

## Operation and Maintenance Manual for Skip-Loaders VL10 – VL18

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# JOAB

# Table of Contents

<b>Introduction</b> .....	<b>v</b>
<b>About the Skip-Loader</b> .....	<b>1</b>
Correct Usage .....	1
Skip-Loader Components .....	3
Extra Options .....	4
General Description .....	4
Manufacture Plate .....	4
Design .....	5
<b>Safety</b> .....	<b>7</b>
<b>Operation</b> .....	<b>9</b>
Hydraulic Pump .....	9
Trailer Warning Lights .....	9
Skip Loader Controls .....	10
Tipping-Hook Controller .....	10
Emergency Stop .....	10
Extra Options – Operation .....	11
Extending-Body .....	11
Cab Mounted Controller .....	11
Safety-Wires .....	11
Rotator .....	12
Radio Controller .....	12
<b>Radio Controller</b> .....	<b>13</b>
Before Operation .....	13
Operation .....	13
LEDs .....	13
Emergency Stop .....	14
Function Mode .....	14
Start the Radio Controller .....	15
<b>Loading a Skip</b> .....	<b>17</b>
<b>Tipping a Skip</b> .....	<b>21</b>
<b>Unloading a Skip</b> .....	<b>25</b>
<b>Handling Double Skips</b> .....	<b>27</b>
<b>High-Tipping-Chains</b> .....	<b>29</b>
<b>Service and Maintenance</b> .....	<b>31</b>
Daily Maintenance .....	31

Washing the Skip-Loader ..... 32

Lubrication Points ..... 33

Service of the Skip-Loader ..... 34

    Service-Reminder Sticker ..... 34

    Service Packets and Warranty ..... 34

**Technical Data ..... 37**

General Information ..... 37

**Fault Tracing the Skip-Loader ..... 39**

**Safety Warnings ..... 41**

**Contact Information ..... 43**

Service and Warranty Claims ..... 43

# Introduction

This manual explains how to operate and maintain your skip-loader. 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 skip-loader, we recommend reading this manual carefully.

This manual also contains information regarding fault tracing, lubrication, and servicing of your skip-loader. 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 skip-loader as this can affect its structural properties. If a modification is required, contact JOAB for advice before making a modification to the skip-loader.

After receiving the skip-loader, 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 skip-loaders 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 skip-loaders, lift dumpers, and the Hookmaster.

Always bear in mind that it is the operator that is responsible for handling the skip-loader.

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# About the Skip-Loader

JOAB's skip-loaders 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 skip-loader.

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

Mounting the skip-loader onto a vehicle that has not been specifically designed for the purpose of carrying a skip-loader 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 arm system extended.



Make sure that the support legs are lowered before lifting a skip.



If the skip becomes stuck, observe caution.  
The skip-loader can be damaged.



Do not use the skip-loader for any other purpose than its intended use.

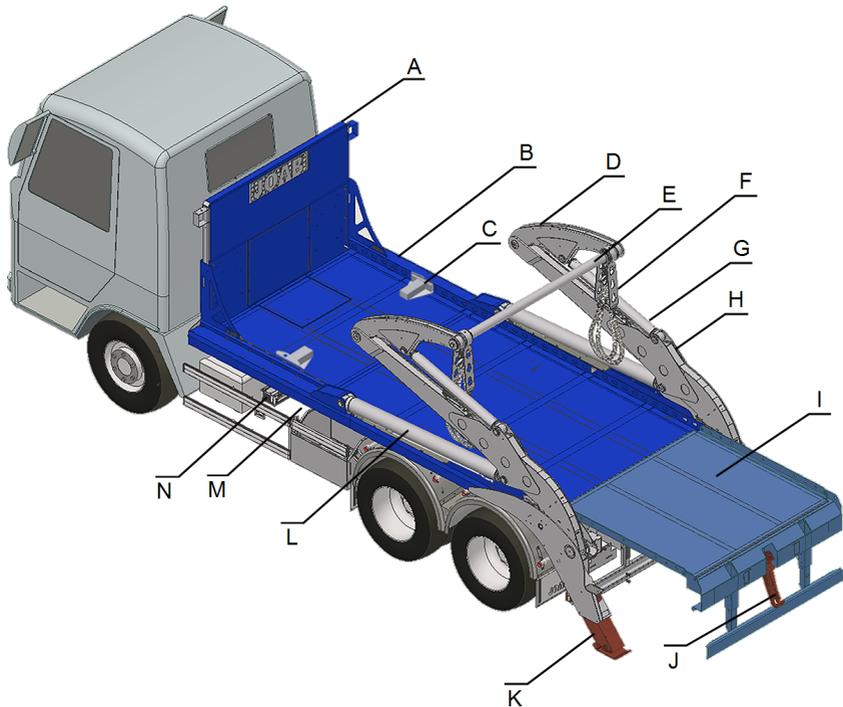


Make sure that the vehicle and the skip have the same angle of tilt.

## Skip-Loader Components

The main components of a skip-loader are listed and shown below. Some parts shown in the image are optional extras. These are marked with an asterisk (\*)

- |                              |                                    |
|------------------------------|------------------------------------|
| A. Bulk head                 | H. Lifting-arm                     |
| B. Safety-wire controls*     | I. Extending body*                 |
| C. Container-stop            | J. Tipping-hook*                   |
| D. Folding-arm               | K. Support leg (X2)                |
| E. Boom pipe                 | L. Lifting-arm cylinder            |
| F. Lifting chains and plates | M. Skip-loader controller          |
| G. Folding-arm cylinder      | N. Tipping-hook and rpm controller |



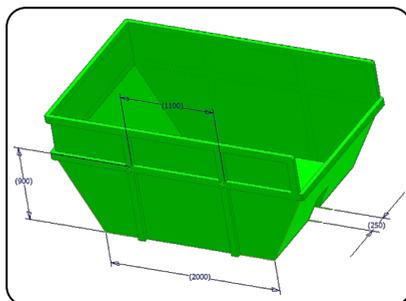
## Extra Options

A number of options are available when purchasing a skip-loader. These options are listed below. For more information see also *"Extra Options – Operation"*, on page 11

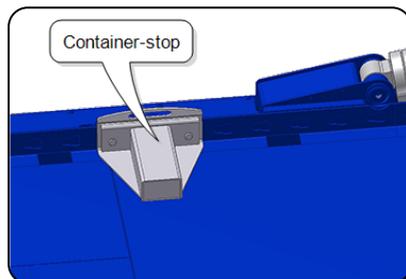
1. Extending-body
2. Cab mounted controller
3. Rotator (rotates the skip)
4. Safety-wire system
5. Radio controller

## General Description

JOAB's skip-loaders are designed to transport skips that are manufactured according to the Swedish standard SS 3020.



