



EN

MANUAL K-XE

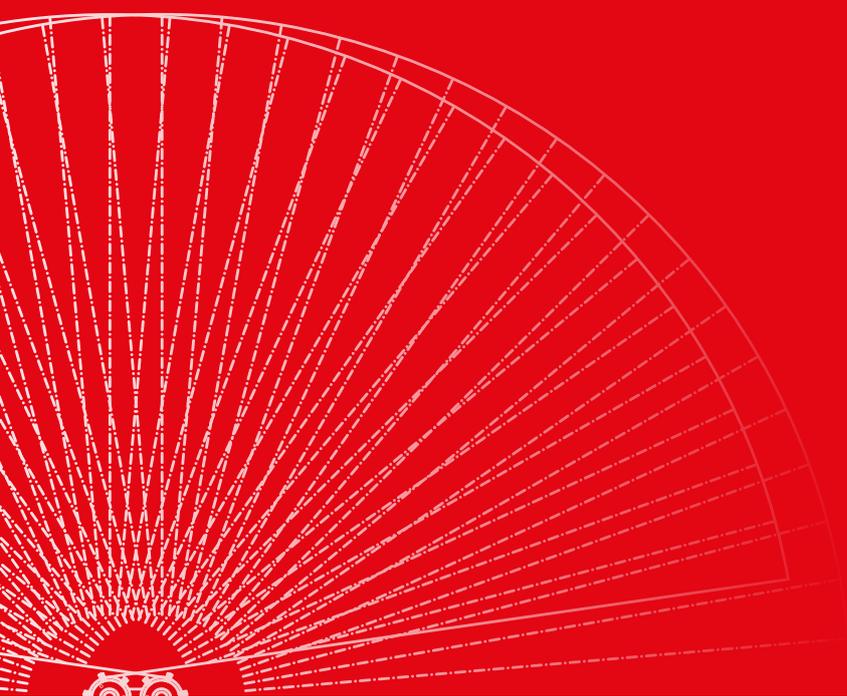


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SAFETY

The safety distance from the spreading discs is at least 30 meters when these are rotating. If people or animals are within this distance, the tractor's PTO must be disengaged.

Never adjust the spreader while the spreading discs are rotating.

When loading the spreader, keep foreign objects, such as stones, etc., from getting in the machine's hopper, as they can cause damage and be very hazardous for the surroundings.

Sitting/standing on the machine while it is operating or during road transport is not permitted.

Before working on the machine, make sure to disengage the tractor's PTO and depressurize the hydraulic system.

Shields on PTO shafts and the implement must be intact and correctly attached.

Never operate the hydraulic hopper extension or raise or lower the side wings if anyone is within the spreader's hazard zone.

> TRAFFIC SAFETY

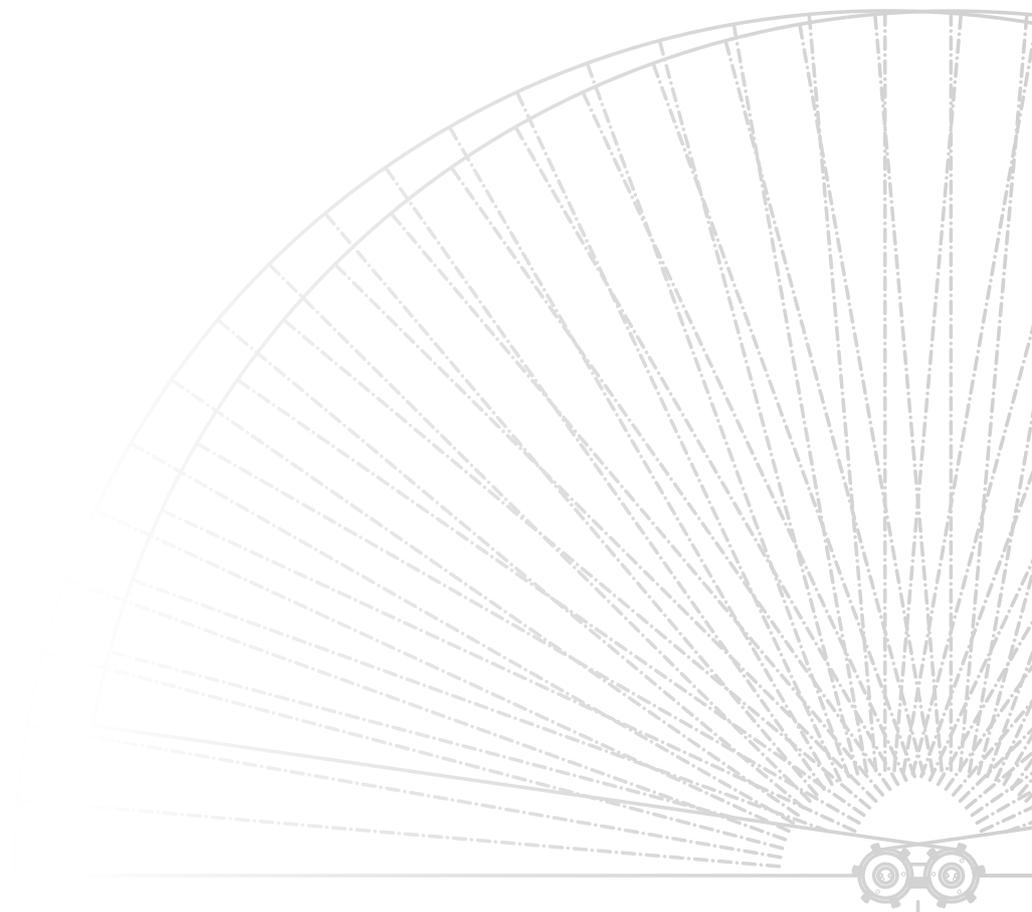
As traffic safety is important when driving on public roads, the following must be checked:

- The light system must be connected to the tractor's light socket, the lamps must be cleaned, and turning signals and brake lights must work correctly.
- Reflective warning triangles must be intact and clean.
- All hitch and wheel bolts must be tightened to the correct torque. Torque level for wheel nuts, 510 NM.
- The tire pressure must be correct.
- Make sure there are no cracks in tires, axles or rims.
- The hitch peg must be properly dimensioned and locked so that it cannot be ejected.
- Brakes must be connected and working correctly.
- For trailers with a bogie, the bogie **MUST** be locked at all times during road transport, because otherwise there is a risk that the vehicle will begin to sway and cause an accident.

