



AL-KO QUALITY FOR LIFE

LEVELSYSTEM
MOTORHOME

TOUCHSCREEN OPERATION



» HYDRAULIC LEVELSYSTEM «

MOTORHOME

ENGLISH

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Limited Warranty

Under all circumstances this manual should be read thoroughly, before installing and/or using the product. In no event shall E&P Hydraulics be liable for any direct, indirect, special consequential or incidental damages arising out of the use or inability to use this documentation or product, even if advised of the possibility of such damages.

E&P Hydraulics reserves the right to change parts of the device at any time without preceding or direct announcement to the client.

E&P Hydraulics reserves the right to revise the manual(s), and to make changes in the contents without obligation to notify any person or entity of the revision or change. A registration number appears on the product. Make sure that this official registration number has not been removed. It should be used whenever servicing by E&P Hydraulics or an authorized E&P Hydraulics dealer is necessary.

Important

This equipment has been tested and found to comply with the limits valid for this device, pursuant to EN300220, EN301489, EN60950 rules conform 868MHZ. These limits are designed to provide reasonable protection against harmful interference when this product is operated in a commercial environment. Any unauthorized changes or modifications to this device could void the user's authority to operate this equipment.

For CE-countries:

This device is in conformity with the CE standards. Please note that this device can ONLY be used with the official E&P Hydraulics level system parts to conform to these standards.



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» Preface

With the purchase of the E&P Hydraulics levelsystem your motorhome (vehicle) will be automatically levelled and made perfectly stable with one push of a button.

Common issues resolved:

- Where the vehicle moves when you walk through it, or if it is windy.
- Where you suffer from unwanted opening or closing doors.
- where the shower water runs through to the wrong side caused by height differences.
- wherein you have the problem of sleeping at a lean angle.

All issues that are fixed with the E&P Hydraulics levelsystem.

The ergonomic design ensures effortless handling and the sleek good looks will automatically enhance your working environment. It is based on proven E&P Hydraulics technology which forms the basis of all our E&P Hydraulics products. After installation one button operates the entire system.

Within the E&P Hydraulics strategic vision this product is 100% user friendly and reliable.

This philosophy does not only apply to our customers (end users). Also, the technicians installing this device/system within our dealer network are very important to us. This product greatly depends on a proper, professional installation. That's the reason why E&P Hydraulics do all they can do to support the people who are responsible for installing our products for you.

This manual is part of our policy. In this manual we explain how to use the general characteristics as easy and efficiently as possible. Precisely follow these instructions for the installation, because installing the E&P Hydraulics levelsystem is a precise job. Fully installing the system requires a high level of skill. After all, we are dealing with equipment that must be able to withstand huge forces, something that is often underrated by people with insufficient technical training. If the installation is not performed correctly, serious damages could result in a short time, and even personal injury. Therefore, this system may only be installed by professional technicians with sufficient practical experience and the thorough relevant technical training. At all times, the installer will bear sole responsibility for the assembly of the system.

This product is based on hundreds of test hours as well as many successful installations. If you follow this manual step-by-step, you will see what a wonderful, user friendly, quality product this is. However, there will always be aspects that can be improved. If you have any suggestions, remarks or questions concerning this product or manual, please do not hesitate to contact us.

On behalf of,
E&P Hydraulics

1. The E&P Hydraulics levelsystem

1.1 Operating of the hydraulic levelsystem

The E&P Hydraulics levelling system is an electrically/hydraulically driven system.

A **hydraulic pump** is powered by a 12V or 24V direct current motor, which will pump hydraulic oil through a system of hydraulic hoses and four **hydraulic jacks**. This is with the aim of stabilizing and levelling the vehicle. Mounted to this pump are the oil tank, the valve block and solenoid (magnetic) valves. The E&P Hydraulics levelsystem is electronically controlled by an **operating system** or so called main-unit, which is mounted on a central location in the vehicle.

The levelsystem can be operated either fully automatically or manually by means of the built-in **touchscreen**. In most frequent cases the touchscreen is mounted in the sidewall at the entrance of the vehicle. The four hydraulic jacks are mounted directly to the chassis of the vehicle. The jacks have the bearing and levelling capacity your motorhome requires. Each hydraulic jack has a 230 mm. stainless steel foot plate on a flexible pivot guaranteeing the greatest firmness possible on any surface.

REMARK: for safety backup considerations, E&P Hydraulics advises to use a backup control panel within the touchscreen controlled levelsystem set. With the help of this backup control panel, the hydraulic level system can be operated at all times if the touch panel is lost or broken. Furthermore, the touch panel can also cooperate with the already existing remote control. For these reasons these two control devices are mentioned in this usermanual.



Pump unit



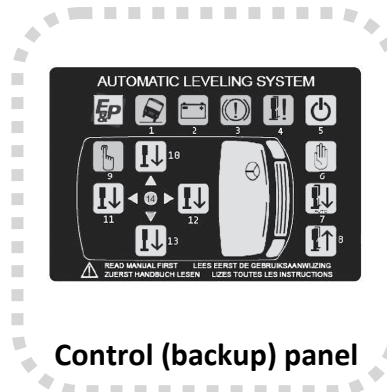
Hydraulic jacks



Operating system



Touchscreen



Control (backup) panel



Remote control (optional)

The E&P Hydraulics levelsystem *(continued)*

1.2 Using the levelsystem

- Park the vehicle on a surface that is as level as possible.
- The HAND BRAKE of the vehicle must be engaged.
- The transmission must be in a neutral position or in the parking position.
- When the levelling system is operating, persons or animals are not allowed in the vehicle.
- The ignition of the vehicle must be switched on.

1.3 Specific characteristics of the levelsystem

- Automatically extending the jacks from a retracted position.
- Automatically retracting the jacks from an extended position.
- Automatically or manually levelling the jacks.
- Alarm mode (jacks not retracted and hand brake disengaged).
- Configuration function for levelling and empty bladder zero point(s)



2. Safety warnings

Not observing the following warnings may lead to damages to the vehicle and/or serious physical injuries.

- Using the E&P Hydraulics levelling system for other purposes than supporting the vehicle is officially forbidden according to E&P Hydraulics limited warranty.
- This product is exclusively developed as a levelling system and may not be used for other work under the vehicle such as changing the tires, maintenance or applying snow chains.
- When the system is operating, all persons and animals should keep their distance.
- Body parts (e.g. hands and eyes) should never come into contact with released fluids. Oil leaving the hydraulic levelling system may be under high pressure and could cause serious injury to the skin.
- The vehicle becomes unstable as soon as it is lifted to high. Avoid this kind of lifting as much as possible, if the tyres of the vehicle no longer reach the ground, this could lead to an unstable and dangerous situation.
- The vehicle should be parked on a solid, level and non-slippery surface. The parking location must be free of holes and free of waste and surrounding objects.
- If the vehicle is parked on very soft soil, you must place a support plate under each jack in order to distribute the weight.
- Check if the installation of the hydraulic levelsystem is performed by a skilled mechanic with sufficient practical experience and technical E&P Hydraulics training.
- In case of repairs/malfunctions to the hydraulic levelsystem: know what you are doing. Never try to repair it yourself, but consult your installer or dealer.
- Fully read this user manual(s), before using the hydraulic levelling system.
- After deploying the hydraulic levelsystem ALWAYS make an inspection tour around the vehicle. Just to be sure the vehicle stands stable (all hydraulic jacks are on the ground).

3. The Touchscreen

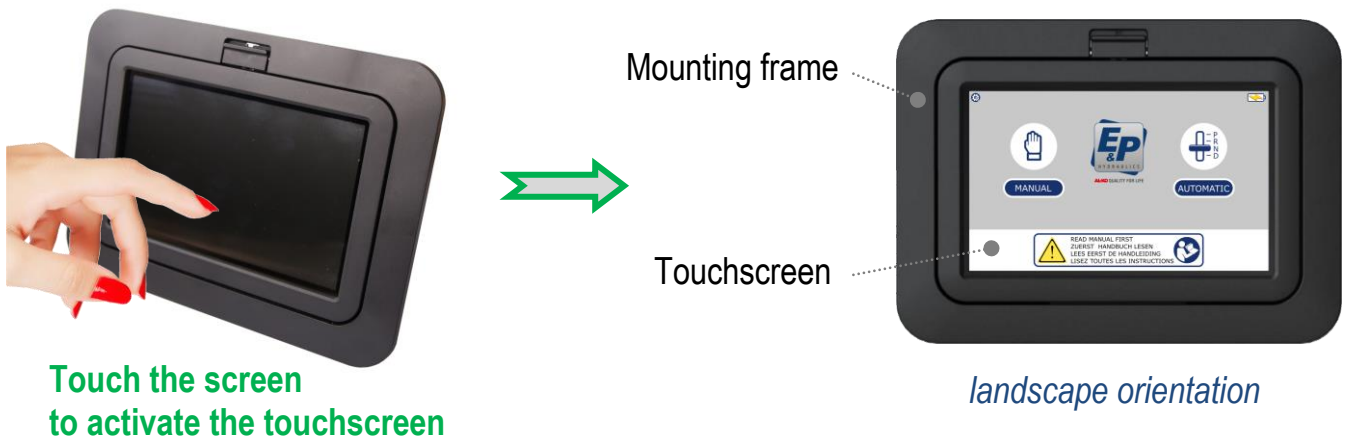
3.1 In advance

The Touch Remote Control set consists of a removable touchscreen and a mounting frame. The touchscreen could be used in a fixed (connected to the vehicle) and remote / handheld (separated from the mounting frame in the vehicle) situation.

When disassembling and replacing, the display automatically turns on and automatically goes off after approx. 30 seconds.

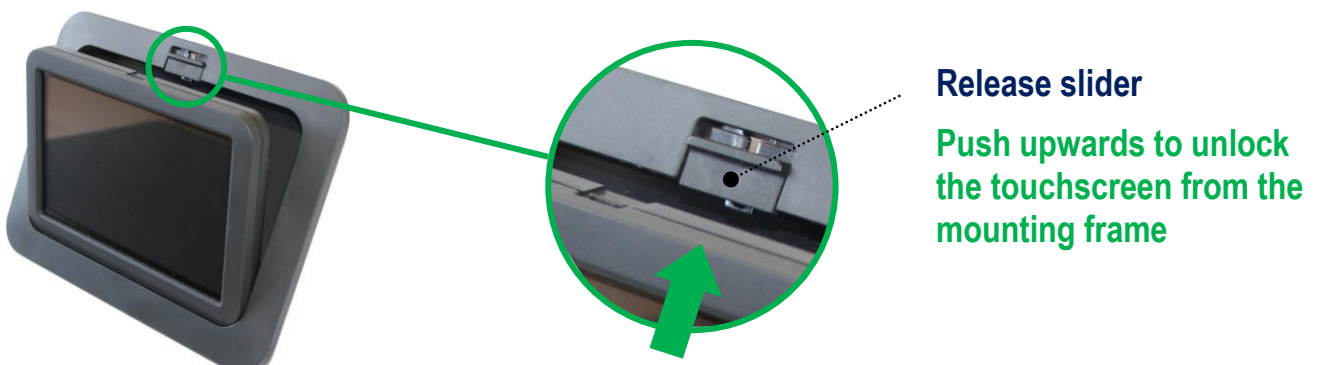
3.2 Fixed situation

In this situation the touchscreen is built into a mounting frame, you only have to touch the screen to activate the touchscreen. By doing this the startup screen will appear in a “landscape” orientation.



