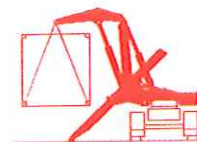
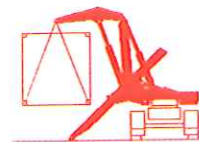


INSTRUCTION MANUAL



CONTENTS

Read this first - Important information.....	p. 3
1. Description of the machine and its domain of utilisation.....	p. 4
2. Technical characteristics	p. 4
3. Security features	p. 5 - 18
3.1 Static security	
3.2 Dynamic security and the ESS	
3.3 Canbus control.	
4. Operating instructions	p. 19 - 25
4.1 Safety precautions	
4.2 Putting the machine in to service for the first time.	
4.3 Connecting a new prime mover to the BoXLoader	
4.4 Command	
4.5 Accelerator	
4.6 Emergency stop	
4.7 Procedure to load a container	
4.8 Procedure to unload a container	
4.9 Precautions when handling a container on a soft surface.	
4.10 Precautions when handling a container in a slope.	
4.11 Precautions when stacking a container on top of another.	
4.12 Precautions when handling two 20' containers together	
4.13 Precautions when transferring a container.	
4.14 Precautions when driving with the BoXLoader.	
5. Maintenance	p. 26 - 27
6. Trouble shooter	p. 28 – 30
6.1 Problem list	
6.2 Verification and measures to be taken	



Read this first - Important information.

- 1. The Machine directive CEE 89/392 is applicable on side loading trailers.**
- 2. The BoXLoader is simultaneously a vehicle and a lifting equipment. It is therefore subject both to road and crane/lifting equipment regulations.**

The Company using the BoXLoader must unconditionally let verify:

- The vehicle by the appropriate local authority at intervals according to local laws.
- The cranes by an authorised organisation (TUV, VERITAS, NORISKO, etc)

In the European Union the interval between two inspections must not exceed six months.

- The complete machine after:
 - a) Disassembly and assembly of the cranes.
 - b) The repair after an accident.
 - c) Modifications of the cranes or the vehicle that may have an influence during lifting.

All interventions shall be duly noted in the maintenance book.

3. Before leaving the machine in the hands of an operator/driver:

- You must verify that he/she has received the necessary training and explanations in order to use the machine in a safe manner.
- That he has read and understood the contents of this manual.

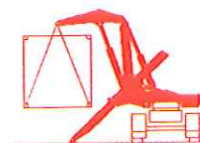
4. BXL declines all responsibility for damages and accidents occurring as a result of a lack of proper maintenance.

5. If a BoXLoader has an accident and the proprietor of the BoXLoader holds BXL as responsible, it is vital that an expert accredited by BXL sees the machine on site before measures are taken.

6. It is strictly forbidden to modify the BoXLoader (crane and chassis) without written permission from BXL.

7. Only use original spare parts.

BXL decline all responsibility in case of an accident due to the use of pirate spare parts.



1. Description of the machine and its domain of utilisation.

The BoXLoader is developed to handle and transport containers, flats and other loads following the ISO sea container standard, from 20' to 45' and up to 40Tons.

The BoXLoader is independent and versatile. It can put containers or flats on the ground or load and unload other vehicles and railway wagons. It can also put a container on a loading deck.

The BoXLoader can also stack one container on top of another, without shortening the chains.

The BoXLoader consists of two cranes with stabilisers mounted on a semi-trailer or a Lorry chassis. The container is seized in its lower corner fittings by specially designed hooks. It is thereafter lifted horizontally by the two cranes. The stabilisers deliver a counter moment to preserve stability. Once the container is placed on the BoXLoader and the cranes and stabilisers are folded to transport position, the BoXLoader is compatible with road regulations in the same way as any standard Truck + semi-trailer combination.

2. Technical characteristics

Lifting capacity:

Truck mounted unit, model 30C:	30T
Semi-trailer model 34:	34T (reduced to 30T when stacking two containers high)
Semi-trailer model 40:	40T
Semi-trailer model Speedloader:	35T

Length of the equipment:

Truck mounted unit, model 30C:.....	6 950 mm
Semi-trailer model 34 in 40' position:	13 600 mm
Semi-trailer model 40 in 40' position:	14 000 mm
Semi-trailer model 40 in 45' position:	15 525 mm
Semi-trailer model Speedloader in 40' position:	13 600 mm

Width of the equipment:

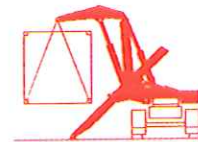
All versions.....	2 550 mm
-------------------	----------

Crane outreach (from the center):

Truck mounted unit, model 30C:.....	3 700 mm
Model 34T:	3 600 mm
Model 40T:	3 900 mm
Model Speedloader:.....	2 980 mm

Stabiliser outreach (from the centre):

Truck mounted unit, model 30C:.....	3 025 mm
Model 34T:	3 230 mm
Model 40T:	3 470 mm
Model Speedloader:.....	3 075 mm



3. Security features

3.1 Static security

Folding and unfolding of the cranes:

- If the load weighs more than 800kg (1 770lbs) and the stabilisers are not put firmly on the ground, it is not possible to fold or unfold the cranes.
- When the cranes are unfolded and the load exceeds 800kg, the stabilisers can not be retracted.

3.2 Dynamic security and the ESS CANBUS.

The BoXLoader, as with all lifting equipment respecting the machine directive, is equipped with a stability system: The ESS (Electronic Stability System) verifies in real time the stability as a function of the position of the crane and stabiliser and also the weight of the container.

If the stabilisers are close to the BoXLoader (i.e short stabiliser outreach) the stability is reduced and the lifting capacity of the crane will be reduced accordingly.

