

MULTILIFT XR S

Hooklift XR2S / XR3S / XR5S



USER AND MAINTENANCE MANUAL
110817116/US
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MULTILIFT

This manual is a translation from the original operating instructions
compiled in Finnish.

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MULTILIFT XR2S, XR3S AND XR5S HOOKLIFT

User Manual

This manual concerns the MULTILIFT XR2S, XR3S and XR5S hooklift equipment.

Information about the equipment.

Type of system:	<input type="checkbox"/> XR2S	<input type="checkbox"/> XR3S	<input type="checkbox"/> XR5S
Serial number:			
Date of commissioning:			
Owner			
Your Multilift dealer			
Service workshop:			

Preface

The XR S hooklift equipment is designed for manipulations with swap truck bodies under the standard SFS 4417 only. The hooklift equipment complies with the requirements of the EU Machinery Directive and has the CE marking. The seller of a machine entity (chassis and hooklift equipment) shall be responsible for the conformity of the whole entity. The installation fitter of the equipment shall provide to the Customer the Declaration of Conformity for the completed installation. The environment protection aspects, e.g. as regards the noise levels produced by the equipment and the recyclability of parts, have been also taken into consideration in the design of the XR S hooklift equipment. Proper use of the hooklift equipment and regular maintenance will ensure durability and reliability of the equipment. We recommend keeping this User Manual together with the vehicle instruction manual in the driver's cabin, easily accessible at hand.

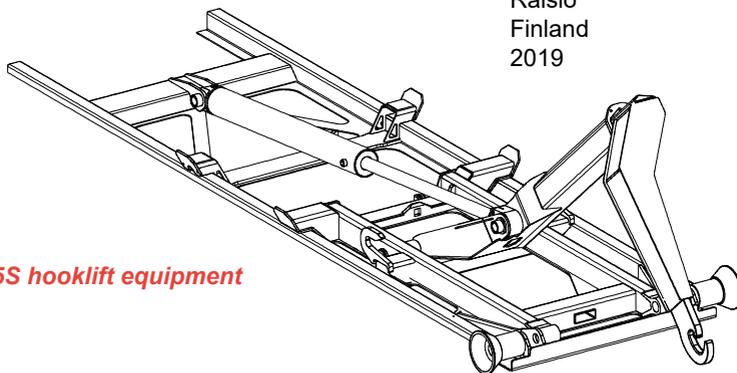
Use only genuine spare parts from Multilift.

The XR S hooklift equipment is a high-quality Finnish product manufactured by Multilift and marketed by Multilift sales network.

Multilift reserves all rights relating to this User Manual.

Multilift reserves the right to change the construction of the equipment without any special notice after the publication of this User Manual.

Cargotec Finland Oy
Multilift
Raisio
Finland
2019



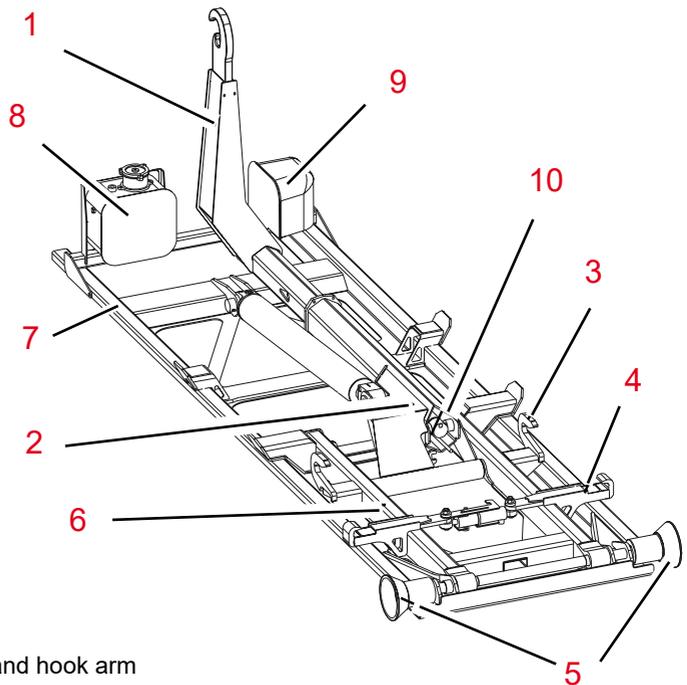
MULTILIFT XR5S hooklift equipment

Note!

Cargotec Finland Oy reserves the right to change specifications, equipment, operating and maintenance instructions without prior notice.

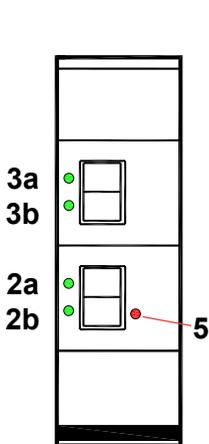
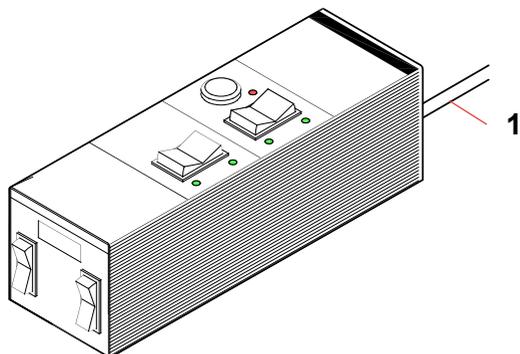
Due to continuous product development some picture details may look different when compared to the actual device.

Main components

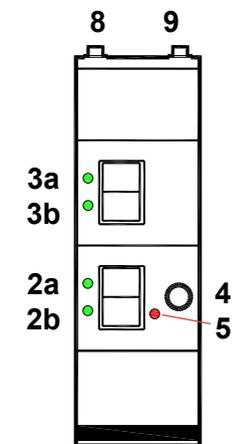


1. Gripping hook and hook arm
2. Middle frame
3. Body locking, mechanical
4. Body locking, hydraulic (optional)
5. Rear rollers
6. Rear frame
7. Sub frame
8. Oil tank
9. Control valve
10. Tipping lock

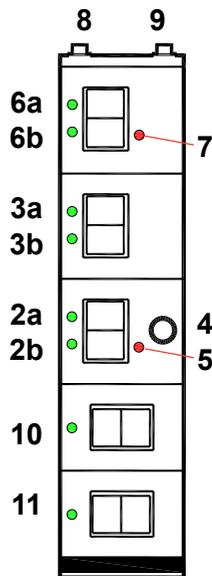
Control unit



*Control unit
basic version*



*Control unit
basic version with options*



*Control unit
XR S equipment with
all options*

Control unit components and basic functions

Ref.	Component or function
1	Control unit cable
2	Rocker switch <i>MAIN CYLINDERS</i> a main cylinders forward b main cylinders backward
3	Rocker switch <i>HOOK ARM</i> a hook arm forward b hook arm backward
4	Button <i>SLOW SPEED</i>
5	Warning light <i>FRAME NOT DOWN</i>
6	Rocker switch <i>HYDRAULIC BODY LOCKS</i> a hydraulic body locks closed b hydraulic body locks open
7	Warning light <i>HYDRAULIC BODY LOCKS NOT CLOSED</i>
8	Rocker switch <i>ADDITIONAL HYDRAULICS 1 FUNCTION</i> (option)
9	Rocker switch <i>ADDITIONAL HYDRAULICS 2 FUNCTION</i> (option)
10	Rocker switch <i>PTO / PUMP ON - OFF</i>
11	Rocker switch <i>NIGHT SILENCE ON - OFF</i>

Safety instructions and safety rules

MULTILIFT XR hooklift equipment was developed for the loading, unloading, tipping and transporting of removable containers/bodies on vehicles. All other use of the Multilift hooklift equipment is strictly forbidden. Multilift accepts no liability whatsoever with regard to such other use.

The hooklift equipment meets all safety and stability standards that apply at the moment of its delivery from the factory. Use the hooklift equipment only if it is in good condition, and only for the purpose for which it was designed and in accordance with the instructions and guidelines specified in this manual.

Cargotec Finland Oy Multilift accepts no liability whatsoever for any loss or damage caused by the failure to strictly adhere to the safety instructions specified in this manual or due to carelessness during the operation, adjustment, maintenance or repair of the hooklift equipment. Depending on the specific working conditions, additional safety instructions may be required. Contact your Multilift dealer immediately if you have encountered an unsafe situation with XR hooklift equipment that is not described in this manual.

Safety during use - general

The driver must be familiar with the contents of this manual and should strictly follow the directions and instructions. He must see to it that his XR hooklift equipment is technically in perfect condition. Control of the suspension, condition of the tyres, tyre pressures, weak or poor condition of the container or unsuitable loading of it, are all his responsibility. The driver must handle the XR equipment with care. For example during loading and unloading the front wheels of the truck must not be lifted up from the ground.

In the vicinity of the control units there must be no obstacles or loose objects that might accidentally activate unit's functions.

If the equipment has not been used for two weeks or longer, all safety functions must be checked before the equipment is used again.

Avoid the unnecessary use of the main pressure relief valve. Heating up of the oil reduces the quality of it and results in shorter life span of retaining rings and gaskets.

In subzero temperatures (<32°F) it is recommended to let the pump idle for around 1 minute in order for the hydraulic oil to be warmed up.

During the use of the equipment the engine noise will increase due to additional loading. Noise level will also increase if the container is pulled along the ground during loading or unloading of it. When the equipment is used carefully and in a sensibly planned manner, the noise level can be kept lower.

Take care that the truck or the hooklift is not overloaded. Observe the factory data for the truck with regard to maximum permissible axle load/GVW. See also the axle load calculations!

Strong winds will have an effect on the operation during loading, unloading or tipping of the container.

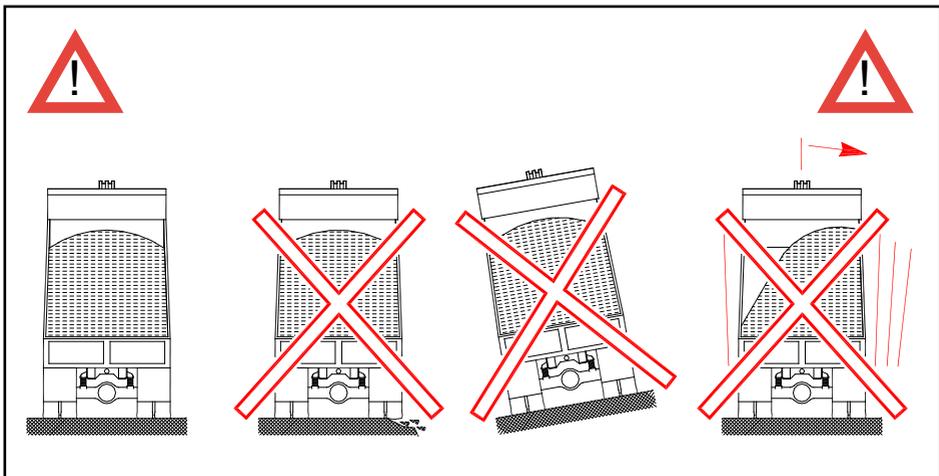
If several successive containers switches are performed, the hydraulic oil may overheat >140°F (60°C) making it necessary to install an oil cooler to the system.

**When leaving the driving cab for loading, unloading or tipping,
always engage the parking brake.**

Requirements for the working area ground condition

Before you start loading, unloading or tipping using the XR hooklift equipment, you must inspect the following:

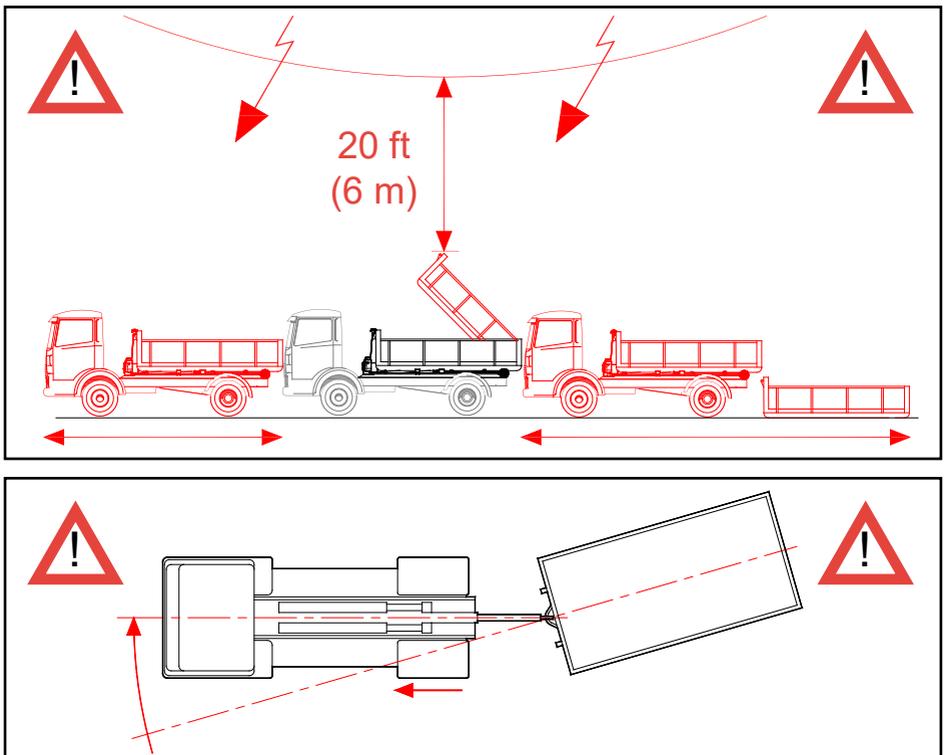
- the ground must be firm and free from potholes into which the truck could move during operation
- the ground must not be slippery
- the ground must be level



Working area

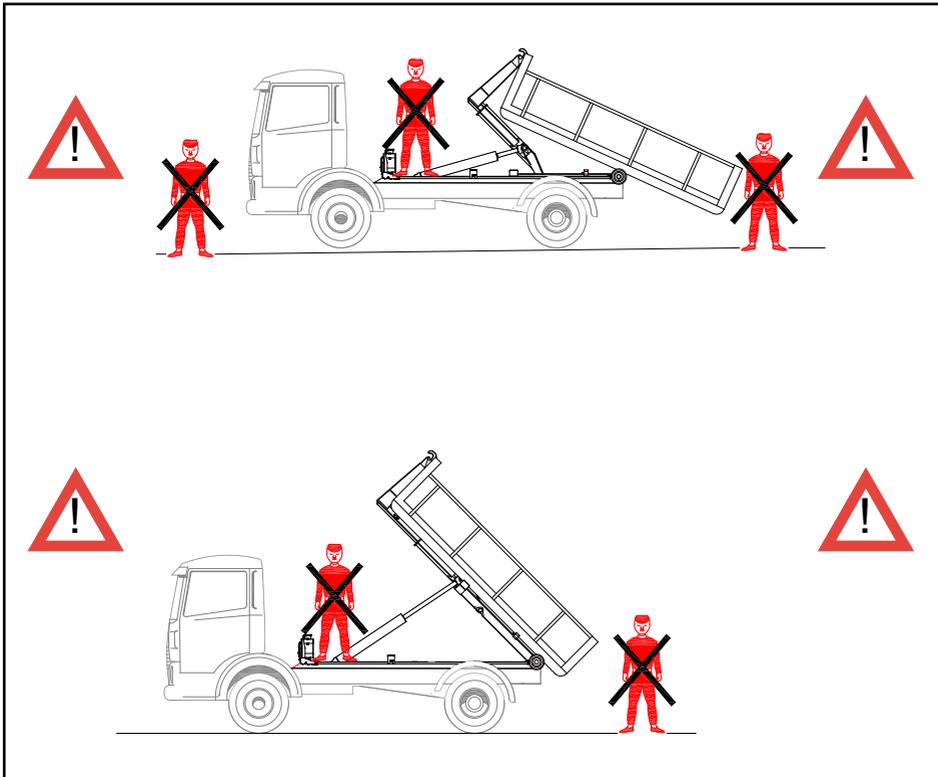
Load or unload only where there is sufficient space; this also applies to free height. **There must be at least 33 ft (10 m) free space at both sides of the vehicle.**

Check the vicinity for possible dangers.



