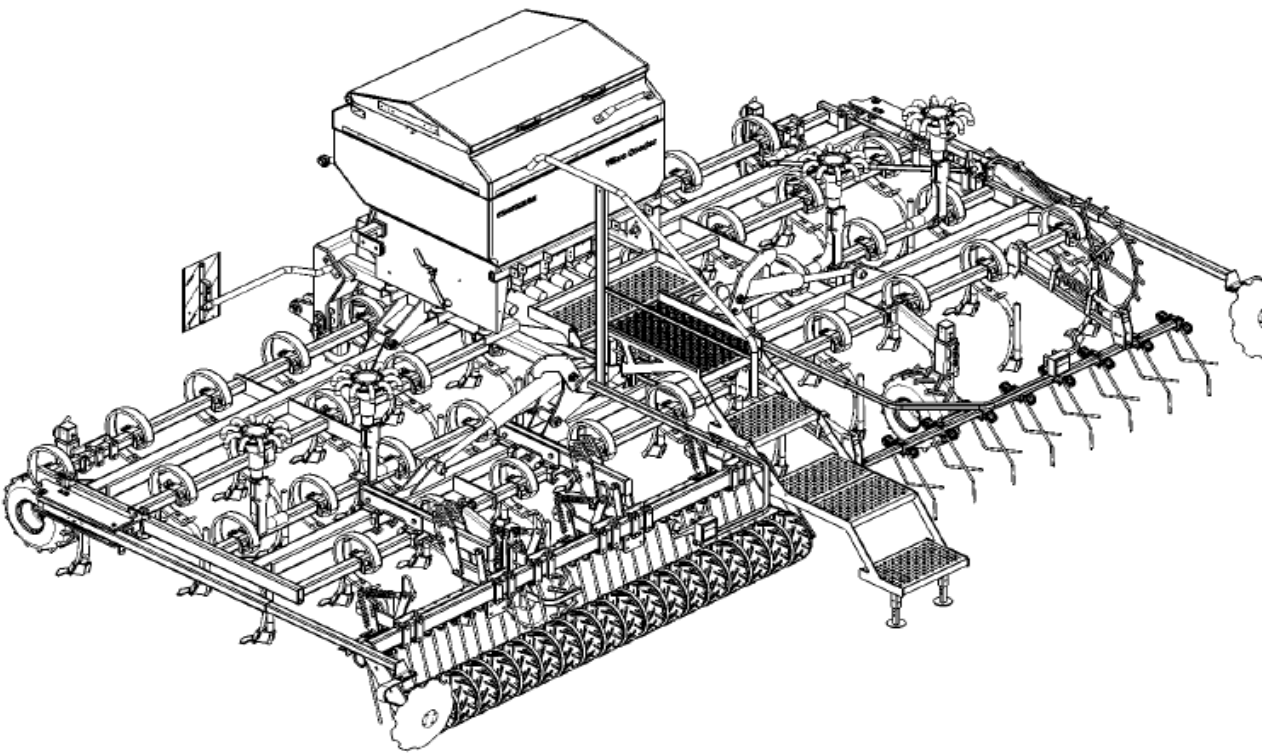


VIBRO SEEDER



Directions for use

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Introduction

Congratulation with your new KONGSKILDE Vibro Seeder!

The KONGSKILDE Vibro Seeder is a tine seeder, based on the well known vibrating KONGSKILDE tines.

Vibro Seeder is a fully mounted seed drill.

Vibro Seeder is mainly designed for seeding in unploughed conditions, where the open frame allows passage of straw and field residues. A soil preparation is normally necessary prior to the seeding operation, in order ensure enough loose soil around the seeds.

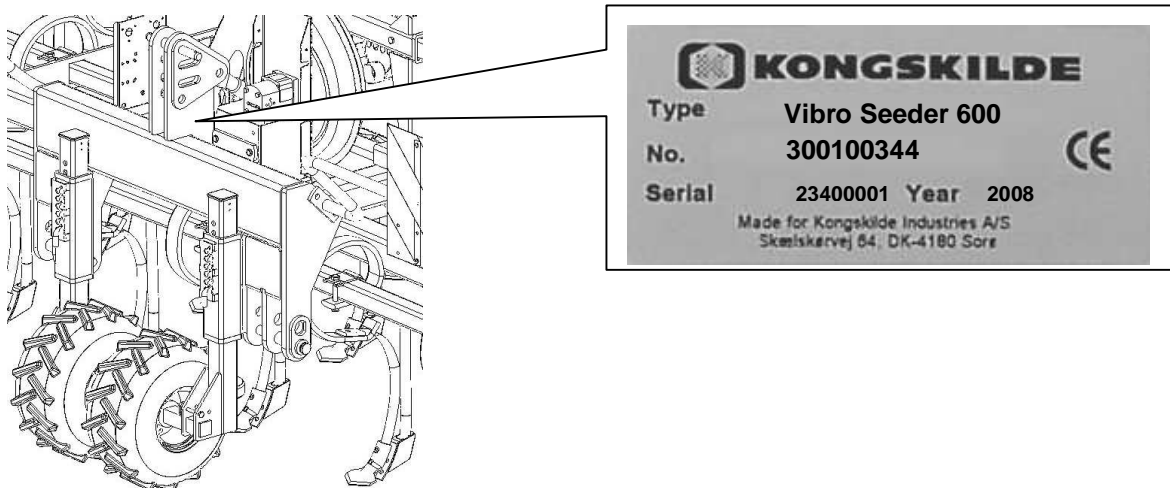
In order to obtain good weight distribution on the tractor, it is recommended always to use adequate front weights on the tractor.

In order to get the full benefit from your new seed drill, Kongskilde Industries A/S recommends to read this users manual, before taking the seed drill in use.

Kongskilde Industries A/S is convinced that you will benefit from your new Vibro Seeder!

Identification

The specifications of Vibro Seeder can be found in the type plate. This is located on the left side of the head stock, as shown on the below drawing.



Please note the specifications from the type plate:

Type: _____

Name of implement.

No.: _____

EDP identification number.

Serial: _____










The serial number for the specific implement.

For any queries regarding Vibro Seeder and for ordering spare parts, please quote these specifications.

The numbers for the spare parts can be found in the spare parts list supplied along with this users manual.

Explanation of symbols

The symbols given in this manual will shorten the text and simplify working with the document. Please study carefully all symbols and their meaning prior to operation.

	Warning	Important note
	Visual inspection	Visual inspection, inspection of condition
	Setting	Check and adjust measures and settings
	Lubricate	Lubricate or grease parts of machine
	Securing	Adjust securings (bolts, guards, rings)
	Easy servicing	Facilitating work
	Observe direction of mounting	For these parts a wrong direction of mounting might be possible
	Recycling	Special operating elements are to be recycled
	Protection of environment	Follow local prescriptions for environmental protection

Safety



General safety advice

- Before commissioning Vibro Seeder read the operating instructions and safety advice. It is mandatory to stick to the safety advice and the warnings stated in the manual. The manufacturer declines any responsibility for accidents and damages to Vibro Seeder resulting from failure to apply safety advice.
- Vibro Seeder should only be used, maintained and repaired by persons, who are familiar with the safety advice and who are informed about the dangers.
- General safety advice and the regulations for the prevention of accidents must be observed.
- The safety instructions must be passed on to other users.
- Use the implement only for soil preparation and seeding in farming.

Coupling and uncoupling

- Be careful when coupling or uncoupling implements to and from the tractor. Do not stand between tractor and Vibro Seeder, when the tractor is moving.
- Fasten the implement only at the provided points.
- Check and attach transport equipment, for example lighting equipment, warnings and possibly safety equipment.
- Observe the tractor's operating instructions.
- Use original and correct coupling parts.

Three-point hitch or linkage

- The attachment category for the three-point hitch on the tractor and the implement has to match properly, or the appropriate adjustments must be made.
- Before coupling, check all linkage parts for cracks, missing components, loose bolts and nuts etc. Make sure the implement will not disconnect by accident during fieldwork or transport.
- While the implement, when mounted in the three-point hitch, is in transport position, ensure sufficient locking at the side of the three-point linkage.

Operation

- Before each use, check the implement and the tractor as to their road and operational safety.
- Before starting work, familiarise yourself with all facilities and operating elements. It is too late to do so during work activities.
- Examine work surface for hidden obstacles, which could pose a risk (For example under-ground cables, pipes).
- Adjustments should only be made on the implement, when it is completely parked on the ground in unfolded position and when the engine of the tractor is switched off. Remove ignition key and apply hand brake.
- Wear tightly fitting working clothes. Avoid loose clothes, which could be caught in movable parts.
- Wear strong shoes or preferably safety shoes.
- Unauthorised persons are not allowed to stay in the working area during work. No work is to be carried out, if there are unauthorised persons, especially children, near Vibro Seeder or in the danger zone of foldable parts without keeping a safe distance.
- It is prohibited to allow any person to ride on Vibro Seeder.
- Never work diagonally to inclines or slopes, where there is a risk that the tractor can tilt.
- Be aware of rotating parts inside the fan – do not put in fingers while the fan is in operation.
- Ear plugs must be used in order to protect from the noise coming from the fan.

Transportation by road/transport

- When using public traffic routes, observe the regulations specific to the particular country including the local maximum transportation width.
- The attachment of implements should not exceed the admissible total weight, the admissible axle load and the weight-bearing capacity of the tractor tyres and the capacity of the lift.
- The tractor must be suitable for Vibro Seeder.
- To ensure the ability to steer, the front axle load should always amount to at least 20% of the total weight of the tractor incl. the implement.
- Hitch up the machine as far as it is necessary to ensure a safe road transport.

