

# Operating and Parts Manual

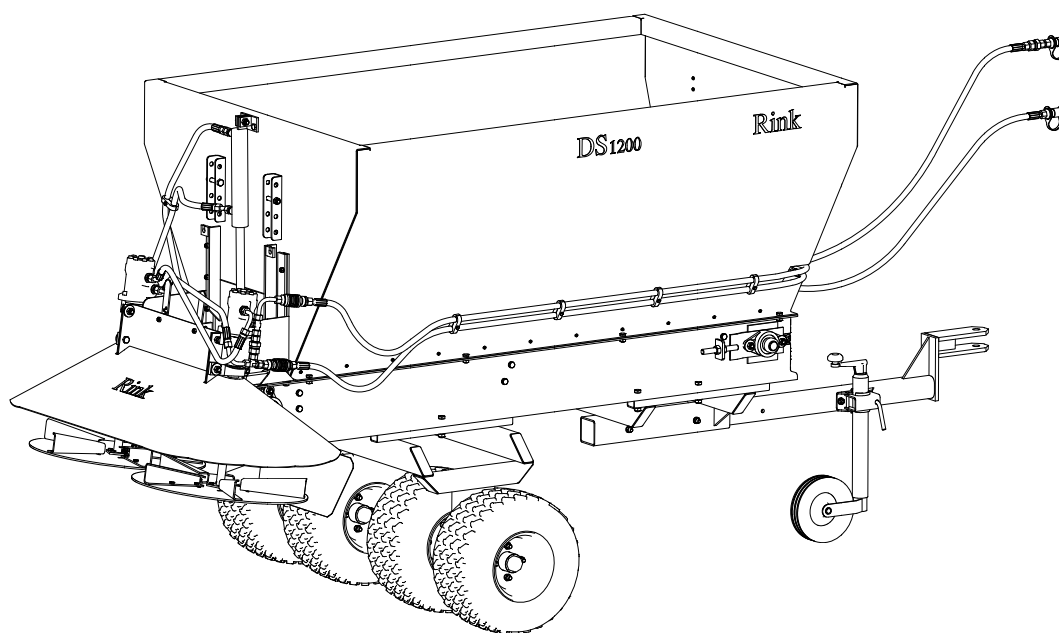


## RINK

### Model DS550/DS800/ DS1200/DS2000

### Serial number:

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#### NOTE:

IN ORDER TO ENSURE THE SAFE USE AND TO ACHIEVE THE BEST PERFORMANCE, IT IS ESSENTIAL THAT THIS OPERATING MANUAL IS CAREFULLY READ BEFORE THE RINK IS USED.

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Technical alterations reserved.

*Parts marked with # are only available as additional equipment.*



## **SAFETY REGULATIONS**



- (1) The **Topdresser DS550/DS800/DS1200/DS2000** is built **solely for spreading small-grained**, loose material such as sand, small granular material or similar products.

Any other usage is not in accordance with the indicated use. The manufacturer **does not answer for any damage resulting from incorrect usage**. The user alone has to incur the risk.

Usage in accordance with the intended use also includes **compliance with the manufacturer's conditions of operation, maintenance and repair**.

- (2) The spreader is built according to prior art and operationally reliable; however, **the spreader could put life and limb of the operator or of third persons at risk** if it is not used, maintained and repaired by persons who are familiar with it and have been informed of the dangers.

- (3) Any person who, in the plant of the user, is responsible for the operation, maintenance and repair of the spreader, **must have read and understood** the operating instructions and, in particular, this chapter, **Safety Regulations**. **Detach the spreader** from the towing vehicle during maintenance and service work. Only use **original spare** parts from the manufacturer for repairs. Alongside the references in these operating instructions, **the general regulations for safety and for prevention of accidents must be observed**. When using public roads, the corresponding provisions (e.g. StVZO) will be in force.

**Accompanying persons are not allowed !**

- (4) A spreader may only be towed along public roads once it **holds the necessary registration**. Complete road-worthiness certificate, licensing permit and the additional safety facilities necessary for this (Lighting set, wheel chocks)<sup>#</sup> are obtainable on request of the customer.

- (5) The operator is obliged to **check the spreader for any external damage or failure before putting it into operation**. Any changes (including operating performance) which might affect safety must immediately be remedied. Changes to and rebuilding of the spreader (other than changes allowed by the manufacturer) are, for reasons of safety, not allowed.