When loading, the container must be placed in line with the driving direction of the truck.

If working in the dark, use working lights shining backwards in addition to the standard truck lights.



It is the responsibility of the driver to ensure that there are or there will be no other persons within the danger zone of the working area. It is strictly forbidden for anybody to be close to the truck or the container.

Tip Mark out the working area, for example, with cones.

Tip Ensure that the warning buzzers are operational

**In case of emergency:
Disengage the clutch and the PTO.**

Safety instructions and maintenance

Always follow the maintenance instructions and use only original Multilift spare parts. See chapter **Maintenance**.

Container

The demountable body can be a container, tank, gravel body, body for transporting machinery etc. according to standards (e. g. DIN 30722, SFS 4417, SS 3021 or CHEM).

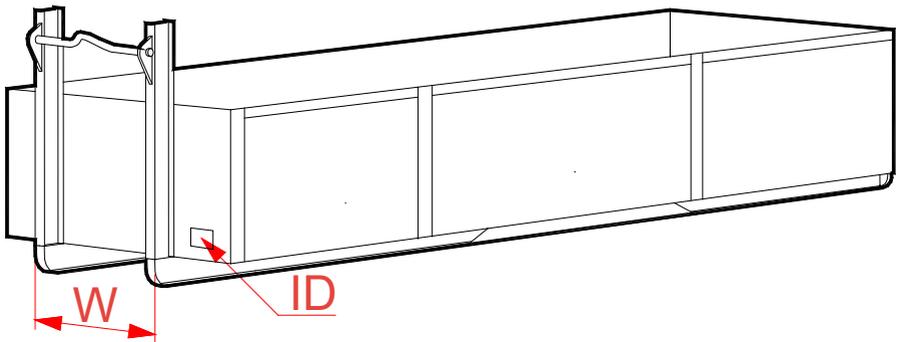
Check to be sure that the container is suitable for the load to be transported. Generally each container has a model plate (ID) on which the length and permissible load are specified.

Before picking up the container, check that the hook height (H), tunnel height (T) and the width (W) correspond with the XR hooklift dimensions and that the notches for the body locks are in correct positions.

If there is even the slightest doubt of the container dimensions, measure them first in order to prevent the equipment and the container from being damaged.

Gripping height (H), tunnel height (T) and width (W) of the container can vary from one container to another. Note that they are country specific dimensions. If there is doubt about the origin of the container, the tunnel height and width must be checked in order to ensure that they are compatible with those of the Multilift equipment.

Country specific standard dimension table of the container is on the next page.



Gripping height (H), tunnel height (T) and width (W) of the container can vary from one container to another. Note that they are country specific dimensions. If there is doubt about the origin of the container, the tunnel height and width must be checked in order to ensure that they are compatible with those of the XR equipment.

Country specific standard dimension table of the container is on the next page.

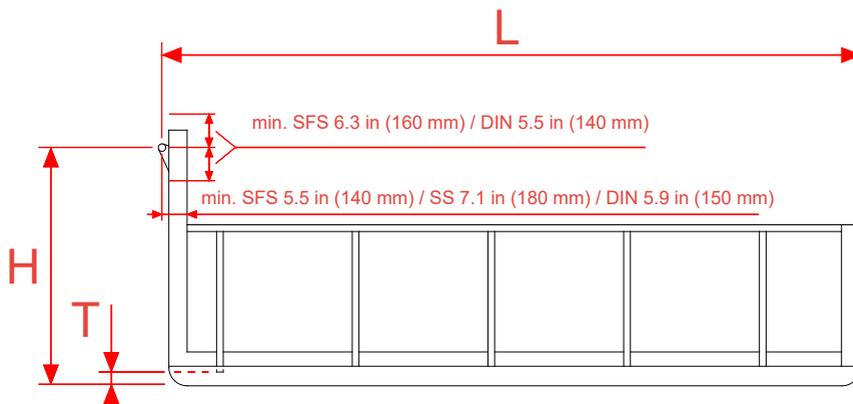
If your country is not mentioned on the list, check the matter in your hooklift equipment technical specifications.

The condition of the container must be checked regularly. Especially if you are going to use a type of container with which you are not familiar. In particular, check the condition of the locking points and the condition and position of the lifting hook.

The maximum allowed wear of the lifting hook is 10 % from its nominal diameter. Nominal diameter must be checked with the hooklift equipment supplier.

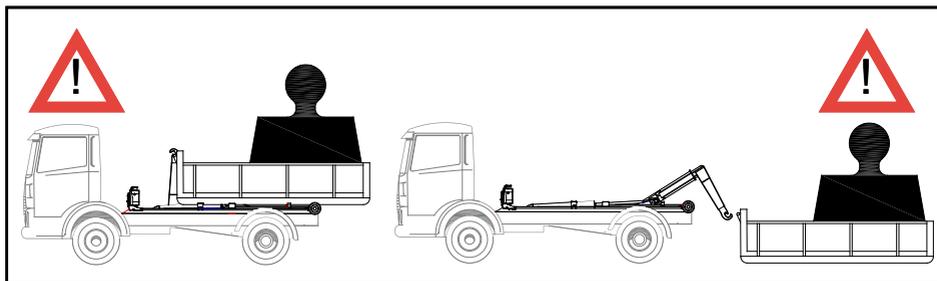
The longitudinal rails at the bottom of the container are under heavy burden. Carry out daily checks of these components for wear or damage.

If the container is frozen to the ground, do not pull it loose by using the XR hooklift equipment. Use, for example, a forklift truck.

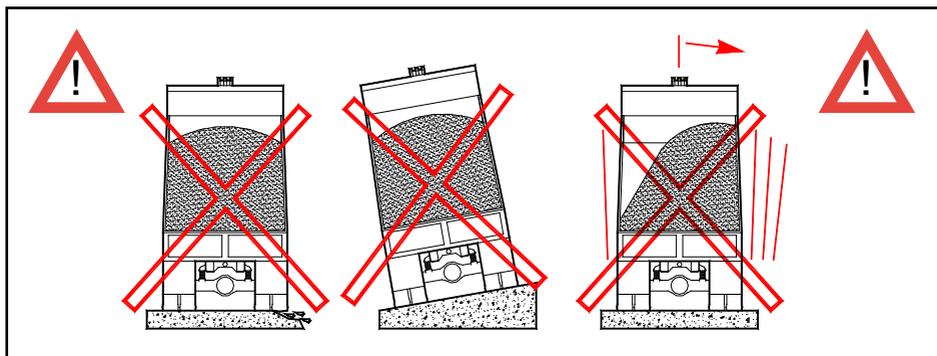


Loading and unloading of a container

Ensure before loading that the length of the container is suitable for your XR hooklift equipment



Loading of a balanced container requires special care.



Never load, unload or tip a container when the load is heavier to one side or the ground is sloping.

Ensure that the load's centre of gravity is as low as possible and that it is in the middle of the container and evenly distributed. If the load must be secured, do this when the container is on the ground.

Ensure before loading or unloading of the container that all the removable equipment are safely fastened and that the load space tail gate, side doors and the load's fastening have been checked.

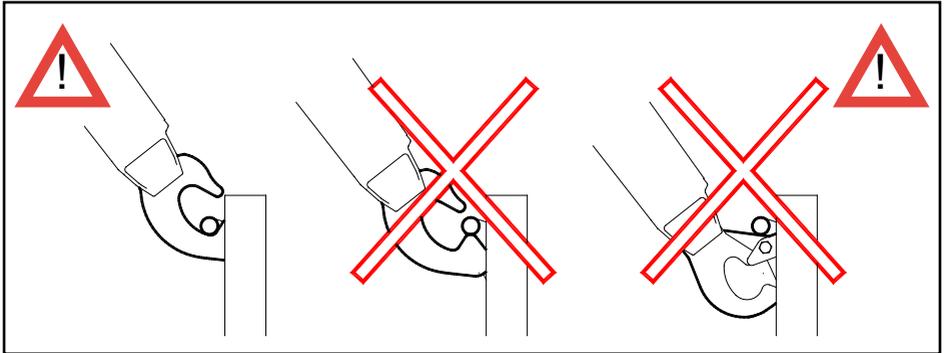
Reverse the truck as slowly as possible to avoid damaging the container, the load or the XR hooklift equipment.

If the truck is not in line with the container, position the container in line by lifting the front end of it approx. 3.9 in (10 cm) and pulling it forward by truck. This will prevent the container from being pulled outside the rear rollers, and the hooklift and rear lights being damaged.

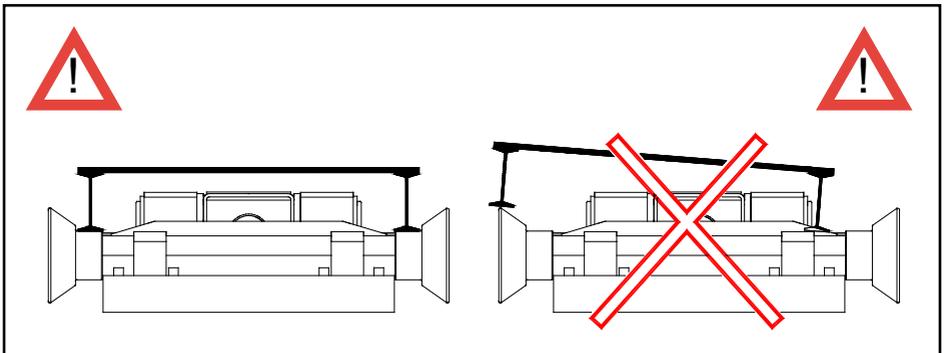
When moving the container to get it in line with the truck, first remove all obstacles in front of the container.

When loading or unloading a container, ensure that the hydraulic body locks are open.

Remember that the maximum permissible speed of the pump = the recommended engine speed. Let the engine run at idle speed while switching the hydraulic body locks on and off. Each movement must begin and end at idle speed of engine and at low speed of the tipping cylinders. In addition the recommended pump speed (= engine speed) must not be exceeded.



Before picking up the container, the gripping bar of the container must be properly inside the lifting hook. In this way you prevent the container from falling. The situation must be checked by lifting the container approx. 3.9 in (10 cm) and after that checking physically and visually that the container gripping bar is inside the lifting hook.



When loading and unloading a container, be sure that it is running in line between the rear rollers.

Stop the movement of the middle frame immediately when the container is on ground. If the hooklift movement is not stopped in time, the truck rear end will be lifted up from the ground, which will cause damaging of the container, truck or the hooklift equipment.

The operation of the hooklift must take place in the correct sequence, one operation at the time.

The handbrake of the vehicle must be activated during the loading and unloading operation.

When loading, unloading or tipping a container, check that there are no people too close to the operation, and check for any possible unusual or disruptive movements or sounds caused by the container. If you notice anything like this, STOP THE OPERATION, press the clutch pedal and disengage the PTO. Find out the reason for this carefully. Do not continue the operation before the cause has been established! Failing to do this could result damaging the container or the XR equipment. The disruption must be remedied before the operation is continued.

NEVER LOAD, UNLOAD OR TIP IN DANGEROUS SITUATIONS:

- When the load is heavier to one side of the body
- Illegally heavy load
- Sloping or slippery ground
- Soft or crumbly ground under the truck wheels
- Strong side wind, over 20 m/s [44 mph (70 km/h)]
- Frozen or stuck load

TRUCK PROBLEMS:

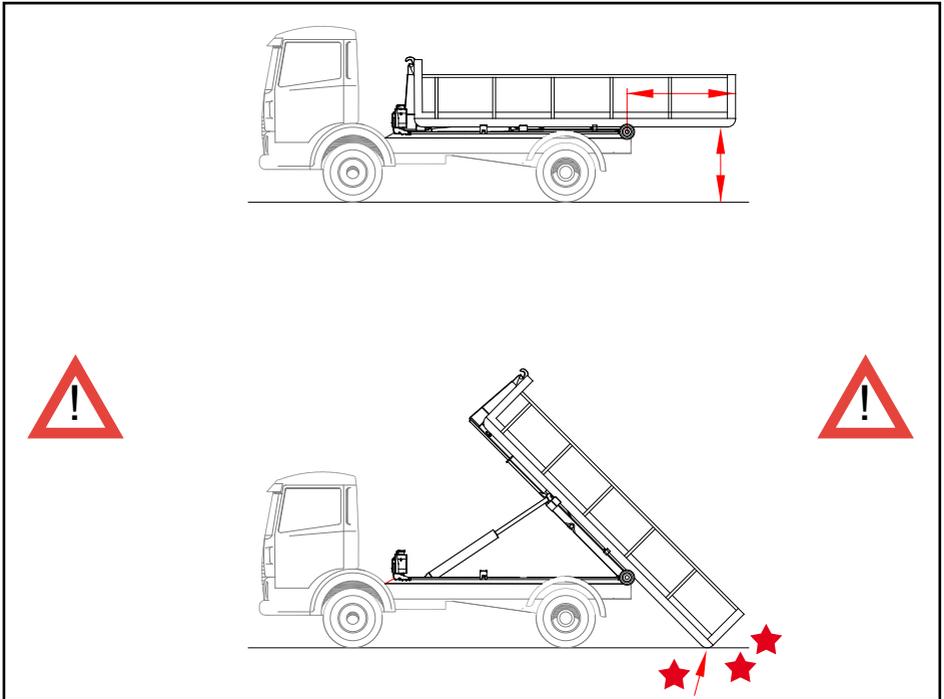
- Weak springs on one side
- Poor condition of tyres

Before using the under-run bar, ensure that there is nobody close or under the under-run bar frame.

Tipping

Please, check before tipping that the horizontal shift has completely moved forward.

If the container overhang is too much, the rear end of the container will touch the ground when tipping and the container, truck or hooklift equipment will be damaged.



