

Original instruction,
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EuroTRADE 2.2 S **MANUAL BIN LIFT SYSTEM**

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Foreword

This user manual provides information about the operation and maintenance of the EuroTRADE manual bin lift system.

In order to work safely and efficiently with the manual bin lift system, it is essential that you read this manual carefully before putting the bin lift into use.

The operation and appearance of components and button control stations may differ. This depends on the version ordered.

Make the user manual available to everyone concerned with the operation and/or the maintenance of the bin lift.

Where necessary, refer to the user manual of the refuse collection vehicle (RCV) and the refuse handling body.

When all the operating and maintenance instructions have been met the bin lift can be safely used.

Should you nonetheless have any further questions, please get in touch with your distributor.

Intended Use

Use the bin lift system as described in this manual, to handle 2-wheel bins and 4-wheel containers, and bag collection or bulky waste.

Any other use of the bin lift system is forbidden.

Abbreviations

The following abbreviations are used in this manual:

- RCV - Refuse Collection Vehicle
- L/H - left hand
- R/H - right hand
- I/O - input / output

Warranty

For more information about the conditions of warranty, please contact your distributor.

Operator requirements

The bin lift system must be operated by persons who are familiar with the operation of the bin lift.

Repairs must be carried out by qualified personnel.

Symbols used

NOTE

Additional information.



CAUTION

If these instructions are not followed, this may result in slight to average injury and/or damage to the product or the environment.



WARNING

If these instructions are not followed, this may result in serious or fatal injury and/or serious damage to the product or the environment.

The user manual has the following sections:

1. INTRODUCTION
A description of the functions, conditions and the operating principle of the machine.
2. SAFETY
Description of the safety provisions and the measures that need to be taken into account in order to work safely with the machine. As well as an explanation of the symbols on the machine.
3. OPERATION
A clear description of the most important components and instructions for emptying various types of bins.
4. MAINTENANCE AND CLEANING
Covers all the periodic operations needed for the correct functioning of the machine, trouble shooting and fault diagnosis.
5. DECOMMISSIONING (disposal)
Description of the actions necessary to dismantle the machine safely and to dispose of this in an environmentally friendly manner.

Type indication

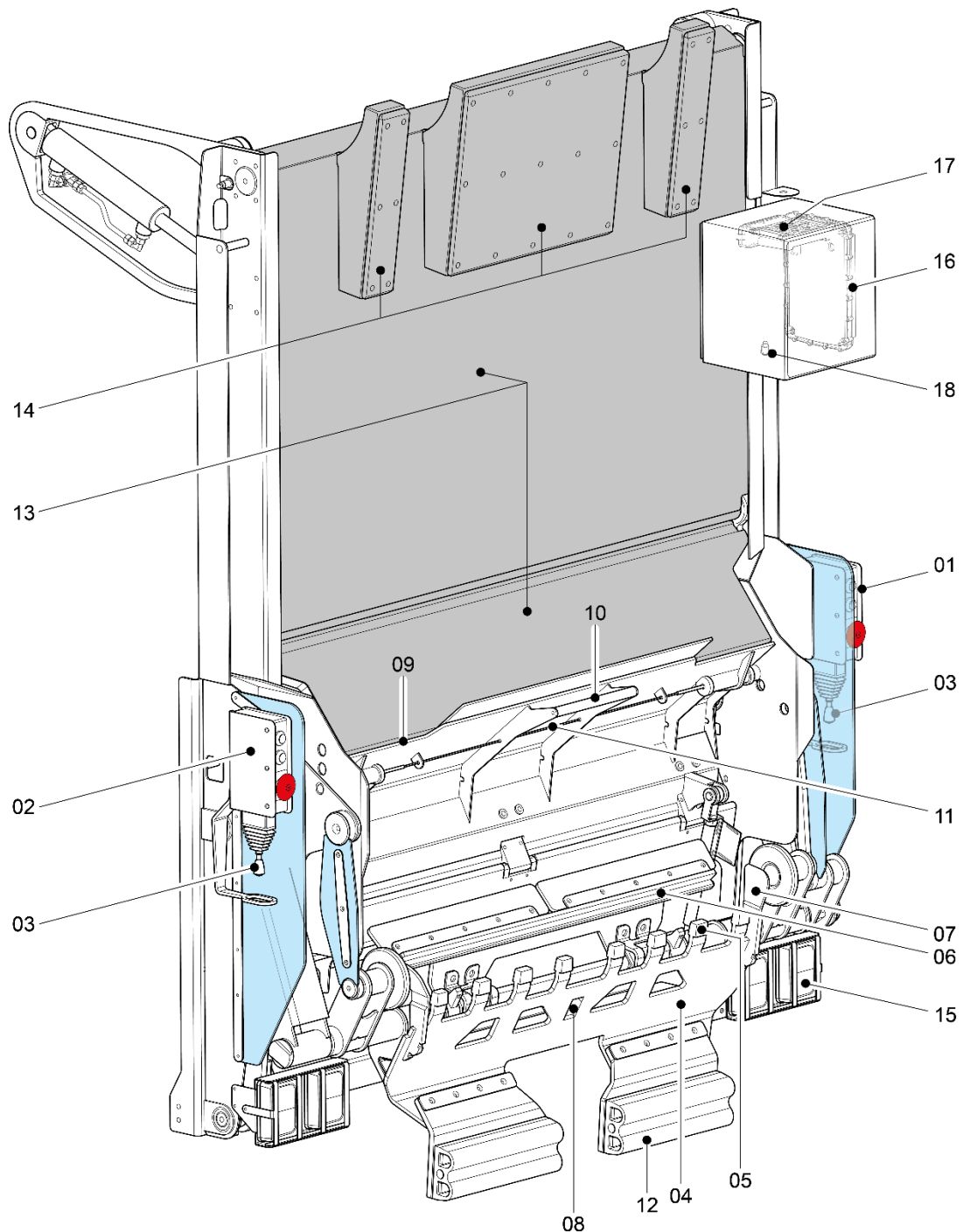
Each bin lift is provided with a type plate with the type indication, machine number and year of construction. You find the type plate on the R/H side of the frame.

		Terberg Machines B.V. Baronieweg 23 3403 NL IJsselstein Nederland Tel. +31 (0)30 210 06 00 www.terbergmachines.nl	Bin lift system Beladingssysteem Lève-conteneurs Schüttungssystem
TYPE	TCH-BL-22-E		
FABR. NR. MANUF. NR. HERSTELL. NR.	200511007909		BOUWJAAR YEAR OF MANUF. ANNÉE DE CONSTR. BAUJAHR 2020

1. INTRODUCTION

1.1 Description of the bin lift system

1. Button control station R/H with integrated emergency stop
2. Button control station L/H with integrated emergency stop
3. Joystick for Pull/Push movement
4. Lifting chair
5. Pick-up comb (Uni com)
6. Locking plate
7. Bin guide plate
8. 4-Wheel (trade) container sensor
9. Refuse guide plate
10. Refuse guide plate handle
11. Pull cable to open refuse guide plate
12. Flexible chair bottom
13. Hopper cover
14. Bin / container stopper bars
15. Tail lights
16. I/O box
17. Terberg Connect Module
18. LED flashlight



Details

The EuroTRADE is a versatile manual bin lift system. This bin lift system is suitable for emptying the normal 2-wheel bins, most 4-wheel containers (see section 3.7), and manual handling of bulky waste.

Operation is done using the two button control stations on each side of the bin lift.

The bin lift is provided with a semi-automatic function for 4-wheel containers.

1.2 Technical specifications

The bin lift is a 'demountable lifting device' in compliance with EN 1501-5:2011.

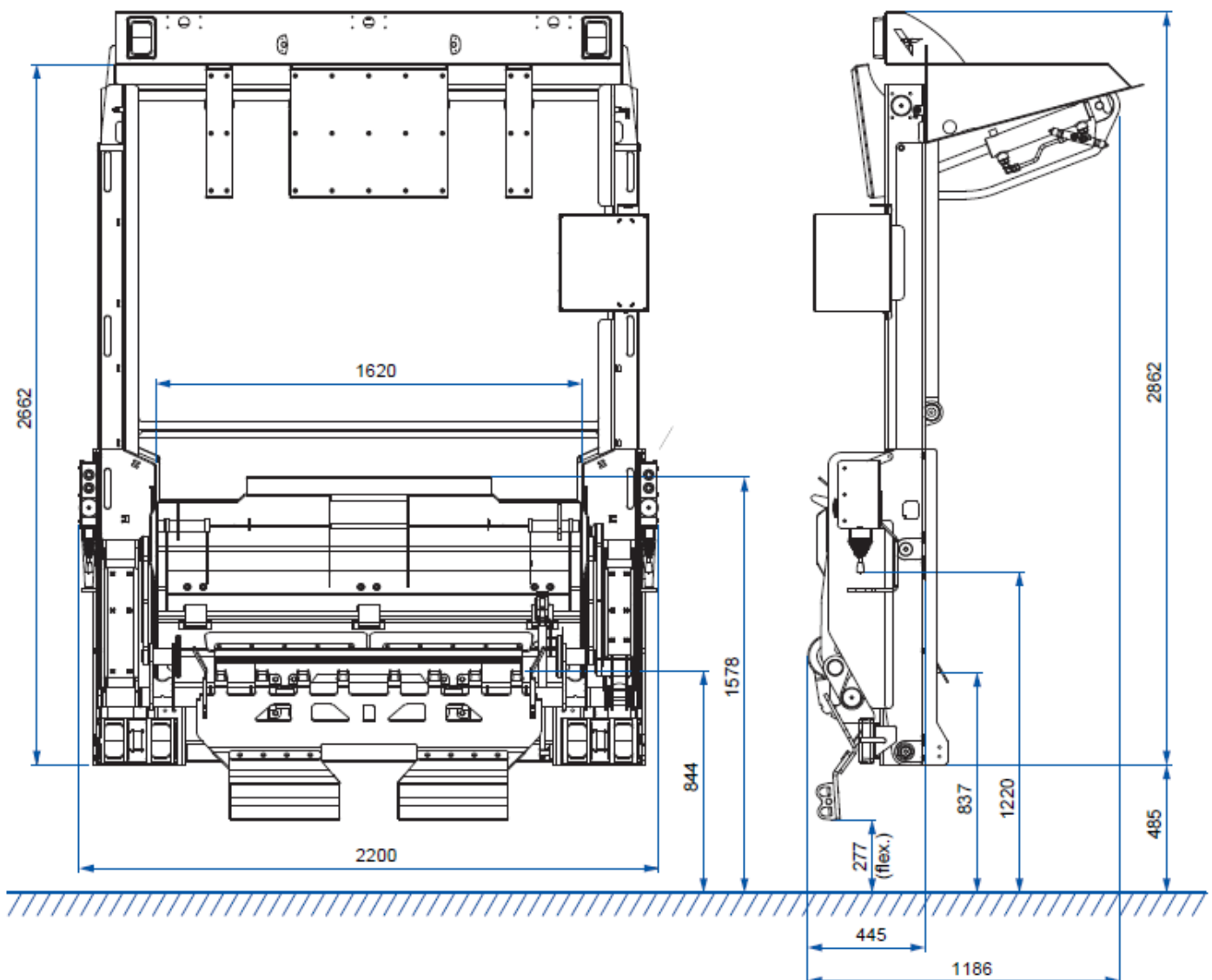
NOTE

This bin lift system has been designed for mounting onto refuse collection vehicles that are fitted with a standard interface (mechanical, hydraulic, electrical, for technical dimensions and functionality).



Table 1 Technical data

Guidelines and standards	2006/42/EG, EN 1501-1 & EN 1501-5:2011
Weight	675 kg standard
Noise level (according EN1501-4 6.4.3)	≤ 70 dB(A)
Vibrations	≤ 2.5 m/s ²
Operating voltage	24 Volt DC
Maximum current consumed by controls	10 Ampère / 24V DC
Required oil flow	40 litres/minute
Required working pressure	Min. 200 bar
Return pressure	Max. 2.0 bar at 70 litres/minute

1.2.1 Dimensions of the bin lift



1.2.2 Bin/container and bin lift information

	2-wheel bins 	4-wheel containers with flat lid 
Capacity (litres)	240	660
According to standard	EN 840-1	EN 840-2
Lifting capacity	1600N (160 kg)	5000N (500 kg)
Cycle time*	± 8 seconds	± 9 seconds
Emptying time	Not adjustable	Not adjustable
Manual emptying	yes	yes
Pick-up via comb	yes	yes
Lid opener	not applicable	not applicable
Bin stop / catcher bar	yes	yes

* Depending on mounting height, bin/container weight and oil temperature.



