



Pneumatic seed drill a-drill

Operating manual

Translation of the original operating manual

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Execution	Accessories
Reference	RF31913

Identification of the machine

In order that your dealer may help as fast as possible. He needs a few indications regarding your machine. Please provide this information below.

Description

Pneumatic seed drill a-drill

Working width

Weight

Machine no.

Accessories

Reseller address

Manufacturer address

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Target group for this operating manual

This operating manual is intended for trained farmers and individuals who are otherwise qualified to perform agricultural activities, and who have received training in the operation of this machinery.

For your safety

Study the contents of this operating manual carefully before assembly or initial operation of this machine.

In this way, performance and work safety are optimised.

For the employer

All personnel are to be regularly trained in the use of this machine. Untrained or unauthorised individuals are not permitted to use this machine.

Training

The retailer provides the user with instructions relating to the use and maintenance of the machine.

Meaning of symbols

In order to make this manual clear and easy to read, we have used various symbols. They are explained below:

- A dot precedes each item in a list.
- ▶ A triangle indicates operating functions which must be performed.
- An arrow indicates a cross-reference to other sections of this manual.

We have also used pictograms to help you find instructions more quickly:

NOTE The term "Note" indicates tips and notes on operation.



The spanner indicates tips for assembly or adjustments.



The warning triangle indicates important safety instructions. Failure to observe these safety instructions can result in:

- Serious operational faults of the machinery;
- Damage to the machinery;
- Personal injury or accidents.



A star indicates examples that help to better understand the instructions.

[+] A plus sign in square brackets indicates that the equipment is optional.

For your safety

In this chapter, you will find the general safety instructions. The different chapters in this operating manual include specific safety instructions.

Please follow these safety instructions:

- in the interest of your own safety,
- in the interest of the safety of others,
- to ensure the safety of the machine.

Numerous risks can result from handling agricultural machines in the wrong way. Therefore, always work with special care and never under pressure.

For the employer:

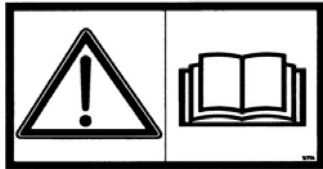
Inform personnel working with the machine of these safety instructions at regular intervals and according to statutory regulations.

Safety

Warning symbols

On this machine, you will find safety decals for user safety. These decals must not be removed. When these are illegible or they no longer stick, order new decals and affix them at the corresponding locations.

Meaning of safety symbols



Read and comply with the manual and safety instructions before starting up or carrying out any operations on the machine.



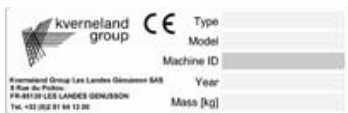
Carrying persons on the machine while in motion (in transit or at work) is strictly forbidden.



Risk of crushing by an articulated part of the machine. Install the safety devices provided and/or check the working order of the automatic safety devices before entering a hazardous area.



Risk of hands being pinched when adjusting the machine. Please follow the adjustment instructions.



EC type plate guaranteeing the conformity of the machine according to directive 2006/42/EC and adapted to national legislations.

Safety regulations

Maintenance

The brakes or vehicle immobilisation system must be engaged before all interventions within the radius of the tractor - tool unit.

Wear safety gear (helmet, safety shoes, gloves, etc.) when changing parts on the machine.

You are advised to be careful with all parts with sharp edges or corners.

Before welding, disconnect the electric units and disconnect the tractor alternator and battery.

Never direct the jet of high pressure cleaners directly onto the bearings, the hydraulic hoses, electric units or other sensitive components on the machine (risk of damage).

The jet may bounce back off some surfaces.

Hydraulic system

The hydraulic system is pressurised.



Before any intervention on the hydraulic system:

- ▶ Block the folding extensions in their rest position.
- ▶ Block the hydraulically controlled accessories in their rest position.
- ▶ Reduce the pressure.
- ▶ Stop the tractor engine.

Identify the connectors using a colour code, as indicated in the user manual, when intervening on the hydraulic system.

Incorrect connections and the reversal of functions could cause serious injuries.

Presentation of the accessory

This chapter contains general information about your tool as well as information concerning the following points:

- Scope of use.
- Characteristics.
- The description of groups and technical data.

Conditions of use

This tool has been designed solely for normal agricultural use, i.e. for cultivating farmland. Any other use or misuse, for example, transportation, clearing or transmission of forces to another machine is considered to be non compliant with the intended use.

The manufacturer and the specialised retailer decline all liability for damage resulting from use that does not comply with the intended use. The user is responsible for all risks.

Compliance with the conditions of use includes compliance with the manufacturer's operating instructions.

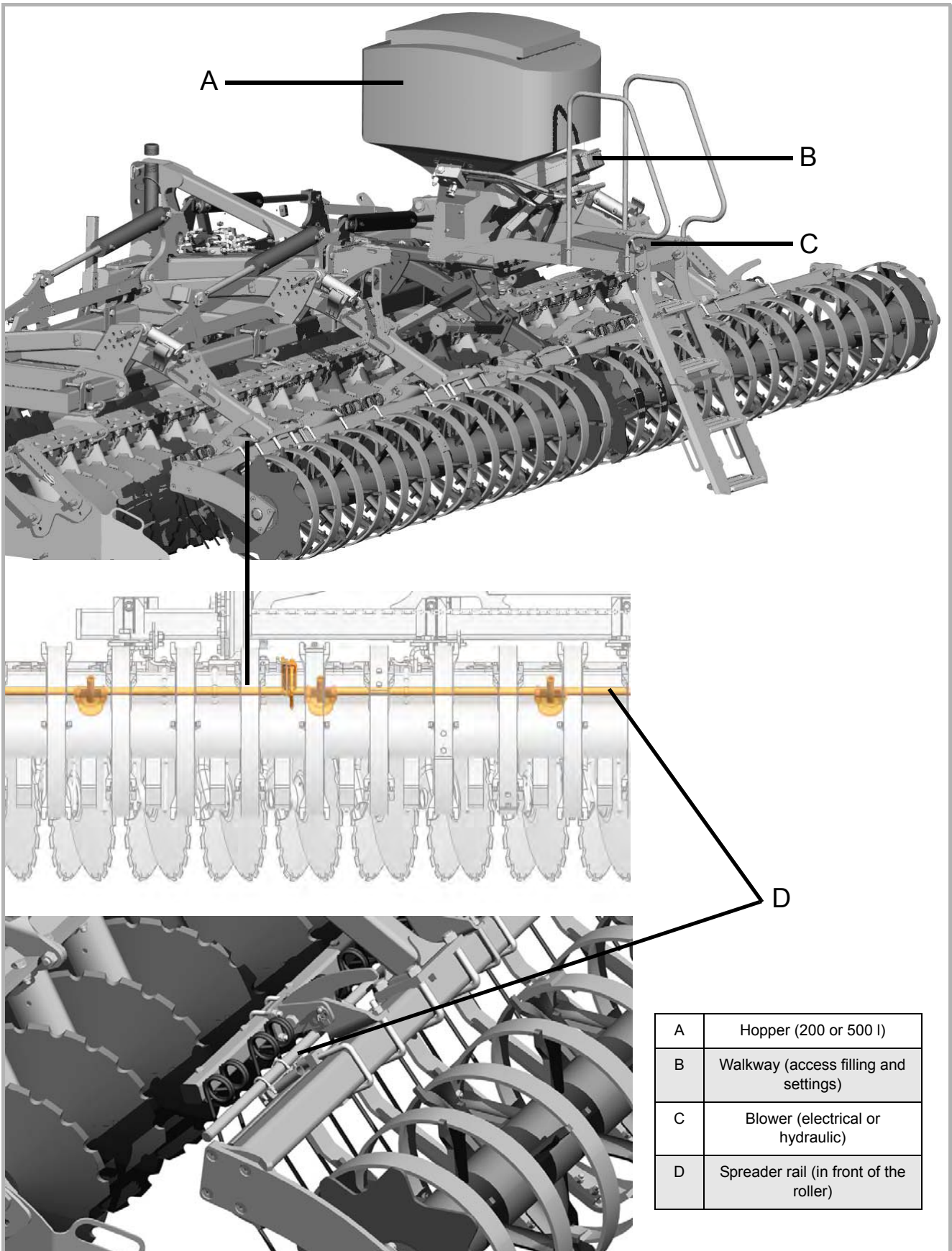
The safety instructions (specified below) as well as the general safety, occupational health and road traffic regulations.

Modifications to the tool made by the client or the use of spare parts or accessories that are not from KVERNELAND will cancel the manufacturer's liability for all damages resulting from the modification.

The company will not be held liable for damage resulting from erroneous settings, choice of equipment, seed, fertilizer, treatments or farming strategy or for any other damage not directly related to the machine.

Presentation of the accessory

General Description



Presentation of the accessory

Type of Seed drills

The a-drill pneumatic seed drills are distribution seed drills by fixed grooved rotors.

The seed drill does not contain sowing elements, broadcast sowing is carried out by 8 spreaders.

The flow adjustment is by variation in the grooved rotor speed, 8 rotors are available. A support blower ensures the transportation of seeds from the distributor to the spreaders.

The pneumatic seed drills are available in several versions :

- Hopper volume 200 l or 500 l
- Control box :
 - Version 3.2 (manual flow adjustment)
 - Version 5.2 (flow proportional to progression)
- Electrical or hydraulic blower on mounted machine, hydraulic on trailed machine.



The box 5.2 provides the following additional services :

- End of field sensor (automatic stop and restart)
- EFPP (Electronic flow proportional to progression) by radar sensor or ISO 7 terminal connector.

To have these two functions simultaneously, the box 5.2 is equipped with a branch cable, that provides 2 x 12 terminal connectors.

Technical specifications

Model	200 L	500 L
		<i>52.83 gallons</i>
Weight of seed drill only	60 Kg	100 Kg
	<i>132.30 lbs</i>	<i>220.5 lbs</i>
Dimensions (L x D x H)	70 x 88 x 100 cm	80 x 122 x 117 cm
	<i>27 1/2" x 34 5/8" x 39 5/8"</i>	<i>31 1/2" x 48" x 46"</i>

Electrical supply

12 V, 25 A

Hydraulic supply

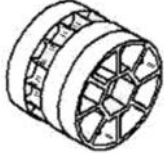


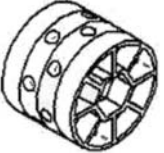
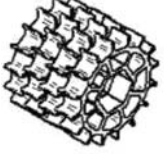
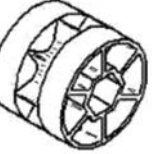
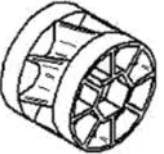
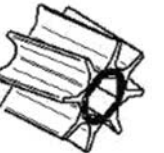
Maximum pressure : 200 bar (*2900.76 psi*)

Maximum flow: 80 L/min (*21.13 gallons/min*)

Dimensions (L x D x H): 400 x 460 x 270 mm (*15 3/4" x 18" x 10 5/8"*)

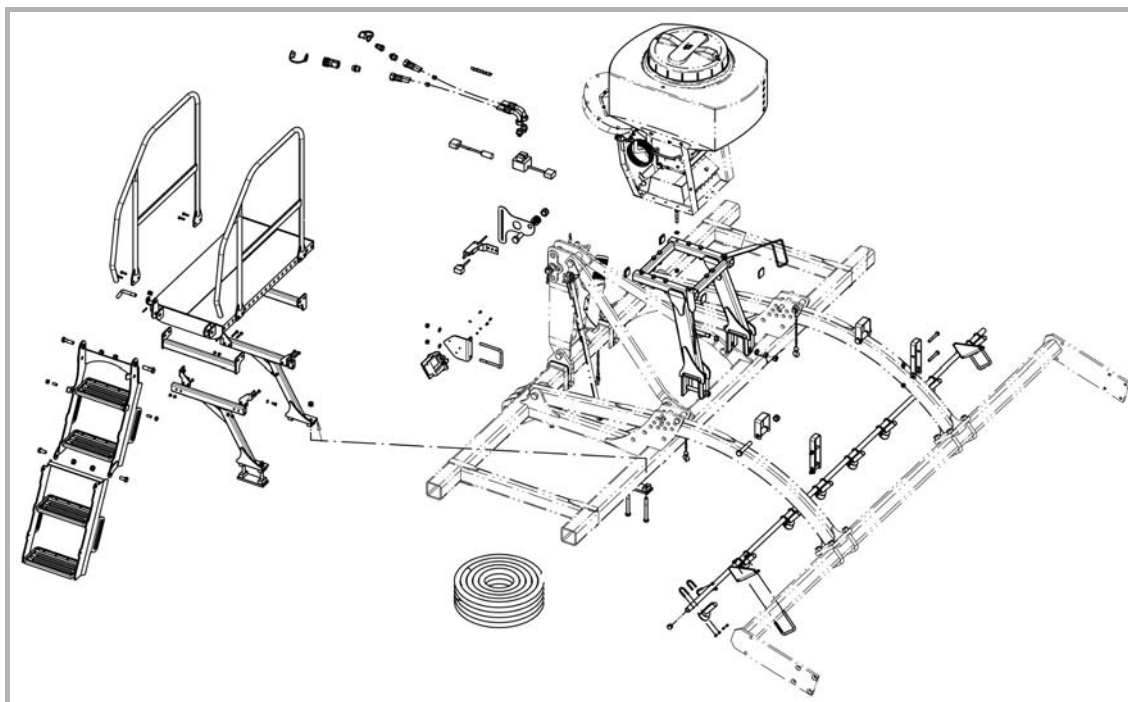
Presentation of the accessory

8 grooved distribution rotors are available :

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.
	fine dummy fine fine dummy fine dummy			
	GGG	RF32061	Standard equipment	Large grooves: Sowing of cereals. Eg: mix of grasses, rye, barley, wheat, oats, etc.
	Coarse Coarse Coarse			
	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.
	fine dummy extra fine extra fine dummy fine dummy fine dummy			
	fb-efv-efv-fb	RF32209	Optional equipment	Fine honeycomb grooves: Sowing of small seeds or small quantities. Eg: radish, mustard, etc.
	fine dummy extra fine honeycomb extra fine honeycomb fine dummy			
	fff	A135122830	Optional equipment	Fine grooves: Sowing of small seeds or small quantities. Eg: grass, wheat, barley, radish, etc,
	fine fine fine fine			
	GB-G-GB	A135132030	Optional equipment	Coarse grooves: Sowing of large seeds or large quantities. Eg: mix of grasses, rye, barley, wheat, oats, etc.
	Coarse dummy Coarse Coarse dummy			
	fb-Flex20-fb	A135002130	Optional equipment	Flexible distribution wheel: Sowing of very large seeds and fertilizer. EG: fertilizer, peas and vetches.
	fine dummy Flex20 fine dummy			
	Flex40	RF31432	Optional equipment	Flexible distribution wheel: Sowing of very large seeds and fertilizer. EG: fertilizer, peas and vetches.

Delivery and assembly

Rigid CLC



Mounting the support and the hopper

Task description

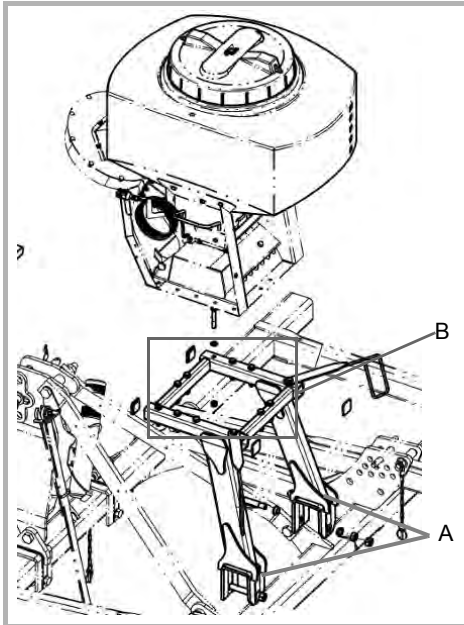
There are two types of mountings:

- Mounting with the hopper centred compared to the machine.
- Mounting with the hopper offset compared to the machine.

During offset mounting, it is necessary to move it 14 cm to the left (compared to the machine driving direction) on the following models:

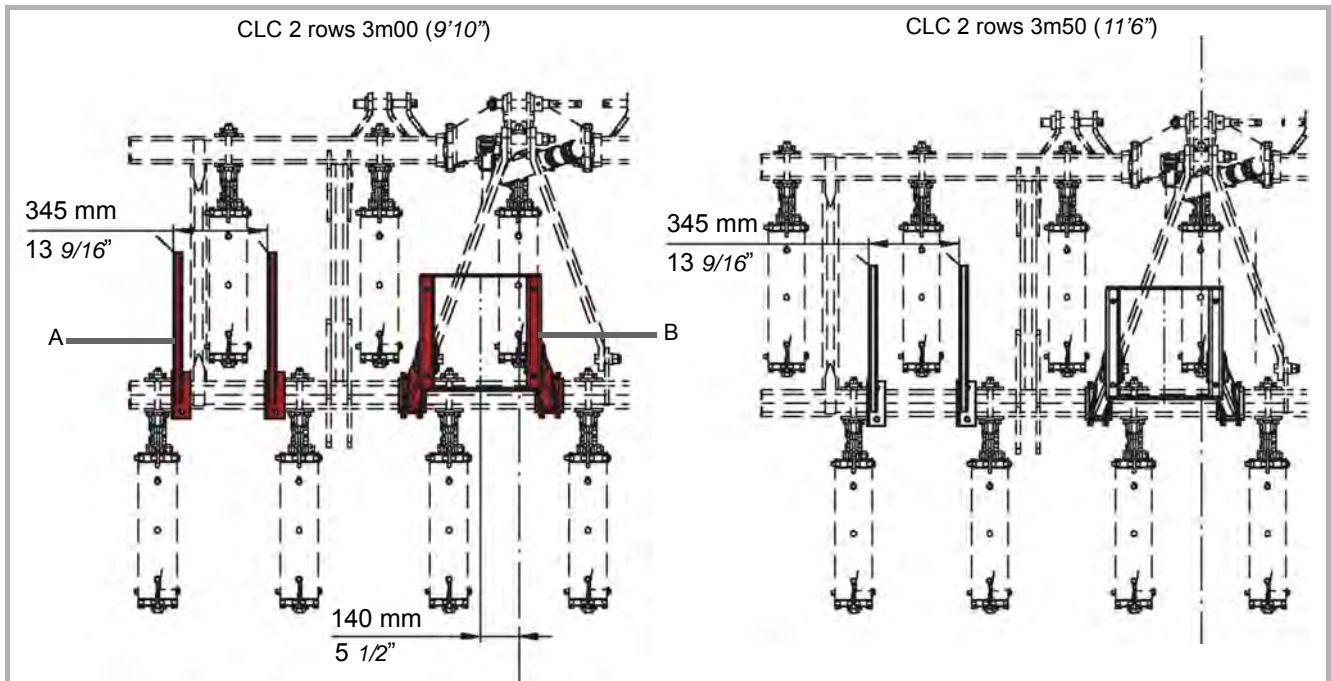
- CLC Evo 3m00 (9'10") - 11 tines
- CLC Evo 3m50 (11'6") - 13 tines
- CLC Evo 4m00 (13'1") - 15 tines

Procedure



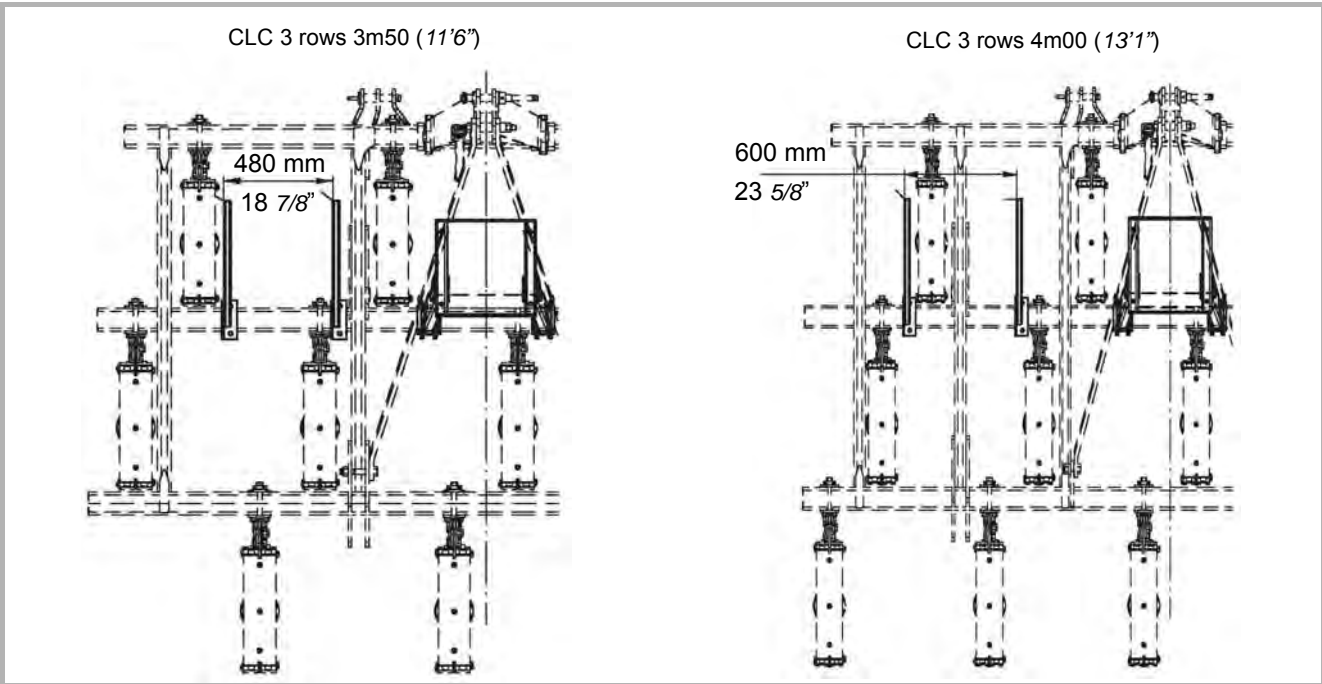
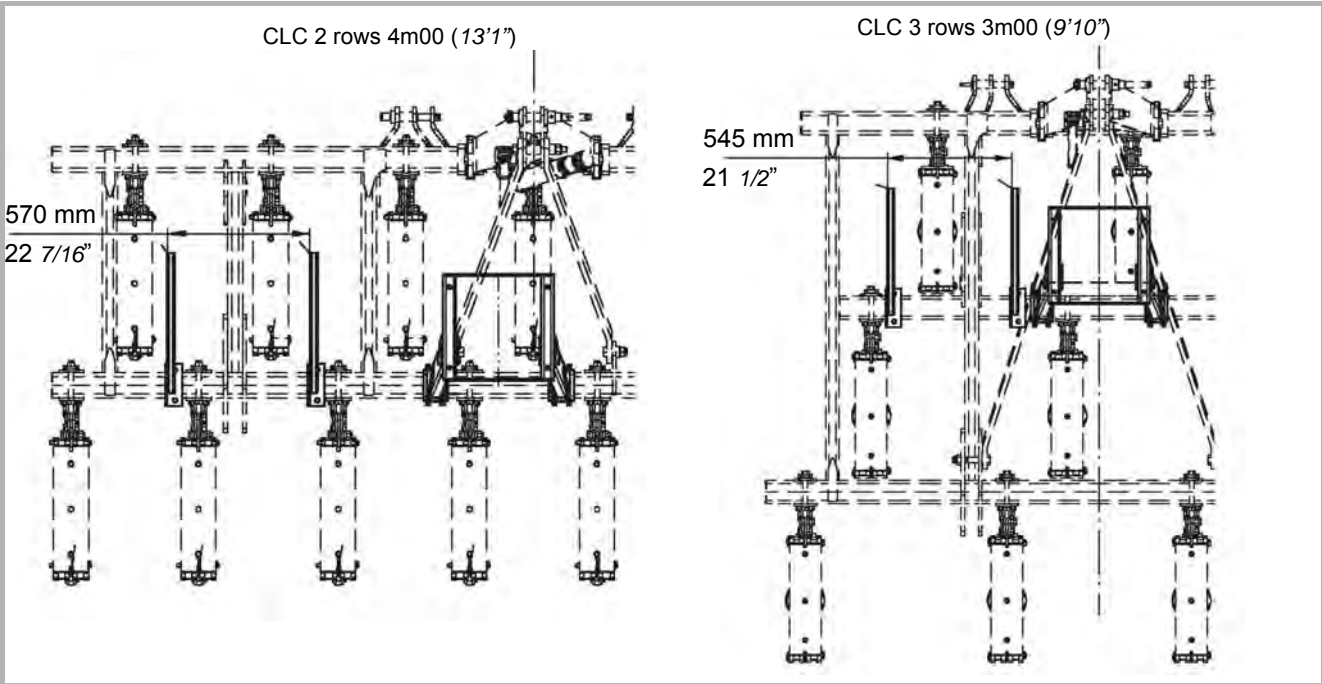
- ▶ Turn the hopper so that the hoses come out from the rear of the machine.
- ▶ Using U clamps, fix the support to the second beam of the main frame.
- ▶ Use the four long fixing screws.
- ▶ Insert the 14 screws (B) in the tubes to fix the hopper.

Mounting diagrams for the platform and hopper support



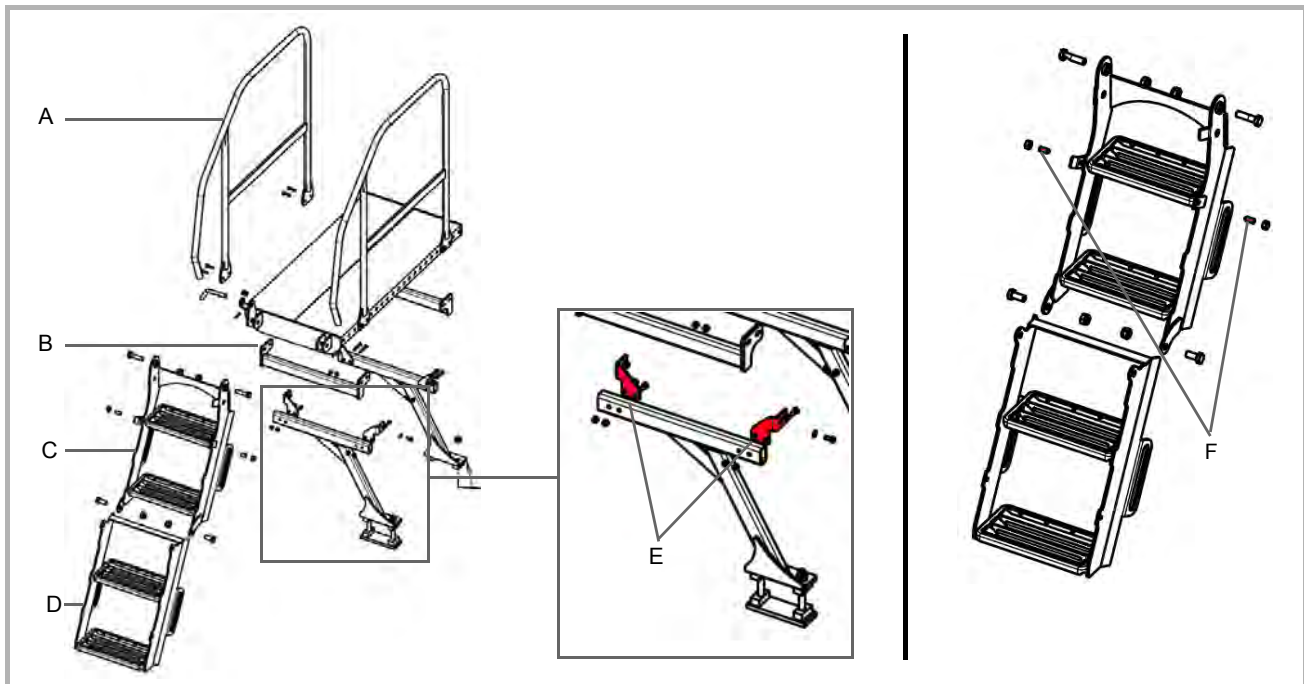
A	Platform
B	Hopper support

Delivery and assembly



Mounting the walkway

Procedure

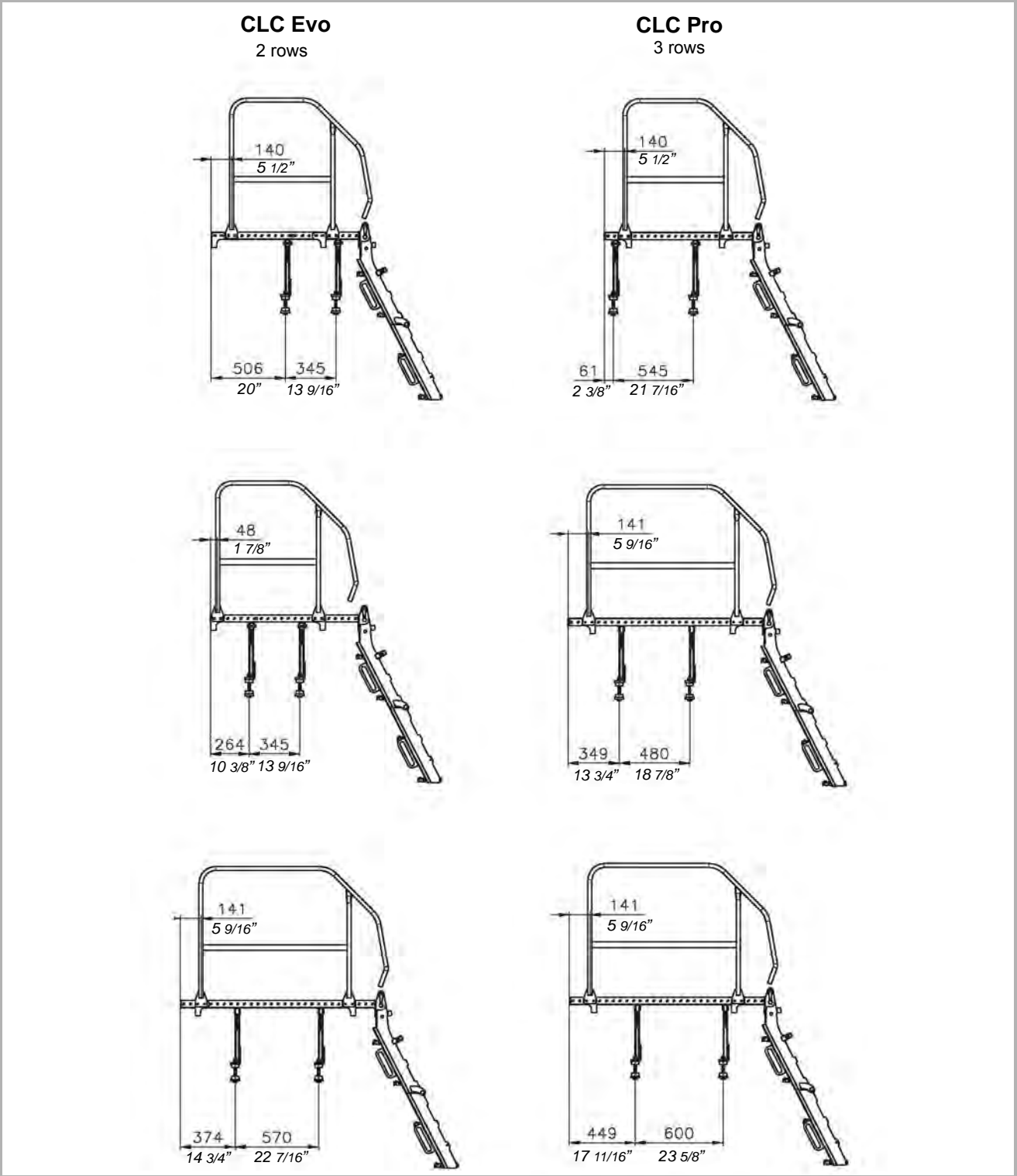


A	Guardrail
B	Reinforcement crossbar
C	Upper part of stairs
D	Lower part of stairs
E	Fixing brackets
F	Ball screw

- ▶ Position the support arms for the walkway on the frame, respecting the dimensions indicated on the diagrams page 13.
- ▶ Install the walkway on the support arms using the fixing brackets (E).
- ▶ Using the same screws, fix the guardrail and reinforcement crossbars.
- ▶ Fix the upper part of the stairs to the extremity of the walkway.
- ▶ Adjust the ball screws (F) to ensure the lower part of the stairs (D) is maintained on the upper part (C).

