Installation

Operating manual

TESA snc di Altieri A. & C. - Via Etiopia 7, 65015 Montesilvano (PE) – ITALY

Tel/Fax +39 0854175602

www.tesaitaly.com

Contents

!! Important remarks

In order to make a correct installation, please follow the instructions in this manual, the manufacturer of Autolift System does not respond to damage caused by improper installation or improper use of the device

Use fixing points with sufficient stability. Consider every jack can lift up to 2500 kg. If necessary, the fixing points at the chassis must reinforced with adequate parts.

Consider the required space between jack and floor of 30mm at least in vertical position

Do not forget to install the fuse in the +power line and make sure a professional execution of electrical works to guarantee the safety functions

Follow the instructions step by step and complete the chapter “Initial operation” after installing.

1.Fitting the jacks on the chassis frame

Please fit the front jacks in converse tipping direction to the rear in order to get the best stability, if possible.

Fit every jack with 4 screws and nuts on the frame like shown in the picture, also in case of using adapters.

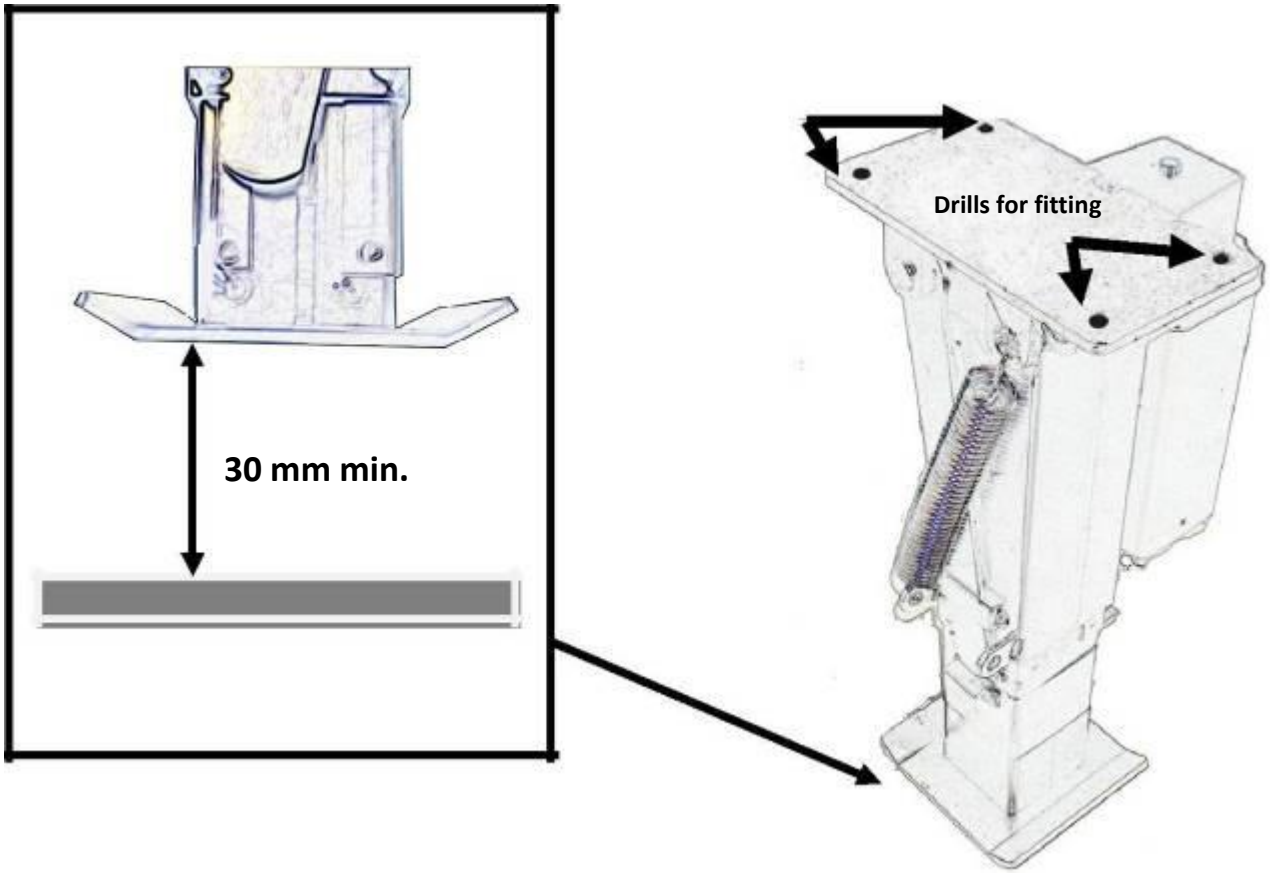
1.1 Choosing fitting points

In difficult conditions the jacks can be welded with adapters.

In vertical position of the jacks the space between Jack and floor must be 30 mm at least.*

Check the space requirement of the Jack. In the swing area of the Jack may be no obstacle. **

* Delivered length can be extended (see following chapter)
* * The retraction distance of the supports can be changed (see chapter Setting the limit switches)



1.2 Vertical length

Make sure there is enough space under the jack at the fitting point.

