

ELFOOT

**Electrical converter for stabiliser legs
*for your caravan***



Fitting instruction

User manual



With this kit you will transform the traditional stabilising legs of your caravan into a electrically remote operation. The actuator turn the existing spindle with enough power for lowering and lifting the legs. The system are not intended to lift or adjust leveling the caravan. This must be performed prior lowering the stabiliser legs.

Maintenance

The system do not require any maintenance but the function depends of perfect conditions of your stabiliser legs. Turning the spindle must be easy able to run freely, and light. Rust, dirt, non greased spindels, screwed or deformed spindels will cause an unintended functionality. At least ones a year inspect and maintain all moving parts of the original stabiliser legs. Use only light running grease/oil. The battery inside the remote must be removed if system is not in use for a longer periode. The battery have a life time of about 2 years.

Turning on the remote please press and hold the button «automatic up» more than 5 sec. The LED in remote start flashing every 1 second (ready to use) The remote shut down automatically after 5 minutes if it is not used. (sleep function)

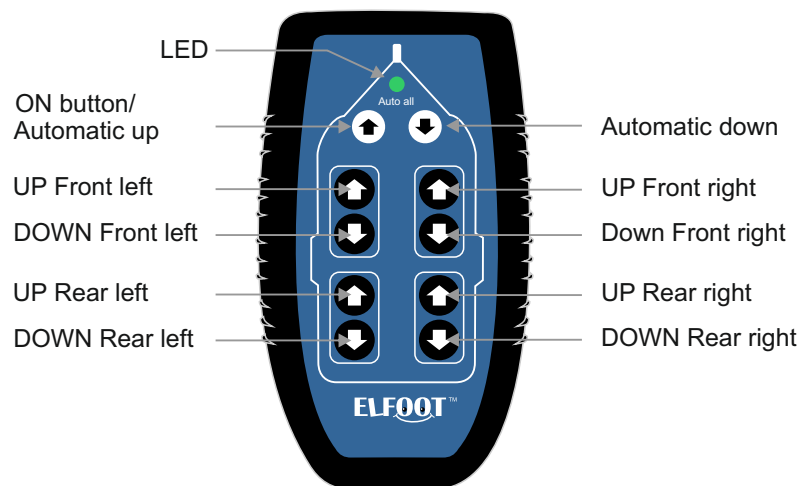
Function of the remote

When activating shortly the button «automatic down», the legs starts to lower one by one. The sequence starts with R rear, Left rear, R front and finally L front. Every leg stops automatically when touch down force is reached. After all legs are down, the system perform a extra turn on each legs to ensure full contact to the surface.

You are able to provide extra power to each of the individually legs by using the manual button related on the remote. Normally it is not recommended to provide this extra power. To much load can damage the caravan construction.

Interruption of automatic function will always be possible by simply pressing one of the buttons of the remote shortly. Turn off the main power (caravan main power switch) will stop the function.

Choosing the function «automatic up», the legs starts one by one to lift. After legs are in top possition, they perform a loosen-operation by turning half turn down. This ensure the leggs not to block, if not used for a longer periode.



Warning

Activating the system must be done with greatest attention and it must be ensured that **no** objects, body parts or animals are nearby the the satbiliser legs when in motion.

Do not touch the stabiliser legs itself, or nearby when system in powered. Do always turn of the power to the system when not in use.

Important

The system power must always be turned off when towing the caravan. Always check by visual control that the satbiliser legs are in desired position prior towing the caravan.

Before installation

In order to guarantee a faultless operation and thus exclude the danger to people and objects, this product must be mounted in accordance with professionals who possess the necessary technical knowledge and the necessary tools. The mounting guide must be read thoroughly. Before starting the mounting you must make sure the mounting kit is complete.

Do always start the installation with manual check and functionality of each stabiliser leg. *Rotation of the spindle must run freely, and light. Rust, dirt, non greased spindels, screwed or deformed spindle will cause an unintended functionality.*

The kit contain 4 actuators. Two with black flex and two with gray flex. A pair of these to be mounted each end of the caravan. Fig. (J). Choose position of the actuator who gives a smooth and easy route of the flexible cables. This will ensure long lasting of the mechanical cables.

