

EFFER JIB 45X



SPACE evo

Operator's Manual GB

737 4315



Congratulations!

You are now the owner of a quality Product manufactured by Hiab (part of Cargotec Corporation).

The aim of this manual is to help you handle, maintain your crane safely and with full satisfaction.

This Manual provides detailed information about your Product, its control systems and its practical management and maintenance.

Please read the complete Manual carefully and make sure that you understand its contents. Please also carefully familiarise yourself with your Product before you start to use it.



Help us to improve this manual. Please send your comments and suggestions to **documentation@hiab.com**

This manual applies to JIBs that operate with the crane control system
SPACEevo from serial number:

00000330

2023-03

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1. Introduction

1.1. This Operator's Manual is intended for operators of cranes with a JIB

This manual describes

- operation
- maintenance and faults

This manual is a supplement to the Operator's Manual for your type of crane.



DANGER

If you have not studied the complete Operator's Manual for your crane and for your JIB carefully, it could lead to fatal accidents or serious damage.

Therefore you should:

- Study the entire Operator's Manual carefully.
- Operate the crane only after you have done so.
Follow the directions for use, operation and maintenance of the crane exactly.

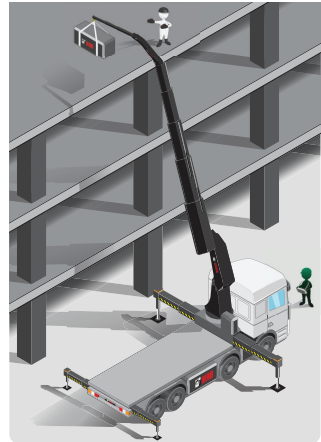


NOTE

The manufacturer reserves the right to change specifications, equipment, operating instructions and maintenance instructions without prior notice.

1.2. The JIB

The JIB is an interchangeable equipment that extends the crane boom. Use the JIB so as to be able to reach further.



NOTE

- Load diagram signs for the JIB are placed on the column.
- See the Technical Data for the precise technical information concerning the JIB on your crane.

Crane configurations where JIB 45X can be installed:

Model	JIB 45X
EFFER iX.195 HP	E-3-4-5

1.3. The Machinery Directive 2006/42/EC

- The Declaration of Conformity, delivered with the equipment contains (1):
- Business name and full address where the interchangeable equipment is manufactured (2):

Factory addresses:

Hiab Cranes S.L.U. Pol. Ind. Malpica, calle E, 86 50016 Zaragoza, Spain

Cargotec Poland Sp. z o. o. Ul. Metalowa 2, 73-102 Stargard, Poland

Hiab Italia S.r.l. Via IV Novembre 12, 40061 Minerbio (BO), Italy

- Description and identification of the equipment (3):

Mark

Type: see chapter Identification of the interchangeable equipment.

Serial number

Manufact. year

Declaration of which provisions the equipment fulfils.

- Name and address of the person authorised to compile the technical file (4):

Name

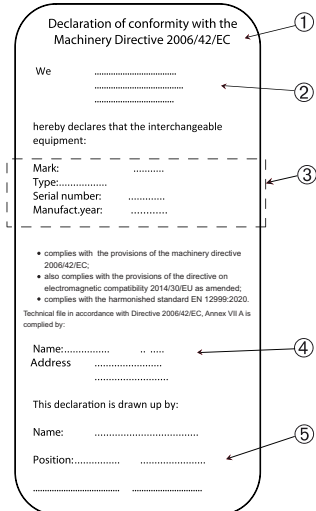
Address

- Identity and signature of the person who drawn up the declaration (5):

Name

Position

Date and Signature



Declaration of conformity with the Machinery Directive 2006/42/EC

We
.....
.....

hereby declares that the interchangeable equipment:

Mark:
Type:.....
Serial number:
Manufact. year:

• complies with the provisions of the machinery directive 2006/42/EC;
• also complies with the provisions of the directive on electromagnetic compatibility 2014/2002/EU as amended;
• complies with the harmonised standard EN 12999:2020.

Technical file in accordance with Directive 2006/42/EC, Annex VII A is compiled by:

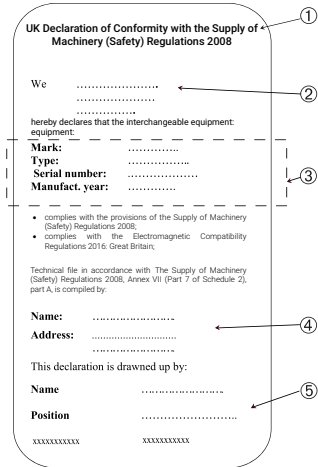
Name:.....
Address

This declaration is drawn up by:

Name:
Position:.....
.....