Delivery and assembly

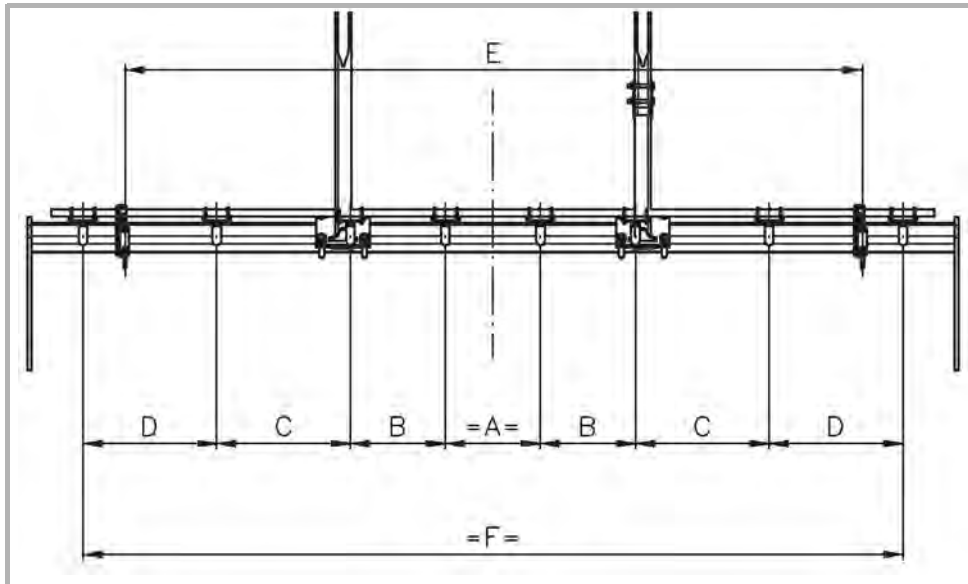
Mounting diagrams for the platform



Positioning the spreaders

Task description

The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The following table provides the mounting dimensions for the different machines:



Machine	A	B	C	D	E	F
2R 3m00 arm	355 / 14"	355 / 14"	385 / 15 1/8"	385 / 15 1/8"	2257 / 89"	2605 / 103"
2R 3m00 //	355 / 14"	355 / 14"	355 / 14"	355 / 14"	2257 / 89"	2605 / 103"
2R 3m50 arm	355 / 14"	355 / 14"	500 / 19 11/16"	500 / 19 11/16"	2757 / 109"	3065 / 121"
2R 3m50 //	470 / 18 1/2"	430 / 16 15/16"	450 / 17 11/16"	450 / 17 11/16"	2757 / 109"	3130 / 123"
2R 4m00 arm	525 / 20 11/16"	525 / 20 11/16"	525 / 20 11/16"	425 / 16 11/16"	3057 / 120"	3500 / 138"
2R 4m00 //	500 / 19 11/16"	475 / 18 11/16"	475 / 18 11/16"	550 / 21 5/8"	3057 / 120"	3500 / 138"
3R 3m00 arm	290 / 11 7/16"	290 / 11 7/16"	430 / 16 15/16"	430 / 16 15/16"	2257 / 89"	2590 / 102"
3R 3m00 //	370 / 14 9/16"	370 / 14 9/16"	370 / 14 9/16"	370 / 14 9/16"	2257 / 89"	2590 / 102"
3R 3m50 arm	450 / 17 11/16"	455 / 17 15/16"	445 / 17 1/2"	440 / 17 5/16"	2757 / 109"	3130 / 123"
3R 3m50 //	450 / 17 11/16"	455 / 17 15/16"	445 / 17 1/2"	440 / 17 5/16"	2757 / 109"	3130 / 123"
3R 4m00 arm	500 / 19 11/16"	500 / 19 11/16"	500 / 19 11/16"	500 / 19 11/16"	3057 / 120"	3500 / 138"
3R 4m00 //	500 / 19 11/16"	500 / 19 11/16"	500 / 19 11/16"	500 / 19 11/16"	3057 / 120"	3500 / 138"

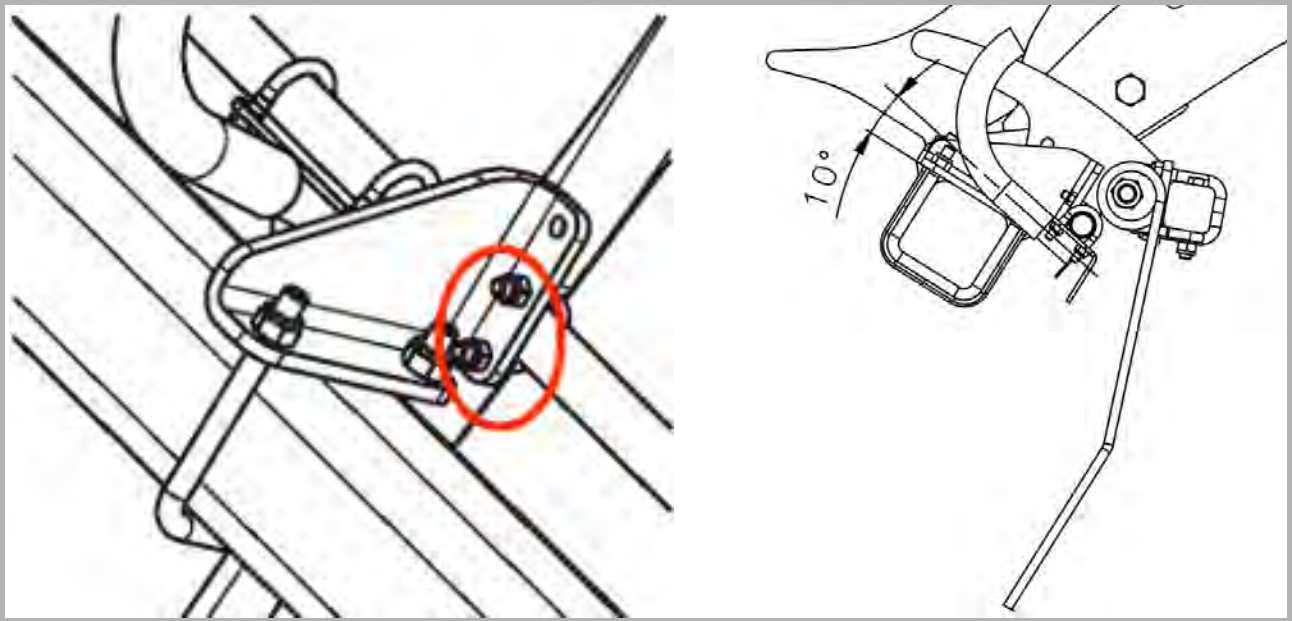


- "2R" corresponds to a machine with 2 rows of tines.
- "3R" corresponds to a machine with 3 rows of tines.
- "arm" corresponds to a machine whose rear tool is mounted on a curved arm.
- "/" corresponds to a machine whose tool is mounted on a parallelogram.

Delivery and assembly

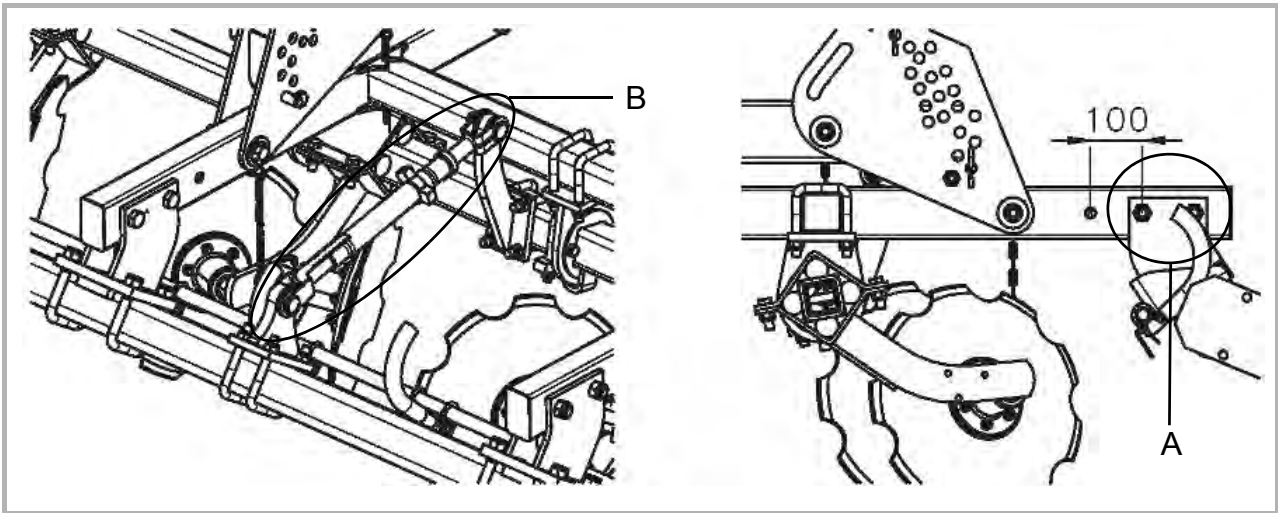
Procedure

Levelling tines fixed to the roller beam:



- ▶ Install the rail of spreaders in the lower position on the support.

Adaptation on a machine equipped with levelling discs:

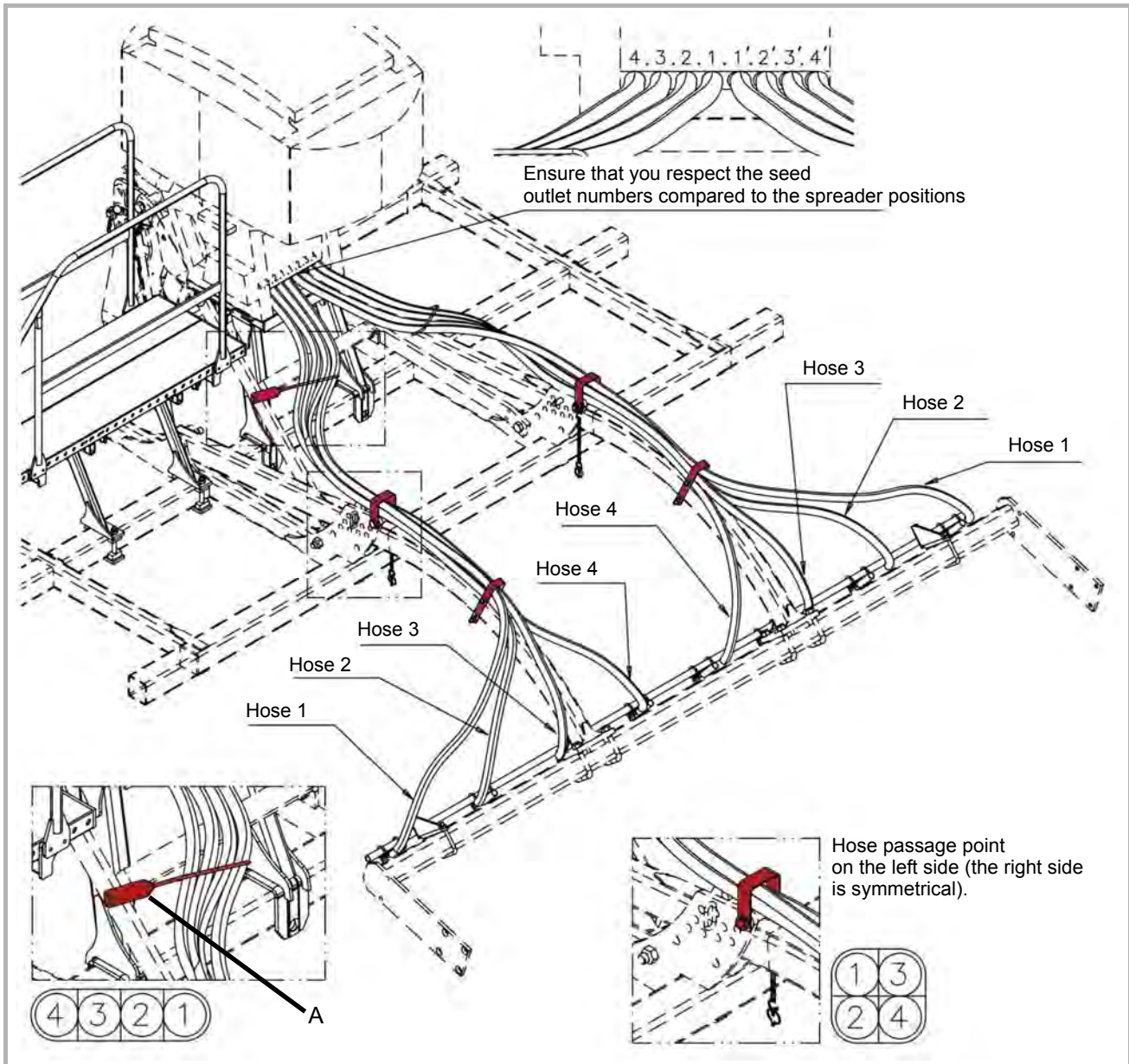


- ▶ Fix the roller supports to the last 2 fixing holes of the parallelogram (A).
- ▶ Use and adapt the longest push bar (B) in order to keep the working angle of the levelling discs.
- ▶ Use the adapting kit for machines prior to June 2012, that do not have a rear roller mounting position.

Delivery and assembly

Passage of hoses

Order of hose distribution for seed flow

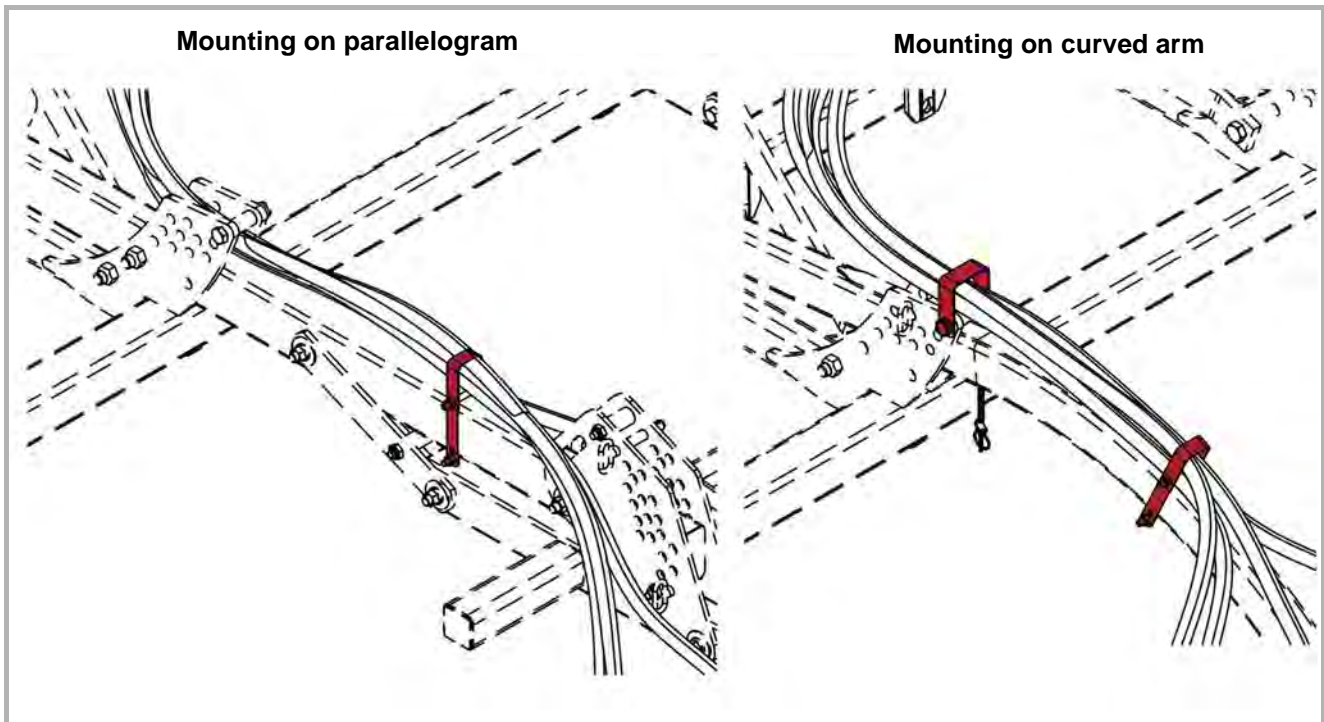


		Hose length (mm/in)				
		Left side / roller				
	Hopper	N° 1	N° 2	N° 3	N° 4	
CLC 2R	3m00 / 9'10"	Offset	3335 / 131"	3095 / 122"	3075 / 121"	2940 / 116"
CLC 2R	3m50 / 11'6"	Offset	3335 / 131"	3095 / 122"	3075 / 121"	2940 / 116"
CLC 2R	4m00 / 13'1"	Offset	3550 / 140"	3355 / 132"	3645 / 144"	3825 / 151"
CLC 2R Wings	3m00 / 9'10"	Centred	3195 / 126"	2955 / 116"	2935 / 116"	2800 / 110"
CLC 2R Wings	3m50 / 11'6"	Centred	3195 / 126"	2955 / 116"	2935 / 116"	2800 / 110"
CLC 2R Wings	4m00 / 13'1"	Centred	3410 / 134"	3215 / 127"	3505 / 138"	3685 / 145"
CLC 3R	3m00 / 9'10"	Centred	3630 / 143"	3260 / 128"	3400 / 134"	3120 / 123"
CLC 3R	3m50 / 11'6"	Centred	3630 / 143"	3260 / 128"	3400 / 134"	3120 / 123"
CLC 3R	4m00 / 13'1"	Centred	3700 / 146"	3605 / 142"	3905 / 154"	3975 / 156"

Hose supports have been designed to allow optimal passage of hoses on the machine.

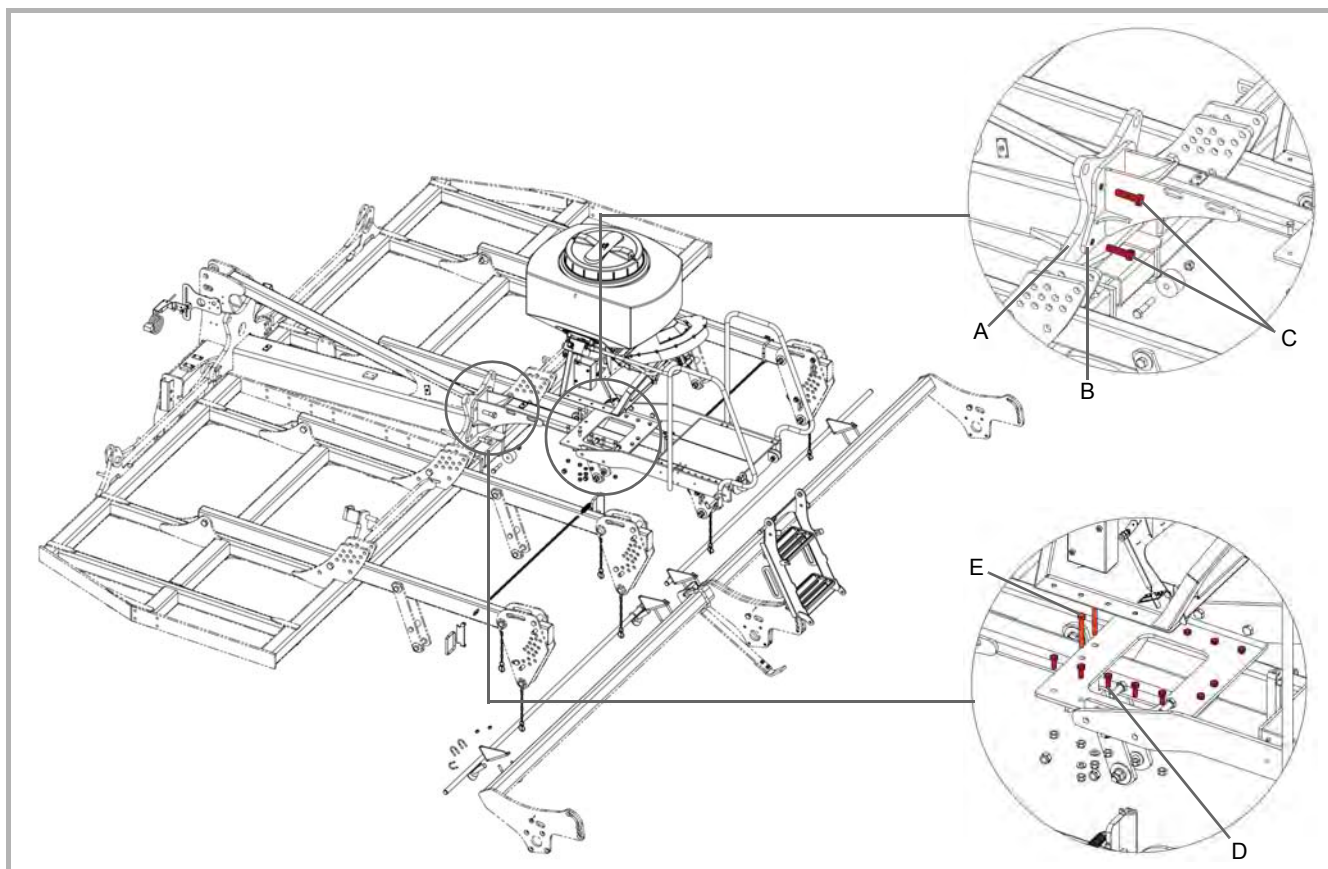
- ▶ Fix the supports above the arms.
- ▶ Group the hoses and pass them in the supports.
- ▶ Cross the hoses when you connect them to the rail of spreaders. The hoses that come out of the centre of the seed drill must supply the exterior spreaders of the machine.

NOTE On 3 row cultivators, a hose guide (A) is installed on the stays.



Delivery and assembly

Folding CLC



Mounting the hopper support

Task description

On folding cultivators, the hopper support and the access walkway are fixed to the central frame using 4 screws.

Procedure

- ▶ Align the holes located at the rear extremity of the hopper support (B) with the rear extremity of the central frame (A) of the machine.
- ▶ Place the 4 hexagonal head M20x70 screws (C) in the holes.
- ▶ Fix the screws using M20 nuts.

Mounting the hopper

Task description

Once the support is fixed to the machine, you now need to mount the hopper onto it. The hopper is placed on the support and fixed using 14 screws.

Procedure

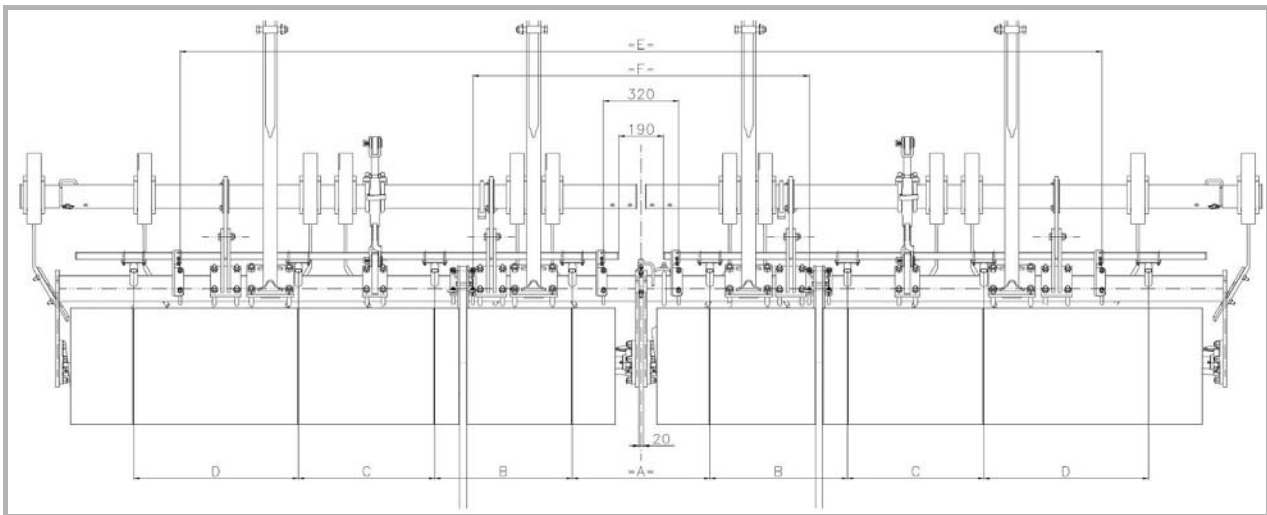
- ▶ Place the hopper on the support fixing plate, aligning the screw holes.
- ▶ Place the 12 screws M12x30 (D) on the sides and rear of the hopper support.
- ▶ Place the 2 screws M12x90 (E) in the holes located at the front of the hopper support.
- ▶ Fix the screws using M20 nuts.

Delivery and assembly

Positioning the spreaders

Task description

The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The following table provides the mounting dimensions for the different machines:

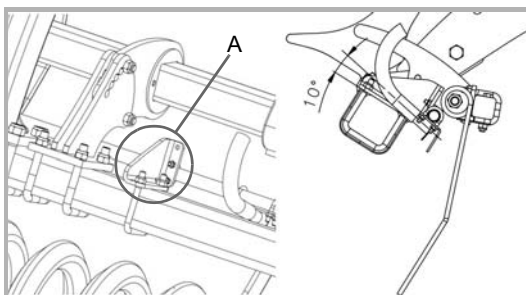


Machine	A	B	C	D	E	F
4m00 //	490 / 19 5/16"	530 / 20 7/8"	530 / 20 7/8"	530 / 20 7/8"	3920 / 154"	1430 / 56"
4m00 arm	530 / 20 7/8"	530 / 20 7/8"	530 / 20 7/8"	530 / 20 7/8"	3920 / 154"	1300 / 51"
4m50 //	490 / 19 5/16"	590 / 23 1/4"	560 / 22"	560 / 22"	3520 / 139"	1430 / 56"
4m50 arm	560 / 22"	560 / 22"	560 / 22"	560 / 22"	2520 / 99"	1300 / 51"
5m00 //	490 / 19 5/16"	580 / 22 13/16"	570 / 22 7/16"	700 / 27 9/16"	2785 / 110"	1660 / 65"
5m00 arm	585 / 23"	585 / 23"	580 / 22 13/16"	700 / 27 9/16"	2785 / 110"	1300 / 51"



- Column F corresponds to the distance between signalling supports.
- "arm" corresponds to a machine whose rear tool is mounted on a curved arm.
- "//" corresponds to a machine whose tool is mounted on a parallelogram.

Procedure

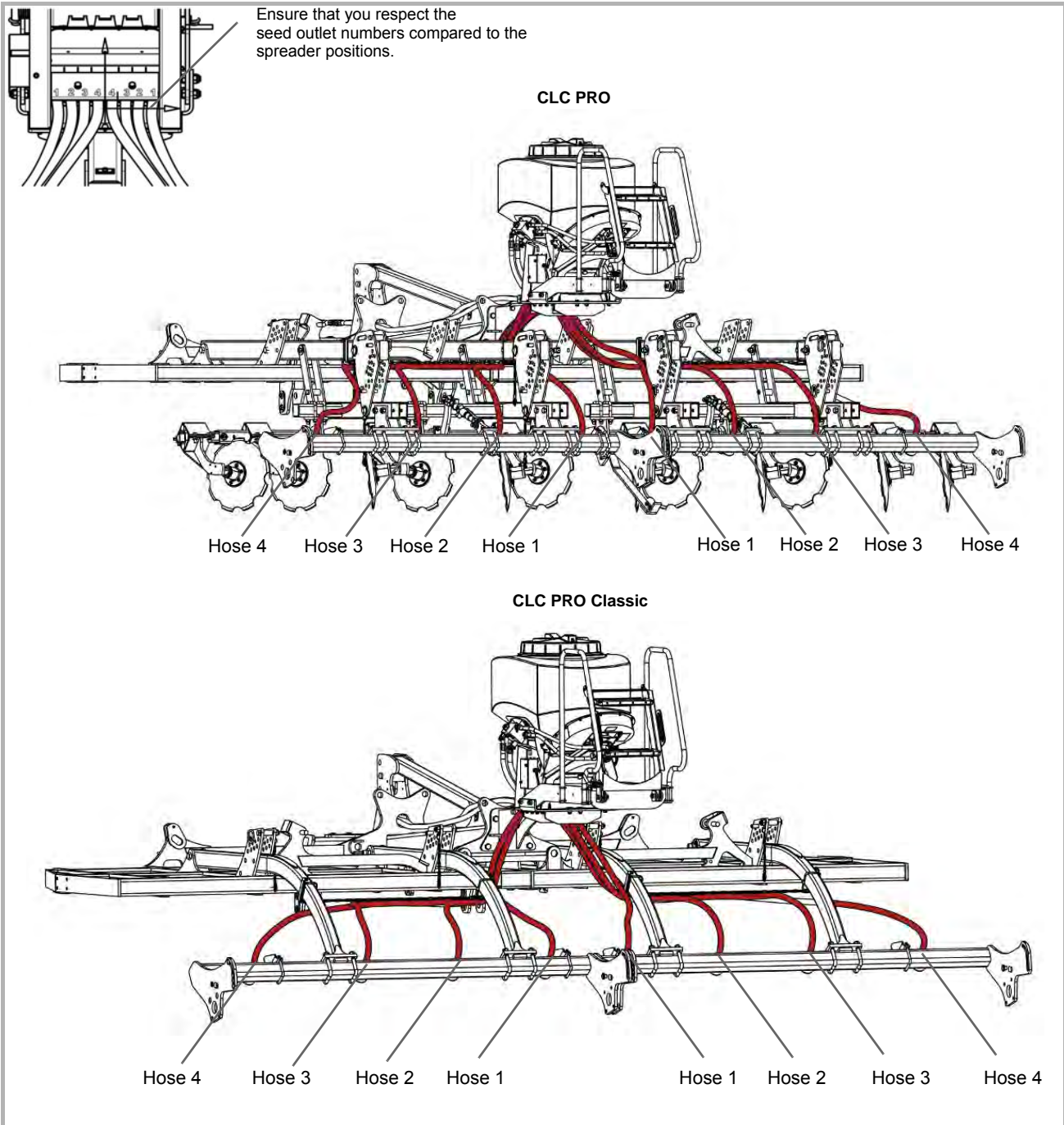


Levelling tines on CLC Pro Classic

- ▶ Adjust the rail to the low position (A) to position the spreaders.

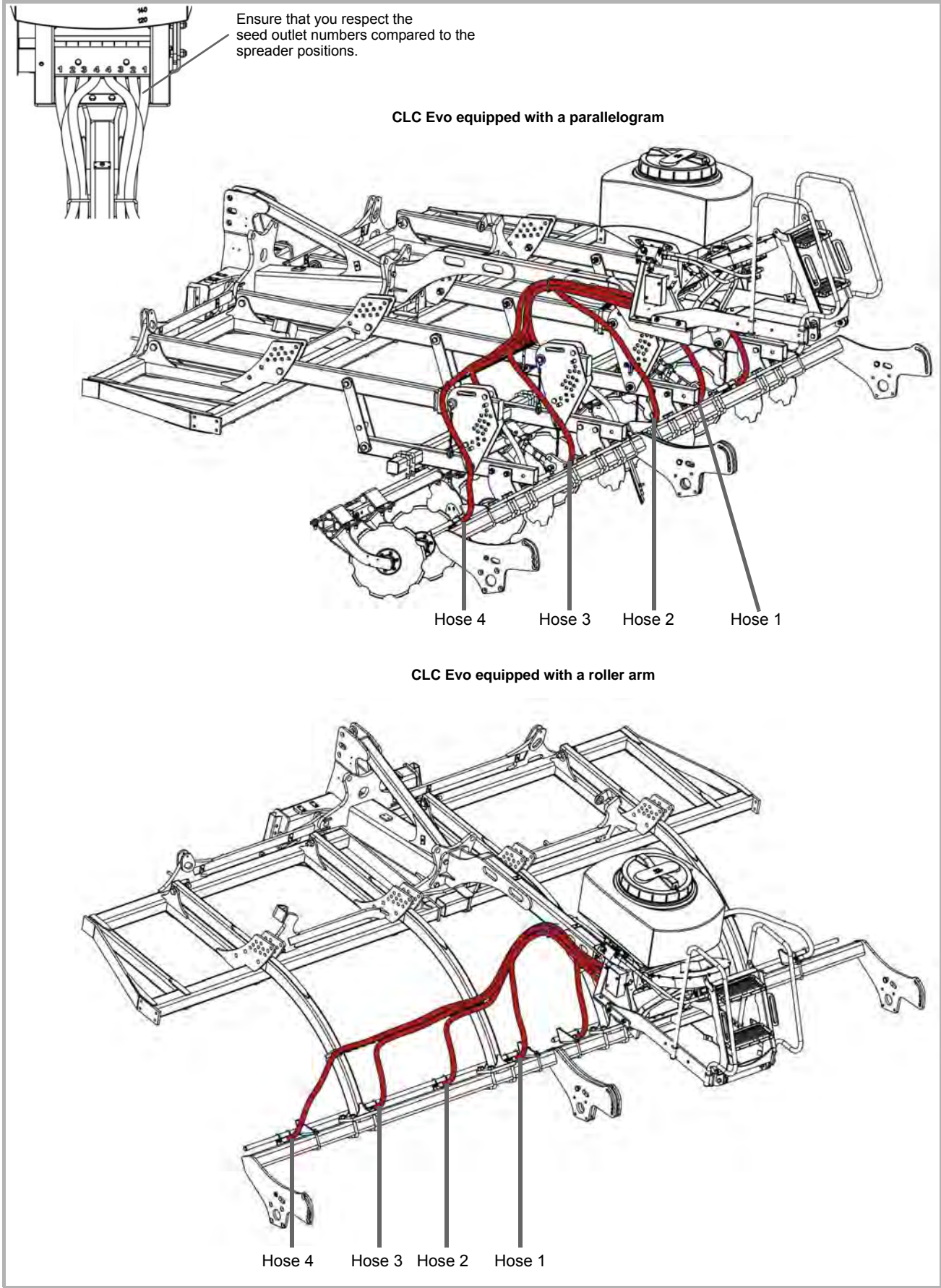
Passage of hoses

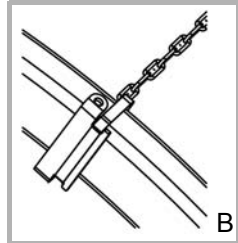
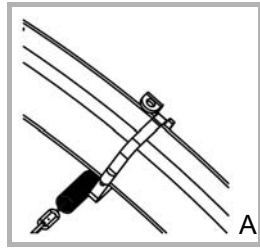
Order of distribution for seed hoses on CLC Pro



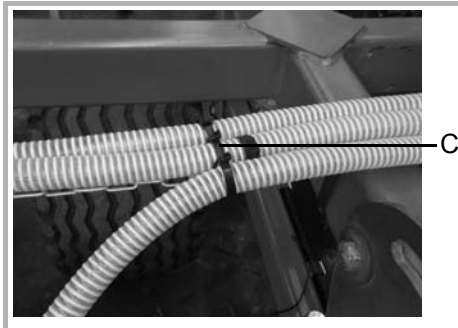
Delivery and assembly

Order of distribution for seeds on CLC Evo

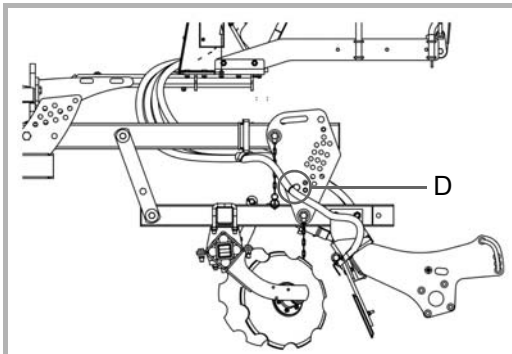




- ▶ Use the support containing a spring (A).
- ▶ Install the spring support on the exterior arm, ensuring that the spring is directed towards the interior of the machine.
- ▶ Fix the support using a metal clamping ring.
- ▶ Use the link support (B).
- ▶ Install the link support on the interior arm, ensuring that the link is directed towards the exterior of the machine.
- ▶ Fix the support using a metal clamping ring.
- ▶ Attach the chain to the spring.
- ▶ Tighten the chain so that the weight of the hoses does not make it bend.
- ▶ Attach the chain to the link.
- ▶ Cut the excess chain.

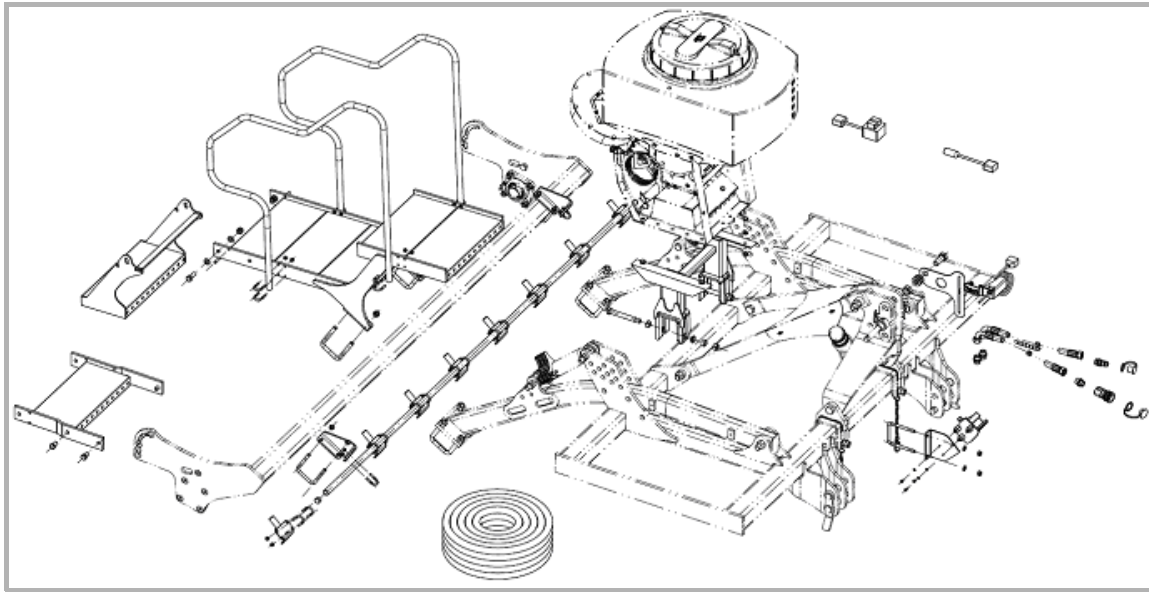


- ▶ Group the hoses and fix them to the chain using plastic rings.
- ▶ Fix the hoses to the extremity of the machine using a washer (D).
- ▶ Check in the upper and lower positions that there are no blocking or crushing points for the hoses.



