
User Manual



Adding efficiency & safety to manual handling

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1.1 EC declaration of conformity



EC declaration of conformity

We: **JibFlex A/S**
 Of: **Sahara 4**
DK, 6700 Esbjerg

In accordance with the following Directives:
 Order No. 612 of 25 June 2008 on the Design of Technical Equipment (Denmark)

&
 2006/42/EC Machine directive

Hereby declares that:

Machine name: **JibFlex**

Model no.	
050-2 to 050-7	300-2 to 300-5
100-2 to 100-7	350-2 to 350-4
150-2 to 150-7	400-2 to 400-4
200-2 to 200-6	450-2 to 450-3
250-2 to 250-5	500-2 to 500-3

Is in conformity with the applicable requirements of the following documents:

Ref. No.	Title	Edition/date
AT Nr. 612	Order No. 612 of 25 June 2008 on the Design of Technical Equipment	2008
2006/42/EC	Machine directive	2006
DS/EN ISO 13849-1	Safety of machinery - Part 1: General principles for design	2006
DS/EN ISO 12100	Safety of machinery - General principles for design - Risk assessment and risk reduction	2011
LOLER L113	Lifting Operations and Lifting Equipment Regulations	1998









Signed by:  01-12-2023

Name: **Tonny Klein**
 Position: **CEO, JibFlex A/S**
 Done at: **JibFlex A/S**

The technical documentation for the machinery is available from:
 Name: **JibFlex A/S**
 Address: **Sahara 4, 6700 Esbjerg, DK**

1.2 Safety and Compliance

Any lifting operation performed with JibFlex must be planned to take the following general warnings into account.

Warnings	
	Read the safety and operation instructions before usage of JibFlex.
	Do not operate the JibFlex with wind speeds exceeding 15 m/s
	Do not exceed the predefined SWL/WLL of the JibFlex, which includes the load and lifting equipment.
	Plan the lifting operations such that no individuals or objects obstruct the JibFlex.
	Plan the lifting operations such that no individuals are located under a suspended load. The JibFlex is a suspended load.
	The JibFlex must be installed on lifting points designed specifically for this.
	Lifting operations using the JibFlex must be performed by a competent operator.
	Lift of personnel with the JibFlex is NOT allowed.

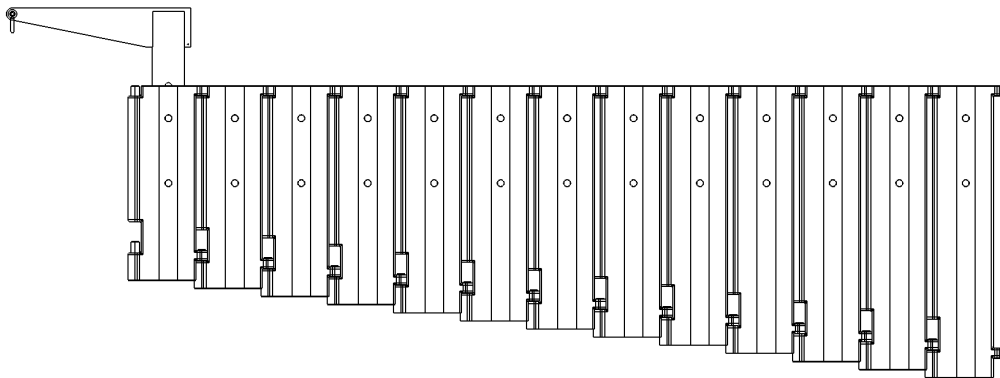
The JibFlex can be operated safely by two individuals, which allows one person to be dedicated to controlling the movements of the JibFlex.

2. Description of JibFlex

JibFlex is a module based lifting device (jib arm) designed to support lifting operations. The structural characteristics of JibFlex are varying depending on model.

The following figure is a principle drawing for the JibFlex. Depending on model, your JibFlex is assembled from a specific number of modules in specific sizes.

Data table and other specific characteristics for your JibFlex can be found in the data sheet, ref. **Appendix A – Data sheet**



Your JibFlex may have different WLL on the various modules. The WLL of the specific module can be found on the label-mark of the physical module and in the module data table corresponding to your JibFlex.

