

70X



SPACE evo

JIB Operator's Manual GB

737 4229



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
SPACEvo from serial number 222178

2023-06

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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.

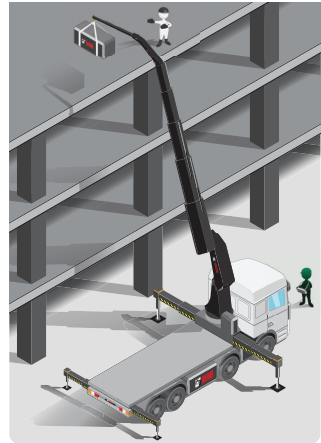


NOTE

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

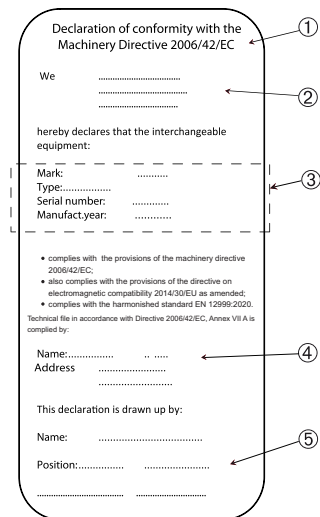
- Load diagram signs for the JIB are placed on the column.
- See the Technical Data for the precise technical information concerning the JIB on your crane.

Crane configurations where JIB 70X can be fitted:

model	JIB 70X
EFFER iX.355 HP	E-5-6

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:

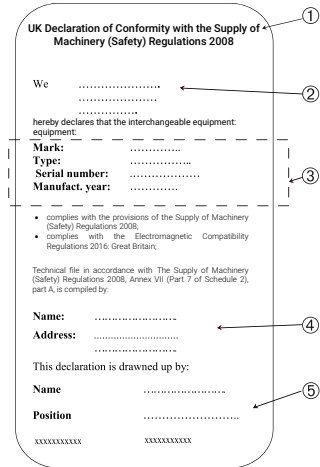
Name:.....
 Address

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

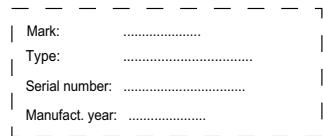
Description and identification of the JIB:

Mark:

Type: **JIB 70X**

Serial number:

Manufact. year:



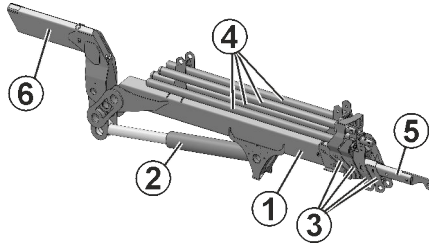
Mark:
 Type:
 Serial number:
 Manufact. year:

2. Structure and parts of the JIB

2.1. JIB Components

2.1.1. 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

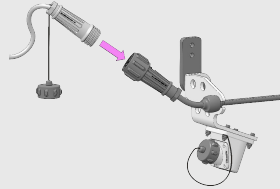
If you have not studied the Operator's Manual for your crane carefully, it could lead to fatal accidents or serious damage.



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.

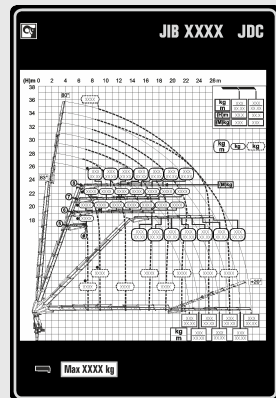


DANGER

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.

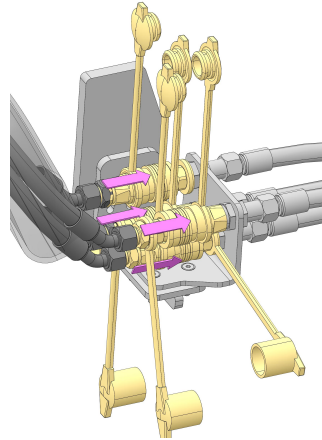


WARNING

- 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

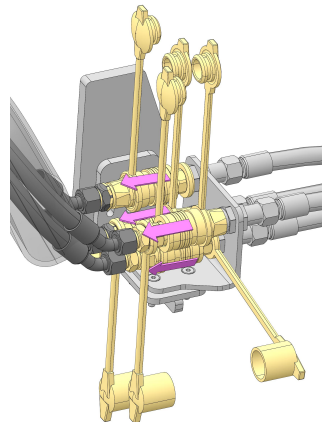

NOTE

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.

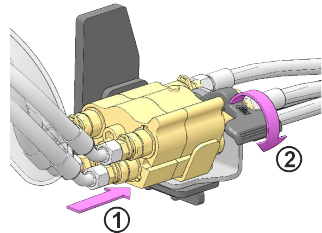


WARNING

- 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.

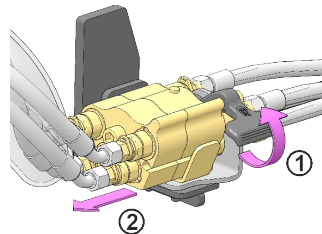
To connect the hydraulic quick couplings you must:

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

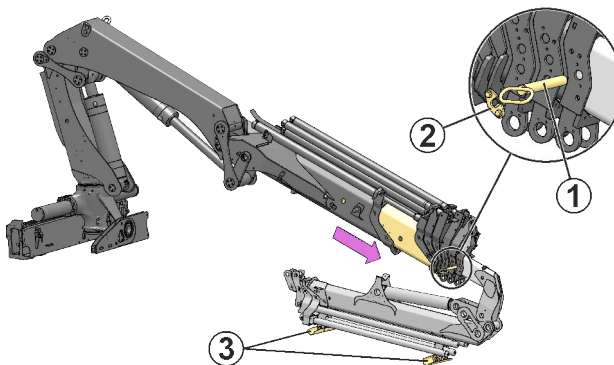
Take care, when assembling and disassembling the JIB that your fingers do not get trapped.



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.