JOAB's skip-loaders are equipped with container-stops, as shown opposite (see also *"Skip-Loader Components"*, on page 3). These are used to limit a skip's movement and are adjustable. They can be positioned to accommodate different types of skip.



## Manufacture Plate

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

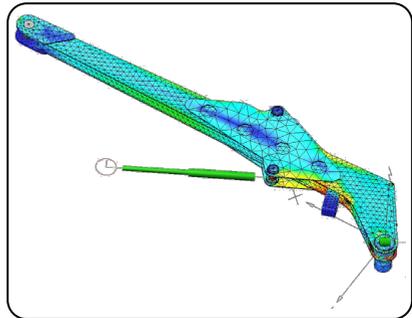


In addition to the manufacture plate, the manufacture number is also stamped onto the lifting cylinder's fastening point, as shown.



## Design

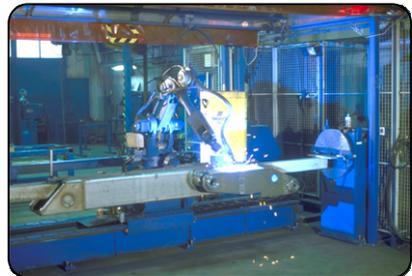
JOAB's products are subjected to demanding tasks and must be of the highest quality. All of JOAB's components and constructions are thoroughly tested. Simulations for calculating: load capacity, durability, and service life are performed on all components.



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.



# 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 41.

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

Before operating the skip-loader make sure that there is a safe working distance around the vehicle and equipment. Do not stand anywhere near the skip-loader and equipment when it is being operated.



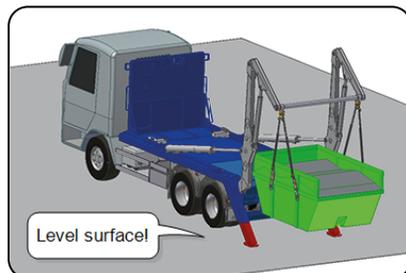
Never work around the lifting equipment when a controller is active. Turn all operating devices OFF before working around the skip-loader and lifting equipment.

If a radio controller or other operating equipment is active there is a risk that the skip-loader is accidentally activated when working around the lifting equipment. This in turn can lead to serious injury or death.

Every day, before operation of the skip-loader, perform a daily inspection of the vehicle as described under "Daily Maintenance", on page 31.

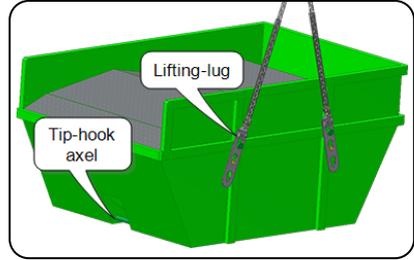


Always make sure that the vehicle is on a level and firm surface before operating the skip-loader. Failure to do so can cause the vehicle to become unevenly loaded and lead to it tipping over. If the vehicle leans two or more degrees there is a risk that it will tip over.



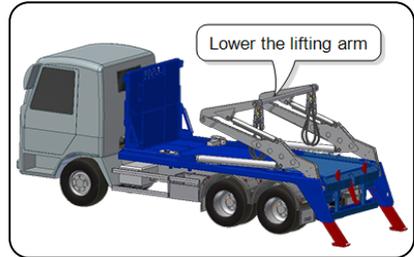
Before collecting a skip, always inspect and verify that its lifting-lugs and tipping-hook axle are free from damage. Do not lift a skip that has damage.

Certain models are equipped with lifting plates that have a safety catch. Always make sure that these are locked before lifting a skip.



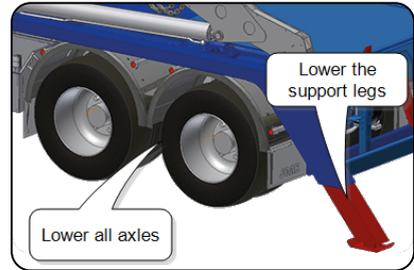
Do not drive a vehicle with the lifting-arm or the folding-arm raised. Make sure that they are lowered before driving the vehicle.

There is a serious risk of colliding with electrical wiring or similar when the lifting-arm is raised. In addition, there is a risk of tipping over!



Lower all of the vehicle's axles before handling a skip. Do not handle a skip with the vehicle's axles lifted.

Before lifting a skip, always make sure that the support legs are lowered.



If an oil leakage occurs in the skip-loaders hydraulic system, activate the emergency stop immediately to prevent as much oil spillage as possible. See "*Emergency Stop*", on page 10 for information regarding its operation.

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

# Operation

Operation of the skip-loader is controlled using a set of hydraulic levers and control switches. This standard equipment is mounted on the front-left-hand-side of the chassis. See "*Skip-Loader Components*", on page 3. Provided below is a description of this equipment.

It is also possible to order optional equipment for the skip-loader, such as a cab mounted controller. For more information, refer to "*Extra Options – Operation*", on page 11.

## Hydraulic Pump

The skip-loader is fed with a hydraulic supply that must be activated in order to operate the skip-loader. A small JOAB LED panel and a button for activating the hydraulic pump are normally mounted on the driver's dashboard for this purpose, as shown opposite. The appearance of the pump button will look different for different vehicle manufacturers.