Also, the bogie **MUST** always be locked when driving in reverse as otherwise there is a risk of damaging the lock cylinder.

Lock the bogie by pressurizing the outlet and possibly locking the ball valve as an additional precaution. Unlock the bogie by putting the tractor's hydraulic system in float position.

- Always make sure that the side wings are correctly locked and that both locking pawls are in mesh before driving on a road.



SPREADING OF LIME

When lime equipment is mounted on the K-XE spreader, it can be used to spread various types of lime and other materials such as compost, chicken manure, residual biogas products, ashes, etc.

In order for these materials to be spreadable, they must be adequately dry.

The maximum working width greatly depends on which material is being spread. Some types of lime can be spread across 30 meters, whereas others can only be spread with a satisfactory result across 15 meters.

The working width and spread pattern is primarily adjusted using the settings for downchutes and backstops, and by adjusting the disc rpm if necessary.

> TYPES OF DISC



X DISCS

X discs are standard with the spreader.

The discs make it possible to maximize the working width when spreading the material in question.



K DISCS

The maximum working width of K discs is less than that of X discs, but K discs excel by requiring less power for spreading. If the preferred working width can be achieved using K discs, this will in many instances increase the spreading capacity and reduce the power usage compared to X discs.

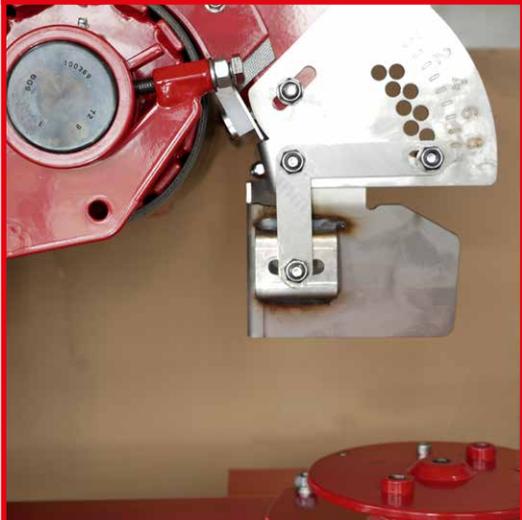
> MOUNTING OF LIME EQUIPMENT



1. If fertilizer equipment is mounted on the spreader, dismantle the fertilizer discs, downchutes, funnel with scraper, floorbelt divider and screen.



2. Attach the lime downchutes
Adjust each downchute until the plastic scraper fits snugly against the belt.
If the downchute plate is adjustable, it must be vertical when the scale setting is 9.
Then adjust the downchute to the preferred scale setting. The basic setting is 4.





3. Attach the lime backstop.



4. Attach the lime spreading discs (X or K discs).

> SETTING THE SPREADER

REAR DOOR

For lime, it is advisable to set the rear door on a scale from 150 to 300, depending on application rate, working width and driving speed. Try not to open the rear door more than necessary to achieve the preferred application rate, as the most even application is achieved with a small door opening and high belt speed.

Note! It is important to enter the rear door's setting in the ISOBUS computer. Otherwise the spreader's application rate will be incorrect.



DOWNCHUTES

The downchute position determines the spreading pattern. The higher the scale setting, the higher the volume of material deposited between the wheel tracks, whereas a lower setting results in more material being deposited behind the spreader. The basic setting is 4.



BACKSTOP

The function of the backstop is to keep the material within the downchute and prevent it from being flung too far out onto the discs at high belt speed. The backstop can open to let a large lump of material or stone flow through.

The basic setting places the edge of the plate directly over the disc center. Afterwards, adjust the backstop using the 2 bolts so the material just hits the backstop without clogging.

On XESC spreaders, the backstop position is crucial for the spreading pattern, as the side belts run at high speed and fling material far out.



The backstop can be mounted in three different positions.

With the bolts in the outermost position, it is easiest for the backstop to open to let stones or lumps of material flow through.

DISC RPM

Enter the disc rpm in 'Job parameters'.

Recommended disc rpm for field spreading:

X discs: 450–600 rpm

K discs: 500–600 rpm

Never drive with a higher disc rpm than necessary as this requires excessive power usage and wears out the vanes. In general, the highest spreading capacity (kg/min.) is achieved at the lowest possible rpm.

For spreading ash, a maximum of 400 rpm is recommended, as ash is extremely wearing on the vanes.

HEADLAND SPREADING

For headland spreading, reduce the disc rpm towards boundaries until the desired delimitation is achieved. Disc rpm, headland side: 250–400 rpm, depending on the type of disc and working width.

SPREADING OF FERTILIZER

When the K-XE spreader is fitted with fertilizer equipment, it is designed to spread fertilizer on working widths from 36 to 48 meters, depending on the type of fertilizer and disc.

The spreader is not designed to spread types of fertilizer with good spreading properties over less than 36 meters. It is possible to spread types of fertilizer with inferior properties such as granular urea, potash, ammonium sulfate and N34 down a width of 24 meters, however.

> TYPES OF DISC



A DISCS

The A discs are standard and can spread the most common NPP, NS, PP and N fertilizers across a minimum working width of 36 meters.



H DISCS

H discs are used if it is not possible to achieved the preferred working width using A discs. This can be particularly relevant for fertilizer types such as potash, granular urea, ammonium sulfate and N34.

In most instances, the vanes are mounted in a square hole. For a slightly wider working width, mount the vanes in a round hole.



Z DISCS

Z discs are specialty discs that should only be used if the H discs cannot achieve a sufficiently wide working width. This will typically be for spreading fertilizers with poor spreading properties across 36 meters or more .

