JOAB



Operation and Maintenance Manual for Hooklifts L and LA

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Introduction

This manual explains how to operate and maintain your hooklift. It contains important information for your own safety and the surrounding environment.

JOAB's products are characterised by a high level of safety, reliability, and long service-life. To get the best out of your hooklift, we recommend reading this manual carefully.

This manual also contains information regarding fault tracing, lubrication, and servicing of your hooklift. This manual is based on the original mounted equipment only. Refer to the relevant supplier's manuals for all other optional or auxiliary equipment.

JOAB takes no responsibility for consequences that occur due to work carried out by non-professionals. Do not make any modifications to the hooklift as this can effect its structural properties. If a modification is required, contact JOAB for advice before making a modification to the hooklift.

After receiving the hooklift, ensure that it is in proper working order. If it is not, contact JOAB, your dealer, or other supplier.

The specifications, constructions, and illustrations found in this manual are not binding. JOAB AB retains the right to make changes without prior notice.

For all hooklifts sold in Sweden, the general delivery regulations apply.

A training CD is included with certain deliveries. This comprehensively describes how to use JOAB's products, such as hooklifts, lift dumpers, and the Hookmaster.

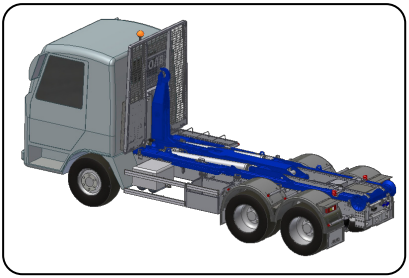
Always bare in mind that it is the operator that is responsible for handling the hooklift.

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About the Hooklift

JOAB's hooklifts are multi-purpose. They can be used with all vehicle manufacturers. However, it is important that the vehicle has been built specifically for the purpose of bearing a hooklift.

It is important to verify that the vehicle has the correct axle distance and wheelbase.



JOAB's hooklifts are designed to transport different types of bodies that have been manufactured according to the Swedish standard SS-3021.

These typically include: dump bodies, flat beds, and containers, as shown.







Mounting the hooklift onto a vehicle that has not been specifically designed for the purpose of carrying a hooklift will increase the risk of an abnormal load on the vehicle. This in turn can lead to serious injury or damage.



Correct Usage

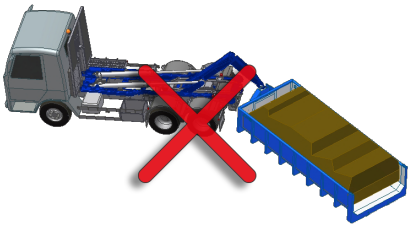
Incorrect use of JOAB's products can lead to material fatigue and cause excessive wear to the hydraulics and its components. The service life of the product can be reduced and in the worst-case lead to breakdown.



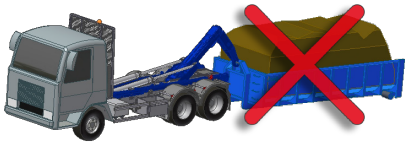
Do not drive the vehicle with the hook lift extended. It must be fully retracted.



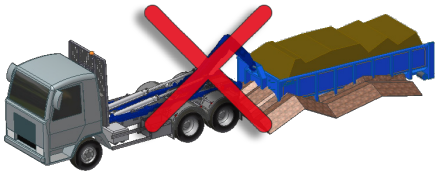
Do not use the vehicle for any other purpose than its intended use.



Make sure to reverse straight towards the body. Do not reverse at an angle.



Do not lift loads that exceed the hook-lift's specifications.

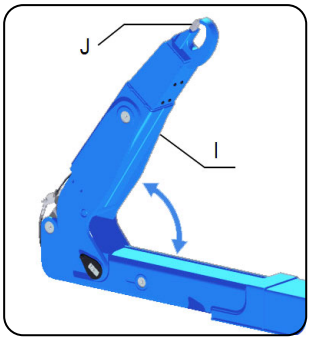


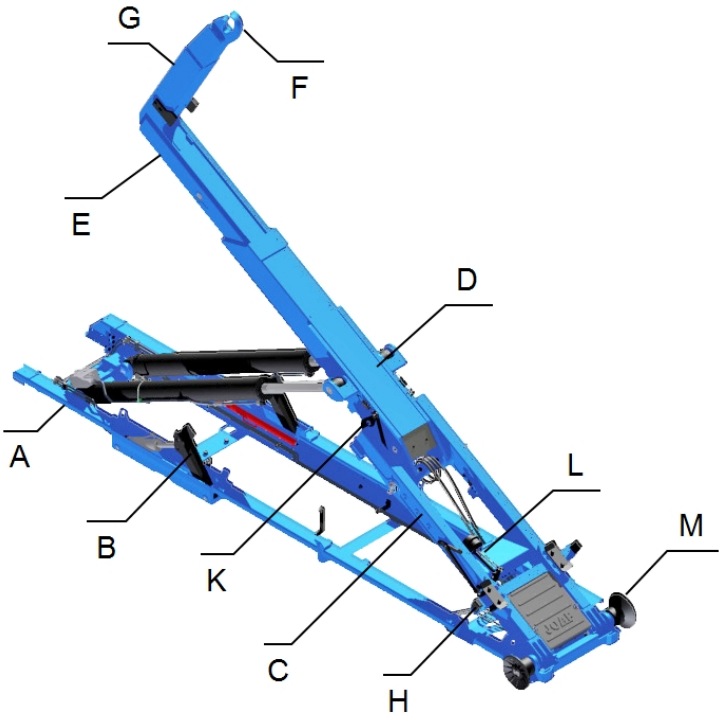
If the body becomes stuck, observe caution. The hooklift can easily be damaged.

Hooklift Components

The hooklift consists of the following main components: a frame, cylinders, auxiliary lifting arms, and a post with a lifting hook (made of high tensile steel).

A. Subframe
B. Auxiliary lifting arm
C. Inner rear section
D. Intermediate section
E. Extending section
F. Hook
G. Hook post
H. Hydraulic lock
I. Folding hook post (LA models only)
J. Safety hook (LA models only)
K. Centre lock
L. Spreader flap deployer (accessory)
M. Rollers





LA-Model Hooklifts

LA-models are equipped with both a folding-hook-post (I) and a safety-hook (J), as shown above.

The folding-hook-post is used to allow for low lifting angles. The hook-post can be moved upwards and downwards as required to assist the loading/unloading of a body. It is operated using the cab controller for the hooklift.

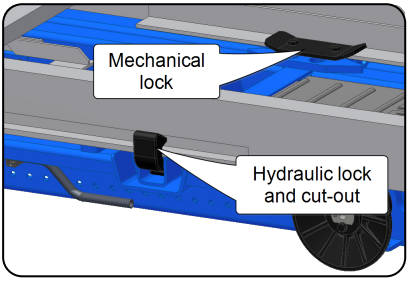
The safety-hook is used to lock the hook onto the lifting bracket of a body and is operated from the cab.

Optional Locking Mechanisms

JOAB's hooklifts can be purchased with optional body locking devices. These options are in addition to the governing standards relevant to each country.

For information regarding the relevant body standard, refer to *"Body Standard", on page 7*.

An internal-mechanical lock or hydraulic lock can be purchased as an option, as shown opposite.



If a hooklift with external hydraulic locking is purchased, the body must have cut-outs in its frame, as shown. If the body does not have cut-outs, it will not be secured during transport!

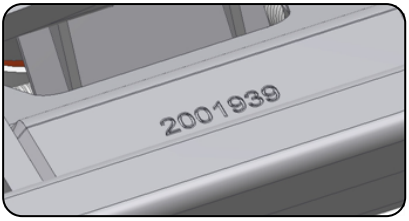
If a hooklift with internal-mechanical locking is purchased, make sure that the locks engage the body correctly. If they do not engage correctly, the body will be transported unsecured!

Manufacture Plate

All hooklifts have a manufacture-plate located on the front left-hand side of the subframe. The information on the manufacture-plate must be provided in the event of making a claim or when ordering spare parts from JOAB.

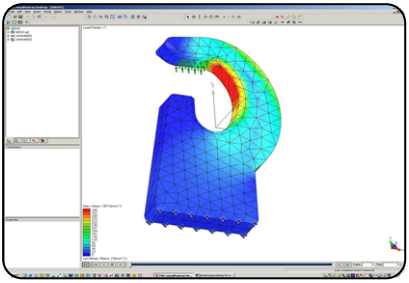


In addition to the manufacture plate, the manufacture number is a also stamped onto the cylinder cross member, as shown.



Design

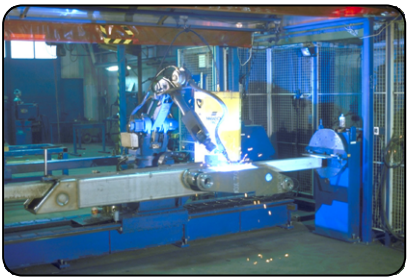
JOAB's products are subjected to demanding tasks and must be of the highest quality. All of JOAB's components and constructions are thoroughly tested. Simulations for calculating: load capacity, durability, and service life are performed on all components



All development and manufacture is performed by JOAB. We are ISO 9001 and ISO 14001 certified.



A large proportion of our production is automated. This guarantees high quality in the manufacturing process.



JOAB's painting facilities meet all applicable environmental requirements.

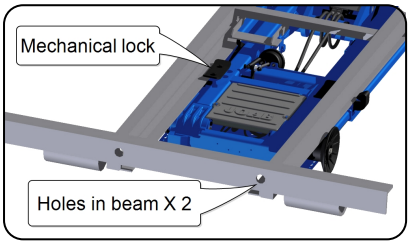


Body Standard

The use of bodies that are not designed in accordance with the governing standard for which the hooklift has been designed can lead to personal injury or environmental damage. JOAB accepts no responsibility for the use of bodies that do not conform to the standard that the hooklift is designed for.

JOAB's hooklifts are designed to handle bodies that are manufactured in accordance with national standards or order-specific standards.

