

Caravan Mover®

GB **Operating instructions**
Installation instructions

To be kept in the vehicle!

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5 YEARS
WARRANTY IS
STANDARD IN
THE UK

Sales and warranty UK and
Southern Ireland only



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Symbols used



Symbol indicates potential dangers.



Note with information and tips.

Safety instructions

- Practice operating the Caravan Mover® in an open area before using for the first time.
This is to fully familiarise yourself with the remote control / Caravan Mover® operation.
- Always check tyres and drive rollers before using the equipment; remove sharp-edged stones and the like if necessary.
- The side slide switch on the remote control (ON / OFF) also serves as an “Emergency Stop switch”. Switch the side slide switch to “OFF” immediately in the event of any abnormalities, e. g. uncontrolled behaviour of the manoeuvring system.
- No person must be present in the caravan during operation.
- There must be **no persons (particularly children)** inside the turning and movement range (manoeuvring range) of the mobile home.
- When engaging and disengaging and while operating the Caravan Mover® care must be taken to ensure that no hair, parts of the body, clothing or other parts on the body can become caught in moving and / or rotating parts (such as drive rollers).
- The distance between the radio remote control and the centre of the caravan when manoeuvring **must not exceed 10 m!**
- In the event of malfunctions pull on the handbrake.
- To prevent the caravan from tipping, direct the tow coupling downhill when manoeuvring down a slope.
- After manoeuvring, always **apply the handbrake** first, **disengage the drive rollers from the tyres** and **block the wheels** (particularly on downwards-sloping surfaces). The Caravan Mover® is **not suitable for use as a parking brake** for a parked caravan.
- Ensure that the remote radio control is protected from unauthorised access (particularly by children!).
- Never tow the caravan with the drive rollers applied. This can cause damage to the tyres, the towing vehicle and the drive units.
- All wheels and tyres on the caravan must be of the same size and design.


- In order to ensure that the Caravan Mover® operates correctly, the distance between the tyres and the disengaged drive rollers must be 20 mm. All tyres must have the same inflation pressure as per the manufacturer's instructions (check at regular intervals!). If tyres are worn or new tyres are fitted, the distance between the drive rollers and the tyres may need to be readjusted (see "Installation of the drive units").
- Do **not** use the Caravan Mover® as a support when jacking up the caravan, since this may damage the drive unit.
- Sensitive objects such as cameras, DVD players etc. must not be kept in the stowage box near the control unit or the motor cable. They can be damaged by the electromagnetic fields.
- The weight of the Caravan Mover® is additional to the empty weight of the vehicle, which reduces the payload of the vehicle.
- When engaging, ensure that there are no objects (e.g. stones, blocks of ice) between the drive motor and the motor frame.

General instructions

The Caravan Mover® was developed to overcome gradients of up to 13 % for a total weight of 2000 kg on suitable ground.

Depending on the weight of the caravan, the Caravan Mover® cannot overcome obstructions that are more than about 2 cm in height without assistance (please use wedges as a ramp).

Due to the nature of a radio signal, it can be interfered with by external terrain or objects. This means that there may be small areas around the caravan with reduced reception quality, in which case the Caravan Mover® may briefly stop.


 When the Caravan Mover® is switched off using the remote control, the control unit remains in standby. In order to switch off completely the battery must be disconnected or an isolating switch installed.

Batteries

We recommend the Truma Mover® PowerSet which contains batteries with round cell technology and a matching charger to ensure optimum operation. Drive, lighting and gel batteries with adequate capacities are also suitable.

Recommended battery capacities

Round cell technology	min. 55 Ah
Gel / AGM	min. 70 Ah
Lead-acid battery (liquid electrolyte)	min. 80 Ah
Starter batteries are not suitable	

 Batteries with a greater capacity allow longer operation.


Charger

For optimum battery charging we recommend the Truma BC 10 charger, which is suitable for all battery types up to 200 Ah.

Battery care (also maintenance-free batteries)

The following points should be observed to extend the battery life:

- Batteries should be fully charged before and after they have been used.
- Disconnect from the power circuit in the case of longer standstills (e.g. with a circuit breaker or by disconnecting the battery terminal).
- In the case of longer standstill periods, the battery must be disconnected and charged for 24 hours every 12 weeks at the latest.

 Store fully charged batteries in a cool but frost-free place during the winter and recharge at regular intervals (every 12 weeks).

Function description

Always observe the operating instructions and "Safety instructions" prior to starting! The vehicle owner is responsible for correct operation of the appliance.

Note that the Caravan Mover is only suitable for single axle caravans.

The Caravan Mover® is a manoeuvring system with which a caravan can be moved without the assistance of a towing vehicle.

It consists of two separate drive units, each of which has a 12 Volt DC motor. These units are attached to the frame of the vehicle near the wheels and are connected by lateral bars.

Once the drive rollers have been engaged onto the tyres using the provided lever, the Caravan Mover® is ready for operation. All operation takes place using the remote control, which transmits radio signals to the control unit. A separate 12 V lead-acid battery or suitable lead-gel battery (not included in scope of delivery) supplies the control unit with current.

Operating instructions

Remote Control

a = On / Off slide switch

- ! On (green LED illuminates)
- Off (green LED goes off)

- b = Caravan forwards
(both wheels rotate in forwards direction)
- c = Caravan reverse
(both wheels rotate in reverse direction)
- d = Caravan right forwards
(left wheel rotates in forwards direction)
- e = Caravan left forwards
(right wheel rotates in forwards direction)
- f = Caravan right reverse
(left wheel rotates in reverse direction)
- g = Caravan left reverse
(right wheel rotates in reverse direction)

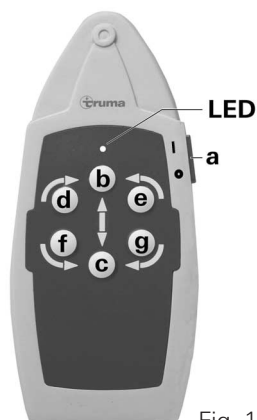


Fig. 1

The caravan can be turned in a circle on the spot without moving forward:

- d + g = Turn caravan to the right
(left wheel rotates forwards + right wheel rotates backwards)
- e + f = Turn caravan to the left
(left wheel rotates backwards + right wheel rotates forwards)

The remote control automatically switches itself off after approx. 2 minutes if no button is pressed, or after 7 minutes if one of the movement buttons is held down. The green LED goes off.