Attention!

The driving behaviour of the tractor changes.

Suit your driving according to the conditions of the road.

Pay special attention to the centre of gravity of hydraulic foldable machines.

Do not exceed a speed of 25 km/h when transporting Vibro Seeder on the road.

Before driving

- Observe admissible axle loads, total weights and transport measurements.
- For transportation on any public road, track or place, the legal transport width according to local rules should not be exceeded. If the transport width is exceeded, a special authorisation may be obtained under certain conditions from the appropriate authorities.
- Road behaviour, performance, ability to steer and brake are influenced by attached or coupled implements and ballast weights. Ensure that there is sufficient ability to steer and brake.
- Before starting off Vibro Seeder, check the immediate area. Pay special attention to children and that there is sufficient visibility.
- For road transportation with the implement raised, lock the control valves of the tractor.
- Make sure that wing security locks are correctly locked.

NOTE:

The security locking devices prevents from accidental unfolding in case of a defect in the hydraulic hoses. However, it may not prevent unintentional unfolding if the security lock is operated by mistake.

During transportation

- Riding on the implement during work and transport is not permitted.
- Never leave the driver's cab during transportation.
- When driving around corners and bends take the extra width and the inertia of Vibro Seeder as well as the high centre of gravity of the folded frame into consideration.

After transportation

- Before leaving the tractor, set the implement down onto the ground, switch engine off, remove ignition key and apply hand brake.
- No one should stand between tractor and implement without securing the vehicle by the hand brake and/or stop chocks.
- Foldable frame parts should be completely unfolded. The implement must only be parked with unfolded frame parts.

Maintenance

- Repairs, maintenance and cleaning work as well as the solving of functional faults should principally only be carried out, while the engine is switched off. Remove ignition key and apply hand brake.
- For maintenance on a raised up implement, always secure Vibro Seeder on suitable stands.
- Do not ever go under Vibro Seeder unless secured on suitable stands.
- Never attempt to disconnect hydraulic connections while system is pressurised.
- When changing work tools, which have cutting edges, use suitable tools and gloves.
- Spare parts should correspond at least to the technical requirements defined by the manufacturer. Use only original parts.

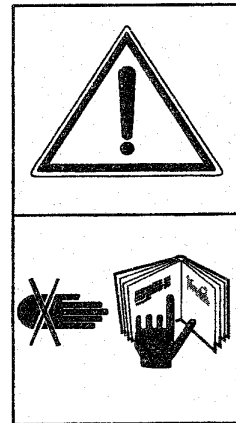
Safety decals

1

Instructions

Read and observe the operating instructions. Before commissioning Vibro Seeder, read and observe both operating instructions and safety advice.

Part no.: 71 000 187 250

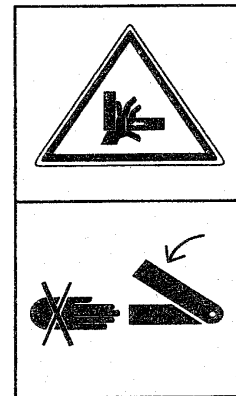


2

Danger of crushing

Never reach into the danger zone, as long as there could be moving parts.

Part no.: 71 000 629 549

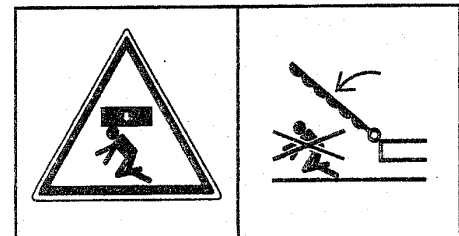


3

Moving Parts

Do not stand near foldable frame of Vibro Seeder.

Part no.: 71 000 629 546

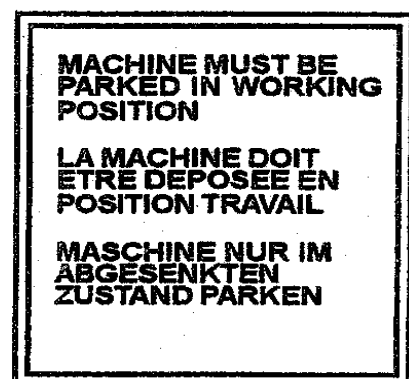


4

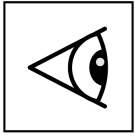
Park in lowered position.

Vibro Seeder must ONLY be parked in working position.

Part no.: 71 000 646 708

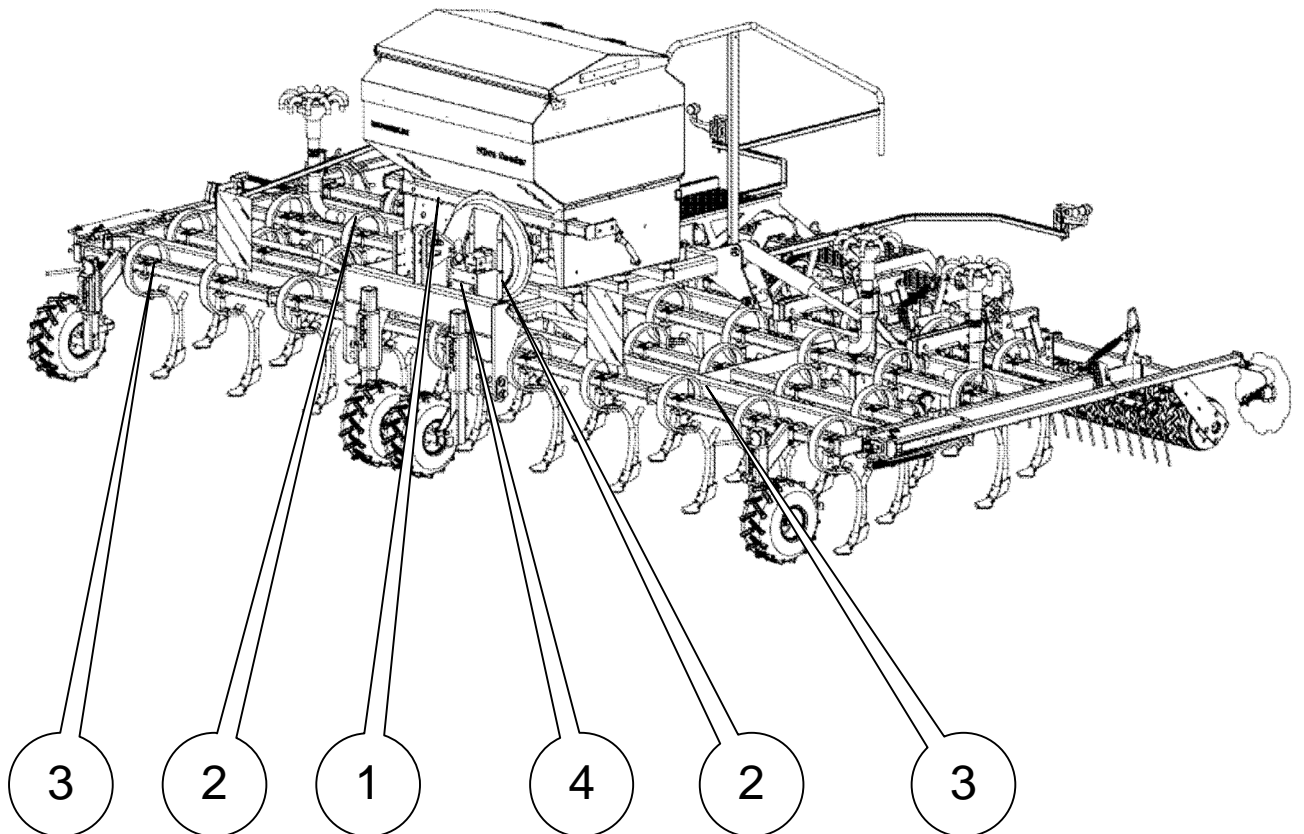


Always keep safety decals in clean and readable condition!