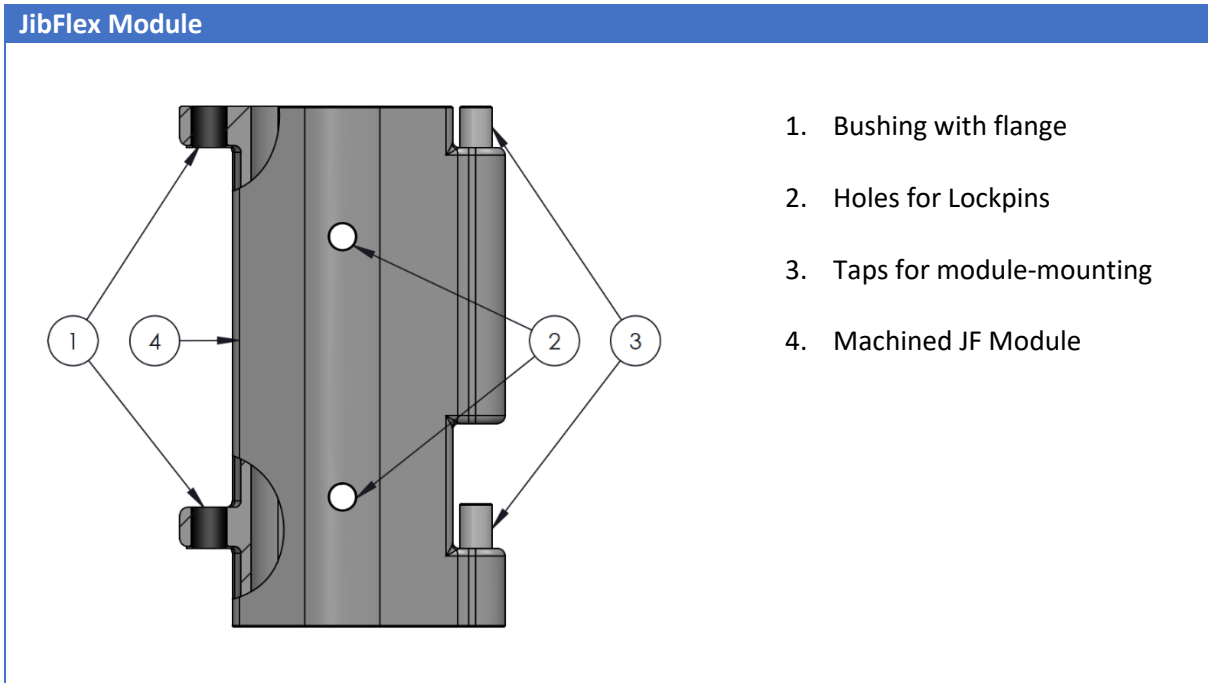
The JibFlex modules are delivered with a lifting arm (Stork). Various Stork types and their use is described in section **3.2**.

JibFlex can be used for lifting from a fixed surface/platform to another fixed surface/platform. JibFlex may not be used for lifting operations performed on unstable foundation.

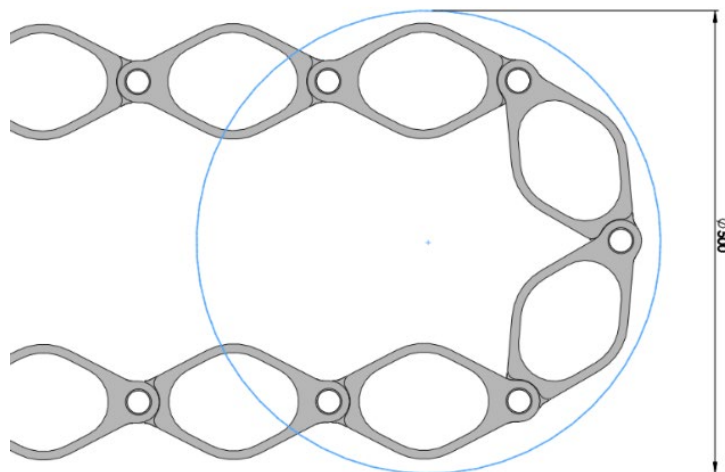
The lifting operation of a JibFlex must be planned such that no operators will be located below the assembled JibFlex.

2.1 Description of JibFlex Module

The following section is a general description of a JibFlex module:



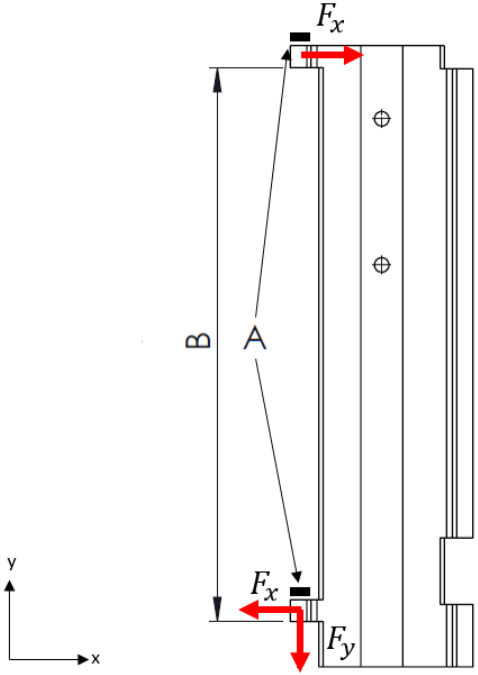
The modules are designed such that a rotation of 62° can occur between one module and the previous. This yields a turning diameter of approximately 500 mm as illustrated below:



2.2 Attachment of JibFlex

The JibFlex must be attached to verified attachment point (e.g., wall). The strength requirements of the attachment point for your JibFlex can be found in the Specifications table in the data sheet, see **Appendix A – Data sheet**.

