



SHUTTLE

INSTRUCTION MANUAL

*Safe and simple alternative for the manual lifting
of goods on (mobile) scaffolding*

April 2020



CONTENTS

INTRODUCTION	3
1. ASSEMBLY OF THE SHUTTLE	4
1.1 Assembly of the SHUTTLE lift mast	5
1.2 Installation of the SHUTTLE carriage	10
1.3 Installation of the SHUTTLE crate	11
1.4 Installation of the SHUTTLE winch	12
2. USING THE SHUTTLE WINCH	13
3. SAFETY	17
4. REPAIRS AND WARRANTY	18
CONTACT	19

INTRODUCTION

This manual describes the assembly and use of the Shuttle lift system (or simply “Shuttle”) for the vertical transport of goods on (mobile) scaffolding.

Before starting to assemble and use the Shuttle, you need to carefully read this manual and understand its contents. The Shuttle must be assembled and used entirely in accordance with the instructions in this manual.

All instructions and directions in this manual must be strictly adhered to. Failure to follow these instructions and directions could lead to accidents. De Liftfabriek cannot be held liable for damage if the Shuttle is not assembled and used in accordance with this manual.

The employer, supervisor and user are responsible for the correct application of the Shuttle. They must check to ensure that the Shuttle is the correct lift solution for the intended operations.

The employer, supervisor and user must carry out a thorough risk analysis prior to assembly and use of the Shuttle and act in accordance with the results thereof. They must also ensure that this manual is always present at the workplace when working with the Shuttle.

It is expressly stated that the Shuttle may only be used on scaffolding that complies with the most current version of European regulations ¹.

Do not use the Shuttle if there is anything in the manual that you do not understand. Contact the supplier for advice.

APPLICATION OF THE SHUTTLE ON (MOBILE) SCAFFOLDING

Scaffolding in combination with the Shuttle may only be assembled, disassembled or modified under the direction of a competent person and by employees who have received adequate training for the intended work with regard to specific risks, which training is particularly aimed at:

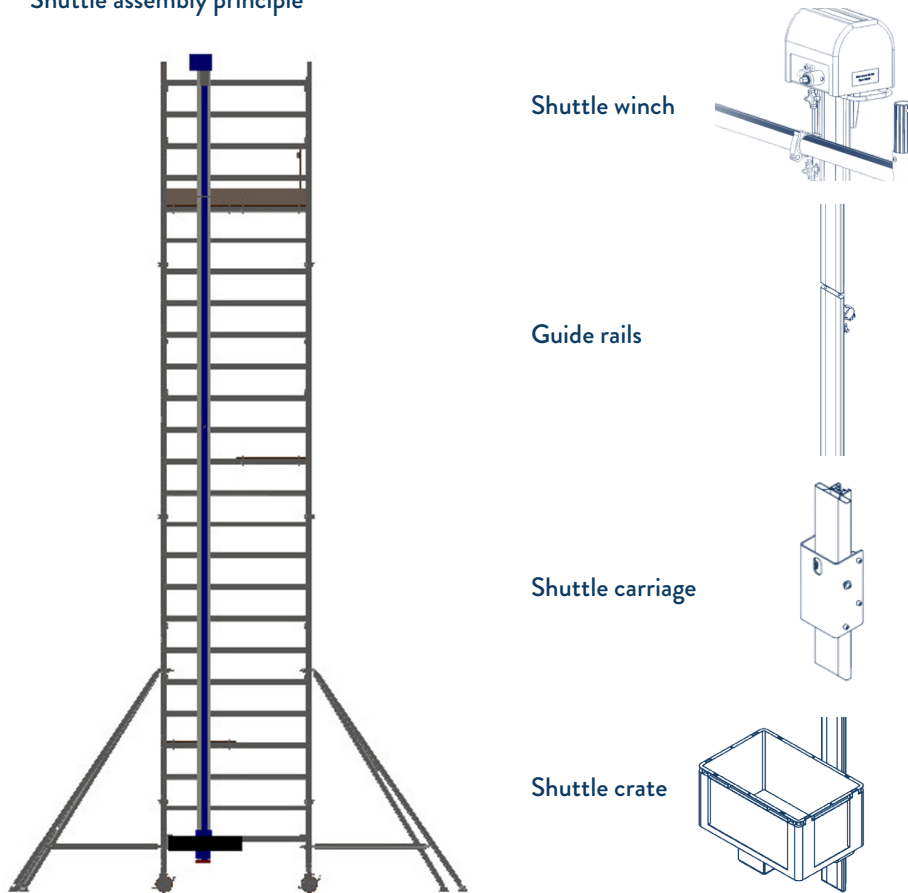
- Understanding the assembly, disassembly and the construction and conversion schedule of the relevant scaffolding and Shuttle
- Safe assembly, disassembly or conversion of the relevant scaffolding and Shuttle
- Measures to prevent the risk of people or objects falling
- Safety measures in case of changing weather conditions that may affect the safety of the relevant scaffolding and Shuttle
- Permissible load on the different parts of the scaffolding and Shuttle
- Any other risk that the aforesaid assembly, disassembly or conversion work may entail