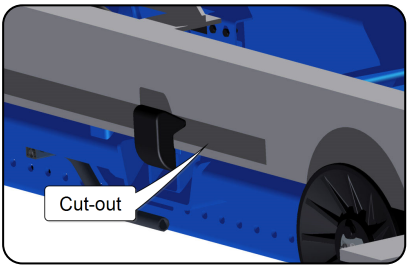
For hooklifts delivered in Sweden, the Swedish standard SS 3021 is followed. Provided below are the requirements for bodies used with the hooklift, in accordance with the standard SS 3021. Note that this will vary depending on the governing national standard relevant to the hooklift delivery.



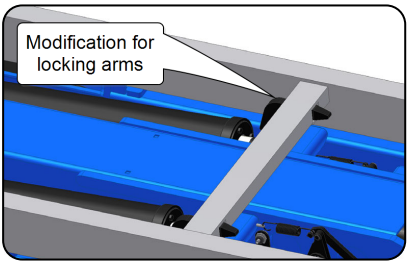
Internal mechanical lock that locks the body onto the hooklift. This is optional equipment.

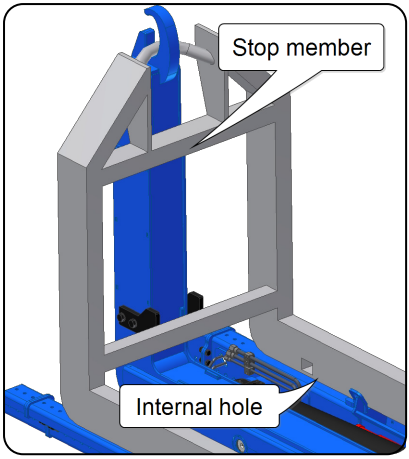
Holes in the body's rear beam. These are used to secure the body onto a trailer.

Cut-outs in the body's frame. These are used to hydraulically lock the body onto the hooklift.



Modification in the body that allows the hooklift to lock the body onto the hooklift with the use of locking arms (optional).





The body must have a stop member that prevents the body from moving forwards and into the cab of the vehicle.

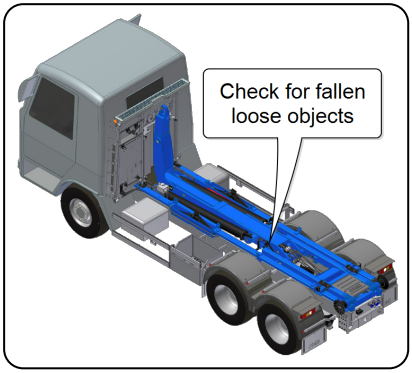
Internal holes located in the body's frame members are used to lock the body onto a trailer.

Safety

Observe all safety warnings. Failure to do so can lead to serious injury or damage to equipment. For further information regarding warning labels placed on the vehicle, refer to "Safety Warnings", on page 65.

All personnel operating the hooklift must read and follow all warnings provided in this manual and on the hooklift.

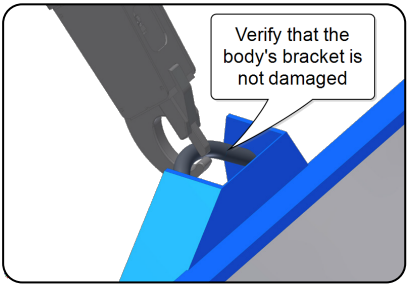
Every day, before operation of the hooklift, inspect and verify that no objects have fallen in between the hooklift's tipping components.



Always make sure that the vehicle is on a level and firm surface before operating the hooklift. Failure to do so can cause the vehicle to become unevenly loaded and lead to it tipping over.

If the vehicle leans two or more degrees there is a risk that it will tip over.

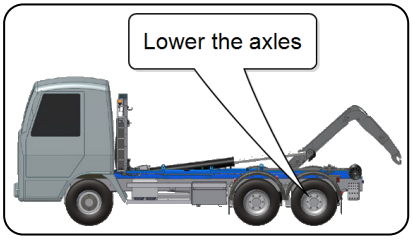
Before collecting a body, make sure that its body-bracket is undamaged.



Make sure that the hook on the hooklift engages the body's bracket properly, as shown opposite.

If the hooklift has a safety hook (LA models only), make sure that it is locked.

Do not tip, load, or unload bodies when the vehicle's axles are raised.

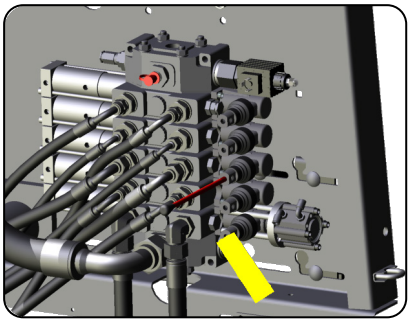


Make sure the axles, where applicable, are lowered before operating the hooklift.

Do not make any modifications to the hooklift as this can effect its structural properties. If a modification is required, contact JOAB for advice before making a modification to the hooklift.

Emergency Operation

NOTE! when using the emergency operating system, the hooklift's safety system is disengaged. Caution must be taken! When the safety system is disengaged it is possible to damage the hooklift or cause injury. Before using the emergency override make sure that you are fully aware of its operation.



In the event of a failure in the hooklift's control system it is possible to operate the hooklift via the hydraulic block, as shown opposite. An emergency operating lever is supplied with the hooklift for this purpose. This is normally placed in the driver's door.

If the hooklift is equipped with extended-tip-cylinder, read and adhere to the warning *"Extended-Tipping-Cylinders", on page 66* before operating the emergency override.

If in any doubt about the use of the emergency override, contact JOAB for advice before using it.

Operation - Electrical Systems

This chapter explains the operation of hooklifts that are **electrically controlled only**. For information regarding air controlled hooklift systems, refer to *"Operation - Air Systems", on page 27*.

The hooklift can be controlled by a cab mounted controller or a radio controller. Radio controllers are an extra option. For further information see *"Radio Controllers", on page 33*.

Electrical controlled systems manufactured after 2017 are equipped with a combined user interface and control stick, called the CBW controller. Systems earlier to this use a separate control stick and a LED display. For information regarding the CBW controller, refer to below. For information regarding earlier systems, refer to *"Two Button Controller and LED Display", on page 22*.

CBW controller

The CBW controller has both a display and control stick, as shown, and is used to control all functions of the hooklift.



Certain functions, such as the operation of the hydraulic pump, can be installed on the cab instrument panel, either in addition or separate from the CBW controller, as required.

The CBW controller has the fallowing main parts:

1. Emergency Stop
2. User Interface
3. Control stick
4. Mounting bracket
5. Screen lock screw

The emergency stop button is used in case of an emergency. Once pressed, all functions of the hooklift that could cause injury are disabled. To restore operation the system must be restarted.

The user interface of the CBW controller has a 2.8 inch colour display. It is configurable. It is possible to display one of five different page set-ups. Each page set-up can have six user defined functions, such as turning lights on. For further information see *"Page Set-Ups", on page 14*.

The control stick is used to control the basic functions of the hooklift, such as tipping. For detailed information regarding its function, refer to *"Control Stick Function", on page 16*.

The mounting bracket is used to mount the unit inside the cab. Normally it is mounted onto the driver's A-post. However, it is also possible to mount it onto the driver's right arm rest. This is ideal for snow ploughs.

User Interface



Shown opposite is an overview of the user interface.

The areas marked with a white rectangle on the screen are programmable. The user can set which functions are placed there. These functions are activated by pressing the corresponding buttons: F1–F4 and the UP/DOWN arrows. For further information on how to set these functions, refer to *"Function Buttons", on page 15* below.

The function icons (F1–F4 and the UP/DOWN arrow buttons) that are displayed in the user interface is dependent upon which page set-up is selected. There are five different page set-ups. To switch between these press either the left or right arrow button located below the screen. For more information see *"Page Set-Ups", on page 14*.

All other icons that are displayed on the screen (not the user defined functions) simply provide feedback to the user regarding the status of the hooklift, which page set-up is active, and active functions, such as lights on etc.

See *"Icon Definitions"*, below for a list of the icons and their function.

Icon Definitions

Provided below is a list of the functions available in the user interface and their meaning. Note, not all functions listed below are activated for all installations. Some of the functions are optional extras, these are marked with an asterisk (*).

Functions that can be selected for the programmable areas (F1–F4 and the UP and DOWN buttons) are coloured white. All other buttons (orange and green) simply provide feedback to the user as to whether or not they are active.

Table 1: User interface – icon description

Icon	Function	Icon	Function
	Night mode		Automatic flap - VEHICLE*

Table 1: User interface – icon description (continued)

Icon	Function	Icon	Function
	Load light -ON		Tip trailer - UP*
	Back light - ON		Tip trailer - DOWN*
	Flashing light - ON		Draw bar*
	Red light - ON		Hydraulic lock - CLOSE
	Center lock is OPEN		Hydraulic lock - OPEN
	Safety hook is OPEN*		Automatic flap - VEHICLE*
	Hydraulic lock is OPEN		Continuous-hydraulic-supply (start/stop)*
	Hydraulic Pump (start/stop)		Salt spreader*
	Air dump - TRAILER*		Scraper*
	Axle lift - TRAILER*		Snow plough*
	Automatic flap - TRAILER*		Side plough UP on reverse*
	Spreader flap - VEHICLE*		Start/stop the crane*
	The hooklift is in its lowered status.		Axle lift - TRAILER*

*Extra option. Not standard equipment. **LA models only.

Page Set-Ups

The user interface can display one of five main page set-ups, each configured with user defined functions. In addition, a page that displays information regarding the position of the hook on the hooklift can also be displayed. See *"Hook Positioning", on page 15* below. The pages available are listed below. The page set-up that is active is displayed in the bottom right-hand side of the screen with one of the following icons (see *"User Interface", on page 12*).

Table 2: Page set-ups

Icon	Description
	Vehicle setup_1
	Vehicle setup_2
	Trailer setup
	Lighting setup
	Snow plough setup
	Hook positioning display

To switch between these page set-ups, simply press either the left or right arrow button below the display.