Requirements of Attaching Points



A locking mechanism must be implemented at the hinges, marked A, to secure the module from vertical displacement.

The distance B and the respective loads are found in the data sheet.

$$F_{x,max} = xx \text{ kN}$$

$$F_{y,max} = yy \text{ kN}$$

$$B = zzz \text{ mm}$$

The noted reactions are characteristic loads that includes a dynamic amplification factor (DAF), but without partial coefficients/safety factors.

The responsibility of verified attachment points lies with the owner of the facility where the JibFlex is installed.

3. Installation and lifting procedure

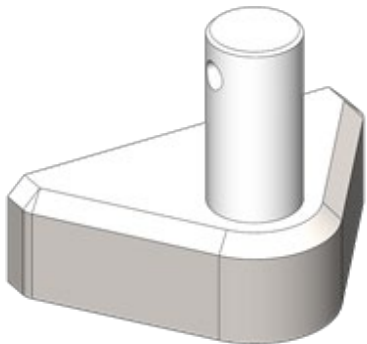
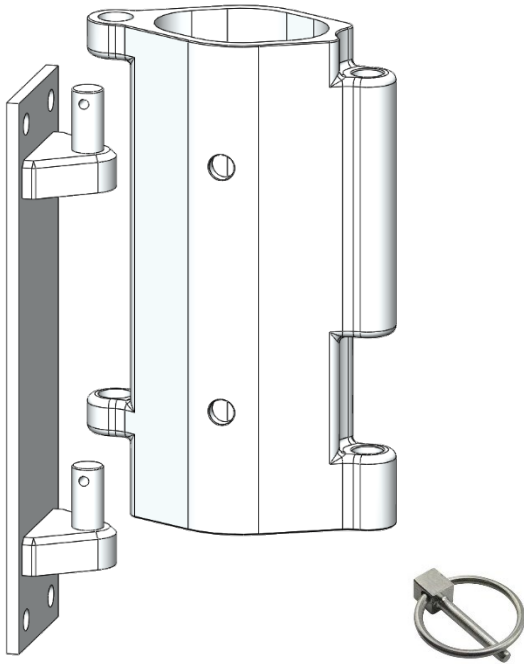
3.1 Installation

It must be verified that the WLL of the JibFlex is not exceeded before the jib arm is installed.

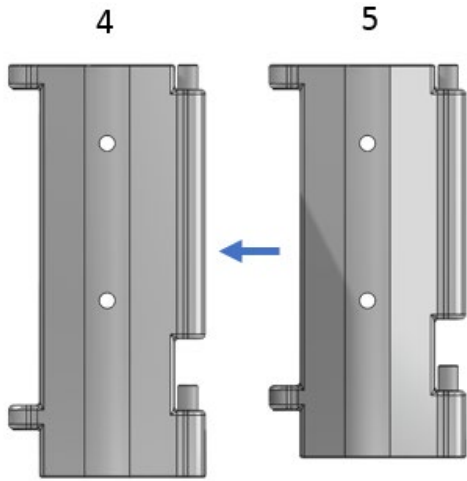
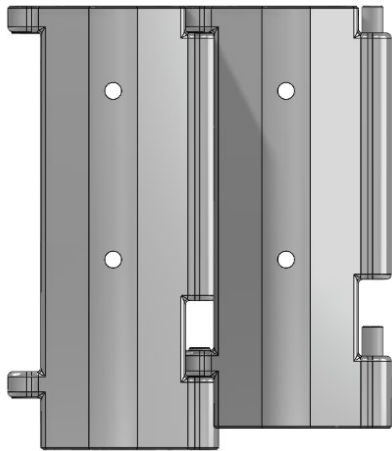
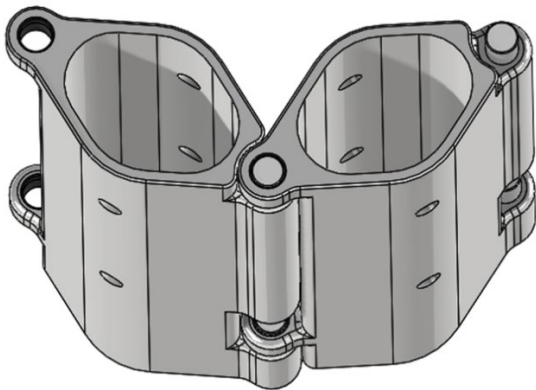
The JibFlex must be installed on approved anchoring.

