



Base Service Hook Lifts L and LA

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JOAB

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Introduction

This instruction describes how to perform a base service on Hook-Lifts, models L and LA.

This instruction is based on the original mounted equipment only. Refer to the relevant supplier's documentation for all other optional or auxiliary equipment.

JOAB takes no responsibility for consequences that occur due to work carried out by non-professionals.

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

Before performing a service on a Hook-Lift make sure that you have read and are fully aware of all safety warnings in the operator manual. Failure to do so can lead to serious injury or damage to equipment.

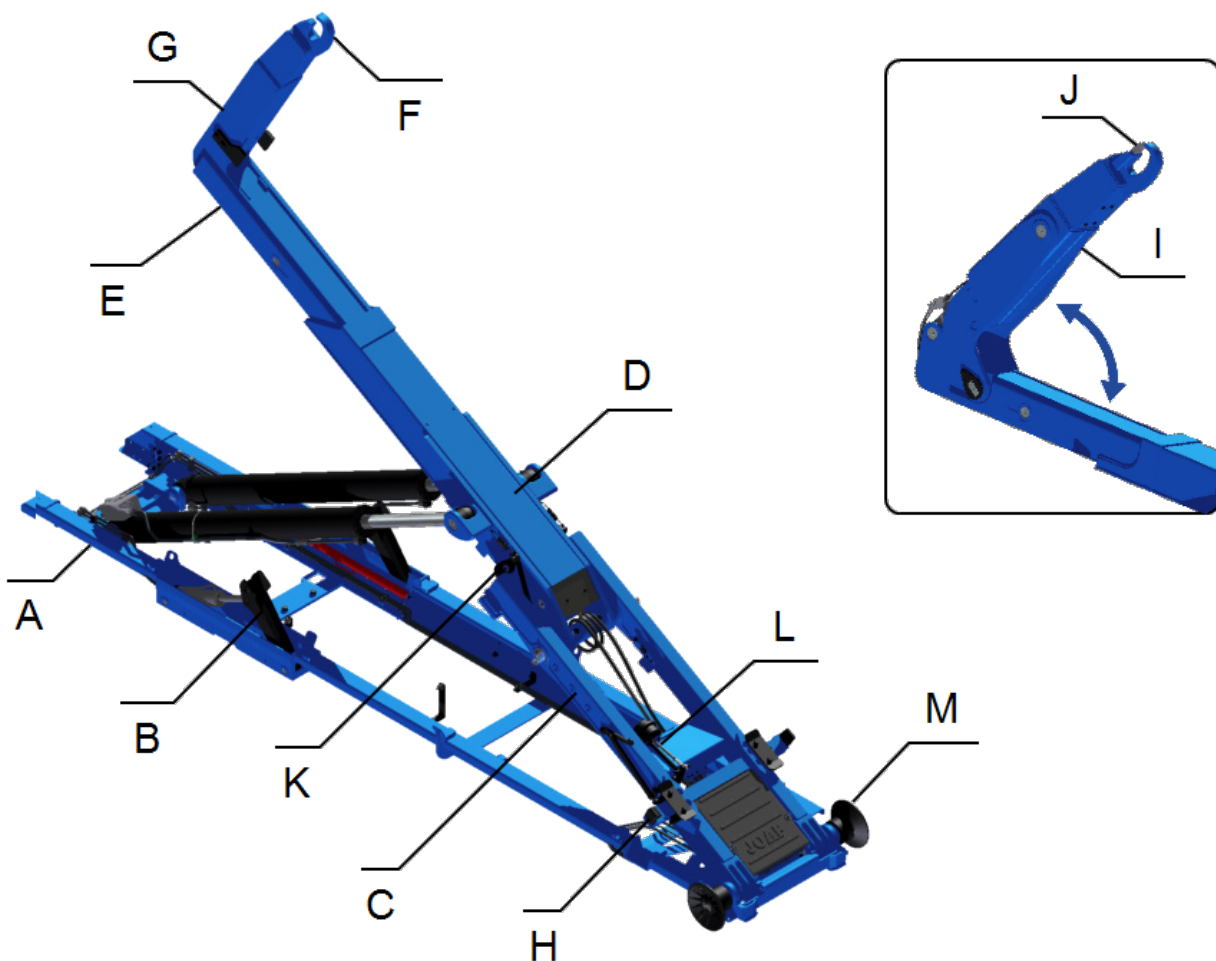
Always bare in mind that it is the operator that is responsible for handling the Hook-Lift.

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Overview

The following image provides an overview of the Hook-Lift and its components. These components will be referred to throughout this procedure. Items marked with an asterisk (*) are optional equipment.

- A. Sub frame
- 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



Required Equipment

The following table lists the materials required to carry out the base service.

Table 1: Required materials

Material	Required Quantity	Part Number	Viscosity
Filter kit (Base)	1	1008902	--
Hydraulic filter - included in filter kit	(1)	(1651)	
Air filter - included in filter kit	(1)	(4650)	--
O-ring (return filter) - included in filter kit	(1)	(1631-3)	--
High pressure filter kit	1	1008902-1	--
High pressure filter	(1)	49402	--
Filter- LS	(1)	1523559	--
Hydraulic oil (can be customer specific)	70 – 230 litres	--	SHS 32/46
Lubricating grease: NLGI0 or thicker	--	--	--

Safety

There is a serious risk of injury when working with the hook-lift if due care is not taken. Make sure that all personnel are competent and aware of the risks before working on the hook-lift.



Before starting work with the hook-lift, read and adhere to the safety warnings provided under "Safety Warnings", on page 39. Failure to adhere to the safety warnings can lead to serious injury or damage to equipment. In addition, read and adhere to all safety warnings provided in the vehicle's documentation.

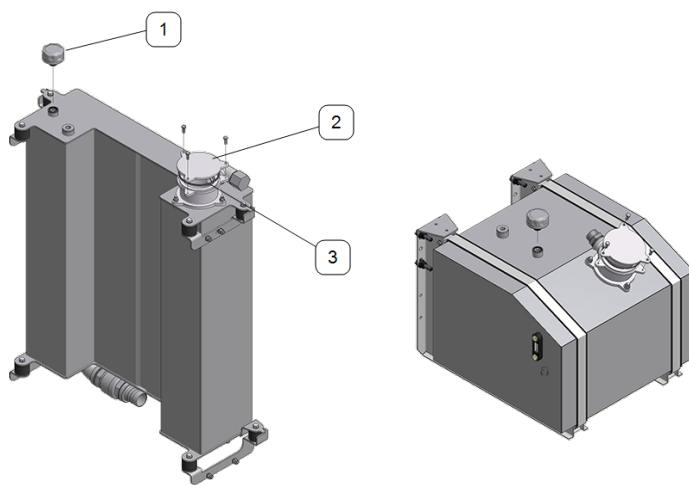


Care must be taken when working with hydraulic components. There is a risk of hydraulic fluid leaking under high pressure that can lead to injury. Make sure that all personnel are trained in the correct procedures before working with the hydraulics.

Group 1 – Replace Service Components

1:1 Thoroughly clean the area around the cap for the air-filter (1) and the area around the hydraulic-filter (2), on the hydraulic tank. Then replace the following items with new ones:

1. The air filter.
2. The hydraulic filter.
3. The O-ring for the hydraulic filter

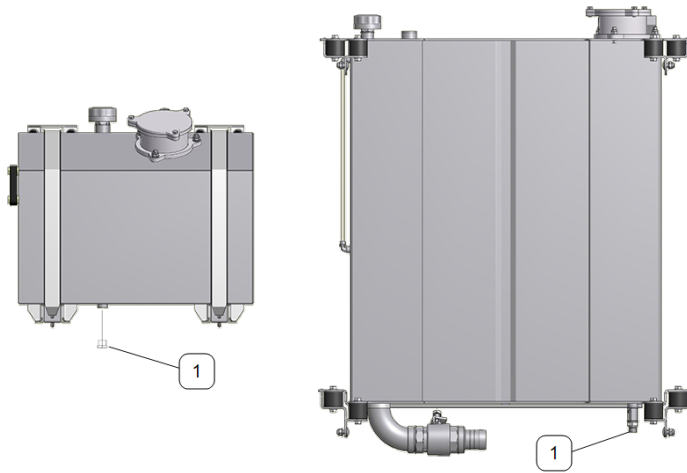


1:2 Replace the high pressure filters HF & LS as follows:

- For hook-lifts equipped with a variable pump, replace both the HF and the LS filter. The LS filter is mounted as standard inline to the pump.
- For hook-lifts L18X and L26, replace the HF filter.