Please check prior installation that enough space in front of the stabiliser legs are present. In some case it is necessary to create space by removing plastic part or bending edge of drip-edges. To give better access to the brackets during insertion, the blue adaptor can be removed temporarily.

Lowering the stabiliser legs

It is helpful to lower the stabiliser legs a little. This makes it possible to turn, by hand, the spindle a little to match shape of spindle hex bolt together the inside hex shape of the blue adaptor.

Loosen the stabiliser leg and insertion of the bracket

The bolts holding the stabiliser leg must be loosened (M1). Push in carefully the bracket with the blue adaptor in the gab as indicated in fig. (M2).

At the same time, if necessary, turn the spindle bolt by hand to make possible insertion of the blue adaptor over the spindle hex bolt. Push gently the bracket until the adaptor touch the edge of the spindle bolt fig. (M3). Draw 5 mm. backwards to provide space for movement of the spindle bolt (back and forward).

It is essential that gear are able to follow the movements of the spindle (up-down) when turning (bearing clearance). Normally there are space enough but in some cases it is necessary to provide extra space. In this case insert the shims as shown in fig. (M2)

Re-tighten the bolts fig. (M1)

Fasten the motor

Please turn the motor half way fig. (M4). Position the motor so the black housing is facing to the bottom plate of the caravan. Turn the motor in its flexible cables until desired position. Make sure the cables are bend in a smooth curve as shown in fig. (J). Do never bend more than 45 degree. Fasten the motor using the two screw provided fig. (M5). Note: The two bolts (A) fig. (M6) must not be tighten since the gear must be able to follow the up-down movements of the spindle when turning.

Fasten the wires



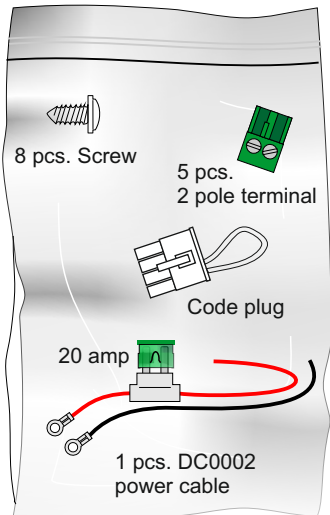

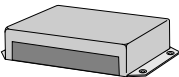


Please fasten the control unit inside the caravan. Close attachment to the caravan battery is recommended. The red 2" power wire must be connected via 20 amp. fuse to positive+ battery. Connect the black 2" wire to negative- battery. Ensure good connections!

Fasten the motor wires in a safe and suitable way and route the ends through whole in caravan bottom plate. Be carefull when drilling. Some caravans have floor heating installation! Ensure that the 2 pole connectors are firmly clicked together with motor part. All wires have identification each ends. When attachment are finish and wires are inside the caravan, please strip 5 mm. of the ends and tighten the wires in the screw terminals. Follow the diagram fig. (J)

Finish

The system have 3 level of settings. The difference is only how much torque the software allow the stabiliser legs to reach before it stop the motor action. The factory setting is program no. 1. Change of program see: settings. Please test all functions after end of installation.

Contents

<p>DC0050</p>  <p>2 pcs. Motor with GRAY flex on the wires.</p>	<p>DC0080</p>  <p>1 pcs. Remote</p>	<p>DC0070</p>  <p>8 pcs. Screw</p> <p>5 pcs. 2 pole terminal</p> <p>Code plug</p> <p>20 amp</p> <p>1 pcs. DC0002 power cable</p>
<p>DC0060</p>  <p>2 pcs. Motor with BLACK flex on the wires.</p>	<p>DC0090</p>  <p>1 pcs. Control unit</p>	
<p>DC0040</p>  <p>8 pcs. 4 mm shims</p>	<p>DC0003-5</p>  <p>2 pcs. Motor wire 5 m.</p>	