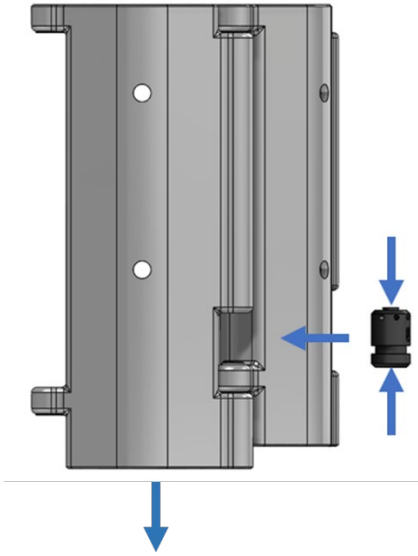
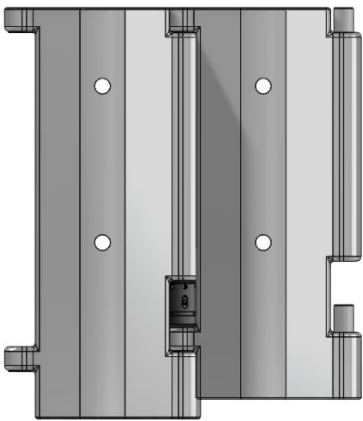
The first module of the JibFlex must be secured from vertical displacements due to the snatch loads. The rest of the modules are secured from this effect by the Lock-brackets.

3.1.1 Assembly of JibFlex system

Anchoring and securing Module 1	
	<p>There are different types of anchoring. The figure shows a standard bracket.</p> <p>It is important that the two anchor brackets are mounted exactly vertically.</p>
	<p>Module 1 is placed on the two anchor brackets.</p> <p>Once Module 1 is mounted on the taps of the anchoring, it must be secured from vertical displacement with linch pins (or a similar safety mechanism) through the holes of the taps.</p>

The following illustrations describes the assembly of two JibFlex modules in five steps.

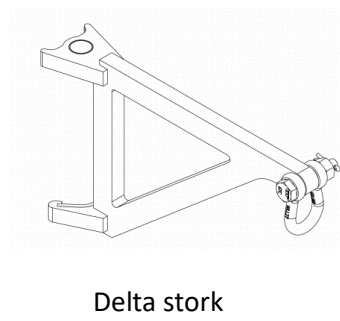
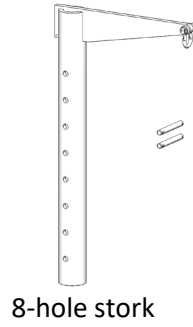
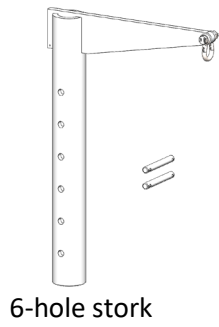
Assembly of JibFlex system	
	<p>Step 1: The modules must be assembled in numerical order as shown on the illustration.</p> <p>The two hinges of the fifth module are fitted onto the two taps of the fourth module.</p>
	<p>Step 2: The modules will fit closely and must be able to rotate freely. They are assembled correctly if the planes on the top of the modules are coincident.</p>
	<p>Step 3: Rotate the modules as shown to ensure the Lock-bracket can be inserted.</p>

	<p>Step 4: The Lock-bracket is compressed and placed in the area between the modules such that it rests on the hinge of the fifth module.</p> <p>Pull the wire inside the module to ensure that the Lock-bracket is placed correctly.</p> <p>A distinctive clicking sound verifies that the Lock-bracket is correctly installed.</p>
	<p>Step 5: The illustration shows a correctly installed module. The next module can now be installed by repeating the steps.</p>

