



GKB

THE WORKER IS KING



Leaf-Clean

Manual_Leaf-Clean_EN_2302

LC150-180

EC DECLARATION OF CONFORMITY CONCERNING MACHINES
According to Directive 2006/42/EG, annex 2, point 1, A

GKB Machines B.V.
Middelweg 1
2992 SP Barendrecht
Nederland

hereby declares that the

GKB Leaf-Clean

Type: LC150 - LC180

to which this declaration relates are in conformity with the provisions of:

At Barendrecht,

T.J.W. Kraaijeveld

UKCA DECLARATION OF CONFORMITY CONCERNING MACHINES
According to Machinery (Safety) Regulations 2008

Manufacturer:
GKB Machines B.V.
Middelweg 1
2992 SP Barendrecht
Nederland

UKCA Delegate
GKB Machines Ltd.
Warwick House, Ermine Buseniss Park, Spitfire Close
Huntingdon PE29 6XY
United Kingdom

hereby declares that the

GKB Leaf-Clean

Type: LC150 - LC180

to which this declaration relates are in conformity with the provisions of:

- Machinery (Safety) Regulations 2008

At Barendrecht, 13/02/2023



T.J.W. Kraaijeveld

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1. FOREWORD

The information contained within these operating instructions covers the necessary use, safety, operation, and maintenance of the machines mentioned in the CE declaration. Before operating anyone of the machinery has to read this operating manual in its entirety. The manufacturer will not be held liable for an injury or damage which occurs from improper use.

It is the goal of the manufacturer to create excellent products, therefore we hold the right to make changes at any time and will not be held under obligation to previously delivered machines. Certain aspects, such as weight and dimensions, may change at any time without notice. Images are also not bound to interim changes.

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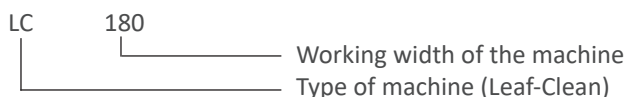
2. INTRODUCTION

The Leaf-Clean is designed to clean all types of sport fields and golf courses against surface pollution such as leaves and mowed grass. The machine is designed with a suction unit and reservoir. Using brushes the material is sent to the suction assembly, after which it gets sucked. The material is captured in the reservoir on the rear side of the machine.

Every machine is marked with a code, as seen in the image below.

Voorbeeld:

Model 'LC180':



The manufacturer shall not be held liable for any damage resulting from unintentional use.

3. CONTACT

Manufacturer:

GKB Machines B.V.
Middelweg 1
2992 SP Barendrecht
NETHERLANDS
info@gkbmachines.com
www.gkbmachines.com

Productnumber Manual: See footer/ front page

Your personal Dealer:

Your GKB dealer:

4. WARRANTY

The statutory warranty period of two years from the invoice date applies to the machines. Warranty repairs or product replacements do not extend the warranty period of the machine or parts. The guarantee does not apply to items arising from normal wear and tear or ageing.

A warranty procedure starts with an investigation to determine whether the problem is covered by the warranty. Your cooperation is required to verify that the warranty conditions have been met. To this end, keep a record of the maintenance and repairs carried out in a maintenance logbook.

If the manufacturer receives a warranty notification, it will be determined whether the defect is covered by the warranty. If this is the case, a suitable solution will be found in consultation with the customer. In all cases, consult with the dealer before you try to solve the problem yourself. Warranty can only be given if the machine is in its original condition.

The manufacturer's written permission is required to ensure that the machine does not deviate in any way from the aforementioned purpose of use. Use other than as described will lead to the loss of product liability and warranty.

Product liability obliges the manufacturer and the dealer, when selling machines, to provide a manual and to instruct the user on the operating, safety and maintenance instructions.

The manufacturer is not responsible for any (unintended) damages to grass or sport fields.

Caution! The operating instructions must also be supplied if the machine is subsequently exchanged or resold by the user. Also inform the new user of the regulations.

5. SAFETY

5.1. General

The safest operation requires these machines are operated exactly according to these instructions. In addition, there are also safety warnings on the machines to warn of potential dangers and instructions on how to handle them. The only way to 100% guarantee no property damage or personal injury occurs is to follow these instructions. While using this machine, keep this handbook nearby and always ensure that safety markings on the machines are visible.