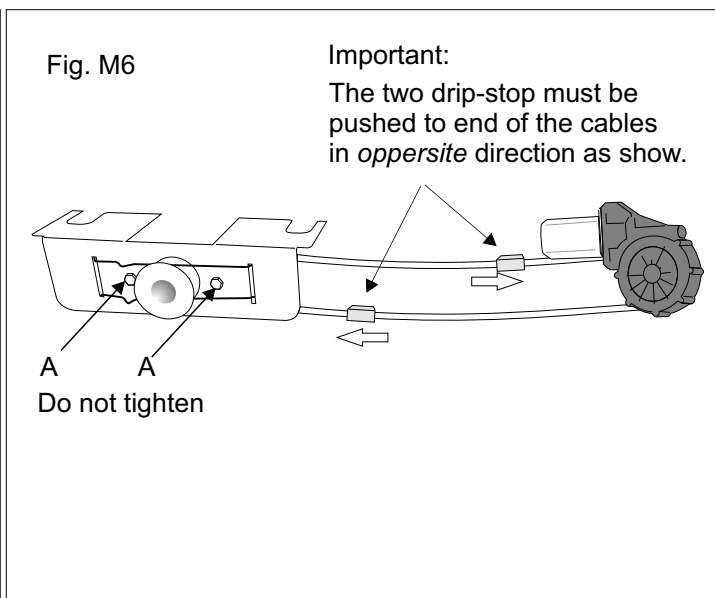
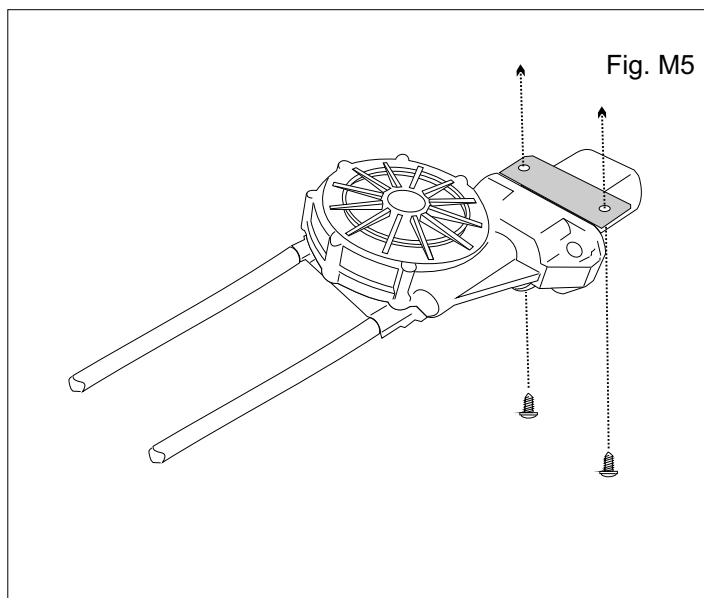
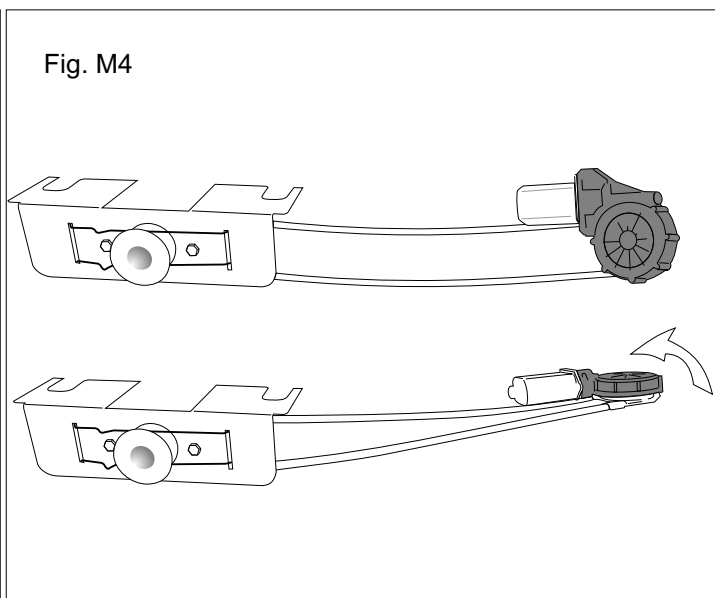