In very cold weather the load might freeze tight on the container. In that case it must be freed before tipping. Note that the load might come out in large chunks!

NEVER TIP UNDER THE FOLLOWING CIRCUMSTANCES:

- Container is top heavy at the front end or at either side.
- Load is frozen or only partially loose
- Ground is slippery or uneven
- Strong side wind, which exceeds over 44 mph [20 m/s (70 km/h)]

If it is necessary to drive with the tipping device up, pay attention to the vicinity regarding the height of the hooklift equipment / container with respect to the surroundings like bridges, tunnels and overhead power lines! Drive slowly and be extra careful.

If the tipping angle is changed during driving, the gearbox bears an extra burden, and the truck can make unexpected motions on a slippery surface.

Before driving away

Before you drive off, always check the following:

- Hydraulic body locks must be closed.
The locking hooks must be tight on the container, i.e. on the lower flange of the container frame beams or in the specific notches (if provided). Check this on both sides of the truck.
- PTO must be disengaged.
- Check that the container doors are closed.
- Check that the load is secured and covered.
- Air suspension is raised to the normal ride height.
- When there is no container mounted, the XR hooklift equipment must be positioned in its transport position on the sub-frame both during driving and parking. Never drive the truck with the hooklift in any position other than the transport position.
- Driving with main cylinders in some other position than transport, will damage the XR equipment and/or main cylinders (leaks). Drive speed with the hooklift in the before mentioned position must not exceed 18 mph (30 km/h).

Safety facilities of the XR hooklift equipment

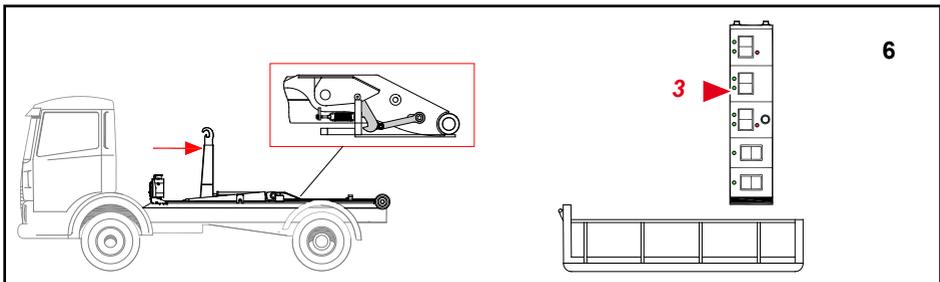
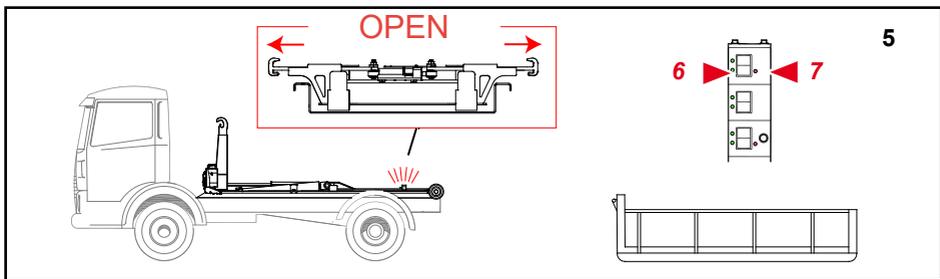
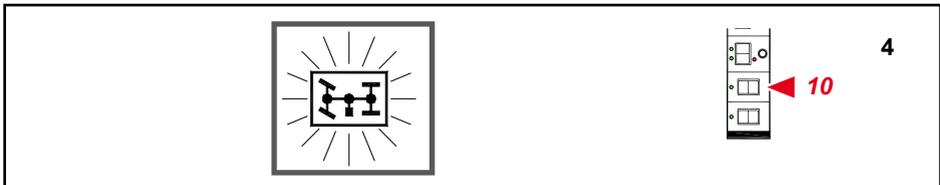
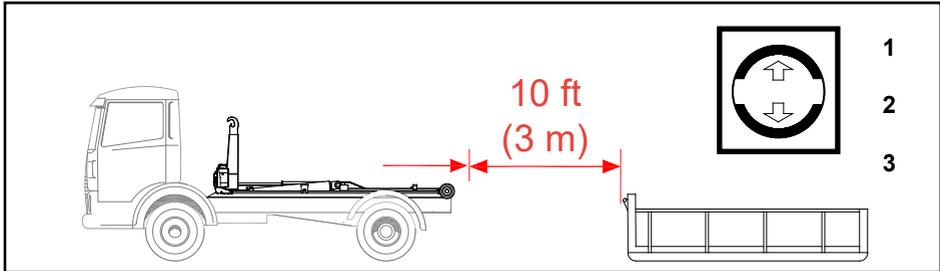
To increase safety, the control system has safety features to prevent incorrect movements of the body so that the load can be kept under control.

The hydraulic cylinders are provided with load holding valves that ensure a controlled movement of the XR equipment. In addition these valves serve as a safety feature in case of the failure of hydraulic hoses.

The following functions have safety features:

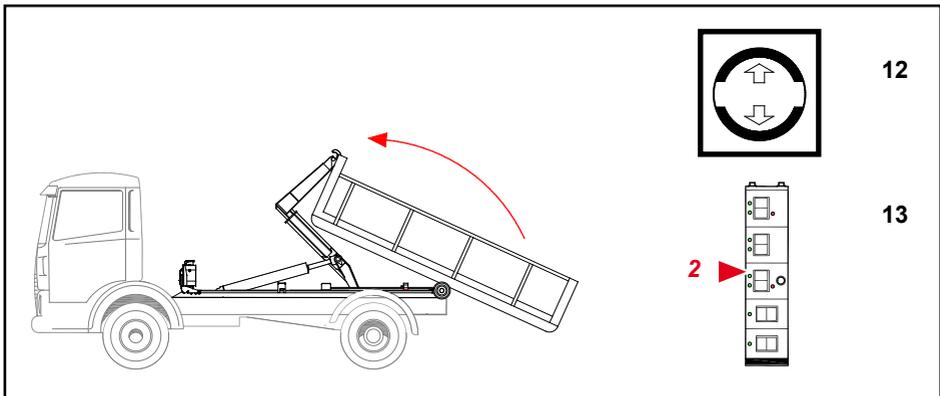
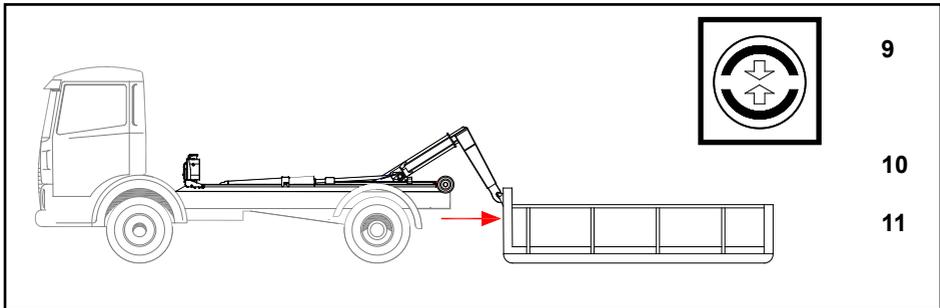
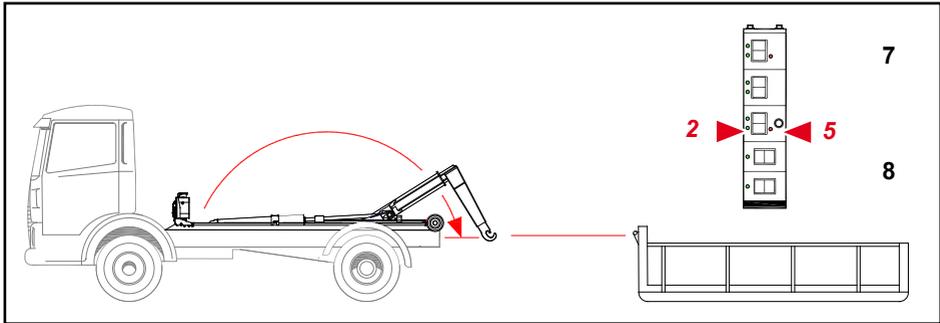
- Hydraulic body locks cannot be opened during tipping.
- If the body locks are closed, it is not possible to move the hook arm.
- Moving the hook arm is not possible during tipping.
- When tipping, the rear frame and the middle frame are locked together by the tipping lock. The lock operates mechanically.
- Main cylinders will not be able to move if the adjustable under-run bar is out .

Use



Loading a container

1. **See the safety instructions before loading.**
2. **Reverse the truck carefully close to the container.**
Stop it about 10 ft (3 meters) from the container gripping bar.
Check in the rear-view mirrors that the vehicle is aligned with the container.
3. **Engage the parking brake.**
4. **Press the clutch pedal and engage the PTO**
- use control switch 10 (option).
5. **Open the hydraulic body locks** (option)
- use the control switch 6 (*hydraulic body locks open*)
- signal light 7 lights (*hydraulic body locks not closed*).
6. **Move the hook arm fully rearward position**
- use the control switch 3 (*hook arm backward*).
The mechanical tipping lock will open automatically when the hook arm is fully back.



7. **Move the hook arm / middle frame towards the container**
 - use the control switch 2 (*main cylinders out*)
 - signal light 5 lights (*frame not down*).
8. **Stop the movement when the hook opening is on the same level with the container gripping bar.**
9. **Release the parking brake.**
10. **Reverse the truck slowly.**

The tip of the hook must enter inside the container gripping bar.
11. **Check that the container can be raised without problems.**

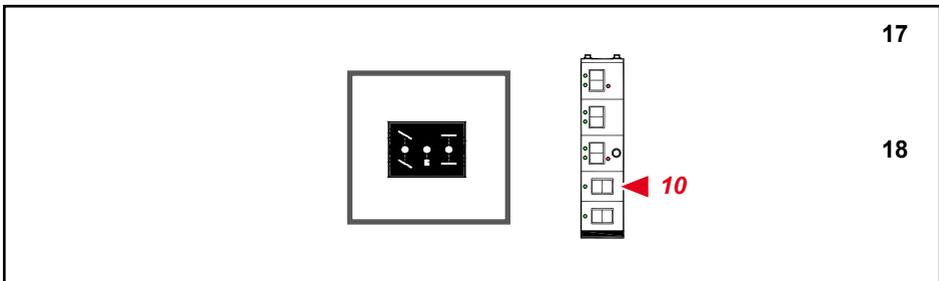
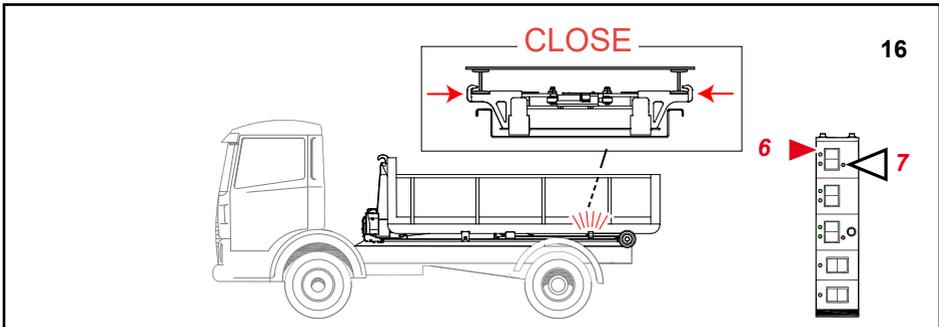
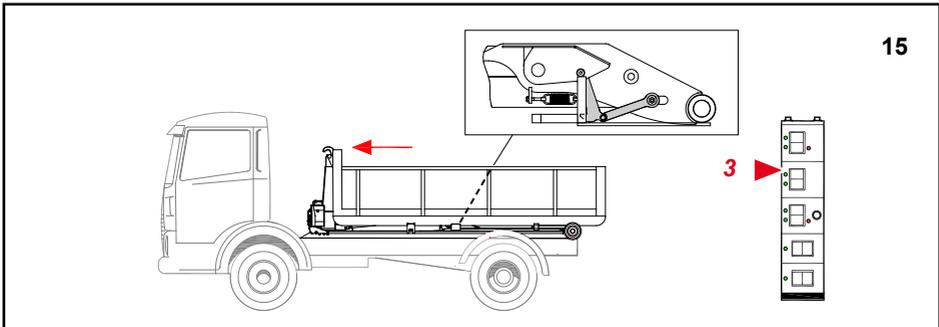
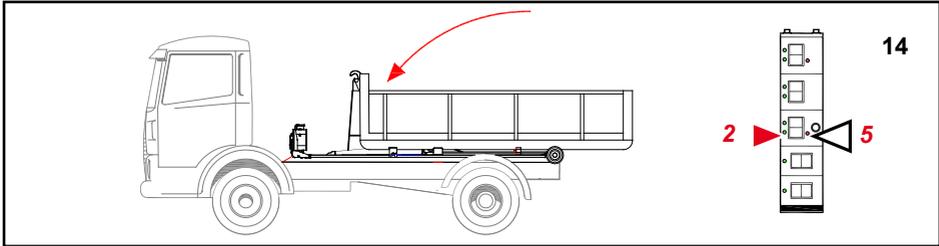
The container must pass the truck rear end without hitting it during loading.
12. **Engage the parking brake.**
13. **Lift the container up**
 - use the control switch 2 (*main cylinders in*).

Check that the container is raised in line with the rear rollers.
Ensure that the container makes contact with both rear rollers simultaneously.



A very heavy container may cause the front wheels of the vehicle to be lifted off the ground. Be careful, as this may cause the vehicle to move sideways.





14. Pull the container fully on the truck chassis

- the control switch 2 is in **main cylinders in** -position
- signal light 5 (**frame not down**) goes off as the body is lowering onto the subframe.

The container must be in right position between the rear rollers.

15. Move the hook arm forward until the container is in its transport position

- use the control switch 3 (**hook arm forward**).

Movement will close also the mechanical tipping lock.