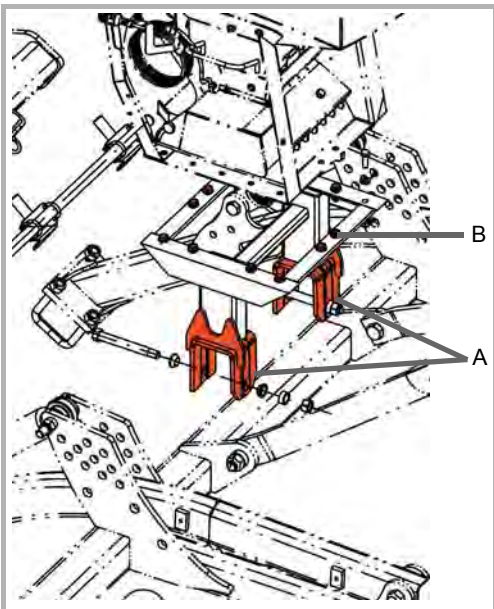
Delivery and assembly

Rigid Qualidisc



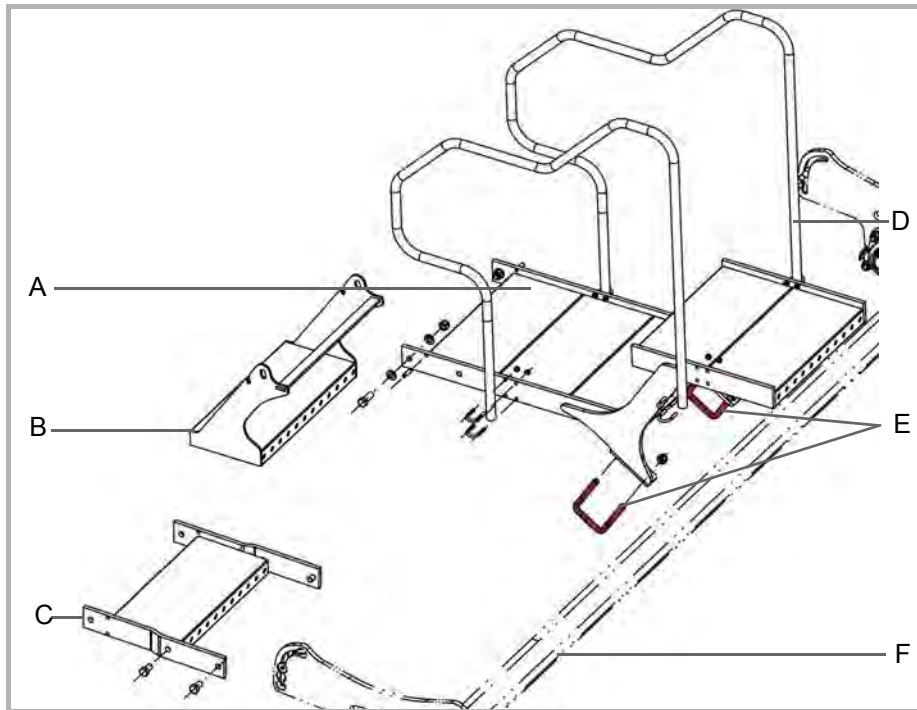
Mounting the hopper support and the hopper

Procedure



- ▶ Turn the hopper so that the hoses come out from the rear of the machine.
- ▶ Using U clamps (A), fix the support to the second beam of the main frame.
- ▶ Insert the two screws M20x160.
- ▶ Tighten the M20x160 screws to 500Nm torque.
- ▶ Insert the 12 screws M12x35 (B) in the angles of the hopper support.
- ▶ Place the bolts.

Mounting the walkway



A	Platform
B	Retractable step
C	Walkway extension
D	Guardrail
E	Brackets
F	Roller beam

Procedure

- ▶ Centre the support for the walkway on the roller beam (F).
- ▶ Position the two brackets (E) on the roller beam.
- ▶ Bolt the brackets.

Machines equipped with double rollers:

- ▶ Attach the walkway extension (C) between the platform (A) and the retractable step (B).

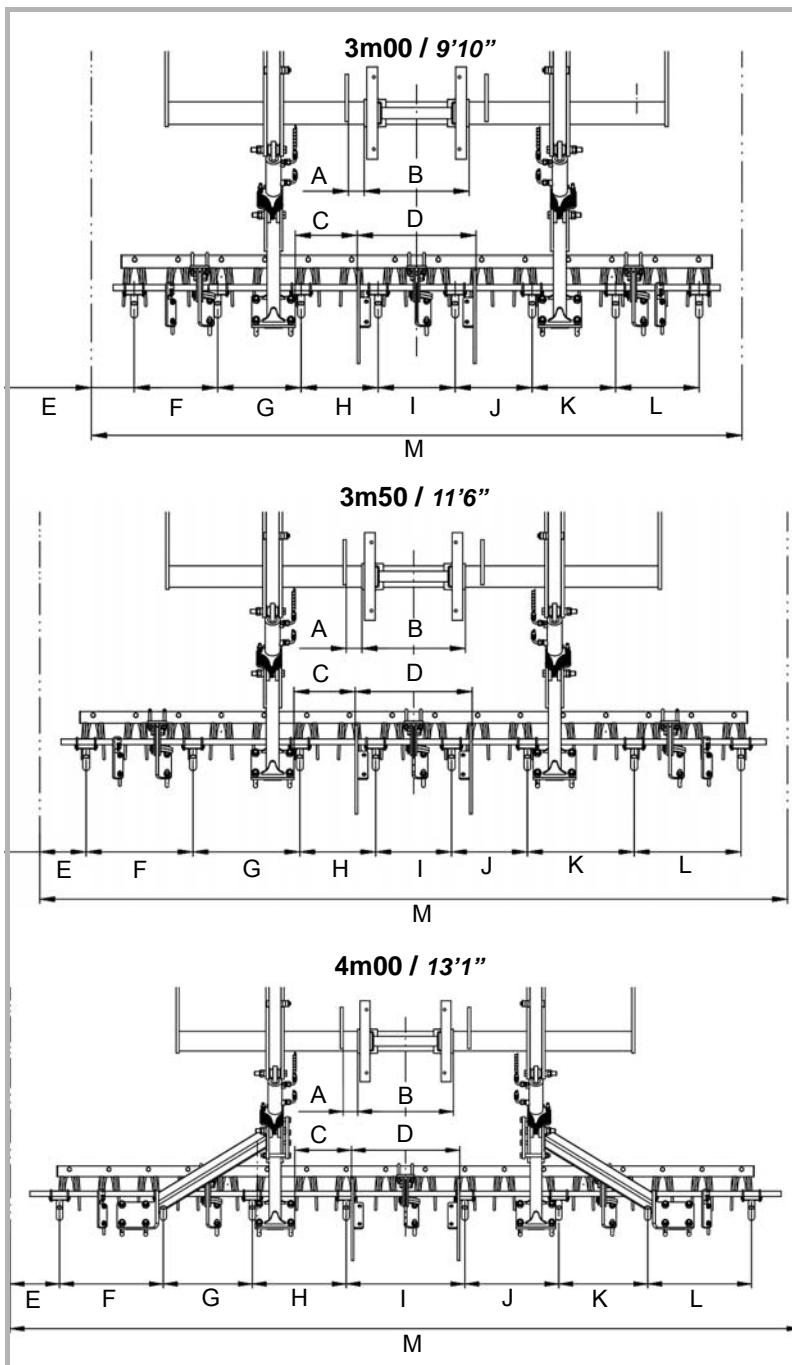
Delivery and assembly

Positioning the spreaders

Task description

Different accessories such as a comb harrow or rollers can be mounted on disc cultivators. The tool has no effect on the mounting of the spreader rail.

The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The following tables specify the mounting dimensions (mm/in) for the different machines:



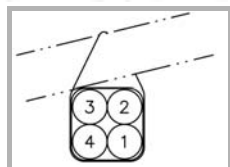
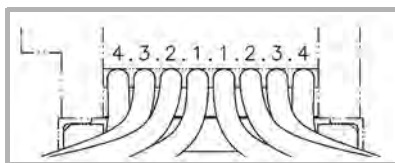
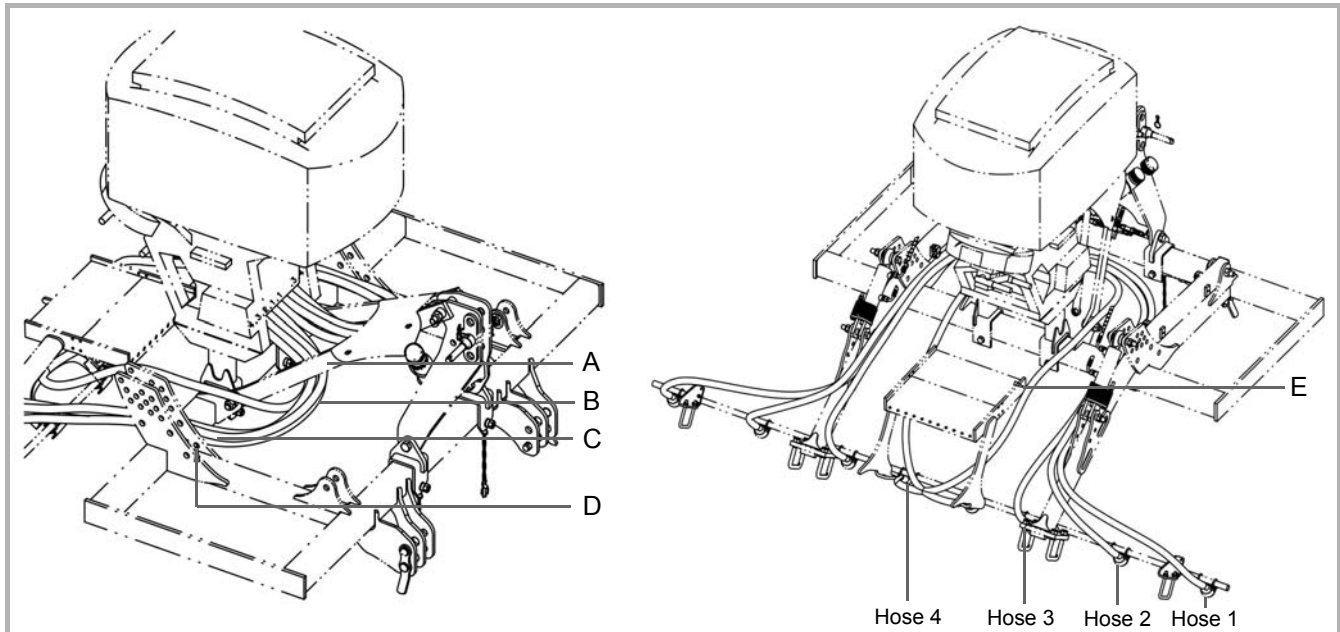
	3m00 (9'10")	3m50 (11'6")	4m00 (13'1")
A	73 / 2 7/8"	73 / 2 7/8"	73 / 2 7/8"
B	484 / 19"	484 / 19"	484 / 19"
C	286 / 11 1/4"	286 / 11 1/4"	286 / 11 1/4"
D	548 / 21 9/16"	548 / 21 9/16"	548 / 21 9/16"
E	197.5 / 7 3/4"	217.5 / 8 9/16"	250 / 9 7/8"
F	385 / 14"	500 / 19 11/16"	525 / 20 11/16"
G	385 / 14"	500 / 19 11/16"	450 / 17 3/4"
H	355 / 15 3/16"	355 / 15 3/16"	475 / 18 11/16"
I	355 / 15 3/16"	355 / 15 3/16"	600 / 23 5/8"
J	355 / 15 3/16"	355 / 15 3/16"	475 / 18 11/16"
K	385 / 14"	500 / 19 11/16"	450 / 17 3/4"
L	385 / 14"	500 / 19 11/16"	525 / 20 11/16"
M	3000 / 118"	3500 / 138"	4000 / 157"

Passage of hoses

Order of distribution for seed hoses

The seed flow hoses leave the hopper to the front when it is mounted on a rigid mounted disc cultivator.

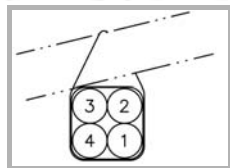
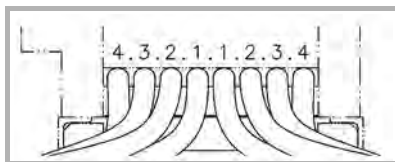
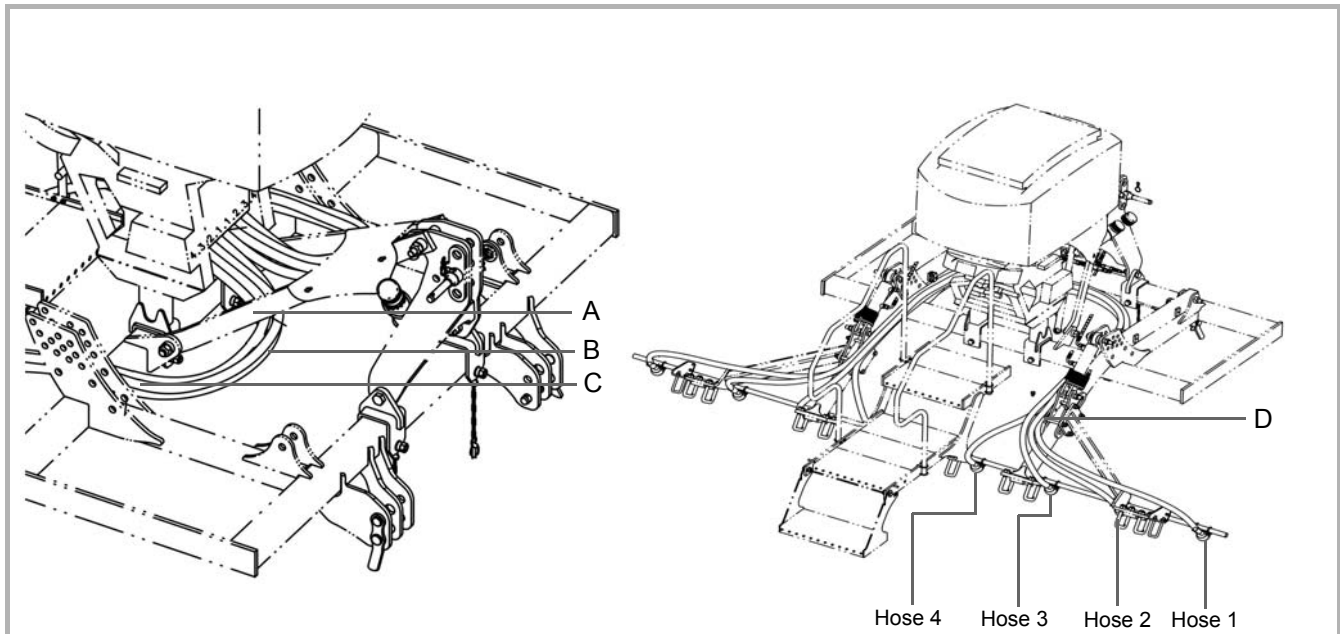
Cultivators 3m00 (9'10") and 3m50 (11'6")



- ▶ Ensure you respect the seed outlet numbers compared to the spreader positions.
- ▶ Group the 4 hoses (position B) so that they form a square.
- ▶ Put a clamping ring around the 4 hoses.
- ▶ Fix them to the machine stay (A).
- ▶ Fold the hoses ensuring that their curve is as natural as possible.
- ▶ Pass hoses number 1, 2 and 3 in a new clamping ring (position C).
- ▶ Attach this clamping ring in the furthest front hole of the drilled plate of the machine (D).
- ▶ Attach the hose number 4 to the upper part of the platform (E).
- ▶ Cross the two hoses number 4 before connecting them to the spreaders.
- ▶ Check in the upper and lower positions that there are no blocking, tension or crushing points for the hoses.

Delivery and assembly

Cultivators 4m00 (13'1")



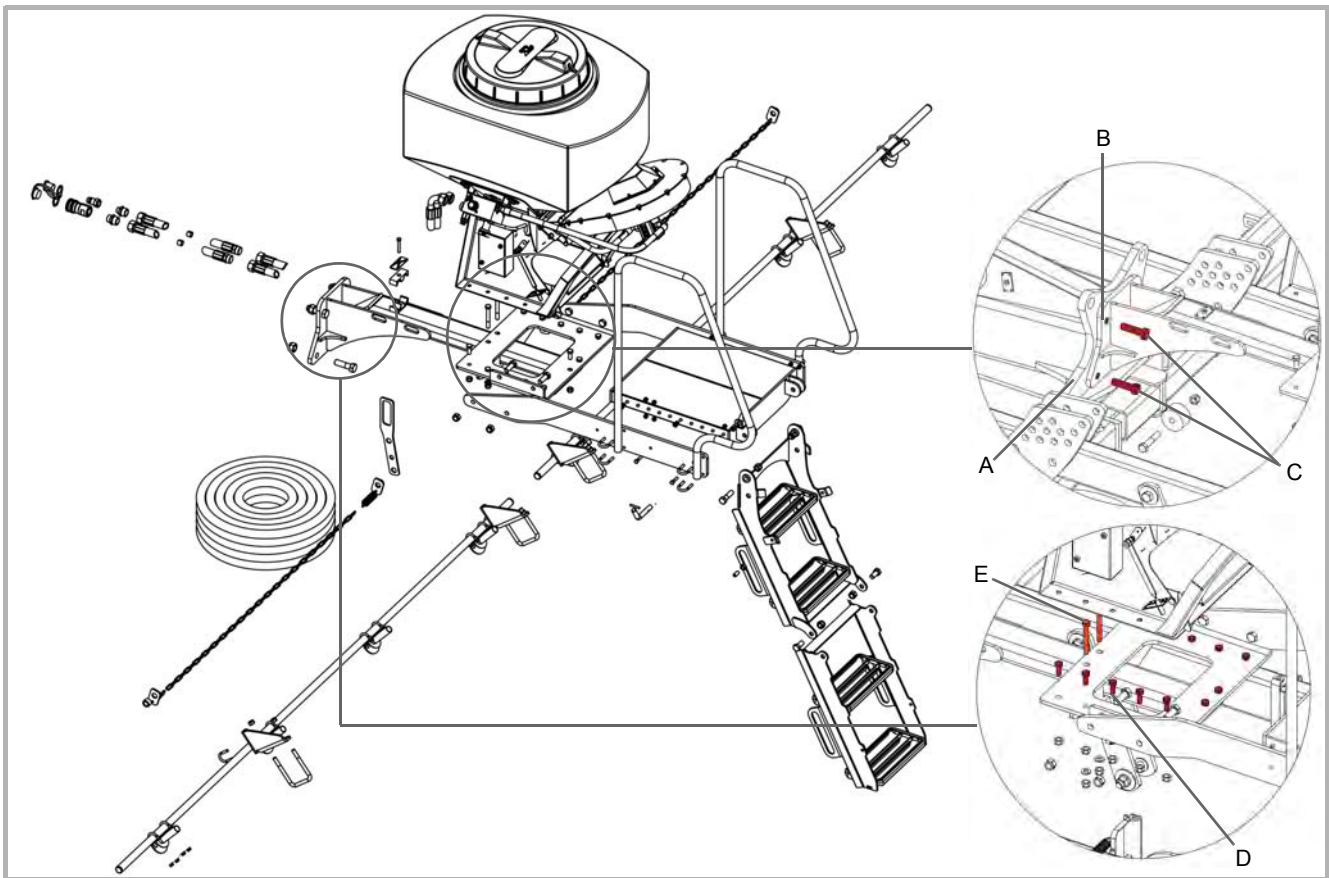
- ▶ Ensure you respect the seed outlet numbers compared to the spreader positions.
- ▶ Group the 4 hoses (position B) so that they form a square.
- ▶ Put a clamping ring around the 4 hoses.
- ▶ Fix them to the machine stay (A).
- ▶ Fold the hoses ensuring that their curve is as natural as possible.
- ▶ Attach the 4 hoses together again with a clamping ring (position C).
- ▶ Put the washer equipped with a ring on the screw in position D.
- ▶ Attach the group of hoses to the washer clamp.
- ▶ Check in the upper and lower positions that there are no blocking, tension or crushing points for the hoses.

Length of hoses

	3m00 (9'10")	3m50 (11'6")	4m00 (13'1")
Hose 1	2600 mm / 102"	3100 mm / 122"	3400 mm / 134"
Hose 2	2900 mm / 114"	2700 mm / 106"	2900 mm / 114"
Hose 3	2400 mm / 94"	2400 mm / 94"	2400 mm / 94"
Hose 4	2400 mm / 94"	2400 mm / 94"	2400 mm / 94"

Delivery and assembly

Folding Qualidisc



Mounting the hopper support

Task description

On folding cultivators, the hopper support and the access walkway are fixed to the central frame using 4 screws.

Procedure

- ▶ Align the holes located at the rear extremity of the hopper support (B) with the rear extremity of the central frame (A) of the machine.
- ▶ Place the 4 hexagonal head M20x70 screws (C) in the holes.
- ▶ Fix the screws using M20 nuts.

Mounting the hopper

Task description

Once the support is fixed to the machine, you now need to mount the hopper onto it. The hopper is placed on the support and fixed using 14 screws.

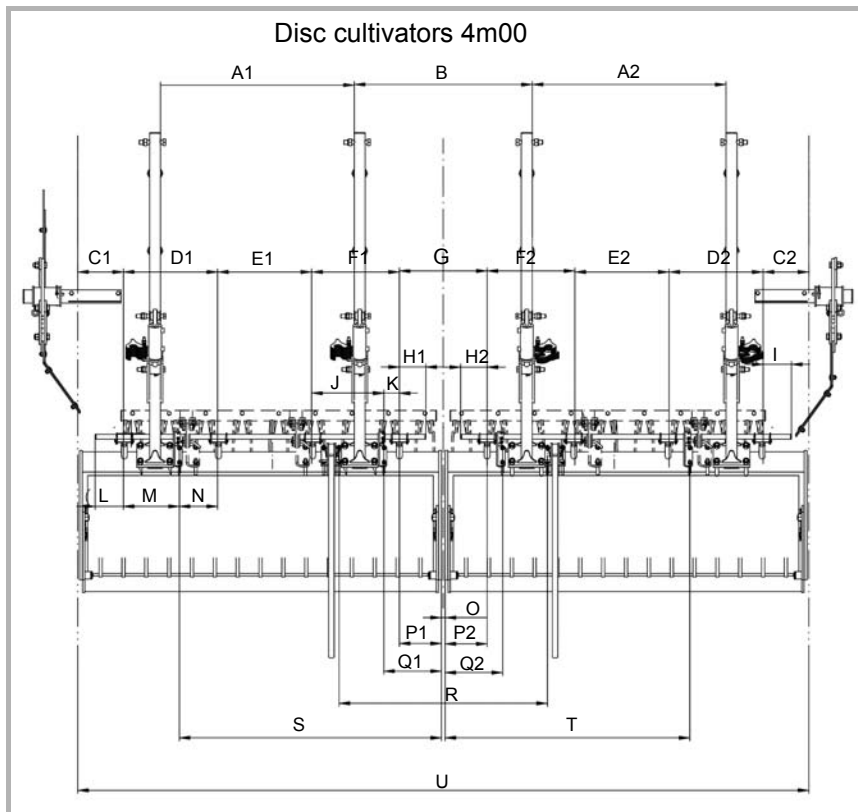
Procedure

- ▶ Place the hopper on the support fixing plate, aligning the screw holes.
- ▶ Place the 12 screws M12x30 (D) on the sides and rear of the hopper support.
- ▶ Place the 2 screws M12x90 (E) in the holes located at the front of the hopper support.
- ▶ Fix the screws using M20 nuts.

Positioning the spreaders

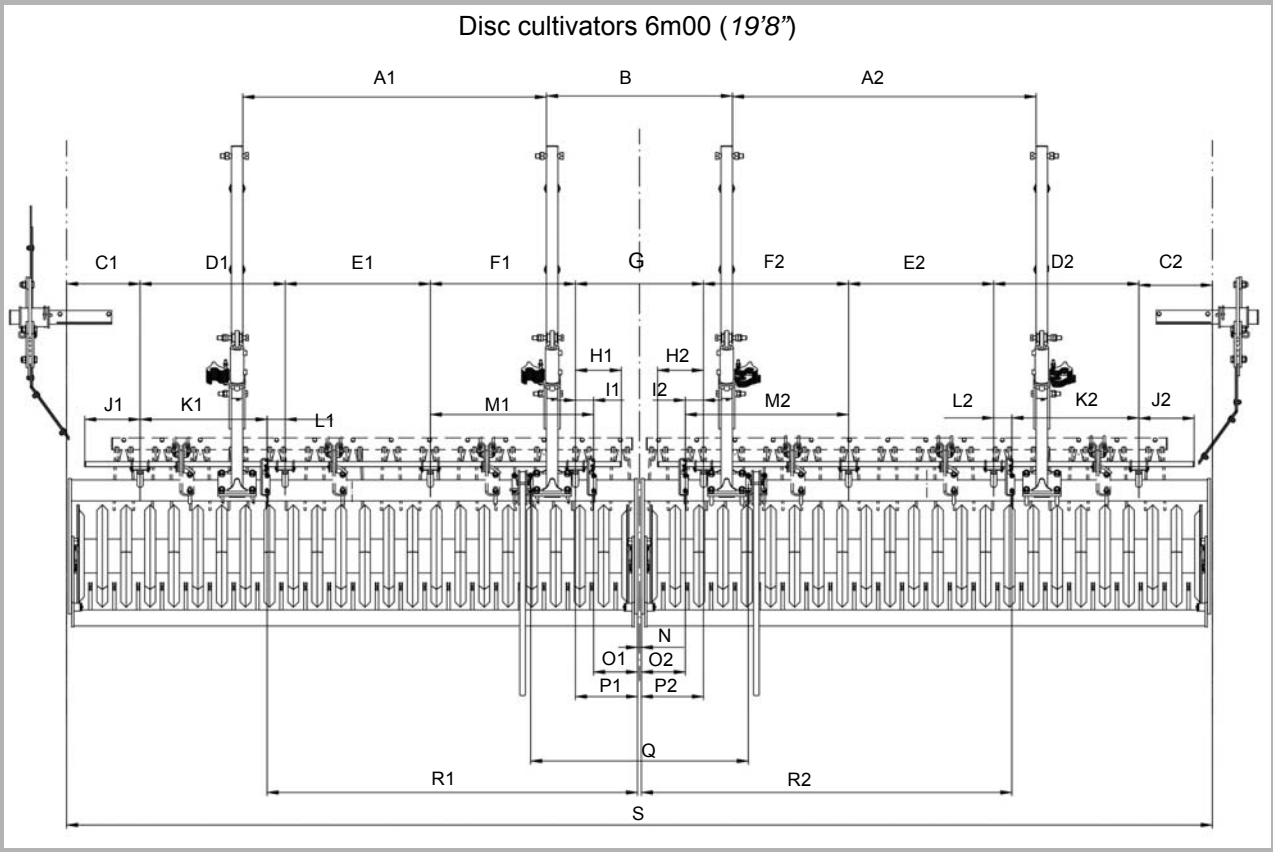
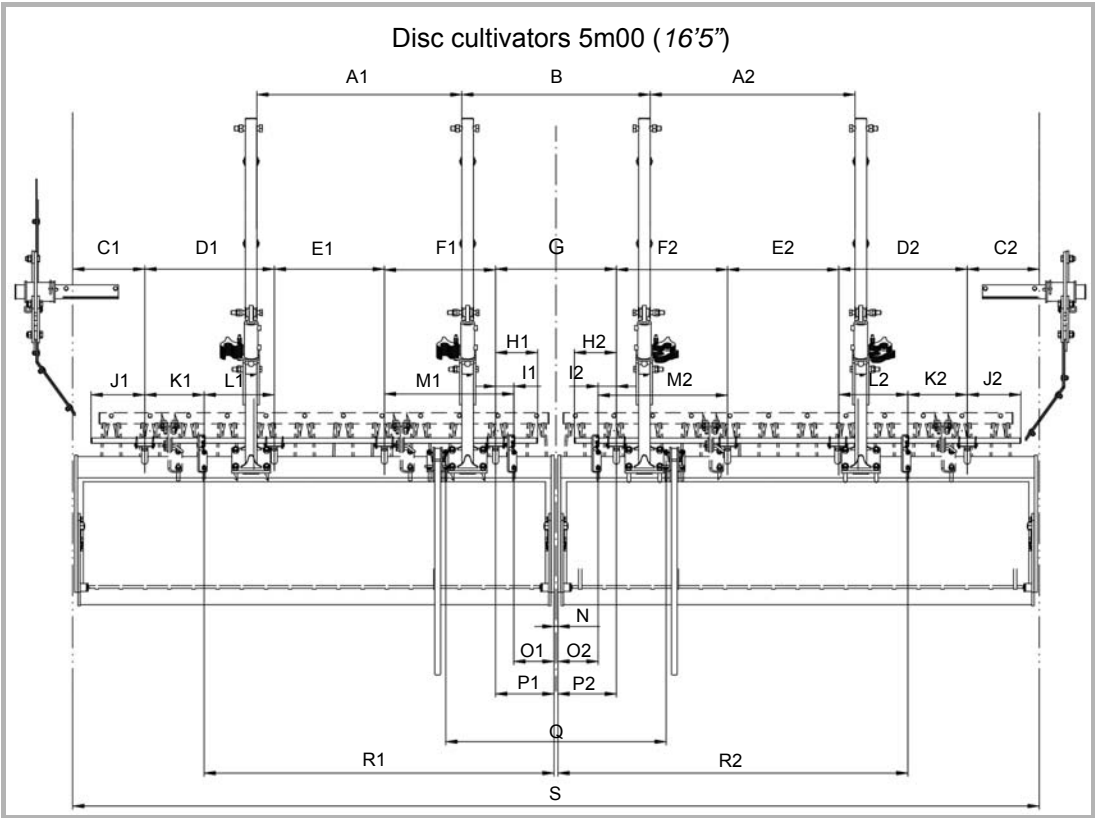
Task description

The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The following diagrams specify the mounting dimensions (mm/in) for the different machines:



Marking	4m00 (13'1")	Marking	4m00 (13'1")
A1 & A2	1060 / 42"	L	155 / 6 1/8"
B	974 / 38 3/8"	M	306 / 12"
C1 & C2	250 / 9 13/16"	N	209 / 8 1/4"
D1 & D2	515 / 20 1/4"	O	20 / 13/16"
E1 & E2	515 / 20 1/4"	P1 & P2	230 / 9"
F1 & F2	480 / 18 7/8"	Q1 & Q2	315 / 12 3/8"
G	480 / 18 7/8"	R	1140 / 45"
H1 & H2	145 / 5 11/16"	S	1434 / 56"
I	155 / 6 1/8"	T	1339 / 53"
J	395 / 15 1/2"	U	4000 / 157"
K	85 / 3 3/8"	-	-

Delivery and assembly

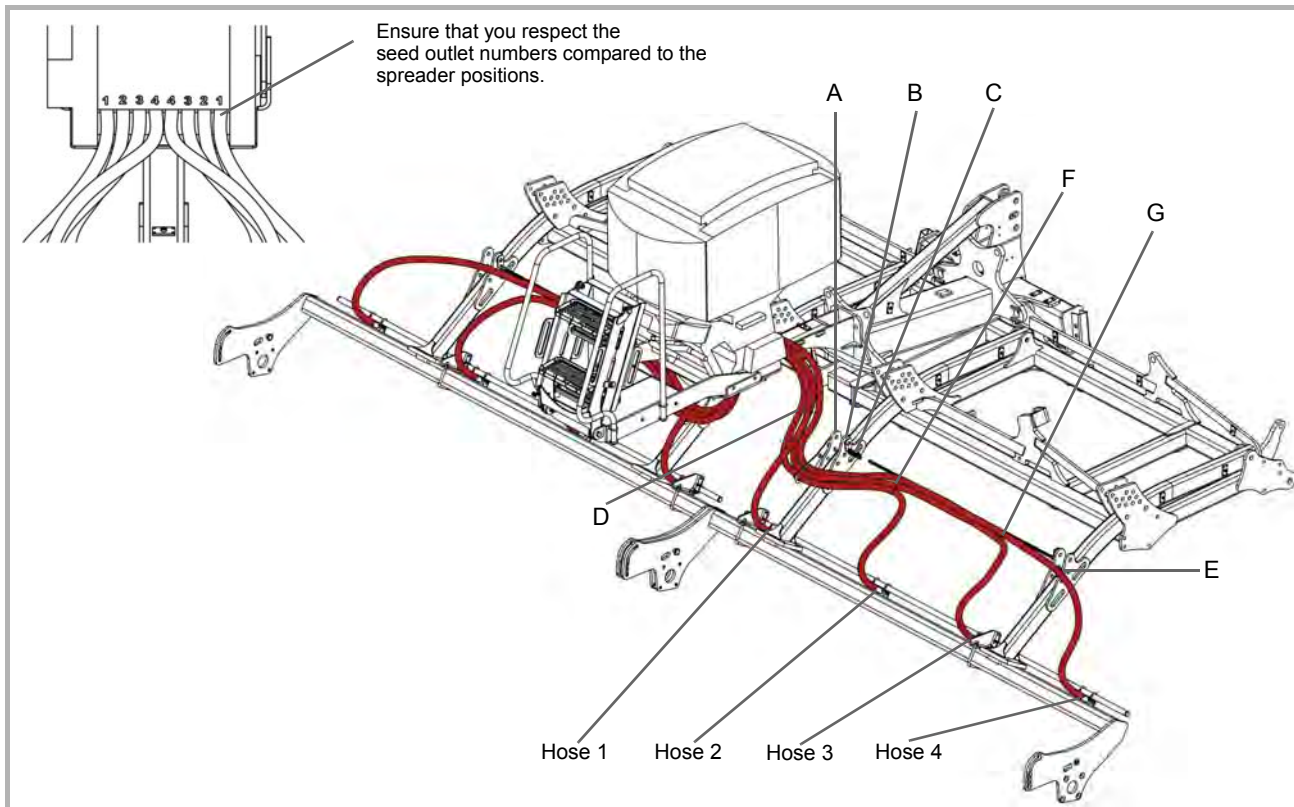


Marking	5m00 (16'5)	6m00 (19'8)	Marking	5m00 (16'5)	6m00 (19'8)
A1 & A2	1060 / 42"	1590 / 63"	K1 & K2	307 / 12 11/16"	665 / 26 3/16"
B	974 / 38 3/8"	974 / 38 3/8"	L1 & L2	363 / 14 5/16"	95 / 3 3/4"
C1 & C2	373 / 14 11/16"	385 / 15 3/16"	M1 & M2	669 / 26 3/8"	855 / 33 11/16"
D1 & D2	670 / 26 3/8"	760 / 30"	N	20 / 13/16"	20 / 13/16"
E1 & E2	570 / 22 7/16"	760 / 30"	O1 & O2	208 / 8 3/16"	230 / 9"
F1 & F2	575 / 22 5/8"	760 / 30"	P1 & P2	303 / 12"	325 / 12 13/16"
G	625 / 24 5/8"	670 / 26 3/8"	Q	1140 / 45"	1140 / 45"
H1 & H2	218 / 8 9/16"	240 / 9 7/16"	R1 & R2	1810 / 71"	1940 / 76"
I1 & I2	95 / 3 3/4"	95 / 3 3/4"	S	5000 / 197"	6000 / 236"
J1 & J2	278 / 11"	290 / 11 7/16"			

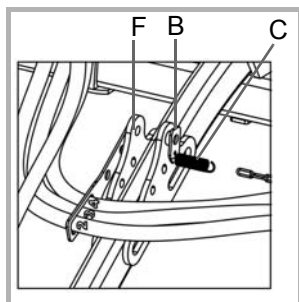
Delivery and assembly

Passage of hoses

Order of distribution for seed hoses

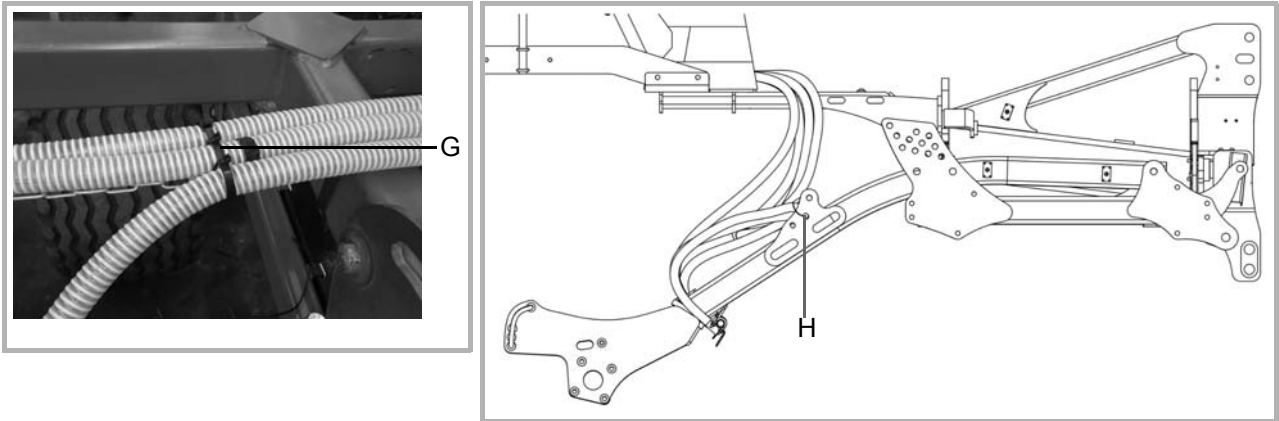


Mounting the hose supports:



- ▶ Thread the spring support (B) into the jack retention screw.
- ▶ Thread the pin into the jack retention screw.
- ▶ Place the jack retention screw into the hole located on the interior roller arm.
- ▶ Place the hose support on the other side of the drilled plate (F).
- ▶ Fix with a nut.
- ▶ Thread the rapid link support into the jack retention screw.
- ▶ Thread the pin into the jack retention screw.
- ▶ Place the jack retention screw into the hole located on the exterior roller arm.
- ▶ Attach the spring (C) to the support (B).
- ▶ Attach the chain to the spring.
- ▶ Attach the rapid link.
- ▶ Tighten the chain so that the weight of the hoses does not make it bend.
- ▶ Attach the chain to the link.
- ▶ Cut the excess chain.