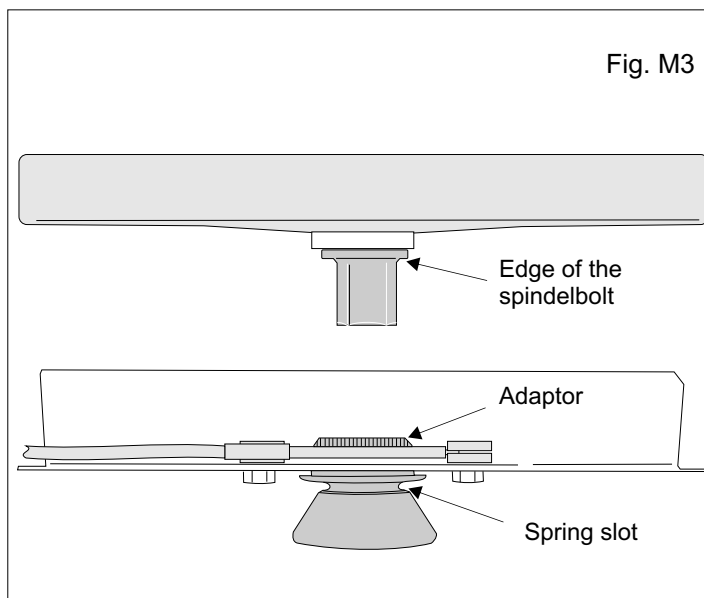
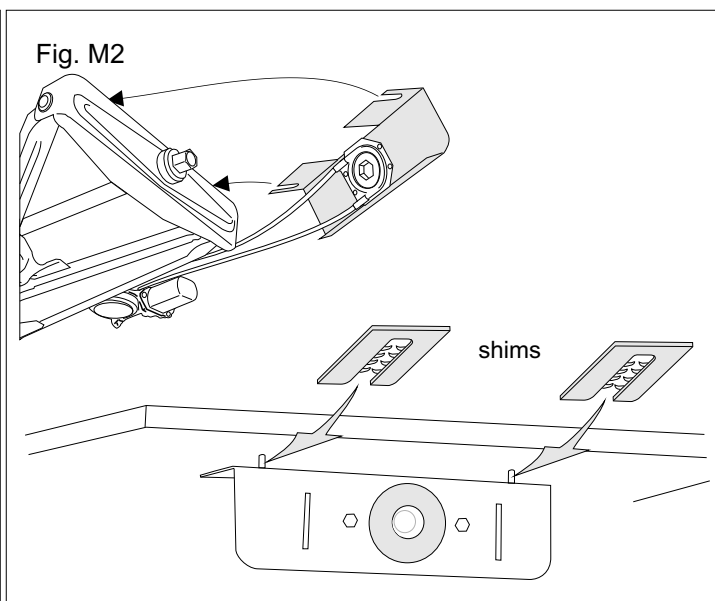