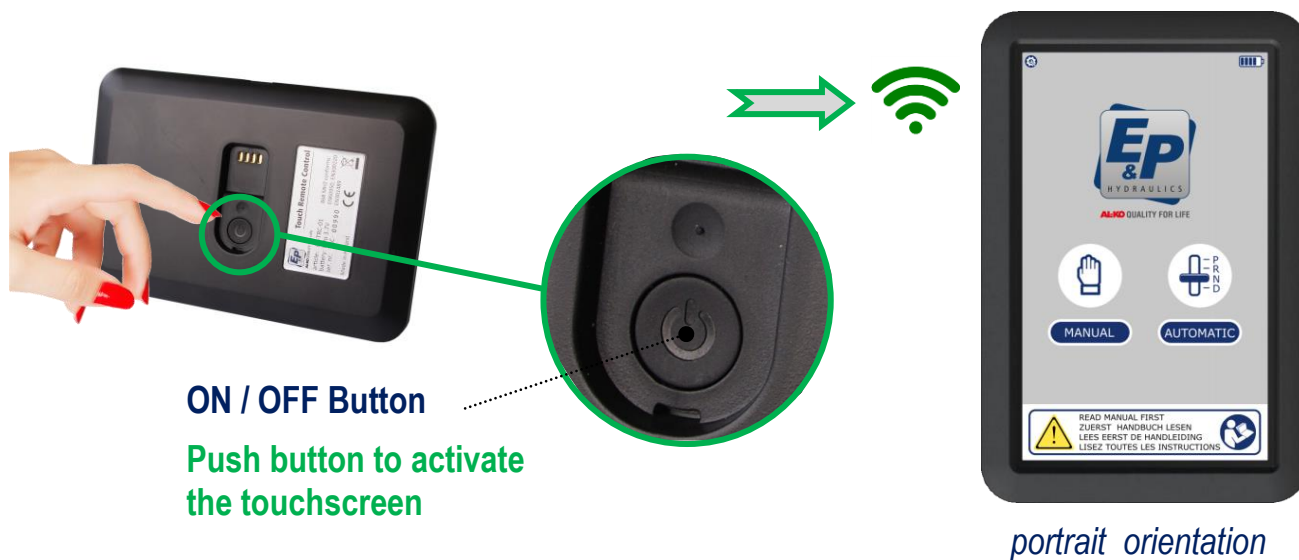
3.3 Remote situation

The touchscreen could also be taken out of the mounting frame by pushing the release slider upwards. After doing this the touchscreen functions as a remote control for operating the levelsystem.



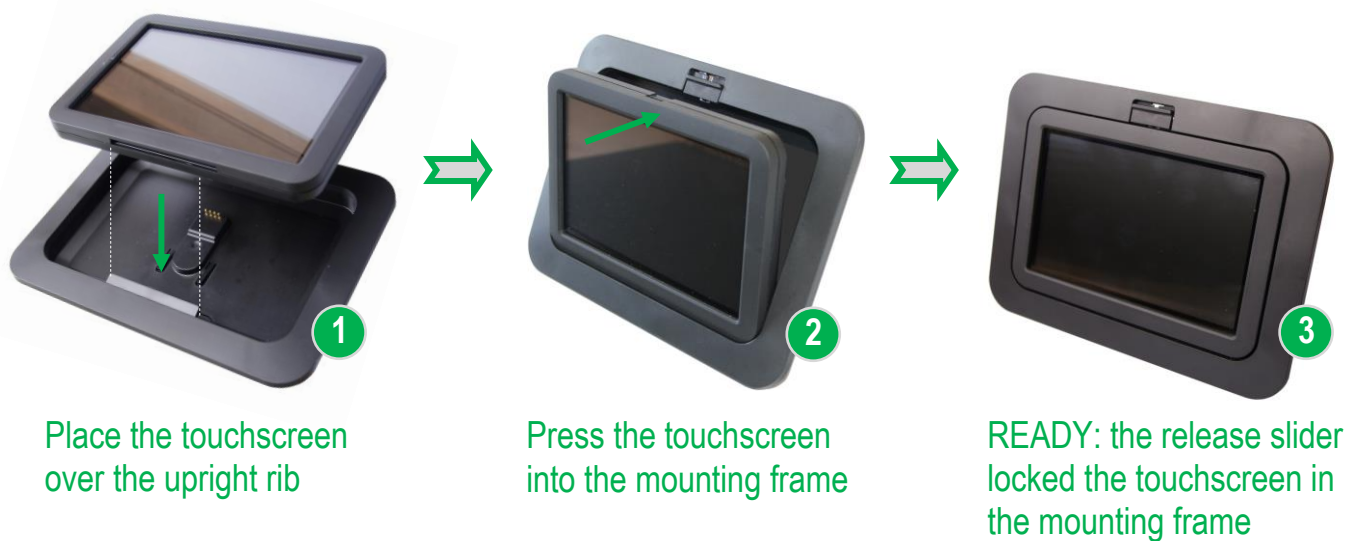
The Touchscreen (continued)

After disconnecting the touchscreen from the mounting frame, the touchscreen can be activated by pushing the “**ON / OFF**” button at the backside of the touchscreen. By doing this the startup screen will appear in a portrait orientation.



3.4 Replace the touchscreen

When replacing the touchscreen in the mounting frame, the touchscreen must be placed over the upright rib located at the bottomside of the mounting frame. After this the touchscreen must be pressed backwards into the mounting frame. A slight click of the release slider indicates that the touchscreen is properly locked in the mounting frame.



The Touchscreen (continued)

3.5 First time operating

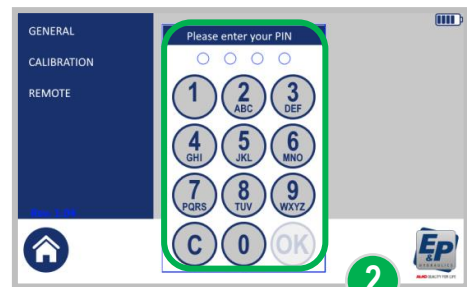
When you use the E&P Hydraulics touchscreen for the first time, you have the choice to determine your personal language and access code settings. If you want to adjust your personal settings for whatever reason, you can do this yourself. Remember that this procedure has already been carried out at your dealer/installer to make the functioning of the levelsystem possible.

CAUTION: with the below mentioned procedure you enter an environment where your dealer/installer has programmed/calibrated the functioning of your levelsystem.

Push the “ **CONFIGURATION** ” button at the top left location of the screen.



Push configuration button

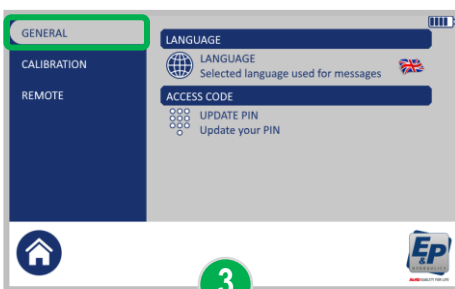


Enter PIN code (0000 factory setting)

After pushing the configuration button a screen will appear in which you have three options: General, Calibration and Remote. Before entering one of these options you have to enter 4 times 0000 (factory setting) and confirm with OK.

After pushing the icon “ **GENERAL** ” it is possible to make your personal choice for the referred display language and NEW PIN/access code.

These two options will be found after pressing the buttons “ **LANGUAGE** ” and/or “ **ACCESS CODE** ”. After doing this the touchscreen is ready to use.



Push general button



Set language



Enter new pincode

4. Control functions on the touchscreen

Below shows the appearance of the start screen. By pushing the icon “ **AUTOMATIC** ” or “ **MANUAL** ” you are able to operate the hydraulic levelsystem. On the startscreen there are also some more symbols visible, below gives an explanation of these symbols.



Appearance of the start screen



CONFIGURATION icon

- Change settings



NO SIGNAL indicator

- Appears in remote use of the touchscreen, when there is no communication between touchscreen and operation unit .



BATTERY STATUS indicator

- 5 lines indicates fully loaded



BATTERY STATUS indicator

- Battery is charging



BATTERY STATUS indicator

- Fully empty



MANUAL levelling indicator

- Brings you to the next screen of the manual levelling procedure



AUTOMATIC levelling indicator

- Brings you to the next screen of the automatic levelling procedure



NOTIFICATION

- Read manual first indicator

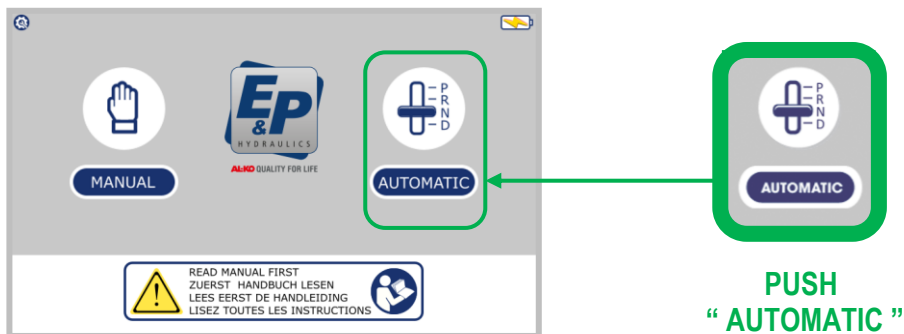
5. Operating the levelsystem

5.1 Automatic levelling

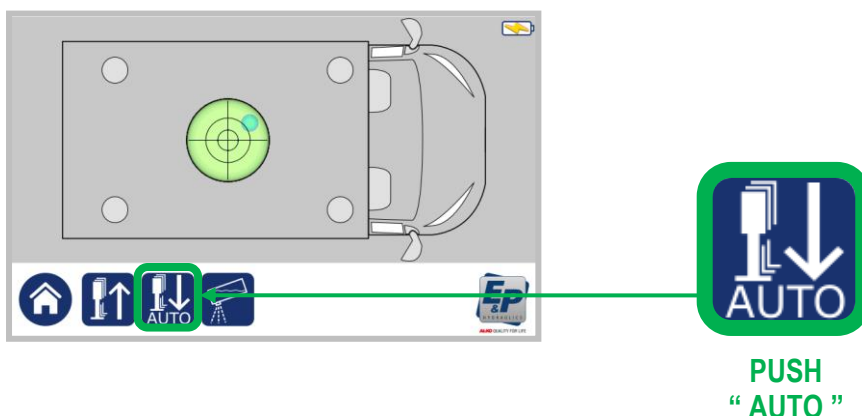
Before starting the automatic levelling procedure: make sure that the vehicle's parking brake is engaged and the ignition is on. Also note that everyone has exited the vehicle, including yourself.

IMPORTANT: Before levelling the vehicle (in case of considerable slope) it is advisable to put some extra materials (e.g. wooden plates) under the footplate of the jacks on the lower side, this with the aim to compensate on extreme height difference. This will avoid the risk that the system is not able to level the vehicle due to large differences in height. When the difference in height is too large the hydraulic supports can come to the end of their stroke

Step 1 Push the button “ **AUTOMATIC** ” to activate the levelsystem in automatic levelling.



Step 2 Push the button “ **AUTO** ” to activate levelsystem further in automatic mode. Now the hydraulic pump starts working and the hydraulic levelling procedure starts automatically by extending the jacks.