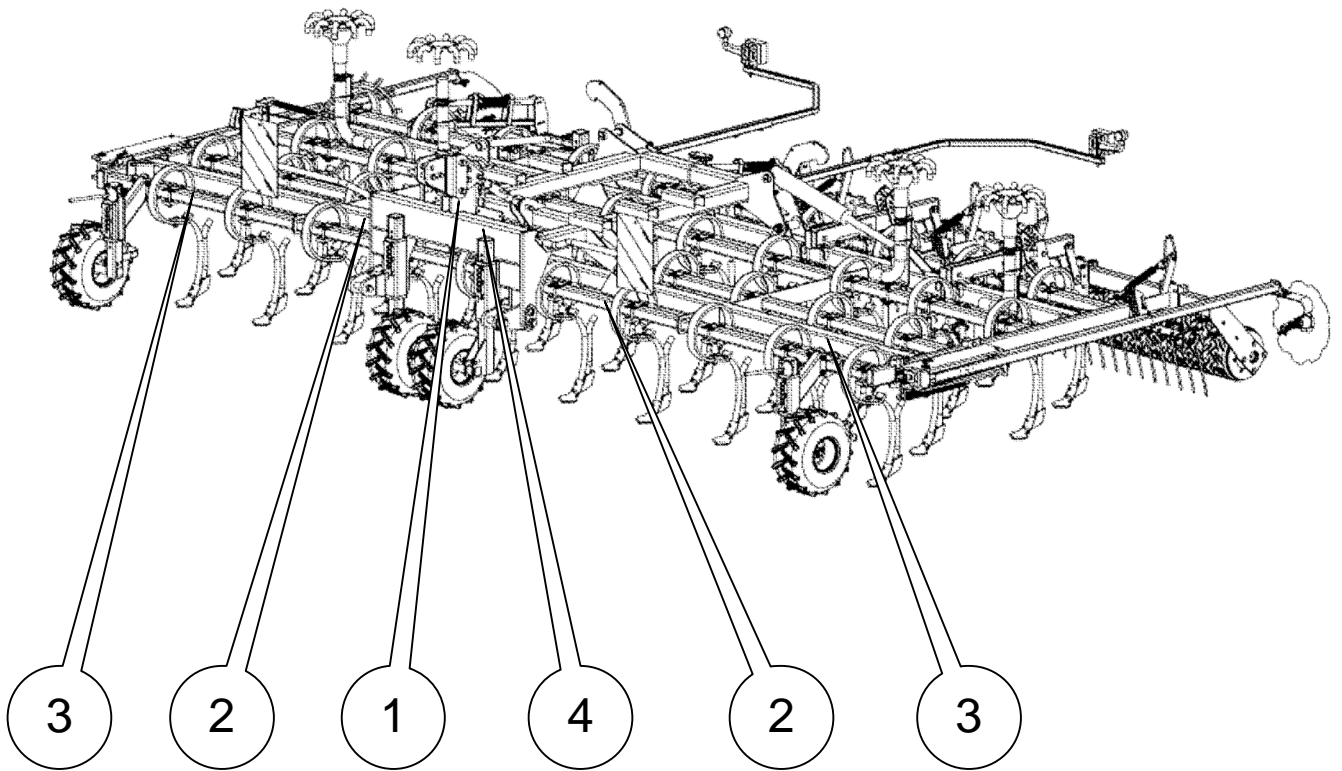


Request substitutes for damaged or missing decals from the dealer and place these at the intended positions!

Vibro seeder with rear mounted hopper:



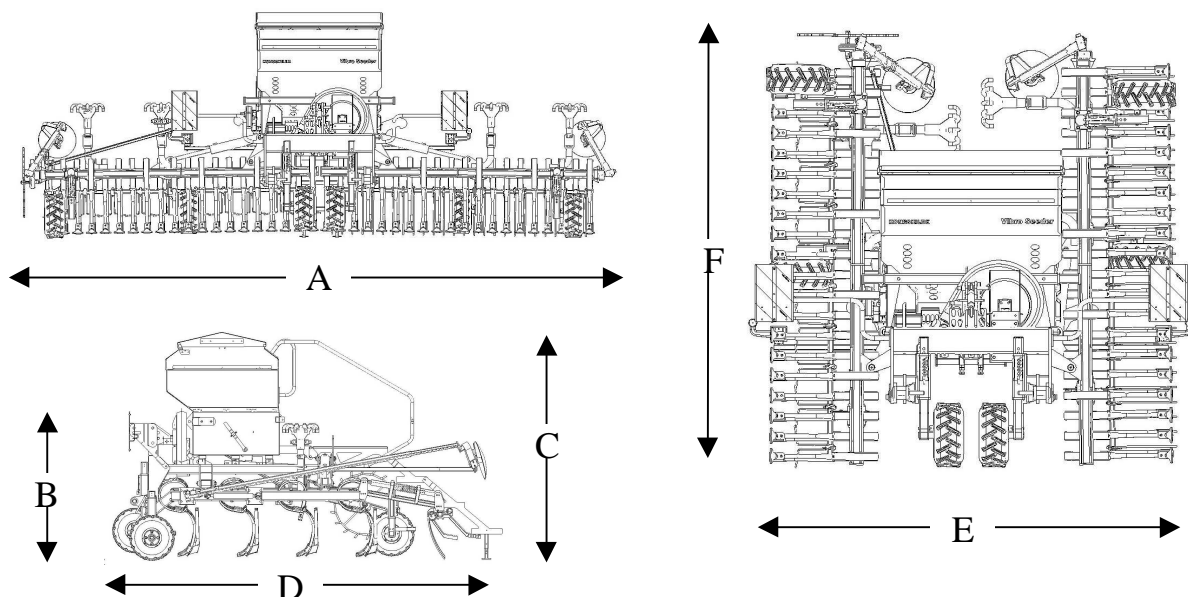
Vibro Seeder with front mounted hopper:



Technical data and dimensions

Type	VS 400	VS 500	VS 600
Working width	4,0 m	5,0 m	6,0 m
Transport width	3,0 m	3,0 m	3,0 m
Transport height *)	2,9 m	3,4 m	3,9 m
Hydraulic folding	YES	YES	YES
Weights:			
Cultivator w/ rear hopper	appr. 2.500 kg	appr. 2700 kg	appr. 3.000 kg
Cultivator w/o hopper	appr. 2.000 kg	appr. 2.200 kg	appr 2.500 kg
Front hopper NS 1500 NS 1900		appr. 450 kg appr. 475 kg	
Rear harrow Wing Flow or Max Flow	appr. 110 kg	appr 120 kg	appr. 130 kg
Hydraulic demands	1 double acting for the hydraulic folding 1 double acting outlet required for the markers 1 single acting with free flow return for the fan		
Horsepower demand, HP	110 - 130	130 - 150	150 – 170
Contents seed hopper (rear mounted)	1100 liter		
Contents seed hopper (front mounted)	1500/1900 liter		
Number of tines	26 pcs	32 pcs	40 pcs
Tine spacing	150 mm	150 mm	150 mm
Dimensions, in mm			
A	4424 mm	5424 mm	6424 mm
B (Front hopper)		1582 mm	
C (Rear hopper)		2416 mm	
D		4145 mm	
E		3000 mm	
F (Rear hopper)	2327 mm	2697 mm	3197 mm
F (Front hopper)	2197 mm		

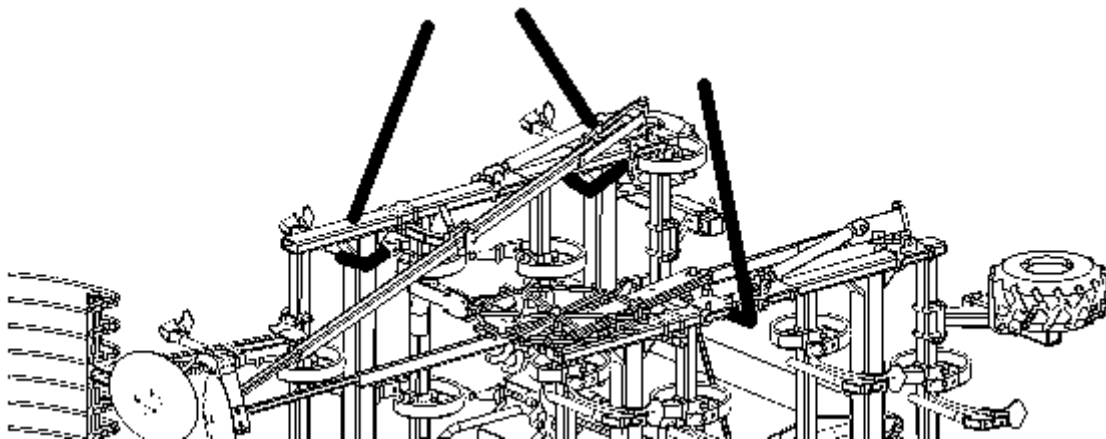
*) 10 degr. tilt and 300 mm ground clearance



Lifting points

When Vibro Seeder should be lifted up or down from a truck by a crane or a forklift the following lifting recommendations must be followed.

- Always use a crane or a forklift with the sufficient strength and ballast to carry the weight of Vibro Seeder.
- Always lift Vibro Seeder in folded position.
- Park in unfolded position after lifting.
- Do not stay under the seed drill when lifting
- Place straps as shown: 2 in the left side close to the large profiles and 1 (One) in right side between the bracket for the marker cylinder and the bracket for the wheel arm.
- Take care of land wheel and marker arms



For lifting the front mounted hopper, the advice from the user manual for NS1500/1900 must be followed.

Operation

Coupling

Attention!



While hitching up Vibro Seeder, stop the tractor and secure it from rolling.

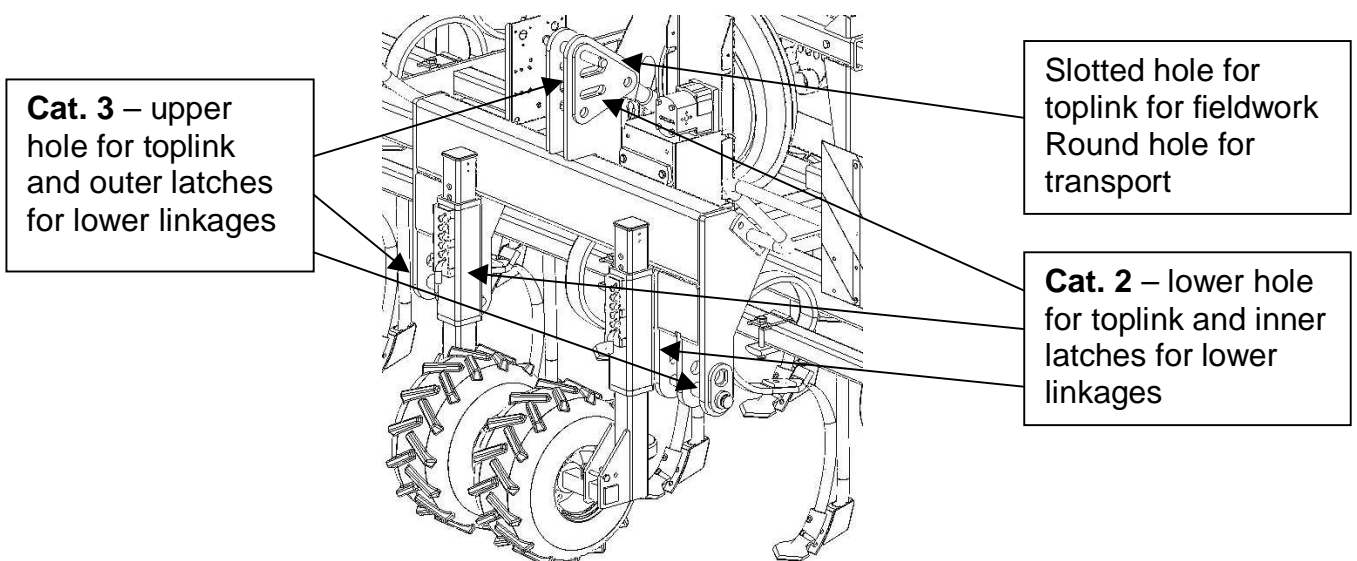
Ensure that during coupling of Vibro Seeder, no one is standing between the tractor and the implement. No one should stand in the operational range of the implement.