The principal functioning of the ESS:

When 90% of the permitted stability is reached, a yellow lamp is lit and an intermittent audible signal is activated. If the container are moved further away from the BoXloader and the limit 100% stability is reached, all manoeuvres that will further endanger the stability are blocked.

A red lamp and a continuous audible signal indicate that the maximum permitted stability is reached. Furthermore an overload message is shown on the screen placed in the back of the trailer.

- If this occurs when a container is lifted from the ground (or *a container being transferred to/from another vehicle, loading deck or railway wagon*), the only possible movement is to put the container back to the ground.
- If this occurs when the container is still on the vehicle, the only possible movement is to put it back down on the vehicle.



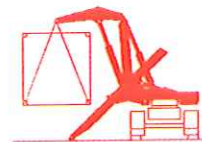
The ESS will also interfere when a container is moved towards the non lifting side of the machine. In this case the only possible movement is to put it back on the vehicle.

The ESS is a supplementary system to verify the stability of the machine.
The ESS does not replace, and shall not replace, the good judgement and the experience of the driver/operator.

3.3 Canbus control

All crane functions are controlled by a canbus system. This system consists of:

- Main unit placed in the rear of the trailer.
- Slave units placed in the crane frame on each crane.
- Pressure meters placed on the overcenter valve of the overarms
- Anglemeters placed on crane arms and stabiliser.
- Inductive switches placed on extra support legs and stabiliser.



PUSH BUTTON FUNCTION



Button	Description	Button	Description
	Activation of relative screen function		Figure of value selection inside setting menus
	Activation of relative screen function		Figure of value selection inside setting menus
	Activation of relative screen function		Not used
	Activation of relative screen function		Manual activation of acoustic signal
	Selection of screen function		Inside double menus selection of front or rear crane menus
	"Confirm" function inside menus		Permit the access to user menu
	"Row Up" or "Increase Value" inside menus		Keep pressed for 2 seconds do the function "Exit" from all menus
	"Row Down" or "Decrease Value" inside menus		Permit the access to setting menu by using the correct PIN.



Operative page – Status icons and indications

	FRONT			REAR			TRANSPORT OK
	ROW1 OPERATING TEXT						See row 1 operating messages table
	ROW2 OPERATING TEXT						
	23.4						Actual weight indication in ton
	t						
		STOP					

using percentage bar regarding the front crane

using percentage bar regarding the rear crane

Icon indicate that both crane are in correct transport position (arm, stabilizer and extra leg completely closed)

See row 1 operating messages table

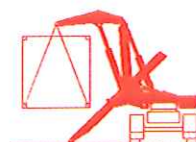
See row 2 operating messages table

Actual weight indication in ton

indicate that the front stabiliser in correctly on the ground

Indication of emergency push button status

indicate that the rear stabiliser in correctly on the ground



Operative page – Status icons and indications

Icon indicate that the cranes are not in correct transport position

	FRONT	<input type="text" value="0"/>	
	REAR	<input type="text" value="0"/>	
	ROW1	OPERATING TEXT	
	ROW2	OPERATING TEXT	
	23.4_t		
		STOP	

indicate that the front stabiliser is not on the ground

indicate that the rear stabiliser is not on the ground

	FRONT	<input type="text" value="0"/>	
	REAR	<input type="text" value="0"/>	
	ROW1	OPERATING TEXT	
	ROW2	OPERATING TEXT	
	23.4_t		
		STOP	

if is blinking indicate that the emergency push button is pressed

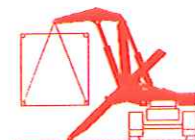


Operative page 1

by pressing F1 active the over arm up movement		FRONT REAR	<input type="text" value="0"/> <input type="text" value="0"/>	
by pressing F2 active the over arm down movement		ROW1 OPERATING TEXT ROW2 OPERATING TEXT		
by pressing F3 active the under arm out movement		23.4^t		
by pressing F4 active the under arm in movement				
by pressing F5 go to the operative page 2			OK STOP	

Operative page 2

by pressing F1 active the stabiliser extending movement		FRONT REAR	<input type="text" value="0"/> <input type="text" value="0"/>	
by pressing F2 active the stabiliser retracting movement		ROW1 OPERATING TEXT ROW2 OPERATING TEXT		
by pressing F3 active the stabiliser down movement		23.4^t		
by pressing F4 active the stabiliser up movement				
by pressing F5 go to the operative page 3			OK STOP	

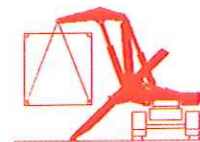


Operative page 3

by pressing F1 active the extra leg extending movement		FRONT REAR	<input type="text" value="0"/> <input type="text" value="0"/>	
by pressing F2 active the extra leg retracting movement		ROW1	OPERATING TEXT	
		ROW2	OPERATING TEXT	
by pressing F3 active the 20' trailer movement	20'	23.4_t		
by pressing F4 active the 40' trailer movement	40'			
by pressing F5 go to the operative page 4			OK STOP	

Operative page 4

by pressing F1 active the only front crane movement		FRONT REAR	<input type="text" value="0"/> <input type="text" value="0"/>	
by pressing F2 active the only rear crane movement		ROW1	OPERATING TEXT	
		ROW2	OPERATING TEXT	
by pressing F3 active the RPM increasing movement	RPM +	23.4_t		
by pressing F4 active the start engine function				
by pressing F5 go to the operative page 5			OK STOP	