To reactivate the remote control, move slide switch to "Off" ● and then back to "On" ! after approximately 1 second.

There is no "On / Off" switch on the caravan to be operated.

Remote control LED flash codes and acoustic signal

LED "On" and no acoustic signal

System is ready for operation

LED "Off" and no acoustic signal

System off (check remote control batteries if necessary)

LED "flashes" in combination with acoustic signal:

- for approx. 5 seconds after switching the remote control on, until the system is ready for operation.
- for approx. 10 seconds after switching the remote control on, then it is switched off again – unable to establish radio link to controller.
- every 3 seconds if the caravan battery has a low charge (finish manoeuvring as quickly as possible and charge battery).
- 5 times a second (5 Hz) if the caravan battery voltage is low. No manoeuvring is possible until the battery voltage is above 11 V again (e.g. by means of recovery / battery charging).
- approx. 2 times per second with overcurrent / overtemperature (2 Hz). Switch remote control off and on again (wait for cooling down if necessary in the event of overtemperature).

Changing the batteries in the remote control

Please be sure to use leak-proof micro-batteries only, type LR 03, AAA, AM 4, MN 2400 (1.5 V).

When fitting new batteries it must be ensured that the polarity is correct!



Dead and used batteries may leak and damage the remote control!

Remove the batteries if the remote control is not going to be used for an extended period.

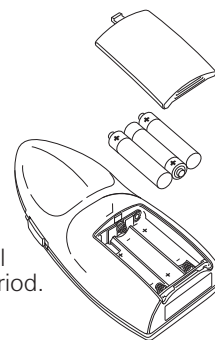


Fig. 2

No claims under guarantee will be considered for damage caused by leaking batteries.

Before throwing away a defective remote control, it is essential that the batteries are removed and disposed of in a proper manner.

Manoeuvring the caravan



Please read the "Safety instructions" before using the Caravan Mover®!

With the caravan uncoupled (apply handbrake), engage the drive rollers to the tyres using the provided lever. Swivel the lever as far as it will go without using excessive force. The drive unit securely engages in the end position.



Before operating the Caravan Mover®, release the handbrake.

Move slide switch (a) on remote control to the "On" ! position – green LED flashes for 5 seconds in combination with the acoustic alarm until the control unit is ready for operation.

The six direction buttons provide movement in six directions – forward, reverse, left forward, left reverse, right forward, right reverse.

The "left forward" (e) and "right reverse" (f) or "right forward" (d) and "left reverse" (g) buttons can also be pressed simultaneously in order to turn the caravan in a circle on the spot without moving it forwards.



The soft start / stop facility means that the caravan starts without jerking and is gently braked when stopping.

If the buttons are released or the radio signal is interfered with or becomes too weak, the caravan stops. Your Caravan Mover® cannot be activated by radio devices or other Mover® remote controls.

After starting up, the Caravan Mover® moves at a uniform speed. The speed will increase slightly when going downhill and decrease slightly when going uphill.

Move slide switch on remote control to the "Off" ● position to switch the remote control and the Caravan Mover® off.



The slide switch also acts as an "Emergency stop" switch.

After manoeuvring, **first apply the handbrake** and then **dis-engage the drive rollers away from the tyres**.

Coupling to a towing vehicle

It is possible to position the caravan's coupling to a stationary car tow ball using the Caravan Mover®, but take some care.

Use the instructions above as your guide. Use the button controls to move the caravan to the car (car handbrake "ON", and car in gear). Use a button stabbing technique to position the coupling exactly above the ball. Lower the coupling onto the ball and engage in the normal way using the jockey wheel.

Prepare the caravan for towing as usual. **The caravan must not be towed with the drive rollers engaged.**

Maintenance

Please do not allow the drive units to become soiled with coarse road material. When you are cleaning the caravan, spray the Caravan Mover® with a water hose to dissolve mud etc. Please ensure that no stones, twigs or the like become trapped in the equipment. The control unit does not require maintenance. Please keep the remote control in a dry place.

Every year (and / or before putting away for the winter), clean Caravan Mover® as described, dry and lightly spray the drive unit guides with oil spray or a similar water-repelling lubricant. **Do not put lubricant on the rollers or the tyres!** Engage and disengage the drive units several times to allow the lubricant to penetrate all the guides. Do not park the caravan with the drive rollers engaged.

To prevent the battery from becoming totally discharged during long periods of inactivity it must be disconnected and recharged before using again. Charge the caravan battery before starting up.

It is extremely easy for you or your caravan dealer to perform the checking and maintenance of your Caravan Mover® during the annual inspection of your caravan. If in doubt, please contact the Truma Services (see Truma Service Booklet or www.truma.com).

Checks

- Check the installation, wiring and connections for damage at regular intervals. The drive units must be able to move freely and be returned automatically to the safe idle position by the return spring when they are disengaged. If this is not the case, examine drive units for soiling or corrosion at the guides and clean if necessary. Undo all moving parts as required and oil or spray with a lubricant such as WD40 to ensure that the equipment moves correctly and provides the full range of movement.
- After the annual inspection, check whether all motors react properly to the buttons on the remote control.
- At least every 2 years, an expert **must** check the Caravan Mover® for rust, check that detachable parts are firmly attached and check that all safety-related parts are in good working order.

Troubleshooting

Before calling customer service, please check the following:

Are the batteries in the remote control in good condition?