3.2 Description of Storks

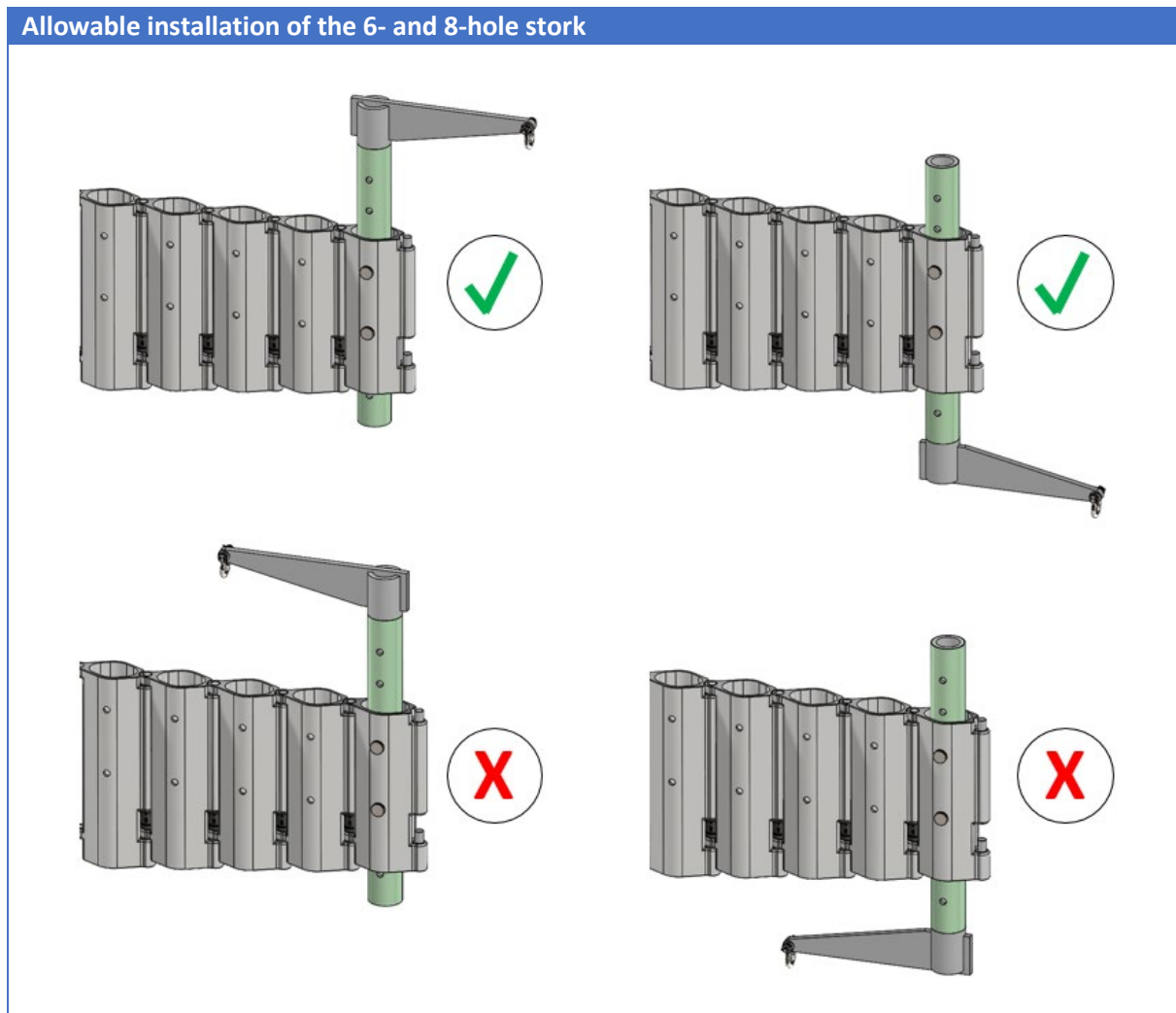
The JibFlex modules are delivered with a lifting arm (Stork) that can be mounted on each module. The stork must always be mounted on the outer module, and the load may only be fixated in the lifting eye of the stork. A Ø16 shackle is recommended.

There are different Stork variations. Your JibFlex comes with one of the following storks:



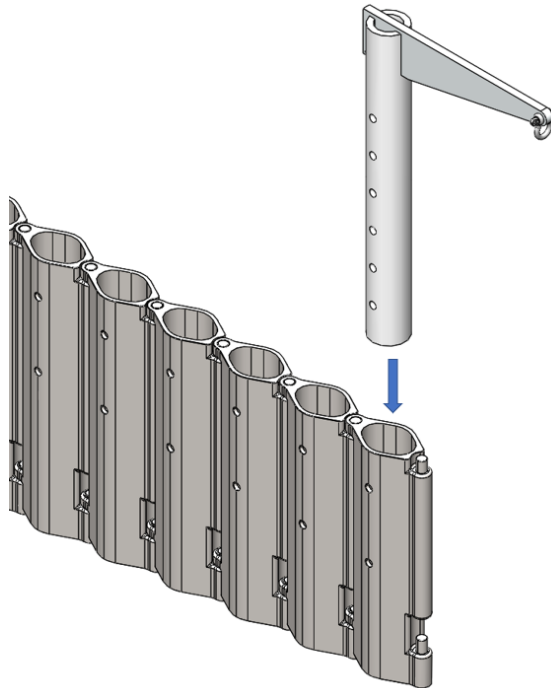
3.2.1 Installation of 6- and 8-hole stork

Only one stork is allowed to be installed on a JibFlex at any given time. The stork can be installed in any of the JibFlex modules but must **always** be installed on the last module of the current JibFlex configuration (other modules must be removed).