## SAFETY REGULATIONS



- (6) Before starting work, the operator must make himself familiar with all fittings and controls as well as their functioning.  
Spreaders must be properly attached (**Risk of injuries !**)  
Before driving away, check the immediate vicinity and care for a good field of vision.
- (7) **Whilst spreading is in operation, no one is allowed to enter the loading ramp.**  
A label with this notice is stuck on both sides of the spreader. This notice must always be well legible and has to be replaced if damaged!
- (8) Whilst the spreader is in operation, do not enter the zone of danger of the spreader since rotating parts and foreign flying particles might cause any injuries.
- (9) Adjusting and repair work on axle (wheel bearings, tyres) must only be undertaken by properly trained and authorised personnel.
- (10) Before starting work on the hydraulic system, it is important that it is without pressure.  
The hydraulic hose pipes must be regularly checked and replaced if damaged or worn out.  
The replacement hose pipes must conform with the manufacturer's technical requirements.
- (11) The authorized supporting load on the towing vehicle should be noted.
- (12) A sound level of 74 dB (a) is emitted in the immediate vicinity of the spiners on the Topdresser DS550/DS800/DS1200/DS200.

***Used oil damages the environment; please dispose of carefully***

## SHORT DESCRIPTION

The Topdresser DS550/DS800/DS1200/DS2000 is used for spreading small-grained, loose material, such as sand, small granular material or similar products. The spreading equipment of the Topdresser is driven by a gear box with hydraulic motor for conveyor belt and a separate hydraulic motor for each spinner. The number of revolutions of the hydraulic system for the conveyor belt and spinners can be continuously adjusted independently by means of a flow divider. Spreading density or spreading amount can be determined by the tractors speed, spinner speed and conveyor belt speed.

### Technical Data

<b>Dimensions</b>	<b>DS550</b>	<b>DS550 Towed</b>	<b>DS 800</b>	<b>DS 800 Towed</b>	<b>DS 1200</b>	<b>DS 2000</b>
Length	1.9m	2.55m	2.40 m	3.40 m	3.40 m	3.70 m
Width	1.4m	1.6m	1.40 m	1.40 m	1.40 m	1.40 m
Height	1.15m	1.5m	0.85 m	1.49 m	1.56 m	1.75 m
Loading capacity	0.55 m <sup>3</sup>	0.55 m <sup>3</sup>	0.8 m <sup>3</sup>	0.8 m <sup>3</sup>	1.2 m <sup>3</sup>	2 m <sup>3</sup>
<b>Weights</b>						
Authorized total weight	880 Kg	1000 Kg	1500 Kg	2500 Kg	2500Kg	3700 Kg
Authorized axle load		750 Kg		2000 Kg	2000 Kg	3200 Kg
Authorized supporting load		250 Kg		500 Kg	500 Kg	500 Kg
Empty weight	370 Kg	450 Kg	420 Kg	475 Kg	490 Kg	820 Kg
Spreading width	Up to 12m	Up to 12m	Up to 12m	Up to 12m	Up to 12m	Up to 12m
Tyre equipment		4 x18x9.5-8 Block		4 x18x9.5-8 Block	4 x 24x13.00-8 Multi Trac Titan	520/50-17 Rib Trailor
Tyre pressure		0.80 bar		0.80 bar	0.80 bar	2 bar
Speed limit		25 km/h		25 km/h	25 km/h	25 km/h
Towing capacity		20 KW (25 Hp)		20 KW (25 Hp)	20 KW (25 Hp)	26 KW (35 Hp)
Spreading amount	Infinetely adjustable	Infinetely adjustable	Infinetely adjustable	Infinetely adjustable	Infinetely adjustable	Infinetely adjustable
<b>Hydraulic connected load</b>						
Minimum conveying capacity towing vehicle	25 l/min	25 l/min	25 l/min	25 l/min	25 l/min	25 l/min
Minimum pressure towing vehicle	140 bar	140 bar	140 bar	140 bar	140 bar	140 bar

**The typeplate is fastened onto the front right-hand side of the spreader**

## INITIAL OPERATING

- \* **Should the spreader be used on public roads**  
**(German law: only possible with licensing certificate and registration)**

- Attach license plate to plate holder at the left-handed rear side.
- Check lighting set<sup>#</sup>.

- \* **After the first ride with a full load**

- Retighten wheel nuts.
- Check wheel hub clearance and have it adjusted, if necessary.
- Test tire pressure.

### **For DS800 Mounted machine on utility vehicle**

- Take away loading ramp of vehicle
- Connect complete machine with subframe (same as with ramp) on the connecting points, and secure machine with pin.
- Install hydraulic pipes under machine to the back.

## OPERATION

### **Before every ride**

- Check for any externally recognizable failures or damage and repair them.
- Check tire pressure.
- Check lighting<sup>#</sup>.
- Check conveyor belt tread, reset if necessary. Conveyor belt must not graze the sides.