The driver should familiarize themselves with which buttons and lamps are actual for the operation of the hydraulic pump.

The right button is used to start and stop the hydraulic pump. When active, the pump LED will illuminate red on the left LED panel. For some vehicles a warning will also be displayed in the driver's dashboard. This is dependent upon the manufacturer of the vehicle.

## Trailer Warning 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.

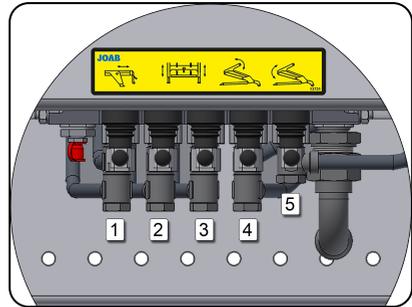


## Skip Loader Controls

The skip-loader is controlled using five hydraulic levers, as shown opposite.

A label above the levers clearly indicates what each lever does, as described below. The levers have two functions, up and down, to extend and retract.

1. Extending-body
2. Left support-leg
3. Right support-leg
4. Folding-arm
5. Lifting-arm

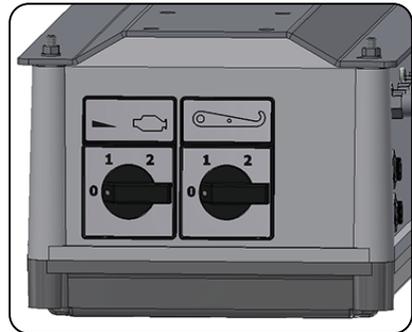


## Tipping-Hook Controller

The controller for the tipping-hook, shown opposite, is located to the left of the skip-loader controls, see "*Skip-Loader Components*", on page 3. This is used to both operate the tipping-hook and adjust the engine's rpm.

The left knob controls the engine's rpm. Position 1 increases the engine's rpm to 800 rpm. Position 2 increases the rpm to approximately 1200 rpm. These settings can be set to different values, if required, during manufacture.

The right knob controls the tipping-hook. Position 1 activates the tipping-hook.



## 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 that have a cab mounted controller.



Pressing the emergency stop button will stop all functions of the skip-loader 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 – Operation

A number of options are available for the skip-loaders. Operation of these options is described below.

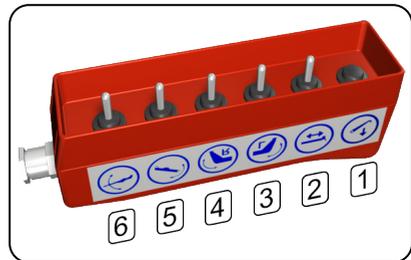
### Extending-Body

Skip-loaders can be ordered with an extending-body. These allow for two skips to be transported on the same skip-loader. Operation of the extending-body is done using either the standard controls on the chassis or a cab mounted controller, as shown below. For more information about the extending-body and the handling of two skips, see *"Handling Double Skips"*, on page 27.

### Cab Mounted Controller

The cab mounted controller, shown opposite, is used for operating both the skip-loader and the tipping-hook. Each switch is clearly labelled with its function and is used to both extend and retract. The switches have the following functions

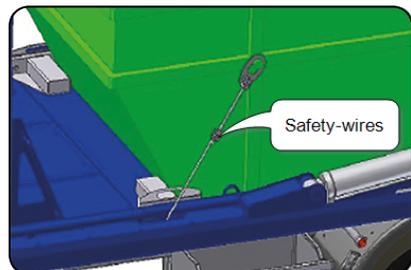
1. Tipping-hook
2. Extending-body
3. Left support-leg
4. Right support-leg
5. Folding-arm
6. Lifting-arm



### Safety-Wires

All skips must be properly secured onto the vehicle before driving. This can be done using manually placed securing equipment, such as chains. Alternatively, JOAB's hydraulic safety-wire system can be purchased. JOAB's safety-wire system is built into the skip-loader and allows for fast and secure fastening of a skip(s) onto the vehicle.

The safety-wire system is primarily intended to be operated using JOAB's radio controller. This gives the operator the benefit of a good visual overview and ease of use.

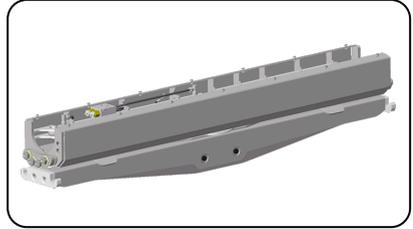


It is also possible to operate the safety-wire system using the standard fitted controls. These are located on the front-right-hand side of the chassis, see *"Skip-Loader Components"*, on page 3. There is a lever for activating each safety wire. These allow the operator to extend and retract the safety-wires.

## Rotator

A rotator can be purchased for skip-loaders. This makes it possible to rotate a skip 270 degrees when suspended from the lifting-arm. The rotator is mounted onto the skip-loader's boom-pipe (see *"Skip-Loader Components"*, on page 3).

Operation of the rotator is done using a switch that is located next to the Skip-Loader controller. The switch can be turned right and left which corresponds to the rotation of the rotator, clock-wise or anti-clock-wise. It is also possible to operate the rotator using a radio controller.



## Radio Controller

A radio controller can be purchased as an option for skip-loaders. This allows for remote operation of the skip-loader and safety-wire system, where applicable. The driver does not need to stand beside the standard controls to operate the skip-loader. For information specific to the use of JOAB's radio controller, refer to *"Radio Controller"*, on page 13.

# Radio Controller

A radio operated controller can be bought as an option for all skip-loaders. These allow for operation of the skip-loader remotely. The operator does not need to stand at the external controls to operate the skip-loader.

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.

## 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 ten 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

Provided below is an overview of the radio controller for skip-loaders.

Operation of the skip-loader 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 skip-loader 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. Function\_1, Function\_2, or Function\_1+2.

Buttons 1 – 8 have more than one function. These are related to the function mode selected for the controller (Function\_1, Function\_2, or Function\_1+2).

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

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

Table 1: Radio controller function for skip-loaders

Button	Func_1	Func_2	Func_1+2*
1	Lifting-arm UP	Lifting-arm UP	Front-left-safety-wire - Release*
2	Lifting-arm DOWN	Lifting-arm DOWN	Front-left-safety-wire - Tighten*
3	Folding-arm - UP	Folding-arm - UP	Front-right-safety-wire - Release*
4	Folding-arm - DOWN	Folding-arm - DOWN	Front-right-safety-wire - Tighten*
5	Left support-leg - DOWN	Left support-leg - DOWN	Rear-right-safety-wire - Release*
6	Left support-leg - UP	Left support-leg - UP	Rear left-safety-wire - Tighten*
7	Right support-leg - DOWN	Right support-leg - DOWN	Rear left safety-wire - Release*

Table 1: Radio controller function for skip-loaders (continued)

Button	Func._1	Func._2	Func._1+2*
8	Right support-leg - UP	Right support-leg - UP	Rear-right-safety-wire - Tighten*
9	Tipping-hook - UP and DOWN	--	--
0	Switch Function mode	Switch Function mode	Switch 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.



# Loading a Skip



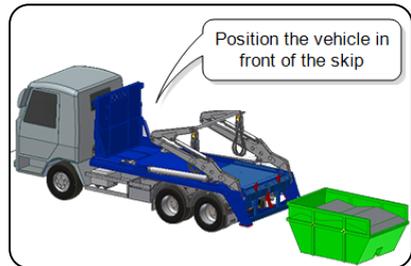
The operator of the skip-loader is responsible for handling it. Care must be taken to avoid injury or damage. Before operating the skip-loader make sure that you have read and are fully aware of the warnings in this manual and on the skip-loader.

To load a skip, follow the procedure listed below.

1. Make sure that there is nobody within the working area of the skip-loader.



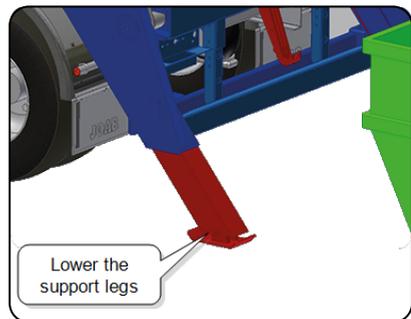
2. Position the vehicle in front of the skip so that it is centred and parallel to the skip, as shown.



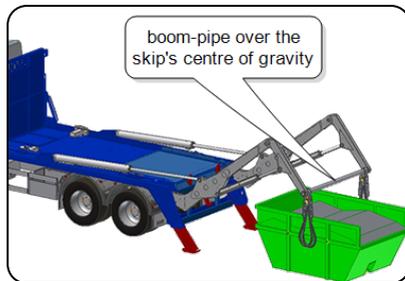
3. Apply the vehicle's parking brake.
4. Lower the vehicle's axles.
5. Turn the hydraulic pump ON. See "Hydraulic Pump", on page 9.

6. Activate both support-legs and lower them. Verify that they are placed firmly and secure on the ground.

If necessary, place supports under the support legs so that they do not sink into the ground.

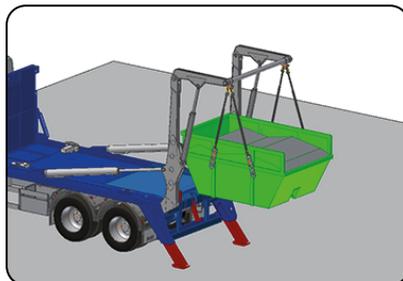


7. Tip the lifting-arm so that the lifting-plates hang over the skip as shown.
8. Use the folding-arm and ensure that the boom-pipe is positioned so that it is over the skip's center of gravity.
9. Connect the lifting-plates onto the skip. Verify that they are connected properly.



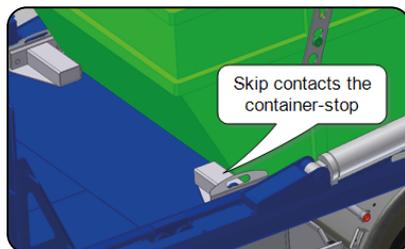
10. Use the lifting-arm and lift the skip onto the skip-loader, as shown.  
  
Use the folding-arm to ensure that the skip moves freely from the back of the skip-loader towards the front of it.

*Be careful when using the skip-loader. The skip can become damaged if the skip-loader is not used properly.*



11. Use the lifting-arm to ensure that the skip is positioned so that it butts up against the container-stops.

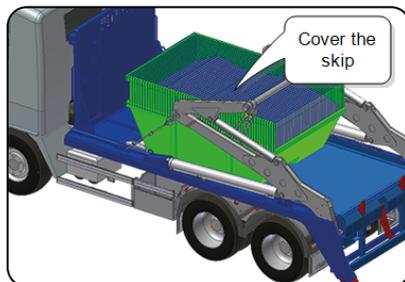
If necessary, the container-stops can be adjusted to fit different size skips.



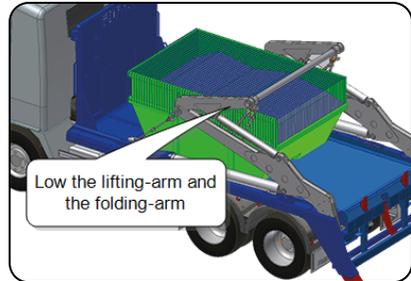
12. Cover the skip so that there is no risk of objects flying off when driving the vehicle.

**NOTE:** Do not drive the vehicle with a loaded skip that is uncovered. Loose objects can fly off the vehicle and cause serious damage to the environment or other drivers.

The driver of the vehicle is responsible for the safety of other drivers and the environment.