Any local safety regulations, including road traffic regulations, must be observed at all times.

The warranty, CE marking, and product liability automatically expire upon changes being made to the machine without consultation of the manufacturer.

The machine is equipped with several safety stickers, to instruct the user how to handle the machine with care. An example of a safety sticker is shown next.

Annex III describes every type of safety sticker. Read them carefully before using the machine.



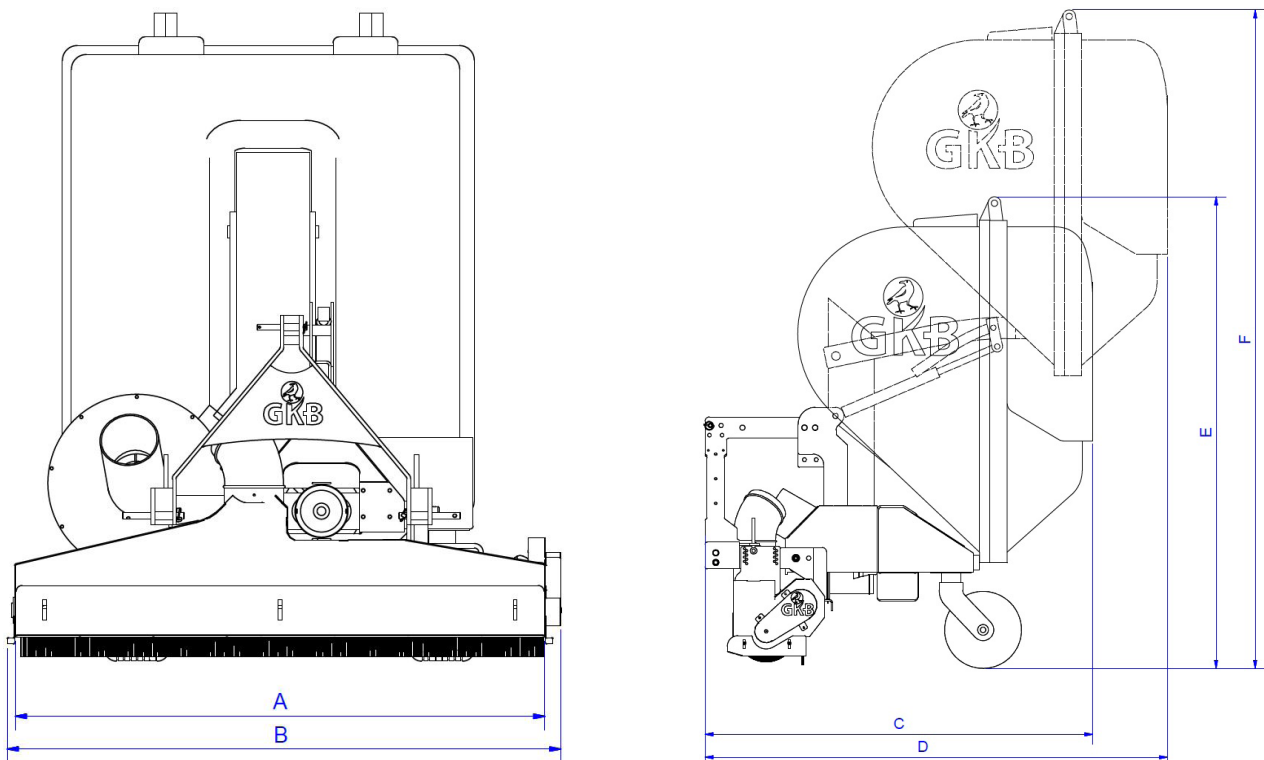
5.2. Safety instructions

1. These operating instructions must be read and understood by everyone who works, checks or maintains the machine in order to avoid risks and to avert dangers.
2. Pass on all safety and operating instructions to all users.
3. The machine may only be used for the intended work.
4. For optimum performance, the surface to be worked on must be flat and free of obstacles.
5. Only use parts and accessories specified by GKB. The installation and/or use of non-original parts and accessories may change or impair the specific characteristics of the machine. GKB is excluded from any liability for damage resulting from the use of non-original parts and accessories.
6. Before working with the machine, it is necessary to become familiar with all control components, their functions, safety aspects and risks. The machine may therefore only be operated and maintained by qualified personnel.
7. Maintenance must be carried out in accordance with the instructions in the manual. The maintenance carried out must be recorded. Never come under the machine in any situation!
8. Before commissioning, the safety of operation and transport must be checked. The inspection includes, but is not limited to, the correct functioning of the mechanical, hydraulic and electrical components.
9. If leaks are suspected, stop the entire hydraulic system and allow it to cool down before carrying out maintenance.
10. Before use, check that there are no persons and/or obstacles within the working area of the tractor and the machine.
11. There are several warning labels on the machine. These stickers contain important instructions for safe use and must always be clean and visible.
12. All safety devices must be attached to the machinery and be in good working order. Timely replacement of worn and damaged protective equipment is required. This also applies to the warning labels. Fixed guards must always be present during operation.
13. The operator's clothing must be close-fitting. If necessary, wear head and hearing protection.
14. Driving on the machine during work and transport is not permitted.
15. When using the machine on public roads, the (local) traffic regulations of the respective country apply. Observe the markings, lighting and safety devices applied. Only drive if all required permits and approvals have been obtained.