The person in charge of the work and the employees involved must have access to this manual. This manual must, therefore, always be present on the scaffolding whenever and wherever the Shuttle is in use.

¹ At the time of publication of this manual, they are NEN-EN 1004:2005 - Mobile scaffolding assembled from prefabricated parts - Materials, dimensions, loads, safety and performance requirements.

1. ASSEMBLY OF THE SHUTTLE

Shuttle assembly principle



Assembly of the Shuttle is as follows:

- First assemble the Shuttle lift mast - you can do that if the scaffolding is already up or if you are in the process of putting up the scaffolding. In any case, start with the bottom guide rail
- It is advised to install the Shuttle carriage straight away once you have attached the bottom guide rail
- Hook the Shuttle crate onto the Shuttle carriage
- Install the Shuttle winch on top of the top guide rail
- Use your drill/driver to lower the winch belt and take the carabiner to hook the Shuttle carriage to the Shuttle carriage buckle

The following pages of this manual provide a detailed description of this assembly.

1.1 ASSEMBLY OF THE SHUTTLE LIFT MAST

Before you start: check that all parts of the lift mast are free from cracks, deformations and other damage that may cause danger when the Shuttle is in use.

The Shuttle lift mast can be assembled together with the scaffolding. It is not a problem if the scaffolding is already up. Decide what is easiest for you. In both situations, assembly (and disassembly) is quick and easy.

When assembling, pay attention to the following points:

- The use of scaffolding outriggers (tele-outriggers) is mandatory (!).
- Install the guide rails in such a way that they do not interfere with the hooks of platforms and braces (!).
- Make sure that the loading crate can freely move up and down the guide rails, thus keeping the crate within the braces (!).

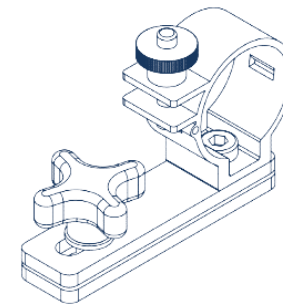
Clamping plate

An important part of the assembly of the lift mast is the adjustable clamping plate. This clamping plate has an adjustment knob (plastic rotary knob) and a knurled nut (on the clamp).

The adjustment knob fixes the clamping plate to the rail. By loosening the adjustment knob, you can move the clamping plate in relation to the rail, simply by sliding it.

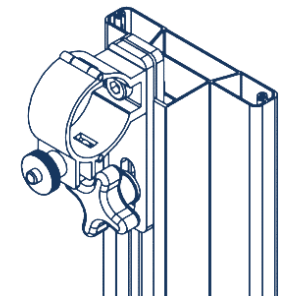
The knurled nut serves to tighten the clamp on the rungs of the mounting frame.

Tightening the adjustment knob and knurled by hand suffices.
Do not use pliers or other tools.



Clamping plate with the adjustment knob and the knurled nut of the clamp – loosen the adjustment knob 1 or 2 turns and you can slide this clamping plate across the rail, so that you can install the clamp on the correct tubes of the mounting frame.

The clamping plate comes with the correct gap width between the two clamping strips. Slide the clamping plate into the clamping channel from the top of the guide rail. The clamping plate is securely attached to the rail by tightening the adjustment knob by hand.



Recipe for assembling the Shuttle lift mast

The assembly of the Shuttle lift mast is very simple and fast when starting from the bottom of the scaffolding. Do check whether the rung distance of your scaffolding is 28cm or 25cm.

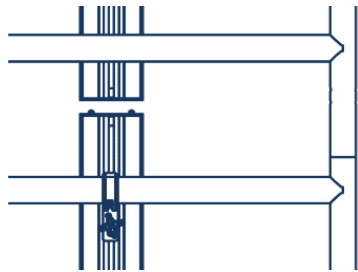
In the case of scaffolding with a rung distance of 28cm, you must use guide rails measuring 196cm and 112cm in length.

In the case of scaffolding with a rung distance of 25cm, you must use guide rails measuring 200cm and 100cm in length.