WARNING

Do not empty bin/container types other than those indicated above. It is not permitted with this bin lift system. If in doubt, please contact your distributor.

2. SAFETY

Terms of conformity

This bin lift conforms to the current standards at the time of production. It has been tested and checked, on a rig, in normal conditions with an increase of 25% weight in static and 10% weight in dynamic operation. It is the end user's responsibility to maintain the equipment in accordance with the manufacturer's recommendations. If there is a risk of damages or injury the bin lift must be taken out of service immediately.

2.1 General safety instructions

- Never operate the bin lift system when the refuse collection vehicle is travelling along
- Never operate the bin lift system when the refuse collection vehicle is in reverse gear.
- Operate the bin lift system only when you have received operator training and are fully familiar with the working of the bin lift.
- Read the operating instructions carefully before taking the bin lift into service.
- Read the instructions for the compactor.
- You will be working where traffic is present during your daily work as operator of the bin lift. Do not endanger yourself or other road users during your daily operations with the bin lift.
- Before you start your work day discuss and agree with your colleagues how to act in particular situations such as stopping, driving away, etc.
- When you are working with the bin lift system, do not wear any loose hanging clothing or jewellery.
- Always wear work clothing, safety shoes and work gloves that comply with the standards shown in the table below while working with the bin lift.

Personal protection equipment:	According to standard:
Work clothing	NEN-EN-ISO 20471:2013
Safety shoes	NEN-EN-ISO 20345:2011
Work gloves	NEN-EN 420:2003+A1:2009

- Make sure that an unattended bin lift can never be started by a person who is not authorised to do so (remove the ignition key whenever the vehicle is left unattended).
- Don't use the bin lift in areas or near installations where there is a risk of fire and/or explosion due to the presence of gases and/or combustible substances.
- Never operate the bin lift if the oil flow is greater than 60 litres/minute.
- Technical faults must be reported immediately to the person who is responsible for the supervision of the bin lift. The bin lift must be put out of action until the fault (that could cause danger) is repaired.
- Never use the lifting chair or other parts of the bin lift system as a seat.
- Never change the controls.
- Never remove or change any of the safety provisions fitted.
- If the safety provisions are damaged, they must be repaired or replaced immediately by original parts.
- Never change the cycle speeds and lifting forces set by the manufacturer.
- Operating and safety decals must be present and properly legible.
- Actions that override the safety provisions are forbidden!
- The lifting chairs must be positioned in their travel position before reversing.
- Make sure that you are visible to the driver of the refuse collection vehicle when it is reversing.
- Never use the bin lift as a hoisting instrument.
- No vehicle may be towed with the towing cable attached to the bin lift system.
- Never lift the refuse collection vehicle by the lifting points of the bin lift.
- Never sit or stand on parts of the machine when the vehicle is driving.
- Do not use the bin lift system in extremely bad weather (storms, thunder- storms, etc.).

2.1.1 During operation of the bin lift system

- Make sure that there are no persons in the immediate vicinity of the bin lift during the loading cycle.
- It is forbidden to put your hand in the bin lift system when it is operating.
- In the event of danger immediately press the nearest emergency stop switch (See chapter 3.3.1).
- Check that there are no foreign objects in the bin lift system that could obstruct the working of the bin lift system.
- Do not load loose waste above the hopper edge
- It is forbidden to carry out compacting when there are objects sticking out of the throw-in opening.
- Don't use the bin lift system in situations where there is poor visibility of the bin lift.
- Never use the bin lift system on an uneven surface.
- Do not drive the bin lift system up against a bin/container or a pile of refuse.
- Take account of the heating of the hydraulic oil. The oil can become 40°C warmer than the environment. As a result, the pipes and hoses can cause light burns at high ambient temperatures.
- It is not permitted to work with bin/container types other than those stated in this manual.
- Nothing should protrude from the bin.
- Only bins whose lids are fully closed should be emptied.
- Don't empty damaged bins/containers.
- Overweight bins/containers should be removed from the bin lift system:
 - Max. lifting capacity see chapter 1.2.2
- Check that the bin/container is positioned correctly on the pick-up comb before emptying it.
- Let go of the bin/container as soon as it is lifted.
- It is forbidden to assist the lift of the bin lift system manually or by using extra equipment such as a crane or forklift truck.
- Only apply extra shaking if needed.
- Only take the bin/container away when the bin lift has come to a standstill and the bin/container is back on the ground.
- Place empty bins/containers where they will not cause a danger to other road users.
- It is forbidden to empty bins/containers containing hazardous and/or radioactive substances.
- It is forbidden to empty bins/containers containing smouldering or burning substances.
- Never walk backwards in the direction of the bin lift system.
- Minimise as much, as one person, the presenting or taking of two containers simultaneously.
- Offer a bin only to the bin lift system when it is held by the handle bars.
- Always push a 2-wheel bin to the bin lift with two outstretched arms.
- Never bend your body over the bin when you offer it to the bin lift.
- Be aware that under wintry conditions, if the bin lift is blocked with large amounts of ice or snow deposits, the sensors may become concealed or the bin clamping mechanism may become clogged up. Press the emergency stop switch prior to cleaning. Clean the affected parts and keep them as dry as possible, for example with a broom. Never use defrosting liquids to clean the bin lift!



CAUTION

Keep a minimum distance of 2.5 meter between the bin lift and objects which are located behind the bin lift system. This is to avoid a dangerous situation in case that a bin/container falls from the pick-up comb.

2.1.2 During maintenance and repair


- Only qualified technical personnel is permitted to carry out maintenance or repairs.
- Correct any detected faults before using the bin lift system.
- Switch off the bin lift system during maintenance or repair work:
 - switch off the engine of the refuse collection vehicle;
 - switch off the main power switch.
- Remove the ignition key from the ignition switch during repair work and keep it on your person. This prevents unintentional switching on of the machine.
- It is forbidden to work underneath the lifting chairs for repair or cleaning unless the lifting chairs are adequately supported.
- Switch off the drive of the refuse collection vehicle before you start cleaning.
- Protect your eyes by always wearing safety glasses. It is possible that grease can squirt out from the hinge points when you use a high-pressure cleaner.
- Use the lifting points provided to raise the bin lift.
- When working on the hydraulic system:
 - Always use personal protection equipment to avoid contact with skin and eyes;
 - Use collecting trays / absorbents to avoid environmental pollution.
- You must comply with the maintenance interval prescribed by the manufacturer.
- Never bridge or replace electrical fuses by a fuse with a higher capacity.
- When dismantling, disconnect the plugs and couplings from the vehicle.
- Following a collision involving the bin lift system Terberg must assess whether the bin lift system is still safe to use or first needs to be repaired.
- Original or specified parts should always be used for repair or maintenance.
- Do not stand under the bin lift.
- Do not stand under the bin/container.



CAUTION

Repairs may only be carried out by qualified personnel, never rectify faults yourself. Rectifying faults by unqualified personnel may cause harm to people and damage to the bin lift system.

2.2 Warning and information decals

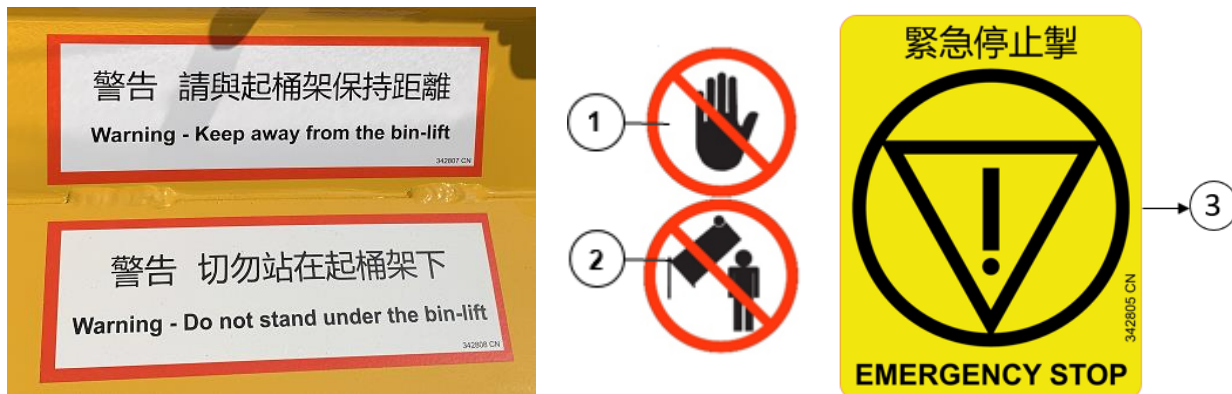
 **WARNING**
 Replace damaged safety and instruction decals immediately.

2.2.1 Place of warning and information decals



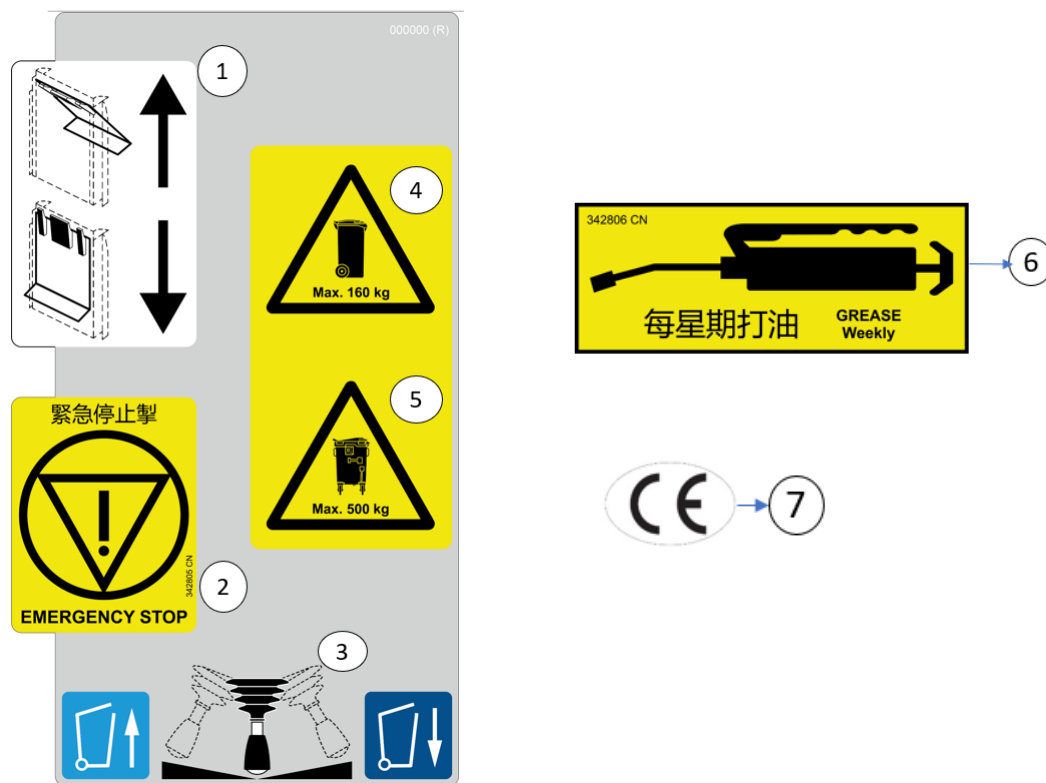
1	Warning signs: Keep away from the bin lift (top) and Do not stand under the bin lift (bottom) on L and R inside,
2	Information signs and warning signs
3	CE-certification mark
4	Lubrication interval – reads “Grease weekly”
5	Warning signs: Keep away from the bin-lift and Do not stand under the bin-lift.