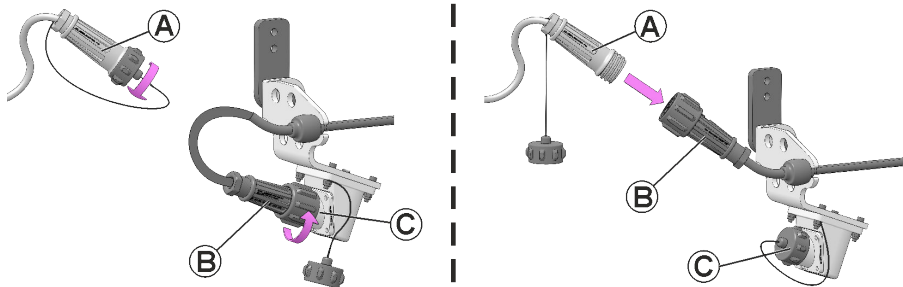
- a. Switch off the control system and the PTO before connecting the hydraulic system.
- b. Release the pressure on the hydraulic system. Operate the levers on the main control valve for the JIB functions.
- c. Connect the hydraulic couplings.



NOTE

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

5. Connect the JIB to the control system:



- a. Switch off the control system and the PTO before connecting the electrical connections.
- b. Remove the plug from the JIB connector (A).
- c. Remove the crane connector (B) from the connector (C).
- d. Protect the connector (C) with the plug.
- e. 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.

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

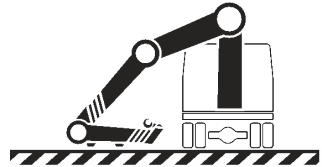
5.2. Disassembling the JIB (without hoist)



WARNING

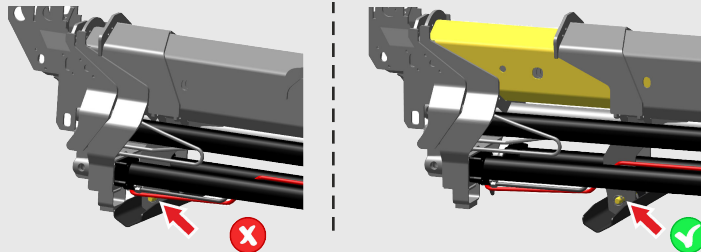
- Take care, when assembling and disassembling the JIB that your fingers do not get trapped.
- Disassemble the JIB carefully. Rough and careless handling can damage the JIB.

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. Install them if necessary.



NOTE

To install the parking support of the JIB 70X, you must extend the 1st JIB extension to be able to install the parking support.



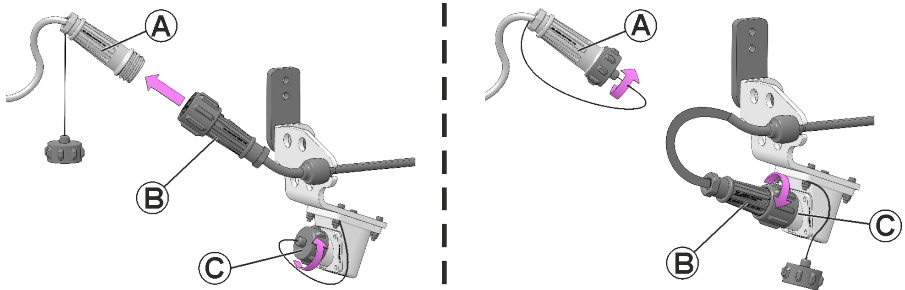
- d. Lower the JIB very carefully on to a level surface until the JIB supports for the ground rest on the ground.



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.

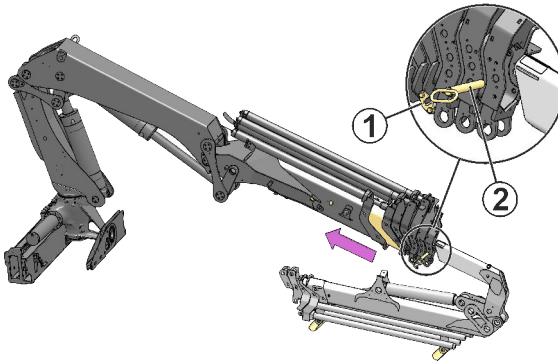
6. Carefully disconnect the JIB from the hydraulic system:

- 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.

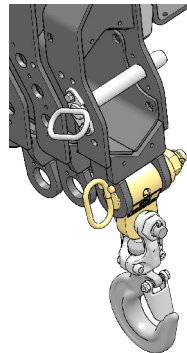

NOTE

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

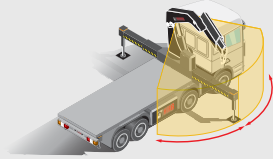


WARNING

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.

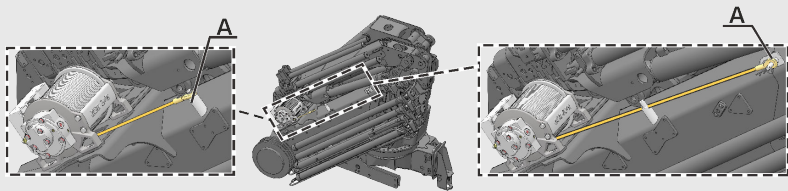

WARNING





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 355 HP

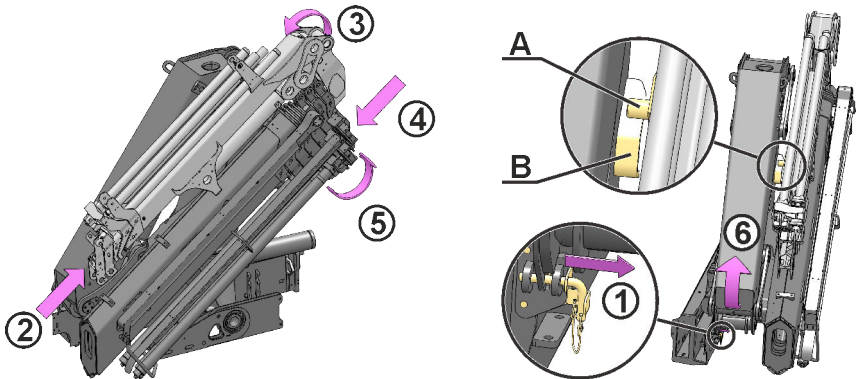
1. Turn the pin (1) and pull it out to unlock the 1st boom.
2. Increase the pressure in the cylinders on the crane and JIB before starting the operation.



CAUTION

Do these operations slowly to not damage any parking support or parking pins of the crane and JIB.

- a. Retract the JIB extensions (2) carefully.
- b. Operate the JIB against the 2nd boom (3) carefully.
- c. Retract the crane extensions (4) carefully.
- d. Operate the 2nd boom against the 1st boom (5) carefully.