The Jacks are always delivered in such a way that the measurement is simple and without preparatory work needed.

If you ignore the minimum space between jack and floor it is possible small bumps can derange the correct course of the jack. Damages on vehicle and jacks are pre-programmed!

For higher frames the jacks can be extended with different pieces in order to reach the correct space. Following lengths are possible:

Standaard

Extension of the column – modified Basic lengths:

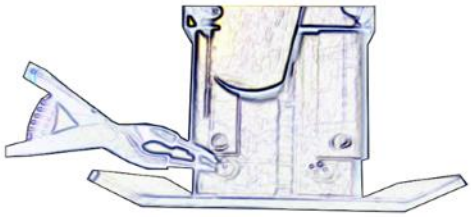
Standard size 300 mm

Measurements obtained in mm:

320 - 330 - 340 - 350 - 360 - 370 - 380 - 390 - 400 - 410 - 420 mm

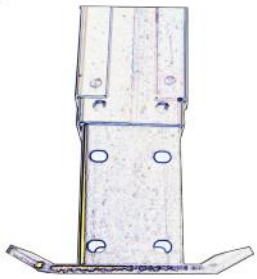
1.3 Insertion of lengthening pieces

1



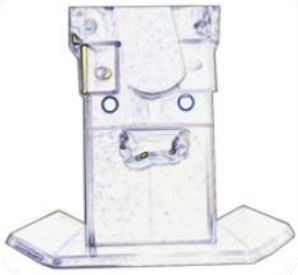
REMOVE THE BOLDS AND PULL THE TWO PINS

2



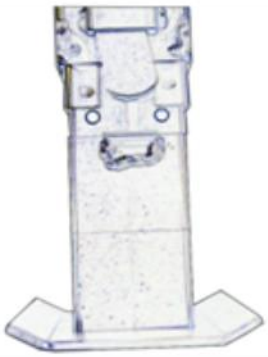
Remove the foot downwards

3



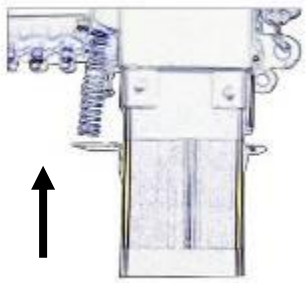
INSERT THE EXTENSION WITH THE ANGLES FIRST

3B



Use the pieces without angles at the bottom if needed

THE BIGGER ANGLE MUST BE SET ON THE SIDE WITH THE CONTACTS. THE ANGLES MUST BE SET ON THE UPPER SIDE OF THE PIECES!



4 **REINSTALL THE BOLTS AND CIRCLIPS**

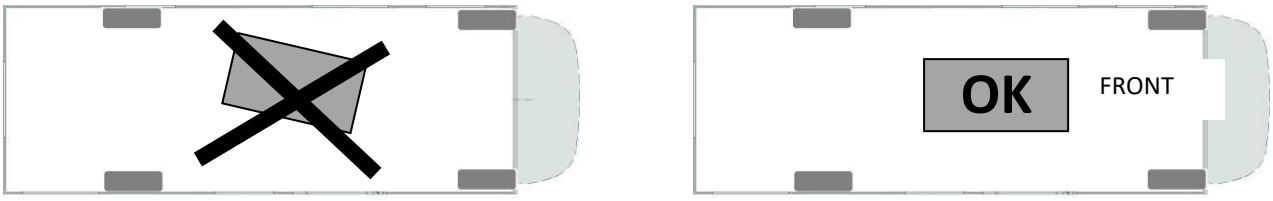
2.Installation control unit

The control unit is delivered ready pre-wired. Fit the box under the bottom of the vehicle at a centre point in the middle.

Following points are important for correct function:

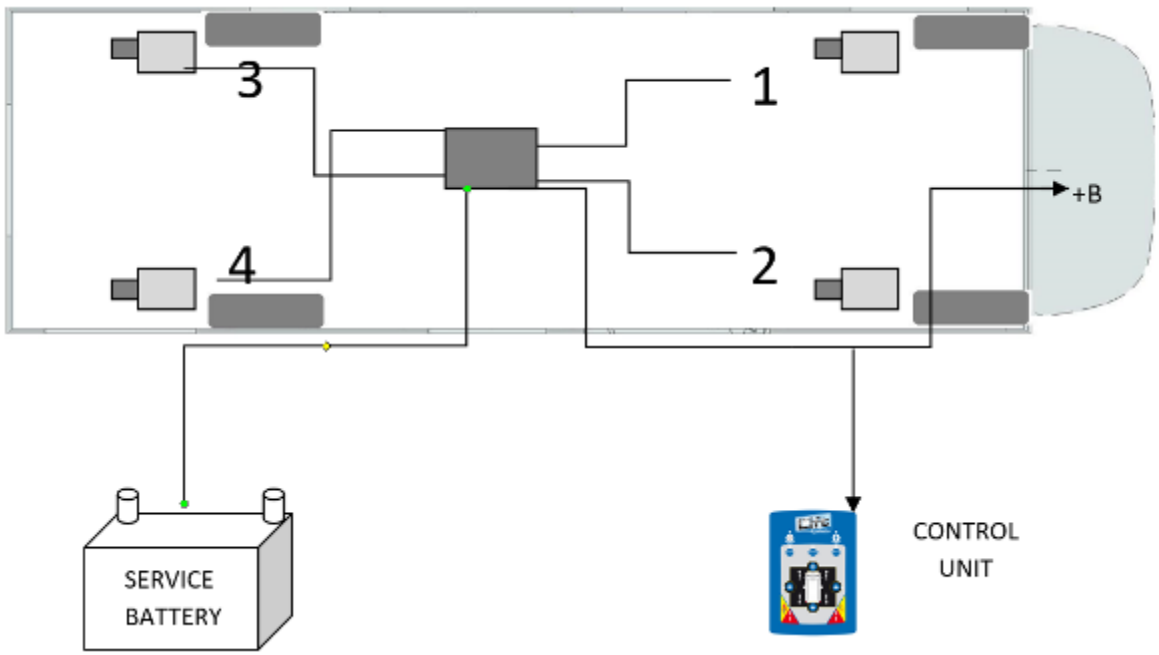
The controlbox must be fixed with the bottom up to the vehicle. The bottom of the control box and the vehicle floor must be parallel to each other.