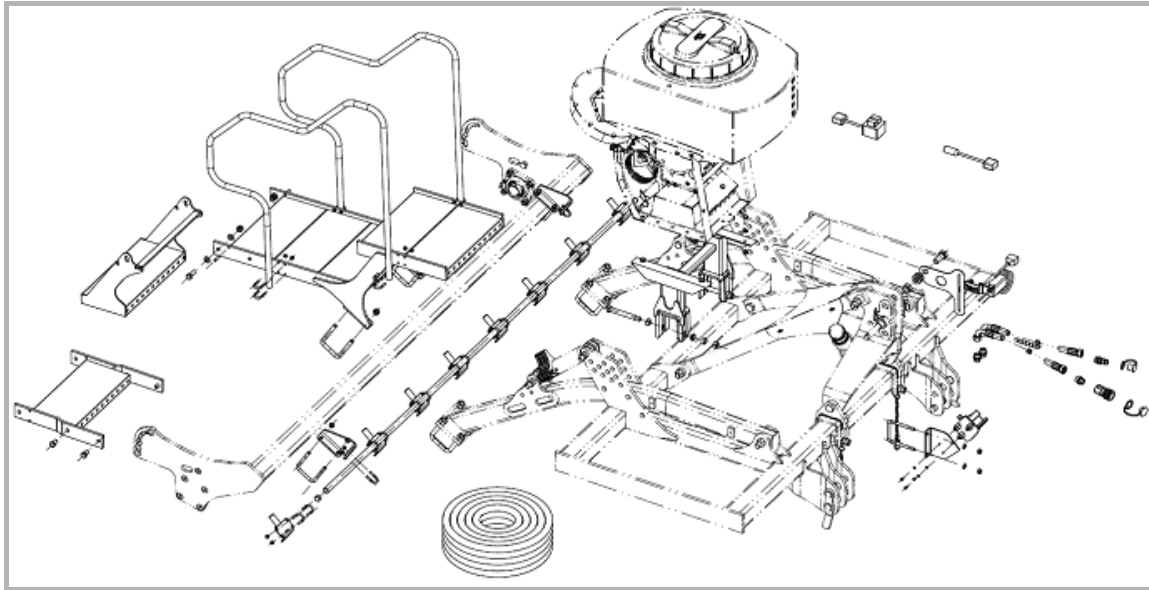
Passage of hoses:



- ▶ Group the 4 hoses using clamping rings (E).
- ▶ Connect the hose n°1 to the spreader.
- ▶ Pass hoses n°2,3 and 4 through the hose support (A).
- ▶ Group hoses n°2,3 and 4 using clamping rings.
- ▶ Attach the hoses to the chain using a clamping ring (F).
- ▶ Connect the hose n°2 to the spreader.
- ▶ Group hoses n°3 and 4 using clamping rings.
- ▶ Attach the hoses to the chain using a clamping ring (G).
- ▶ Using clamping rings, attach hose n°4 to the exterior drilled plate (H) of the exterior roller arm.
- ▶ Connect the hose n°4 to the spreader.
- ▶ Check in the upper and lower positions that there are no blocking or crushing points for the hoses.

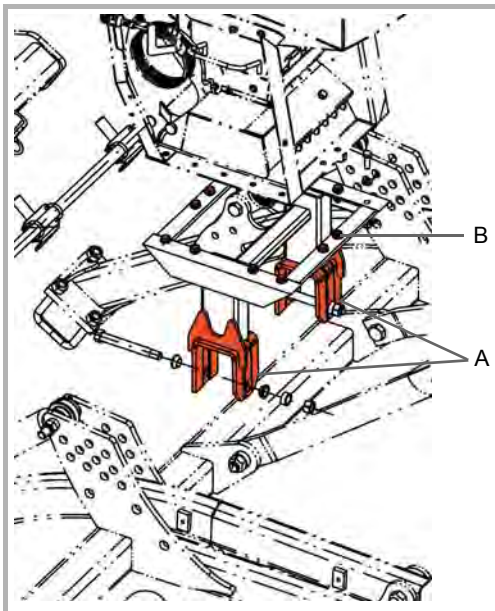
Delivery and assembly

Rigid Qualidisc Farmer



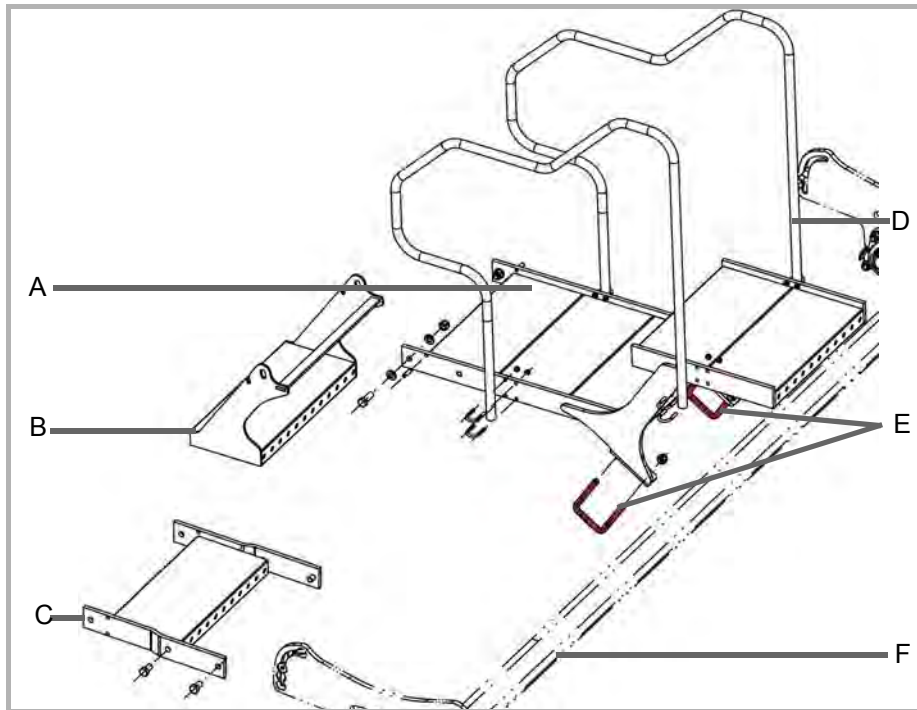
Mounting the hopper support and the hopper

Procedure



- ▶ Turn the hopper so that the hoses come out from the rear of the machine.
- ▶ Using U clamps (A), fix the support to the second beam of the main frame.
- ▶ Insert the two screws M20x160.
- ▶ Tighten the M20x160 screws to 500Nm torque.
- ▶ Insert the 12 screws M12x35 (B) in the angles of the hopper support.
- ▶ Place the bolts.

Mounting the walkway



A	Platform
B	Retractable step
C	Walkway extension
D	Guardrail
E	Brackets
F	Roller beam

Procedure

- ▶ Centre the support for the walkway on the roller beam (F).
- ▶ Position the two brackets (E) on the roller beam.
- ▶ Bolt the brackets.

Machines equipped with double rollers:

- ▶ Attach the walkway extension (C) between the platform (A) and the retractable step (B).

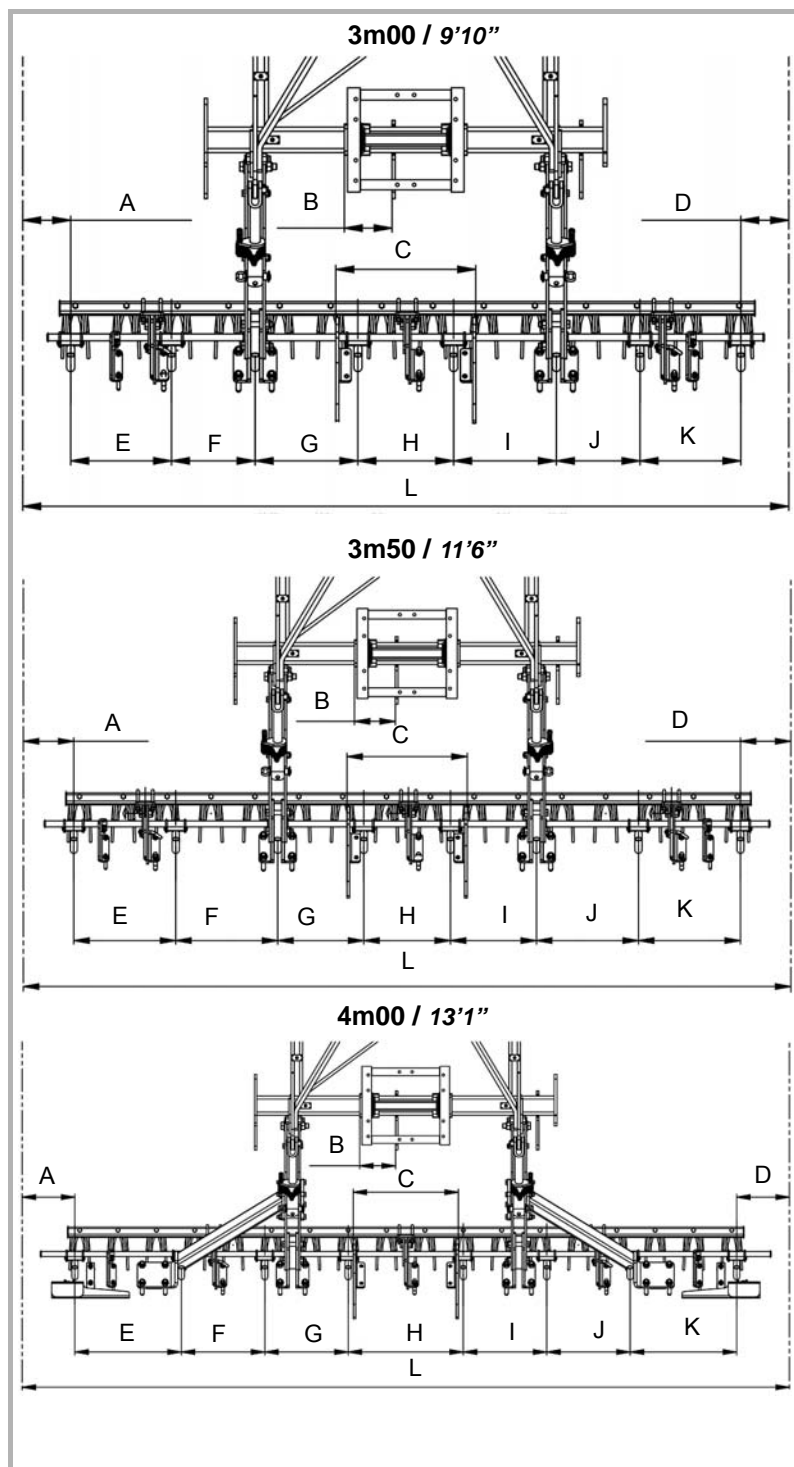
Delivery and assembly

Positioning the spreaders

Task description

Different accessories such as a comb harrow or rollers can be mounted on disc cultivators. The tool has no effect on the mounting of the spreader rail.

The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The following tables specify the mounting dimensions (mm/in) for the different machines:



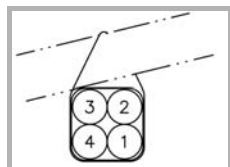
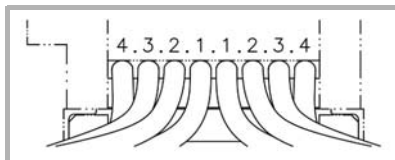
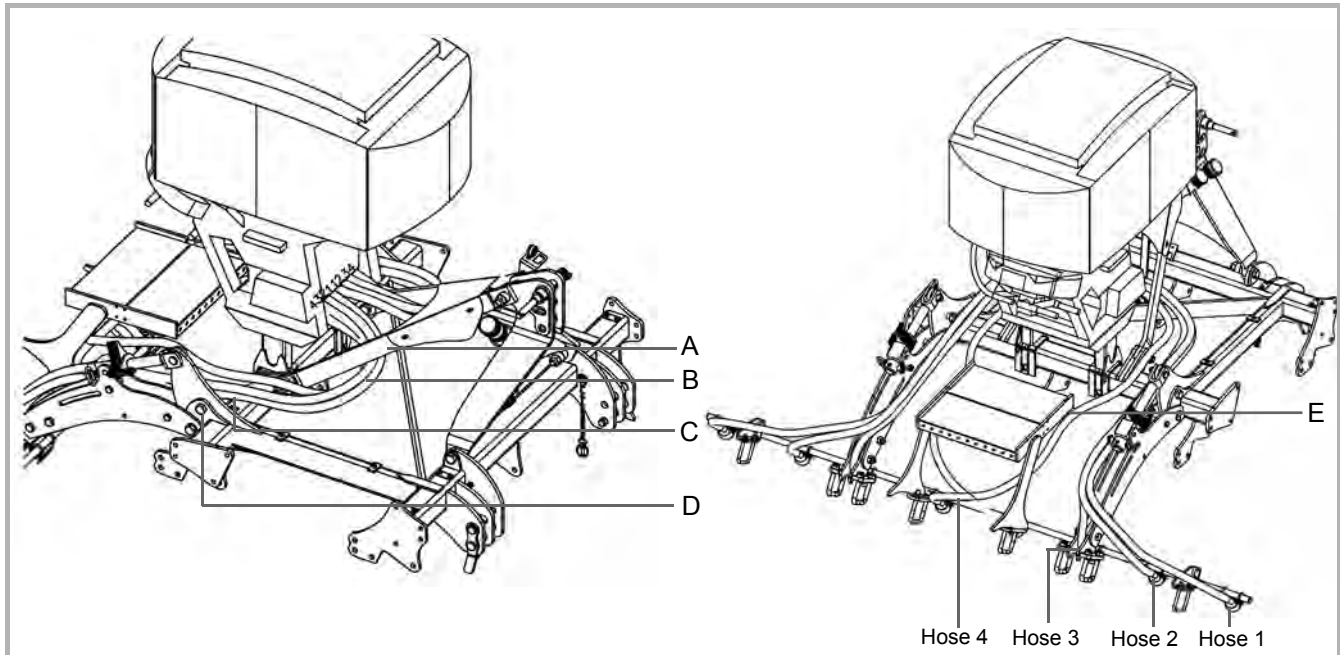
	3m00 (9'10")	3m50 (11'6")	4m00 (13'1")
A	187.5 / 7 3/8"	230 / 9 1/16"	275 / 10 13/16"
B	187 / 7 3/8"	187 / 7 3/8"	187 / 7 3/8"
C	548 / 21 9/16"	548 / 21 9/16"	548 / 21 9/16"
D	187.5 / 7 3/8"	230 / 9 1/16"	275 / 10 13/16"
E	395 / 15 1/2"	465 / 18 5/16"	555 / 21 7/8"
F	328 / 13"	465 / 18 5/16"	435 / 17 1/8"
G	402 / 15 13/16"	392 / 15 7/16"	435 / 17 1/8"
H	375 / 14 3/4"	395 / 15 1/2"	600 / 23 5/8"
I	402 / 15 13/16"	392 / 15 7/16"	435 / 17 1/8"
J	328 / 13"	465 / 18 5/16"	435 / 17 1/8"
K	395 / 15 1/2"	465 / 18 5/16"	555 / 21 7/8"
L	3000 / 118"	3500 / 138"	4000 / 157"

Passage of hoses

Order of distribution for seed hoses

The seed flow hoses leave the hopper to the front when it is mounted on a rigid mounted disc cultivator.

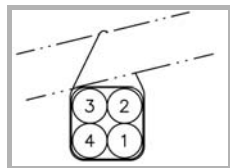
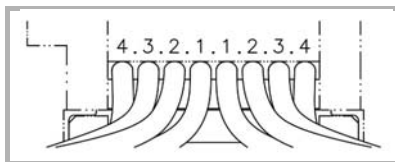
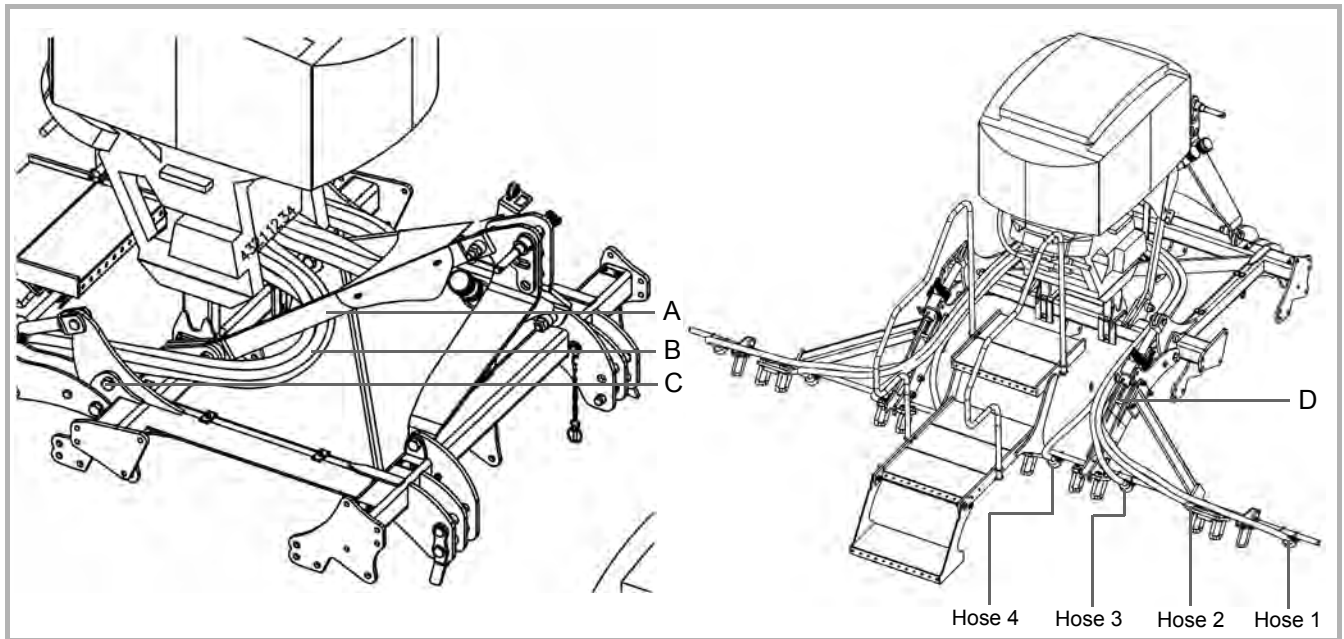
Cultivators 3m00 (9'10") and 3m50 (11'6")



- ▶ Ensure you respect the seed outlet numbers compared to the spreader positions.
- ▶ Group the 4 hoses (position B) so that they form a square.
- ▶ Put a clamping ring around the 4 hoses.
- ▶ Fix them to the machine stay (A).
- ▶ Fold the hoses ensuring that their curve is as natural as possible.
- ▶ Pass hoses number 1, 2 and 3 in a new clamping ring (position C).
- ▶ Attach this clamping ring in position D.
- ▶ Attach the hose number 4 to the upper part of the platform (E).
- ▶ Cross hoses number 4 before connecting them to the spreaders.
- ▶ Check in the upper and lower positions that there are no blocking, tension or crushing points for the hoses.

Delivery and assembly

Cultivators 4m00 (13'1")



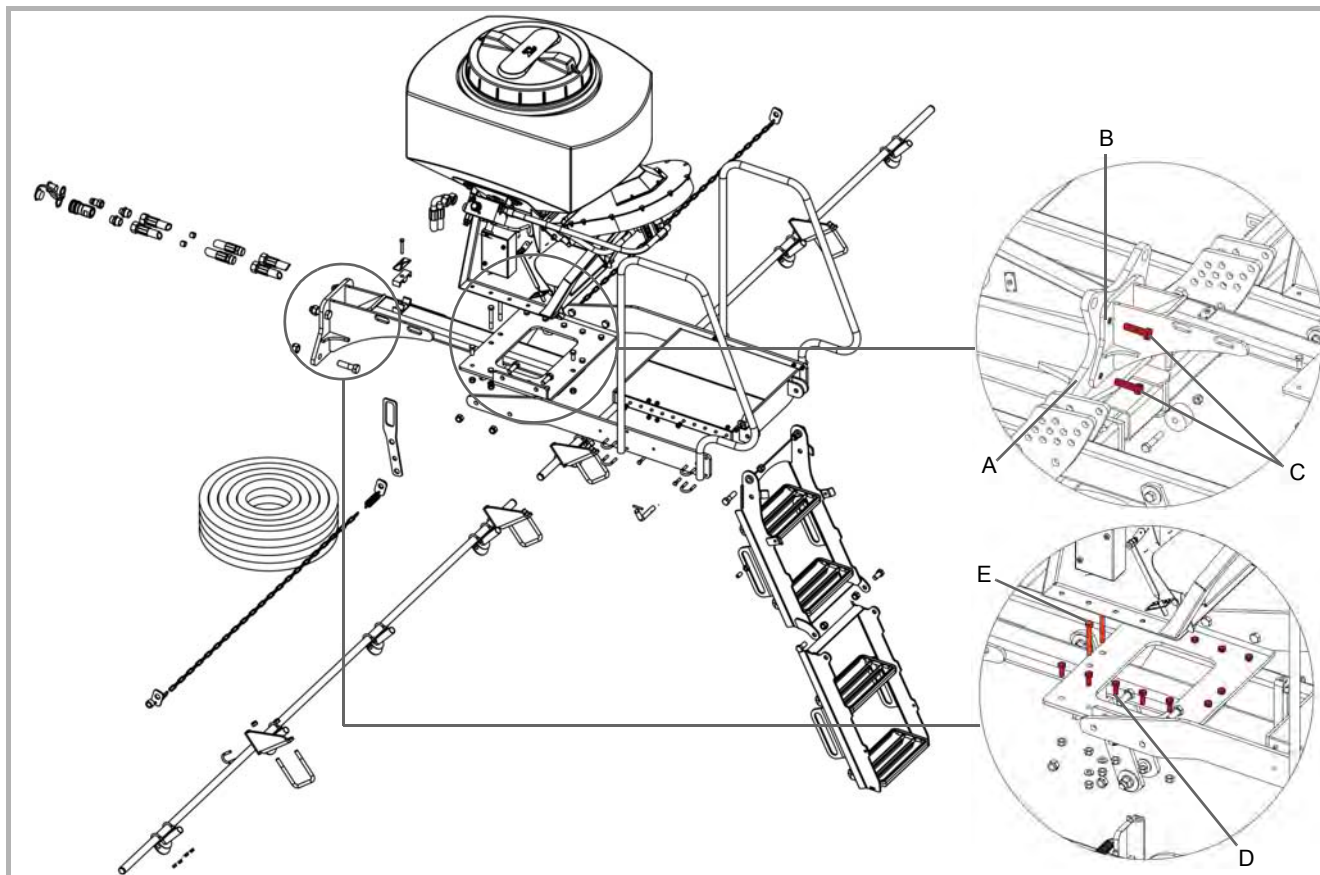
- ▶ Ensure you respect the seed outlet numbers compared to the spreader positions.
- ▶ Group the 4 hoses (position B) so that they form a square.
- ▶ Put a clamping ring around the 4 hoses.
- ▶ Fix them to the machine stay (A).
- ▶ Fold the hoses ensuring that their curve is as natural as possible.
- ▶ Attach the 4 hoses together again with a clamping ring (position C).
- ▶ Put the washer equipped with a ring on the screw in position D.
- ▶ Attach the group of hoses to the washer clamp.
- ▶ Check in the upper and lower positions that there are no blocking, tension or crushing points for the hoses.

Length of hoses

	3m00 (9'10")	3m50 (11'6")	4m00 (13'1")
Hose 1	2900 mm / 114"	3100 mm / 122"	3300 mm / 130"
Hose 2	2500 mm / 98"	2600 mm / 102"	2400 mm / 94"
Hose 3	2200 mm / 87"	2200 mm / 87"	2300 mm / 91"
Hose 4	2300 mm / 91"	2300 mm / 91"	2900 mm / 114"

Delivery and assembly

Folding Qualidisc Farmer



Mounting the hopper support

Task description

On folding cultivators, the hopper support and the access walkway are fixed to the central frame using 4 screws.

Procedure

- ▶ Align the holes located at the rear extremity of the hopper support (B) with the rear extremity of the central frame (A) of the machine.
- ▶ Place the 4 hexagonal head M20x70 screws (C) in the holes.
- ▶ Fix the screws using M20 nuts.

Mounting the hopper

Task description

Once the support is fixed to the machine, you now need to mount the hopper onto it. The hopper is placed on the support and fixed using 14 screws.

Procedure

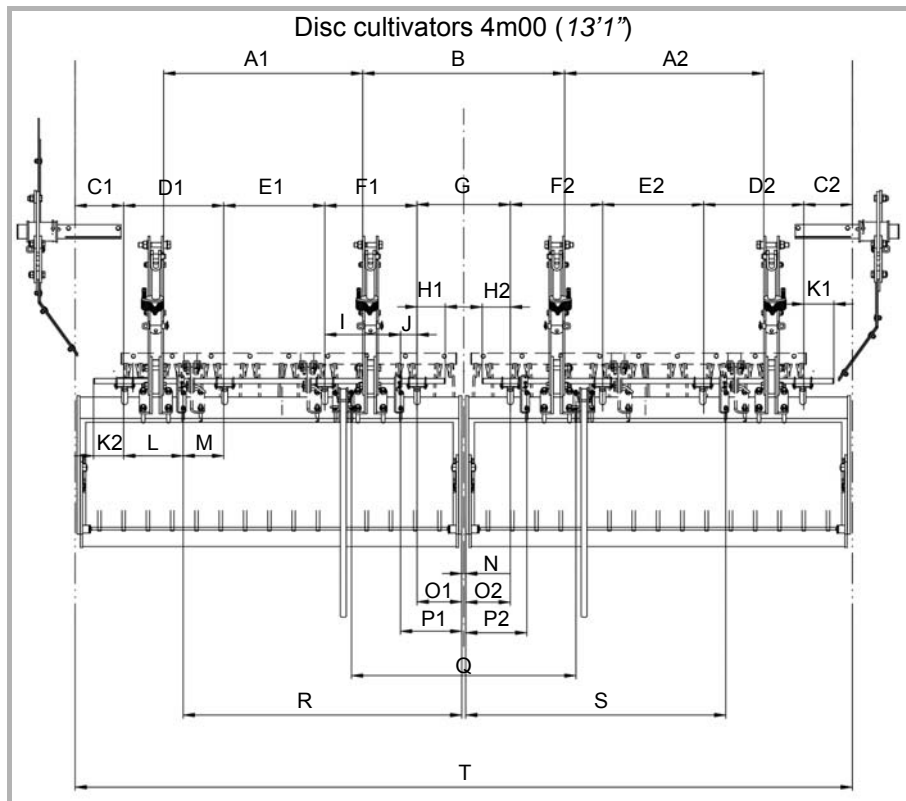
- ▶ Place the hopper on the support fixing plate, aligning the screw holes.
- ▶ Place the 12 screws M12x30 (D) on the sides and rear of the hopper support.
- ▶ Place the 2 screws M12x90 (E) in the holes located at the front of the hopper support.
- ▶ Fix the screws using M20 nuts.

