OPERATING and MAINTENANCE MANUAL

H.A.B. S 142-12 E2WD

Your manufacturer and supplier

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Explanation of symbols

This symbol means imminent **danger** for life and health.

- Non-compliance with this warning may result in grave health hazards and life threatening injuries.

This symbol means **possible danger** for life and health.

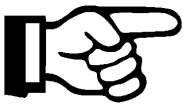
- Non-compliance with this warning may result in grave health hazards and life threatening injuries.

This symbol means **possible dangerous situation**.

- Non-compliance with this warning may result in light injuries or could lead to material damage.

This symbol provides important information about the appropriate handling of machinery.

- Non-compliance with this warning may result to faulty machinery or environment



When you see this symbol you will receive user tips and particularly useful information.

- This information will assist you to optimally using all machinery functions.

1. Basic information

1.1 Importance of the manual

The manual is an important document for the safe operation of the mobile elevating work platforms. Before using the work platforms the manual should have been read and understood.

1.2 Appropriate use

The elevating work platform may only be used when carrying out assembly, maintenance or similar work. It can be lifted to a working height of 14,2 metres. The specifications and threshold values stated in this manual and the safety instructions have to be strictly complied with. Any other use than the one described does not comply with the regulations set.

In case of any required special operations or operational conditions, please contact the manufacturer for advice and approval.

1.3 Inappropriate use

Inappropriate and therefore unauthorised use is:

- using the work platform as a lifting gear, lift, pressing or pulling gear,
- lifting or stacking loads,
- loading the work platform in a lifted state,
- using it as a tilting mechanism for work pieces or for similar work,
- pushing off or pulling towards from the work platform and
- loading the work platform beyond its permitted load.
- using it on unprotected load carrying electrical plant parts.

1.4 Warranty

The manufacturer provides a warranty of 12 months. The manufacturer will only guarantee a faultless operation if the instructions of this manual and the appropriate use are adhered to.

The manufacturer will not be liable for damage caused due to the inappropriate use of the elevating work platform, or due to non-compliance with the instructions and behavioural rules set out in this manual.

Warranty claims against the manufacturer are excluded, if the elevating work platform has constructionally been altered without the written approval of the manufacturer, or has been altered in its operational design without prior authorisation.

1.5 Description of the work platform

The work platform consists of a moveable undercarriage, a scissor lifting mechanism and a work platform. Operation is carried out via a control panel within the access platform. The machine s delivered in a ready to operate condition and is EU design type approved. This is certified via a manufacturers' conformity declaration..

1.6 Issue date of the manual

Issue date is: 26.02.2008

1.7 Copyright

1.8 Address of the manufacturer

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Service Center GmbH

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2. Basic Safety Information

2.1 Operator duties

The independent operation of the mobile elevating work platforms may only undertaken by individuals who

- have completed 18 years of age,
- have read and understood the manual,
- have been trained in the operation of the mobile elevating work platform and
- have received the written order by the company to operate the machinery

The operating staff on the scissors work platform has to ensure that they will not cause any harm to themselves or any other person.

If more than one person will work on the work platform, the operating company has to nominate a supervisor.

Work underneath overhead power lines that are less than 3 metres away is not allowed.

If the operating safety of the elevating work platform is compromised due to faults or damage, the elevating work platform should immediately be taken out of operation and should only be used again after all hazardous sources have been removed.

2.2 Informal safety instructions

- When moving the work platform in public areas national traffic regulations have to be complied with. (EN 280 7.1.1.2f)
  In case of hiring out the work platform, the user has to be handed this manual.

2.3 Hazards when operating the work platform

The following work safety instructions state principal information about possible hazards during the use of the elevating work platform. It has to be strictly adhered to by the operating staff.

- **The elevating work platform has always to be operated on a load resistant and horizontal base (free of diagonal grooves, indentations etc.).**

Warnung

- **The maximum permissible load capacity of the scissor lift work platform may never be exceeded.**

Warnung

- **The scissors work platform may only be accessed and left via the corresponding access facility. Accessing and leaving the work platform during the lifted state is not permitted** (EN 280 7.1.1.2o)

Gefahr !