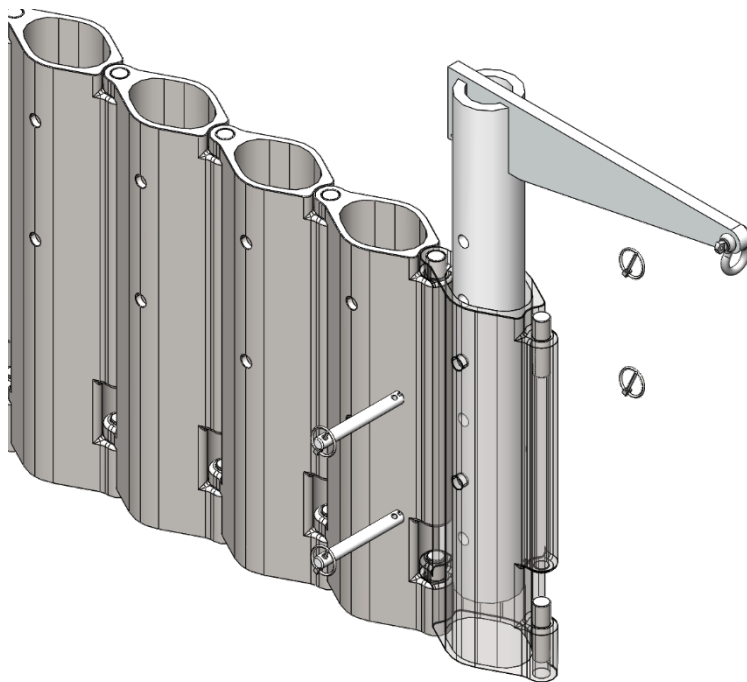
The Stork must be placed in the last module as shown above. The procedure is shown on the following illustrations.

Installation of Stork



Step 1:

The stork is placed in the last module of the JibFlex such that the required lifting height is achieved.



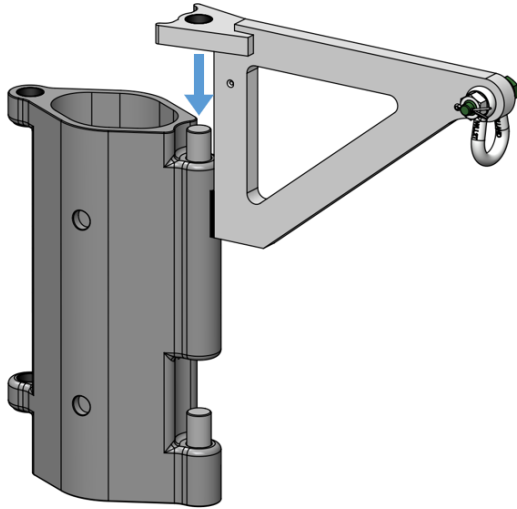
Step 2:

The stork is placed such that the holes on the module and the Stork are coincident. This allows the two Lock-pins to be inserted. Four linchpins secure the Lock-pins from unwanted displacements. A Ø16 shackle is attached to the lifting eye of the Stork.

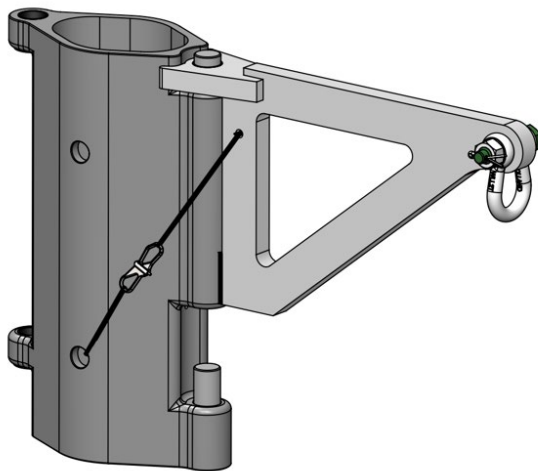
3.2.2 Installation of Delta stork

The Delta stork can be attached to all modules of the JibFlex.

Installation of Delta stork



1. The two hinges of the Delta stork are placed above the taps of the module.
2. The Delta stork is lowered onto the module. It is correctly placed when only a very small rotation of the Delta stork is possible.



3. Pull the steel wire through the lower hole of the JibFlex module and lock it in the shackle on the other end of the wire.

