

Pneumatic seed drill SH200 & SH500

Operator's manual

Original operator's manual

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Model	Accessory
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Machine identification

In order to provide any assistance which you may need, your dealer needs to know certain information about your machine. Please provide this information below.

Designation	Pneumatic seed drill SH200 & SH500
Working width	
Weight	
Serial number	VPUSD1YY1LGA06601
Accessories	
Supplier's address	
Manufacturer's address	Kverneland Group Les Landes-Genusson S.A.S. 9 Rue du Poitou FR-85130 Les Landes-Genusson Tel.: +33 (0)2 51 64 13 00

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Onboard documents

The machine user manual is stored in the waterproof tubular document box fitted on the machine, generally near the coupling point.

After reading the document, put it back in the box.

This user manual is also available via
https://www.kvgportal.com/publicquest/

Other applicable documents

The machine documentation consists of this user manual, together with other documents:

Name	Description
Spare parts catalogue	Complete list of all spare parts available in the KVERNELAND GROUP after-sales service network. Online catalogue corresponding to the machine, available via **https://www.kvgportal.com/publicquest/**

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:

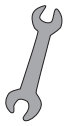
- A dot precedes each item in a list.

▸ 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.

X 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.

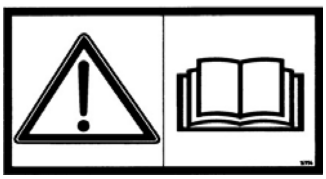
Numerous risks can result from handling agricultural machines in the wrong way. Therefore, always work with special care and never under pressure.

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

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.



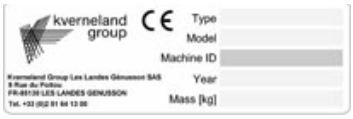
Carrying persons on the machine while in motion (in transit or at work) is strictly forbidden.



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.

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

- Usage clause.
- Characteristics.
- Description of machine components.
- Technical data.

Usage clause

This machine has been designed solely for normal agricultural use, i.e. for cultivating farmland. Any other use or misuse, for example, transport, land clearing or transmission of power to another machine is considered to be contrary to the intended use.
The manufacturer and specialist dealer decline any responsibility for damage caused by use other than normal use. **The user assumes all risks**.

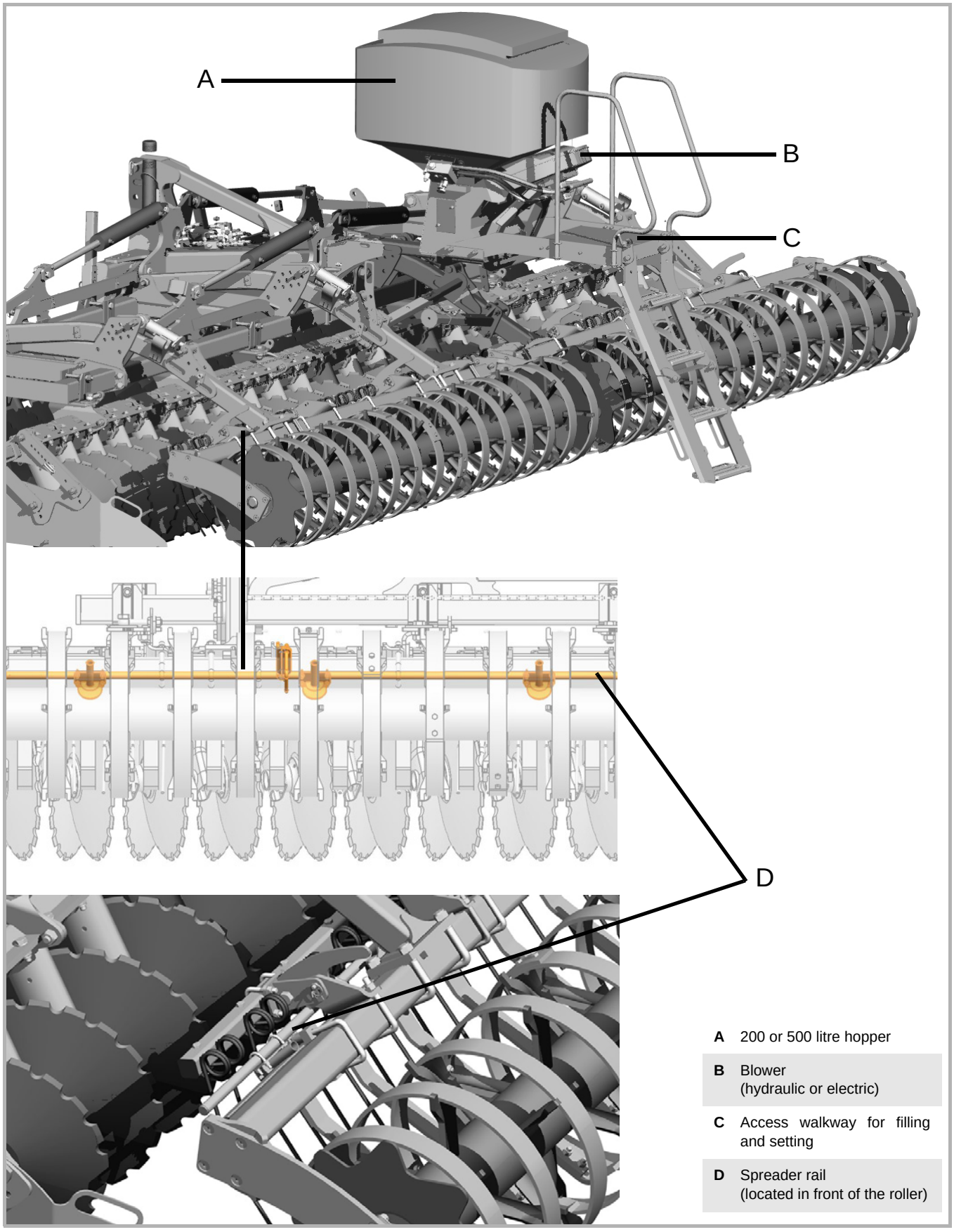
Compliance with the conditions of use includes compliance with the manufacturer's user instructions.

The safety instructions (detailed above) and rules regarding general safety, occupational health and road traffic must also be followed.

Modifications to the tool made by the customer or the use of spare parts or accessories that are not original parts will void the manufacturer's liability for all damage resulting from the modification.

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

General Description



A	200 or 500 litre hopper
B	Blower (hydraulic or electric)
C	Access walkway for filling and setting
D	Spreader rail (located in front of the roller)

Type of seed drills

The **SH200** and **SH500** pneumatic seed drills distribute the seeds using fixed grooved rotors.
The seed drill does not contain sowing elements, broadcast sowing is carried out by 8 spreaders.
The flow is adjusted by varying the speed of the grooved distribution rotor, available in 8 models. A support blower transports the seeds from the distribution to the spreaders.

The pneumatic seed drills are available in several versions:

- Hopper volume 200 L or 500 L
- Control box:
  - Version 1.2 (manual flow adjustment)
  - Version 5.2 (flow rate proportional to advance)
- Electric 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)
- **DPAE** (**D**ébit **P**roportionnel à l'**A**vancement **É**lectronique / Flow rate proportional to the electronic advance) by radar sensor, GPS sensor or 7 terminal ISO 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

SEED DRILL	SH200	SH500
Model	**200 L**	**500 L**
	52.83 gallons	*132.10 gallons*
Weight only	**60 kg**	**100 kg**
	132.30 lbs	*220.5 lbs*
Dimensions (L x D x H)	**70 x 88 x 100 cm**	**80 x 122 x 117 cm**
	27 1/2" x 34 5/8" x 39 5/8"	31 1/2" x 48" x 46"

Electrical supply

12 V, **25 A**

Hydraulic supply

SH200 & SH500 SEED DRILL	
Maximum pressure	**200 bars**
	2900.76 psi
Maximum flow rate	**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"

Equipment available on all machines

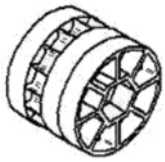
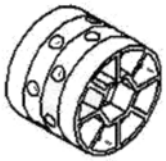
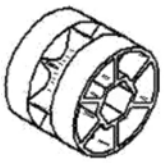
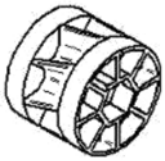
Options

The following options are available, no matter which machine the seed drill is installed.

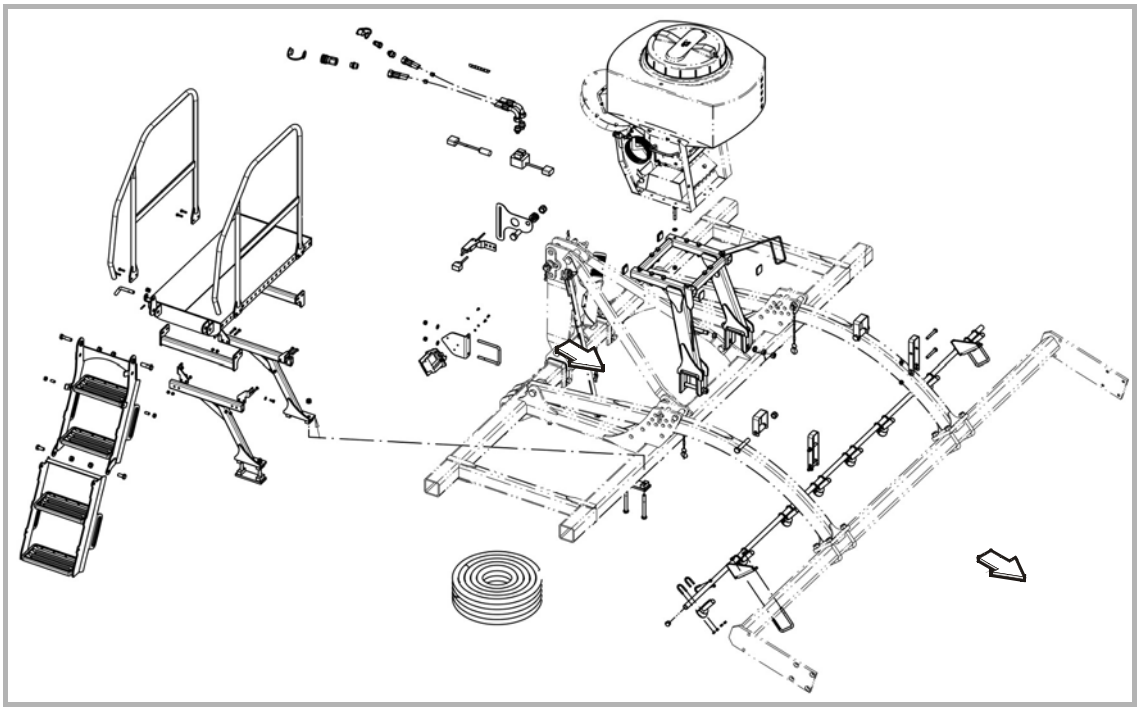
Image	Reference	Button	Qty
	A135652700	Speed sensor: • GPS technology • Compatible only with box 5.2.	1
	A135652600	Calibration button: • Used to adjust the distribution rate. • Compatible only with box 5.2.	1

Distribution rotors

8 grooved rotors are available to distribute the seeds:

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

Rigid CLC



Mounting the support and the hopper

Task description

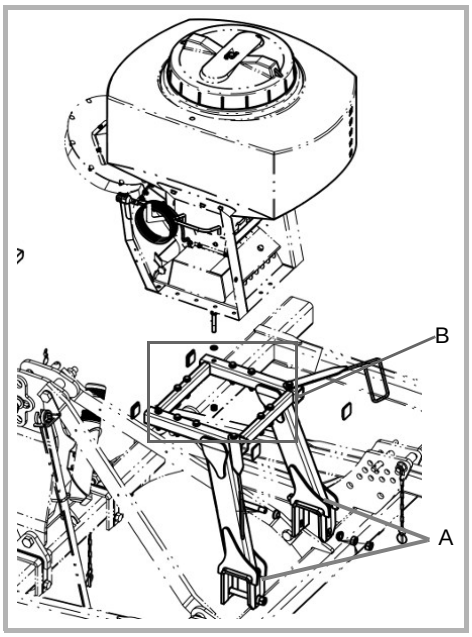
There are two types of mountings:

- 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 4 cm (relative to the machine driving direction) on the following models:

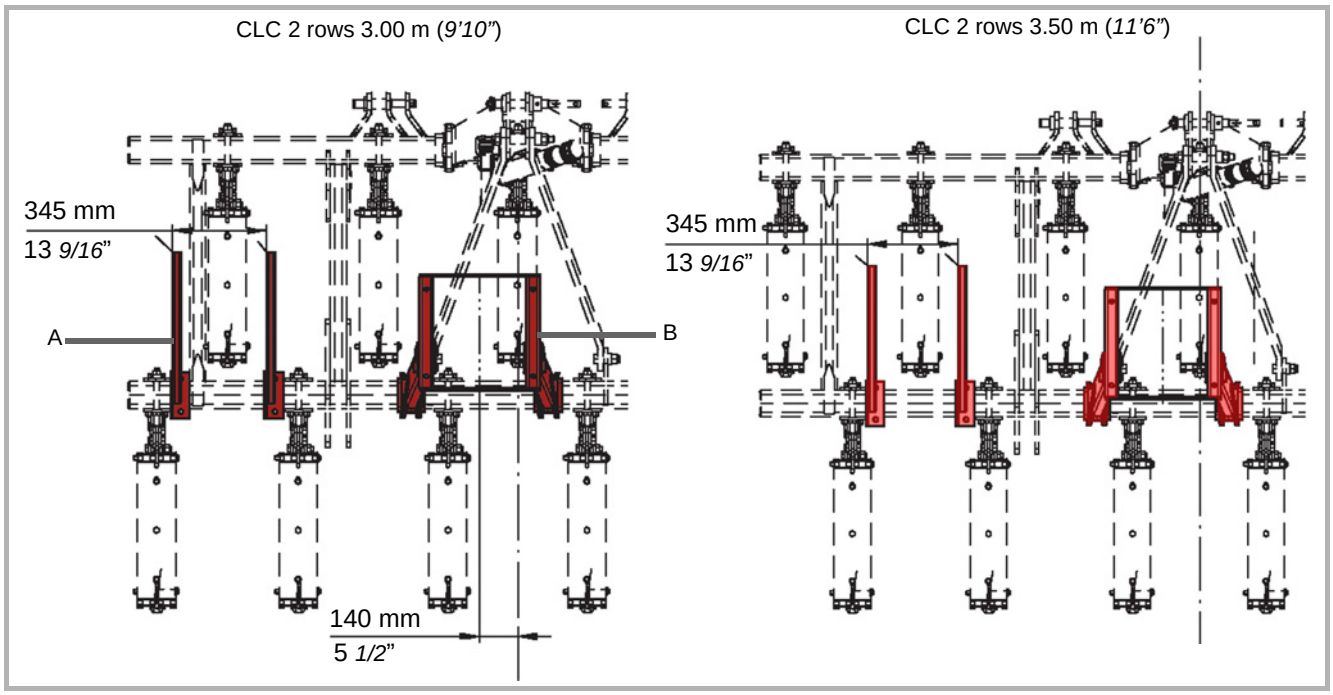
- CLC Evo 3.00 m *(9'10")* - 11 tines.
- CLC Evo 3.50 m (*11'6"*) - 13 tines.
- CLC Evo 4.00 m (*13'1"*) - 15 tines.

Procedure



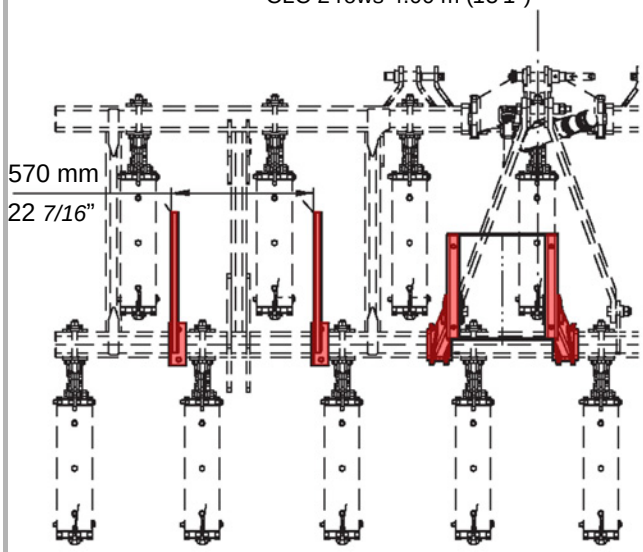
- Turn the hopper so that the hoses come out from the rear of the machine.
- Using the U clamps **A**, fix the support to the second beam of the main frame.
- Use the four long fixing screws.
- Insert the 14 screws **B** in the tubes to fix the hopper.