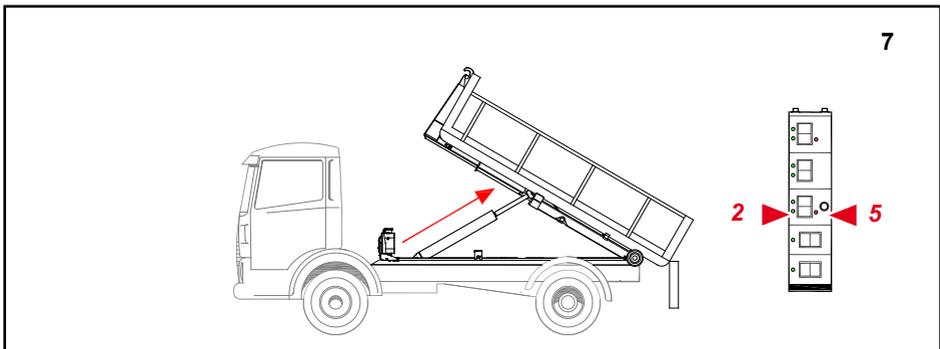
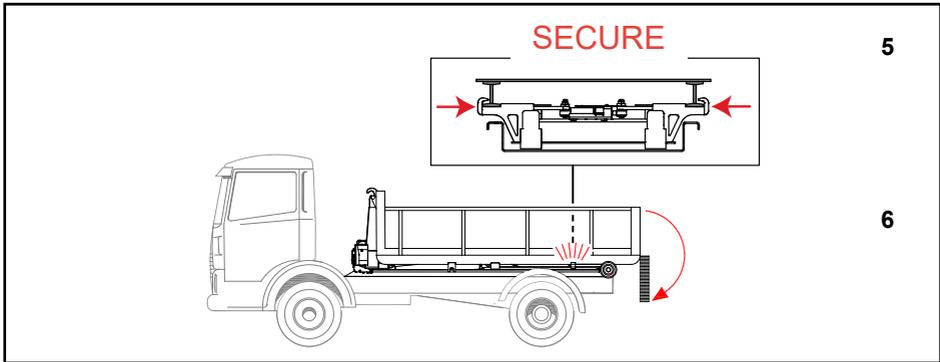
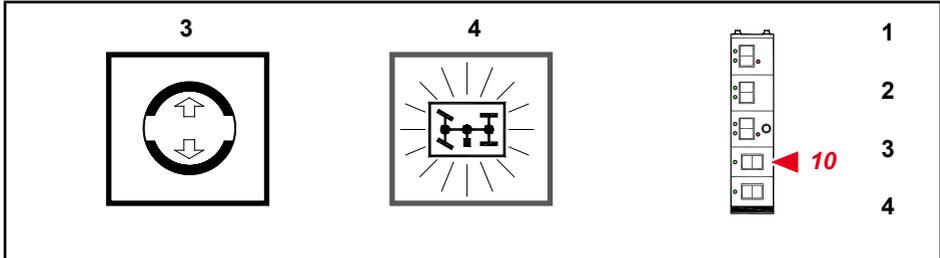
16. Close the hydraulic body locks (option)

- use the control switch 6 (**hydraulic locks closed**).
- signal light 7 (**hydraulic body locks not closed**) goes off as the locks are closed.

17. Press the clutch pedal and disengage the PTO

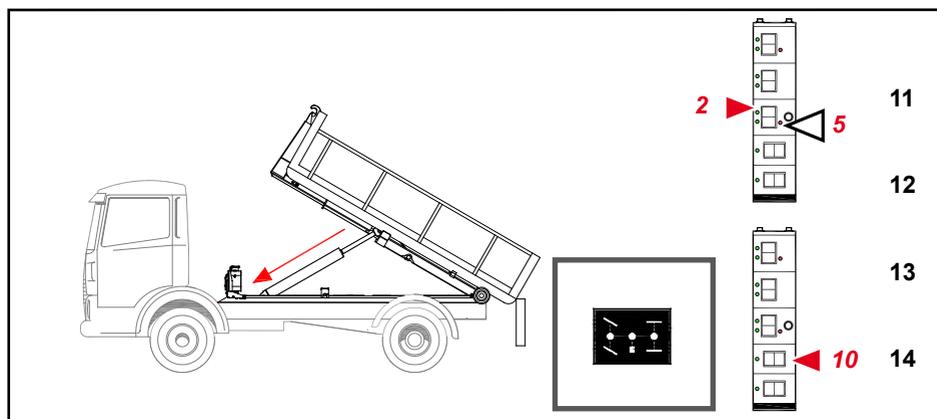
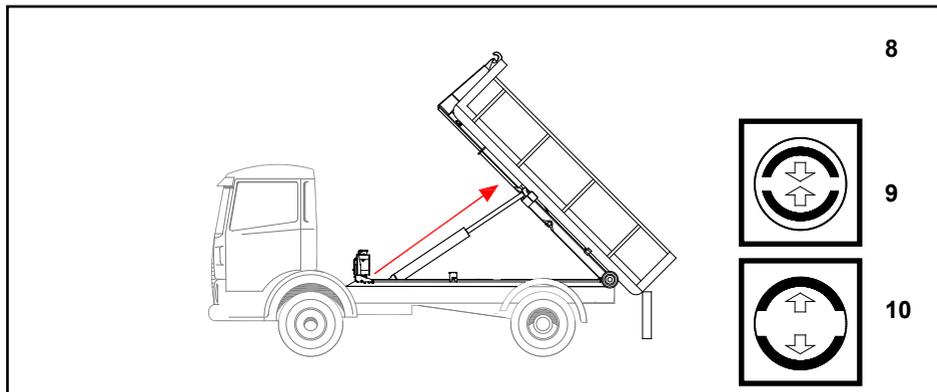
- use the control switch 10 (option).

18. Check that the container is locked with hydraulic body locks and that the load on the container is secured.



Tipping a container

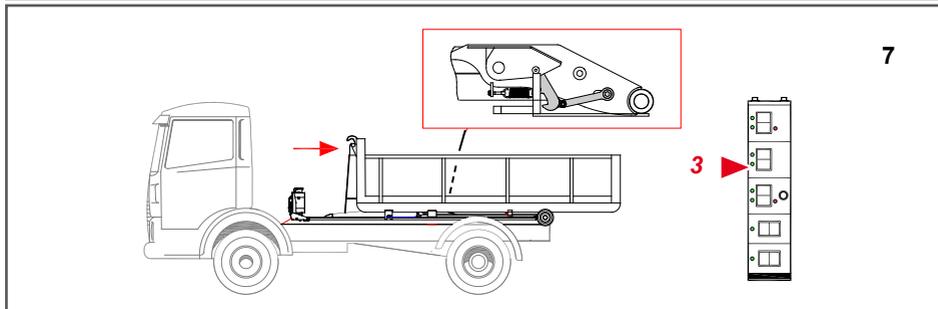
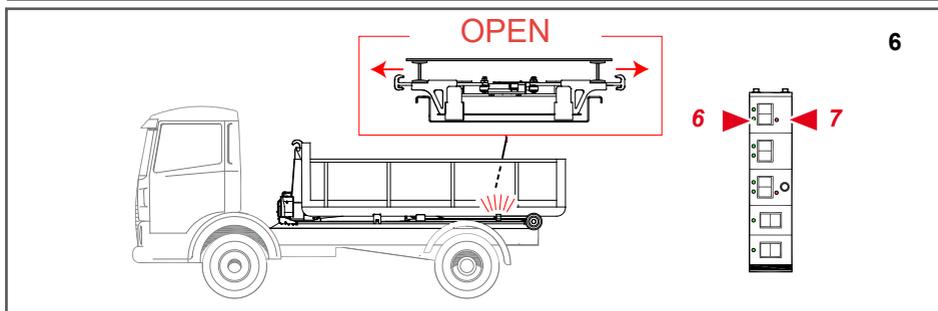
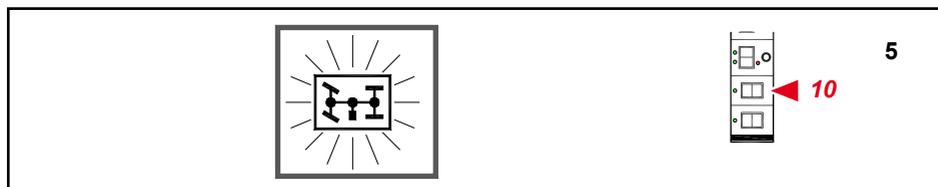
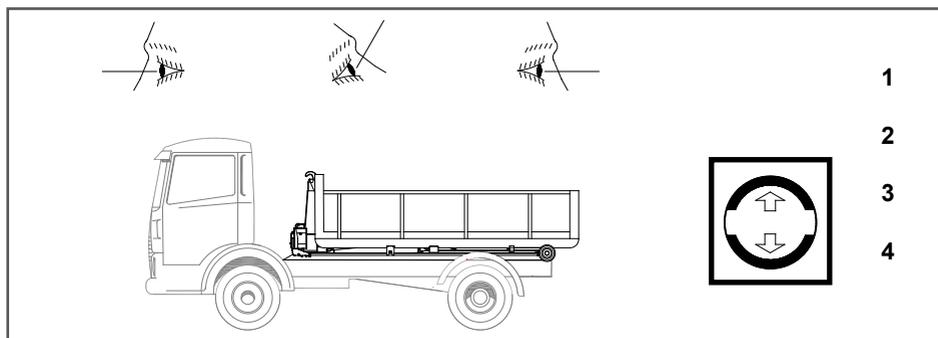
1. **See the safety instructions before tipping.**
2. **Drive the truck to the place where the load has to be discharged.**
3. **Engage the parking brake.**
4. **Press the clutch pedal and engage the PTO**
 - use control switch 10 (option).
5. **Open the container tail gate**
 - note the container operating instructions
 - stand by the side of the container so that the opening tail gate and discharging load do not hit you.
6. **Check that the container is locked**
 - the horizontal shift is completely forward
 - hydraulic locks are closed
 - the middle/rear frame lock (= tipping lock) must be closed.
7. **Lift the main cylinders (middle frame together with the rear frame) to the desired or maximum tipping angle**
 - use the control switch 2 (*main cylinders out*)
 - signal light 5 lights (*frame not down*)
 - the container must not touch the rear bumper of the truck or the ground.



8. **Decrease the speed of tipping movement to prevent an abrupt stop during the last tipping phase.**
9. **Release the parking brake and drive, if needed, a little forward in order to empty the complete contents of the container.**
10. **Engage the parking brake.**

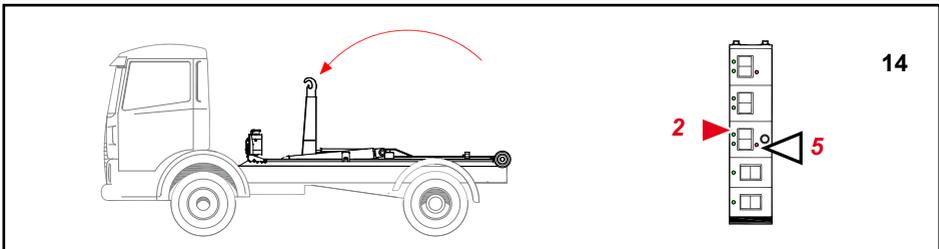
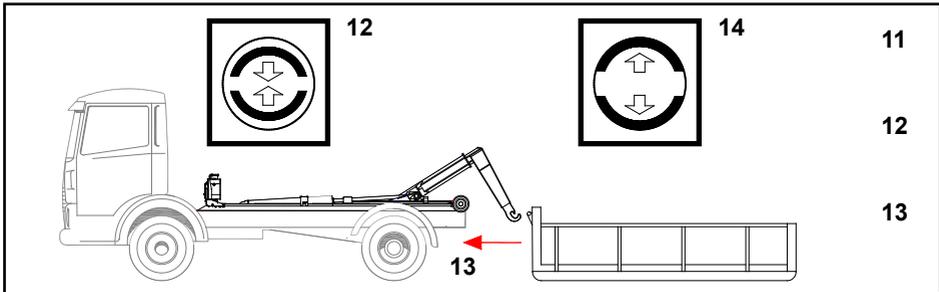
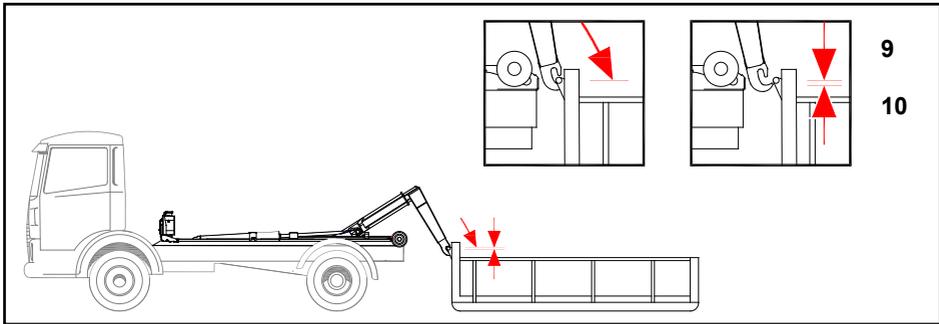
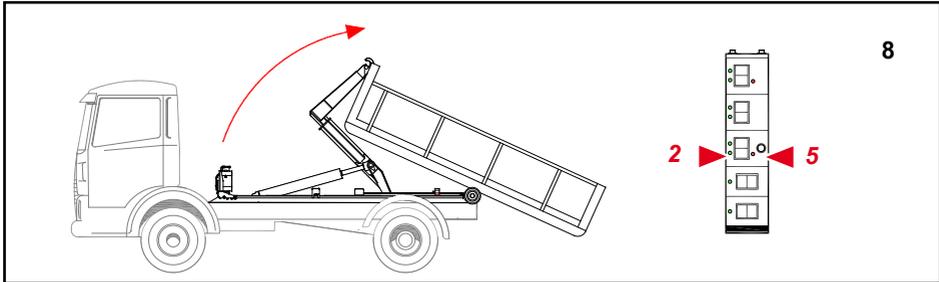
Lowering the tipping device

11. **Lower the tipping device**
 - use the control switch 2 (*main cylinders in*)
 - signal light 5 (*frame not down*) goes off as the body is lowering onto the subframe.
12. **Check that the frame of the XR equipment and the container are in the lowest position.**
13. **Close the container tail gate.**
14. **Press the clutch pedal and disengage the PTO**
 - use the control switch 10 (option).



Unloading a container

1. **See the safety instructions before unloading.**
2. **Drive the truck to the place where the container has to be unloaded.**
3. **Check the working area.**
Ensure that there is enough space in front, rear and above the truck.
4. **Engage the parking brake.**
5. **Press the clutch pedal and engage the PTO**
- use control switch 10 (option).
6. **Open the hydraulic body locks**
- use the control switch 6 (*hydraulic body locks open*)
- signal light 7 lights (*hydraulic body locks not closed*).
7. **Move the hook arm fully rearward position**
- use the control switch 3 (*hook arm backward*).
The mechanical tipping lock will open automatically when the hook arm is fully back.
Do not close the hydraulic body locks in this position.



8. **Move the hook arm / middle frame together with the container backwards**
 - use the control switch 2 (*main cylinders out*)
 - signal light 5 lights (*frame not down*).

9. **Stop the movement when the container is completely on the ground.**

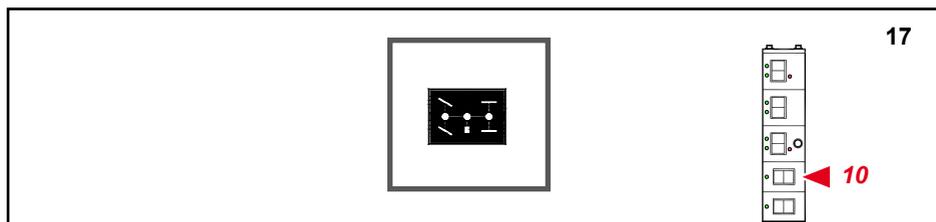
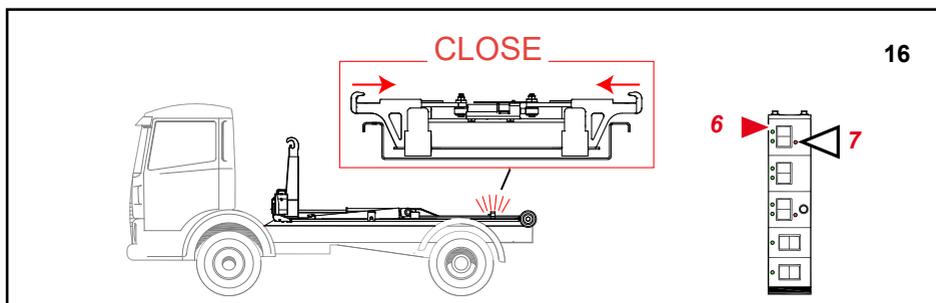
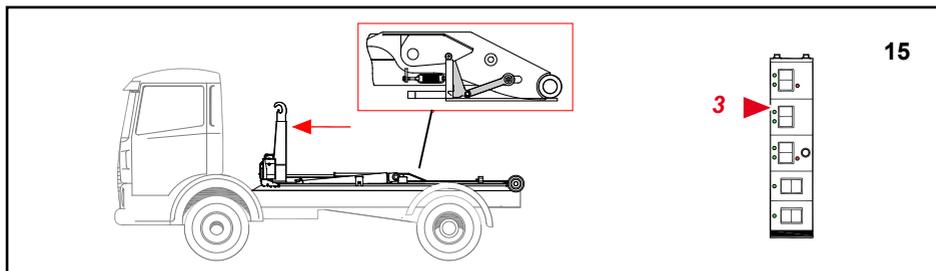
10. **Lower the middle frame slowly lower and see that the hook is lowering down from gripping bar. Do not push the container down with the hook.**

11. **Release the parking brake.**

12. **Drive the truck forward so that the hook will be off the container gripping bar.**

13. **Engage the parking brake.**

14. **Move the hook arm / middle frame to forward position until the frame is completely down**
 - use the control switch 2 (*main cylinders in*)
 - signal light 5 (*frame not down*) goes off as the body is lowering onto the subframe.



15. **Move the hook arm forward.**

- use the control switch 3 (***hook arm forward***).

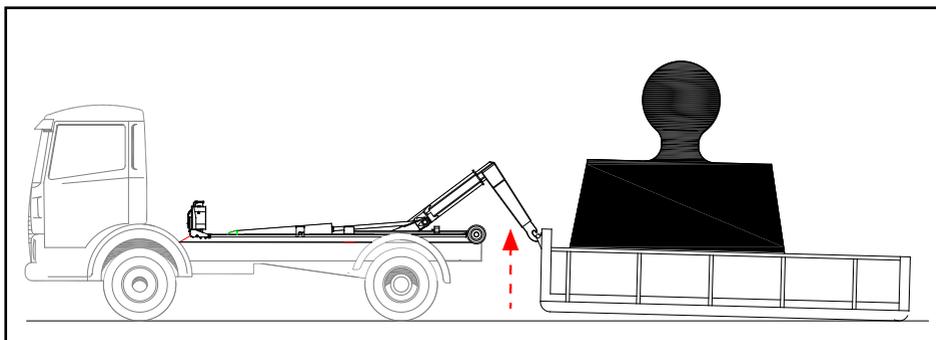
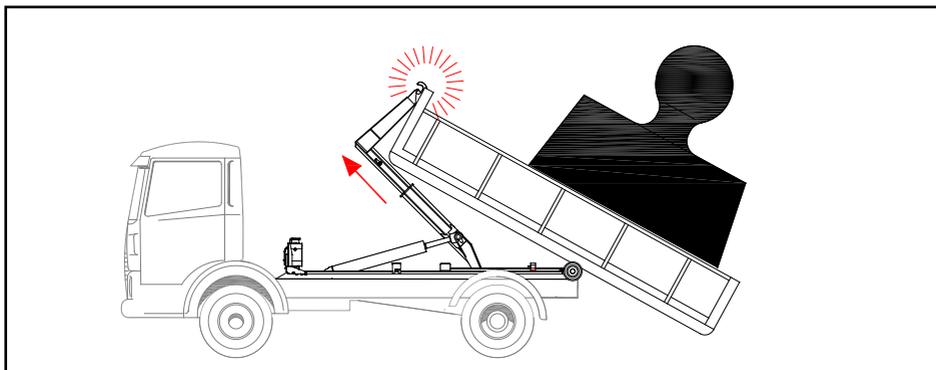
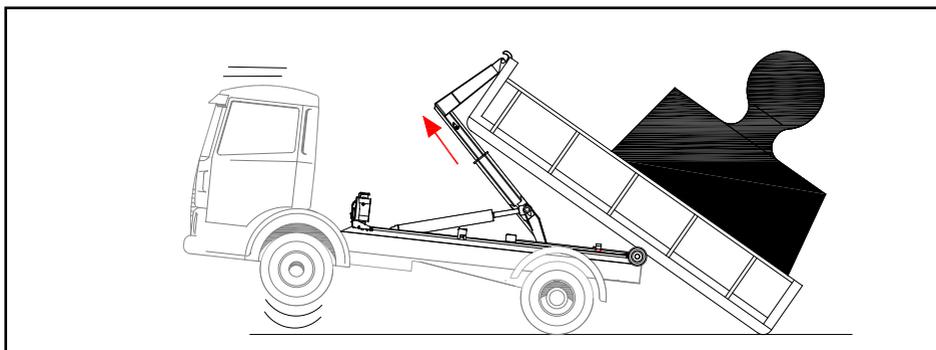
Movement will close also the mechanical tipping lock.

16. **Close the hydraulic body locks**

- use the control switch 6 (***hydraulic locks closed***)
- signal light 7 (***hydraulic body locks not closed***) goes off as the locks are closed.

17. **Press the clutch pedal and disengage the PTO**

- use the control switch 10 (option).



Loading of rear heavy container

A container loaded more heavily at the rear end can cause the truck front wheels to be lifted off the ground. Be extra cautious when this happens. When the container is on rear rollers, move the hook arm forward before lowering the middle frame on the sub-frame. Otherwise there is a danger of the container becoming loose from the hook.

Unloading of a rear heavy container

When unloading a long or rear heavy container to the ground, move the hook arm forward before the container touches the ground. Otherwise there is a danger of the container becoming loose from the hook.

Loading of a front heavy container

When loading a too front heavy container, it might happen, that the equipment is not strong enough to carry out the loading, although the total weight of the container and the load would not exceed the maximum allowed. In this case move the load closer to the centre of the container, if possible.

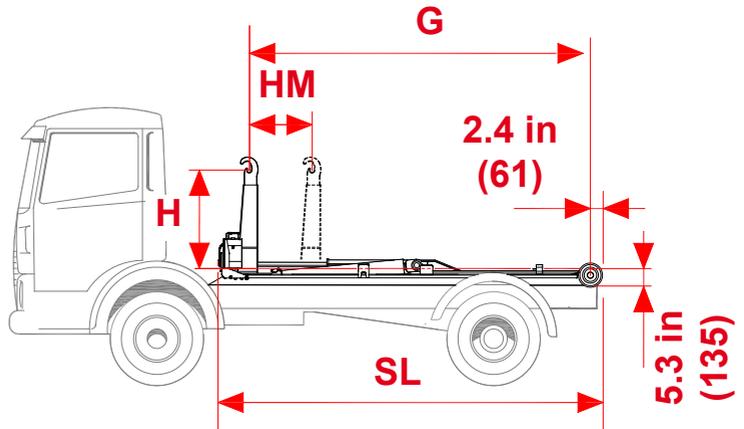
Technical specifications

Hooklift XR2S, XR3S

Manufacturer Multilift, Raisio

Equipment type	XR2S	XR3S
Technical performance, max. lbs	4400	6600
..... (t)	(2)	(3)
Tipping angle, max. (°)	48	48
Working pressure of the hydr. system max. psi	2610	3625
.. (MPa)	(18)	(25)
Recommended oil flow rate gpm	4 - 6	4 - 6
..... (l/min)	(15 - 20)	(15 - 20)
Operating times with max oil flow		
- loading (approx.) sec	30	30
- unloading (approx.) sec	35	35
- tipping (approx.) sec	35	35
- lowering tipping (approx.) sec	30	30
Equipment weight lbs	860 - 950	880 - 970
..... (kg)	(390 - 430)	(400 - 440)
Container length ft	9.8 - 13.1	9.8 - 13.1
..... (m)	(3,0 - 4,0)	(3,0 - 4,0)

XR2S, XR3S dimensions



XR2S, XR3S	2700	2950	3200
G in (mm)	106.3 (2700)	116.1 (2950)	126 (3200)
HM in (mm)	19.6 (500)	19.6 (500)	25.6 (650)
H Multilift in (mm)	36.6 (930)	36.6 (930)	36.6 (930)
H DIN in (mm)	35.4 (900)	35.4 (900)	35.4 (900)
SL in (mm)	118.1 (3000)	130 (3300)	137.8 (3500)



BE AWARE!

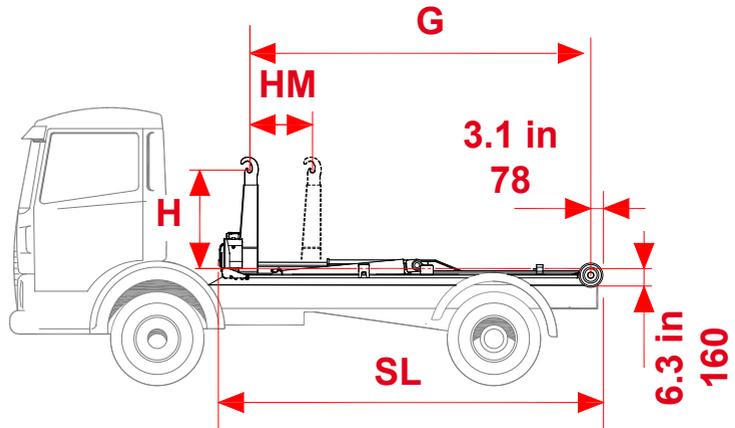
When transporting the body with the sliding frame in rear position, the hydraulic body lockings must be closed.

Hooklift XR5S

Manufacturer Multilift, Raisio

Equipment type	XR5S
Technical performance, max. lbs	11000
..... (t)	(5)
Tipping angle, max. (°)	48
Working pressure of the hydr. system max. psi	XR5S 3250 / 3650: 4060 (28)
.. (MPa)	XR5S 4150: 4350 (30)
Recommended oil flow rate gpm	5 - 6.6
..... (l/min)	(20 - 25)
Operating times with max oil flow	
- loading (approx.) sec	30
- unloading (approx.) sec	35
- tipping (approx.) sec	35
- lowering tipping (approx.) sec	30
Equipment weight lbs	1433 - 1610
..... (kg)	(650 - 730)
Container length ft	9.8 - 16.4
..... (m)	(3,0 - 5,0)

XR5S dimensions



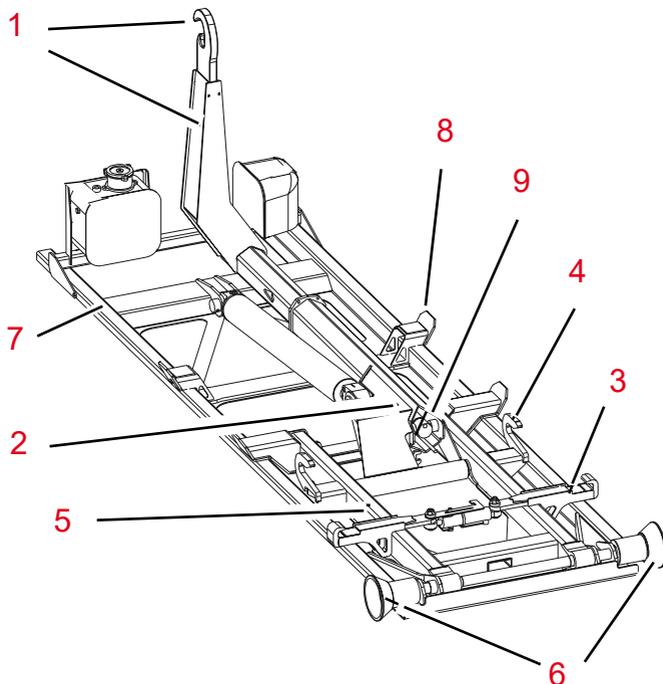
XR5S	3250	3650	4150
G in (mm)	128 (3250)	143.7 (3650)	163.4 (4150)
HM in (mm)	23.6 (600)	27.5 (700)	31.5 (800)
H Multilift in (mm)	36.6 (930)	36.6 (930)	36.6 (930)
H DIN in (mm)	35.4 (900)	35.4 (900)	35.4 (900)
SL in (mm)	141.7 (3600)	157.5 (4000)	177.2 (4500)



BE AWARE!

When transporting the body with the sliding frame in rear position, the hydraulic body lockings must be closed.

Main components



1. Gripping hook and hook arm
2. Middle frame
3. Hydraulic locking of the container
4. Mechanical locking of the container
5. Rear frame
6. Rear rollers
7. Sub-frame
8. Container supports
9. Tipping lock

Construction

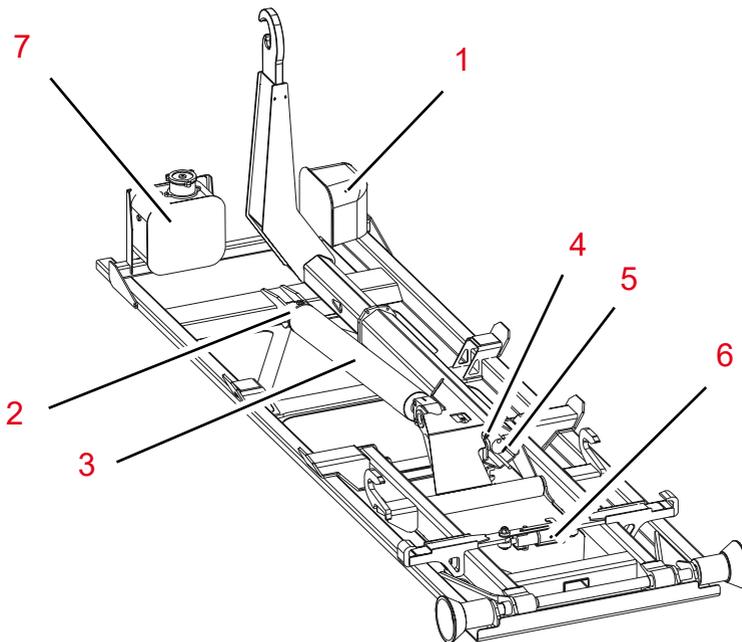
The hooklift equipment is built on a subframe, which is attached to the vehicle frame by fastening plates. The rear frame is bearing-mounted with axles of rear rollers at the rear end of the subframe. The rear rollers guide and facilitate the passage of the demountable swap body when loading or unloading the swap body.

The equipment has mechanical body locking hooks installed on the rear frame, and a hydraulic body lock is possible, available as an optional accessory. The middle frame is in the front part of the rear frame and is fixed thereto with an axle. During tipping, the joint of the rear frame and the middle frame is stiffened by means of the tipping lock. The hook frame with hooks is on the middle frame. There are sliding pads placed between the middle frame and the hook frame. They facilitate sliding of the hook frame, even under a heavy load.

Hydraulic system

The hydraulic system consists of components as shown in the picture below.

Note! The hydraulic pump is located on the vehicle and is not shown in the picture.



1. Direction valve block with pressure limiting valves
2. Load holding valve, main cylinder
3. Main cylinder
4. Hookarm cylinder
5. Dual pilot operated check valve, hookarm cylinder
6. Body lock cylinder
7. Hydraulic Oil Tank (with return oil filter)

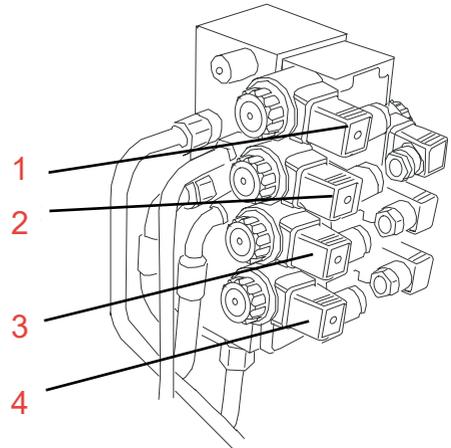
Control valve

The control valve assembly consists of three, four or five valve spool sections.

A three-valve control valve assembly is available as standard, while four-valve or five-valve assemblies are available as an optional accessory together with the hydraulic body lock and/or additional hydraulics. The directional valve spools are operated electrically with the control unit switches.

Main pressure limiting valve is located inside the valve block. The main relief valve setting is:

XR2S	2610 psi (18 MPa)
XR3S	3625 psi (25 MPa)
XR5S 3250 & 3650	4060 psi (28 MPa)
XR5S 4150	4350 psi (30 MPa).

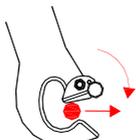


1. The first valve spool (located on the top) is free flow spool. The solenoid on the free flow valve must be energized before the system can be operated.
2. The second spool is connected for operation of the hookarm cylinder. The A port of the slide has no pressure limiter, the B port has a pressure limiting valve for the main cylinder circuit set at 1160 psi (8 MPa).
3. The third valve spool is connected for operation of the main cylinders.
4. The fourth spool is connected for operation of the body lock cylinder. (or the valve of additional hydraulics, if the body lock is not available).

Equipment

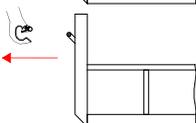
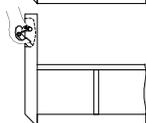
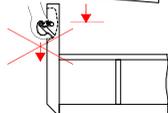
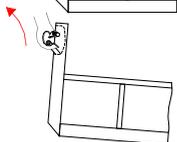
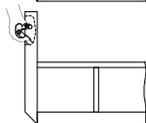
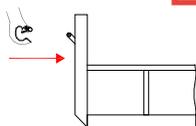
Hook models

Hook, standard



The safety lock on the gripping hook opens and closes by its own weight during the movement of the middle frame.

The correct operation of the safety lock must be checked regularly and the surfaces greased every month.



- **Reverse the vehicle so that the gripping bar slides inside the hook.**
Also see section 11 “loading”.
- **Before pulling the container on the vehicle, check that the gripping bar is well inside the hook.**
- **Pull the container on the vehicle.**
See section 13 “loading”.
- **When unloading, the main cylinder must be stopped as soon as the container reaches the ground.**
The gripping bar must not be pressed down by the hook. See section 11 “unloading”.
- **Check that the hook opening is level with the gripping bar.**
- **Drive the vehicle forward so that the hook is released from the gripping bar.**
See section 13 “unloading”.

Locking mechanisms of the hook

The tipping and loading/unloading features are secured through a number of builtin locks.

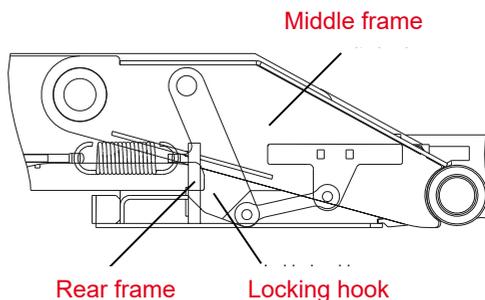
Tipping lock

Mechanical tipping lock (locking rear frame to middle frame)

Tipping lock in locked position

Middle frame locked to the rear frame (tipping)

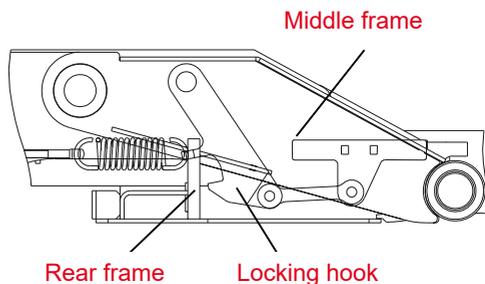
The hookarm extended forwards more than 3.9 in (100 mm) from its fully rearward position



Tipping lock in open position

Middle frame locking open (unloading / loading of container)

The hookarm fully retracted



A mechanically actuated tipping lock is located between the rear frame and middle frame, consisting of a hook that grips around the locking lug. The hooks are fully exposed when the hookarm is completely retracted. The hooks are locked automatically when the telescopic hookarm is extended forwards by more than 3.9 in (100 mm). During tipping, the middle frame is locked to the rear frame by the tipping lock. The lock is automatically operated when the hookarm is activated.

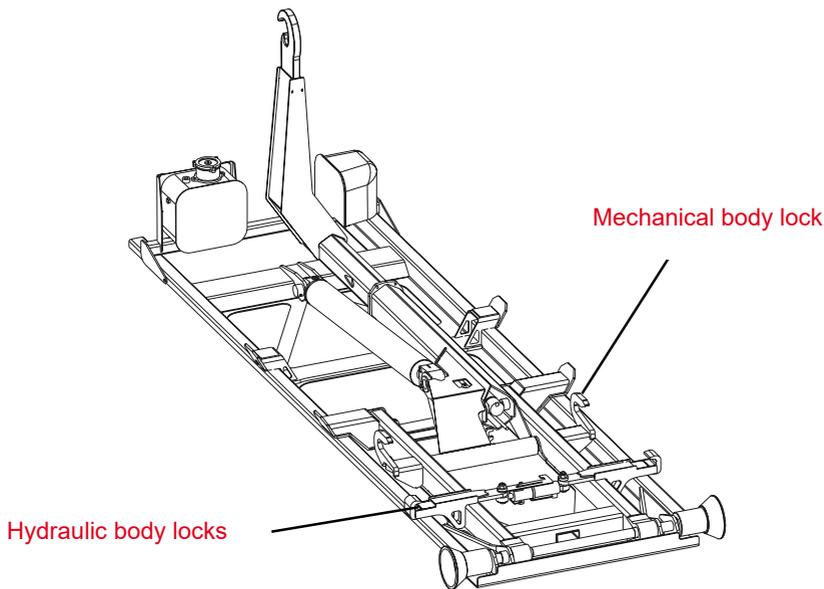
Container locks

Body lock alternatives

- mechanical body lock
- hydraulic body lock

Mechanical body lock

The mechanical frame lock is comprised of two lock hooks welded to the rear frame, whose placement is defined by the length of the device and according to the container standard SFS 4417.

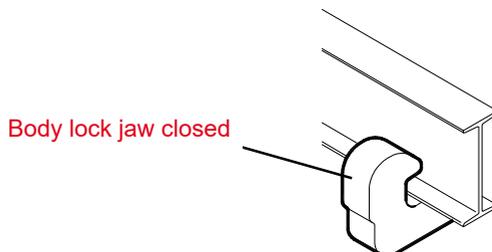
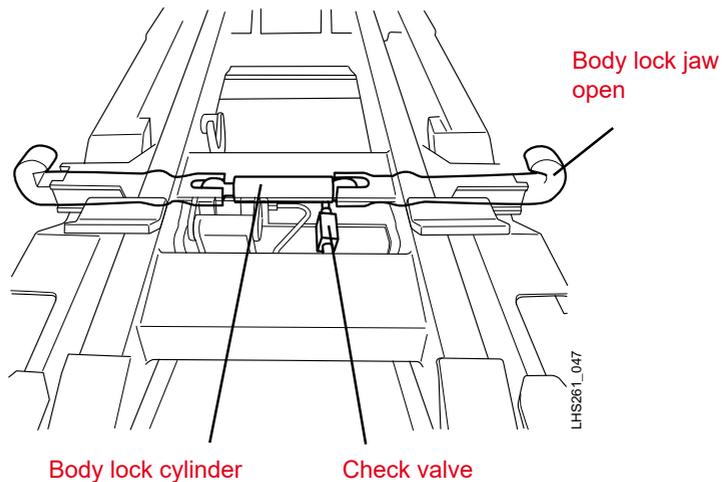


Body lock cylinder with blocking valve (optional)

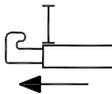
A hydraulic cylinder for locking and unlocking the body lock is located at the rear of the rear frame. The cylinder actuates both body lock jaws simultaneously.

A check valve is located on the cylinder that prevents the cylinder from opening the lock if a hose in the circuit were to rupture or if internal leakage in the control valve occurs. The body lock cylinder thereby always retains its last commanded position; open or closed.

The body lock is opened by a switch on the control unit being activated. A warning lamp on the vehicle instrument panel will light if the body lock is not completely closed.



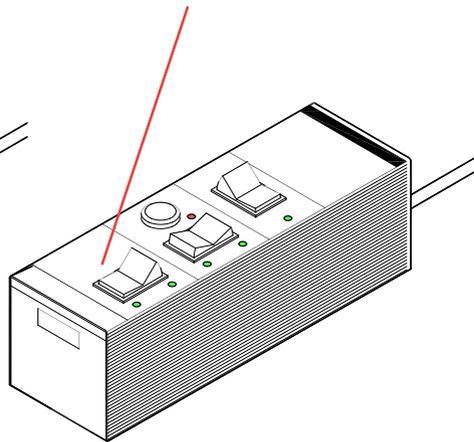
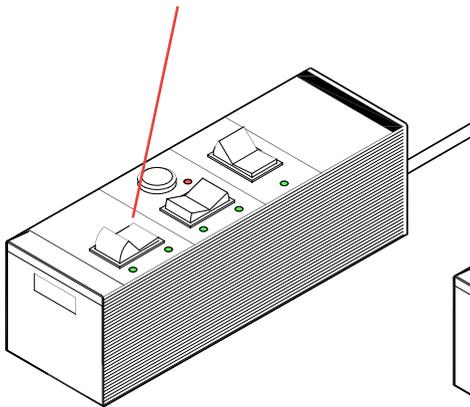
Control switch of hydraulic body locks



Open body locks



Close body locks



The body locks open when the user presses the back of the body lock rocker switch and close when pressing the front part.

Remove the element obstructing the locks, or if they are obstructed by the lock pocket in the container frame beam, check that the container is correctly positioned on top of the hook device.

Electric system

The power supply for the hooklift equipment is taken from the vehicle's regular electrical system. See vehicles instructions for details.

Proximity switches

There are two proximity switches for increasing safety when handling the hooklift equipment that sense the current position of the rear frame and body locks.

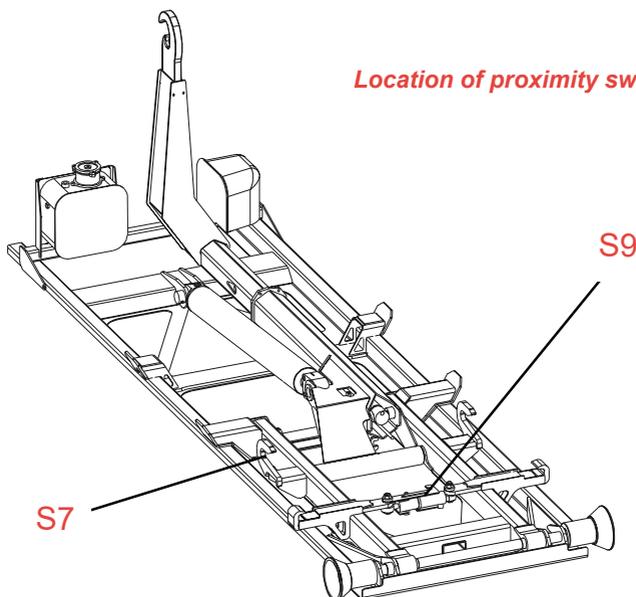
These sensors give signals to the control box which then actuates its circuits preventing any movements that might cause damage.

The inductive sensors in the diagram are designated with the letter S and a number.

The inductive sensors have the following functions:

S7 (dia. 1.18 in [Ø30 mm]) = indicates that the rear frame is down

S9 (dia. 0.7 in [Ø18 mm]) = indicates that the hydraulic body lock is open.

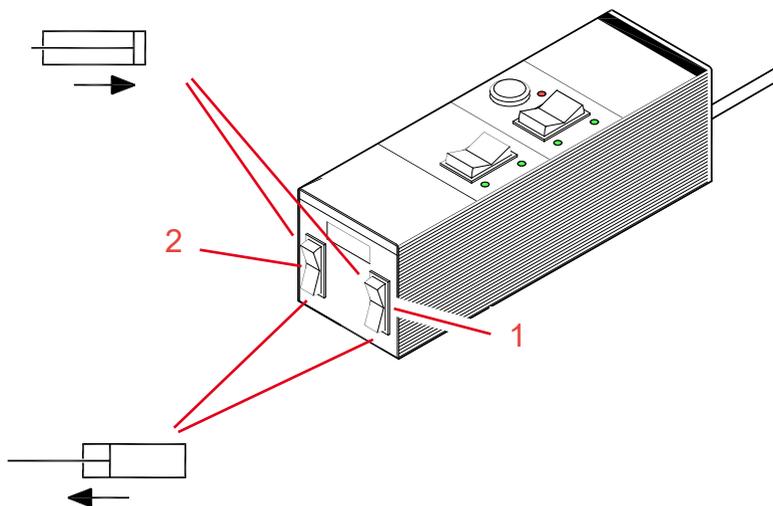


Additional equipments

Additional hydraulics

Auxiliary equipment connected to the XR S's own hydraulics, is controlled by the additional hydraulic control switches, for example, tail gate, sand spreader, etc.