16. Maintain an adjusted speed when the machine is hanging behind the tractor. Especially when driving over thresholds or poor road conditions. Always place the topline in the round hole!
17. The driver is responsible for ensuring that the tractor and the machine are on public roads in accordance with the regulations. Permitted axle loads and weights must be considered.
18. If the driver is unable to oversee the carriageway immediately behind him, he must be instructed when reversing. Instructors must be within the driver's field of vision only and never between the tractor and the machine.
19. Connect the machine with the tractor according to prescribed tools.
20. When connecting and disconnecting, parking or storing the machine, it must be prevented that the machine moves unintentionally. Depending on the machine, this can be prevented by applying the brakes, using the parking position or locking the wheels by placing wedges.
21. During use, transport or storage on a sloping slope or during maintenance, one should be aware of the risk of tipping over.
22. Prevent burns by careful use of hot components such as oil lines and engines. When carrying out maintenance work, allow the system to cool down completely.
23. It is not allowed to drive or maintain the machine under the influence of medication, drugs or alcohol.
24. Using headphones or hearing protection with music or radio is not permitted.
25. Smoking and open fire is prohibited in and around the machine.

5.3. Product specifications Leaf-Clean

	Unit	LC150	LC180
Dimensions			
Working width A	cm	150	180
Total width B	cm	160	190
Length 1 C	cm	180	180
Length 2 D	cm	215	215
Height 1 E	cm	150	220
Height 2 F	cm	290	360
General specifications			
Empty weight	kg	450	750
Content of the bunker	l	650	1050
Max. noise*	dB(A)	80	80
Towing vehicle			
Power	pk	25-50	40-70
Pumpcapacity oil	l/min	20	20
Max. hydraulic pressure	bar	180	180

* When using personal protective equipment, bear in mind that in many cases the sound of the machine is drowned out by the towing/powering vehicle.



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6. CONSTRUCTION OF THE LEAF-CLEAN

A Leaf-Clean has many different components and parts. This chapter will describe each of them.

6.1. The frame

The frame connects the reservoir to the suction unit. Using the three-point hitch the machine is connected to the towing vehicle.

6.2. The suction unit

The front side of the machine is provided with a suction unit. The brush rotor works the surface material, after which it gets sucked into the suction assembly.

The suction power is created by a ventilator. This is mounted onto the suction unit and is driven using a PTO shaft.