The number of menu page set-ups that are accessible via the left and right arrow buttons can be configured as required (1–5 page set-ups). In the example shown below, three page set-up are selected, these are shown with a green rectangle below them. The three active page set-ups will be visible when the left/right arrow buttons are pressed.

To configure which of the page set-ups are available when the left and right arrow buttons are pressed, follow the procedure below:



1. Press and hold down the OK button and press either the left or right arrow button at the same time for a few seconds.

   The screen will then display the menu page options as shown.
2. Select the desired page set-up from those displayed and then press the OK

button to either activate it or de-activate it (active page set-ups have a green rectangle below them).

3. Press and hold down the OK button for a few second to save the new settings.

Hook Positioning

The hook position page option displays the position of the hook. As shown opposite, the position of the hook and its angle are displayed in the user interface whenever this menu page is selected (see also *"Page Set-Ups", on page 14*). This option is only available for *L26 hooklift models* and is dependent upon which optional sensors have been installed. For further information contact JOAB.



NOTE: This function is dependent on the hooklift's sensors. If the sensors malfunction or they are incorrectly positioned, the information displayed in the user interface will be incorrect. The actual information provided should be seen as an approximation and not an exact value.

Function Buttons

Each of the five page set-ups in the user interface can be configured with six personal functions. The icons for the selected functions are placed at the bottom of the user interface (shown in white rectangles, see *"User Interface", on page 12*). These functions are activated by pressing the corresponding function buttons below the screen: F1–F4 and the UP/DOWN arrow buttons.

To set the desired function associated with the function buttons, follow the procedure below:

1. Press and hold the OK button while simultaneously pressing the function button that is to be changed.
2. The current icon set for that function will be displayed with a green rectangle around it, as shown below.



3. Use the UP/DOWN arrow buttons to select the desired function.
4. Press the OK button.

Background Light

The background light for the user interface can be adjusted as required. This function allows the user to quickly adjust the background light so that it is possible to read the display, when for example there is a lot of sun shining on the display.

To adjust the background light simply press the OK button with a short press repeatedly to switch between 100%, 20%, and 0% background light.

The display will automatically turn off whenever the hydraulic pump is off. It will only remain on if there is a warning to display, as listed under *"Warnings"*. below.

Warnings

The user interface will display warnings whenever the hydraulic pump is not in operation. These warnings display an icon indicating the following states:

Table 3: User interface warnings

Icon	Meaning
	The hook lift is not in drive status. It is not fully retracted.
	The center-lock is open.
	The hydraulic-lock is open.
	The safety-hook is open (LA models only).

Control Stick Function

Listed below are the various functions that the control stick has. For information regarding the control of snow ploughs refer to *"Snow Plough Functions", on page 18*.

Table 4: CBW controller stick functions

Tip Up	Tip Up Fast Operation*	Extending-Section IN
 Pull backwards	 Bottom button pressed and pull backwards	 Turn the knob ant-clockwise
Tip Down	**Tip Down Fast Operation***	**Extending-Section OUT**
 Push forwards	 Bottom button pressed and push forwards	 Turn the knob clockwise
Folding-Hook-Post UP**	**Folding-Hook-Post DOWN****	**Auto Cycle Load***
 Push the knob to the right	 Push the knob to the left	 Top button pressed and push forwards

Table 4: CBW controller stick functions (continued)

Auto Cycle Unload*		
 Top button pressed and pull backwards		

*Extra option. For further information see *"Extra Options", on page 24*. **LA models only.

Snow Plough Functions

Provided below are the functions for vehicles that have snow ploughs. Note, these functions are not standard. They are installed as additional options. To activate these functions the user interface must be in the snow plough page set-up . Refer to *"Page Set-Ups", on page 14*.

The snow plough functions must first be activated in the snow plough page setup using the following icon .

Once the snow plough icon has been activated, it is then possible to operate the snow ploughs using the control stick. Simply push the control stick forward for a short period to activate the front snow plough. To initiate the side plough, simply press the top button, as shown below in Table 5.

Whenever a snow plough is active, a text message will be displayed in the snow plough page set-up stating which plough(s) are active.

Table 5: CBW controller stick - snow plough functions

Side plough UP	Side plough OUT	Front plough LEFT
 Bottom button pressed	 Push the knob right	 Turn the knob ant-clockwise

Table 5: CBW controller stick - snow plough functions (continued)

Side plough DOWN	Front plough UP	Front plough RIGHT
		
Top button pressed	Pull the knob backwards	Turn the knob clockwise
Side plough IN	**Front plough DOWN**	
		
Push the knob left	Push the knob forwards	

Diagnostics and Statistics

The CBW controller has a diagnostic and statistics page that the user can view. The information provided in this page includes:

1. Time that the system has been active.
2. Time the power has been active.
3. The number of shunts done.
4. The number of tips done.
5. The software version (not all units).
6. Which sensor is active.
7. Control stick diagnostic information.
8. Certain installations packets.
9. Diagnostic information for outputs.

To access the menu, first make sure that one of the main menu pages is displayed and then press and hold down the OK button for a few seconds. The screen shown opposite will then be displayed.

Use the arrow buttons to navigate the menu. The up and down arrow buttons navigate through the menu. The left and right arrow buttons allow the user to select from options when applicable.

To exit the diagnostic and statistical menu, press and hold down the OK button for a few seconds.



Limp Home Mode

The CBW controller has a limp-home function. In the event that either the display or the control stick fails, it is still possible to operate the hooklift, as described below.

To initiate the limp-home function, turn the vehicle's ignition off and then back on. Then press and hold down buttons F1 and F4 (see *"User Interface", on page 12*), simultaneously, while the unit loads. Once in limp-home mode, the hooklift can be operated by pressing the following buttons.

Table 6: Limp-home functions

Button	Function
F1	Hydraulic lock – LOCK
F2	Hydraulic lock – OPEN
Arrow-UP	Tip UP
Arrow-DOWN	Tip DOWN
Arrow-LEFT	Extending section – EXTEND
Arrow-RIGHT	Extending section – RETRACT

Continuous-Hydraulic-Supply

The CBW controller can be used to set and adjust a *constant* hydraulic feed to a tip-trailer. This is not standard, it must be ordered as an extra option.

The continuous-hydraulic-supply is not the same as tipping or lowering a trailer. When the trailer is simply lowered or tipped, a hydraulic feed is provided only during the time the function is activated. In contrast, the continuous-hydraulic-supply is constantly fed to the tip-trailer and

can be either increased or decreased as required. Note, not all vehicles are equipped with the ability to increase or decrease the flow of hydraulic fluid.

The hydraulic supply to a tip trailer is normally fed from the hooklift's connector on the back of the vehicle.

The CBW controller is used to control the flow of hydraulic fluid to the tip-trailer. The flow is initially set at 0L/min and must be set to the required value by the driver using the tip trailer icons. Refer to *Table 7*, on page 21.

Once a value for the hydraulic supply has been set, using the tip-trailer icons, it is saved. If the unit or power supply is turned off, the value is still saved. It can be changed again, if desired, at any time.

After setting the continuous-hydraulic-supply, it can be started by simply selecting its icon, as shown below. The hydraulic supply will flow at the saved rate of flow.

There is no hydraulic flow sensor in the supply line to the tip trailer. Therefore, an external flow sensor will be required if the hydraulic flow is to be measured.

To operate the hydraulic supply to the tip trailer use the functions listed below.

Table 7: Hydraulic supply to tip trailer

Icon	Function
	Start the continuous-hydraulic-supply. The power-take-of must be active.
	Increase the continuous-hydraulic-supply
	Decrease the continuous-hydraulic-supply
	Stop the continuous-hydraulic-supply

Emergency Stop

In case of an emergency, such as a hydraulic leak or risk of injury, an emergency stop button is fitted to the CBW controller (see *"CBW controller", on page 11*). Pressing the emergency stop button will stop all functions of the hooklift immediately. To reset the emergency stop function, first make sure the stop button is reset. Then restart the hydraulic pump.

Two Button Controller and LED Display

Hooklift installations prior to the CBW controller have a controller installed as shown below in Table 8. It is normally mounted on the left-hand side of the driver's seat. There are two buttons on the front of the controller's knob.

The controller is used for both L and LA hooklifts. For further information regarding its function refer to below.

Cab-Controller Operation

Provided below is information on the use of the cab-controller and the functions that the buttons have.

Table 8: Electrical system - 2 button controller

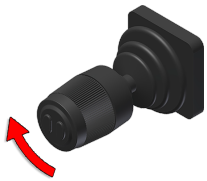
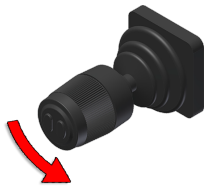
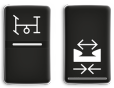
Tip Up	Tip Up Fast Operation*	Extending-Section OUT
 Pull Up	 Inner front button pressed and pull up	 Turn the knob clockwise
Tip Down	**Tip Down Fast Operation***	**Extending Section IN**
 Push Down	 Inner front button pressed and push down	 Turn the knob ant-clockwise

Table 8: Electrical system - 2 button controller (continued)

Folding-Hook-Post DOWN**	Folding-Hook-Post UP**	Auto Cycle Unload*
 Push the knob outwards	 Push the knob inwards	 Outer front button pressed and pull up
Auto Cycle Load*		
 Outer front button pressed and push down		

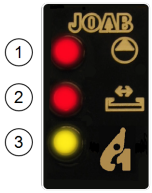
*Extra option. For further information see *"Extra Options", on page 24*. **LA models only.

LED Display and Buttons



Operation of the hydraulic-pump and the hydraulic-lock is controlled using the installed buttons as shown opposite (left and right button, respectively). These are JOAB's standard buttons. However, it is possible that the vehicle's own buttons are used instead of those shown. The driver should familiarize themselves with which buttons are actual for the operation of the hooklift.