The three-point linkage category of Vibro Seeder and tractor must match each other. Vibro Seeder can be connected by category 2 or 3.

If they do not correspond, the three-point linkage of the tractor must be adjusted.

Make sure that Vibro Seeder is parked on solid ground and secure it against rolling.

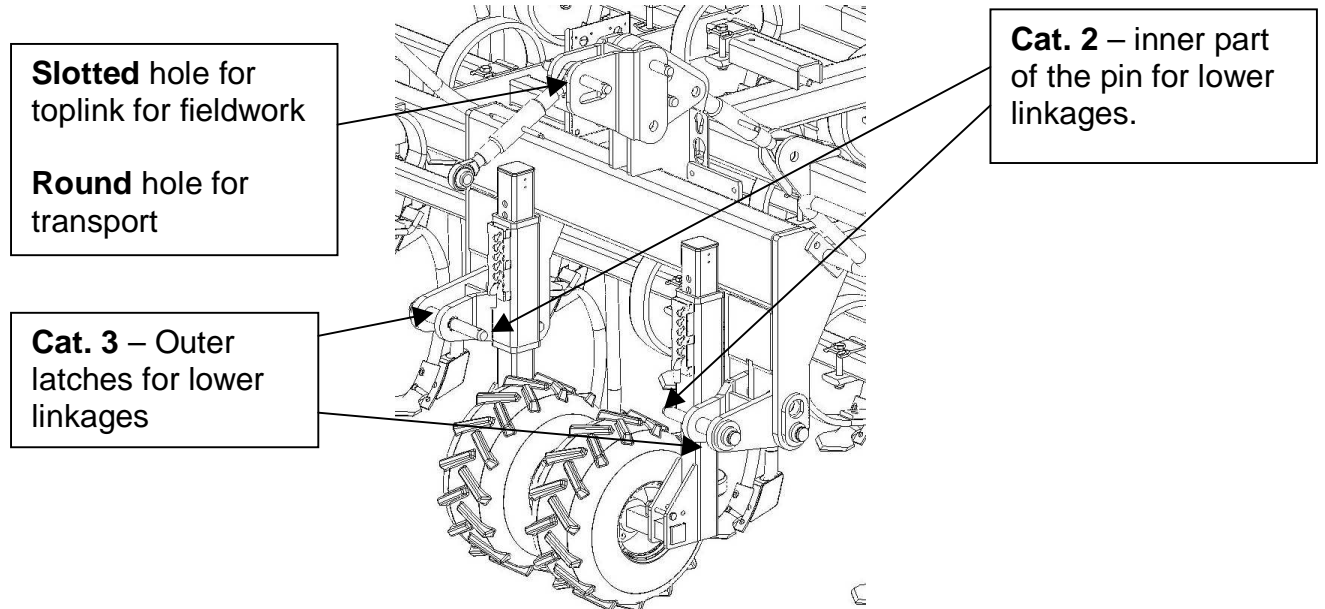
- Fit ball bushes in correct category over the pins for the lower links and the head stock connections
- Lower the lower links of the tractor and drive backward until the lower link hooks are under the ball bushes
- Raise the lift until the lower link hooks are hooked in.
- Put in the top link: **Use slotted hole for fieldwork and round hole for transport.**
- Secure all connections against unintentional opening
- Make sure the hydraulic fittings are clean and connect the hydraulic hoses.
Note: The blower needs a free flow return.
- Connect light equipment (Optional)
- Control no oil is leaking from hydraulic connections
- Control all functions work correctly.
- Connect the wires for the electronic control box (optional)



Vibro Seeder with front mounted hopper:

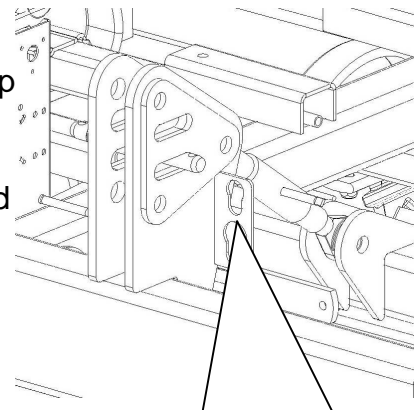
Note that linkage extensions must be put on to allow space for the piping

Follow the procedure as for Vibro Seeder with rear mounted hopper



Uncoupling

- Unfold Vibro Seeder
- Park Vibro Seeder on levelled, solid ground.
- Disconnect the wires for the electronic control box (op
- Disconnect the light equipment (Optional)
- Remove the oil pressure from the connections
- Uncouple the hydraulic hoses from the tractor and brackets near the toplinek.
- Remove top link from Vibro Seeder
- Release the lower linkage hooks
- Lower the lower links until free of the ball bushes
- Drive tractor slowly forwards.



**Brackets for hydraulic couplings:
2 positions in right side
4 positions in left side**

Coupling / uncoupling of front hopper

If the front mounted hopper is used in the configuration, the advice from the user manual for NS 1500/1900 must be followed.

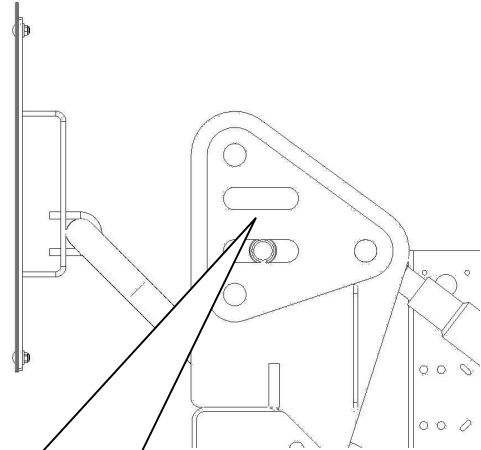
Adjustment of top link

The cultivator frame must stay horizontal during work to make both the front and the rear row of tines work at the same depth. This is adjusted by means of the tractor's top link. A short top link raises the rear row of tines whereas a lengthened top link lowers the rear row of tines.

When the cultivator works in the field the top link must be lower at the tractor end than at the head stock of the cultivator.



In order of obtaining an even seeding depth, Vibro Seeder should behave like a trailed seed drill. It is therefore essential, that when the implement is running in the field, the top link should be in the middle of the slotted hole.



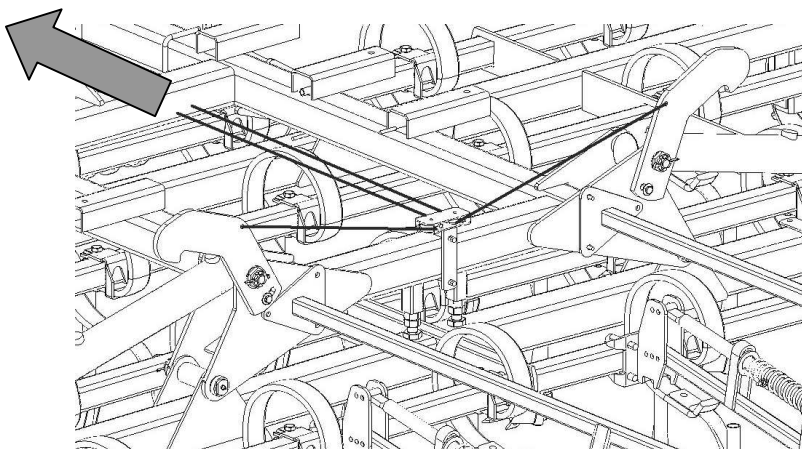
The top link in the middle of the slotted hole

Folding and unfolding



When folding or unfolding make sure that no one are in the working range of the implement

- Lift the implement off the ground, high enough to secure it does not hit during folding or unfolding.



Unfolding:

- Open the security hooks by pulling the 2 strings attached to the wing locks. If the tractor hydraulic is slightly leaking, then there may be tension on the security

hooks. In this case operate the tractors hydraulic valve as to fold the implement and then pull the strings.

- Use the hydraulics to unfold Vibro Seeder.

Folding:

- Make sure the strings for the security hooks are loose, so the security hooks are in the lower position ready to lock the wings when folded up
- Use the hydraulics to fold Vibro Seeder.



Make sure the security hooks have locked the wings in upright position

Markers

The markers are used to make a marker track. The track ensures that the outer coulter in one row is both parallel to and correctly spaced with respect to the previous row.

Vibro Seeder has centre marking. Therefore the marker is set 4,0 m out, as measured from the centre of a 4,0-m Vibro Seeder, 5,0 m out on a 5,0-m etc.