Scaffolding with a rung distance of 28cm

It does not matter if you start the scaffolding with a low 4-rung mounting frame or a high 7-rung mounting frame:

- The top clamp of the bottom guide rail is pre-assembled. Install this clamp on rung 7, counting from the bottom of the scaffolding..



Install the top clamp of the bottom guide rail on rung 7, counting from the bottom of the scaffolding.

Note: if you have installed the bottom rail, you are advised to place the Shuttle on it straight away.

- Straighten the rail, then tighten the bottom clamp of the guide rail to rung # 2 of the scaffolding
- If the bottom clamp is not in the correct position straight away, you can loosen the plastic adjustment knob 1 or 2 turns and slide the clamping plate until you are in the correct position for the clamp; then simply tighten the black plastic adjustment knob again

Tip: place the Shuttle on this first rail now, otherwise you will have to do it from a greater height later.

After you have attached the bottom rail, you can install the second rail on top and attach it to the next mounting frame:

- Make sure that the ball-hole splice plates fit together neatly and that the plates connect seamlessly
- Install the clamp of the second rail on rung 14, counting from the bottom of the scaffolding
- You can easily adjust the position of the clamp as explained above

Install the third and subsequent guide rail by following the same procedure. Simply attach the new rail 7 rungs higher than the previous rail.

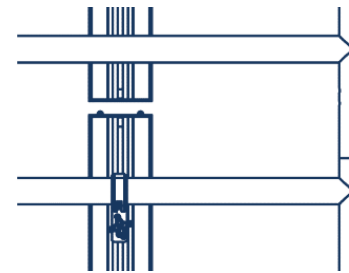
The clamps must fit onto the tubes of the mounting frame without twisting. Tightening the clamping knobs and knurled nuts by hand suffices. The plate on which the clamp and the adjustment knob are mounted fits exactly into the low channel of the rail. Make sure the plate sits straight in there, as this will make adjusting it very easy.

The lift mast must be straight. You can easily check this by looking downwards along the rails during the installation process. You can, of course, also use a spirit level or tighten a cord along the guide rail.

Scaffolding with a rung distance of 25cm

Scaffolding with a rung distance of 25cm features a high mounting frame of 200cm with 8 rungs. A low mounting frame has a height of 100cm with 4 rungs. Again, it does not matter whether you start with a low or high mounting frame:

- Install the first clamp of the bottom guide rail on rung 8, counting from the bottom of the scaffolding



Install the top clamp of the bottom guide rail on rung 8, counting from the bottom of the scaffolding.

- Straighten the rail, then tighten the bottom clamp of the guide rail to rung # 3 of the scaffolding
- If the bottom clamp is not in the correct position straight away, you can loosen the plastic adjustment knob 1 or 2 turns and slide the clamping plate until you are in the correct position for the clamp; then simply tighten the plastic adjustment knob again

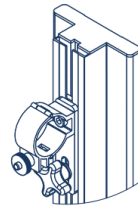
After you have attached the bottom rail, you can install the second rail on top and attach it to the next mounting frame:

- Make sure that the ball-hole splice plates fit together neatly and that the plates connect seamlessly
- Install the clamp of the second rail on rung 16, counting from the bottom of the scaffolding
- You can easily adjust the position of the clamp as explained above

Install the third and subsequent guide rail by following the same procedure. Simply attach the new rail 8 rungs higher than the previous rail.

The top rail – note the flat end cap (!)

When installing the last and top rail, make sure this rail ends with a flat end cap. If you were to end up with a ball cap, you can no longer place the winch or pulley in that position.