The buttons are normally installed on the driver's dashboard. Depending on options ordered, there may also be more buttons installed for the additional options.



The status of the hooklift is displayed inside the vehicle using JOAB's own LED display. The display is normally mounted on the drivers dashboard and has three warning LEDs, as follows:

1. The hydraulic pump is active - RED.
2. The hydraulic-lock is OPEN - RED.
3. The center-lock is OPEN - YELLOW.

Some vehicles are equipped with a hydraulic pump lamp that will also illuminate whenever the hydraulic pump is active. This is not JOAB equipment. Read the vehicle's manual and make sure that you are aware of the relevant equipment for the vehicle being operated.

Trailer Warming Lights

For vehicles with auxiliary equipment such as a tow hitch for trailers, an additional display will also be fitted, as shown. The red LED indicates that the tow-hitch is OPEN. The green LED indicates that it is closed.





Certain manufacturers, such as Scania, have a reset switch for the tow-hitch's servo. This must be pressed to deactivate the warning for the tow-hitch after it has been locked. If it is not reset, the warning for the tow-hitch will remain active both on the LED panel, and in the driver's display, where applicable.

Emergency Stop

In case of an emergency, such as a hydraulic leak or risk of injury, an emergency stop button is fitted to all vehicles.



Pressing the emergency stop button will stop all functions of the hooklift immediately. The button is usually placed below the steering wheel, in the cab.

To reset the emergency stop function, pull the button out, reset all functions to neutral, then switch off and restart the vehicle's engine.

Extra Options

A number of options can be purchased for operating additional functions with the hooklift as well as a trailer. These are discussed below:

1. Fast operation
2. Auto-cycle
3. Snow plough functions
4. Trailer functions

Fast Operation

This function can be used when tipping a load UP or DOWN. Fast operation of the tip-DOWN function will only work when there is a load on the hooklift. The weight of the load is used to force the hydraulic fluid from the hydraulic cylinders, which causes fast operation to work. The heavier the load, the faster the operation will work.

Fast operation of the hooklift can also be used when in shunting mode (the centre-lock is open) and **only** when moving the hooklift backwards **without** a load.



Do not use fast operation of the hooklift in shunting mode when there is a load on the hooklift. Damage to the equipment can occur if fast operation is used in shunting mode with a load. When fast operation is used, the return line of the hydraulic cylinder is fed back into the supply line of the hydraulic cylinder.

Auto-Cycle

As an extra option, the cab controller can also be equipped with an automatic cycle function. This is used to load or unload a body in one continuous cycle. The auto-cycle function has the following procedures:

Auto-Cycle – Unload

1. Open the hydraulic lock - **manually**
2. Extending-section is retracted 250 mm
3. Auxiliary arms are activated
4. Extending-section is fully retracted
5. The body is unloaded
6. The safety-hook is opened (LA models only)

Auto-Cycle – Load

1. The safety-hook is locked
2. The body is loaded onto the hooklift
3. Auxiliary arms are activated
4. Extending-section is partly extended
5. The body is fully lowered
6. The extending-section is fully extended
7. The hydraulic-lock is locked

Trailer Functions

Functions specific for trailers can also be purchased as an option. These include functions such as tipping, spreader flap control, and automatic flap. For further information regarding all options available contact JOAB.

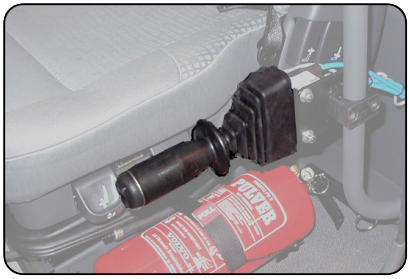
Snow Plough Functions

The cab controller can be equipped with functions for controlling snow ploughs. These functions allow the driver to control both a front and side snow plough. These options are only applicable for the CBW controller. For information regarding the operation of snow ploughs, refer to *"Snow Plough Functions", on page 18*.

Operation - Air Systems

The hooklift can be controlled by a cab mounted controller or a radio controller. Radio controllers are an extra option. For further information see *"Radio Controllers", on page 33*.

A cab mounted controller is installed inside the cab for operating the hooklift. It is normally mounted on the left-hand side of the driver's seat, as shown.



The type of controller installed is dependent upon the option ordered. There are two options, as follows and described below:

1. Two button controller
2. Seven button controller

For further information regarding the operation of the two button controller, refer to below. For information regarding the operation of the seven button controller, refer to *"Seven Button Cab-Controller", on page 28*.

Two Button Cab-Controller

The operation of the two button controller and the functions that the buttons have is provided below.

Table 9: Air system - 2 button controller

Tip Up	Tip Up Fast Operation*	Extending Section IN
		
Pull Up	Top button pressed and pull up	Press the bottom button in

Table 9: Air system - 2 button controller (continued)

Tip Down	Tip Down Fast Operation*	Extending-Section OUT
 Push Down	 Bottom button pressed and push down	 Press the top button in

*Extra option. For further information see *"Extra Options ", on page 29*.

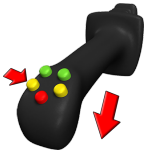
Seven Button Cab-Controller

The operation of the seven button controller and the functions that its buttons have is described below. Note, two of the buttons are located on the bottom of the controller and are not normally used. However, these can be assigned customer specific functions, if required.

Table 10: Air system - 7 button controller

Tip Up	Tip Up Fast Operation*	Extending-Section IN
 Pull the controller Up	 Inner green button pressed and pull the controller up	 Press the inner green button

Table 10: Air system - 7 button controller (continued)

Tip Down	Tip Down Fast Operation*	Extending Section OUT
 Push the controller Down	 Inner yellow button pressed and push the controller down	 Press the inner yellow button
Folding-Hook-post UP**	**Folding-Hook-post DOWN****	
 Press the outer green button	 Press the outer yellow button	

*Extra option. For further information see below. **LA models only.

Extra Options

A number of options can be purchased for operating additional functions with the hooklift as well as a trailer. These are discussed below:

1. Fast operation
2. Auto-cycle
3. Trailer functions

Fast Operation

This function can be used when tipping a load UP or DOWN. Fast operation of the tip-DOWN function will only work when there is a load on the hooklift. The weight of the load is used to force the hydraulic fluid from the hydraulic cylinders, which causes fast operation to work. The heavier the load, the faster the operation will work.

Fast operation of the hooklift can also be used when in shunting mode (the centre-lock is open) and **only** when moving the hooklift backwards **without** a load.

Do not use fast operation of the hooklift in shunting mode when there is a load on the hooklift. Damage to the equipment can occur if fast operation is used in shunting mode with a load. When fast operation is used, the return line of the hydraulic cylinder is fed back into the supply line of the hydraulic cylinder.

Trailer Functions

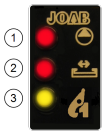
Functions specific for trailers can also be purchased as an option. These include functions such as tipping, spreader flap control, and automatic flap. For further information regarding all options available contact JOAB.

LED Display and Buttons



Operation of the hydraulic-pump and the hydraulic-lock is controlled using the installed buttons as shown opposite (left and right button, respectively). These are JOAB's standard buttons. However, it is possible that the vehicle's own buttons are used instead of those shown. The driver should familiarize themselves with which buttons are actual for the operation of the hooklift.

The buttons are normally installed on the driver's dashboard. Depending on options ordered, there may also be more buttons installed for the additional options.



The status of the hooklift is displayed inside the vehicle using JOAB's own LED display. The display is normally mounted on the drivers dashboard and has three warning LEDs, as follows:

1. The hydraulic pump is active - RED.
2. The hydraulic-lock is OPEN - RED.
3. The center-lock is OPEN - YELLOW.

Some vehicles are equipped with a hydraulic pump lamp that will also illuminate whenever the hydraulic pump is active. This is not JOAB equipment. Read the vehicle’s manual and make sure that you are aware of the relevant equipment for the vehicle being operated.

Trailer Warming Lights



For vehicles with auxiliary equipment such as a tow hitch for trailers, an additional display will also be fitted, as shown. The red LED indicates that the tow-hitch is OPEN. The green LED indicates that it is closed.



Certain manufacturers, such as Scania, have a reset switch for the tow-hitch's servo. This must be pressed to deactivate the warning for the tow-hitch after it has been locked. If it is not reset, the warning for the tow-hitch will remain active both on the LED panel, and in the driver's display.

Emergency Stop

In case of an emergency, such as a hydraulic leak or risk of injury, an emergency stop button is fitted to all vehicles.



Pressing the emergency stop button will stop all functions of the hooklift immediately. The button is usually placed below the steering wheel, in the cab.

To reset the emergency stop function, pull the button out, reset all functions to neutral, then switch off and restart the vehicle's engine.

Radio Controllers

A radio operated controller can be bought as an option for all hooklifts. These allow for operation of the hooklift remotely. The operator does not need to be in the vehicle to operate the hooklift.

The use of a radio controller allows the operator to have a good visual overview of the lifting operation. This can be beneficial in many aspects.

When the radio controller is active, the cab-controller, mounted inside the cab, can not be operated.

There are two types of radio controllers. One for electrical controlled hooklift systems, see *"Operation - Electrical Systems", on page 33*. And one for air controlled hooklift systems, see *"Operation - Air Systems", on page 37*.

Before Operation

Personnel must be trained in the use of radio controllers before being allowed to use them. Serious injury or damage to the environment can result if a radio controller is operated incorrectly.

The operator must make sure that they are fully aware of the surrounding environment and equipment.

The operator must be fully focused on the operation of the controller and lifting equipment. Do not operate the radio-controller when performing other tasks.

Make sure that a safe working distance of at least four meters exists around the lifting equipment. Failure to do so can lead to serious injury.

Do not leave a radio controller unattended. When the controller is not in use, make sure it is turned off.

Operation - Electrical Systems



Provided below is an overview of the radio controller for electrical controlled hooklift systems only. For information regarding radio controllers for air controlled systems, see *"Operation - Air Systems", on page 37*.

Operation of the hooklift is made using the main control buttons 1-12, as shown opposite.