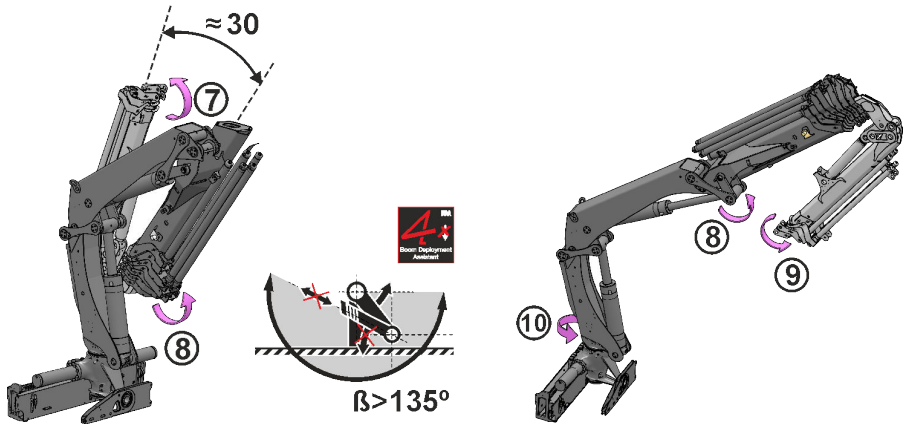
3. Raise the 1st boom (6) until BDA allows you to operate the 2nd boom or $\beta > 135^\circ$.



CAUTION

Do these operations slowly to not damage the parking pin "A" or the parking support "B".

4. Operate the JIB about 30° (7) to save any interchangeable equipment and/or optional crane component.
5. Raise the 2nd boom (8).



6. Raise the JIB (9). Make sure that the 1st boom and 2nd boom are unfolded before starting this JIB operation.
7. Slew the crane (10) to working position.

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.

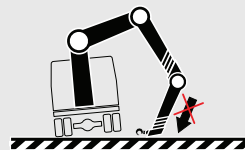
Crane Speed

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



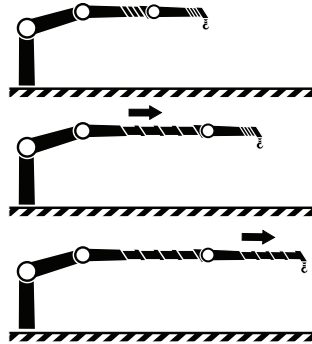
WARNING

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



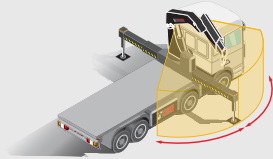
WARNING

Never use SAF with mounted tools.



WARNING

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.



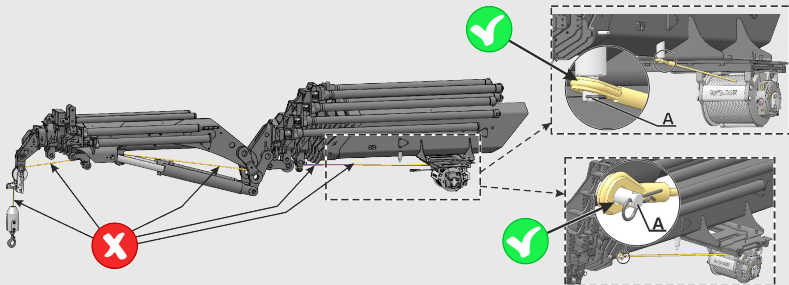
WARNING





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 is **equipped with a hoist**, change from hoist to hook operation. Displace the hoist, if needed, to the outside position before operating the crane to parking position with JIB and hoist. Make sure that the rope is on the 2nd boom support and does not pass through any pulley. If not, remove the rope from the pulleys and fit it in the 2nd boom support (**A**) before operating the crane with the SAF feature.






1. Select menu for SAF on the controller.
2. If SAF is not configured in a separate menu, push button  to activate it.
3. Operate lever on the controller until the extensions are fully retracted:
 - XSDrive  or 
 - CombiDrive 

4. Confirm on the controller that the extensions are totally retracted:
 - XSDrive 
 - CombiDrive 

**NOTE**

If you stop the SAF sequence, remember that when you start it again, the crane will not move. You must push the confirm button/lever  or  on the controller to continue with the sequence. Push this button/lever once, because it activates/deactivates the SAF sequence. So, if you push the button twice you will need to push it again to continue with the SAF sequence.

5. Continue operating lever on the controller until the boom system is totally folded:
 - 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 fold 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.

6. If SAF is not configured in a separate menu, push button  to deactivate SAF.

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

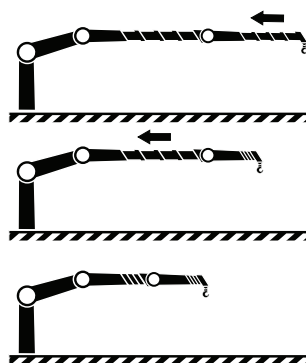


WARNING

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.