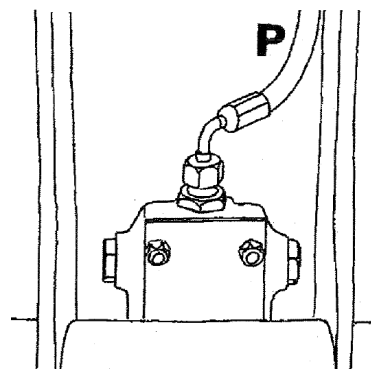
The adjustment is carried out most easily by driving forward a few metres with the markers Vibro Seeder lowered into working position. After this, the tracks can be seen clearly in the soil.

Vibro Seeder is fitted with hydraulic markers.



Attention: Make sure no persons are within the working area of the markers while operated.

A double-acting hydraulic outlet is required. The marker shifter valve is activated in the following way:



- On applying hydraulic pressure to the marker system, both markers go to parking position.

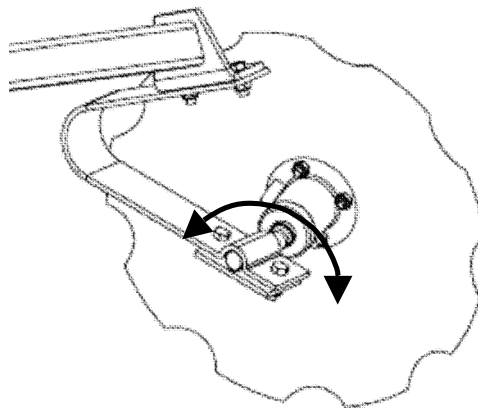
- By removing hydraulic pressure from the marker system, one marker will move into its working position.
- Shifting between the markers (i.e. between left and right) is done by supplying, and then removing, hydraulic pressure from the system.

If both markers are required in their working position, the marker system is activated in the following way:

- Add hydraulic pressure until the marker, which is in its working position, has moved about 30 degrees.
- The hydraulic pressure is then removed from the system, after which both markers will move into their respective working positions.

Marking track

The marking track's width can be adjusted by turning the cranked marker shaft.



- The narrowest track is obtained by turning the shaft downwards setting the marker parallel to the driving direction.
- The widest track is obtained by turning the shaft setting marker angled backwards with respect to the driving direction.

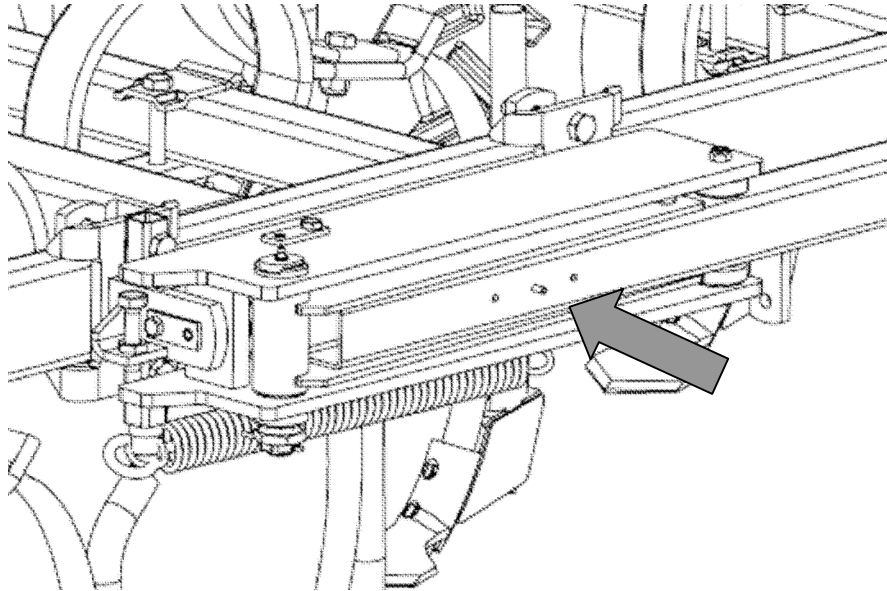


The shaft should not be turned upwards or angled forwards with respect to the direction of travel as this can damage the shaft and give a poor track.

To obtain a good visible marking track the marker disc shall only be set as aggressive and deep as absolutely necessary.

Marker arms, shear bolt

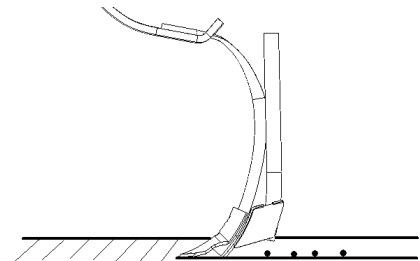
The marker arms are equipped with a shear bolt which is released when overloaded. Carrying a few extra shear bolts (M8 x 80 grade 8.8) and nuts is recommended.



Seeding depth

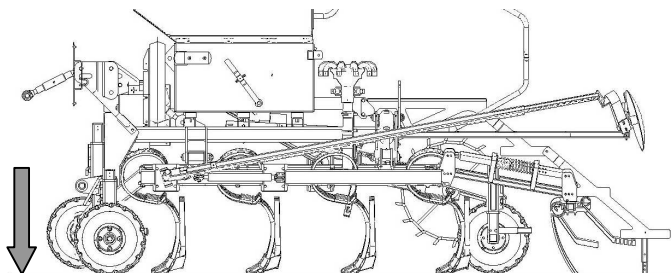
The seeding depth is controlled by the 6 wheels fitted on the machine.

As the seeds are placed directly on the track of the share, working depth of the tines equals the seeding depth.



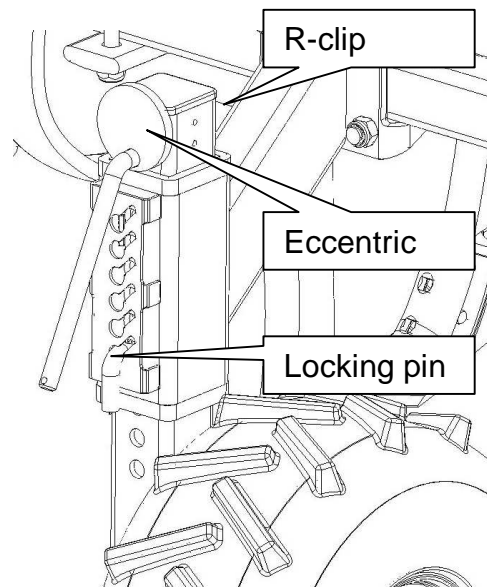
Adjustment before first use

- At first use, place the machine on leveled ground and adjust all the wheels in a way that all the wheels are in contact with the ground.



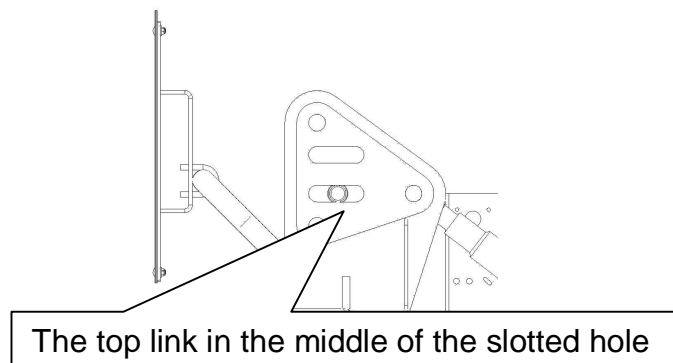
The working depth can be change in steps of 5 mm by using a combination of the holes in outer and inner tube, which have different distances.

- Place the eccentric tool in a hole in top of the inner tube.
- Turn the eccentric tool to take rest on the edge of the outer tube, preventing the wheel to drop uncontrolled when the locking pin is removed.
- Remove the locking pin by turning it counter-clockwise and pulling.
- Turn the eccentric tool to lift or lower the inner tube to another position
- Put in the locking pin and secure it by turning it clockwise
- Remove the eccentric tool
- Repeat the procedure at all wheels
- Finally lock the eccentric tool with an R-clip to prevent losing it.



Adjustment in the field

- Put the machine in working position.
- Drive forward about 10 m and be sure that the top link is placed in the middle of the slotted hole in the topmast.
- During work the machine is used like a trailed implement meaning that the machine can follow the ground.



- Check the depth in which the seeds are placed and make the necessary depth adjustment by changing position of the wheels.

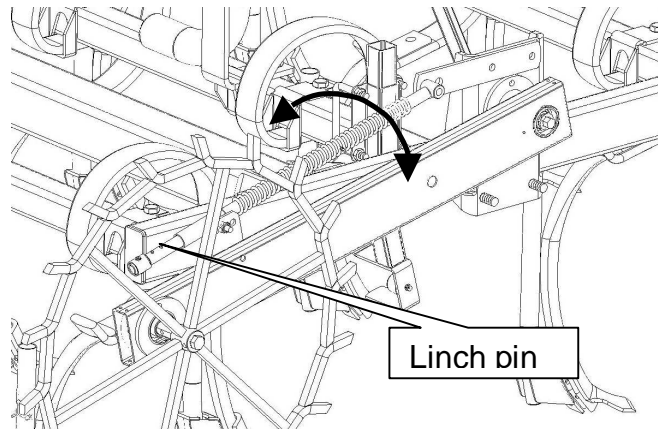


Be sure that the machine is horizontal during the work. Checking the seeding depth of first row and rear row easily controls this. If the seeding depth is different, make the necessary adjustment on rear or front wheel.

Drive wheel

The rotation of the seed wheels is partly dependent on the gearbox's setting, and partly dependent on the rotation of the drive wheel in the field.

In order to achieve the correct feed rate, the drive wheel should be set in its working position and the spring tension adjusted correctly during seeding to prevent the drive wheel from slipping



With the correct spring tension adjustment, the wheel will rotate easily in the soil without going too deep and without slip.