Drive the cylinder of the hydraulic auxiliary equipment in



Drive the cylinder of the hydraulic auxiliary equipment out

Control switches of additional hydraulics

This manual is a translation from the original maintenance instructions compiled in Finnish.

MAINTENANCE

Regular and correctly timed maintenance will increase the safety, reliability and economy of the hooklift equipment. All accomplished services and replacements of wearing parts are worth while to record.

In connection with the maintenance work, the work safety must be noted and all possible danger elements must be kept in mind by everybody participating. This instruction must be read carefully before commencing any service work.

The equipment operator can carry out the daily, weekly and monthly services described in these instructions. If there appears damages, hydraulic leaks, malfunctions or other problems with the equipment, contact the nearest Multilift service point. Repairs related to these may be carried out only by the professional and trained personnel. Especially the electrical system and the hydraulics are such which require specialised competence.

Wash the equipment carefully with low pressure washer before inspection and service. Dry and check all electrical components after washing.

Safety instructions

Loose, long hair, loose clothing, jewellery etc. are an accident risk.

Use always personal protections and other protective means in service work.

All modifications and additions made to the equipment construction, which might have an effect to the operational safety of the hooklift, are prohibited. In general, all modification and additional work on the equipment must be consulted with the dealer or manufacturer of the equipment. Also a more extensive repair work or welding work to be done on frames must be approved by an authorised service shop or the manufacturer of the equipment.

All the spare parts must conform with the technical requirements of Multilift. The best way to ensure this is to use the original Multilift spare parts.

The safe and easy accomplishment is best achieved by using the correct and sound tools.

Note the service and inspection periods mentioned in this instruction and the replacement needs of parts which have been noted in connection with the equipment inspection.

Wash and clean the equipment regularly before any service work.

Never service an equipment when the truck engine is running or the PTO is engaged.

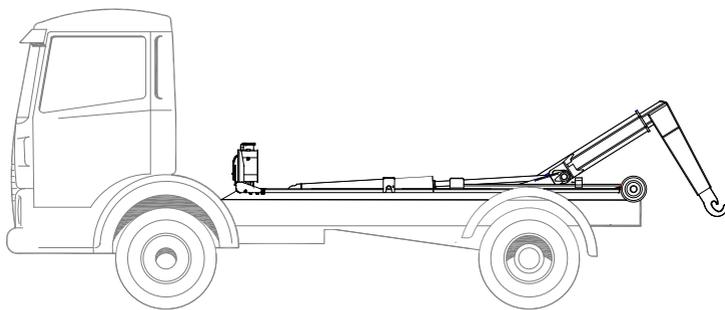
Each service work must have a named responsible person who is responsible for the vocational skills of the person carrying out the work.

Try always to separate the service area from persons not involved.

Before water wash, cover and protect all the electric components and connections. Do not direct the washing agents to hot points.

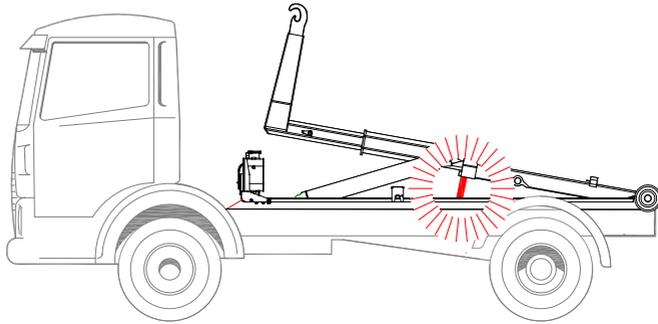
- Inform the equipment operator of the start of the maintenance work.
- If the equipment is damaged or otherwise non-functional, ensure that it cannot be started accidentally before and especially during the service work.
- Remove the truck ignition key and keep it in a safe place. Inform also others, for example, with a warning sign.
- If there are several persons involved in the service work at the same time, the one having the ignition key must inform everybody if, for example, the truck engine is started or the hooklift functions are used.

If the work area is under the tipping frame, the equipment must be moved to loading position.



Hooklift in rear position

If the work is done under the middle frame, the equipment must be moved to loading position and the frames supported with separate tipping support in the correct places. Remember to remove the support after the work has been completed.



Hooklift supported to tipping position

If the work is done under the rear frame, the equipment must be lifted to tipping position and the frames supported with separate tipping support in the correct places. Remember to remove the support after the work has been completed.



BE AWARE!

Never move the middle frame or the rear frame by means of hydraulics against the tipping support. The equipment cylinders are powerful enough to break the support or the frames and there is a great risk of personal injury. Stop the movement of the main cylinders immediately when the frame reaches the support.

Stop the truck engine always when doing service work under the raised frame and under the container.

Use ladders and working platforms when required.

Do not utilise the hooklift components for climbing up the equipment.

If the work has to be done on top of the equipment, note and prevent the risk of falling.

All ladders, working platforms etc. must be kept clean from oil and grease.

Fasten and tighten all removed components and screw joints after the service.

Dispose of all extra material and oil in an appropriate manner, noting all environmental rules and regulations.

Before commencing any service or repair work, ensure that the vehicle is standing on an even surface with the hand brake engaged.

Remember to follow appropriate work safety and environmental instructions.

Record all service and repair work and any special matters which have appeared during the job.

Service table

Daily

1.1	Check the safety functions
1.2	Check for possible damages and oil leaks
1.3	Check the control and warning lights
1.4	Check the function of the control unit
1.5	Check the load lockings

Weekly

2.1	Check the daily objects
2.2	Check the oil level
2.3	Check all valves, hoses and pipes
2.4	Check the clearance of the rear rollers and shafts
2.5	Check the clearances of other shafts

Monthly

3.1	Check the daily and weekly objects
3.2	Wash the hooklift equipment carefully
3.3	Lubricate all the lubrication points
3.4	Check all the safety functions without a container
3.5	Check all frame constructions for possible damages and ensure their correct functioning
3.6	Check the tightness and condition of all fastening bolts
3.7	Check the gripping hook condition and wear
3.8	Check the condition and deterioration of the container brackets
3.9	Check the whole hydraulic system for leaks and damages
3.10	Check the condition of all warning stickers

Once or twice a year

4.1	Change the hydraulic oil (annually or more often if it is dirty)
4.2	Change the return filter (twice a year or more often if it is blocked)
4.3	Check and clean/change ventilation plug (annually)

Hydraulics service



BE AWARE!

Servicing, repairs and installations of the hydraulic components may be done only by persons trained for the jobs.

Do not carry out any repair if you do not know the item to be repaired.

Never carry out any service or repair on system under pressure.

Stop the truck engine always before tightening or repairing hydraulic connections.

Do not try to locate a hydraulic hose leak with your hands. A leak from a pressurised system can penetrate the skin and cause serious injuries. A leak from a pressurised system can also cause a fire when hitting a hot object.

Avoid skin contact with oil. Protect also your eyes.

Do not carry out work on hydraulic components under a raised frame. Use always a mechanical support.

Do not remove any hydraulic components before supporting the frames and releasing hydraulic system pressure.

Pipe connections, hose lengths and materials must conform with the Multilift requirements. Use original Multilift spare parts or ensure otherwise that the components correspond with the highest working pressure used.

Ensure that the oil corresponds with the requirements and ensure its viscosity and cleanliness when adding oil into the system.

All changes to the recommendations concerning the oil and hydraulics must be verified in writing with Multilift.



BE CAREFUL!

Do not touch pressurised hydraulics. Do not remove any hydraulic components before the hooklift equipment has been supported mechanically.

General

- Keep the hydraulic system clean.
- Keep the oil in a clean, locked space. When adding oil, use a funnel which has a fine filter net.
- Keep funnels and containers free of dust.
- Always use clean towels or preferably high quality tissue.
- Before removing the hydraulic system components, clean the surrounding areas carefully with steam or fat removal agent.

Checking the oil level

When the middle frame and the hook arm are in operating position, the oil level should be in the middle of the sight glass.

Checking the return filter

Use a dirt indicator to check how dirty the return filter is. Replace the filter cartridge if the indicator is in the red zone when the pump works and the oil is at operational temperature.

Checking the air filter

Check the condition of the air filter. Clean and replace it as necessary.

Checking the condition of the oil

It is possible to examine ageing and deterioration of the quality of oil in the following way:

- dark colour is caused by overheating of oil
- milky and/or frothy oil contains water
- water can also be seen in separated oil
- air bubbles in oil are a sign of too little oil or of a leak in suction line
- solid particles indicate a component damage or old oil
- air is a sign of oil ageing as a result of overheating.

If you notice any of the above symptoms in oil, change it according to the following instructions.

Attention!

Hydraulic oils, especially mineral oils, are hazardous to environment. Therefore, follow all regulations pertaining to collecting and storing oil. Earth material polluted with oil must be processed according to relevant instructions.

If several successive containers switches are performed, the hydraulic oil may overheat >140°F (60°C) making it necessary to install an oil cooler to the system.

Changing the hydraulic oil

1. Check that all piston rods of the cylinders are in retracted position.
2. Completely empty the oil tank via the drain plug.
3. Change the return filter.
4. Fill the tank with new oil via the return filter.
5. Check the air filter.



BE CAREFUL!

Hydraulic oils and mineral and more environment friendly oils can cause skin irritation and allergic symptoms. Hands and other exposed skin must be protected well. Wash your hands carefully after the oil change.

Hydraulic oil specifications

Quality classes: ISO 6743-4 type HV or
DIN 51524 part 3 type HVL or
Swedish SMR standard for hydraulic oil (SHS).

Degree of cleanliness: 16/13 (ISO 4406).

Viscosity:

Ambient temperature °F (°C)					ISO-VG
-13	(-25)	...	50	(+10)	22
5	(-15)	...	68	(+20)	32
23	(-5)	...	86	(+30)	46
59	(+15)	...	122	(+50)	68

Oil qualities

Hydraulic system sets many requirements to the hydraulic oil characteristics. They contain amongst others:

- Lubrication requirements
- Oxidation prevention capability
- Corrosion protection
- Defoaming quality
- High viscosity index, in other words, low change of viscosity when the oil is heated.

In order to meet these requirements and qualities, additives are used in oils. Therefore it is important that the selected oil meets the characteristics for the operating environment in question. A lower ambient temperature is the same as the lowest starting temperature.

Note! Vegetable based bio oils are not allowed to be used. Only synthetic environment friendly oils that meet the above mentioned requirements are allowed.

Note! Do not mix different oil qualities. Mixing of different oils weakens generally their characteristics. If it is necessary to use an alternative oil, check with the supplier the characteristics and correspondence with the recommended oil.

Changing to biodegradable oil

To obtain the best results, the percentage of the mineral oil left in the system should not exceed 2%. The “Changing to biodegradable oil” –procedure might also apply to new systems because the hooklift is tested with mineral oil at the factory if otherwise noticed.

Safety

- Suitable eye and hand protection must be worn whilst carrying out this operation.
- Ensure suitable containers to hold the amount oil you will be draining are available before starting this operation.

Environment

- Ensure oil waste oil is disposed of safely and in accordance with any local environmental regulations.

Attention! Ask the oil supplier for instructions. If you do not receive any instructions, follow these recommendations:

Procedure

1. Completely empty the oil tank via the drain plug. Clean the oil tank carefully from oil and contamination. On older systems with heavy contamination, it may be necessary to remove the oil tank and flush out with a suitable flushing agent.
2. Completely empty the hydraulic cylinders, tubes, hoses and the suction hose to the pump.
3. Change the return filter.
4. Fill the tank with new oil via the return filter. Operate all cylinders carefully to ensure that they will be filled with oil. Ensure that the pump is filled all the time. Fill up the tank before it gets empty.
5. Drive for 2 or 3 days.
6. Check that all piston rods of the cylinders are in retracted position. Completely empty the oil tank via the drain plug and change the return filter. Fill up the oil tank with new oil and operate all cylinders carefully to ensure that they will be filled with oil. Ensure that the pump is filled all the time. Check that the oil level in tank remains in correct level.

Note! Synthetic esters can dissolve old contamination. If the performance of the hooklift appears to deteriorate before the oil filter change, inspect the filters and change if necessary.

Safety functions

Check the safety functions of all different movements; tipping, loading and unloading. Do the checks first without a container and thereafter with the container.

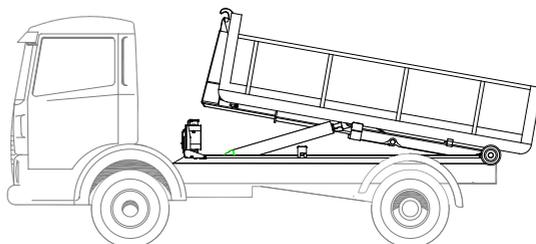
Safety functions

Check that:

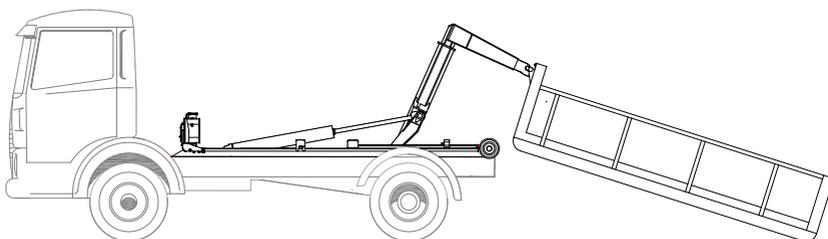
- hydraulic body locks cannot be opened during tipping (tipping device approx. 20 in (0,5 m) raised)
- moving of hook arm is not possible during tipping
- hook arm cannot be moved when the hydraulic body locks are closed
- body locks signal light is lit when the locks are not closed.

Check the functioning of the load holding valves with a loaded container:

- let the hooklift stay with the container raised for 5 minutes and check that the tipping device has not descended by itself (fig. **Tipping device** raised)
- let the hooklift stay in loading position for 5 minutes and check that the container has not descended down (fig. **Loading position**).



Tipping device raised

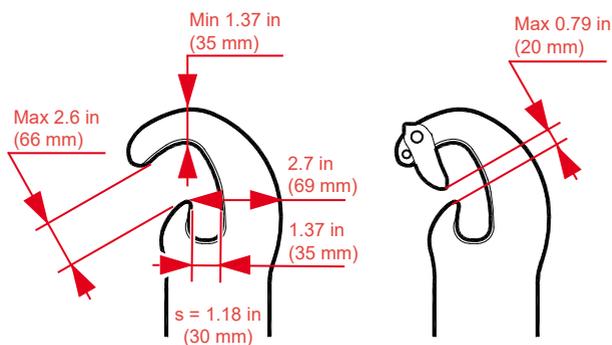


Loading position

General inspection

Check:

- steel construction for deformations and breakages
- hooklift fastening to the truck chassis, for breakages and loose bolts
- fastening of the rear rollers. Check the securings of all shafts.
- surfaces of piston rods. If the chromium surface of the rod is damaged, especially if the scratches are longitudinal, the rod or the whole cylinder must be changed.
- wear rate of the gripping hook. The original thickness of the hook must not be worn more than 10 %.
- wear of the sliding pads. They must not have worn down by more than 0.078 in (2 mm) (original dimension 0.33 in [8,5 mm]).
- keep all safety and danger signs on the machine in legible condition, observe and follow them.