The box must be installed with the arrow showing exactly to the front →



2.1 Electrical connection

The cables on the control unit are numbered. The control unit must be connected with the jacks like shown in the following picture (no. 1 front left, no. 2 front right etc.)

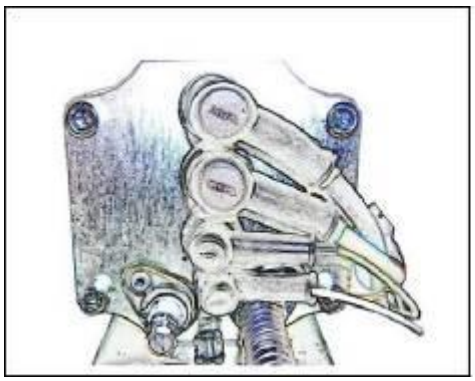


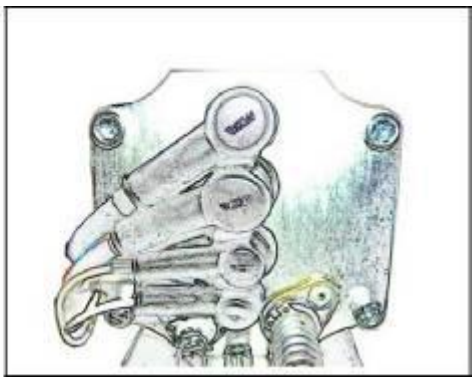
2.2 Electrical connection of jacks

Cable 1 must be connected to jack no. 1. Follow this procedure up to jack no. 4.

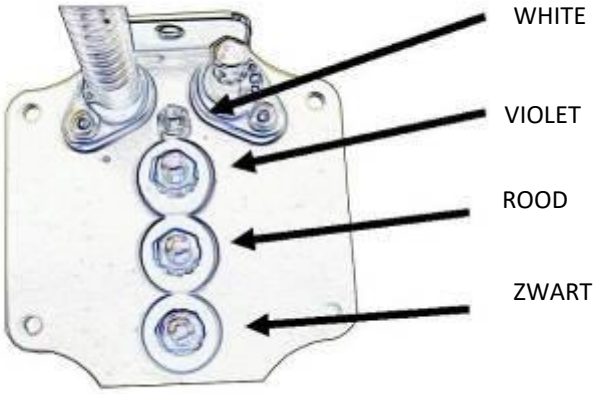
Connect the wiring corresponding to the different colours. **The wiring should be secured to the Jacks so that it does not obstruct the tilting of the Jack.**

Choose the optimal way of fitting corresponding to the tipping direction:





Connect the cables to the Jack with respect to the colours:



MODERATELY TIGHTEN THE CABLES SCREWS INSERTING BETWEEN THE TERMINAL AND THE NUT WASHER.

! WARNING: IN CONNECTING THE WHITE WIRE MAKE SURE THAT IT DOES NOT TOUCH OR PREVENT THE COMPLETE MOVEMENT OF THE TWO BUTTON SWITCH.

<u>Important! only for the violet cable!</u>

After fitting the violet cable fill the rubber cap with the delivered grease. Do not fix the rubber cap earlier. This special grease avoids accidental ground with other connections caused by splash water and avoids corrosion caused by de-icing salt. Non-observance will cause function problems of the limit switches in the long run!

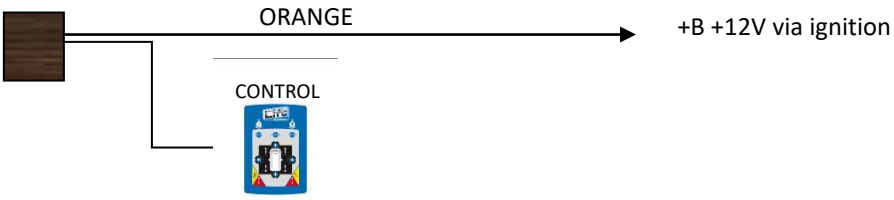
Fit the cable at the jack like shown in the pictures.