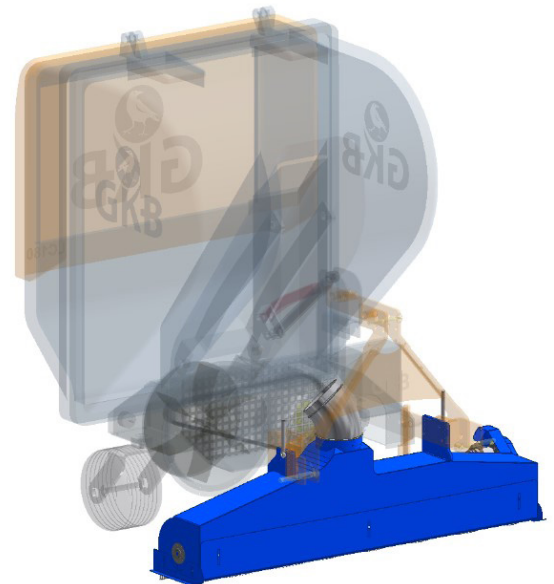
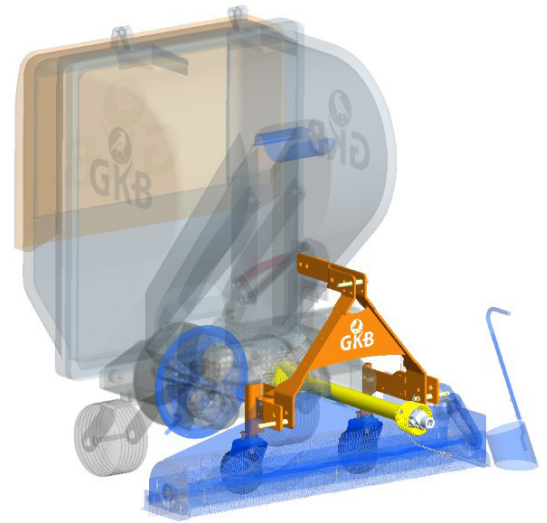
6.3. The collection bin

On a frame, supported by castors, a reservoir is mounted so that materials can be stored. The reservoir has a contents of 1050 liters.

On the rear side a cover has been mounted to empty the reservoir. The reservoir can be adjusted in height.

6.4. The hydraulic components

The ventilator is driven by the towing vehicle using drive shafts. The brush rotor is driven using a hydro motor. Furthermore, the storage bunker is driven using a hydraulic cylinder.



7. OPERATION LEAF-CLEAN

7.1. Connecting and disconnecting the machine

To operate all components, it's required to have one PTO-shaft and two hydraulic connection points.

Connecting:

- | | |
|---|--|
| 1 | Make sure that the tractor and machine can't move and are placed horizontal; |
| 2 | <p>Connect the machine to the three-point hitch of the tractor and secure the attachment points with the locking pins;</p> <p>Attach the top link in the round hole of the hitch and adjust it so that the small wheels softly touches the grass;</p> <p>Connect the hydraulic hoses and PTO-shaft;</p> <p>Lift the machine and check if the distance between the machine and ground is equal on the left and right side. If necessary, change the positions of the adjustable stabilizer arm;</p> |




 See risk analysis: Machine environment/ inlet suction unit

Pay attention! Make sure the PTO-shaft is completely free when lifting the machine.

Disconnecting:





- | | |
|---|---|
| 1 | <p>Make sure that the tractor and machine can't move and are placed horizontal;</p> <p>Remove infillmaterial before leaving the field.</p> |
| 2 | <p>Lower the machine slowly until it completely rests on the ground;</p> <p>Disconnect the hydraulic hoses and PTO-shaft;</p> <p>Disconnect the three-point hitch and move the tractor.</p> |



 See risk analysis: Machine environment/ inlet suction unit

7.2. Height adjustment suction unit

Follow the schedule below to adjust the height. Correct adjustment is essential for obtaining a good result.

1	Make sure that the tractor and machine can't move and are placed horizontal;	
2	Loosen the wingnuts of the brushplate at the back. Make sure that the hairs of the brush just touches the grass.	
3	Position the sideplates just above the grassfield.	
4	Loosen the wingnuts of the frontplate and adjust it to two centimeter above the grass.	
5	Inspect the rotation direction of the brush rotor. The rotor has to rotate in line with the driving direction.	

 See risk analysis: Inlet/ suction unit/ rotor/ machine environment

7.3. Emptying the container

The reservoir can be emptied in two different ways.

Emptying at low level:

1. Drive the combination, towing vehicle and machine, to the preferred location;
2. Serve the hydraulic cylinder to open the valve; (Switch the hydraulic system when the lifting cylinder is served instead of the door cylinder)
3. Inspect whether the reservoir is empty;
4. Serve the hydraulic cylinder to close the door.