1.4. The Machinery (Safety) Regulations 2008

- The Declaration of Conformity, delivered with the equipment contains (1):
- Business name and full address where the interchangeable equipment is manufactured (2):
 Factory addresses:
 Hiab Cranes S.L.U. Pol. Ind. Malpica, calle E, 86 50016 Zaragoza, Spain
 Cargotec Poland Sp. z o. o. Ul. Metalowa 2, 73-102 Stargard, Poland
 Hiab Italia S.r.l. Via IV Novembre 12, 40061 Minerbio (BO), Italy
- Description and identification of the equipment (3):
 Mark
 Type: see chapter Identification of the interchangeable equipment.
 Serial number
 Manufact. year
 Declaration of which provisions the equipment fulfils.
- Name and address of the person authorised to compile the technical file (4):
 Name
 Address
- Identity and signature of the person who drawn up the declaration (5):
 Name
 Position
 Date and Signature



UK Declaration of Conformity with the Supply of Machinery (Safety) Regulations 2008

We

 hereby declares that the interchangeable equipment:
 equipment

Mark:
 Type:
 Serial number:
 Manufact. year:

• complies with the provisions of the Supply of Machinery (Safety) Regulations 2008;
 • complies with the Electromagnetic Compatibility Regulations 2016 Great Britain.

Technical file in accordance with The Supply of Machinery (Safety) Regulations 2008, Annex VII (Part 7 of Schedule 2), part A, is compiled by:

Name:
 Address:

This declaration is drawn up by:

Name
 Position

XXXXXXXXXX XXXXXXXXXXXX

1.5. Identification of JIB

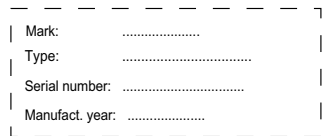
Description and identification of the JIB:

Mark:

Type: **JIB 45X**

Serial number:

Manufact. year:

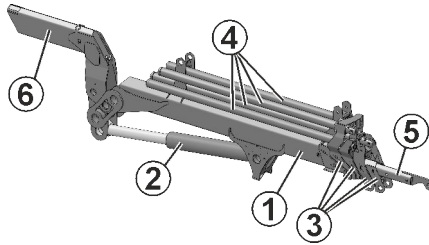


Mark:
 Type:
 Serial number:
 Manufact. year:

2. Structure and parts of the JIB

2.1. The JIB consists of the following components:

- (1) JIB boom
- (2) JIB cylinder
- (3) JIB extension
- (4) JIB extension cylinder
- (5) JIB manual extension [option]
- (6) JIB support



3. Safety precautions and warnings

3.1. Safety precautions and warnings



DANGER

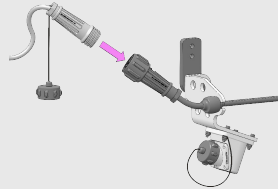
If you have not studied the Operator's Manual for your crane carefully, it could lead to fatal accidents or serious damage.



DANGER

When using the JIB, always connect the JIB to the SPACE control system.

Without this connection, the OLP protection for the JIB is not activated.

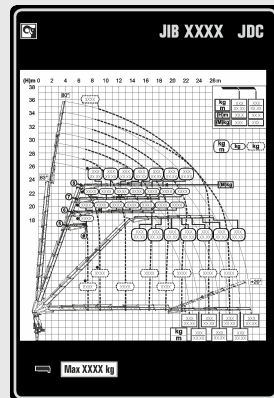


DANGER

Load diagram JIB

Load diagram signs on the column show the maximum loads in the working zone for your JIB.

Never exceed the JIB's maximum permitted load!



NOTE

When you use equipment such as hoist, JIB, lifting accessories or interchangeable equipment and their necessary components, you add weight to the load. Because of this, the load you can lift is less heavy.



DANGER

Always check that the JIB is firmly attached before use.



WARNING

The operation of a crane with JIB is different from the operation of a crane without it. For example, there is a big difference when you need to put the crane in and out of transport position.

To prevent damage to the JIB: study this instruction carefully before operating the crane with the JIB.

4. Hydraulic connections

You can disconnect a hydraulic line or a hose only for specific operator's tasks (for example, disconnecting the interchangeable equipment).



DANGER

- STAY AWAY from oil leaks in the hydraulic system! Oil in the hydraulic system is under high pressure, can spill, be very hot and cause you injury.
- Do not replace any hydraulic hoses or lines yourself.



WARNING

- Switch off the control system and the PTO before connecting or disconnecting the electrical and hydraulic connections.
- Keep the electrical and hydraulic protection caps and plugs in good condition and store them in a safe place.

4.1. Hydraulic quick couplings [option]

Hydraulic quick couplings allow a faster connection and disconnection of each hydraulic line.

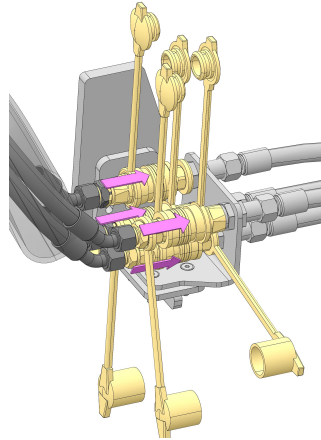


WARNING

- Switch off the control system and the PTO before connecting or disconnecting the connectors.
- Always remove/attach first the electrical connection before the hydraulic connection.
- Keep the electrical and hydraulic protection caps and bypass in good conditions and store them in a safe place.