Connect the power line to the battery. RED = + 12Volt BLACK = -12V

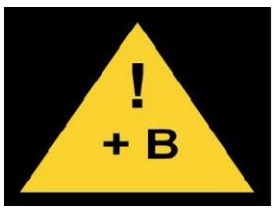
When connecting to the battery, be sure to use the supplied fuse to avoid damage to the vehicle and the jacks. Insert the fuse into the + 12V / red cable

The control panel should be fitted in the motor home near the door in a position which is reachable from inside and outside. Pay attention for enough space around the panel for special functions with both hands. Connect the network cable on the backside of the panel and the control unit

The ORANGE (+ B) cable that is to be found together with the keyboard wiring must be connected to a + 12 Volt (POSTIVE IGNITION) when the vehicle start key is activated.



<u>Later: After passing the wiring and a function test, seal the cables tubes with appropriate material to avoid water damages!</u>



The connection of the orange cable (+B) is essential for the correct function of the safety features. It prevents the accidental lowering of the jacks while driving.

3.Initial operation

After finishing the wiring press the button **ON/OFF** on the control panel. All LED's flash one after another, at last the LED **GET UP**. It shows the correct wiring. Press again **ON/OFF** to switch off the system and start the next chapter. In case another LED is on please see chapter malfunctions.

3.1 Adjustment of limit switches

The jacks are equipped with adjustable limit switches.

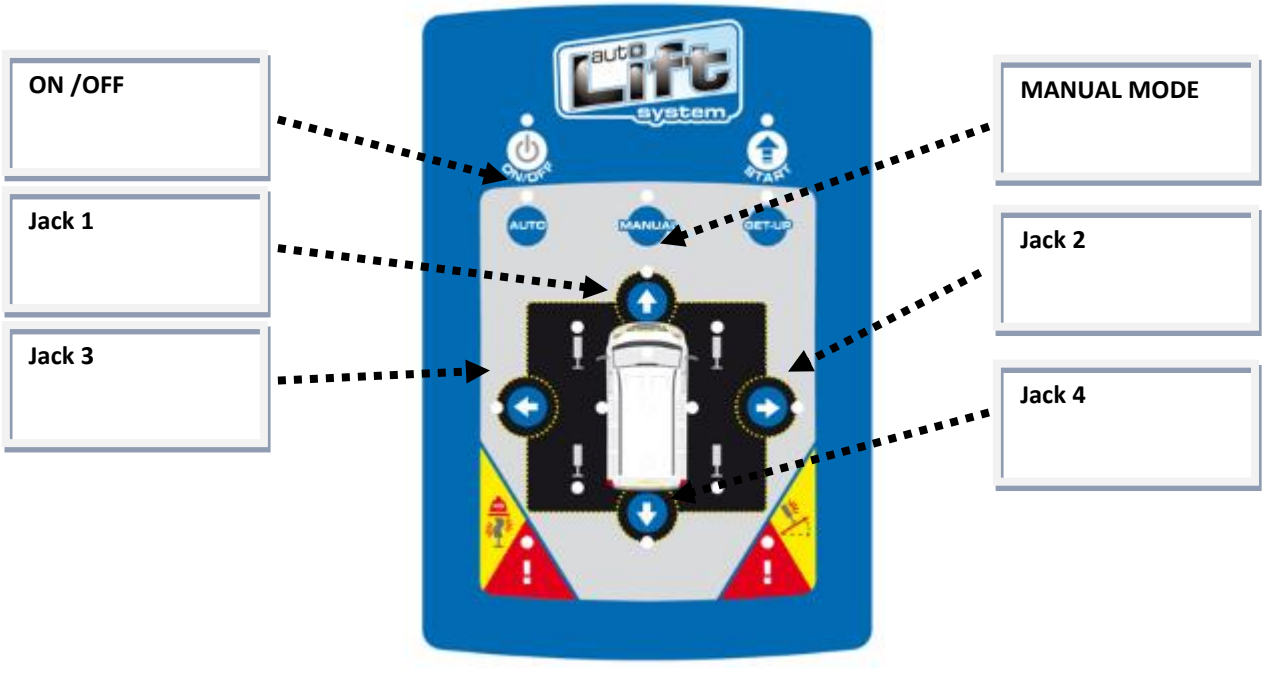
The point of switching-off must be adjusted correctly at every jack to avoid the motor of the jack keeps running when it cannot move anymore. Proceed as follows

Switch over to „calibration mode":

Turn on the system. (**ON / OFF** button)
Immediately afterwards during the LED control sequence keep all 4 arrow keys of the props pressed until the LED:

- **MANUAL** lights up. Then release all buttons.
- Press **MANUAL** and the arrow keys light up constantly

In this mode, the jacks can be moved separately up and down to adjust the limit switches. Pressing one arrow button will lift the corresponding jack to driving position. By Pressing **MANUAL** and one arrow button the corresponding jack **will go down.**