- Remove the linch pin
- Set the wheel to the ground
- Put the linch pin back into the hole with the roll pin at the free end of the shaft.
- Adjust the tension in the spring by rotating the spring.

With the drive wheel locked in the upper position, Vibro Seeder is able to work the soil without seeding.

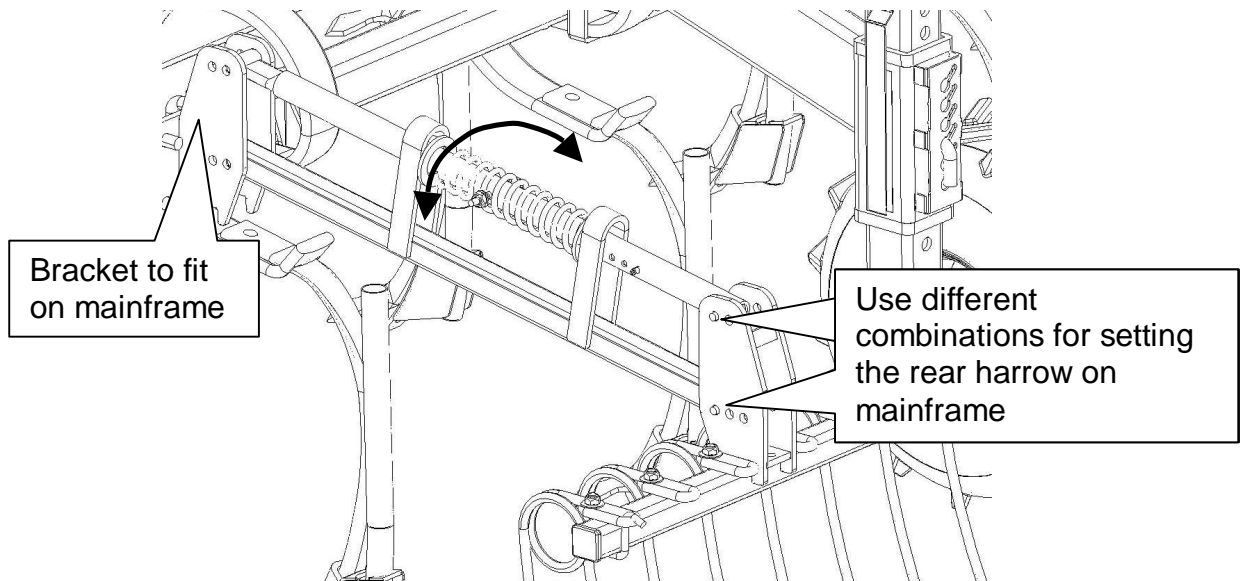
Rear harrow – Wing Flow or Max Flow

The rear harrow is mounted by fixing the bracket on the parallelogram arms to the cultivator frame of Vibro Seeder.

The rear harrow can be set to light or heavy harrowing by using different combinations of upper and lower set of holes in the brackets.

The desired position is secured by cotter bolts. The cotter bolts must always be locked with the "R" pins.

The rear harrow is equipped with compression springs, which gives the possibility of a more intensive cultivation. The pressure on the cultivator is adjusted by turning the compression spring.



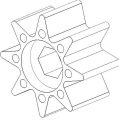

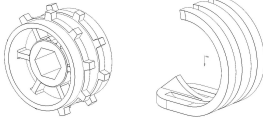
Rear harrow – 3 row long finger

Your Vibro Seeder may be equipped with a 3 row long finger rear harrow. Please use the documentation delivered with the following harrow for further information regarding setting and use.

Special crops – Change of seed wheels

When seeding special crops, certain precautions may have to be taken.

Different kind of seed wheels can be used along with fine seed fingers as seen in the table below:

		
Star-wheel	Peg-wheel	Peg-wheel w/ fingers
Grain	Smaller grass seeds	Clover
Peas		Small round (Like rape)
Bean		
Bigger grass seeds		

Star-wheel, Peg-wheel and fine seed fingers are all delivered with Vibro Seeder as standard.

Grass seed

Seeding of grass seed requires special attention since the seeds can „bridge“ in the hopper, thus affecting the actual feed rate. This problem will particularly be seen if the hopper is exposed to vibration.

It is therefore advisable to carry out calibration with a limited amount of seeds in the hopper, and to avoid filling to much seeds in the hopper until arrival at the field where seeding is shall take place.

In addition, regular stops to manually stir the hopper contents are recommended in order to achieve uniform seeding.



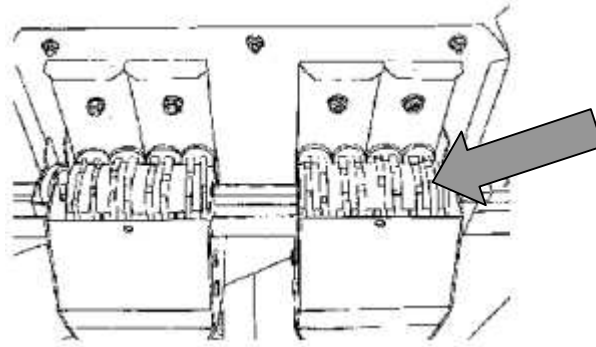
Due to the rotating agitator shaft, stirring of the hopper contents must only be carried out when the machine is switched off.

Seeding small round seeds

When seeding small, round seeds, such as turnip, white mustard and rape, the star-wheels are exchanged for Peg-wheels with fine seed fingers. The feed rate is reduced to 1/9 and at the same time, waste is avoided since the seeds are only fed out by the pegs.

Mounting of fine seed fingers

The fine seed fingers are fitted by pressing them over the rollers. As the roller is turned, the fine seed fingers are pulled round to cover the roller. The fine seed fingers are shaped so that they are held in place.

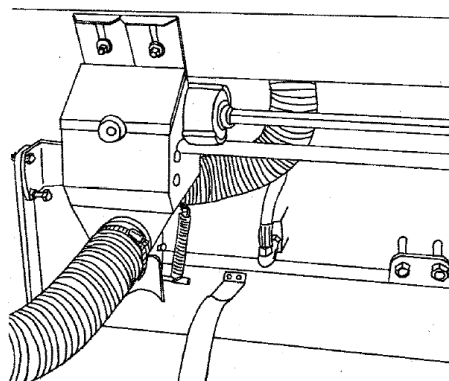


Disengaging the seed wheels

- Remove the cover above the seed wheels by loosening the black thumbscrews at the front of the seed housings
- Remove the shaft connections on both sides of the seed housings
- Remove the R-clips
- Remove the R-clip on the left side of the seed housing (At the bearing)
- Push out the bearing from the bearing retainer
- Push the feed shaft fully to the right and observe the bearing moving away from the bearing retainer
- Lift the feed shaft out the seed housing

Mounting of peg wheels

- Move the solenoid clutch (for tram lining) towards the peg wheel shaft.



- Put down the feed shaft into the seed housing
- Slid down the seed wheels into the seed housing.
- Push back the bearings in position and lock by an R-clip.
- The shaft connections are now completed.

- When peg wheels with fine seed fingers are used the bottom flap handle is placed in position 1.

Preparing for Road transport

- Make sure the strings for the security hooks are loose, so the hooks are in the lower position
- Lift the implement and fold as described
- Make sure the security hooks have locked the frames in upright position
- To give a lower point of gravity, and thereby a more stabile transport, it is recommended to lower the implement to a lower level, but keeping sufficient distance to road during transport.
- Secure that the implement is safe, that nothing will fall off, including big lumps of soil, during transport.
- Check any light kits and warning plates that these are working and clean.

Adjustment and use of Vibro Seeder

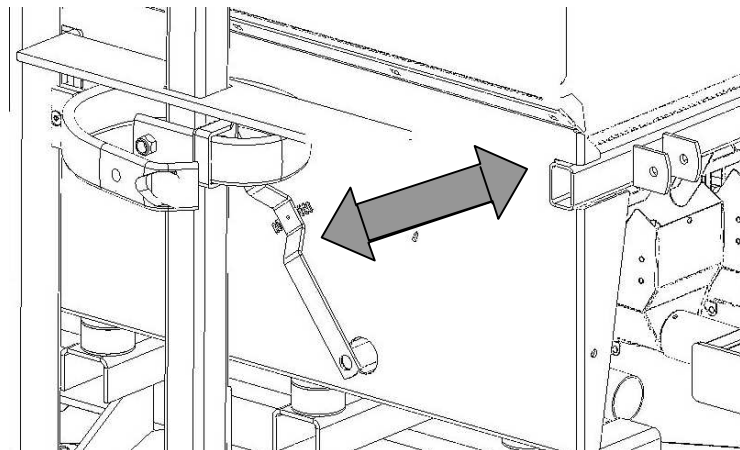
Calibration of Vibro Seeder.

The below procedure for calibrating Vibro Seeder counts for the rear mounted hopper. If a front mounted hopper is used, then the advice in the user manual for the NS 1500/1900 must be followed.

Calibration includes the calibration of the seed drill and setting the correct feed rate per unit.

The calibration is carried out point by point according to the following instructions.