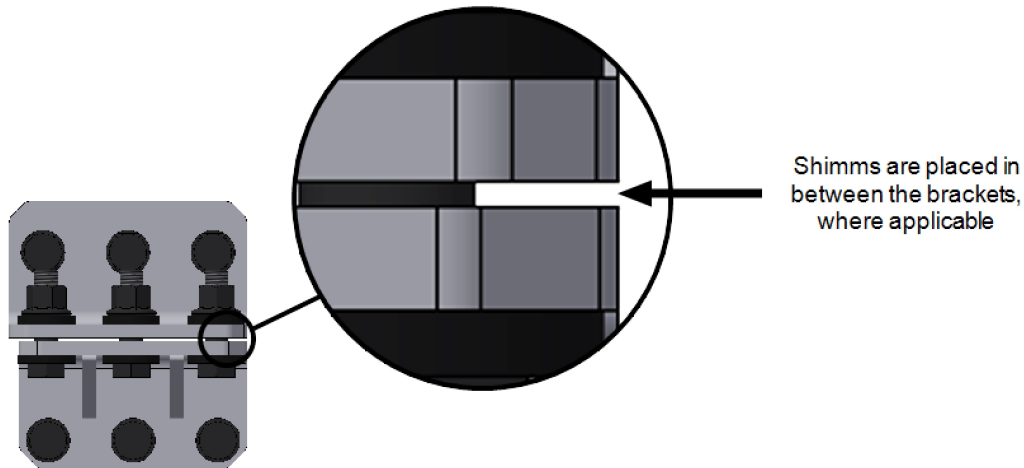
- 1:3** Clean the area around the hydraulic-tank's drain plug (1). Unscrew the plug and completely drain the oil. Then replace the drain plug and refill the tank with new oil. Refer to "*Required Equipment*", on page 2 for details of the correct oil to use.



Group 2 – Torque the Chassis Brackets

- 2:1** Inspect and make sure that all shims for the chassis's fastening brackets, where applicable, are not loose and correctly positioned.

NOTE: Before the chassis brackets are first fastened, during assembly, the gap between them is measured, as shown below. If the gap is greater than 2 mm, shims are placed in between them before torquing of the bolts.

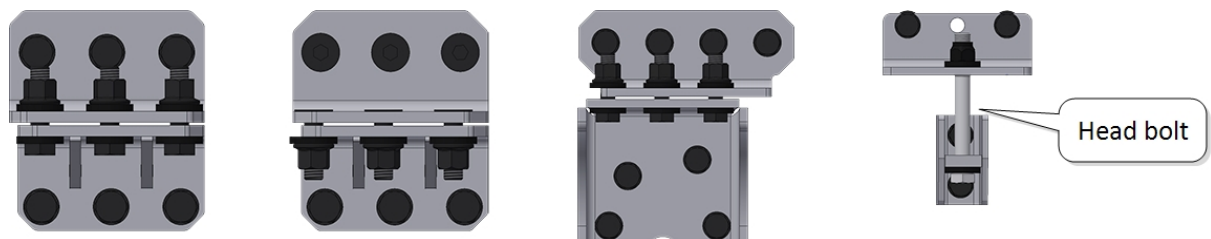


- 2:2** Check **all** of the chassis's fastening brackets and make sure that all bolts are correctly torqued. Use the torque settings listed below in Table 2 for all bolts, except head bolts. For head bolts, use a torque value of 40 Nm.

Table 2: Torque setting for chassis brackets

Thread (Metric)	Class 8.8	Class 10.9
M14	128 Nm	181 Nm
M16	197 Nm	277 Nm

Provide below are some examples of the chassis brackets. The actual brackets used may be different to those shown, however the torque settings are the same.



Group 3 – Operation and Function Check

- 3:1 Inspect and make sure that all of the hook-lift's lighting functions correctly. Make sure to also inspect the reverse lights when the vehicle is put in reverse gear.
- 3:2 Inspect and make sure that the hook-lift's work lights function correctly.
- 3:3 Turn the hydraulic pump ON and operate all of the hook-lift's main hydraulic functions, under load. Verify that they function fully and correctly. Verify that the hydraulic functions stop as expected at their end points, such as when shunting.

When operating the hook-lift's functions under load, listen to the vehicle's engine and hydraulic pump and verify that all functions as expected. Look for hydraulic leaks and listen for unusual noises.

NOTE: The type of control-stick installed in the vehicle is dependent upon the system and option ordered. Refer to the following for information specific to each type of controller and its operation.

1. *"Electrical Controlled Systems - CBW controller", on page 31*
2. *"Electrical Controlled Systems - Two Button Controller", on page 33*
3. *"Air Controlled Systems - Two Button Controller", on page 34*
4. *"Air Controlled Systems - Seven Button Controller", on page 35.*

- 3:4 Verify that all buttons on the hook-lift's control-stick function correctly.
- 3:5 Check that the emergency stop button functions correctly, as described below. It is normally located below the steering wheel, as shown.

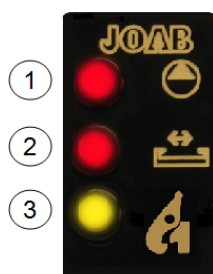


Turn the pump for the hook-lift ON, operate the hook-lift, and then activate the emergency stop to verify that it stops the hook-lift from working. Reset the emergency stop, and then verify that the hook lift is able to function again.

3:6 Inspect and verify that all LEDs on JOAB's display panel function correctly, as shown below.

If the vehicle is equipped with a CBW controller, verify that its corresponding icons function in the display, as shown:

NOTE: Certain vehicle manufacturers have indicator lights for the hydraulic-pump in the driver's display. Make sure that you are aware of any additional lights that the vehicle is equipped with, that relate to the operation of the hook-lift, and that they also function correctly.



JOAB's display panel







CBW controller

1. Make sure that the LED for the pump (1) illuminates when the hydraulic pump for the hook-lift is active.
2. Make sure that the LED for the hydraulic-lock (2) illuminates when the hydraulic-lock is open.
3. Make sure that the LED for the centre-lock (3) illuminates when the centre-lock is open.

3:7 For vehicles equipped with a CBW controller perform the following additional checks:

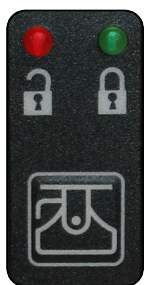
1. Verify that the buttons for functions F1 to F4, the arrow buttons, and the OK button all function correctly. Refer to "Appendix 2 - CBW User Interface", on page 37
2. Verify that the screen, all icons, and menus work correctly. Make sure to view the "Page Set-ups", the "Diagnostics and Statistics" page, and the "Hook positioning" page.
3. Verify that the following warnings are displayed in the user interface when the pump is **turned off** and the corresponding state is active.

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).

- 3:8** Verify that the LEDs for the trailer warning lights, as shown below, function correctly, as listed:

NOTE: This is optional equipment. It is not standard.



1. Make sure that the red LED illuminates when the tow hitch is open.
2. Make sure that the green LED illuminates when the tow hitch is closed.

- 3:9** Operate the radio controller for the hook-lift (where applicable) and verify that it functions correctly for all standard and optional equipment, as listed below.

NOTE: The radio controller is optional equipment. It is not standard.

1. Verify that the emergency stop button on the radio controller functions correctly. Turn the pump for the hook-lift ON, operate the hook-lift, and then activate the emergency stop to verify that it stops the hook-lift from working. Reset the emergency stop afterwards, and then verify that the hook lift is able to function again.
2. Check that all LEDs on the radio controller function correctly.
3. Verify that all applicable functions and their buttons work correctly. Provided below in Table 4 is a list of all functions available. Depending on the hook-lift

being serviced, different functions will be applicable. A number of the functions listed below are optional. Optional function are marked with an asterisks (*).

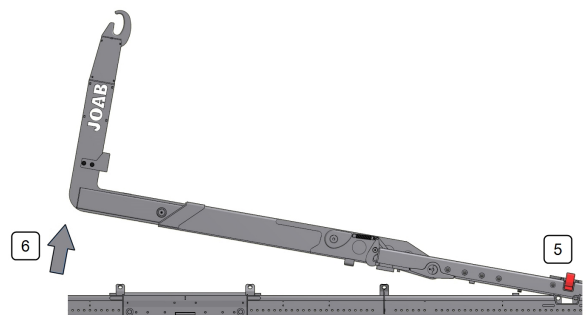
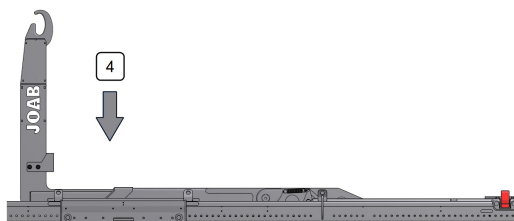
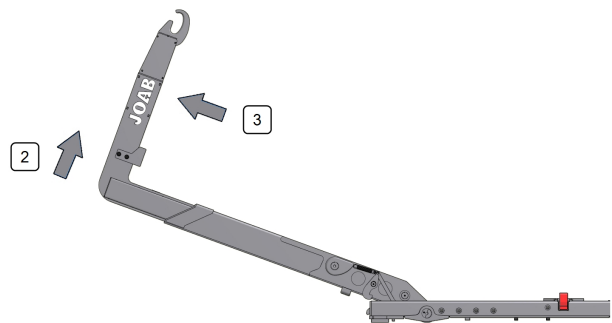
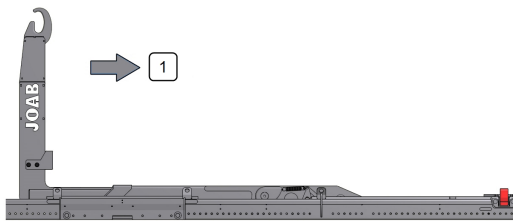
Table 4: Radio controller functions

Button	Function_1 Set-up	Function_2 Set-up	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 (LA models)	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

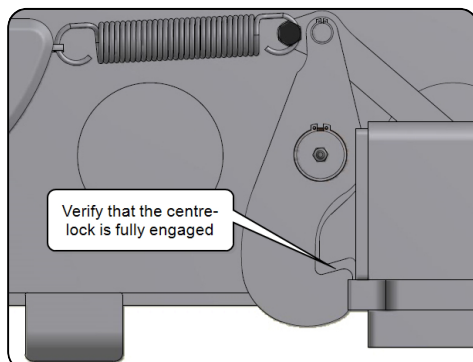
Group 4 – Inspection and Adjustment

4:1 Verify that the hook-lift and centre-lock function correctly. To do this, first operate the hook-lift as listed and shown below. Verify that each of the actions, 1-6, function correctly. For information regarding the operation of the CBW controller, refer to: *"Appendix 1 - Control Stick Functions", on page 31.*

1. Retract the extending-section - fully.
2. Tip the hook up in Shunting mode.
3. Extend the extending-section - fully.
4. Lower the Hook-Lift - fully.
5. Lock the hydraulic-lock.
6. Tip the hook in tip mode.