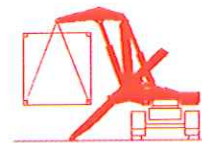


Operative page 5

by pressing F1 switching On and Off the working light

	FRONT	<input type="text" value="0"/>	
	REAR	<input type="text" value="0"/>	
	ROW1 OPERATING TEXT		
	ROW2 OPERATING TEXT		
	23.4^t		
		OK STOP	
		OK	

by pressing F5 go back to the operative page 1

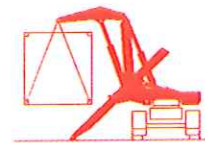


Row 1 operating text table

Text	Description
ALARM CODE: XXX	Is shown when a system alarm is detected. The machine is blocked. The code shown is the first alarm detected.
EMERGENCY STOP!	Is shown if an emergency push button is pressed
OVERLOAD STOP	Is shown if an overload or an over moment of the crane is detected. In this condition only the some movement are allowed.
NON LIFTING STOP	Is shown when the container position has reached the maximum radius in non lifting side
STABILISER STOP	Is shown when the stabilizer is not correctly on the ground at the begging of lifting cycle
FRONT CRANE ONLY...	Is shown if only the front crane movement is selected
REAR CRANE ONLY...	Is shown if only the rear crane movement is selected
CRANE READY!	Is shown if everything is Ok


Row 2 operating text table

Text	Description
UNDER ARM CLOSED!	Is shown when the front and rear under arm are closed
UNDER ARM OPEN!	Is shown when the front and rear under arm are completely open
STABILISER CLOSED!	Is shown when the front and rear stabilizer are closed
VERICAL ALIGNMENT	Is shown when there is a vertical alignment between the chain pin and the under arm pivoting pin
MAX LOAD: XX.X t	Is usually shown to inform which is the maximum possible load of the machine with the actual stabilizer configuration.




Menu Description

Welcome Page

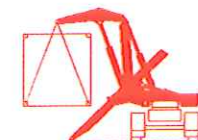
	
9	V e r s i o n B C v v _ r r
10	D a t e d d - m m - h h h h

Line	Type	Description
9	Showing	Indication about the software version (vv) and release (rr)
10	Showing	Indication of the date of the software version

User Menu

1	U S E R M E N U
2	C o n t r a s t : 
3	L a n g u a g e : U K
4	T i m e S e t t i n g
5	D i a g n o s t i c s
6	S e c u r i t y O F F

Line	Type	Description
1	Header	Menu Name
2	Setting	Press Enter when this row is active to change the contrast setting. The text will be blinking and by using the arrow Up and Down the percentage will be changed. The percentage is shown by a graph bar. Press again Enter to exit the setting mode.
3	Setting	Press Enter when this row is active to change the current language. By using the arrow Up and Down the language will be changed. The following symbols indicate which language is selected: FR for French UK for English DE for German IT for Italian Press again Enter to exit the setting mode.
4	Menu Access	Press Enter when this row is active to enter the Time Setting Menu
5	Menu Access	Press Enter when this row is active to enter the Diagnostic Menu
6	Menu Access	Press Enter when this row is active to enter the Security OFF Menu. To disable the limiting functions.



Time Setting Menu

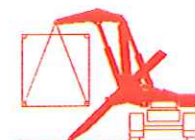
1	T I M E S E T T I N G	
2	M i n u t e :	m m
3	H o u r :	h h
4	D a y :	d d
5	M o n t h :	M M
6	Y e a r :	Y Y
7	U p d a t e t i m e . . .	
8	T i m e U p d a t e d !	

Line	Type	Description
1	Header	Menu Name
2	Setting	Follow the "Value setting procedure" to adjust the minute
3	Setting	Follow the "Value setting procedure" to adjust the hour
4	Setting	Follow the "Value setting procedure" to adjust the day
5	Setting	Follow the "Value setting procedure" to adjust the month
6	Setting	Follow the "Value setting procedure" to adjust the year
7	Command with confirm	Press enter twice to update the time
8	Showing	This row appear only when the time is updated

Security Off Menu 1

1	S E C U R I T Y D I S A B L E 1	
2	Y o u a r e s w i t c h i n g	
3	O F F t h e s e c u r i t y	
4	s y s t e m . . .	
5	D o y o u r e a l l y w a n t	
6	d o i t ?	
7	- - - - -	
8	C o n f i r m D i s a b l e !	

Line	Type	Description
1	Header	First step to deactivate the limiting functions
2	Showing	Text about the first step of switching off the security.
3	Showing	
4	Showing	
5	Showing	
6	Showing	
7	Showing	
8	Command with confirm	Press enter twice to go to the next step



Security Off Menu 2

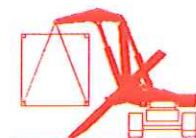
1	S E C U R I T Y D I S A B L E 2
2	A r e y o u s u r e t o
3	s w i t c h O F F t h e
4	s e c u r i t y s y s t e m . . .
5	- - - - -
6	C o n f i r m D i s a b l e !

Line	Type	Description
1	Header	Second step to deactivate the limiting functions
2	Showing	Text about the second step of switching off the security.
3	Showing	
4	Showing	
5	Showing	
6	Command with confirm	Press enter twice to go to the next step

Security Off Menu 3

1	W A R N I N G !
2	T H E S E C U R I T Y
3	I S D I S C O N N E C T E D !
4	U S I N G T H E M A C H I N E
5	I N T H I S S T A T E M A Y
6	C A U S E A L E T A L
7	A C C I D E N T . . .
8	B X L R E F U S E A L L
9	R E S P O N S I B I L I T I E S
10	- - - - -
11	A c t i v a t e S y s t e m ?