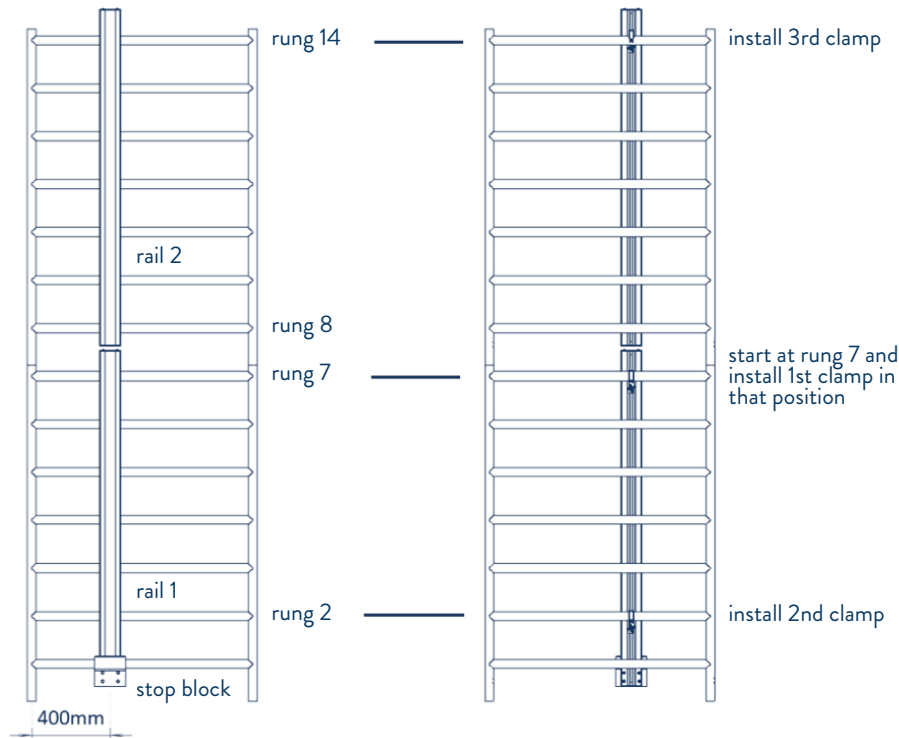


Assembly drawing of the Shuttle lift mast for high (7-rung) mounting frames with a rung distance of 28cm

The assembly of the Shuttle lift mast is illustrated clearly in the drawing. This example features two high mounting frames with a rung distance of 28cm. If you start with a 4-rung mounting frame, the clamps are in the same rung positions: on rung 2, rung 7 and rung 14, counting from the bottom of the scaffolding.

In the case of scaffolding with mounting frames with a rung distance of 25cm, these positions would be rung 2, rung 8 and rung 16 because in that case, the high mounting frames have 8 rungs.

The low mounting frame counts 4 rungs.



Tip: another two basic rules that practically always work

- In the case of scaffolding with a width of 75cm, install the guide rails exactly in the middle of the mounting frame
- In the case of scaffolding with a width of 135cm, allow a 40cm free space between the rail and the upright tube of the mounting frame (see previous drawing)

Optional (not included as a standard): support rail

De Liftfabriek can, as an option, include a support rail that is mainly intended for installation on the bottom mounting frame of your scaffolding. The advantage of this support rail is that you can leave it on this frame as a reminder of the right position for assembly. In addition, this support rail further increases the rigidity of the guide rail, which may be desirable in some applications. Support rails are U-profiles measuring 330mm in length and which enclose the back of a guide rail. Support rails are supplied with two (2) clamps.

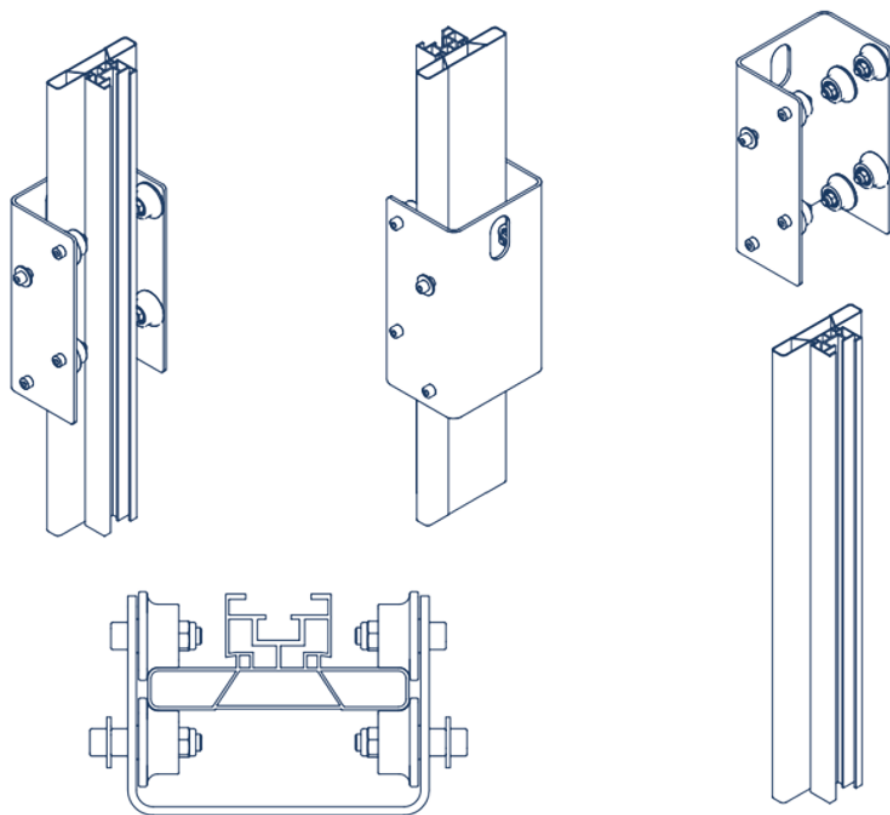
For further information about the assembly of the lift mast, reference is made to the website of De Liftfabriek: www.deliftfabriek.com

1.2 INSTALLATION OF THE SHUTTLE CARRIAGE

Once you have installed the bottom guide rail on the bottom mounting frame, you can place the Shuttle carriage on this rail. Installing the carriage is self-explanatory.

Do make sure that the hole by which you attach the carriage to the lifting strap or lifting cord later on is positioned at the top of the carriage. See the images below.

Drawing of installing the SHUTTLE carriage:



Installation of the Shuttle carriage on the guide rail

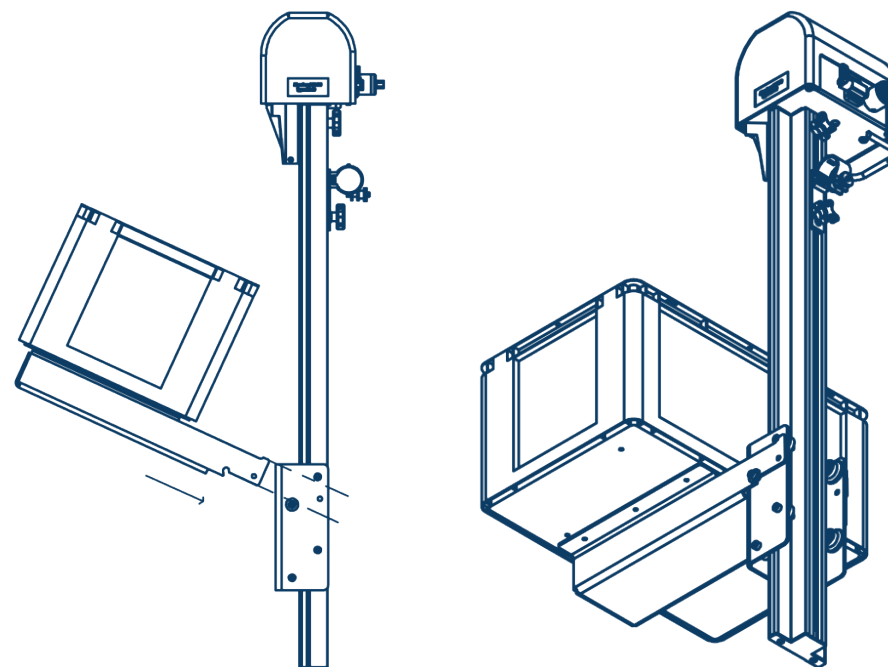
For further information about installing the Shuttle carriage on the guide rail, reference is made to the website of De Liftfabriek: www.deliftfabriek.com

1.3 INSTALLATION OF THE SHUTTLE CRATE

Before you can use the Shuttle crate, you must first assemble it according to the instructions that you can find in the packaging with the support brackets. Assembly instructions can also be found on the website www.deliftfabriek.com.

The Shuttle crate has two support brackets that you must install on the carriage. You do this by hooking the crate brackets onto 4 bolts on the carriage.

There is only one way to do this and it is self-explanatory. See the images below for the position of the brackets on the Shuttle carriage, viewed from the rear of the crate.