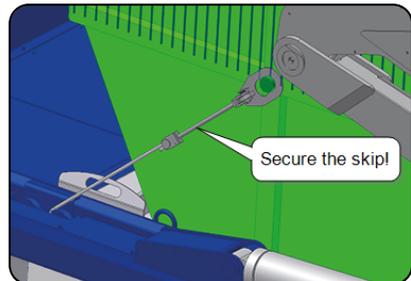
13. Fully lower the lifting-arm and the folding-arm. Do not drive the vehicle with the lifting-arm or folding-arm raised.



14. Make sure that the skip is properly secured onto the vehicle before driving the vehicle. Secure it with the fastening equipment. This can be found in the vehicle's side tool box.

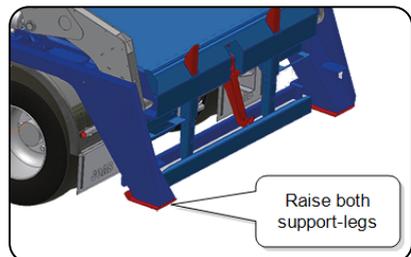
If the skip-loader is equipped with JOAB's safety-wire system (extra option), as shown, use it to secure the skip.

Always hold the handle on the safety-wire while it is extended. Then connect it onto the skip's lifting-lugs.



Do not hold onto the safety-wire when it is tightened. There is a risk for becoming trapped!

15. Raise both of the support-legs.
16. Turn the hydraulic pump OFF.





# Tipping a Skip



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

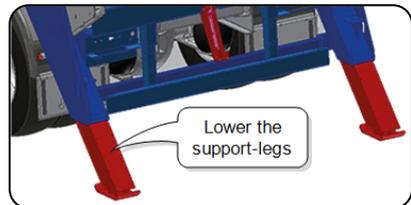
To tip a skip follow the procedure listed below. If tipping a skip with the use of the high-tipping-chains, read and adhere to the information provided under "High-Tipping-Chains", on page 29 before tipping the skip.

1. Make sure that there is nobody within the working area of the skip-loader.
2. Lower the vehicle's axles.
3. Turn the hydraulic pump ON. See "Hydraulic Pump", on page 9.



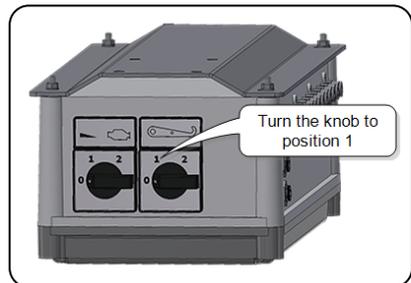
4. Activate both the support-legs and lower them. Verify that they are placed firmly and secure on the ground.

If necessary, place supports under the support legs so that they do not sink into the ground.



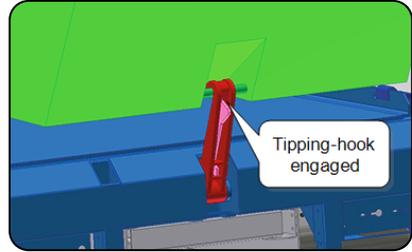
5. Use the tipping-hook's controller and activate the tipping-hook. To do this, turn the right-hand-side knob to position 1.

The image opposite shows the standard controller that is located on the chassis, outside the cab. However, it is also possible to control the tipping-hook from inside the cab or with a radio controller (extra options). For more information see "Extra Options – Operation", on page 11.



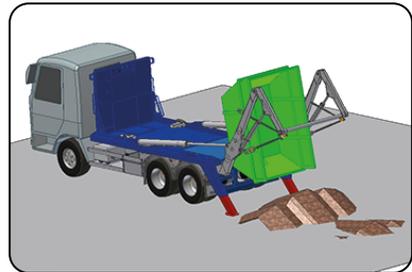
6. Inspect and verify that the tipping-hook has properly engaged with the skip's tipping-axle, as shown opposite.

**Note:** the tipping-hook is equipped with a mechanical locking device. This is automatically activated when the tipping-hook makes contact with the skip's tipping-axle.



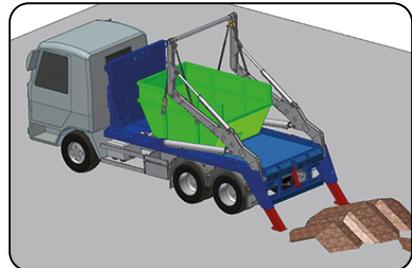
7. Operate the lifting-arm and the folding-arm, as required, so that the skip is tipped and the load is emptied.

**NOTE:** to avoid damage to the tipping-hook or the skip's tipping-axle, do not use the folding-arm when the tipping-hook is extended out.

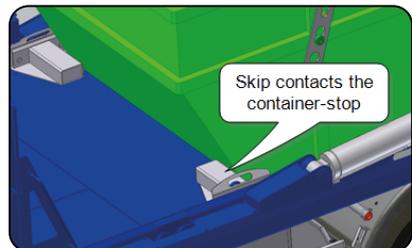


8. After tipping the load, use the lifting-arm and lower the skip back onto the vehicle. Then release the tipping-hook from the skip.

*Be careful when using the skip-loader. The skip can become damaged if the skip-loader is not used properly.*

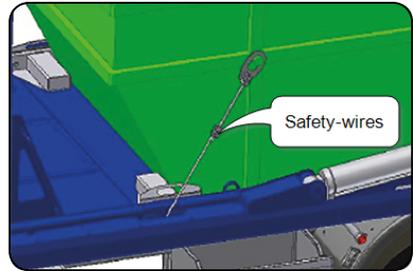


9. Use the lifting-arm to ensure that the skip is positioned so that it butts against the container-stops.

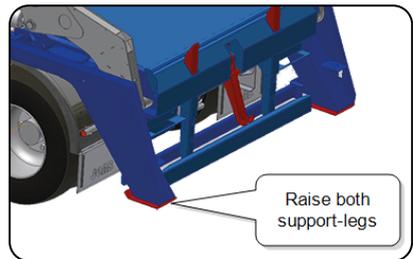


10. Make sure that the skip is properly secured onto the vehicle. Secure it with fastening equipment.

If the skip-loader is equipped with JOAB's hydraulic safety-wire system (extra option), as shown, use it to secure the skip.