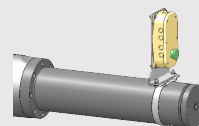


5.7.1. EFFER X-HiPro 355

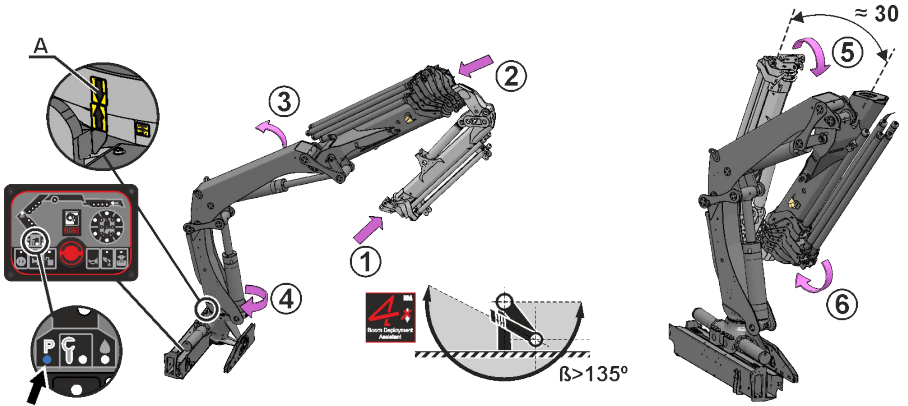


NOTE

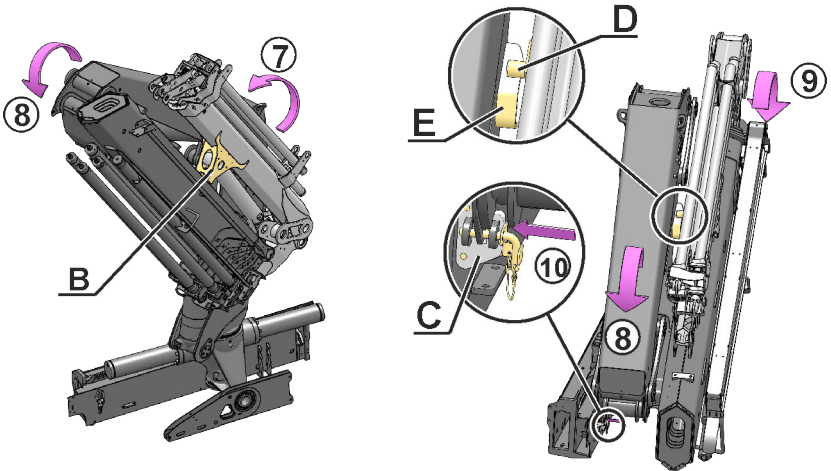
If the crane has OPS, press the button and hold it in, while operating the boom system into the transport position.



1. Retract the JIB extensions (1). Then retract the crane extensions (2).
2. Raise the 1st boom (3) until BDA allows you to operate the 2nd boom or $\beta > 135^\circ$.
3. Slew the crane (4) to parking position. Check that arrows "A" are aligned. LED for the parking control **P** will light blue on the User Interface [If fitted].
4. Operate the JIB towards the 2nd boom (5), leaving an angle of 30° approx. between the JIB and 1st boom extension. Take care not to damage any interchangeable equipment and/or optional crane component, if mounted.



5. Operate the 2nd boom against the 1st boom (6) .
6. Lower the JIB completely on to the 2nd boom (7) until the parking support "B" rests on the 2nd boom
7. Lower the 1st boom completely (8) on to the parking support "C", on the crane base.



8. Release OLP. Press the release button on the controller for remote control operation or on the User Interface for manual operation.



9. Lower the 2nd boom slowly (9) until the parking pin "D" rests on the parking support "E" on the column.



CAUTION

Take care not to damage the parking pin and parking support during these operations.

10. Always lock the 1st boom with the locking pin (10).
11. Fold the hook.

5.8. OLP JIB

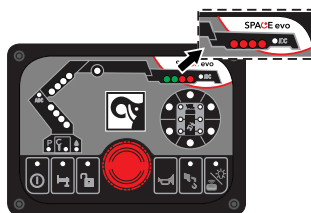
5.8.1. OLP JIB on the User Interface

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 red
- 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.

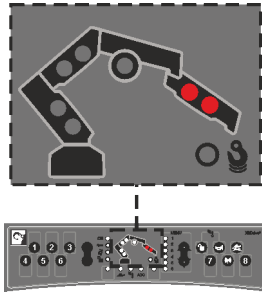
5.8.2. OLP JIB on the XSDrive controller

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 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.

5.9. Manual extensions [option]

Operation with manual extensions

- Always extend the hydraulic extensions first, then the manual extensions.
- The use of manual extensions should be restricted to the longest outreach needed. When this reach is not needed, the manual extension should be retracted.



DANGER

Do not stand in front of moving parts. They may eventually move and cause injuries.



WARNING

Never use the SAF feature with the manual extensions extended.

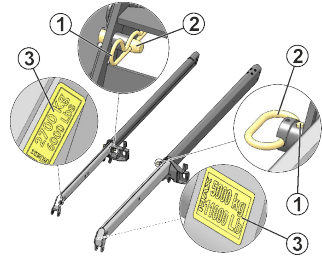


CAUTION

To operate the crane to transport position, do not forget either dismantle manual extension or place manual extension completely into the last hydraulic extension.

To extend the manual extensions

1. Locate the boom system as close as possible to the horizontal position, but low enough to reach the extension by hand.
2. Stop the crane, by pressing the stop button.
3. Remove the locking device (1) and the locking pin (2).
4. Extend the manual extension fully by hand.
5. Secure the manual extension, by locking the pin (2) and locking device (1).



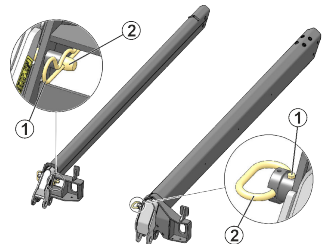
DANGER

- Make sure that the locking device is properly locked.
- Each manual extension has a sign (3) for the maximum load that can be handled.
- Do not lift loads heavier than the values stated on the hook attachment.

To lift heavier loads than specified on the sign (3), the hook position must be moved to the nearest hydraulic extension, in accordance with the load plate on the crane.

To retract the manual extensions

1. Locate the boom system as close as possible to the horizontal position, but low enough to reach the extension by hand.
2. Stop the crane, by pushing the stop button.
3. Remove the locking device (1) and the locking pin (2).
4. Retract the manual extension fully by hand.
5. Secure the manual extension, by locking the pin (2) and locking device (1).



DANGER

- Make sure that the locking device is properly locked.


Activate and de-activate OLP for manual extensions on the User Interface




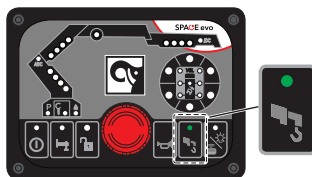
WARNING

You must switch the OLP on and off manually for additional manual extensions!


Activate:

Push button  on the User Interface.

The manual extensions are now included in the OLP protection. The lifting capacity will be reduced automatically. The lamp for  lights up on the User Interface.



De-activate:

Push the button again. The lamp for  goes out.

Activate and de-activate OLP for manual extensions on the XSDrive controller




WARNING


You must switch the OLP on and off manually for additional manual extensions!

Activate:

Push buttons  and  on the controller.

The manual extensions are now included in the OLP protection and the lifting capacity will be reduced automatically.

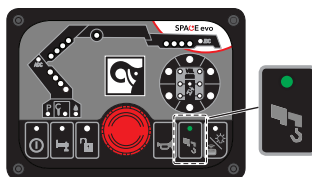
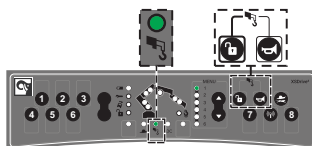
The green LED for the manual extensions  on the controller is on.

The green LED for the manual extensions  on the User Interface is on.