Installation of the Shuttle crate onto the Shuttle carriage

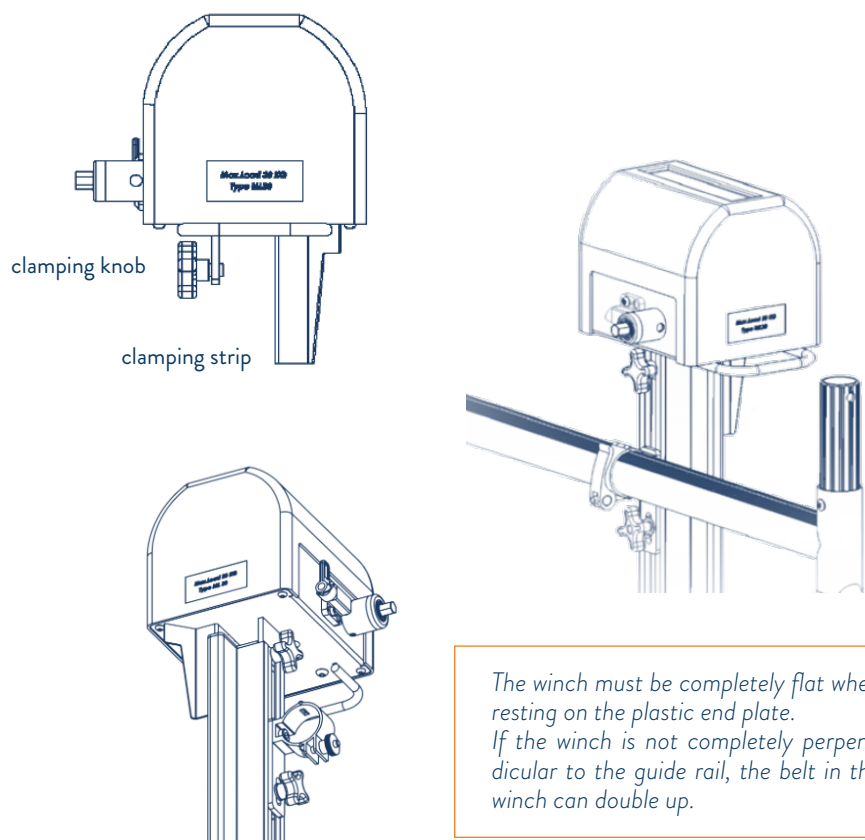
For further information about assembling the support brackets/crate and installing the Shuttle crate on the Shuttle carriage, reference is made to the website of De Liftfabriek: www.deliftfabriek.com

1.4 INSTALLATION OF THE SHUTTLE WINCH

Make sure that at the top of your scaffold, you finish with a top rail. This top rail has a flat plastic end plate (i.e. no semi-balls or two holes).

Installing the Shuttle winch is easy. Position the winch above the guide with the coupling and the interlock facing you. Now place the clamping strip of the winch in the free opening of the rail. Lower the clamping strip completely into the rail. The winch now rests on the flat plastic top plate of the rail. See the image below.

Finally, tighten the Shuttle winch clamping knob by hand. The winch is now ready for use.



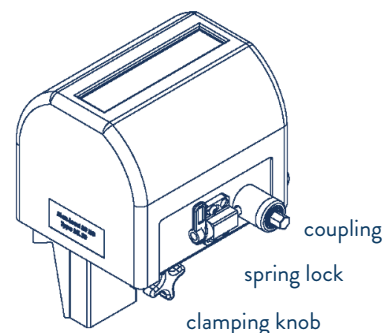
Installation of the Shuttle winch on the top guide rail

For further information about installing the Shuttle winch on the guide rail, reference is made to the website of De Liftfabriek: www.deliftfabriek.com

2. USING THE SHUTTLE WINCH

Parts of the SHUTTLE winch

The three parts of the Shuttle winch that are important to the user:



Spring lock for securing the winch, especially when loading and unloading goods at heights; the spring lock prevents the Shuttle carriage from moving

Coupling for installing the drill and driving the winch (short coupling or ball coupling)

Clamping knob for securing the winch to the top guide rail

Spring lock

When you have lifted the load to the desired height, engage the spring lock so that it is positioned against the coupling. If the load unexpectedly moves down, the lock automatically runs into one of the two locking holes on the slip coupling, blocking any further movement.

Coupling, bit set and Cardan suspension

The user decides which coupling he/she wants to use. The difference between the two couplings is that the ball coupling can give way in the case of higher loads. This has advantages in terms of overloading and preventing damage to the winch. However, the user does not require the stated functionality of the ball coupling. In that case, he/she can use the short coupling.

Note: the ball coupling is not a substitute for the slip coupling of the drill that must be set and applied as described on page 14 of this manual.

We supply a suitable socket wrench-bit combination (size 13) for driving the coupling.

Vibration-free operation: we also supply a matching Cardan suspension as a standard, which ensures that you can work virtually vibration-free. This at the same time improves the lifespan of the winch.

Klemknop van SHUTTLE-lier

After you have installed the winch on the top guide rail, tighten the clamping knob by hand. The Shuttle is now ready for use.

SHUTTLE winch: use a device with sufficient power!

Je kunt de lier aandrijven met een boor/schroefmachine. Gebruik daarvoor een You can drive the winch with a drill/driver. Use a professional device that has the necessary power for lifting the load and endurance when using the Shuttle intensively.