11. Raise both of the support-legs.
12. Turn the hydraulic pump OFF.





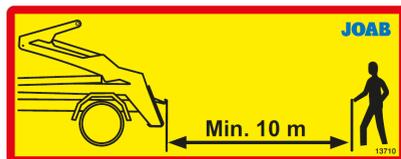
# Unloading a Skip



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

1. Stop the vehicle and put the handbrake on.

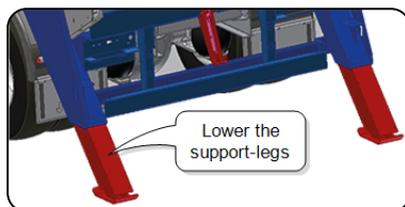
2. Make sure that there is nobody or anything else within the working area of the skip-loader.



3. Turn the hydraulic pump ON. See "Hydraulic Pump", on page 9.

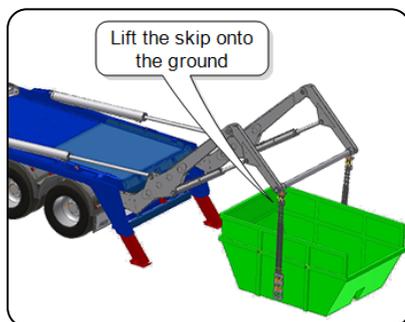
4. Activate both the support-legs and lower them. Verify that they are placed firmly and secure on the ground.

If necessary, place supports under the support legs so that they do not sink into the ground.



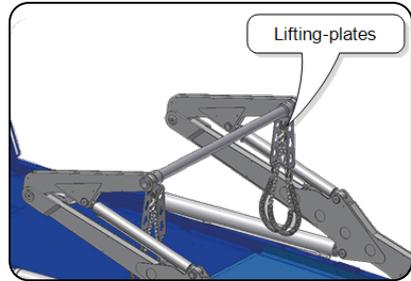
5. Activate the lifting-arm and place the skip onto the ground so that the lifting-plates become free from the lifting-lugs on the skip.

Make sure that the skip is placed so that it does not come into contact with the folding-arm's cylinders.

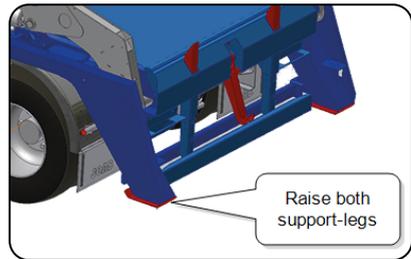


6. Remove the lifting-plates from the skip and hang them up on their hooks on the skip-loader.
7. Lower the lifting-arm and the folding-arm to their transport position.

Do not drive the vehicle with the lifting-arm or the folding-arm raised. Make sure that they are lowered before driving the vehicle.



8. Raise both of the support-legs.
9. Turn the hydraulic pump OFF.



# Handling Double Skips

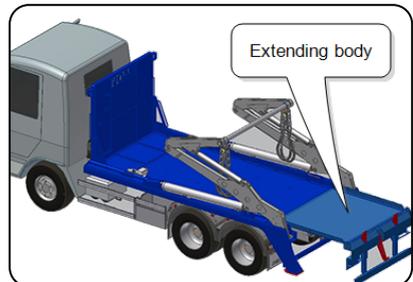


*The operator of the skip-loader is responsible for handling it. Care must be taken to avoid injury or damage. Before operating the skip-loader make sure that you have read and are fully aware of the warnings in this manual and on the skip-loader.*

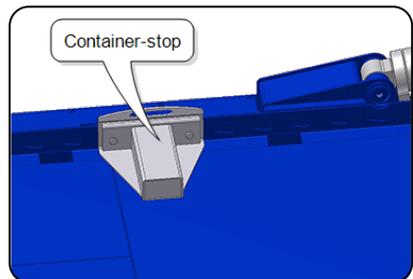
Skip-Loaders can be purchased with an extending-body. This allows for two skips to be loaded onto the skip-loader. This is not standard equipment and must be ordered as an option.

Provided below is important information specific to the handling of skip-loaders with an extending-body.

Do not tip a skip when the extending-body is extended, as shown opposite.

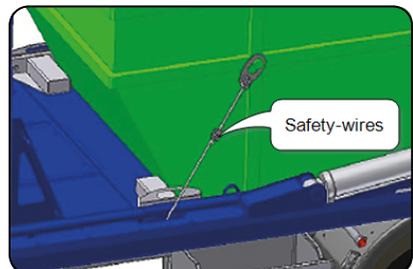


Make sure that **both** skips are positioned so that they butt up against the container stops on the skip-loader. Use the lifting-arm to ensure that the skips butt against the container-stops.



Both skips must be properly secured onto the skip-loader with the use of appropriate securing equipment.

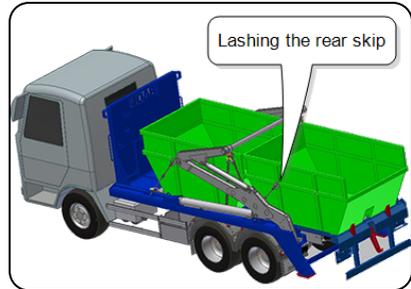
If the skip-loader is equipped with JOAB's safety-wire system (extra option) make sure that they are attached to both skips. The safety-wire can be placed outside of the lifting-plates.



When lashing the rear skip onto the skip-loader, the safety-wire can be hooked on to either the front or the rear lifting lug of the skip, depending on the length of the skips.

Make sure that the lifting-arm is fully retracted. If necessary, adjust the lifting chain's length to allow the lifting-arm to be fully retracted.

Be aware of the total height of the vehicle.

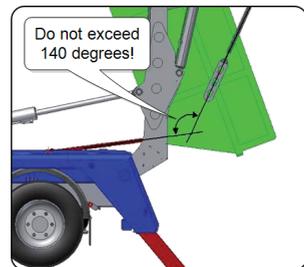


# High-Tipping-Chains

To lift, tip, or unload a skip using the high-tipping-chains, follow the normal procedures listed in this manual. In addition, the warnings and bullet points listed below **must** be adhered to.