De-activate:

Push buttons  and  on the controller again.

The green LEDs for the manual extensions  are off.



Activate and de-activate OLP for manual extensions on the CombiDrive controller



WARNING


You must switch the OLP on and off manually for additional manual extensions!

Activate and deactivate with the ON-OFF buttons

1. Push the appropriate button to activate or deactivate the feature.
2. Make sure that the symbol of the feature is ON or OFF in the main centre display.





Activate and deactivate with the levers

1. Press the button  on the controller.
2. Navigate to MODES sub-VIEW.
3. Activate or deactivate the feature with the appropriate lever.
4. Make sure that the symbol of the feature is ON or OFF in the main centre display.





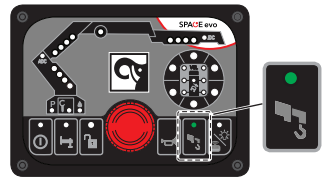
If the feature is ON:

- The manual extensions are now included in the OLP protection and the lifting capacity will be reduced automatically.
- The symbol  on the centre display is highlighted.
- The green LED for the manual extensions  on the User Interface is ON.



If the feature is OFF:

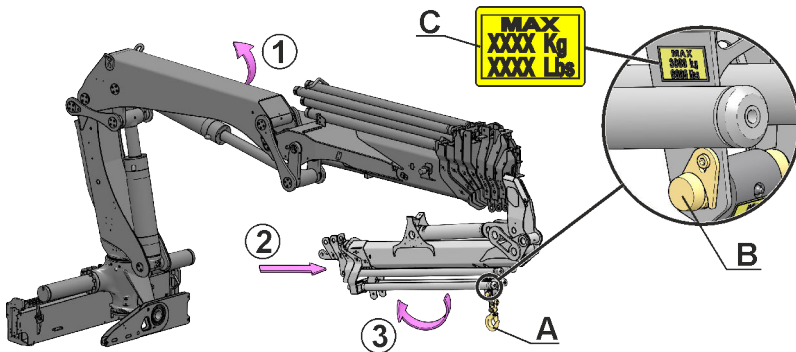
- The symbol  on the centre display is not highlighted.
- The green LED for the manual extensions  on the User Interface is OFF.



5.10. Special hook application without dismantling the JIB

This is the special hook application to handle heavy loads without dismantling the JIB.

1. Raise the 1st boom (1).
2. Retract the JIB extensions (2).
3. Remove the hook from the tip of the JIB.
4. Operate the JIB against the 2nd boom (3).
5. Place the hook "A" in the hole located on the 1st boom of the JIB. Fix the hook, by the pin and the locking plate "B".
6. Attach the load to the hook "A".



DANGER

Never exceed the value given on the crane optional components, interchangeable equipment or lifting accessories load plates "C". They may break and cause injuries.



CAUTION

To operate the crane to transport position, do not forget to dismantle the hook "A" from the 1st boom.

6. Operation with hoist

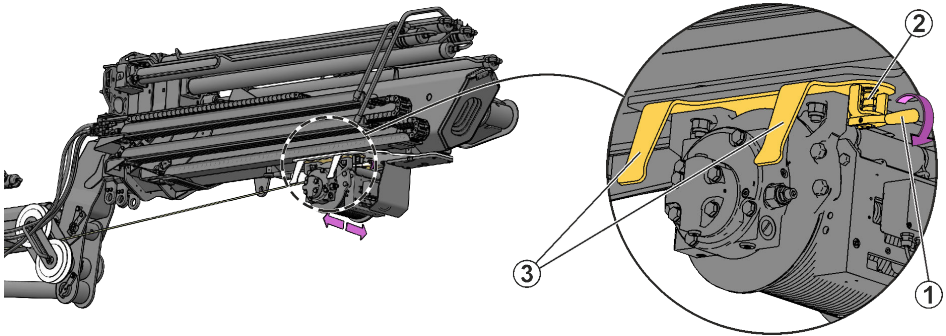
6.1. Operation with hoist

If a hoist is mounted on the crane the rope is guided by pulleys mounted on the extensions and on the JIB.

6.2. Moving the hoist manually

**WARNING**

The hoist must work in line with the pulleys.



To move the hoist from the outside position to the central position:

1. Turn 90° clockwise the lever (1), then the shaft (2) is unlocked.
2. Push the hoist to the central position with the handles (3).
3. Turn 90° counterclockwise the lever (1), to lock the shaft (2).

To move the hoist from the central position to the outside position:

1. Turn 90° clockwise the lever (1), then the shaft (2) is unlocked.
2. Pull the hoist to the outside position with the handles (3).
3. Turn 90° counterclockwise the lever (1), to lock the shaft (2).

**DANGER**

Before lifting load with the hoist, be sure that the hoist is locked with the lever (1) in working position.

Connecting the hoist TI2L rope to the JIB (with integrated pulleys)

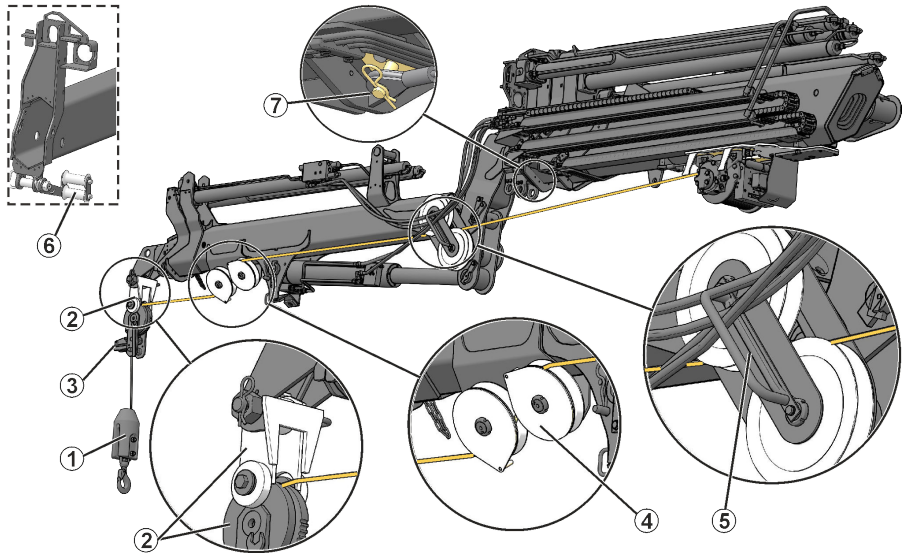
1. Remove the rope from the support (7) on the 2nd boom.