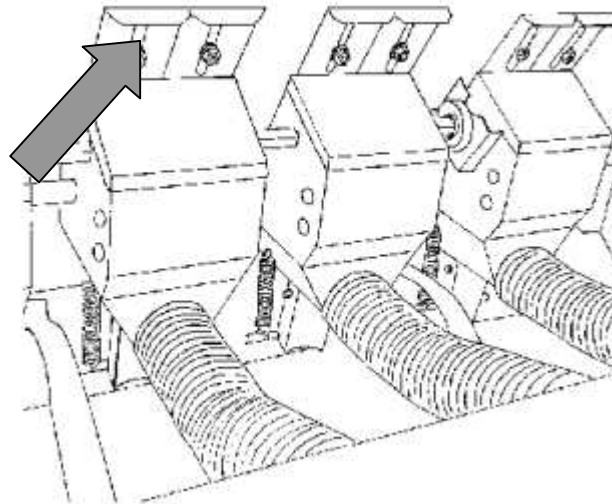
- The agitator shaft must always be running. It is not necessary to disengage the agitator shaft when seeding large seeds, e.g. peas and beans.
- The bottom flaps should be as close as possible to the seed wheels without damaging or squeezing the seed. The bottom flaps can be adjusted using the handle at the left side plate of the machine.



The setting for different seed sizes should be as follows:

Fine seed	1
Cerials	2-3
Peas etc.	3-6

- The shutters must not be used for adjusting the seed rate.
- The shutters should always be completely open or closed.
- If you wish to start seeding with half the working width, the shutters at one side can be closed.



- Empty the machine from earlier drilled seeds, if not of the appropriate kind
- Exchange of seed wheel to fit the type of seeds to be drilled.
See following paragraph “Special crops”
- Fold Vibro Seeder to transport position



During the calibration procedure, Vibro Seeder must always be in folded position in order to gain access to the metering system under the hopper.

Note that the wing lock hooks are looked properly before starting up the calibration procedure.

The blower must not be running during the calibration.

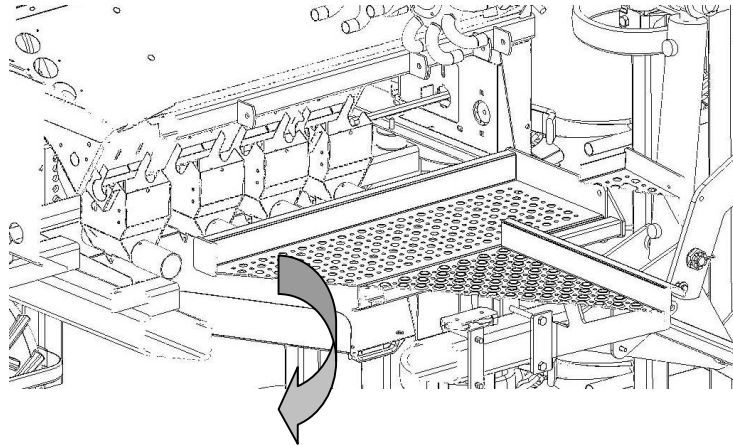
The calibration ensures a correct feed rate and is carried out as follows:

- The correct feed rate can be adjusted using the formula:

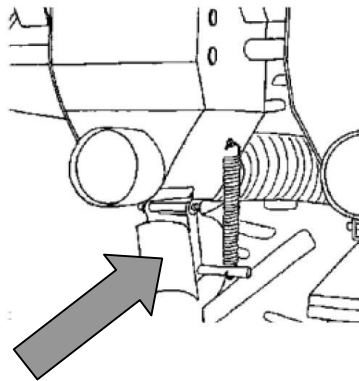
TGW = 1000 grain weight

$$\text{kg/ha} = \frac{\text{Number of plants per m}^2 \times \text{TGW}}{\text{Germination percent in the field}}$$

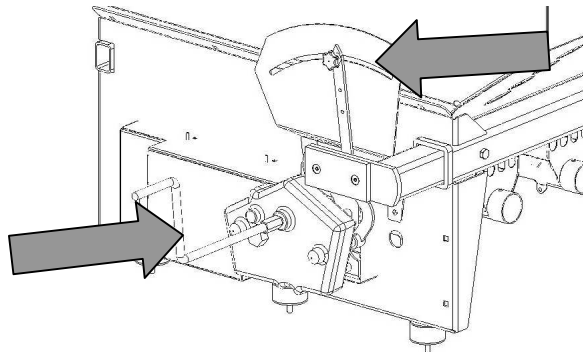
- Flip down the calibration tray and place a bucket in a way enabling the seeds to run into the bucket.



- Open the calibration flaps



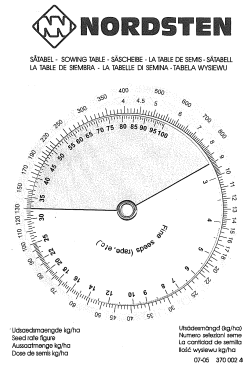
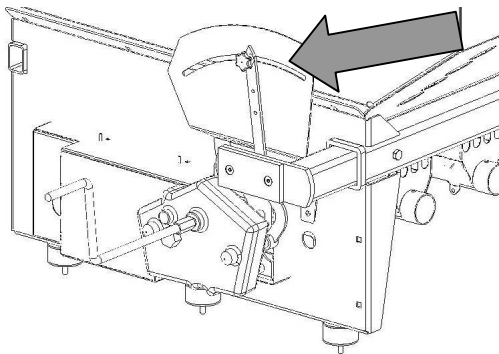
- Fill sufficient seed in the hopper such that the agitator shaft is still covered after a calibration has been carried out.
- Set the scale for the gear to a value from the seed tables to get the first approximation for the setting.
- Attach the calibration handle and turn it clockwise until the seed flows from all of the outlets.



- Empty the contents of the calibration bucket into the seed hopper
- Turn the calibration handle according to the table below:

	1/40 hectare
VS 400	77 revs
VS 500	62 revs
VS 600	52 revs

- Weigh the seed from the bucket on an accurate pair of scales.
- To obtain the feed rate for 1 ha, multiply the measured weight by 40.
- If the calculated feed rate corresponds to the required rate, then the machine is correctly adjusted.
- If the feed rate is not correct, it can be adjusted by changing the setting of the scale of the gearbox. You may use the seed tables or the turning disc to find the value for the scale.



- After adjustment of the scale setting, a new calibration should be carried out.
- Repeat the procedure until the desired feeding rate is achieved.

Difference between calculated and actual feed rate

If the calibration has been carried out carefully, the actual and calculated feed rates should correspond exactly.

If this is not the case in practice, then the cause could be that the test has not been carried out correctly or that an inaccurate pair of scales has been used.

However, another potential cause of the deviation is unusual soil conditions. Very wet or very loose soil can cause inaccurate rolling of the drive wheel.

A field test can also be carried out. It is not possible to collect the seeds from the calibration chute while the machine is in working position.

Therefore the number of revolutions of the handle, when covering 1/40 hectare, can be checked and used for a stationary calibration test.

The number of meters described below must be measured in the field, and while driving this distance with the seeddrill in working position, the number of revolutions of the handle must be counted.



**Riding on the implement during work and transport is not permitted.
Never leave the driver's cab during transportation.
Stay out of markers working range**

	1/40 hectare
VS 400	125 m
VS 500	100 m
VS 600	83 m

After calibration

- The calibration tray must be lifted into the upper position.
- The calibration flaps under the seed housings must be closed.
- The fan must be engaged and the working pressure can be read on the pressure gauge.

Driving speed

During the seeding work the speed should be 8-13 km/h.

In general the speed should depend on the prevailing conditions and, in particular, oscillation of the machine should be avoided.

Turning

Never turn the seed drill, when working in the soil, so sharply that the tines are forced sideways and backwards. It may result in loads far in excess of what the tines are designed for.

Reversing

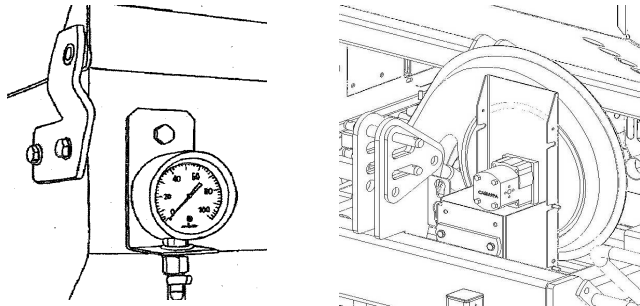
Never reverse with the tines in the soil. The seed drill must be raised to avoid the tines being overloaded, as this can lead to breakage of the tines.

The blower

The tractor hydraulically drives the blower and the speed is set by the oil flow.

The manometer on the seed hopper should show about 60 mbar.

When seeding light seeds, e.g. grass, reducing the speed of the blower can reduce the amount of air.



Emptying of seed hopper

The seed hopper is emptied in the same way as Vibro Seeder is calibrated

- Fold Vibro Seeder into transport position

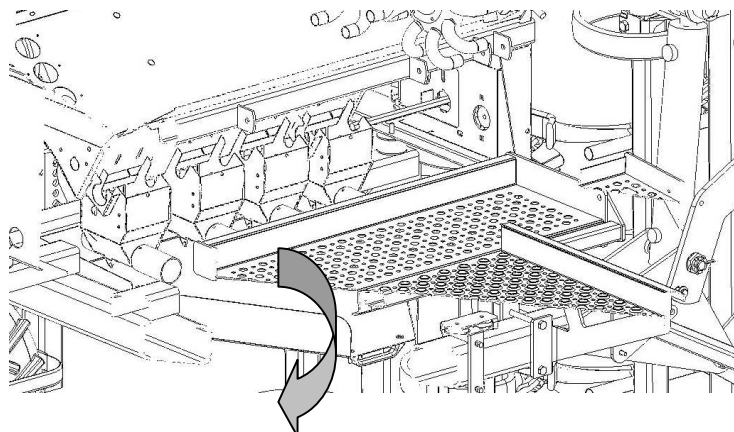


During the emptying procedure, Vibro Seeder must always be in folded position in order to gain access to the metering system under the hopper.