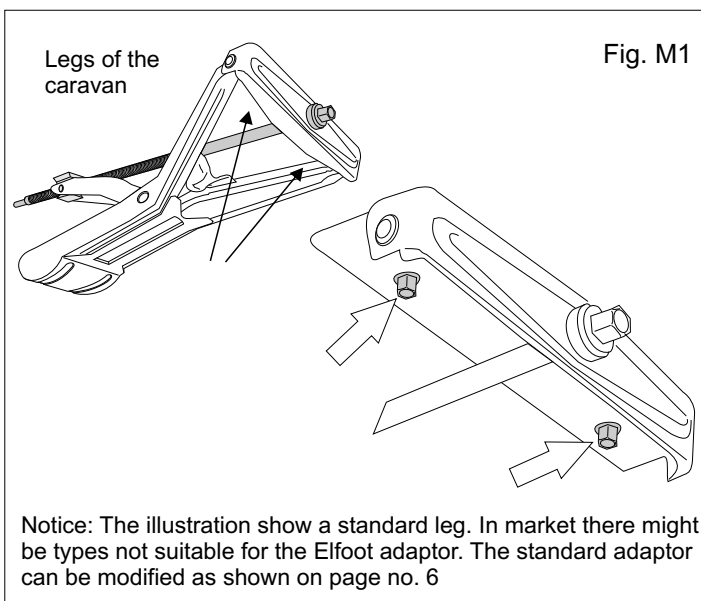
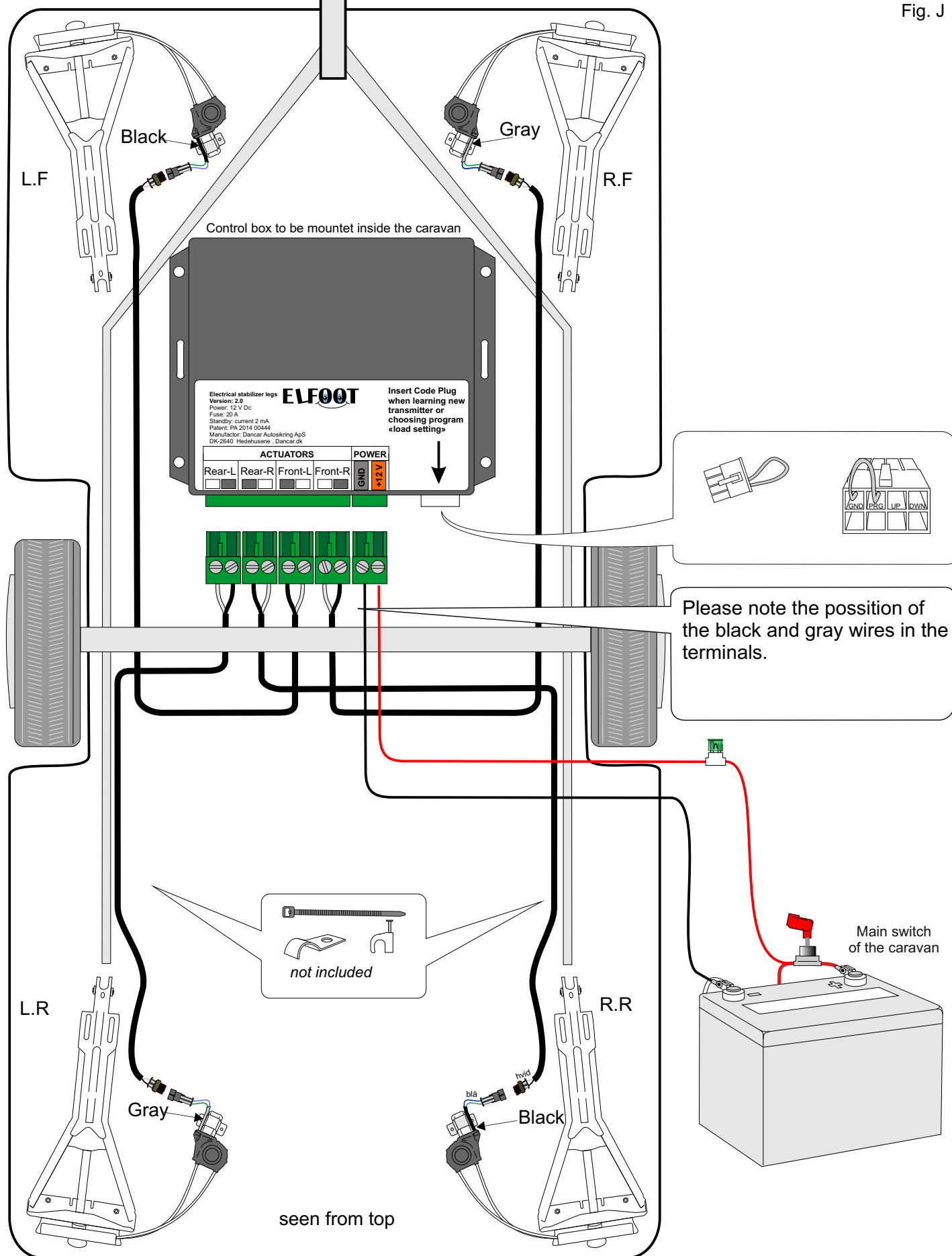
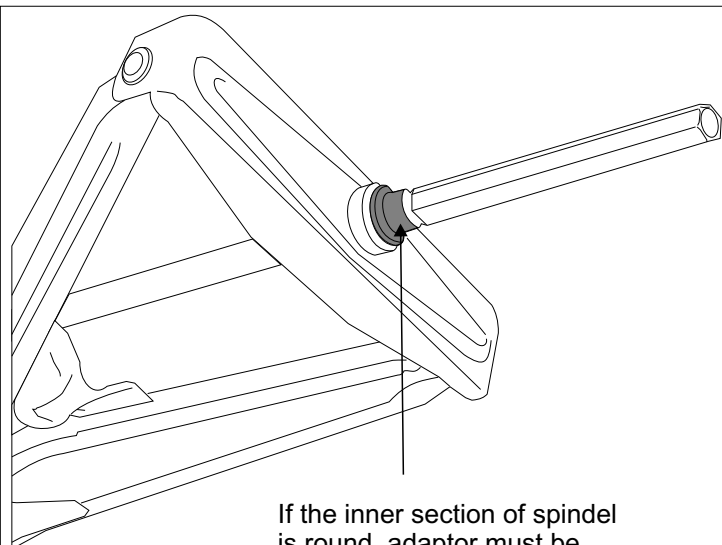