Is the caravan battery in good condition and fully charged? Please note that battery performance can deteriorate rapidly at cold ambient temperatures.

Perform a reset by briefly disconnecting the battery (for approx. 10 seconds).

If the fault cannot be remedied, please contact your dealer or the Truma Service department (see www.truma.com).

Synchronising the electronic control unit with the radio remote control

i The remote control and the control unit are synchronised with each other in the factory.

If the control unit or the remote control is replaced, they must be re-synchronised as described below.

Check the installation in accordance with the installation instructions and ensure that the drive rollers are **not** applied. Check that the battery is properly connected, check the condition of the battery and that a voltage of 12 V is present at the control unit.

Press the reset button (k) on the control unit and hold down (red LED (j) flashes slowly), and after approx. 5 seconds the LED (j) starts to flash rapidly. Then release the reset button and press and hold down the caravan reverse button on the remote control (c) within 10 seconds, simultaneously switching on the remote control using the slide switch (a).

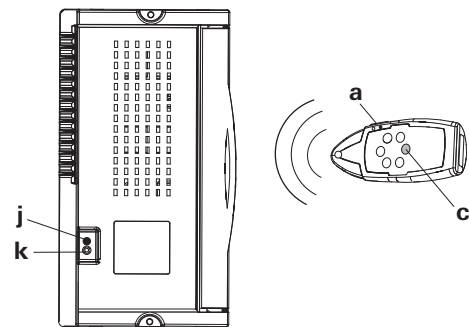


Fig. 3

The remote control and the control unit are synchronised with each other. After successful synchronisation, the red LED flashes rapidly.

Declaration of conformity

1. Information about the manufacturer

Name: Truma Gerätetechnik GmbH & Co. KG
Address: Wernher-von-Braun-Str. 12, D-85640 Putzbrunn

2. Device identification

Model / Version:

Caravan Mover® manoeuvring aid

3. Complies with the requirements of the following EC directives

- 3.1 R&TTE directive (1999/5/EC)
- 3.2 EMC directive (2004/108/EC)
- 3.3 Radio Interference in Vehicles 72/245/EEC (with the supplements)
- 3.4 End of Life Vehicles (2000/53/EC)

and bears the type approval number e1 03 4473 and the CE symbol.

Caravan Mover®:
Class 1, **frequency** 868 MHz.

Countries:

AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE, SI, SK.

4. Basis of proof of conformity

EN300220-2:2006, EN300220-1:2006 (R&TTE art. 3.2), EN301489-1:2005, EN301489-3:2002 (EMV art. 3.1b), EN61000-4-2:2001, EN61000-4-3:2006, EN61000-4-6:2001, EN55022:2003 (Class B), ISO 7637-2:2004, EN60950:2001, 2004/104/EG, 2005/83/EG, 2006/28/EG, 2000/53/EG

5. Monitoring body

Federal Office for Motor Traffic

6. Signatory details



Signature: Mathias Venschott
Head of product centre climate
and manoeuvring systems

Putzbrunn, 22.04.2013

Technical data

Designation

Caravan Mover®

Area of operation

Single axle caravans with a total weight up to 2000 kg

Operational voltage

12 V DC

Current consumption

Average approx. 20 A

Maximum 120 A

Stand by consumption

< 20 mA

Remote control frequency

Class 1, 868 MHz

Speed

Approx. 16 cm per second (depending on weight and incline)

Weights

Approx. 34 kg (including cross actuation device)



Right to effect technical modifications reserved!

Manufacturer's terms of warranty

1. Case of warranty

The manufacturer grants a warranty for malfunctions in the appliance which are based on material or production faults. In addition to this, the statutory warranty claims against the seller remain valid.

A claim under warranty shall not apply:

- for parts subject to wear and in cases of natural wear and tear,
- as a result of using components in the units that are not original Truma parts,
- for gas pressure regulation systems as a result of damage by foreign substances (e.g. oils, plasticisers) in the gas,
- as a consequence of failure to comply with Truma instructions for installation and use,
- as a consequence of improper handling,
- as a consequence of improper transport packing.

2. Scope of warranty

The warranty is valid for malfunctions as stated under item 1, which occur within 60 months after conclusion of the purchase agreement between the seller and the final consumer. The manufacturers will make good such defects by subsequent fulfilment, i.e. at their discretion either by repair or replacement. In the event of manufacturers providing service under warranty, the term of the warranty shall not recommence anew with regard to the repaired or replaced parts; rather, the old warranty period shall continue to run. More extensive claims, in particular claims for compensatory damages by purchasers or third parties, shall be excluded. This does not affect the rules of the product liability law.

The manufacturer shall bear the cost of employing the Truma customer service for the removal of a malfunction under warranty – in particular transportation costs, job and material costs, as long as the service is carried out by an authorised Truma Dealer.

Additional costs based on complicated removal and installation conditions of the appliance (e.g. removal of furniture or parts of the vehicle body) do not come under warranty.

Rollers carry 60 months warranty against manufacturing defects. Take care to remove sharp stones from your tyres prior to using your Mover®.

3. Making a claim under the warranty

The distributor's address is:
Truma UK Limited
2000 Park Lane, Dove Valley Park
Foston
South Derbyshire DE65 5BG.

Please describe your complaint in detail and state the factory number of the device and the purchase date.

In order for the manufacturer to be able to determine whether an incident subject to guarantee has occurred, the end user must bring or send the device to the manufacturer at his own risk. If there is damage to heat exchangers, the gas pressure regulator must also be sent back to the factory.

Air conditioning systems:

To avoid transportation damage, the unit may only be sent to the Truma Service Centre Germany or one of our authorised service partners if agreed beforehand. Otherwise the sender bears the risk for any transportation damage.

Please send all shipment to the factory as freight. In cases under warranty, the works shall bear the transport costs or the costs of delivery and return. If the damage is deemed not to be a warranty case, the manufacturer shall notify the customer and shall specify repair costs which shall not be borne by the manufacturer; in this case, the customer shall also bear the shipping costs.