Information regarding operation is displayed in the controller's display, located at the top of the controller.

Buttons 1–8 are analogue. Pressing these buttons harder will cause the operation that it controls to happen faster. Alternatively, these buttons can be set to simply have an ON/OFF function.

Buttons 9–12 are digital and used for simple functions, such as the operation of a spreader flap.

The buttons 1–12 are multi-functional. That is, they can have more than one function assigned to them. See *"Function Mode"* below.

Display

The display at the top of the controller displays information regarding the current function mode selected and the function currently activated. In the example shown, the truck symbol indicates that function mode_1 is selected and that the current function being operated is the hydraulic-lock.

LEDs

Each button has an LED located to the left or right of it. In the example shown, the LED to the left of button 2 is illuminated green. These LEDs are used to provide information regarding current status of the active operation. Listed below is table describing what each relevant LED means.

Table 11: LEDs and their meaning

Button LED	Green LED Meaning
2	Tip DOWN fully completed. Either lock or unlock the hydraulic-lock.
4	Extending Section fully retracted. The centre lock is open and it is possible to tip the body in shunting mode.
8	Hydraulic lock is OPEN. It is not possible to tip the body UP.
12	Funtion mode_2 elected.
11 & 12	Funtion mode_3 selected.

Emergency Stop

The large red emergency STOP button located at the bottom of the controller is used to stop the hooklift in an emergency. To activate it, simply push it in. It must be pulled out to start the controller.

Function Mode

Buttons 1–12 are multifunctional. They can have three functions assigned to them. These are related to the function mode selected for the controller (Function_1, Function_2, or Function_3).

To select the desired function mode, simply press button 12 after start-up of the controller. By default, Funtion mode_1 is operative at start-up. The LEDs next to buttons 11 and 12 indicate which function mode is operative, see *Table 11*, on page 34. If function mode 1 is active the LEDs for buttons 11 and 12 are not illuminated.

Listed below is an overview of the buttons and their functions in relation to which function mode has been selected.

Table 12: Radio controller functions for electrical operated systems

Button	Function_1 Setup	Function_2 Setup	Function_3*
1	Tip - UP	Trailer Tip - UP	Front Plough - UP*
2	Tip - DOWN	Trailer Tip - DOWN	Front Plough - DOWN*
3	Extending Section - OUT	Extra 1*	Front Plough - LEFT*
4	Extending-Section - IN	Extra 2*	Front plough - RIGHT*
5	Folding hook post - DOWN	Extra 3	Side Plough - UP*
6	Folding hook post - UP	Extra 4*	Side Plough - DOWN*
7	Hydraulic-lock - CLOSE	Spreader hatch - trailer*	Side Plough - IN*
8	Hydraulic-lock - OPEN	Extra 6*	Side Plough - OUT*
9	Spreader flap	Start motor*	Extra 7*
10	Automatic flap	Stop motor*	Extra 8*
11	Safety-hook (LA models)	--	--
12	Change function mode	Change function mode	Change function mode

*Extra option. Not standard equipment.

Start the Radio Controller

To start the radio controller, follow the procedure listed below:

1. Make sure that the STOP button is pulled out.
2. Press and hold down buttons 11 and 12 simultaneously until a bleep is heard.

3. Verify that the display turn ON.

Fast Operation

To operate the fast tip function, first make sure that the extending-section is fully retracted and the hydraulic lock is closed. Then simply press and hold button 4 down while operating the tip function. Note, the radio controller can not operate fast operation, when tipping down.

Axle Weight Reading



The radio controller can be used to provide an **approximate** value for the weight on an axle(s). Note, this is not a precise value and must be seen as an indication of the actual weight only.

JOAB AB disclaims all responsibility if a vehicle is over weight, even if the radio controller displays a value that is lower then the maximum allowed for the vehicle.

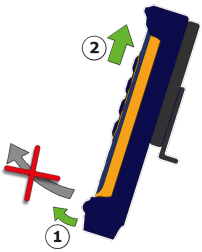
The value displayed in the radio controller will normally be within ± 150 kg.

To activate the axle weight mode, press button 12 repeatedly, until a weight scale is shown. To select which axles are included in the measurement, press the respective buttons: 2, 4, 6, and 8 corresponding to the axle(s) that are to be measured.

Each of the buttons (2, 4, 6, and 8) have two LEDs above them. These are used to show which axles are selected and the status of the axles. The right LED is illuminated red for axles that are selected, as shown. The left LED will blink red whenever an axle is 0–500 kg less than the maximum allowed weight. The left LED will constantly illuminate if an axle is over its allowed weight.

The LED above button 9 is used to indicate that it is the net weight that is displayed in the screen. When the net weight is displayed, the LED is lit red. To change between the net weight and the gross weight press button 9.

Charging



The charger for the radio controller is normally mounted next to the driver's A-post inside the cab. Alternatively, it is mounted in the driver's side toolbox, behind the door.

When not in use, always place the radio controller in its charger. This will ensure that it is always fully loaded and ready for operation.

To remove the radio controller from the charger, first pull the bottom out a *small amount*, approximately 10 mm, and then push the controller up, as shown.

Do not pull the controller out from the bottom. This will cause damage.

Operation - Air Systems

Provided below is an overview of the radio controller for air controlled hooklift systems.

Operation of the hooklift is made using the main control buttons 0-9, as shown opposite.



LEDs

There are three LEDs at the top of the controller. Two yellow (1 and 2) and one green (3). LEDs 1 and 2 indicate which function mode is selected, refer to *"Function Mode"* below.

LED 3 is lit green when the controller is active and red when the battery is low.

Emergency Stop

The large red emergency STOP button located at the bottom of the controller is used to stop the hooklift in an emergency. To activate it, simply push it in. It must be pulled out to start the controller.

Function Mode

LEDs 1 and 2 (yellow) indicate which mode the controller is in. Either Function_1 or Function_2.

Buttons 5–9 have the numbers 1 and 2 written on them and have two functions. These are related to the function mode selected for the controller (Function_1 or Function_2).

To select the desired function mode, simply press button 0 after start-up of the controller, until LED 1 or LED 2 is illuminated.

Listed below are the radio controller's buttons and their functions in relation to which function mode has been selected.

Table 13: Radio controller function for air operated systems

Button	Function_1 Setup	Function_2 Setup
1	Tip UP	Tip UP
2	Tip DOWN	Tip DOWN
3	Extending-Section - IN	Fast operation - TIP UP*
4	Extending-Section - OUT	Fast operation - TIP DOWN*

Table 13: Radio controller function for air operated systems (continued)

Button	Function_1 Setup	Function_2 Setup
5	Folding-hook-post - DOWN	Trailer - TIP UP
6	Folding-hook-post - UP	Trailer - TIP DOWN
7	Hydraulic-lock - OPEN	Spreader flap - VEHICLE
8	Hydraulic-lock - CLOSE	Spreader flap - TRAILER*
9	Safety-hook (LA models)	Automatic flap - VEHICLE*
0	Select Function mode	Select Function mode

* Extra option. Not standard equipment.

Start the Radio Controller

To start the radio controller, follow the procedure listed below:

1. Make sure that the STOP button is pulled out.
2. Press buttons 9 and 0 in for at least one second and then release them.
3. Verify that LED 3 is lit green. When lit the controller is active.

Fast Tip Operation

To use the fast tip operation , the extending-section must be fully retracted and the hydraulic lock activated. Simply press and hold button 3 down while operating the tip function to initiate fast operation.

Distributing a Load on a Body

The operator of the hooklift is responsible for handling it. Care must be taken to avoid injury or damage. Before operating the hooklift make sure that you have read and are fully aware of the warnings in this manual and on the hooklift.

Before lifting a body with a load, make sure that:

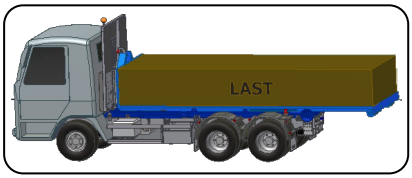
- The load does not exceed the hooklift's maximum lifting capacity.
- The load is evenly distributed.
- The lifting is done on a level ground.
- The body's support rollers rotate.



If a load is unevenly distributed, the lifting capacity can be reduced. For example, if the load is positioned at the front of the vehicle, the lifting capacity can be reduced by up to 40%.



Another important condition to consider is how long the body is. The length of the body and the load on it affect the lifting capability of the hooklift.



A short overhang causes an abnormal load. A correctly designed body for your chassis will distribute the load correctly.



The body must be covered if it contains loose material. There is a risk that loose material will be thrown off the vehicle if it is not covered.



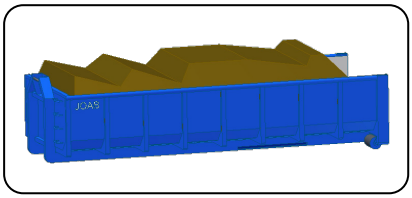
Loading a Body

The operator of the hooklift is responsible for handling it. Care must be taken to avoid injury or damage. Before operating the hooklift make sure that you have read and are fully aware of the warnings in this manual and on the hooklift.

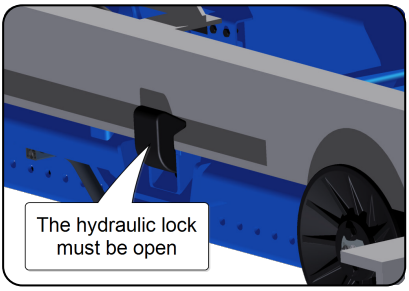
Before loading a body, refer to and read the information provided under *"Distributing a Load on a Body", on page 39*

To load a body, follow the procedure listed below:

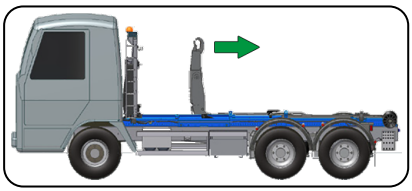
1. Visually inspect the load and make sure that it is evenly distributed.