2.2.2 Warning signs



Warning	
1-	Keep away from the bin-lift.
2-	Do not stand under the bin-lift.
3-	Emergency stop

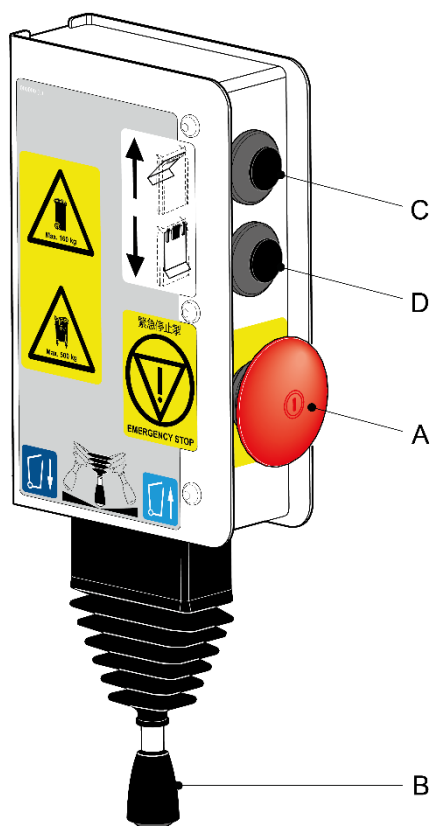
2.2.3 Information signs



Information			
1.	Open and close of hopper cover.	5	Maximum weight 4-wheel containers
2.	Emergency stop	6	Lubrication interval
3.	Joystick handling	7	CE-declaration sign
4.	Maximum weight 2-wheel bins		

3. OPERATION

3.1 Operator panel



Operator panel

- | | |
|----|---------------------------|
| A- | Emergency stop, see 3.3.1 |
| B- | Joystick |
| C- | Hopper cover Open 3.6 |
| D- | Hopper cover Close 3.6 |

3.2 Joystick



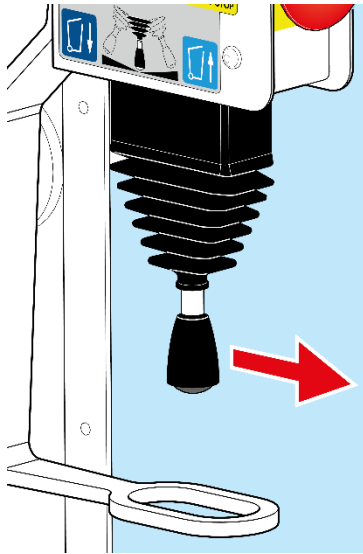
With the joystick you operate the pickup comb.

Operate the joystick from its neutral position, see also 3.6

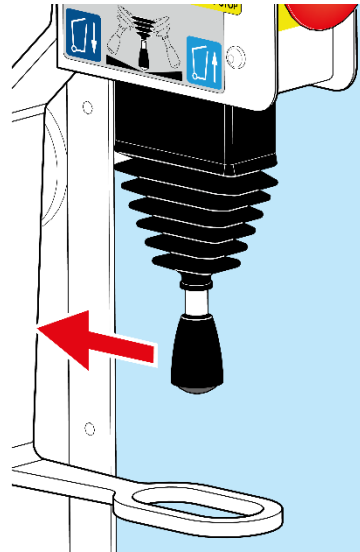
In case of serious malfunction, you might have to replace the joystick, see 4.6.

There are four actions:

- Pull to lift the pickup comb.



Push to lower the pickup comb



- Pull the joystick and hold it to shake the bin.
- Move the joystick into neutral position to stop the bin lift temporarily during operation.

NOTE

Depending on settings in the cabin of the RCV the pickup comb raises automatically when the RCV is in reverse or first gear.

3.3 Safety provisions

3.3.1 Emergency stop button

When the bin lift system does not work or has a fault while collecting refuse, the workshop or service station must be informed immediately with a clear description of the defect.

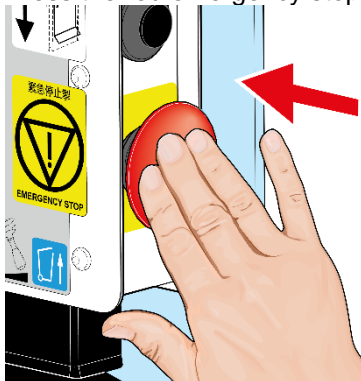


CAUTION

Repairs may only be carried out by qualified personnel.
Never rectify faults yourself, this may cause danger to you and damage to the bin lift system!

Emergency stop button

Press the red emergency stop button in case of emergency.

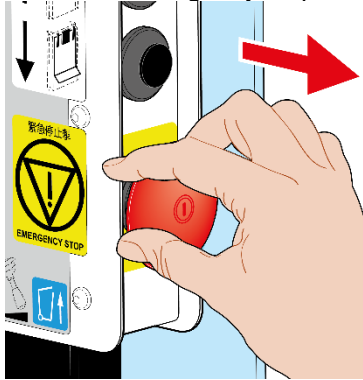


The buttons are positioned in the button control stations on both sides of the bin lift. This action immediately stops the compactor and the loading cycle of the bin lift.

After the red emergency stop button is pressed, the supply of hydraulic oil stops and the electrical circuit is interrupted. The check lights go out. The driver of the refuse collection vehicle is warned by a buzzer in the cabin that the emergency stop button has been pressed.

3.3.1.1 Reset emergency stop button

- 1- Solve the reason for pressing the emergency stop button.
- 2- Reset the emergency stop button and pull it out.



The buzzer in the cabin stops.

You may have to reset the compactor body. In that case consult the body manual for the correct procedure.

- 3- Remove the bin/container from the bin lift system if applicable.
The bin lift system is ready for use.

3.3.1.2 Entrapment

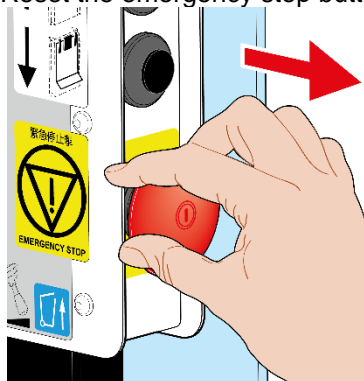
In the event of a dangerous occurrence or if a person has become trapped in the lifting mechanism and consequently the emergency stop button has been pressed.

The system must be reset to allow the lifting chair to be raised or lowered whichever is appropriate to release the person.

An understanding of the resetting procedure of the compactor body will be required of the operators.

In such cases, proceed as follows:

1. Reset the emergency stop button by pulling it out.



The buzzer in the cabin stops.

Resetting of the compactor body may be required, consult the body manual for the correct procedure.

2. Pull or push the joystick to remove the person.

3.4 Warnings and tips

NOTE

Read the operating instructions before you use the bin lift system.



WARNING

Never use the bin lift system as a seat.



CAUTION

When the bin lift system is in operation, do not reach into the lifting system. This may cause a danger of injury

Overview warnings and tips

- It is forbidden to assist the lifting of the bin lift system manually.
- It is forbidden to assist the lifting of the lift system by using extra equipment such as a crane or forklift truck.
- For lifting capacity see chapter 1.2.2
- Remove overweight bins/containers from the bin lift system.
- Do not remove the bin/container before the bin lift has come to a standstill.
- Always approach the bin lift forwards with stretched-out arms, even when removing the bin/container.
- Do not endanger yourself or other road users. Place empty bins/containers where they do not cause any danger to other road users.
- When you are working with the bin lift system do not wear any loose hanging clothing or jewellery.
- Loading is teamwork. Before commencing the run discuss and agree with your colleagues how to act in particular situations such as stopping, driving away, etc.
- Make sure that you are visible to the driver of the refuse collection vehicle when it is reversing.

3.5 Daily checks

Before you start, check the bin lift system for the following points:

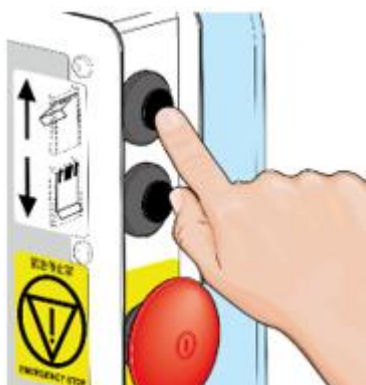
- Check for occurrence of oil loss.
- Check for foreign objects (branches, twigs, plastic bags, etc.) in the bin lift system that could hinder its operation.
- Operation of the controls

Check the operation of all the controls by performing all the possible actions with empty bins/containers:

- Emergency stop buttons
- Catcher bar
- Refuse guide plate open / close
- Manual operation
 - Open / Close buttons of the hopper cover.
 - Lift / Lower handle
 - Lift / lower bin/container acceptance
 - Shaking (keep handle towards you in tilting position).
- Start sensors
- 4-wheel recognition.

3.6 Hopper cover handling

The EuroTrade 2.2 S is equipped with a hopper cover. You control this hopper cover with the two black buttons on the control panel.



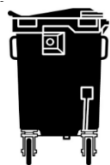
To open the hopper cover push the top black button.

To close the hopper cover push the bottom black button

3.7 Manual loading 2- and 4-wheel bins/containers with the pick-up comb



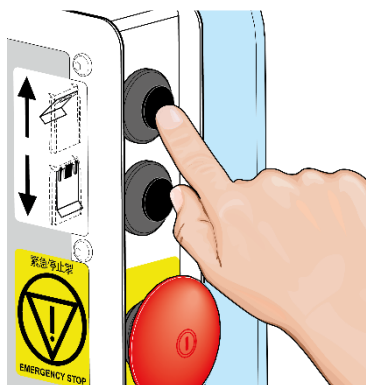
Content 240 litres
According EN 840-1



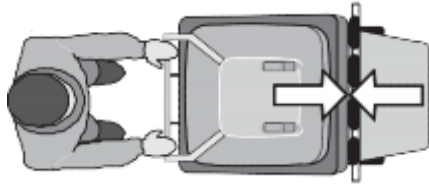
Content 660 litres
According EN 840-2

Manual loading procedure

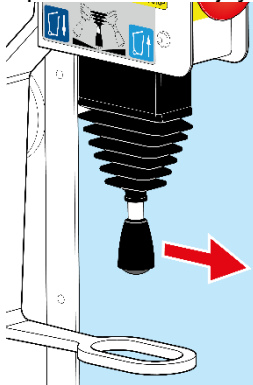
1. Activate the compactor body of the RCV.
2. Push the top black button to open the hopper cover.



3. Roll the bin against and above the pick-up comb at the position of the separation plate.
4. Pull the joystick to lift and empty the bin.



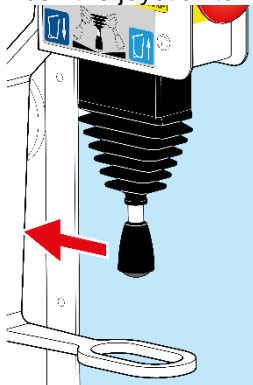
5. Optional: Pull the joystick and keep it in this position to shake the bin.



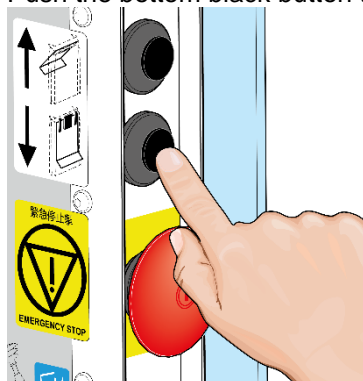
NOTE

Only give an extra shake if there is a need. Shaking takes time and causes extra noise for the surrounding area.

6. Push the joystick to lower the bin.



7. Remove the bin:
 - a. Pull the bin out of the bin lift as soon as the wheels touch the ground.
8. Push the bottom black button to close the hopper cover.

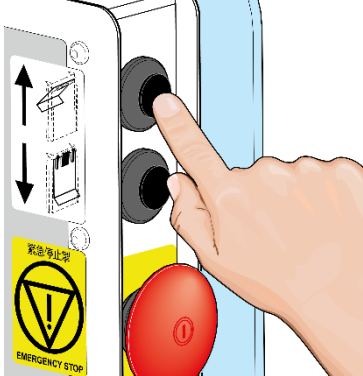


3.8 Bag collection or bulky waste

To throw in bags and/or bulky waste, you must lower the throw-in height. Lower the refuse guide plate to perform this action.