Installation instructions

Read the installation instructions prior to starting work and follow them carefully!

Please ensure that no metal chips or other contaminants get into the controller during installation.

Intended use

The **Caravan Mover®** has been built for use with single-axis caravans with a gross weight of up to 2000 kg.

The Caravan Mover® weighs approx. 34 kg with the cross actuation device attached.

Check the towing load of your vehicle and the gross weight of your caravan in order to establish whether they are designed for the additional weight.

Approval

The Caravan Mover® satisfies other requirements stated in the EU directives and standards (see declaration of conformity).

The technical and administrative regulations of the country in which the vehicle is initially registered must be complied with when the Caravan Mover® is being installed.


Any modifications to the unit, or the use of spare parts and accessories that are important to the operation of the system that are not original Truma parts and failure to follow the installation and operating instructions will cancel the warranty and indemnify Truma from any liability claims. In addition to this, the operational approval for the device will be cancelled.

Tools and facilities required

To install the unit you will need:

- 13 mm, 17 mm, 10 mm socket wrench, ring spanner or open-jawed spanner
- Allen key 4
- Torque wrench (5 – 40 Nm)
- Cable cutter / Crimping tool
- Power drill / screwdrivers / 25 mm hole cutter
- Portable 2 tonne trolley jack and axle stands to suit
- Appropriate lighting

Minimum installation dimensions

 A distinction is made between L-profiled and U-profiled chassis as shown in the illustration.

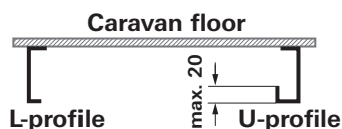


Fig. 4

The equipment can only be fitted to caravans / trailers within the following dimensions.

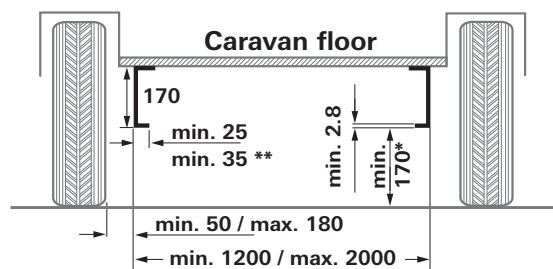


Fig. 5

All dimensions in mm.

* for a loaded vehicle with a max. allowed gross weight

** for U-profile

Measuring the frame height

A frame height of min. 170 mm is required about 340 mm from the outer edge of the tyre at the height of the wheel hub / centre.

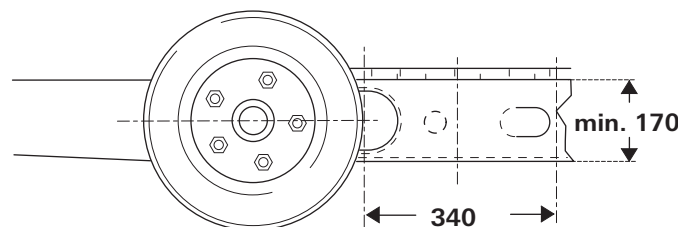


Fig. 6

Determining the installation type

1. Standard installation

Standard installation is used with a U-profile or L-profile chassis and a frame height of approx. 170 mm. **No special accessories** are required.

2. Installation with chassis with U-profile or L-profile and frame height of between 125 and less 170 mm

With a chassis with a frame height of 125 mm to less 170 mm, 1, 2 or 3 **spacer plate sets** and the **screw set** are needed to compensate for the height.

3. Installation with chassis with U-profiles or L-profiles with frame height of less than 125 mm

With a chassis with a frame height of less than 125 mm a **low chassis kit** must be fitted to compensate for the height.



In Germany, the low chassis kit installation must be accepted by a vehicle expert.

4. The **AL-KO Vario III / AV installation kit** must be used with the AL-KO Vario III / AV chassis with a frame thickness of less than 2.8 mm.

5. For attachment in front of the axle on the AL-KO chassis M with adjustable beams

The **AL-KO chassis M adapter set** (part no. 60030-38600) must be used in order to compensate for overlapping frame edges

6. For attachment in front of the axle on the AL-KO chassis M with continuous frame

The **AL-KO chassis M adapter set** (part no. 60031-02000) must be used in order to compensate for overlapping frame edges

7. Installation with Eriba Touring chassis

The Eriba Touring mounting set is needed for the Eriba Touring chassis.

8. For attachment behind the axle on an Eriba Troll chassis

The Eriba Troll mounting set is needed for the Eriba Troll chassis.

9. Installation on chassis with L-profile and with a limited amount of space

The **short mounting system** is required to compensate for the height (30 or 60 mm) with substructures such as tanks.

Special accessory installation

1. Set of screws

For height compensation with spacer plates, max. 45 mm eight DIN 933 screws M10 x 95 8.8, galvanized, part no. 60010-70000.

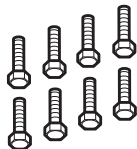


Fig. 7

2. Spacer plate kit (two 15 mm spacer plates)

For height compensation max. 45 mm (3 plates) at each side (e.g. installed behind axle), part no. 60010-66000.

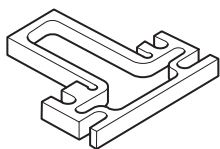


Fig. 8

3. Low chassis kit

To compensate for the height difference for caravans / trailers with a frame height of **less than 125 mm** and / or for bridging struts, part no. 60010-64900.

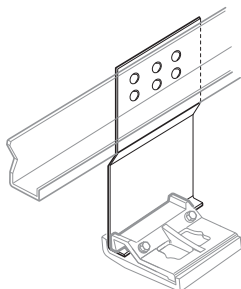


Fig. 9

4. Low chassis kit, short

To compensate for the height difference for caravans / trailers with a frame height of less than 125 mm, part no. 60030-37600.