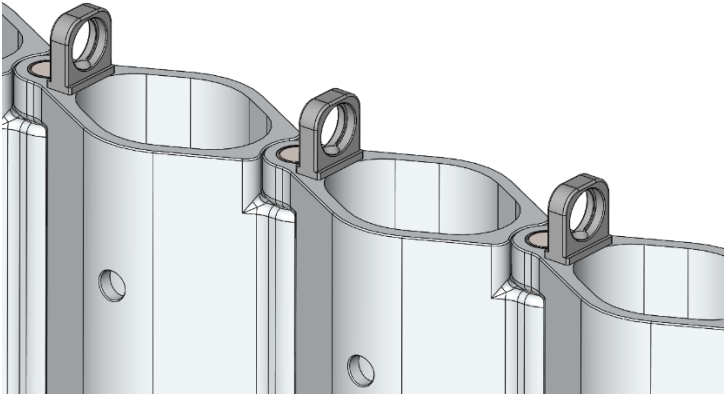
The image shows a correctly installed Delta stork.

Notice that the wire the secures the Delta stork from detaching by snatch loads.

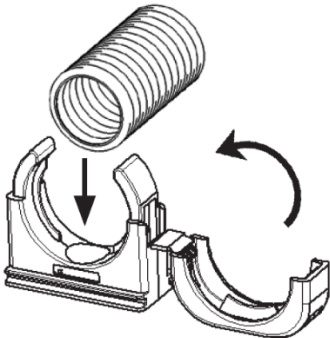
3.3 Flexhose installation (optional for electric hoists)

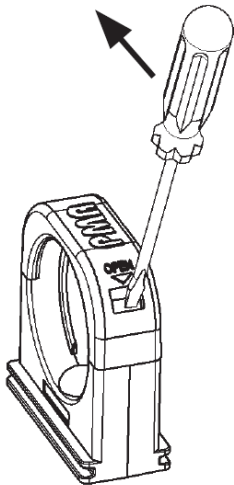
Both manual and electric hoists can be attached to the Stork. It may be advantageous to run the electric cable through a Flexhose when using an electric hoist. The following section describes the installation of the Flexhose.

Installation of Flexhose



Step 1:
Install the enclosed Flexhose Clips on top of each module.





Step 2:
The Flexhose Clips can be opened by inserting a screwdriver into the hole on the side of the clip, and applying a force as shown below. This can also be done by performing the same motion without the screwdriver.

Once opened, the Flexhose can be inserted and the clips can be closed, making a distinct 'clicking' sound.

3.4 Initiation

A competent person must inspect the entire assembly of the JibFlex before any lifting operations can be executed.

A competent person must be qualified to evaluate if the chosen JibFlex configuration is assembled correctly and is adequate for the lifting operation. The competent person must be qualified to evaluate the attachment points and choice of additional lifting equipment with respect to the current lifting operation.

3.5 During Use of JibFlex

It is essential that JibFlex is secured from unwanted movements and that it is under physical control during operation.

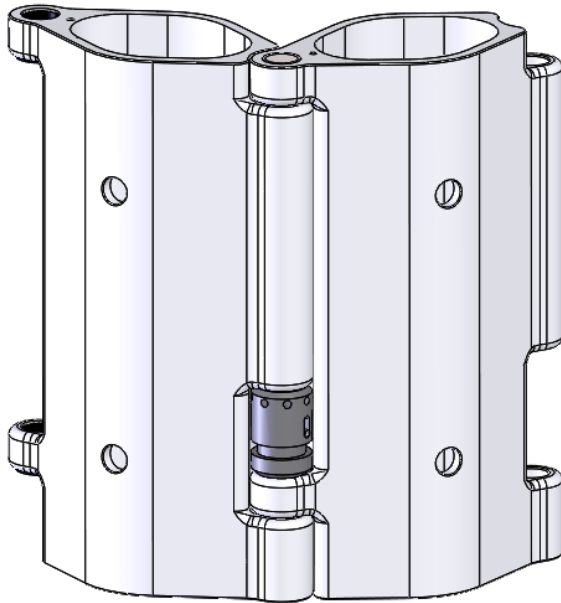
The operator of JibFlex must have a basic knowledge qualifying the person to perform lifting operations.