Z discs are not suited for spreading types of fertilizer with good spreading properties.

> ATTACHING FERTILIZER EQUIPMENT



1. If the spreader is fitted with lime equipment, first dismantle the lime discs, lime downchutes and lime backstops.



2. Attach the funnel with scraper.
Adjust the funnel until the plastic scraper fits snugly against the belt.



3. Install the fertilizer downshutes.
Connect the downchute drawbar to the actuator drawbar.





4. Attach the fertilizer discs (A, H or Z).



5. Attach the floorbelt divider over the floor belt.
Mount the separator plates so they run parallel to and barely touch the belt.



6. Install a screen in the container.

> SETTING THE SPREADER

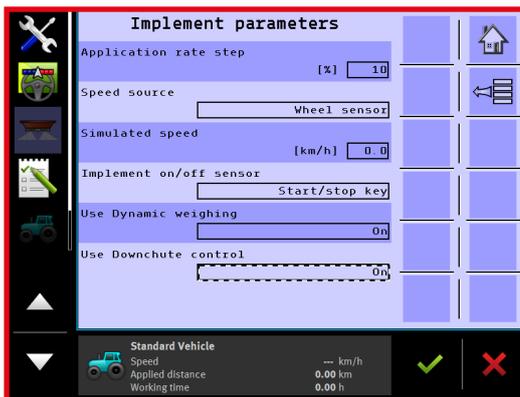
Refer to the basic manual for the K Series, section "Settings for various types of fertilizer".

If it is not possible to find your type of fertilizer or similar on the website, the following guidelines can be used:

REAR DOOR

For fertilizer spreading, it is advisable to set the rear door on a scale from 40 to 70, depending on application rate, working width and driving speed. The preferred application rate is best achieved by only opening the rear door as little as possible, as a small door opening and high belt speed give the best application rate.

Note! It is important to enter the rear door's setting in the ISOBUS computer. Otherwise the spreader's application rate will be incorrect.



DOWNCHUTES

The downchutes' position determines the spreading pattern. The higher the scale setting, the higher the volume of material deposited between the wheel tracks, whereas a lower scale setting results in more material being deposited behind the spreader.

Downchute control must be activated in the ISOBUS program and should be deactivated for spreading with lime equipment (from program version 1.03R): Main/Machine/Implement parameters/Use downchute control.



Enter the downchute position in Job parameters.

The following different setting options are found under downchute control:

- Automatic: the downchutes automatically adjust to a standard setting for the working width entered in the computer.
- Manual: the preferred downchute position must be entered.
- Automatic without flow control: the downchute position does not change for varying flows. This should not be used.

It is advisable to use 'Manual' downchute control and enter the downchute position that matches the type of fertilizer to be spread.

If no basic setting is preferred, the downchutes can initially be set to 'Automatic'. A spreading test in the field will show whether the downchute position needs to be adjusted. If so, select 'Manual', after which the downchute position can be modified until the spreading results are satisfactory.

Note! When the working width is changed, downchute control always returns to 'Automatic'.

- Press the input field 'Downchute control'
When "Manual" is selected, the downchute position for field and headland spreading can be changed.
- Press the field "Downchute pos. – field" to change the value entered for field spreading.
- Press the field "Downch. headl. (border sides)" and "Downch. headl. (field side)" to change the downchute setting for headland spreading.
In most instances, these values are one scale step higher than for field spreading.

DISC RPM

Enter the disc rpm in 'Job parameters':

Recommended disc rpm for field spreading:

A and H discs: 900–1100 rpm

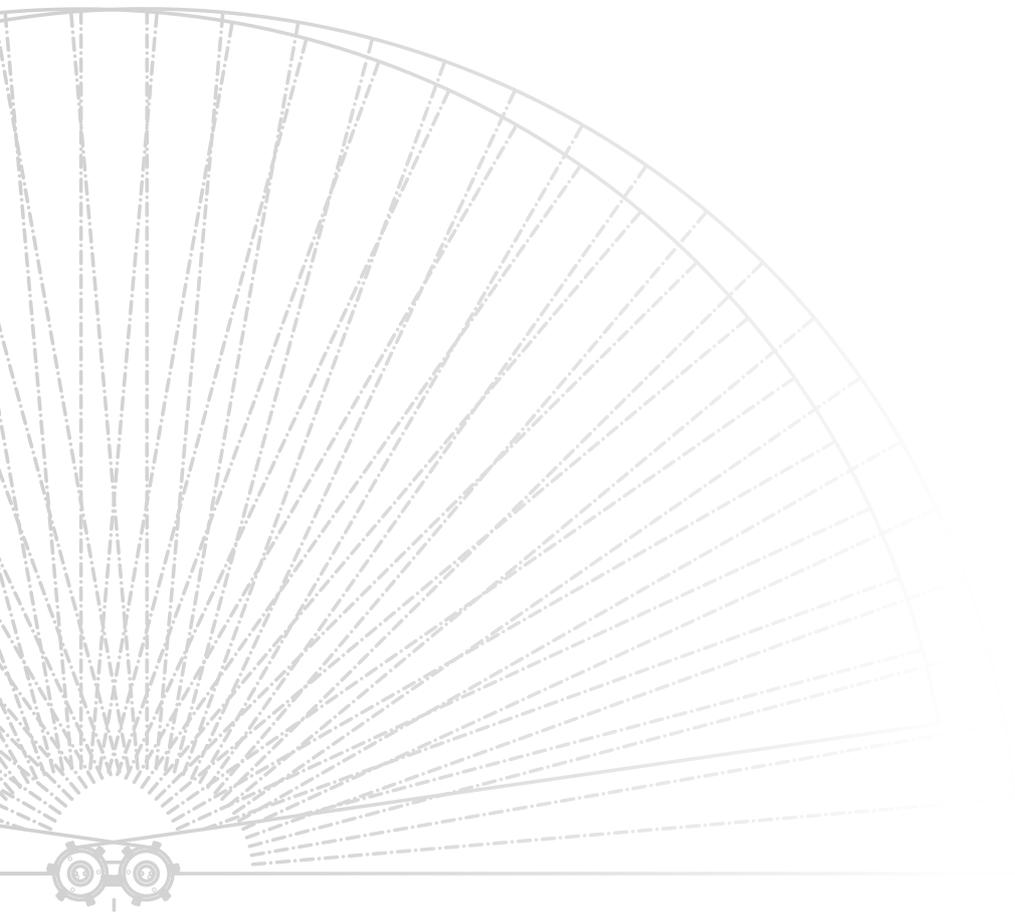
Z discs: 900–1000 rpm

HEADLAND SPREADING

For headland spreading, reduce the disc rpm towards boundaries until the desired headland spreading is achieved.