To connect the hydraulic quick couplings you must:

1. Switch off the control system.
2. Disengage the PTO.
3. Remove the protection caps.
4. Connect the respective hydraulic quick couplings taking care with the corresponding identification:
 - Yellow and blue collars = 5th function
 - Red and green collars = 6th function

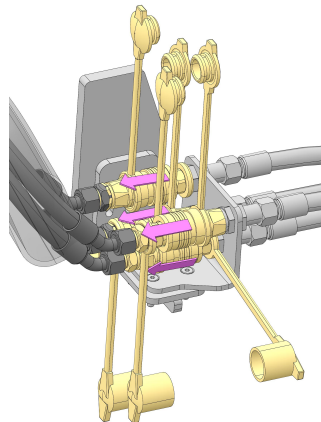

NOTE

To prevent damage, do not change the hydraulic quick couplings position.

5. Reconnect the PTO and switch on the system, if needed.
6. Do a functional test of all movements of the interchangeable equipment to verify that there are no mistakes in the connections.

To disconnect the hydraulic quick couplings you must:

1. Switch off the control system.
2. Disengage the PTO.
3. Disconnect the hydraulic couplings, and protect them with protective caps.
4. Reconnect the PTO and switch on the system, if needed.
5. Operate the crane to verify that all functions work correctly.



4.2. Hydraulic quick couplings (MULTI-X) [option]

Hydraulic quick couplings allow the connection of several hydraulic lines at the same time.

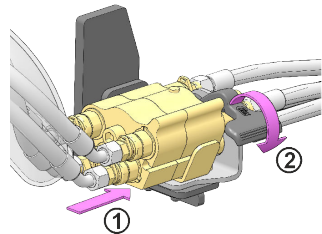


WARNING

- Switch off the control system and the PTO before connecting or disconnecting the connectors.
- Always remove/attach first the electrical connection before the hydraulic connection.
- Keep the electrical and hydraulic protection caps and bypass in good conditions and store them in a safe place.

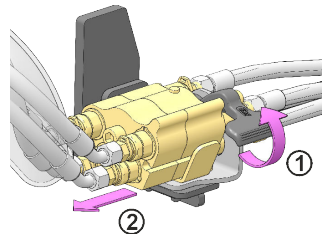
To connect the hydraulic quick couplings you must:

1. Switch off the control system.
2. Disengage the PTO.
3. Remove the protection caps.
4. Turn the lever to the upper position to allow the hydraulic connection.
5. Connect the hydraulic quick coupling MULTI-X (1).
6. Turn the lever to the lower position (2). Make sure that the lever locks the connection correctly.
7. Reconnect the PTO and switch on the system, if needed.
8. Do a functional test of all movements of the interchangeable equipment to verify that there are no mistakes in the connections.



To disconnect the hydraulic quick couplings you must:

1. Switch off the control system.
2. Disengage the PTO.
3. Turn the lever to the upper position (1).
4. Disconnect the hydraulic couplings (2), and protect them with protective caps.
5. Turn the lever to its initial position.
6. Reconnect the PTO and switch on the system, if needed.
7. Operate the crane to verify that all functions work correctly.



5. Operation

5.1. Assembling the JIB (without hoist)



WARNING

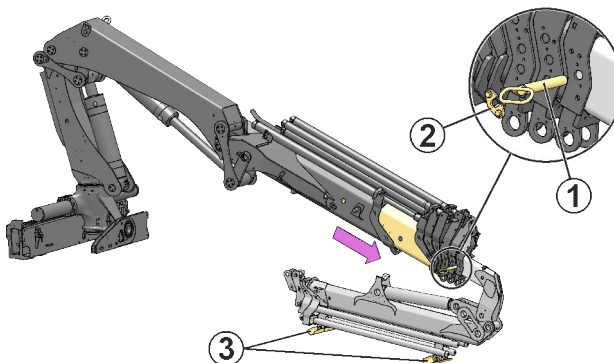
Take care, when assembling and disassembling the JIB that your fingers do not get trapped.



WARNING

- Switch off the control system and the PTO before connecting or disconnecting the electrical and hydraulic connections.
- Keep the electrical and hydraulic protection caps and plugs in good condition and store them in a safe place.

1. Remove the hook, hook support, or lifting accessory from the tip of the crane.
2. Remove the locking devices from the tip of the crane.
3. Assemble the JIB on the crane:
 - a. Operate the crane to align the boom system with the JIB support.
 - b. Carefully extend the crane extension to put the JIB support in the last crane extension.
 - c. Place the shaft (1).
 - d. Install the securing plate or pin (2).



DANGER

Check that the JIB is firmly attached!

Check that the shaft and the securing plate are firmly attached!

4. Carefully connect the JIB to the hydraulic system:



WARNING

Clean the quick connect coupling on the hydraulic system and on the JIB. Dirt will cause serious damage to the hydraulic system.

