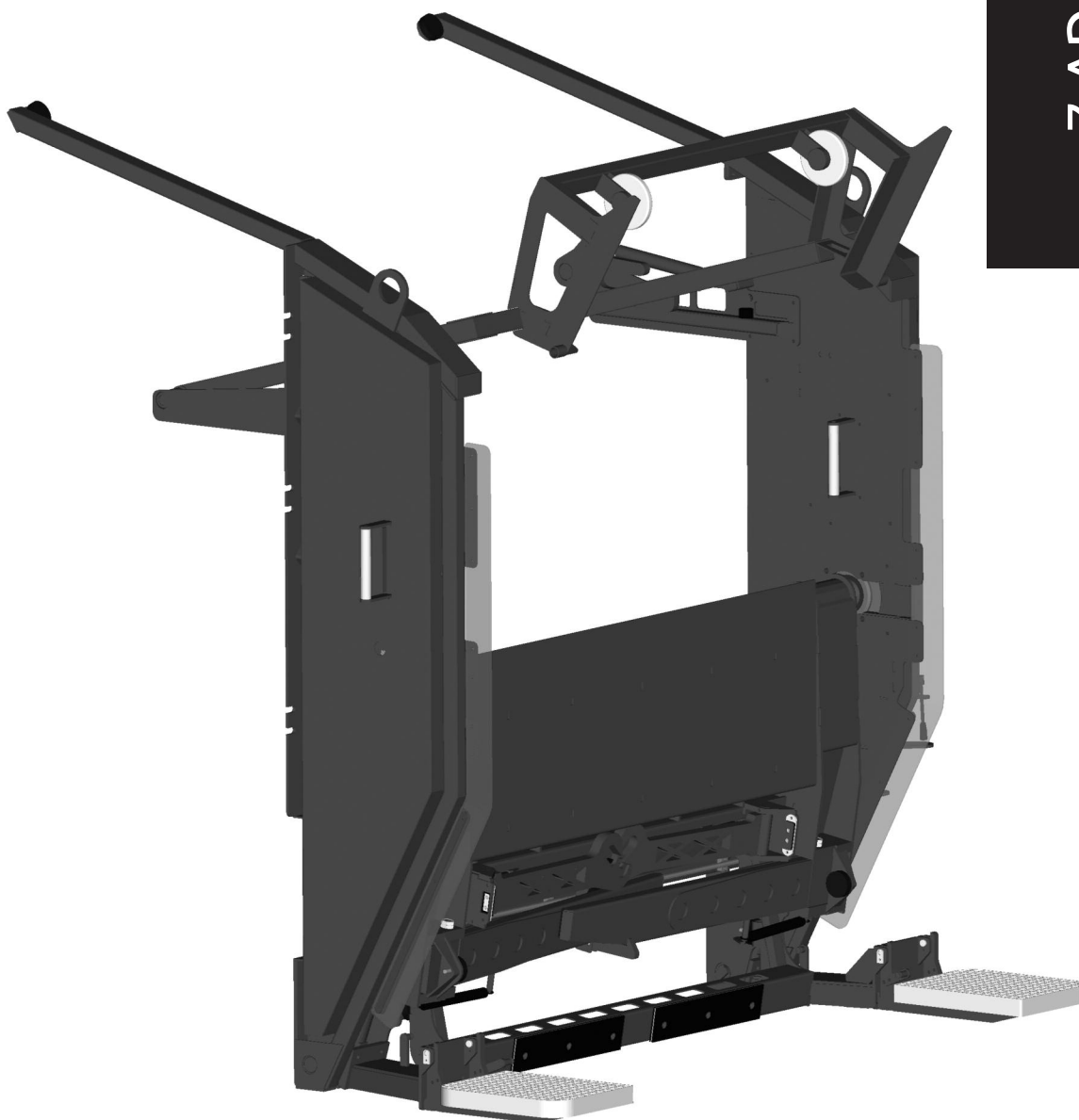


TGV-2



 **TERBERG**
MACHINES
A TERBERG ROSROCA COMPANY

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The original Dutch version (article code 37700) can be obtained from Terberg. Please send a mail to: info@terbergmachines.nl

Baronieweg 23, 3403 NL IJsselstein
The Netherlands
Telephone: (+31) 30 2100 600
Telefax: (+31) 30 2100 610
Homepage: www.terbergmachines.nl
E-mail: info@terbergmachines.nl

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Foreword

This user manual provides information about the operation and maintenance of the **TGV-2** bin lift system.