Mounting diagrams for the platform and hopper support

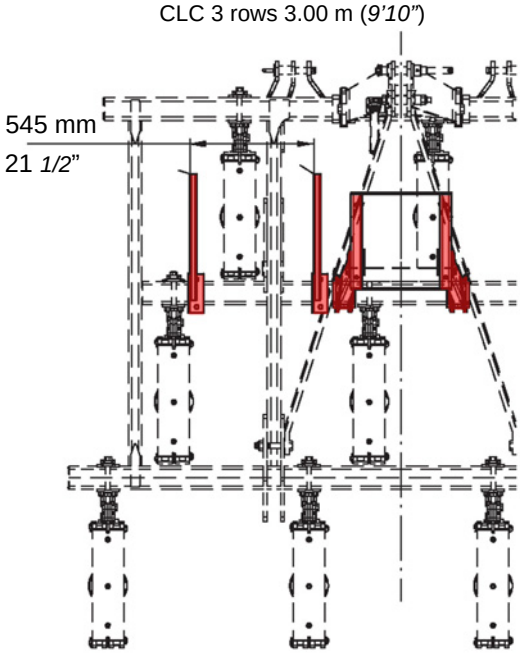


A	Platform
B	Hopper support

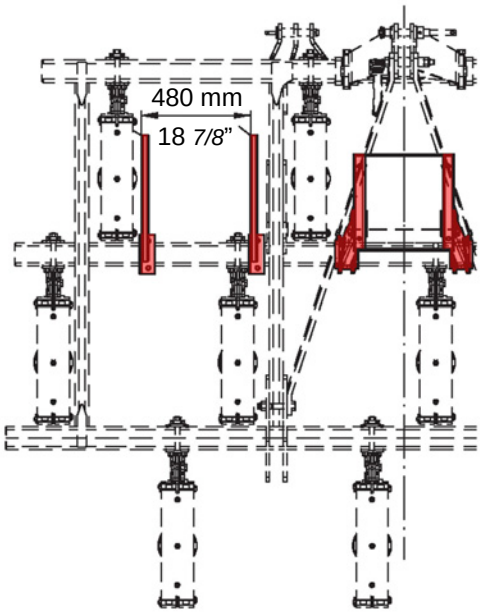
CLC 2 rows 4.00 m (*13'1"*)



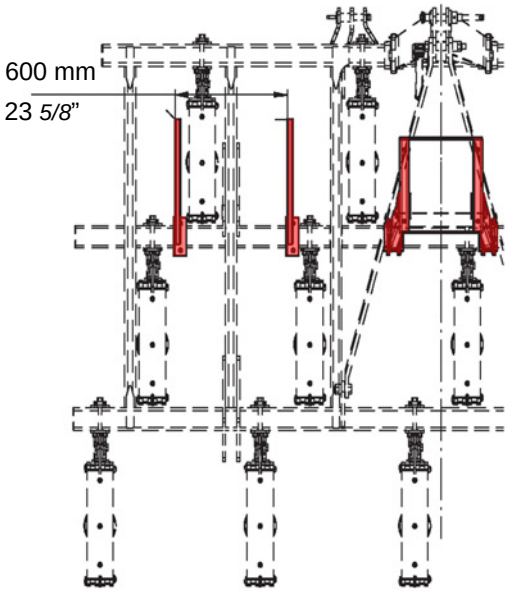
CLC 3 rows 3.00 m (*9'10"*)



CLC 3 rows 3.50 m (*11'6"*)

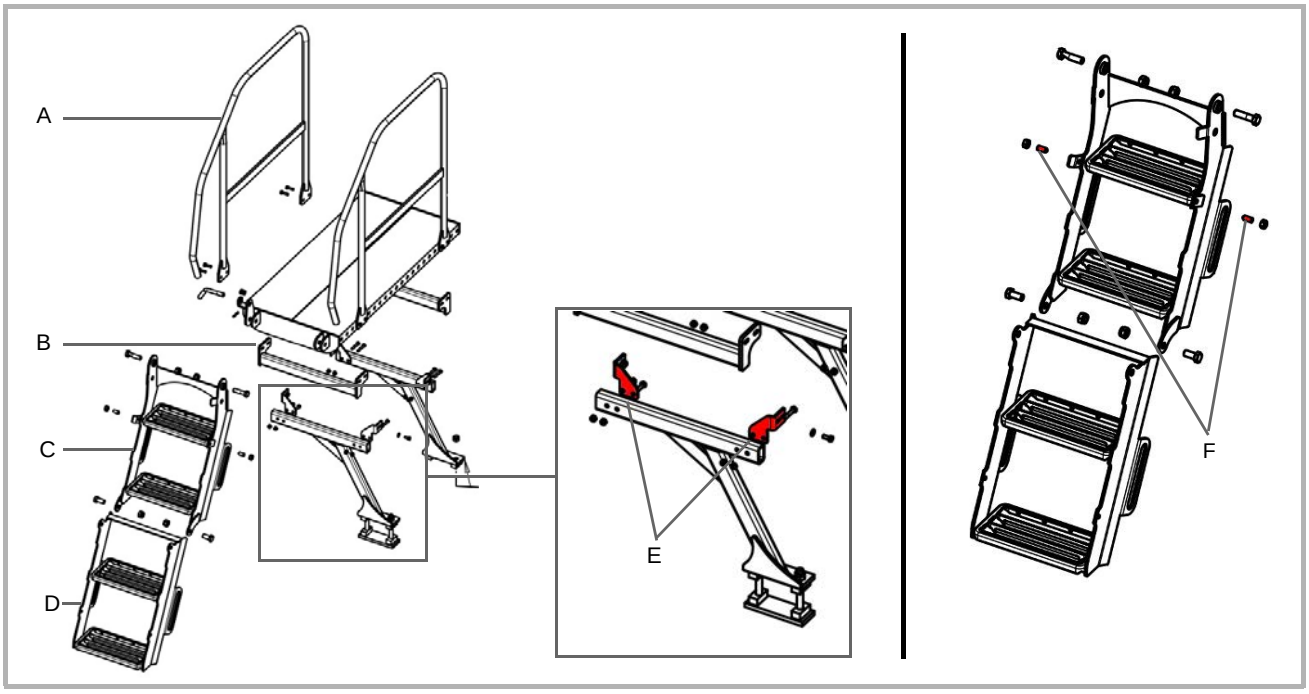


CLC 3 rows 4.00 m (*13'1"*)



Mounting the walkway

Procedure

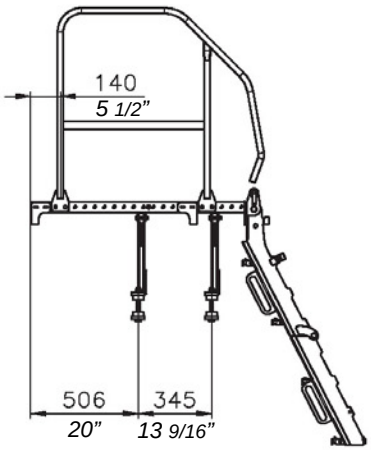


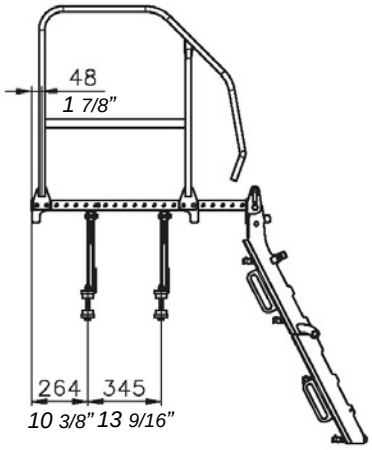
A	Guardrail
B	Reinforcement crossbar
C	Upper part of stairs
D	Lower part of stairs
E	Fixing brackets
F	Ball screw

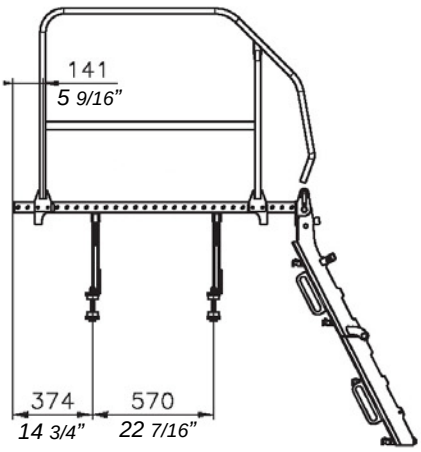
- Position the support arms for the walkway on the frame, respecting the dimensions indicated on the diagrams page **19** and **14.**
- Install the walkway on the support arms using the fixing brackets **E**.
- Using the same screws, fix the guardrail and reinforcement crossbars.
- Fix the upper part 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**.

Mounting diagrams for the platform

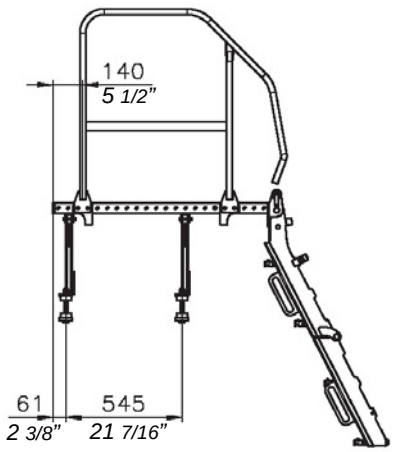
CLC Evo
2 rows

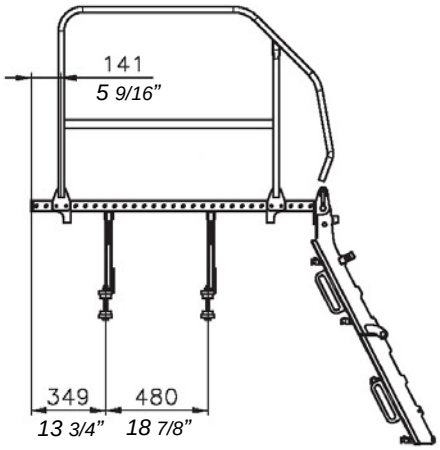


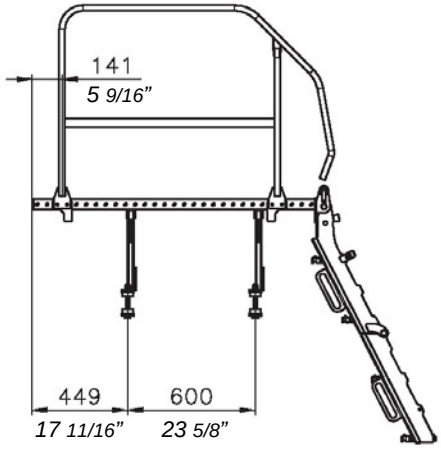




CLC Pro
3 rows



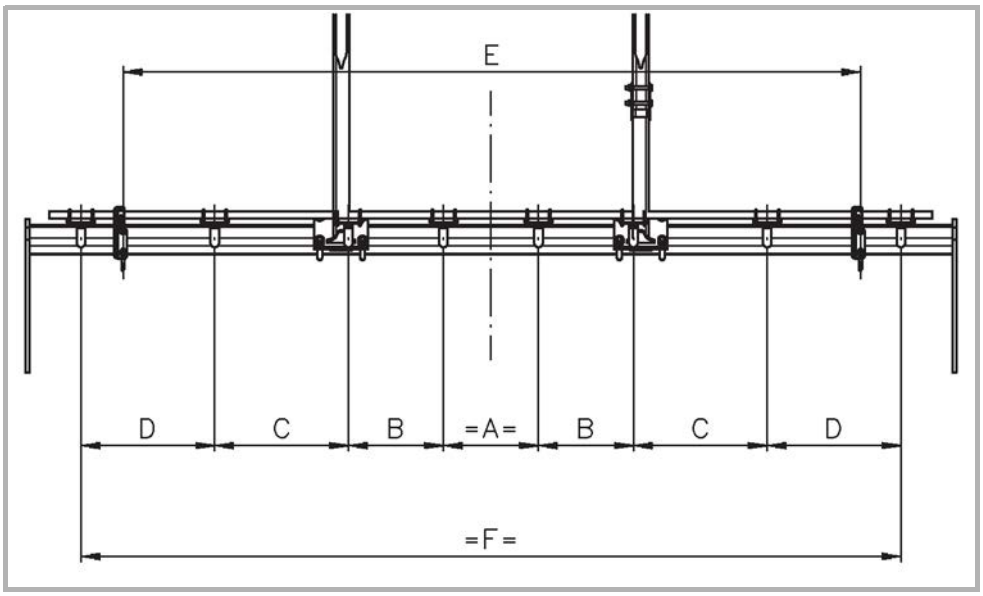




Positioning the spreaders

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:

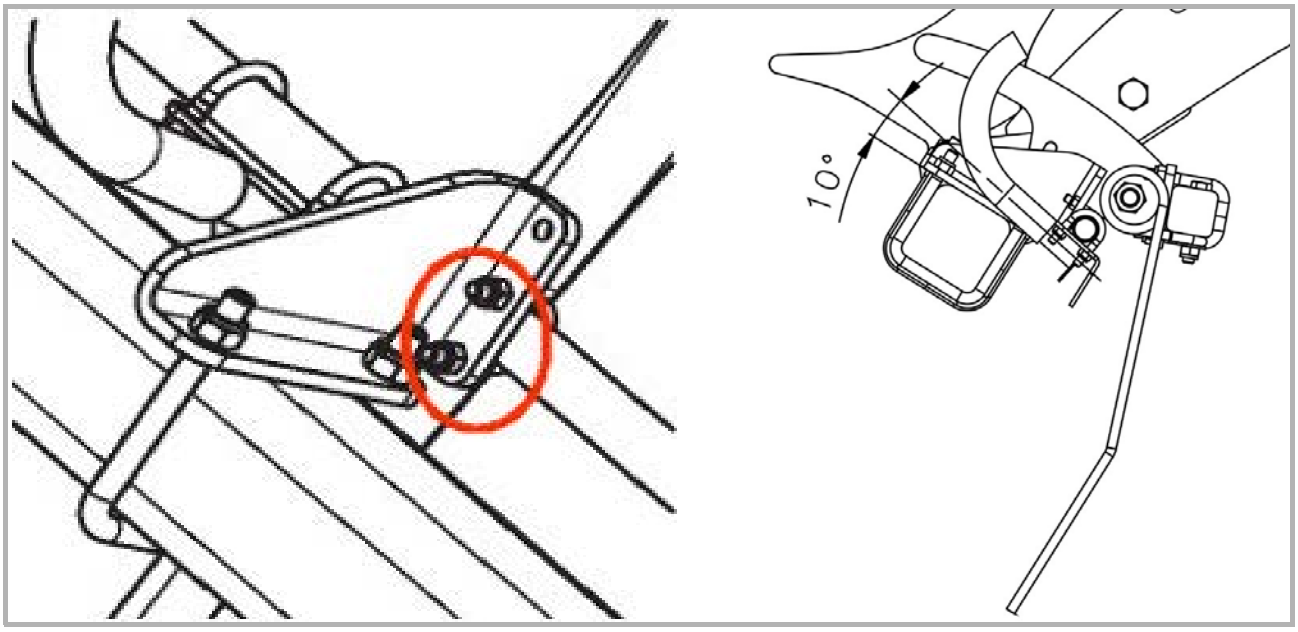


Machine	A	B	C	D	E	F
2R 3.00 m arm	355 / *14”*	355 / *14”*	385 / *15 1/8”*	385 / *15 1/8”*	2257 / *89”*	2605 / *103”*
2R 3.00 m //	355 / *14”*	355 / *14”*	355 / *14”*	355 / *14”*	2257 / *89”*	2605 / *103”*
2R 3.50 m arm	355 / *14”*	355 / *14”*	500 / *19 11/16”*	500 / *19 11/16”*	2757 / *109”*	3065 / *121”*
2R 3.50 m //	470 / *18 1/2”*	430 / *16 15/16”*	450 / *17 11/16”*	450 / *17 11/16”*	2757 / *109”*	3130 / *123”*
2R 4.00 m arm	525 / *20 11/16”*	525 / *20 11/16”*	525 / *20 11/16”*	425 / *16 11/16”*	3057 / *120”*	3500 / *138”*
2R 4.00 m //	500 / *19 11/16”*	475 / *18 11/16”*	475 / *18 11/16”*	550 / *21 5/8”*	3057 / *120”*	3500 / *138”*
3R 3.00 m arm	290 / *11 7/16”*	290 / *11 7/16”*	430 / *16 15/16”*	430 / *16 15/16”*	2257 / *89”*	2590 / *102”*
3R 3.00 m //	370 / *14 9/16”*	370 / *14 9/16”*	370 / *14 9/16”*	370 / *14 9/16”*	2257 / *89”*	2590 / *102”*
3R 3.50 m arm	450 / *17 11/16”*	455 / *17 15/16”*	445 / *17 1/2”*	440 / *17 5/16”*	2757 / *109”*	3130 / *123”*
3R 3.50 m //	450 / *17 11/16”*	455 / *17 15/16”*	445 / *17 1/2”*	440 / *17 5/16”*	2757 / *109”*	3130 / *123”*
3R 4.00 m arm	500 / *19 11/16”*	500 / *19 11/16”*	500 / *19 11/16”*	500 / *19 11/16”*	3057 / *120”*	3500 / *138”*
3R 4.00 m //	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.

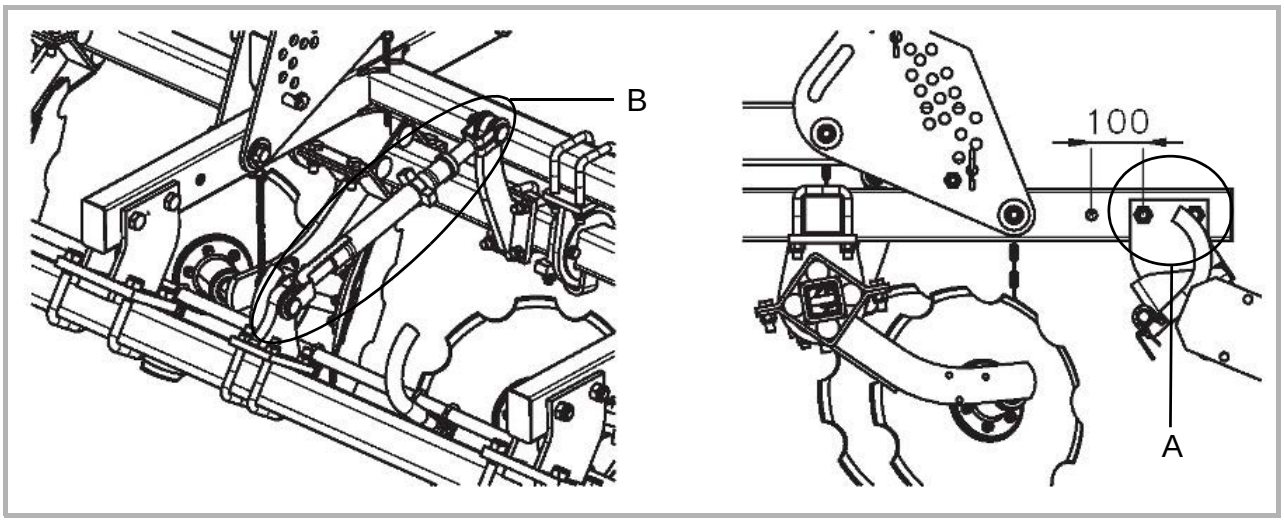
Procedure

Levelling tines fixed to the roller beam:



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

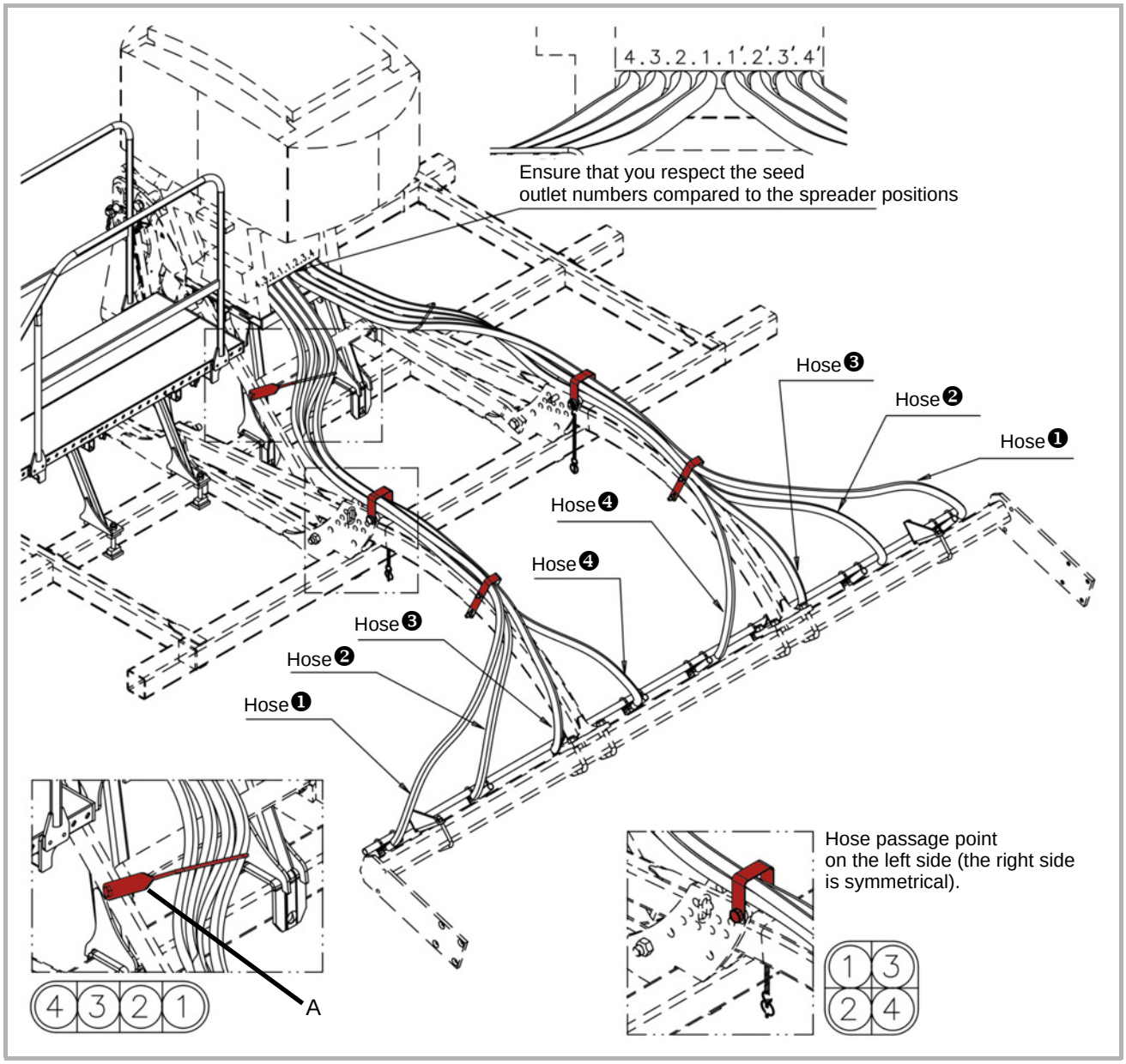
Adaptation on a machine equipped with levelling discs:



- 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.

Passage of hoses

Order of hose distribution for seed flow



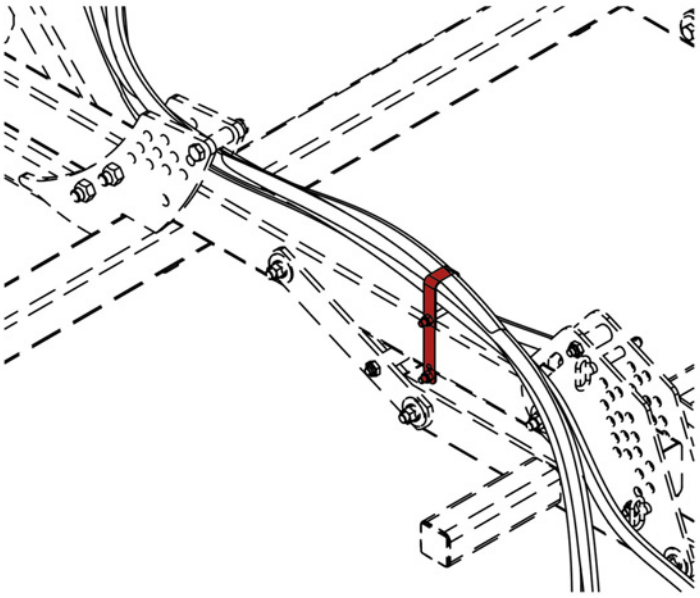
			Hose length (mm/in)			
			Left side / roller			
		Hopper	N° 1	N° 2	N° 3	N° 4
CLC 2R	**3.00 m /** *9'10"*	Offset	3335 /*131"*	3095 /*122"*	3075 /*121"*	2940 /*116"*
CLC 2R	**3.50 m /** *11'6"*	Offset	3335 /*131"*	3095 /*122"*	3075 /*121"*	2940 /*116"*
CLC 2R	**4.00 m /** *13'1"*	Offset	3550 /*140"*	3355 /*132"*	3645 /*144"*	3825 /*151"*
CLC 2R Wings	**3.00 m /** *9'10"*	Centred	3195 /*126"*	2955 /*116"*	2935 /*116"*	2800 /*110"*
CLC 2R Wings	**3.50 m /** *11'6"*	Centred	3195 /*126"*	2955 /*116"*	2935 /*116"*	2800 /*110"*
CLC 2R Wings	**4.00 m /** *13'1"*	Centred	3410 /*134"*	3215 /*127"*	3505 /*138"*	3685 /*145"*
CLC 3R	**3.00 m /** *9'10"*	Centred	3630 /*143"*	3260 /*128"*	3400 /*134"*	3120 /*123"*
CLC 3R	**3.50 m /** *11'6"*	Centred	3630 /*143"*	3260 /*128"*	3400 /*134"*	3120 /*123"*
CLC 3R	**4.00 m /** *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.

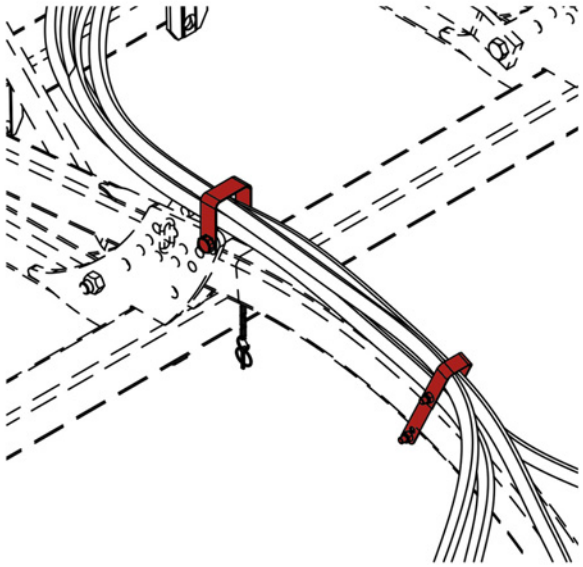
- Fix the supports above the arms.
- Group the hoses and pass them in the supports.
- Cross the hoses when you connect them to the rail of spreaders. The hoses that come out of the centre of the seed drill must supply the exterior spreaders of the machine.

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

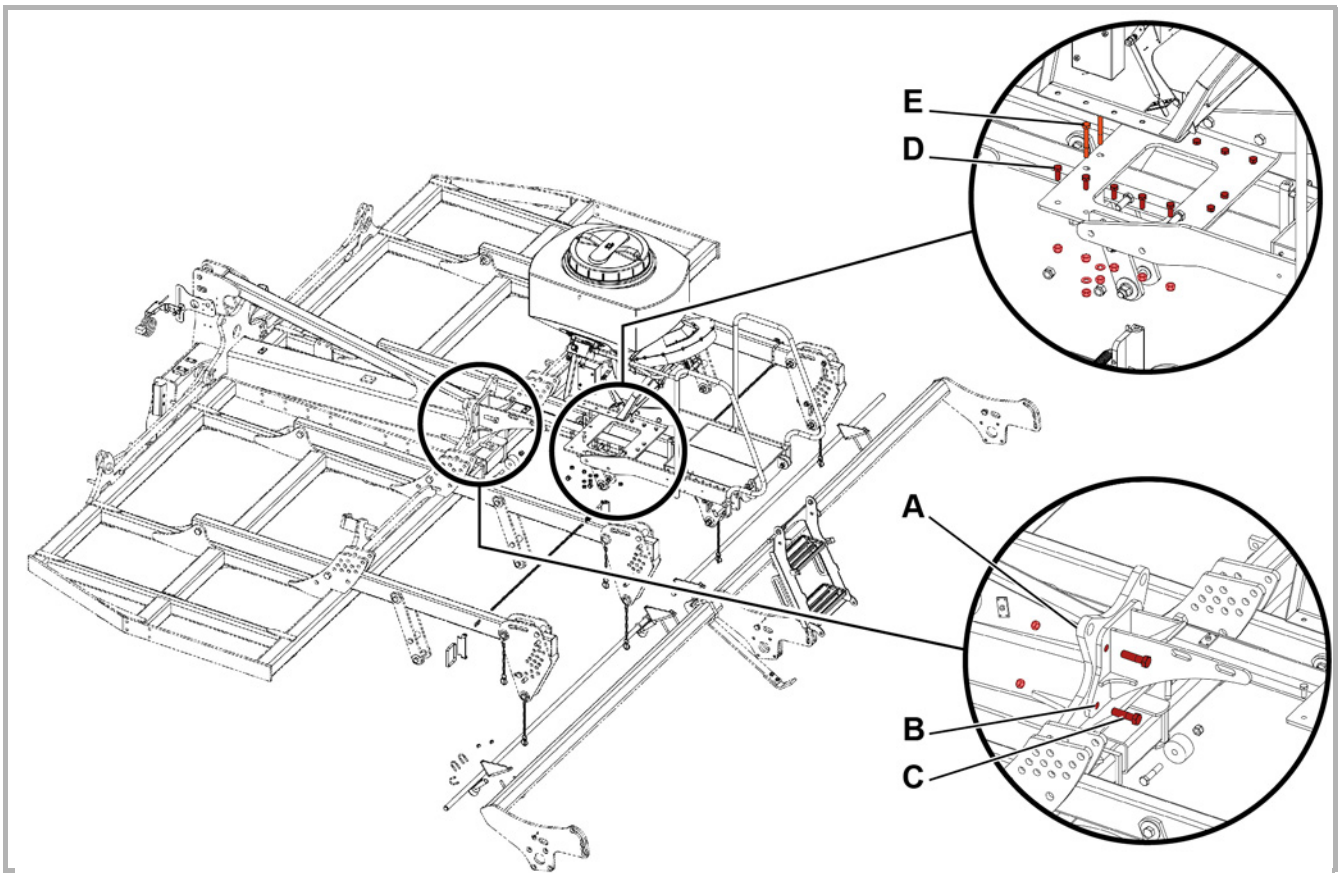
Mounting on parallelogram



Mounting on curved arm



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 + nuts **C**.

Procedure

- Align the holes **B** located at the rear extremity of the hopper support with the rear extremity of the central frame **A** of the machine.
- Place the 4 hexagonal head M20x70 screws **C** in the holes.
- Fix these 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 + nuts **D** and **E**.

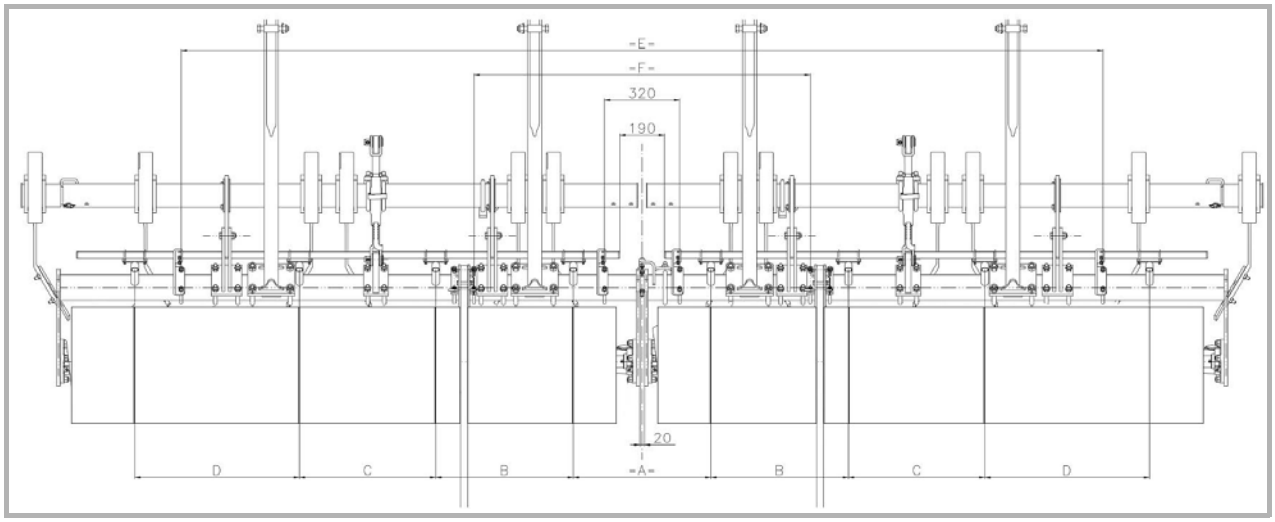
Procedure

- 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 M12 nuts.

Positioning the spreaders

Task description

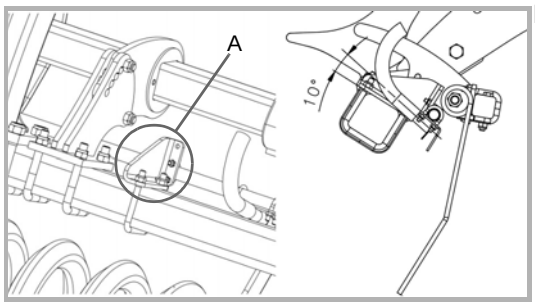
The spreaders must be distributed in a regular way on the machine, although their position can be slightly offset depending on the machines. The following table provides the mounting dimensions for the different machines:



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

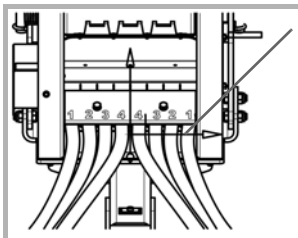


Levelling tines on CLC Pro Classic

- Adjust the rail to the low position **A** to position the spreaders.

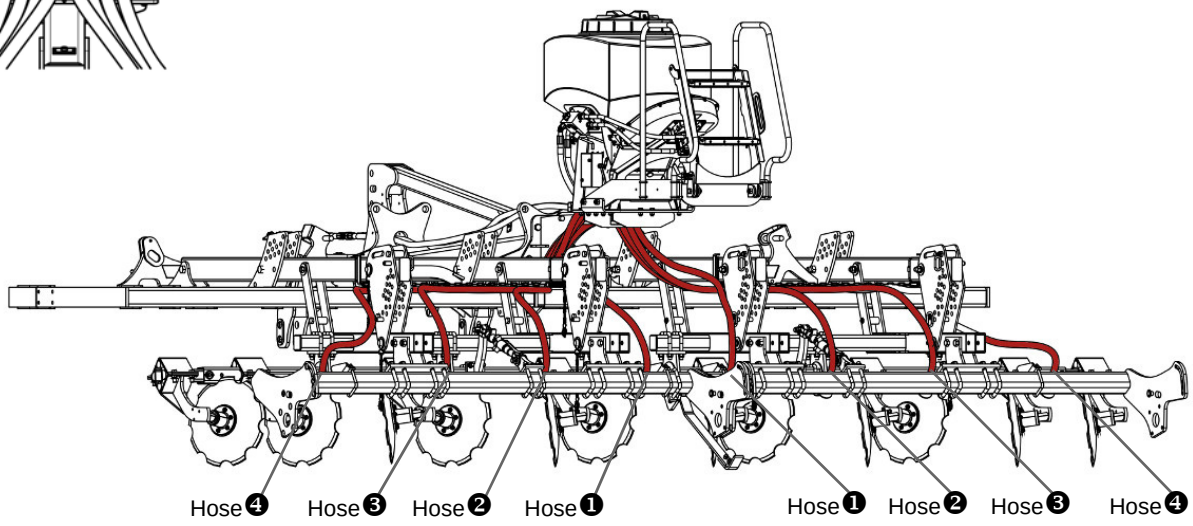
Passage of hoses

Order of distribution for seed hoses on CLC Pro

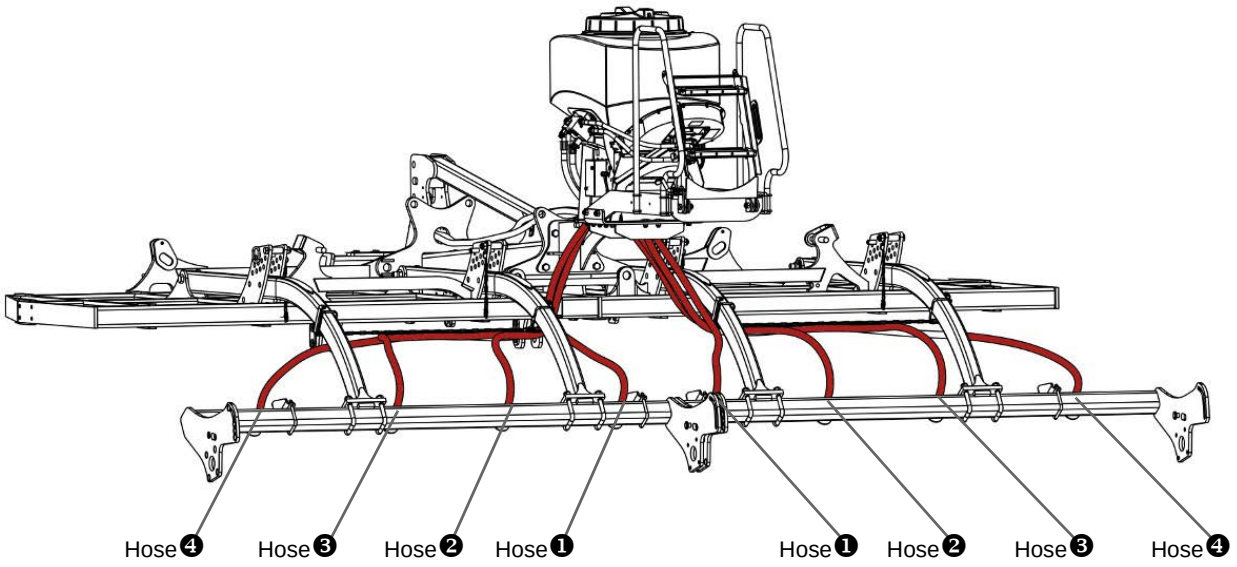


Ensure that you respect the seed outlet numbers compared to the spreader positions.

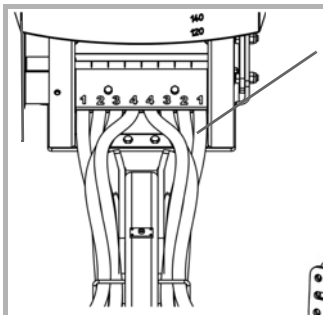
CLC PRO



CLC PRO Classic

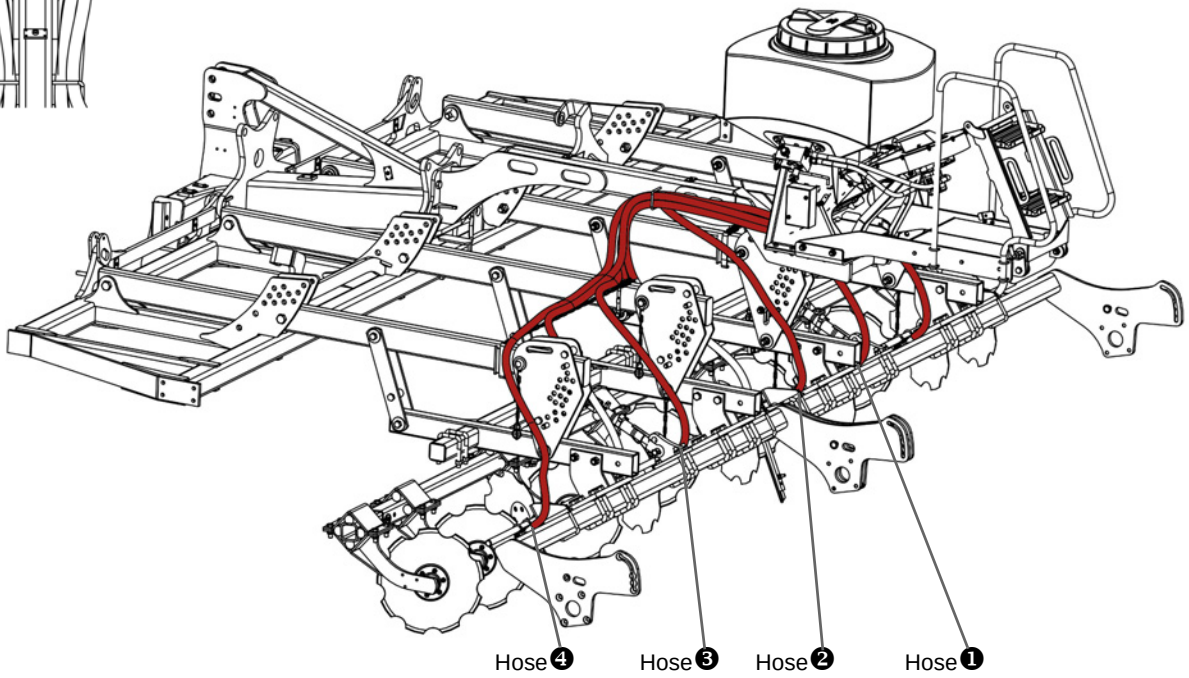


Order of distribution for seeds on CLC Evo

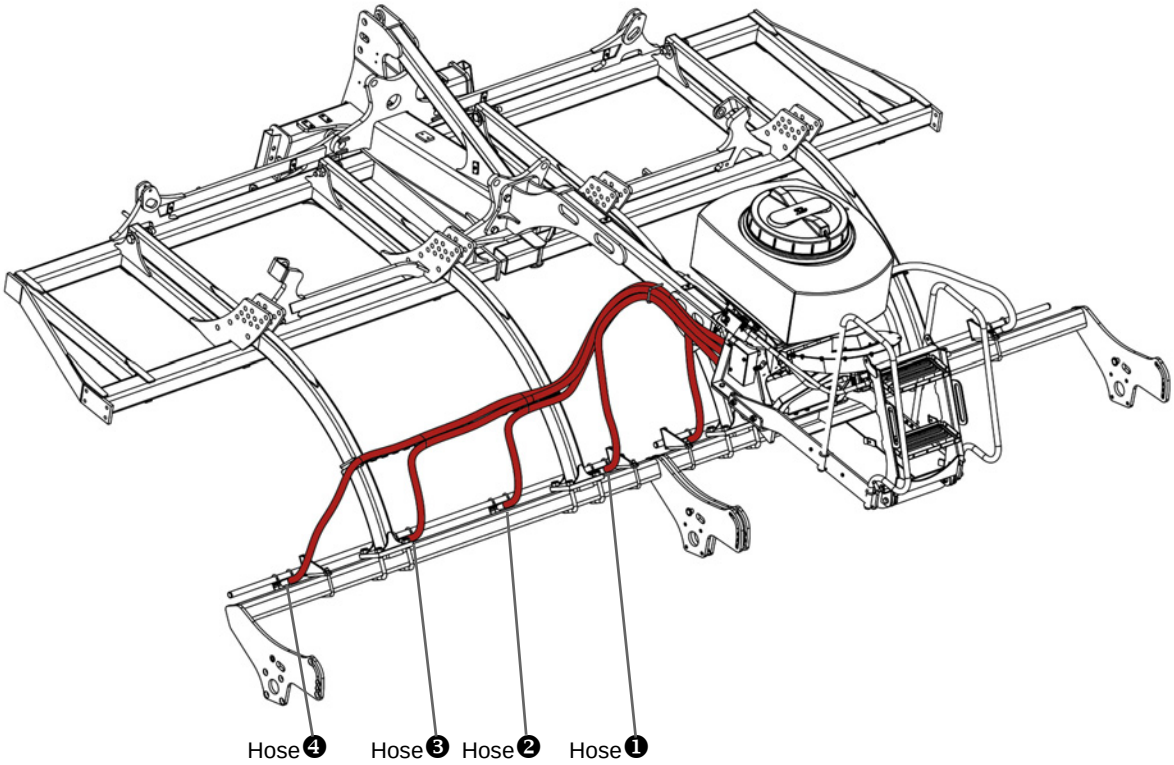


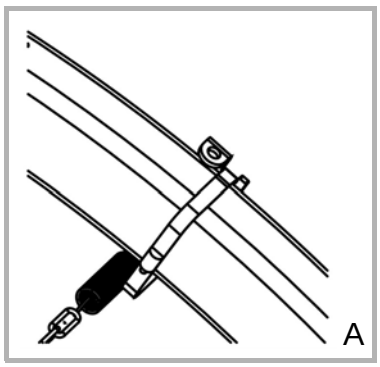
Ensure that you respect the seed outlet numbers compared to the spreader positions.

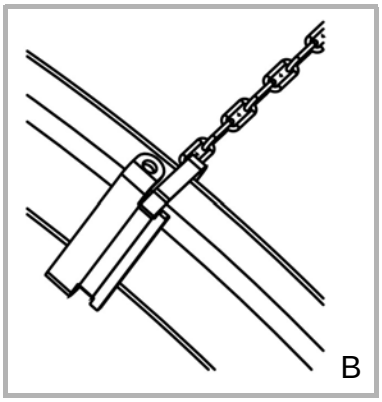
CLC Evo equipped with a parallelogram



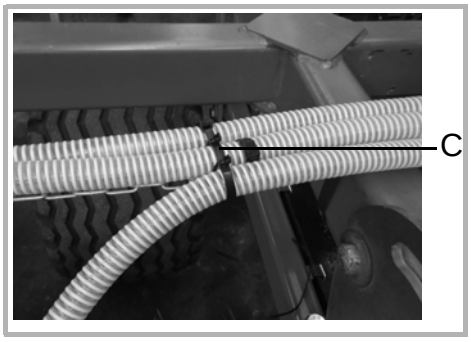
CLC Evo equipped with a roller arm

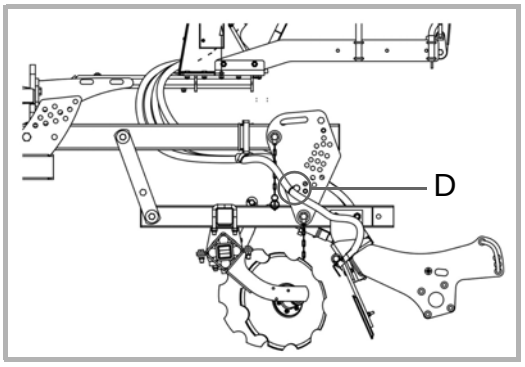






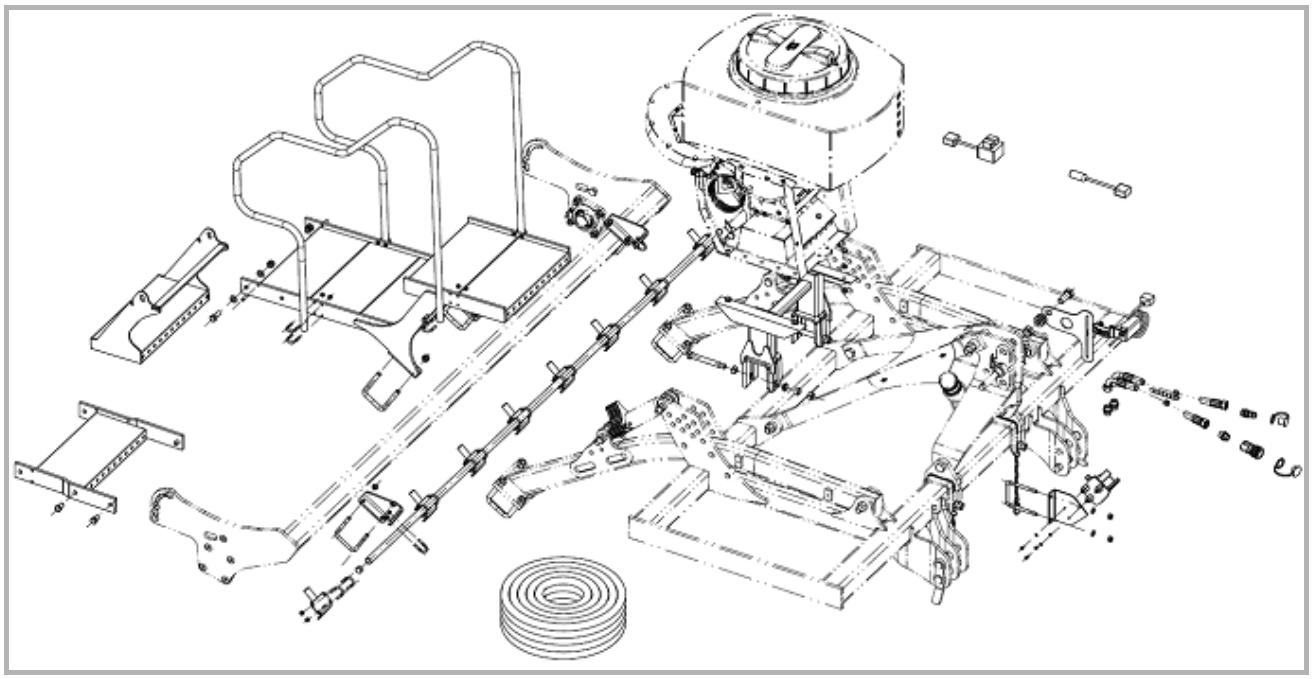
- Use the support containing a spring **A**.
- Install the spring support on the exterior arm, ensuring that the spring is directed towards the interior of the machine.
- Fix the support using a metal clamping ring.
- Use the link support **B**.
- Install the link support on the interior arm, ensuring 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.



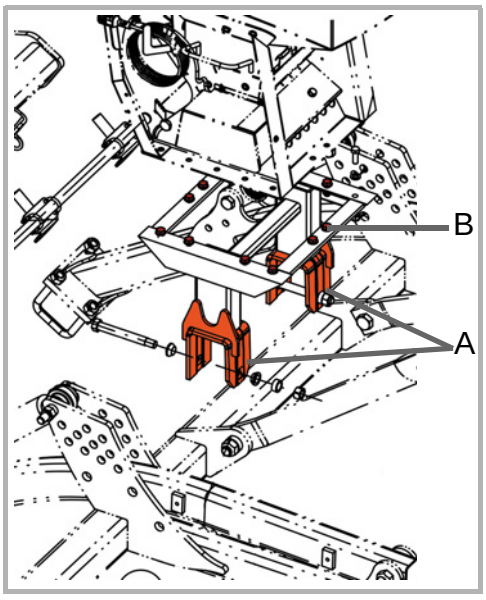


- Group the hoses and fix them to the chain using plastic rings.
- Fix the hoses to the extremity of the machine using a washer **D**.
- Check in the upper and lower positions that there are no blocking or crushing points for the hoses.

Rigid Qualidisc Pro

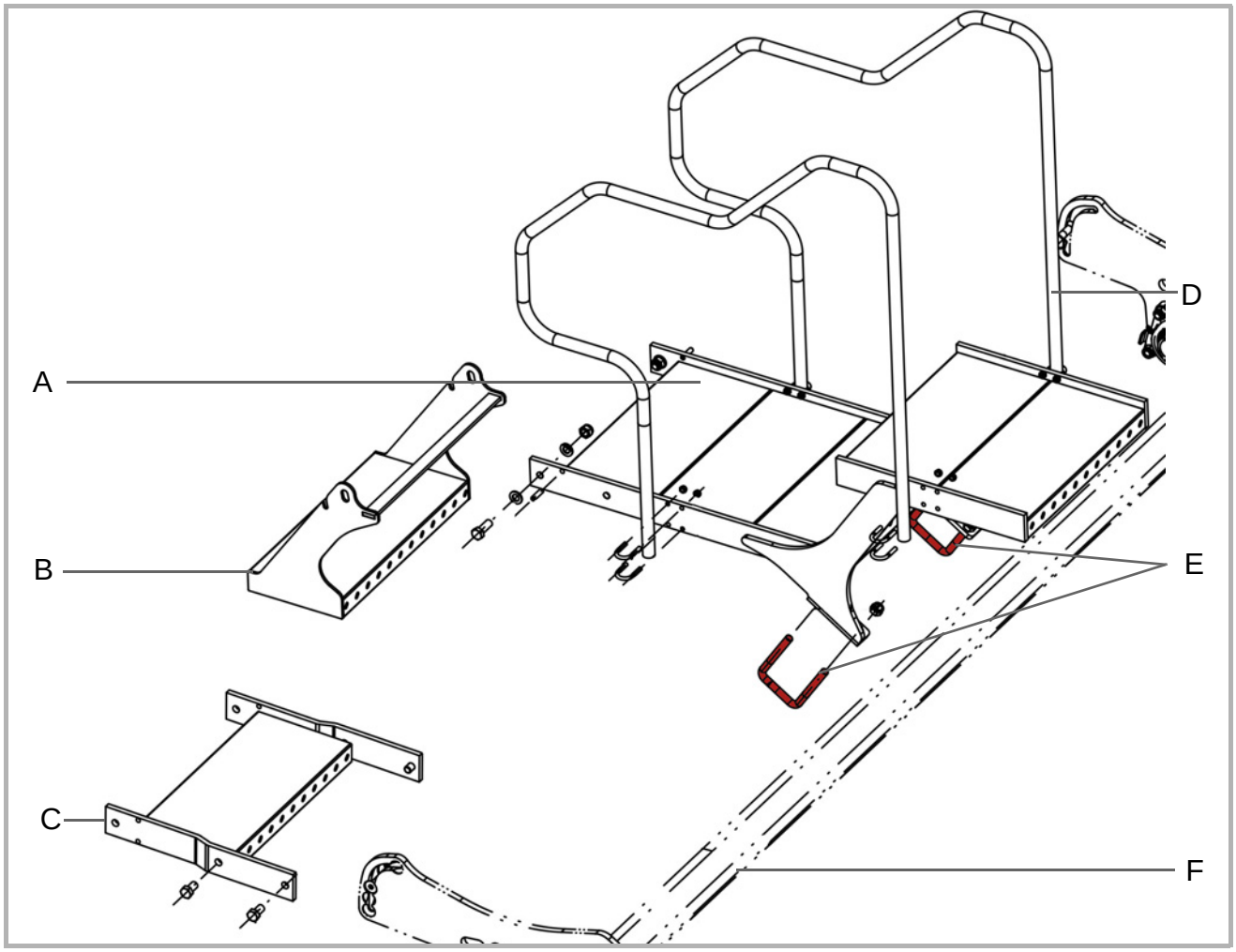


Mounting the hopper support and the hopper



- 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 **500 Nm** torque.
- Insert the 12 screws M12x35 **B** in the angles of the hopper support.
- Fix the 12 screws using M12 nuts.

Mounting the walkway



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

- 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:

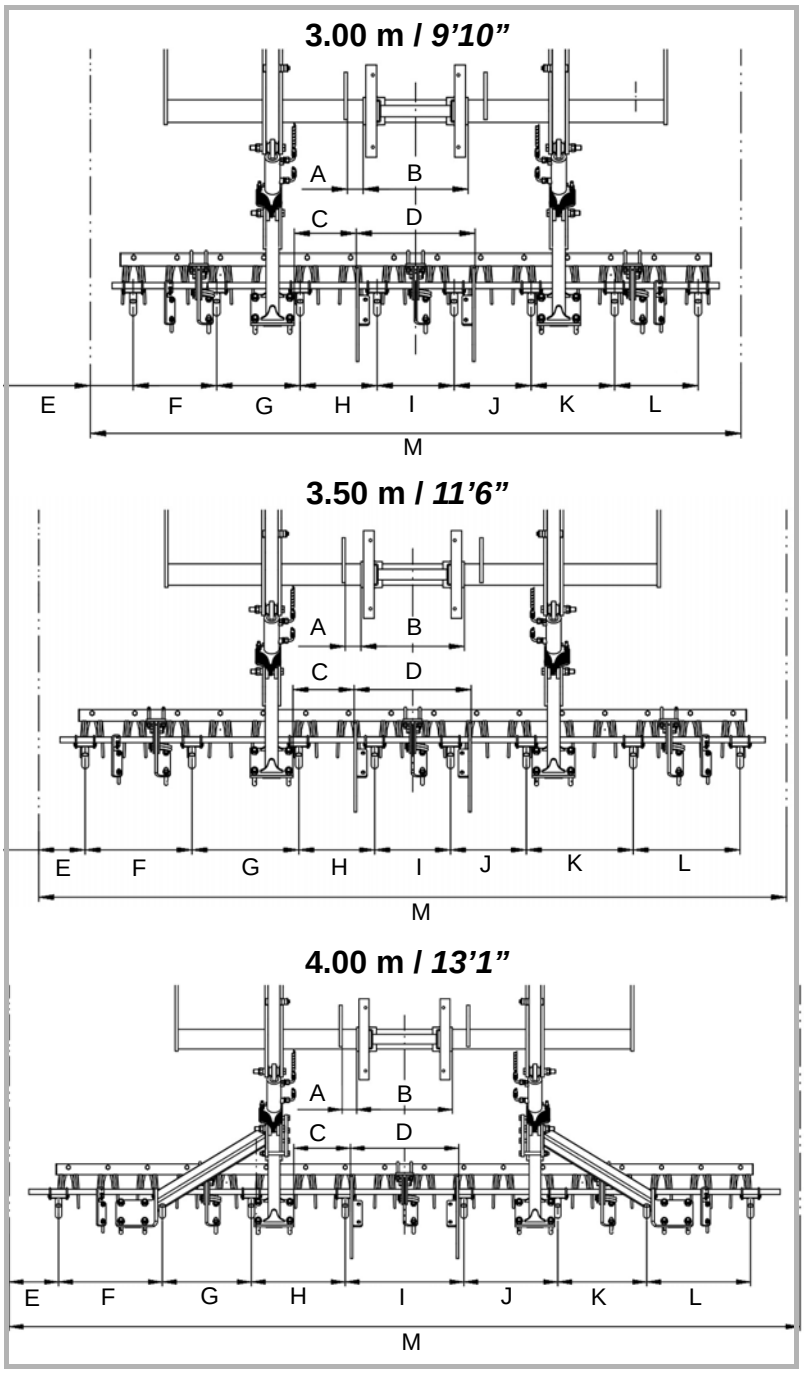
- Attach the walkway extension **C** between the platform **A** and the retractable step **B**.

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:



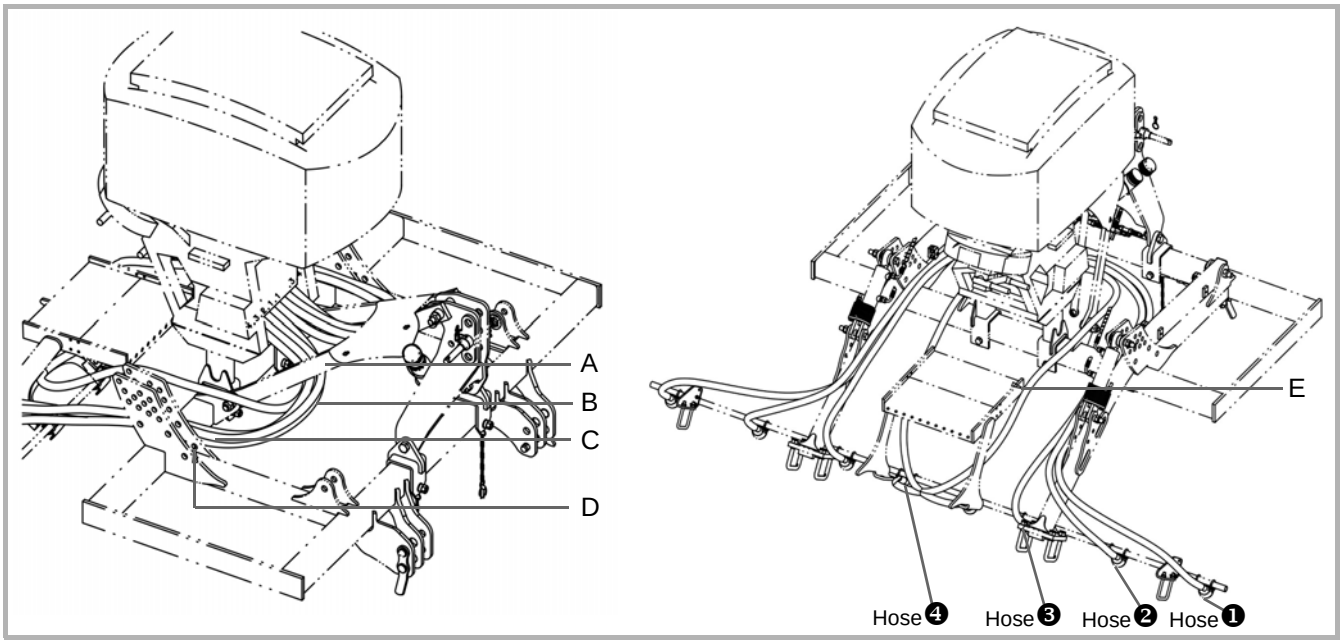
	3.00 m *(9'10")*	3.50 m (*11'6"*)	4.00 m (*13'1"*)
A	73 / *2 7/8"*	73 / *2 7/8"*	73 / *2 7/8"*
B	484 / *19"*	484 / *19"*	484 / *19"*
C	286 / *11 1/4"*	286 / *11 1/4"*	286 / *11 1/4"*
D	548 / *21 9/16*"	548 / *21 9/16*"	548 / *21 9/16*"
E	197.5 / *7 3/4*"	217.5 /*8 9/16"*	250 / *9 7/8*"
F	385 / *14"*	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"*

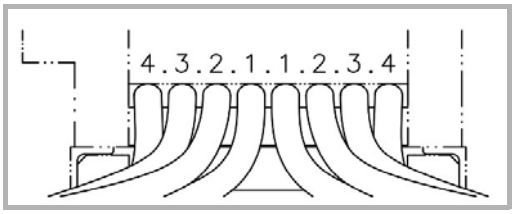
Passage of hoses

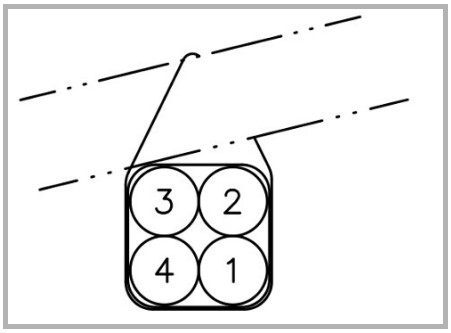
Order of distribution for seed hoses

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

Cultivators 3.00 m (*9'10"*) and 3.50 m (*11'6"*)



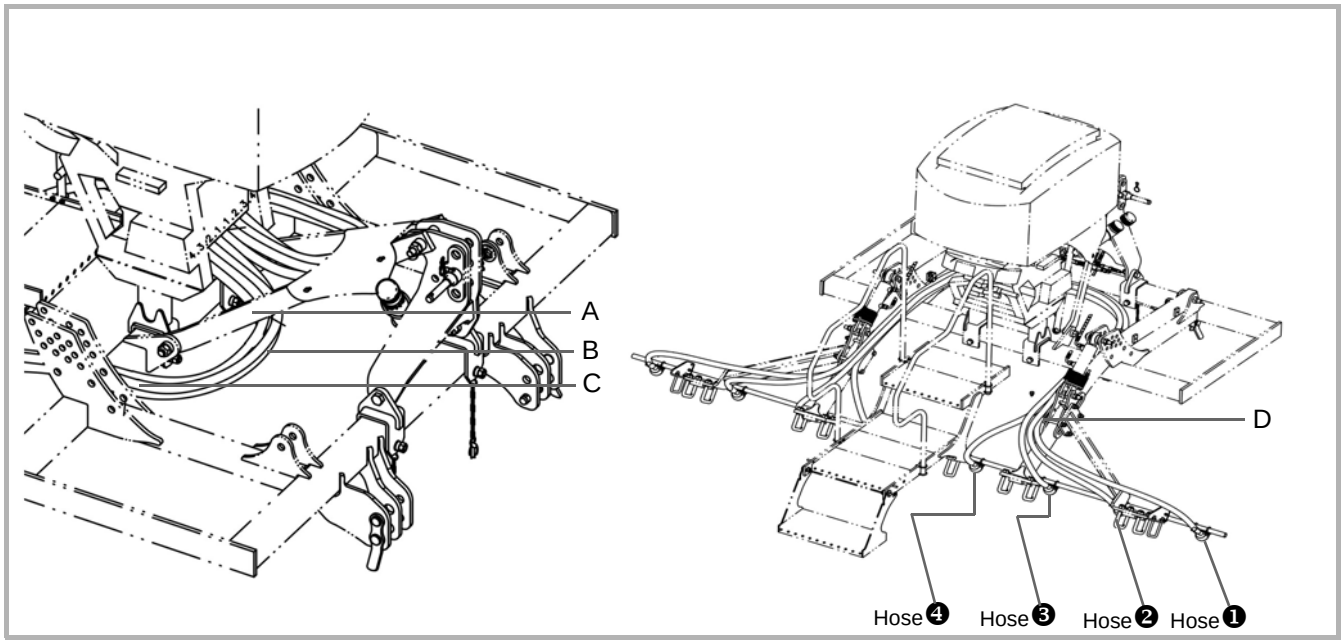


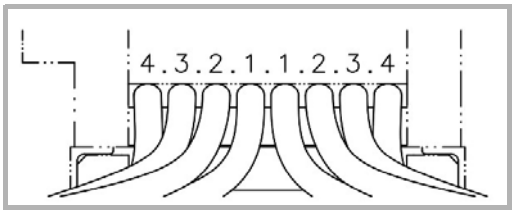


- Ensure you respect the seed outlet numbers compared to the spreader positions.

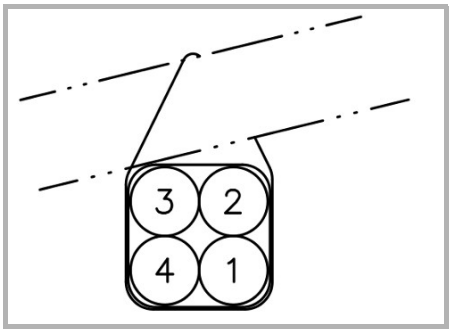
- Group the 4 hoses (position **B**) so that they form a square.
- Put a clamping ring around the 4 hoses.
- Fix them to the machine stay **A**.
- Fold the hoses ensuring that their curve is as natural as possible.
- Pass hoses ❶, ❷ and ❸ in a new clamping ring (position **C**).
- Attach this clamping ring in the furthest front hole of the drilled plate of the machine **D**.
- Attach the hose ❹ to the upper part of the platform **E**.
- Cross the two hoses ❹ 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.

Cultivators 4.00 m (*13'1"*)





- Ensure you respect the seed outlet numbers compared to the spreader positions.



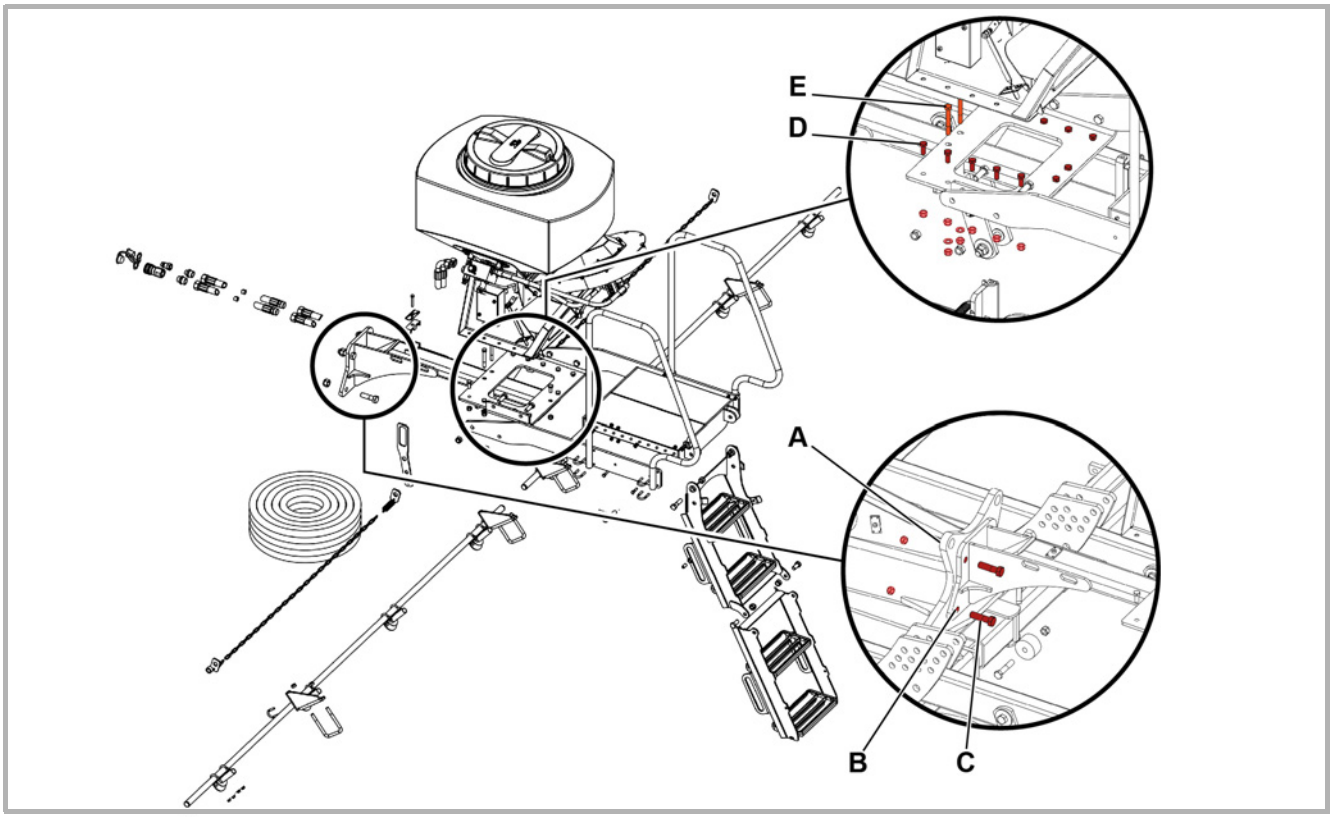
- Group the 4 hoses (position **B**) so that they form a square.
- Put a clamping ring around the 4 hoses.
- Fix them to the machine stay **A**.

- 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

	3.00 m *(9'10")*	**3.50 m (*11'6"*)**	**4.00 m (*13'1"*)**
Hose ❶	2600 mm / *102"*	3100 mm / *122"*	3400 mm / *134"*
Hose ❷	2900 mm / *114"*	2700 mm / *106"*	2900 mm / *114"*
Hose ❸	2400 mm / *94"*	2400 mm / *94"*	2400 mm / *94"*
Hose ❹	2400 mm / *94"*	2400 mm / *94"*	2400 mm / *94"*

Folding Qualidisc Pro



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 + nuts **C**.

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 + nuts **D** and **E**.

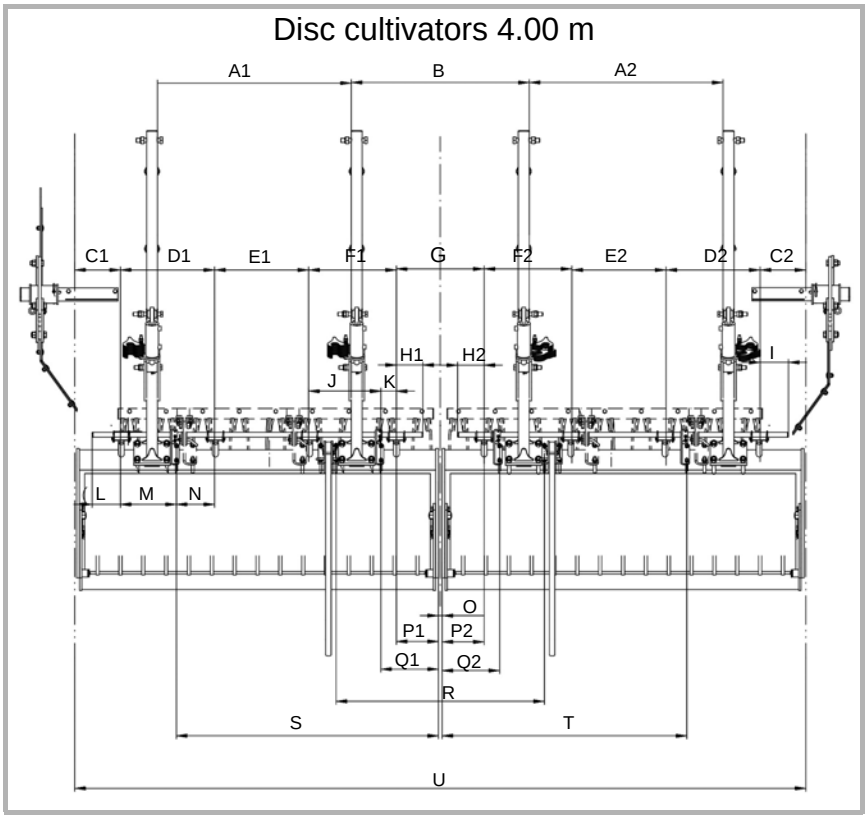
Procedure

- 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

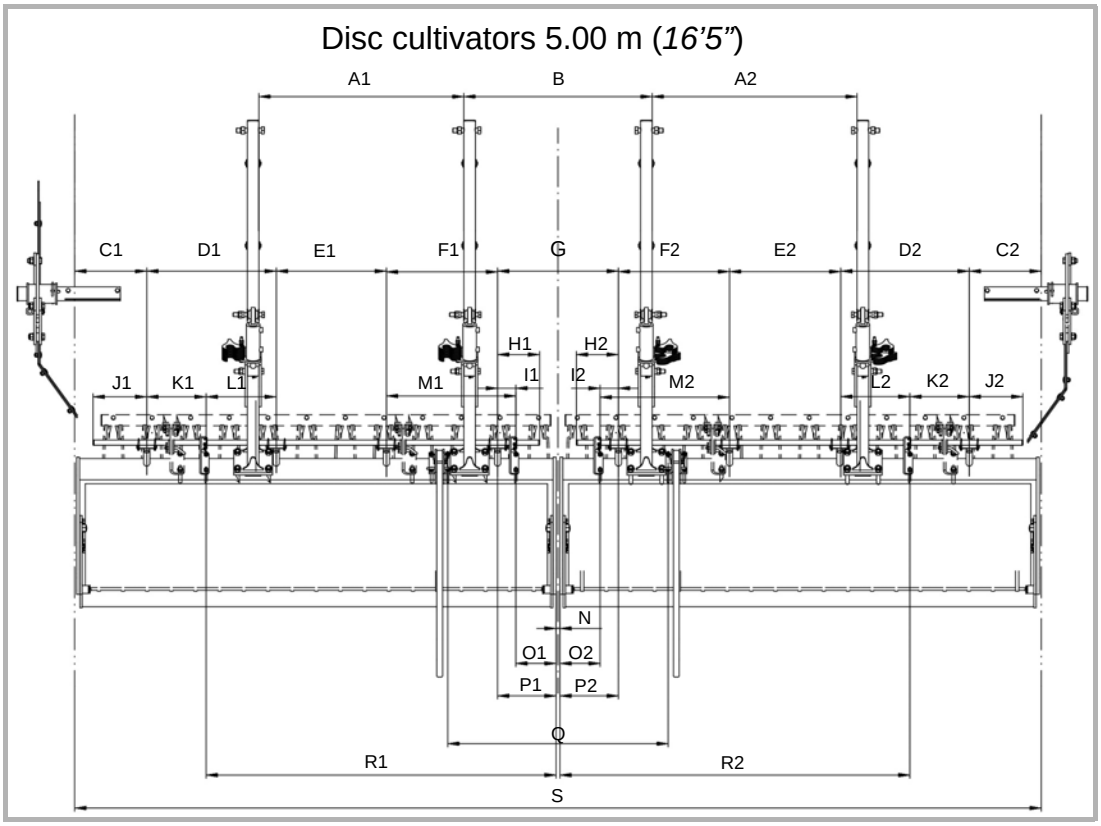
Task description

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:

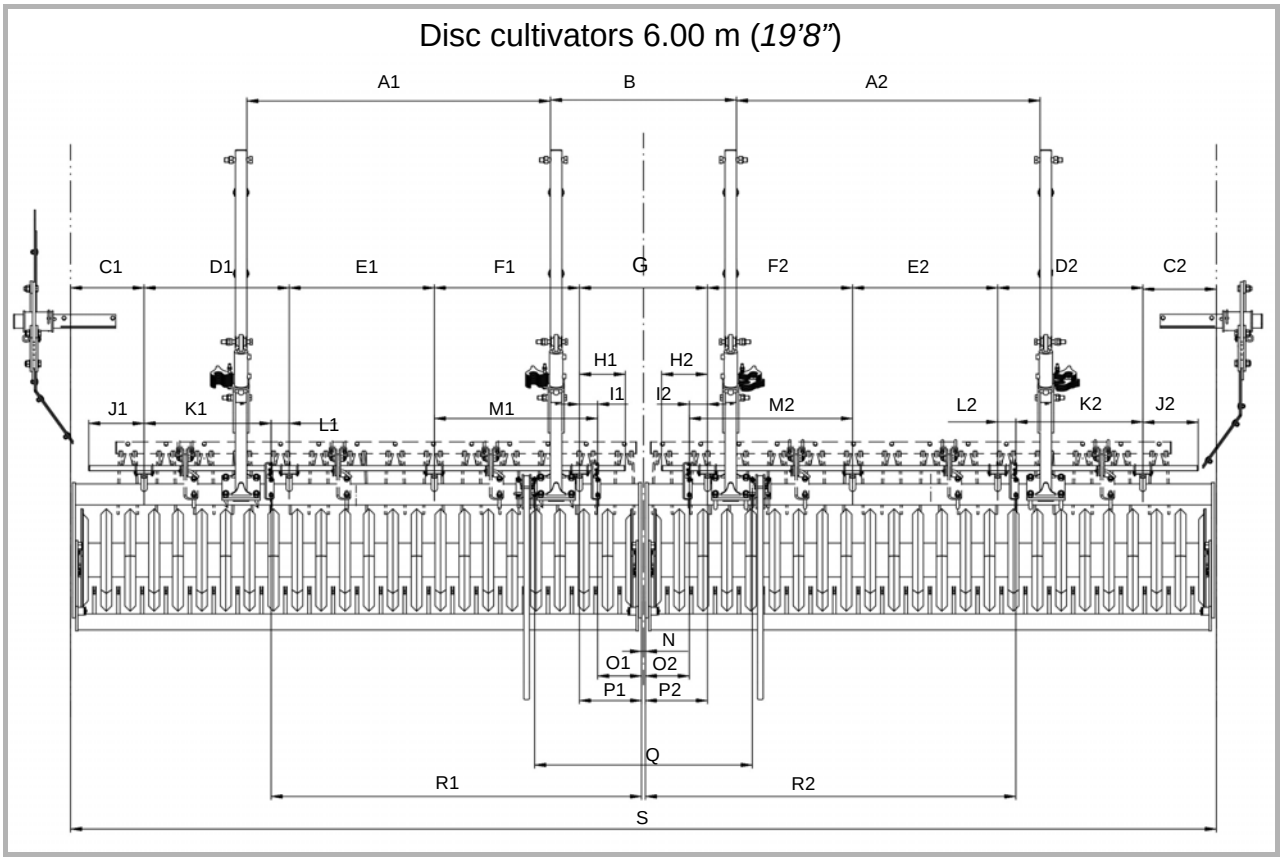


Reference	4.00 m (*13'1"*)	Reference	4.00 m (*13'1"*)
A1 & A2	1060 / *42"*	**L**	155 / *6 1/8"*
B	974 / *38 3/8"*	**M**	306 / *12"*
C1 & C2	250 / *9 13/16"*	**N**	209 / *8 1/4"*
D1 & D2	515 / *20 1/4"*	**O**	20 / *13/16"*
E1 & E2	515 / *20 1/4"*	**P1 & P2**	230 / *9"*
F1 & F2	480 / *18 7/8"*	**Q1 & Q2**	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"*	**-**	-