Working width 24–36 m: Disc rpm, border side, 500–750

Working width over 36 m: Disc rpm, border side, 750–850



MAXIMUM CAPACITY PER MINUTE

The application rate (kg/minute) can be read on the operation screen in the ISOBUS program.

> LIME

To avoid overloading the transmission, the application rate per minute should not exceed the following:

K discs, up to 600 rpm: max. 2200 kg/min.

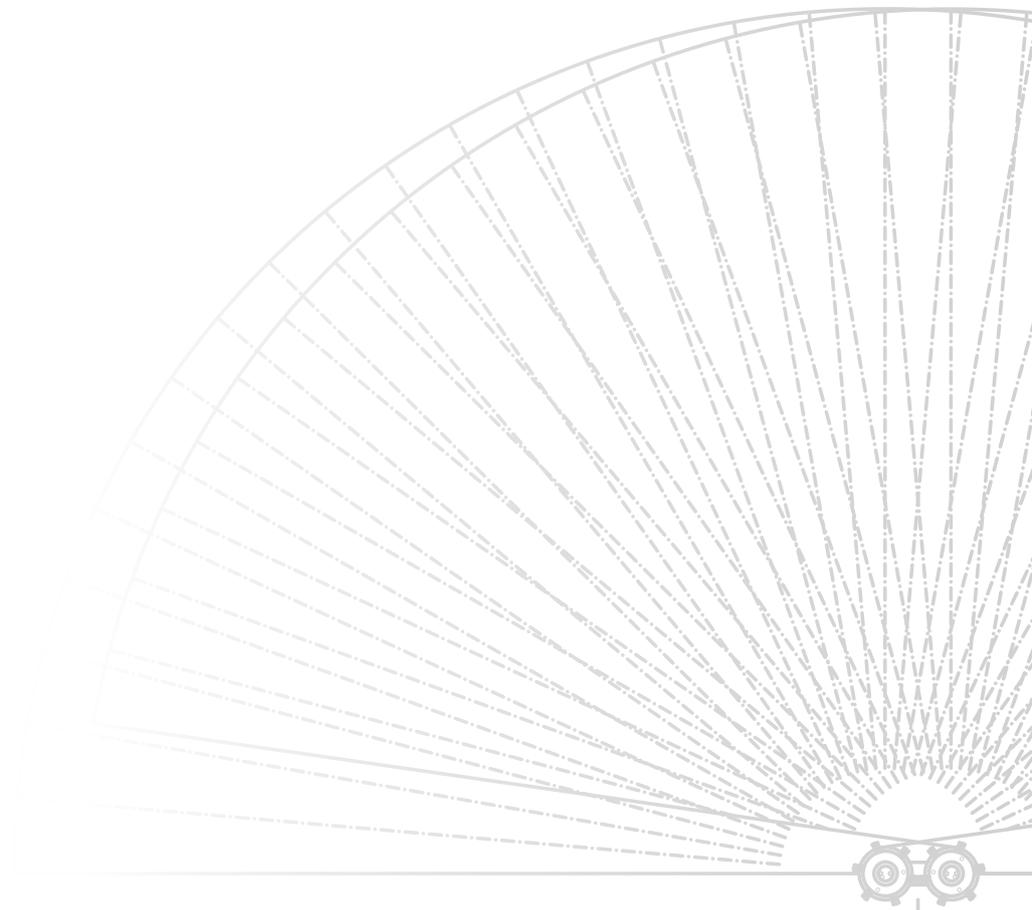
X discs, up to 500 rpm: max. 2200 kg/min.

X discs, up to 600 rpm: max. 1600 kg/min.

> FERTILIZER

It is advisable not to spread more than 350 kg/min.

The spreader can spread large volumes but the spreading pattern of certain types of fertilizer will be impaired if the application rate exceeds this volume. To spread large volumes, it is advisable to do a spreading test in the field for the given volume to ensure that satisfactory spreading results can be achieved.



EXTERNAL HYDRAULIC FUNCTIONS



The functions for folding up and locking the side wings and the hydraulic hopper extension are activated via the valve blocks in the cabinet on the right side of the spreader.

On K-XESC spreaders with section control, the side belts and cylinder for section control are also activated here.

The operation/activation of the functions is done via the ISOBUS program.

These functions can only be activated if oil is flowing to the belts and the external functions (K-XE) or just to the external functions (K-XESC).

If, for some reason, the functions cannot be activated via ISOBUS, the Valves can, in an emergency, be manually activated by a handle on the valve block.

> FOLDING-UP/LOCKING OF SIDE WINGS



FOLDING UP

Use the key to operate fold-up and locking. Press and hold the key for 20–30 seconds after the side wings have been folded up to ensure that the locking pawls are completely in mesh. On K-XESC models, the side wings can only be folded up if the spread unit is centered.

Always make sure that the side wings are correctly locked and that both locking pawls are in mesh before driving on a road.



LOWERING

Use the key to unlock and lower the side wings. Press and hold the key for about 10 seconds after the side wings have been lowered to ensure that the locking pawls are completely in mesh.

> HYDRAULIC HOPPER EXTENSION

Use the keys to open/close the hopper extension.

If preferable, the operation of the hydraulic hopper extension can be transferred to the tractor's joystick. The operation can then take place while you are in the operating picture.