Fig. J

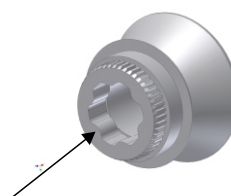




If the inner section of spindle is round, adaptor must be modified.

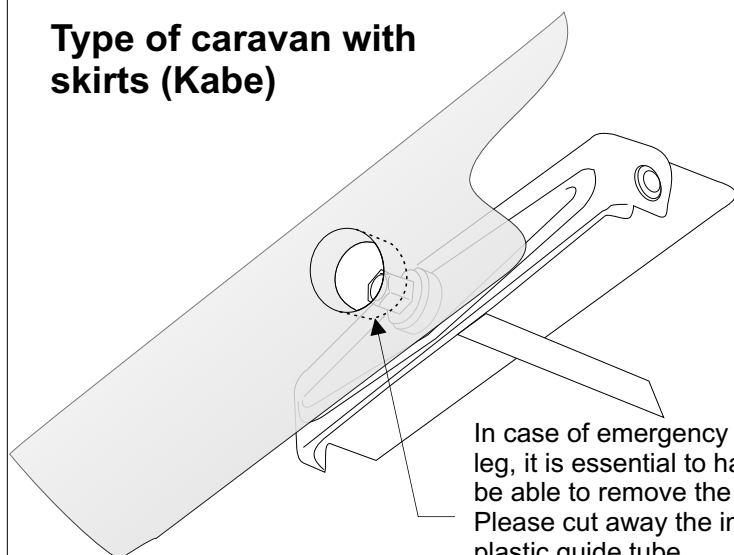
Type of spindle with *round* attachment

Please modify the adaptor by removing the first 30 mm. of the hex-curves. (use cutter drill)
This makes it possible for the adaptor to fully insertion.

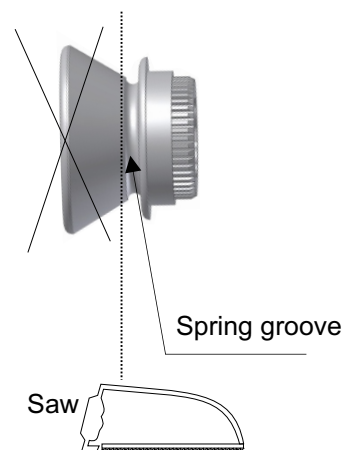


6 pcs. hex-curves to be removed

Type of caravan with skirts (Kabe)



In case of emergency operation of the stabiliser leg, it is essential to have enough space to be able to remove the adaptor.
Please cut away the innersection of the plastic guide tube.



With a mini saw, please remove the funnel part of the adaptor. Please save the spring groove.

Emergency situation

If the system for some reason, is not possible to operate by the remote, you can always use your handle for manual operation by following this procedure:

The spring holding the adaptor must be removed as shown in fig. (N1). Take away the adaptor from the toothed wheel fig. (N2). This makes it possible to use your handle. Observe: The adaptor can be a little tight to remove if legs are loaded (legs are down).