3.6 Disassembly

Disassemble the JibFlex by following the procedure below:

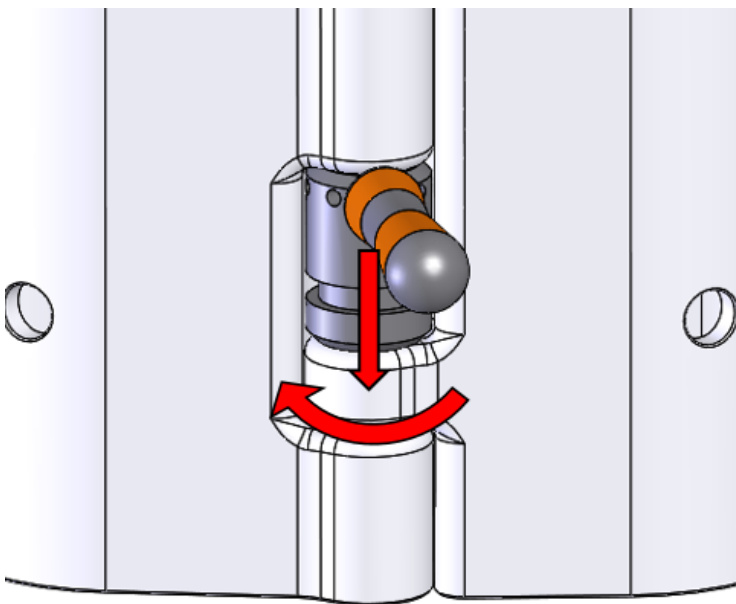
1. De-attach the lifting equipment from the Stork.
2. Remove the Stork and its locking mechanism.
3. Disassemble the modules by following the steps from Chapter 3.1.1 in reverse. The simplest method is to remove one Lock-bracket followed by one module and repeating until all modules are separated. See the following illustrations.
4. Remove the snatch-load safety mechanism (linchpin) from the first module and de-attach the first module.

Removal of LockBracket



Step 1:

The modules are rotated as shown to expose the Lock-bracket.



Step 2:

Insert Lock-bracket-tool into the Lock-bracket. Apply a downwards force to the tool and turn it as shown. This rotation unlocks and removes the Lock-bracket from the module.

Do **NOT** apply a moment to the tool, but a downward force close to the Lock-bracket.

Notice:

Lock-brackets should be inserted into the modules when storing the modules.

4. Maintenance

Maintenance of the JibFlex is performed with respect to daily inspections, ongoing maintenance, annual inspection, and inspection every ten years.

4.1 Daily inspections, ongoing maintenance

The JibFlex must be visually inspected for the following when assembling or disassembling the system:

- Damage of JibFlex Modules
 - No scratches >3 mm deep
 - No dents >3 mm deep
 - No deformation
- Damage of Polymer Bushings
- Damage of Lock-brackets

Clean the JibFlex with freshwater when needed. Store any JibFlex parts in dry locations.

Inspect the lifting points daily when using a JibFlex consistently for several days.

4.2 Annual Inspection

JibFlex is a lifting device (jib arm) which lifts/moves free-hanging loads. The annual inspection of said device must be performed:

At least every 12th month or according to local specific laws and/or requirements and company policy.

After longer periods of idleness of the JibFlex.

The supplier or equally competent service provider may perform the annual inspection. It must satisfy the legal framework and the suppliers' recommendations. The inspection is defined as completion of the three following steps:

4.2.1 Visual inspection

All components of the JibFlex must be inspected visually. All parts must be examined individually, and any damaged parts must be replaced. A competent person must focus upon identifying permanent deformation and indications of initiating damage. The stork is a critical component regarding permanent deformation since this can occur if the device is used incorrectly.

4.2.2 Inspection of functionality

The JibFlex is mounted on lifting points, and it is controlled that:

- a) Lock-bracket functions correctly and the wire keeping it in place is intact.
- b) Bushings provide the desired rotation between the JibFlex modules.
- c) Stork and bolts for securing can be installed without difficulties.

4.2.3 Load test

The load test is performed according to the following guidelines:

- a) The JibFlex must be load tested with the load applied in the maximum lifting radius while the JibFlex is mounted on approved lifting points
- b) The load factor to be applied to the load is defined as 150% WLL
- c) The load must be maintained five minutes for each load test

Replacement of any of the main parts (module, stork, anchoring) requires new load test.

4.2.4 Supplemental information

The need for certifications should be evaluated at the annual inspection. The location of the operation with JibFlex could require additional certifications, for example LOLER.

Only the supplier of JibFlex can perform any repair should the annual inspection require it. Stork and modules can be replaced by a competent person. Replacement of bushings, Lock-brackets is assumed a part of the daily maintenance.

A competent person with regards to annual maintenance of JibFlex is defined as a person who has:

- a) Knowledge of the technical aspects of the JibFlex.
- b) Knowledge of the user manual.
- c) Knowledge of the requirements specified by the local working environment authority, especially regarding reporting, load test and journal.
- d) Knowledge of requirements from other authorities based on where the JibFlex is used.

4.3 Ten-year inspection

The ten-year inspection replaces the annual inspection and must be performed by a competent person or supplier of JibFlex.

All JibFlex parts must be inspected visually, and a new load test must be performed. Additionally, the first module must be inspected using liquid penetrant method to check for development of cracks.

5. Appendix A – Data sheet