*When tipping a skip with the use of the high-tipping-chains, do not allow the angle between the high-tipping-chains and the skip-loader's lifting-chains to exceed 140 degrees. If the angle exceeds 140 degrees, serious damage or injury **will** occur. See below for further information.*



A

- High tipping a skip shall only be performed with JOAB's high-tipping-chains. Do not use any other equipment to high tip a skip. The high-tipping-chains are located at the rear of the skip-loader, as shown above.
- Control of the tipping action must be performed with the use of the external controls and a good visual overview of the equipment. Do not perform the action using the cab mounted controls.
- When lifting the skip onto the skip-loader make sure that there is space between the bottom of the skip and the skip-loader.
- The high-tipping-chains must be attached onto the skip's tipping-hook axle. Do not attach them to any other place on the skip.
- Use the folding-arm and follow with the use of the lifting-arm to tip the skip.
- Exercise caution when the skip nears its center tipping point, there is a risk that the skip will make contact with the boom-pipe on the skip-loader.
- Exercise caution when the skip is tipped backwards towards the skip-loader, tension built up in the high-tipping-chains can cause the skip to swing suddenly.



# Service and Maintenance

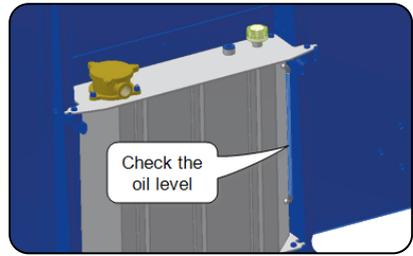
To prevent unnecessary wear, it is important to maintain the skip-loader continuously. Provided below is information regarding daily maintenance and servicing.

## Daily Maintenance

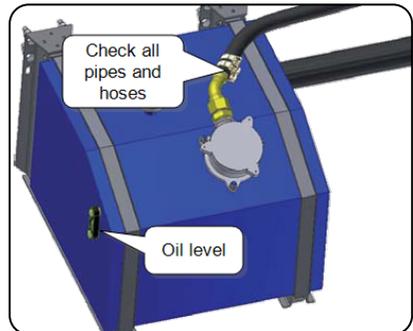
Daily care, which only takes a few minutes, can prolong the service life of your skip-loader. Provided below are some daily steps to help maintain the skip-loader.

1. Check the hydraulic oil level.

Side mounted tanks, as shown below, have a sight glass mounted on the side of the oil tank.



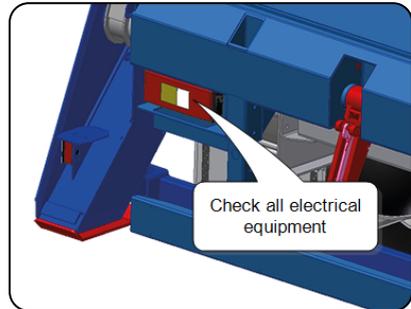
2. Make sure that there are no trapped pipes or hoses. And that they are free from damage or leaks.



3. Make sure that there are no objects in between the skip-loader's components.
4. Check that the skip-loader 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 Skip-Loader

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 skip-loader with a high pressure washer entails risks. All electrical components, even enclosed, are sensitive to water under high pressure.

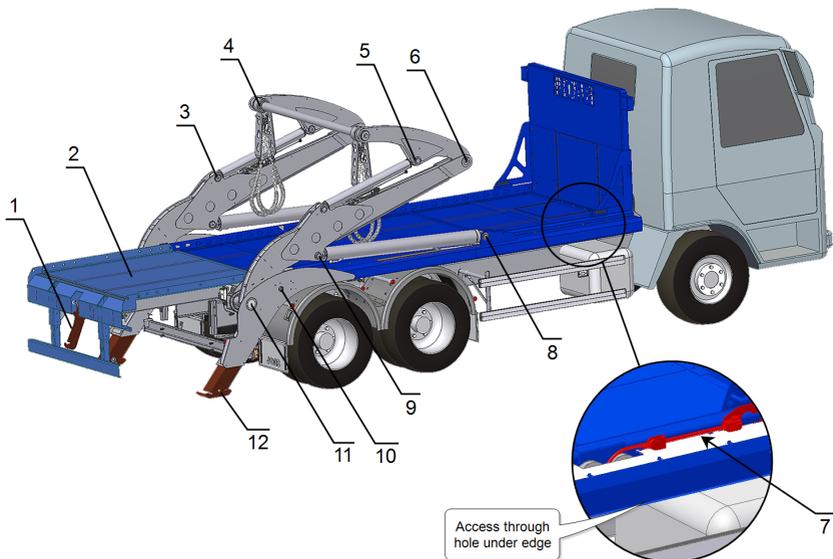
When using a high pressure washer, make sure to hold the nozzle at least 45 cm from all lacquered surfaces. Use a standard nozzle only, do not use a turbo nozzle.

Always apply fresh grease around lubrication points after washing. For more information regarding the skip-loaders lubrication points, refer to below.

## Lubrication Points

The following image highlights the locations on the skip-loader that shall be kept lubricated.

- |                              |                                |
|------------------------------|--------------------------------|
| 1. Tip-hook                  | 7. Safety-wire system cylinder |
| 2. Extending-body's cylinder | 8. Lifting-arm cylinder (x2)   |
| 3. Folding-arm cylinder      | 9. Lifting-arm cylinder (x2)   |
| 4. Chain mount               | 10. Support leg cylinder (x2)  |
| 5. Folding-arm cylinder (x2) | 11. Lifting-arm (x2)           |
| 6. Folding-arm (x2)          | 12. Support leg cylinder (x2)  |



Maintenance of the lubrication points on the skip-loader should be performed after every 200 hours of service. Use chassis grease NLGI 0 or thicker. All of the grease nipples must have fresh grease applied after washing.