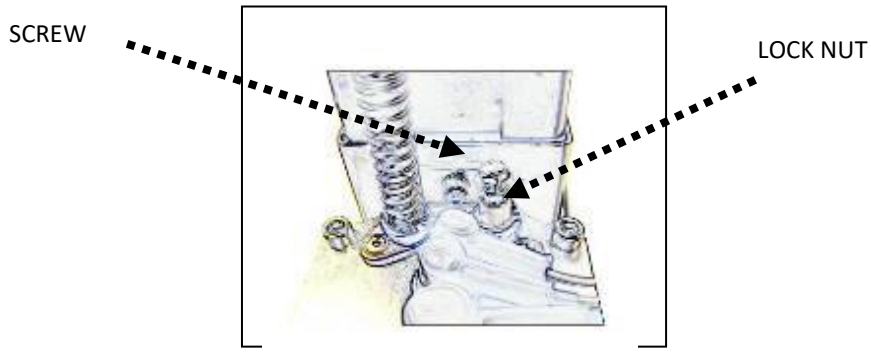


Start now with the adjustment of the jacks.

3.2 Adjustment of the jacks.

After entering the special function: - **Adjusting of limit switches** - as described above, calibrate the end stroke starting from pin 1. Proceed as follows:

1. Press the arrow button of jack 1 until it reaches the driving position. The system answers with a long beep.
2. Adjust with the adjusting-screw (see picture below) by turning in a later point or turning out an earlier point of switching off.
3. Move again the jack down and up to the point of switching off.
4. Repeat this procedure until the adjustment is correct. Then fix the lock nut.
5. Repeat 1-4 at all jacks in the same manner.
6. Move all jacks to driving position if not yet done.
7. Finish the calibration mode by pressing ON/OFF.
8. Switch ON/OFF again. The system starts now the self-control shown by the flashing LED's. At last the LED **START** lights up. If not the LED **GET UP** lights up. It shows that one or more limit switches are not closed correctly. In this case control and adjust the limit switches again.



<u>Important remarks for the adjustment</u>

The limit switches must not react at the mechanical end point of the jack. Leave enough clearance between the cut-off point of the limit switches and the mechanical stop of the jack to compensate for moments of inertia.
To control the play, move the jacks up to the switch-off point of the limit switch. Then push the jacks upwards with your hand. There must be a little play up to the mechanical stop. The play between electrical and mechanical end point must be about 1 cm.

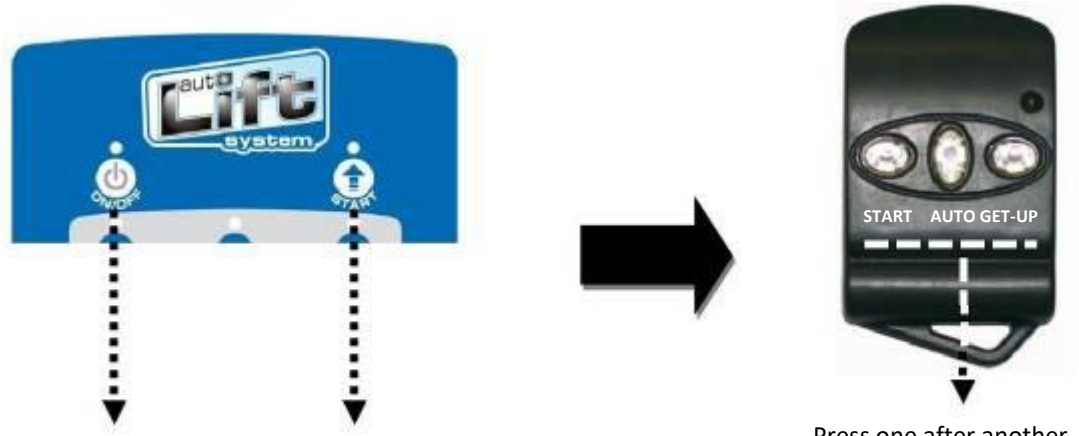
If the limit switches are not adjusted correctly the most functions are blocked. Pay attention to the careful adjustment.

4.Programming the remote control

The remote control is factory-provided pre-programmed and saved in the control unit.