Line	Type	Description
1	Header	Warning the security is OFF.
2	Showing	Warning text about use the machine in this condition.
3	Showing	
4	Showing	
5	Showing	
6	Showing	
7	Showing	
8	Showing	
9	Showing	
10	Showing	
11	Command with confirm	Press enter twice to switch On the security and come back to the operative page



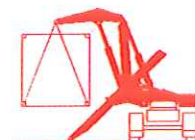
Alarm List Menu

1	A L A R M	L I S T	
2	A l a r m	0	c o d e x x x x x
3	A l a r m	1	c o d e x x x x x
4	A l a r m	2	c o d e x x x x x
5	A l a r m	3	c o d e x x x x x
6	A l a r m	4	c o d e x x x x x
7	A l a r m	5	c o d e x x x x x
8	A l a r m	6	c o d e x x x x x
9	A l a r m	7	c o d e x x x x x
10	A l a r m	8	c o d e x x x x x
11	A l a r m	9	c o d e x x x x x

Line	Type	Description
1	Header	Alarm list menu
2	Showing	Codes of the first 10 alarm condition detected
3	Showing	
4	Showing	
5	Showing	
6	Showing	
7	Showing	
8	Showing	
9	Showing	
10	Showing	
11	Showing	

Alarm List and Description

Code	Description
1	CRC error of parameter saved
10	Reading of front pressure sensor low side too low (open circuit)
20	Reading of front pressure sensor high side too low (open circuit)
30	Reading of rear pressure sensor low side too low (open circuit)
40	Reading of rear pressure sensor high side too low (open circuit)
80	Can BUS message of front stabilizer ASA sensor not received
81	Can BUS message of front under arm ASA sensor not received
82	Can BUS message of front over arm ASA sensor not received
83	Can BUS message of rear stabilizer ASA sensor not received
84	Can BUS message of rear under arm ASA sensor not received
85	Can BUS message of rear over arm ASA sensor not received
86	Can BUS messages of front ARM unit not received
87	Can BUS messages of rear ARM unit not received




Value setting procedure

Follow this procedure to set a value:

Select the row where is the value you need to set.
For example:



1	P I N S E T T I N G
2	P I N : 0
3	E n t e r t o C o n f i r m

Press  push button to make the figure blinking between the value "0" and



the underscore "_".

The underscore shows which figure of the value is selected and can be changed.



P I N :	0	P I N :	_
-----------	---	-----------	---

Press  or  to increase or decrease the value of the figure selected.


P I N :	1	P I N :	_
-----------	---	-----------	---

Press  or  to select the other figure that you need to change

P I N :	1	P I N :	_1
-----------	---	-----------	----

Press  or  to increase or decrease the value of the figure selected.

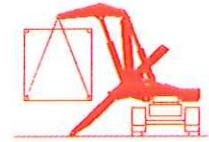
P I N :	11	P I N :	_1
-----------	----	-----------	----

Press  button to confirm the value and exit the mode.

1	P I N S E T T I N G
2	P I N : 0
3	E n t e r t o C o n f i r m

ATTENTION: The Load measurement indicated on the screen is not calibrated and shall not serve to weigh the container with precision.

As a final security measure: Verify that the weight indicated on the ELD is in the authorised zone in the load diagram.



4. Operating instructions

The hydraulic energy is provided by a pump mounted on the prime mover or by a power pack on the side loader.

4.1 Safety precautions

- Never stay in the working zone of the machine nor the prime mover.
- Never stay under a suspended load.
- Never touch the machine as long as the PTO is in gear (or the power pack running). There is a serious risk of squeezing and/or crushing. Fatal injury may occur.
- Never touch the container during lifting. There is a serious risk of squeezing and/or crushing.
You can not stop the container from swinging with your hands!
- Never overload the machine.
- Never use the manual levers to handle a container. They are for maintenance purposes only.
ATTENTION: The ESS does not work when using the manual levers.
- Verify that there are no high voltage cables that may interfere with the BoXLoader.
You should respect distances according to local regulations.

4.2 Putting the machine in to service for the first time

After the first 100km (60miles):

- Tighten the wheel bolts/nuts. Torque: 52-55 kgm
- Check the tyre pressure
- Tighten the bolts on the fifth wheel. Torque: 52-55 kgm

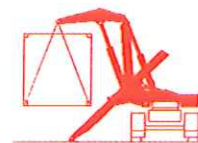
After having handled the 20 first containers:

- Tighten the screws on the axles of the cranes.
- Grease the cranes via the centralised greasing points located under the valve package in the crane frame.

4.3 Connecting a new prime mover to the BoXLoader

Turn the prime mover to a maximum both to the left and to the right. Also pass over a bump. Then check:

- That the hydraulic hoses, electric cables and pneumatic conductors can move freely. They should not get entangled. They must have the right length.
- That no part of the prime mover such as rear lights or supports will touch the BoXLoader.
- If the BoXLoader isn't equipped with a power pack, check that the PTO and pump installation is compatible with the BoXLoader. In case of doubts, contact BXL.



4.4 Command

The BoXLoader is operated via a cable command or an optional radio command. This will allow the operator to move around the machine and choose the best position to supervise the movement of crane and container.

ATTENTION: Never stay in the working zone of the machine, nor the prime mover.

Each button on the command corresponds to the extension or the retraction of a cylinder on the machine. When a button is pushed, it activates the same function on both the front crane and the rear crane. This is the simplest way to work with the two cranes simultaneously.

It is of course possible to work with one crane only: When pushing the upper left button, the rear crane is disconnected and only the front crane will respond to commands. Push the middle button in the upper row to work with the two cranes again.

In the same fashion, you can disconnect the front crane and work only with the rear crane by pushing the upper right button.

4.5 Accelerator

It is possible to accelerate the movement of the BoXLoader with the button on the left side of the command. As a safety precaution, use this button only to fold/unfold the crane and stabiliser without any load.