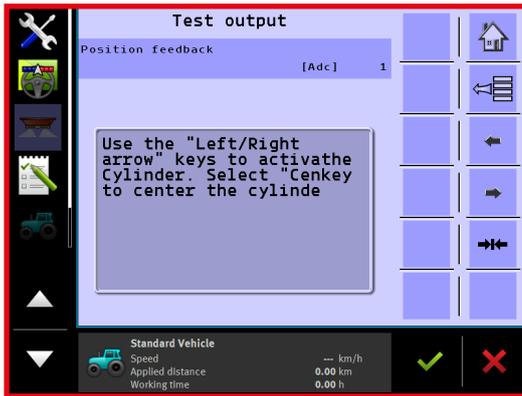
> SIDE BELTS (K-XESC)

The side belts automatically activate with the starting/stopping of the discs.

> CYLINDER FOR SECTION CONTROL (K-XESC)

The section-control cylinder (shifting of the spread unit) is controlled by the section control program during spreading.

Insufficient oil flow to external hydraulic functions (below the recommended flow of 70 liters/minute) may briefly trigger the alarm 'Cylinder blocked'. The alarm will stop once the cylinder reaches the desired position. If the alarm does not stop or is repeatedly triggered, check whether the spread unit can move freely and unobstructed. Make sure that all rollers, guides and scrapers are clean and that the rollers are lubricated.

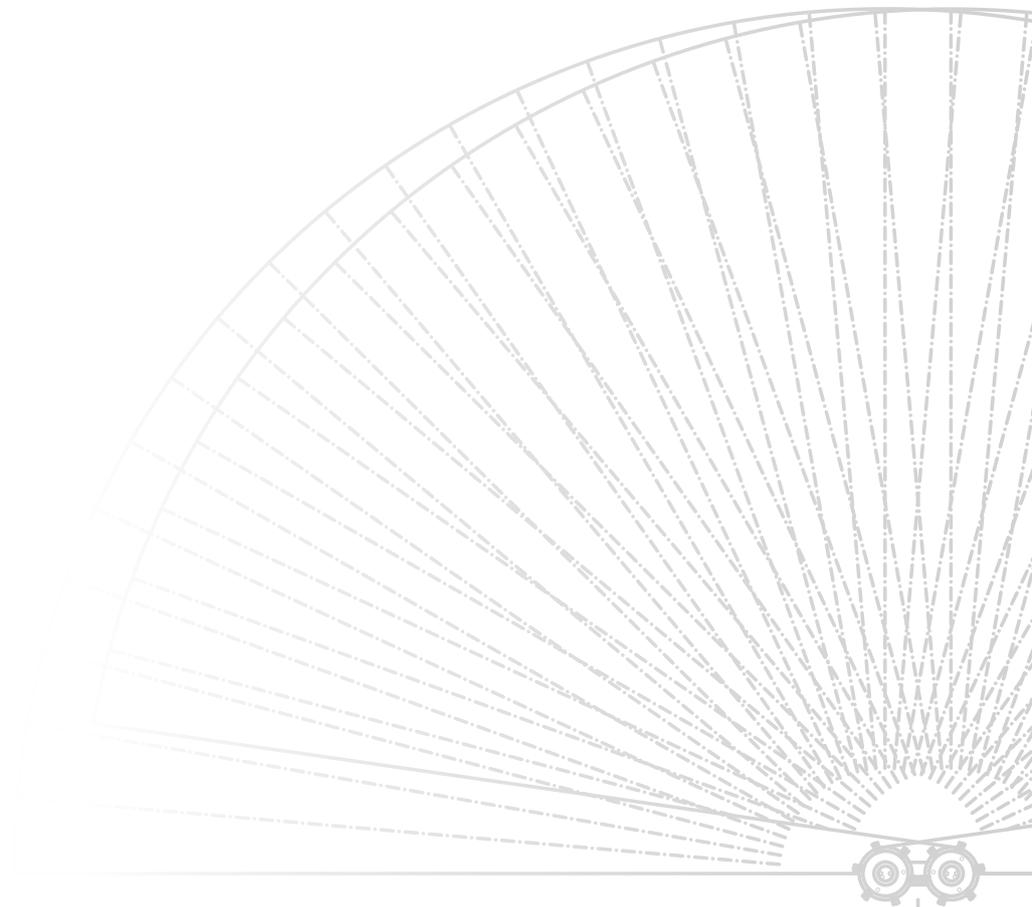


When the ISOBUS program is on, the cylinder must always center the spread unit automatically, unless some sections are closed. The side wings can only be folded up if the cylinder is centered.

If the cylinder does not center, this will trigger the alarm 'Cylinder not centered'. First, check that oil is flowing to the external hydraulic functions. If the cylinder still does not center, this can be done manually.

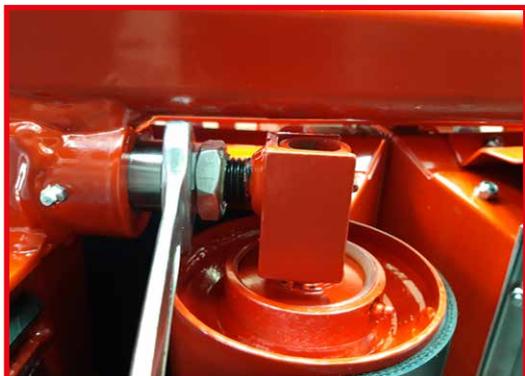
Select Main/Help/Diagnostic/Test output/Test cylinder output.

It is now possible to center the cylinder using the arrow keys.



ADJUSTING SIDE BELTS AND CHECKING SCRAPERS

> SIDE BELTS



Normally, the belts do not need to be tightened, unless they are sliding on the rollers and cannot keep up.

In many cases, this may be necessary after the first few days of operation, as the belts stretch a little when new.

If a belt needs to be tightened, tighten equally on each side until the belt keeps up. First loosen the lock nut, and then tighten the tension bar.

The belt must run roughly on the center of the rollers. If a belt veers to one side, tighten the nut on the side to which the belt is veering. Tighten the nut about one-quarter of a turn at a time and let the belt run a little until it has shifted.

Also check the following:

- that the scrapers are cleaning the belt
- that all belt rollers are rotating
- that the guide rollers are rotating

> SCRAPERS



Regularly check that the plastic Scrapers – on both the inner and outer sides of the belt – fit snugly against the belt to keep it clean.

The downchute scraps must fit very snugly against the belt. It must not be possible for lime or fertilizer to flow between the nylon strip and the belt.

The scrapers are a wearing part that must be replaced now and then.

ADJUSTING THE SIDE-WING LOCKS



The fold-up lock is activated along when the side wings fold up.

FOLD-UP ADJUSTMENTS

When the side wings come in contact with the travel stop, the pressure in the hydraulic system increases and sequence valve 1 (approx. 170 bar) opens the flow of oil to the locking cylinder.

If the locking pawls close too quickly or too slowly, adjust the Allen screw inside the valve.

Closes too quickly: Tighten the screw 1/4 of a turn at a time.

Closes too slowly: Loosen the screw 1/4 of a turn at a time.



Always check that the side wings are correctly locked and that both locking pawls are in mesh before driving on a road.



LOWERING ADJUSTMENT

When side-wing lowering is activated, sequence valve 2 opens (approx, 120 bar) the flow of oil to the cylinders for lowering.

If the locking pawls open too quickly or slowly, adjust the Allen screw inside the valve.

Opens too slowly: Tighten the screw 1/4 of a turn at a time.

Opens too quickly: Loosen the screw 1/4 of a turn at a time.

BASIC SETTINGS AND ADJUSTMENT OF FERTILIZER DOWNCHUTES

To get the best possible spreading pattern, it is important that the downchutes' basic setting is correct. Both downchutes' pivot points must be centered over the middle of the discs; also, the downchute position must be correctly adjusted.

This check and adjustment must only be carried out if parts of the spread unit or downchute have been dismantled.

> CHECKING DOWNCHUTES' CENTERING



Unscrew the downchute's downflow drawbar from the actuator's drawbar.



Dismantle the downchutes and the cones over the center of the discs.



Disassemble the downchutes, as the baseplates must be used for the adjustment. Loosen the M8 bolt on the inside and then unscrew the countersunk socket screw. Make sure that the guide disc centering the downchute in the hole is put back in place when the downchutes are reassembled. It is also important to keep the right and left sides separate so these are not interchanged.



Reattach the downchutes' baseplates to the shield.



Screw a long M16 screw into the threaded holes in the center of the discs so these penetrate the center hole of the baseplate.

Now, it is possible to check whether the downchutes are centered over the center of the discs. If they do not center, shift the mounting plate to which the downchutes are attached.



Loosen the 4 screws holding the mounting plate and move it until the center of the downchute is centered over the center of the disc.

Be precise. The more precisely the downchutes are adjusted, the easier it will be to achieve a better spreading pattern.

After adjusting the plate, retighten the 4 screws.



After the adjustment, reassemble the downchutes. These must rotate easily when the center screw is tightened. Once they rotate with proper ease, tighten the lock nut. Remember to correctly reattach both the centering disc and the large washer.

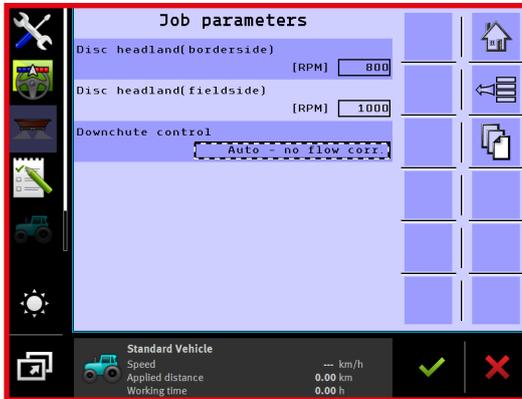


Reattach the downchutes and the tow bar.

Now check/adjust the basic setting of downchute scale.

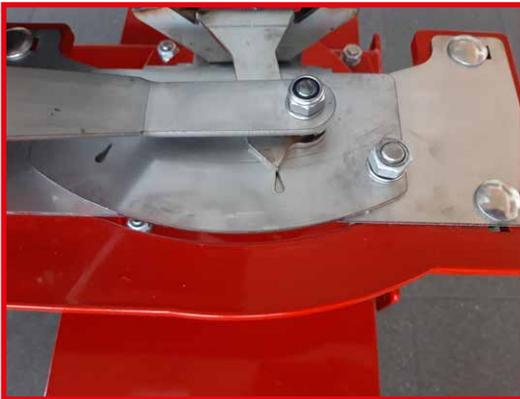
> CHECK/ADJUSTMENT OF DOWNCHUTE SCALE

Follow this procedure to make sure that the downchutes are correctly positioned.

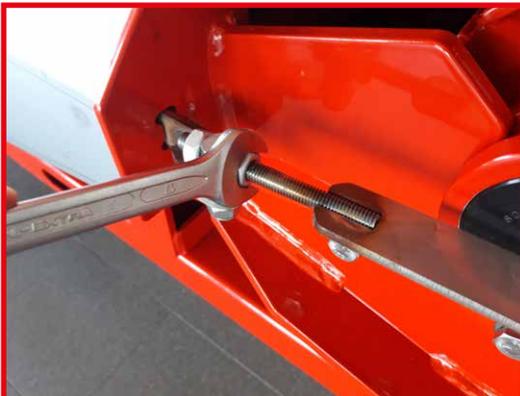


On the computer, enter '36' meters as the working width. Select 'Auto – no flow corr.' under downchute control.

Return to the operation screen and click 'Start spreading'  NB: headland spreading must not be activated, as otherwise the downchutes will not move out into the correct position. Also all sections must be turned on.