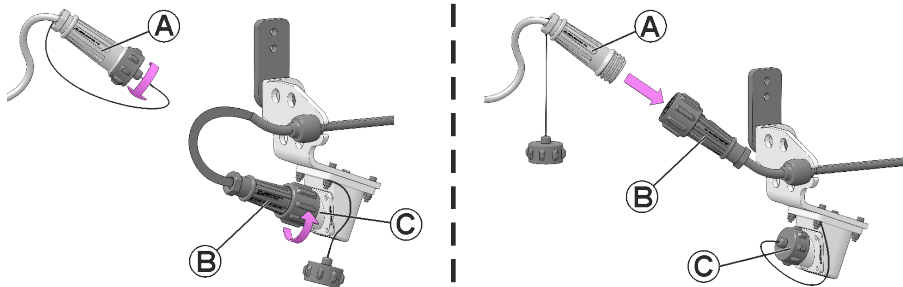
- Switch off the control system and the PTO before connecting the hydraulic system.
- Release the pressure on the hydraulic system. Operate the levers on the main control valve for the JIB functions.
- Connect the hydraulic couplings.



NOTE

Refer to the content [Section 4: Hydraulic connections \(page 14\)](#) for more information.

5. Connect the JIB to the control system:



- Switch off the control system and the PTO before connecting the electrical connections.
- Remove the plug from the JIB connector (A).
- Remove the crane connector (B) from the connector (C).
- Protect the connector (C) with the plug.
- Connect the JIB connector (A) to the crane connector (B).



DANGER

- When using the JIB, always connect the JIB to the control system.
- Never use the JIB without connecting it to the control system.

- Carefully operate the crane and JIB. Make sure that the JIB is firmly attached and that it works correctly.
- Remove the JIB parking supports (3).

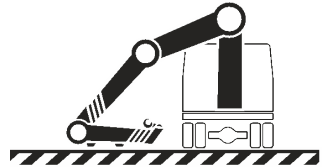
5.2. Disassembling the JIB (without hoist)



WARNING

- Take care, when assembling and disassembling the JIB that your fingers do not get trapped.
- Disassemble the JIB carefully. Rough and careless handling can damage the JIB.

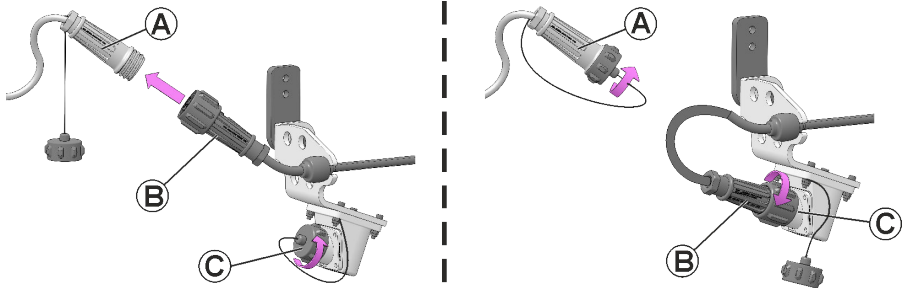
1. Operate the crane and put it in a safe area to disassemble the JIB.
2. Remove the hook from the JIB, if needed.
3. Fully retract the crane and JIB extensions.
4. Operate the crane and JIB:
 - a. Extend the 2nd boom cylinder totally to reach a similar position as shown on the picture.
 - b. Extend the crane extensions at least the length of the JIB support (800 mm approx.).
 - c. Make sure that the JIB parking supports are mounted on the JIB.
 - d. Lower the JIB very carefully on to a level surface until the JIB supports for the ground rest on the ground.



CAUTION

Make sure that the tip of the crane and the JIB are not damaged in this operation.

5. Disconnect the JIB from the control system:



- a. Remove the JIB connector (A) from the crane connector (B).
- b. Remove the plug from the connector (C).
- c. Protect the JIB connector (A) with the plug.
- d. Connect the crane connector (B) to the connector (C).



NOTE

Make sure that the crane connector (B) is connected to the connector (C) when disassembling the JIB. Without this connection, the control system senses the JIB still attached to the crane.

6. Carefully disconnect the JIB from the hydraulic system:

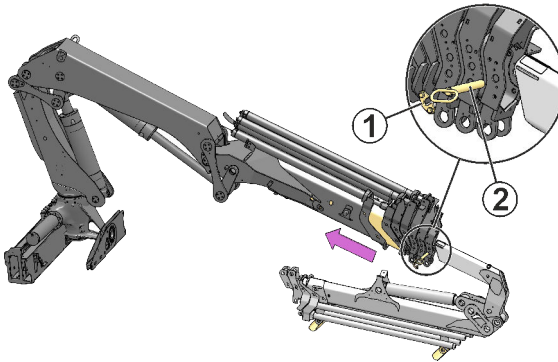
- a. Switch off the control system and the PTO before disconnecting the hydraulic system.
- b. Release the pressure on the hydraulic system. Operate the levers on the main control valve for the JIB functions.
- c. Disconnect the hydraulic couplings, and protect them with protective caps.



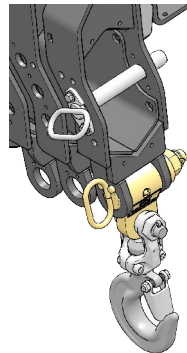
NOTE

Refer to the content [Section 4: Hydraulic connections \(page 14\)](#) for further information.

7. Remove the JIB from the tip of the crane:
 - a. Remove the securing plate (1).
 - b. Remove the shaft (2).



8. The JIB is now free from the crane. Carefully retract the crane extension away from the JIB support.
9. If you are going to work with the hook on the tip of the crane:
 - a. Attach the hook support to the last crane extension.
 - b. Attach the hook to the hook support.



5.3. SAF Semi Automatic Folding [option]

SAF is a feature which allows the operator to fold or unfold the boom system in one single sequence using only one lever.



Unfold the boom system semi automatically

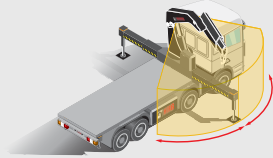


WARNING

Never use SAF with mounted tools.


WARNING

Make sure there is enough space for the boom system to unfold/fold semi automatically. If the situation does not allow SAF, use crane mode to operate the boom system out of/into the parked position.


WARNING

If your crane has manual extensions, make sure that they are totally retracted or removed before operating the crane with the SAF feature.

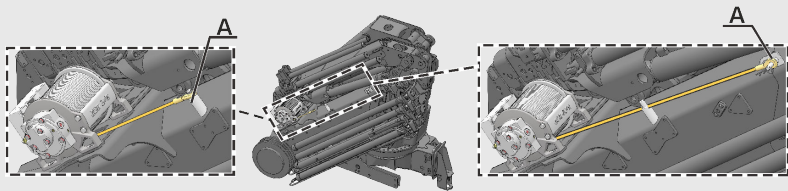

WARNING





If your crane has long JIB support, make sure that it is totally retracted before operating the crane with the SAF feature.


WARNING

If your crane has a hoist, change from hoist to hook operation.

Make sure that the rope is on the 2nd boom support and it does not pass through any pulley. If not, remove the rope from the pulleys and put it in the 2nd boom support (A) before operating the crane with the SAF feature.



1. Select the menu for SAF on the controller.
2. If SAF is not configured in a separate crane menu, push the button  to activate it.
3. Operate the lever on the controller until the boom system has been fully unfolded:
 - XSDrive  or 
 - CombiDrive 




DANGER

Pay careful attention when using this feature.

Always maintain eye contact when operating the crane.

During this movement, the boom system will unfold itself, release the lever immediately if the boom system is about to:

- Hit a person
- Hit an object
- Hit a moving obstacle that suddenly comes closer to the crane.

4. If SAF is not configured in a separate crane menu, push button  to deactivate it.

5.4. Operate the crane with JIB (without hoist) out of parked position



DANGER

Position the stabiliser extensions and legs on the ground.

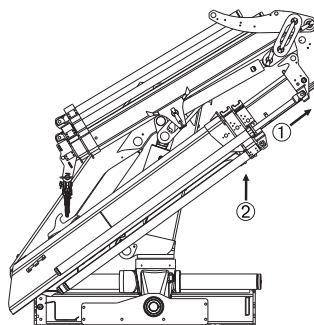


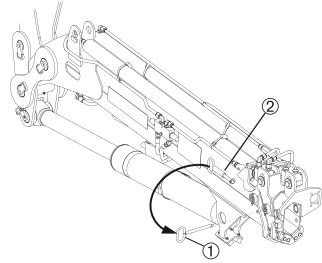
WARNING

Always operate a crane with a JIB very carefully. The space for moving the boom system and the JIB is limited. Make sure that there is enough space available. Careless or rough crane movements can seriously damage the crane and the JIB.

EFFER iX.195 HP

1. Extend the crane extension approximately 600 mm (1), while at the same time the JIB boom is moved a small distance to disengage the hook from its locking device. Make sure that you do not damage any interchangeable equipment and/or optional crane component, if installed.
2. Raise the 2nd boom a small distance from transport position (2).
3. Raise the 1st boom carefully. You need to raise the 1st boom to an angle large enough to let the 2nd boom move without touching the crane base. When you arrive at that angle, you can operate the 2nd boom and the JIB.



**NOTE**

If the crane has both JIB and hoist, the extensions are locked with a locking pin. Remove the locking pin (1) and put it in the holder (2).

5.5. Working with the JIB

5.5.1. Operation with the 5th and 6th functions

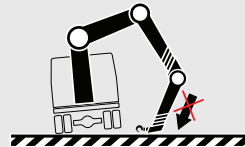
The JIB is operated with the 5th and 6th functions of the control valve or from the remote control.

Crane Speed

With the boom system fully extended: work at low crane speed.

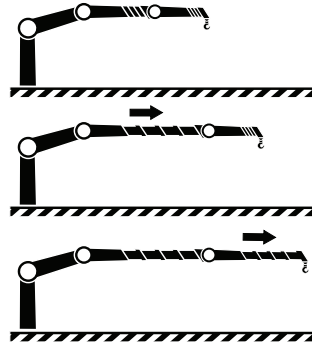
**WARNING**

If the JIB extensions are extended, do not push the JIB tip against the ground. You will damage it.



5.5.2. How to achieve sufficient reach

1. First extend the crane extensions completely.
2. Then extend the JIB as far as needed.



WARNING

Do not slew the crane until the load is completely free of the ground.



DANGER

Never exceed the JIB's maximum permitted load.



WARNING

In high boom positions, retract the JIB extensions before retracting crane extensions. Otherwise, unexpected side movements of the boom system can occur, causing dangerous movements of the load.

5.6. SAF Semi Automatic Folding [option]

SAF is a feature which allows the operator to fold or unfold the boom system in one single sequence using only one lever.



Fold the boom system semi automatically



WARNING

Never use SAF with mounted tools



WARNING

For hoist:

Change from hoist to hook operation.

1. Make sure there is enough space for the crane to fold semi automatically.



DANGER

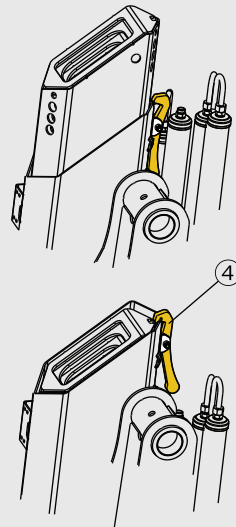
In case the situation does not allow semi automatic folding, use crane mode to put the boom system to folded position.










NOTE

For cranes with S-boom:


Before you select SAF menu, it is necessary to extend the boom extensions until the catcher (4) drops. Retract the extensions carefully until the catcher secures the boom. By selecting the SAF menu, you confirm that the extensions are fully retracted and that the catcher locks the boom. The SAF sequence can now be started.



2. Select menu for SAF.
3. If SAF is not configured in a separate crane menu, push button  to activate it.
4. Operate lever on the controller until the extensions are retracted:
 - XSDrive 
 - CombiDrive 
5. Confirm that the extensions are retracted on the controller:
 - XSDrive 
 - CombiDrive 
6. Continue to hold lever on the controller until the boom system is folded:
 - XSDrive 
 - CombiDrive 

**DANGER**

During this movement, the boom system will fold itself. Make sure that the boom system does not cause injury or damage, if so, release the lever immediately.

7. If SAF is not configured in a separate crane menu, push button  to deactivate it.

5.7. Operate the crane with a JIB (without hoist) to parking position

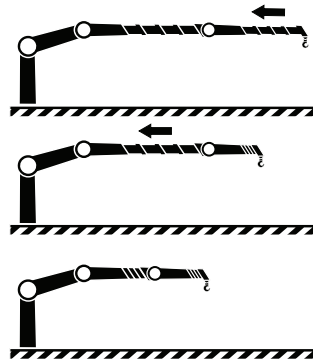


WARNING

Always operate a crane with a JIB very carefully. The space for moving the boom system and the JIB is limited. Make sure that there is enough space. Careless or rough crane movements can seriously damage the crane and the JIB.

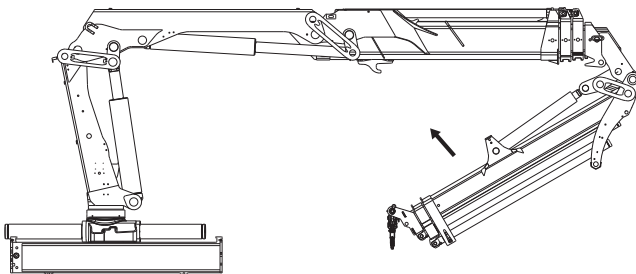
Retract the JIB extensions first.

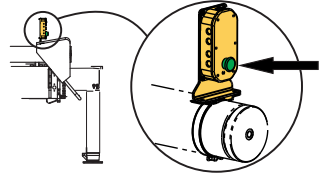
Then retract the crane extensions.



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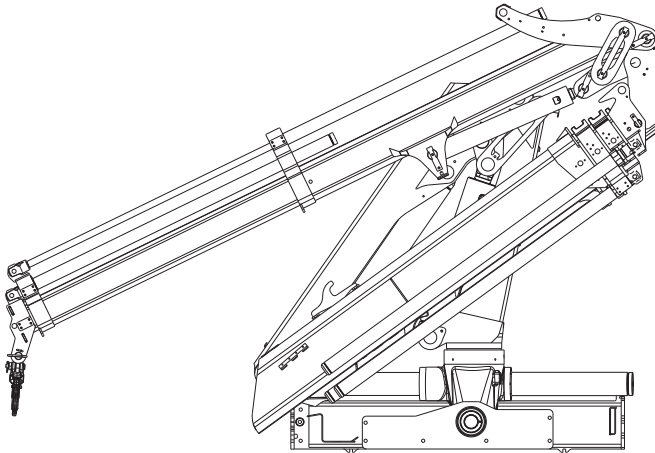
1. Operate the JIB almost completely towards the 2nd boom.
2. Raise the 1st boom.



**NOTE**

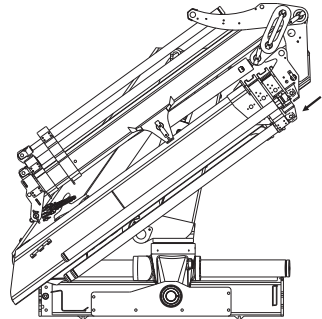
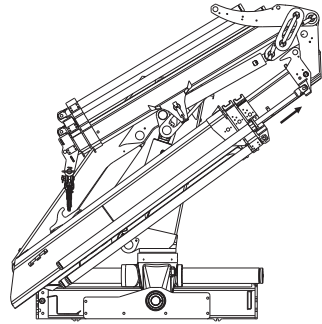
If the crane has OPS, push and hold the button while you do steps 3 to 4.

3. Operate the 2nd boom against the bottom of the 1st boom. Make sure that the position of the 1st boom is sufficiently high to do so.
4. Lower the 1st boom to go into the parking support of the crane base. Adjust the 2nd boom to the parking support on the column.
5. Extend the JIB extensions until you can reach the hook. Turn the hook manually to engage the locking device.



6. Retract the JIB extensions completely and extend the crane extension approx 600 mm.

7. Retract the crane extensions while adjusting the JIB until the hook engages the locking device.
8. Lock the JIB in this position by securing the hook in the locking device.



5.8. OLP JIB

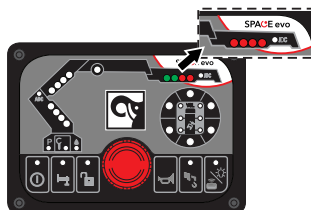
5.8.1. OLP JIB on the User Interface

OLP prevents the JIB from being overloaded.

When 100% of the maximum permitted pressure is reached, OLP cuts in and stops all functions that increase the pressure.

The pressure level in the JIB boom is indicated by the LEDs on the User Interface:

- 50% of maximum pressure – 1 of 4 LEDs light green
- 70% of maximum pressure – 2 of 4 LEDs light green
- 90% of maximum pressure – 3 of 4 LEDs blinking green
- 100% of maximum pressure – 4 of 4 LEDs light red



DANGER

Never use the OLP override to overload the crane deliberately! Never exceed the values given on the load plate.



NOTE

Do not operate heavy loads with the extensions fully retracted. In an OLP situation, it is an advantage to be able to retract the extensions.



NOTE

In case of a crane breakdown, the use of OLP release will be part of the investigation. If the use of OLP release is too excessive it might affect warranty.

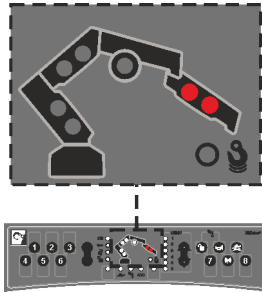
5.8.2. OLP JIB on the XSDrive controller

OLP prevents the JIB from being overloaded.

When 100% of the maximum permitted pressure is reached, OLP cuts in and stops all functions that increase the pressure.

The pressure level in the JIB boom is indicated by the LEDs on the User Interface:

- Lower green LED on: 70% of maximum pressure.
- Lower red LED flashing: 90% of maximum pressure.
- Lower and upper red LEDs red on: 100% of maximum pressure.



DANGER

Never use the OLP override to overload the crane deliberately! Never exceed the values given on the load plate.



NOTE

Do not operate heavy loads with the extensions fully retracted. In an OLP situation, it is an advantage to be able to retract the extensions.



NOTE

In case of a crane breakdown, the use of OLP release will be part of the investigation. If the use of OLP release is too excessive it might affect warranty.

5.8.3. OLP JIB on the CombiDrive controller

OLP prevents the JIB from being overloaded.

When 100% of the maximum permitted pressure is reached, OLP cuts in and stops all functions that increase the pressure.

- A percentage of maximum permitted pressure in the cylinders is shown on the displays. When 90% or more of maximum pressure is reached, the centre display turns yellow on the boom that get into 90% of maximum permitted pressure in the cylinder.
- When pressure reaches 100 %, all functions that would increase pressure are blocked. If the operator attempts to operate a blocked function, the function symbol is replaced by a cross while the lever is engaged. When the lever is returned to neutral position, the cross disappears and the function symbol returns. Operate permitted (pressure reducing) functions only.



DANGER

Never use the OLP override to overload the crane deliberately! Never exceed the values given on the load plate.



NOTE

Do not operate heavy loads with the extensions fully retracted. In an OLP situation, it is an advantage to be able to retract the extensions.



NOTE

In case of a crane breakdown, the use of OLP release will be part of the investigation. If the use of OLP release is excessive it might affect warranty.

6. Maintenance

6.1. Maintenance and service

Follow the instructions in this manual and the Operator's Manual for your crane.

6.2. Lubrication

General greasing of the cranes

Incorrect or insufficient lubrication of a crane is the number one cause of premature failure.



WARNING

Before and after a long stop of the crane, lubrication is absolutely necessary. This is especially important after a winter shutdown.



WARNING

Follow the lubrication schedule exactly. If you do not do so, you can cause serious damage to the crane, interchangeable equipment and/or optional crane component.

Procedure:

1. Shut down the crane.
2. Make sure that all the lubrication points are clean before lubricating. Dirt can damage the parts.
3. Lubricate all points in each section.
4. Operate the crane through the full cycle for each section. Moving the lubricated parts is really important to get the full and correct lubrication of all moving components.
5. Shut down the crane and repeat the lubrication.
6. Lubrication is finished when the grease spills out from the ends. Clean the excess grease.



WARNING

Personnel should never attempt to work on a crane that is moving. Serious injury or death will occur if you try to work on an activated/moving crane.



CAUTION

When you use pressure grease pumps, open the plastic safety guard of the nipple and close it at the end.

Greases

Use lithium-based grease containing EP additives (consistencies 2 and 3 are recommended, depending on the climate).

**CAUTION**

Do NOT grease with graphite or molybdenum-disulphide additives.

Recommended greases:




BP LS EP 2, ESSO UNIWAY EP2 N, AGIP GR MU/EP3, NYNÄS UNIFETT EP.

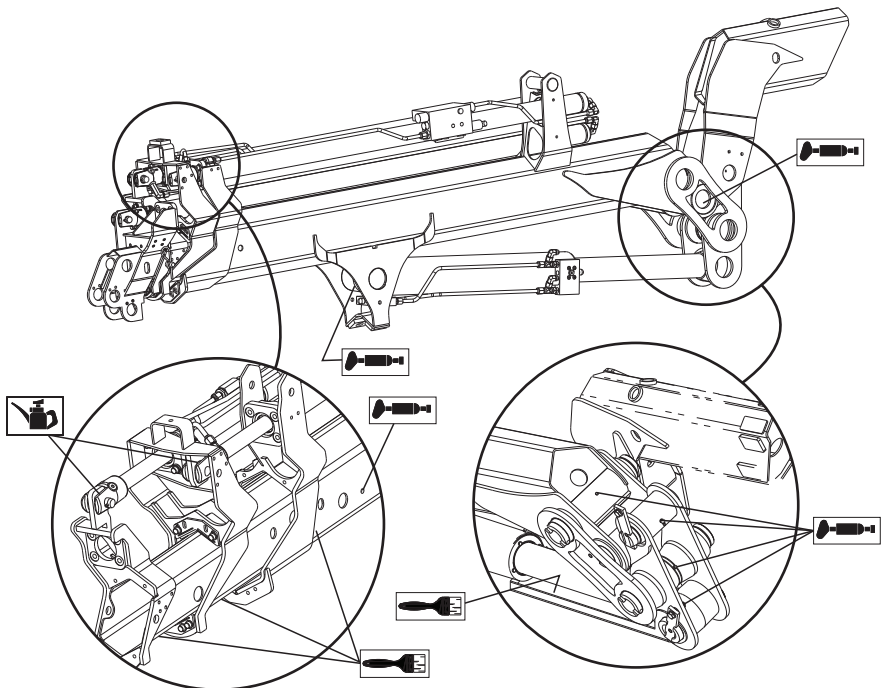
Alternative:

Use a Teflon grease spray to lubricate the extensions and mobile parts.

6.3. Lubrication schedule JIB

Lubricate all the marked points.

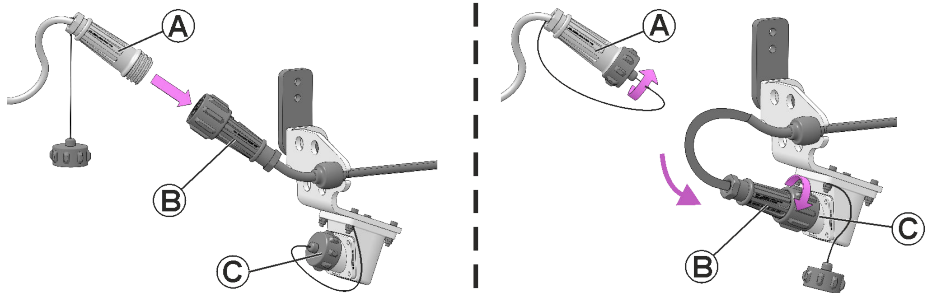
	Lubricate after every 16 hours of operation.
	Lubricate after every 50 hours of operation.
	Grease after every 50 hours of operation.



6.4. Faults

Make sure that the JIB connections are according to the operation you are doing to avoid errors in the control system:

- When you use the JIB, connect the JIB connector (A) to the control system on the crane connector (B).
- After you disassemble the JIB, connect the crane connector (B) to the control system on the connector (C).



NOTE

Make sure that the plug is connected. Without this plug the control system senses the JIB still attached to the crane.



WARNING

- If faults occur with the JIB, contact an authorised service workshop.
- Never try to repair the JIB yourself!

7. Technical Data

Documentation

The Technical Data for the JIB shall be printed out when installed on the crane.

The Operator's manuals for the crane and the JIB should be stored together with Technical Data for both.

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