Emptying at higher level:

1. Drive the combination of towing vehicle and machine to the preferred location;
2. Switch the hydraulic system to serve the lifting cylinder. Place the reservoir at the preferred height;
3. Switch the hydraulic system so that the shut-off valve can be served;
4. Open the valve to empty the reservoir;
5. Inspect whether the reservoir is empty;
6. Close the valve using the hydraulic cylinder;
7. Switch the hydraulic system and serve the lifting cylinder to lower the reservoir.



Caution! Never empty the reservoir at a tilted surface. Be careful for potential tilting hazard!



Zie risicoanalyse: Zandstrooier/ omgeving machine

7.4. Transport and storage

Transport:

When transporting the machine, a suitable means of transport must be selected. Make sure that the machine is secured against rolling away and tipping over. If you don't have sufficient knowledge for a transport, carry it out by a specialised transport company. Provide at least four attachment points on the transporting vehicle.

Storage:

The following points must be taken care when storing the machine:

1. Before storage, clean the machine in such a way that no sand or other impurities are left behind;
2. Store the machine at a dry place;
3. Check if the machine is positioned right with the support legs or place wheel chocks in front and behind the wheels;
4. Never put the machine away on the brake (if applicable);
5. Empty the tanks of the machine if they are filled with water;
6. To prevent corrosion of uncoated parts, apply a protective oil layer;

If the machine is to be used again after storage, all maintenance points must be gone through. Before use, make sure that all components are working properly.

Lifting:

The machine may only be lifted at the designated attachment points. It is important that all existing attachment eyes are used to lift the machine safely. Attaching lifting equipment to other parts of the machine can cause serious damage to the machine and the environment. Make sure the machine is free of materials such as infill and seeds.



8. MAINTENANCE

8.1. Maintenance schedule

To maintain machine quality, adhere to the following diagram. The list of spare parts will show the correct parts to replace. See chapter 7.3 for safe execution of the maintenance points.

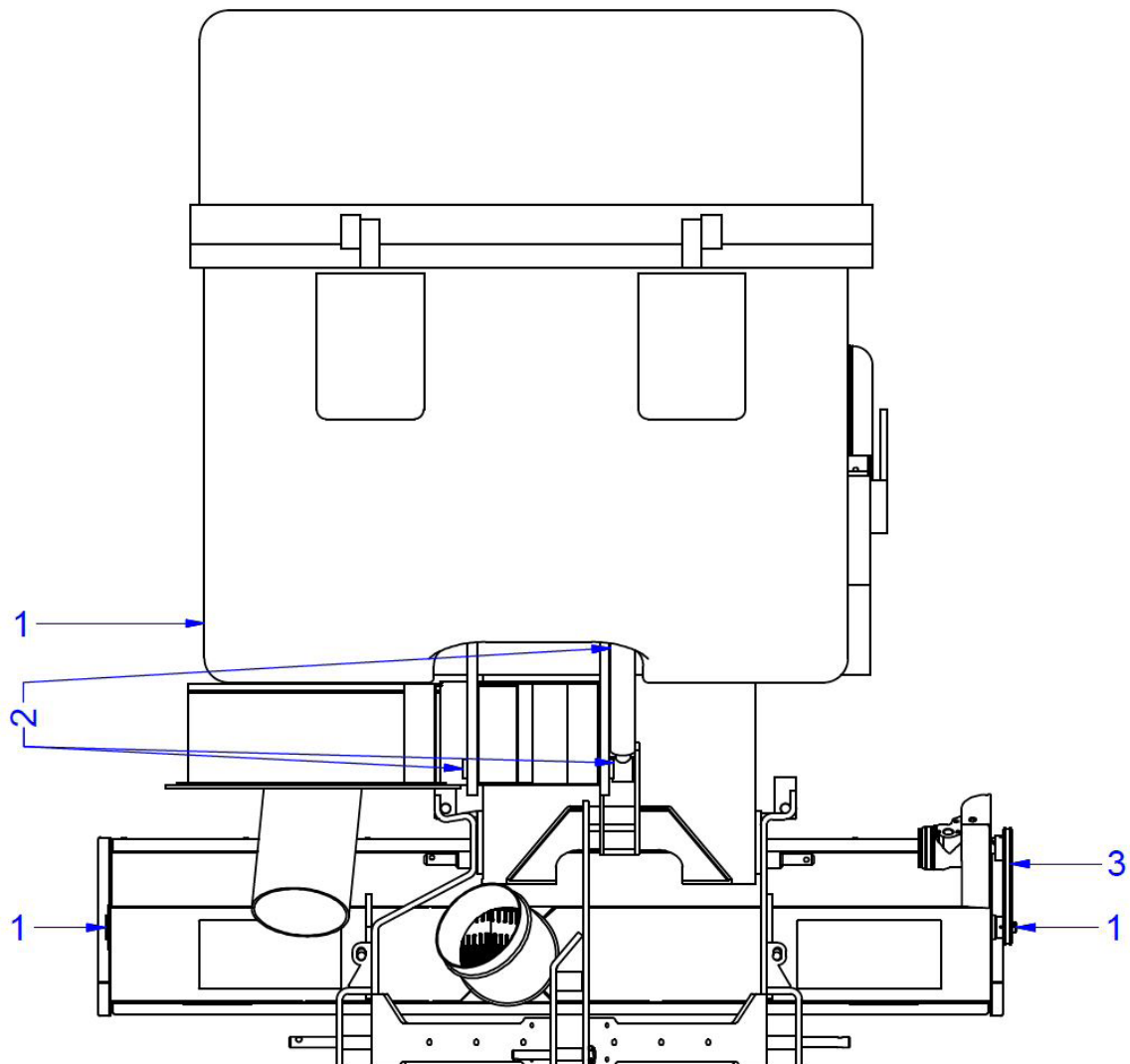
Always ensure that the machine is switched off, cannot move and has cooled down completely.