## OPERATION

### Coupling and taking off

- Attach spreader to towing vehicle.
- Mount spreader on back of utility vehicle.
  
- Carry out hydraulic connection (see page 8 for further details):
- Oil circulation is required. Install valve (5) for conveyor belt on towing vehicle.  
Please use therefore enclosed bracket.
  
- With External Oil Supply<sup>#</sup>, mount the plug-on pump on the PTO driver on the tractor and secure against slippage using the mounted torque support.  
(PTO speed 450 rpm).

To ensure optimum operation, the oil temperature should have reached a temperature of around 25°C before starting work (see viewing window at the oil tank). Not sufficient oil power, can reduce the spinner disc speed. Check the oil level before starting work (centre of the oil viewing window).

- Plug the seven-pole plug<sup>#</sup> into towing vehicle.



**Hydraulic hoses in such a way that they do not drag to the ground or chafe at the towing vehicle.**

**Taking off the spreader is carried out in an analogous way.**

### Loading

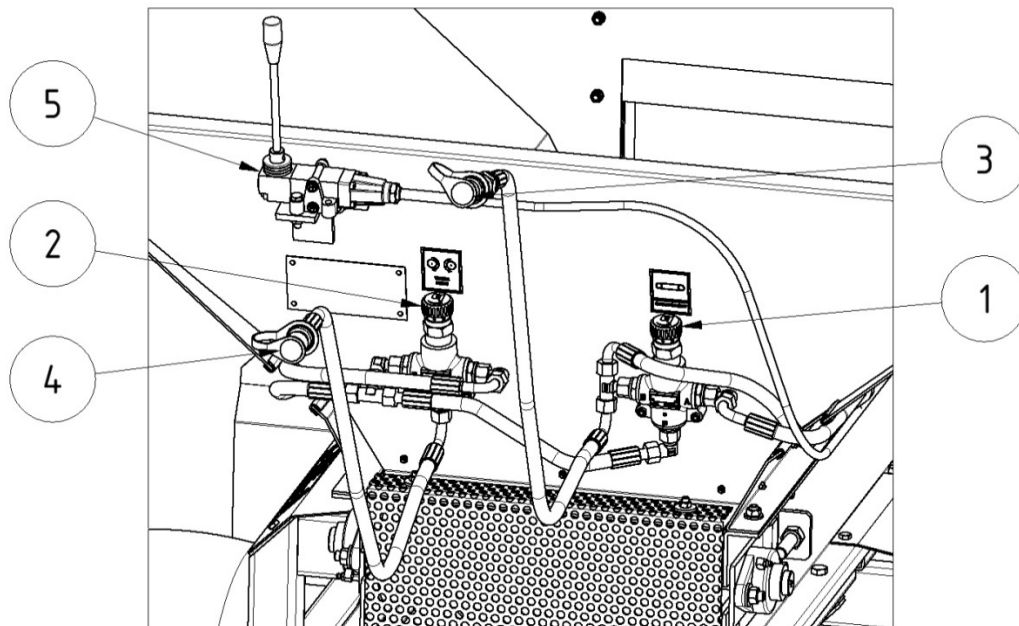
- Pay attention to the desired maximum ground pressure.
  
- When loading, pay attention for the authorized total weight.

## SPREADING

If you run the machine, the spinner discs will be activated immediately. The conveyor belt and the closing gate will be activated with the valve (5). First the gate opens and part of a second later the conveyor belt starts moving. Before starting work, please choose gate opening 1-4 at the rear of the machine.

### Controls:

- 1 Regulator for setting the speed of the conveyor belt
- 2 Regulator for setting the speed of the spinner discs
- 3 Reverse hydraulic line
- 4 Power hydraulic line
- 5 Valve for activating conveyor belt and gate



### Adjusting spreading thickness:

The spreading thickness (mm) is dependent on

- the speed of the towing vehicle
- the speed of the conveyor belt (regulator)
- the speed of the spinner discs
- the gate opening

Set the controller for the conveyor belt speed to the required value.

Set the controller for the spinner disc speed to the required value.

