THE WORKER IS KING

Sandspreader

Manual_Sandspreader_EN_2002

SP100-230-300-400
SPM 230-300-400

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 Sandspreader

Type: SP100 - SP230 - SP300 - SP400
SPM230 - SPM300 - SPM400

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

- Directive 2006/42/EC Machinery Directive

At Barendrecht, 31/01/2023

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 Sandspreader

Type: SP100 - SP230 - SP300 - SP400
SPM230 - SPM300 - SPM400

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

- Machinery (Safety) Regulations 2008

At Barendrecht, 31/01/2023

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.

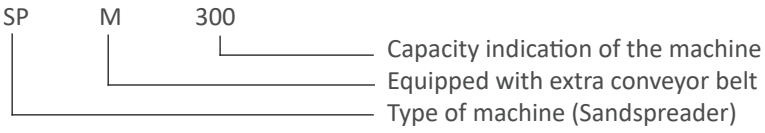
It is the goal of the manufacturer to create excellent products, therefore we hold the right to make changes at any time and will not be held under obligation to previously delivered machines. Certain aspects, such as weight and dimensions, may change at any time without notice. Images are also not bound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

2. INTRODUCTION

The Sandspreader spreads clean sand over natural grass and hybrid fields, fill trenches, or act as a buffer for other applications. Machines will differ in the buffer capacity of the sand and each one is marked with a code, as seen in the image below.

Example:

Model 'SPM300':



Additionally, the manufacturer will not be held liable for damages from the use of contaminated materials or for unintentional use.

Only machines with a European type approval are permitted for the operation on public roads – both the standard and its variants. Approved machines come equipped with an approval plate as well as a brake system and lighting.

These operating instructions must be read and understand by everyone who works, checks or maintains the machine in order to avoid risks and to avert dangers.

3. CONTACT

Manufacturer:

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

Your personal Dealer:

Your GKB dealer:

Productnumber Manual: See footer/ front page

Serialnumber of the machine:

Location: Chassis frame

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 safetysticker 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 understand 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 tresholds or poor road conditions. Always place the toplink 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 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. Driving on public roads and tires

A European type approval is required before either the standard sand spreader or any of its variants can be used on a public road. Approved machines come equipped with an approval plate as well as a brake system and lighting. This approval is for any country within the E.U. If you operate outside the E.U., you will be subject to local regulations of the country in which you operate. Importers are responsible for covering all local requirements.

A tractor/Sandspreader combination may travel at a maximum speed of 40 km/h.

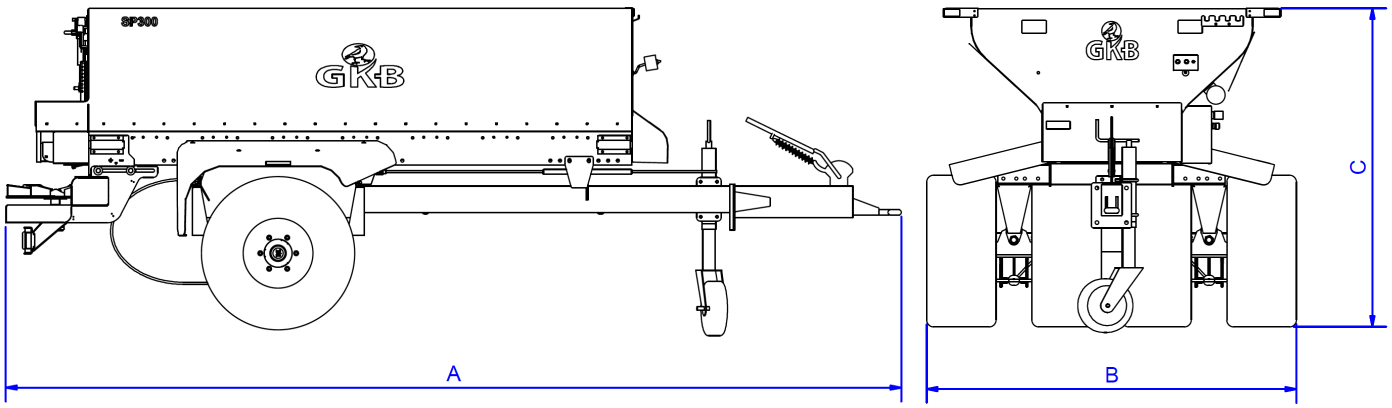
Before taking the machine on public roads, perform a system check to ensure all lights are working and that you have fastened the breakaway cable. Switch off all hydraulic components, fold them down, and secure them if necessary. It is the driver's responsibility to comply with local traffic regulations while operating the tractor/ Sandspreader combo.

If European approval has not been obtained, the Sandspreader must be transported. Ensure the machine is properly secured to the transport so that it will not roll off or tip over. For security, hire a specialized transport company to complete the journey.

5.4. Product specifications Sandspreaders

	Eenheid	SP100 assembled	SP100	SP230/EU	SP300/ EU	SP400/ EU
Dimensions						
Length A	cm	235	320	440 / 450	515 / 525	520 / 530
Width B	cm	150	150	190 / 215	190 / 215	235 / 255
Height C	cm	130	140	160 / 185	185	205
General specifications						
Empty weight	kg	450	700	1080 / 1160	1480 / 1550	1520 / 1600
Permitted max. mass	kg	2300	2300	8000	8000	8000
Max. coupling load	kg	-	-	1600	1600	1600
Max. axle load	kg	-	-	8000	8000	8000
Noise*	dB(A)	80	80	80	80	80
Sand bunker content	m^3	1,0	1,0	2,3	3,0	4,0
Towing vehicle						
Power	hp	20-40	20-40	30-50	40-60	60-80
Pump capacity oil	l/min	30	30	40	40	50
Max. hydraulic pressure	bar	150	150	150	150	150
Tires			**SP100**	**SP230**	**SP230 EU SP300/ EU**	**SP400/ EU**
Type of tire:	-	-	BKT 26x12.00-12	BKT 26.5x14.00-12	BKT 400/60-15.5	Mitas 500/50 R17
Nominal pressure	bar	-	2,0	2,0	3,0	2,8
Min. pressure	bar	-	2,0 - 1090 kg/tire	2,0 - 1280 kg/tire	3,0 - 2295 kg/tire	2,0 - 2275 kg/tire
Max. pressure	bar	-	-	-	6,0 - 3485 kg/tire	5,0 - 4420 kg/tire

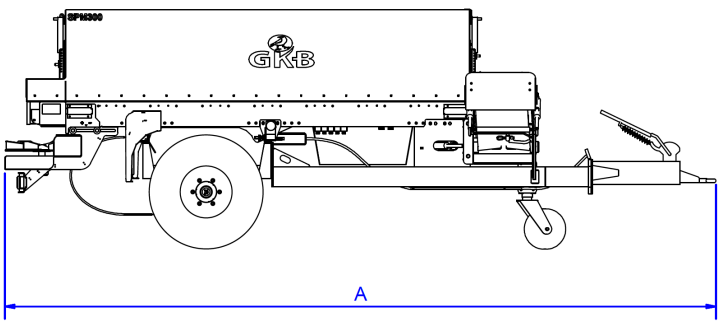
* When using personal protective equipment, bear in mind that in many cases the sound of the Sandspreader is drowned out by the towing/powering vehicle.

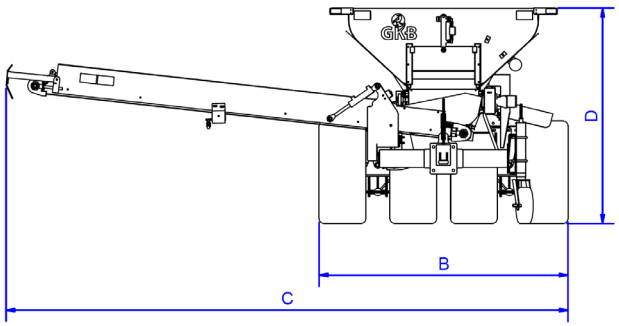


5.5. Product specifications Sandspreaders with conveyor belt

	Unit	SPM230 / EU	SPM300 / EU	SPM400 / EU
Dimensions				
Length A	cm	470 / 510	540 / 570	540 / 570
Width (transport) B	cm	205 / 220	210 / 215	235 / 255
Width (conveyor belt folded out) C	cm	405 / 420	460 / 500	500 / 530
Height D	cm	190	190	205
General specifications				
Empty weight	kg	1180 / 1260	1580 / 1650	1620 / 1700
Permitted max. weight	kg	8000	8000	8000
Max. coupling load	kg	1600	1600	1600
Max. axle load	kg	8000	8000	8000
Noise*	dB(A)	80	80	80
Sand bunker content	m^3	2,3	3,0	4,0
Towing vehicle				
Power	hp	30-50	40-60	60-80
Pump capacity oil	l/min	40	50	50
Maximum hydraulic pressure	bar	150	150	150
Tires				
Type of tire		BKT 400/60-15.5	BKT 400/60-15.5	Mitas 500/50 R17
Nominal pressure	bar	3,0	3,0	2,8
Min. pressure	bar	3,0 - 2295 kg/tire	3,0 - 2295 kg/tire	2,0 - 2275 kg/tire
Max. pressure	bar	6,0 - 3485 kg/tire	6,0 - 3485 kg/tire	5,0 - 4420 kg/tire

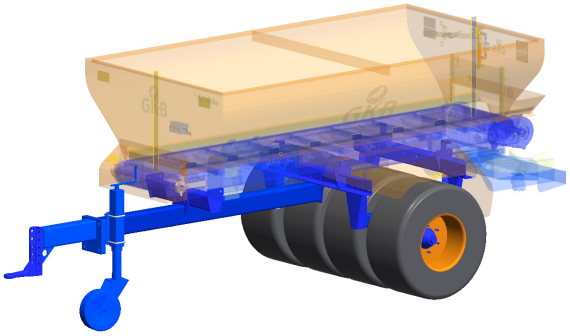
* When using personal protective equipment, bear in mind that in many cases the noise of the Sandspreader is drowned out by the towing/powered vehicle.





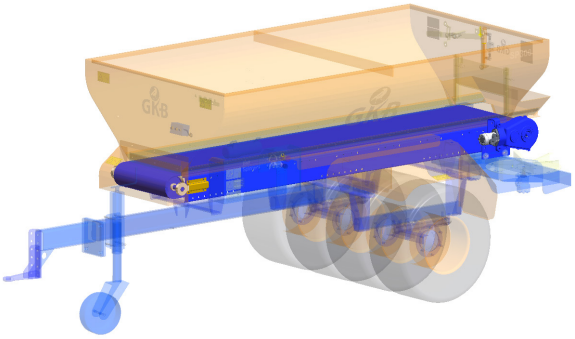
6. SANDSPREADER CONSTRUCTION

A Sandspreader has many different components and parts. This chapter will describe each of them.



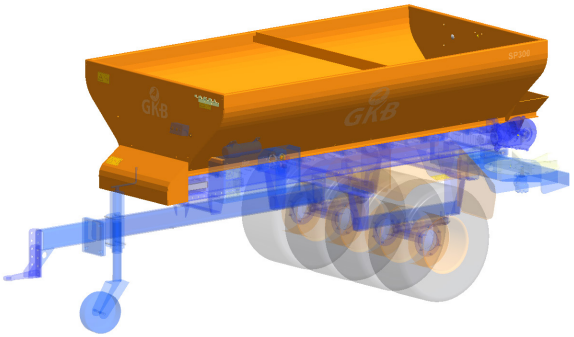
6.1. The frame

The frame carries the sand bunker and the extra conveyor belt. Under the frame there are two oscillating axles equipped with 2 wheels each.