Automatic levelling (continued)

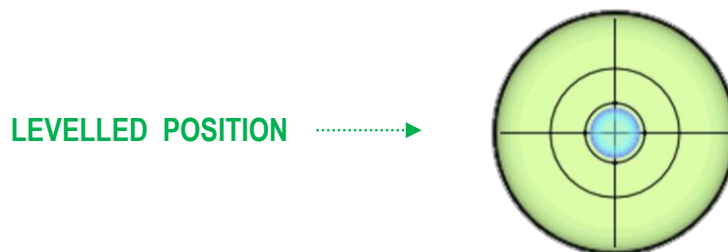
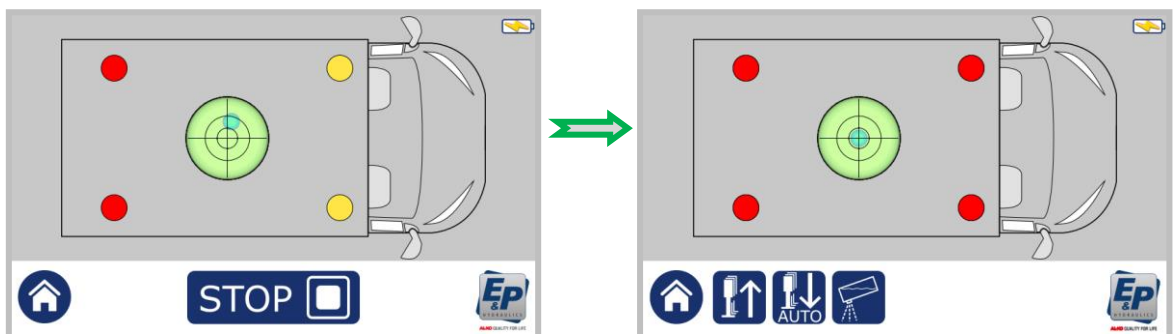
Step 2 After pushing the “ **AUTO** ” button, on the bottom of the screen a “ **STOP** “ button appears. During operation, with this button you are able to stop the automatic levelling procedure.

Remark: In case you have stopped the procedure you have to press the button “ **retract all jacks** “ to start the procedure again.

During this automatic leveling procedure you see the four GREY area’s (indicating the hydraulic jacks in withdrawn position) changing in color from YELLOW (jacks in operation) to RED (jacks extended).



During this operation you will see a “ **BLUE CIRCLE** ” in the middle of the spirit level change in position. When the vehicle is in a level position the BLUE area is located in the middle of the spirit level.



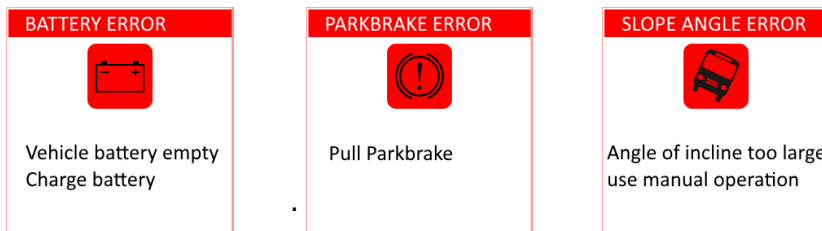
When the automatic levelling procedure is **complete**, the “ SPIRIT LEVEL ” shows a blue circle centered around the middle. Depending on the angle of the terrain and type of vehicle, the automatic levelling procedure takes about 1 minute.

When ready the touchscreen switches OFF automatically.

Automatic levelling (continued)

In case something is **wrong** to make the automatic levelling procedure able to work some “ **warning slides** “ may appear.

Below shows three of the most common warning slides.



In the unusual case that you see another warning sign on the screen during the automatic levelling procedure, see Chapter 6.6, error descriptions, page 34

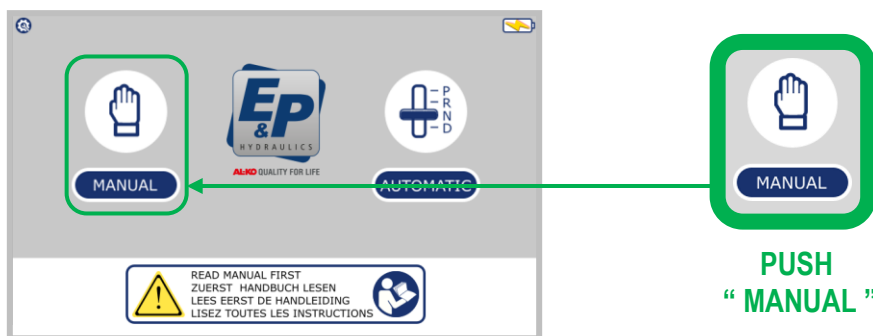
5.2 Manual levelling

Before starting the manual levelling procedure: make sure that the vehicle's parking brake is engaged and the ignition is on. Also note that everyone has exited the vehicle, including yourself.

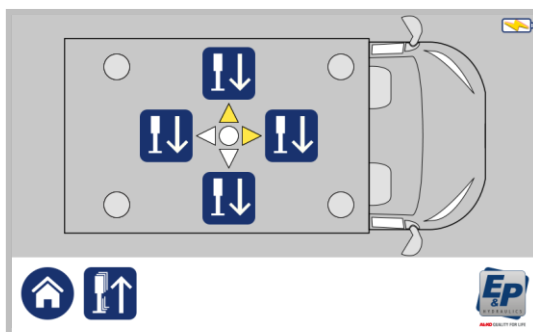
The manual levelling function is mainly used when automatic levelling is not possible due to a large tilt of the vehicle. With the help of this feature it is also possible to change the position of the vehicle; think of your sleeping comfort. Most people prefer to sleep with their head up slightly. Depending on the orientation of the vehicle with this feature you can manually adjust the angle where necessary.

IMPORTANT: Before levelling the vehicle manually (in case of considerable slope) it is advisable to put some extra materials (e.g. wooden plates) under the footplate of the jacks on the lower side, this with the aim to compensate on extreme height difference. This will avoid the risk that the system is not able to level the vehicle due to large difference in height. When the difference in height is too large the hydraulic supports can come to the end of their stroke.

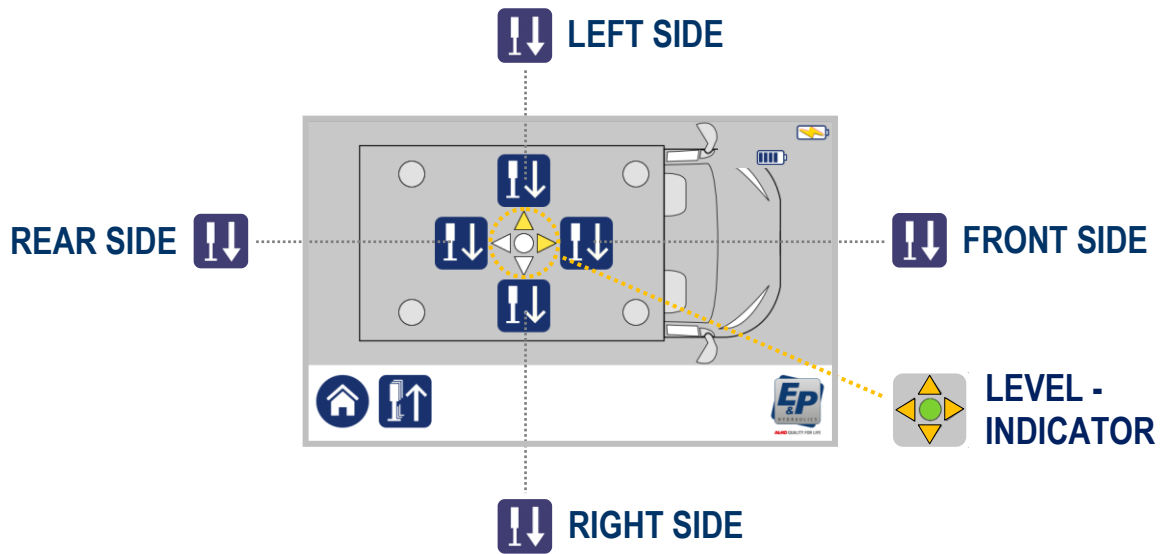
Step 1 Push the button “**MANUAL**” to activate the levelsystem in manual levelling.



After pushing the button “**MANUAL**” to activate the levelsystem working in manual mode the screen shown below will be visible. Depending on the position of the vehicle, 1 or 2 yellow arrows light up.



Manual levelling (continued)



Step 2

Push the button “ **FRONT SIDE** ” and **hold it down**, now the hydraulic pump starts working, hold the button down until the front jacks have reached the ground. Hold the button down a little longer to allow the vehicle to lift apr. 3 cm. on the frontside.

IMPORTANT: Always level the vehicle on the front side first.

During this operation you see the four GREY area's (indicating the hydraulic jacks in withdrawn position) changing in color from YELLOW (jacks in operation) to RED (jacks extended).



Step 3

Push the button “ **REAR SIDE** ” and **hold it down** until the rear jacks have reached the ground. Hold the button down a little longer to allow the vehicle to lift apr. 3 cm. on the rear side.

The illumination of one or two ORANGE arrows central on the touch screen clears the position of the vehicle. In the unlikely event that the vehicle is already level, then the indicator LED lights up GREEN directly.



Manual levelling (continued)

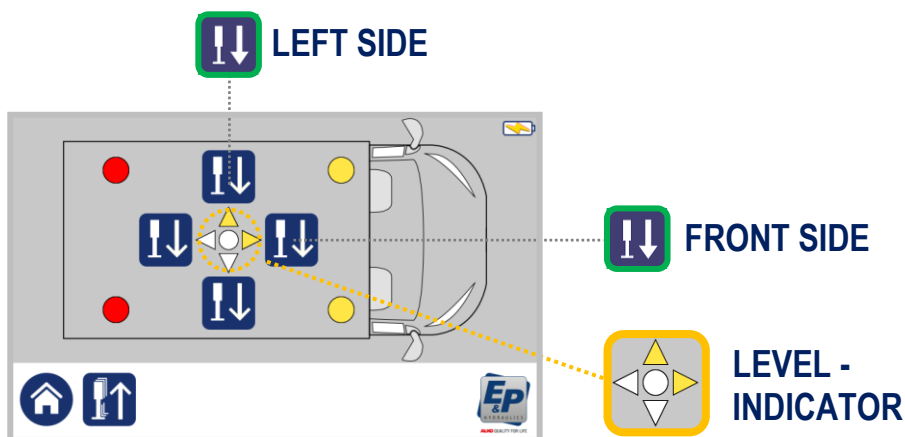
Step 4 Depending on the tilt of the vehicle with the aid of the button's: “ **FRONT SIDE** ”, “ **REAR SIDE** ”, “ **LEFT SIDE** ” or “ **RIGHT SIDE** ” you are able to level the vehicle.

Keep the buttons pressed until the level system automatically stops levelling, the ORANGE arrow(s) central on the touchscreen will go out by itself.

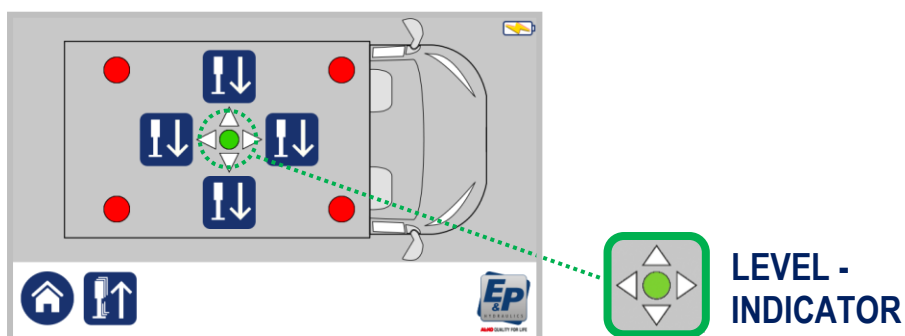
REMARK: When two orange arrows light up, level the vehicle gradually, not first completely leveling one side until the level system stops and then completely leveling the other side. Perform this action(s) in small (alternating) steps. In this way the levelsystem is working optimally.

Example situation: the front and left side of the vehicle stands too low.

Keep the buttons “ FRONT SIDE ” and “ LEFT SIDE ” pressed (after each other) until the level system automatically stops levelling, the ORANGE arrow(s) on the screen will go out by itself.



When all orange arrows in the middle of the screen are off, a GREEN circle lights up. This is the sign that the vehicle is completely levelled and stands even.



Manual levelling (continued)

In case something is “wrong” to make the manual levelling procedure able to work some “ **warning slides** “ may appear.

Below shows two of the most common warning slides.



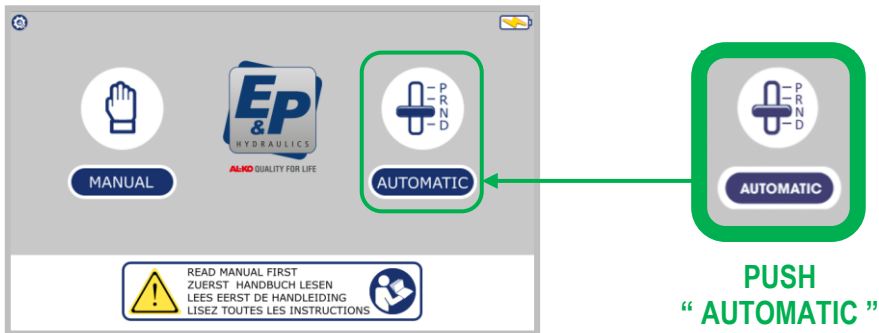
In the unusual case that you see another warning sign on the screen during the automatic levelling procedure, see Chapter 6.6, error descriptions, page 34

5.3 Retracting the jacks

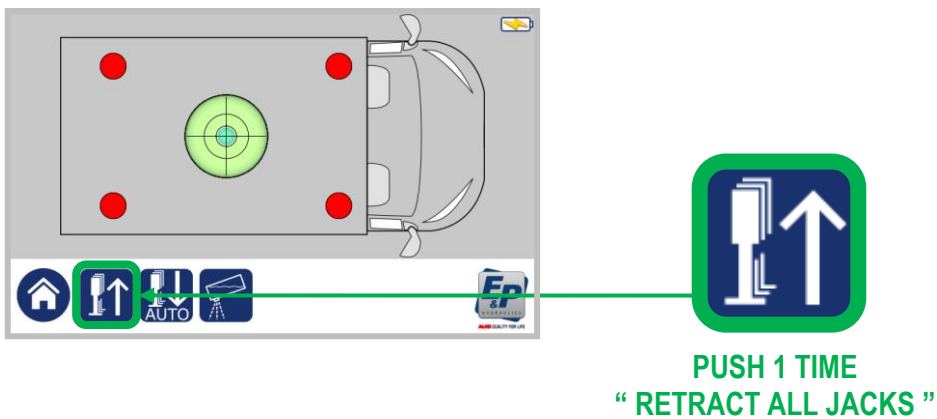
The jacks could be retracted in the automatic or manual mode.

5.3.1 Automatic

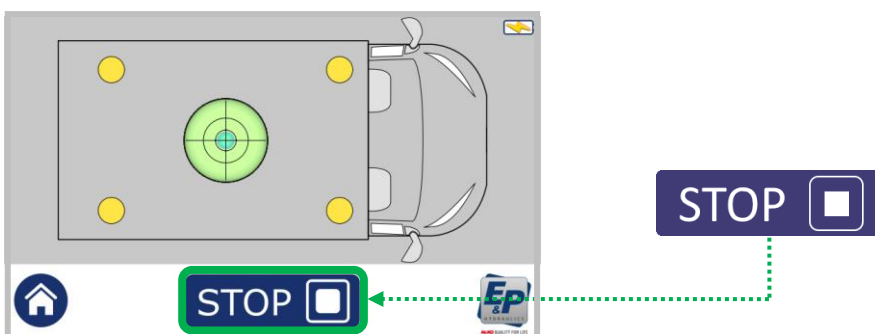
Step 1 Push the button “ **AUTOMATIC** ” to activate the system.



Step 2 Push the button **1 time** to “ **RETRACT ALL JACKS** ”. Now the hydraulic pump starts working to starts retracting the jacks.



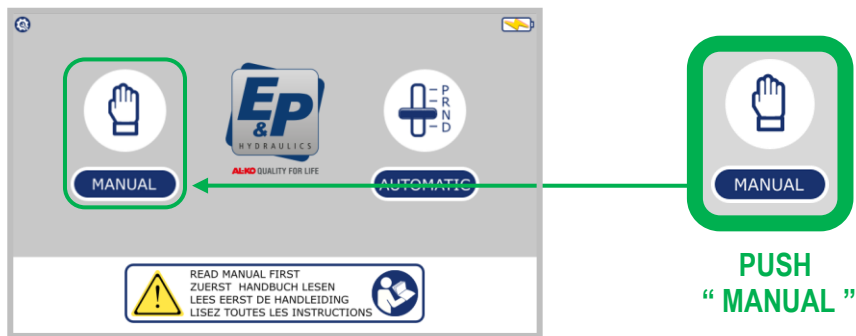
By pushing the button “ **RETRACT ALL JACKS** ” a “ **STOP** ” sign appears on the screen, this is to give the user the option to stop the retract procedure immediately.



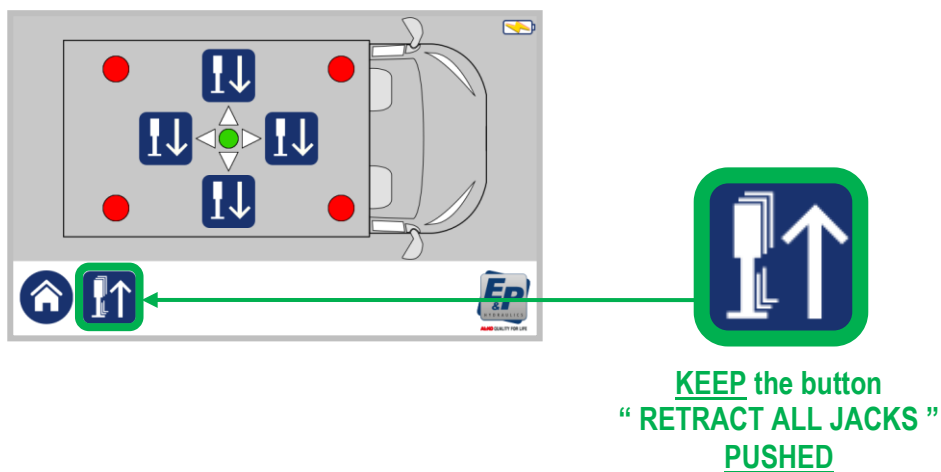
Retracting the jacks (continued)

5.3.2 Manual mode

Step 1 Push the button “**MANUAL**” to activate the system.



Step 2 **Keep pushed** the button “**RETRACT ALL JACKS**”. Now the hydraulic pump starts working to starts retracting the jacks.



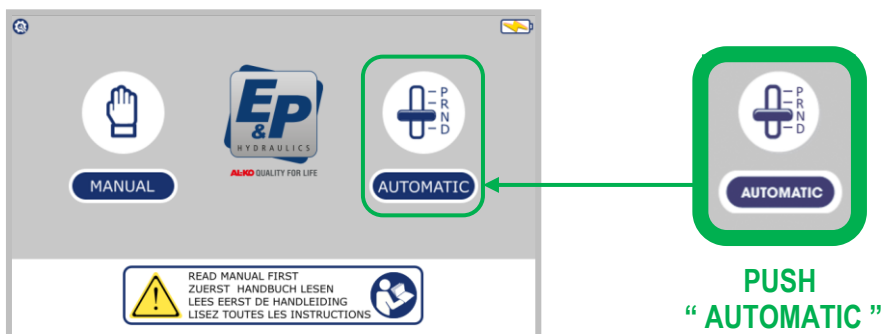
REMARK: Keep the button pressed until the pump stops running.

5.4 Inclination function

With this function, the wastewater can be easily emptied out of the wastewater-tank.

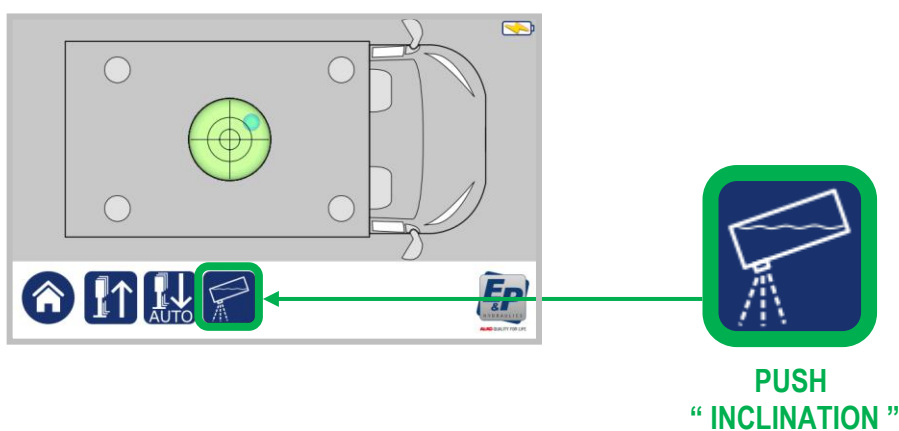
Note: the left and right side are factory settings for this function. If front or rear will be used the factory settings has to be reprogrammed by the dealer.

Step 1 Push the button “ **AUTOMATIC** ” to activate the system.



Step 2 Push the button “ **INCLINATION** ”

The vehicle will automatically go to the position as programmed by your dealer. There is a built-in maximum inclination so that the wheels will never lift off the ground.



6. Extra functions

6.1 Calibration *(setting the zero point)*

The calibration procedure described below has already been carried out at your dealer/installer. You don't have to perform this procedure by yourself. E&P Hydraulics has decided to include this chapter as an extra in this manual in case of failure and/or service & repair matters. Consider setting the zero point ** as a condition to make it possible to level the vehicle automatically- and/or manually. When this operation, for some reason, has not been done or has been carried out incorrectly, it is not possible to level the vehicle.