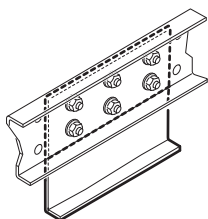


Fig. 10

5. AL-KO Vario III / AV

Installation kit for caravans with AL-KO Vario III / AV Chassis (frame thickness less than 2.8 mm) mandatory, part no. 60010-21500.

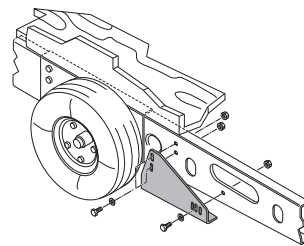


Fig. 11

6. AL-KO Chassis M

adapter kit for chassis with axial displacement with a permitted gross weight of 1800 kg

Mounting set to compensate for frame edges for caravans with AL-KO Chassis M. Mounting set is needed for mounting in front of the axle, part no. 60030-38600.

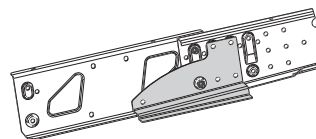


Fig. 12

7. AL-KO Chassis M

adapter kit for chassis with a continuous frame and a permitted gross weight of 1900 kg to 2000 kg

Mounting set for compensating for frame edges for caravans with AL-KO Chassis M. The mounting set is needed for mounting in front of the axle, part no. 60031-02000

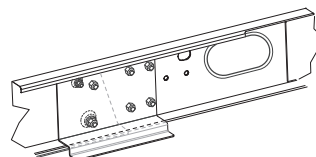


Fig. 13

8. Spacer plate set for single-axle

caravans up to a total weight of **1700 kg** with chassis AL-KO Vario III / AV (2 x 4 spacer plates à 15 mm) to compensate height differences of up to 60 mm, part no. 60010-70500.

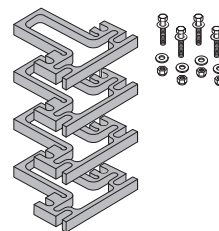


Fig. 14

9. Caravan Mover® mounting set for Eriba-Touring, part no. 60030-09000.



Installation is not possible in some cases because of attachments to the underbody. Contact your dealer if necessary.

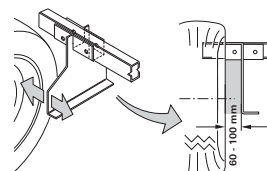


Fig. 15

10. Eriba Troll Mounting Set

The Eriba Troll Mounting Set allows the Mover® to be mounted behind the axle on an Eriba Troll caravan/trailer. part no. 60031-03000

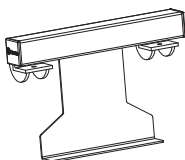


Fig. 16

11. Short mounting system

Replacement for standard mounting system if this cannot be used due to lack of space and to compensate for the height (30 or 60 mm) of substructures such as tanks. part no. 60031-20000

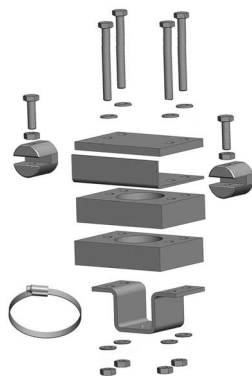


Fig. 17

12. Mud guard set (no illustration)

Replacement for standard mud guards, if these cannot be adapted to the Mover®. part no. 60031-08200

i Detailed installation instructions are provided with the relevant mounting set.

⚠ The Caravan Mover® is not approved for installation on caravans / trailers with any other chassis!

Any drilling (exception: when using low chassis kit*) or welding to the chassis is not allowed. Under no circumstances remove any suspension components from the chassis.

* In the case of the AL-KO Vario III / AV Chassis, never drill into the vehicle frame even if the flat frame kit is used.

Choice of location

The Caravan Mover® should preferably be installed in front of the axle, but can also be installed behind the axle under special circumstances (e.g. due to lack of space). Only the bolts that are provided must be used to secure the Mover® (or the add-on parts provided as special accessories).

Mud guards

Proceed in accordance with these instructions only if a splash guard is fitted. When a manoeuvring assistant is fitted behind the axle, the existing mud guards must be moved / adapted if necessary (max. distance between tyre / mud guard 300 mm).

i The mud guards are installed behind the axle. No mud guards are required in front of the axle.

Original mud guards

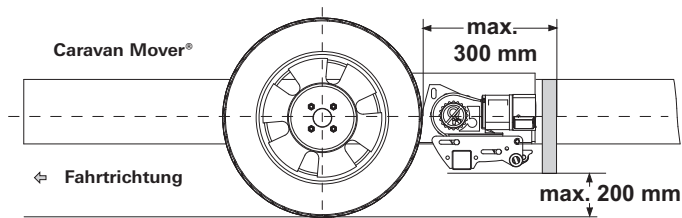


Figure 18

Adapting the mud guards to the Mover®

1. Remove the existing mud guards.
2. Fit the Mover®.
3. If necessary, make recesses in the mud guard for the apron contour.
4. Secure the mud guard 300 mm from the tyre on the underside of the caravan.

Installation of the drive units

The frame of the vehicle must be kept free of rust and heavy soiling and without any damages to the suspension components.

The wheels and tyres that are fitted to the caravan must be of the same size and model and inflated as per the manufacturer's instructions.

Remove all components from packing and place on the floor.

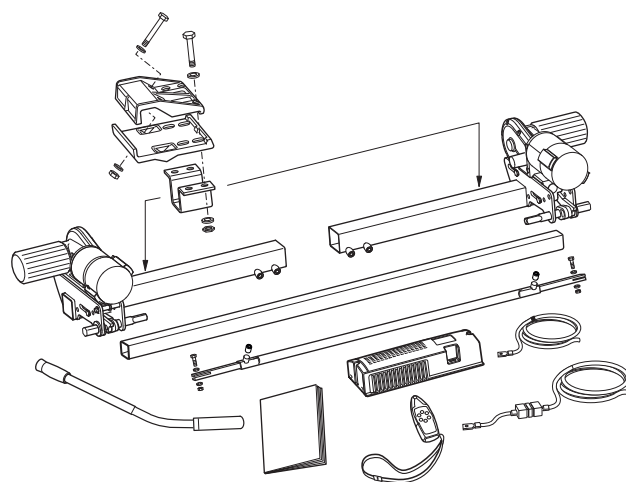


Fig. 19

⚠ The provided factory plates (f) must be attached on the left and right sides of the cross strut next to the drive unit retaining plates.