Hook wear limits

Welding

Before welding, ensure the material to be welded, method and additives.

Contact Multilift service, if needed.

Welding may only be carried out by a trained welder.

Check from the truck user manual all the electrical connections which need to be disconnected before welding. Remove the hooklift equipment electrical system connection to the truck always before welding.

Connect the earthing cable as close as possible to the spot to be welded. If the welding current flows through bearings, joints and seals, they might get damaged.

Check that the welding and flame cutting sparks do not fly to oily areas. Remember also the protection of the truck cab.

Use always welding protections. Ensure sufficient ventilation. Prevent the risk of fire.

Electric system

Maintenance and repair works in the electrical system may be carried out only by a trained electrician.

All the safety instructions and regulations related to electric work must be noted.

Use always only original electric components.

It is not allowed to make any additional connections to the electric system, wiring harnesses and valve coils.

Repairing Damaged Paint Surface

XR hooklift is painted with polyurethane paint in accordance with standard PUR 100/1 FeSa 2 ½. The frame of the device can optionally be coated with a zinc-primer before surface coating, in accordance with standard EPZn®PUR 140/2 FeSa 2 ½.

Surface damage occurring during the transport, installation or usage of the device must immediately be repaired to prevent the damage from spreading:

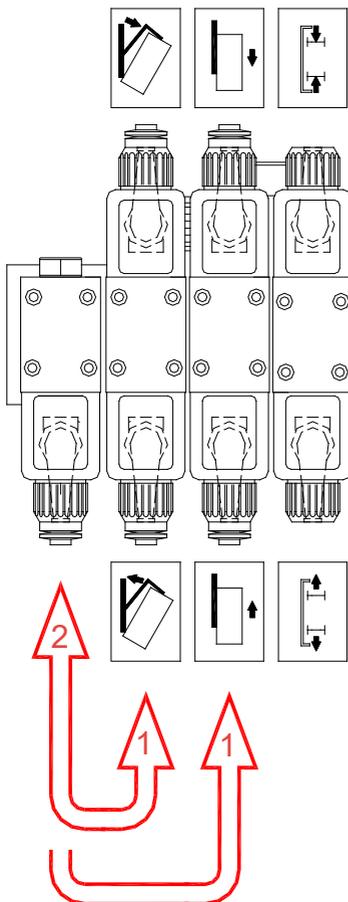
Cover up surfaces near the device, clean up the damaged area and surfaces surrounding it of any impurities and existing paint down to the steel surface, even out the edges of the paint surface. Make sure that the surface is completely free of dust, oil and grease and that it is completely dry for repair painting. Apply a 100 µm coat of primer. It is not recommended to use a primer for the surface coating. Use a pre-shaded acrylic paint for the repair painting and confirm the colour shade and colour code (RAL) before applying the paint. Let the paint dry for 24h indoors before use.

If auxiliary equipment is installed to the device afterwards, the surfaces in contact with the painted area must be protected with suitable protective wax.

Emergency operation

CAUTION!

Internal safety functions of the device do not work in manual control mode. Therefore, be especially careful when carrying out the movements.



If a failure happens in the electric system of the device, the device may be restored to its normal state, by operating the control valve manually:

1. Press down the button located at the end of valve for needed direction and hold it down.
2. Press down the button located at the end of free circulation valve.
3. Release the buttons when you would like to stop the movement.

Note!

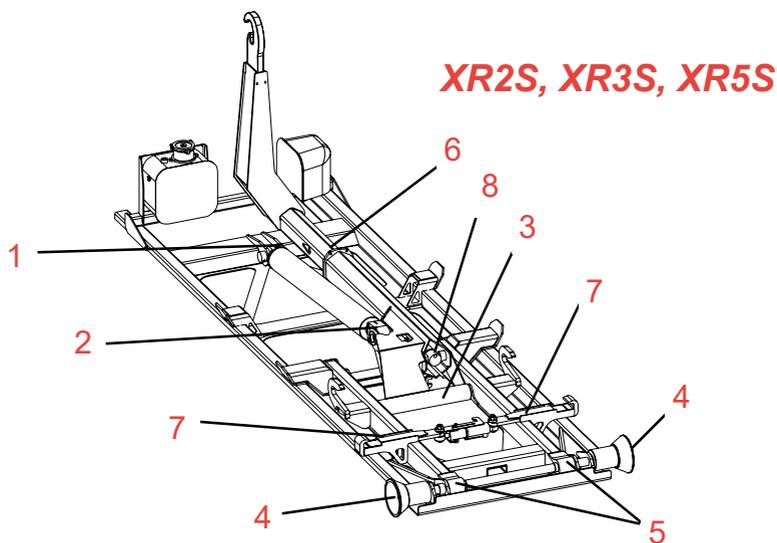
The valve stem return spring is rather rigid and requires effort to push the button to the bottom.

LUBRICATION

Lubricate all the lubrication points at max 3 month intervals. A more recommended lubrication interval would be 1 month.

Note! The hooklift equipment contains plastic surface slide bearings. Use LITHIUM based general lubrication grease (EP2). Molybden based lubricant shortens the service life of the bearings.

If the hooklift is equipped with a central lubrication system, this will need to be checked according to the manufacturer's instructions.



Lubrication points

XR2S, XR3S, XR5S

Point	Lubrication point	Number of nipples
1	Main cylinder lower fastening	1
2	Main cylinder upper fastening	1
3	Middle frame bearing	1
4	Rear rollers	2
5	Rear frame bearing	2
6	Hook arm slide tube (if necessary)	spray (*)
7	Hooks of the hydraulic locks (accessory) (if necessary)	spray (*)
8	Tipping lock	2
Total number of nipples		9

*) It is recommended to use a drying material, for example teflon or a silicon spray.

1 - 5, 8 Note! Use LITHIUM based general lubrication grease (EP2). It is not allowed to use a graphite or molybdensulfide based lubricant.

Periodical Service

The following services are recommended to be done on XR devices by an authorised Multilift Service Point:

- delivery service in connection with the commissioning of the device
- first service after 1 - 3 months after commissioning
- annual service:
 - at 12 months interval in normal use (0 -15 platform changes a day)
 - at 6 months interval in 2-shift use (16 – 30 platform changes a day)
 - at 3 months interval in 3-shift use (over 30 platform changes a day)

As running hours the service should be done at 100 hours interval.



Environmental notice

Appropriate disposal of used oils, lubricants, discarded parts and other used material.

Recycling after service life

When a device is discarded, all of its components shall be recycled and disposed of in accordance with valid decrees and regulations.

Service Card

Services done below on XR hook device type XR _____

Serial Number _____

Service	Carried out by	Signature	Date
Commissioning inspection			
1st Service			
2nd Service			
3rd Service			
4th Service			
5th Service			
6th Service			
7th Service			
8th Service			

WARRANTY CONDITIONS

To the buyer

You are now the owner of a demountable body system made by the Hiab factory indicated on the manufacturer's plate and sold to you by an authorized Hiab dealer.

With the demountable body system you will receive this Warranty and Maintenance Book, containing service instructions and warranty conditions. Should any problem on service or warranty arise, you should approach the authorized dealer (hereinafter referred to as the "Seller"), who sold you the demountable body system.

The Operator's manual is included in the delivery. The manual contains instructions on operation and maintenance, as well as relevant safety instructions.

The first maintenance should take place no later than three months after the delivery. The second maintenance should be carried out no later than 12 months after the delivery. The following maintenance should be performed every 12 months from the delivery.

Keep in mind that regular maintenance will improve the product reliability and resale value, and thereby will also improve its economical performance.

Information for the buyer/operator

The buyer must be given instructions regarding:

- The operator's manual and its contents.
- The correct method of operating the demountable body system and any extra equipment.
- Safety system and safety equipment.
- Daily inspection and maintenance.
- Lubrication points.
- Filters, their placing and replacement.
- Type of hydraulic oil to be used, oil changes and topping-up.
- Warranty conditions.

- That adjustment of pressure relief valve settings and where applicable load limiting valve settings is prohibited and will invalidate the warranty.
- Miscellaneous
.....
.....

Owner's Warranty

This Owner's Warranty (hereinafter referred to as the "Warranty") applies to the products listed on the delivery card (hereinafter referred to as the "Products") which accompanies it. This Warranty is issued by the company that has sold the Product (hereinafter referred to as the "Seller"). The Warranty cannot be invoked against any other party than the Seller.

1 Warranty

1.1 The Seller warrants that the Products as listed in the delivery card, with the exceptions stated below, are free from defects in material and manufacture. The Warranty period is twenty-four (24) months from the date of delivery of the Products, [but shall never exceed thirty (30) months from the date of delivery from factory].

- For demountable body systems the Warranty periods shall only apply in normal usage of the Product, meaning in the maximum 4 000 platform changes per 24 months. In case the Product is used more excessively, the duration of the Warranty period must be negotiated separately and if no agreement is entered into the period in this paragraph applies.

Extended Warranty Demountables

An extended Warranty for the period of 5 years or 10 000 platform changes, whichever occurs first, shall apply to structural parts (as defined below), but the period shall never exceed 66 months from the date of delivery from factory. Only the substitute Products shall be refunded. The labour costs shall not be covered during the third, fourth and fifth year.

Parts included in Extended Warranty Demountable body systems

The extended Warranty shall cover the following parts:

- For XR Power, XR Low, Ultima and Optima hooklifts: Sub frame, rear frame, middle frame, sliding frame and hook arm.
- For Futura Flex skip loaders: floor, outer boom and inner boom.

1.2 Expendable items, lubricants and oil are excluded from any Warranty and the Seller accepts no responsibility for defects in such parts.

1.3 If any defect appears, which is covered by the Warranty, the Seller may at its own option repair or replace the Product or defective component. Any defective Products or components are to be repaired by the Seller or a workshop authorized by the manufacturers.

1.4 In order to maintain the rights under this Warranty, the Owner must notify the Seller in writing about the defect immediately after it occurred and in no case later than (15) days after the expiry of the liability period defined in Clause 1.1. The notice shall contain a sufficiently detailed description of the defect. If the owner fails to notify the Seller in writing within the above time limits, the right to make any claim in respect of the defect is void. If there is reason to believe that the defect may cause damage of any type or form, notice shall be given forthwith. If notice is not given forthwith, the Owner loses the right to make any claim based on damage which occurs and which could have been avoided if such notice had been given.

- 1.5 After receipt of a written notice the Seller shall remedy the defect. Repairs will be carried out within a reasonable time, having regard to the nature of the defect and the difficulties of assessing it, the Owner's need of the Product and the availability of spare parts and repair capacity.
- 1.6 The warranty does not cover travelling- and/or transportation costs. Transports of Products or components are made at the Owner's risk.
- 1.7 For spare parts fitted during the products Warranty period the Warranty expires within the products Warranty. Spare parts fitted at the Owner's expense after the product warranty period has expired has a Warranty period of 6 months after the date of delivery to the customer. Labour costs are not covered. All transport of Products or components is at the Owner's expense. The Owner must also pay the travelling expenses for the Seller's personnel.
- 1.8 Defective parts, which have been replaced, must be put at the Seller's disposal.
- 1.9 The Owner must reimburse the Seller for all costs the latter may incur as the result of any Warranty claim in respect of a defect not covered by Warranty.
- 1.10 The Warranty does not cover defects due to occurrences after delivery of the Products such as, but not limited to, overloading or incorrect operation, normal wear and tear, insufficient or faulty lubrication or other maintenance, faulty installation or repair or the use of other than original spare parts. The Warranty will not apply if lead seals on valves have been broken, or if the Products have been altered without the Seller's approval in writing. The Owner is solely responsible for his choice of Products as to type and size, and the Seller does not warrant that the Products are suited to their actual use.
- 1.11 The extended Warranty Period for the frames of hooklifts XR Small, XR Medium and XP, as well as for the frames of skiploaders SL and Futura Basic, shall be 36 months.

2 Limitations of Liability

The Seller is under no circumstances liable for any consequential or indirect damage, such as but not limited to damage to property, standstill costs, loss of revenue, other loss of profits, or any other loss or damage, travel costs or costs relating to measures in connection with other equipment than the Product etc, whether resulting from a defect in a delivered Product, or from an action or omission by the Seller.

The Seller is not liable for defects wholly or partly caused by materials or designs stipulated, specified or provided by the Owner. No other warranties, either direct or implied, are given in relation to the Products than stated in this Warranty.

3 Conditions for Validity of the Warranty

The Warranty as stated in these conditions is not valid unless all of the following conditions have been fulfilled:

- Installation and inspection before delivery has been performed by the Seller or other workshop authorized by Hiab.
- The Products have been serviced in accordance with this Warranty- and service document.
- The Products have been handled in accordance with issued service instructions.
- Any repair and/or change of parts have/has been carried out by the Seller or by a Hiab authorised repair Dealer.
- Only Hiab genuine spare parts have been used.
- Warranty repairs are made only by the Seller or other workshop authorized by Hiab.

This instruction presents a summary of warranty terms. The complete warranty terms and conditions are presented in Hiab Warranty Manual.



EC declaration of conformity
of the machinery
(Directive 2006/42/EC, Annex II, part 1, sub A)

We Cargotec Finland Oy, Multilift
Nesteentie 36
FI-21200 Raisio
Finland

declare on our sole responsibility that the
Ground Level Demountable Equipment

Mark **Multilift**
Type **XR**
Serial number
Manufacturing year

- complies with the provisions of the machinery directive 2006/42/EC.
- also complies with the provisions of the directive on electromagnetic compatibility 2004/108/EC as amended.



DELIVERY CARD

Country	Country code
Distributor	

Multilift Demountables

<input checked="" type="checkbox"/>	Hooklift
<input type="checkbox"/>	Skiploader
<input type="checkbox"/>	Other

Customer:
Address:
Contact person:
Tel.:
E-mail:
Body builder / Dealer:

Model XR	Serial No.	Delivered
Pump model	Oil tank	
Truck model	Chassis No.	Registration No.

Accessories	Part No.	Serial No.

<p>The equipment described above has been received today, assembled and fully serviceable. The operator's manual and warranty conditions accompanying the equipment have been read through as witnessed below.</p> <p>Product operation instructions and safety instructions have been received.</p>	<p>Installation and delivery service carried out according to the manufacturer's instructions.</p>
<hr/> <p>Purchaser</p>	<hr/> <p>Seller / Body builder</p>
<p>To ensure that the warranty applies this delivery card should be received by the manufacturer no later than 30 days after commissioning.</p>	



*Cargotec improves the efficiency of cargo flows on land and at sea – wherever cargo is on the move. Cargotec's daughter brands, **Hiab, Kalmar** and **MacGregor** are recognised leaders in cargo and load handling solutions around the world. Cargotec's global network is positioned close to customers and offers extensive services that ensure the continuous, reliable and sustainable performance of equipment.*

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