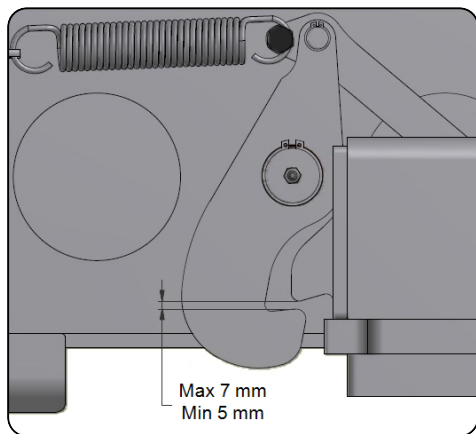


4:2 With the hook-lift in the tipped state, as shown above (6), inspect and verify that the centre-lock on both sides of the hook-lift is fully engaged, as shown below.



- 4:3** Lower the hook-lift back to its parked position and then inspect the centre-lock. Measure the gap between the contact surfaces of the centre-lock as shown below. The gap must be between 5 mm – 7 mm. If it is not within the tolerance, it must be adjusted so that it is.

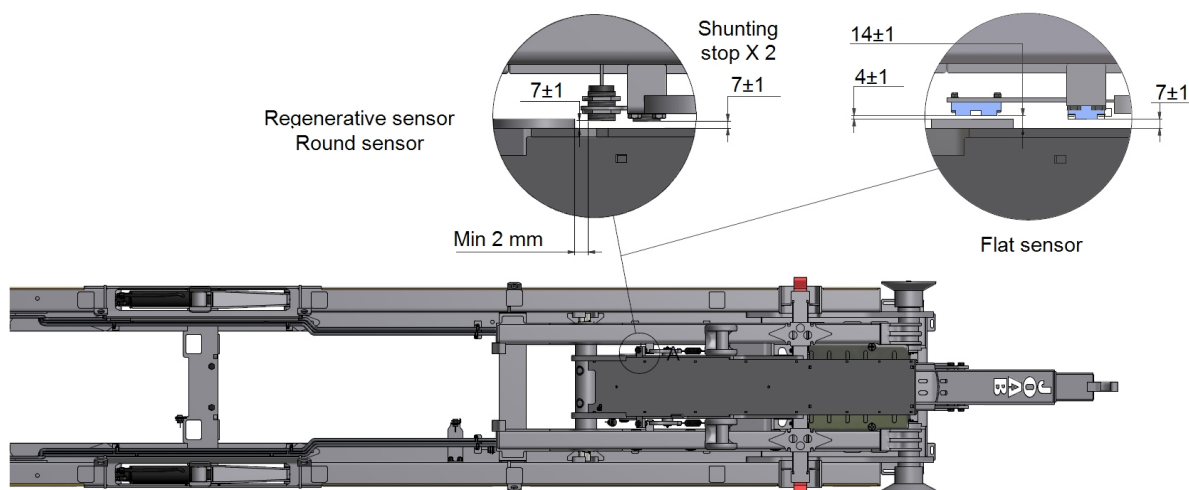
NOTE: The hook-lift must be fully lowered before making a measurement.

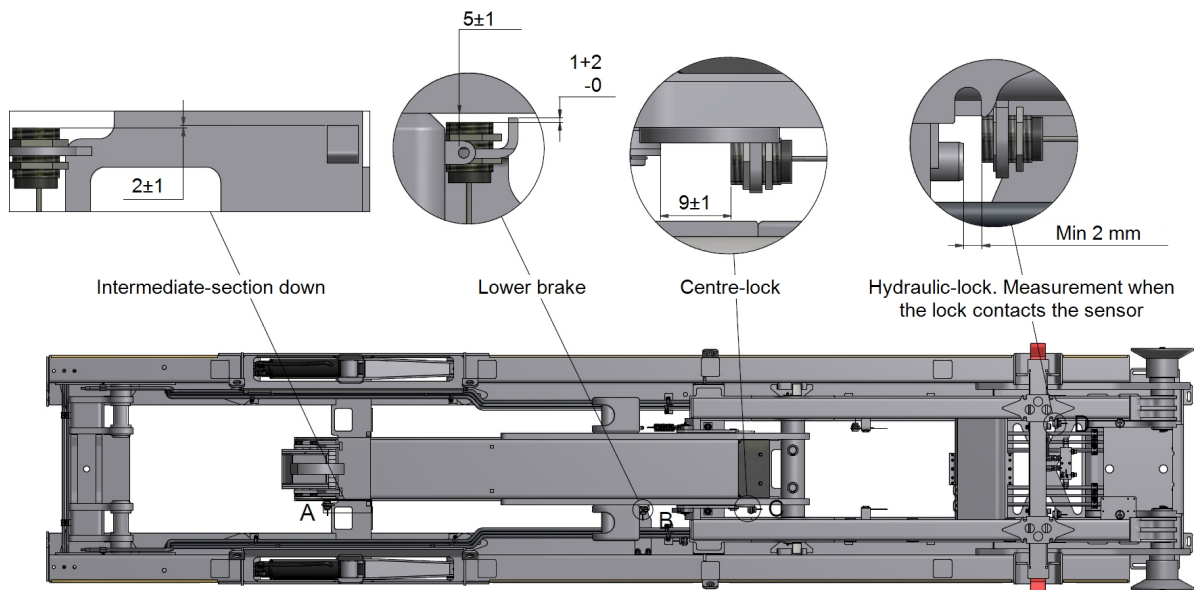


- 4:4** Operate the hook-lift in shunting mode and verify that the sensors that restrict how far the hook can be shunted function correctly, causing it to stop. Take care and make sure not to shunt the hook-lift so that the piston-rods contact the rear section and cause damage. This can happen if the sensors or system are not adjusted/functioning correctly.

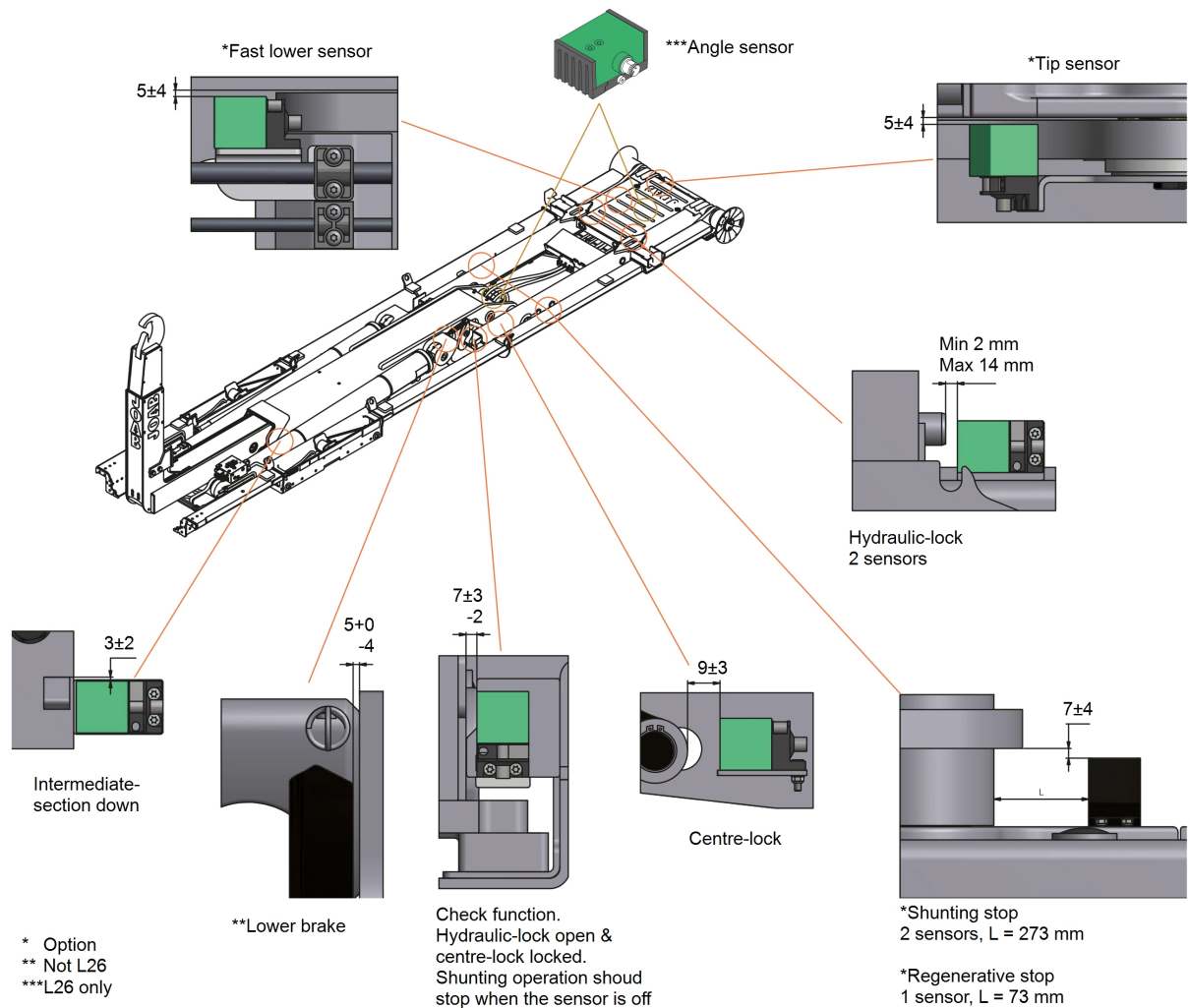
If necessary, adjust the sensors to ensure correct shunting operation. Use the information below to check and adjust all sensors as required. The type of sensors installed on the vehicle can either be round or square, depending on manufacture date. Information for both types of sensors is provided below.