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.

## Service of the Skip-Loader

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

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

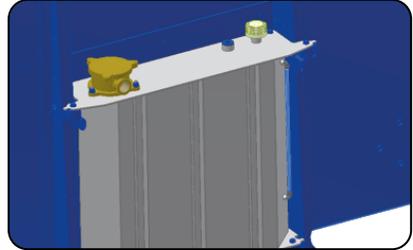
JOAB recommends that the oil is changed during the autumn period.

Hydraulic oil type 32-cst/40 is recommended for mineral oil.

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 with every oil change.

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 skip-loader 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 skip-loader is serviced in accordance with the sticker.



### Service Packets and Warranty

Service packets can be ordered from JOAB using the information provided below. Always have the information provided on the skip-loader's manufacture plate ready before making contact. Refer to "*Manufacture Plate*", on page 4.

Table 2: Service packets

Department	Contact Details
Service and Spare Parts	JOAB Göteborg telephone: +46 31-7050600
Warranty	JOAB Göteborg telephone: +46 31-7050600
Spare Parts	JOAB Göteborg, telephone: +46 31-7050610, +46 31-7050612, +46 31-7050686
Technical Support	JOAB Göteborg telephone: +46 31-7050620, +46 31-7050688
Service	JOAB Göteborg telephone: +46 31-7050621, +46 31 7050687
Service	JOAB Dals Rostock telephone: +46 530-44450
Technical Support	JOAB Dals Rostock telephone: +46 530-44455
Service	JOAB Lessebo telephone: +46 478-69081
Service	JOAB Botkyrka (Stockholm – South) telephone: +46 873-25876
Technical Support	JOAB Täby (Stockholm – North) telephone: +46 873-25875
Service	JOAB Täby (Stockholm – North) telephone: +46 863-08871

Visit our website: [www.joab.se](http://www.joab.se) to order spare parts and find your nearest JOAB authorised workshop.



# Technical Data

Specifications of the skip-loader are provided below.

Table 3: Specifications

Specification	Value
Maximum volume with standard container	Approximately 25 m <sup>3</sup>
Maximum lifting capacity	V10: 10 tons V12: 12 tons V14: 14 tons V18: 18 tons
Maximum operating pressure	230 bar – 290 bar
Oil flow @ 1000 rpm	60 litres – 80 litres
Hydraulic oil: tank capacity	75 litres – 130 litres
Hydraulic oil: viscosity class	32 cst

## General Information

The following features are applicable for all JOAB's skip-loaders:

- The cylinders for the lifting-arm and the folding-arm are assisted by over centre valves.
- All hydraulic cylinders have link bearings at the piston rod end.
- The support-legs are individually operated and secured with a hydraulic lock.
- The tipping-hook is pneumatically operated and has a mechanical safety lock.



# Fault Tracing the Skip-Loader

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

Table 4: Fault tracing the skip-loader

Fault	Cause	Action
<ul style="list-style-type: none"> <li>Noise from pump.</li> </ul>	<ol style="list-style-type: none"> <li>The pump is sucking air.</li> <li>Incorrect amount of oil.</li> <li>The pump is defective</li> </ol>	<ol style="list-style-type: none"> <li>Check connections.</li> <li>Adjust the amount of oil.</li> <li>Replace the pump.</li> </ol>
<ul style="list-style-type: none"> <li>Nothing works</li> </ul>	<ol style="list-style-type: none"> <li>Emergency stop is activated</li> <li>Fuse/relay blown</li> </ol>	<ol style="list-style-type: none"> <li>Switch off the engine, pull out the emergency stop, and restart.</li> <li>Replace the fuse/relay</li> </ol>
<ul style="list-style-type: none"> <li>Noise from cylinders</li> <li>Jerky hydraulic movement.</li> <li>Oil sprays from the tank.</li> </ul>	<ol style="list-style-type: none"> <li>The piston rod is defective</li> <li>Air in the hydraulic system.</li> <li>Valve or piston fault in pump.</li> <li>Tank oil level too high or low.</li> <li>Pump draws air.</li> <li>The tank's air filter is blocked.</li> </ol>	<ol style="list-style-type: none"> <li>Replace the piston rod.</li> <li>Check that the suction line is sealed.</li> <li>Service or replace the pump.</li> <li>Regulate the oil level.</li> <li>Service or replace the pump.</li> <li>Replace the filter.</li> </ol>
<ul style="list-style-type: none"> <li>Poor lifting capacity</li> </ul>	<ol style="list-style-type: none"> <li>Insufficient amount of oil to the pump</li> <li>Oil pressure too low.</li> <li>Leaking cylinder seals.</li> </ol>	<ol style="list-style-type: none"> <li>Check the oil level.</li> <li>Contact JOAB.</li> <li>Replace the cylinder seals.</li> </ol>
<ul style="list-style-type: none"> <li>Controller electric lifting-arm jam.</li> </ul>	<ol style="list-style-type: none"> <li>Chain lock/lever jams.</li> <li>Spring set for air cyl broken.</li> <li>Electric solenoid jams.</li> </ol>	<ol style="list-style-type: none"> <li>Remove, lubricate, and reinstall</li> <li>Replace spring set</li> <li>Clean the solenoid. If necessary, replace it.</li> </ol>



# Safety Warnings

The skip-loader 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 authorized persons in close proximity of the vehicle's working area. The risk zone is 8 meters in all directions of the vehicle.



## Skip-Loader's working Area

The area directly behind the skip-loader must be kept free from obstructions and persons. Make sure that there is a distance of 10 m between the back of the vehicle and any obstructions or persons. Failure to do so can lead to serious injury or damage.



## Risk of Slipping

Be aware when operating the skip-loader, 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 equipment. Always verify that there is no risk of anyone becoming trapped or injured before operating the equipment.





# 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:	<a href="http://www.joab.se">www.joab.se</a>

## Service and Warranty Claims

For information regarding service and warranty claims, refer to "*Service Packets and Warranty*", on page 34.