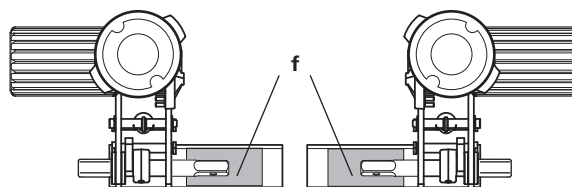


Fig. 20

Loosely attach the drive units to the lateral bar. The bolts (lock nuts) must be no more than finger-tight.

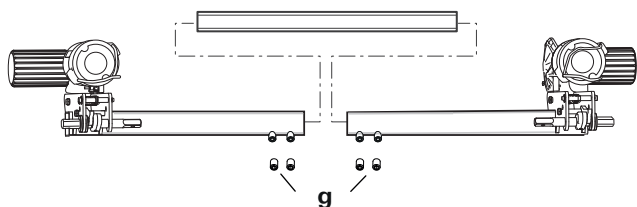


Fig. 21

Place the mounting set (b) on the vehicle frame and secure using the two bolts (c), tight enough so that it can just about be moved on the frame.

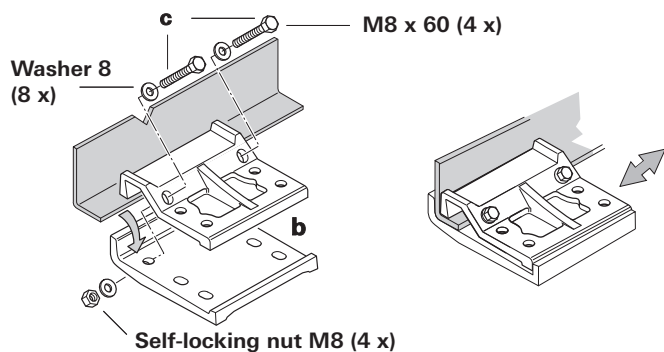


Fig. 22

Bolt drive units with lateral bar to mounting set using U-bracket (d), tight enough so that it can just about be moved.

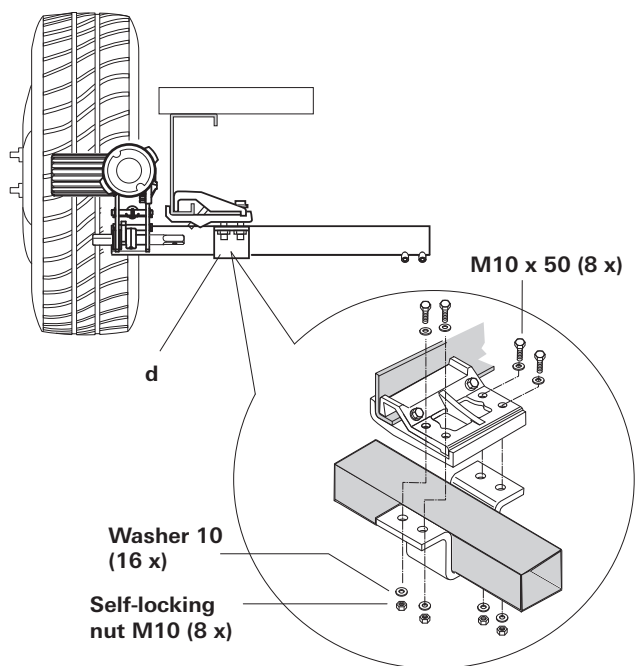


Fig. 23

Position the drive rollers so that they are approximately at the height of the wheel hub / centre.

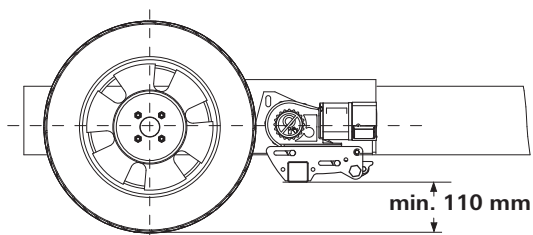


Fig. 24

Truma can supply a spacer plate set for compensating for height differences of up to 45 mm (part no. 60010-66000,

2 pcs. à 15 mm). Up to three spacer plates can be used at each side. A bolt set (part no. 60010-70000) is needed to attach the spacer plates.

The low chassis mounting set (part. no. 60010-64900) must be used for height differences of more than 45 mm. Check that there is adequate ground clearance (min. 110 mm).

The correct distance can be set between the tyre and the roller (20 mm) with the provided spacer by sliding the (disengaged) drive units in the longitudinal direction. The movable middle tube makes it possible to adapt to the width of the frame.

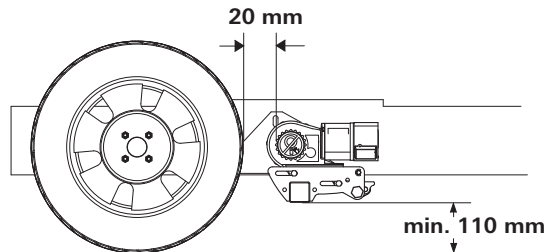


Fig. 25

Slide drive units in lateral direction so that the maximum amount of tyre tread is covered.

Ensure that there is adequate clearance between the gearbox and the tyre / shock absorber so that they do not touch.