Round Sensors





Square Sensors



- * Option
- ** Not L26
- ***L26 only

- 4:5** Operate the hook-lift and fully lower it in fast mode (regenerative function). Verify that the fast lower function slows down to normal speed when lowering the hook. Hook-lifts equipped with this option have a sensor that causes the hook-lift to slow down before the intermediate-section reaches the sensors for stop of shunting. The speed of the fast lower reduces down to normal speed when the sensor is triggered.

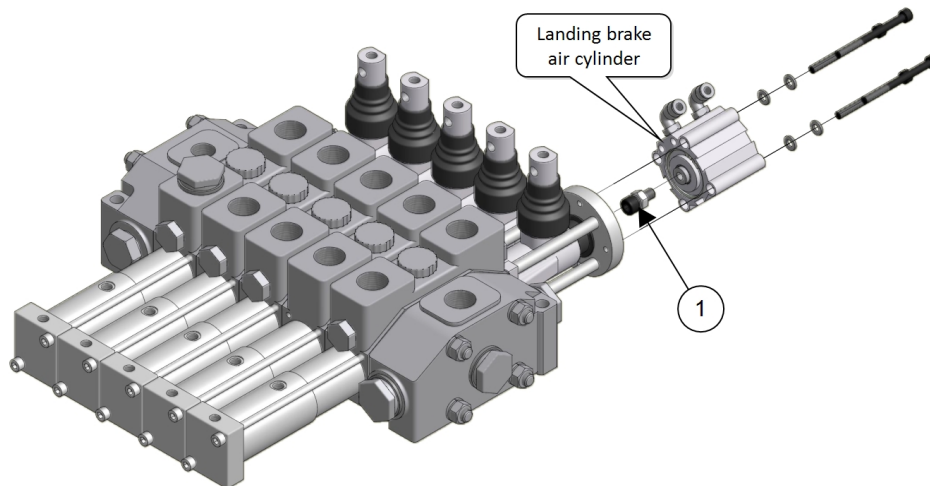
NOTE: Fast operation is not standard equipment, it is an extra option.

- 4:6** Inspect and verify that the landing brake for the hook-lift functions correctly, when lowering it without a body, as follows:

NOTE: This step is not applicable to L26 and L18X models.

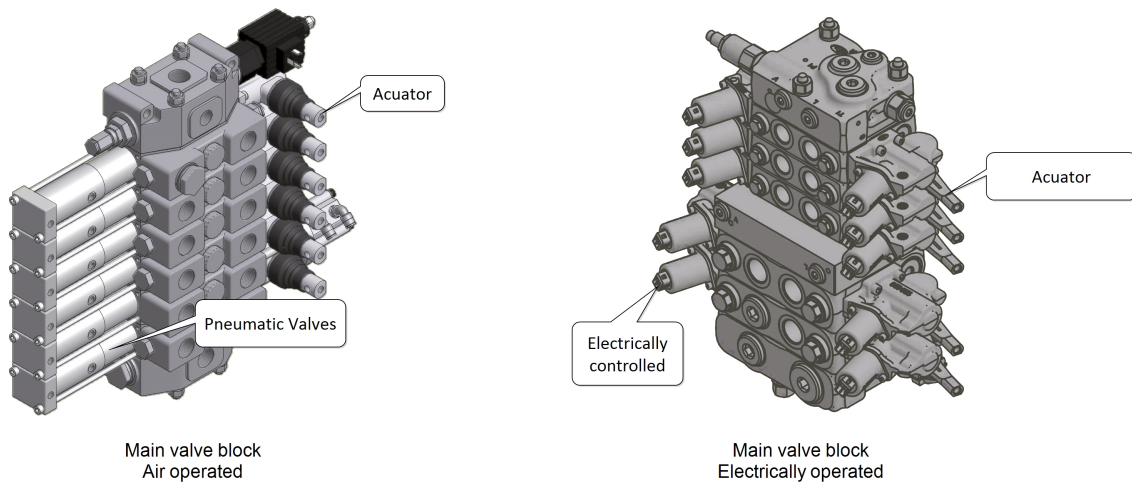
1. Operate the hook-lift without a body and observe it when lowering it. Verify that the speed is decreased significantly when the lower brake sensor is triggered during the lower operation. If necessary, adjust the air cylinder for the lower brake to ensure a smooth and reduced speed landing. The air cylinder is located on the main-valve-block, as shown below.

NOTE: To adjust the air cylinder, dis-assemble it as shown, loosen the check nut on the air cylinder (1), then use an Allen key to turn the top of the threaded rod either in or out by $\frac{1}{4}$ of a turn, at a time. Turning it inwards will increase the landing-brake speed. Turning it outwards will reduce the landing-brake speed.



2. Re-assemble the air cylinder and test the landing brake again, to ensure that it works satisfactorily. If necessary, adjust the air cylinder again, until it works satisfactorily.
3. Inspect and make sure that there are no leaks from the air cylinder.

- 4:7** Inspect the hook-lift's main valve block as shown and described below. Both the air controlled and electrically controlled versions are shown.



1. Turn the vehicle OFF.
2. Move the actuator for each section of the valve block. Verify that they move easily, without any restriction, and that there is no evidence of malfunction in the movement of them.
3. Check for oil leaks around the: actuators, plugs, nipples, and hoses.
4. Inspect and verify that all of the pneumatic-control-valves function correctly - air controlled valve block.
Inspect and verify that all the electrical contacts are in good condition - electrically controlled valve block.

- 4:8** Inspect the valve block for the snow plough where applicable, as follows:

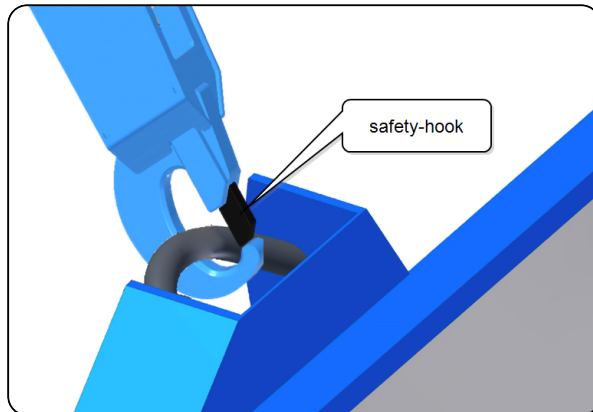
NOTE: This is optional equipment.

1. Operate all functions and verify that the magnets pull and a click sound can be heard.
2. Operate the plough equipment and verify that the pressure builds up to the correct level.

- 4:9** Verify that the folding-hook-post functions correctly, as follows:

NOTE: This is only applicable to LA models. L models do not have a folding-hook-post or safety-hook.

1. Operate the hook-lift and engage the hook with a lifting-bracket on a body. Then operate the safety-hook. Verify that it functions correctly and fastens the hook onto the lifting-bracket. Check that the safety hook moves freely and smoothly, and that it does not leak air.



2. Verify that the folding-hook-post and its over-centre-valves (OC) function correctly. Operate the folding-hook-post in each direction, up and down. Leave it stationary in each direction, and observe it for a short while to verify that it does not move. If the folding-hook-post moves, there is a leak in the OC valves. If there is a leak, it must be corrected.