Disc cultivators 5.00 m (*16'5"*)



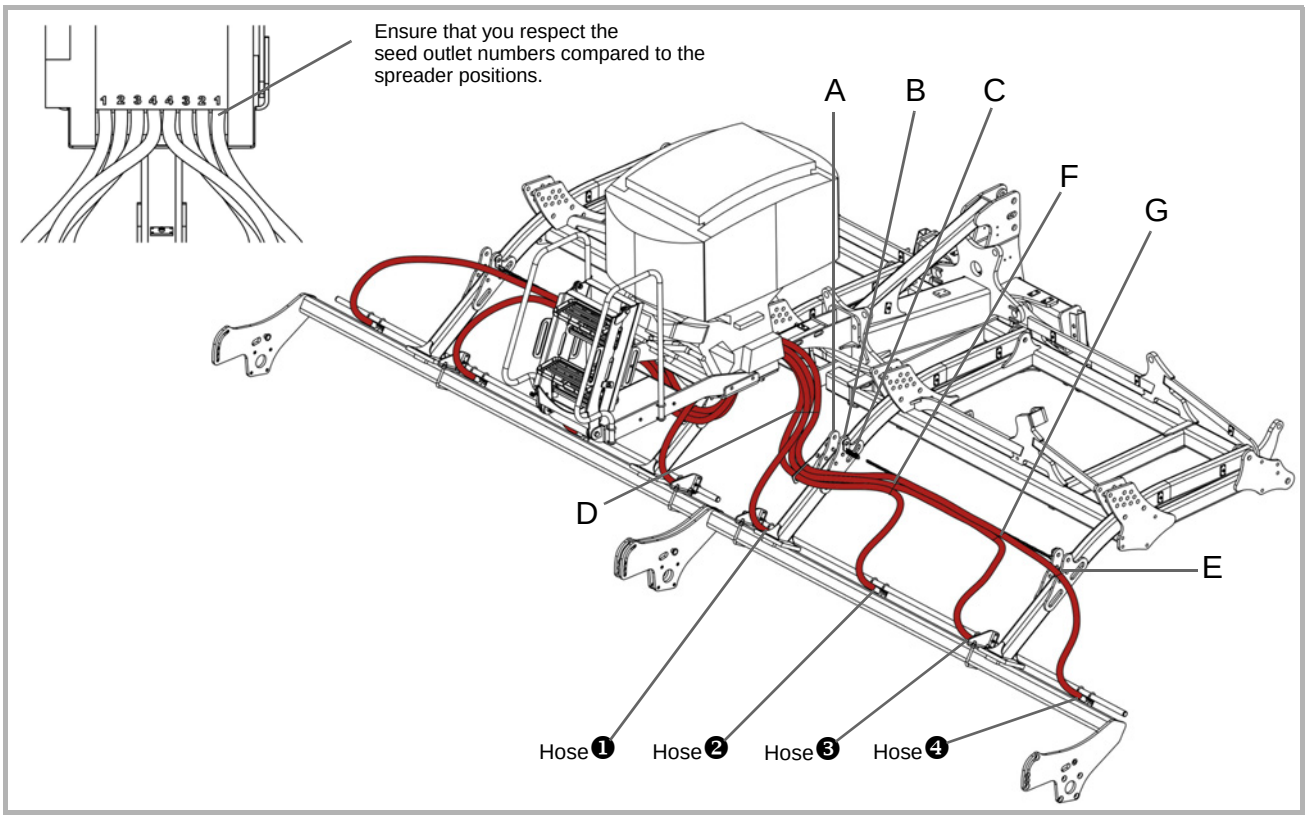
Disc cultivators 6.00 m (*19'8"*)

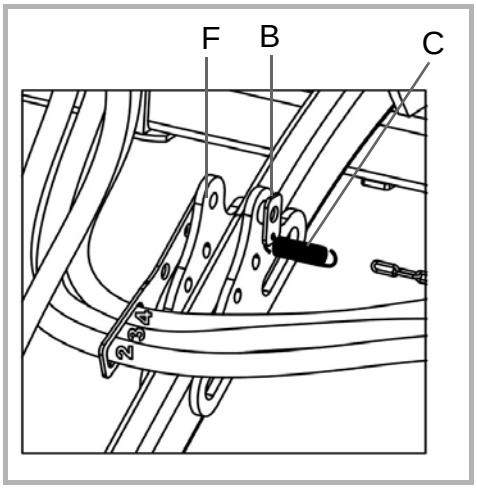


Reference	5.00 m (*16'5*)	6.00 m (*19'8*)	Refer-ence	5.00 m (*16'5*)	6.00 m (*19'8*)
A1 & A2	1060 / *42"*	1590 / *63"*	**K1 & K2**	307 / *12 11/16"*	665 / *26 3/16"*
B	974 / *38 3/8"*	974 / *38 3/8"*	**L1 & L2**	363 / *14 5/16"*	95 / *3 3/4"*
C1 & C2	373 / *14 11/16"*	385 / *15 3/16"*	**M1 & M2**	669 / *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"*			

Passage of hoses

Order of distribution for seed hoses



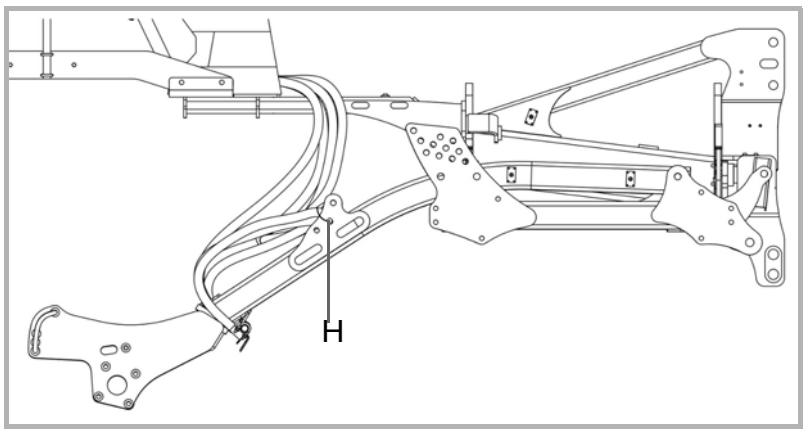


Mounting the hose supports:

- 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.

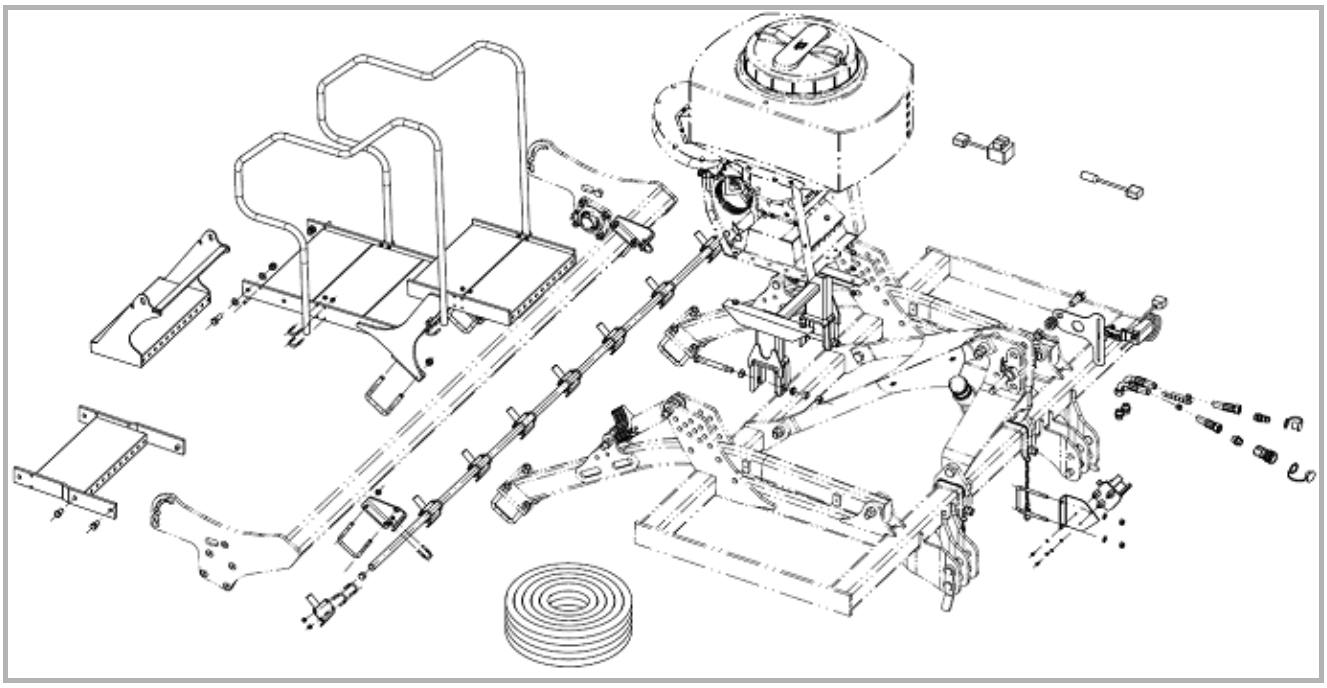
Passage of hoses:





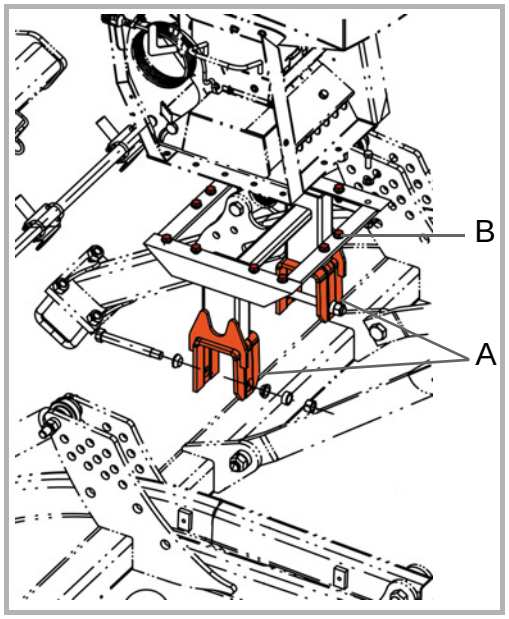
- Group the 4 hoses using clamping rings **E**.
- Connect the hose❶ to the spreader.
- Pass the hoses❷, ❸ and ❹ through the hose support **A**.
- Group the hoses❷, ❸ and ❹ using clamping rings.
- Attach the hoses to the chain using a clamping ring **F**.
- Connect the hose❷ to the spreader.
- Group the hoses❸ and ❹ using clamping rings.
- Attach the hoses to the chain using a clamping ring **G**.
- Using clamping rings, attach the hose❹ to the exterior drilled plate **H** of the exterior roller arm.
- Connect the hose❹ to the spreader.
- Check in the upper and lower positions that there are no blocking or crushing points for the hoses.

Rigid Qualidisc Farmer



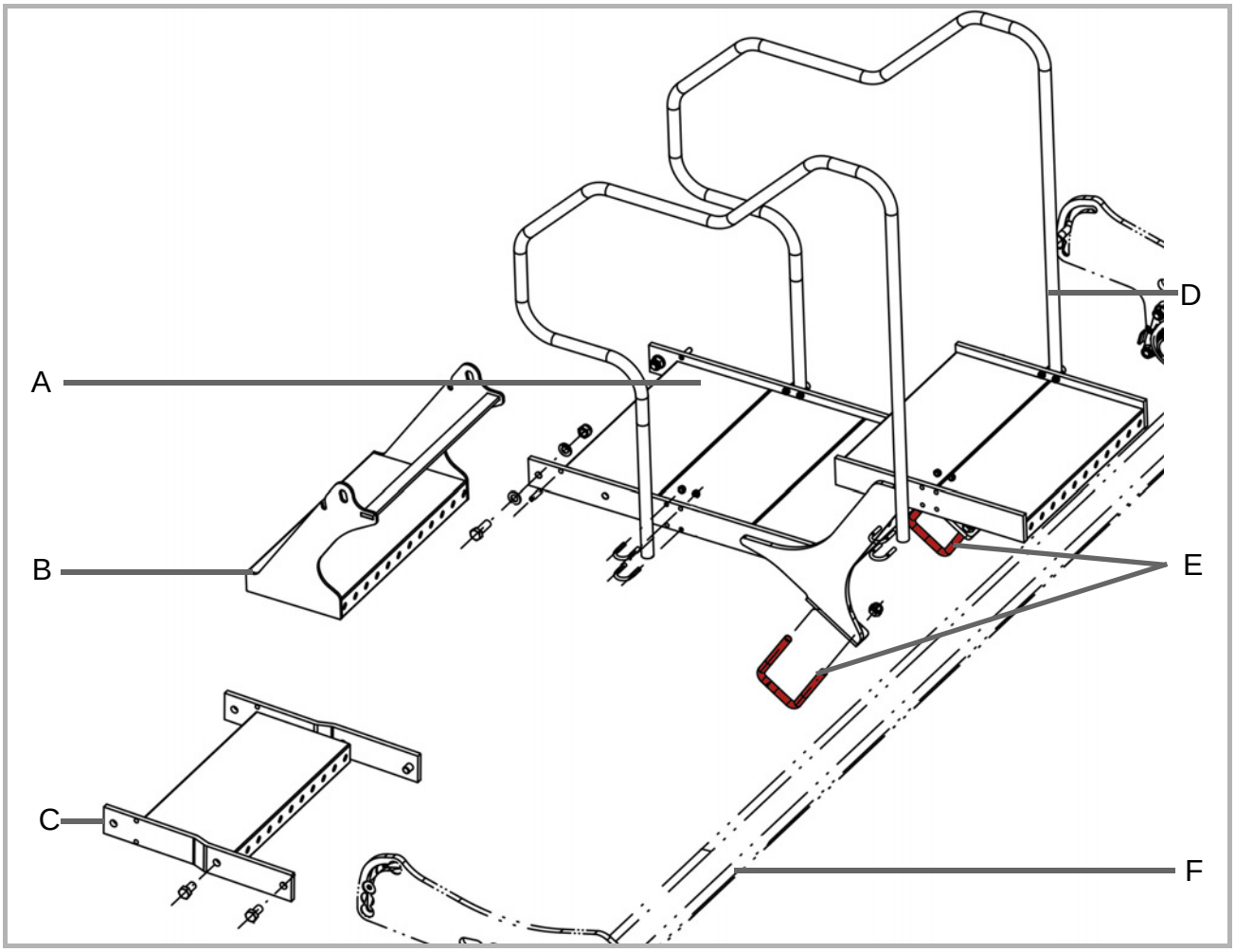
Mounting the hopper support and the hopper

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 **500 Nm** torque.
- Insert the 12 screws M12x35 **B** in the angles of the hopper support.
- Fix the 12 screws using M12 nuts.

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.

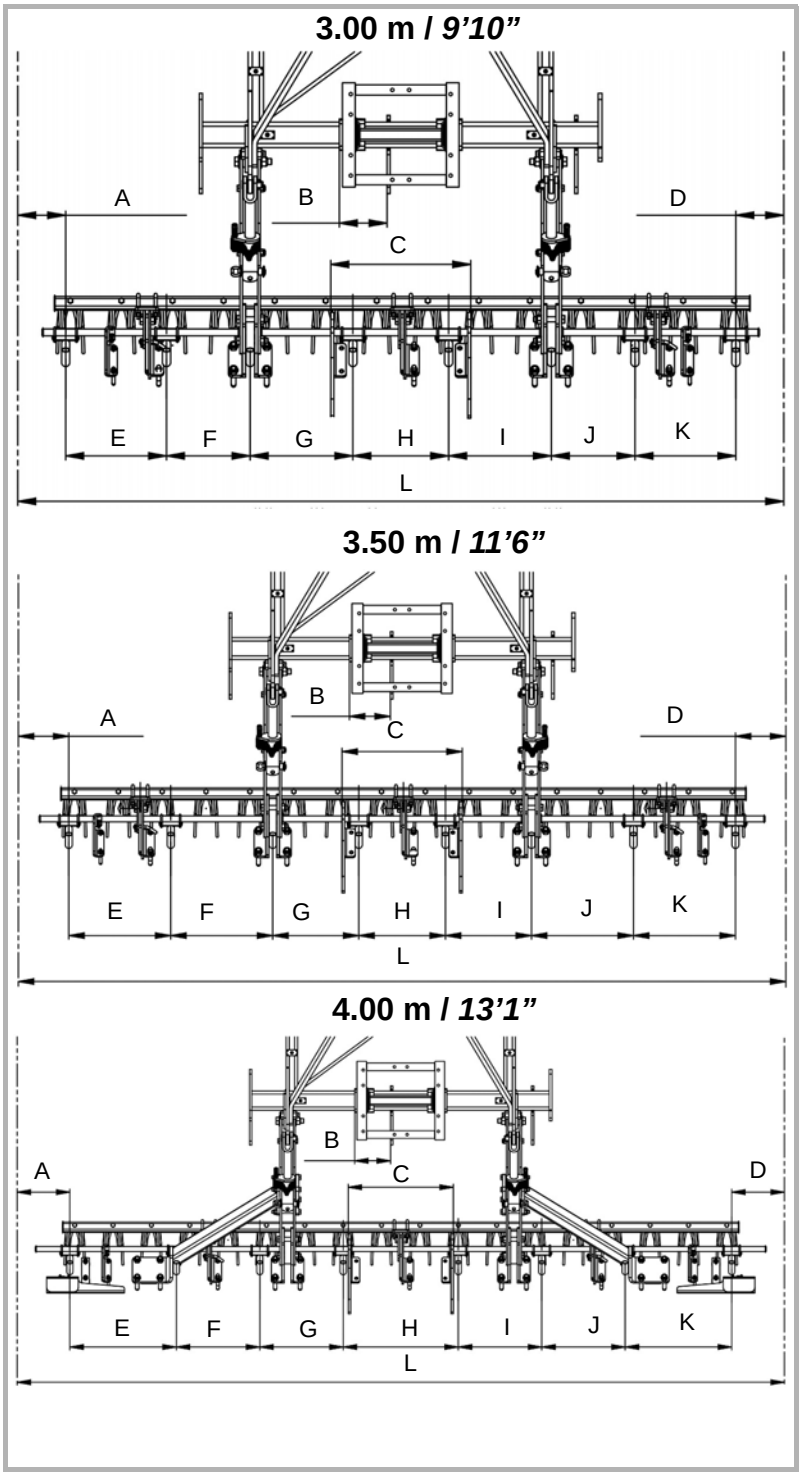
Machines equipped with double rollers:

- Attach the walkway extension **C** between the platform **A** and the retractable step **B**.