2. Make sure that there is nobody within the working area of the vehicle and the body.
3. Start the hydraulic pump.
   - CBW controller – the pump icon is displayed at the top of the screen. See example.
   - LED display – the pump LED will illuminate. See example.
4. Open the hydraulic-lock.
   - CBW controller – the hydraulic-lock-open icon is displayed on the screen. See example.
   - LED display – the hydraulic lock's LED will illuminate red. See example.



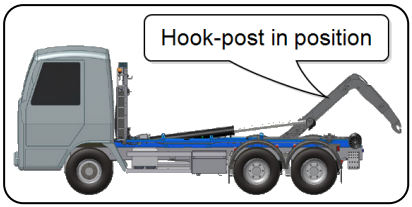
5. Operate the extending-section so that it retracts fully. The centre-lock will then open.
6. Check that the centre lock is open.
   - CBW controller – the centre-lock-open icon is displayed on the screen. See



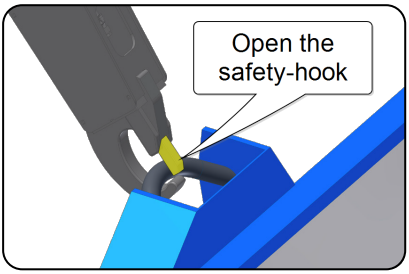
example.

- LED display – the centre-lock's LED will illuminate yellow. See example.

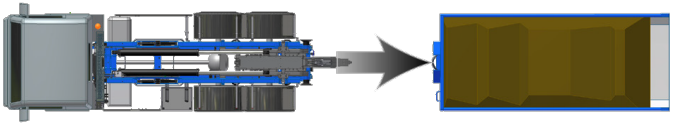
7. Operate the tip function so that the hook-post is in position ready for collecting the body.



8. LA models only:
   Before reversing towards the body's lifting-bracket, make sure that the safety-hook on the hook-post is open.



9. Reverse the vehicle towards the body aiming the hook-post at the centre of the body’s lifting bracket. Make sure to reverse straight towards the body. If the vehicle is not reversed straight towards the body, there is a risk of missing the rollers when loading the body.



10. Operate the extending-section as required and engage the hook-post with the body's lifting-bracket.

11. Inspect and verify that the hook is correctly engaged with the body's lifting bracket.

12. Use the tip function and lift the body. If the load is heavy or the body’s rollers are stuck in the underlying surface, reverse carefully at the same time as lifting.

LA Models only:
Use the folding-hook-post only when it is necessary, for example when a low pulling angle is required.



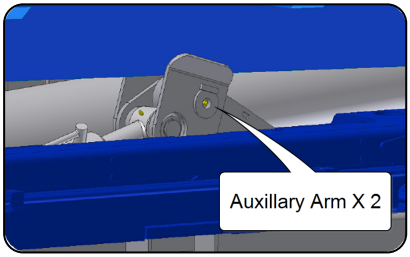
13. Load the body onto the hooklift and fully extend the extending-section. To facilitate loading, the vehicle must be in neutral and free to roll in under the body.



It is strictly forbidden to force or push the body up, especially with a heavy load. Do not use the underlying surface to force the body up onto the vehicle.

LA model only:
If the hook-post is lowered (down) when pulling the body onto the hooklift, make sure that the body does not make contact with the hooklift's carrier wheels. If the body contacts the carrier wheels the hook-post can break.

Use the auxiliary-arms, shown opposite, to help load the body and to reduce the friction between the hooklift and the body. To do this, simply tip the body up a small amount so that the auxiliary-arms are activated.



14. Visually inspect and verify that the body is correctly loaded.



15. Verify that the warning lamp/icon for the centre lock, in the cab, is no longer illuminated.

16. Activate the hydraulic lock.

17. Inspect and make sure that hydraulic-lock has correctly secured the body onto the hooklift and that its warning icon/lamp is no longer lit inside the cab.

18. Turn the hydraulic pump OFF.

Tipping a Body

The operator of the hooklift is responsible for handling it. Care must be taken to avoid injury or damage. Before operating the hooklift make sure that you have read and are fully aware of the warnings in this manual and on the hooklift.

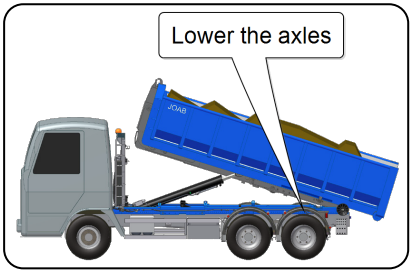
To tip a body follow the procedure listed below:

1. Make sure that there is nobody within the working area of the vehicle and the body.

2. Make sure that the vehicle is on a level and firm surface.

   Failure to do so, can lead to the vehicle being unevenly loaded and tipping over. If the vehicle leans two or more degrees there is a risk that it will tip over.

3. If the vehicle has retractable axles, make sure that they are lowered before tipping.

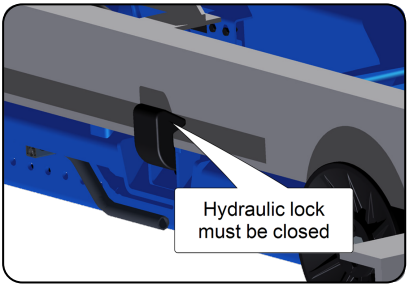


4. Start the hydraulic pump.

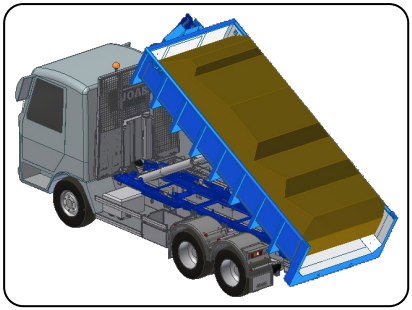
   - CBW controller – the pump icon is displayed at the top of the screen. See example.
   - LED display – the pump LED will illuminate. See example.

5. Inspect and make sure that the body is secured with the hydraulic lock. The hydraulic lock **must** be closed.

   Verify that the warning in the cab, indicating that the hydraulic-lock is open is **not active.**



6. Use the cab controller and tip the load.



7. After tipping, lower the body back to its retracted position.

   To prevent wear, do not drive the vehicle with the body raised. This also applies to short journeys.



8. Turn the hydraulic pump OFF.

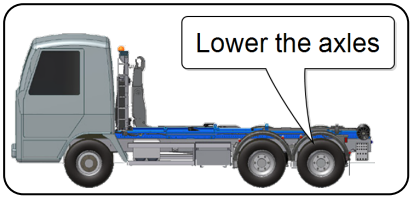
Shunting a Body

The operator of the hooklift is responsible for handling it. Care must be taken to avoid injury or damage. Before operating the hooklift make sure that you have read and are fully aware of the warnings in this manual and on the hooklift.

To shunt a body from a trailer follow the procedure listed below:

1. Make sure that there is nobody within the working area of the vehicle and the body.

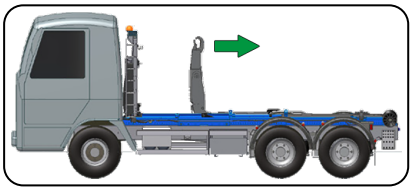
2. If the vehicle has retractable axles, make sure that they are lowered.



3. Start the hydraulic pump.
   - CBW controller – the pump icon is displayed at the top of the screen. See example.
   - LED display – the pump LED will illuminate. See example.

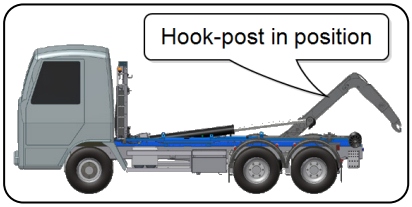
4. Open the hydraulic-lock.

5. Operate the extending-section so that it fully retracts and the hook is moved outwards, as shown. The centre-lock will then open.

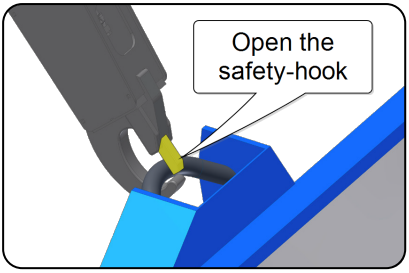


6. Verify that the centre lock is open.
   - CBW controller – the centre-lock-open icon is displayed on the screen. See example.
   - LED display – the centre-lock's LED will illuminate yellow. See example.

7. Activate the tip function so that the hooklift is in position ready to collect the body, as shown.



8. **LA Model only:**
   Make sure that the safety-hook on the hook-post is open.



9. Reverse the vehicle as straight and as close as possible towards the trailer. Make sure not to damage to the trailer's tow-bar.



10. Use the extending-section and engage the hook-post with the body's lifting-bracket.

11. Inspect and verify that the hook-post is correctly engaged with the body's bracket.

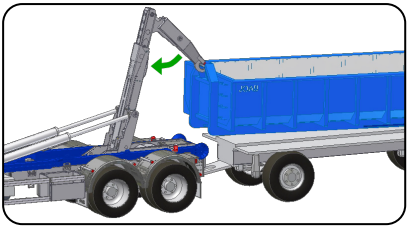
12. Use the tip function and pull the body from the trailer onto the hooklift.

    Do not extend the extending-section as this places greater loads on the hooklift. Keep the extending-section retracted as much as possible. This will ensure optimal lifting force.

    Do not retract the hooklift's extending-section when the trailer's suspension springs are compressed.

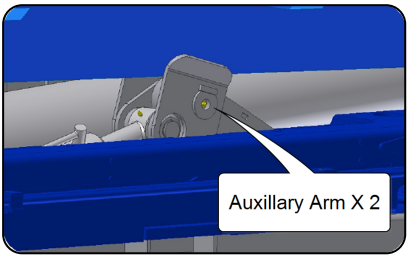


For LA models only:
Use the folding-hook-post, where necessary, to reduce the loading angle when pulling the body onto the vehicle.



13. Make sure that the tipping cylinders are fully retracted and then extend the extending-section so that the body is completely loaded onto the hooklift.