Activate valve for gate and conveyor belt

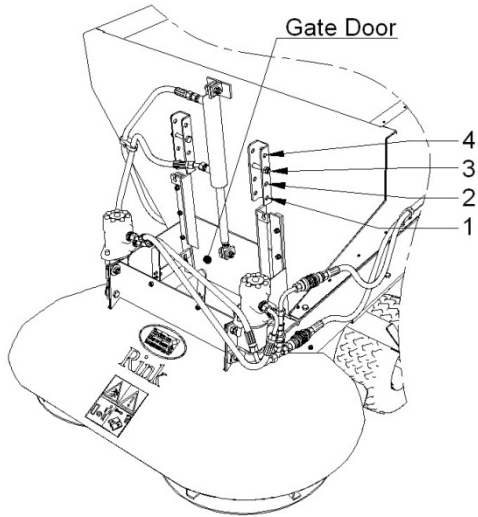
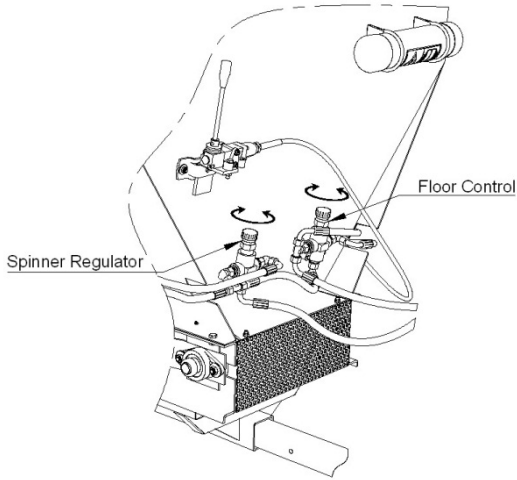
**Different spreading material needs different adjustments. On the machines DS550/DS800/DS1200/DS2000 we have given you all possibilities to adjust a very even spreading pattern.**

- 1 Angle of the spreading showels
- 2 Conveyor belt speed
- 3 Spinner disc speed
- 4 Opening of the automatic gate



## Rink Disc Spreader DS550/DS800/DS1200/DS2000 Spreading Guide

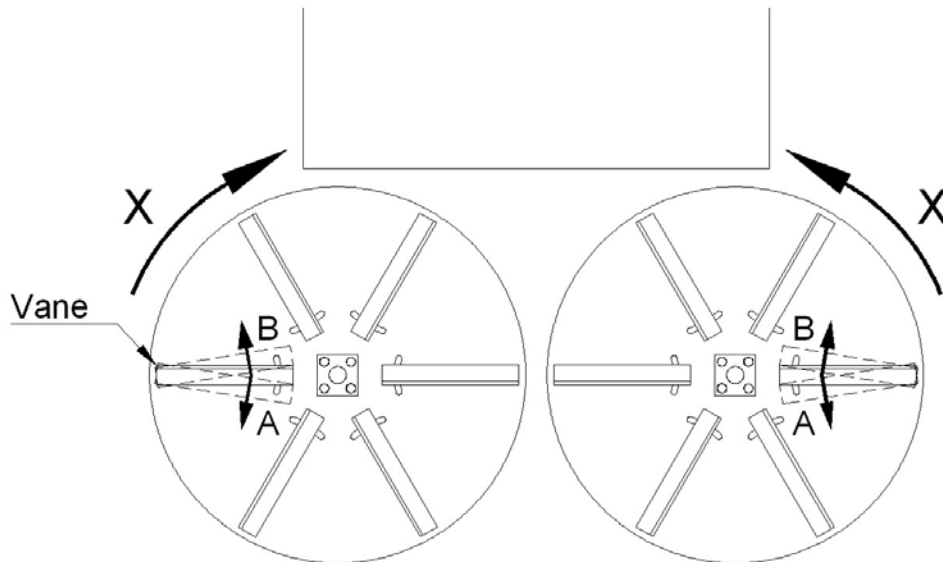
Application Topdressing	Spinner Regulator	Floor Control	Gate Door	Approx. Spreading Width
Light	8-10	10	1	10m
Medium	6-7	10	2	8m
Heavy	4	10	3-4	4m



## Disk settings in case of unequal spreading pattern:

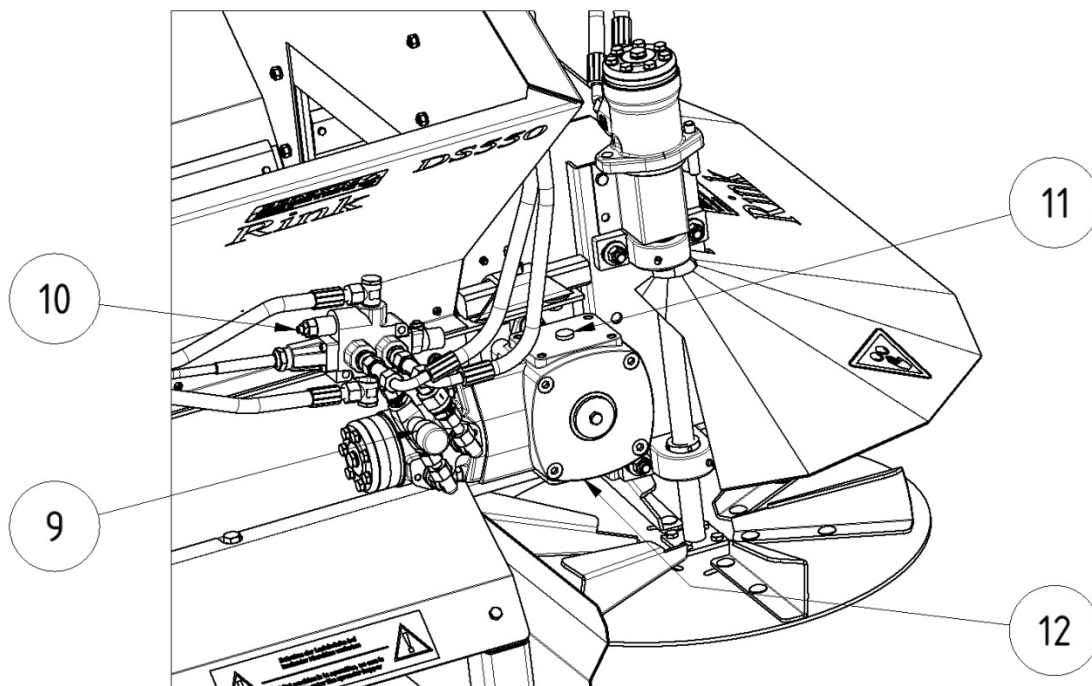
**A: Only outside material concentration – move all vanes in direction B**

**B: Only inside material concentration – move all vanes in direction A**



## Gate opening setting

The gate opens automatically when the spreading operation is started. The opening time of the gate is dependent on the mass of the material to be spread. It is therefore possible that a different material the gate does not open and needs adjusting. This can be done through valve 9 has to be set by the knob.



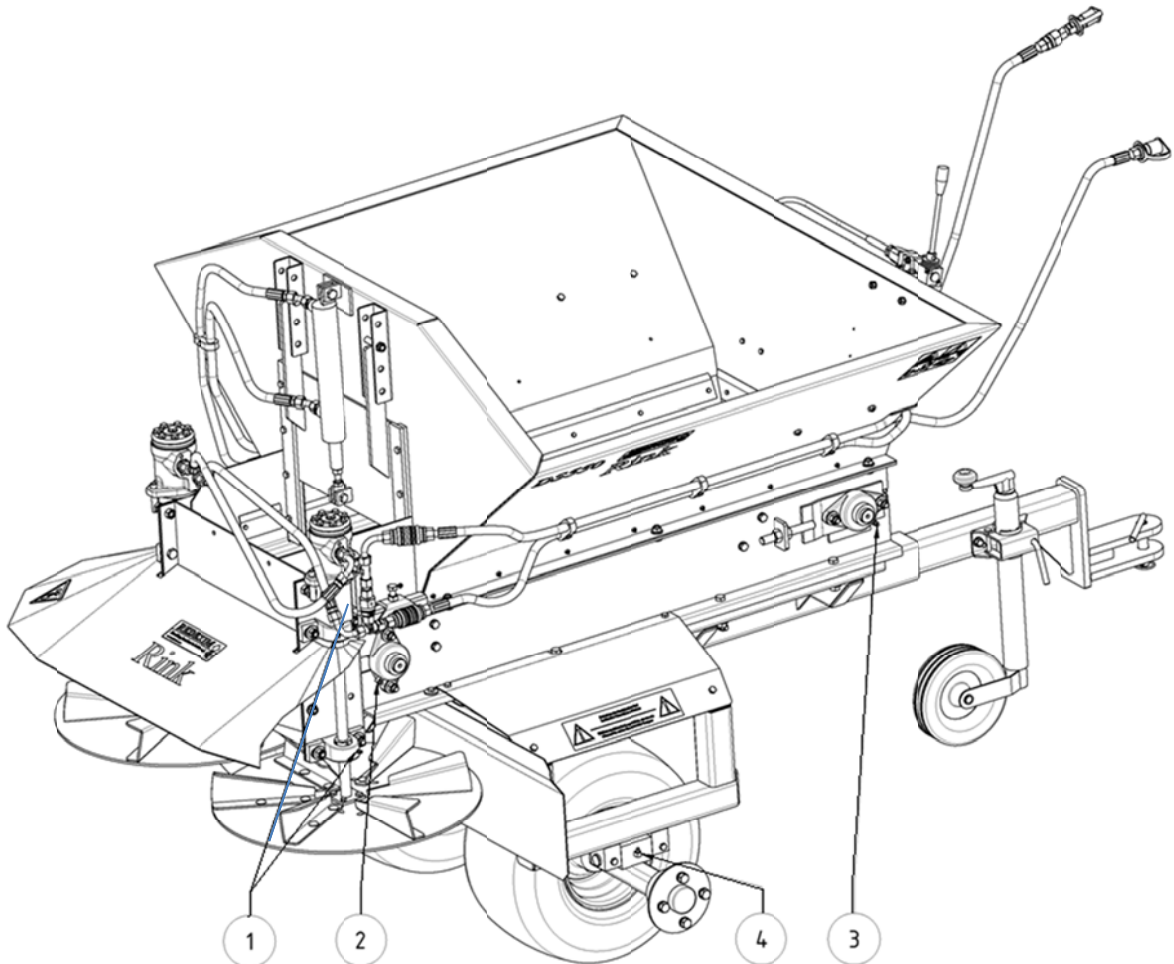
## REPAIR AND MAINTENANCE

Lubricate spreader (every 50 operating hours)

Lubricate with multi-purpose grease:

- 1 Bearings on both sides of the spreading discs
- 2 Bearings on both sides of the rear conveyor shaft
- 3 Bearings on both sides of the front conveyor shaft
- 4 Bearings on both sides of the drive axle  
(only on DS550/DS800 towed and DS1200)

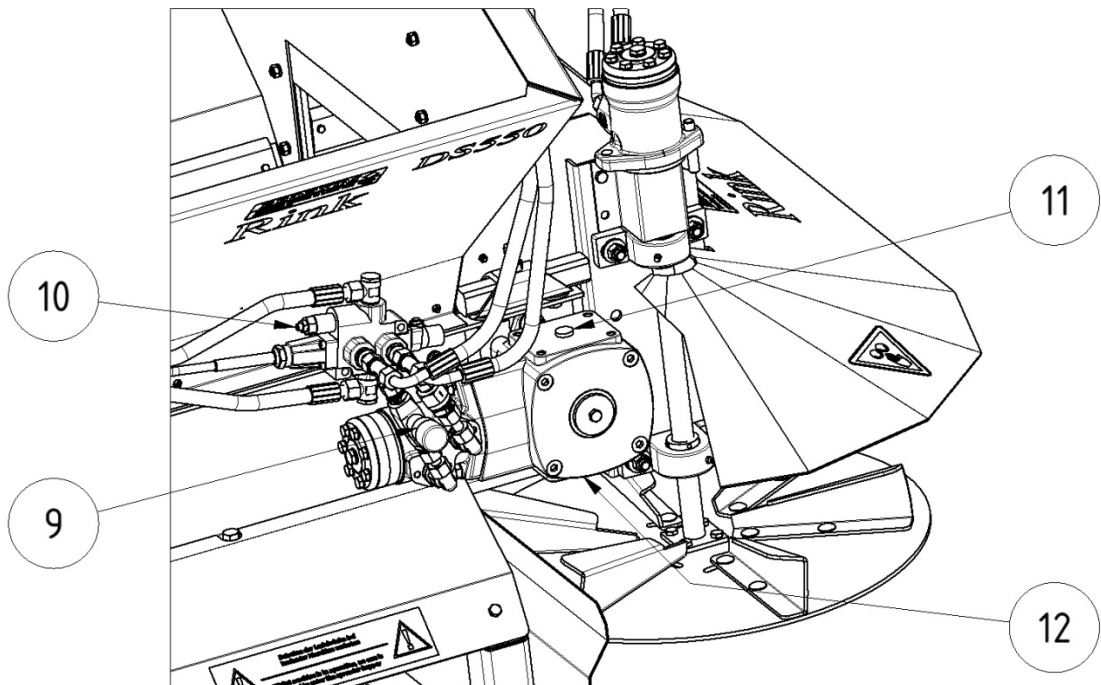
*Bearings without a lubricating nipple require no greasing.*



## REPAIR AND MAINTENANCE

### Oil change for conveyor belt gears (every 2 years.)

- Unscrew filler screw (11).
- Loosen drain plug (12) from the below inside area and drain off oil.
- Screw on drain plug with new gasket.
- Add 0.6 l Oil **SAE 120 to 140**.
- Screw on filler screw with the new gasket.