		Operating hours					
		Before use	50 h	250 h	500 h	1000 h	Annually
General	Outside cleaning of the machine	x					
	Check if all safety stickers are on the machine	x					
	Check for oil stains/ traces	x					
	Check state of wearing parts for broken pieces or deformation	x					
Hydraulic	Clean the hydraulic main connections of the towing vehicle	x					
	Check the operation of hydraulic components	x					
	Check hydraulic components for damages/ leakages. Replace when needed.	x					
	Check hoses and fittings for dehydrations/ cracks			x			
Others	Driving belt - Check tension on the ventilator belt (1000 Nm)			x			
	Driving belt - Check for dehydrations/ cracks and replace when needed			x			
	Chains - Check tension on the chain (1-2cm chain clearance)		x				
	Check locking pins	x					
	Tighten bolted connections of rotating parts		x				
	Tighten bolted connections of fixed parts			x			

8.2. Lubrication scheme

For optimum machine performance, please refer to the plan below for lubrication of the maintenance points.

		Operating hours					
		Before use	50 h	250 h	500 h	1000 h	Annually
EP2 grease	1 Lubricate bearings		x				
	2 Lubricate hinges			x			
Chain-spray	4 Lubricate chain drive of the rotor*			x			



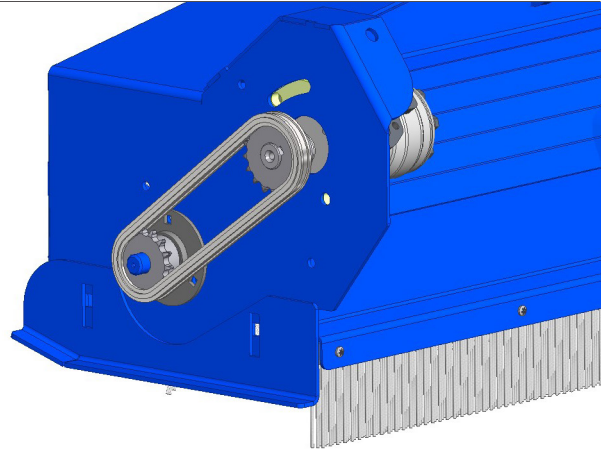
8.3. Performing maintenance

Always make sure that the machine is switched off, cannot move and has cooled down completely.

Leaf-Clean 150/180

Tension the chain transmission:

- Remove the cover from the chain transmission;
- Loosen the slot hole mounting of the hydromotor;
- Loosen the mounting nut at the bottomsides just one turn;
- Tension the chain by turning the hydro motor;
- Hold the motor under pressure and tighten the bolts;



Lubricate the bearing of the ventilator:

- Remove the cover of the backside of the ventilator;
- Loosen the four wing nuts;
- Place the grease kit on the greasnipple of the ventilator and lubricate the bearing;
- Place the cover back on the frame.