    Use the auxiliary-arms, shown opposite, to help load the body and to reduce the friction between the hooklift and the body. To do this, simply tip the body up a small amount so that the auxiliary-arms are activated.



14. Visually inspect and verify that the body is correctly loaded.

15. Verify that the warning lamp/icon for the centre lock, in the cab, is no longer illuminated.

16. Activate the hydraulic-lock.

17. Inspect and make sure that hydraulic-lock has correctly secured the body onto the hooklift.

18. Turn the hydraulic pump OFF.

Risk of Damage

The tip-cylinder's pistons can break or other damage can occur when shunting a body between a vehicle and a trailer. Care must be taken to avoid damage when shunting a body between a vehicle and a trailer.

Forcing the hook-eye, on the hook-post, against the top of the body's bracket when a body sits on the trailer, can lead to damage. This is due to the fact that the trailer and the vehicle act as a rigid unit.



As the force to the tipp-cylinders increases, the vehicle will lift. It is not possible constrain this. The trailer on the other hand acts against this force, since it is connected to the vehicle. If the force to the tip cylinders is increased above 195 bar, it will eventually cause damage.

To prevent the tip-cylinder's pistons from breaking or causing other damage, the force applied to the tip cylinders should be restricted to 195 bar. A pressure relief valve can be installed to minimise this risk. A pressure relief vale is installed as standard on L26 models.

For further information, contact JOAB.

Unloading a Body

The operator of the hooklift is responsible for handling it. Care must be taken to avoid injury or damage. Before operating the hooklift make sure that you have read and are fully aware of the warnings in this manual and on the hooklift.

Before unloading a body, refer to and read *"Distributing a Load on a Body", on page 39*

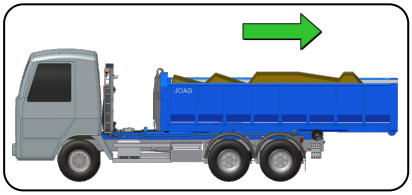
To unload a body, follow the procedure listed below:

1. Make sure that there is nobody within the working area of the vehicle and the body.

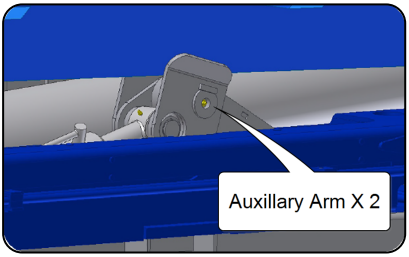
2. Start the hydraulic pump.
   - CBW controller – the pump icon is displayed at the top of the screen. See example.
   - LED display – the pump LED will illuminate. See example.

3. Open the hydraulic-lock.
   - CBW controller – the hydraulic-lock-open icon is displayed on the screen. See example.
   - LED display – the hydraulic lock's LED will illuminate red. See example.

4. Operate the extending-section so that it fully retracts and the body is moved outwards, as shown. The centre-lock will then open.



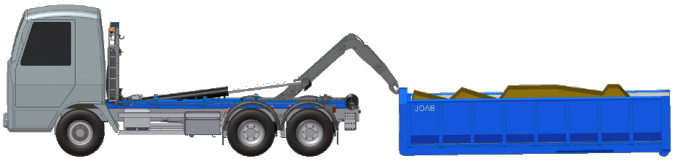
Use the auxiliary-arms to reduce the friction between the hooklift and the body. To do this, simply tip the body up a small amount to activate the auxiliary-arms.



5. Verify that the centre lock is open.
   - CBW controller – the centre-lock-open icon is displayed on the screen. See example.
   - LED display – the centre-lock's LED will illuminate yellow. See example.

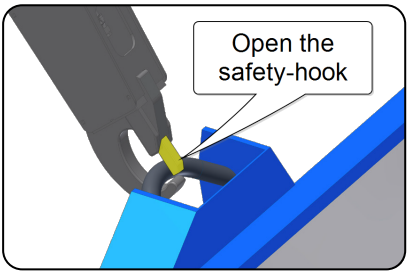
6. Activate the tipping function and allow the body to roll freely onto the ground. Alternatively, let the vehicle roll forwards.

   LA Models only:
   If necessary, use the folding hook post to assist the unloading procedure. For example, when a low unloading angle is required.



7. Operate the extending-section and make sure that the hooklift's hook is free from the body's lifting-bracket.

   LA models only:
   Make sure that the safety catch has been released first.



8. Operate the hooklift and return it to its normal position on the vehicle.

9. Stop the hydraulic-pump.

Service and Maintenance

To prevent unnecessary wear, it is important to maintain the hooklift continuously. Provided below is information regarding daily maintenance and servicing.

Daily Maintenance

Daily care, which only takes a few minutes, can prolong the service life of your hooklift.

Provided below are some daily steps to help maintain the hooklift.

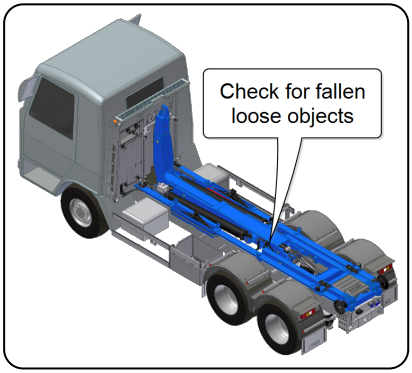
1. Check the oil level.

2. Make sure that there are no trapped pipes or hoses. And that they are free from damage or leaks.

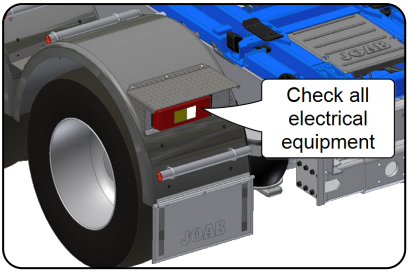


3. Make sure that there are no fallen objects in between the hooklift's different parts.

4. Check that the hooklift is free from deformation and cracks.

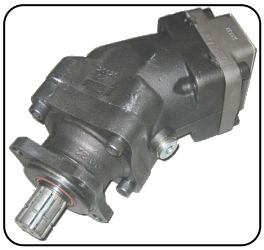


5. Verify that all lighting and other electrical equipment functions correctly.



6. Finish by inspecting the hydraulic pump.

   If any damage is found, contact your JOAB workshop immediately.



Washing the Hooklift

Newly lacquered surfaces must be cleaned using detergent and a sponge only. Do not use a high pressure washer. A high pressure washer should only be used after at least three weeks following treatment of surfaces.

Detergents contain acids. Make sure that the cleaning fluid used to clean surfaces contains less than 9pH. The maximum temperature of the cleaning fluid must not exceed 50 °C above the ambient temperature. After washing, make sure to rinse all surfaces thoroughly.



Cleaning the hooklift with a high pressure washer entails risks. All electrical components, even enclosed, are sensitive to water under high pressure.

When using a high pressure washer, make sure to hold the nozzle at least 45 cm from all lacquered surfaces. Use a standard nozzle only, do not use a turbo nozzle.

Always apply fresh grease around lubrication points after washing. For more information regarding the hooklift's lubrication points, refer to below.

Lubrication Points

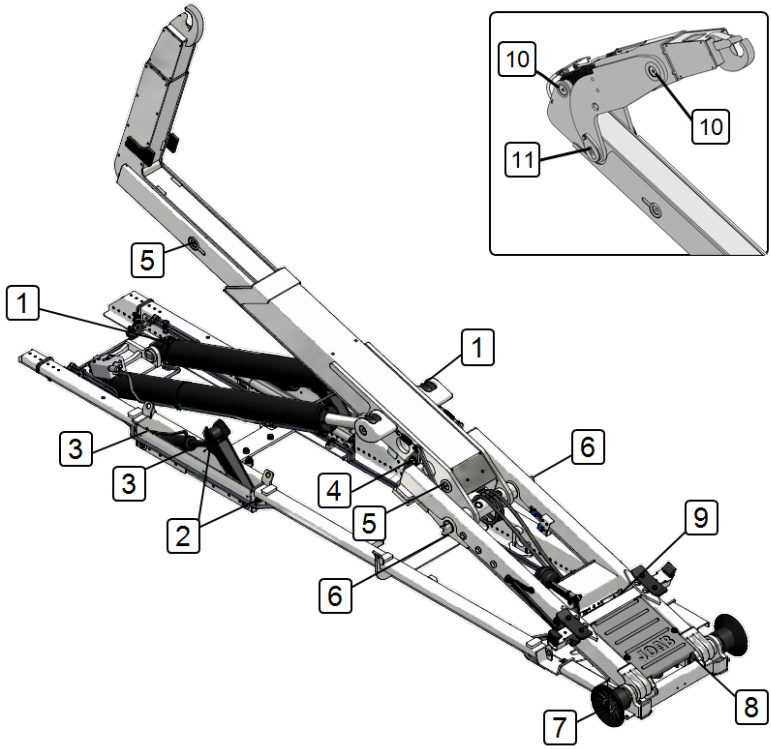
The following image highlights the locations on the hooklift that shall be kept lubricated.

Hooklift L

1. Tip-cylinder (x 4)
2. Auxiliary-lift-arm (x 4)
3. Auxillary-lift-cylinder (x 4)
4. Centre-lock (x 2)
5. Extending-section cylinder (x 2)
6. Shunting-pivot (x2)
7. Rollers (x 2)
8. Tip-pivot (x 2)
9. Hydraulic-lock-cylinder (x 2)

Hooklift LA (optional)

10. Hook-post-cylinder (X 2)
11. Hook-post axle (X 2)



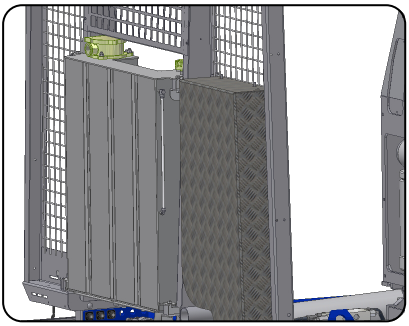
Maintenance of the lubrication points on the hooklift should normally follow the vehicle's maintenance scheme for lubrication. However, the hooklift's lubrication points must be maintained after every 75 hours of operation.