### Axle maintenance (every 100 operating hours)



**Maintenance work on the axle should only be carried out by fully trained and authorised personnel.**

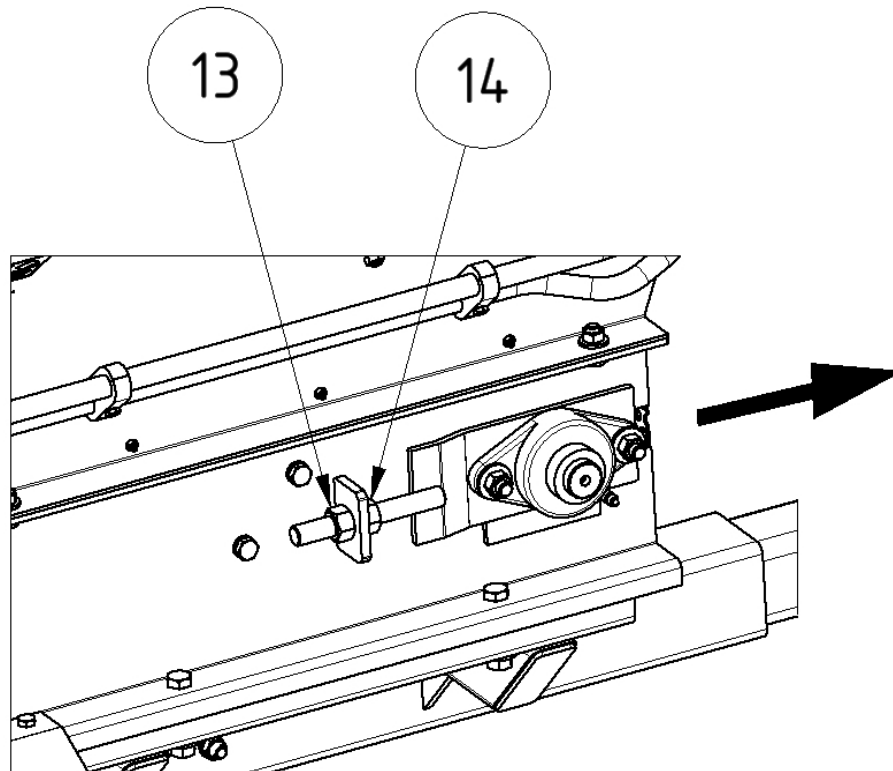
- Retighten wheel nuts.
- Check wheel hub clearance and have it adjusted, if necessary

## REPAIR AND MAINTENANCE

### Stretch conveyor belt (in case of slipping)

- Loosen counternut (13).
- Turn nut (14) once clockwise.
- Tighten counternut.

**!** Excessive stretching can reduce the life span of the conveyor belt.

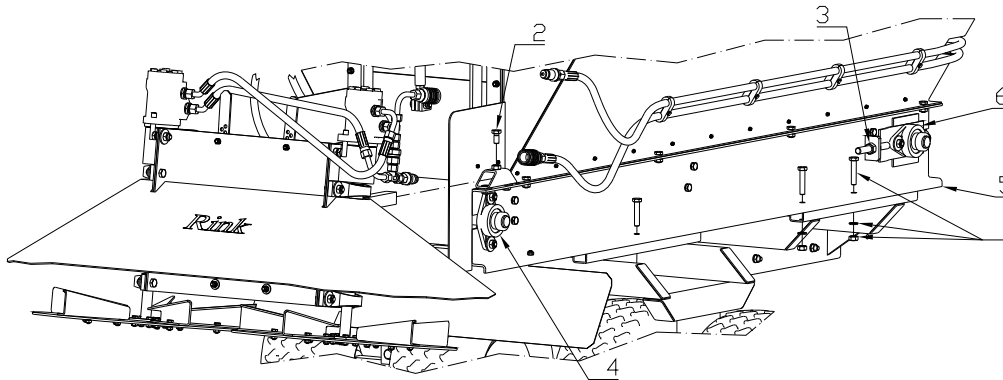


## REPAIR AND MAINTENANCE

### Installing and removing the conveyor belt

- Loosen screws on both sides (1) and remove the chassis.
- Remove the spreading device by loosening the screws (2).
- Release the tension on the conveyor belt on both sides (3).
- Remove the bearing on the right seen in the direction of travel (4).
- Pull away the side element (5) with tension bearing (6).
- Remove the conveyor belt.

***The reassembly takes place in reverse order.***



### Stretching conveyor belt after assembly

- Mark a distance of 1000 mm (39") in the loose condition of the belt. Span the belt with the 2 tension bolts to a length of 1003 mm (40").
- Allow the conveyor belt to run in for approx. 30 minutes until it runs centrally.