4.6 Emergency stop

In case of a false manoeuvre or a malfunction on the machine, push the emergency stop button. There is an emergency stop on the radio command as well as on the cable command.

An additional emergency stop is placed in the rear of the trailer.

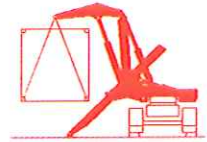
ATTENTION: The emergency stop on the radio command will not work if the radio command is not switched on or if the emitter is out of reach!

Therefore: ALWAYS keep the emitter switched on when the PTO is in gear (or the donkey motor is turning)

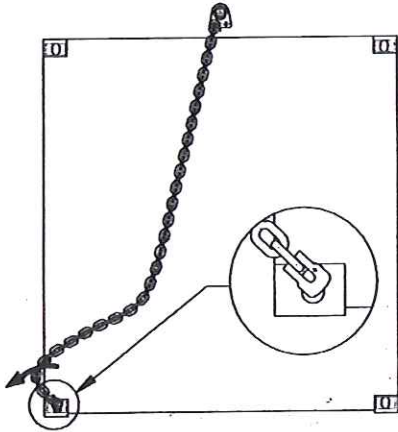
4.7 Procedure to load a container

- Place the BoXLoader parallel with the container at a distance of approximately 50cm (2').
- Lock the parking brakes.
- Engage the PTO
- Verify that the twistlocks are unlocked.
- Unfold the cranes and put the container hooks in the lower corner fittings of the container.

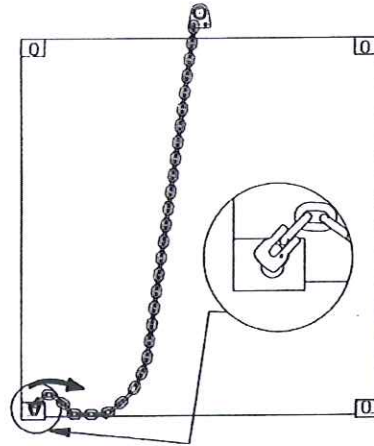
BOXLOADER®



When put correctly they can not fall out:



First turn the hook towards the exterior.
Insert in the corner fittings.

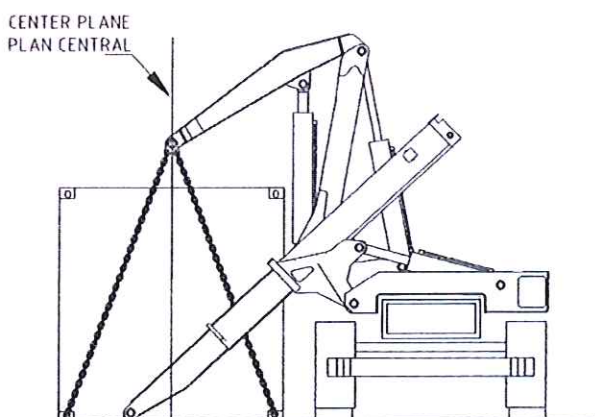


Then: Flip the chain towards
the centre of the container

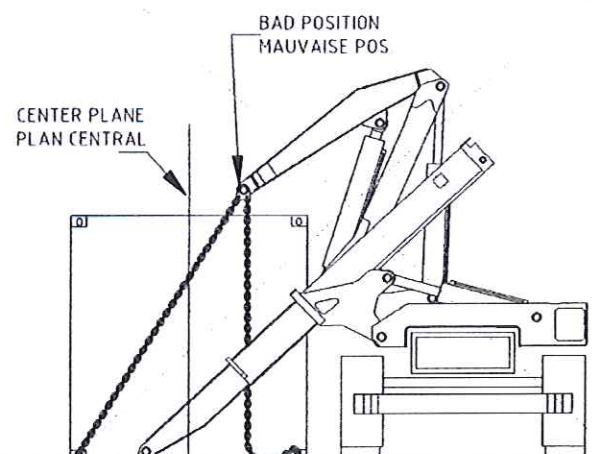
- Extend the stabilisers and then pivot so the foot is put firmly on the ground.
To increase safety: Always extend the stabilisers to a maximum when possible.

- Always make sure that the load yoke of the overarm is in the middle plane of the container when the chains are straightened. This will prevent the container from swinging when it leaves ground. Verify both the rear and the front crane.

The best position for the operator to do this is to be right behind the container.

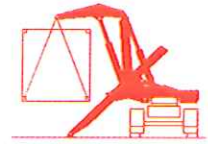


CORRECT POSITION OF THE CHAINS



BAD POSITION OF THE CHAINS

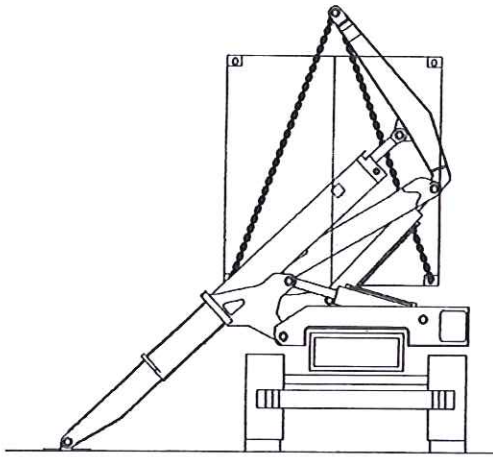
BoXLoader®



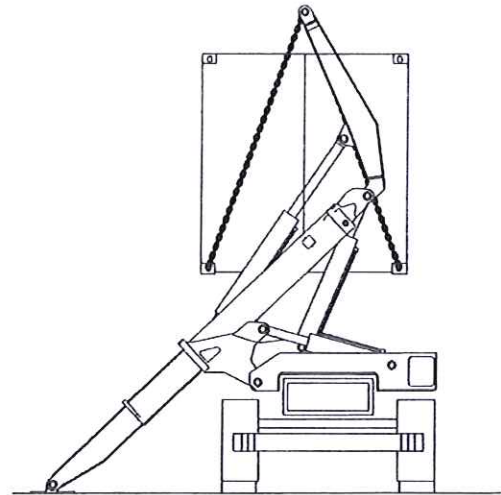
- Lift the container with the overarms. Pull it home with the underarms. The container should always be horizontal. If there is a height difference between front and rear, adjust with one crane only.