6.2. The conveyor belt

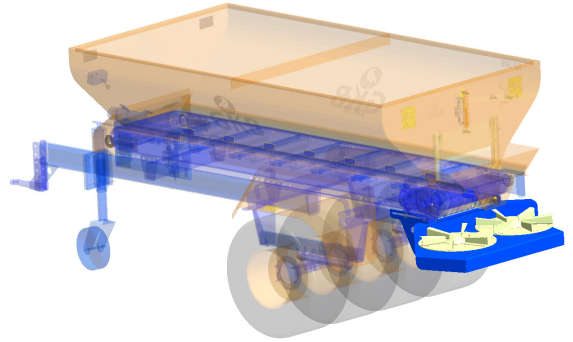
The conveyor belt transports the sand from the bunker to the dishes. SP conveyor belts are driven by one hydraulic motor with a gearbox. SPM conveyor belts are driven by two hydraulic motors with a chain transmission.



6.3. The bunker

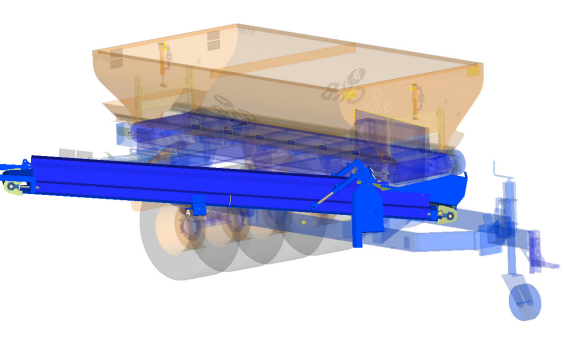
A sand bunker is mounted on the frame to create buffering capacity during machine operation. A dosing valve regulates the supply of sand to the dishes.

When the machine is equipped with a conveyor belt, a second dosing valve is located at the front of the bunker.



6.4. The dish unit

The dish unit contains two dishes which are driven by 2 hydraulic motors which spreads the sand. Rotating force spreads the sand over the field like a fan.



6.5. Additional conveyor belt

The additional conveyor belt is suitable for multiple applications and can swing both horizontally and vertically. A valve is mounted on the discharge side to control the sand flow.

This, along with other components on the machine is controlled via a proportional control box.

6.6. Hydraulic components

The engines and cylinders are driven by the hydraulics from the tractor. For some configurations, the components can be controlled electrically.

7. SANDSPREADER OPERATION

To ensure the proper spreading pattern for your desired result, it is important to understand how to operate each component and to learn what their individual effect is on the sand. The three most common spreading patterns are as follows:

Oval spreading pattern
The oval or rounded image provides good results and is most commonly used. This pattern is optimal for spreading multiple strips.

Pyramidal spreading pattern
If more sand is spread in the middle than at the edges, a pyramid-shape is created. If more than one row is scattered, an undulation occurs on the separation of the rows.

“V” - spreading pattern
When the sand is mainly spread at the edges, traces of sand are left on the field. On the separation of the tracks there will be a track of sand with almost no sand in the middle. In many cases, the cause lies in a dish distance that is too small in relation to the machine.

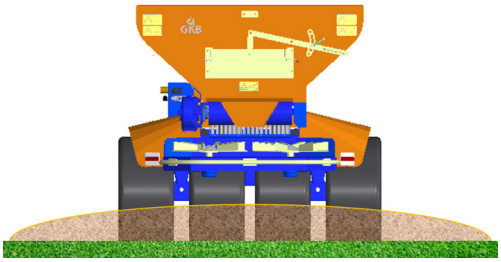


Fig. 1

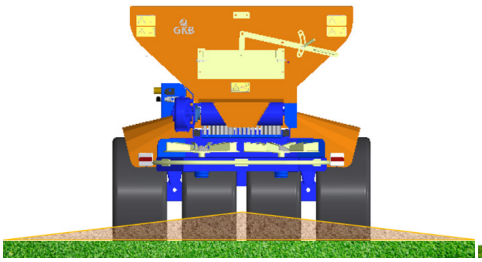


Fig. 2

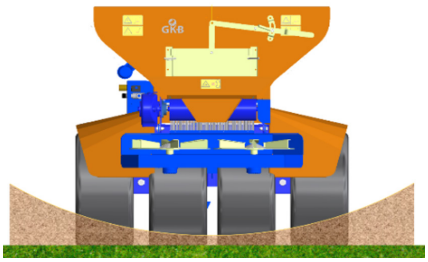


Fig. 3

7.1. Connecting and disconnecting the Sandspreader

The following steps describe how to connect and disconnect the Sandspreader. The sandbox must never be filled while the machine is disconnected. Stay clear from the area between the tractor and trailed vehicle when connected.

In case of an emergency, stop the tractor and machine, switch it off and leave the tractor. First take care of yourself, then help others who are around the machine. Call the emergency line if necessary.

Connecting:

1	Drive the rear of the tractor as close as possible to the tow bar of the Sandspreader. Turn the tractor off and apply the handbrake. Ensure both the tractor and machine are in a level, horizontal position.	
2	Remove the brake from the Sandspreader (if applicable); Position the tow bar in the jaw of the tractor and place the pin through the tow bar;	
3	Turn the support wheel all the way in and fold it up. Ensure no tension is in the spring; Make sure the connection points are free of sand and other contaminants and then connect the hydraulic oil hoses. Connect the 7-pole plug of the lighting (if applicable). Install the proportional control box in the tractor cab (if applicable).	
	See risk analysis: Machine environment/ hydraulics/ electrics	

Make sure that the machine is always connected to the tractor when loading. Load it slowly, the machine might tip over. Make sure that everyone is at a suitable distance. Clean up spilled material after loading.

Disconnecting:

1	Set up the combination horizontally, turn off the tractor, and apply the handbrake.	
2	Remove the oil hoses and hang them in the fixing points at the Topdrop. If necessary, disassemble the lighting plug and the proportional control box.	
3	Turn the support wheel all the way out so the machine will rest on the supportwheel; Apply the brake, if applicable, or place blocks in front of the tirest; Remove the pin out of the towing eye. The tractor can be moved away.	
	See risk analysis: Machine environment/ hydraulics/ electrics	

7.2. Adjusting spreading width

Via speed disk unit

The rotational speed of the dishes determines the spreading width. The higher the rotational speed, the wider the spread. The following are instructions for adjusting the speed.

	Operation on machine:	*Proportional:*
1	Apply the parking brake of the tractor;	Apply the parking brake of the tractor;
2	Turn the bottom knob towards '+' to widen the spreading pattern, towards '-' to narrow the spreading pattern.	Switch on the control box using the switch. The green light will light up;
3		Operate the potentiometer 'SPEED SPINNERS'. Position '0' is off, position '1' is maximum narrowed, position '10' is maximum widened.

⚠ See risk analysis: Disk unit

7.3. Adjusting the spreading pattern

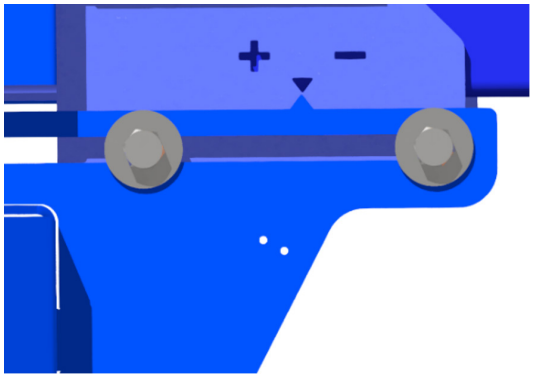
Via distancing dish unit
Changing the distance determines where the sand leaves the dishes. When the dish is further away from the machine, the sand is spread more evenly. When the dish is closer to the machine, more sand is sprinkled at the edges. This gives a 'V-shaped' spreading pattern.

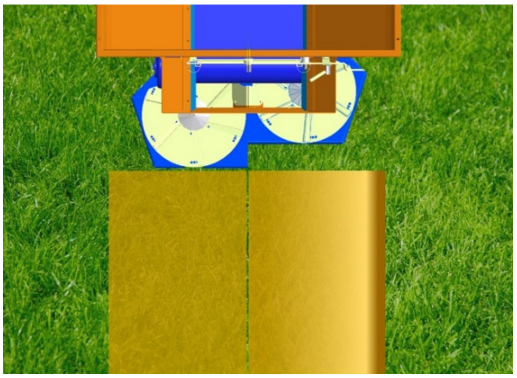
Step-by-step plan:

1. Switch off the Sandspreader;
2. Apply parking brake of the tractor;
3. Loosen the bolts on both sides of the unit to allow the dish unit to slide;
4. Move the dish unit to the desired position: '+' gives a more even spreading pattern, '-' gives a less even spreading pattern;
5. Re-tighten the bolts on both sides of the disk. See Appendix I for tightening torques.

The standard factory setting is achieved by positioning the two triangles opposite each other.

See risk analysis: disk unit/ machine environment

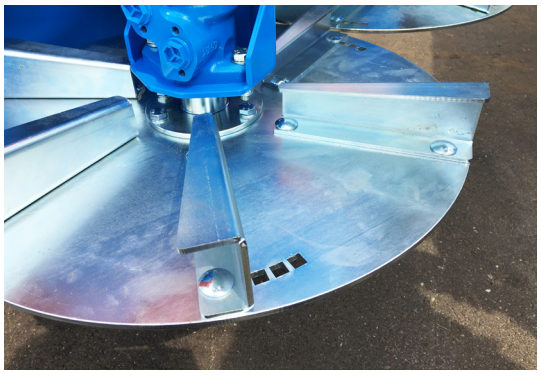


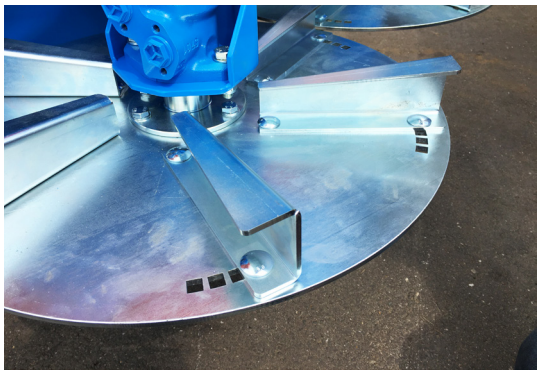


Via guider adjustment
There are six guiders mounted on each disc. These guiders spread the sand. The angle to the center determines sand distribution. A narrow spreading position gives a more even picture.

Step-by-step plan:
1. Turn off the Sandspreader;
2. Turn the tractor off and apply the handbrake;
3. Remove any dirt from the dishes;
4. Remove the bolted connection from the guider by loosening the nut at the underside;
5. Replace the guiders in the desired position. Figure 6 shows the narrowest spreading position;
6. Tighten the bolts. (See Appendix I for tightening torques.)
7. Repeat points 3 through 5 for all guiders;
8. Check that all guiders are mounted in the same position.

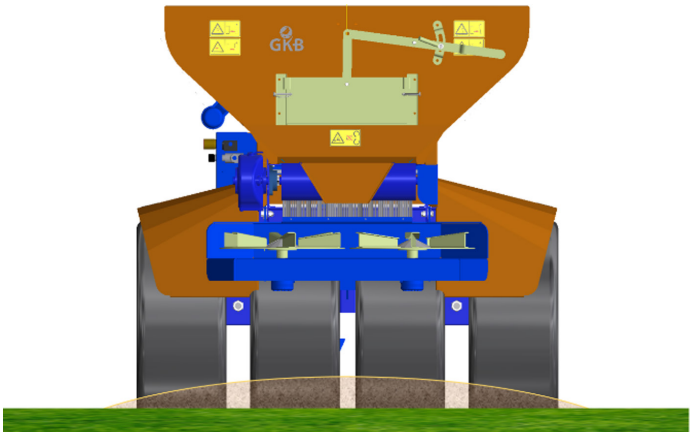
See risk analysis: disk unit/ machine environment

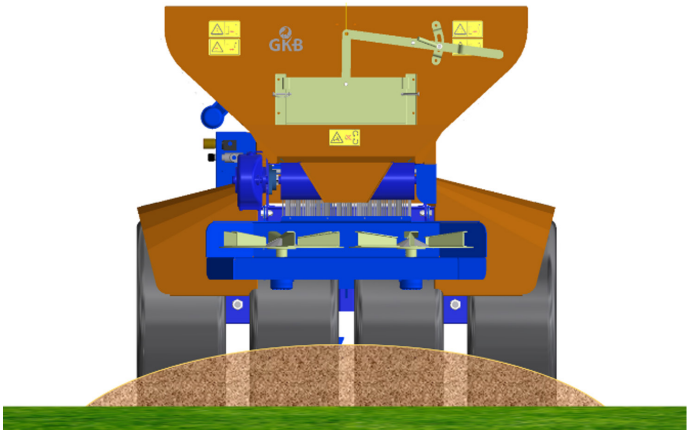




7.4. Adjusting the layer thickness

In addition to the options below, there are many ways to change the spreading thickness. The spreading pattern settings also influence layer thickness. For the correct optimization, maintain a consistent travel speed.





Via speed conveyor belt

There is a conveyor belt under the bunker that transports sand to the dish unit. A higher conveyor speed creates a higher sand flow.

	Operation on the machine:	*Proportional:*
1	Apply the parking brake of the tractor;	Apply the parking brake of the tractor;
2	Turn the upper knob towards '+' to increase the layer thickness, towards'-' to decrease the layer thickness.	Switch on the control box by using the switch. The green light will light up;
3		Operate the potentiometer 'SPEED BELT'. Position '0' is off, position '1' is as thin as possible, position '10' is maximum layer thickness. Operate switch 'A' on the proportional control box in the direction ON and potentiometer 'B'.

⚠ See risk analysis: Conveyor belt/ Diskunit

Via sand dosing valve adjustment

On the back of the machine you will find the dosing valve. This valve, whether manually or hydraulically, limits the transport of sand to the dishes.

	Operation on machine:	*Proportional:*
1	Switch off the tractor including all hydraulics;	Switch off the tractor including all hydraulics;
2	Apply the parking brake of the tractor;	Apply the parking brake of the tractor;
3	Unlock the adjustment lever;	Move the locking pins upwards to increase the layer thickness, downwards to decrease the layer thickness. The locking pins must always be mounted above the valve.
4	Move the locking pins 'up' to increase the layer thickness, 'down' to decrease the layer thickness;	Check if the valve can be operated out of the towing vehicle.
5	Position the valve against the locking pins. The locking pins are mounted above the valve. Tighten the adjustment lever lock;	The valve can now be operated from the tractor up to the set limit while driving.

See risk analysis: Conveyor belt/ Dishunit

7.5. Other optimization possibilities

Take the following into account:

- It is best to use slightly damp or moist sand;
- If the opening of the dosing valve is too large, there will be an interruption of the sand flow and sand will spread unevenly. Reduce the opening and increase the speed of the conveyor belt for the same yield.

7.6. Adjusting the additional conveyor belt

An optional, extra conveyor belt can also be used to transport material from the bunker. Use the control panel to set the desired position. As standard, the belt is locked beneath the bunker and the machine uses the spreading unit to disperse sand.

You can perform the following operations via the control panel:

- Horizontal swiveling (max. 90°);
- Vertical lifting of the conveyor belt (max. 45°);
- Choice between spreading via spreader or extra conveyor belt;
- Choice between close or remote discharge.

Operate additional conveyor belt

1	Unlock the conveyor lock;	
	⚠ See risk analysis: Optional conveyorbelt	
2	Connect the gray connection cable of the Sandspreader to the control box; Connect the 3-pole power cable to the tractor;	
	⚠ See risk analysis: Electrics	
3	Turn on the leftmost switch to activate the control box.	

Proporional operation of additional conveyor belt

Conveyor belt operation switch-on

Switch A to ´ON´ position. The green light lights up.

Expanding the conveyor belt
(Close discharging)

Switch B to icon conveyor belt;
Lever C ↑ to expand;
Lever C ↓ to collapse

Open the cover
(Discharging far away)

Lever D ↓to open the capture cap;
Lever D ↑to close the capture cap

Lifting conveyor belt
(Close to unloading)

Lever E ↑ to lift the conveyor belt;
Lever E ↓ to lower the conveyor belt

Further operation
Potentiometer F: Speed dish/ elevating belt
Potentiometer G: Speed conveyor belt
Switch I: Dish/ additional conveyor belt on/ off
Switch J: conveyor belt on/ off
Switch B: Selector switch conveyor belt/ dish units

7.8. Operation of SP100 on a multifunctional working vehicle

The Sandspreader 'SP100 structure' can be mounted on one of the following vehicles:

- John Deere Progator
- Toro Workman
- Jacobsen Truckster UTV

Follow these instructions for proper mounting:

1	Lift the SP100 and mount the four support legs. Mount the support legs with spindle at the rear. Lock the attachment points with the locking pins; Drive the vehicle under the Sandspreader;	
2	Turn in the rear support legs to mount the pivot point of the SP100 to the frame. Attach the lifting cylinder(s) to the frame of the Sandspreader; Connect the SP100 to the vehicle using the vehicle's fasteners.	
3	Lift the Sandspreader using the cylinder(s) to remove the front support legs. Rear support legs can now be disassembled;	
4	Rotate the support legs 90 degrees to face each other. Slide the support legs fully into the frame and lock them with the four locking pins; Place the ends of the support legs directly opposite each other and secure them by screwing out the rear support legs; Connect the hydraulic hoses using the quick couplings.	
⚠	See risk analysis: Machine environment/ hydraulic system	

Perform the above steps in opposite order to safely disassemble the Sandspreader.

7.10. 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.

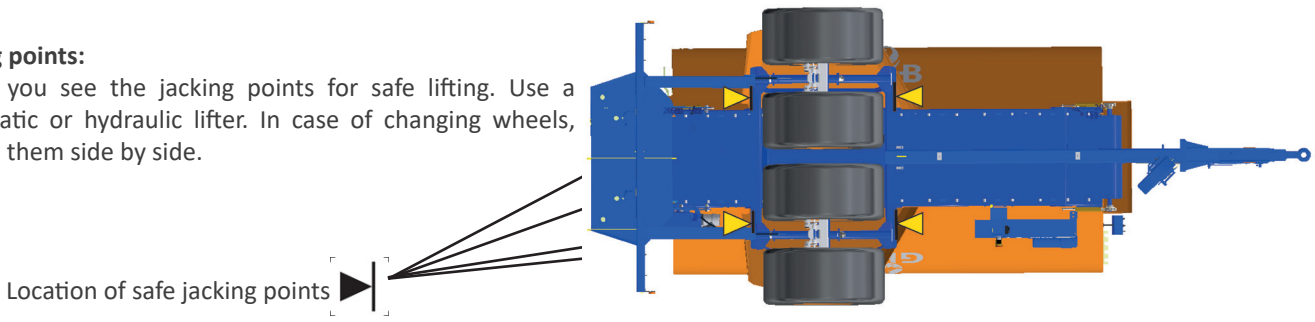
Storage:
The following points must be taken care when storing the machine:

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:
There are fastening eyes provided at the machine for safe lifting. It´s recommended to hoist the machine with lifting straps. Use at least two straps in all cases. The lifting points are indicated in the figure. Before lifting, make sure that the machine is free from loose materials like seeds or infill materials etc.

Jacking points:
Beside you see the jacking points for safe lifting. Use a pneumatic or hydraulic lifter. In case of changing wheels, change them side by side.



8. MAINTENANCE

To maintain machine quality, adhere to the following diagram. The list of spare parts will show the correct parts to replace.
Always ensure that the machine is switched off, cannot move and has cooled down completely. Make sure that maintenance is perfomed by qualified people. Observe the safety precautions mentioned in this manual.

Tire pressure**:	Public roads:	Others:	Operating hours				
26x12.00-12 BKT LG-306 8 PLY TL		2,0 - 3,0 bar					
26,5X14.00-12 BKT LG-408 6 PLY TL		2,0 - 3,0 bar					
400/60-15.5 BKT AW-708 18 PLY	3,0 bar	3,0 - 6,0 bar					
500/50R17 Mitas Serv. AR-03 149D TL	2,8 bar	2,0 - 5,0 bar					

		Before use	50 u	250 u	500 u	Annually
General	Outside cleaning of the machine/ spray suppression valances with water	x				
	Check for visible oil stains/ traces	x				
	Check if all safety stickers are on the machine. Replace if necessary	x				
	Check freewheeling of the disk units and disassemble/ lubricate the parts	x				
	Check if the manual operation of the dosing valve works fine (if applicable)	x				
	Check handbrake operation. If not, contact your dealer*	x				
Hydraulics	Check hoses and quick couplings for dehydration / hairline cracks and replace if necessary			x		
	Check hydraulic components (operation/ damage/ leakage). Replace broken parts before using the machine	x				
	Clean tractor connections with a clean towel or blow it clean with airpressure	x				
Electronic*	Check if the lightening operates correctly and replace if necessary	x				
	7-pin plug check (Clean connection points)	x				
	Check the wiring of the lighting. Replace cables if necessary					x
Rotating parts	Tires - Check profile and replace when a smooth surface is reached		x			
	Tires - Check pressure**		x			
	Conveyor belt - Check for cracks on belt surface or edges and replace if necessary			x		
	Conveyor belt - Check attachment of steering belt and guide rollers and replace if necessary			x		
	Conveyor belt - Inspect tension on the belt Tension when necessary with 3-10mm on 1 meter			x		
	Check locking pins. If they don't work properly, replace the pins	x				
	Tighten bolted connections of rotating parts (wheels/ disk units etc.)		x			
	Tighten bolted connections of fixed parts			x		

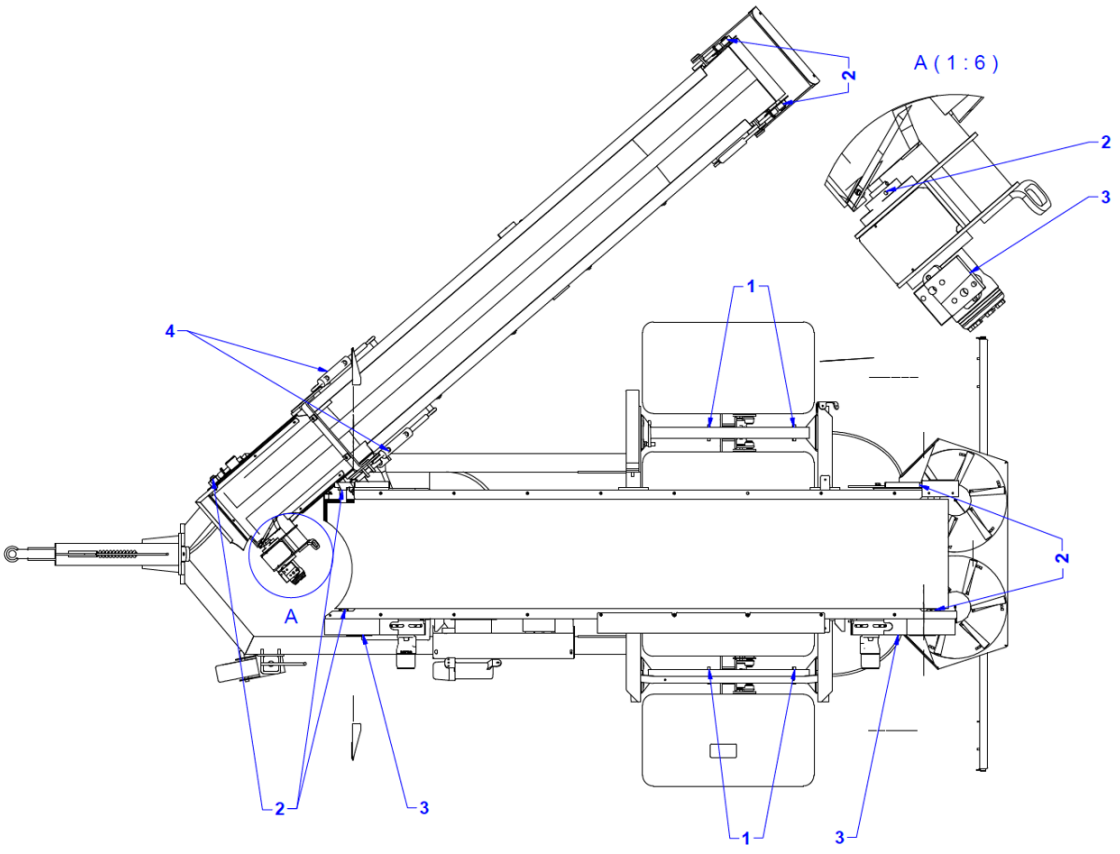
* Applicable only to Sandspreaders with European approval
** Read the safety instructions before doing maintenance at tires. There might be a risk of over inflation.

8.1. Lubrication schedule

To maintain machine quality, adhere to the following diagram.

Always ensure that the machine is switched off, cannot move and has cooled down completely. Make sure that maintenance is perfomed by qualified people. Observe the safety precautions mentioned in this manual.

			Operating hours				
			Before use	50 u	250 u	500 u	Jaarlijks
EP2 grease	1	Lubricate pendulum bearings wheel set			x		
	2	Lubricate bearing conveyor belt		x			
	4	Lubricate hinge points cylinders			x		
SAE90 oil	3	Check oil level SP model	x				
	3	Replace oil gearbox SP model		x[1ste]		x	x
Chain spray	3	Lubricate chain SPM model			x		



9. FAILURES

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

General		
Symptom	*Cause*	*Solution*
Components don´t work at the set speed	Insufficient oil supply from the tractor	Check the specifications/ user manual of the tractor
	Oil quality of the tractor	Check the manual of the tractor for the right quality of the oil or how to replace the oil
	Leakage in the system	Inspect hydraulic hoses and fittings for possible leaks
Wrong spreading pattern of the sand	Many causes possible	See chapter 6 of this manual
Minimal outcome of the sand	Conveyor belt is slipping	Tension the belt
Conveyor belt wrings	Pollution at the inside of the conveyor belt	Inspect and clean the whole conveyor belt including drive and guide rollers
Braking system		
Symptom	*Cause*	*Solution*
Weak brakingpower	Broken brakes	Inspect the quality of the braking pads. Check the expand of the braking system
	Broken cables	Inspect the cables and connection points for damages
	Pulling eye is broken	Inspect the in- and outcoming of the pulling eye
Electrical system		
Symptom	*Cause*	*Solution*
Proportional control box doesn't work properly	Cable isn't connected right with the control box	Check the connections with the control box
	Cable is not connected properly with the tractor	Check the connections of the cable with the tractor
	Broken cable	Inspect cables for damage
	Leakage in the electrical system of the tractor	Inspecteer het elektrisch systeem van de trekker
The lightening system is not working properly	Broken lightbulb	Replace broken lightbulbs
	Light connection points are broken or oxidized	Inspect the lighting unit
	Broken cables or connection points	Inspect the cables from the towing vehicle untill the lighting unit
	Cable plug isn't connected right	Check the cable plug

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

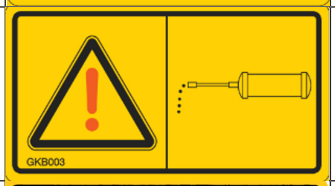
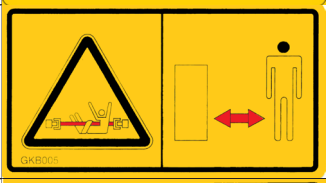
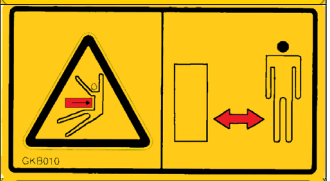
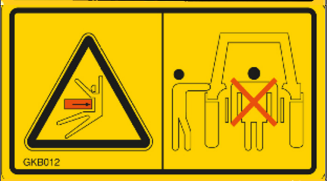
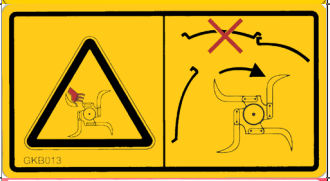
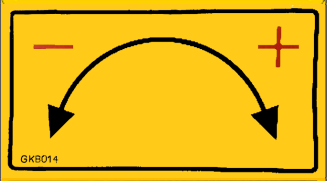
ANNEX II RISK ANALYSIS