**The conveyor belt should not graze the sides. If readjustment is necessary increase tension on the side which is doing the grazing.**

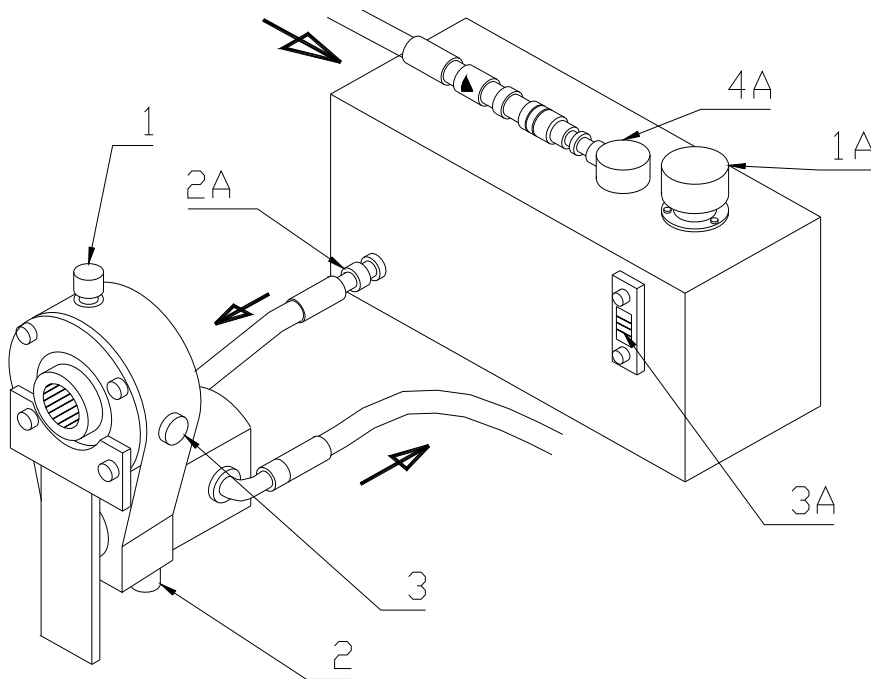
**Too much tension will reduce the life span of the conveyor belt.**

## REPAIR AND MAINTENANCE

### External hydraulic unit#

#### Oil change for the hydraulic pump (every 100 operating hours)

- Unscrew filler screw (1).
- Loosen drain plug (2) and drain off oil.
- Screw on drain plug with new gasket.
- Add oil **SAE 90** right up to the level of the control screw (3).
- Screw on filler screw with new gasket.



#### Oil change for the hydraulic tank (according to requirements)

- Unscrew the filling nozzle (1A).
- Release the suction hose (2A) and drain off the oil.
- Screw the suction hose back into place.
- Top up with **Bio-Hydraulic oil CG 46** until the level reaches the centre of the viewing window (3A).
- Screw the filling nozzle back on.

#### Please note:



**This is a closed hydraulic circuit. In order to prevent the ingress of contaminants, the runback filter (4A) must be replaced every 100 operating hours.**

# Problem analyse

Gate will not open	No sand in hopper	Fill up the hopper
Disc will not spread wide enough	Spinners turn to slow	Check oil supply
Sand layer to thin	Not enough sand comes on to the disc.	Open gate more, increase the belt speed to low
	Disc speed too fast	Lower disc speed
	Forward speed too high	Lower forward speed
Sand layer to thick	Too much sand comes on the disc	Close gate more lower belt speed
	Disc speed to low	Check speed of the disc
	Forward speed to low	Speed up forward speed
Too much sand in the center of the strook	Vane of the disc not in right position	Change angle of the vane (note: Depending on material)
Too much sand on the outside of the strook	Vane on the disc not in right position	Change angle of the vane (note: Depending on material)
Lumps of sand fall of the belt	Belt turns too slow	Speed up the belt
	Sand is too wet	Reduce opening of gate and increase belt speed
Belt not starting	Valve is not activated	Activate valve
Hydraulic components are not working	Check hydraulic hoses if connected correct	Change pump line and reverse line
Belt is not moving	Too Much weight, tension too low	Reduce weight and/or tight belt



Parts list

RINK DS550/DS800/DS1200/DS2000

### Ordering spare parts

To ensure that your spare parts order can be processed quickly, always specify the following data when ordering.

- Chassis number / Ident. number
- Model (year of construction if available)
- Part number from respective spare parts list
- Designation
- Order number

Ordering example: 529413 1994 13 Conveyor belt 10524

Chassis number      Model      Part no.      Designation      Order no.