Open and close of refuse guide plate

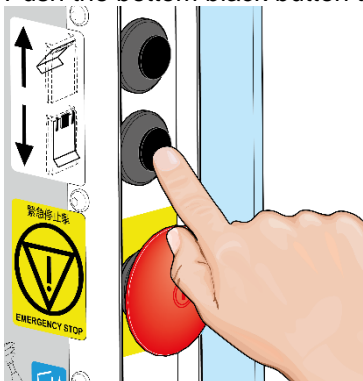
1. Push the top black button on the operation panel to open the hopper cover.



2. Pull the cord and handle simultaneously towards you, to lower the refuse guide plate.



3. Throw in the bulk waste and/or bags.
4. Push the handle to close the refuse guide plate.
5. Push the bottom black button to close the hopper cover.



CAUTION

Throw large heavy objects across the width of the compactor space to prevent damage to the bin lift system.

4. MAINTENANCE AND CLEANING

NOTE

Before you start maintenance, cleaning or repair work, take notice of the points mentioned in paragraph During operation of the bin lift system.

4.1 Daily maintenance

We recommend to clean the bin lift system after each working day.



CAUTION

Before you start to clean, you must switch off the drive of the refuse collection vehicle!



CAUTION

For your own safety, never stand under the chairs during cleaning of the bin lift!



CAUTION

Always wear safety goggles when you clean the bin lift with a high-pressure cleaner.

- Clean the system with a high-pressure cleaner.
- Adhere to the following points:
 - Do not spray directly on to electrical components, control stations or decals!
 - Keep enough distance between the spray lance and the bin lift. (30-40 cm distance from component washing).
 - We strongly discourage the use of pressure cleaners with rotating or pulsating nozzles.
 - After removing grease from moving parts by cleaning the bin lift, refill these points with grease before taking the machine back into service.
- Check the working of the status lights in the control stations.
- Replace the status lights at the slightest malfunctioning.

4.2 Weekly maintenance



CAUTION

Any faults identified must be rectified before the bin lift is put into service.

Print the maintenance table and use the **Check** column for completion.

Maintenance part	Maintenance action	Action overview
Working of the controls	Check the working of all controls by carrying out all possible actions with the bin lift using empty bins/containers	Emergency stop switches
		Manual operation functions
		Shaking functions
Refuse guide plate	Check that the refuse guide plate turns smoothly	
	Check the Vulcolan strip. Replace the strip if it is deformed or cracked.	
	Check the operation of the refuse guide plate switch.	
Sensors	Check the operation of the start sensors	
	Check the 4-wheel recognition sensor.	
Decals	Replace damaged safety and instruction decals immediately. (See chapter 2.2).	
Lubricate bin lift	<p>The bin lift is provided with 9 grease nipples (see fig.).</p> <ol style="list-style-type: none"> Grease nipples (1, 2, 3, 4, 5 and 6). You reach the nipples with the chairs in the lifted position. When you work under de chairs - press the emergency stop button and - support the chairs safely against lowering (hist, props etc.). Remove the red protective caps and clean the grease nipples. Add grease until you can see new grease between the pivot points. Grease both nipples (9) of the refuse guide 	

	<p>plate cylinder axle and the refuse guide plate handle (7 and 8). You reach both from the front.</p> <p>6. Remove the red protective caps and clean the grease nipples.</p> <p>7. Add grease until you can see new grease between the pivot points.</p> <p>Only use qualified acid-free grease types that do not affect the bearings, such as Texaco Multifak EP2 (or equivalent).</p>	
Visual checks	<p>Check:</p> <ul style="list-style-type: none"> - the fixing and condition of rubber stops, - warning edges and - protective screens/windows. 	
	<p>Check if the teeth of the pick-up comb are aligned correctly.</p>	
	<p>Check the bin lift for defective parts (warped, bent or broken).</p>	
	<p>Check for oil leaks. Check the wiring for any damage.</p>	

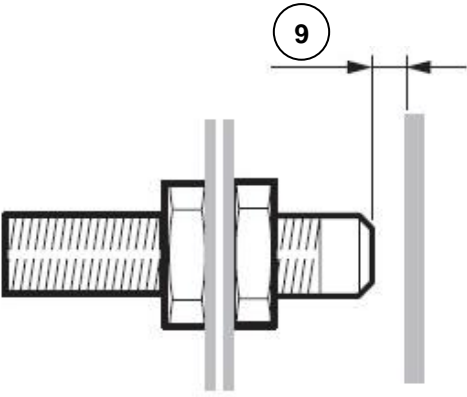
4.3 Six-weekly maintenance



CAUTION

First carry out the weekly maintenance.

Maintenance part	Maintenance check	Overview
<p>Container lock</p>	<p>Check the clamp opening between the pick-up comb (2) and the locking plate (1).</p> <p>This must be done with the lifting chair in the highest position.</p> <p>Measure between the left and right tooth and the locking plate!</p> <p>3 = min. 10 mm max. 16 mm 4 = min. 6 mm max. 8.5 mm 5 = min. 22 mm max. 24 mm 6 = min. 0° max. 18° 7 = min. 20 mm max. 25 mm</p>	
	<p>Correct the clamp opening, use the adjusting bolt (A).</p> <ol style="list-style-type: none"> 1. Make the correction with the lifting chair in the lowest position. 2. Set the lifting chair again in the tipping position. 3. Check the clamp opening once more. 	

Proximity switches	Check the distance (9) M12 min. 0.5 mm max. 1.5 mm M18 min. 1.0 mm max. 4.0 mm	
--------------------	--	--



CAUTION

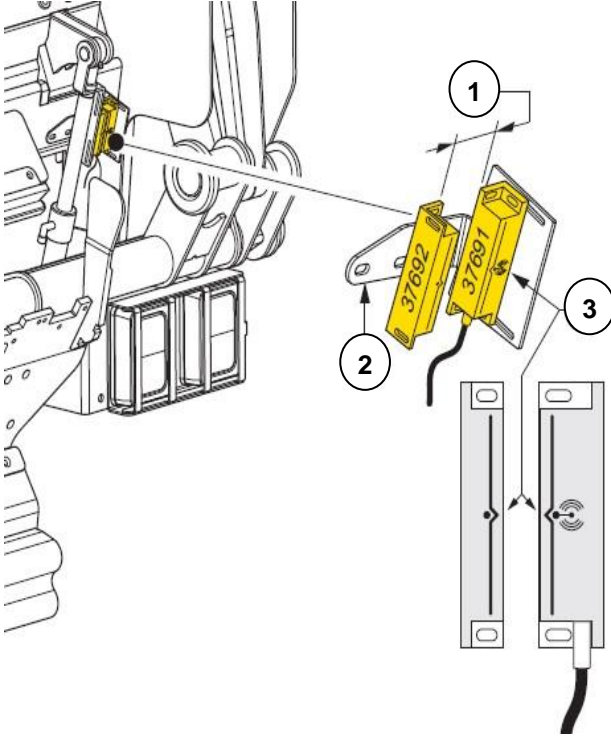
Rectify any identified faults before the bin lift is put into service.

4.4 Annual Maintenance

CAUTION
First carry out the weekly maintenance.

CAUTION
First carry out the 6- weekly maintenance.

Maintenance part	Maintenance check	
Attachment points	<p>Tighten all the bin lift's attachment points, such as:</p> <ul style="list-style-type: none"> • Mounting bolts of the bin lift system to the refuse collection vehicle or adaptation frame (assembly frame). The tightening torque is 200 Nm. • Catcher bar assembly to the bin lift system frame. <p>Check all bolt and nut connections.</p>	
Pick-up teeth	Check the pick-up teeth for wear.	
Cycle time	<p>Check the cycle time of the bin lift (See also section 1.2.21.2).</p> <p>The cycle time is calculated without the tipping position time (dwell time) and depends on the body height, bin/container weight and oil temperature.</p> <p>For the measurements, use an empty 240 litre or a 660 litre container.</p> <p>Start the measurement when the wheels leave the ground. Stop the measurement when the wheels touch the ground again. The tipping position time must be subtracted from the measurement.</p>	
Hydraulic system	<p>Check the working pressure of the hydraulic system.</p> <p>The working pressure is set to 130 bar. The bin lift system is rated for a lifting capacity of no more than 500 kg.</p> <p>Measure the lifting pressure via measuring point M1A (see chapter 6.1). Reading: 130 bar.</p> <p>Measure the lowering pressure at measuring point M2 (see chapter 6.1). Reading: 40 bar</p>	
Hopper cover grease points	<p>Grease the two cylinder points at the L/H upper side of the hopper cover..</p> <ol style="list-style-type: none"> 1. Turn off the vehicle. 2. Remove the L/H side cover by loosening the bolts. <p><i>Use a solid ladder.</i></p> <p><i>Make sure your working area is safe</i></p>	

	<p>from intrusion by others.</p> <ol style="list-style-type: none"> Remove the red protective caps and clean the grease nipples. Add grease until you can see new grease between the pivot points. <p>Only use qualified acid-free grease types that do not affect the bearings, such as Texaco Multifak EP2 (or equivalent).</p>	
<p>Refuse guide plate switch</p>	<p>Check the opening between the transmitter (37692) and receiver (37691).</p> <p>This opening should be between 2 and 5 mm (1).</p> <p>Correct, if need be, by moving the mounting bracket (2) of the receiver slightly.</p> <p>Take note of the alignment markings (3) on the transmitter and receiver during any installation work.</p>	
<p>Hydraulic hoses</p>	<p>Check the production date of the hoses.</p> <p>The hydraulic hoses must be replaced after four years in service. This must be done at the latest six years after the production date (shown on the hose ferrule).</p>	
<p>Electrical wiring</p>	<p>Check the electrical wiring for moisture penetration.</p> <p>Check the electrical connections for moisture penetrations.</p> <p>Check the control stations for moisture penetration</p>	
<p>Position sensor</p>	<p>Calibrate the position sensor</p> <ol style="list-style-type: none"> Press the emergency stop button. Press the two black buttons simultaneously on the control panel. Keep the two black buttons pressed for five seconds. The green indicator LED on the hydraulic box lights up and starts to blink. 	

- | | |
|--|---|
| | <ol style="list-style-type: none">5. Pull out the emergency stop button.
Resetting of the compactor body may be required, consult the body manual for the correct procedure.6. Pull the joystick to lift the pick-up comb.7. Push the joystick to lower the pick-up comb.8. Do this at least once. |
|--|---|



CAUTION

Any faults identified must be rectified before the bin lift is put into service.

4.5 Opening the hydraulic system

The EuroTRADE bin lift has a special master/slave synchronisation system. That means that the two lift cylinders are interconnected for perfect synchronisation.

When you open the hydraulic system – for example, to replace the hoses – you must give serious consideration to the following:

Try to lose as little oil as possible while replacing the components.

- Support the bin lift and make sure that the bin lift does not move during the work.
- The cylinders in the EuroTRADE bin lift are fitted with special internal automatic levelling valves. These valves can remove any residual air if necessary. For this keep the bin lift in the upper position for at least two minutes under full working pressure.
 1. Put the bin lift temporarily into the 'Position sensor' calibration mode (See:4.7)
 2. Pull the joystick and keep it in lift position for two minutes.

After carrying out your work:

1. Check that the system is synchronised and in alignment before putting it back into operation.
2. Check whether or not containers can be presented again.

4.6 Replacing the joystick

If you get error message 80 or 81 you must replace the joystick.



Joystick replacement

1. Remove the hood
 - a. Remove the bolts.
 - b. Pull the hood towards you.
2. Remove the two bolts on either side of the joystick
3. Pull the non-functioning joystick out.
4. Place the new joystick.
5. Fasten the two bolts on either side of the joystick.

6. Place the hood partly over the joystick.
7. Fasten the bolts.

4.7 Calibration position sensor

Follow the steps to calibrate the position sensor manually. Then calibrate the speed (proportion valve) as described in the next section.