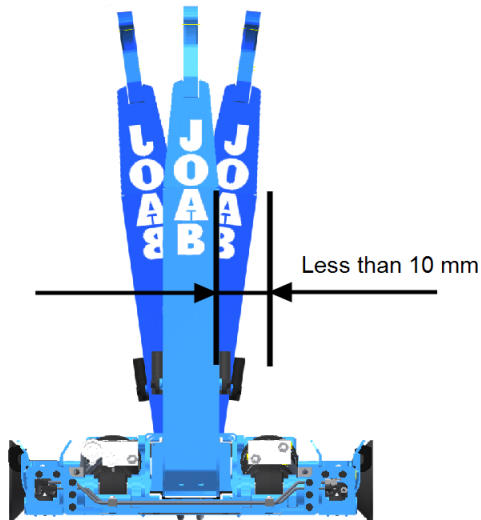
4:10 Check the extending section, as follows:

1. Check for hydraulic fluid leaks.
2. Inspect all welding for signs of damage.

4:11 Inspect the hook-post and the hook for damage. Remove any sharp edges from the hook.

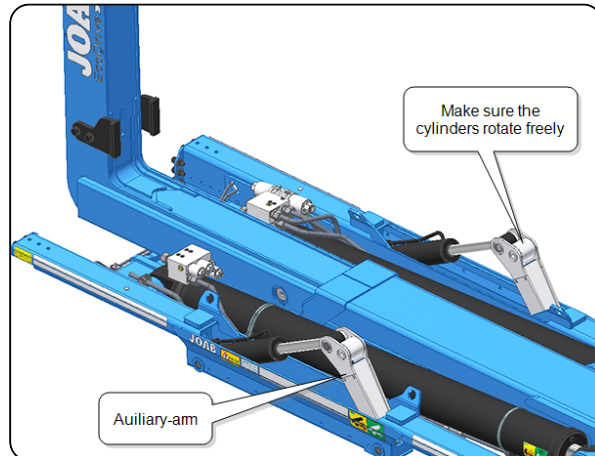


- 4:12** Check the free play in the hook-post, as shown below. The play must be less than 10 mm when moved from side-to-side, as shown below.



- 4:13** Raise the auxiliary-arms and inspect them as follows:

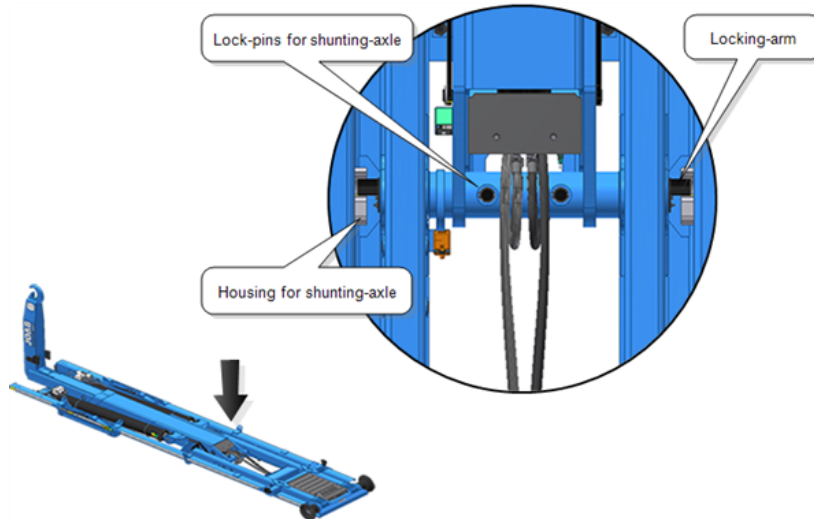
1. Verify that the cylinders that carry the body are free to rotate. Make sure that they rotate smoothly and without resistance.



2. Check for scratches, dis-colouring, and impact damage on the cylinders.
3. Check for hydraulic fluid leaks.
4. Check for damage to the mechanical components.
5. Inspect the fastening points for wear or damage.

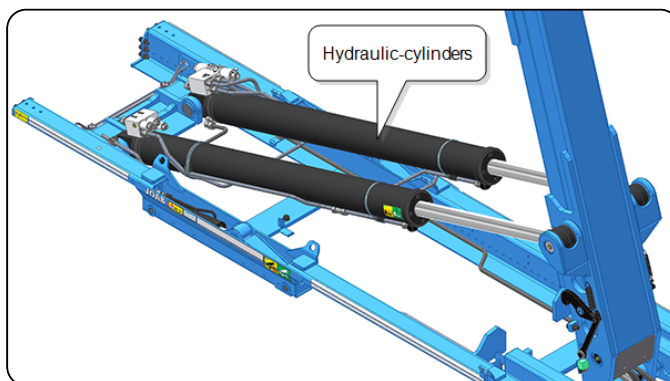
4:14 Inspect the shunting axle components, as follows:

1. Inspect the housings for the shunting-axle, on the sub frame. Check for damage or wear.



2. Inspect the locking-arms for the shunting-axle, as shown above. Check for damage and wear.
3. Inspect the lock-pins for the shunting-axle. Make sure that the circlips are correctly positioned and there is no damage.

4:15 Inspect the tip-cylinders, as follows:

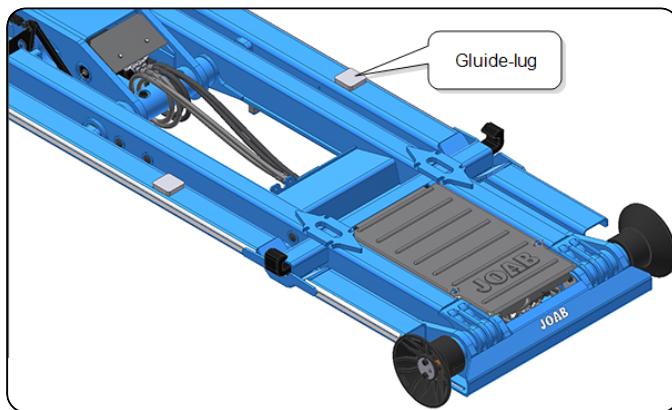


1. Check for scratches, dis-colouring, and impact damage on the tip cylinders.
2. Check for hydraulic fluid leaks.
3. Check the bearings on each end of the hydraulic cylinders.

4:16 Verify that the over-center-valves (OC) for both the extending-section and the tip cylinders do not leak, as follows.

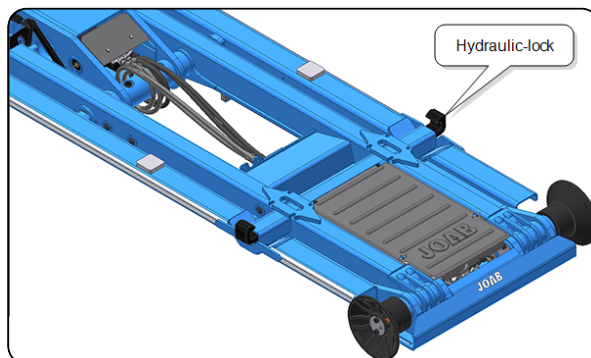
1. Position the hook-post so that it is in the shunting position with the extending-section extended a bit.
2. Leave the hook-post in position and observe it. Observe to see whether or not the extending-section or the hook-post moves. If either of them moves, there is a leak in the respective OC valves. If the OC valves leak, they must be fixed.

4:17 Inspect all the glide-lugs on the hook-lift's frame for damage and wear, as shown below. If necessary, remove any sharp edges, to prevent them from causing damage to a body or other equipment.



4:18 Operate the hydraulic-lock and verify that it functions correctly, as follows:

1. Inspect its mechanical parts for damage.

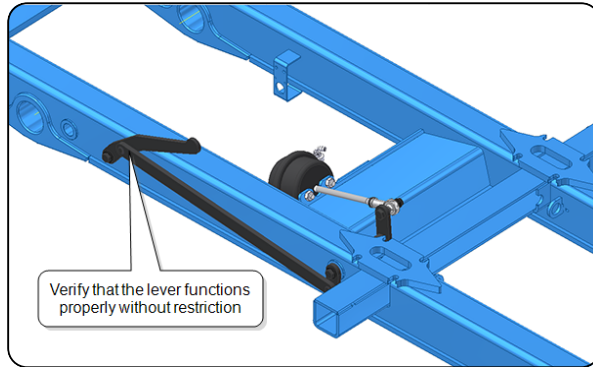


2. Check for free-play on the cylinder fastening points.
3. Check for free-play on the locking claws.
4. Check for hydraulic fluid leaks.