Delivery and assembly

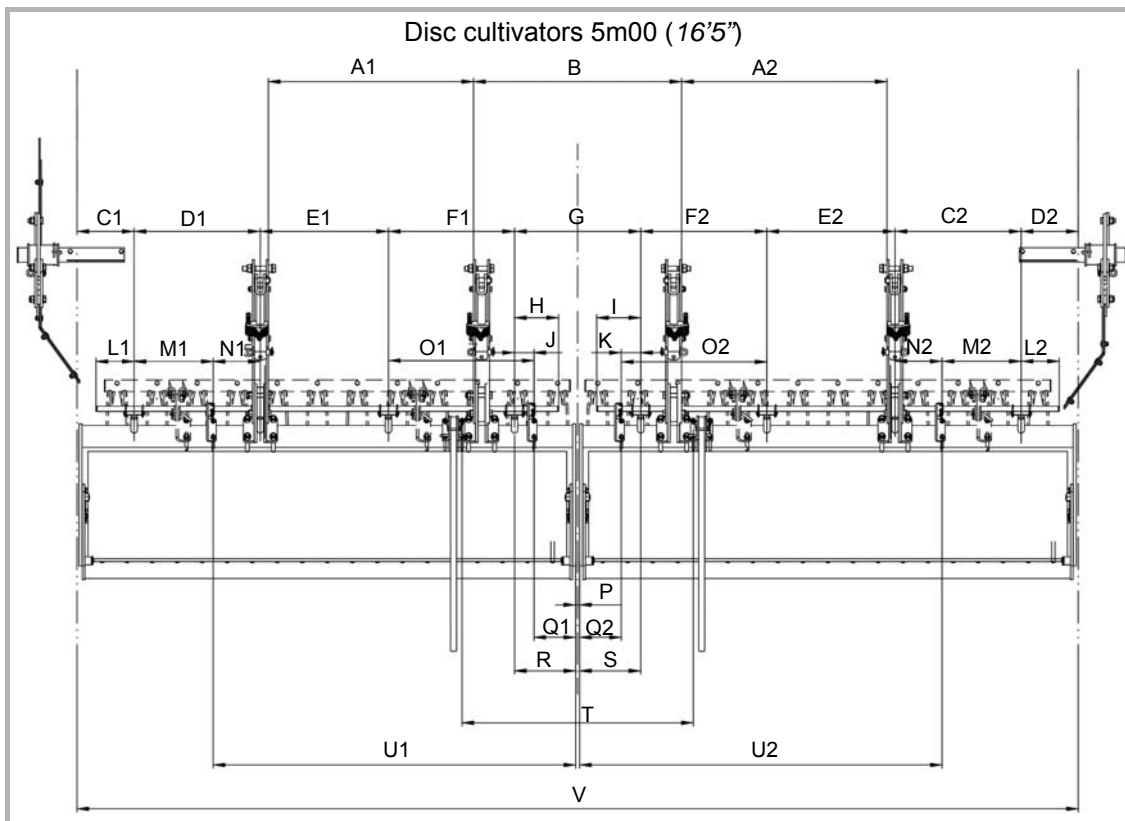
Positioning the spreaders

Task description

The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The following diagrams specify the mounting dimensions (mm/in) for the different machines:

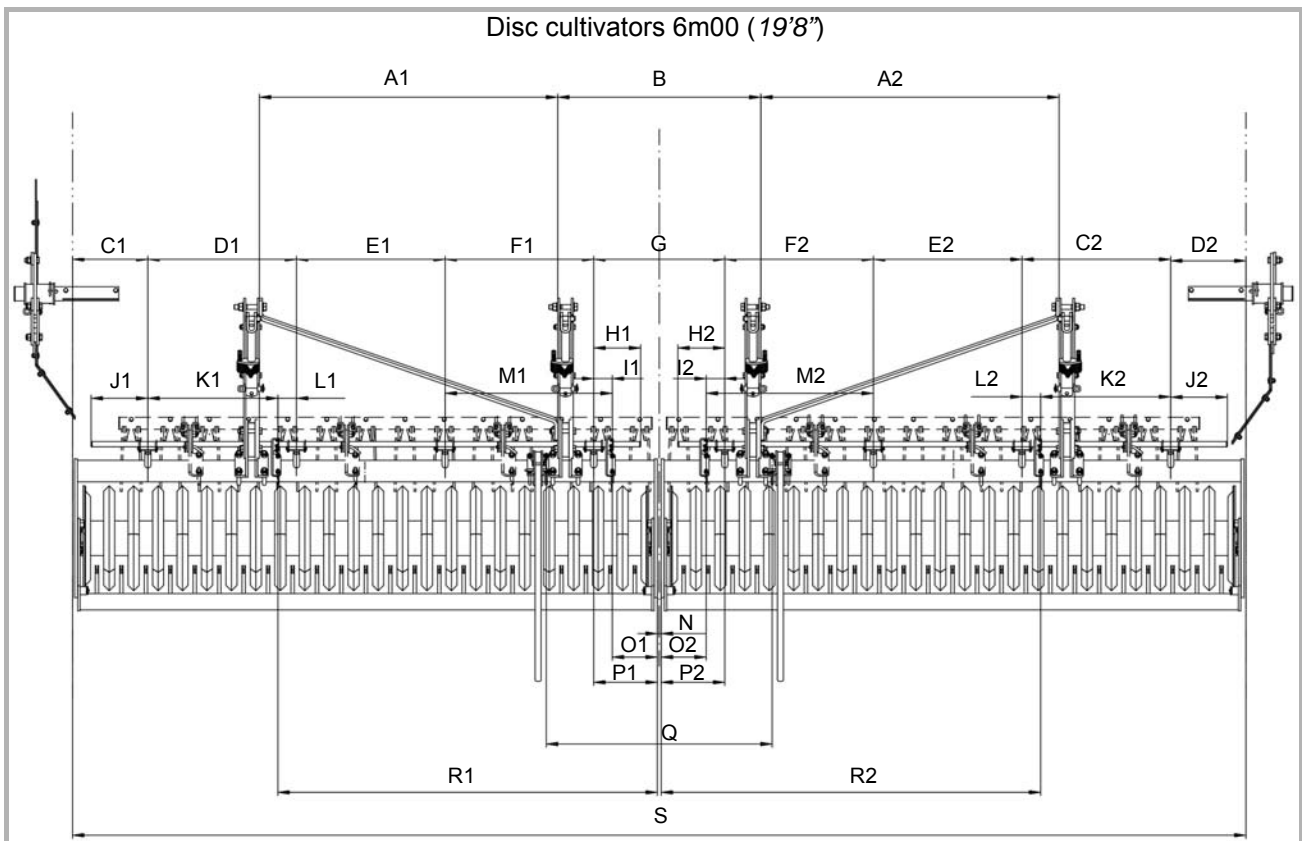


Marking	4m00 (13'1")	Marking	4m00 (13'1")
A1 & A2	1025 / 40"	K1 & K2	155 / 6 1/8"
B	1039 / 41"	L	306 / 12"
C1 & C2	250 / 9 13/16"	M	209 / 8 1/4"
D1 & D2	515 / 20 1/4"	N	20 / 13/16"
E1 & E2	520 / 20 1/2"	O1 & O2	230 / 9"
F1 & F2	475 / 18 11/16"	P1 & P2	315 / 12 3/8"
G	480 / 18 15/16"	Q	1155 / 45"
H1 & H2	145 / 5 11/16"	R	1434 / 56"
I	390 / 15 3/8"	S	1339 / 53"
J	85 / 3 3/8"	T	4000 / 157"



Marking	5m00 (16'5")	Marking	5m00 (16'5")
A1 & A2	1025 / 40"	L1 & L2	190 / 7 1/2"
B	1039 / 41"	M1 & M2	395 / 15 9/16"
C1 & C2	285 / 11 1/4"	N1 & N2	235 / 9 1/4"
D1 & D2	630 / 24 13/16"	O1 & O2	727 / 28 5/8"
E1 & E2	640 / 25 3/16"	P	20 / 13/16"
F1 & F2	630 / 24 13/16"	Q1 & Q2	208 / 8 3/16"
G	630 / 24 13/16"	R	305 / 12"
H	220 / 8 11/16"	S	303 / 11 15/16"
I	218 / 8 9/16"	T	1155 / 45"
J	97 / 3 13/16"	U1 & U2	1810 / 71"
K	95 / 3 3/4"	V	5000 / 197"

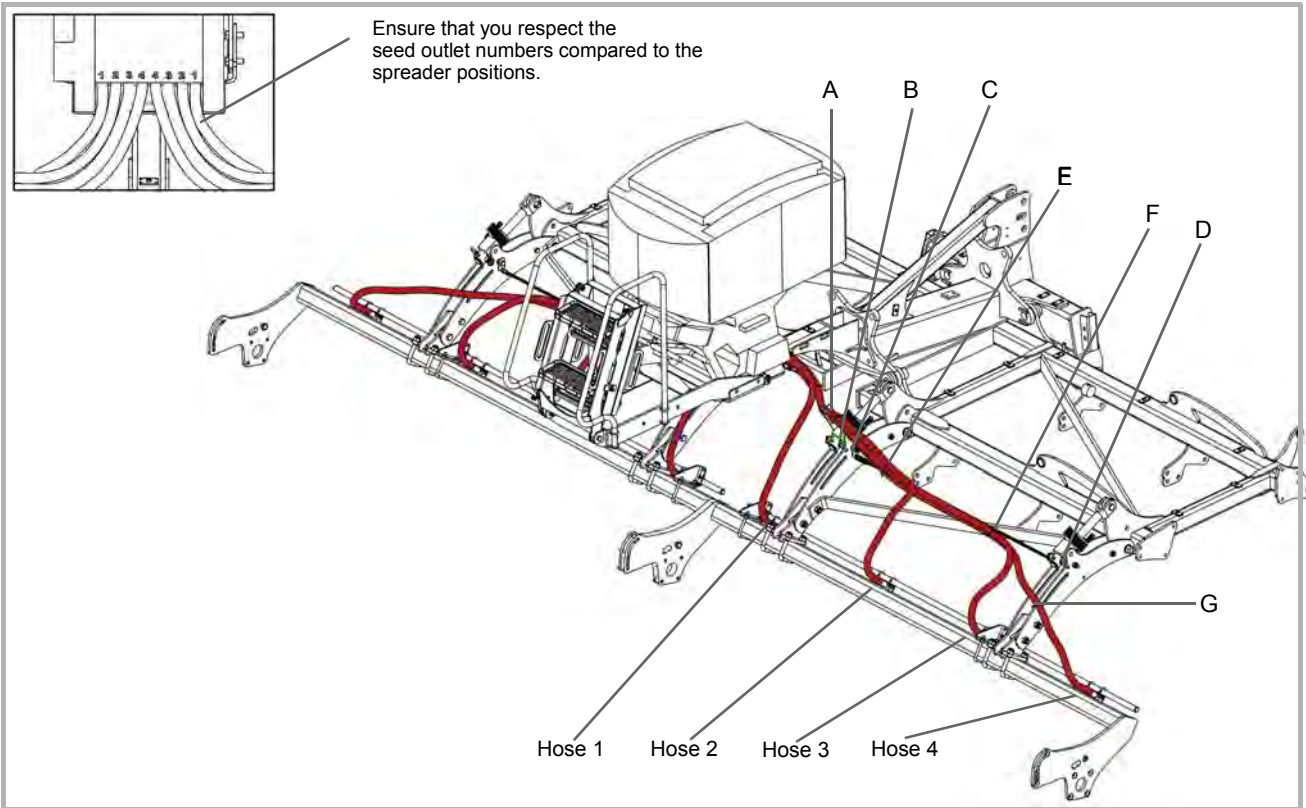
Delivery and assembly

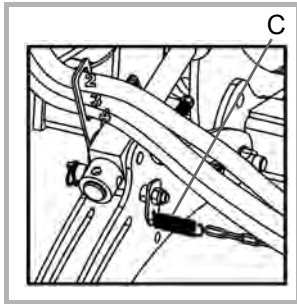
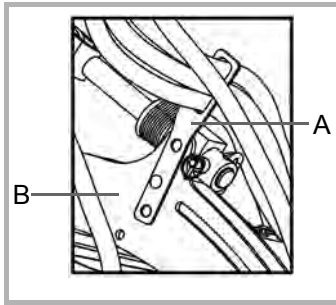


Marking	6m00 (19'8'')	Marking	6m00 (19'8'')
A1 & A2	1525 / 60"	K1 & K2	665 / 26 3/16"
B	1039 / 41"	L1 & L2	95 / 3 3/4"
C1 & C2	385 / 15 3/16"	M1 & M2	855 / 33 11/16"
D1 & D2	760 / 30"	N	20 / 13/16"
E1 & E2	760 / 30"	O1 & O2	230 / 9"
F1 & F2	760 / 30"	P1 & P2	325 / 12 13/16"
G	670 / 26 3/8"	Q	1155 / 45"
H1 & H2	240 / 9 7/16"	R1 & R2	1940 / 76"
I1 & I2	95 / 3 3/4"	S	6000 / 236"
J1 & J2	290 / 11 7/16"	-	-

Passage of hoses

Order of distribution for
seed hoses

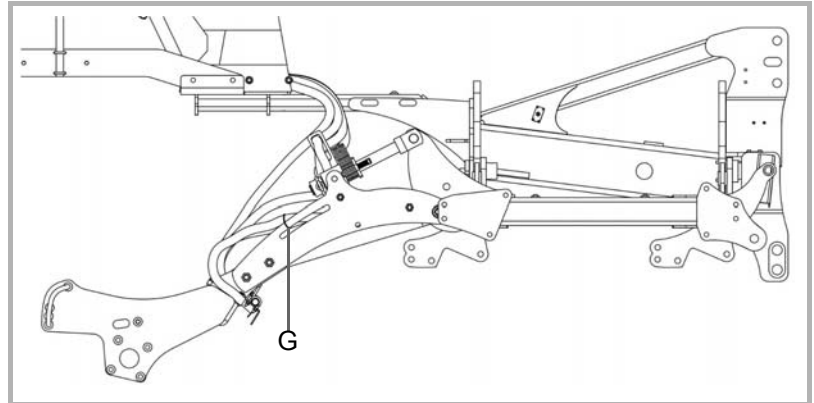




Mounting the hose supports:

- ▶ Thread the spring support (B) into the jack retention screw.
- ▶ Thread the pin into the jack retention screw.
- ▶ Place the jack retention screw into the hole located on the interior roller arm.
- ▶ Place the hose support on the other side of the drilled plate (F).
- ▶ Fix with a nut.
- ▶ Thread the rapid link support into the jack retention screw.
- ▶ Thread the pin into the jack retention screw.
- ▶ Place the jack retention screw into the hole located on the exterior roller arm.
- ▶ Attach the spring (C) to the support (B).
- ▶ Attach the chain to the spring.
- ▶ Attach the rapid link.
- ▶ Tighten the chain so that the weight of the hoses does not make it bend.
- ▶ Attach the chain to the link.
- ▶ Cut the excess chain.

Passage of hoses:

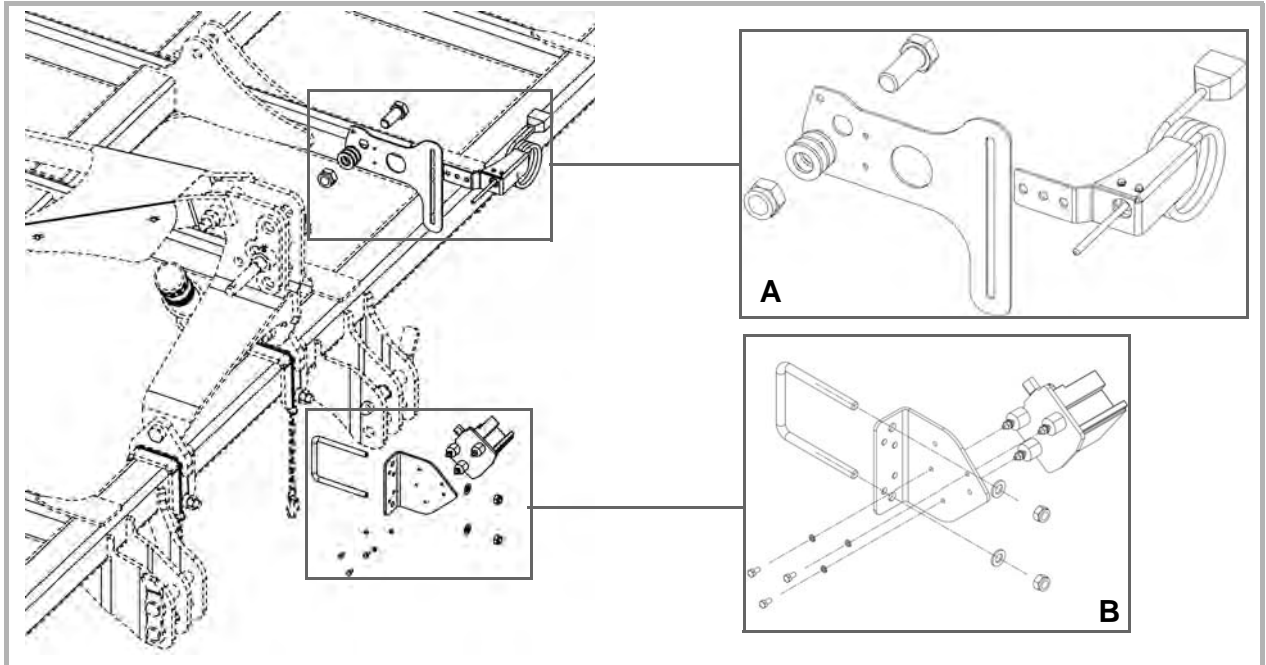


- ▶ At the hopper outlet, connect the hose n°1 to the spreader.
- ▶ Pass hoses n°2,3 and 4 through the hose support (A).
- ▶ At the hose support exit, group the 3 hoses using clamping rings.
- ▶ Group the 3 hoses in position E and fix them to the chain using clamping rings.
- ▶ Connect the hose n°2 to the spreader.
- ▶ Group hoses n°3 and 4 in position F and attach them to the chain using clamping rings.
- ▶ Connect the hose n°3 to the spreader.
- ▶ Fix hose n°4 to the oblong hole in the exterior roller arm (G) using a clamping ring.
- ▶ Connect the hose n°4 to the spreader.

Delivery and assembly

Equipment available on mounted machines

Rigid machines



End of Field sensor (A)

The end of field sensor stops distribution when you raise the machine to turn. Distribution automatically restarts when you lower the machine.

- ▶ Adjust the sensor position so that the tractor upper link activates the sensor when the machine is raised.
- ▶ Attach all.

Radar sensor (B)

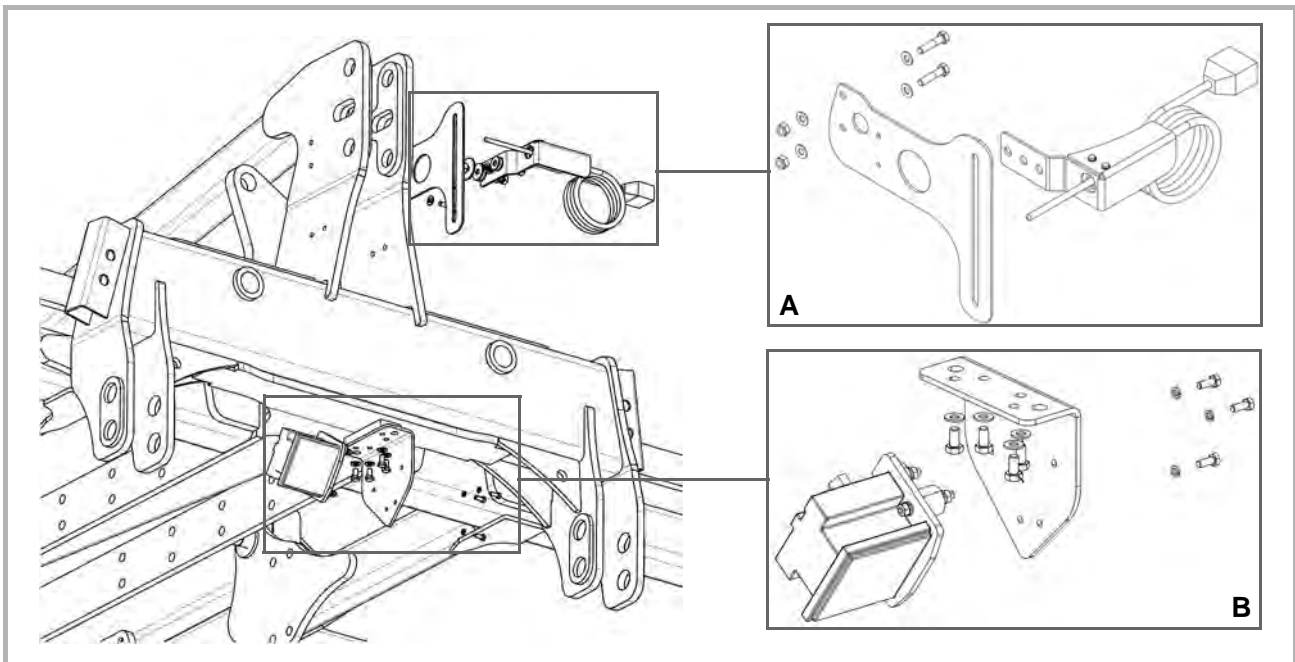
The radar system allows you to adapt the seed distribution flow to your tractor speed.



**Never look directly at the radar detection head when operating.
This could cause serious eye injuries.**

- ▶ Position the bracket on the front beam of the frame.
- ▶ Insert the plate onto the bracket.
- ▶ Position the washers and fix all.
- ▶ Ensure that no objects (cables, hoses, coupling bar, etc.) enter the radar detection field.

Folding machines



End of Field sensor (A)

The end of field sensor stops distribution when you raise the machine to turn. Distribution automatically restarts when you lower the machine.

- ▶ Install the end of field sensor on the machine upper link coupling.
- ▶ Attach the support using 2 M8 bolts.
- ▶ Adjust the sensor position so that the tractor upper link activates the sensor when the machine is raised.

Radar sensor (B)

The radar system allows you to adapt the seed distribution flow to your tractor speed.



**Never look directly at the radar detection head when operating.
This could cause serious eye injuries.**

- ▶ Install the radar support on the reinforcement plate located under the front beam of the frame.
- ▶ Fix the support using 4 M8x16 bolts.
- ▶ Install the radar on the support.
- ▶ Fix the radar using 4 M8x16 bolts.

Rigid and folding machines



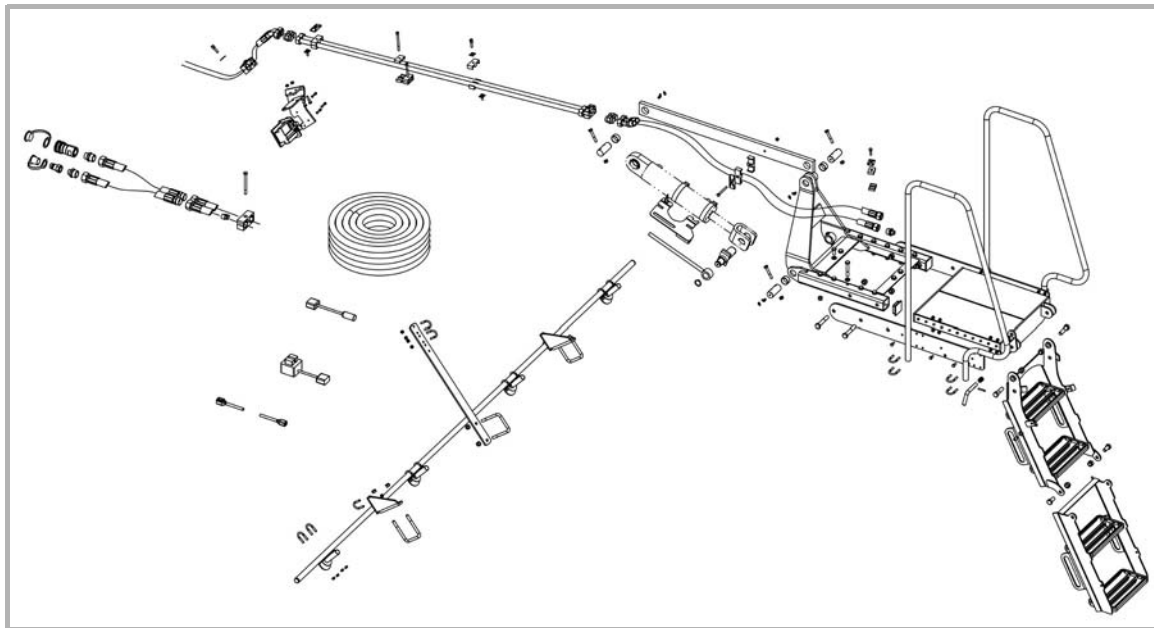
Tractor speed information cable

The rotor distribution speed can also be communicated to the control box via a 7 terminal cable. However, your tractor must be equipped with a 7-terminal speed information socket.

A	12-pin socket (control box)
B	7-pin socket (tractor)

Delivery and assembly

Qualidisc T

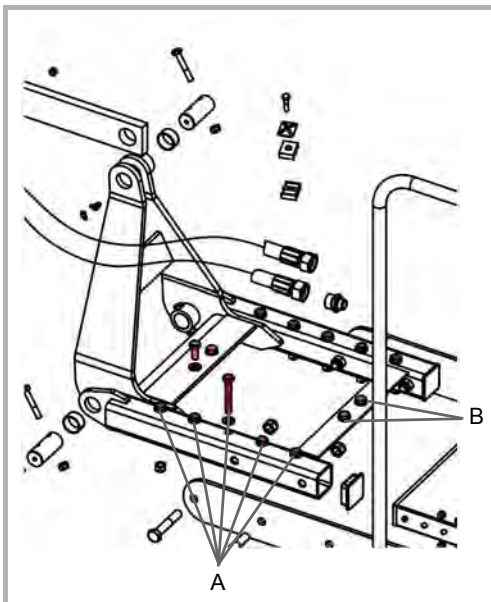


Mounting the hopper support

Task description

The hopper is mounted on an articulated support attached to the transportation carrier. In this way, the seed drill is always horizontal whether the machine is lowered or raised.

Procedure



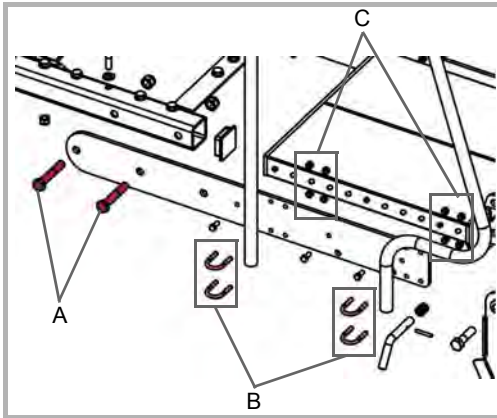
- ▶ Turn the hopper so that the hoses come out from the front of the machine.
- ▶ Place the hopper on the support.
- ▶ Align the fixing holes.
- ▶ Position the 10 nuts M12x80 (A) on the sides of the support.
- ▶ Place the 4 screws M12x30 (B) at the front and rear of the support.
- ▶ Fix all to the recommended tightening torques.

Mounting the walkway

Task description

The seed drill is accessed from the rear of the machine via the stairs and the walkway. Adjustments to the seed drill are carried out either by the walkway or the ground by the rear of the machine.

Procedure

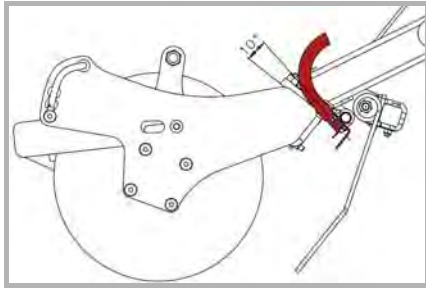


- ▶ Mount the walkway on the hopper support.
- ▶ Position the 4 screws M16x90 (A) in the holes provided.
- ▶ Fix the M16x90 screws.
- ▶ Install the 2 guardrails.
- ▶ Position the 8 brackets (B) in the holes provided.
- ▶ Fix the brackets using M8x8 nuts (C).

Delivery and assembly

Positioning the spreaders

Task description

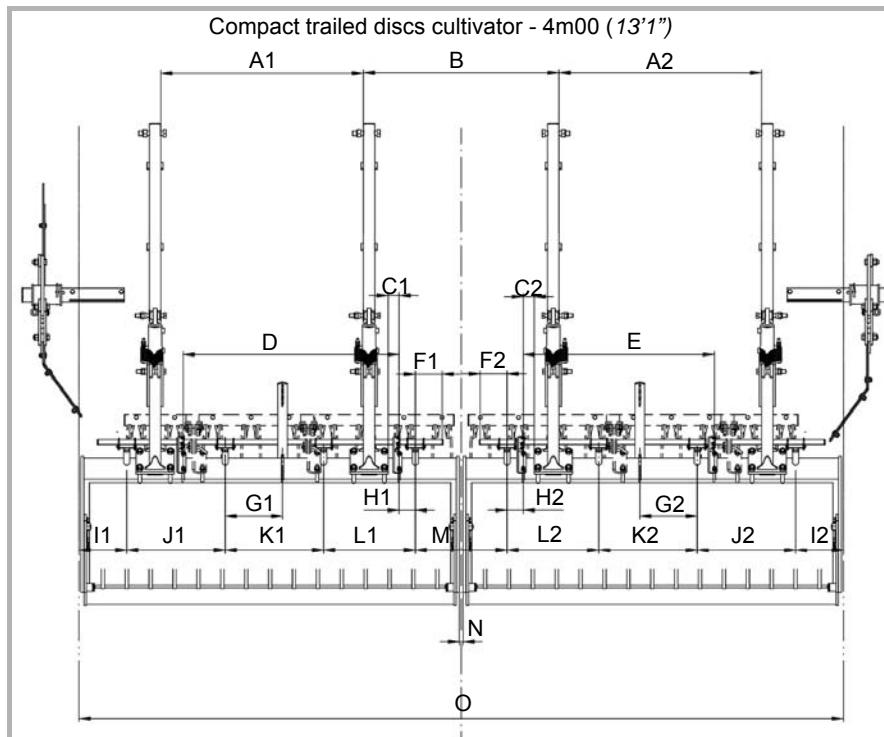


Different accessories such as a comb harrow or rollers can be mounted on disc cultivators. The tool has no effect on the mounting of the spreader rail.

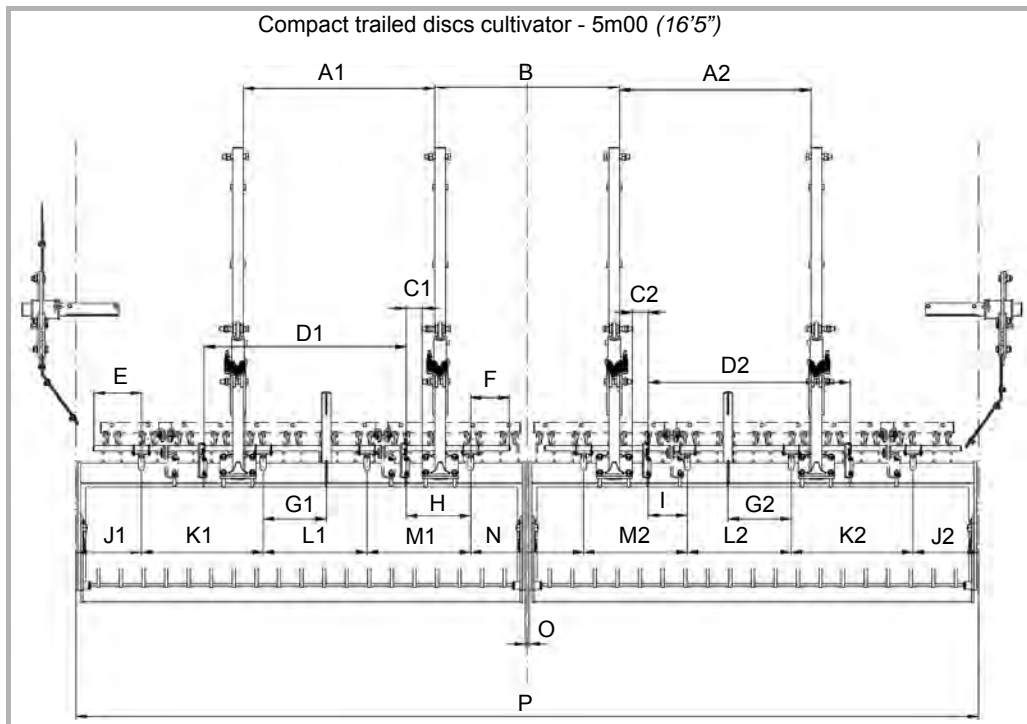
The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The direction of the spreaders is optimal when the hoses are in contact with the roller beam.

The following diagrams and tables specify the mounting dimensions (mm/in) for the different machines:

Diagrams

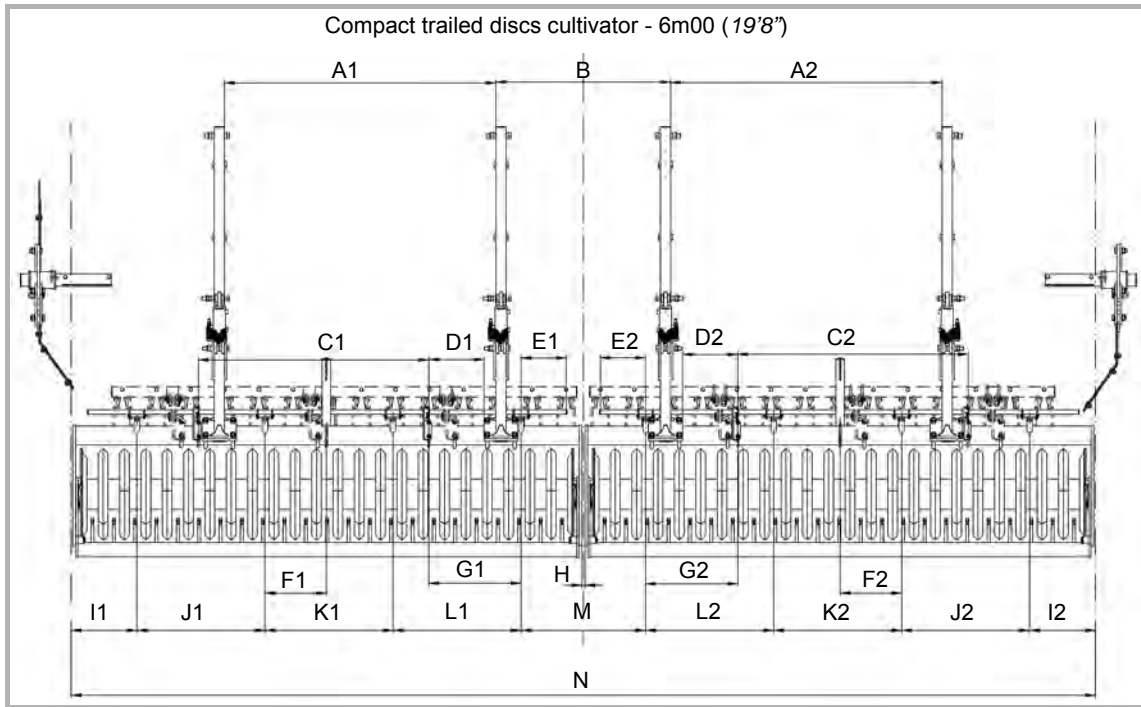


Marking	4m00 (13'1")	Marking	4m00 (13'1")
A1 & A2	1060 / 42"	I1 & I2	250 / 9 13/16"
B	1024 / 40 5/16"	J1 & J2	515 / 20 5/16"
C1 & C2	57 / 2 1/4"	K1 & K2	515 / 20 5/16"
D	1130 / 45"	L1 & L2	480 / 18 15/16"
E	1000 / 39"	M	480 / 18 15/16"
F1 & F2	140 / 5 1/2"	N	480 / 18 15/16"
G1 & G2	300 / 11 13/16"	O	4000 / 157"
H1 & H2	85 / 3 3/8"	-	-

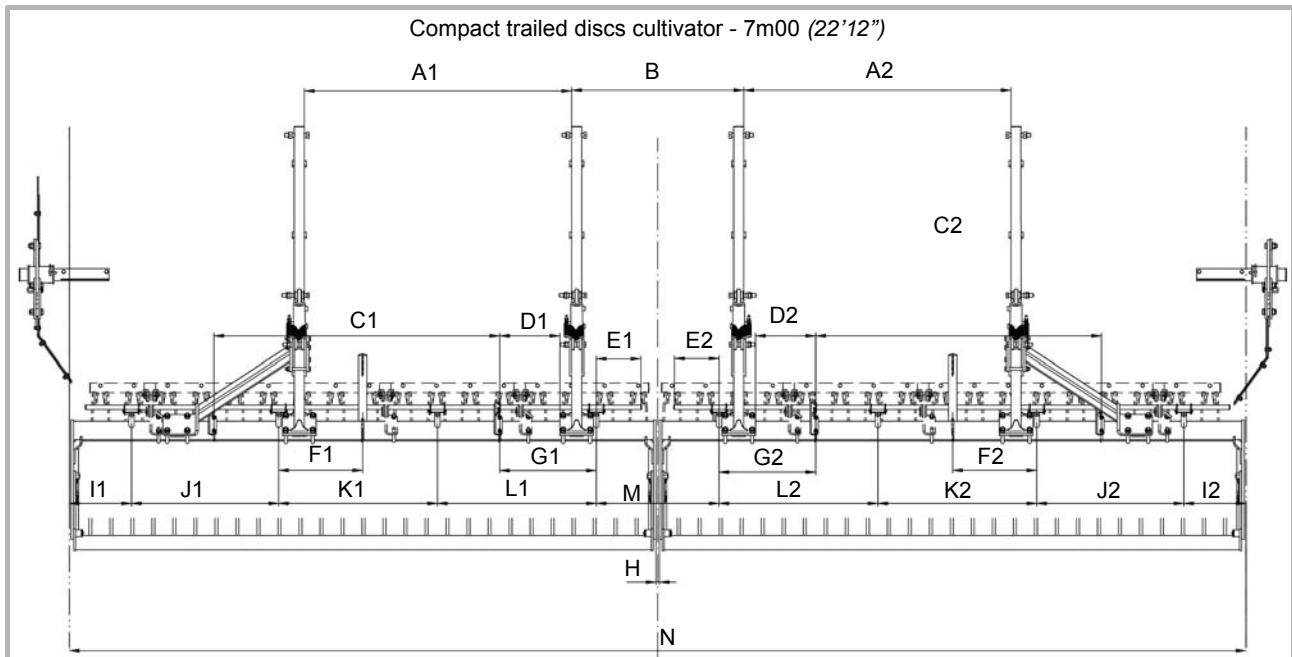


Marking	5m00 (16'5)	Marking	5m00 (16'5)
A1 & A2	1060 / 42"	I	217 / 8 1/2"
B	1024 / 40"	J1 & J2	362.5 / 14 1/4"
C1 & C2	88 / 3 7/16"	K1 & K2	675 / 26 1/2"
D1 & D2	1120 / 44"	L1 & L2	575 / 22 5/8"
E	263 / 10 3/8"	M1 & M2	575 / 22 5/8"
F	213 / 8 3/8"	N	625 / 26 3/8"
G1 & G2	350 / 13 3/4"	O	20 / 3/16"
H	357 / 14"	P	5000 / 197"