** The zero point is the point (level) at which the hydraulic leveling system (in an automatic cycle) returns.

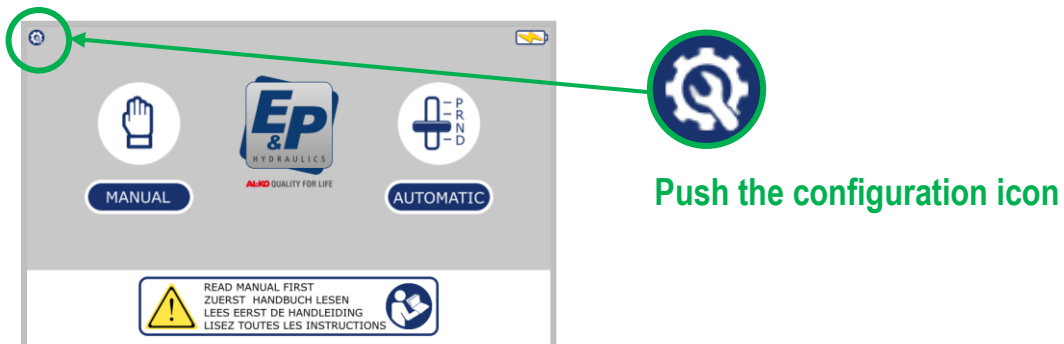
Setting the zero point

Step 1 For setting the “zero point”, you must **first** perform the **manual levelling** procedure to place the vehicle in a levelled position. Do this by placing a spirit level in the center of the vehicle.

Step 2 After the vehicle is in a level position go back to the startscreen by pushing the “**HOME**” button.



Step 3 Push the button “**CONFIGURATION**” at the top left location of the screen.

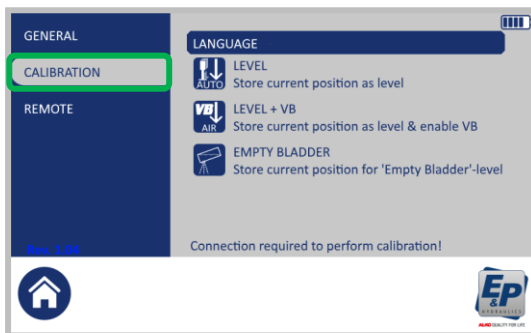


Step 4 After pushing the configuration button a screen will appear in which you have to fill in and confirm your programmed PIN/access code by pressing OK (factory setting: 4 times 0000)



Calibration (continued)

Step 5 After pushing the button “ **CALIBRATION** ” it is possible to make your choice for:



LEVEL

Store the (new) desired zero point.

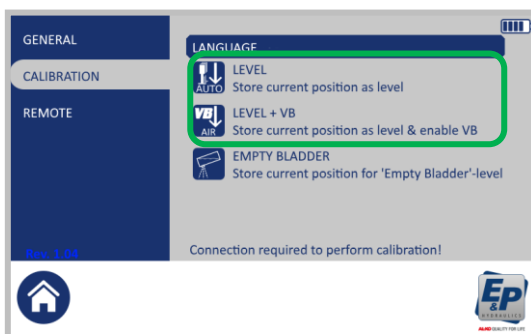
LEVEL + VB ***

Store the (new) desired zero point in case you have a VB-Airsuspension set installed to the vehicle.

REMARK ***

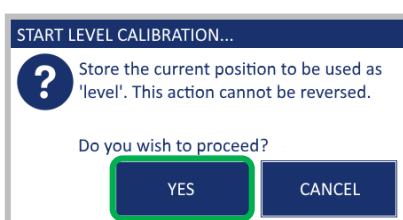
By connecting the VB-air-suspension system, via the E&P Hydraulics “air-drop system” or “air-suspension interface”, it will be possible to keep the vehicle as low as possible to the ground, when using the automatic leveling system of E&P Hydraulics. The system is designed so that it is usable both for the front and rear axle air suspension (where fitted). The system is designed to lower the vehicle towards the ground, to create the lowest step-height possible and to give the hydraulic jacks the maximum leveling stroke possible. In other words, when the vehicle floor is as low as possible to the ground, the effectiveness of the level system will be enhanced.

Step 6 Push the button “ **LEVEL** ” or “ **LEVEL + VB** ” on the touch screen to activate the function store the (new) desired zero point of the levelsystem.



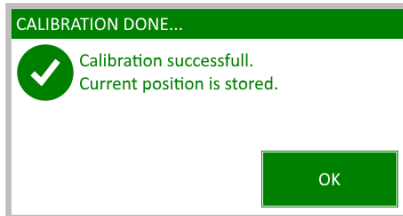
After pushing the chosen button directly a popup box appears on the screen with the question: **Store the current position to be used as level. This action cannot be reversed. Do you wish to proceed?**

Step 7 Push the button “ **YES** ” to continue the procedure. Now the calibration modus will be activated automatically, when calibrating is in progress a popup box appears showing the system is storing the current position in memory.



Calibration (continued)

Step 8 When storing is ready a pop-up appears with the message “**CALIBRATION DONE**”. Push the button “**OK**” to complete the process.



Calibration (continued)

6.2 Empty bladder programming (inclination wastewater tank)

The calibration procedure described below has already been carried out at your dealer/installer. You don't have to perform this procedure by yourself. E&P Hydraulics has decided to include this chapter as an extra in this manual in case of failure and-or service & repair matters. If the inclination of the vehicle is not set or programmed, or you want to adjust the tilt, then this can be done with this procedure:

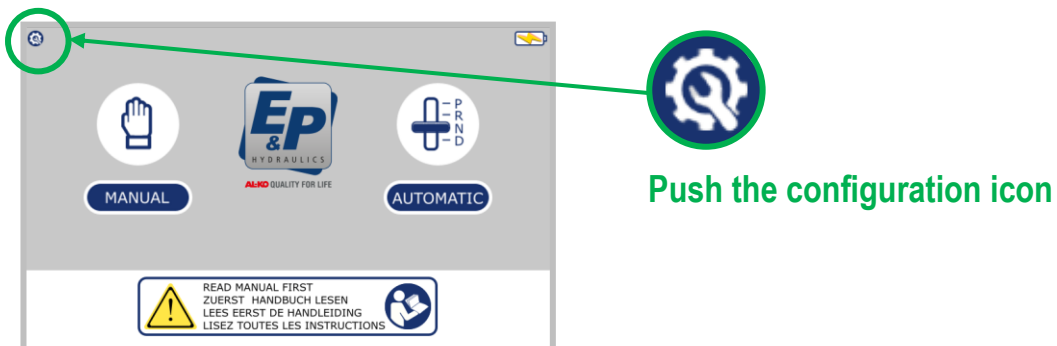
Programming the inclination (empty bladder)

Step 1 At first perform the manual levelling procedure to put the vehicle in the desired (new) tilt position.

Step 2 After the vehicle is in the desired position go back to the startscreen by pushing the “ **HOME** ” button.



Step 3 Push the “ **CONFIGURATION** ” button at the top left location of the screen.

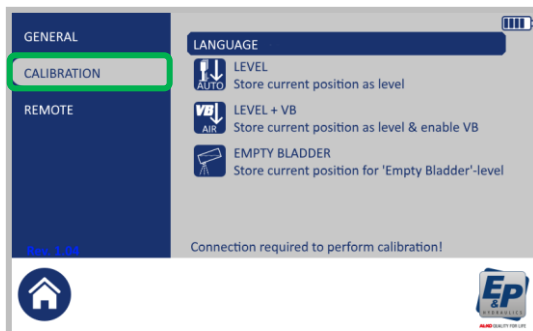


Step 4 After pushing the configuration button a screen will appear in which you have to fill in and confirm your programmed PIN/access code by pressing OK (factory setting: 4 times 0000)



Calibration (continued)

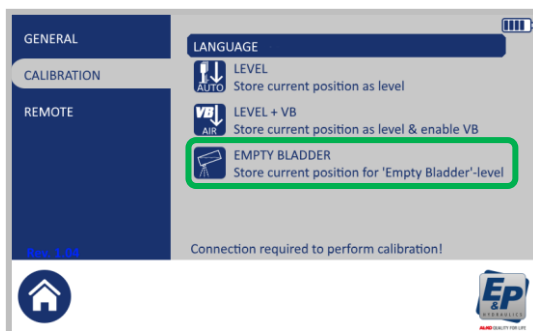
Step 5 After pressing the icon “ **CALIBRATION** ” it is possible to make your choice for:



EMPTY BLADDER

Store the inclination or (new) desired tilt position of the vehicle.

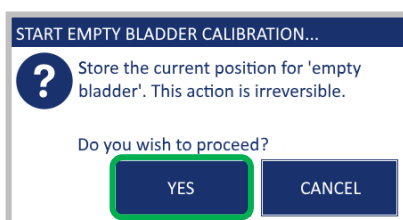
Step 6 Push the button “ **EMPTY BLADDER** ” on the touch screen to activate the function **putting the vehicle in the desired (new) tilt position.**



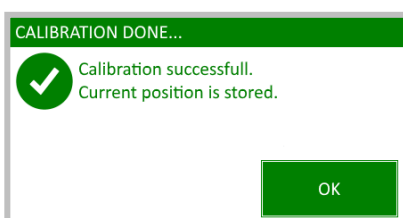
After pushing the “ empty bladder ” button directly a pop-up box appears on the screen mentioning the question: **Store the current position for empty bladder. This action is irreversible. Do you wish to proceed?**

Step 7 Push the button “ **YES** ” to continue the procedure

Now the calibration modus will be activated automatically, when calibrating is in progress a popup box appears showing the system is storing the current position in memory.



Step 8 When ready a pop-up appears on the screen mentioning the message “ **CALIBRATION DONE** ”. Push the button “ **OK** ” to complete the process.



6.3 Pairing the touchscreen

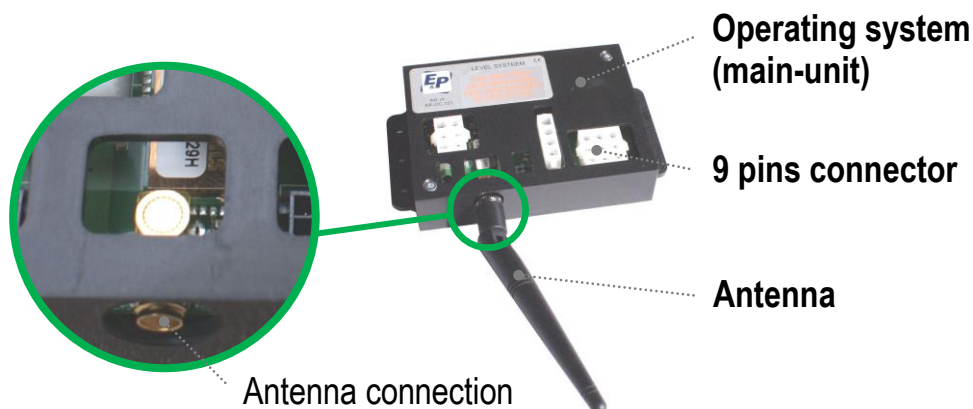
6.3.1 In advance

The procedure described below has already been carried out at your dealer/installer. You don't have to perform this procedure by yourself. E&P Hydraulics has decided to include this chapter as an extra in this manual in case of failure and/or service & repair matters. When this operation, for some reason, has not been done or has been carried out incorrectly, it is not possible to level the vehicle with the touch screen in remote (hand held) function.

Extra Note:

To communicate with the hydraulic levelling system in remote function the touchscreen only operates with version 3.14 (or higher) of the operating system. If you want to purchase the touchscreen at a later stage ask your dealer for the correct compatibility settings

Below is the picture of the operating system including the antenna connection.



Pairing (continued)

6.3.2 Pairing the touchscreen (*calibrate/pair*)

Below shows the procedure how to pair the touchscreen to the hydraulic levelsystem. (this action needs to be done to make it possible operating in remote function (handheld)).

REMARK: the pair function ONLY work if device is used as remote!

Step 1 Activate the touchscreen by pressing the “ **ON / OFF** ” button at the backside of the touchscreen.