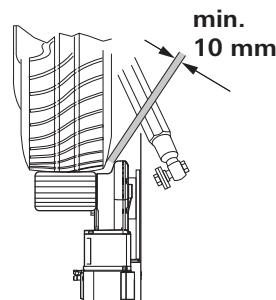


Fig. 26

! The minimum clearance with the drive units engaged is 10 mm.

After correctly positioning the bolts and nuts of the mounting set, tighten slightly and then check the required distances / clearances again. The weight of the caravan must be on the wheels when doing this.

Place the movable connection pipe in the centre (use the marking) and fix each side with 2 threaded bolts (g) M8 x 12 (15 Nm).

! The threaded bolts are coated with sealant, and may therefore only be bolted in once.

Re-check the distance of 20 mm to the tyre (with weight on wheels) and then tighten the 2 mounting set bolts (M8) with 24 Nm and the 4 mounting set bolts (M10) with 48 Nm.

The bolt tightening order must be strictly adhered to for correct installation.

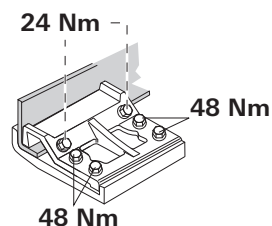


Fig. 27

i Re-check that **all** 6 bolts have been tightened to the correct torque!

Installing the cross actuation device

Please ensure that the drive rollers are **not** resting against the tyres (at both sides)!

Slide the connecting tubes (1) into the middle tube (2) with the holes facing the outside.

Slide the connecting tubes (1) onto the deflexion bolts (a). Insert screws (5) through the deflexion bolts and tighten.

Centre the central pipe (2), measuring again if necessary. In this position, screw in the 2 threaded bolts (3 + 4) (15 Nm). Finally, check all the bolted connections again.

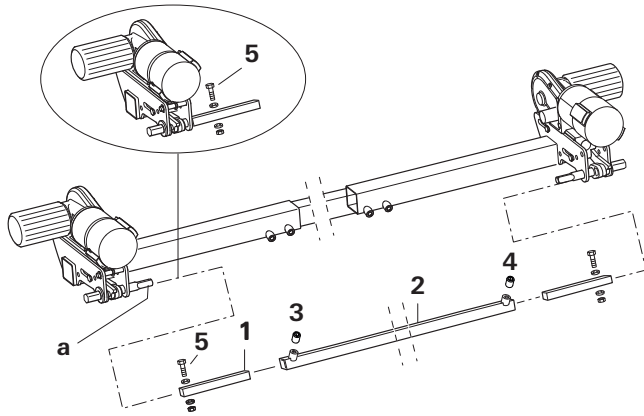


Fig. 28

Engage the rollers using the provided lever. The drive rollers must now be applied at both sides. Also check the opposite side. Disengage drive rollers again.

Repeat this procedure at the opposite side.

Installation of motor cables and control unit

The Mover® is only suitable for connection to 12 V batteries (DC voltage)!

! Remove battery cable terminals and disconnect any external electrical power before starting work. If you are unsure about the electrical installation, have it checked out by a qualified automotive electrician.

The electrical installation must comply with the technical and administrative provisions of the respective country in which it is used (e.g. EN 1648-1). National regulations and guidelines must be observed.

Each motor has two preinstalled heavy-duty cables (6 mm²). Mark the respective motor connecting cables (motor A or B – see also wiring diagram) and temporarily route to the intended control unit installation position on the underbody of the caravan. An example of a suitable location for the control unit is in a bed storage box in close proximity to the manoeuvring system, **at least 40 cm away from the battery**.

Insert control unit into storage box and secure with the supplied chipboard screws (5 x 16).

Drill a 25 Ø hole in the floor of the caravan for leading the cables through, approx. 150 mm from the control unit terminal strip.

! Take care to avoid any chassis members, gas pipes and electrical wires!

Drill hole and lead cables through floor of caravan to control unit in such a way that they cannot chafe (particularly when leading through metal panels). This can be done using protective tubes, which will prevent the cables from being damaged.

i **The drive motors move during operation.** To compensate for this, the **cables** should be secured **loosely** with a little play in this area in order to prevent cable stretching. **No** cables must be routed over the control unit!

Secure cables to chassis and / or underbody using the supplied clips and screws.

Seal hole in vehicle underbody using plastic body sealant.

Connecting diagram

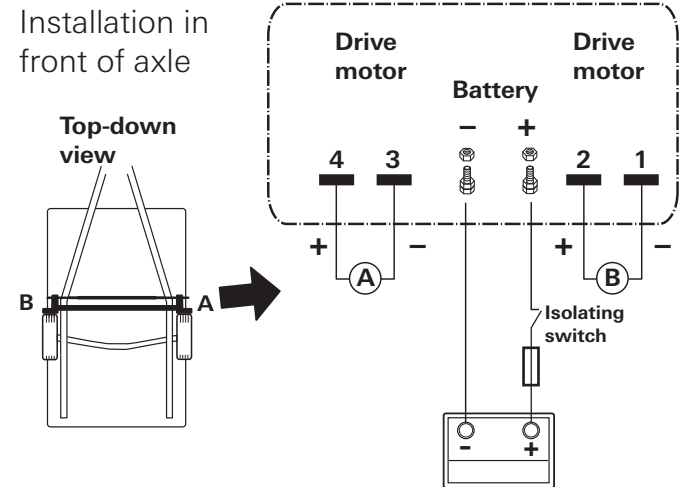


Fig. 29

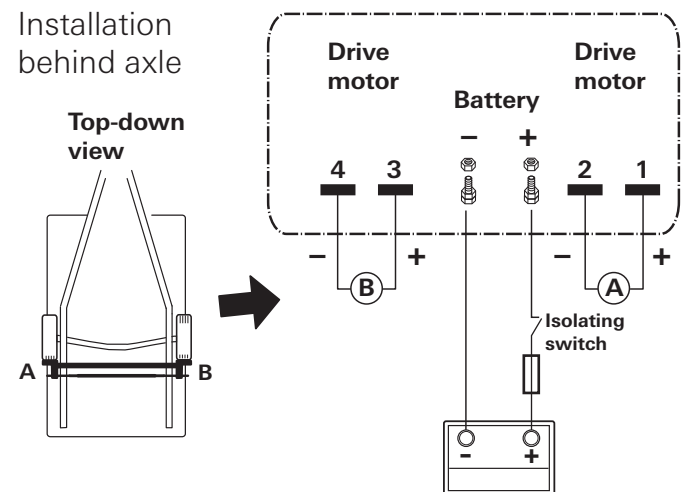


Fig. 30

Installing the isolating switch

Install isolating switch in a suitable location (near the battery) in the positive lead between the battery and the controller.