Delivery and assembly



Marking	6m00 (19'8")	Marking	6m00 (19'8")
A1 & A2	1590 / 63"	H	20 / 3/16"
B	1024 / 40"	I1 & I2	385 / 16 3/16"
C1 & C2	1350 / 53"	J1 & J2	750 / 29 1/2"
D1 & D2	323 / 12 3/4"	K1 & K2	750 / 29 1/2"
E1 & E2	265 / 10 7/16"	L1 & L2	750 / 29 1/2"
F1 & F2	360 / 14 3/16"	M	730 / 28 3/4"
G1 & G2	540 / 21 1/4"	N	6000 / 236"

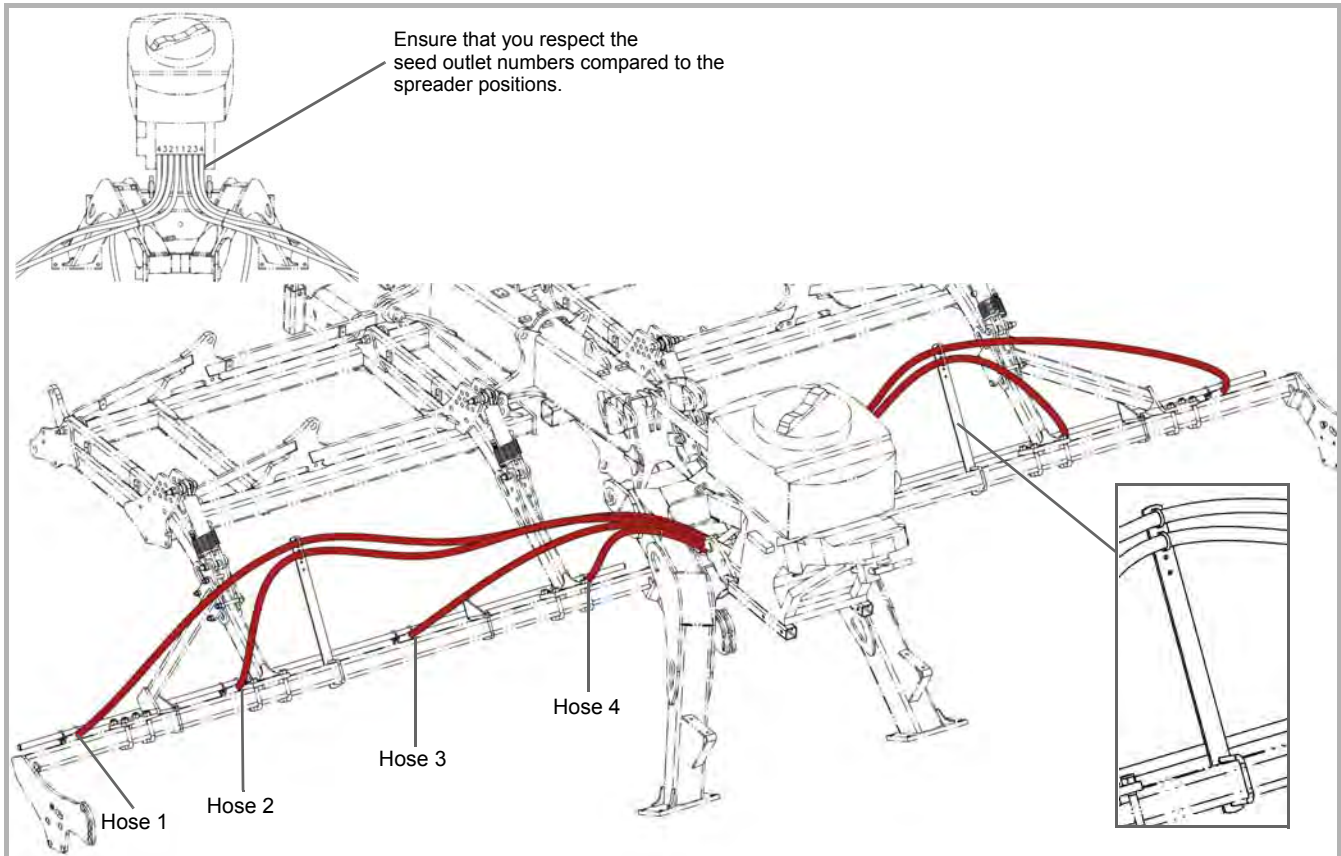


Marking	7m00 (22'12")	Marking	7m00 (22'12")
A1 & A2	1590 / 63"	H	20 / 3/16"
B	1024 / 40"	I1 & I2	370 / 14 1/2"
C1 & C2	1700 / 67"	J1 & J2	875 / 34 7/16"
D1 & D2	358 / 14 1/16"	K1 & K2	945 / 37 3/16"
E1 & E2	265 / 10 7/16"	L1 & L2	945 / 37 3/16"
F1 & F2	500 / 19 11/16"	M	730 / 28 3/4"
G1 & G2	575 / 22 5/8"	N	7000 / 276"

Delivery and assembly

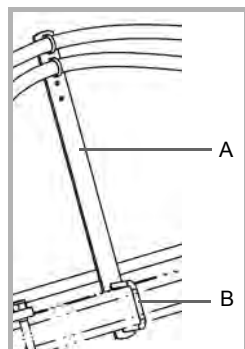
Passage of hoses

Order of distribution for seed hoses



Length of hoses

	4m00 (13'1")	5m00 (16'5")	6m00 (19'8")	7m00 (20'12")
Hose 1	3110 / 122"	3140 / 134"	3780 / 149"	4275 / 168"
Hose 2	2750 / 108"	2880 / 113"	3200 / 126"	3475 / 137"
Hose 3	2250 / 89"	2345 / 92"	2510 / 99"	2675 / 105"
Hose 4	2045 / 81"	2100 / 83"	2100 / 83"	2100 / 83"



.Mounting the hose support

The hose support is mounted directly on the roller arm. It is designed to hold hoses n°1 and 2 :

- ▶ Mount the bracket (B) on the roller arm.
- ▶ Mount the hose support (A) on the bracket.
- ▶ Bolt the hose support to the bracket.

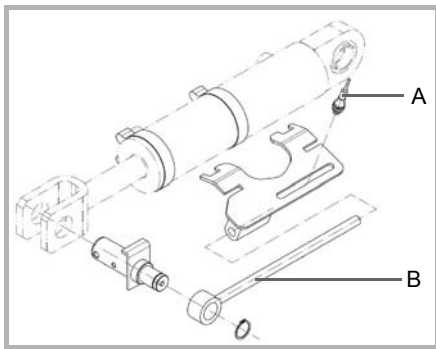
Passage of hoses

At the hopper outlet, pass the 4 hoses in the guide located on the carrier.

- ▶ Connect hoses n°4 and 3 to the spreaders.
- ▶ Pass hose n°1 in the upper bracket of the hose support.
- ▶ Pass hose n°2 in the lower bracket of the hose support.
- ▶ Connect hoses n°1 and 2 to the spreaders.

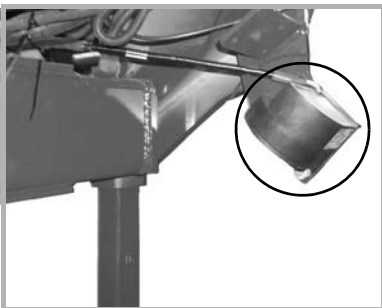
Equipment available on Qualidisc T

The end of field sensor



The end of field sensor (A) is installed on one of the lifting jacks. It is an inductive type sensor, and detects the sliding rod (B) fixed on the jack. When the rod leaves the detection range of the sensor, the seed drill distribution is cut-off.

Radar sensor



The radar system allows you to adapt the seed distribution flow to your tractor speed.

**Never look directly at the radar detection head when operating.
This could cause serious eye injuries.**

Tractor speed information cable

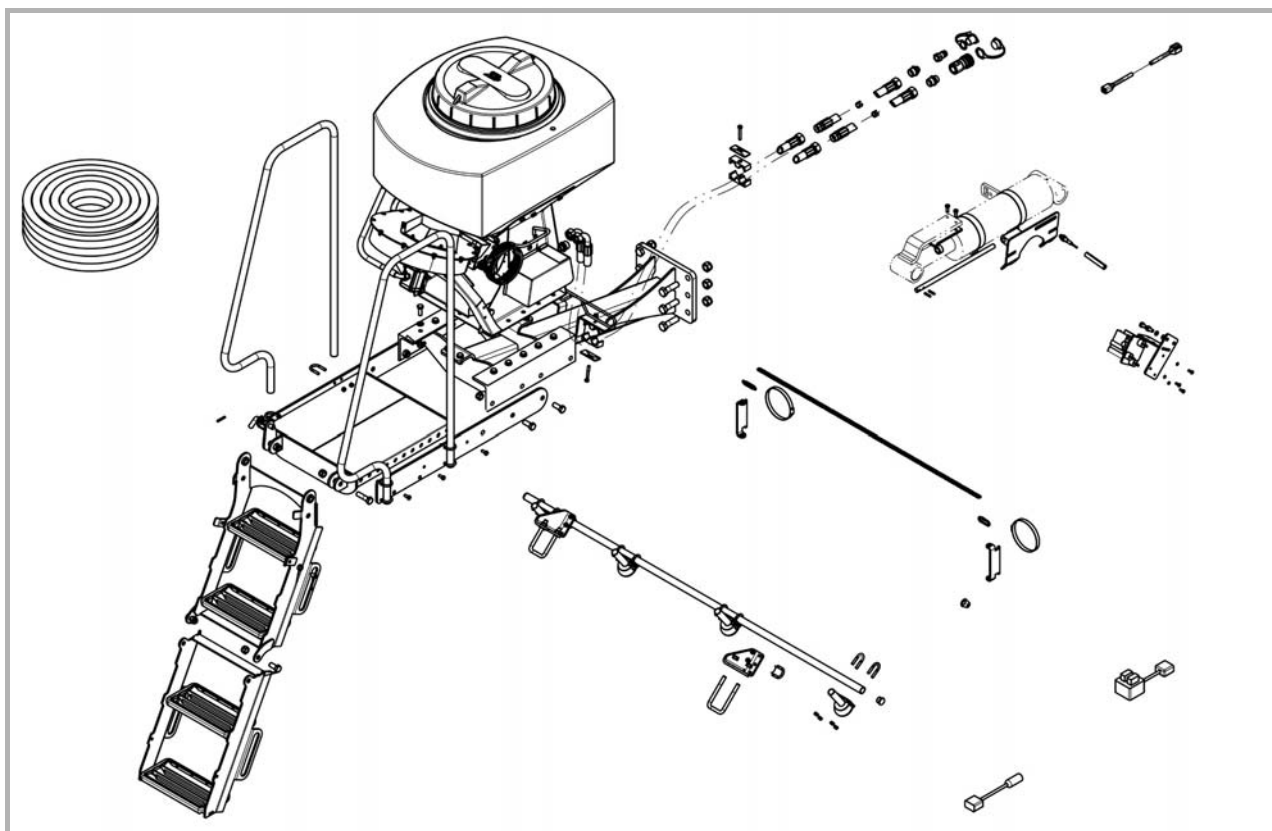


The rotor distribution speed can also be communicated to the control box via a 7 terminal cable. However, your tractor must be equipped with a 7-terminal speed information socket.

A	12-pin socket (control box)
B	7-pin socket (tractor)

Delivery and assembly

CTC

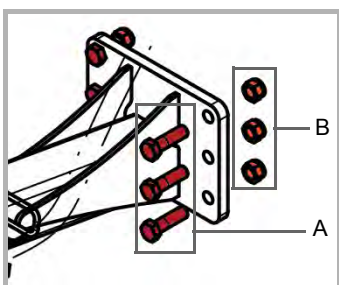


Mounting the hopper support

Task description

The hopper support is fixed to the rear of the central frame.

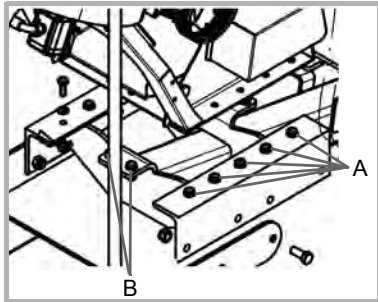
Procedure



- ▶ Position the hopper support to the rear of the central frame of the machine.
- ▶ Insert the 6 screws M20x70 in the holes provided.
- ▶ Fix the 6 screws using M20 bolts.

Mounting the hopper

Procedure



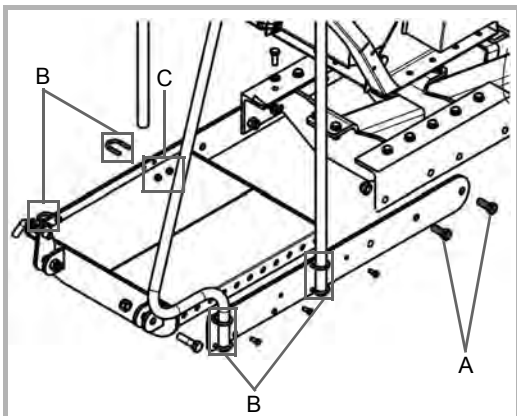
- ▶ Turn the hopper so that the hoses come out from the front of the machine.
- ▶ Place the hopper on the support.
- ▶ Align the fixing holes.
- ▶ Position the 10 screws M12x80 (A) on the sides of the support.
- ▶ Place the 4 screws M12x30 (B) at the front and rear of the support.
- ▶ Fix all to the recommended tightening torques.

Mounting the walkway

Task description

The seed drill is accessed from the rear of the machine via the stairs and the walkway. Adjustments to the seed drill are carried out either by the walkway or on the ground by the rear of the machine.

Procedure



- ▶ Mount the walkway on the hopper support.
- ▶ Position the 4 screws M16x40 (A) in the holes provided.
- ▶ Place the nuts M16 on the screws.
- ▶ Install the 2 guardrails.
- ▶ Position the 8 brackets (B) in the holes provided.
- ▶ Fix the brackets using M8 nuts (C).

Delivery and assembly

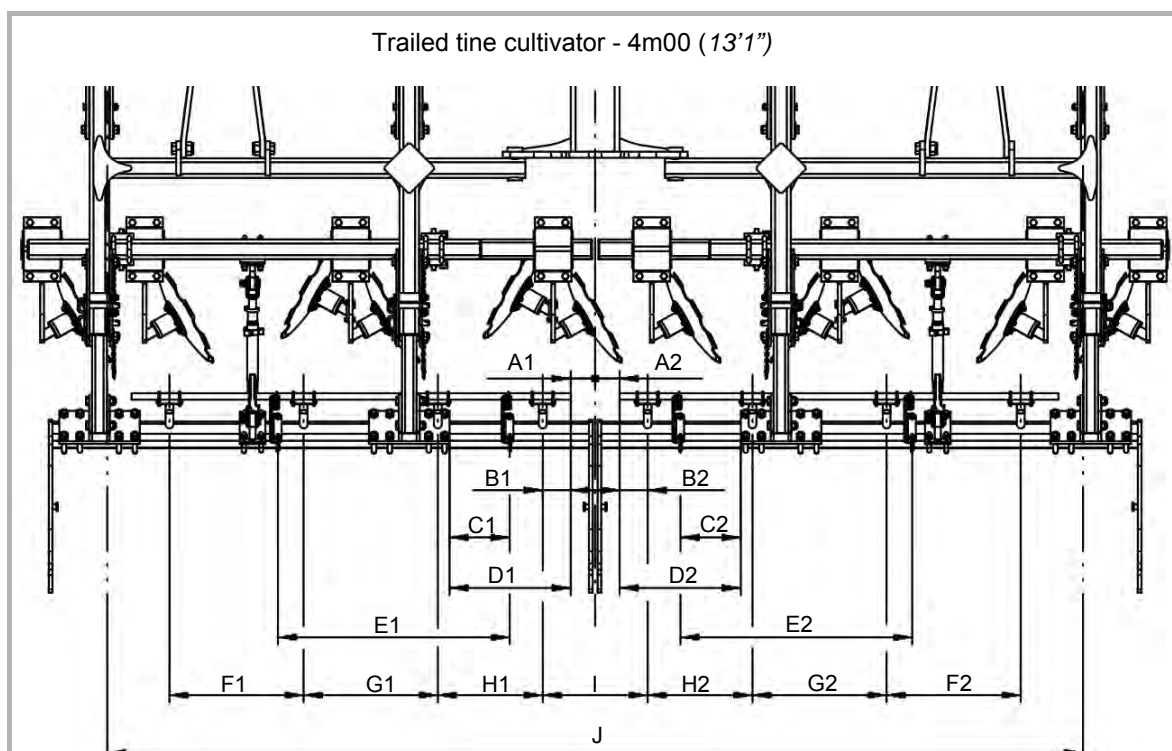
Positioning the spreaders

Task description

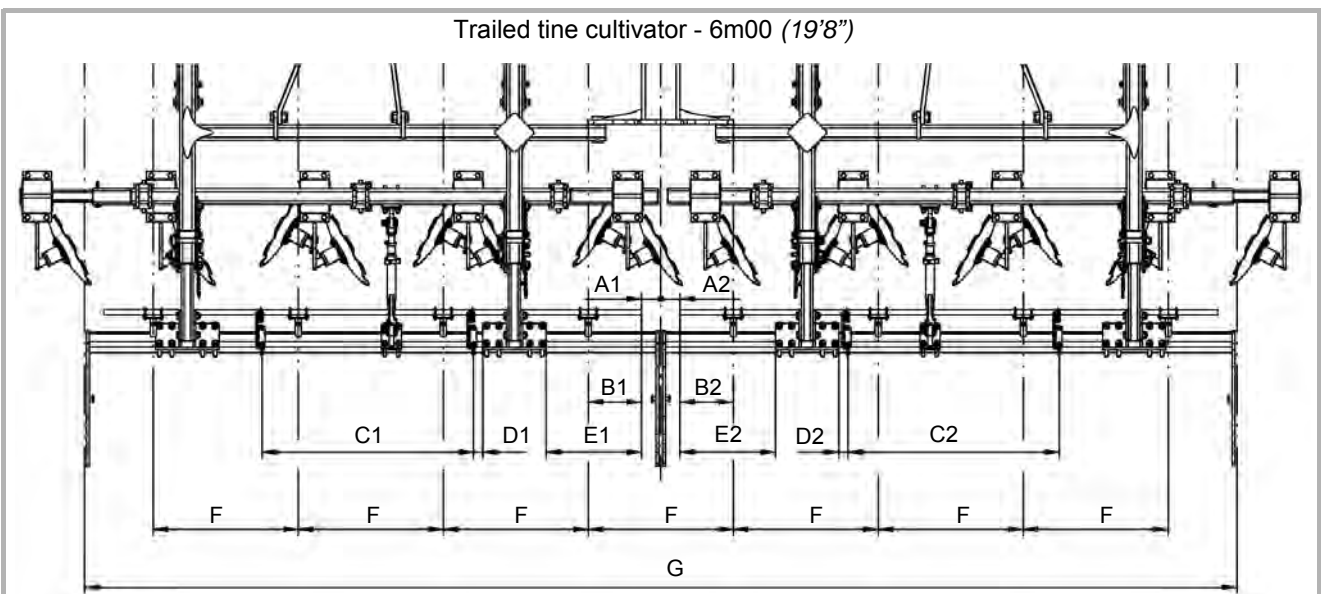
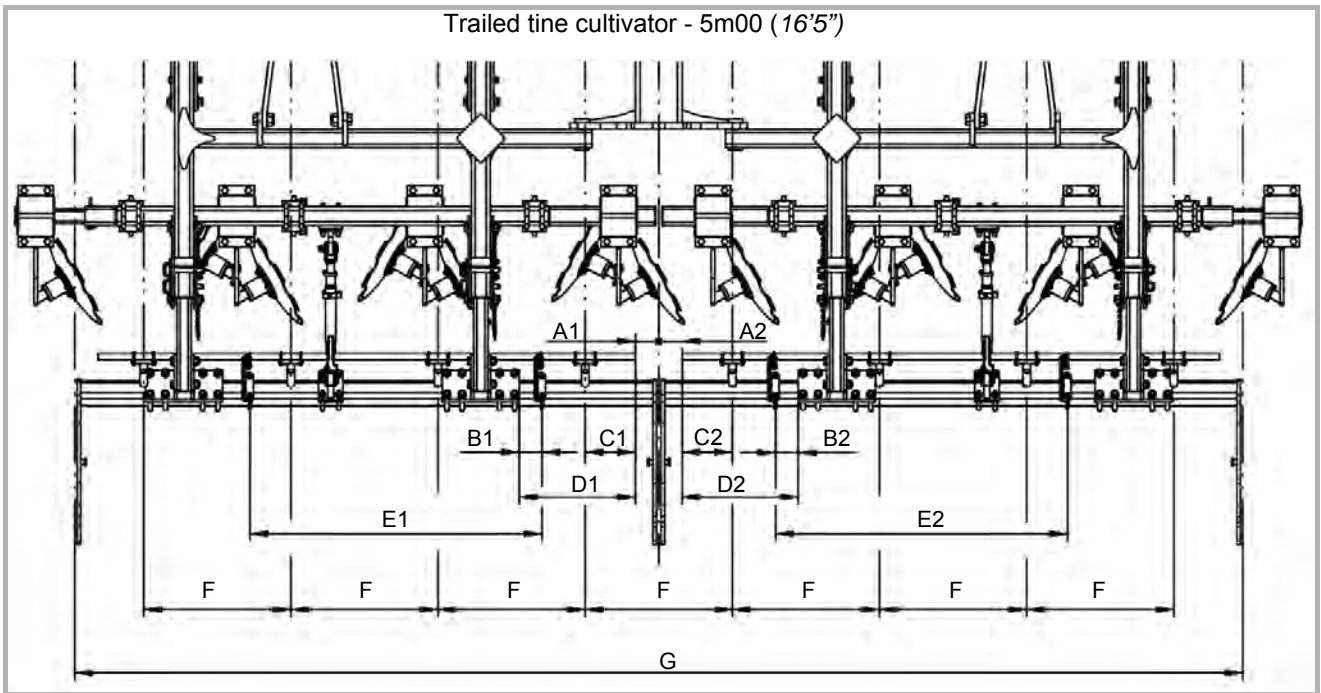
The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The direction of the spreaders is optimal when the hoses are in contact with the roller beam.

The following diagrams and tables specify the mounting dimensions (mm/in) for the different machines:

Diagrams



Marking	4m00 (13'1")	Marking	4m00 (13'1")
A1 & A2	100 / 3 15/16"	F1 & F2	550 / 21 5/8"
B1 & B2	115 / 4 1/2"	G1 & G2	550 / 21 5/8"
C1 & C2	247 / 9 3/4"	H1 & H2	430 / 16 15/16"
D1 & D2	497 / 19 9/16"	I	430 / 16 15/16"
E1 & E2	950 / 37 7/16"	J	4000 / 157"

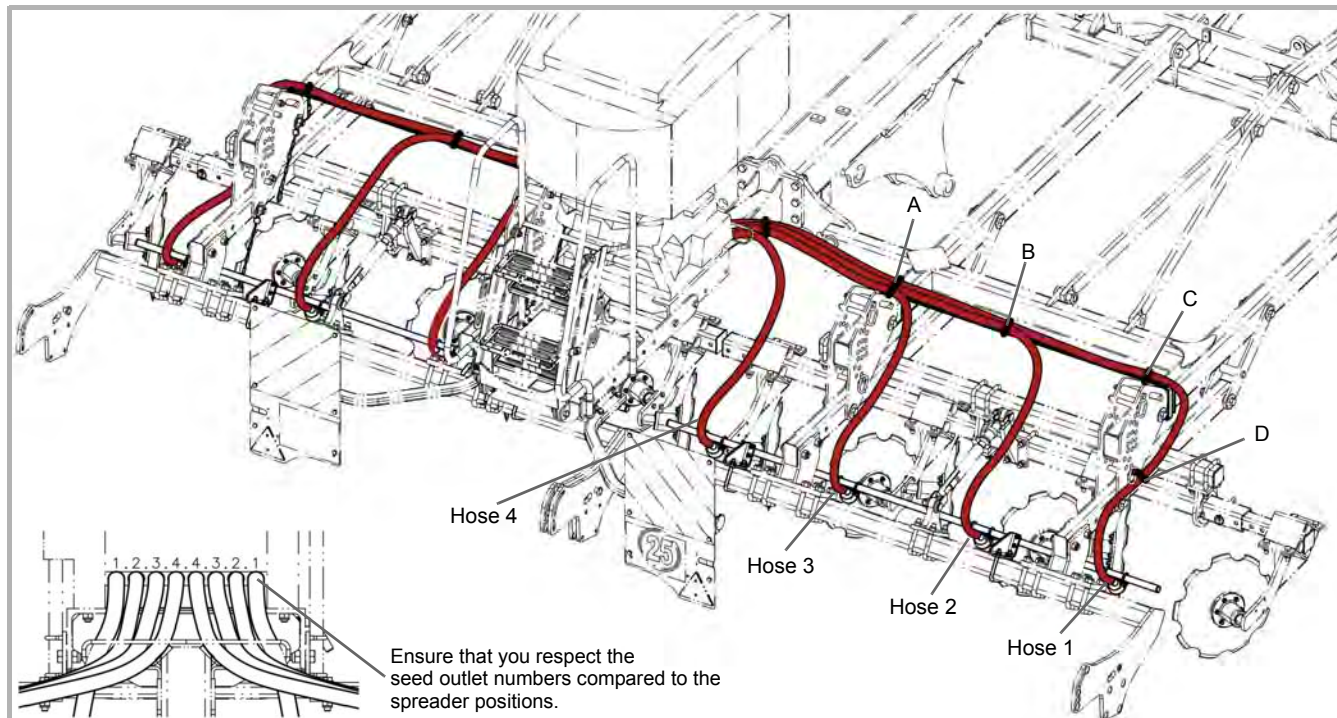


Marking	5m00 (16'5")	6m00 (19'8")	Marking	5m00 (16'5")	6m00 (19'8")
A1 & A2	100 / 3 15/16"	100 / 3 15/16"	E1 & E2	1250 / 49"	497 / 19 9/16"
B1 & B2	97 / 3 13/16"	277 / 10 15/16"	F	630 / 24 13/16"	755 / 29 3/4"
C1 & C2	215 / 8 7/16"	1100 / 43"	G	5000 / 197"	6000 / 236"
D1 & D2	497 / 19 9/16"	48 / 1 7/8"	-	-	-

Delivery and assembly

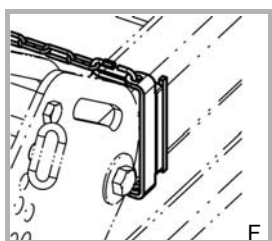
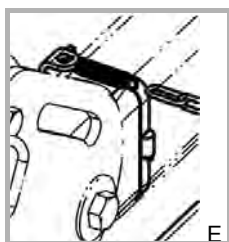
Passage of hoses

Order of distribution for seed hoses



Length of hoses

	4m00 (13'1")	5m00 (16'5")	6m00 (19'8")
Hose 1	3200 / 126"	3800 / 150"	4200 / 165"
Hose 2	2600 / 102"	3000 / 108"	3400 / 134"
Hose 3	2000 / 79"	2300 / 91"	2500 / 98"
Hose 4	1600 / 63"	1600 / 63"	1600 / 63"

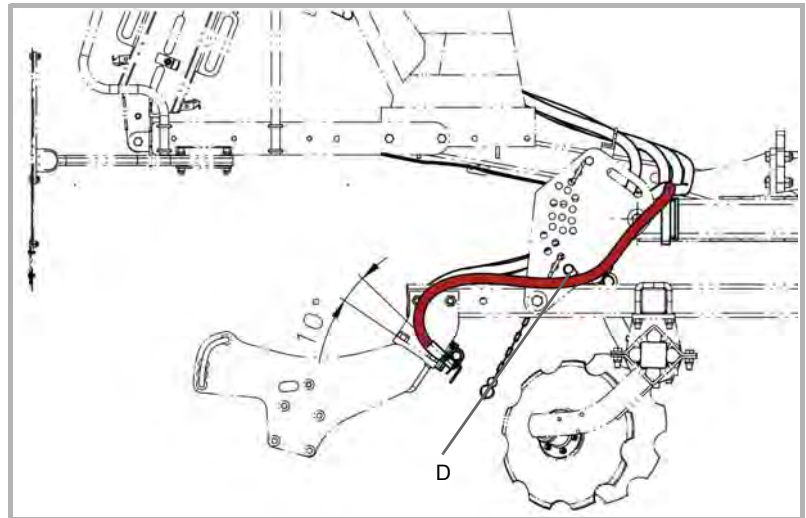


Mounting the hose support chain

- ▶ Use the support containing a spring (E).
- ▶ Install the spring support on the exterior arm, ensuring that the spring is directed towards the interior of the machine.
- ▶ Fix the support using a metal clamping ring.
- ▶ Use the link support (F).
- ▶ Install the link support on the interior arm, ensuring that the link is directed towards the exterior of the machine.
- ▶ Fix the support using a metal clamping ring.
- ▶ Attach the chain to the spring.
- ▶ Tighten the chain so that the weight of the hoses does not make it bend.
- ▶ Attach the chain to the link.
- ▶ Cut the excess chain.

Passage of hoses

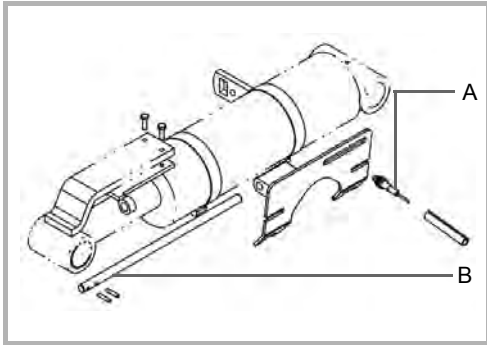
- ▶ At the hopper outlet, connect the hose n°4 to the spreader.
- ▶ Group the 3 remaining hoses in position A.
- ▶ Attach the 3 hoses to the chain using clamping rings.
- ▶ Connect the hose n°3 to the spreader.
- ▶ Group the 2 remaining hoses in position B.
- ▶ Attach the 2 hoses to the chain using clamping rings.
- ▶ Connect the hose n°2 to the spreader.
- ▶ Attach the hose n°4 in position C.
- ▶ Attach the hose n°4 to the screw located on the drilled plate using a washer M16 (D).
- ▶ Connect the hose n°4 to the spreader.



Delivery and assembly

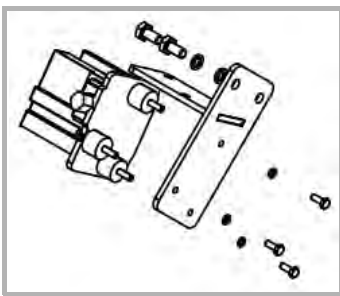
Equipment available on CTC

The end of field sensor



The end of field sensor (A) is installed on the lifting jack. It is an inductive type sensor, and detects the sliding rod (B) fixed on the jack. When the rod leaves the detection range of the sensor, the seed drill distribution is cut-off.

Radar Sensor



The radar system allows you to adapt the seed distribution flow to your tractor speed.



Never look directly at the radar detection head when operating. This could cause serious eye injuries.

Tractor speed information cable



The rotor distribution speed can also be communicated to the control box via a 7 terminal cable. However, your tractor must be equipped with a 7-terminal speed information socket.

A	12-pin socket (control box)
B	7-pin socket (tractor)

Mounting kit for hopper only

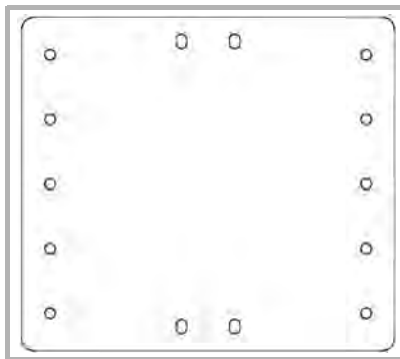
This kit is designed to facilitate the installation of the seed drill on your machine. It includes the following elements:

- The hopper.
- The adaptation plate for your machine.
- 25 metres of hose.
- A set of 8 deflectors.

The following equipment is optional:

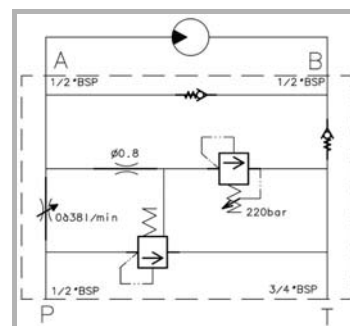
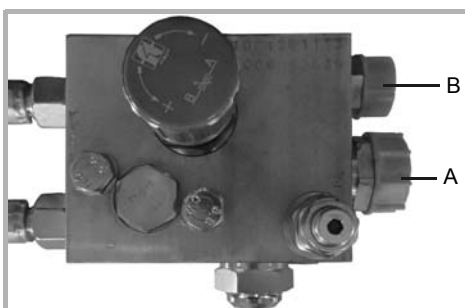
- A set of 3m00 hydraulic hoses.
- A set of 11m00 hydraulic hoses.
- The tractor speed information cable.
- The radar.
- The control box 3.2.
- The control box 5.2.

Installing the seed drill



- ▶ Install the hopper fixing plate (A) on your machine.
- ▶ Turn the hopper so that the hoses come out from the front of the machine.
- ▶ Place the hopper on the support.
- ▶ Align the fixing holes.
- ▶ Place the 14 screws M12x30.
- ▶ Bolt all to the recommended tightening torques.
- ▶ Position the spreaders on your machines.
- ▶ Connect the distribution hoses to the spreaders.

Installing the hydraulic blower



In order to supply oil to the hydraulic blower :

- ▶ Connect a hose to the T outlet (A) located on the seed drill hydraulic unit.
- ▶ Connect this hose to the free return socket located on the tractor.
- ▶ Connect another hose to the P outlet (B) located on the hydraulic unit.
- ▶ Connect this hose to the single effect distributor socket located on the tractor.
- ▶ Attach the hoses to the central machine frame using clamping rings.

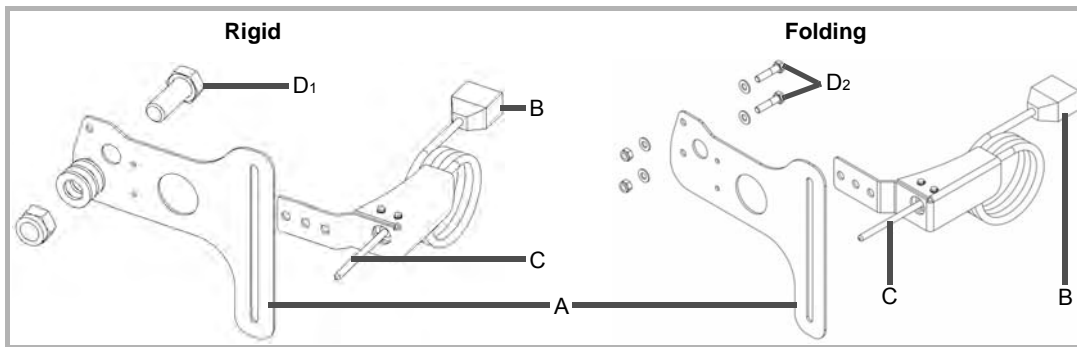
Adjusting the machine

Lifting sensor

Mounted machines

Operations

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.



A	Sensor support plate
B	Lifting sensor
C	Sensor detection rod
D ₁	Nut M24x8
D ₂	Nuts M8x35

- ▶ Mount the support plate (A) on the coupling head of the machine.
- ▶ Fix all:
 - ▶ Rigid machines: Insert the nut M24x8 and bolt.
 - ▶ Folding machines : Insert the nuts M8x35 and bolt.
- ▶ Position the sensor detection rod (C) under the upper link bar.

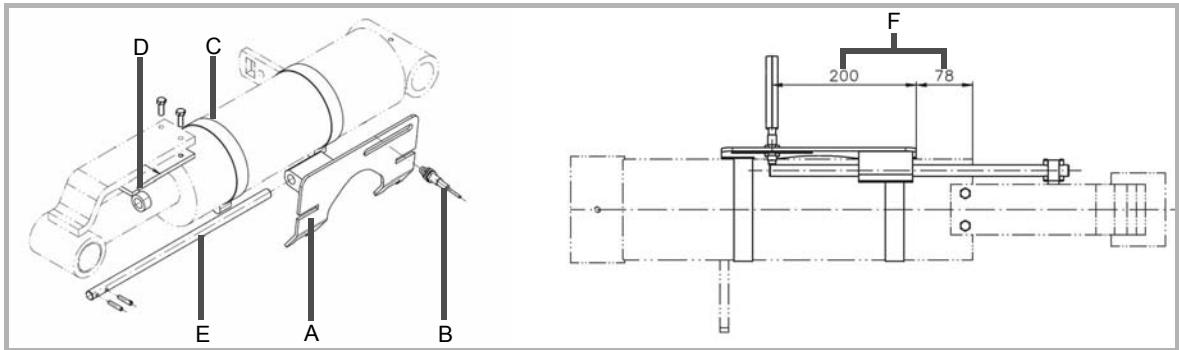
Adjusting the machine

Trailed machines

The raising sensor is positioned on one of the lifting jacks of the machine transportation carrier.

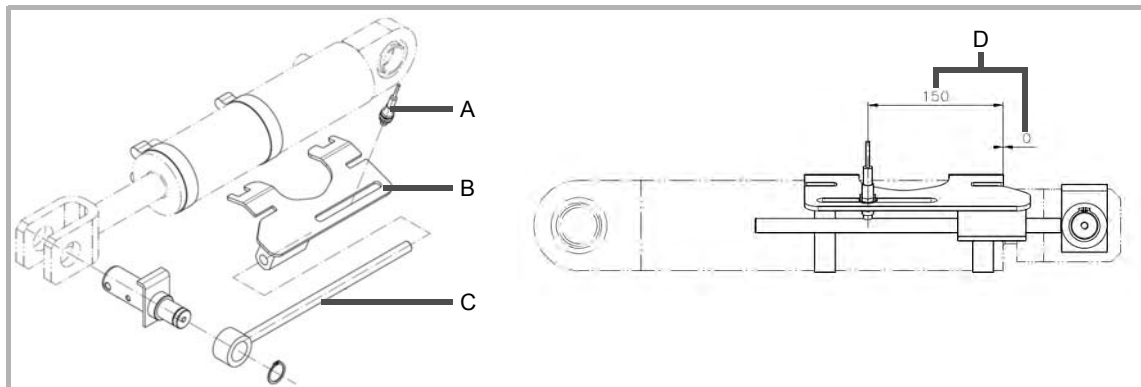
The sensor detection rod is located on the jack rod. By default, when the rod passes in front of the sensor, the seed drill stops the distribution.

CTC



A	Sensor support plate
B	Inductive sensor
C	Clamping ring
D	Rod support
E	Rod
F	Default factory values

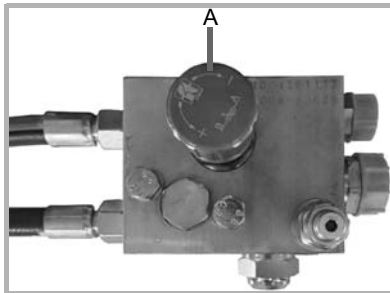
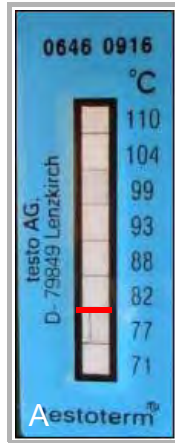
Qualidisc T



A	Inductive sensor
B	Sensor support plate
C	Rod support
D	Default factory values

Adjusting the machine

Hydraulic blower



The adjustment of the hydraulic blower is an important task that must be carried out carefully. Failure to respect the following instructions could lead to machine damage.

- The adjustment must be as precise as possible to avoid sowing defects in case of low revving or damage to the blower in case of over-revving.
- A measuring strip from 71°C to 110°C (A) has been applied to the hydraulic motor. Always ensure that the temperature does not exceed **80°C**.
- The "free return" of the tractor must not exceed 5 bars. A higher pressure risks damaging the hydraulic motor.
- The adjustment is only valid for the tractor used. Redo the blower adjustments when using another tractor.

The hydraulic blower flow is adjusted using the adjustment knob (A) located on the hydraulic unit.

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.

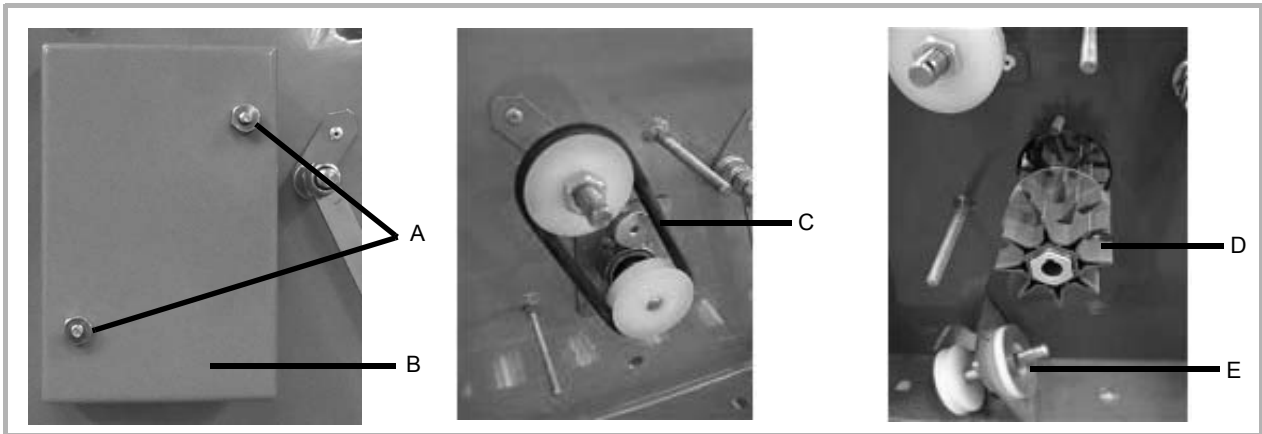
- ▶ Loosen the adjustment knob to the maximum (A).
- ▶ On the tractor flow regulator, adjust the oil level to 0.
- ▶ Switch on the blower.
- ▶ Slowly increase the oil quantity in order to bring the blower to the required rotation speed.
- ▶ Ensure that you do not exceed 80L/minute. If the tractor produces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

Seed drill adjustment

Distribution

Choice of distribution rotor

The choice of distribution rotor depends on the sowing required. Consult the sowing tables (page 80) as well as the list of distribution rotors (page 11) to choose the most suitable rotor.



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-mount.

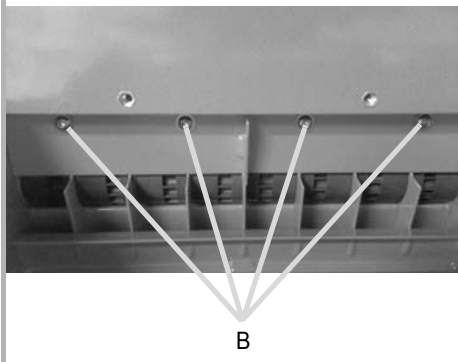
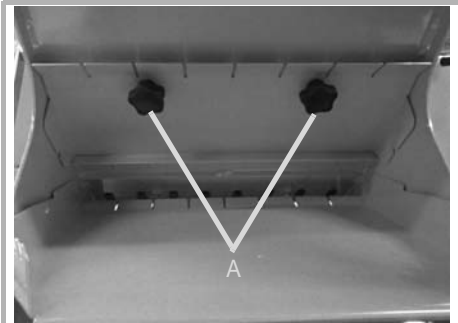
Hopper bottom sheet

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

- Vetch,
- peas,
- beans,
- etc.

We also recommend using Flex distribution rotors as these are flexible and do not break.

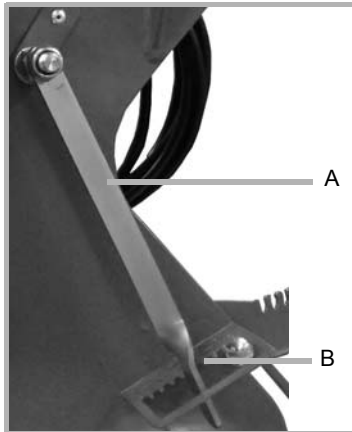
Procedure



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

Seed drill adjustment

Adjusting the brush



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 (A) attached to the seed drill frame. The lever can be adjusted on a scale (B) 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.

Lever position	Impact on the sowing quantity	Seed size recommended
- 5 to - 1	Diminution	Small
0	No impact	Standard
+1 to +4	Increase	Large

NOTE: The sowing tables provided have been determined with adjustment 0.

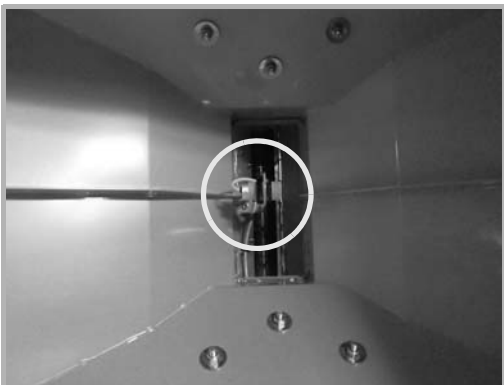
Agitator

The sowing of large seeds is likely to cause blocking of the agitator. To avoid this, it is necessary to remove the drive belt located under the protection cover on the side of the seed drill.

To remove the drive belt, follow this procedure:

- ▶ Fully empty the hopper.
- ▶ Unscrew the two nuts located on the side cover.
- ▶ Remove the side cover.
- ▶ Remove the agitator drive belt.

Hopper level sensor



This sensor equips 500L / 132 gallons hoppers and operates with the control box 5.2. The sensor sounds an alarm when it is no longer covered with seeds.

Similarly, it is possible to adjust the height level.

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 to 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 :

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


Example:


$$\frac{5[\text{kg/ha}] \times 12[\text{km/h}] \times 12[\text{m}]}{600} = 1.2 [\text{kg/min}]$$


Seed drill adjustment

Sowing tables

Sowing shaft	ffff		BG-G-BG		GGG		Sowing shaft	ffff		GGG		fb-Flex20+fb		Flex40	
	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min		kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min
	In % of max. speed														
2	0,06	0,13	0,26	0,57	0,27	0,60	2	0,13	0,29	0,52	1,15	0,344	0,758	0,480	1,058
5	0,22	0,49	0,45	0,99	0,61	1,34	5	0,16	0,35	1,18	2,60	0,584	1,287	1,030	2,271
10	0,49	1,08	0,76	1,68	1,17	2,58	10	0,20	0,44	2,30	5,07	0,985	2,172	1,945	4,288
15	0,76	1,68	1,07	2,36	1,73	3,81	15	0,24	0,53	3,41	7,52	1,386	3,056	2,681	5,911
20	1,03	2,27	1,39	3,06	2,30	5,07	20	0,28	0,62	4,52	9,96	1,787	3,940	3,776	8,325
25	1,30	2,87	1,70	3,75	2,86	6,31	25	0,32	0,71	5,64	12,43	2,188	4,824	4,682	10,322
30	1,38	3,04	1,98	4,37	3,42	7,54	30	1,58	3,48	6,7	14,77	2,589	5,708	5,607	12,361
35	1,47	3,24	2,26	4,98	3,98	8,77	35	2,85	6,28	7,76	17,11	2,990	6,592	6,523	14,381
40	1,55	3,42	2,54	5,60	4,55	10,03	40	4,11	9,06	8,82	19,44	3,391	7,476	7,438	16,398
45	1,64	3,62	2,83	6,24	5,11	11,27	45	5,37	11,84	9,88	21,78	3,792	8,360	8,354	18,417
50	1,72	3,79	3,11	6,86	5,67	12,50	50	6,63	14,62	10,94	24,12	4,193	9,244	9,269	20,434
55	1,82	4,01	3,30	7,28	6,23	13,73	55	6,96	15,34	11,21	24,71	4,593	10,126	10,185	22,454
60	1,93	4,25	3,50	7,72	6,79	14,97	60	7,28	16,05	11,48	25,31	4,994	11,010	11,100	24,471
65	2,03	4,48	3,69	8,13	7,36	16,23	65	7,61	16,78	11,76	25,93	5,395	11,894	12,016	26,490
70	2,13	4,70	3,89	8,58	7,92	17,46	70	7,93	17,48	12,03	26,52	5,796	12,778	12,931	28,508
75	2,23	4,92	4,08	8,99	8,48	18,70	75	8,26	18,21	12,30	27,12	6,197	13,662	13,847	30,527
80	2,34	5,16	4,28	9,44	9,05	19,95	80	8,58	18,92	12,57	27,71	6,598	14,546	14,762	32,544
85	2,44	5,38	4,47	9,85	9,61	21,19	85	8,91	19,64	12,84	28,31	6,999	15,430	15,678	34,564
90	2,55	5,62	4,67	10,30	10,17	22,42	90	9,23	20,35	13,12	28,92	7,400	16,314	16,593	36,581
95	2,67	5,89			10,73	23,66	95	9,86	21,74	13,93	30,71	7,801	17,198	17,509	38,600
100	2,81	6,19			11,30	24,91	100	10,48	23,10	14,75	32,52	8,202	18,082	18,424	40,618

Barley Orge <i>Hordeum</i>		ffff		GGG	
		Rotor de distribution		Rotor de distribution	
		En % de la vitesse max.	kg/min	lbs/min	kg/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	

Radish Radicis <i>Raphanus raphanistrum</i>		ffff		GGG	
		Rotor de distribution		Rotor de distribution	
		En % de la vitesse max.	kg/min	lbs/min	kg/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					


Vetch Vesce <i>Vicia</i>		fb-f-fb-fb		ffff	
		Rotor de distribution		Rotor de distribution	
		En % de la vitesse max.	kg/min	lbs/min	kg/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					


Seed drill adjustment


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

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


Buckwheat Blé noir <i>Fagopyrum</i>	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	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100																																																															
			0,09	0,20	0,54	1,19	0,33	0,73	0,27	0,60	0,39	0,86	0,99	2,18	0,50	1,10	0,70	1,54	0,78	1,72	1,40	3,09	1,07	2,36	2,11	4,65	1,35	2,98	2,82	6,22	1,64	3,62	3,53	7,78	1,92	4,23	4,23	9,33	2,21	4,87	4,94	10,89	2,49	5,49	5,65	12,46	2,78	6,13	6,36	14,02	3,07	6,77	7,07	15,59	3,35	7,39	7,77	17,13	3,64	8,02	8,48	18,70	3,92	8,64	9,19	20,26	4,21	9,28	9,90	21,83	4,49	9,90	10,60	23,37	4,78	10,54	11,31	24,93	5,06	11,16	12,02	26,50	5,35	11,79	12,73	28,06	5,63	12,41	13,44	29,63	5,92	13,05	14,14	31,17


Oat Avoine <i>Avena</i>		Rotor de distribution		fb-f-fb-fb		GGG	
		En % de la vitesse max.		kg/min	lbs/min	kg/min	lbs/min
		2	5	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	


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


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


Seed drill adjustment


Red Clover Trèfle rouge <i>Trifolium</i>		fb-f-fb-fb		ffff	
		Rotor de distribution		ffff	
		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	

Phacelia Phacélie <i>Phacelia Tanacetifolia</i>		fb-f-fb-fb		ffff	
		Rotor de distribution		ffff	
		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			

Rape Colza <i>Brassica Napus</i>		fb-f-fb-fb		fb-fb-ef-eb-fb		fb-efv-efv-fb	
		Rotor de distribution		fb-fb-ef-eb-fb		fb-efv-efv-fb	
		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	

Poppy Pavot <i>Papaver</i>		fb-fb-ef-eb-fb		Flex 40		
		Rotor de distribution		Rotor de distribution		
		kg/min	lbs/min	kg/min	lbs/min	
2	0,029	0,064	0,46	1,01	0,95	2,09
5	0,049	0,108	0,67	1,48	1,45	3,20
10	0,083	0,183	1,02	2,25	2,29	5,05
15	0,116	0,256	1,37	3,02	3,12	6,88
20	0,150	0,331	1,72	3,79	3,96	8,73
25	0,183	0,403	2,07	4,56	4,80	10,58
30	0,260	0,573	2,42	5,34	5,63	12,41
35	0,336	0,741	2,77	6,11	6,47	14,26
40	0,412	0,908	3,12	6,88	7,30	16,09
45	0,489	1,078	3,48	7,67	8,14	17,95
50	0,565	1,246	3,83	8,44	8,98	19,80
55	0,602	1,327	4,18	9,22	9,81	21,63
60	0,638	1,407	4,53	9,99	10,65	23,48
65	0,675	1,488	4,88	10,76	11,49	25,33
70	0,711	1,567	5,23	11,53	12,32	27,16
75	0,748	1,649	5,58	12,30	13,16	29,01
80	0,784	1,728	5,93	13,07	13,99	30,84
85	0,821	1,810	6,28	13,84	14,83	32,69
90	0,857	1,889	6,64	14,64	15,67	34,55
95	0,900	1,984	6,99	15,41	16,50	36,38
100	0,942	2,077	7,34	16,18	17,34	38,23

Pea Pois <i>Pisum Sativum</i>		fb-Flex20-fb		Flex 40		
		Rotor de distribution		Rotor de distribution		
		kg/min	lbs/min	kg/min	lbs/min	
2	0,46	1,01	0,95	2,09	0,46	1,01
5	0,67	1,48	1,45	3,20	0,66	1,46
10	1,02	2,25	2,29	5,05	1,00	2,20
15	1,37	3,02	3,12	6,88	1,34	2,95
20	1,72	3,79	3,96	8,73	1,68	3,70
25	2,07	4,56	4,80	10,58	2,02	4,45
30	2,42	5,34	5,63	12,41	2,36	5,20
35	2,77	6,11	6,47	14,26	2,70	5,95
40	3,12	6,88	7,30	16,09	3,04	6,70
45	3,48	7,67	8,14	17,95	3,38	7,45
50	3,83	8,44	8,98	19,80	3,71	8,18
55	4,18	9,22	9,81	21,63	4,05	8,93
60	4,53	9,99	10,65	23,48	4,39	9,68
65	4,88	10,76	11,49	25,33	4,73	10,43
70	5,23	11,53	12,32	27,16	5,07	11,18
75	5,58	12,30	13,16	29,01	5,41	11,93
80	5,93	13,07	13,99	30,84	5,75	12,68
85	6,28	13,84	14,83	32,69	6,09	13,43
90	6,64	14,64	15,67	34,55	6,43	14,18
95	6,99	15,41	16,50	36,38	6,77	14,93
100	7,34	16,18	17,34	38,23	7,11	15,67

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

Seed drill adjustment

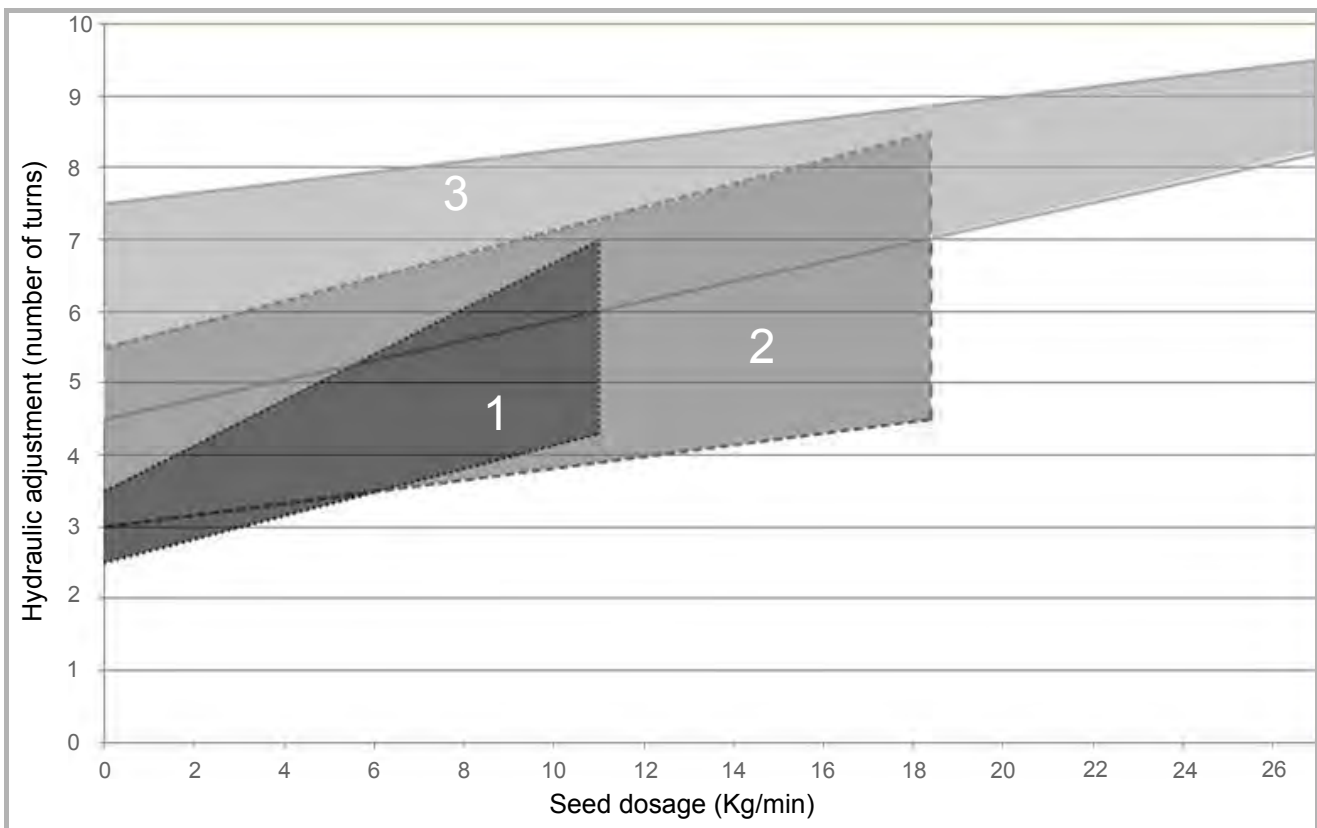
Pre-adjustment of hydraulic motor

- ▶ Take the result of your calculation (the formula can be found page 79)
- ▶ Define the seed category used with the following table:

Description	Seed category	Description	Seed category
Rapeseed	1	Physiostart	2
Poppy	1	Buckwheat	2
Alfalfa	1	Barley	2
Red clover	1	Green rye	2
Mustard	1	Wheat	2
Phacelia	1	Vetch	3
Radish	1	Peas	3
Grass	1	Beans	3
Oats	1	Fertiliser	3

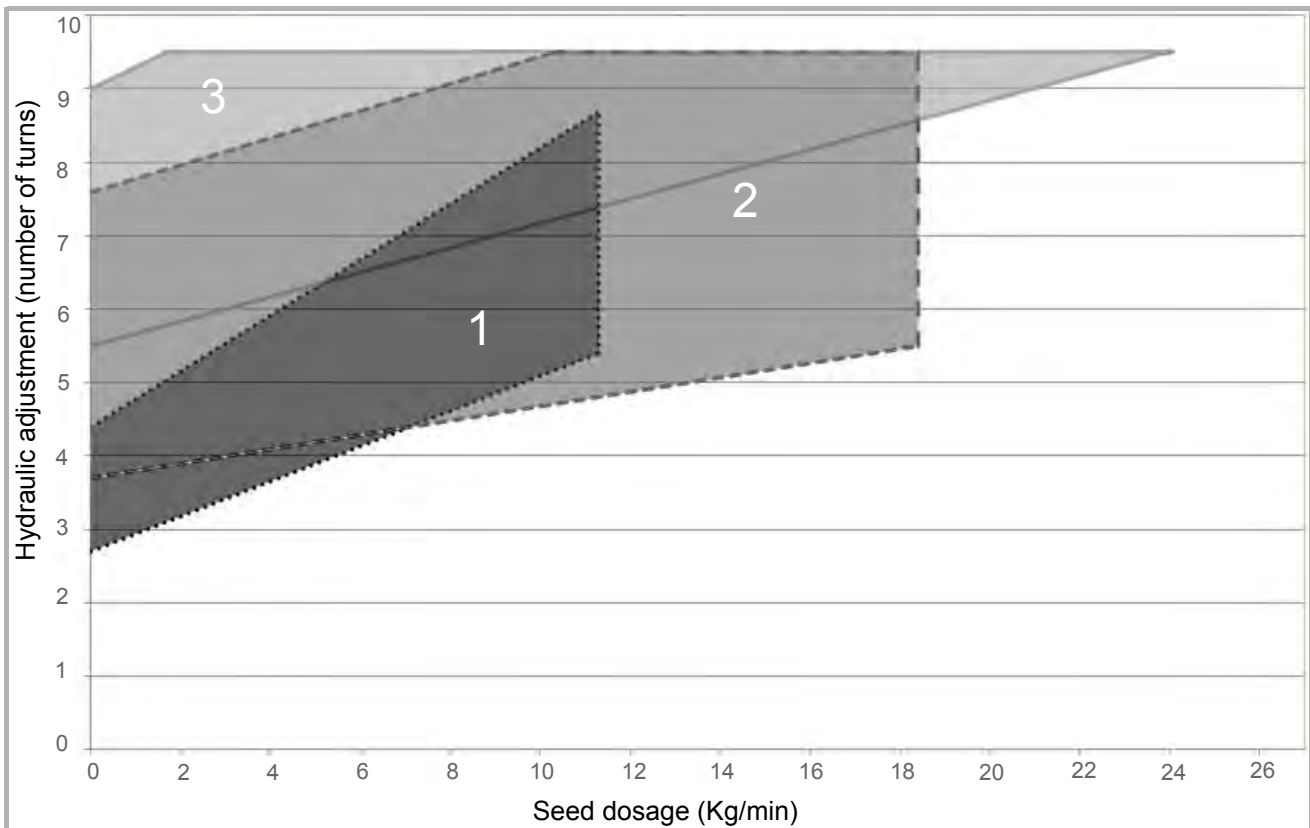
- ▶ Depending on the sowing width, use one of the 3 adjustment graphs (following pages).
- ▶ When you have found the value that corresponds to your needs on the adjustment graphs, tighten to the maximum the knob located on the hydraulic unit.
- ▶ Loosen the number of turns indicated on the graph.

Sowing width of 3m00 and 3m50 (9'10" and 11'6")

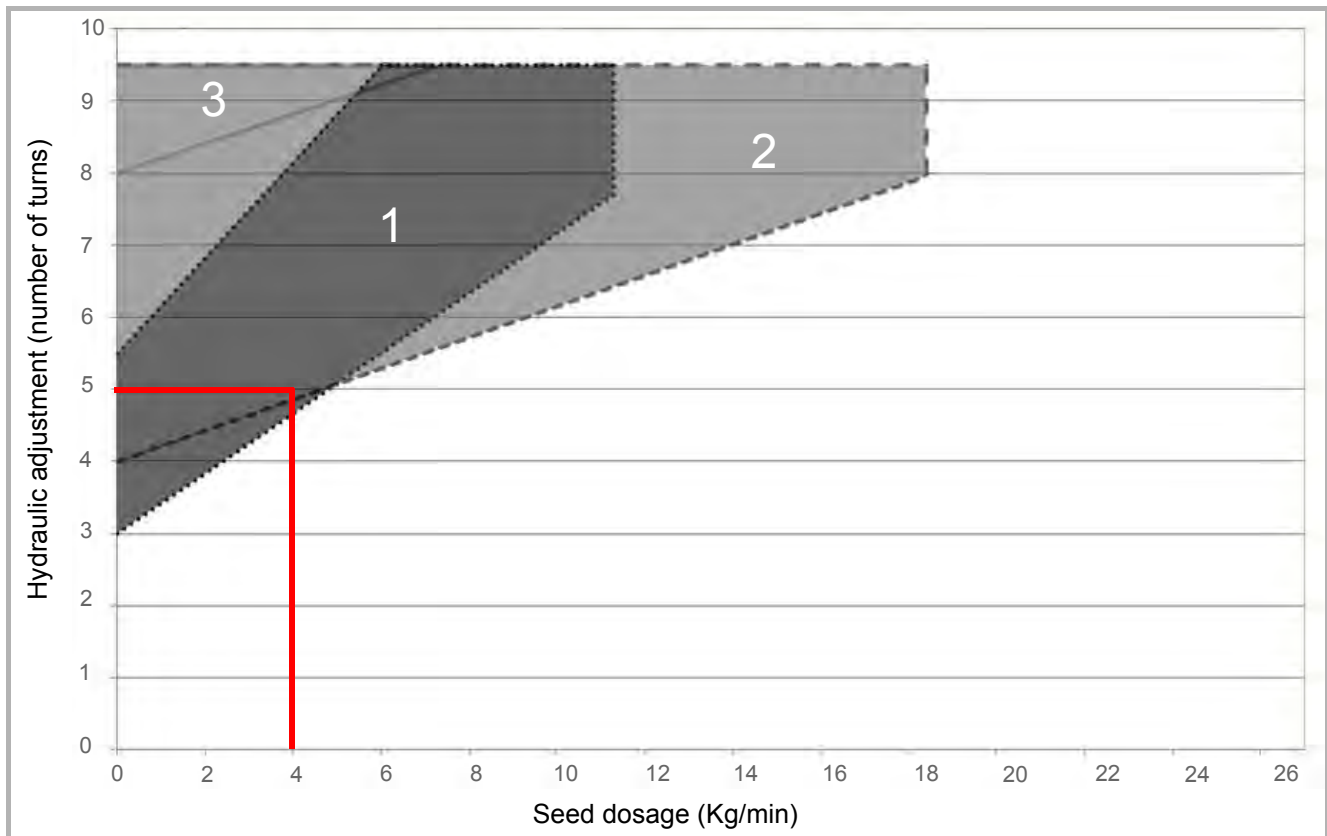


Seed drill adjustment

Sowing width of 4m00 and 5m00 (13'1" and 16'5")



Sowing width of 6m00 and 7m00 (19'8" and 22'12")



Example: Sowing width of 6m00 (19'8"). 4Kg/min in category "1", tighten the valve to the maximum then loosen 5 turns.

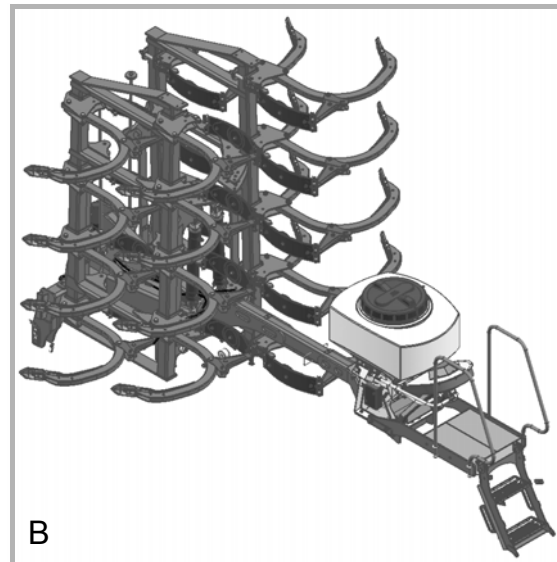
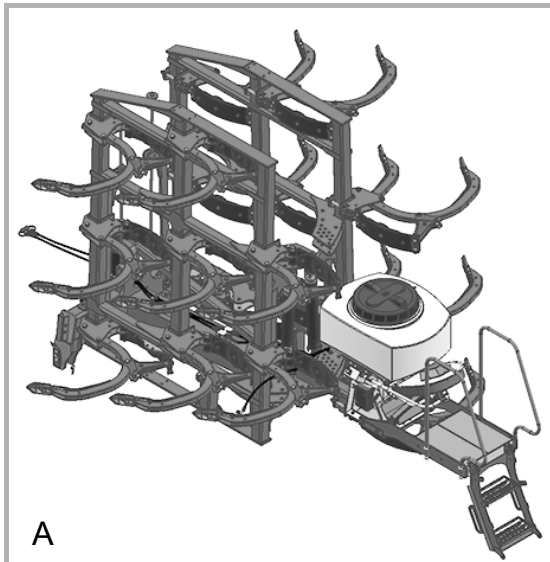
Filling the seedbox

Safety



In order to avoid any accident, make sure the machine is on the ground before filling the seedbox

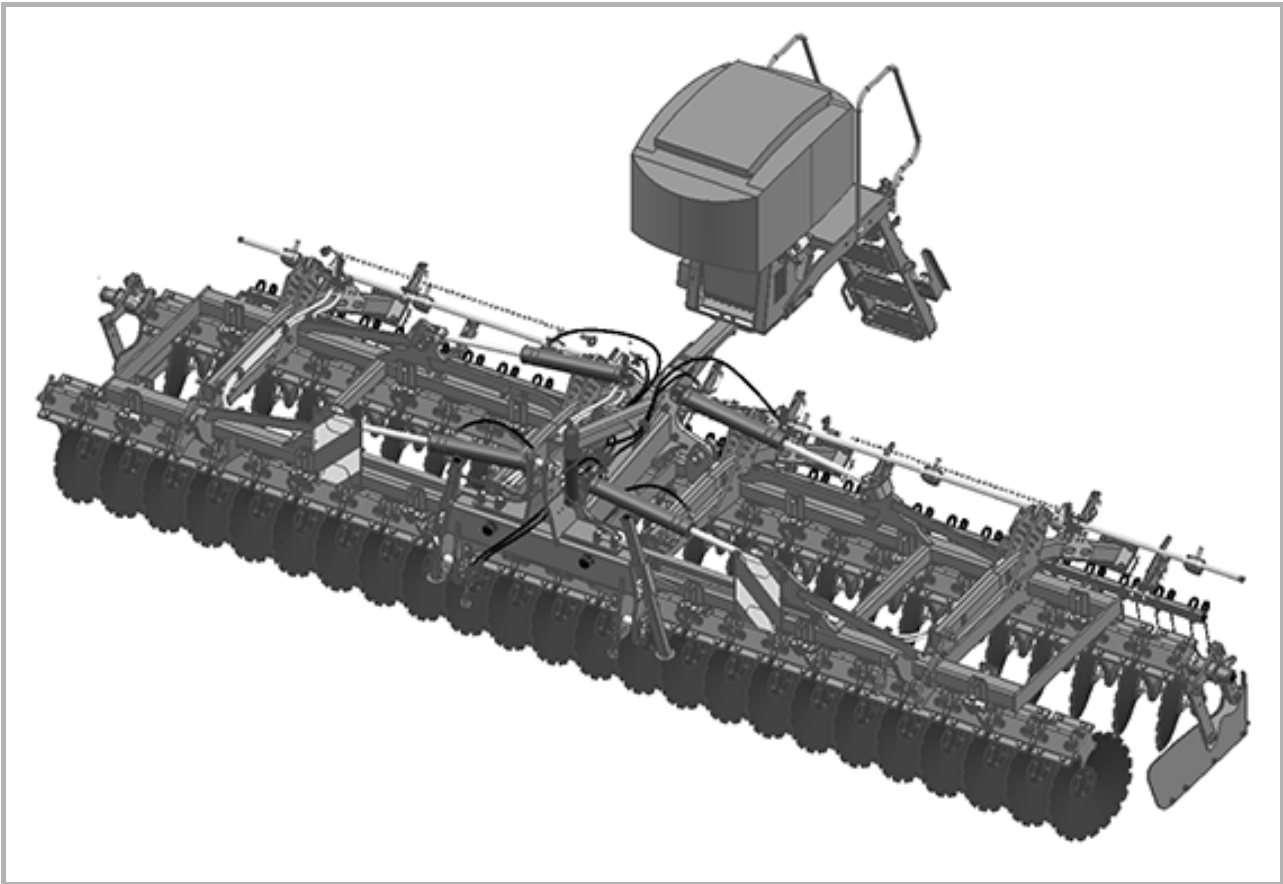
Folding CLC



A	CLC PRO
B	CLC EVO

- ▶ Fold the machine to get to the seedbox.
- ▶ Fill in the seedbox.

Qualidisc and Qualidisc Farmer

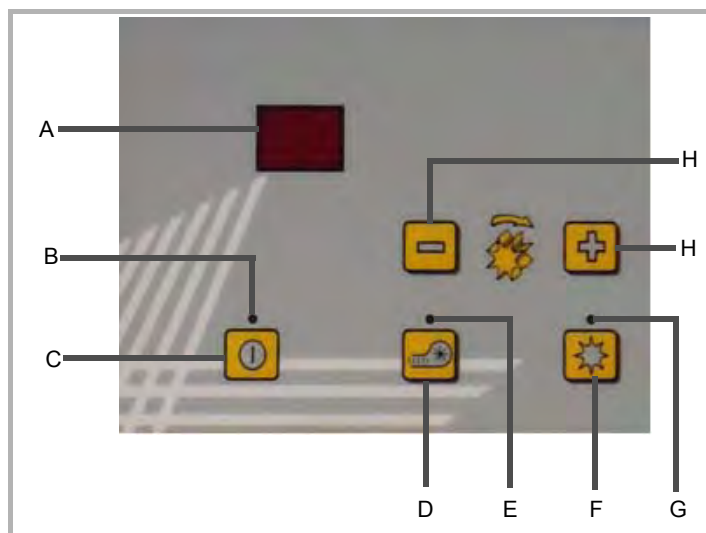


- ▶ Unfold the machine.
- ▶ Fill in the seedbox.

Adjustments






Using the seed drill with the box 3.2

Description of the control module









A	Displays the actual rotor rotation speed as a percentage of its maximum speed (from 1 to 99%).
B	Box power on indicator. Lights 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 if it is activated.
F	On / off button for the distribution rotor.
G	Rotor on indicator. Lights when the rotor is operating.
H	Rotation speed adjustment buttons for the distribution rotor.

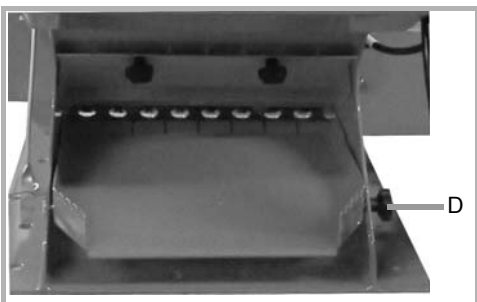
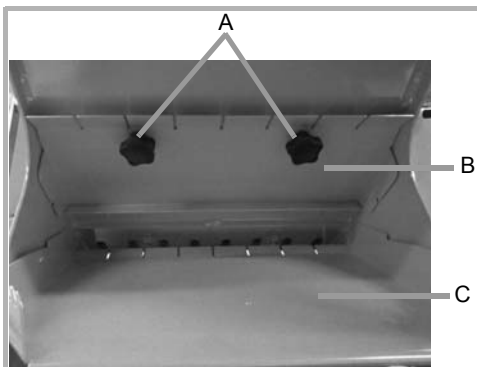
Switching on

- ▶ Press on 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  and  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.









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. This 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.

Distribution test

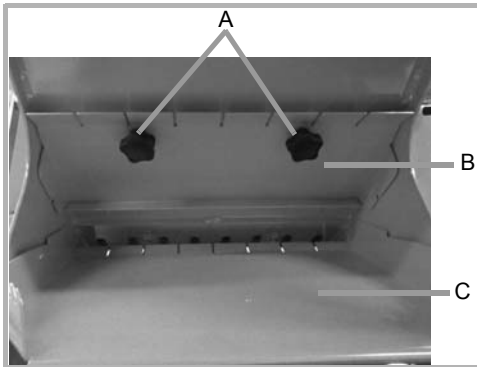


Before the distribution, it is essential to carry out a distribution test. This test allows you to refine your adjustments and carry out the distribution according to your requirements.

- ▶ 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 79, 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  and .
- ▶ 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.







Adjustments

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 .


Automatic box stop

If you do not press on any buttons for 90 minutes and the distribution rotor does not turn, the box stops automatically.

Status and troubleshooting messages

Error messages

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.



Charging the box battery when on may lead to voltage peaks. This may damage the electrical equipment in the box.

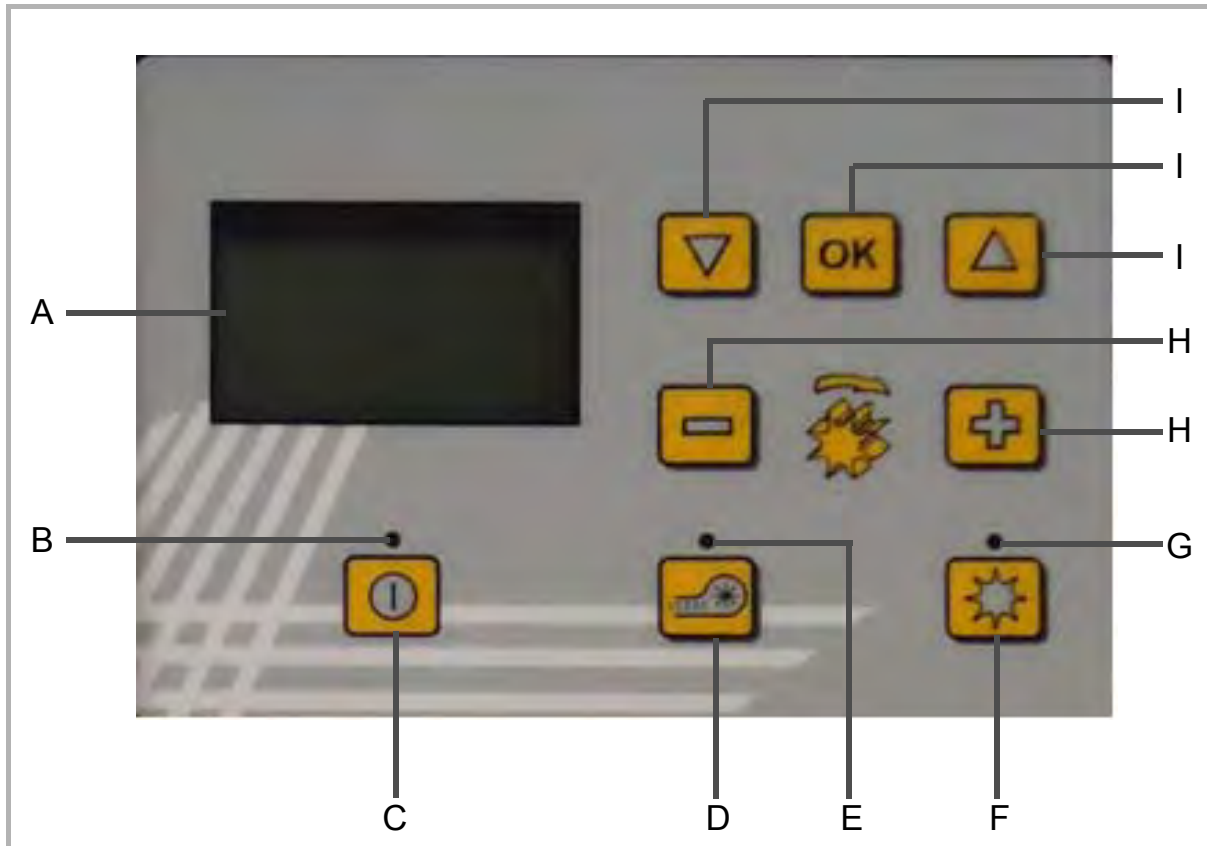
In case of problems

Problem	Possible solution
Having pressed on button  nothing is displayed on the box.	<ul style="list-style-type: none">▶ Check whether the power supply cable is correctly plugged into the box.▶ Check whether the box cable is connected to the correct battery terminals. <p>Incorrect connection to the battery terminals or defective connections can cause damage to the box.</p>

Adjustments

Using the seed drill with the box 5.2

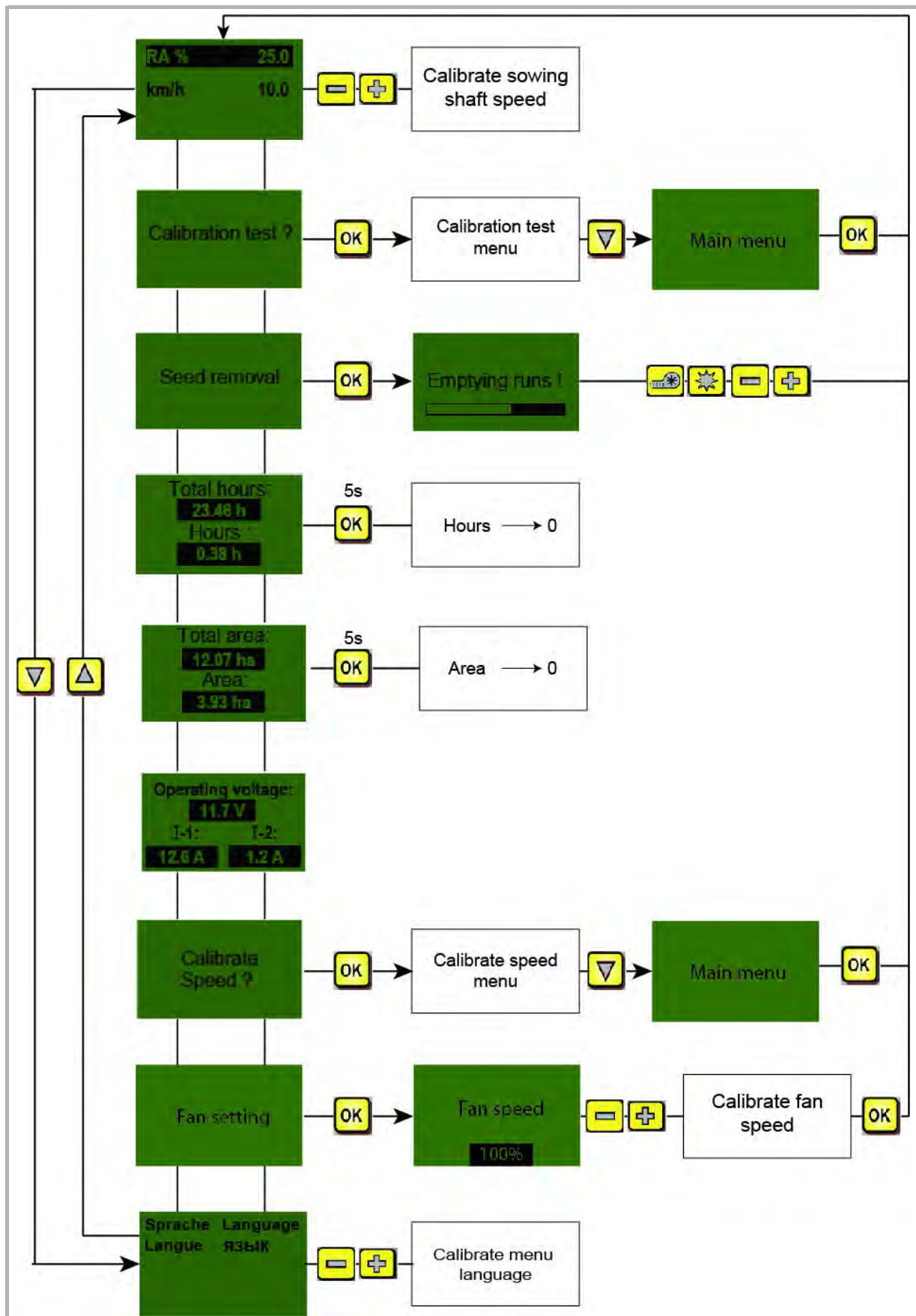
Control module



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

Main display

Organisation of the menus



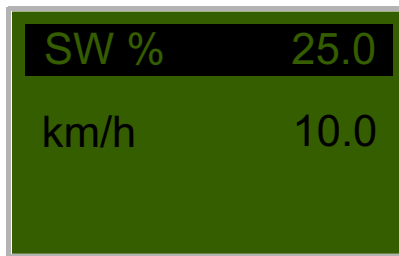
Adjustments



Start screen



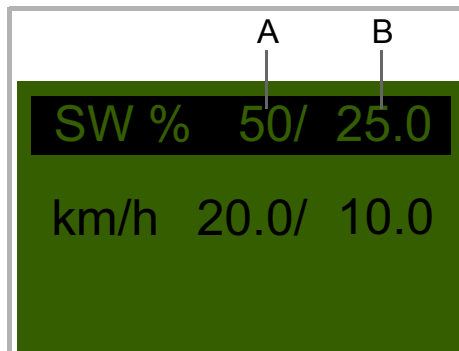
- Indicates the type of box. In this case: 5.2
- Indicates the software version installed.
- This information is essential for correct maintenance operations by the technical services.



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 travel speed (in kilometres per hour) can be adjusted in the menu tab "Distribution 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 travel speed of the tractor/machine.
Km/h	The travel speed (in kilometres per hour) can be adjusted in the menu tab "Distribution Test".	Real travel speed in kilometres per hour. The speed is measured by the sensor.

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	Calibration test ?
Seed removal	Total hours: 23.46 h Hours: 0.38 h	Operating voltage: 11.7 V I-1: I-2: 12.6 A 1.2 A	Sprache Language Langue ЯЗЫК

Navigating 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.

Distribution Test

 The "Distribution test" function corresponds to the "Flow test" tab in the main menu.

Why carry out a 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.

Menu tab

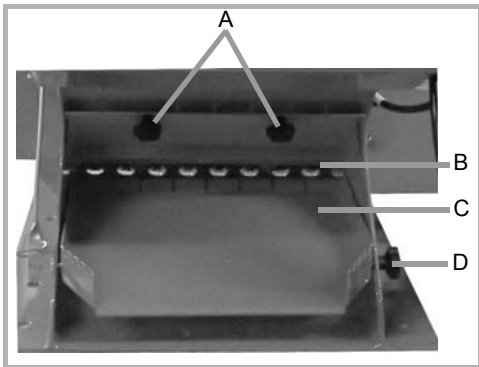
In addition to the distribution test, this tab also allows you to adjust certain general values:

- Distribution rotor rotation speed,
- working width,
- travel speed.

The entered values are respected during the calculation of the sowed surface.

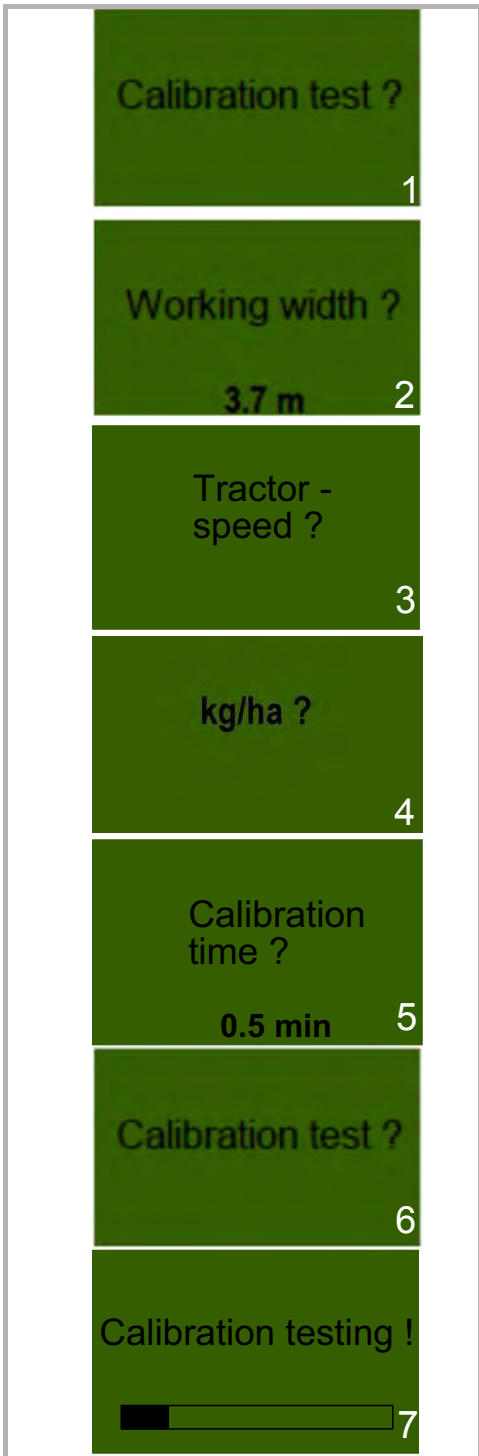
Adjustments

Procedure



Seed drill preparation



- ▶ 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.

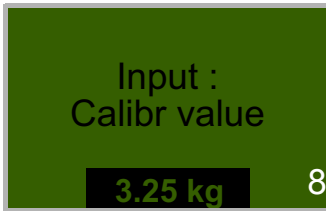


Adjustments

- ▶ In the main menu, select the "Flow test" tab (1).
- ▶ Enter the working width (2).
- ▶ Enter the average travel 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).

	Distribution time	Example
Default	1 minute	
Small seeds	2 minutes	Rapeseed, phacelia, poppy
Large seeds	30 seconds	Wheat, barley, peas

- ▶ If all values are correctly adjusted, launch the test (6).
 - The test starts (7).
 - The rotor turns automatically without the blower.
 - At the end of the defined time, the rotor stops automatically.
 - On 500 L seed drills, or if a hopper level sensor is mounted, the message "Recipient almost empty" may appear, but the test will still carry on. The lack of seeds may however lead to an inexact test.
- ▶ If required, press on  or  to interrupt the test.



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.
 - ▶ You are advised to repeat the test until the preceding message no longer appears.
- The distribution rotor speed is now calculated automatically. The display returns to the main menu.

SW %	25.0
km/h	10.0
kg/ha	5.3


Main menu after the distribution test

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

Main menu after the distribution test if you use a speed sensor

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 (refer to section Distribution Test page 97).
- The counter starts as soon as the distribution rotor starts turning.
 - ▶ To reset the "Surface" tab to zero, press on the button  for 5 seconds.



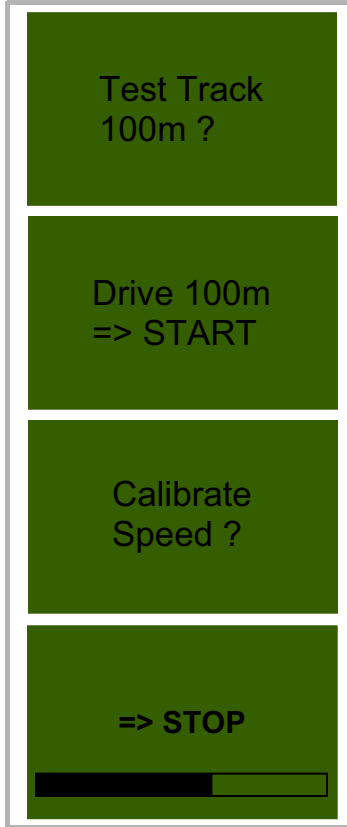
The "Total surface" tab cannot be reset to zero.

Adjustments

Calibration of travel speed


It is necessary to carry out a calibration as the box uses these values as a base to do the calculations (display of speed, dosing, calculation of surfaces, etc.)


Test distance





The test distance is 100 metres (328')

- ▶ Measure a distance of 100 metres (328').
- ▶ Mark the start and finish.
- ▶ In the main menu of the box, choose the tab "Speed calibration?".

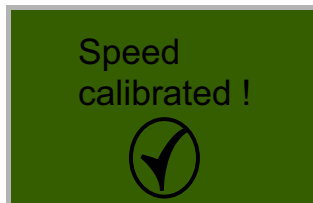
- ▶ Press on  to select this tab.
- ▶ Choose the tab "Calibration distance 100m?".

- ▶ Press on .

- ▶ Press on  to start the test and begin to advance.

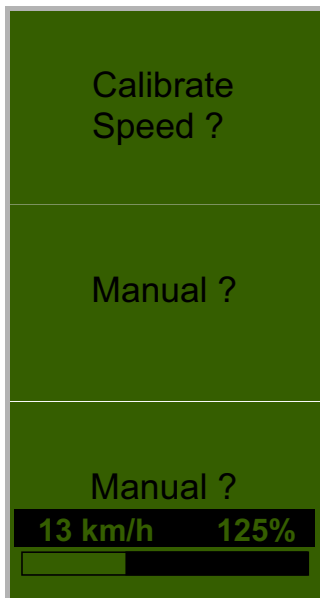
- ▶ Having travelled 100 metres (328'), press on  to stop the calibration.

- The following message is displayed when the calibration is finished.







- The number of radar impulses on the ground during the 100 metres is displayed. Note this number, as it could be useful in case of loss of the calibration values.

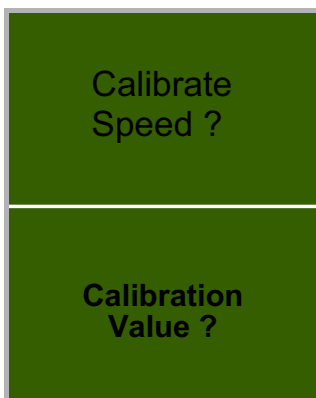
Manual calibration




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

- ▶ In the main menu of the box, choose the tab "Speed calibration?".
- ▶ 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.

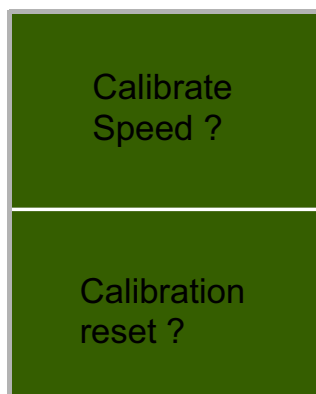
Calibration value





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 "Speed calibration?".
- ▶ 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.

Resetting the calibration



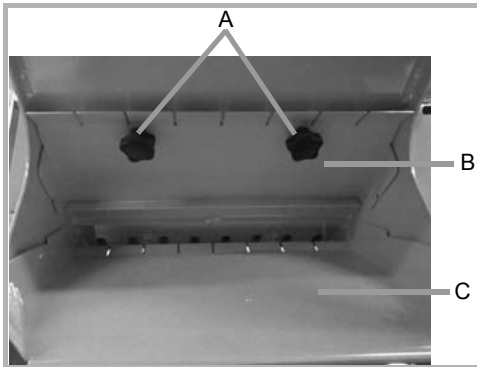
This function resets the calibrated value to its factory configuration.

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



Adjustments

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.

Hour counter

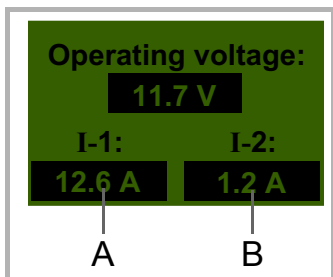


- The hours displayed on the counter correspond to the total and daily operating duration of the distribution rotor.
- The counter starts as soon as the distribution rotor starts turning.
- ▶ To reset the "hour" tab to zero, press on the button for 5 seconds.



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

Operating voltage and current intensity

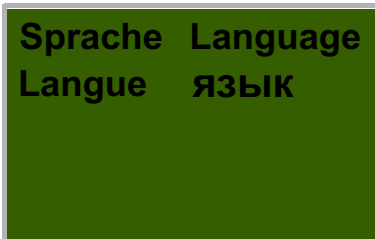


This screen displays the operating voltage and current intensity in the blower motor and distribution rotor motor.



Fluctuations in the operating voltage indicate an electronic malfunction in your dashboard. This may have a negative impact on distribution.

A	Indicates, in amperes (A), the current intensity in the blower motor.	Max. 15A
B	Indicates, in amperes (A), the current intensity in the distribution rotor drive motor.	Max. 5A



Languages



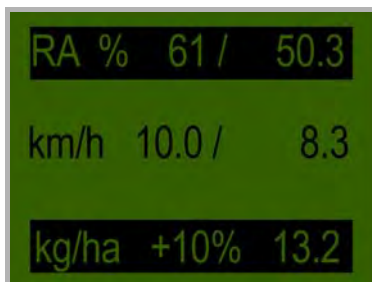
Seed drills equipped with an electrical blower

- ▶ In the main menu of the box, choose the required 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 not connected" is displayed.
- ▶ Press on .
- ▶ You have 15 seconds to select the required language.
- ▶ Press on  to validate the selection.

Changing the flow during operation











The flow can be increased or decreased to a maximum of 50%





- ▶ Press  or  to increase or decrease the flow.

Adjustments

Status and trouble-shooting messages









Warning messages






Display	Cause	Solution
 Internal VCC (5V) not OK !	The box supply voltage is too weak.	<ul style="list-style-type: none"> ▶ Return the box to the factory.
 Operating voltage low ! !	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.
 Operating voltage high !	The box operating voltage is too high.	<ul style="list-style-type: none"> ▶ Check the tractor alternator.
 Hopper almost empty	The seed level sensor in the hopper has not been covered for more than 30 seconds.	<ul style="list-style-type: none"> ▶ Top up the seeds.
 Calibration Value too high !	The number of impulses between the radar and the ground during speed calibration is too high.	<ul style="list-style-type: none"> ▶ 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.	<ul style="list-style-type: none"> ▶ Increase the number of magnets on the wheel sensor. ▶ If this does not work, contact the After Sales Service.
 Sowing shaft speed too high!	Appears when the speed of the distribution shaft is too low during calibration.	
 Sowing shaft speed too low!	Appears when the speed of the distribution shaft is too high during calibration.	<ul style="list-style-type: none"> ▶ Use larger/coarser distribution grooves. ▶ Use more distribution grooves per outlet. ▶ Reduce the travel speed. ▶ Reduce the flow.

Display	Cause	Solution
 <p>Calibration time too short!</p>	<p>Appears when the duration of the calibration is too short.</p>	<ul style="list-style-type: none"> ▶ Press and hold the distribution switch for longer (at least 20 seconds).
 <p>Tractor speed too high !</p>	<p>The driving speed is too high</p>	<ul style="list-style-type: none"> ▶ Compare with the pre-defined adjustments. ▶ Adjust your speed
 <p>Tractor speed too low !</p>	<p>The driving speed is too low</p>	<ul style="list-style-type: none"> ▶ Compare with the pre-defined adjustments. ▶ Adjust your speed
 <p>Switch off !</p>	<p>Screen displayed when the box stops</p>	

Adjustments

Error messages

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.
 Error (Fan)!	Appears when the hydraulic turbine does not produce any air flow or when the return pressure in the motor tank pipe of the hydraulic turbine is too high?	<ul style="list-style-type: none"> ▶ Start the hydraulic turbine. ▶ Replace the return filter. ▶ Do not use a reducer in the tank pipe. ▶ Use a larger tank pipe.
 Motor not connected (Sowing shaft)!	Appears when the hydraulic turbine is not activated. The pressure sensor is not actuated by the air flow.	<ul style="list-style-type: none"> ▶ Check the cabling. ▶ Check the connectors.
 Motor not connected (Sowing shaft) !	Not all connections are made or some cables are defective.	<ul style="list-style-type: none"> ▶ Check the state of the cables and sockets.
 Motor not connected (Fan) !	Not all connections are made or some cables are defective.	<ul style="list-style-type: none"> ▶ 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.	<ul style="list-style-type: none"> ▶ Contact the After Sales Service.

Display	Cause	Solution
 <p>Ground wheel not OK !</p>	<p>The box does not receive a signal from the speed sensor</p>	<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.
 <p>Short-circuit on sensor-wires!</p>	<p>Appears when the power supply cables are overloaded or when there is a short circuit.</p>	<ul style="list-style-type: none"> ▶ Check the cables for damage and short circuits.
 <p>No motor rotation speed (spreading disk)!</p>	<p>Appears if: The motor is connected. The motor is not overloaded. The motor is not running.</p>	<ul style="list-style-type: none"> ▶ Contact After-Sales.
 <p>Motor not connected (spreading disk)!</p>	<p>Appears if: The cables are not connected. The cables are faulty.</p>	<ul style="list-style-type: none"> ▶ Check the cables. ▶ Check the connectors.
 <p>Motor overloaded (spreading disk)!</p>	<p>Appears if: The spreader plate cannot turn. The motor is loaded in the limit range for too long.</p>	<ul style="list-style-type: none"> ▶ Stop the appliance. ▶ Check whether any foreign bodies are preventing the spreader plate from turning.

Adjustments

Trouble-shooting

Problem	Cause	Solution
The distribution rotor turns when the machine is raised.	Incorrect signal from the lifting mechanism.	<ul style="list-style-type: none"> ▶ Change the position of the lifting mechanism sensor.
The distribution rotor does not turn when the machine is in the working position.	<ul style="list-style-type: none"> • The distribution rotor is not switched on. • The travel speed is zero. • No signal from the lifting mechanism sensor. 	<ul style="list-style-type: none"> ▶ Switch on the distribution rotor manually. ▶ Check that the speed sensor is in proper working order. ▶ Check that the lifting mechanism sensor is in proper working order.
The lifting mechanism sensor is not responding.	No signal from the lifting mechanism sensor.	<ul style="list-style-type: none"> ▶ Adjust the sensitivity of the sensor using the screw on the rear. ▶ Change the position of the sensor. ▶ Check the connectors and cables.
The lifting mechanism sensor is permanently activated.	<ul style="list-style-type: none"> • Incorrect sensor settings. • Incorrect sensor position. 	<ul style="list-style-type: none"> ▶ Adjust the sensitivity of the sensor using the screw on the rear. ▶ Change the position of the sensor.
The speed sensor does not send any information.	<ul style="list-style-type: none"> • The speed sensor is not detected. • Incorrect selection of the speed sensor. • The cable is incorrectly connected or faulty. 	<ul style="list-style-type: none"> ▶ Connect the cable correctly according to the markings.
No signal from the lifting mechanism sensor.	<ul style="list-style-type: none"> • The lifting mechanism sensor is not detected. • The lifting mechanism does not send a signal to the 7-pole signal connector of the tractor. • The cable is incorrectly connected or faulty. 	<ul style="list-style-type: none"> ▶ Check the sensor and the lifting mechanism.
The control module does not switch on.	<ul style="list-style-type: none"> • Poorly connected electrical cable. • No power supply. • Faulty fuse. 	<ul style="list-style-type: none"> ▶ Check the connectors. ▶ Check the polarity of the electrical cable (15/30 12 V + pin, 31 earth - pin, 82 ignition on + pin) ▶ Switch on the ignition. ▶ Check the battery. ▶ Replace the fuse.
The control module switches off when the motors are switched on.	<ul style="list-style-type: none"> • Low battery level. Drop in the supply voltage. • Drop in voltage due to a poor contact. 	<ul style="list-style-type: none"> ▶ Check the battery voltage. ▶ Check the connector contacts. ▶ Check the electrical power supply cable.
The setting "travel speed 0.0 kph" appears or continually returns to 0.0 kph.	Wrong speed signal detected or selected.	Contact After-Sales.

Problem	Cause	Solution
The flow in kg/ha or in grains/m ² is not displayed.	<ul style="list-style-type: none"> • Incorrect calibration. • The values have been changed in the calibration menu. 	<ul style="list-style-type: none"> ▶ Perform a calibration.
Flow too low or too high.	<ul style="list-style-type: none"> • Incorrect speed. • The lifting mechanism sensor switches when working. • The grain properties have changed. 	<ul style="list-style-type: none"> ▶ Check the surface counter. ▶ Check the working speed. ▶ Calibrate the speed sensor. ▶ Check the sensor of the lifting mechanism. ▶ Perform a calibration. ▶ Reduce the speed of the hydraulic turbine.
Return pressure too high.	<ul style="list-style-type: none"> • Pipe cross-section too small. • The pipe is too long. • Return filter clogged. 	<ul style="list-style-type: none"> ▶ Use a larger pipe cross-section. ▶ Reduce the length of the pipe. ▶ Use a new return filter.

Maintenance

For your safety

Special Safety instructions



Conditions required for maintenance work

Carry out maintenance work only if you have the necessary knowledge and if you have appropriate tooling. A lack of knowledge or inappropriate tools may lead to accidents.

Use original spare parts

Use only original spare parts for components related to safety. Dimensions, stability and material quality must be in conformity. If parts other than original parts are installed, the guarantee will not apply.

Storage of the tool

- ▶ After use, store the seed drill in a covered place.
- ▶ Blow the rotor and hoses with compressed air.

At delivery of the tool, check that all the accessories are included and that there is no damage due to transport. Claims must be made in writing within 6 days.

The guarantee will be granted only if the conditions appearing on the delivery contract have been met by the buyer.

The guarantee cannot be granted if the accessory :

- was repaired by the client without the dealer's agreement,
- was modified by the installation of components other than original parts.

Disposal of the tool

When the service life of your tool is over, it must be properly disposed of. Please observe applicable regulations when disposing of the tool.



Do not spread on the ground or pour into the sewers used grease or other substances such as motor oil, hydraulic oil, coolant fluid, brake fluid, fuel...

Metal parts

All metal machine components can be sent to scrap recycling.

Hydraulic oil

- ▶ Collect hydraulic oil in watertight, clean containers, designed for this purpose.
- ▶ Avoid using food containers or drink bottles.
- ▶ Take hydraulic oil and hoses to a suitable recycling centre.

In accordance with
directive 2006/42/EC

We

Kverneland Group Les Landes Génusson SAS
9 Rue du Poitou
FR-85130 Les Landes Genusson

declare under our sole responsibility that the product



Pneumatic seed drill a-drill

to which this declaration relates, corresponds to instructions in terms of health and safety stipulated in the European directive 2006/42/EC.

For the relevant implementation of the safety and health requirements mentioned in the EC Directive, the following standards have been taken into account:

- ISO 12100-1:2003
- ISO 12100-2:2003
- ISO 4254-1:2009

Kverneland Group Les Landes Génusson
Les Landes Génusson, on 02-07-2012

Kverneland Group Les Landes Génusson S.A.S.
9 Rue du Poitou
85130 LES LANDES GENUSSON
FRANCE

Les Landes Génusson, 02-11-2013

A handwritten signature in black ink, appearing to read 'Hasan Kesek', written over a light grey rectangular background.

Hasan Kesek
President and authorised EC representative

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