WARNING

To obtain a correct rolling up, the rope has to be guided. A wrong rolling up can result in damage on rope or unexpected movements.

2. Move the hoist to the working position (outside position).
3. Guide the rope through the pulleys (4) and (5) as shown in the picture.
If the crane has 6 boom extensions or more, pass the rope through the cable guide (6) at the 4th boom extension.



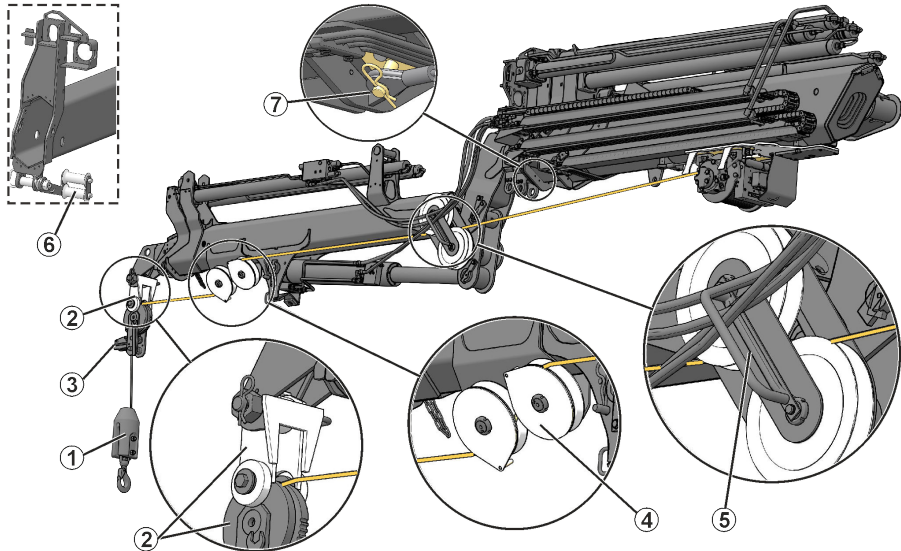
NOTE

It is not necessary to dismount pulleys when operating the crane with JIB in to or out of parking position.

4. Fit link and pulley (2), if it is not fitted.
5. Pulley (2):
 - a. Remove the securing pin and the locking pin (3).
 - b. Install the rope.
 - c. Reinstall the locking pin and the securing pin (3).
6. Install the hook and counter weight (1).

6.3. Disconnecting the hoist TI2L rope from the JIB (with integrated pulleys)

1. Remove hook and counter weight (1) if mounted.
2. Pulley (2):
 - a. Remove the securing pin and the locking pin (3).
 - b. Remove the rope.
 - c. Reinstall the locking pin and the securing pin (3).
3. Remove the rope through pulleys (4) and (5).



4. If the crane has 6 boom extensions or more, remove the rope through the cable guide (6) at the 4th crane boom.
5. Roll the rope at the hoist.



WARNING

To obtain a correct rolling up, the rope has to be guided. A wrong rolling up can result in damage on rope or unexpected movements.

6. Attach the rope end to the support (7), then tighten lightly.

6.4. Assembling the JIB with hoist TI2L

1. Follow the procedure: [Section 5.1: Assembling the JIB \(without hoist\) \(page 17\)](#)
2. Move the hoist to the working position (outside position). Make sure that the hoist is in line with the pulleys.



WARNING

To obtain a correct rolling up, the rope has to be guided. A wrong rolling up can result in damage on rope or unexpected movements.

3. Follow the procedure: [Section 6.: Connecting the hoist TI2L rope to the JIB \(with integrated pulleys\) \(page 39\)](#).

6.5. Disassembling the JIB with hoist TI2L



WARNING

- During the following operations, keep the rope loose. Use the controller to wind/unwind the rope while putting/removing the rope from the pulleys.
- To obtain a correct winding, the rope has to be guided. A wrong winding can result in damage on rope or unexpected movements.

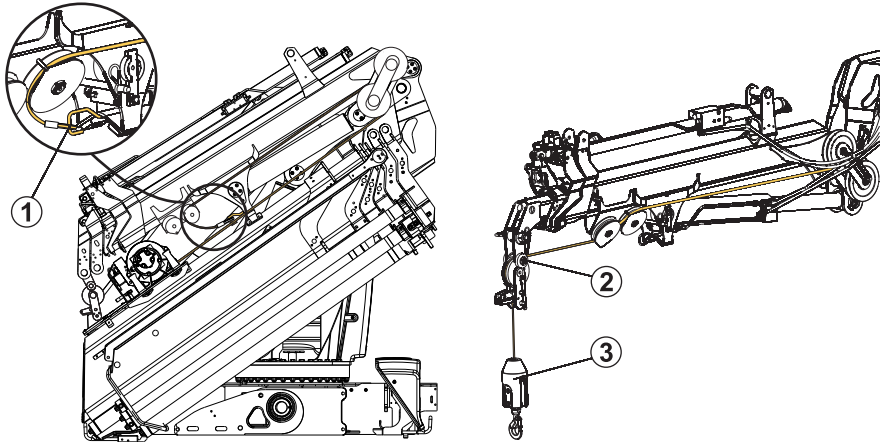
1. Follow the procedure: [Section 6.3: Disconnecting the hoist TI2L rope from the JIB \(with integrated pulleys\) \(page 40\)](#)
2. Follow the procedure: [Section 5.2: Disassembling the JIB \(without hoist\) \(page 19\)](#)
3. Once the JIB is dismantled, the hoist must be placed in the central position.

6.6. Operating a crane with JIB and hoist out of parked position

Operating a crane with JIB and hoist TI2L out of parked position (with integrated pulleys)

Rope fitted to the JIB support

1. Release the rope from the support (1) on the JIB.



DANGER

Before moving the boom system, unroll the rope far enough to release the crane from the transport lock.