Warning: if the power of the drill/driver is insufficient for lifting the load, it will warm up quickly and it may overheat. The motor of the device can burn out if not protected against overload.

Drill/driver: mandatory use of slip coupling on the device!

Two (2) extremely important reasons why the use of the slip coupling on the drill/driver is mandatory:

- The Shuttle aims to offer a safe and ergonomic alternative for manually lifting goods on (mobile) scaffolds up to approx. 30 kilos
- Never allow a winch to run at rail end as this can damage the winch

Setting and using the slip coupling on the drill/driver prevents loads of more than 30 kilos from being lifted, while the risk of damage to the winch is reduced if this weight is nevertheless exceeded.

Setting the slip coupling on the drill/driver is quick and very easy:

- Place a weight of about 30 kilos in the Shuttle crate
- Start with the lowest setting of the slip coupling on the drill/screwdriver and increase it in steps until you can lift the load of 30 kilos

Remember and/or write down the coupling value that applies to this machine and set it each time the Shuttle is used.

Note: stated coupling value is different for each drill (!) Therefore, determine the couple value every time you start working with another device (!).

You determine the speed of lifting/lowering and the point at which you stop!

By selecting the direction of rotation of the drill, you can either hoist or lower the load. You choose the speed at which you do this. After all, you determine the speed at which you run the device.

It is just like drilling a hole or driving in a screw. So pay attention and reduce speed when you are “almost there” (rail end). Stop before you run the Shuttle carriage against the winch.

If you lift the load too high, the carriage will run against the winch. This will engage the slip coupling of your drill causing it to slip. The slipping of the coupling is completely unnecessary and can easily be avoided by keeping a few centimetres clear from the rail end.

In addition: if you hit the rail end and your slip coupling is engaged, the Shuttle may move down, especially if you have loaded too much weight. The more reason to adhere to the maximum load of 30 kilos and to observe the rule that you should not let the winch continue to run at rail end.

Make sure that the winch belt always enters the winch flat and without twisting/folding!

The most important point to pay attention to when using the winch belt is that it always enters the winch flat and without folding and twisting.

The winch belt must run flat and straight. Making sure it does, is not difficult at all. You just need to make sure that you hook the Shuttle carriage correctly onto the winch belt:

- When hooking up, pull the winch belt so that it is flat and straight, while making sure there are no twists in the belt
- Now use the carabiner to hook the shuttle carriage and the winch belt together, making sure not to twist the belt in the process
- The winch belt now runs straight and flat across the guide

Avoid folds in the winch belt. When entering the winch drum enters, these folds become worse and the belt no longer rolls up flat. This will damage and weaken the winch belt.

Note the following two points stated earlier:

- Make sure the lift mast is perfectly upright (check with a spirit level)
- Make sure the winch is flat on and perpendicular to the lift mast. If tilted, the winch belt can double up in the winch drum.

Finally

Avoid getting trapped: keep out of the way of the Shuttle.

Persons on the lower platforms of the scaffolding should take care not to place their hands/ arms and feet/legs directly next to the Shuttle's guide rail.

Likewise, make sure no objects are sticking out of the Shuttle's path.

Warning stickers must be affixed to the inside of the guide rail.

These stickers are supplied with the product by the manufacturer and more can be ordered if desired.

Regularly check your winch belt and make sure that it always runs perfectly flat and straight when in operation

The most important point to pay attention to when using the winch belt is that it always enters the winch flat and without folding and twisting. Avoid folds in the winch belt. When entering the winch drum enters, these folds become worse and the belt no longer rolls up flat. This will damage and weaken the winch belt.

The winch belt has enormous strength. The belt must nevertheless be checked regularly (at least once a month) to ensure that no damage has been caused, for example, by contact with sharp objects.

If you detect any cracks, frays or notches, replace your belt immediately!

The winch belt must be replaced with a new belt five years after its production date, due to UV rays acting on the belt. This also applies if the belt is still completely intact.

Remember - maximum 30-kilo load and goods only

The Shuttle is designed for loads of up to 30 kilos. Do not exceed that weight. Overloading can also damage your drill.

The Shuttle must be used to lift goods only. Under no circumstances should it be used to lift or lower animals or children/adults.