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

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 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.

Guarantee

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

Operator requirements

- The bin lift system may only be operated by persons who are familiar with the operation of the bin lift.
- Repairs may only be carried out by qualified personnel.

The user manual has the following sections:

Introduction

A description of the function, conditions of use and the operating principle of the machine.

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.

Operation

A clear description of the most important components and instructions for emptying different types of bin.

Maintenance and cleaning

Covers all the periodic procedures needed for the proper functioning of the machine.

Technical data

Hydraulic connections and components, troubleshooting and parts.

Symbols used



Note:

Additional information.



Warning:

If these instructions are not followed, there is a risk of damage to the equipment and/or personal injury.



Stop:

If these instructions are not followed correctly, there is a risk of personal injury and/or risk of serious damage to the equipment.

1.1 Description of the bin lift system

The **TGV-2** is a manually-operated bin lift system that can be very widely used and is particularly well suited to collecting industrial waste.

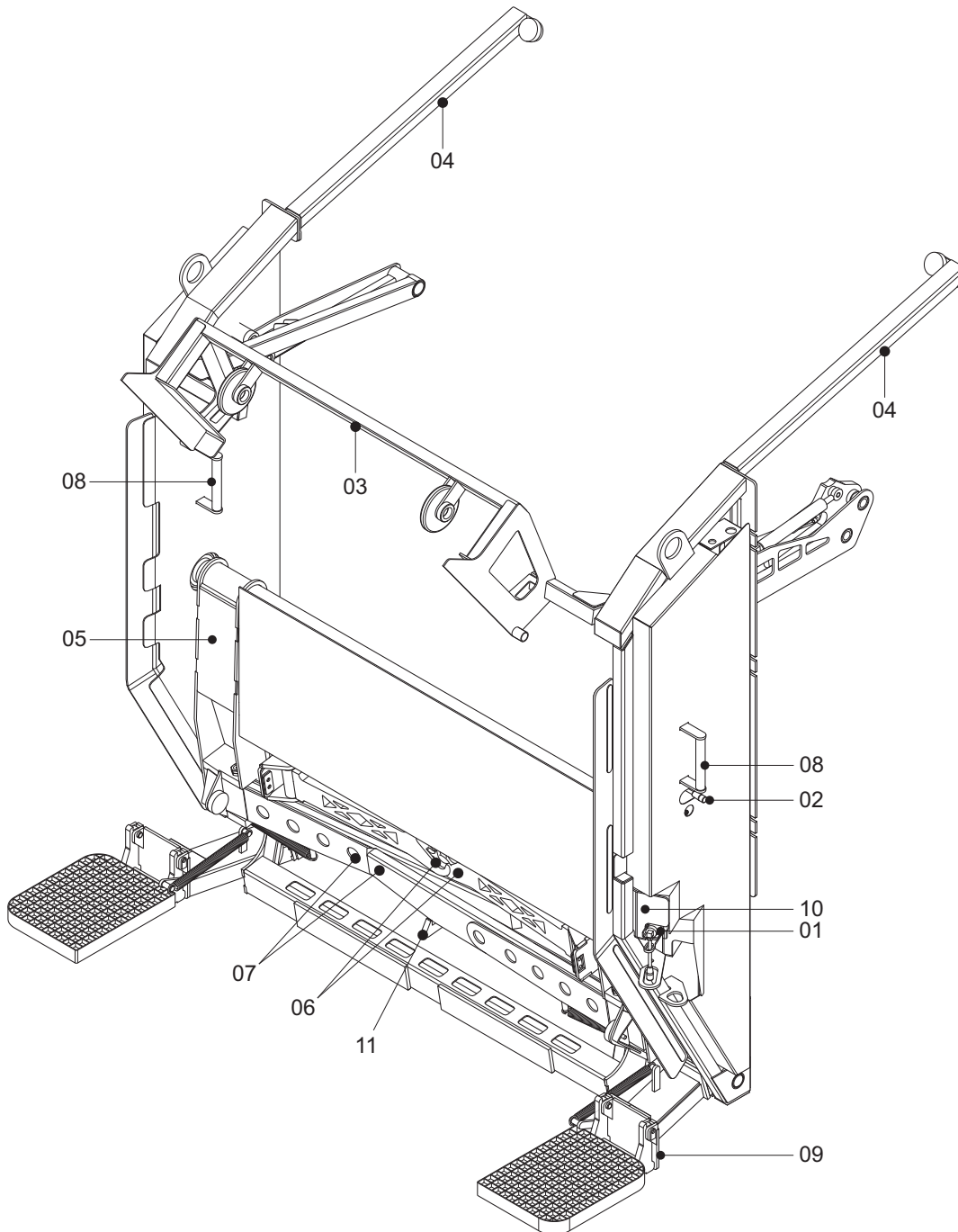
The **TGV-2** is fitted with DIN pick-up arms for emptying 4-wheel bins that conform to the EN 840-2 and EN 840-3 standards.