Step 2 Push the “ **CONFIGURATION** ” button at the top left location of the screen.

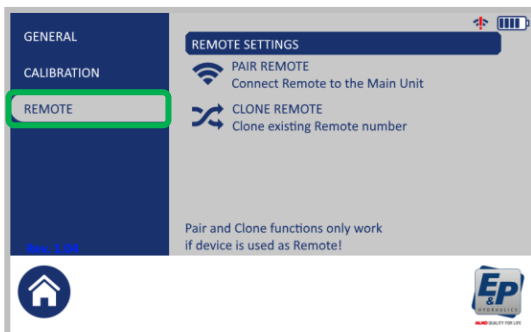


Step 3 After pushing the configuration button a screen will appear in which you have to fill in and confirm your programmed PIN/access code by pressing OK (factory setting: 4 times 0000)



Pairing (continued)

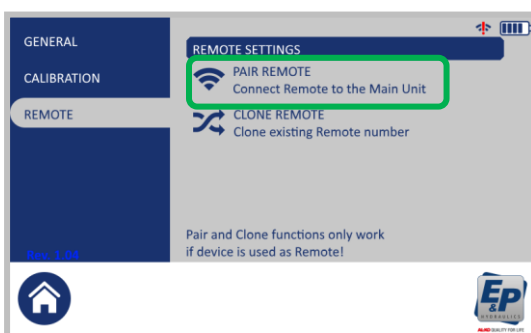
Step 4 After pushing the button “ **REMOTE** ” it is possible to make your choice for:



PAIR REMOTE

Connecting the touchscreen in remote function to the operating system.

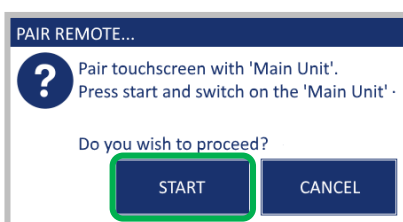
Step 5 Push the button “ **PAIR REMOTE** ” in order to pair the touchscreen unit to the system.



After pushing the “pair remote” button directly a pop-up box appears on the screen with the question: **Pair touchscreen with main unit. Press start and switch on the main unit. Do you wish to proceed?**

Step 6 Remove the fuse out of the cable assembly from the hydraulic levelsystem or disconnect the 9 pin cable connector from the operating system.

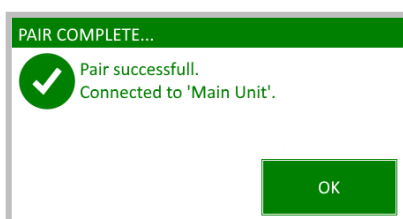
Step 7 Push the button “ **START** ” to continue the procedure. The pairing process should be made within a certain time (apr. 20 sec.)



Now the pairing procedure will be activated automatically, after this a pop-up box appears showing: **Pair successful. Connected to main unit”**

Step 8 Depending on what action you performed under step 6, reconnect the 9 pin connector, or the fuse to the system to power on the system.

Step 9 When ready the screen is displaying the message “ **PAIRING DONE** ”.



Push the button “ **OK** ” to complete the process. Now the touchscreen is ready for use in remote function.

Extra Note: the popup box appears within 5 seconds, otherwise the procedure has to be executed again.

6.4 Clone remote control

With the clone function you are able to clone/connect the touchscreen to another device (e.g. the E&P Hydraulics remote control type RC-001)

REMARK: the clone function ONLY work if device is used as remote!

6.4.1 Clone the touchscreen

Step 1 Activate the touchscreen by pressing the “ **ON / OFF** ” button at the backside of the touchscreen.

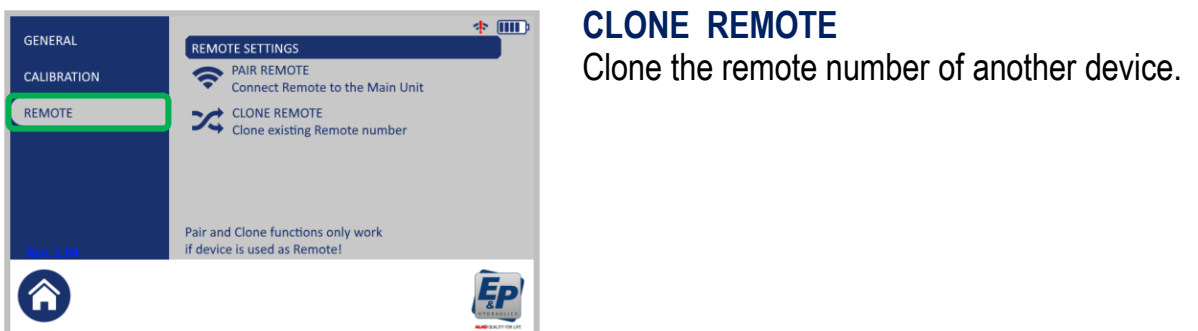
Step 2 Push the “ **CONFIGURATION** ” button at the top left location of the screen.



Step 3 After pressing the configuration button a screen will appear in which you have to fill in and confirm your programmed PIN/access code by pressing OK. (factory setting: 0000)

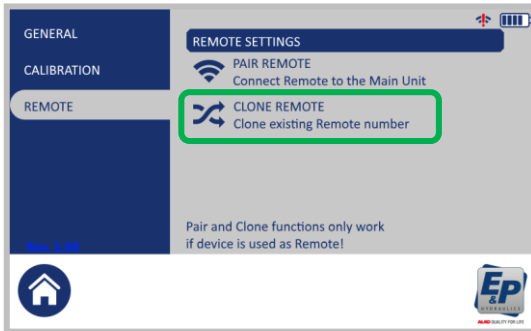


Step 4 After pushing the button “ **REMOTE** ” it is possible to make your choice for:



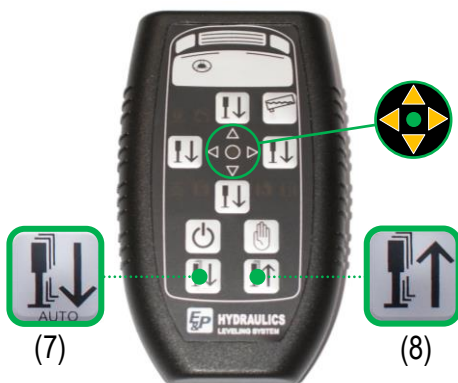
Clone (continued)

Step 5 Push the button “ **CLONE REMOTE** ” in order to clone the touchscreen unit to the E&P Hydraulics remote control type RC-001.



After pushing the “clone remote” button, a pop-up box appears mentioning: **Clone remote number to another device. Place other device in Pair and press start .**

Step 6 Press the buttons “ **AUTOMATIC MODE** ” (no.7) and “ **RETRACT ALL JACKS** ” (no.8) 1x simultaneously.

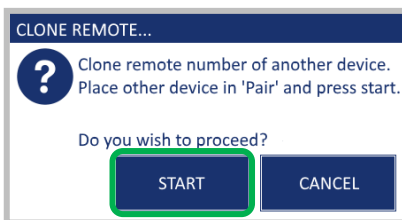


Extra Note: Do NOT press the on/off button.

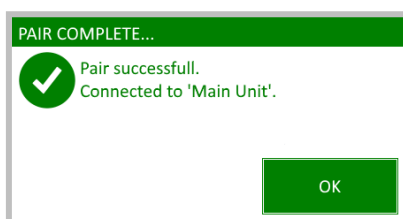
Press buttons 7 and 8 simultaneously in the out situation of the remote control unit.

During this phase the indicator LEDs will flash green and orange

Step 7 Push the button “ **START** ” to continue the procedure.



Step 8 When ready a screen appears displaying the message “ **CLONE DONE** ”.



Push the button “ **OK** ” to complete the process.

Clone (continued)**6.4.2 Which device takes command**

The device which is switched on first (touchpanel or remote control) takes the command to control the system, until that device is switched off. If you would like to switch from one control device to another, you need to switch off the device that was in operation first.

REMARK 1:

In the event of switching over from the touchscreen to the remote control you have to wait a little time, to give the system enough time to switch off contact between the touchscreen and the operating system.

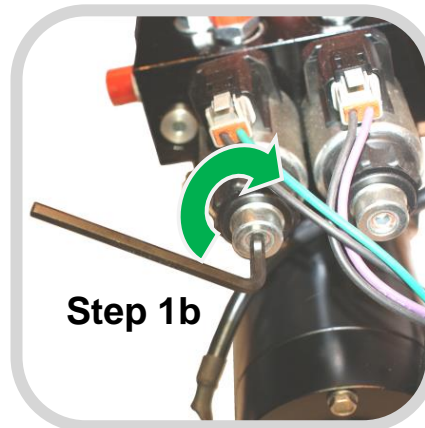
REMARK 2:

It may be that the operating system is built in in such a way that receiving a signal between the remote control and the operating system works poorly or even not at all (caused by vehicle construction materials e.g. steel, wood, plastics, aluminium, etc.). In this case there is a possibility to move the antenna away from the operating system by means of an optional extension cable (length max. 2 meters, available from E&P Hydraulics).

6.5 Emergency control

In case of emergency, the electronic levelling system can also be operated manually by means of auxiliary tools, such as a battery powered drill, or a battery powered screwdriver. This way, in case of a failure in the system, you can retract the jacks manually and depart to a new destination.

CAUTION ! Depending on the type of hydraulic pump the valves could be adjusted by hand OR by using an Allen key. Please do this **VERY CAREFULLY** when both opening and closing the valve.

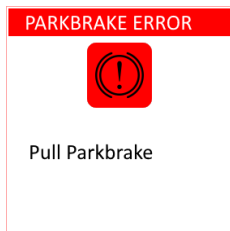


Operating the emergency system

- Step 1a-b** Turn the four valves on the pump **CAREFULLY CLOCKWISE** to the fully open position, by hand or by means of the supplied Allen key.
- Step 2** Remove the protective label on the front side of the electric motor whereby a coupling becomes visible.
- Step 3** Insert the supplied hexagon-bit (1/4" HEX) into the coupling and turn it with the auxiliary tool **ANTI-CLOCKWISE** to retract all the jacks.
- Step 4 a-b** When all jacks are fully withdrawn, turn the four valves on the pump **CAREFULLY ANTI-CLOCKWISE** to the original position.

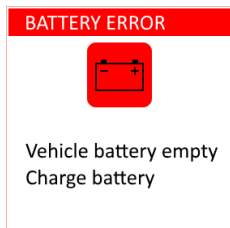
6.6 Error descriptions

Below an overview of the possible error warnings which may appear on the screen.



The parking brake is not engaged.

Apply the handbrake to continue.



The battery voltage powering the level system is too low.

Charge the battery sufficiently to continue. The pump of the level system draws more power than can be charged. For this it is necessary to charge the battery sufficiently before the system can be reused



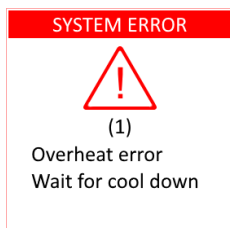
The surface on which you are standing is too skewed to automatically level it.

Use the 'Manual' levelling procedure to put your vehicle on its jacks.

The jacks may also be too short to get your vehicle level.

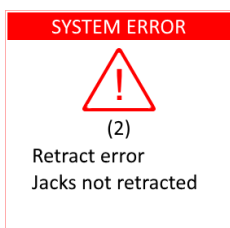
If necessary, place blocks under the jacks.