Manual operation must NEVER be performed when adaptor is inserted. Using handle or other tool when adaptor is inserted will damage the gear of the motor. Warranty void.

Re-insert the adaptor

Please press carefully the adaptor into the tooth wheel fig (N2). Supporting the bracket by holding with fingers fig. (N4). To let the adaptor pass freely over the spindle hex-bolt, turning the spindle a little is sometimes necessary. Fasten the spring as shown i fig. (N3) ensuring the spring are firmly in the spring groove. Wrong insertion of the adaptor or spring can cause permanent damage of the gear. Warranty void.

Possible reasons of unintended function (stop working)

1)

The system measure the load when the spindles are turning. If the load are to high, even before the legs touch the ground, it is most likely that the spindles are in poor conditions. Remove the adaptors, check by manual turning and make necessary service to the legs.

2)

Check the battery and fuse condition.

Fig. N1

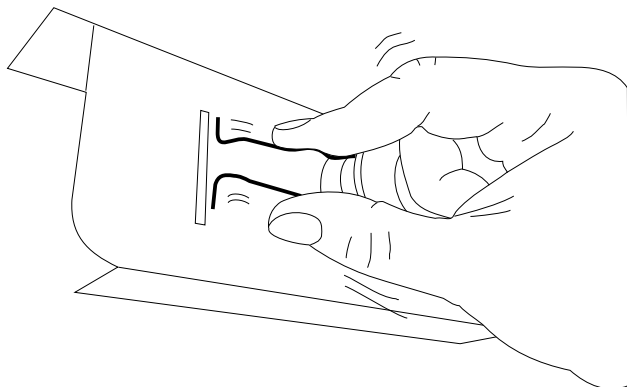


Fig. N2

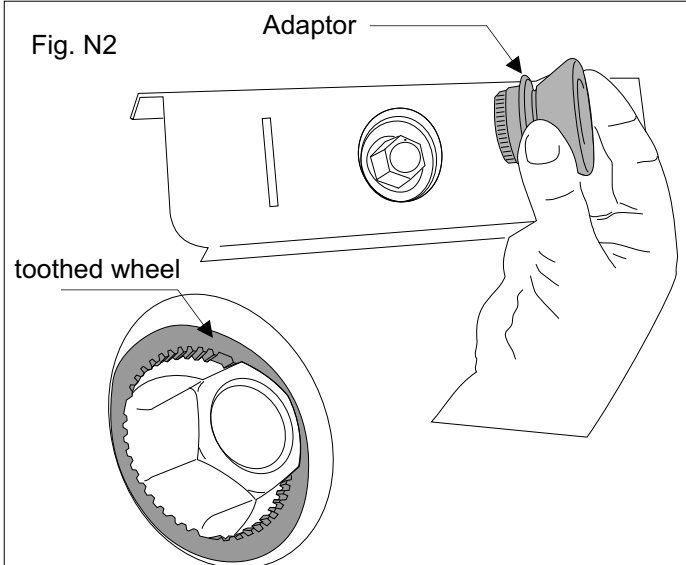


Fig. N3

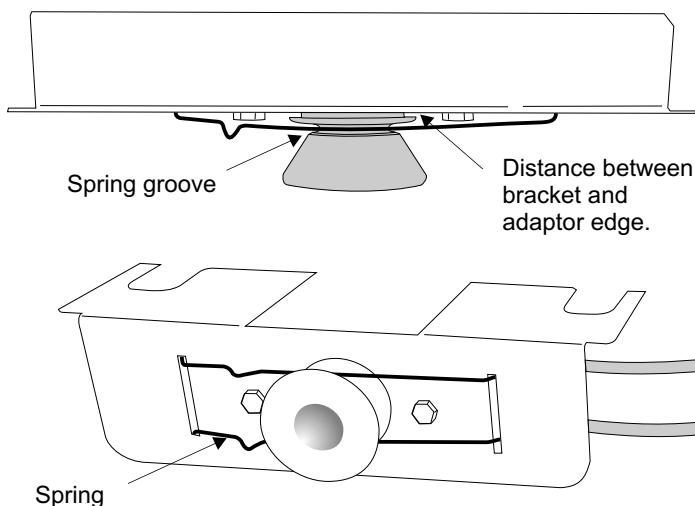
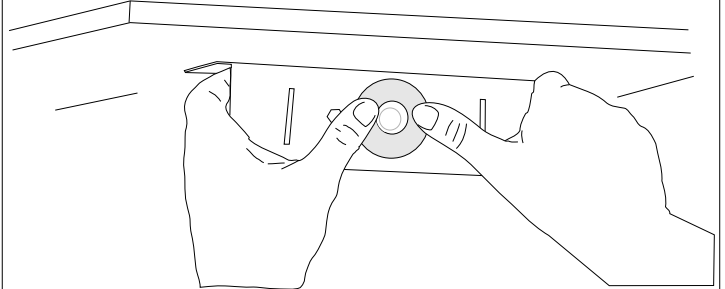