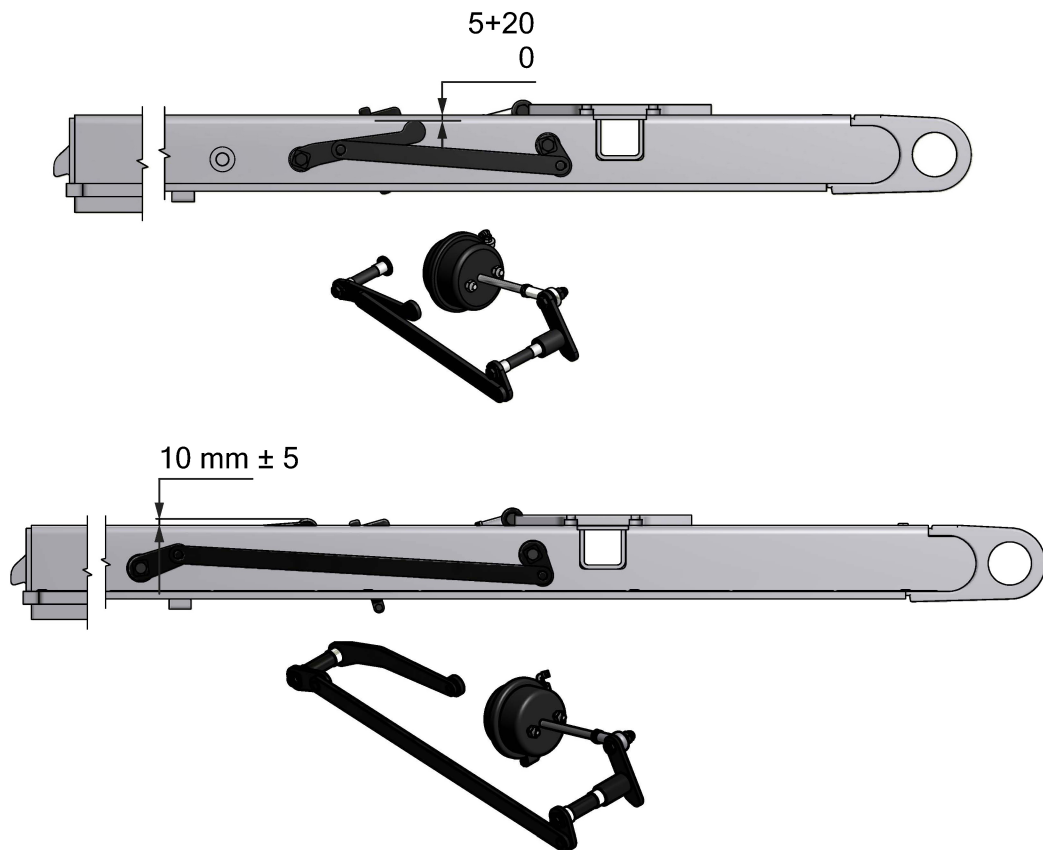
4:19 Verify that the spreader flap/deployer functions correctly, as follows:

NOTE: This is optional equipment. It is not standard.

1. Operate the spreader flap and verify that it functions correctly. Make sure it moves freely and without any resistance.

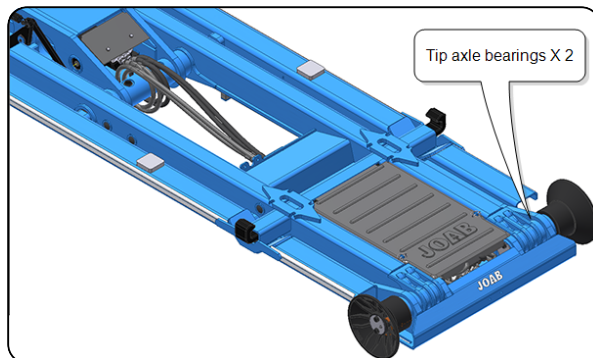


2. Release the spreader flap and verify that it returns to its parked position - fully. Measure and make sure that it sits within the tolerances shown below.



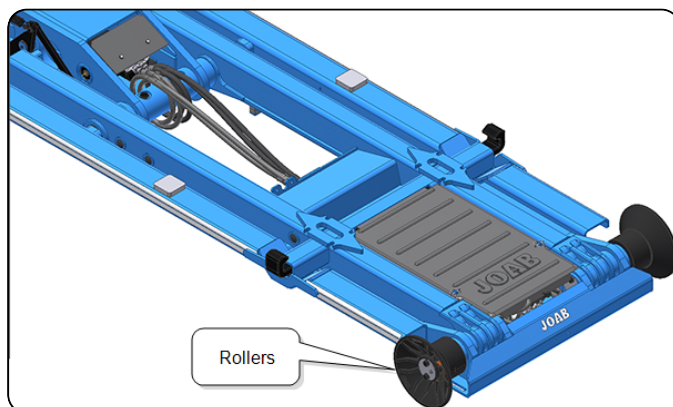
4:20 Inspect the tip axle's bearings, as follows:

1. Check the bearings for wear and excessive free-play.



2. Make sure that the grease points for the bearings are free from damage.
3. Inspect the tip axle for material damage.

4:21 Verify that the rollers on the back of the hook-lift move freely and that the bearings do not have play in them.



4:22 Inspect the hook-lift's entire frame work for damage, as listed below:

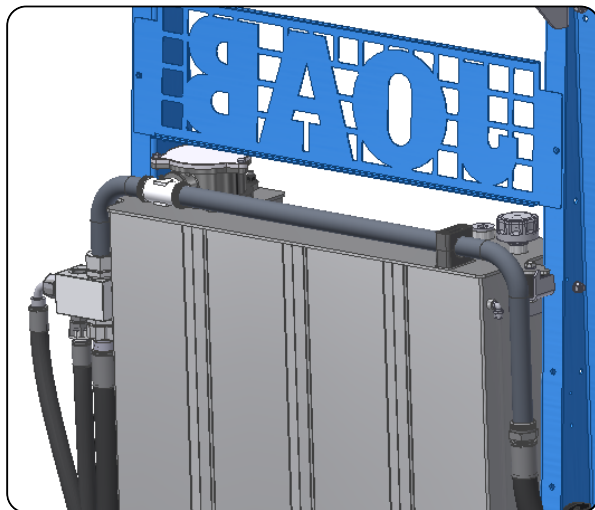
1. Check for damage in the frame work, such as cracks etc..
2. Inspect all welded fastening points for damage to the welding.
3. Inspect all welded joints for signs of damage.

4:23 Verify that the hydraulic pump functions correctly, as follows:

1. Operate the hydraulic pump under load and listen for any unusual noises that would indicate that there is a problem with it.
2. Inspect the hydraulic pump's supply and return hoses for damage.
3. Make sure that the pump's hoses are correctly secured and do not leak.
4. Make sure that the hose clamps on the pump are correctly tightened.

4:24 Inspect the hydraulic tank as follows:

1. Make sure that the tank is secure and that there are no loose items. Adjust as required.



2. Check the connections to and from the tank and make sure that there are no leaks.

4:25 Inspect all hydraulic hoses, pipes, and connections for the hook-lift's entire hydraulic system. Check for cracks and any other signs of damage. Make adjustments as necessary to ensure that there is no risk of damage to the pipes and hoses, due to poor routing of them.

4:26 Inspect and replace the high pressure filter, as follows:

NOTE: This equipment is optional. It is not standard.

1. Inspect the high-pressure-filter's container, as shown in the above image. Make sure there are no leaks and that all connections are correctly connected.

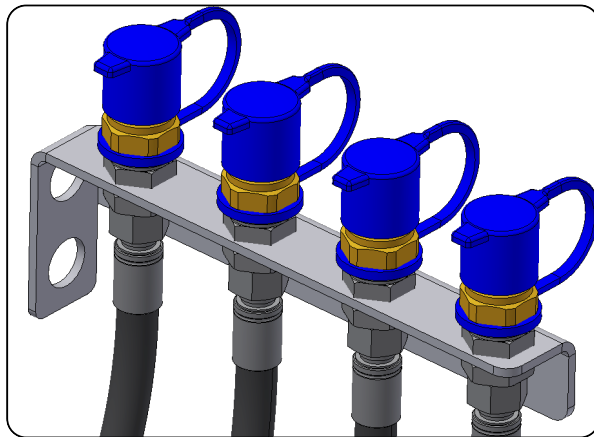
2. Make sure that the high-pressure-filter's body is clean, then remove the internal filter and replace it with a new one.

4:27 Check all valves for the hook-lift and make sure that they function correctly and that they do not leak.

4:28 Inspect the hook-lift's external mounted electrical and hydraulic panel that is used for additional equipment such as a snow plough, as follows:

NOTE: This equipment is optional. It is not standard.