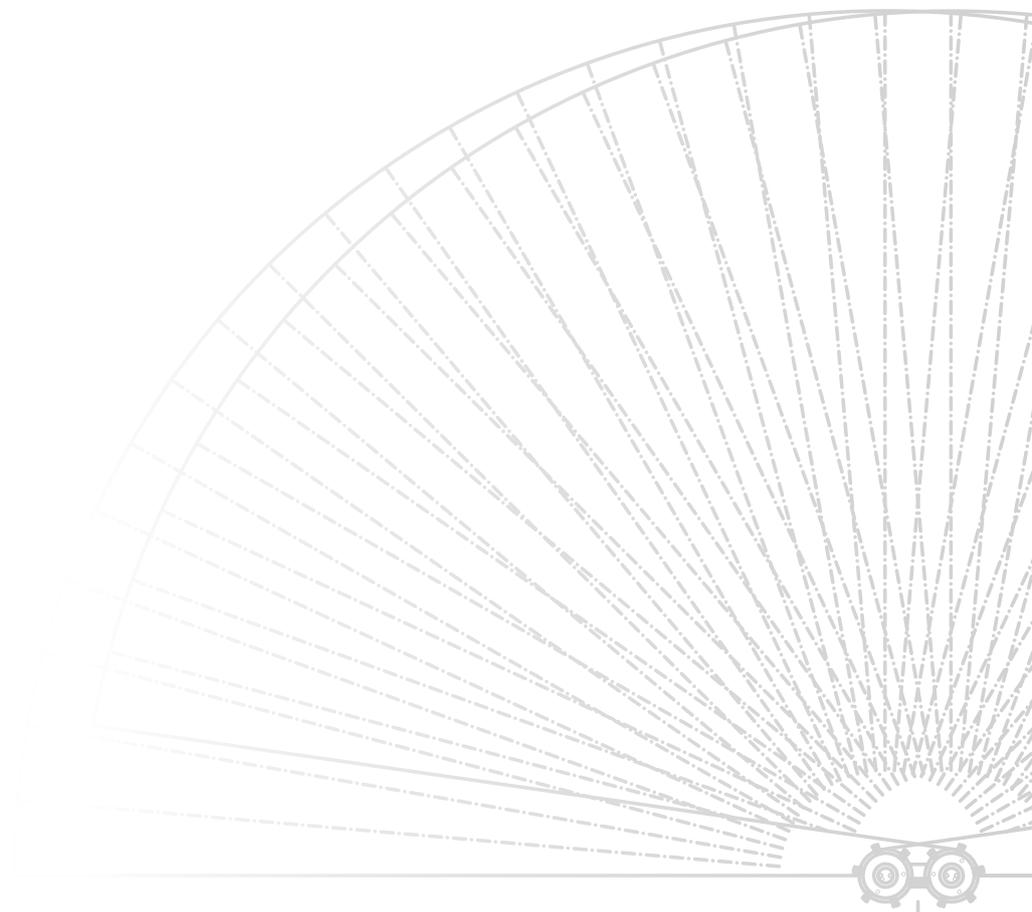
After clicking 'Start spreading', the downchutes must move out and align with the small arrow cut into the downchutes' baseplate. If the arrows do not align, they must be adjusted until the basic setting is correct.



Adjust the tow bar's threading until the downchute's arrow aligns with the baseplate arrow.

After completing the adjustment:

Remember to re-enter the following settings in the computer: the working width for spreading and the downchute position to be used for spreading.



LUBRICATION POINTS

The different lubrication points on the implement are shown below. The number of operating hours for each lubricating interval is specified at each lubricating point.

> EVERY 100 HOURS



Roller bearings (2 lubrication points on each belt). It may be necessary to run the belt to access the grease nipple.



The belts' guide rollers (2 lubrication points on each belt.)



Drive-roller bearings (2 lubrication points on each belt).

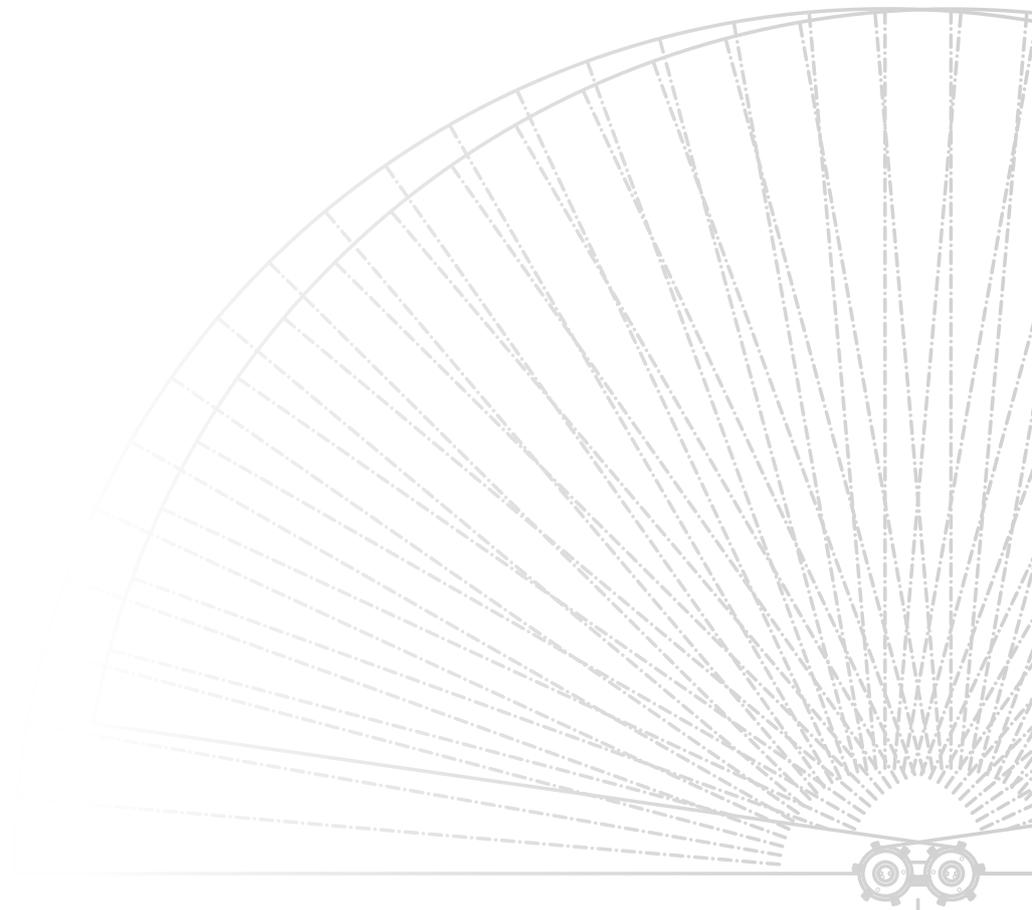




Right and left top, just below the discs.



Support rollers (4 lubrication points). Only require lubricating on XESC models.



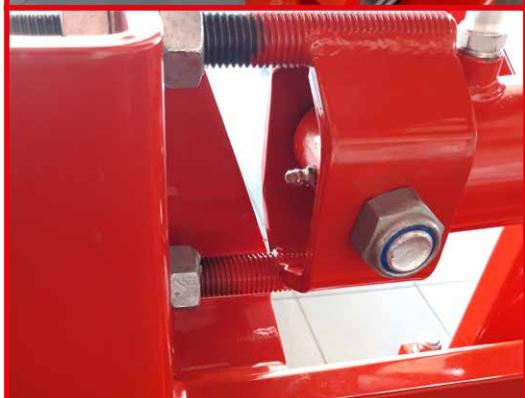
LUBRICATION POINTS

The different lubrication points on the implement are shown below. The number of operating hours for each lubricating interval is specified at each lubricating point.

> EVERY 200 HOURS



Cylinder for side-wing fold-up (2 lubrication points on each cylinder).



Hinges for side-wing fold-up (4 lubrication points on each belt).





Tension bar for roller (2 lubrication points on each belt).



Cylinder for safety lock (1 lubrication point).



Cylinder for section control (2 lubrication points). XESC models only.

OTHER MAINTENANCE AND CLEANING

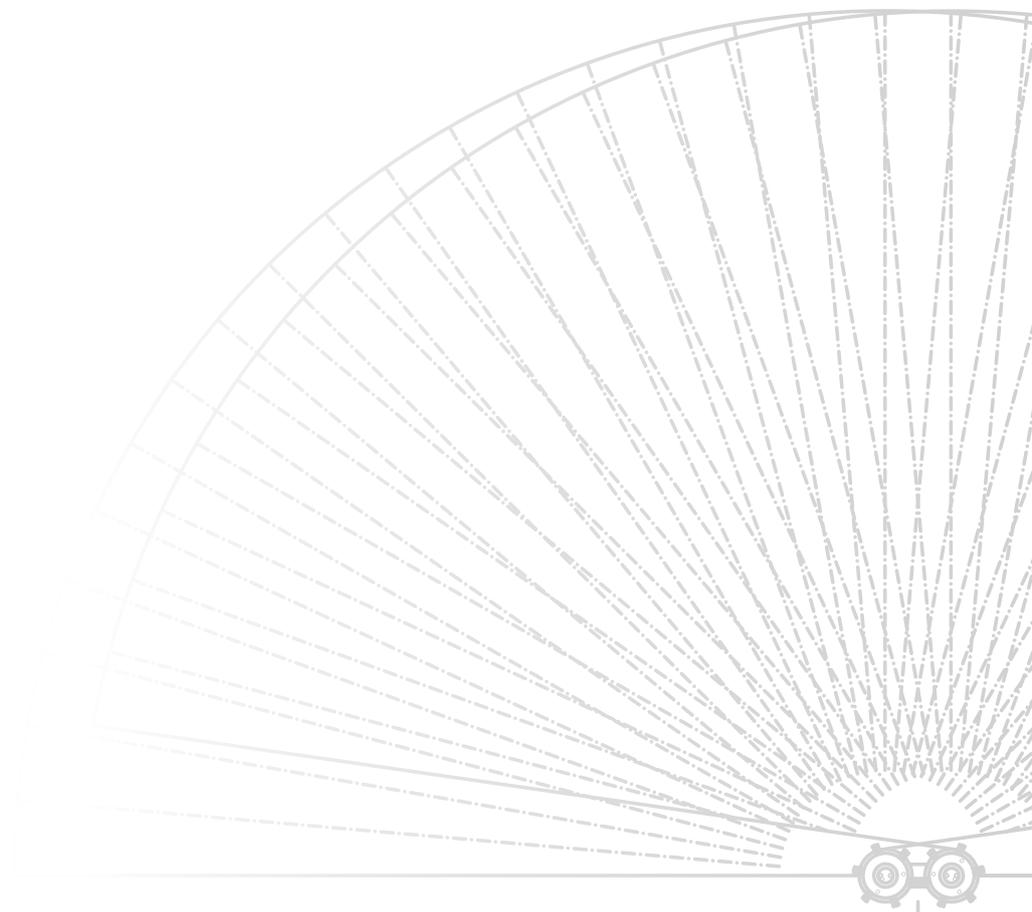


Inspect and clean side belts and all rollers daily to remove attached lime, fertilizer, stones, etc., as these materials can increase belt wear and ruin them.



XESC models: It is important that the spread unit can move freely without obstruction. Every day, check all rollers, side guides and scrapers to make sure they are clean.





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MANUAL K-XE EN

For more than 50 years, BREDAL has specialized in the development and production of high-quality lime and fertilizer spreaders for agricultural purposes. The company's goal is to build reliable machinery, precise in use, and simple to operate and maintain. In recent years, the product line has also included winter equipment such as sand and salt spreaders.

The company's interests in countries importing BREDAL machinery are represented by local importers who sell BREDAL spreaders and provide technical support and service.

BREDAL is located in Vejle, Denmark, where it has state-of-the-art production facilities with the latest technologies ensuring the production of top-quality machines.

**SIMPLE
PRECISE
RELIABLE**