NOTE

Keep the rope loose. Use the controller to roll/unroll the rope while you are raising the crane



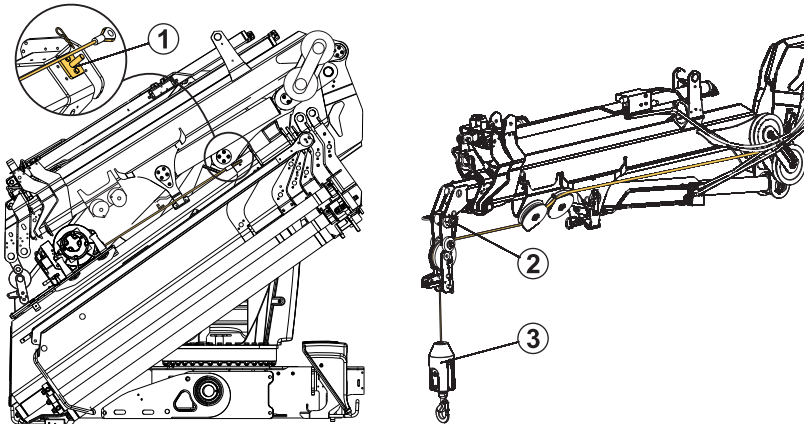
WARNING

You must disable the SDC (Synchronize Distance Control) feature when you fold or unfold the boom system. Use the hoist function to wind or unwind the rope during these operations.

2. Follow the procedure: [Section 5.4: Operate the crane with JIB \(without hoist\) out of parked position \(page 23\)](#), according to your crane model.
3. Fit link and pulley (2) and pass the rope through the pulley, if they are not fitted.
4. Fit the hook and the counter weight (3).
5. The hoist must work in line with the pulleys, displace it if necessary.

Rope fitted to the 2nd boom support

1. Release the rope from the support (1) on the 2nd boom.



DANGER

Before moving the boom system, unroll the rope far enough to release the crane from the transport lock.



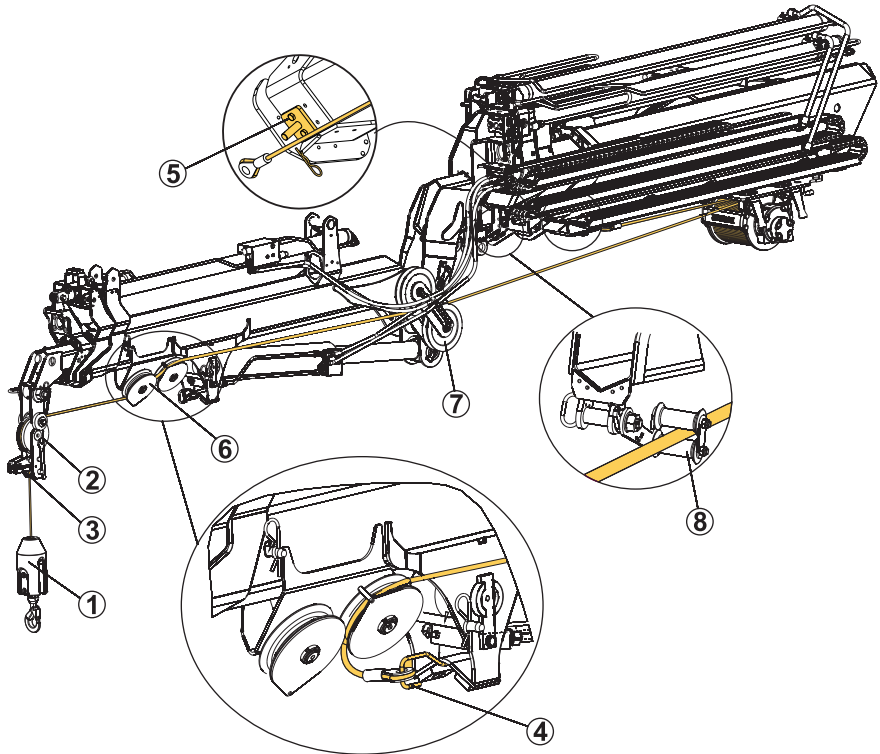
NOTE

Keep the rope loose. Use the controller to roll/unroll the rope while you are raising the crane

2. Follow the procedure: [Section 5.4: Operate the crane with JIB \(without hoist\) out of parked position \(page 23\)](#), according to your crane model.
3. Fit link and pulley (2) and pass the rope through the pulley, if they are not fitted.
4. Follow the procedure: [Section 6.: Connecting the hoist T12L rope to the JIB \(with integrated pulleys\) \(page 39\)](#), according to your crane model.
5. Fit the hook and the counter weight (3).
6. The hoist must work in line with the pulleys, displace it if necessary.

6.7. Operating a crane with JIB and hoist to parking position

EFFER X-HiPro 355



1. Dismantle the hook and the counterweight (1).
2. Remove the rope through the pulley (2):
 - a. Remove the securing pin and the locking pin (3).
 - b. Remove the rope.
 - c. Reinstall the locking pin and the securing pin (3).
3. Fit the rope in the required support:

Support (4) on the JIB.

Once the rope is free from pulley (2) , fasten the rope end directly from pulleys (6) to the support (4), then tighten lightly.

Support (5) on the 2nd boom.

 - a. Once the rope is free from pulley (2), remove the rope through pulleys (6) and (7).
If the crane has 6 boom extensions or more, remove the rope through the cable guide (8) at the 4th crane boom.
 - b. Once the rope is free from pulley (2), remove the rope through pulleys (6) and (7).
 - c. Place the rope end in support (5) , then tighten lightly.

**CAUTION**

If JIB fitted with the cylinder protection, the cable guide (8) must be removed before operating the crane to parking position.

**NOTE**

During the following operations keep the rope loose. Use the controller to roll/unroll the rope while you are folding the crane.

Take care, not to damage hoist.

**WARNING**

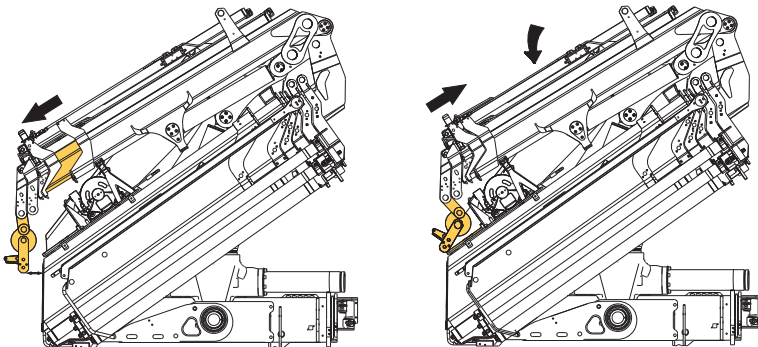
You must disable the SDC (Synchronize Distance Control) feature when you fold or unfold the boom system. Use the hoist function to wind or unwind the rope during these operations.