- **Climbing onto the protective rail or attaching ladders and scaffolding within the work platform is not permitted.**
- **The attachment of overhanging loads or any other enlargement of the work platform is not permitted.**

Gefahr !

- **There should not be any obstacles within the movement and lifting range of the scissor lift work platform. The drive range and the stand area should be in a condition that it does not compromise stand safety and exclude any harm to personnel.**

Gefahr !

- The traffic range of the work platform should be blocked off for any other machinery and facilities during its operation.
- The setup of the pressure limiting and stop valves should not be altered.
- The same applies for all safety facilities.

Vorsicht

- Please always ensure sufficient lighting when operating the work platform.

2.4 Safety installations

The scissor lift work platform has been equipped with the following safety installations:

1. Emergency switch on the control panel:

Pressing the switch will shut off all operational functions. Excluded are the operational functions of the undercarriage. In order to re-activate the controls the emergency switch has to be reset into its original position by pulling it out.

2. End switch for driving with lifted platform:

With a lowered platform the working platform can be moved at maximum speed. If the platform is lifted higher than about 3.50 metres only a slow drive speed is possible.

3. Tilt switch:

If the tilted position of the machine is larger than 2° degrees, at a platform height beyond about 3.50 m, the platform cannot be lifted any further.

4. End switch fort the safety facility <u>pothole protection</u>:

In case of a lifted platform two mechanically triggered rails alongside the undercarriage reduce the ground clearance. This enables that the work platform can be moved without risk in an elevated position. Should the rails not released during the lifting procedure, an end switch will switch off the movement. (at a platform height of >3,50m).

5. Scissor protection:

To avoid squashing at the scissor mechanism, a scissor protection function has been included. This means that the lowering of the platform cannot be completed in one action. (only to 4.5m). **The operator has to ascertain that nobody is standing close to the scissors** and then has once again to activate the lowering function in order to lower the platform completely.

We recommend to carry out a operational test before commencement of work.

6. Pressure switch at the lifting cylinder:

To avoid overloading the scissor package by exceeding the permissible load capacity, the lifting procedure will be automatically stopped in case of exceeding the permissible load capacity. The platform has to be lowered via the emergency lowering mechanism and the overload has to be removed from the platform. After that the lifting function will start to operate flawlessly.

7. Safety support to block the scissor mechanism:

For the safe completion of maintenance work this work platform has been equipped with a safety support. It is on the side of the scissor package. Its application relieves the lifting cylinder and the work platform is securely supported. The safety screw of the support has to be loosened before the working platform is lifted. After completion of the work the support has to be secured accordingly.

It is mandatory to use the support during work carried out close to the scissors, if the platform is in an elevated state.

3. Technical data

H.A.B. scissor lift work platform S 142-12 E2WD

Work height max.	14,23 m
Platform height max.	12,23 m
Transport height (rails folded down)	2,76 m (1,98m)
Work platform dimensions, retracted	2,50 x 1,20 m
Work platform dimensions, extended	3,70 x 1,20 m
Transport – dimensions (length,width,height)	2,71 x 1,20 x 2,76 m
Transport – dimensions (rails folded)	2,71 x 1,20 x 1,98 m
Ground clearance / with activated hole protection	220mm /25mm
Tyres	
Turning radius, external / internal	2,48 m / 0,09 m
Load capacity platform/reject (unlimited)	350 kg
Approved number of people	2
Approved additional load	190 kg
Approved manual force	400 N
Approved tilt position	2 degree
Climbing power	<25%
Wheel ground pressure max.	0,72N/mm²
Wheel contact face max.	mm
Temperature range	-15°C to +45°C
Total weight	3.400 kg

! Work platform may only be inside !