1. Press the emergency stop button.
2. Press the black push buttons simultaneously.
3. Keep the buttons pressed for five seconds.
The green indicator LED lights up and blinks.
4. Pull out the emergency stop button.
5. Use the joystick to tilt the pick-up comb maximum.
6. Use the joystick to lower the pick-up comb maximum.
7. Do this at least once

The position sensor is now calibrated.

4.8 Calibration speed (proportional valve)

NOTE

Calibrate the position sensor first.

1. Press the emergency stop button.
2. Press the black push buttons simultaneously.
3. Keep them pressed for five seconds.
The green indicator LED starts to flash.
4. Pull out the emergency stop button.
5. Press the top black button to start the calibration.
The green LED now flashes slower.
The pick-up comb goes up and down about ten times. At first slowly, but then slightly faster. This may take some time.
When the calibration is completed the LED stops flashing. The bin lift automatically leaves the calibration mode.
6. Check the operation of the bin lift.

The calibration is successful.

4.9 Maintenance schedule

Maintenance schedule								
Bin lift type: EuroTRADE					Date:	Page 1 of 2		
					Machine number:			Description
	Daily	Weekly	6-weekly	Annual				
Jet cleaning	X	X	X	X	Use a high pressure cleaner to spray clean the bin lift. Do not direct the jet at electrical components or decals.	4.1		
Controls	-	X	X	X	Check the functioning by carrying out all possible procedures using empty bins/containers.	4.2		
Refuse guide plate	-	X	X	X	Check the operation and locking. Check the Vulcolan strip for deformation or cracks. Check the operation of the switch.	--		
Sensors	-	X	X	X	Check the operation of the start sensors and of the 4-wheel recognition sensor.	--		
Decals	-	X	X	X	Replace damaged instruction and safety decals immediately.	2.2		
Bin security switch / mechanical pedal arm	-	X	X	X	Check the springs and operation of the bin security switches and mechanical pedal arms.	4.2		
Lubrication	-	X	X	X	Individual greasing points; apply grease (≥ 1 cc)	4.2		
Teeth of pick-up comb	-	X	X	X	Check that the teeth of the pick-up comb are aligned.	--		
Rubbers / warning edges / protective screens and windows	-	X	X	X	Check the fixing and condition of the bump stops, warning edges and protective screens / windows.	--		
Faults	-	X	X	X	Check the bin lift for any faulty or damaged parts.	--		
Oil leak	-	X	X	X	Check that there are no oil leaks.	--		
Wiring	-	X	X	X	Check the wiring for damage.	--		
Container locking	-	-	X	X	Check the clamp gap between the pick-up comb and the clamping plate.			
Proximity switches	-	-	X	X	Check the setting of the proximity switches.			
Fixing points	-	-	-	X	Check security of all fixing points of the bin lift and check all bolt / nut connections.	---		
Pick-up teeth	-	-	-	X	Check the pick-up teeth for wear.	--		
Speed of lifting	-	-	-	X	Check the cycle time of the bin lift	1.2		
Pressure hydraulic system	-	-	-	X	Check the operating pressure of the hydraulic system.	1.2		

Rectify identified faults before the bin lift is put into service.

Maintenance schedule (continued)							
Bin lift type: EuroTRADE					Date:		Page 2 of 2
					Machine number:		
	Daily	Weekly	6-weekly	Annual	Description	Additional information: see paragraph	Carried out
Refuse guide plate switch	-	-	-	X	Check the opening between transmitter (37692) and receiver (37691).	4.4	
Electrical	-	-	-	X	Check that no moisture has entered the electrical wiring, electrical connections and control stations.	--	
Hydraulic hoses	-	-	-	X	Check the production date of the hydraulic hoses and replace if necessary.	4.4	
Calibration position sensor	-	-	-	X	Calibration of the position sensor manually.	4.7	
Faults identified must be rectified before the bin lift is put into service!							

4.10 Trouble shooting

Error	Check
There is not enough lifting force.	Check the oil supply from the compactor body Check the working pressure.
Bin lift slows down.	Check the oil supply from the compactor body.
Oil temperature exceeds 75°C.	Check the maximum oil supply from the compactor body.
Bin lift runs askew.	Check cylinders and hoses for internal and external leakage. Perform a position sensor calibration. Hold the joystick in Lift position for at least two minutes; the cylinders are hydraulically levelled (see also Section 4.7).
The bin lift does not go fully up or down.	Check the position sensor above the R/H lift cylinder. Calibrate the position sensor (see also 4.4).
Bin lift stops halfway through lifting.	Check that the refuse guide plate is closed properly and that the refuse guide plate switch is active (see also 4.7).
Bin lift does not move at all.	Check the power supply. Check oil supply. Is the refuse guide plate closed? Check the emergency stop on the bin lift and body.
Bin lift releases bins/containers.	Check that the container clamp mechanism is free of refuse or other obstructions Check that the container clamp mechanism is correctly adjusted (see also 4.3).

4.10.1 Alarm messages

The Eurotrade 2.2 S is equipped with a green lamp to report error codes and status codes. You find this lamp at the bottom of the hydraulic box.



Reading the alarm

The flashing of the green control lamp notifies the operator about an alarm. Count the flashes to deduct the alarm number.

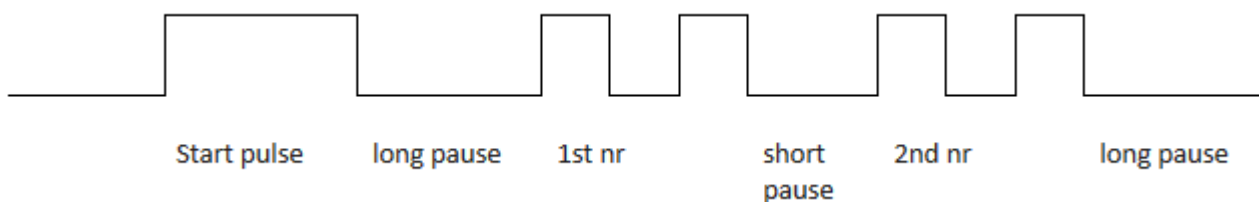
- The control lamp starts with a start pulse.
- After this pulse a *two seconds* long pause follows.
- Then the green alarm message flashes.
 - If the alarm number is two digits it splits up into two separate numbers.
 - After the first number a short pause (0.7 seconds) follows.
 - Then the second number flashes.

NOTE

Be aware that a 0 is signalled with 10 flashes.

In case of multiple alarms, a subsequent alarm only flashes after you have solved the previous one.

The alarm repeats itself as:



Long pause = 2 sec

Short pause = 0.7 sec

Examples:

45 flashes as follows:

Start pulse – long pause – 4 flashes – short pause – 5 flashes --- repeat until problem is solved

20 flashes as follows:

Start pulse – long pause – 2 flashes – short pause – 10 flashes --- repeat until problem is solved.

Alarm messages

01: EMERGENCY STOP	Emergency stop signal is active.	<i>Check emergency stop buttons on the bin lift and refuse body.</i>
02: DRIVE HEIGHT SIGNAL	Truck in reverse or first gear.	<i>Signal for lifting to drive height is active. Put gear in neutral position to start emptying bins.</i>
03: NO UPWARD CHAIR MOVEMENT	No upward movement.	<i>(Check timer ran out).</i>
04: NO DOWNWARD CHAIR MOVEMENT	No downward movement.	<i>(Check timer ran out).</i>
05: CONTROL STATION ERROR LH	Error if one or more of the following buttons are activated / pressed during start up or after emergency stop start up. Both button control stations are checked. - Up button - Down button	<i>Make sure no button is pressed during start-up or during the release of the emergency stop buttons. Check the button stations for water ingress. Check cables and buttons for damage.</i>
06: CONTROL STATION ERROR RH	Error if one or more of the following buttons are activated / pressed during start up or after emergency stop start up. Both button control stations are checked. - Up button - Down button	<i>Make sure no button is pressed during start-up or during the release of the emergency stop buttons. Check the button stations for water ingress. Check cables and buttons for damage.</i>
08: FOOTBOARD OCCUPIED	Footboard is occupied and this is an unsafe situation. Bin lift is stopped.	<i>Do not stand on the footboards when you operate</i>
11: HOPPER PLATE SWITCH	The hopper plate door is open, the bin lift is ready for hand loading of bags only. Hopper plate line 1 or hopper plate line 2 is low, this error is generated as sign the hopper plate door is not closed.	<i>Close the hopper plate door. If this message is displayed even with the hopper plate door closed, check the functionality and alignment from the hopper plate door sensor.</i>
14: RCV NOT READY	RCV must be set to ready	<i>You cannot start bin lifting when RCH is not ready.</i>
15: HOPPER PLATE SENSOR ERROR	Hopper plate does not function correctly	<i>Check for defect wiring or a defect refuse guide plate sensor</i>
16: FOOTBOARD NOT DOWN	Footboard not in DOWN position	<i>Set the footboard in the DOWN position</i>
25: WAIT FOR PACKER	The RCV and bin lift are both equipped with an anti-collision system, this prevents the compactor to pack / collide with the bin or bin lids when a trade bin is inside the compacting area. This message will be on the display when the compactor is moving down towards the bin lift, or is stopped in a possible collision situation. The bin lift will stop lifting / tipping in the bin until the compacting system has reported to be out of the collision zone.	<i>Start the compactor. Make sure the compacting mechanism is out of the collision zone before emptying a trade bin. Check the signals from the refuse body to the compactor.</i>

27: DRIVE GEAR ACTIVE	This message appears when a container is offered and the vehicle is not in neutral gear.	<i>Shifting gear in neutral releases the bin lift.</i>
29: POSITION SENSOR FAULT	This error can be generated by more than one error and is a generally generated position sensor error for the L/H lifting chair. When the bin is removed the error will be reset.	<p><i>Check for mechanical axial and radial play from the position sensors or adjoined bearings.</i></p> <p><i>Check the position sensor(s).</i></p> <p><i>Check the cables from the position sensors.</i></p> <p><i>Check the analogue values from the position sensors (analogue input 00.0 and 00.1 always higher than 100, lower than 900).</i></p> <p><i>Recalibrate the position sensors.</i></p>
52: LH N11 4W DETECT SWITCH ON	L/H N11 active failure.	<p><i>Container stands too long in front of the sensor.</i></p> <p><i>Remove container</i></p> <p><i>or</i></p> <p><i>in case no container present, check sensor and wiring left N11 sensor</i></p>
53: RH N11 4W DETECT SWITCH ON	R/H N11 active failure.	<p><i>Container stands too long in front of the sensor.</i></p> <p><i>Remove container</i></p> <p><i>or</i></p> <p><i>in case no container present, check sensor and wiring of the R/H N11 sensor</i></p>
60: CAN BUS ERROR	<p>General bin lift CAN bus error.</p> <p>A CAN bus error can be caused by the following failures:</p> <p>Termination of CAN bus not OK</p> <p>A defect CAN cable.</p> <p>One or more CAN devices are broken or cannot be found by the controller.</p> <p>Wrong bit rate or CAN settings (at installation only).</p> <p>If a specific CAN device is not found by the controller this can be displayed behind the alarm message as well.</p>	<p><i>Check 120Ω line resistance. Check all CAN related cables</i></p> <p><i>Please contact your local Terberg dealer.</i></p>
65: SHUTTER DOOR NOT OPEN FAILURE	Shutter door cannot open	<i>Check for obtrusions, dirt, possibly wiring</i>
66: SHUTTER DOOR TIMEOUT FAILURE	Shutter door not opened within set time frame	<i>Check the shutter open sensor.</i>
73: LIST STOP L/H ID	The container offered on the L/H side of the bin lift has a transponder that is STOP listed.	<p><i>Rfid not valid.</i></p> <p><i>Remove the L/H container</i></p>
74: LIST STOP R/H ID	The container offered on the R/H side of the bin lift has a transponder that is STOP listed.	<p><i>Rfid not valid.</i></p> <p><i>Remove the R/H container</i></p>
75: LIST STOP TRADE ID	The trade waste container offered to the bin lift has a transponder that is STOP listed.	<p><i>Rfid not valid.</i></p> <p><i>Remove industrial container</i></p>
78: JOYSTICK LH POSITION FAILURE	Joystick in wrong position	<p><i>Put joystick in neutral position</i></p> <p><i>Reset emergency button (See paragraph 3.3.1)</i></p>
79: : JOYSTICK RH POSITION FAILURE	Joystick in wrong position	<p><i>Put joystick in neutral position</i></p> <p><i>Reset emergency button (See paragraph 3.3.1)</i></p>

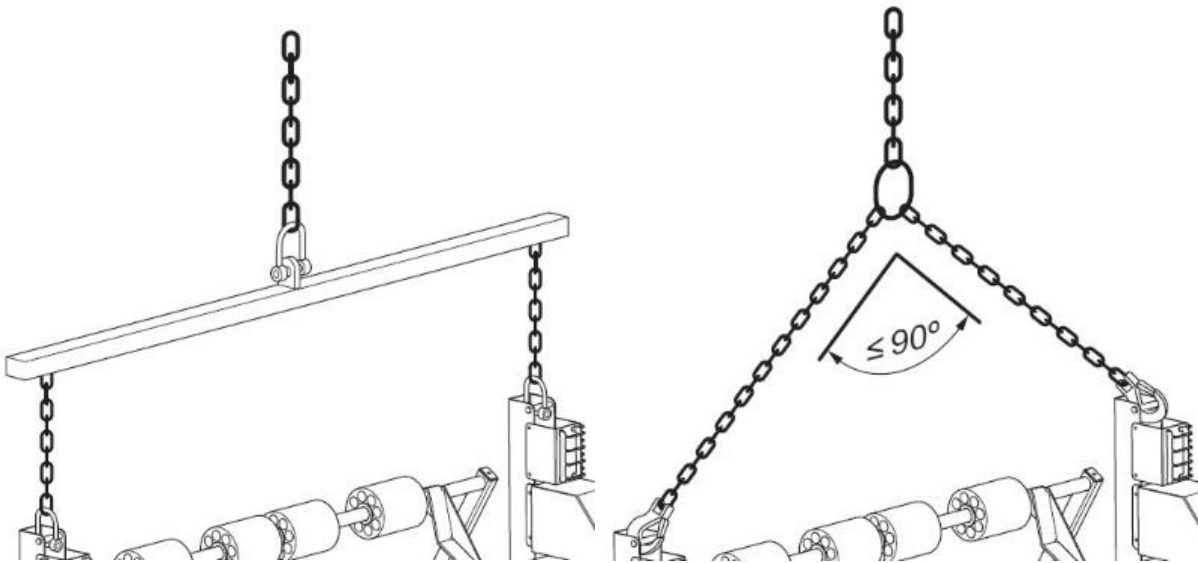
80: JOYSTICK LH REDUNDANT FAILURE	Replace joystick	See section 4.6
81: JOYSTICK RH REDUNDANT FAILURE	Replace joystick	See section 4.6
84: SERVICE REQUIRED	For electric bin lifts only: Service interval date reached.	<i>The bin lift has reached its service interval date and requires maintenance. This message will start to appear just prior to the date, if the maintenance is not done within 6 months after the maintenance date the bin lift will go into "limp" mode to prevent possible damage. Please contact your local Terberg dealer for more details.</i>

5. DECOMMISSIONING (disposal)

1. Dismantle the bin lift from the refuse collection vehicle.
2. Place it horizontally.

Bear in mind the centre of gravity of the bin lift when lifting with a fork lift truck or hoist
For information regarding the weight, see paragraph 1.2.

3. Use a hoisting gantry with a minimum lifting capacity of 1000 kg and a hoist beam or make use of a double chain sling.
4. Use the lifting points present for hoisting the bin lift.



5. Dismount all springs that are mounted with pre-tensioning.
6. Drain off the hydraulic oil.
7. Dispose of the various materials in accordance with the current local (legal) provisions.



WARNING

Always use personal protection equipment to avoid contact with the skin and eyes.



CAUTION

Use collecting trays / absorbents to avoid polluting the environment.

6. APPENDICES

6.1 Hydraulic connections and components

The bin lift uses the hydraulic provisions of the compactor body. Make sure that there is sufficient clean oil in the hydraulic system.

For topping up and the viscosity of the hydraulic oil as well as the oil change intervals, see the user manual of the body manufacturer.



CAUTION

Terberg Machines cannot be held liable for damage that occurs to the bin lift system as a consequence of using dirty oil.

All forms of warranty lapse if it is found that the set pressures and flow rates have been changed.

For trouble-free operation of the bin lift system, the hydraulic system of the refuse collection vehicle must have an oil flow of between 40 and 60 litres per minute.

The minimum pressure must be 200 bar and the maximum 250 bar. Maximum return pressure 2 bar (at an oil flow of 70 litres per minute).

Check that there are no leaks when the system is working. Solve any small leaks by tightening up the leaking coupling.

It is forbidden to change pressure settings and flow speeds. These have been set by the manufacturer. Do not break fitted seals.



WARNING

Always use personal protection equipment to avoid contact with the skin and eyes.



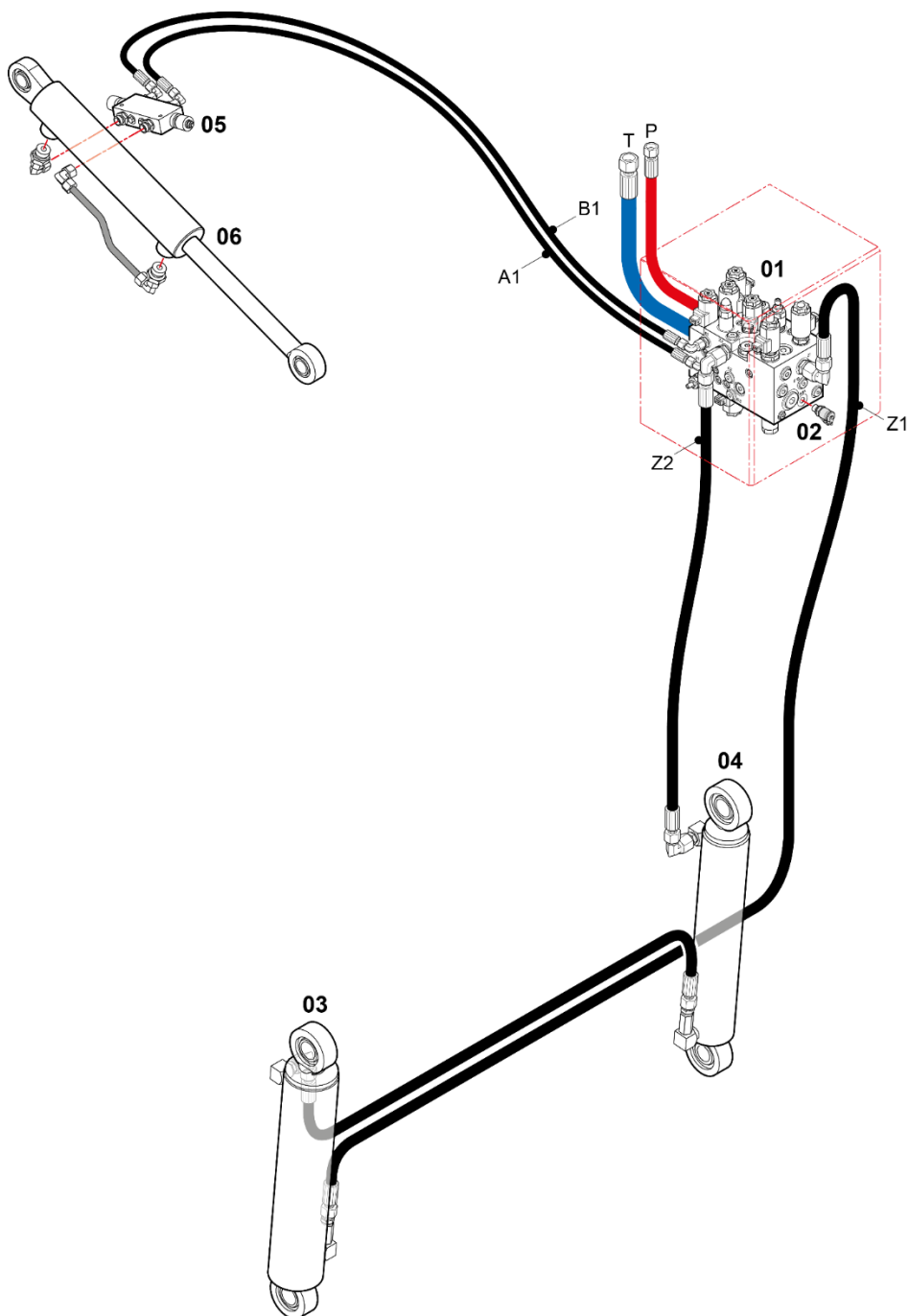
CAUTION

Use collecting trays / absorbents to avoid polluting the environment.

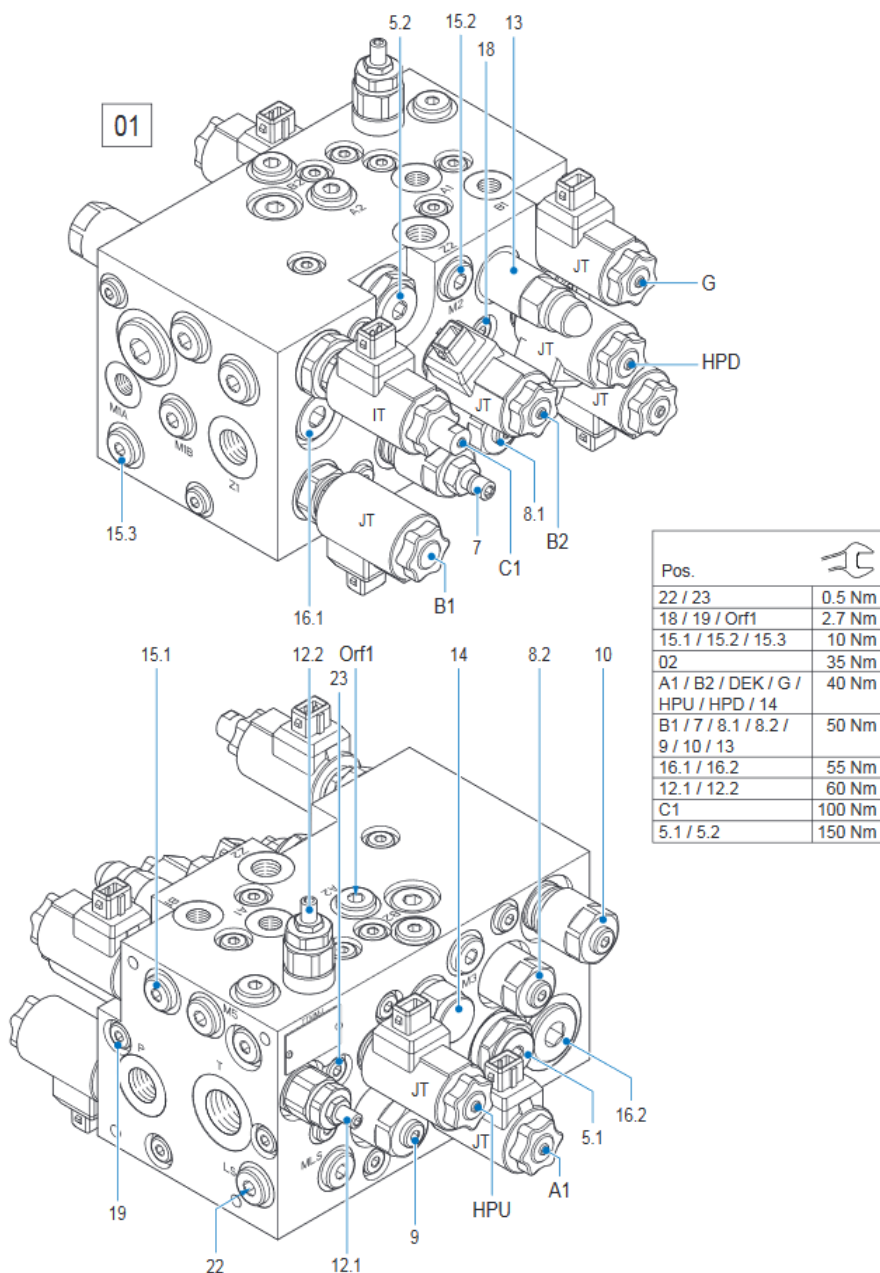
The bin lift can optionally be prepared for a vehicle with a closed hydraulics system with an adjustable 'Load Sense' pump control.

Operation

The optional 'Load Sense' pump control on the bin lift will request the pump flow required by the controllable pump and send this to the bin lift.



- 01 Hydraulic block (417810)
- 02 Test nipple M16 (22645)
- 03 Lifting cylinder master (417753)
- 04 Lifting cylinder slave (38825)
- 05 Valve balance (53155)
- 06 Cylinder hopper / tailgate cover (13044)



01 Hydraulic block complete (417810)
HK configuration;
 A1 Valve 4/2 'UP'
 B1 Valve 4/2 'UP'
 B2 Valve 2/2 'DOWN'
 C1 Flow adjustment valve
 G Valve 4/2
 HPU Hopper/tailgate cover OPEN
 HPD Hopper/tailgate cover CLOSED
 Orf1 Flow limiter 1mm
 JT Coil 24 Volt
 IT Coil 12 Volt

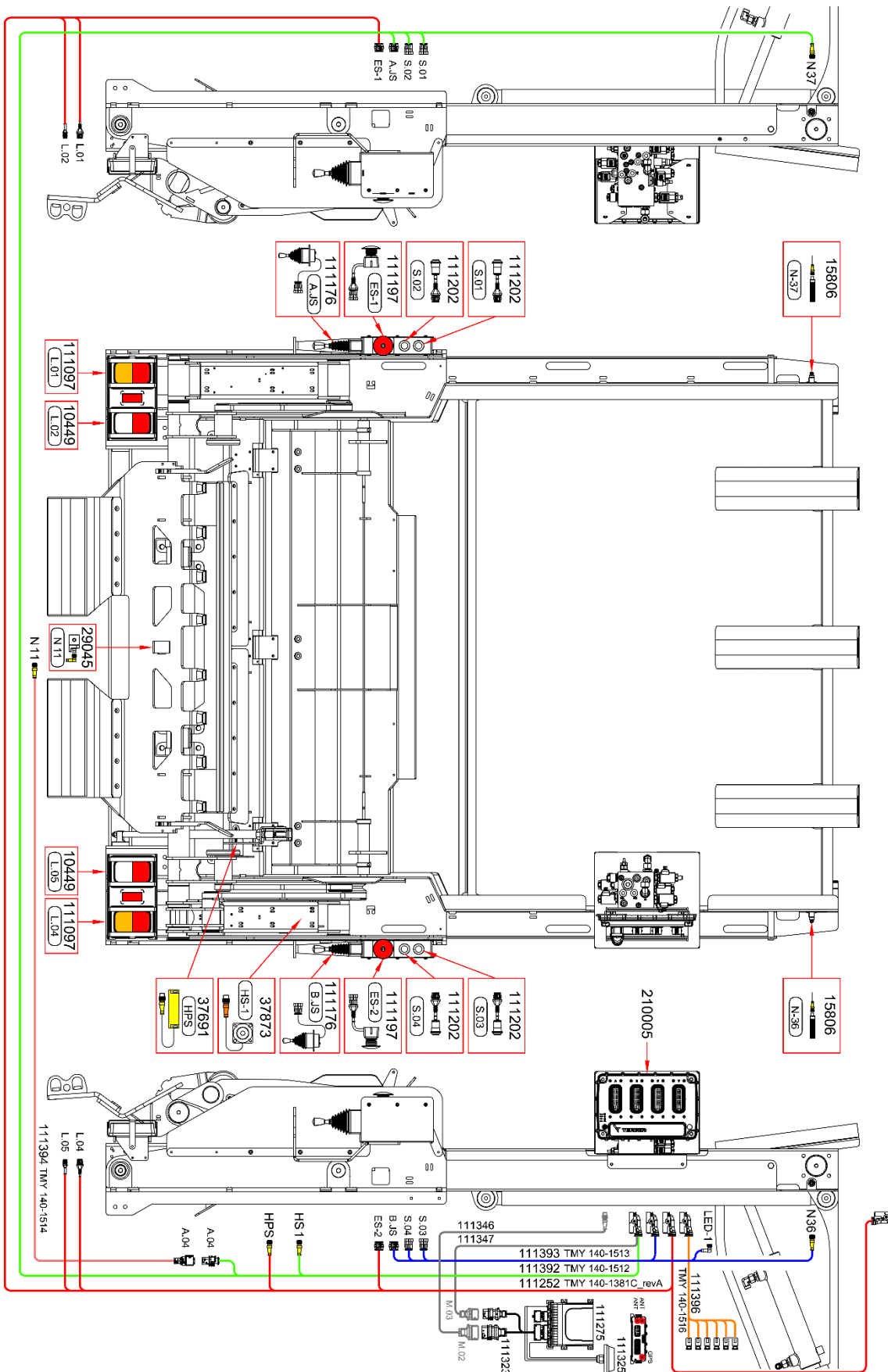
01	Hydraulic block complete (417810)	
01-1	A1	Valve 4/2 'UP'
01-2	B1	Valve 4/2 'UP'
01-3	B2	Valve 2/2 'DOWN'
01-4	C1	Flow adjustment valve
01-5	DEK	Valve container stop
01-6	G	Valve 4/2
01-7	HP1	Valve hopper plate 'UP'

01-8	HP2	Valve hopper plate 'DOWN'
01-9	Orf1	Flow limiter 1.3 mm
01-10	Orf2	Flow limiter 1.3 mm
01-11	JT	Coil 24 Volt
01-12	IT	Coil 12 Volt

Position	Tightening torque
22 / 23	0.5 Nm
18 / 19 / 01-9 / 01-10	2.7 Nm
15.1 / 15.2 / 15.3	10 Nm
02	35 Nm
01-1 / 01-3 / 01-5 / 01-6 / 01-7 / 01-8 / 14	40 Nm
01-2 / 7 / 8.1 / 8.2 / 9 / 10 / 13	50 Nm
16.1 / 16.2	55 Nm
12.1 / 12.2	60 Nm
01-4	100 Nm
5.1 / 5.2	150 Nm

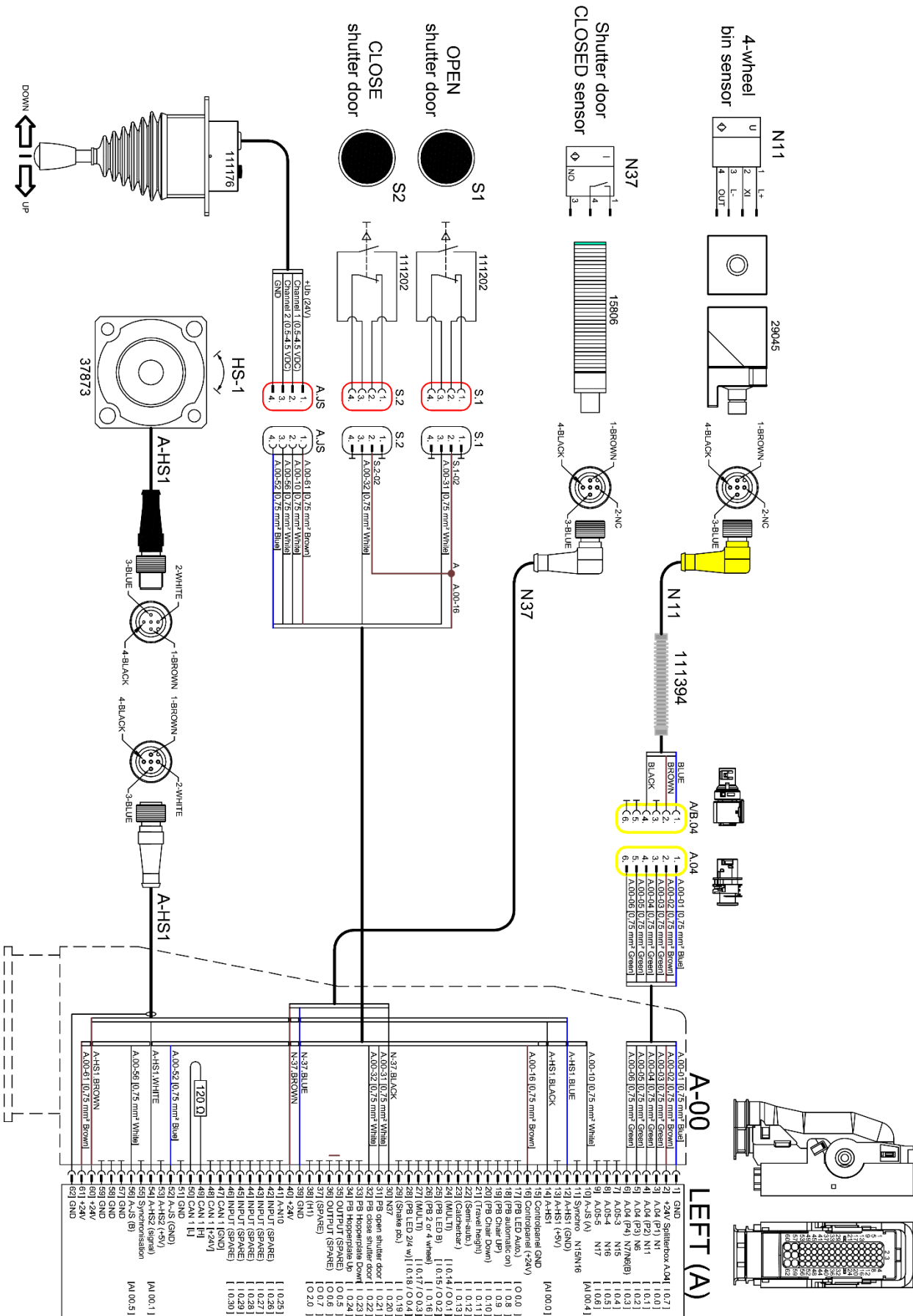
Valve open diagram (only to be used if the electrical system works properly)	A1	B1	B2	C1	HPU	HPD	DEK1	G
Lifting chair UP	+	-	-	+	-	-		-
Lifting chair DOWN	-	+	+	+	-	-		-
Hopper / hopper cover LIFT	-	-	-	-	+	-		+
Hopper / hopper cover DOWN	-	-	-	-	-	+		+