4. Follow the procedure: Section 5.7: Operate the crane with a JIB (without hoist) to parking position (page 29), according to your crane model.

Lowering the JIB on to the parking support can differ depending on the crane configuration:

With the top roller fitted on the JIB:

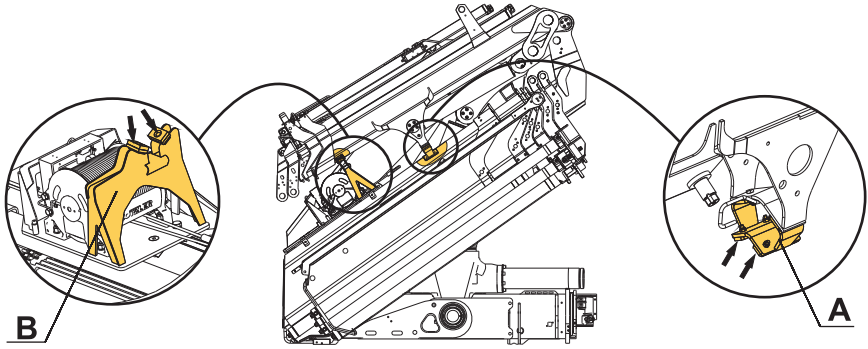
- Before lowering the JIB completely on to the parking support, extend the JIB extensions a bit.
- Check that the pulley kit on the tip of the JIB has no contact with the second boom.
- Retract completely the JIB extensions. The pulley kit will rest on the protection of the second boom as shown in the picture.
- Lower the JIB completely on to the parking support.

**With movable hoist support:**

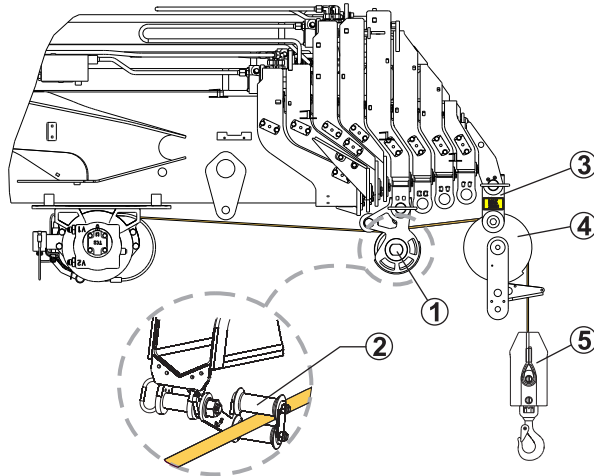
Lower the JIB until the parking support "A" rests on the second boom.

Without movable hoist support:

Lower the JIB until it rests on the parking support "B" of the hoist.



6.8. Operating with hoist TI2L (without JIB)



Once the JIB has been disassembled:

1. If the crane has 6 or more extensions, install the intermediate pulley (1) at the 4th extension of the crane.



NOTE

Use this intermediate pulley only for crane operations with hoist. To use the hoist with the JIB again, pulley (1) must be replaced by the cable guide (2).

2. Install the link assembly kit (3) in the last extension of the crane.
3. Install the hoist pulleys kit (4).
4. Install the hook and the counterweight (5).



WARNING

The hoist must work in its central position.

7. Maintenance

7.1. Maintenance and service

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

7.2. 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:

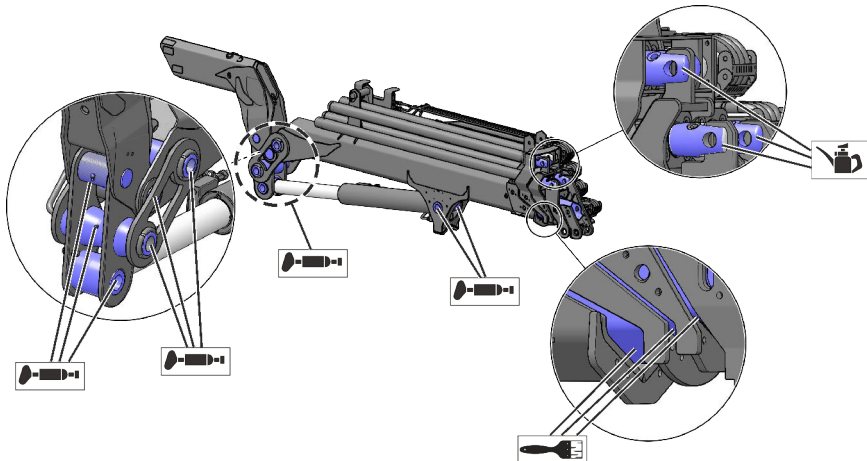
Use a Teflon grease spray to lubricate the extensions and mobile parts.

7.3. Lubrication schedule JIB

1. Extend the extensions totally.
2. Lubricate all marked points.

Lubricate all the marked points.

	<p>Lubricate after every 16 hours of operation.</p>
	<p>Lubricate after every 50 hours of operation.</p>
	<p>Grease after every 50 hours of operation.</p>



Lubrication of slide pads in the JIB extensions

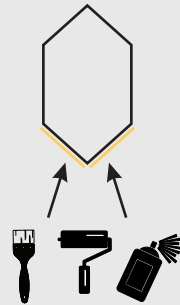
Clean the surfaces and remove with a spatula all abrasive material (dirt, sand, shavings), and where possible, the old grease.



NOTE

To prevent or correct malfunctions or the “stick-slip” of the boom extensions operation, we recommend lubricating the lower part of the extensions.

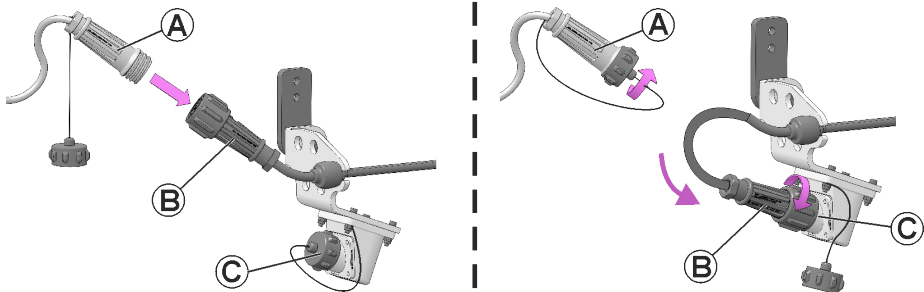
If you have any doubt, please contact your Effer representative.



7.4. 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!

8. 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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