Fig. N4



Learning new transmitter

Turn on the new transmitter by holding down the «Automatic up» for more than 5 sec. (green led start flashing). The code plug (white 8 pole connector) must be inserted in the controlbox. This will generate click-sound from relays of the controlbox. This confirm that the program mode is active.

After this please press shortly the « automatic up» botton. Remove the 8 pole plug from the receiver. The new transmitter is now ready to use. Earlier remote are now deleted from memory and will no longer be able to communicate with the receiver.

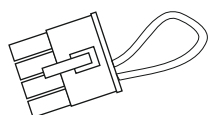
Change setting for the load to surface

This setting will change only the load provided to the ground when using the «automatic down» function. This is normally not to be changed since it is made during the installation. Remember too high load can damage the constrution of the caravan.

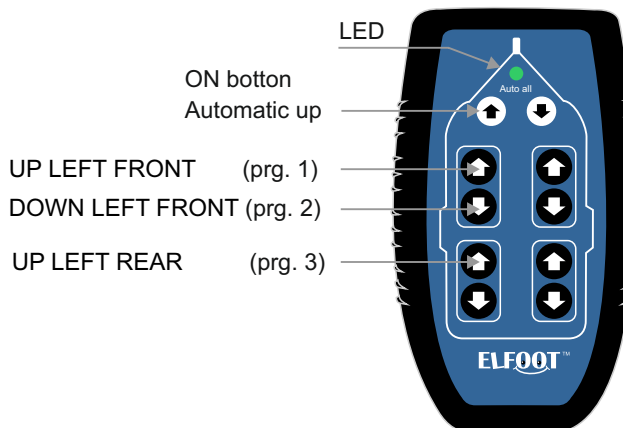
Turn on the transmitter by holding down the «Automatic up» for more than 5 sec. (green led start flashing). The code plug (white 8 pole connector) must be inserted in the controlbox. This will generate click-sound from relays of the controlbox. This confirm that the program mode is active. After this:

Press shortly botton UP LEFT FRONT	(prg. 1) small caravan (factory setting)
Press shortly botton DOWN LEFT FRONT	(prg. 2) medium caravan
Press shortly botton UP LEFT REAR	(prg.3) large caravan

When the desired program has been choosen, please remove the 8 pole plug from control box.



8 pole plug



Warrenty

Factory warrenty is 2 years from the day of sale. Warrenty covers all parts except the remote battery. Warrenty is granted under condition of normal usage. Any claim is rejected if parts or product are used unintented or having physical damage of any kind. Warrenty do not cover any 3. party claims nor any compesation of disadvantage or cost related to missing or not working product. Any claim must be followed by decription and reason. Further the original invoice must be enclosed.

Tecnical data

Power: 11,8 til 14 volt DC
 Max load motor: 16 amp.
 Fuse: 20 amp ATO fuse
 Stand by consumption: 13 mA
 Battery transm. 1x 9V
 Transm. freq.: 2.4 Gh
 Weight: about.: 5.6 kg.
 Elfoot is a international trademark

Patent: PA 2014 00444
 Working temperature: -10 til 50 celcius.
 Production country EU: danmark
 Warrenty: 2 year
 Production inv.: RoHS og EMC direktiv.

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