Make sure that the container goes free from the twistlocks when pulling it towards the BoXLoader.

- When the container is above the BoXLoader see to that the height between machine and chassis do not exceed 50cm as this will jeopardise stability. Lower the container with the overarms if necessary.



Correct position of the container.

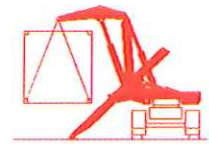


The container is too high. Dangerous position

- It is often easier, especially in the beginning, to put down the container on the twistlocks with one crane at a time. For example, disconnect the rear crane and put the container down on the twistlocks in the front, then disconnect the front crane and activate the rear crane to put down the container on the rear twistlocks. The best position for the operator to do this is to be on the non lifting side of the BoXLoader at the rear of the container.

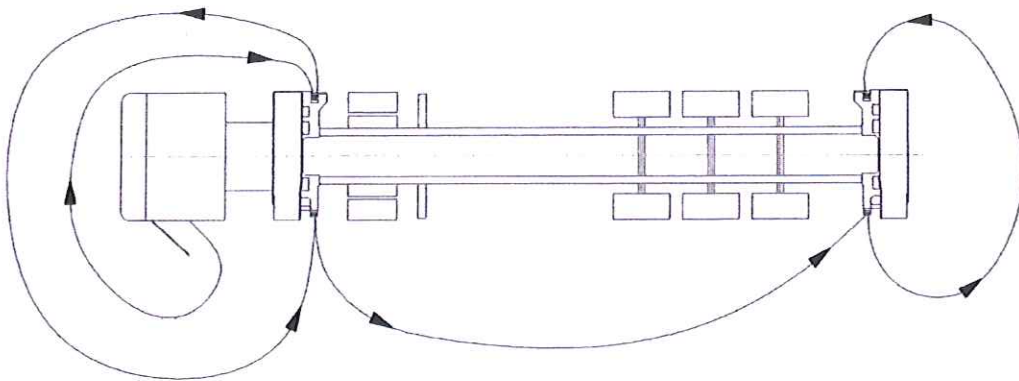
When positioning the container it will much easier if you use small movements and take your time!

- Fold the cranes and stabiliser to transport position.
- Lock the twistlocks.
- Disengage the PTO



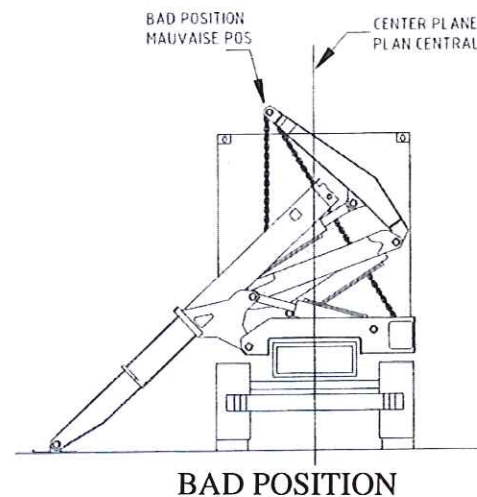
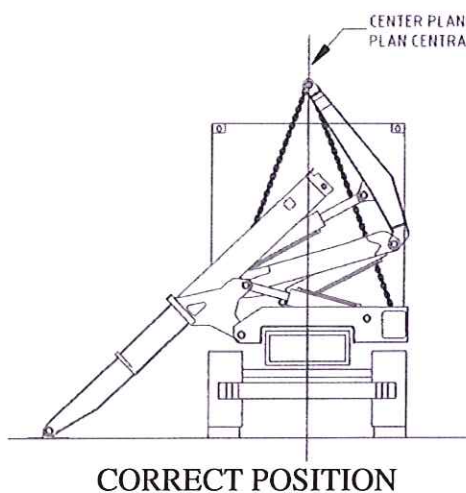
4.8 Procedure to unload a container

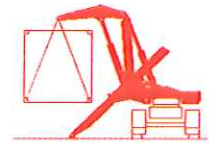
- Make sure that You have enough space for the container at the side of the machine.
 - Lock the parking brakes.
 - Engage the PTO
 - Unlock the twistlocks.
- To save time you should do it in the following order:



Start with the front twistlock on the passenger side. Turn back for the other three twistlocks.

- Extend the stabilisers and then pivot so the foot is put firmly on the ground.
To increase safety: Always extend the stabilisers to a maximum when possible.
- Always make sure that the load yoke of the overarm is in the middle plane of the container when the chains are straightened. Important: Verify the chains of both the front and the rear crane.





To permit the container to leave the twistlocks smoothly, you must lift the container vertically. To do this you should do several small movements with the overarm and the underarm alternatively. Look at the chains and the load yoke: It shall always be in the middle plane of the container. The best position for the operator to do this is to be right behind the BoXLoader.