<u>Complete this chapter only in case of changing the remote control.</u>

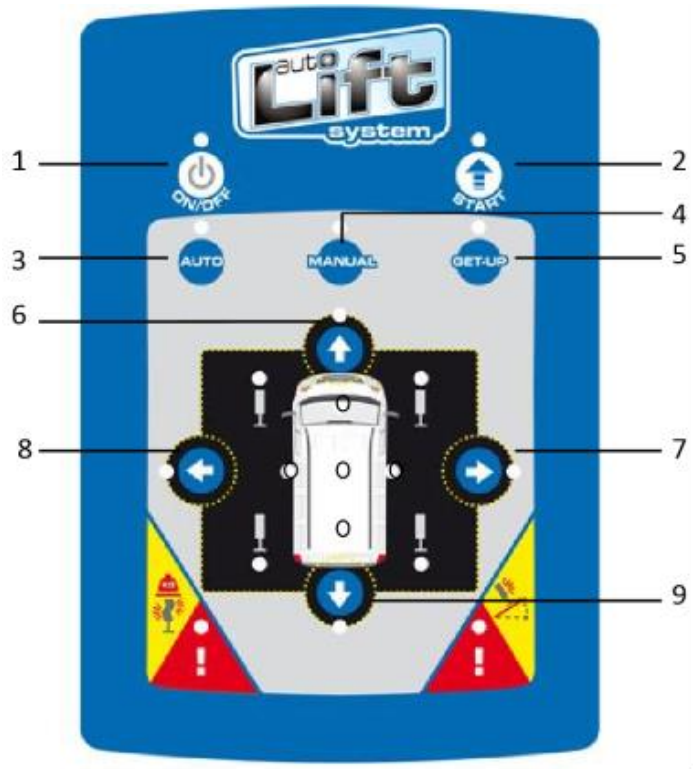
1. Switch off the system. Press and hold at once START and ON/OFF on the panel. Don’t release the buttons.
2. Press START on the remote control. 2 beeps confirm the saving. Wait 2 seconds and press AUTO on the remote control. Again, you get 2 beeps. Wait again 2 seconds and press GET UP on the remote control, again you will hear 2 beeps.
3. Release the buttons START and ON/OFF on the panel.



Press and hold at once

Press one after another
START – AUTO – GET-UP

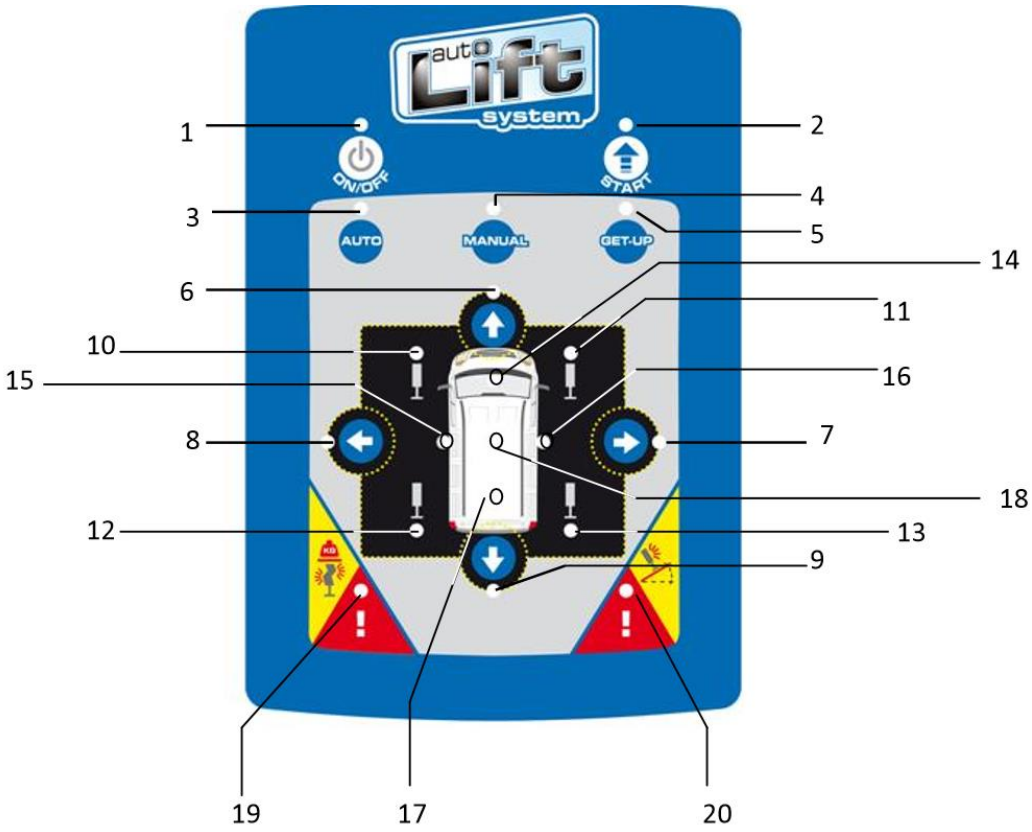
5. Control panel - Description of buttons



1. ON/OFF: System switch
2. START: begins the start phase*
3. AUTO: begins the automatic levelling*
4. MANUAL: activates manual levelling*
5. GET-UP: lifts all jacks to driving position*
6. Ascend front Jacks (manual)
7. Ascend rear Jacks (manual)
8. Ascend left Jacks (manual)
9. Ascend right Jacks (manual)

*See detailed description of functions

5.1 Control panel - Description of LED's



1. Red LED System on
2. Green LED ready for phase START
3. Red LED: ready for automatic levelling
4. Red LED: ready for manually levelling
5. Red LED ready for GET UP
6. yellow LED: button front jacks activated
7. yellow LED: button right jacks activated
8. yellow LED: button left jacks activated
9. yellow LED: button rear jacks activated
10. 11. 12. 13. Red LED's: overload or malfunction*
14. 15. 16. 17. Red LED's: level indicator: shows the side which must be lifted
18. Green LED: levelling correct (like programmed)
19. Red LED: overload *
20. Red LED: unacceptable incline

5.2 Detailed description of functions

In this chapter, the several functions of the AUTOLIFT system are exactly described. Before using the system plead read this manual attentively. The below described functions are **only available at ignition off**. Nevertheless, it is possible to use the most functions with running motor, except the safety functions (see chapter: Special functions).