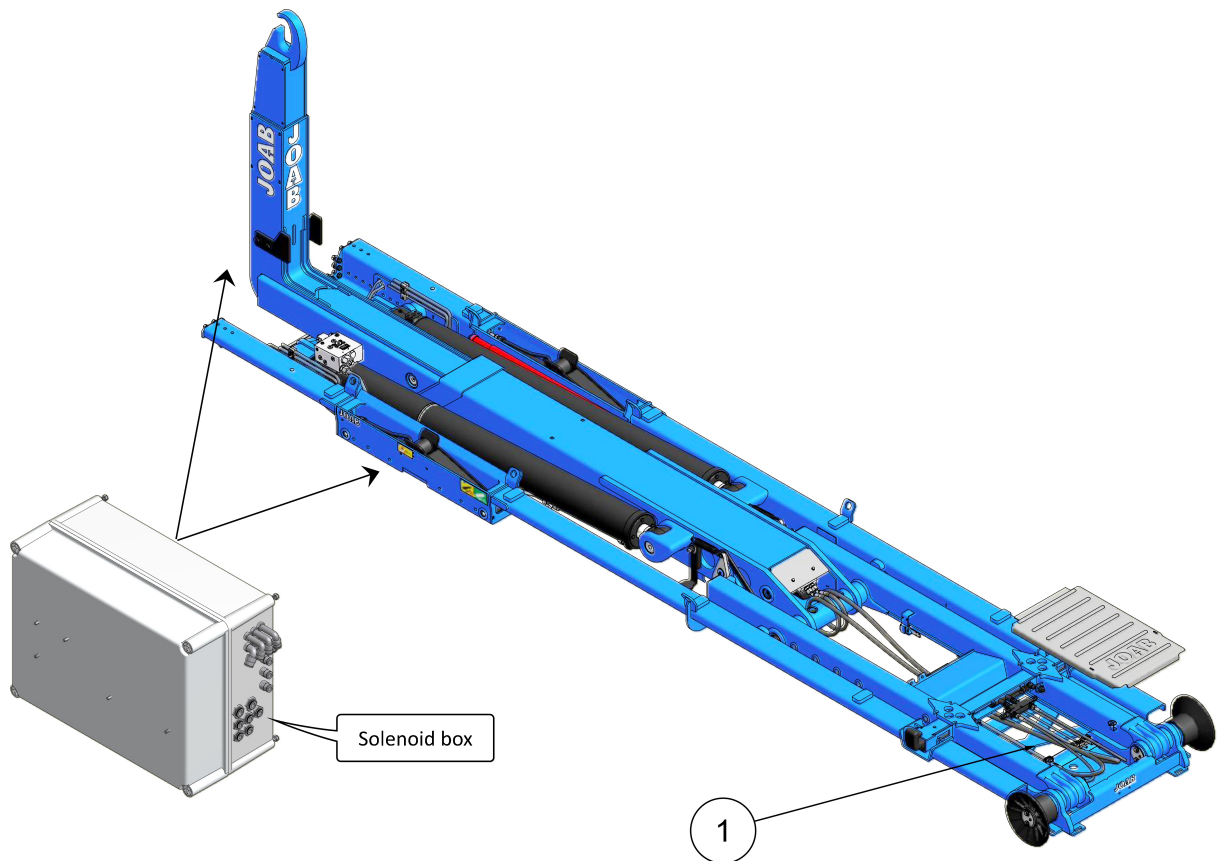
1. Inspect all hydraulic quick-couplings for the hook-lift and equipment, such as a snow plough. Verify that they function correctly, and do not leak. Make sure that they have protective caps, as shown below:



2. Make sure that all electrical connection points are free of damage and function correctly.

4:29 Open and inspect the two solenoid boxes for the hook-lift. Inspect the: cables, relays, valves, and fasteners for damage or evidence of corrosion.

The big solenoid box is located either to the side of the hook-post or to the side of the sub-frame, as shown below. The small solenoid box (1) is located under the plastic cover at the back of the hook-lift, as shown.



4:30 Check and make sure that all electrical wiring for the hook-lift is free from damage or deterioration. Inspect the following:

1. Check the wiring harnesses for damage. Make sure that they are correctly secured and routed. Make adjustments as necessary.
2. Check all cables and their contacts for damage. Make sure that the cables are properly attached to their contact points. If it is suspected that a wire or contact does not function correctly, perform a test of it. Perform an insulation and resistance test as required and repair any poor contacts.

Group 5 – Hydraulic Pressure Control

- 5:1** Measure the hydraulic pressure of the hook-lift at working temperature and adjust the pressure-regulator-valve, as required, so that it functions at the stated pressure listed below in Table 5.

The oil temperature must be at least 40 degrees when taking a reading. Use the pressure-regulator, shown below, to adjust the oil pressure if required.

Table 5: Hydraulic pressure relief valve values for hook-lifts

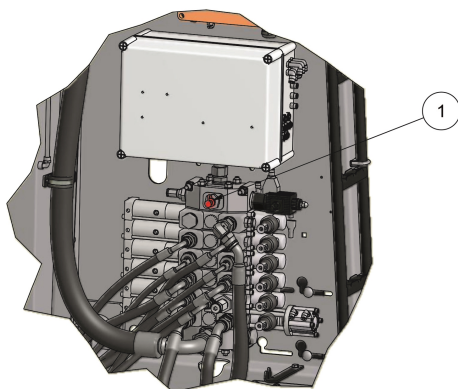
Model	Model Length	Hydraulic Pressure - bar
L17	4800	250
	5000	250
	5200	250
	5400	250
	5600	250
	5750	270
	5950	275
L20	4800	250
	5000	250
	5200	250
	5400	260
	5600	265
	5750	275
	5950	280
	6150	285

Table 5: Hydraulic pressure relief valve values for hook-lifts (fortsatt)

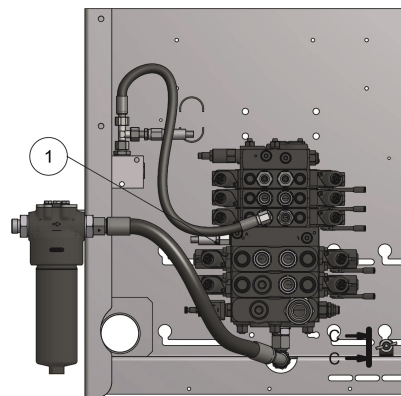
Model	Model Length	Hydraulic Pressure - bar
L24	4800	255
	5000	260
	5200	265
	5400	270
	5600	275
	5750	290
	5950	285
	6150	290
L18X	5000	240
	5200	245
	5400	250
	5600	255
L26	5750	285
	5950	285
	6150	285

When setting the pressure-regulator-valve, follow the steps listed below.

1. Turn the vehicle off.
2. Connect the pressure gauge to the hook-lift's main valve block, as shown.



Main valve block
Air operated



Main valve block
Electrically operated

3. Start the vehicle.

4. Activate the hydraulic pump for the hook-lift.
5. Allow the hydraulic oil to warm up.
6. Observe the hydraulic pressure and adjust the pressure-regulator-valve as necessary, so that it functions at the stated pressure in the above table.
7. Measure the hydraulic pressure once again and note the actual working pressure. It is recommended that it should be approximately 200 bar. Make adjustments as necessary.

NOTE: It is possible that a crane or other equipment on the hook-lift is connected to the port on the main valve block. In such cases, it is likely that a different working pressure is required. Make sure that you are aware of the actual system pressure required, in such cases. The maximum pressure allowed in such cases must still be in accordance with Table 5 above.

5:2 Check that the by-pass valve on the hook-lift's main valve block functions correctly. The system pressure should not fall below 2 bar when the hydraulic pump is stopped. To do this, follow the steps listed below:

1. Turn the vehicle OFF.
2. Connect a pressure gauge onto the valve block, as shown in the previous step.
3. Start the vehicle.
4. Start the hydraulic-pump for the hook-lift and allow the system to prime itself.
5. Stop the hydraulic-pump for the hook-lift.
6. Inspect the pressure gauge to verify that the system pressure does not fall below 2 bar.

Group 6 – Lubrication

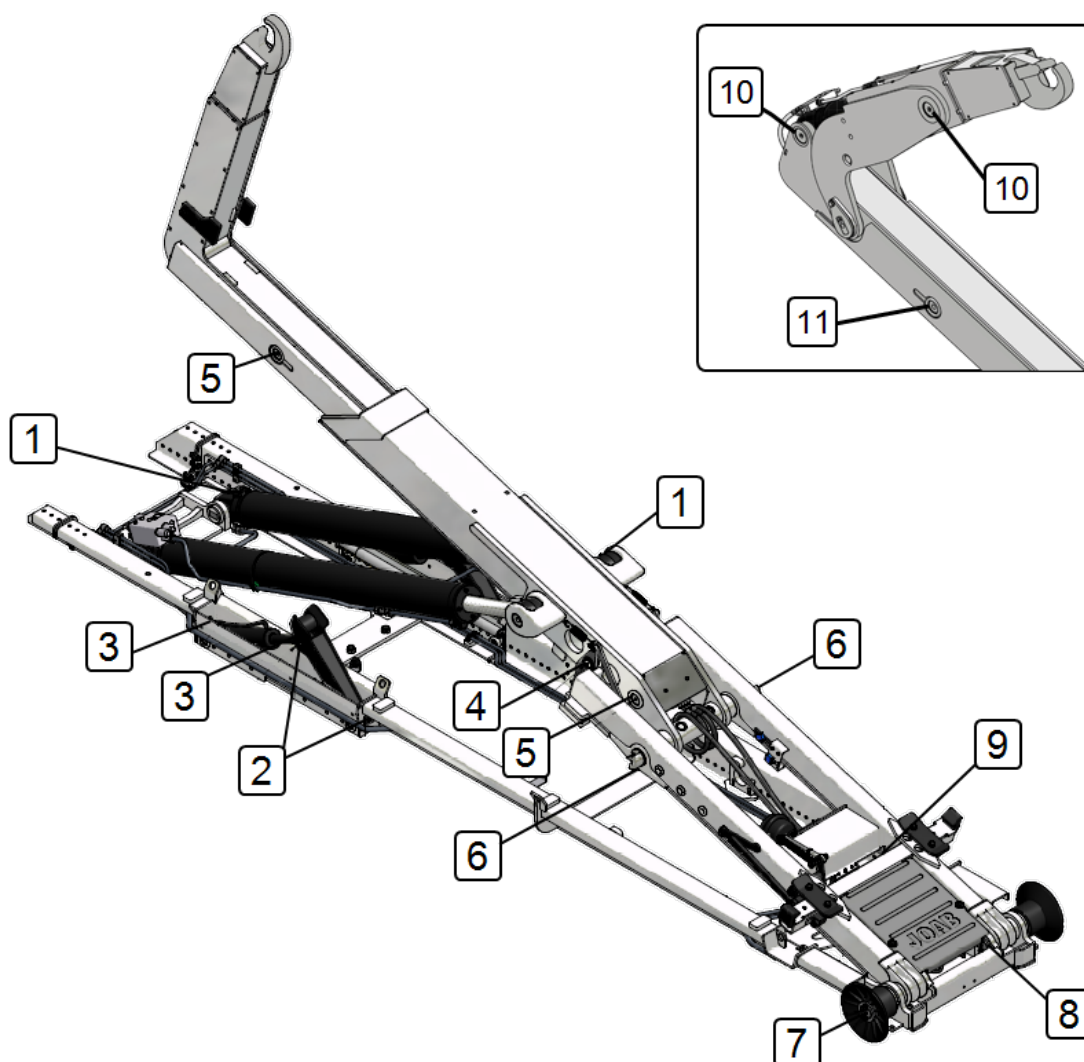
6:1 Lubricate all of the hook-lift's lubrication points, as listed and shown below:

Hook-Lift L

1. Tip-cylinder (x 4)
2. Auxiliary-lift-arm (x 4)
3. Auxillary-lift-cylinder (x 4)
4. Centre-lock
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)

Hook-Lift LA (optional)

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



Appendix 1 - Control Stick Functions

Provided below are the four different types of control-stick that are used to operate the hook-lift depending on model and options of the hook-lift.

Electrical Controlled Systems - CBW controller

Table 6: CBW controller stick functions


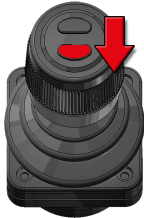







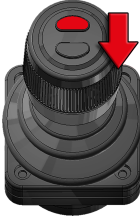
Tip Up	Tip Up Fast Operation*	Extending-Section IN
 <p>Pull backwards</p>	 <p>Bottom button pressed and pull backwards</p>	 <p>Turn the knob ant-clockwise</p>
Tip Down	Tip Down Fast Operation*	Extending-Section OUT
 <p>Push forwards</p>	 <p>Bottom button pressed and push forwards</p>	 <p>Turn the knob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





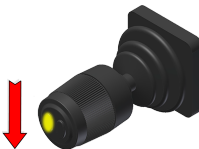





Table 6: CBW controller stick functions (fortsatt)

Auto Cycle Unload*		
 <p data-bbox="215 622 496 696">Top button pressed and pull backwards</p>		

*Extra option.

Electrical Controlled Systems - Two Button Controller




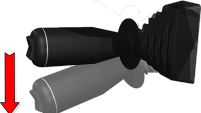


Table 7: Electrical system - 2 button controller

Tip Up	Tip Up Fast Operation*	Extending-Section OUT
 <p>Pull Up</p>	 <p>Inner front button pressed and pull up</p>	 <p>Turn the knob clockwise</p>
Tip Down	Tip Down Fast Operation*	Extending Section IN
 <p>Push Down</p>	 <p>Inner front button pressed and push down</p>	 <p>Turn the knob ant-clockwise</p>
Folding-Hook-Post DOWN**	Folding-Hook-Post UP**	Auto Cycle Unload*
 <p>Push the knob outwards</p>	 <p>Push the knob inwards</p>	 <p>Outer front button pressed and pull up</p>
Auto Cycle Load*		
 <p>Outer front button pressed and push down</p>		

Air Controlled Systems - Two Button Controller

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

Table 8: Air system - 2 button controller








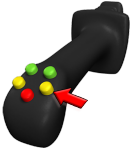
Tip Up	Tip Up Fast Operation*	Extending Section IN
 <p data-bbox="300 725 405 761">Pull Up</p>	 <p data-bbox="592 725 991 801">Top button pressed and pull up</p>	 <p data-bbox="1050 725 1422 761">Press the bottom button in</p>
Tip Down	Tip Down Fast Operation*	Extending-Section OUT
 <p data-bbox="268 1126 437 1162">Push Down</p>	 <p data-bbox="632 1126 951 1202">Bottom button pressed and push down</p>	 <p data-bbox="1078 1126 1398 1162">Press the top button in</p>

*Extra option.

Air Controlled Systems - Seven Button 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.

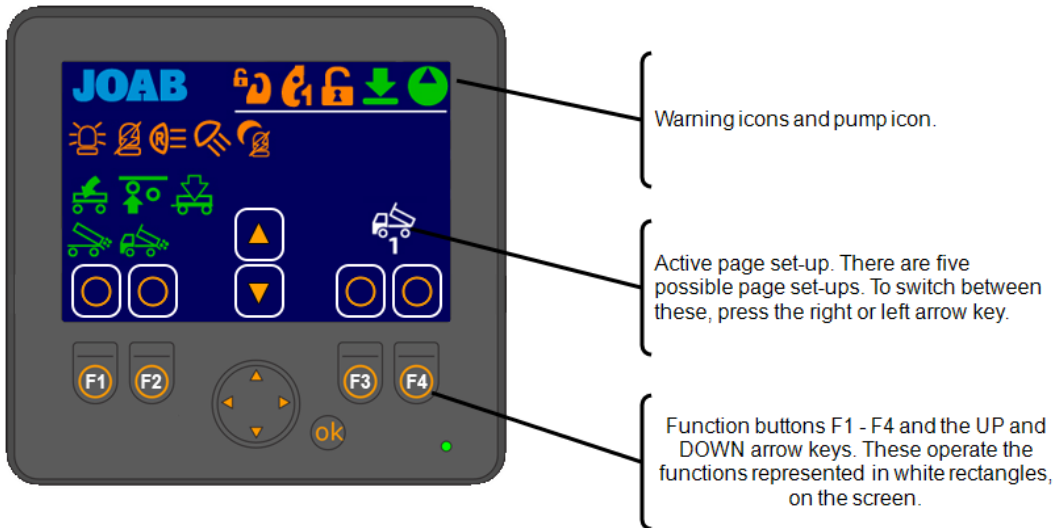
Table 9: Air system - 7 button controller

Tip Up	Tip Up Fast Operation*	Extending-Section IN
 <p>Pull the controller Up</p>	 <p>Inner green button pressed and pull the controller up</p>	 <p>Press the inner green button</p>
Tip Down	Tip Down Fast Operation*	Extending Section OUT
 <p>Push the controller Down</p>	 <p>Inner yellow button pressed and push the controller down</p>	 <p>Press the inner yellow button</p>
Folding-Hook-post UP**	Folding-Hook-post DOWN**	
 <p>Press the outer green button</p>	 <p>Press the outer yellow button</p>	

*Extra option.

Appendix 2 - CBW User Interface

Provided below is an overview of the CBW controller's user interface. For more information regarding the operation of the user interface, refer to the operator's manual.



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 10: User interface – icon description

Icon	Function	Icon	Function
	Night mode		Automatic flap - VEHICLE*
	Load light -ON		Tip trailer - UP*
	Back light - ON		Tip trailer - DOWN*
	Flashing light - ON		Draw bar*

Table 10: User interface – icon description (fortsatt)

Icon	Function	Icon	Function
	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 hook-lift is in its lowered status.		Axle lift - TRAILER*

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

Safety Warnings

The hook-lift 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.

Safe Working Distance

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



Working on the Hook-Lift

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



Park the Hook-Lift before driving the Vehicle

Make sure the hook lift is parked before driving the vehicle. Failure to do so can lead to serious injury or damage. There is a serious risk that the hook will make contact with the environment if it is not parked.



Risk of Slipping

Be aware when operating the hook-lift 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 hook-lift. Always verify that there is no risk of anyone becoming trapped or injured before operating the hook-lift.



Extended-Tipping-Cylinders

Before using the emergency operation function, check and verify if the hook-lift 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 Packets and Warranty

Service packets can be ordered from JOAB using the information provided below. Always have the information provided on the manufacture plate ready before making contact.

Table 11: Service packets

Department	Contact Details
Service and Spare Parts	JOAB Göteborg telephone: +46 31-7050600
Warranty	JOAB Göteborg telephone: +46 31-70506717
Spare Parts	JOAB Göteborg, telephone: +46 31-7050686
Technical Support	JOAB Göteborg telephone: +46 31-7050688
Service	JOAB Göteborg telephone: +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

Table 11: Service packets (fortsatt)

Department	Contact Details
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 to order spare parts and find your nearest JOAB authorised workshop.