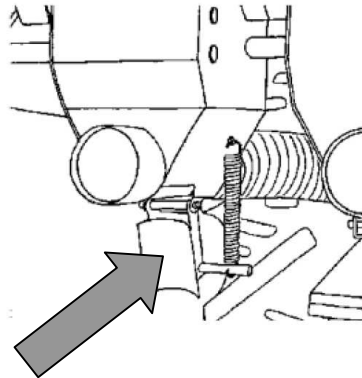
Note that the wing lock hooks are looked properly before starting up the calibration procedure.

The blower must not be running during the emptying.

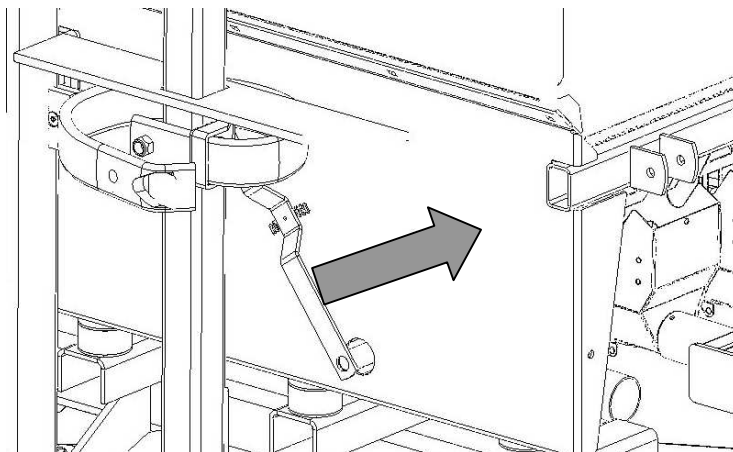
- Flip down the calibration tray and place a bucket in a way enabling the seeds to run into the bucket.



- Open the calibration flaps



- The handle for the bottom flaps should then be pulled back completely allowing any excess seeds to be emptied into the tray.

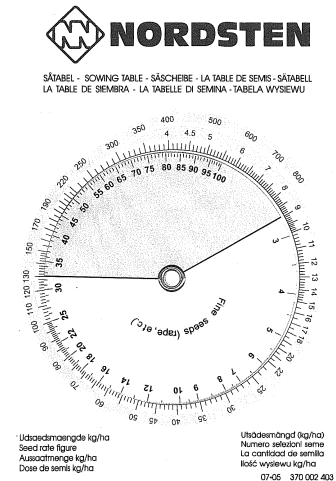


Seed tables

The seed table shows the calibration of the drill and the scale setting for the desired amount of seeds per hectare.

Note that the seed table is only a guide; a calibration should always be carried out to check the scale setting.

As an alternative to the seed tables below, you may use the turning disc delivered with Vibro Seeder



Seed	Barley		
Row Dist	15 cm		
Bottom flaps	2		
Shutters	Open		
Seed wheel	Star		
Air pressure	Appr 60 mbar		
Scale	VS 400	VS 500	VS 600
5			
10			
15			
20			
25			
30			
35	80	127	106
40	92	148	123
45	104	167	139
50	118	188	157
55	134	215	179
60	146	233	194
65	164	263	219
70	177	283	236
75	194	310	258
80	212	338	282
85	230	368	307
90	251	401	334
95	274	438	365
100	296	473	394

Seed	Wheat		
Row Dist	15 cm		
Bottom flaps	2		
Shutters	Open		
Seed wheel	Star		
Air pressure	Appr 60 mbar		
Scale	VS 400	VS 500	VS 600
5			
10			
15			
20			
25			
30			
35	91	145	121
40	105	168	140
45	119	190	158
50	134	215	179
55	149	239	199
60	166	265	221
65	183	293	244
70	202	323	269
75	220	352	293
80	240	384	320
85	262	419	349
90	284	455	379
95	311	497	414
100	336	538	448

Seed	Peas		
Row Dist	15 cm		
Bottom flaps	4-6		
Shutters	Open		
Seed wheel	Star		
Air pressure	Appr 60 mbar		
Scale	VS 400	VS 500	VS 600
5			
10			
15			
20			
25			
30			
35	139	222	185
40	163	260	217
45	184	294	245
50	208	332	277
55	233	372	310
60	245	392	327
65	284	454	378
70	313	500	417
75	342	547	456
80	375	600	500
85			
90			
95			
100			

Seed	Rape		
Row Dist	15 cm		
Bottom flaps	1		
Shutters	15 mm		
Seed wheel	Peg-fine seed fingers		
Air pressure	Appr 30 mbar		
Scale	VS 400	VS 500	VS 600
5	0,8	1,2	1,0
6	1,0	1,6	1,3
7	1,2	1,9	1,6
8	1,4	2,2	1,8
9	1,6	2,5	2,1
10	1,8	2,9	2,4
11	2,0	3,1	2,6
12	2,2	3,5	2,9
13	2,4	3,8	3,2
14	2,6	4,1	3,4
15	2,8	4,4	3,7
16	3,1	4,9	4,1
17	3,2	5,2	4,3
18	3,5	5,5	4,6
19	3,6	5,8	4,8
20	3,8	6,1	5,1
21	4,1	6,5	5,4
22	4,3	6,8	5,7
23	4,4	7,1	5,9
24	4,6	7,3	6,1
25	4,8	7,7	6,4
26	5,1	8,2	6,8
27	5,3	8,5	7,1
28	5,5	8,8	7,3
29	5,7	9,1	7,6
30	5,9	9,4	7,8
31	6,1	9,7	8,1
32	6,3	10,1	8,4
33	6,5	10,3	8,6
34	6,7	10,7	8,9

Maintenance

General

The KONGSKILDE Vibro Seeder needs very little maintenance:

- After usage the machine must be emptied
- After usage clean the machine.
- All nuts and bolts must be checked and tightened after initial 10 working hours and then for every 100 hours. Tighten if necessary.
- Grease according to the specifications below.
- Check the oil level in the gearbox
- Check chains (adjust and lubricate)
- Worn and damaged parts must be changed at the earliest possible moment in order to secure correct and safe function.
- Use only original KONGSKILDE wearing and spare parts.

Tyre pressure

Type of tyre	Recommended tyre pressure
18x9.50-8 4ply ST-45	Normally 1,5 Bar In wed conditions down to 1,0 Bar

Lubrication

Cylinder joints grease for every 100 hrs.
Cylinder joints grease for every 100 hrs.
Folding joints grease for every 20 hrs.
Folding joints grease for every 20 hrs.
Marker disc bearings grease for every 20 hrs.
Joint for land wheel grease for every 20 hrs.

The gearbox oil should be replaced before every season. Use one of the following types:

Universal oil, to which easy access is expected:

STOU – Super Tractor Oil Universal	
Castrol	Agri MP Plus 10W-40
Neste	Farm Universal 10W-30
BP	Terrac Super Universal 1+W-30 / 10W-40
Fuchs	Titan Hydramot MC SAE 10W/30 / 10W-40
Akcela	Super Universal 15W-30
Mobil	Agri Super 10W-30, 15W-40
Valvoline	Super Tractor Oil Universal 10W-30

Alternatively genuine gearbox oil of the following brands:

ARAL	ARAL OEL DEGOL DG 46
BP	BP Energol GR-XP-46
CHEVRON	CHEVRON EP Industrial 46
ESSO	NUTO H 46
Mobil	Mobil DTE 25
TEXACO	RANDO OIL HD B 46

The gearbox oil must be visible in the sight glass, otherwise it must be refilled.

All chains should be lubricated regularly. After each season, the chains should be cleaned in petroleum and then lubricated with oil.

Before each new season all linkages and chain tighteners should also be lubricated.

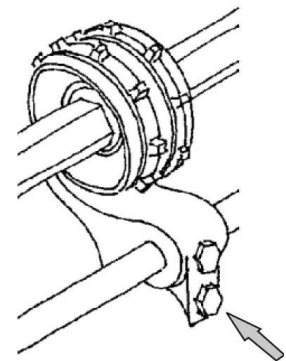
Adjustment of chains

Sprocket wheels for the adjustment of the chain should be loosened. The sprocket wheels should then be pushed upwards until the chains are at the correct tension, at which point the sprocket wheels should be tightened again.

Fine adjustment of bottom flaps

The bottom flaps should be set to the highest position (position 1).

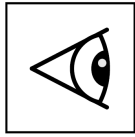
Adjustment can then be carried out by turning the screw on the rear face of each bottom flap until the distance between the flap and the seed wheel is 1 mm.



Cleaning of seed outlets

Cleaning the seed outlets and seed wheels can be facilitated by removing the feed shaft.

Hydraulic hoses and couplings



Before every use of Vibro Seeder, check the hydraulic hoses and connections. If there is any sign of breakage emerging, make sure to change the parts in question.



Note that if the hydraulic fails during folding or unfolding, then the wings may immediately unfold.

Warehousing and storage



For longer operation pauses, store the machine in safe place-not accessible for children.



Prior to longer operation pauses (winter) and prior to first operation all lubrication points must be lubricated and pins and adjusting devices must be greased.



During longer operation pauses exposed surfaces of tines, scrapers and rollers must be greased in order to prevent the formation of rust. Only use grease, which does not have any polluting impact on the environment.



For longer operation pauses the hopper must be emptied and cleaned in order to avoid mice etc. to enter the hopper.



Winter storage of the electronic control box (optional) must take place in dry and warm conditions (10 to 25 °C)



Order necessary spare parts and wearing parts before the beginning of storage period to avoid delays with the new season starting.