9. FAILURES

If a failure is detected, please go through the following points before contacting your dealer.

Fraisingblades		
Symptom	Cause	Solution
Some leaves are left behind on the field	The brush rotates in the wrong direction	Inspect the rotation direction of the brush rotor.
	The brush is placed too high or low	Check the adjustment of the brushes, see chapter 6.2
	Brushunit contaminated	Clean the brushes
	Suction hose blocked	Inspect the airflow of the suction unit
	Tolerance on the belt	Check tension on the belt
	Rotor contaminated	Check the ventilator for possible contamination
De lid of the container doesn't close properly	Edges of the lid are contaminated	Open the lid and inspect the edges of it
	Hydraulic cilinders is possibly broken	Inspect functioning of the cilinder

10. END OF LIFE

To dispose of a machine, follow all local regulations. Practice appropriate safety measures.

Follow these steps:

1. Decommission the machine and shut it down hydraulically;
2. Drain and recycle all consumables;
3. Dispose of the machine in accordance with the local regulations.

ANNEX I TIGHTENING TORQUE

When tightening bolts, observe the following maximum torques (ISO898/1).

The following types of bolts are used in the machine:

- Bolts for wear parts (chisels, etc.): 10.9
- Other bolts: 8.8

Tightening torque [Nm]

		Bold strength:	
		8.8	10.9
Metric	M5	6	8,5
	M6	10,3	14,7
	M8	25,5	35,3
	M10	50	70,6
	M12	87,3	122,6
	M14	138,3	194,2
	M16	210,8	299,1
	M20	411,9	578,6
	M24	711	1000

ANNEX II RISKANALYSIS

Based on risk analysis, the machine has been designed with the safety of users and bystanders in mind. Below is a list of the measures that have been taken to ensure proper safety and prevent injury:

Item	Risk	When	Risk reduction
Drive unit	Crushing/ cutting injuries due to the transmission	If a bodypart or clothing comes in contact with the transmission of the drive unit	Fixed shieldings placed Safety stickers placed Safety instructions in manual
Ventilator	Crushing injuries due to the rotating of the ventilator	If a bodypart or clothing comes in contact with the ventilator	Fixed shieldings placed which can only be removed with tools Safety stickers placed Safety instructions in manual
Inlet suction unit/ support wheels	Being run over by the machine and/or tractor, resulting in serious injury	If the person is between the machine and the tractor and the combination is moving (unintentionally)	Safety stickers placed Safety instructions in manual
Suction unit	Crushing injury while being sucked in by the ventilator	If a person is near the suction unit while it's turned on unintentionally	Safety stickers placed Safety instructions in manual
Rotor	Crushing of limbs by rotating of the brushrotor	If a person is doing maintenance at the rotor while it's switched on unintentionally	Safety stickers placed Safety instructions in manual
Containerunit	Crushing injuries due to the containerunit	If persons are under the containerunit while it drops or falls due to the high dumping method	Cylinderblocking installed Safety stickers placed Safety instructions in manual
Container valve	Crushing injuries in between the door of the container	If a person is near the door and it's opened or closed unintentionally	Safety stickers placed
Machine environment	Being run over by the machine and/or tractor, resulting in serious injury	If the person is between the machine and the tractor and the combination is moving (unintentionally).	Safety stickers placed Safety instructions in manual
		During transport on public roads.	
	Tilt risk of instability resulting in bruising / pinching injury	If the person is next to or under the machine during maintenance.	Safety stickers placed Safety instructions in manual
If the person is on a slope next to the machine.			
Hearing loss	Danger of hearing damage if someone is near the machine.		
Hydraulic system	Poisoning by hydraulic injection	If, in general or during maintenance, the person is in the immediate area of the hazard.	Hydraulic circuits equipped with components that comply with "EN 875". Inspection of hydraulic components
	Serious general injuries to unprotected parts of the body from exploding or escaping hoses		