Watch out! With the 'Manual' levelling procedure, one or more wheels probably come off the ground. Your vehicle can slide on a slippery surface.



Your pump is protected with an overheating timer.

You have the pump running for too long, making it hot. Allow the pump to cool down before continuing to use the level system.

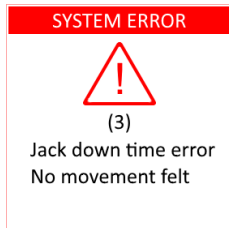


The retraction of the jacks failed.

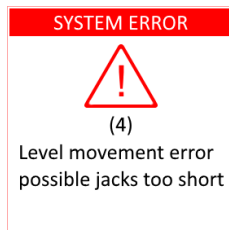
Contact your dealer. The system may have too little oil or there is a defect in the system.

Watch out! Before you start driving, make sure that all four of your jacks are properly retracted. If the jacks are not fully retracted, damage may occur whilst driving away.

Error descriptions (continued)

**Putting down the jacks to the ground failed.**

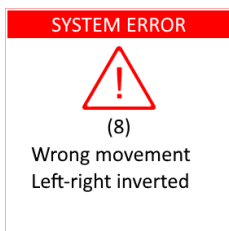
It is possible the jacks may sink into the ground or there is too little oil in the system. Retract the jacks and check the movement of the jacks during a new level attempt.

**Levelling your vehicle has failed.**

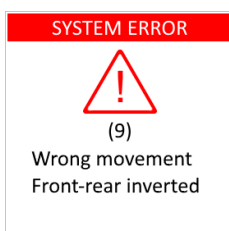
Possibly your vehicle stands too skew and the jacks are too short to get the vehicle level on this position/location. If possible, place thick blocks under the retracted jacks and try again. You can also try to put your vehicle level with the aid of the 'Manual' leveling procedure, or you possibly leave the vehicle in a little skew position or find a flatter spot and try again.

**Levelling your vehicle has failed.**

It is possible the jacks may sink into the ground or there is too little oil in the system. Retract the jacks and check the movement of the jacks during a new level attempt.

**Your vehicle makes an unexpected movement during levelling.**

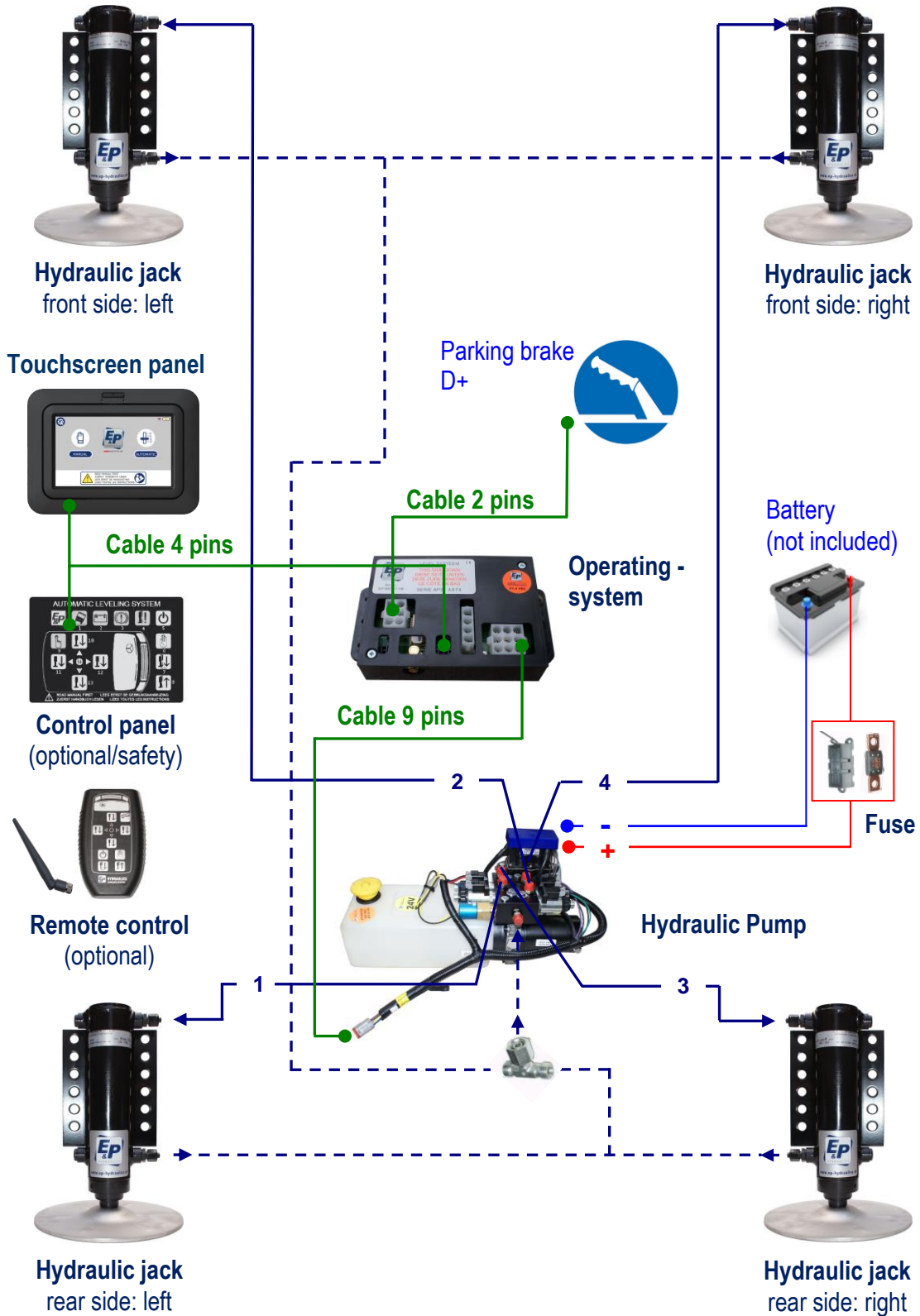
You may be in a windy place, someone moves in the vehicle or one or more jacks sink into the ground.

**Your vehicle makes an unexpected movement during levelling.**

You may be in a windy place, someone moves in the vehicle or one or more jacks sink into the ground.

7. Schematic diagram of the hydraulic levelsystem

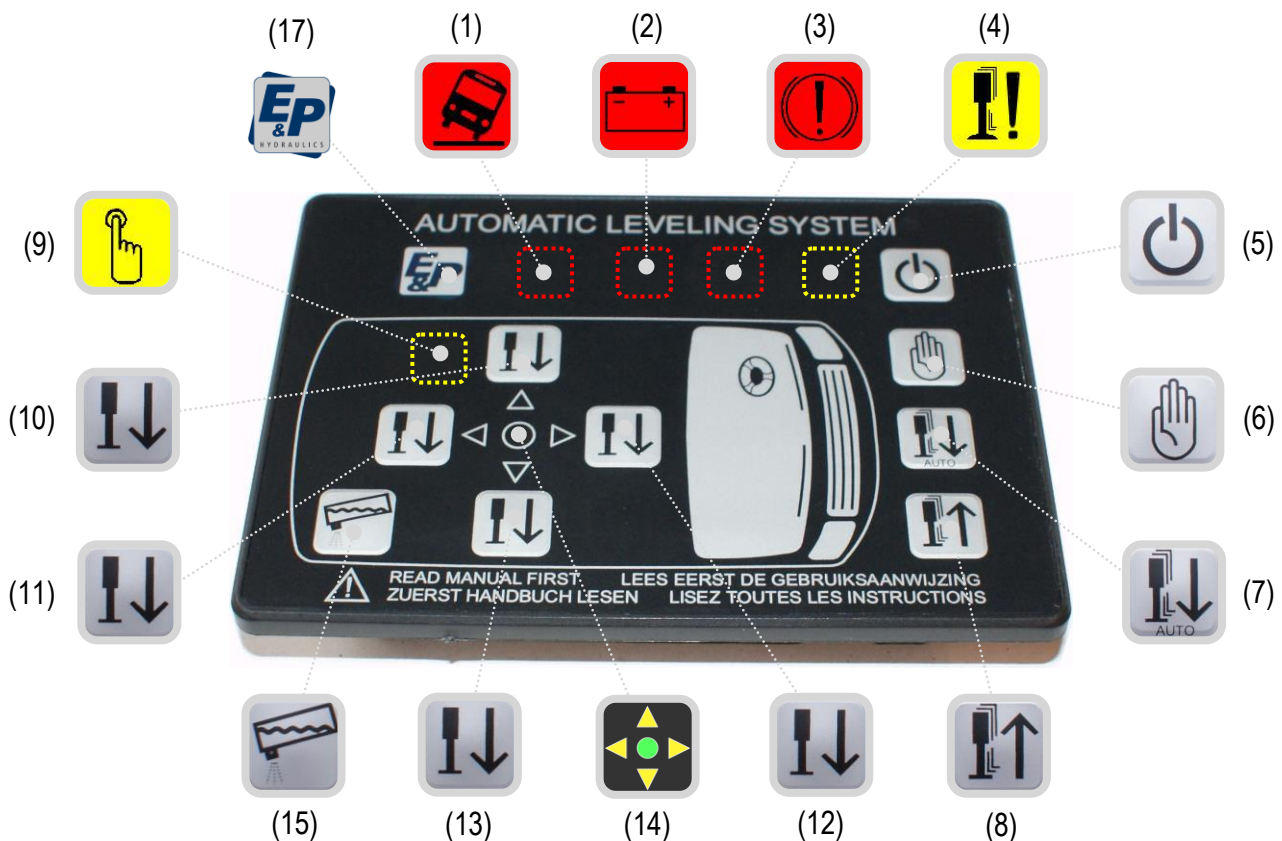
Below the schematic view/diagram of the E&P Hydraulics levelsystem.



8. Control backup devices

8.1 Functions on the control panel

For safety backup considerations, E&P Hydraulics supplies a backup control panel within the touchscreen controlled levelsystem set. With the help of this backup control panel, the hydraulic level system can be operated at all times if the touch panel is lost or broken. Furthermore, the touch panel can also cooperate with the already existing remote control. For these reasons these two control devices are mentioned in this user manual. The diagram below shows the appearance of the control backup panel. See also chapter 8.3 for the extended function declaration concerning buttons and indicator LED's.



Function declaration:

- | | |
|--------------------------------------|-----------------------------------|
| (1) LED: Slope too steep | (9) LED: Manual mode |
| (2) LED: Vehicle battery low voltage | (10) Button: Left side |
| (3) LED: Engage the handbrake | (11) Button: Rear side |
| (4) LED: Jacks not (fully) retracted | (12) Button: Front side |
| (5) Button: ON / OFF | (13) Button: Right side |
| (6) Button: Manual mode | (14) LED: Level indicator |
| (7) Button: Automatic mode | (15) Button: Inclination function |
| (8) Button: Retract all Jacks | (17) LED: E&P logo |

8.2 Functions on the remote control
















The diagram below shows the appearance of the remote control. See also chapter 8.3 for the extended function declaration concerning buttons and indicator LED's.