- A hole with a diameter of 25 mm is required for installation.
- Turn key anticlockwise until it reaches the end position and remove.
- Slide isolating switch through hole and secure with either the provided chipboard screws (5 x 16 mm) or the M6 x 30 bolts and M6 self-locking nuts.
- Cut the positive lead of the battery and crimp the provided pipe-type cable shoes to both ends of the cut cable.
- Insert key again and move to "OFF". Screw cable with pipe-type cable shoes to isolating switch. Connecting order: Pipe-type cable shoe, spring washer, nut.

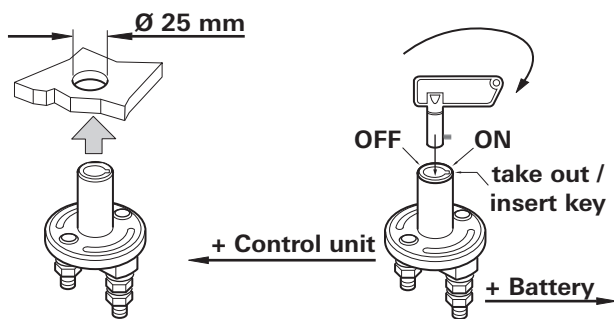


Fig. 31

Connect battery connecting cables to the existing battery terminals (**red = positive, black = negative**).

Re-check whether all cables are correctly connected, attached using the provided clips and cannot chafe.

Connecting the drive motors

When installing the motor cables, please ensure there is no danger that they may become torn or damaged.

Cut motor cable of drive motor that is furthest away from control unit to length. Shorten the motor cable of the nearest drive motor to **the same length**. The two drive motor cables must be of the same length to ensure that the drive output of the Caravan Mover® is uniform! Excess cable must be routed in wavy lines without looping.

Crimp the provided flat plugs onto the drive motor cables. Release flap at control unit terminal strip by pressing and connect cables as shown in wiring diagram (**red = positive, black = negative**). Please ensure that the connections are made properly!

Connecting the battery

Liquid electrolyte batteries need to be placed in a separate box with an external venting system. The fuse for the positive line needs to be connected outside the box. The gel and AGM batteries do not need a separate box. Observe the installation regulations of the battery manufacturer.

The cables leaving the terminal need to be installed separately from each other until after the fuse in the plus line.

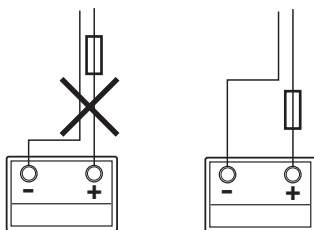


Fig. 32

Route battery connecting cables (only use the original Truma cables included in the delivery) to control unit and securely attach using the provided clips and screws.

i The battery connecting cables must not be extended. They must be routed separately from the motor cables, and must **not** run over the control unit.

Route battery connecting cables so that they do not chafe (particularly at leadthroughs through metal panels). Use suitable leadthrough grommets for protection in order to prevent damage to cables. Connect battery connecting cables to the existing battery terminals (**red = positive, black = negative**).

! Incorrect wiring will destroy the electronics / control system.

The connection to the control unit (as per the connecting diagram) must take place in the order – nut, battery connection ring, nut (torque 7 Nm ±1).

Connect the fuse in the positive cable (150 A) close to the positive contact.

Commissioning the Caravan Mover®

Check whether the battery is fully charged for operating the Caravan Mover® and that the isolating switch is in the “ON” position.

Park the caravan outside on an open, level surface and apply the handbrake. Ensure that the rollers are disengaged from the road tyres and the corner supports are raised.

Connect battery terminals to battery, checking that all cables are secure and not hot or indicating signs of short circuits, etc.

Move slide switch on remote control to the “On” **I** position. This switches the remote control on – green LED flashes for 5 seconds in combination with the acoustic alarm until the control unit is ready for operation. If LED does not illuminate, check polarity and condition of batteries in remote control. The remote control switches itself off after about 2 minutes if no buttons are pressed.

Check whether both drive motors are stationary. With the remote control switched on, and no more than 2 m away from the control unit, press the “Forwards” button. Both drive motors must now move in the forwards direction.

Move slide switch on remote control to the “Off” **II** position to switch the remote control and therefore the Caravan Mover® off.

Move drive rollers against the tyres using the provided lever. Turn the lever until it mechanically engages and cannot be turned any further without using excessive force (end position approximately horizontal).

Ensure that there are no obstacles around the caravan, release the handbrake and switch the remote control on. Now check all functions several times according to the operating instructions.

Apply caravan handbrake. To switch the remote control and the Caravan Mover® off, move slide switch on remote control to the “Off” **II** position. Release drive rollers using the lever and re-check distance between roller and tyre. Adjust if necessary.

i The distance between the disengaged drive rollers and the tyres is 20 mm.

Warnings

The yellow sticker with the warning information, which is enclosed with the appliance, must be affixed by the installer or vehicle owner to a place in the vehicle where it is clearly visible to all users (e.g. on the wardrobe door)! Ask Truma to send you a sticker, if necessary.



Should problems occur, please contact the Truma Service Centre or one of our authorised service partners (see www.truma.com).

In order to avoid delays, please have the unit model and serial number ready (see type plate).

Service