If the vehicle is equipped with a central lubrication system, it is important to ensure that it functions correctly after every 75 hours. And in addition, any lubrication points that are not included in the central system are maintained.

Use grease type: NLGI 0 or thicker when a central greasing system is employed. Bearings with a high load, such as those in the rollers, must use a higher grease viscosity than normal.

Do not apply grease or oil onto the guide rails.

Service of the Hooklift



During normal operation, it is recommended that the oil is changed as follows:

- Mineral oil – once every two years
- Green oil – once every year

JOAB recommends that the oil is changed during the autumn period.

If green oil is used for the system, always use the same type of oil and manufacturer of the oil.

The oil-filter must be changed after the first fifty hours of operation, then every year after that.

The air-filter should be replaced at least once every two years, or more often, as required.

Service-Reminder Sticker

A JOAB service sticker is placed on the inside of the drivers door to indicate when the hooklift is due for its next service. In the example shown opposite, the numbers around the outside represent the months January to December.



As the month numbered 1 (January) is missing from the sticker, this indicates that the next service is due during the month of January. Make sure that the hooklift is serviced in accordance with the sticker.

Torquing of Fasteners

All fasteners on the hooklift shall be re-torqued after 5000 km of operation. Vertical pendulum-bolts shall be re-torqued to 40 Nm. All other bolts shall be torqued as stated below.

Table 14: Torque values for fasteners

Threads	Torque 8.8	Torque 10,9
M8	24 Nm	33 Nm
M10	47 Nm	65 Nm
M12	81 Nm	114 Nm
M14	128 Nm	181 Nm
M16	197 Nm	277 Nm
M18	275 Nm	386 Nm
M20	385 Nm	541 Nm
M24	518 Nm	935 Nm

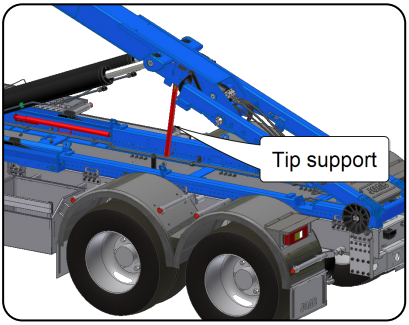
Working on the Hooklift

Before working on a raised hooklift the body must be removed from the hooklift. And the tip-supports must be in place to support the hooklift. Failure to do so, can lead to serious injury or death.

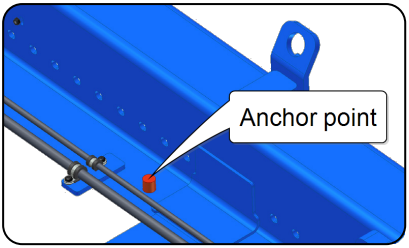
The hooklift is equipped with two tip-supports, as shown and described below.

These are used when working on the hooklift. They support the hooklift when it is raised and act as a safety measure in the event there is a hydraulic failure.

Shown opposite is the location for storing the tip-supports (shown in red) and the correct placement of them when used to support the hooklift.



The tip-supports are anchored onto the hooklift using two red anchor points, as shown opposite. Locate these on the hooklift and place the tip-support between them, as shown above, before working on a hooklift.



Technical Data

Specifications of the hooklift are provided below.

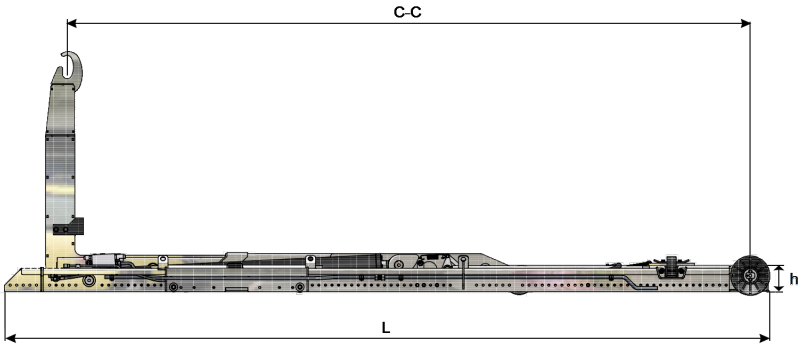


Table 15: Specifications (L Series)

Specification - L series	Value
Oil pressure	240 bar - 290 bar
Recommended oil flow	100 l/min
Maximum load capacity*	17 – 26 ton
Maximum tip angle	47º – 63º
Weight (Kg)*	1950 kg – 2600 kg
Distance between the hook and rollers (C-C)	4800 mm – 6150 mm
Total length (L) of the hooklift	5240 mm – 6740 mm
Height (h)*	196 mm – 198 mm

*Dependent upon model

Fault Tracing the Hooklift

Provided below is a simple troubleshooting guide that can help to identify the most common faults with a hooklift.

Table 16: Fault tracing the hooklift

Fault	Cause	Action
• Noise from pump.	1. The pump is sucking air. 2. Incorrect amount of oil. 3. The pump is defective	1. Check connections. 2. Adjust the amount of oil. 3. Replace the pump.
• Nothing works	1. Emergency stop is activated 2. Fuse/relay blown	1. Switch off the engine, pull out the emergency stop, and restart. 2. Replace the fuse/relay
• Noise from cylinders • Jerky hydraulic movement. • Oil sprays from the tank.	1. The piston rod is defective 2. Air in the hydraulic system. 3. Valve or piston fault in pump. 4. Tank oil level too high or low. 5. Pump draws air. 6. The tank's air filter is blocked.	1. Replace the piston rod. 2. Check that the suction line is sealed. 3. Service or replace the pump. 4. Regulate the oil level. 5. Service or replace the pump. 6. Replace the filter.
• Poor lifting capacity	1. Insufficient amount of oil to the pump 2. Oil pressure too low. 3. Leaking cylinder gaskets.	1. Check the oil level. 2. Contact JOAB. 3. Replace the cylinder gaskets.
• Controller electric levers jam.	1. Chain lock/lever jams. 2. Spring set for air cyl broken. 3. Electric solenoid jams.	1. Remove, lubricate, and reinstall 2. Replace spring set 3. Clean the solenoid. If necessary, replace it.

Error Codes

The following information list error codes that are displayed for vehicles that have a built in cab display. This is not applicable for vehicles that do not have a built in cab display.

Table 17: Hooklift error codes

Trace Signal ID	Error Message	Action
1000	Hydraulic Oil - Low Level	Check the hydraulic oil level for the hooklift and fill as required. Do not operate the hooklift with a low level of oil.
1001	Joystick - Center value error	The control stick for the hooklift does not return to its central (neutral) position. This can lead to unexpected signals from the control stick and unintentional hooklift operations. Restart the vehicle. If the problem persists, contact JOAB for advice. See *"Contact Information", on page 67*
1002	Hookloader not in transport position	The hooklift is not fully retracted and locked. Stop the vehicle and make sure that the hooklift is fully retracted and locked before driving. Do not drive the vehicle when the hooklift is raised or unsecured. Driving a vehicle with a raised or unsecured load can lead to serious injury or environmental damage.
1003	Warning beacon light error	The warning beacon for the hooklift is not working. Check and replace the bulb/LED, if necessary. If the beacon still fails to work contact JOAB for assistance. See *"Contact Information", on page 67*
1004	Valve Error - Pump Unloading Valve	The main pressure relief valve for the pump is not working within its normal range. This is a safety function. Do not operate the hooklift.

Table 17: hooklift error codes (continued)

Trace Signal ID	Error Message	Action
		Restart the vehicle. If the problem persists turn the hooklift off and contact JOAB for advice. See *"Contact Information", on page 67*

Safety Warnings

The hooklift has a number of safety labels attached to it, as shown below. It is important to read and adhere to these warnings. Failure to do so can lead to serious injury or damage to equipment.

Make sure that the labels are in good condition. If necessary, new safety labels can be ordered from JOAB.

Safe Working Distance

Make sure that there are no unauthorised persons in close proximity of the hooklift's working area. The risk zone is 8 metres in all directions of the hooklift and body.



Working on the Hooklift

Never work under a hooklift without the use of the tip-supports. Make sure that the body is removed from the hooklift and that the tip-supports are mounted correctly so that they support the hooklift, before carrying out any work.



Refer also to *"Working on the hooklift", on page 57*

Risk of Slipping

Be aware when operating the hooklift that there may be a risk of slipping, that could lead to injury.



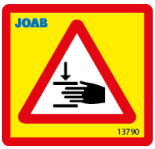
Suspended Loads

Do not stand or walk underneath a suspended load. If a suspended load breaks free it can lead to serious injury or death.



Risk of being Trapped

Be aware that there is a serious risk of becoming trapped when operating the hooklift. Always verify that there is no risk of anyone becoming trapped or injured before operating the hooklift.



Extended-Tipping-Cylinders

Before using the emergency operation function, check and verify if the hooklift is equipped with extended-tip-cylinders.

Warning! It is not possible to operate the tip cylinders to their bottom position with a full stroke. The piston-rods will clash with the back part. 1009124



It is the responsibility of the operator to make sure that they are aware of which safety precautions apply. Failure to do so can lead to serious injury or damage to the equipment and environment.

Contact Information

Information	Details
Address	JOAB Försäljnings AB Östergärde Industriområde 417 29 Göteborg Sweden
Telephone:	031-705 06 00
Tel fax:	031-705 06 09
E-mail:	info@joab.se
Website:	www.joab.se

Service and Warranty

For contact information regarding service or warranty, refer to the table below. Always have the information provided on the manufacture plate ready before making contact.

Table 18: Service packets

Department	Contact Details
Service workshop	031 7050 687
Spare Parts	031-7050 686
Technical Support	031-7050 688
Warranty	031-7050 717
Body Builder Support	031 7050 705

Visit our website: www.joab.se to order spare parts and find your nearest JOAB authorised workshop.