Operating speeds

Driving speed	4,3 km/h
Slow driving speed >2,5m	0,7 km/h
Lifting without load	ca. 58 s
Lowering without load	ca. 55 s

Hydraulics system

Operational pressure max.		190 bar
Hydraulic oil tank - oil type/filling capacity	HLP46 /	30 Litre

Electric controls

Supply voltage:	24 V DC
Fuse:	15 A
Power consumption in sleep mode:	0 A at triggered emergency off
Protection class:	IP 54

The acoustic pressure is below 70 dbA

4. Commissioning

4.1 Control elements

Battery separating plug

The battery-separating plug is on the side in the battery box.

Control panel

The upper control panel controls all movement. It is controlled via a joystick and a tilting switch, its functions are visible via the symbols and/or the labelling. Via the integrated proportional control a stepless speed control is enabled using the joystick.

Emergency OFF switch

The upper and the lower control panels both have an emergency OFF switch each, which will stop all functions when activated. The function not affected is the emergency lowering function. This function will remain active, even when the emergency OFF switch in the control panel has been activated.

Horn

The machine is equipped with a single horn that can be activated from the control panel. The horn is housed in the undercarriage. A signal that will sound an interval tone during driving is not included, however can be optionally ordered against an extra charge.

Driving the work platform:	Switch the operation selection switch to the operation “Drive (Fahren)“ and the joystick the forward or reverse position. By using the right hand side tilt switch you can select 2 speed ranges that are controlled stepless. The joystick integrated biased off-switch will be pressed automatically when operated. (direction away from the operator = drive forward, direction towards the operator = reverse drive)
Slow driving of the work platform:	The switching to slow drive is automatic as soon as the platform has been lifted beyond 2,5m or via the right hand side tilt switch on the upper control panel.
Steering:	The steering direction is selected by operating the rocker switch on the joystick.
Lifting and lowering:	Switch the operation selection switch to the operation “Lift (Lifting)“ and the joystick into lifting or lowering direction. (direction away from the operator = lowering, direction towards the operator = lifting)

4.2 Initiating operability

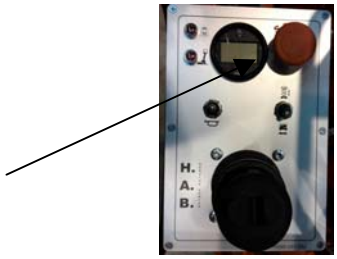
1. Connect control panel on the platform

2. Connect battery plug.

3. Pull both emergency switches.

4. Select operation UPWARD or DOWNWARD.

5. Before commissioning of the work platform it has to be checked whether the charging process has been completed and the batteries are fully charged. The charging level is shown on the batter charge indicator. Charging takes approx. 8 - 10 hours. Also make sure that there is no Error Indication on the screen corrosponding to the Error indication tablet in this Manual. (See appendix)



4. Complete the following checks:

- Operational test of all movements,
- Operation of all end switches,
- Operation of the emergency OFF switch,
- Operation of the scissor protection operation,
- Operation of the hole drive protection function

4.3 Driving the work platform to the operational site

The work platform should **not** be driven in a lifted state.

The work platform is controlled via the upper control panel.

To do so the control panel is connected/plugged into platform.

The operator should be able to see the driving route at any time.

4.4 Preparation of the operational site

At the operational site check, whether the entire drive route is levelled and horizontal and free of obstacles.

Possible diagonal grooves or any other indentations have to be filled solidly.

4.5 Operation

4.5.1 General description of functions and components

- The control panel is situated in the work platform.

- The control panel has an emergency switch, which will stop all functions when activated. However, the emergency lowering function is excluded and remains operable, even when the emergency switch has been activated on the control panel.

- The machine is equipped with a signal horn that can be activated from the panel.

The secure operation of the work platform is controlled by the following limits, which are guaranteed by the end switch with enforced stop switch characteristics:

- The machine may only be manoeuvred within a certain tilted position. The machine may only be manoeuvred within a certain tilted position. The degree of this tilted position is recorded by using a tilt sensor and with a lifted platform will evoke switching off the hydraulics pump. This means it can only be lowered now. In a fully lowered condition any tilted position can be undertaken e.g. when loading the machine. The switching off will happen at a lifted height of approx. 3,50 m.