It is also fitted with Pocket pick-up arms for emptying 4-wheel large object refuse bins with capacities of 2,5m³ and 4,5m³.

The maximum lifting force of the bin lift system is 20,000 N (2000 kg).

The manual controls are on the right of the bin lift system.

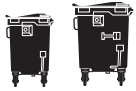
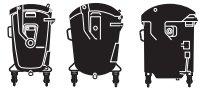

- 01 = Operating lifting / lowering (lift / lower lever)
- 02 = Catcherbar operation (catcherbar lever)
- 03 = Catcherbar, 2 positions
- 04 = Guide track
(opens lid of the 2500-4500 litre containers)
- 05 = Tilt frame
- 06 = DIN pick-up arms
- 07 = Pocket pick-up arms
- 08 = Handle bars
- 09 = Footboards (option)
- 10 = Sensor lift / lower lever
(sends signal to the PTO for increasing revs)
- 11 = Locking for the Pocket pick-up arms



1.2 Technical specifications

Directives and Standards	2006/42/EG, EN 1501-1 & EN 1501-5: 2011
Weight	885 kg (not including footboards)
Sound pressure	≤ 65 dB(A)
Vibration	≤ 2,5 m/s ²
Operating voltage	24 Volts DC
Current	10 Ampère / 24V DC
Oil flow	40-60 litre/minute
Operating pressure PTO	Min. 180 bar / Max. 200 bar

Bin and bin lift information

	4-wheel flat-topped containers 	4-wheel roll-topped containers 	4-wheel container with Pocket arm pick-up 
Capacity (litres)	500 - 770 1000 - 1280	770 - 1100	2500 - 4500
According to standard	EN 840-2	EN 840-3	EN 12574-1 Pocket lifting bin type 3
Lifting capacity	7500 N (750 kg)		20,000 N (2000 kg)
Cycle time	± 16 seconds		
Pick-up arms Pocket	no	no	yes
Pick-up arms DIN	yes	yes	no
Catcherbar	not applicable	yes	not applicable
	May be folded inwards or outwards.	Folded out.	Folded in.



The **Pocket pick-up arms** must be closed when there are bins loaded on the DIN pick-up arms.



The emptying of bin types other than those indicated above, is not permitted with this bin lift system. If in doubt, please contact your distributor.

2.1 General safety instructions

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, also if there is a risk of damages or injury the bin lift must be taken out of service immediately.

General

- The bin lift system may never be operated when the refuse collection vehicle is travelling along and also not with reverse gear engaged.
- The bin lift system may only be operated by persons who have received operator training and are fully familiar with its operation.
- First read the operating instructions before you start using the bin lift.
- Read through the operating instructions for the compaction body carefully.
- In your daily work as bin lift operative you are working in traffic, do not put it or yourself in danger.
- Before starting the collection round, discuss with your colleagues how to act in certain situations such as stopping, driving off, etc.
- When you are working with the bin lift, you should not wear any loose clothing and jewellery.
- While working always wear work clothing, safety footwear and work gloves that comply with the standards indicated in the table below.

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

- Make sure that an unattended bin lift can never be put into operation by unauthorised persons (remove the ignition key).
- Do not use the bin lift system in spaces or installations where the presence of gasses and/or flammable materials creates a danger of fire or explosion.
- The bin lift system may under no circumstances be used if the oil feed rate is higher than 60 litres per minute.

- Technical faults should be reported immediately to the person responsible for supervising the loading. The bin lift must be taken out of operation until the fault (if this could present a danger) is remedied.
- Never use the pick-up arms or any other part of the bin lift system as a seat.
This is **life-threateningly dangerous!**
- The controls may under no circumstances be altered.
- None of the installed safety features may be removed or altered.
- If the safety features are damaged, they must be immediately repaired or replaced by original parts.
- The movement speeds and lifting forces set by the manufacturer may on no condition be altered.
- Operating and safety stickers should be present and clearly legible.
- Actions that override the safety provisions are expressly forbidden!
- It is forbidden to stand on the footboards while the refuse collection vehicle is reversing.
- Take care that during reversing you are visible to the driver of the refuse collection vehicle.
- The bin lift may never be used as a hoisting instrument.
- No vehicle may be towed with the towing cable attached to the bin lift system.
- The refuse collection vehicle may never be raised on the lifting points of the bin lift system.
- The pick-up arms should be folded in while the vehicle is in motion.
- When riding on the vehicle you must absolutely not sit or stand on parts of the machine other than the special footboards for this purpose, **this really is extremely dangerous!**
- In extremely bad weather (storms, thunderstorms, etc.) it is not advisable to use the bin lift system.

2.2 Safety instructions applicable during operation, maintenance and repair

During the operation of the bin lift system

- Ensure that no-one is in the immediate vicinity of the bin lift system during the loading cycle.
- If the bin lift system is in operation, you may under no circumstances reach into the lifting system (**danger of injury**).
- Check that there are no foreign objects in or between the bin lift system that can hinder its operation.
- Loose refuse may not be loaded above the edge of the hopper.
- The compactor may not be used while objects are protruding from the throw-in hole.
- Never use the bin lift system when the view of the load is obstructed.
- Never use the bin lift system on a very uneven surface.
- The bin lift system may not be driven up against a bin or a pile of refuse.
- Take account of the heating of the hydraulic oil. This 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 use bin types not listed in the manual.
- Nothing should protrude from the bin and only bins whose lids are fully closed should be emptied.
- Do not empty any damaged bins. These can cause problems.
- Overweight bins should be removed from the bin lift system.
max. lifting force DIN arm pick-up:
7500 N (750 kg)
max. lifting capacity of Pocket-arm pick-up:
20,000 N (2000 kg)
- Check that the bin is located correctly on the DIN / Pocket pick-up arms before you empty it.
- Let go of the bin as soon as it is picked up by the bin lift system.
- It is expressly forbidden to manually 'help' the lifting system.
- Only remove the bin when the bin lift system has come to rest and the bin is back on the ground.
- Place empty bins where they do not pose a danger to other road users.
- It is forbidden to empty bins that contain dangerous and/or radioactive substances.
- It is not permitted to empty bins that contain burning or smouldering materials.

- Do not walk backwards towards the bin lift system.
- A bin may only be offered to the bin lift system when held by the handle bars.



Keep a minimum distance of 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 comes loose.

During maintenance and repair

- Maintenance and repairs may only be carried out by authorised technical personnel.
- Any faults detected should be corrected before the bin lift system is used.
- For maintenance and repairs switch the bin lift system off (switch off the engine of the refuse collection vehicle and turn off the main power switch).
- While working, accidental activation should be prevented by removing the key from the ignition switch (keep on your person).
- You may not go under the tilt frame for repair or cleaning unless the tilt frame is supported.
- Before cleaning can begin, you should switch off the drive gear of the refuse collection vehicle.
- The grease between the pivots may get washed away if you use a high pressure hose. Think about the safety of your eyes and use safety glasses.
- The bin lift system should only be raised by its lifting points.
- When working on the hydraulic system, you should bear in mind that this is filled with hydraulic fluid under pressure. Always use personal protective equipment to avoid contact with skin and eyes. Use absorbents to avoid environmental pollution.
- You must comply with the maintenance interval specified by the manufacturer.
- On disassembly, disconnect the plugs and couplings from the vehicle.
- Following a collision involving the bin lift system Terberg will need to assess whether it 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 or the bin!

2.2 Safety instructions (continued)



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

2.3 Warning signs

Warning signs

All safety and instruction stickers affixed must be replaced if damaged.

The pictogram stickers have the following meanings:



Do not stand under the tilt frame!



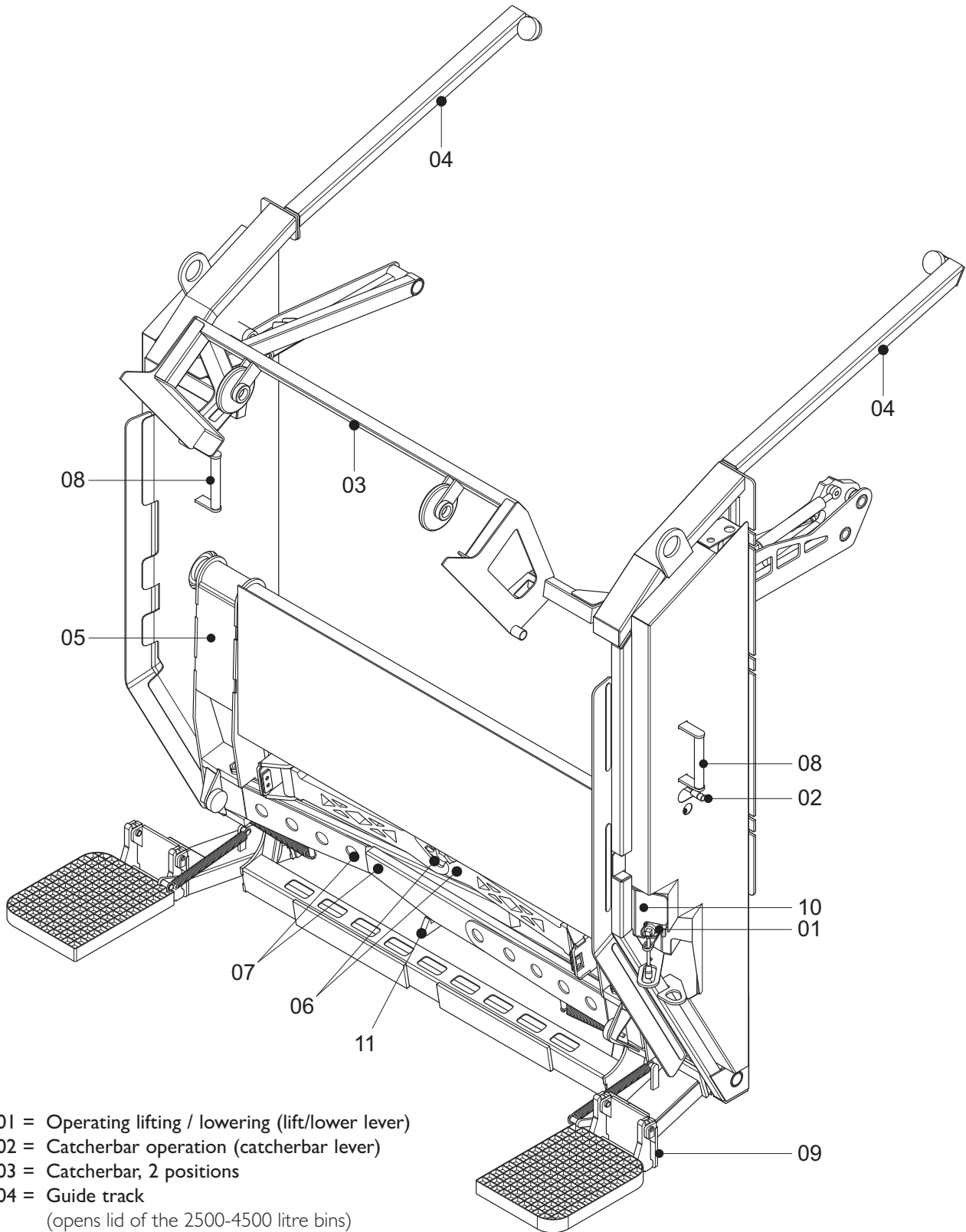
Do not stand behind a working bin lift!



Do not reach into the bin lift, danger of injury!

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3.1 Important components



- 01 = Operating lifting / lowering (lift/lower lever)
- 02 = Catcherbar operation (catcherbar lever)
- 03 = Catcherbar, 2 positions
- 04 = Guide track
(opens lid of the 2500-4500 litre bins)
- 05 = Tilt frame
- 06 = DIN pick-up arms
- 07 = Pocket pick-up arms
- 08 = Handle bars
- 09 = Footboards (option)
- 10 = Sensor lift / lower lever
(sends signal to the PTO for increasing revs)
- 11 = Locking for the Pocket pick-up arms

3.2 Warnings and tips



Before starting to use the bin lift system, first read the operating instructions.

- It is expressly prohibited to help the bin lift system 'manually' with lifting.
- Lifting capacity of the DIN pick-up arms: max. 750 kg.
- Lifting capacity via the Pocket pick-up arms: max. 2000 kg.
- Excessively heavy bins must not be lifted.
- Do not remove the bin before the bin lift has come to a standstill.
- **Always** approach the bin lift forwards with outstretched arms, even when removing the bins.
- When you are working you are in traffic; do not put it and yourself in danger. Place empty bins where they do not cause any danger to other road users.
- When you are working with the bin lift system, do not wear loose clothing and jewellery.
- Loading is teamwork. Before starting the collection round, discuss with your colleagues how to act in certain situations such as stopping, driving off, etc.
- Never use the bin lift system as a seat. ***This is life-threateningly dangerous.***
- When the bin lift system is in operation, you may not reach into the lifting system, **this may cause a danger of injury.**
- It is forbidden to stand on the footboards while the refuse collection vehicle is reversing.
- Take care that during reversing you are visible to the driver of the refuse collection vehicle.

3.3 Daily checks

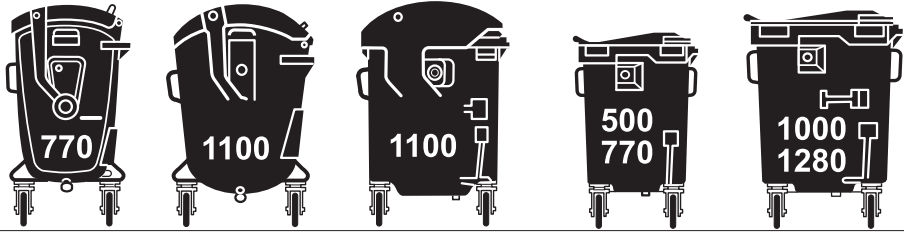
Before you start work, you must check the bin lift system for the following points:

- Check that no oil loss has occurred.
- Look to see if there are any 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 (for information on catcherbar position / bin type see Section 1):
 - Catcherbar adjustment; fold the catcherbar inwards and outwards.
 - Lift / lower lever (the lever should also return to the mid position by itself after use).
- **Working footboards (option)**
Check the operation and mounting of the footboards.

3.4 Loading with DIN pick-up arms

4-wheel bins
with a ROUND lid;
contents 770-1100 litres

with a FLAT lid;
contents 500 to 1280 litres



- 1) Engage the PTO of the refuse collection vehicle.
- 2) Fold down both footboards (09).
- 3) Fold out both DIN pick-up arms (06).

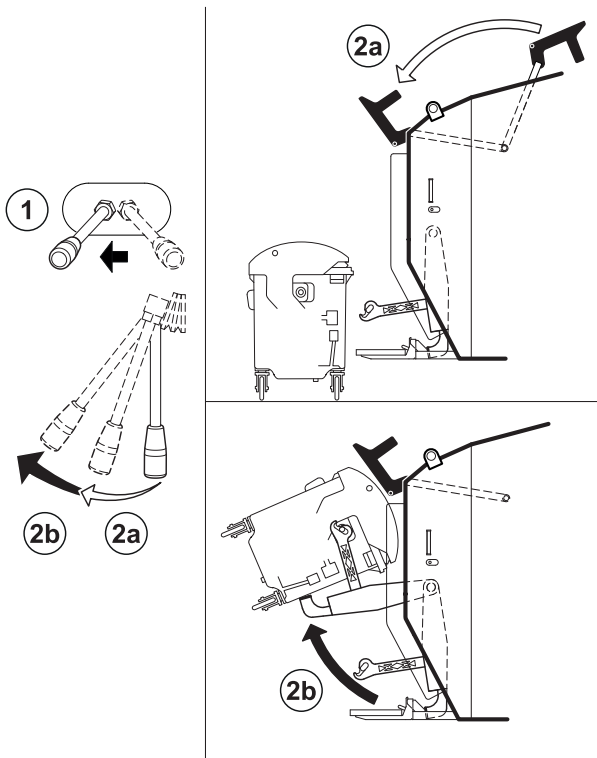


The **Pocket pick-up arms** must be closed when there are bins loaded on the DIN pick-up arms.

4) Fold the catcherbar OUTWARDS:

If the catcherbar (03) has not yet been folded OUTWARDS (this is the working position), put the catcherbar lever (02) in the forward position (see illustration below) and fold the catcherbar OUTWARDS by pushing the lift / lower lever (01) slightly forwards.

Caution: The first path [2a] of the lift / lower lever brings the catcherbar outwards; the second path [2b] (next movement) raises the bin.



(The catcherbar can, if necessary, also be folded outwards by moving the lift / lower lever backwards).

- 5) Roll the bin between the two pick-up arms.
- 6) **Raise the lifting heads to the right height:**
Using the lift / lower lever (01) raise both pick-up arms until level with the lifting lugs of the bin.



Take great care that the bin's lifting lugs insert firmly into both lifting heads of the DIN arms.

7) Emptying the bin:

Use the lift / lower lever (01) to raise the bin further until it reaches the tilt position. The bin is emptied.

8) Removing the bin:

Then use the lift / lower lever (01) to return the bin to the ground. Make sure the lifting lugs of the bin are released from the pick-up heads of the DIN arms (06).

Roll the bin out of the bin lift system.



On an uneven road surface the lifting lugs of the bin may get stuck in the top position of the lifting heads.

In this case, do the following:

- Raise the bin using the lift / lower lever (01) slightly until the wheels are free of the ground.
- Pull the bin backwards so that the lifting lugs of the bin are in the lower position of the lifting heads.
- Then let the bin descend.



Ensure that your fingers do not become trapped when folding in the pick-up arms.

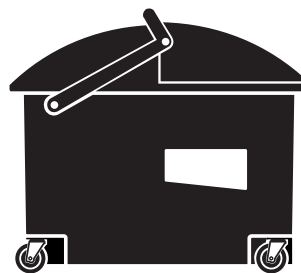


Never pull hard on the operating levers. This can cause damage and has no effect on the operation of the bin lift system.

3.5 Loading with Pocket pick-up arms

4-wheel bins with Pocket-arm pick-up:

contents 2,500 - 4,500 litres

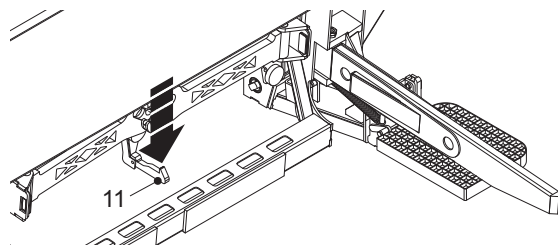


1) Engage the PTO of the refuse collection vehicle.

2) Fold down both footboards (09).

3) Fold out both Pocket pick-up arms.

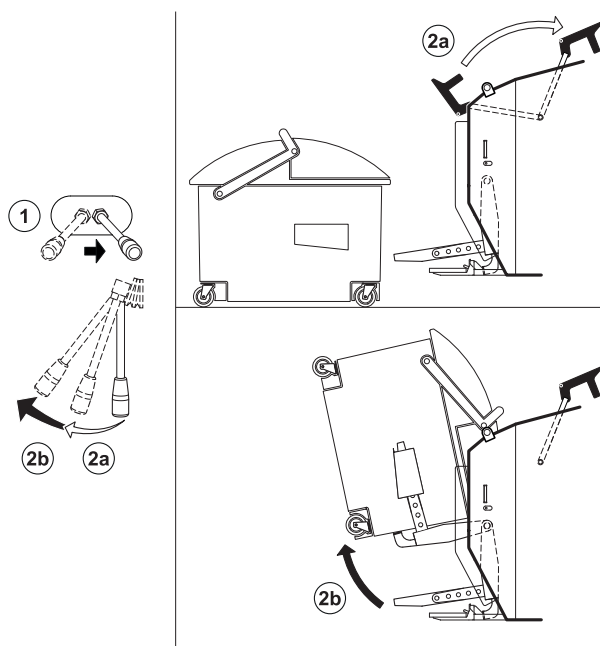
Press the pick-up arm locking (11) downwards and fold both Pocket pick-up arms (07) outwards.



4) Fold the catcherbar INWARDS:

If the catcherbar (03) has not yet been folded INWARDS (stowed position), put the catcherbar lever (02) in the rear position and fold the catcherbar INWARDS by pushing the lift / lower lever (01) slightly forwards.

Caution: The first path [2a] of the lift / lower lever brings the catcherbar inwards; the second path [2b] (next movement) raises the bin.



(The catcherbar can if necessary also be folded inwards by moving the lift / lower lever backwards).

5) Roll the bin in front of the pick-up arms.

6) Raise the pick-up arms to the right height:

Using the lift / lower lever (01), raise both pick-up arms until they can be inserted into the lifting flanges (pockets).

7) Roll the bin over the pick-up arms.

8) Emptying the bin:

Use the lift / lower lever (01) to raise the bin further until it reaches the tilt position. The two guide tracks (04) above, on either side of the bin lift system, have meanwhile opened the lid. The bin is emptied.

9) Removing the bin:

Then use the lift / lower lever (01) to return the bin to the ground.

Roll the bin out of the pick-up arms and out of the bin lift.



Ensure that your fingers do not become trapped when folding in the pick-up arms.



Never pull hard on the operating levers. This can cause damage and has no effect on the operation of the bin lift system.

3.6 Travel height and footboards

Footboards and handle bars

The bin lift system is fitted with footboards and handle bars. The handle bars - two brackets on either side - are fixed.

These are used in three situations. In each of these situations, the footboards must be in the correct position.

1) Transport

Footboards folded up.

2) Loading

Footboards folded down.

3) Riding

Footboards folded down.

If someone is standing on the footboard:

- Reversing is not permitted.
- The refuse collection vehicle may not be driven at more than 30 kilometres per hour (19 mph).
- The compactor should not run in full automatic mode.

Throwing waste in manually

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

Obstacles or uneven surfaces

When driving over large obstacles or uneven terrain, it is important to place the footboards in the transport position and tilt the bin lift up for adequate ground clearance.



The bin lift may never be operated when the refuse collection vehicle is travelling along and also not when reverse gear is engaged.



Never stand on other parts of the bin lift and also never use them as a seat, **this is extremely dangerous!**