6.2 Electrical connections and components

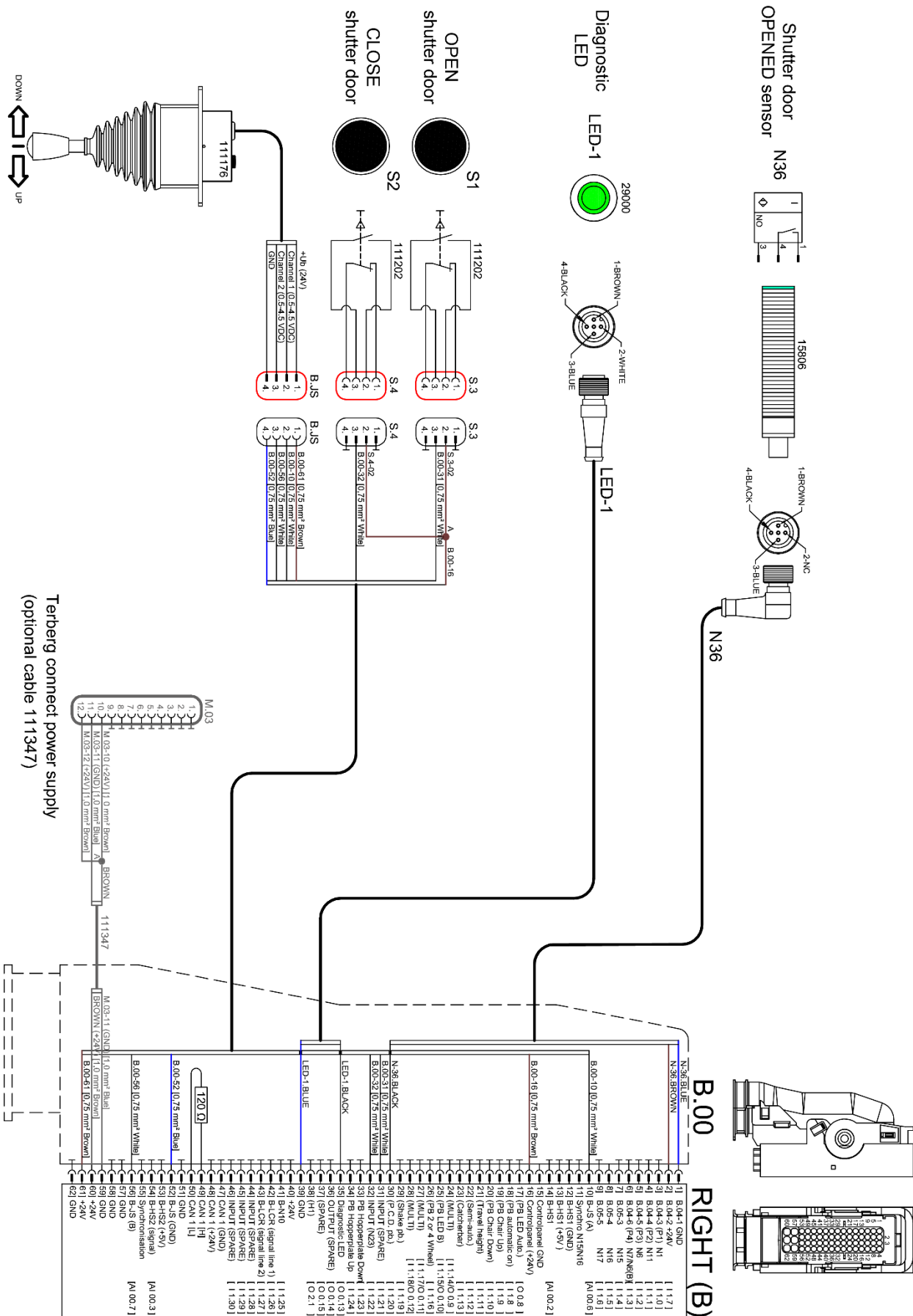


		Qty	Description
	10449	2	Light LED: 3. Reversing light, 4. Fog light
	111097	2	Light LED Reverse light with load
	111176	2	Joystick
	111197	2	Push button switch Emergency stop
	111202	4	Push button black
	111236	4	Light LED: Flash light
	111263	2	Splitter box 4-plug in P&P
	111252	1	Cable harness "C-D"
	111265	2	Push button/indicator: Semi-automatic bin/container operation
	111266	2	Push button/indicator: Container stop/catcher bar operation
	111275	1	Terberg Connect Module V1
	111323	1	Cable harness adapter for 111275
	111325	1	Terberg Connect GPS antenna
	111330	1	RFID Module
	111331	1	<i>Option</i> - RFID stainless steel antenna - Tectus
	111346	1	Cable harness
	111347	1	Cable harness
	111392	1	Cable harness A
	111393	1	Cable harness B
	111394	1	- N11 cable A.04
	111396	1	- Cable harness V
	15806	2	Sensor M18 Inductive e1
	210005	1	Diagnostic System V5
HPS	37691	1	Switch refuse guide plate (hopper plate)
HS-1	37873	1	Angle transducer complete
N11	29045	1	Sensor 4-wheel detection

6.2.1 Electrical connections and components – Cable harness A

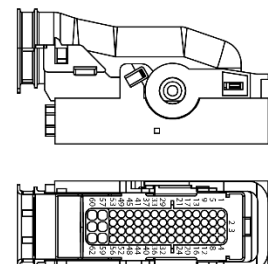
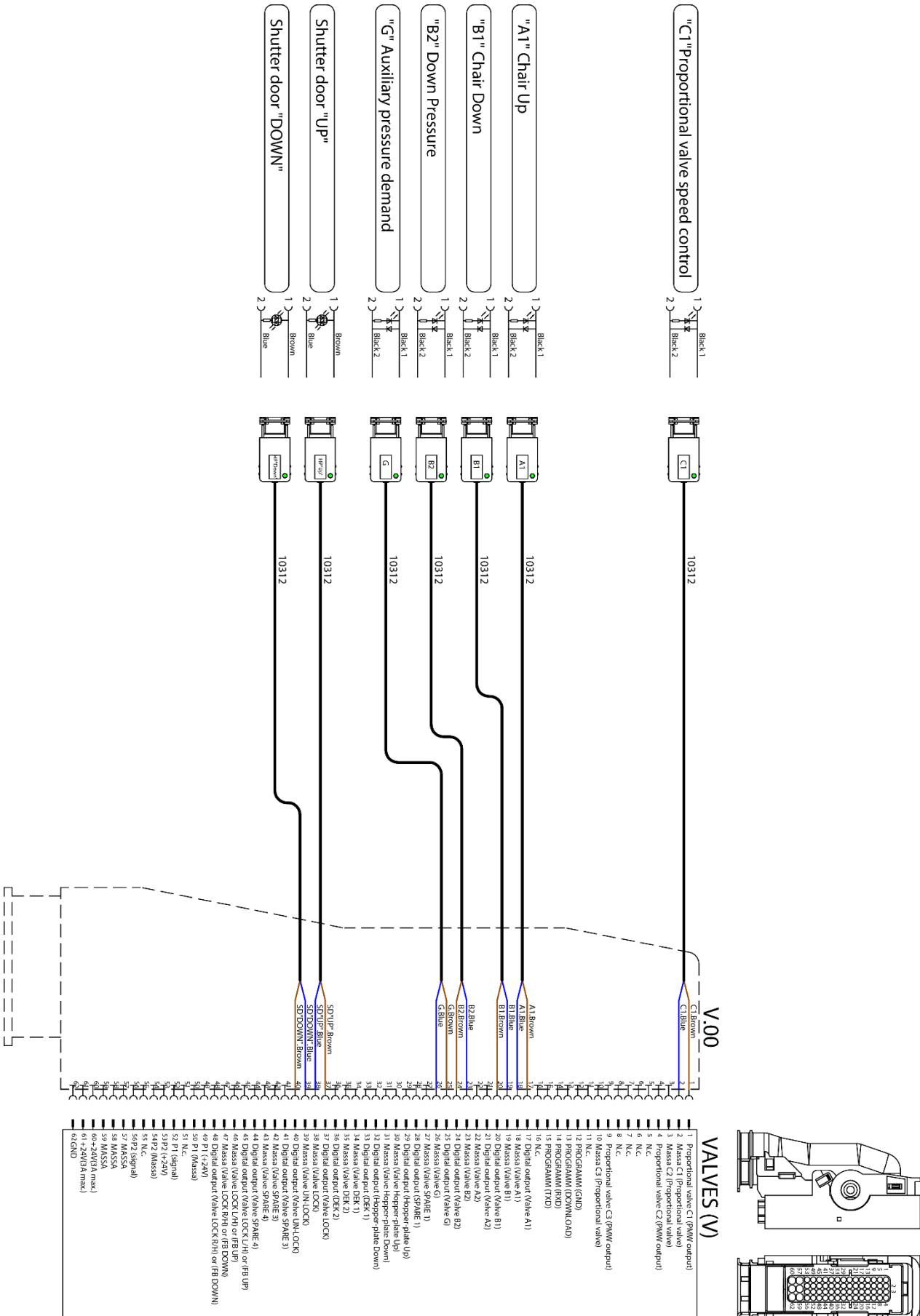


6.2.2 Electrical connections and components – Cable harness B



Terberg connect power supply (optional cable 111347)

6.2.4 Electrical connections and components – Cable harness V



6.3 Used Inputs and Outputs

6.3.1 Used DIGITAL Inputs

Input	Multi i/o board I/O Safety module 3
I2[0]	N1 - Cycle start sensor
I2[1]	N11 - Trade (4-wheel) recognition switch
I2[2]	N6 - Container switch
I2[3]	N7 - Pickup arm folded onto chair
I4[4]	N37 – Hopper cover closed
I4[5]	Push button – open hopper cover
I4[6]	Push button – close hopper cover

6.3.2 Used ANALOGUE Inputs

Input	I/O Safety module 3
AI 00.0	A-HS1
AI 00.1	A-HS2 (signal)
AI 00.4	L/H joystick channel 1
AI 00.5	L/H joystick channel 2
AI 00.6	R/H joystick channel 1
AI 00.7	R/H joystick channel 2

Input	Multi i/o board I/O Safety module 3
I8[4]	N36 – Hopper cover open
I8[5]	Push button – open hopper cover
I8[6]	Push button – close hopper cover
I10[0]	RCV - Vehicle is in reverse gear
I10[1]	RCV - Vehicle system ready
I10[2]	RCV - Vehicle in neutral gear / less than 6 kmph
I10[3]	RCV - Footboard safe - NOT occupied
I11[0]	RCV - Vehicle emergency stop
I11[1]	RCV - Packer interlock signal
I11[3]	Spare
I11[4]	Spare
I11[5]	ID - Ident stop L/H
I11[6]	ID - Ident stop R/H
I11[7]	ID/CNT - Multi function in/out 3
I12[0]	Hopper plate switch - Signal line 1
I12[1]	Hopper plate switch - Signal line 2
I12[2]	Spare
I12[3]	ID/CNT - Multi function in/out 4
I12[4]	Spare

6.3.3 Used DIGITAL Outputs

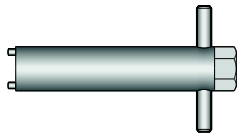

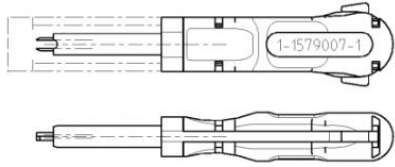
Output	Multi i/o board I/O Safety module 3
O3[5]	Diagnostic LED
O4[1]	RCV - Container counter pulse
O4[2]	RCV - Hydraulic oil request
O4[3]	RCV - Start compaction cycle
O4[4]	RCV - Lifting chair low position
O4[6]	RCV - #1 Safety distance OK
O5[0]	RCV - Stop packer downward movement
O5[5]	RCV - #1 Automatic compaction cycle OK
O6[1]	ID/CNT - Multi function out 0
O6[2]	ID/CNT - Multi function out 1
O6[3]	ID/CNT - Multi function out 2
O6[4]	ID - Container present signal L/H
O6[5]	ID - Container present signal R/H
O6[6]	ID - Container emptied / half height signal L/H
O6[7]	ID - Container emptied / half height signal R/H
O7[0]	ID - Trade (4-wheel) mode active
O7[1]	ID/CNT - Multi function in/out 3
O7[4]	ID/CNT - Multi function in/out 4
O7[5]	Spare
O7[6]	Spare

Output	Multi i/o board I/O Safety module 3
O8[0]	Valve A1 - Chair up
O8[1]	Valve B1 - Chair down
O8[3]	Valve B2 - Down pressure
O8[4]	Valve G - Auxiliary pressure demand
O9[2]	Valve - Hopper cover open
O9[3]	Valve - Hopper cover close
O10[2]	RCV - #2 Safety distance OK
O10[3]	RCV - #2 Automatic compaction cycle OK

6.3.4 Used ANALOGUE Outputs

Output	I/O Safety module 3 PWM
AO0[0]	PWM output control Valve C1
AO0[1]	PWM1 output control Con V (grey) Pin 4
AO0[2]	PWM3 output control Con V (grey) Pin 9

6.4 Special tools

For hydraulic block 417810	
<p>37841 Pin spanner M06 for disassembly of check valve J</p> <p>37840 Pin spanner M08 for disassembly of check valve E</p> <p>417769 Pin spanner M10 for disassembly of check valve F1 and E1</p>	
<p>37857 Pipe wrench, key width 24mm</p> <p>37858 Pipe wrench, key width 27mm</p>	
For the wiring harnesses	
<p>10243 Extraction tool for MCP 1.5k contacts</p>	
<p>26733 Testbox P&P</p>	