- When the container has left the twistlocks, push it outwards with the underarm.
As during lifting, you should make sure that the container goes free from the twistlocks on the lifting side on its way out/down. The container should always be horizontal.
Adjust with the crane if necessary.
- When the container is on the outside of the BoXLoader, lower it with the overarm. You may need to adjust with the underarm as well. Put it on the ground.
- Take out the container hooks.
- Fold the crane and stabiliser to transport position.
Put the chains in the small boxes close to the twistlocks on the lifting side.
You can do this with the cranes directly when you fold them.
- Disengage the PTO

4.9 Precautions when handling a container on a soft surface

- Always verify the condition of the ground before (un)loading a container. If the ground is swampy, or otherwise prone to give in under the pressure from the stabilisers, you must use extra plates to enlarge the area under the support leg foot. (These can be bought from BXL).
- If the ground is very soft it may be necessary to leave a plank or similar under the corner fittings of the containers. Otherwise they risk to be buried and this will make it difficult to disengage the hooks.

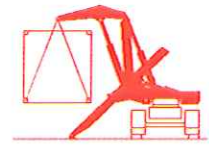
4.10 Precautions when handling a container in a slope

Lift the container only with the lowest crane until the container is perfectly horizontal. Then continue with both cranes.

Likewise, when unloading: Keep the container horizontal as long as possible.

4.11 Precautions when stacking a container on top of another

- Always use the extra support legs on the non lifting side
- The ground must be absolutely flat and solid.
- Put the BoXLoader as close as possible to the container on which you want to stack.
- The container to be stacked will have to be lifted vertically, very high up, before it can be moved towards the other container. It is extremely important not to move the container towards the non lifting side. Always keep it as close as possible to the container on which you want to stack.
- Use the ladder on the BoXLoader to climb up to unhook the container hooks.



This concerns only the model 34T:

- Never stack a container weighing more than 30T.

4.12 Precautions when handling two 20' containers together

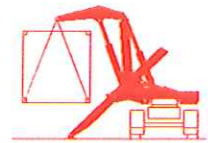
- The maximum weight of each container must not exceed 8T. This safety rule has nothing to do with the BoXLoader, but with the container itself. The corner fittings are not supposed to withstand a higher horizontal force.
- Always make sure that the "twin kit" is in locked position before lifting. The handles shall point towards each other.
- Always put the spacer between the upper corner fittings of the containers. Use the ladder to climb up.

4.13 Precautions when transferring a container.

- If you put the stabiliser on the wagon/semitrailer, make sure that the foot is placed on a rigid part or crossbeam that can support the pressure from the support leg.
- When transferring to/from a semi trailer alone (without prime over), never put the support leg on the front part of the trailer as it will flip over when the load is lifted.
- Remember to unlock the twistlock on the wagon/semi-trailer, before transferring.

4.14 Precautions when driving with the BoXLoader.

- Check that crane, stabiliser and extra support legs are completely folded to transport position.
- Check that the PTO is disengaged or that the donkey engine isn't running
- Always make sure that the side under run protections is mounted. (Telescopic chassis only)
- Check that the extensions of the chassis are locked. (A green lamp on the side of the chassis is lit as long as the chassis extensions are not locked. It is switched off when the chassis is properly locked.)



5. Maintenance

Always make sure that you work in safe conditions.

If you have to be under/inside the machine or under/between crane members, you must:

- *Inform your colleagues that you are working in a dangerous position*
- *Verify that the machine is in equilibrium and will not turn over. Trestle if necessary.*
- *Verify that hydraulic cylinders can't suddenly start to move. There is a serious risk of crushing. Disconnect if there is the slightest risk.*

Hydraulic oil and grease specifications

Hydraulic oil: Standard (0 – 50°C) ISO VG68, NORM HV

Cold conditions: (-10° - 40°C) : ISO VG 46. Very cold conditions: (-20° - 30°C) : ISO VG 32.

Each week:

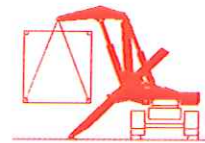
- Check the hydraulic oil level.
- Visual inspection of the crane members and cylinders. Look for cracks, deformation or leaks.
- Wash the machine.

Each month:

- Grease the cranes and the load yoke via the centralised greasing system.
- Grease the semi trailer.
- Grease the chassis locking system. (Telescopic railer only)
- Grease the Tridec system, especially the turning parts around the King Pin.
(This concerns forced axle steering only.)
- Grease the chassis beams.
- Tighten the locking screws on the axles on the cranes.
- Check that the axles are perfectly straight when the BoXLoader is aligned with the prime mover. (Forced steered axles only)

Every six months:

- If the machine is used inside the EU, the machine must be tested by an independent organisation (TUV, Veritas, Norisko..) every six months.
- Check the functioning of the ESS stability system.
- Check the container hooks and the lifting chains for damages and abnormal wear.



Each year:

- Change the hydraulic oil.
- Change the inserts in the high pressure filters and the return filters.

Maintenance of Canbus system

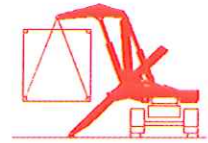
Under normal conditions, the canbus system is maintenance free. If a problem arises there may be two different causes:

1. Physical damage of either angle meters/pressure switches or the cables. In this case the damaged part shall be changed.
2. Humidity entering inside the connectors between the cable system and angle/pressure meter. In this case we advise you to demount the part of the system that causes the problem and verify/dry the connectors.

The screen in the rear of the trailer will display an alarm code that corresponds to each specific problem. This will allow you to identify the problem and take the necessary measures.