ON/OFF (option 1)

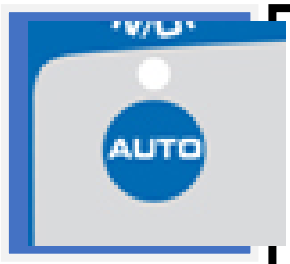
Press **ON/OFF** to switch on the system, shortly after the system starts the Auto test*, In which all the LEDs light up one after the other. At the end of the test, when all the Jacks are in the driving position, the START LED lights up, indicating that the Jacks are ready to move out. If not all columns are in the driving position, the LED GET UP illuminates, indicating that only the function of retraction is available.

* If the control sequence of the LEDs has not started, check whether other LEDs indicate an error. See corresponding chapter.

START (option 2)

Pressing the **START** key is the first step to turn on the levelling functions. The Jacks move into the vertical position and await the following command. The safety function is necessary, so that the free-running free-standing of the Jacks can be visually checked. In this position, you have the possibility to lay the shelves between the floor and the Jacks. At the end of the START phase, the **AUTO** * **MANUAL** - **GET UP** LEDs light up and indicate the availability of these functions.

* If the LED “AUTO” is not lit, automatic levelling in this position is not possible for safety reasons, indicated by the "Incorrect Incline" LED. Under these conditions, only manual levelling is available. But the correct "put into the balance" can not be guaranteed.



AUTO (option 3)

After the START phase, the automatic levelling can be started by pressing the **AUTO** key. At the same time, the Jacks move to the ground, then the automatic control for levelling. Always pairs of Jacks are moved to distribute the lifting forces on two Jacks and to avoid torsion of the chassis. At the end of the levelling the green LED 18 lights up and indicates the correct levelling. During the **AUTO** function, only the **GET UP** function is available (Reset the brakes to the drive position). If the LED 20 (inadmissible oblique position) lights up, the correct levelling may not take place because the remaining stroke of the Jacks is not sufficient. In this case, the system attempts to achieve the best possible levelling. Priority is then given to the Jacks of the side, which has the largest oblique position. Alternatively, when the LED 20 is lit, the **MANUAL** function can also be used to provide more precise alignment.

MANUAL (option 4)

The manual levelling can be performed after the START phase. This function is also used to lift a side of the vehicle for tire change, pulling snow chains or emptying tanks better.

Pressing the MANUAL button simultaneously lowers all Jacks to the ground. At this point, the four yellow LEDs (6-7-8-9) light up and enable the operation with the arrow keys. Each of the arrow buttons moves a pair of Jacks (front, rear, left, or right).

Always pairs of Jacks are moved to distribute the lifting forces on two Jacks and to avoid torsion of the chassis. The vehicle can be manually levelled by observing the indicator LEDs 14 -15 -16-17, which indicate which side must be lifted to balance the vehicle. In the best case, the green LED lights up and indicates the correct levelling.

If the props cannot be extended further, an overload alarm is displayed, indicated by the LED 19. Press the MANUAL button again, if at the end of the levelling a support is still free from the ground. This significantly improves the stability without changing the level.

GET-UP (option 5) Retraction of the Jacks

Press the GET UP button to retract the Jacks. The Jacks move to the point where they would swing upwards. At this point, the Jacks stop to allow the user to remove under layers or the like under the Jacks. During this time, an intermittent beep will be heard. Once you press GET UP a second time, the Jack folds upwards,. upwards.

IMPORTANT: underlaid wood or similar must always be removed before folding in the prop in order to avoid damage to the support, which then cannot fold freely. Bent mechanics or even broken welds could be the result. The complete retraction of all Jacks is acknowledged by a long beep and the START LED.

5.3 Remote control

The main functions can be operated outside with the remote control. So, you have eye contact to the working jacks. You can control the floor conditions and set spacers. Only the functions START – AUTO – GET-UP are available, other functions must be operated via the control panel.

5.4 Alarm signals

Alarm overload (LED 19)

In case of overload of one or more jacks the LED 19 lights up together with one LED 10-11-12-13. It shows which jack is in overload position.

Overload can be triggered by extreme extension of the Jacks up to the mechanical end point or by overloading. In this case, the corresponding support is blocked and only the **GET UP** function is available.

Alarm unacceptable incline (LED 20)

This LED is lit when the angle of inclination is so high that the Jacks can not be "put into balance". With AUTO the system tries to achieve the best possible leveling, but a correct leveling can not be guaranteed. Alternatively, the Jacks can be extended with the **MANUAL** function to achieve more precise leveling

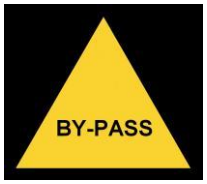
6. Special functions

6.1 Blocking of all functions with ignition switched on

When the ignition is switched on or the engine is running, the Jacks cannot be operated. This safety function is necessary in order to prevent the Jacks from being accidentally lowered while driving. Each time the ignition is switched on, the system is automatically switched off if it is switched on. If the Jacks are all set to the drive position, there is no signal immediately afterwards. However, when the Jacks are lowered, you will receive an acoustic and visual signal on the control panel, indicating that the Jacks must be retracted before driving.