3. SAFETY

DO'S/ DON'TS

DO	DON'T
✓ Carefully read this manual before assembling the SHUTTLE and follow the instructions.	X Do not use the SHUTTLE if there is anything in the manual that you do not understand. Contact the supplier for advice.
✓ Check to ensure that the SHUTTLE is the correct lift solution for the intended operations. Carry out a thorough risk analysis prior to assembly and use of the SHUTTLE and act in accordance with the results thereof.	X The SHUTTLE must never be assembled, used, moved or disassembled by unauthorised persons.
✓ Check that the SHUTTLE has been assembled by a person authorised and qualified to do so.	X Never use the SHUTTLE in poor weather conditions that could endanger the user (snow, sleet, heavy rain, lightning).
✓ Check that correct marking is present, especially the stickers warning of the entrapment hazard and the winch sticker warning against running the winch at rail end and prescribing mandatory use of the slip coupling on the drill/driver driving the SHUTTLE winch.	X Never use the SHUTTLE near overhead electrical cables that are within reach of the user.
✓ As far as the scaffolding is concerned, check that this (i) is certified scaffolding and that it complies with the most recent guidelines, (ii) that it has been put up correctly and in accordance with the guidelines and (iii) that it has been put up by a qualified person.	X The SHUTTLE is exclusively intended for the vertical transport of goods and not of persons and/or animals. Lifting and/or lowering persons and/or animals with the SHUTTLE is strictly forbidden.
✓ Check (i) that the outriggers are in place, (ii) that the crate with load remains fully within the outer diameter of the outriggers and (iii) can move freely along the entire length of the lift mast.	X Never load the SHUTTLE crate with a weight higher than 30 kilos.
✓ Make sure that unauthorised persons cannot operate the SHUTTLE. Disassemble the SHUTTLE completely if the aforesaid requirements cannot be (sufficiently) met.	X Never bend over the railing of the platform to take goods out of the loading crate. The user's upper body must at all times remain fully behind the platform railing.
✓ Always use the slip coupling of the drill/driver when operating the SHUTTLE winch. Set this coupling in accordance with the instructions in this manual.	X Never use the SHUTTLE if the winch slip coupling has not been properly adjusted and/or if it is not working properly.
✓ Always use the SHUTTLE winch spring lock to secure the SHUTTLE carriage at height.	X Never allow the SHUTTLE winch to run against the rail end as this can damage the winch.
✓ Make sure the lift mast is perfectly straight and that the winch is completely perpendicular to it. This is important to prevent folding of the winch belt.	X When using the SHUTTLE, never allow anyone to stand or move underneath the SHUTTLE.

4. REPAIRS AND WARRANTY

Assembly and/or repairs

Assembly (attachment) and/or repairs are at your own expense and risk. De Liftfabriek is not liable for damage caused by incorrect assembly and/or repairs. De Liftfabriek can be called in to repair your product or assemble the relevant parts, at a charge.

Replacement parts

Replacement parts for the Shuttle may only be used if they have been supplied by De Liftfabriek.

Warranty provision

The Shuttle has been designed, produced and tested with the utmost care. The following warranty applies under the express condition that this product is used in accordance with the instructions and its intended purpose:

1. De Liftfabriek guarantees the reliability of the product and the quality of the material used.
2. Defects covered by the warranty will be remedied by us by replacing the defective part or product or by sending a replacement part.
3. The following defects are, in any case, not covered by the warranty:
 - i. Use of the product contrary to its intended purpose or contrary to the operating instructions.
 - ii. Normal wear and tear..
 - iii. Assembly or repairs by the customer or third parties (with the exception of fitting parts sent as referred to under point 2 above).
 - iv. Changes in government regulations regarding the nature or quality of the materials used.
4. Defects identified upon delivery must be reported to De Liftfabriek immediately. Failure to do so will void the warranty. In order to claim under the warranty, De Liftfabriek or your De Liftfabriek dealer requires proof of purchase.

5. Defects in the product must be reported to De Liftfabriek or your De Liftfabriek dealer as soon as possible, but in any case, within 14 days of discovery thereof.

- i. When claiming under the warranty, De Liftfabriek must be able to inspect the product in its quality centre. The customer must make the product available for this. If the investigation establishes that the product has been used incorrectly, investigation costs will be charged.
- ii. If the customer wishes an investigation to be conducted by an independent institute and this investigation concludes that the product has been used incorrectly, the costs of the investigation will be at his expense. The costs of the investigation are also payable by the customer if De Liftfabriek has offered to repair or replace the product at its expense prior to such an investigation.

If you have a question about the SHUTTLE,
our specialists will be happy to assist and/or advise you.
Therefore, do not hesitate to contact us.

+31 (0)85 130 1956



De Maas 22D - 5684 PL - Best (NL)

info@deliftfabriek.nl

+31 (0)85 130 1956

	Machine Directive 2006/42/EG
	Z20-612-999-A