Function declaration:

- | | |
|--------------------------------------|--------------------------------------|
| (1) LED: Slope too steep | (9) LED: Manual mode |
| (2) LED: Vehicle battery low voltage | (10) Button: Left side |
| (3) LED: Engage the handbrake | (11) Button: Rear side |
| (4) LED: Jacks not (fully) retracted | (12) Button: Front side |
| (5) Button: ON / OFF | (13) Button: Right side |
| (6) Button: Manual mode | (14) LED: Level indicator |
| (7) Button: Automatic mode | (15) Button: Inclination function |
| (8) Button: Retract all Jacks | (16) LED: Remote control Battery Low |

8.3 Extensive function declaration

(1)		SLOPE TOO STEEP	LED's In this position the vehicle cannot be levelled. (the surface is not even enough) If necessary switch over to manual mode.
(2)		BATTERY LOW VOLTAGE	The vehicle battery is empty or the voltage is too low to be able to work safely.
(3)		ENGAGE HAND BRAKE	Message indicating that the handbrake is disengaged. When the hand brake is engaged again, the LED will go out.
(4)		JACKS NOT (fully) RETRACTED	One or more jacks are extended or not fully retracted.
(9)		MANUAL MODE	Indicates that the vehicle can now be brought to the correct level manually.
(14)		LEVEL (zero point)	Indicates that the vehicle can now be brought to the correct level.
(16)		BATTERY 9V VOLTAGE	The battery voltage of the remote control is too low. <i>(only present on the remote control)</i>
(17)		E&P LOGO	Indicates that the levelsystem is switched on. <i>(only present on the control panel)</i>
			BUTTONS
(5)		ON / OFF	Switches the levelsystem on or off.
(6)		MANUAL MODE	Switches the levelsystem into manual mode for levelling the vehicle.
(7)		AUTOMATIC MODE	Switches the levelsystem into automatic mode for levelling the vehicle.
(8)		RETRACT ALL JACKS	Automatically retracts all jacks.
(10)		LEFT SIDE	Controls retracting and extending the left jacks.
(11)		REAR SIDE	Controls retracting and extending the rear jacks.
(12)		FRONT SIDE	Controls retracting and extending the front jacks.
(13)		RIGHT SIDE	Controls retracting and extending the right jacks.
(15)		INCLINATION	To empty easily the waste-watertank.

9. Remarks and recommendations

Below is an overview concerning remarks and recommendations (tips) of the hydraulic levelsystem:

- After 4 minutes of no operation, the system will switch off automatically.
- The automatic levelling cycle can only be started after all jacks have been retracted. If the jacks are not retracted when the automatic cycle starts, the system will do this automatically. So it is not possible to make short adjustments to the jacks; the system will always first completely retract its jacks.
- At a low battery voltage, the system will automatically switch off.
- Jacks are extended and you accidentally drive off: the system will immediately give an alarm and the jacks are automatically retracted as soon as the hand brake is disengaged. In case of vehicles with a pneumatic brake installation, this takes place when the engine is started.
- All normal functions of the system are switched off in error mode.
- The jacks always operate 2 at a time at 1 side. The left side, right side, front side and rear side. Only when retracting they operate all 4 at the same time.
- Some vehicles have swivel chairs that do not function when the hand brake is engaged. As soon as the levelling system is finished and the ignition switch is off, you are able to disengage the hand-brake. Before doing that, you must of course check if the car is in gear.
- During winter conditions (e.g. in snow and ice) put something (e.g. a piece of carpet) under the jacks to avoid sliding.
- During bad weather conditions (heavy frost) when levelling is ready and the ignition is switched off you can release the parking brake. TAKE CARE you put the vehicle in gear before releasing the parking brake.
- Manual operation is mainly recommended for uneven surfaces.
- In manual operation, all four jacks should always be extended to the ground before leveling.
- The system cannot handle all angles, the limit values differ per vehicle.

Remarks and recommendations *(continued)*

- If the system encounters a slope angle that is too big and no longer responds to requests for automatic levelling, we recommend bringing the vehicle as close as possible to the zero point in manual mode.

During manual operation 1 or 2 arrows light up. In this way the system indicates where the lowest points are at that moment.

EXAMPLE: first extend the rear jacks by manual operation (vehicle is moving). Wait a moment, then press the arrow for the front jacks. It will stop automatically when the zero point is reached.

Another option, in case of a slope angle that is too high, is to drive the vehicle on wedges and to extend the jacks from this position (please do take the stability into account).

10. Troubleshooting (ONLY be carried out by the dealer/installer)

In case of an error message, check whether the handbrake is engaged, whether the ignition is switched on, whether the battery has sufficient voltage, whether the oil level is correct, whether there is any damage to the jacks, and check all the cables.

If this does not lead to a solution for the fault, the fault could be located in the drive units. As the drive unit does not have any repairable parts, you should contact your E&P Hydraulics dealer/installer.

The error mode

If the ignition switch is not switched on or the hand brake is not engaged, the levelsystem cannot be switched on.

If, when retracting the jacks, the pump is running on overpressure for a few seconds, the retracting action should stop (in both manual and automatic mode).

A timer will run, which will count up when the pump is running and count down when the pump is not running. If this timer reaches a value that is too high, the pump will stop running in order to prevent overheating.

The hydraulic levelsystem does not work

Possible causes

- The ignition of the vehicle is not on
- The parking brake is not engaged
- The control panel switched itself off (4 minute rule)

Solution(s)

- Switch on the ignition
- Engage the parking brake
- Activate touchscreen

Troubleshooting *(continued)***The indicator LED "BATTERY" lights up****Possible causes**

- The battery is almost empty

Solution(s)

- Start the vehicle to charge the battery

Indicator LED message "RETRACT ALL JACKS" will not go out

This while the supports are withdrawn and possibly in combination with the failure of the automatic levelling (flashing alarm)

Possible causes

- The oil level is too low
- The button for retracting the jacks does not work

Solution(s)

- Check the oil level and fill if necessary
- Check wiring connections or replace

The jacks will not (fully) go out, while the pump is in operation**Possible causes**

- Too little or no oil in the tank
- Valve or pump does not work
- Between the operation system and the valve there is no electrical contact

Solution(s)

- Control the oil level and fill if necessary
- Clean, repair or change
- Check cables for voltage loss
Repair if necessary

IMPORTANT: For all other reports and/or mal-functioning of the system, please contact your dealer/installer

11. Maintenance (ONLY be carried out by the dealer/installer)

The E&P Hydraulics levelsystem does not have parts that need to be maintained periodically. When parts have been taken apart, the warranty will become invalid. If necessary parts could be substituted, repaired and/or exchanged (warranty). Please contact your E&P Hydraulics dealer/installer if necessary.

WARNING: In control/service-works, secure the vehicle by placing suitable axle stands under the front and rear axles. By not doing this you create a real danger of personal injury or serious accident.

Preventative controls

- Periodically checking the hydraulic oil level.
 - Check the oil when the jacks are fully retracted. When checking the oil level, the level should be about two to five centimetres below the filling hole.
 - Only fill the tank when the jacks are fully retracted. If this is done with extended jacks, the oil may overspill when they are retracted again.
 - If necessary preventive replacement of the hydraulic oil.
 - Only use transmission oil 'A' (Automatic Transmission Fluid - ATF). E&P Hydraulics recommends ATF with Dexron III or Mercon 5 or a mixture of both. Under freezing point, the jacks may move slower due to the viscosity of the oil. Under extremely cold weather conditions, you should use a special type of oil for low temperatures. Consult E&P Hydraulics or a recognized dealer, before using a different type of oil.
- Periodically check the electronic cables and connections.
- Periodically check the hydraulic jacks.
 - Remove dirt, sand, mud and other contaminates that settle during use, it may obstruct the operation of the hydraulic leveling system.
 - If the jacks remain extended for a longer period of time, the exposed legs must be protected by spraying them with a silicone lubricant. Do this more frequently, if the vehicle is located in a salty environment.
 - We recommend spraying the complete cylinders, including hose connections, with an anti-corrosive agent. This layer (e.g. tectyle) will protect the system against corrosion. This should already have been done during assembly. Annual application of anti-corrosive agent to the system will significantly increase the product's life span. Spray when the supports are withdrawn/retracted.
 - Periodically monitoring of rail tracks and other damage to the piston rods.

Maintenance *(continued)*

- In winter (slippery) conditions.

In winter (slippery) conditions we advise you to take additional safety and precautionary measures. Especially because of your safety during operation of the system. For optimal performance in frequent use under extreme conditions we recommend the use of a special hydraulic oil for low temperatures
(consult an authorized dealer).

Furthermore, during the winter period we have to deal with situations in which de-icing salt will tack to the outside of the system. Preventative maintenance should be:

- Good cleaning of the jacks.
- Clean the cylinder piston rod and spray with a silicone lubricant.
- Remove dirt from the stainless steel foot plate (especially at the bottom, this is the area your vehicle stands on).
- Try to put the vehicle in a location as clean and flat as possible.
- Place a piece of rubber (e.g. piece of carpet) between the frozen (slippery) surface and the the footplate.
- Before leaving make an additional check round the vehicle, if necessary remove snow and ice from the jacks, then you are free to withdraw the jacks.

12. Warranty

E&P Hydraulics has a limited factory warranty for (parts of) the hydraulic leveling system. This manufacturer's warranty applies solely and strictly on the following conditions and exclusions.

1. The guarantee is valid for a period of 24 months from date of purchase.
2. This guarantee covers only defects caused by material and / or workmanship.
3. In order to implement the guarantee, E&P Hydraulics can at its own discretion and preference write a credit note for the defective product/part, either repair or replace the defective product/part at no additional charge by an appointed E&P Hydraulics authorised technician at a location to be designated by E&P Hydraulics. This location can be the E&P Hydraulics factory, another repair facility or the location where the defective product/part is at the moment (repair on location). If E&P Hydraulics on a request as worded would be willing to deviate from her herein at its own discretion and preference choices made, if necessary appropriate fees will be charged at the sole discretion of E&P Hydraulics.
4. The manufacturer's warranty is only valid if the product is purchased from an authorised E&P Hydraulics dealer.
5. The guarantee expires if installation, modification, maintenance or repairs are made to the product or its components by a non E&P Hydraulics authorised dealer or installer. Any attempt to repair a defect will inevitably lead to voiding the warranty.
6. An appeal on the manufacturer's limited factory warranty is only eligible for adoption if an official E&P Hydraulics dealer or installer determines the material and/or manufacturing defect within the warranty period and the appeal to guarantee is done within two weeks after this determination. E&P Hydraulics assesses independently and exclusively or a guarantee request may or may not be allocated.
7. Repair and/or restoration work must not be started before the warranty claim is assigned by E&P Hydraulics and the planned repair is approved by E&P Hydraulics. Any work carried out beforehand will result in the loss of warranty coverage.
8. A warranty claim must be made promptly upon discovery of the problem to E&P Hydraulics. Should this not be the case, E&P Hydraulics can reject the warranty claim, especially if the problem could be exacerbated by the late reporting, this is at the sole discretion of E&P Hydraulics.

Warranty (continued)

9. In the event of damage caused by abuse, misuse, overloading, improper loading (including incorrect weight distribution), improper maintenance, incorrect connection, connection to wrong parts, negligence, accident, intent or deliberate recklessness, it is at the sole discretion of E&P Hydraulics to void the warranty.
10. E&P Hydraulics is not liable for any form of physical, financial or physical direct or consequential damage caused by (parts of) the product, except where the damage concerns the product itself, as per the regulations provided in Directive 85/374/EEC.
11. Excluded are (parts of) products which are used for commercial business, in the sale or on offer, or sold with defects, and/or products where the E&P Hydraulics identification signs have been deleted, removed or made unreadable.

» 13. Notes

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