6.2 Operation of the system with the engine running (+ B correctly connected)

The safety function above can be switched off, e.g. to load the starter battery.



Press the **START** button on the control panel for approx. 5 seconds until the LED START (2) lights up. From now on, you have all the functions available. After switching off the system, the system automatically returns to the default mode. This operation cannot be initiated with the remote control.

! **USE THIS FUNCTION CAREFULLY AND WITH THE HIGHEST ATTENTION**

6.3 AUTO POWER-OFF

After 5 minutes the system switches off automatically if it is not operated. This saves the battery.

6.4 Signalling of malfunctions

After switching on the system, the system completes an auto-test to check all the functions of the system, all LEDs light up one after the other, and a sound signals that the system is in order. If something is wrong, the respective error is indicated by different LEDs on the control panel. The following options are listed here:

LED's 10-11-12-13: The limit jack is defect, not connected or not correctly adjusted. In this case it is possible that the function GET UP is not available. Nevertheless, you have the possibility to put the jacks in driving position (see chapter emergency operation).

LED's 14-15-16-17-18 synchronous: The correct levelling is not or not yet programmed and stored. See chapter "storing the correct levelling".

7. Troubleshooting

Some typical malfunctions and possible reasons:

System cannot be switched on: Control the fuse in the red power line. Control the connection between panel and control unit. Try it with another network cable.

LED START does not light up: one of the limit switches is not correctly adjusted. Control all switches and adjust them like shown on page 11.

The vehicle is not in balance after using AUTO: The controller is already stored in the horizontal position, but it is possible that the vehicle cannot be levelled properly due to the incorrect position and mounting of the control system. In this case, the levelling may not be accurate. If necessary, correct the position of the box and save the correct position again as described.

7.1 Storing the correct levelling

The fault tolerance of automatic levelling is about 0.3° in both directions. Use this procedure only if you want a better result of automatic levelling.

1. Turn on the device and wait for the START LED to light up
2. Press START to start the START phase and wait for the MANUAL LED to light up
3. Press MANUAL to start the MANUAL step and wait for the LEDs 6-7-8-9 to turn on
4. Use the arrow keys 6-7-8-9 and a water balance to correctly level the vehicle.
5. After levelling, turn off the device with the ON / OFF button
6. Turn on the device and immediately press and hold simultaneously the AUTO - MANUAL - GET-UP keys
7. Release the three keys until you hear 7 consecutive beeps and then release the three keys.

8. Emergency operation

In the event of a damage to one of the JackJacks, the fault is displayed when the system is switched on and the GET UP function will not be available. To return the brackets to the driving position, switch to the emergency operation mode as follows:

1. Turn on the device by briefly pressing the ON / OFF button
2. Immediately press and hold the four keys with the arrow (6-7-8-9) simultaneously until the MANUAL LED flashes and then release the four keys.
3. Press the MANUAL button. The LED will stop flashing and lit continuously.
4. By pressing the arrow keys (6-7-8-9) one at a time, you can bring the relevant JacksJacks to the driving position.

In the event of a mechanical break or a permanent electrical fault to the system to bring the JacksJacks back to the driving position, proceed as follows:

Use the car jack from the equipment of the vehicle and lift the vehicle so far that the Jack is free from the ground.

1. Push the Jack with your hands in the Jacks position
2. Secure the Jack to the chassis with an elastic cord or spring so that it remains locked in the Jacks position
3. Contact an installer for repair.

9.Technical data

Lifting power dynamic	Kg 2000 each jack, electronically controlled
Lifting power static	Kg 5000 each jack
Total extension	mm 180
Effective extension	mm 150
Speed max.	5 mm /sec.
Consumption at 1000kg lifting force	12 A
Maximum levelling Longitudinal axle (X)	≥4° (8 %)
Maximum levelling diagonal axle (Y)	≥6° (12 %)
Time automatic levelling	Max 60 sec.
Vertical dimension can be changed to:	changeable 300 mm - 320mm - 340 mm – 380 mm -420 mm
Consumption switched off	0 A
Weight jack	~ Kg 11
Weight total	~ Kg 50
Conformity	89/336/CE
Range of temperature	-20 ÷ 50 °C
Precision automatic levelling	<0,3°

Subject to change without prior notice

9.Warranty:

The product is guaranteed 24 months from the date of purchase, the warranty covers faults caused by manufacturing faults, in which case the defective product will be repaired or replaced. Faults resulting from improper use and / or improper installation are not covered by warranty. The warranty is ex-works, so the shipping costs are always borne by the customer.

HELP! If you need help you can call our technical service or refer to the distributor in your country.

TESA electronic and special devices tel. +39 0854175602 e-mail: info@tesaitaly.com