List of error messages:

Code	Description
1	CRC error of parameter saved
10	Reading of front pressure sensor low side too low (open circuit)
20	Reading of front pressure sensor high side too low (open circuit)
30	Reading of rear pressure sensor low side too low (open circuit)
40	Reading of rear pressure sensor high side too low (open circuit)
80	Can BUS message of front stabilizer ASA sensor not received
81	Can BUS message of front under arm ASA sensor not received
82	Can BUS message of front over arm ASA sensor not received
83	Can BUS message of rear stabilizer ASA sensor not received
84	Can BUS message of rear under arm ASA sensor not received
85	Can BUS message of rear over arm ASA sensor not received
86	Can BUS messages of front ARM unit not received
87	Can BUS messages of rear ARM unit not received



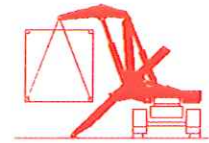
6. Trouble shooter

Down below you will find listed the most common problems that may occur on your BoXLoader. After each problem, a letter indicates the measures to be taken. Execute the measures in order.

EXAMPLE: You have a problem with the radio command: Go to point 1. Take measure L before N, and N before A etc.

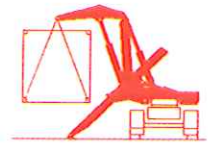
6.1 Problem list:

1. The radio command does not work. L-S-A-B-C-D
2. The cable command does not work. N-S-A-B-C-D
3. No function works, not even with the manual levers. A-S-C-V-E
4. All functions on a crane are faster than the corresponding functions on the other crane. C-U
5. One function doesn't work or doesn't work properly. B-N-O
6. The extension between 20' and 40' does not work. X-P-B-N-O
7. One crane works, but the other does not. Q-B-N-D
8. The ESS, (electronic stability system) doesn't work H-A-B-D-J
9. The stabilisers are firmly put on the ground, but the container can not be loaded/unloaded. F-G
10. The cranes are in transport position but the stabilisers can not be folded. R
11. The container weight is not displayed. H-A-B-D-J
12. Certain functions are suddenly blocked during the handling of a container. I
13. The emergency stop does not work K-N-L
14. There is a noise in the hydraulic circuit. E
15. The extra support leg doesn't function correctly: The leg can not be unfolded or will not return to transport position. T
16. Certain functions are faster on one crane than on the other crane. Example: The underarm on the front crane is faster than the underarm on the rear crane. M
17. The container is blocked in a position close to the twistlocks on the trailer Y



6.2 Verification and measures to be taken

- A. Is the PTO in gear? If this is the case, the orange flickering light on the rear crane is switched on.
- B. Are the electric cables between the prime mover and the BoXLoader correctly connected?
- C. Are the hydraulic hoses between the prime mover and BoXLoader correctly connected?
Especially the return-to-tank hose.
- D. Are the fuses OK? Check the fuses on the prime mover and on the Boxloader.
- E. Verify the inserts in the high pressure filters. If the saturation indicator is completely red, the filter must be changed.
- F. An inductive switch is mounted on the outer support leg. On this switch there is a small lamp that shall be lit when the support leg foot is on the ground. Adjust if necessary the position of the switch. If the switch still isn't lit it's probably broken.
- G. Verify that you have the message "stab ok" from the two icons on the rear screen. Verify that the cable from the inductive switch is OK.
- H. Verify that the security of the machine has not been disconnected. If this is the case you will have a warning message all over the rear screen.
- I. The container is probably too heavy in relation to the position of the stabilisers. A signal, visual and audible, shows that the stability limit is reached. Extend the stabilisers further or put the BoXLoader closer to the container and try again.
- J. Look at the ESS display. It will normally indicate which cable might be damaged. Verify the cables going to the angle meters on the support legs and the cranes as well as the cable going to the load yoke on the overarm.
- K. Verify that the emergency stop is not disconnected with the valves equipped with a handle situated close to the high pressure filters.
- L. Is the radio command switched on and is the battery loaded? Verify that the antennas aren't damaged.
- M. The speed of a certain function can be adjusted on the OC-valves on the cylinder. Please take contact with BXL for further instructions.
- N. Is the cable from the command correctly connected and in good condition?
- O. Verify that the electric signal arrives at the e electro-valve on the valve package situated under the crane frame. A small lamp is lit when the electro-valve is under tension. Also check that the button on the radio/cable command isn't damaged.
- P. Are the locking axles greased and in good condition? (Telescopic chassis only).



Q. Check the buttons on the radio/cable command.

R. Is the load in the chains inferior of 2000kg. (4400bs)?

S. Verify that none of the emergency stop buttons (on the radio command or on the trailer) are pushed.

T. Under the crane frame you will find the tube that houses the extension of the extra support leg. On this tube there is an inductive switch that shall be lit when the extension is completely out. There is another inductive switch on the leg cylinder. Check that this switch is lit when the cylinder rod of the support leg cylinder is inside.

Adjust the position of these switches if necessary. Change if broken.

Important: The extra support leg can always be folded/unfolded with the manual levers under the crane frame.

U. You almost certainly have a problem with the pump. Interchange the two pressure hoses from the pump. If now the other crane is slower, the pump is the problem.

V. Close to the high pressure filters you will find two valves with a handle. Turn these handles and try again. If the crane works you have to change the two electro-valves that are also situated close to the high pressure filters.

EXPLANATION: The hydraulic circuit is maintained open by these electro-valves. If they brake, the oil will immediately return to tank, exactly like pushing the emergency stop button. When you turn the handles you short circuit the emergency stop.

X. Check that the cranes are in transport position. When this is the case you will have see a confirmation on the screen in the rear of the trailer: The icon Transport OK in the upper right corner.

Y. The crane arms are probably moved too far towards the non lifting side. The security system considers that the operator moves the container towards the non lifting side and blocks further movement.

ATTENTION, DANGER: Only turn the handles to finish your manoeuvre. Afterwards you must immediately change the electro-valves. Remember that as long as the handles are turned the emergency stop is disconnected.

If these measures haven't helped you to find the root cause of the problem please contact your BoXLoader agent or BXL in France

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