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
Conveyor belts	Cutting or crushing injury by rotating parts	If any part of the body or clothing contacts the conveyor belt.	Fixed guards that can only be removed with tools Safety stickers placed Safety instructions in manual
	Injury by impact or crushing by moving parts	If a person is in the immediate vicinity when the conveyor belt is unfolded/maneuvered.	
Sand bunker	Bruising / pinching injury by moving parts	If a person is in the sand bunker during operation, the rotating conveyor belt pulls the person towards the small valve opening.	Safety stickers placed Safety instructions in manual
Diskunit	Bruising / pinching / cutting / crushing by rotating parts	If the person with a body part or clothing encounters the rotating dishes.	Safety stickers placed Safety instrucions in manual
Machine environment	Being run over by the machine and/or tractor, resulting in serious injury	If the person is between the Sandspreader and the tractor and the combination is moving (unintentionally).	Safety stickers placed Safety instrucions 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 Type approval (overrun brake and lightening) when the machine is moving on public roads
		If the person is on a slope next to the machine.	
	Injuries to the body caused by the ejection of material	If the person is behind the machine during operation.	
Optional conveyorbelt	Crushing injuries because of the conveyorbelt when folded out	If the conveyorbelt folds out unintentionally while the clamps aren't fixed	Safety stickers placed Safety instructions in manual
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		
Electrical voltage	Electrostatic shocks causing a shock reaction.	Depending on the weather conditions, the tires are statically loaded. In some cases, when touched, the person may be shocked.	Safety instructions
		If cables are broken	

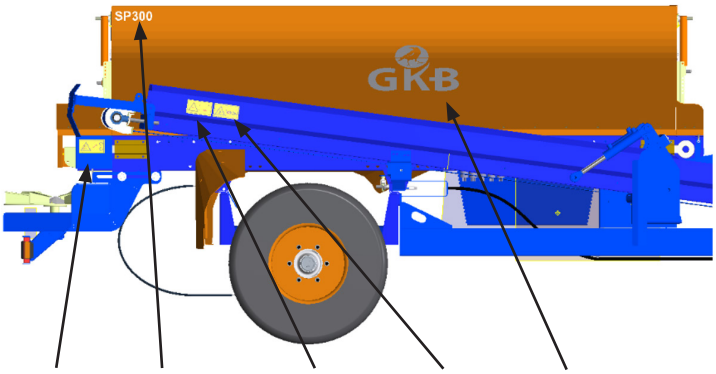
ANNEX III SAFETY STICKERS

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*	

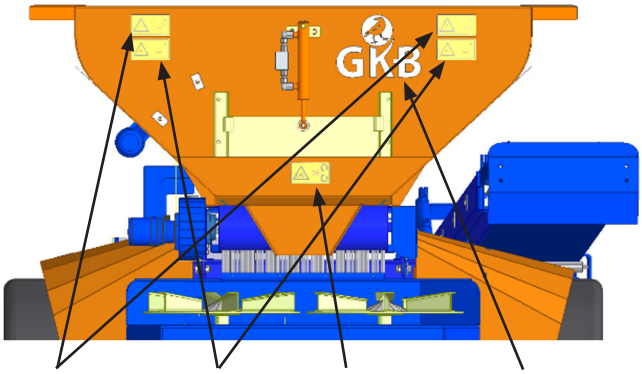
Location safetystickers
The illustrations below show all the safety stickers and their positions:

Left view:



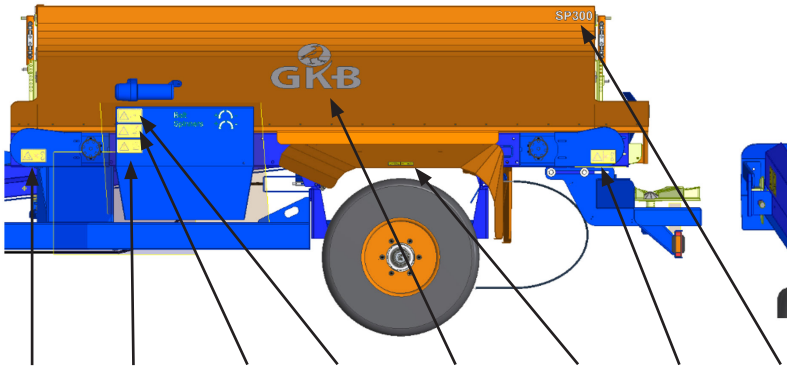
GKB008 MODEL GKB010 GKB009 GKBLOGO

Rear view:



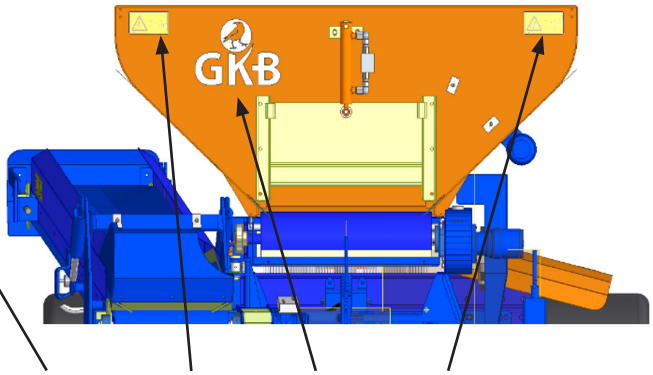
GKB011 GKB010 018417 GKB LOGO

Right view:



GKB008 GKB001 GKB002 GKB003 GKB LOGO GKB009 GKB008 MODEL

Front view:



GKB012 GKB LOGO GKB012