ANNEX III SAFETY STICKERS

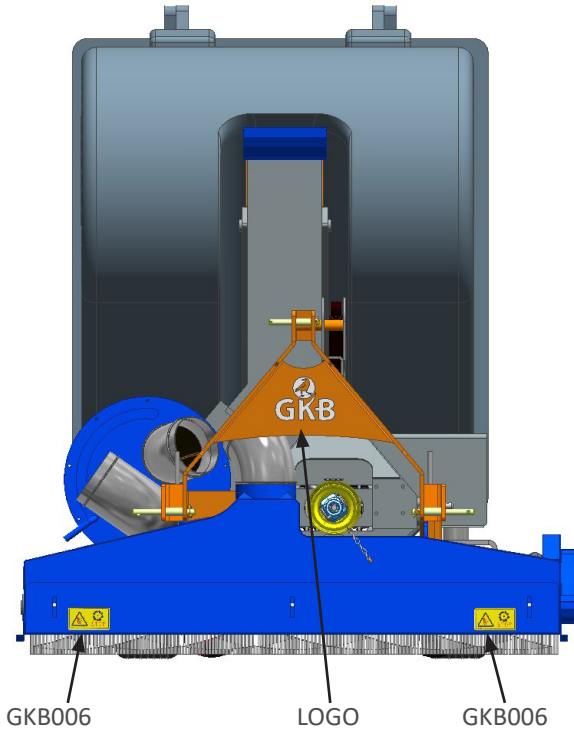
To promote safe practices and proper handling reminders, safety stickers are adhered to all machines. If a sticker cannot be read or found, it should be replaced immediately. The following page shows an overview of all the stickers and their positions.

GKB001	Comply with all maintenance instructions		GKB002	Refer to the owner's manual. It contains useful information about the use, safety and maintenance	
GKB003	Regular lubrication		GKB004	Switch off the power take-off before lifting the implement	
GKB005	Risk of retraction due to rotating parts		GKB006	Risk of finger cutting due to rotating parts	
GKB007	Danger of rotating parts		GKB008	Risk of retraction due to rotating parts	
GKB009	Risk of crushing		GKB010	Keeps distance when the machine is in operation due to swinging parts	
GKB011	Keep a distance when the machine is in operation due to flying parts.		GKB012	Risk of crushing between tractor and implement	
GKB013	Danger of retraction when opening the cover when the rotor is switched on		GKB014	Choice in minimum to maximum adjustment	
GKB015	Danger of retraction due to rotating parts		GKB	Place a safety piece before entering the danger zone	
HOT	Keep a safe distance from hot surfaces		018417	Required speed	

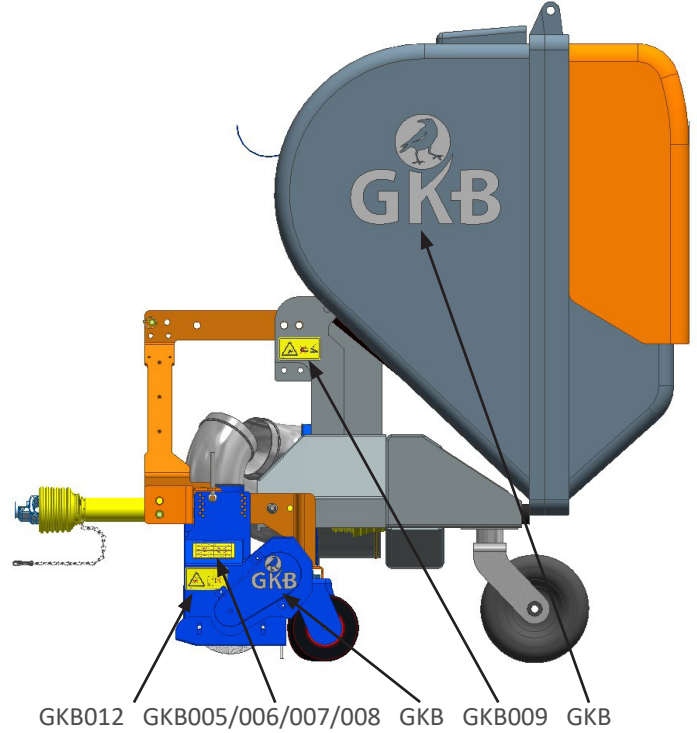
Location safetystickers

The illustrations below show all the safety stickers and their positions:

Front view:



Right view:



Rear view:



Left view:

