

Service manual A-Drill range



Date March 2018

Subject **Service training A-Drill**

Details **A-Drill 200; A-Drill 500**

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1.1 A-Drill 200



	A-Drill 200					
Machine type	CLC Evo/Pro rigid	CLC Evo/Pro Fold	CTC	Qualidisc Rigid	Qualidisc Fold	Qualidisc T
Control box	Version 3.2 or 5.2					
Hopper capacity (l)	200					
Number of spreading deflectors	8					
Total weight (kg) with electric fan	164	90	-	110	90	-
Total weight (kg) with hydraulic fan	183	95	95	115	95	100

- Hydraulic or electric pneumatic fan
- Control box 3.2 or 5.2
- Easy adaptation on existing machines
- Stairs and guards conform to CE rules
- Safe and strong stairs & guards
- 200l hopper capacity
- Translucent plastic hopper
- 60 kg (w/o stairs & guards)

1.2 A-Drill 500



	A-Drill 500					
Machine type	CLC Evo/Pro rigid	CLC Evo/Pro Fold	CTC	Qualidisc Rigid	Qualidisc Fold	Qualidisc T
Control box	Version 3.2 or 5.2					
Hopper capacity (l)	500					
Number of spreading deflectors	8					
Total weight (kg) with electric fan	209	-	-	153	-	-
Total weight (kg) with hydraulic fan	228	-	100	158	-	143




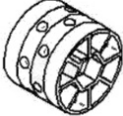
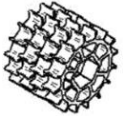
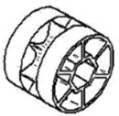


- Hydraulic or electric pneumatic fan
- Control box 3.2 or 5.2
- Easy adaptation on existing machines
- Stairs and guards conform to CE rules
- Safe and strong stairs & guards
- 500 l hopper
- Translucent plastic hopper
- 103 kg (w/o stairs & guards)
- Filling level sensor on a-drill 500 as standard (working only with control box 5.2)

2. Possible adaptations

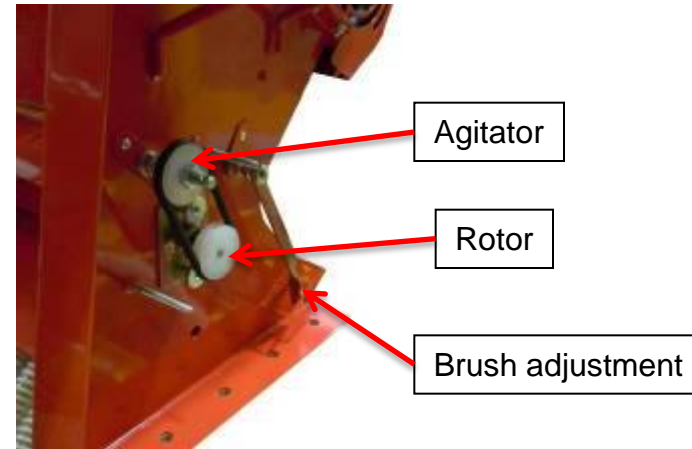
	Qualidisc			CTC	CLC Evo		CLC Pro		Visio	TLC/TLD/TLG
	Rigid mounted	Fold mounted	Trailed	Trailed	Rigid mounted	Fold mounted	Rigid mounted	Fold mounted	Trailed	Fold mounted
A-Drill 200E	✓	✓	✗	✗	✓	✓	✓	✓	✗	✗
A-Drill 200H	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗
A-Drill 500E	✓	✗	✗	✗	✓	✗	✓	✗	✗	✗
A-Dril 500H	✓	✗	✓	✓	✓	✗	✓	✗	✗	✗



3.1 Sowing shaft

Rotor	Type of rotor	Reference	Series / option	Application
	fb-f-fb-fb	RF32066	Standard equipment	Fine grooves: Sowing of small seeds or small quantities. EG: mustard, rapeseed, clover, phacelia, slug pellets, etc.
	GGG	RF32061	Standard equipment	Large grooves: Sowing of cereals. EG: mix of grasses, rye, barley, wheat, oats, etc.
	fb-ef-eb-fb-fb	RF32067	Optional equipment	Very fine grooves: Sowing of very small seeds or very small quantities. EG: clover, poppy, rapeseed, mustard, etc.
	fb-efv-efv-fb	RF32209	Optional equipment	Fine honeycomb grooves: Sowing of small seeds or small quantities. EG: radish, mustard, etc.
	fff	A135122830	Optional equipment	Fine grooves: Sowing of small seeds or small quantities. EG: grass, wheat, barley, radish, etc.
	GB-G-GB	A135132030	Optional equipment	Coarse grooves: Sowing of large seeds or large quantities. EG: mix of grasses, rye, barley, wheat, oats, etc.
	fb-Flex20-fb	A135002130	Optional equipment	Flexible distribution wheel: Sowing of very large seeds and fertilizer. EG: fertilizer, peas and vetches.
	Flex40	RF31432	Optional equipment	Flexible distribution wheel: Sowing of very large seeds and fertilizer. EG: fertilizer, peas and vetches.

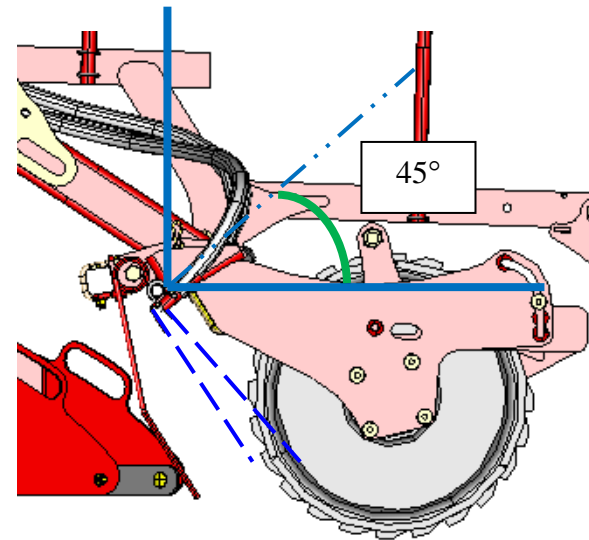
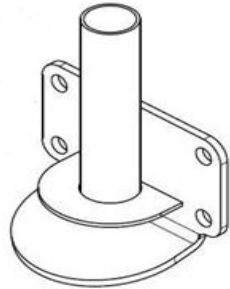
3.2 Seed metering device



- The agitator avoid the effects of vault of the products and allows complete and regular emptying of the hopper.
- Brush for cleaning the rotor and accurate seed flow
- Filling level sensor equipped the A-Drill 500 with only the control box 5.2



3.3 Spreading equipment



- 8 outlets whatever the working width is
- Central hoses from the seeder are placed on lateral sides of the machine (higher pressure)
- Strong spreading deflectors
- Position can be adapted to the different conditions
- Can be easily adjusted laterally and the angle can be easily changed
- Always fitted in front of the roller before the recompaction

3.4 Pneumatic fan

2 pneumatic fans depending on the seed rate, the working width of the machine and the working speed

Electric fan:

4kg/min max (eg: 50kg/ha-4m machine-12km/h)
Recommended for rigid machines and fine seeds
Can be easily adapted on tractors with low oil flow
The seed level can be seen from the tractor cab



Hydraulic fan:

14kg/min max (eg: 100kg/ha-7m machine-12km/h)
Recommended when high speed, large machine and high seed rate and normal seeds
Oil flow needed : 35l/min
1 single acting valve + free return to tank



3.5 Adaptations on the machine



Rigid Qualidisc:

- Easy & safe access from the rear of the machine
- Platform extension when double cage roller
- Can be retrofitted on old machines without problem



Fold Qualidisc – Only with a-drill 200:

- Easy & safe access from the rear of the machine
- Platform extension when double cage roller
- Can be retrofitted on old machines without problem



Qualidisc T:

- Easy & safe access from the rear of the machine
- Hopper mounted on a parallelogram (always horizontal)
- Can be only adapted only on Qualidisc T from 01/2012



Rigid CLC Evo & pro:

- Easy & safe access from the left side of the machine
- Safety has been the main point as it is high
- Tines can get triggered under the platform
- Can be retrofitted on old machine but adaptation kit needed for the deflector plates and frame stays on CLC pro

4.1 Control box



Version 3.2:

- Adjustment of the seed rate
- ON/OFF of the electric fan
- Calibration test & emptying control
- ON/OFF of the seed metering rotor
- Seed rate calibration by using the scattering table

Warning: this control box can not be connected to any sensor for the speed and no START/STOP functions in the headlands (the rotor is switch ON/OFF by the driver on the control box)



Version 5.2:

- Same functions than version 3.2 (seed rate adjustment, electric fan control, calibration test, hopper emptying)
- Easy Seed rate calibration with automatic calibration function
- Can work with speed sensor (from the tractor 7 pin plug or radar info) or w/o sensor if fixed speed all the time
- Indicates the speed, surface, hours, voltage, seed rate
- Includes the daily and total counters (hours, has)
- Several languages available
- START/STOP sensor can be connected for automatic function in the headlands (inductive sensor on CTC & Qualidisc T)
- Automatic diagnostic system
- Seed level sensor

4.2 Sensors

Speed sensor for 5.2 control box:



7 pins cable for tractor speed info



Speed sensor



Headlands sensor for 5.2 control box:



3 point linkage switch for stopping rotor in headlands (rigid Qualidisc & CLC)



Headlands sensor for 5.2 control box (Trailed machine):

Inductive sensor kit for Qualidisc T and CTC



5.1 Hydraulic fan

Warning: There's no measure system to check the speed rotation.

Insufficient air flow : - seed stay/cumulate into the pipe

A high air flow : - The air returns into the tank and it gives wrong seed quantity.

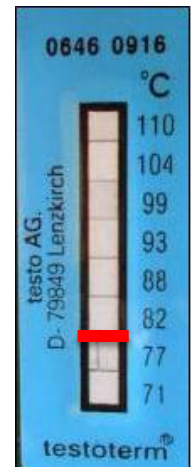
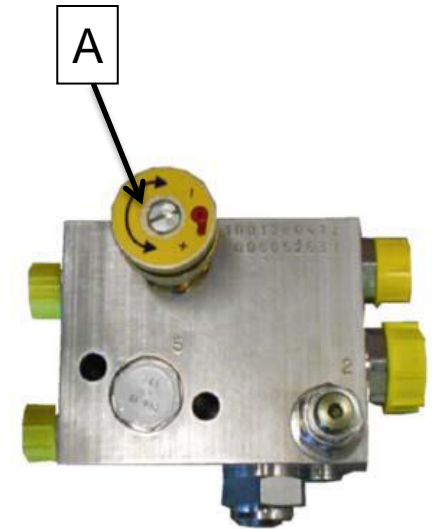
Adjustment variant n°1 The pump is constant and the oil flow to the tractor is not adjustable.

- Tighten the adjustment knob to the maximum (A).
- Switch on the tractor.
- With the tractor, go up to the same engine speed as if you were working in the field.
- Switch on the blower.
- Adjust the blower rotation speed using the adjustment knob (A).
- Ensure that the tractor hydraulic pump provides enough oil to the unit. This avoids an important reduction in the blower rotation speed in case of reduction in tractor engine speed or operation of other hydraulic functions.

Adjustment variant n°2 The tractor is equipped with an adjustable flow distributor.

- Loosen the adjustment knob to the maximum (A).
- On the tractor flow regulator, adjust the oil level to 0.
- Switch on the blower.
- Slowly increase the oil quantity in order to bring the blower to the required rotation speed.
- Ensure that you do not exceed 80L/minute. If the tractor produces more oil, the system risks overheating, particularly if the tractor does not have an oil cooling system.

Warning: A measuring strip from 71°C to 110°C has been applied to the hydraulic motor. Always ensure that the temperature does not exceed **80°C**.

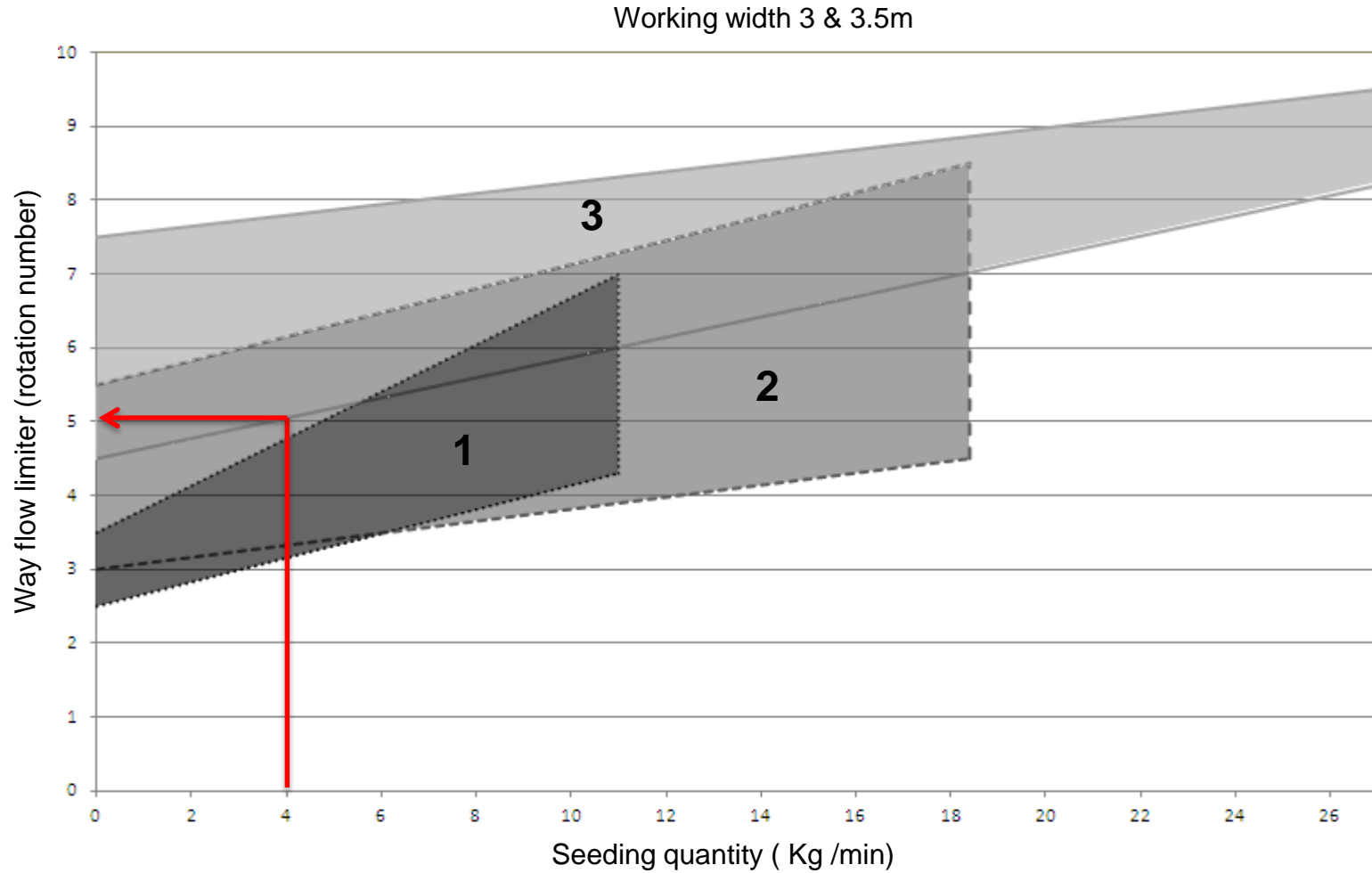


5.2 Hydraulic fan pre-adjustment

- To determine the required seed flow rate use the following formula (p22)
- Chose in enclosed list the seed category
- Then, following the working width, use the correct adjustment with following tables.
- Depend on the indication from the scale, tight completely the flow limiter and unscrew with the correct number of rotation.

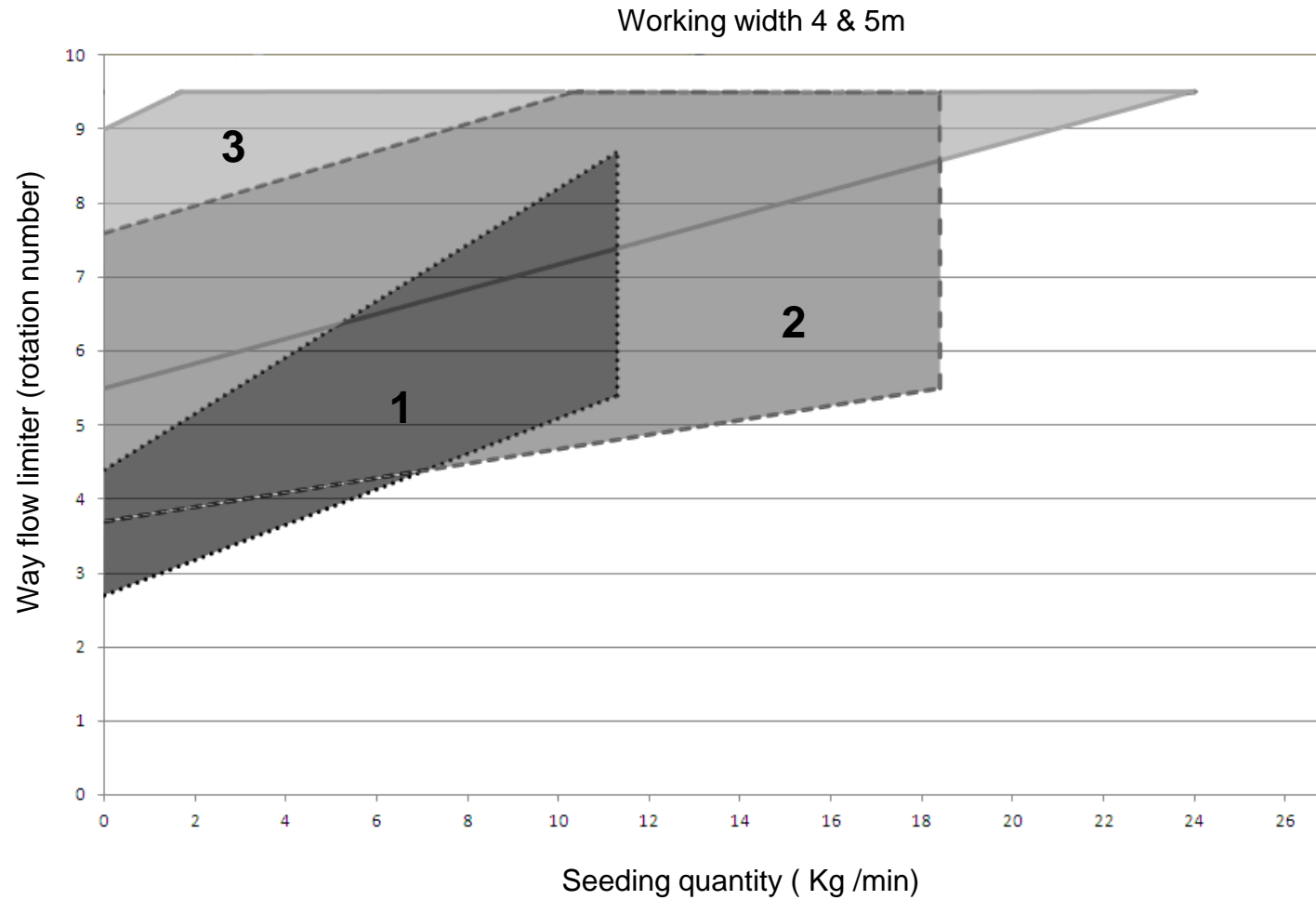
Type of seed	Seed category
Chia withe	1
Rape	1
Poppy	1
Alfalfa	1
Clover	1
Mustard	1
Florex	1
Phacelia	1
Radish	1
Grass	1
Oats	2
Physiostart	2
Wheat	2
Barley	2
Rye	2
Vetch	3
Peas	3
Horse beans	3
Nackas-lose	3
DC 37-lose	3
Blue lupine	3
DC 25-lose	3

5.2 Hydraulic fan pre-adjustment

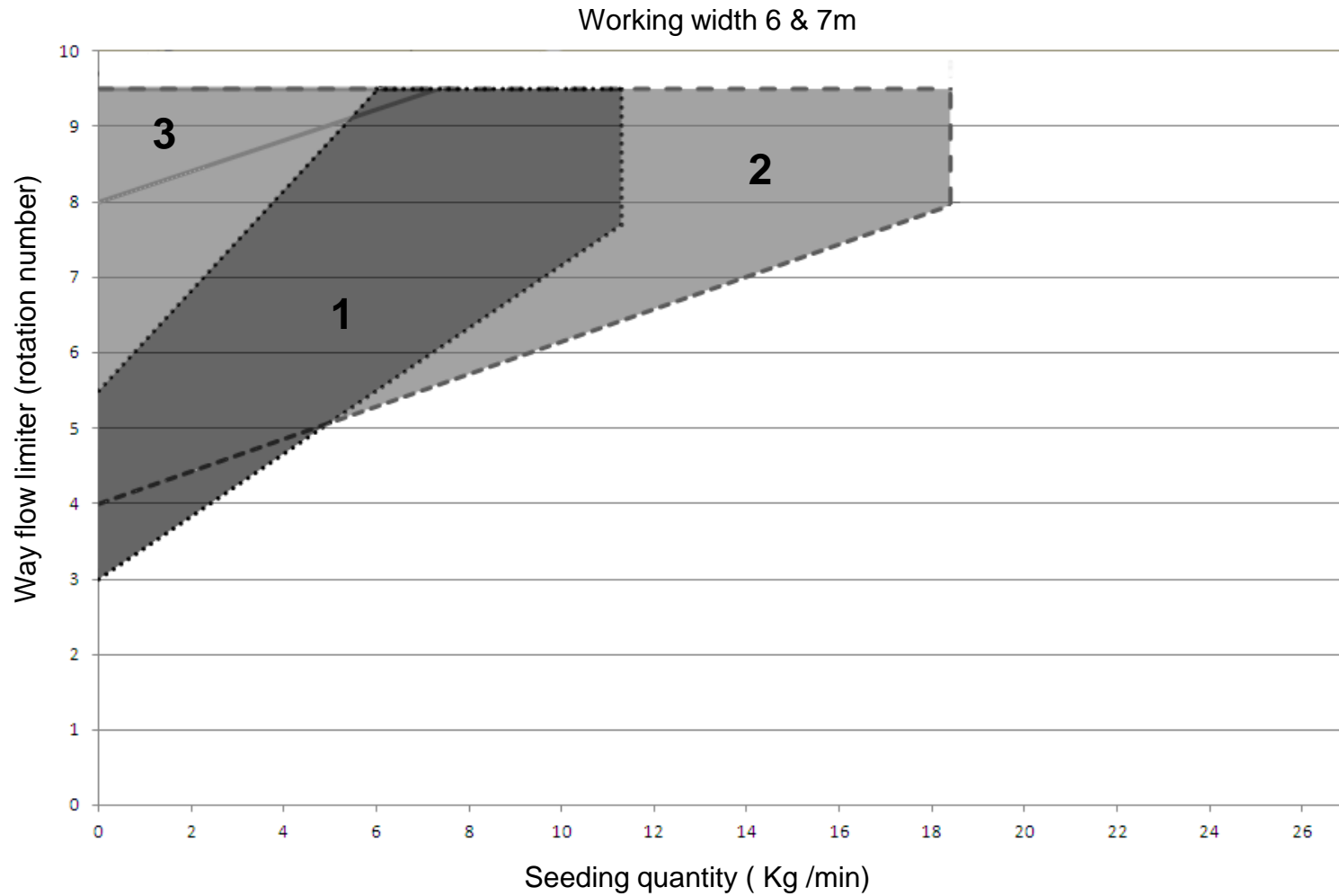


Example : Working width 3,00m - 4kg/min – Seed category 2 Tight completely flow limiter and unscrew 5 turns

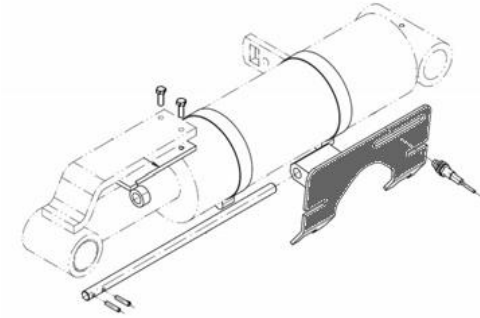
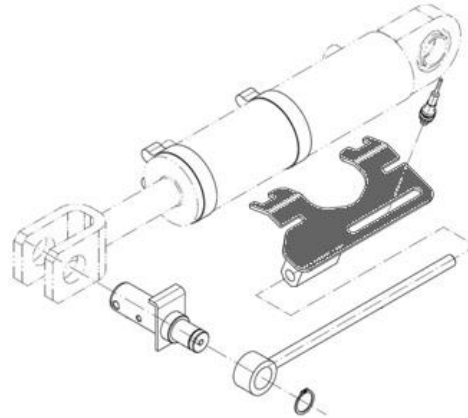
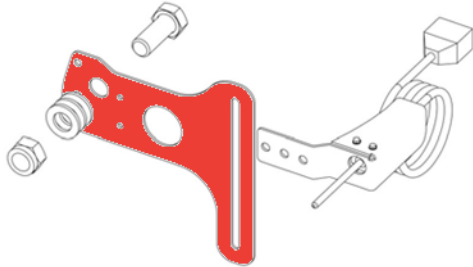
5.2 Hydraulic fan pre-adjustment



5.2 Hydraulic fan pre-adjustment



5.2 Sensors



On the rigid/fold machine:

When the machine is coupled and raised, the upper link bar presses on the sensor rod. The sensor sends an interruption signal to the seed drill, which stops all seed distribution.

How to set up this sensor:

- Place the sensor detection rod under the upper link bar.
- Change the position of the sensor on the bracket (Red)

On trailed machine (left) and the CTC (right):

The raising sensor is positioned on the lifting cylinders of the machine transportation carrier. The sensor detection rod is located on the cylinder rod. By default, when the rod passes in front of the sensor, the seed drill stops the distribution.

For set this:

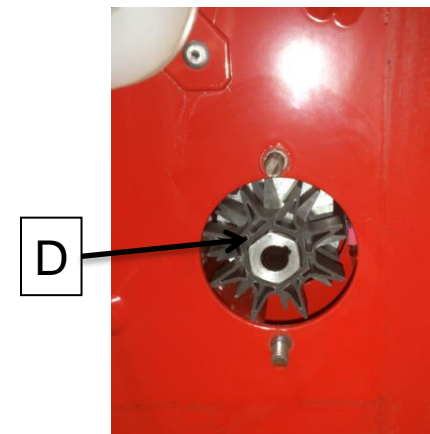
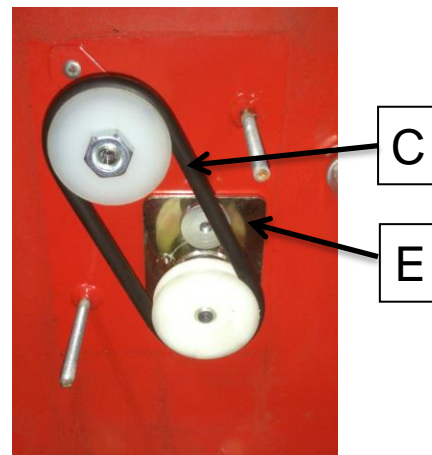
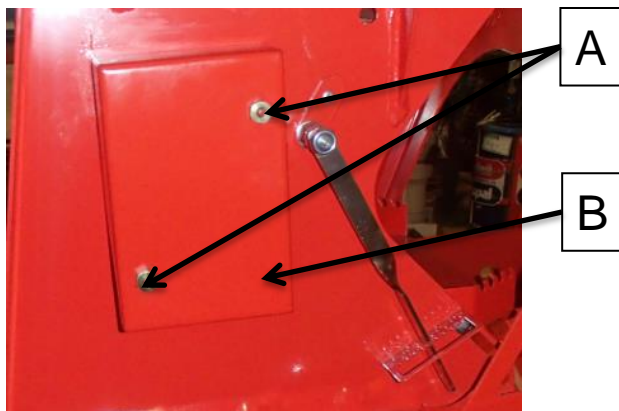
- Change the position of the sensor on the bracket (Grey)

6.1 Distribution

The choice of distribution rotor depends on the sowing required.

To replace the distribution rotor, proceed as follows:

- Fully empty the hopper.
- Unscrew the two nuts (A).
- Remove the side cover (B).
- Remove the agitator drive belt (C).
- Unscrew the knurled nuts from the rotor bearing.
- Remove the distribution rotor (D) and the bearing (E).
- Install the new distribution rotor.
- Carry out the reverse procedure to re-assemble.

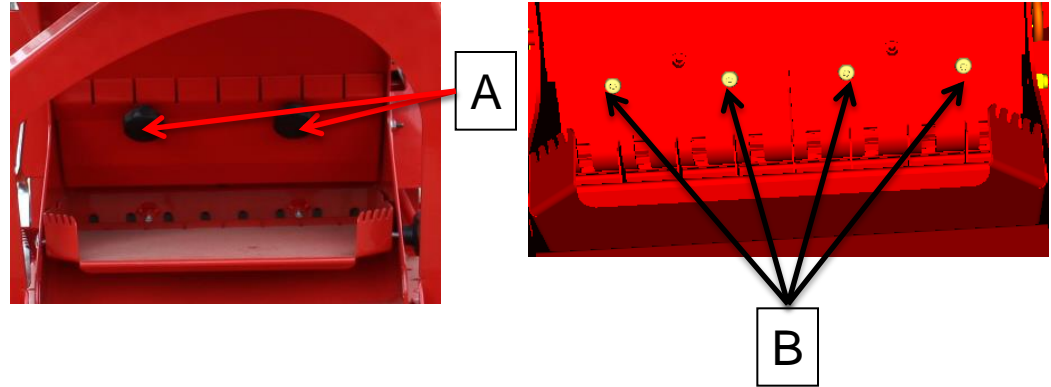


6.2 Hopper bottom sheet and brush

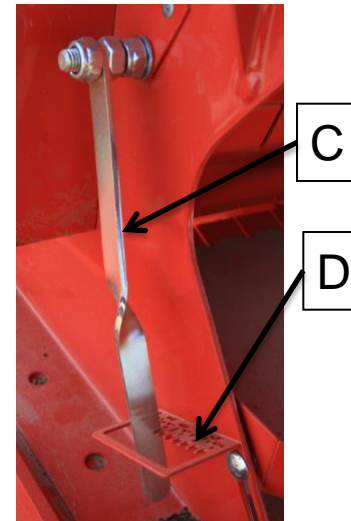
Always remove the hopper bottom sheet to avoid damaging the distribution wheels when sowing large seeds

For remove this:

- Unscrew the two knobs (A).
- Remove the sheet.
- Unscrew the 4 Allen screws M6x12 (B).
- Remove the hopper bottom sheet

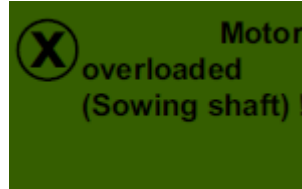


A brush is mounted on the distribution rotor to regulate the seed flow. The distance between the brush and the distribution rotor is adjusted using a lever (C) attached to the seed drill frame. The lever can be adjusted on a scale (D) from -5 (position closed to the rotor) to +4 (position furthest from the rotor). These adjustments allow the flow to be regulated according to the seed weight.



6.3 Prevent the blockage of the sowing shaft

If this message appear on the control box 5.2:



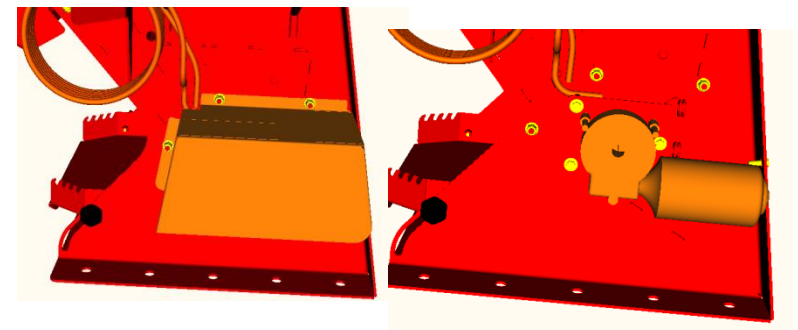
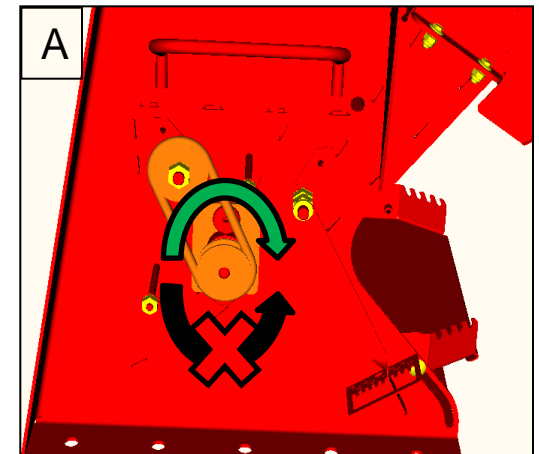
Or a message number « 04 » on the control box 3.2 .

The sowing shaft might be blocked.

To avoid this problem, it's necessary to change the rotation direction of the sowing shaft. Usually, the sowing shaft turns counter clockwise when viewed from the right side of the machine (image A).

For change the direction:

1. Remove the drive motor cover.
2. Disconnect the two electrical connectors from the motor.
3. Reverse both connectors.
4. Re-fit the drive motor cover.
5. Check shaft is turning on clockwise direction **from left side**



6.4 Working width/sowing table

The sowing quantity depends on the speed of the distribution rotor. It can be adjusted manually with the box 3.2 or automatically depending on the working speed with the box 5.2 and a speed sensor.

To define the quantity of seeds to sow, carry out a fixed position test before starting work.

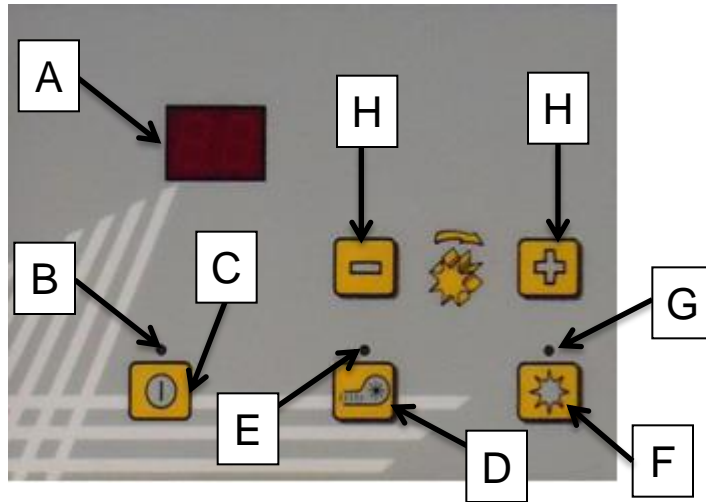
The sowing tables indicate the quantity sown for different seeds in kilogrammes per minute (quantity returned during a fixed position flow test).

The table values can be used as close values. Numerous factors, such as the specific weight, weight of a thousand seeds, seed humidity, modification of fluidity, etc... can lead to differences with these values.

The fixed position flow tests allow these differences to be corrected. To determine the required seed flow rate:
- Use the following formula :

$$\frac{\text{Required spread quantity [kg/ha]} \times \text{Travel speed [km/h]} \times \text{Working width (m)}}{600} = \text{Weight [kg/min]}$$

7.1 Control box 3.2






A	Displays the actual rotor rotation speed as a percentage of its maximum speed (from 1 to 99%)
B	Box power on indicator. Lights up if the box is activated
C	"On/Off" button: Activates or deactivates the box
D	Activates the blower (only on models with electrical blower).
E	Blower power on indicator. Lights up if it is activated.
F	On / off button for the distribution rotor.
G	Rotor on indicator. Lights up when the rotor is operating.
H	Rotation speed adjustment buttons for the distribution rotor

Switching on:

Press on the button  to switch on the box.

- The box version is displayed.
- The indicator above the button lights.
- The current rotor rotation speed in percentage of its maximum speed is displayed.


Use buttons   to adjust the rotor rotation speed.




On electrical blowers, use the button  to start the blower.


Press on button  to switch on the distribution rotor.

7.1 Control box 3.2


Use in the field:

Press on button  to switch on the distribution.

- The control indicator above the button  flashes. This indicates that the blower is starting.
- After a few seconds, the control light above the button  lights continuously. The blower is operating.
- The control indicator above the button  lights. It indicates that the motor driving the rotor and transporting the seeds is activated.

When you turn a corner or change fields, press on button  until the indicator goes out.









- The distribution shaft stops, only the blower functions.

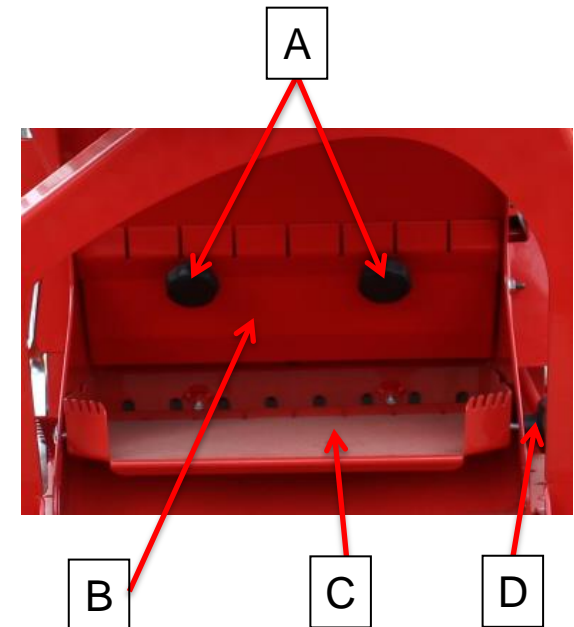
At the end of the work, press on button  of the control module to deactivate the blower and rotor.

7.1 Control box 3.2

Distribution test:

Before the distribution, it is essential to carry out a distribution test. This test allows you to refine your adjustments and carry out the distribution according to your requirements.







- Unscrew the two knobs (A) located on the distribution sheet (B).
- Re-install the lower plate (C) to accentuate its slope.
- Attach the lower plate in position on the frame using the knob (D) located to the right.
- Place a bag or recipient at the extremity of the distribution sheet to recover the seeds.
- Using the formula given in section “Working width / Sowing table” at page 22, calculate the quantity of seeds per minute that you want to spread.
- Look for the rotor speed corresponding to your calculations using the sowing tables.
- Adjust the rotor speed using the buttons  .
- If the blower is operating, deactivate it.
- Keep the buttons  and  pressed to start the test.
 - The distribution rotor will automatically turn for one minute.
- To stop the test, press on , ,  or .
- When the test is finished, remove the bag or recipient and weigh it.
- Adjust the rotor speed according to the results obtained during the test.

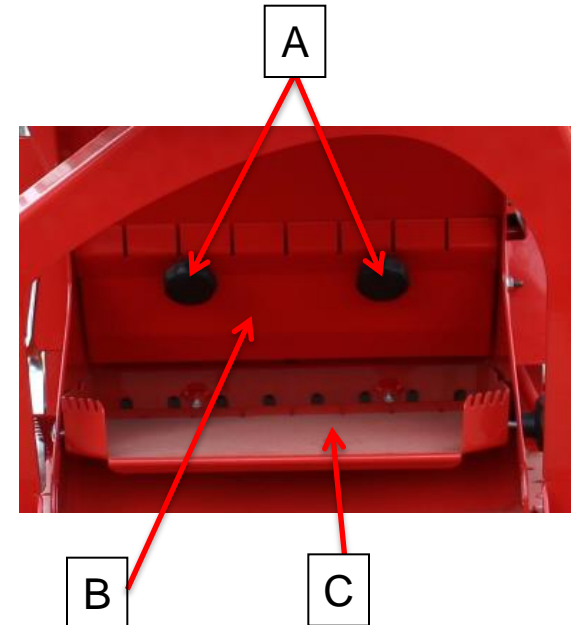


7.1 Control box 3.2

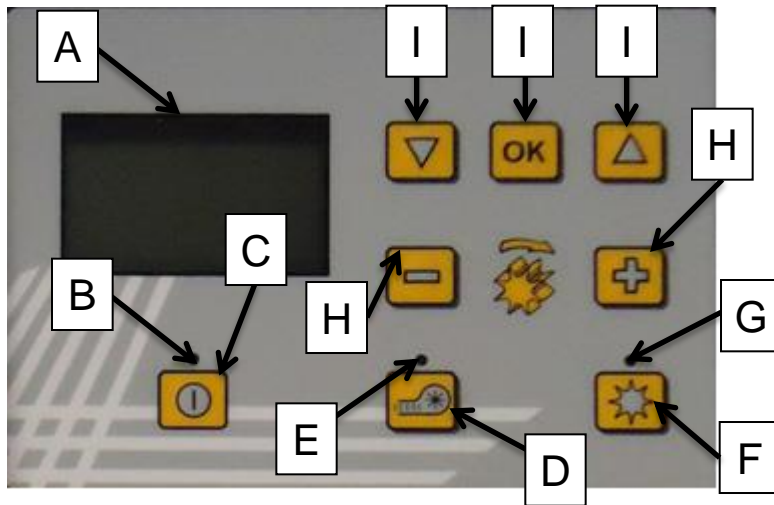
Emptying the hopper:

The hopper emptying is operated on the opposite side to the hose connection to the seed drill. Follow this procedure:

- Unscrew the knobs located on the distribution sheet.
- Turn the sheet and place it on the lower sheet so that it can be used as a slide for the seeds.
- Keep the buttons  and  pressed to start the emptying.
- The distribution rotor turns at maximum speed to empty the contents of the hopper.
- To stop the emptying, press on , ,  or .



7.2 Control box 5.2



Main display

Start screen:



- Indicates the type of box. In this case: 5.2
- Indicates the software version installed.
- This information is essential for correct maintenance operations by the technical services.



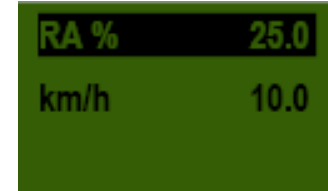
A	Graphic display of seed drill parameters
B	Box power on indicator. Lights up if the box is activated.
C	"On/Off" button: Activates or deactivates the box.
D	Activate or deactivate the blower. <ul style="list-style-type: none"> • Electrical blower : <ul style="list-style-type: none"> - When starting, the indicator flashes. - If the blower operates continuously, the indicator remains lit. • Hydraulic blower : <ul style="list-style-type: none"> - The indicator lights up as soon as the blower has generated enough pressure.
E	Blower power on indicator. Lights up if it is activated.
F	On / off button for the distribution rotor.
G	Rotor on indicator. Lights up when the rotor is operating.
H	Rotation speed adjustment buttons for the distribution rotor.
I	Control buttons for the on-board computer: <ul style="list-style-type: none"> • Surface calculations. • distribution tests, • emptying, • etc.

7.2 Control box 5.2



Operations without speed sensor:

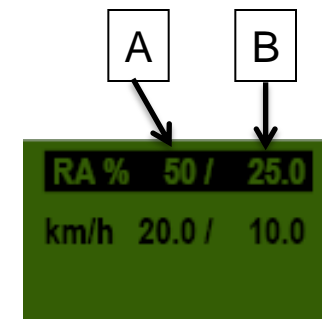
RA%: Distribution rotor rotation speed, defined as a percentage of the maximum rotor speed.
 - Use the buttons  and  to adjust this parameter.

Km/h: The travelling speed (in kilometres per hour) can be adjusted in the menu tab “Calibration Test”.



Operations with a speed sensor:

	Set point value (A)	Real value (B)
RA%	Distribution rotor rotation speed, defined as a percentage of the maximum rotor speed. - Use the buttons  and  to adjust this parameter.	Real distribution rotor rotation speed, as a percentage of its maximum speed. The rotation speed is calculated by the sensor depending on the overall travelling speed of the tractor/machine.
Km/h	The travelling speed (in kilometers per hour) can be adjusted in the menu tab “Calibration Test”.	Real travelling speed in kilometers per hour. The speed is measured by the sensor.



7.2 Control box 5.2

Selection menu:

Tabs in the main menu:

SW % 50/ 25.0
km/h 20.0/ 10.0
kg/ha 5.3

Calibrate
Speed ?

Total area:
12.07 ha
Area:
3.93 ha

Operating voltage:
11.7 V
I-1: I-2:
12.6 A 1.2 A







Calibration test ?

Seed removal

Total hours:
23.46 h
Hours:
0.38 h

Sprache Language
Langue ЯЗЫК

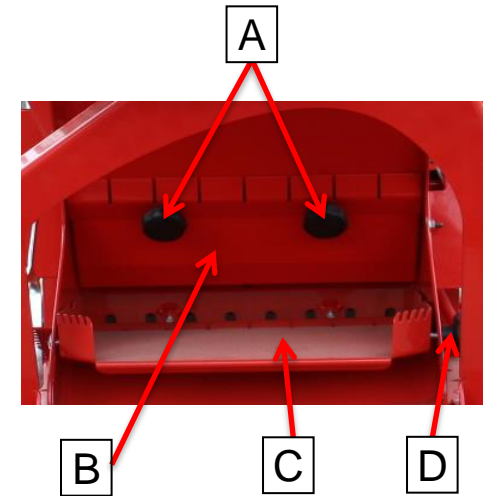
For navigate in the main menu:

- Use the buttons  and  to navigate in the main menu.
- Press on  to select the required menu.
- Adjust the values using the buttons  and .
- Press on  to select the values and return to the main menu

7.2 Control box 5.2

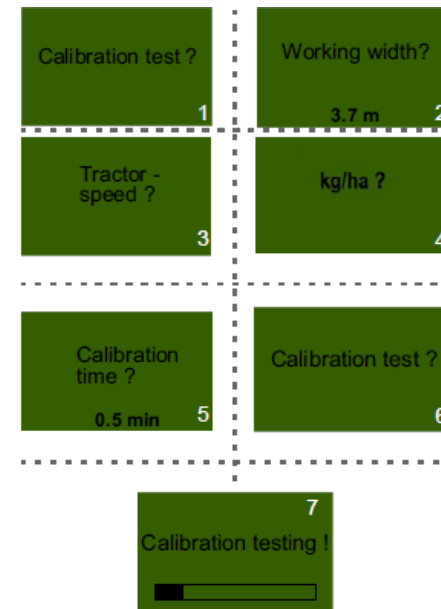
Distribution test:

- Unscrew the two knobs (A) located on the distribution sheet (B).
- Re-install the lower plate (C) to accentuate its slope.
- Attach the lower plate in position on the frame using the knob (D) located to the right.
- Place a bag or recipient at the extremity of the distribution sheet to recover the seeds.



Adjustments:

- In the main menu, select the "Calibration test" tab (1).
- Enter the working width (2).
- Enter the average travelling speed (3) that you wish to work at.
- Enter the quantity of seed (4) that you wish to sow.
- Enter the duration of the distribution test (5):
 - By default the distribution time is 1 minute
 - We recommend to enter 2 minutes for small seeds
 - We recommend to set 30 seconds for large seeds



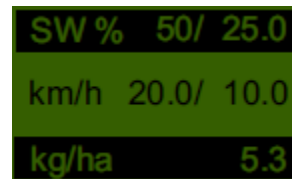
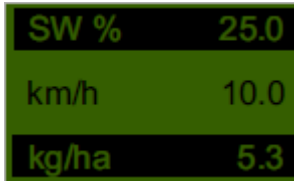
7.2 Control box 5.2

After the test:

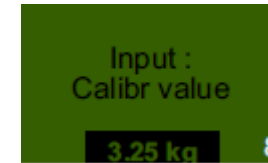
- When the test is finished, remove the bag or recipient and weigh it.
- Enter the weighed value (8).
 - If the difference between the weighed value and the theoretical value indicated is less than 3%, the following screen is displayed:



- If the difference between the weighed value and the theoretical value indicated is more than 3%, we recommend that you redo the test.
- The distribution rotor speed is now calculated automatically. The display returns to the main menu.




With a speed sensor



7.2 Control box 5.2

Hectare counter:





- Displays, in hectares (ha) the total surface and sown surface since the start of work.
- The calculation values are automatically adjusted after the distribution test.
- The counter starts as soon as the distribution rotor starts turning.
- To reset the "Area" tab to zero, press on the button  for 5 seconds.

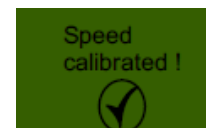
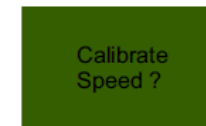
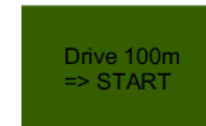
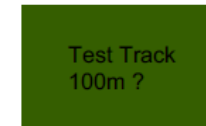
The "Total area" tab cannot be reset to zero.

Calibration of travel speed:

Test distance:

The test distance is 100 meters (328')





- Measure a distance of 100 meters (328').
- Mark the start and finish.
- In the main menu of the box, choose the tab "Speed calibration?".
- Press on  to select this tab.
- Choose the tab "Test track 100m?".
- Press on .
- Press on  to start the test and begin to advance.
- Having travelled 100 meters (328'), press on  to stop the calibration.
- The following message is displayed when the calibration is finished.
- The number of radar impulses on the ground during the 100 meters is displayed. Note this number, as it could be useful in case of loss of the calibration values.



7.2 Control box 5.2


Manual calibration:

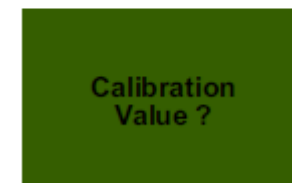
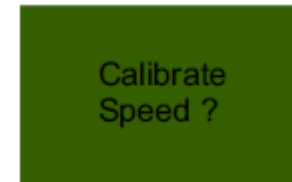
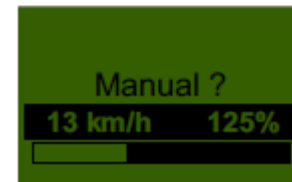
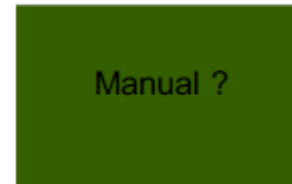
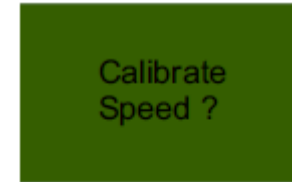
The calibration can be carried out without travelling 100 meters (328').

- In the main menu of the box, choose the tab "Calibrate speed?".
- Press on  to select this tab.
- Choose "Manual".
- Press on  to start the test and begin to advance.
- Compare the speed displayed on the box with the tractor display.
- Correct the values displayed on the box using the buttons  and  until they correspond to those of the tractor.

Calibration value:

If you have already carried out a calibration, but the box has been reset, follow the procedure below:

- In the main menu of the box, choose the tab "Calibrate speed?".
- Press on  to select this tab.
- Choose the tab "Calibration value".
- Enter the number of impulsions over 100 m (328') obtained during the previous calibration.
- Validate



7.2 Control box 5.2

Resetting calibration:

This function resets the calibrated value to its factory configuration.

- In the main menu of the box, choose the tab "Calibrate speed?".
- Press on to select this tab.
- Choose the tab "Calibration reset ?".
- Press on to validate.
- Once the calibration has been reset, the following message is displayed:

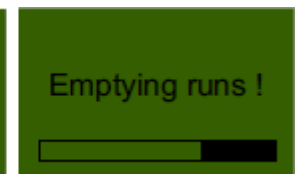
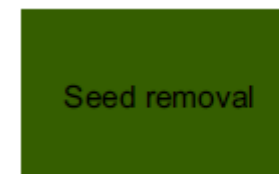
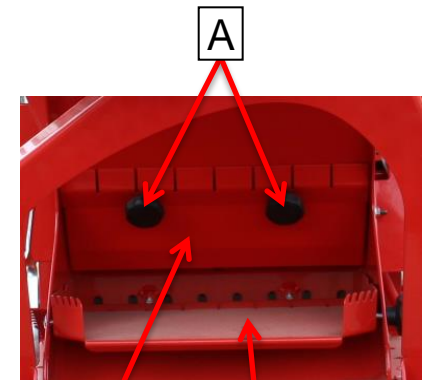


Emptying the hopper:

Hopper emptying may be necessary at the end of work, or when changing seeds or the distribution rotor. The hopper emptying is operated on the opposite side to the hose connection to the seed drill.


Follow this procedure:

- Unscrew the knobs located on the distribution sheet.
- Turn the sheet and place it on the lower sheet so that it can be used as a slide for the seeds.
- In the main menu of the box, choose the tab "Empty".
- Press on to validate.
- The rotor turns at maximum speed without blower.
- To stop the emptying, press on , , or .
- Once the emptying is finished, the display returns to the main menu.



7.2 Control box 5.2

Hour counter:

- The hours displayed on the counter correspond to the total and daily operating duration of the distribution rotor.
- The counter starts as soon as the distribution rotor starts turning.
- To reset the "hours" tab to zero, press on the button  for 5 seconds.

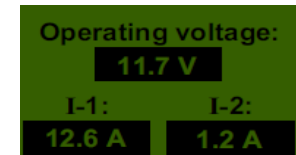


Operating voltage and current intensity:

This screen displays the operating voltage and current intensity in the blower motor and distribution rotor motor. Fluctuations in the operating voltage indicate an electronic malfunction in your dashboard. This may have a negative impact on distribution.



In I-1: Indicates, in amperes (A), the current intensity in the blower motor.

In I-2: Indicates, in amperes (A), the current intensity in the distribution rotor drive motor





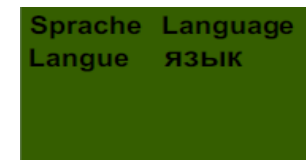
Languages:

Seed drills equipped with an electrical blower:










- In the main menu of the box, choose the tab "Language".
- Press on  to validate.
- Select the required language.
- Press on  to validate the selection.








Seed drills equipped with a hydraulic blower:

- Wait until the message "Motor non connected" is displayed.
- Press on .
- You have 15 seconds to select the required language.
- Press on  to validate the selection.




7.3 Status and trouble-shooting messages: Control box 5.2

Display	Cause	Solution
 Internal VCC (5V) not OK !	The box supply voltage is too weak.	▶ Return the box to the factory.
 Operating voltage low ! !	The box operating voltage is insufficient.	▶ Reduce the number of devices connected to the tractor. ▶ Check the battery. ▶ Check the cabling. ▶ Check the tractor alternator.
 Operating voltage high !	The box operating voltage is too high.	▶ Check the tractor alternator.
 Hopper almost empty	The seed level sensor in the hopper has not been covered for more than 30 seconds.	▶ Top up the seeds.
 Calibration Value too high !	The number of impulses between the radar and the ground during speed calibration is too high.	▶ Reduce the number of magnets on the wheel sensor. ▶ If this does not work, contact the After Sales Service.
 Calibration Value too low !	The number of impulses between the radar and the ground during speed calibration is too low.	▶ Increase the number of magnets on the wheel sensor. ▶ If this does not work, contact the After Sales Service.
 Tractor speed too high !	The driving speed is too high	▶ Compare with the pre-defined adjustments. ▶ Adjust your speed
 Tractor speed too low !	The driving speed is too low	▶ Compare with the pre-defined adjustments. ▶ Adjust your speed
 Switch off !	Screen displayed when the box stops	

Display	Cause	Solution
 Operating voltage not OK !	<ul style="list-style-type: none"> • The operating voltage is too low. • Excessive voltage deviations occur. 	<ul style="list-style-type: none"> ▶ Check the cabling. ▶ Check the connectors. ▶ Check the tractor alternator. ▶ Stop other devices connected to the tractor battery (work projector, etc).
 Motor overloaded (Sowing shaft) !	The distribution rotor is blocked or the motor has suffered an overload.	<ul style="list-style-type: none"> ▶ Stop the box. ▶ Check if materials or solid objects prevent the rotation of the distribution rotor, block the agitator or affect the seed drill operations. ▶ When sowing small seeds, you can deactivate the agitator.
 Motor overloaded (Fan) !	The blower motor is blocked or in overload.	<ul style="list-style-type: none"> ▶ Check that objects are not blocking the blower motor or affecting its operations. ▶ If this is not the case, contact the After Sales Service.
 Motor not connected (Sowing shaft) !	Not all connections are made or some cables are defective.	▶ Check the state of the cables and sockets.
 Motor not connected (Fan) !	Not all connections are made or some cables are defective.	▶ Check the state of the cables and sockets.
 No motor rotation speed (Sowing shaft) !	The distribution rotor motor is correctly connected, is not in overload but is blocked.	▶ Contact the After Sales Service.
 Ground wheel not OK !	The box does not receive a signal from the speed sensor	<ul style="list-style-type: none"> ▶ Check the state of the cables and sockets. ▶ If no malfunctions are detected with the ground wheel, contact the After Sales Service.

7.4 Status and trouble-shooting messages: Control box 3.2

When an error is detected, the box makes a sound signal. The box display alternates between "E" and the error code.

- Press on the button  to acknowledge the error and deactivate the box.

The following error messages may be displayed:

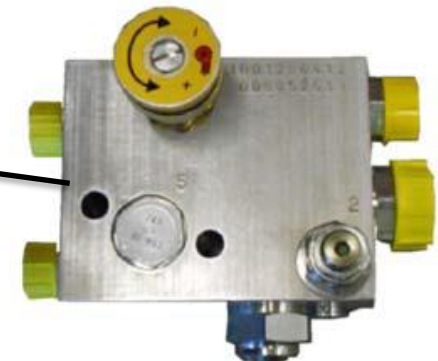
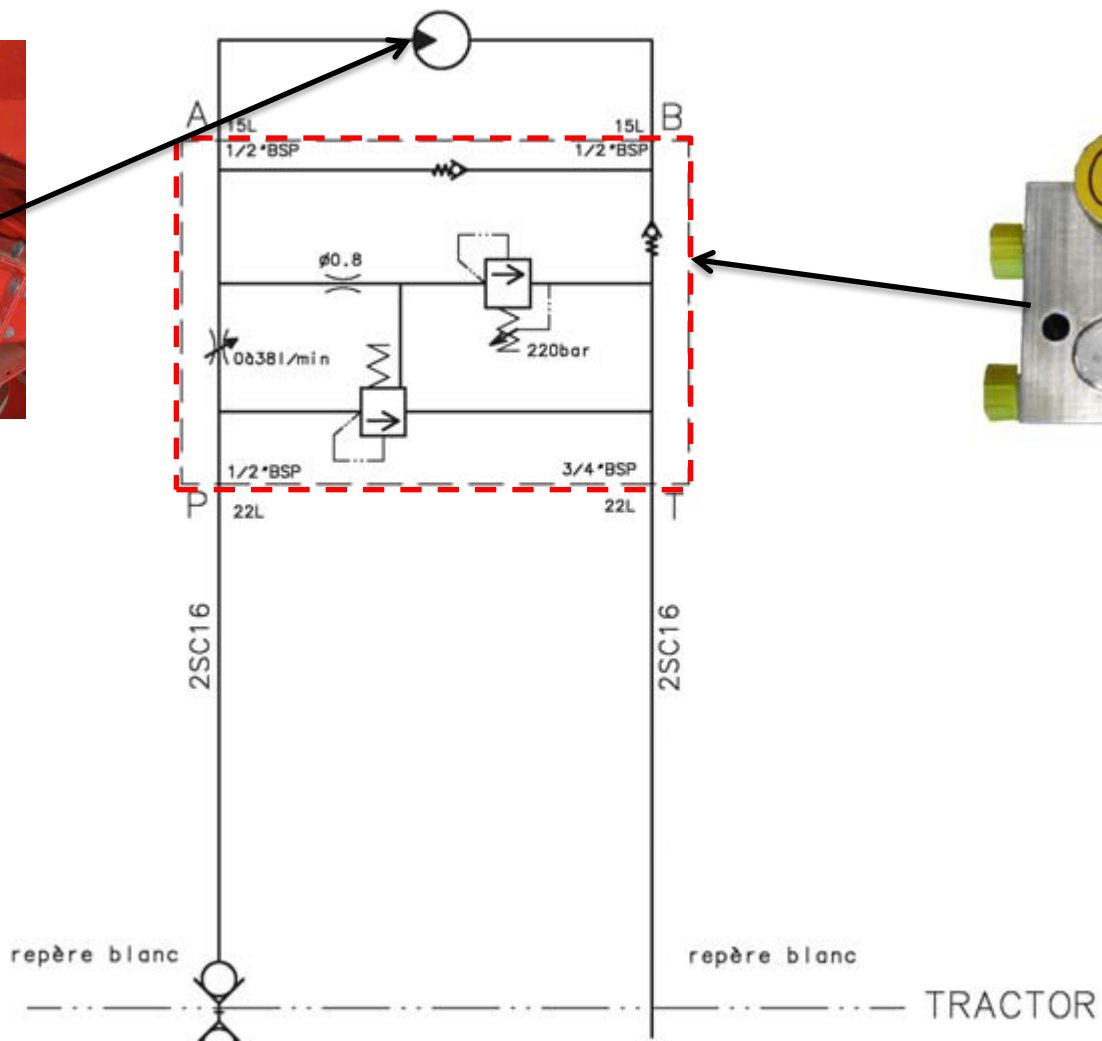
Display	Cause	Solution
01	The box operating voltage is insufficient.	<ul style="list-style-type: none"> ▶ Reduce the number of devices connected to the tractor. ▶ Check the battery. ▶ Check the cabling. ▶ Check the tractor alternator.
02	The box operating voltage is too high.	<ul style="list-style-type: none"> ▶ Check the tractor alternator.
03	The internal voltage is insufficient.	<ul style="list-style-type: none"> ▶ Return the box to the factory.
04	The distribution rotor is blocked or the motor has suffered an overload.	<ul style="list-style-type: none"> ▶ Stop the box. ▶ Check if materials or solid objects prevent the rotation of the distribution rotor, block the agitator or affect the seed drill operations.
05	The drive motor for the distribution shaft is not correctly connected.	<ul style="list-style-type: none"> ▶ Check that the cables are correctly connected to the corresponding sockets. ▶ Check that the cables or sockets are not damaged.
06	The drive motor for the distribution shaft is correctly connected, is not in overload but is blocked.	<ul style="list-style-type: none"> ▶ Check that a foreign body is not blocking the distribution rotor. ▶ If this is not the case, contact the After Sales Service.
07	The blower motor is blocked or in overload.	<ul style="list-style-type: none"> ▶ Check that objects are not blocking the blower motor or affecting its operations. ▶ If this is not the case, contact the After Sales Service.
08	Not all connections are made or some cables are defective.	<ul style="list-style-type: none"> ▶ Check the state of the cables and sockets.
09	The blower motor is correctly connected, is not in overload but is blocked.	<ul style="list-style-type: none"> ▶ Contact the After Sales Service.

8. Hydraulic diagram


For the hydraulic fan




Motor seals kit:
A135552700
(from 2016)



9. Sowing tables

Grass							
<i>Lolium perenne</i>							
Sowing shaft	ffff		BG-G-BG		GGG		
In % of max. speed	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min	
2	0,06	0,13	0,26	0,57	0,27	0,60	
5	0,22	0,49	0,45	0,99	0,61	1,34	
10	0,49	1,08	0,76	1,68	1,17	2,58	
15	0,76	1,68	1,07	2,36	1,73	3,81	
20	1,03	2,27	1,39	3,06	2,30	5,07	
25	1,30	2,87	1,70	3,75	2,86	6,31	
30	1,38	3,04	1,98	4,37	3,42	7,54	
35	1,47	3,24	2,26	4,98	3,98	8,77	
40	1,55	3,42	2,54	5,60	4,55	10,03	
45	1,64	3,62	2,83	6,24	5,11	11,27	
50	1,72	3,79	3,11	6,86	5,67	12,50	
55	1,82	4,01	3,30	7,28	6,23	13,73	
60	1,93	4,25	3,50	7,72	6,79	14,97	
65	2,03	4,48	3,69	8,13	7,36	16,23	
70	2,13	4,70	3,89	8,58	7,92	17,46	
75	2,23	4,92	4,08	8,99	8,48	18,70	
80	2,34	5,16	4,28	9,44	9,05	19,95	
85	2,44	5,38	4,47	9,85	9,61	21,19	
90	2,55	5,62	4,67	10,30	10,17	22,42	
95	2,67	5,89			10,73	23,66	
100	2,81	6,19			11,30	24,91	

Wheat								
<i>Triticum</i>								
Sowing shaft	ffff		GGG		fb-Flex20-fb		Flex40	
In % of max. speed	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min
2	0,13	0,29	0,52	1,15	0,344	0,758	0,480	1,058
5	0,16	0,35	1,18	2,60	0,584	1,287	1,030	2,271
10	0,20	0,44	2,30	5,07	0,985	2,172	1,945	4,288
15	0,24	0,53	3,41	7,52	1,386	3,056	2,681	5,911
20	0,28	0,62	4,52	9,96	1,787	3,940	3,776	8,325
25	0,32	0,71	5,64	12,43	2,188	4,824	4,682	10,322
30	1,58	3,48	6,7	14,77	2,589	5,708	5,607	12,361
35	2,85	6,28	7,76	17,11	2,990	6,592	6,523	14,381
40	4,11	9,06	8,82	19,44	3,391	7,476	7,438	16,398
45	5,37	11,84	9,88	21,78	3,792	8,360	8,354	18,417
50	6,63	14,62	10,94	24,12	4,193	9,244	9,269	20,434
55	6,96	15,34	11,21	24,71	4,593	10,126	10,185	22,454
60	7,28	16,05	11,48	25,31	4,994	11,010	11,100	24,471
65	7,61	16,78	11,76	25,93	5,395	11,894	12,016	26,490
70	7,93	17,48	12,03	26,52	5,796	12,778	12,931	28,508
75	8,26	18,21	12,30	27,12	6,197	13,662	13,847	30,527
80	8,58	18,92	12,57	27,71	6,598	14,546	14,762	32,544
85	8,91	19,64	12,84	28,31	6,999	15,430	15,678	34,564
90	9,23	20,35	13,12	28,92	7,400	16,314	16,593	36,581
95	9,86	21,74	13,93	30,71	7,801	17,198	17,509	38,600
100	10,48	23,10	14,75	32,52	8,202	18,082	18,424	40,618

9. Sowing tables

Rotor de distribution		ffff		GGG	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min	
2	0,18	0,40	0,54	1,19	
5	0,48	1,06	0,87	1,92	
10	0,97	2,14	1,41	3,11	
15	1,47	3,24	1,96	4,32	
20	1,96	4,32	2,51	5,53	
25	2,45	5,40	3,06	6,75	
30	2,95	6,50	3,61	7,96	
35	3,44	7,58	4,16	9,17	
40	3,94	8,69	4,71	10,38	
45	4,43	9,77	5,26	11,60	
50	4,93	10,87	5,81	12,81	
55	5,02	11,07	6,70	14,77	
60	5,12	11,29	7,59	16,73	
65	5,22	11,51	8,48	18,70	
70	5,32	11,73	9,38	20,68	
75	5,41	11,93	10,27	22,64	
80	5,51	12,15	11,16	24,60	
85	5,61	12,37	12,05	26,57	
90	5,71	12,59	12,95	28,55	
95	5,80	12,79	13,84	30,51	
100	5,90	13,01	14,73	32,47	



Barley
Orge

Hordeum

Rotor de distribution		ffff		GGG	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min	
2	0,24	0,53	0,66	1,46	
5	0,62	1,37	1,18	2,60	
10	1,27	2,80	2,05	4,52	
15	1,91	4,21	3,79	8,36	
20	2,55	5,62	4,66	10,27	
25	3,19	7,03			
30	3,60	7,94			
35	4,29	9,46			
40	4,98	10,98			
45					
50					
55					
60					
65					
70					
75					
80					
85					
90					
95					
100					



Radish
Radis

*Raphanus
raphanistrum*

Rotor de distribution		fb-f-fb-fb		ffff	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min	
2	0,76	1,68	3,37	7,43	
5	1,42	3,13	3,89	8,58	
10	2,51	5,53	4,75	10,47	
15	3,61	7,96	5,61	12,37	
20	4,71	10,38	6,48	14,29	
25	5,81	12,81	7,34	16,18	
30			8,00	17,64	
35					
40					
45					
50					
55					
60					
65					
70					
75					
80					
85					
90					
95					
100					



Vetch
Vesce

Vicia

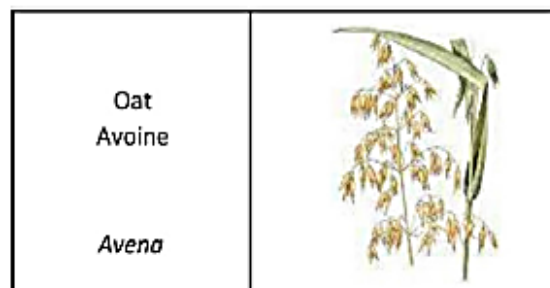
9. Sowing tables

Rotor de distribution		ffff		GGG		fb-Flex20-fb		Flex40	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min	
2	0,09	0,20	0,54	1,19	0,33	0,73	0,27	0,60	
5	0,39	0,86	0,99	2,18	0,50	1,10	0,70	1,54	
10	0,90	1,98	1,74	3,84	0,78	1,72	1,40	3,09	
15	1,41	3,11	2,49	5,49	1,07	2,36	2,11	4,65	
20	1,92	4,23	3,24	7,14	1,35	2,98	2,82	6,22	
25	2,43	5,36	3,99	8,80	1,64	3,62	3,53	7,78	
30	2,86	6,31	4,68	10,32	1,92	4,23	4,23	9,33	
35	3,30	7,28	5,38	11,86	2,21	4,87	4,94	10,89	
40	3,74	8,25	6,07	13,38	2,49	5,49	5,65	12,46	
45	4,18	9,22	6,76	14,90	2,78	6,13	6,36	14,02	
50	4,62	10,19	7,45	16,42	3,07	6,77	7,07	15,59	
55	4,84	10,67			3,35	7,39	7,77	17,13	
60	5,06	11,16			3,64	8,02	8,48	18,70	
65	5,28	11,64			3,92	8,64	9,19	20,26	
70	5,50	12,13			4,21	9,28	9,90	21,83	
75	5,72	12,61			4,49	9,90	10,60	23,37	
80	5,94	13,10			4,78	10,54	11,31	24,93	
85	6,16	13,58			5,06	11,16	12,02	26,50	
90	6,38	14,07			5,35	11,79	12,73	28,06	
95					5,63	12,41	13,44	29,63	
100					5,92	13,05	14,14	31,17	

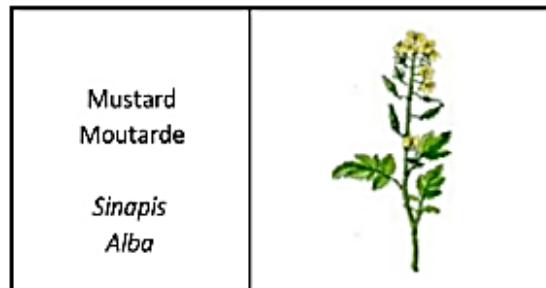
Rotor de distribution	GGG	
En % de la vitesse max.	kg/min	lbs/min
2	0,42	0,93
5	1,11	2,45
10	2,26	4,98
15	3,41	7,52
20	4,56	10,05
25	5,71	12,59
30	6,87	15,15
35	8,30	18,30
40	9,19	20,26
45	10,35	22,82
50	11,51	25,37
55	12,48	27,51
60	13,44	29,63
65	14,41	31,77
70	15,37	33,88
75	16,33	36,00
80	17,30	38,14
85	18,26	40,26
90	19,23	42,39
95	21,71	47,86
100	24,20	53,35

Rotor de distribution	GGG	
En % de la vitesse max.	kg/min	lbs/min
2	0,46	1,01
5	0,99	2,18
10	1,87	4,12
15	2,74	6,04
20	3,62	7,98
25	4,50	9,92
30	5,33	11,75
35	6,16	13,58
40	6,98	15,39
45	7,81	17,22
50	8,64	19,05
55	9,45	20,83
60	10,27	22,64
65	11,08	24,43
70	11,89	26,21
75	12,71	28,02
80	13,44	29,63
85	14,18	31,26
90	14,92	32,89
95	15,14	33,38
100	18,10	39,90

9. Sowing tables



Rotor de distribution	fb-f-fb-fb		GGG	
	kg/min	lbs/min	kg/min	lbs/min
En % de la vitesse max.				
2	0,01	0,02	0,15	0,33
5	0,02	0,04	0,46	1,01
10	0,04	0,09	0,98	2,16
15	0,06	0,13	1,50	3,31
20	0,07	0,15	2,02	4,45
25	0,09	0,20	2,54	5,60
30	0,12	0,26	3,03	6,68
35	0,14	0,31	3,52	7,76
40	0,17	0,37	4,01	8,84
45	0,19	0,42	4,50	9,92
50	0,22	0,49	4,99	11,00
55	0,23	0,51	5,42	11,95
60	0,24	0,53	5,85	12,90
65	0,25	0,55	6,29	13,87
70	0,26	0,57	6,72	14,81
75	0,27	0,60	7,15	15,76
80	0,27	0,60	7,58	16,71
85	0,27	0,60	8,02	17,68
90	0,27	0,60	8,45	18,63
95	0,28	0,62	8,73	19,25
100	0,31	0,68	10,23	22,55

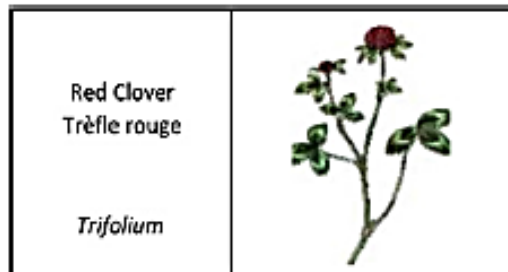


Rotor de distribution	fb-f-fb-fb		GGG	
	kg/min	lbs/min	kg/min	lbs/min
En % de la vitesse max.				
2	0,04	0,09	0,33	0,73
5	0,15	0,33	0,75	1,65
10	0,33	0,73	1,45	3,20
15	0,50	1,10	2,15	4,74
20	0,68	1,50	2,86	6,31
25	0,86	1,90	3,56	7,85
30	1,00	2,20	4,23	9,33
35	1,15	2,54	4,89	10,78
40	1,29	2,84	5,56	12,26
45	1,43	3,15	6,22	13,71
50	1,58	3,48	6,89	15,19
55	1,65	3,64	7,25	15,98
60	1,72	3,79	7,61	16,78
65	1,79	3,95	7,97	17,57
70	1,86	4,10	8,33	18,36
75	1,93	4,25	8,69	19,16
80	2,00	4,41	9,05	19,95
85	2,07	4,56	9,41	20,75
90	2,14	4,72	9,77	21,54
95	2,31	5,09	10,35	22,82
100	2,48	5,47	10,92	24,07



Rotor de distribution	fb-f-fb-fb		ffff	
	kg/min	lbs/min	kg/min	lbs/min
En % de la vitesse max.				
2	0,10	0,22	0,30	0,66
5	0,21	0,46	0,70	1,54
10	0,40	0,88	1,38	3,04
15	0,60	1,32	2,05	4,52
20	0,79	1,74	2,73	6,02
25	0,98	2,16	3,40	7,50
30	1,15	2,54	4,05	8,93
35	1,32	2,91	4,71	10,38
40	1,49	3,28	5,36	11,82
45	1,65	3,64	6,01	13,25
50	1,82	4,01	6,67	14,70
55	1,86	4,10	7,03	15,50
60	1,90	4,19	7,40	16,31
65	1,93	4,25	7,77	17,13
70	1,97	4,34	8,14	17,95
75	2,01	4,43	8,50	18,74
80	2,04	4,50	8,87	19,55
85	2,08	4,59	9,24	20,37
90	2,12	4,67	9,61	21,19
95	2,24	4,94	10,33	22,77
100	2,36	5,20	11,06	24,38

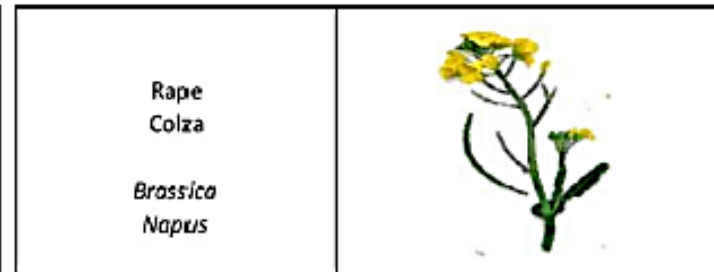
9. Sowing tables



Rotor de distribution	fb-f-fb-fb		ffff	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min
2	0,04	0,09	0,56	1,23
5	0,15	0,33	1,37	3,02
10	0,33	0,73	2,72	6,00
15	0,51	1,12	4,06	8,95
20	0,70	1,54	5,41	11,93
25	0,88	1,94	6,76	14,90
30	1,06	2,34	6,99	15,41
35	1,23	2,71	7,22	15,92
40	1,41	3,11	7,45	16,42
45	1,58	3,48	7,68	16,93
50	1,76	3,88	7,91	17,44
55	1,82	4,01	8,14	17,95
60	1,87	4,12	8,36	18,43
65	1,93	4,25	8,59	18,94
70	1,98	4,37	8,82	19,44
75	2,04	4,50	9,05	19,95
80	2,09	4,61	9,28	20,46
85	2,15	4,74	9,51	20,97
90	2,20	4,85	9,74	21,47
95	2,33	5,14	10,34	22,80
100	2,46	5,42	10,94	24,12

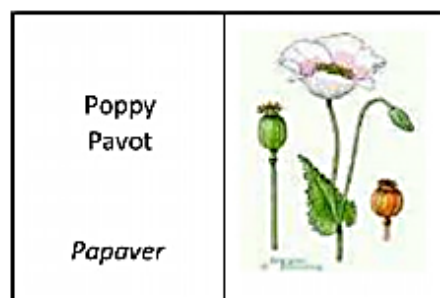


Rotor de distribution	fb-f-fb-fb		ffff	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min
2	0,14	0,31	0,34	0,75
5	0,31	0,68	0,77	1,70
10	0,61	1,34	1,49	3,28
15	0,90	1,98	2,22	4,89
20	1,19	2,62	2,94	6,48
25	1,42	3,13	3,66	8,07
30	1,52	3,35		
35	1,56	3,44		
40	1,59	3,51		
45	1,63	3,59		
50	1,66	3,66		
55	1,75	3,86		
60	1,85	4,08		
65	1,94	4,28		
70	2,04	4,50		
75	2,13	4,70		
80	2,23	4,92		
85	2,32	5,11		
90	2,42	5,34		
95	2,52	5,56		
100	2,62	5,78		

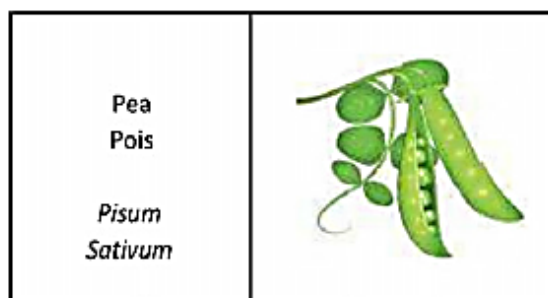


Rotor de distribution	fb-f-fb-fb		fb-fb-ef-eb-fb		fb-efv-efv-fb	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min
2	0,110	0,243	0,037	0,082	0,010	0,022
5	0,211	0,465	0,060	0,132	0,019	0,042
10	0,380	0,838	0,099	0,218	0,047	0,104
15	0,548	1,208	0,138	0,304	0,075	0,165
20	0,717	1,581	0,177	0,390	0,103	0,227
25	0,885	1,951	0,216	0,476	0,131	0,289
30	1,031	2,273	0,294	0,648	0,159	0,351
35	1,178	2,597	0,371	0,818	0,187	0,412
40	1,324	2,919	0,449	0,990	0,150	0,331
45	1,470	3,241	0,526	1,160	0,243	0,536
50	1,617	3,565	0,603	1,329	0,271	0,597
55	1,685	3,715	0,636	1,402	0,299	0,659
60	1,754	3,867	0,669	1,475	0,327	0,721
65	1,823	4,019	0,701	1,545	0,355	0,783
70	1,892	4,171	0,734	1,618	0,383	0,844
75	1,960	4,321	0,766	1,689	0,411	0,906
80	2,029	4,473	0,799	1,761	0,439	0,968
85	2,098	4,625	0,803	1,770	0,467	1,030
90	2,167	4,777	0,864	1,905	0,496	1,093
95	2,303	5,077	0,908	2,002	0,524	1,155
100	2,440	5,379	0,952	2,099	0,552	1,217

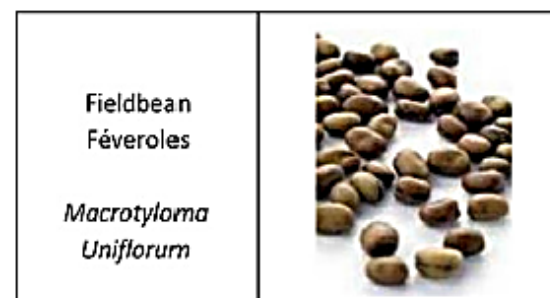
9. Sowing tables



Rotor de distribution	fb-fb-ef-eb-fb	
En % de la vitesse max.	kg/min	lbs/min
2	0,029	0,064
5	0,049	0,108
10	0,083	0,183
15	0,116	0,256
20	0,150	0,331
25	0,183	0,403
30	0,260	0,573
35	0,336	0,741
40	0,412	0,908
45	0,489	1,078
50	0,565	1,246
55	0,602	1,327
60	0,638	1,407
65	0,675	1,488
70	0,711	1,567
75	0,748	1,649
80	0,784	1,728
85	0,821	1,810
90	0,857	1,889
95	0,900	1,984
100	0,942	2,077



Rotor de distribution	fb-Flex20-fb		Flex 40	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min
2	0,46	1,01	0,95	2,09
5	0,67	1,48	1,45	3,20
10	1,02	2,25	2,29	5,05
15	1,37	3,02	3,12	6,88
20	1,72	3,79	3,96	8,73
25	2,07	4,56	4,80	10,58
30	2,42	5,34	5,63	12,41
35	2,77	6,11	6,47	14,26
40	3,12	6,88	7,30	16,09
45	3,48	7,67	8,14	17,95
50	3,83	8,44	8,98	19,80
55	4,18	9,22	9,81	21,63
60	4,53	9,99	10,65	23,48
65	4,88	10,76	11,49	25,33
70	5,23	11,53	12,32	27,16
75	5,58	12,30	13,16	29,01
80	5,93	13,07	13,99	30,84
85	6,28	13,84	14,83	32,69
90	6,64	14,64	15,67	34,55
95	6,99	15,41	16,50	36,38
100	7,34	16,18	17,34	38,23



Rotor de distribution	fb-Flex20-fb		Flex 40	
En % de la vitesse max.	kg/min	lbs/min	kg/min	lbs/min
2	0,46	1,01	1,02	2,25
5	0,66	1,46	1,57	3,46
10	1,00	2,20	2,49	5,49
15	1,34	2,95	3,40	7,50
20	1,68	3,70	4,32	9,52
25	2,02	4,45	5,23	11,53
30	2,36	5,20	6,15	13,56
35	2,70	5,95	7,06	15,56
40	3,04	6,70	7,98	17,59
45	3,38	7,45	8,89	19,60
50	3,71	8,18	9,81	21,63
55	4,05	8,93	10,72	23,63
60	4,39	9,68	11,64	25,66
65	4,73	10,43	12,55	27,67
70	5,07	11,18	13,47	29,70
75	5,41	11,93	14,38	31,70
80	5,75	12,68	15,30	33,73
85	6,09	13,43	16,21	35,74
90	6,43	14,18	17,13	37,76
95	6,77	14,93	18,05	39,79
100	7,11	15,67	18,96	41,80