- When the platform is in a lifted position the drive speed that the work platform could normally reach too fast. To reduce it from a height of 3,5m the motor controller will supply only 25% of the performance and the drive speed is automatically reduced. Maximum drive speed can only be reached with a lowered platform (<3,5m).

- When the platform has reached its max. possible working height, the lifting function is switched off via the upper end switch. This may not be relevant to safety, but is mentioned nevertheless.

- With a lifted platform the ground clearance is reduced by two mechanically operated rails alongside the undercarriage. This enables a risk-free manoeuvring of the work platform in a lifted state and increases the standing stability. If the rails do not protrude during the lifting operation the drive operation will be switched off (at a platform height >3,50m).

- To avoid squashing accidents at the scissor mechanism, a scissor protection function has been provided. This means that lowering the platform is not possible in one operation (only up to 4,5m). **The operator has to ensure that nobody will be close to the hazardous range** and then has to activate the lowering function once again to fully lower the platform.

The faultless operation of the end switches is important for the operation of the machine and has to be checked before each operation and on a daily basis!

Vorsicht

In the upper control panel is a tilt switch switching the operations lifting (and lowering) and driving (and steering). This means that driving and lifting can be controlled via the joystick, depending on the position of the tilt switch. The steering is done via the rocker switch on the joystick, its operation is deactivated during lifting operation.

4.5.2 Lifting and lowering

- When the tilt switch is switched to the position **Lifting** the movement of the joystick will either activate **Lifting** or **Lowering** of the work platform. By doing so the built-in proportional controller will enable a stepless lifting speed control.

- If the work platform has already reached its maximum working height, the lifting valve will be blocked.

- **If moved, the platform protrusion should be reversed into its starting position before lowering platform.**

Vorsicht

- The lowering of the work platform does not use any energy.

- **Should despite all technical precautions the work platform be in a temporary dangerously tilted position, please initiate the lowering operation - DANGER TO LIFE !**

Gefahr !

4.5.3 Driving the work platform using the platform control panel

- When the selector switch is on **Drive** the functions **Lifting and Lowering** will be switched off immediately. The emergency lowering in the lower terminal box remains operational.

- To initiate the driving operation the joystick has to be steered towards the front (away from the operator) and to reverse to the rear (towards the operator). The biased off switch integrated in the joystick is pressed automatically by the operator.

- **When driving the work platform always look into driving direction.**

- The speed can be controlled very precisely due to the integrated proportional control. In correspondence with the direction of the joystick position the speed will be controlled steplessly. Via the right hand side tilt switch at the upper control panel two speeds can be selected.

- Steering is done via the rocker switch on the joystick – depending on selection to the right or left.

- The machine is equipped with an automatic hydraulic **brakes system** (fixed axle). In emergencies the brakes can be released manually. See also **Emergency control.**

The machine is equipped with an automatic hydraulic **brake system**. During an emergency the breaks can be released on both wheels with an imbus key. Turn the screw clockwise till the end. Before doing so please secure the machine agains moving by itself. Both breaks must be released. After finishing the work on the machine turn the screws back out counterclockwise to reengage the brakes.

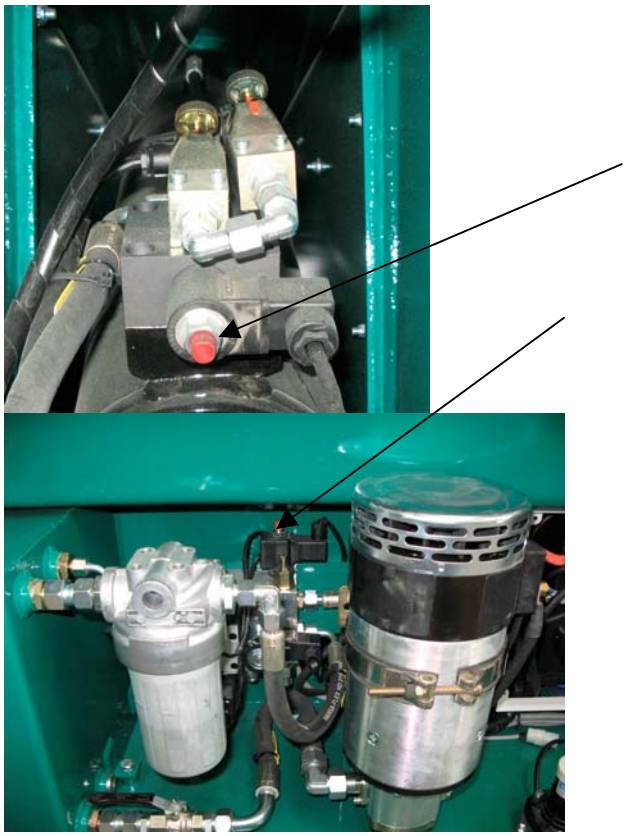
Attention ! The electric breaks are mounted on the steering axle of the unit !

5. Emergency lowering

The machine is equipped with a manual emergency control. In emergencies open the manual lowering valve(1) at the lifting cylinder (turn knob to the left). The lowering valve(1) is inaccessible through the opening on the undercarriage (on the side of the ladder).

Tighten the knob on the middle valve (2) and lower the work platform.

Please do not forget to shut the emergency lowering valves afterward completing the emergency lowering.



Please do not forget to shut the emergency lowering valves afterward co emergency lowering.

6. Decommissioning the work platform

- For decommissioning the work platform lower the scissor lifting mechanism, switch off the main battery switch and remove the key.
- **The work platform has to be secured against unauthorised use. Please take off all keys.**

Warnung

- If the machine will be taken out operation for a longer period of time, it has to be ensured that due to the sleep mode power consumption of the facility the charge of the batteries will be weakened after approx. two weeks should be re-charged.

7. Transport and parking

The work platform can be picked up by a forklift when loading. The location points are marked at the undercarriage of the work platform. . Please ensure that the forks will touch the front and rear edge of the hydraulics and battery space (protection of the hole driving protection rails..

The upper part of the platform banister can be folded down during transport

The second loading option is fixing lifting tools. It is recommended to use a traverse.

The crane eyes should be used as rope fixing points after loading it onto a transport vehicle.

- As already mentioned the control panel of the plant can be stuck in. During transport the control panel should not remain on the platform. Therefore twist/pull the plug at the control panel. This is the best way to avoid that water will penetrate the electric facilities during transport or cleaning the machine and to avoid damage.

- Please ensure during transport and storage of the control panels that the steering lever is not exposed to any impacts or any other heavy mechanical impacts.

8. Care and handling

- For cleaning the machine the control panel has to be removed. Remove the retainer nut at the plug and pull out the plug. Do not expose the open socket at the control cable to direct water exposure. In this way you will best avoid that water will penetrate the electrics and subsequent damage during cleaning the machine.

- The cleaning of the control panels should be undertaken with a moist cloth using a mild detergent. We do not recommend a strong dilution.

- **When cleaning the undercarriage the side shutters should remain shut. Do not direct any direct water beams onto the electrical components like for example the terminal box, magnetic switch, solenoid coils, and ignition or end switches!**

- The entire facility has been designed for safe operation and hence contains all devices necessary to avoid damaging peak voltages or overload stoppages. Should you still decide to add additional components, please do not hesitate to contact us.

- Please always ensure that the oil gate valve of the machine is open and that there is sufficient appropriate oil.

- You will require the advice and approval of the manufacturer, if special ways of working or work conditions will become necessary that are outside of the appropriate use stated by the manufacturer!

9. Inspection and maintenance

Daily:

- check tightness of hydraulics system
- check all functions (do not forget the brakes!)
- check all safety installations
- check tyres for damage
- check for hazardous changes (corrosion, fissures, and wear and tear etc.)

Weekly:

- Check battery water levels
- check ropes in the platform in the platform (see Annex III)
- check all hydraulic hoses and hydraulic components
- check hydraulic oil gauge and if necessary re-fill oil
- (32 litres of hydraulic oil HLP 46,)

Monthly:

- tighten wheel nuts
- check tight fit of all screwed joints

Quarterly:

- check tightness of scissor bolts

Inspection of safety installations

- End switches
- Tilt switches

Electric motors with hydraulic pump

- Check carbon in electric motor, in case of wear exchange correspondingly
- Clean the collector of the electric motor

Lubrication with temperature resistant grease on:

- all lubrication points of the scissor hinges (scissor bolts, blocks etc.)
- all lubrication points of the undercarriage (steering, steering cylinder etc.)

Annually:

- change hydraulic filter insert

Miscellaneous:

- hydraulic oil change as per requirements (oil has to be disposed off appropriately)
- In order to check safe operation conditions all necessary tests have to be run after maintenance work has been completed.

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The specified inspection and maintenance have to be carried when due.

10. Fault finding, electrics / hydraulics

1. Not operational

- Is the battery main plug connected ?

- Has the emergency OFF switch at the control panel been pulled out ?

- Have the starter batteries been charged ?
  (The charge conditions are indicated by the battery charge indicator on the upper control panel)

- Has the fuse gone?
  (1x 15 A fuse in the battery box)

2. The electric motor is turning, selected functions do not work

- Does the magnetic valve work ?
  Check functions of the magnetic valve, if necessary gauge movement and measure voltage.

- Does the hydraulics pump work ?
  Inspection by selecting other functions

- Is there sufficient hydraulic oil in the system ?
  Check the hydraulic oil gauge in the tank with the platform lowered, if necessary re-fill oil (HLP 46 – 30 litres max.)

3. Driving in fast gear is not possible

- Has the platform been completely lowered and retracted?

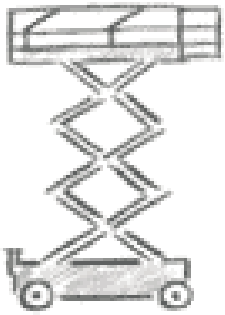
4. Platform does not lift

- Does the machine stand on level ground ?
  At a platform height of 4,50 m and a tilt of more than 3 degrees the the lifting and driving function is switched off automatically.

- Is the emergency lowering knob shut off completely ?
  If the emergency lowering is open, the platform will lower onto the joystick immediately when letting go.

11. SPARE PARTS - ACQUISITION and CUSTOMER SERVICE

Damaged or defect parts may only be exchanged against original spare parts!
In case of third party parts, it cannot be warranted that they have been constructed and manufactured to withstand wear and will comply with safety regulations.
For clarification of any technical questions and spare parts availability please contact the following address:



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12. Manual and technical data of electric controls

12.1 General description of functions and components

- The facility has exclusively been developed for the control of scissor lifting work platforms with a electrohydraulic pump and the movement functions as described below, without limiting the work height. The use of other facilities may possibly be an option, however the actual suitability cannot be expected.

- The realisation of the control logic does mainly take place on the basis of the control motor unit in the lower part next to the electric terminal box. The motor control unit will send a blink code in case of faults. A fault code table is enclosed with the documentation as a separate list.

- The control seat is in the work platform. The control panel has an emergency switch, which if activated will immediately switch off the work platform and all functions. Excluded is only the emergency lowering: will still operate, when the emergency OFF switch has been pressed in the control panel.

- The machine is equipped with a signal horn, which is activated from the control panel. The horn is located in the lower area next to the pump motor.

- The safe operation of the work platform is subject to the following limitations, which are guaranteed by the end switches with an enforced breaker switch function:

  The machine may only be moved in a certain tilted position. The degree of this tilt is measured by tilting sensors and in case of a lifted work platform will lead to the pump motor being switched off and therefore to an interruption of the lifting and drive functions. In such a case the platform can only be lowered. The switch over will take place when the platform has exceeded **3,5 m.**

- With a lifted platform the speed the work platform would normal reach, is too high. Due to this the speed will be throttled automatically, if it has reached a height of beyond **3,5 m** and automatically reduce performance via the motor controller to approx. 25% of its performance, which will permit the pump motor to work only at low rotations..

- When the work platform has reached it maximum work height, the lifting function will be switched off. This is triggered by an end switch. This may not be relevant to safety, but is mentioned nevertheless.

- The faultless operation of the end switches is important for the operation of the machine and has to be checked before each operation and on a daily basis. The operator of the work platform should test all functions before operation.

- In the upper control panel is a **operational selector switch** switching the operations lifting (and lowering) and driving (and steering). This means that driving and lifting can be controlled via the joystick.

12.2 Joystick, driving, lifting and lowering

- When the **function selector switch** is in position “Drive“ the lifting and lowering valve will not be energised. The functions “Lifting and lowering“ are switched off in this moment. However, the emergency lowering in the lower terminal box will remain operational.

- In order to initiate driving operation the control lever has to be pushed forward in driving direction and to be pushed backward when reversing.

- When the **function selector switch** is in position “Lifting“ the drive and steering valve is not energised. The functions “Drive“ (forward and reverse) and “steering“ are switched off in this moment.

- The machine is equipped with an automatic hydraulic **brakes system**. During emergencies the brakes can be released manually.

- When the **function selector switch** is in position “Lifting“ by moving the joystick and simultaneous activation of the biased off switch either to “Lifting“ or “Lowering“ of the work platform is activated. The speed can be controlled steplessly with the joystick (proportional control).

- If the work platform has already reached its maximum work height, the lifting valve will be blocked.

12.3 Emergency functions: Lifting + Lowering via ground control

Operation from the ground

- In the undercarriage is a control panel with an integrated key switch, 2 tilt switches and an emergency OFF switch. The key switch can be set into three positions:

Right position :	**UPPER** / Switching from auf platform control/control panel
Middle position:	**0** / control off
Left position:	**LOWER** / Lifting and lowering via flip switch

This function will only be available :

- with correct key position
- if the platform is not overloaded
- If the battery charging control did not react due to partial discharge of battery.
-

Release break (for towing)

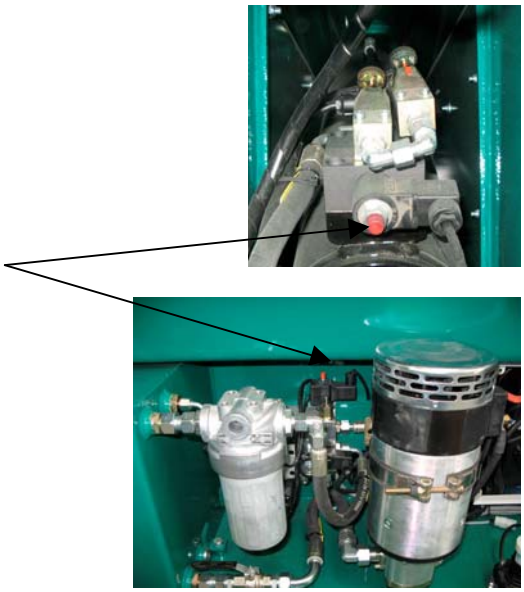
The machine is equipped with an automatic hydraulic **brake system**. During an emergency the breaks can be released on both wheels with an imbus key. Turn the screw clockwise till the end. Before doing so please secure the machine agains moving by itself. Both breaks must be released. After finishing the work on the machine turn the screws back out counterclockwise to reengage the brakes.

Emergency lowering (in case of overloading)

The machine is equipped with a manual emergency lowering function. In emergencies please open the manual lowering valve (1) on the lifting cylinder (turn knob to the left). The lowering valve(1) is accessible through the opening at the undercarriage (on the side of the ladder).

After that please tighten the knob on the middle valve (2) and lower the work platform.

After completed emergency lowering please do not forget to shut the emergency lowering valves.



13. General information about care and handling

- Please ensure that during transport and storage of the control panels that the control lever is not exposed to impact or any other mechanical impacts.

- The cleaning of the control panels should be undertaken with a moist cloth using a mild detergent. We do not recommend a strong dilution.

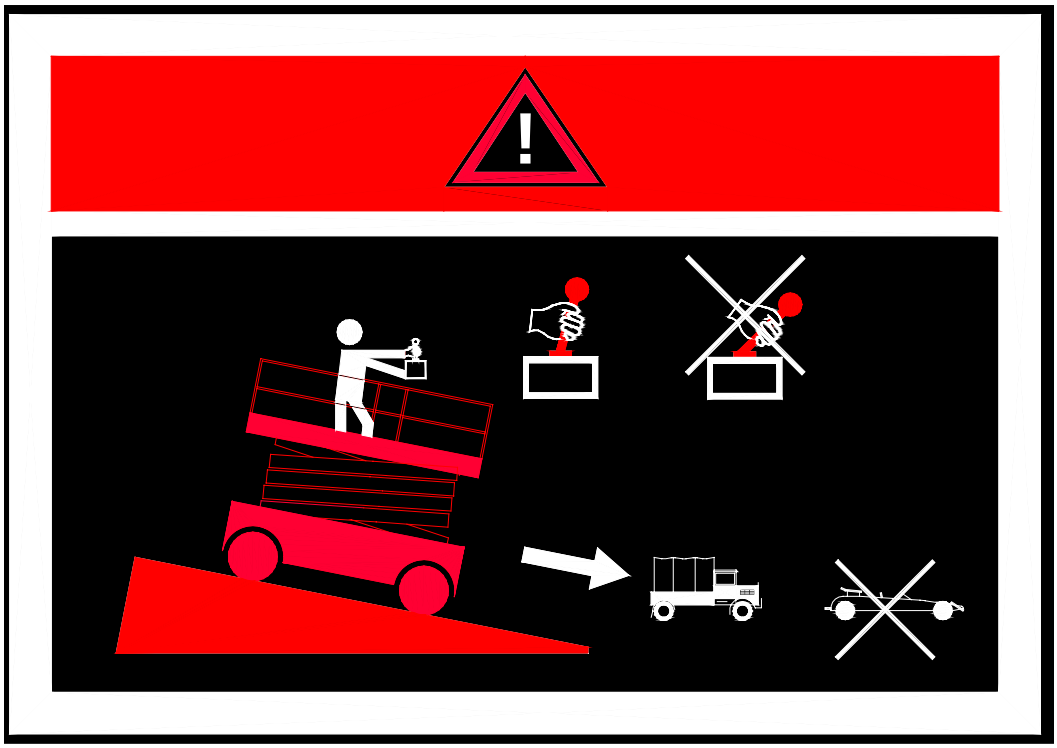
- During cleaning of the undercarriage do not directly water spray electrical components like the terminal box, charger, magnetic switch, valve spools or end switches !

- The entire facilities has been designed for a safe operation and contains all components to avoid damaging voltage peaks or overload stoppages. Should you still decide to fit additional components, please do not hesitate to contact us.

- If the machine is taken out of operation for a longer period, it is necessary to switch off the battery main switch. Doing so it has to be ensured that the remaining sleep mode power consumption of the facility and the discharge of the batteries has to be considered and the batteries have to be recharged after approx. two weeks.

- Please always ensure that the oil gate valve of the machine is open and that there is sufficient appropriate oil.

Driving down a ramp



The following should be adhered to in case of a lowered work and driving down a ramp:

The joystick should be handled gently (**do not full push forward**), to avoid the work platform to roll down too quickly.

The above image clarifies the shape of the symbols.

Addendum
to chapter 1.4: Warranty
to chapter 9: Inspection and maintenance

Exclusion of warranty for adjustable elements

All mechanically adjustable elements like the end switch, pressure switch will be transferred to the responsibility and care of the operator of the work platform after three months and/or 200 hours of operation.

The means that after this period the warranty will cease for parts referring to the adjustment of such elements.

To chapter 9:
Inspection and maintenance

Before renting out the work platform the operator has to check correct operation of switches, and if necessary, carry out adjustments.

Issue 08/2006 We reserve the right to changes

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Annex I

- Hydraulics diagram-
- Electric diagram -

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Annex I I

- Lubrication Schedule -