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:



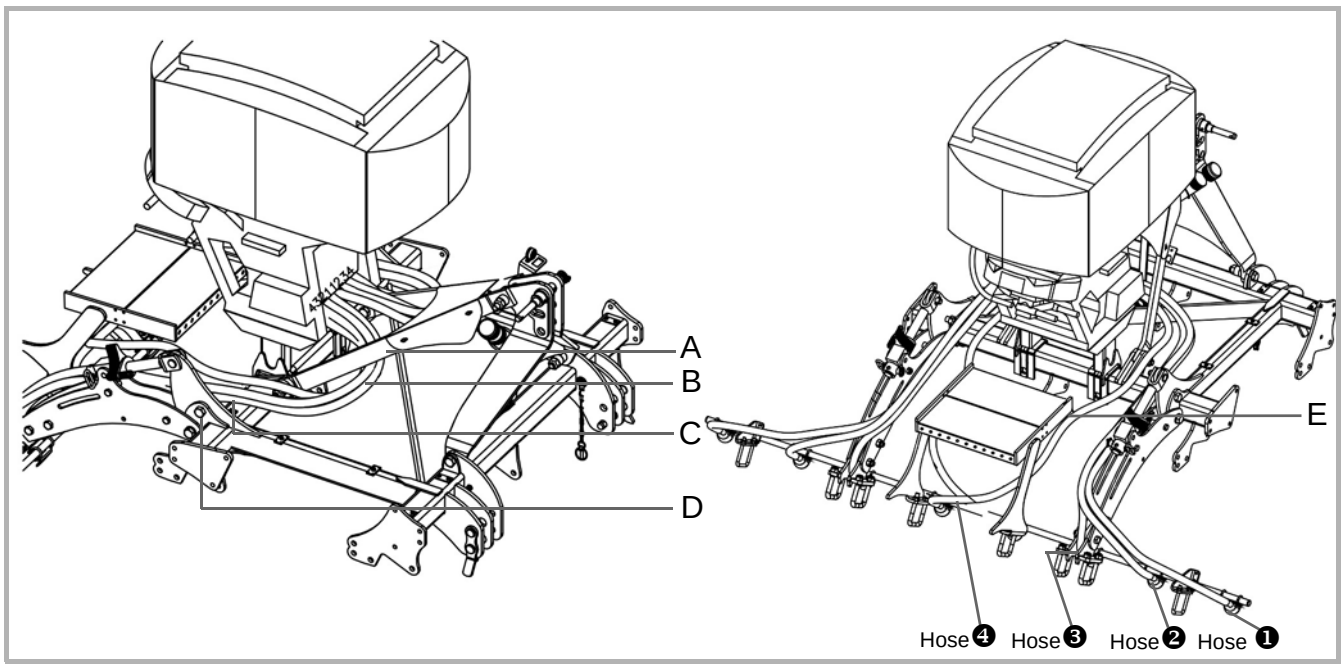
	3.00 m *(9'10")*	3.50 m (*11'6"*)	4.00 m (*13'1"*)
A	187.5 / *7 3/8"*	230 / *9 1/16"*	275/*10 13/16"*
B	187 / *7 3/8"*	187 / *7 3/8"*	187 / *7 3/8"*
C	548 / *21 9/16"*	548 / *21 9/16"*	548 / *21 9/16"*
D	187.5 / *7 3/8"*	230 / *9 1/16"*	275/*10 13/16"*
E	395 / *15 1/2"*	465 / *18 5/16"*	555 / *21 7/8"*
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"*

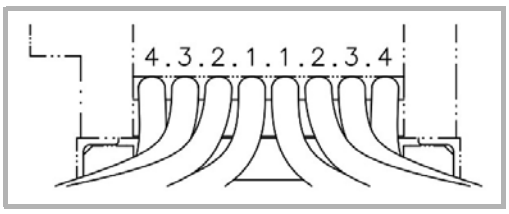
Passage of hoses

Order of distribution for seed hoses

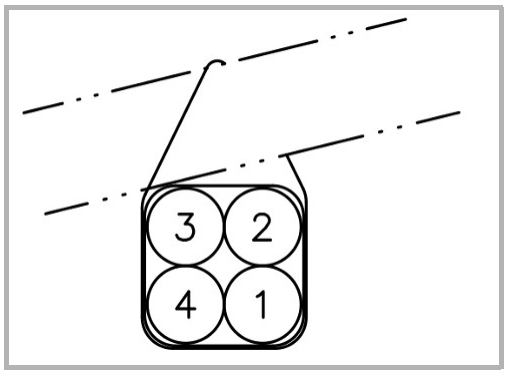
The seed flow hoses leave the hopper to the front when it is mounted on a rigid mounted disc cultivator.

Cultivators 3.00 m (*9'10"*) and 3.50 m (*11'6"*)



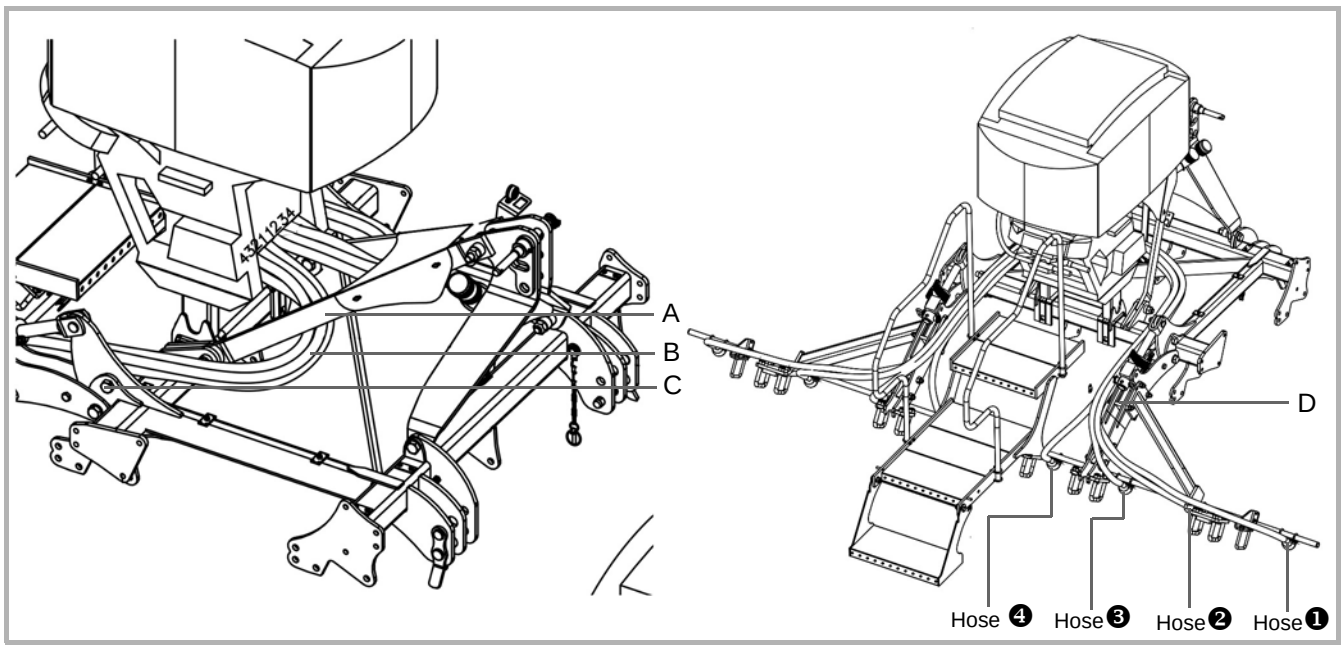


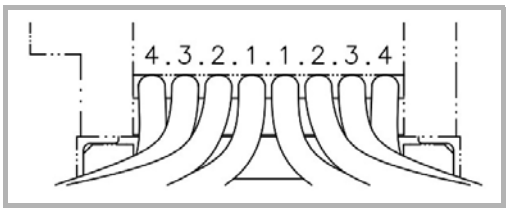
- Ensure you respect the seed outlet numbers compared to the spreader positions.



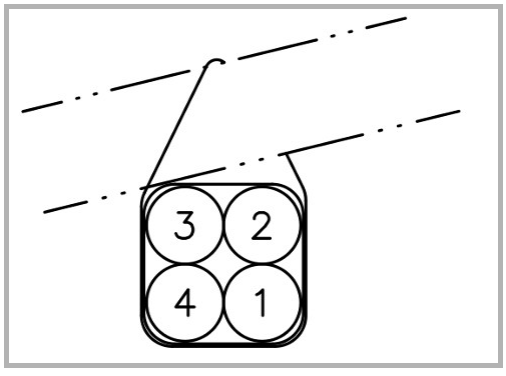
- Group the 4 hoses (position **B**) so that they form a square.
- Put a clamping ring around the 4 hoses.
- Fix them to the machine stay **A**.
- Fold the hoses ensuring that their curve is as natural as possible.
- Pass hoses❶, ❷ and ❸ in a new clamping ring (position **C**).
- Attach this clamping ring (in position **D**).
- Attach the hose❹ to the upper part of the platform **E**.
- Cross the hoses❹ 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.

Cultivators 4.00 m (*13'1"*)





- Ensure you respect the seed outlet numbers compared to the spreader positions.



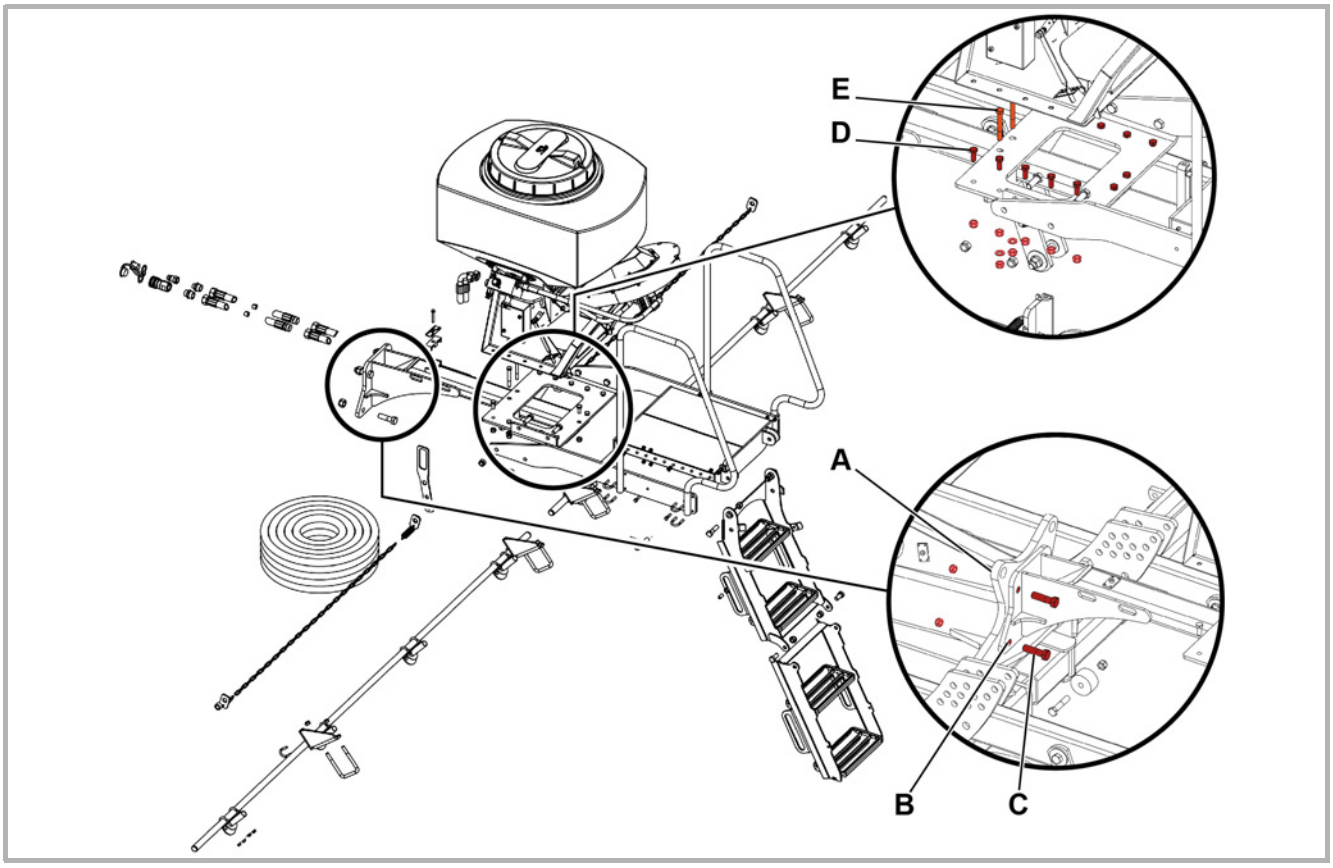
- Group the 4 hoses (position **B**) so that they form a square.
- Put a clamping ring around the 4 hoses.
- Fix them to the machine stay **A**.

- 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

	3.00 m *(9'10")*	**3.50 m (*11'6"*)**	**4.00 m (*13'1"*)**
Hose ❶	2900 mm / *114"*	3100 mm / *122"*	3300 mm / *130"*
Hose ❷	2500 mm / *98"*	2600 mm / *102"*	2400 mm / *94"*
Hose ❸	2200 mm / *87"*	2200 mm / *87"*	2300 mm / *91"*
Hose ❹	2300 mm / *91"*	2300 mm / *91"*	2900 mm / *114"*

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 + nuts **C**.

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 + nuts **D** and **E**.

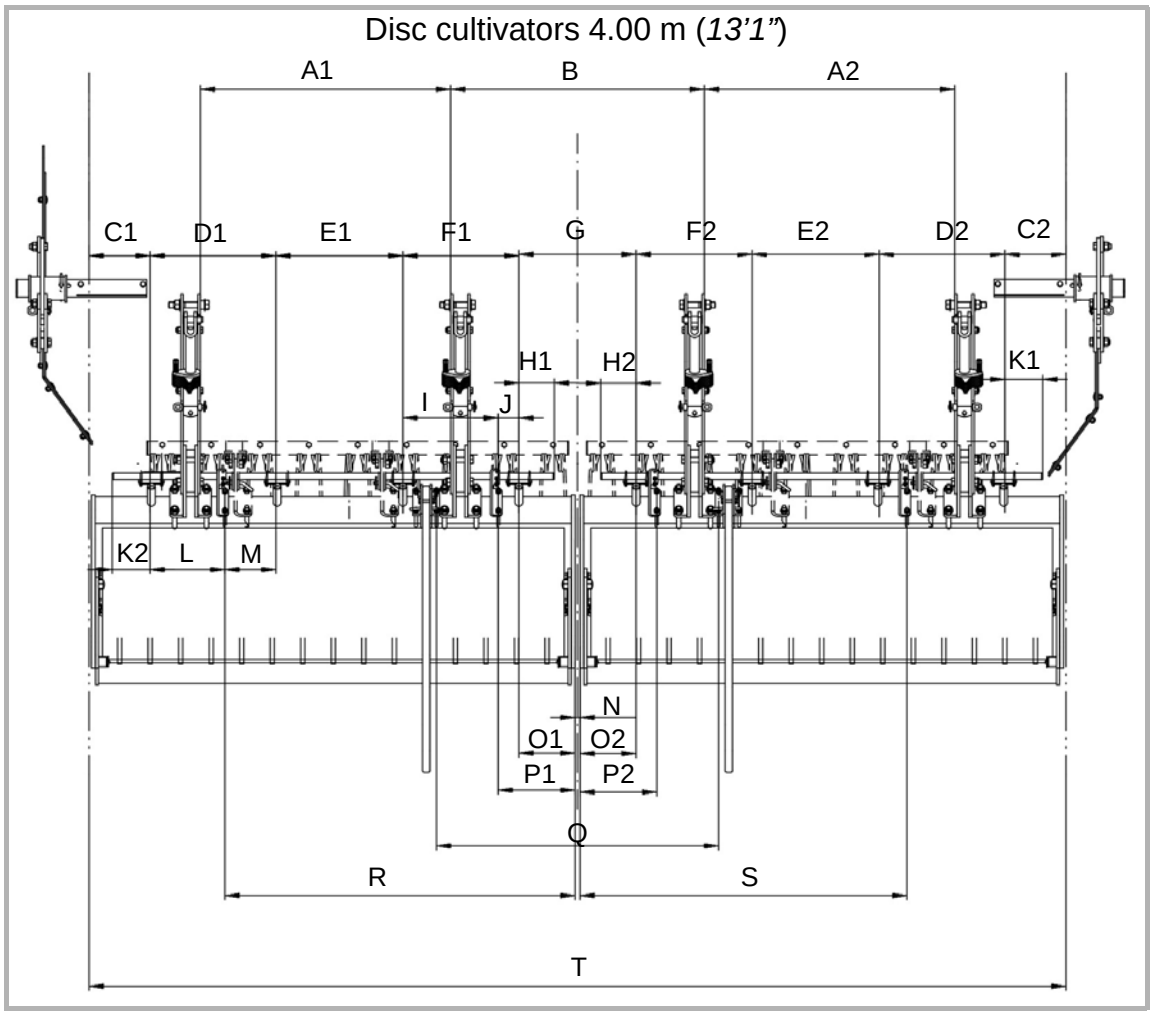
Procedure

- 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

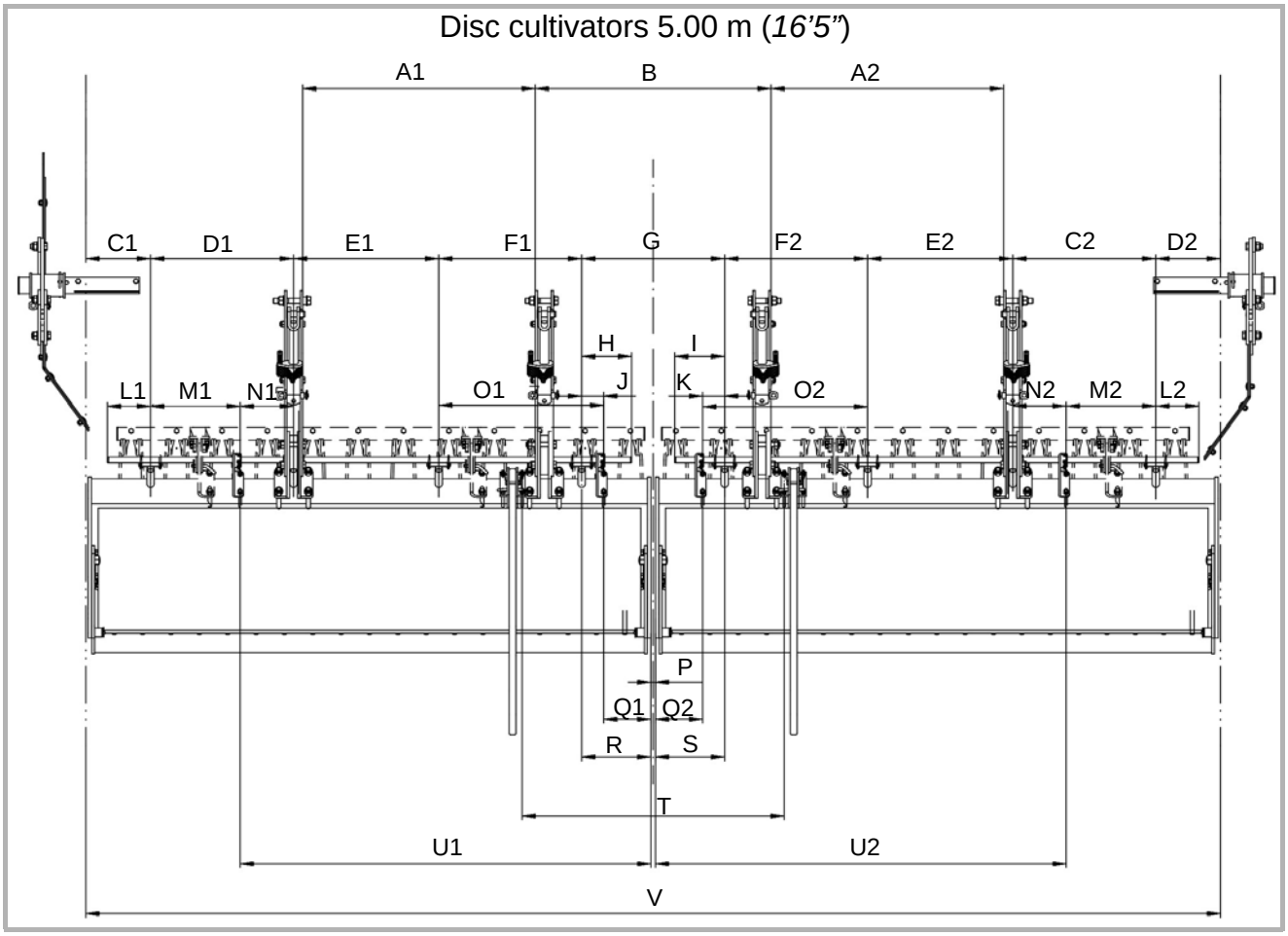
Task description

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:



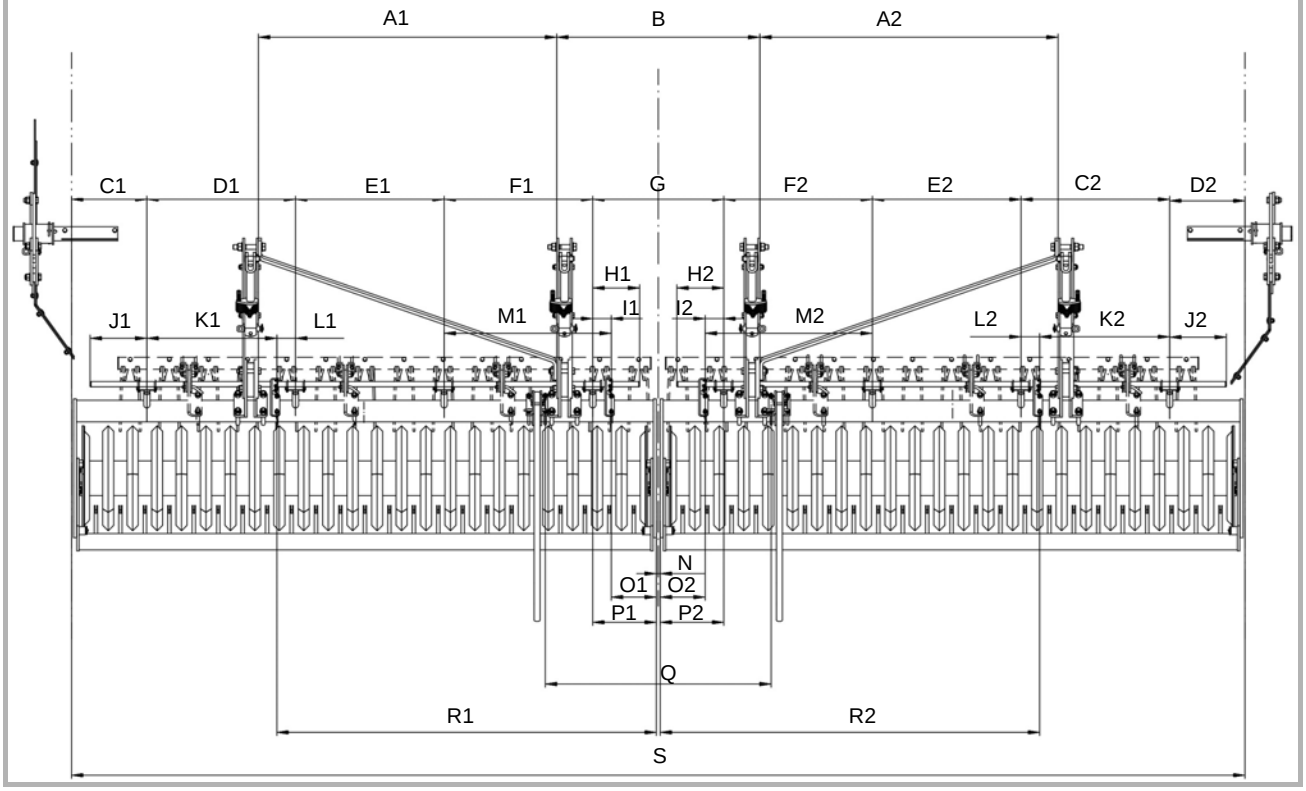
Reference	4.00 m (*13'1"*)	Reference	4.00 m (*13'1"*)
A1 & A2	1025 / *40"*	**K1 & K2**	155 / *6 1/8"*
B	1039 / *41"*	**L**	306 / *12"*
C1 & C2	250 / *9 13/16"*	**M**	209 / *8 1/4"*
D1 & D2	515 / *20 1/4"*	**N**	20 / *13/16"*
E1 & E2	520 / *20 1/2"*	**O1 & O2**	230 / *9"*
F1 & F2	475 / *18 11/16"*	**P1 & 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"*

Disc cultivators 5.00 m (*16'5"*)



Reference	5.00 m (*16'5"*)	Reference	5.00 m (*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"*

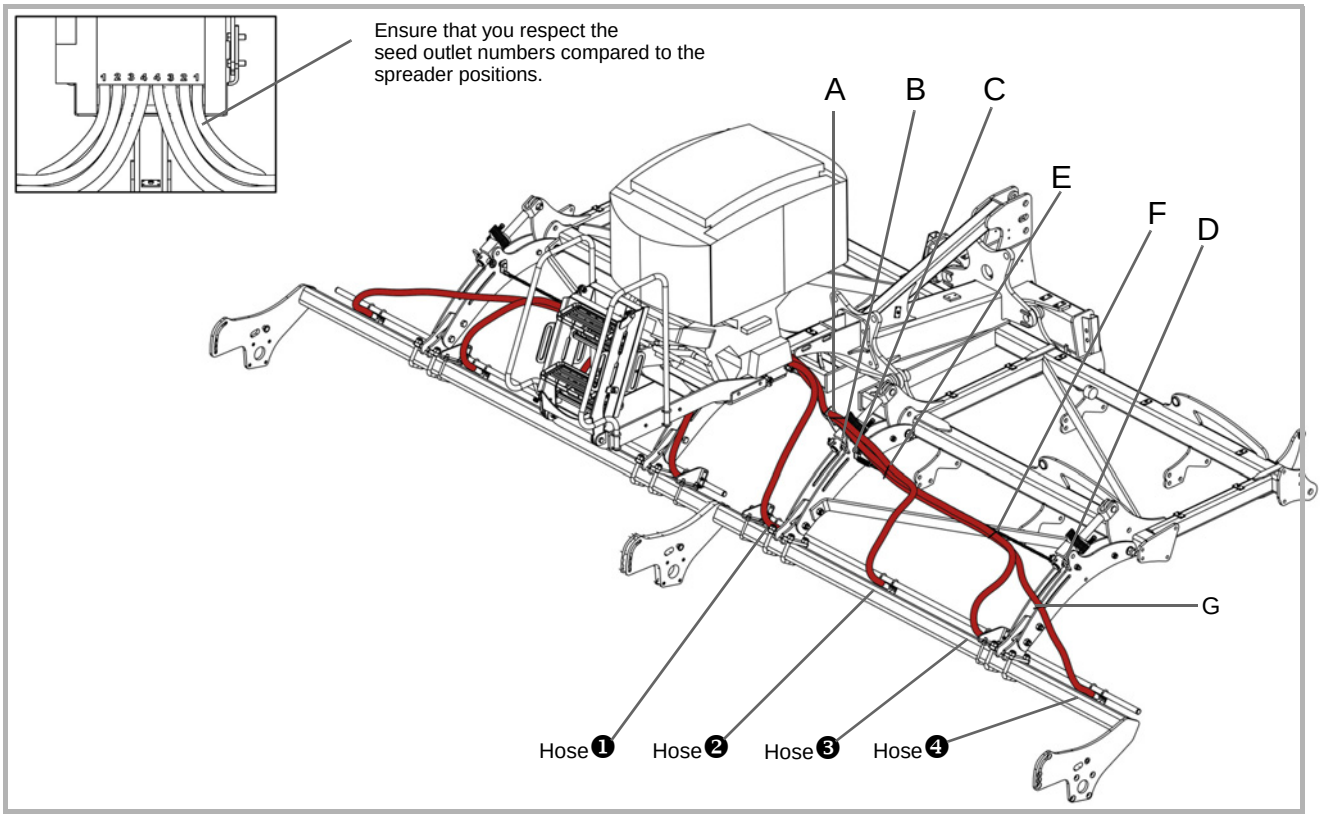
Disc cultivators 6.00 m (*19'8"*)

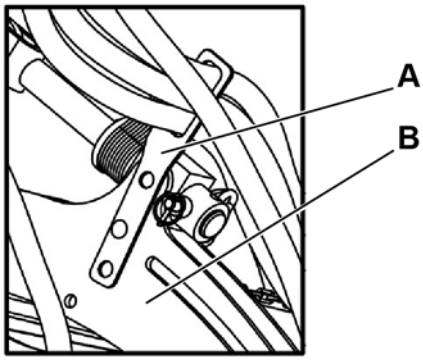


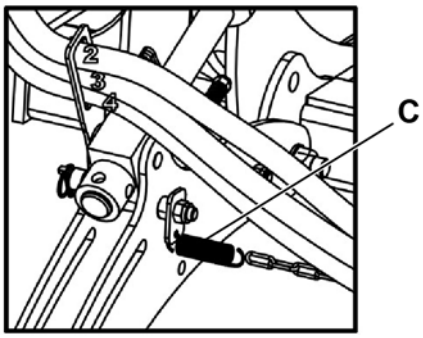
Reference	6.00 m (*19'8"*)	Reference	6.00 m (*19'8"*)
A1 & A2	1525 / *60"*	**K1 & K2**	665 / *26 3/16"*
B	1039 / *41"*	**L1 & L2**	95 / *3 3/4"*
C1 & C2	385 / *15 3/16"*	**M1 & M2**	855 / *33 11/16"*
D1 & D2	760 / *30"*	**N**	20 / *13/16"*
E1 & E2	760 / *30"*	**O1 & O2**	230 / *9"*
F1 & F2	760 / *30"*	**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





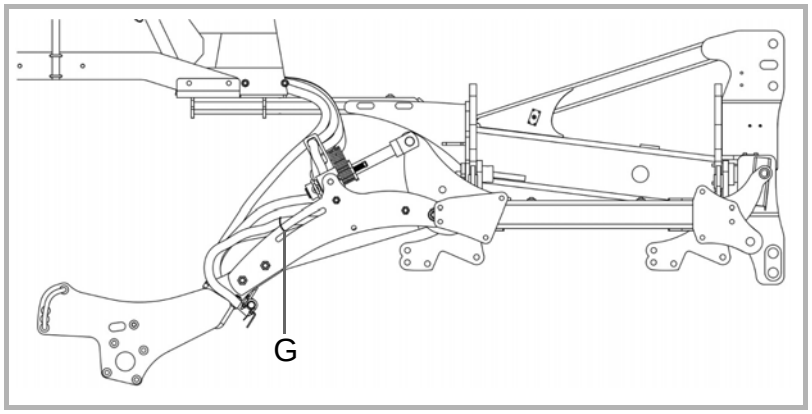


Mounting the hose supports:

- 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.

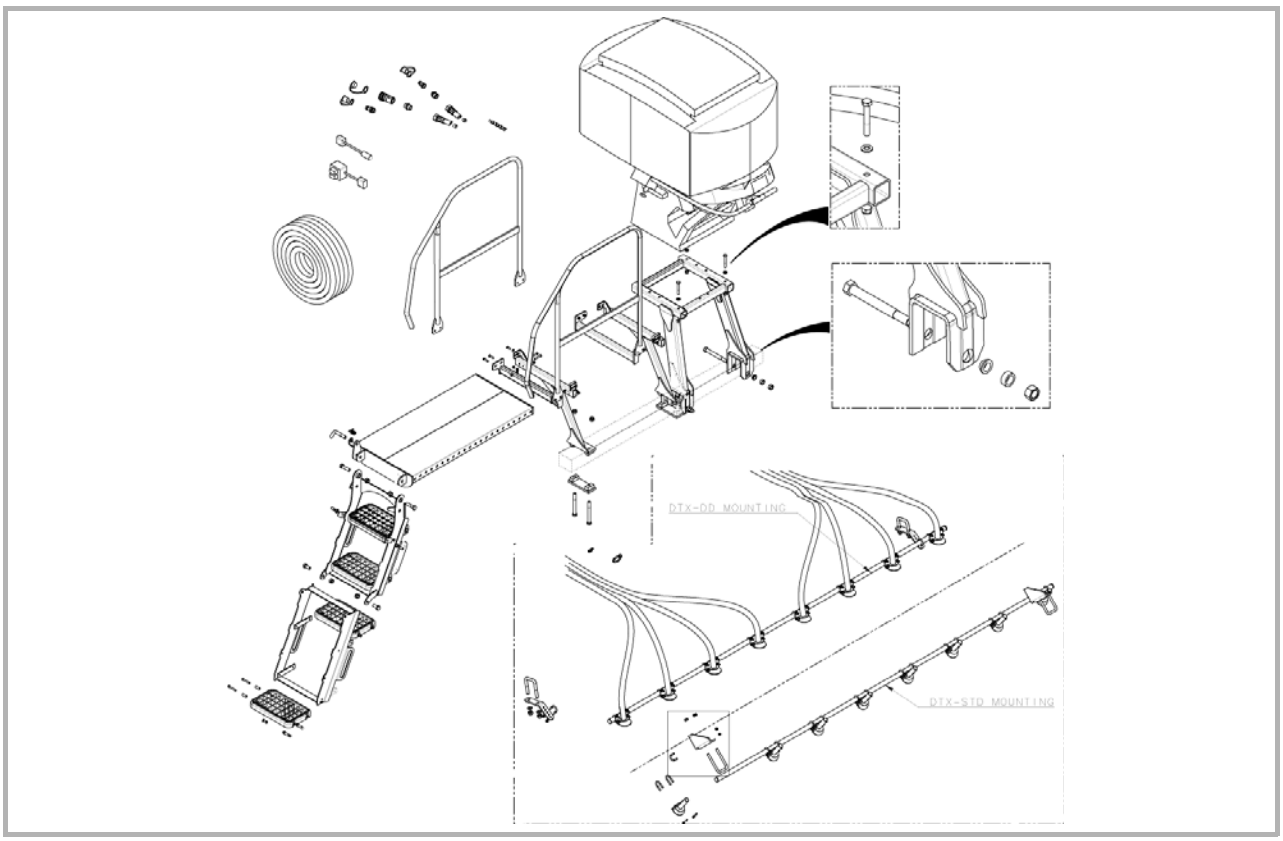
Passage of hoses:





- At the hopper outlet, connect the hose❶ to the spreader.
- Pass the hoses❷, ❸ and ❹ 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 hose❷ to the spreader.
- Group the hoses❸ and ❹ in position **F** and attach them to the chain using clamping rings.
- Connect the hose❸ to the spreader.
- Fix the hose❹ to the oblong hole of the exterior roller arm **G** using a clamping ring.
- Connect the hose❹ to the spreader.

DTX

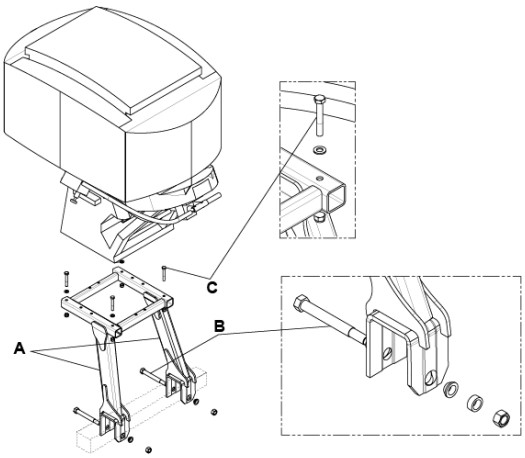


Mounting the hopper support

Task description

On decompactor cultivators, the hopper support and the access walkway are fixed to the central frame as indicated in the Procedure chapter.

Procedure



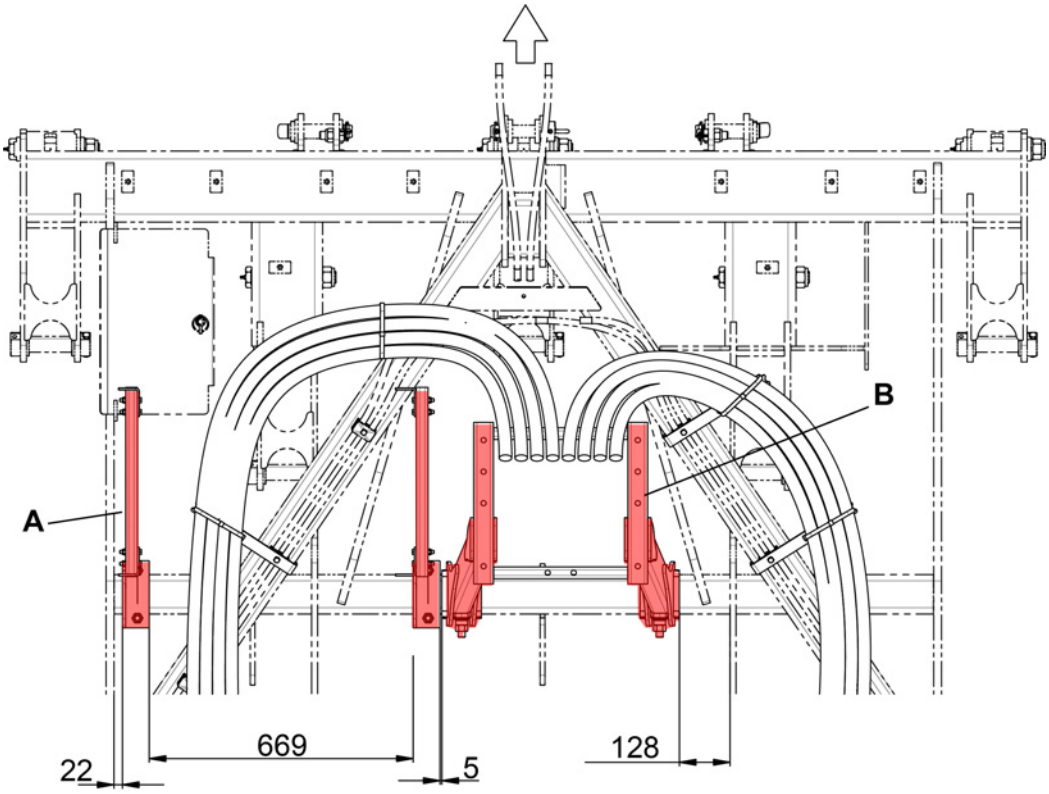
- Turn the hopper so that the hoses come out from the front of the machine.
- Using the U clamps **A** and the 2 M20 long fixing screws and nuts **B**, fix the support to the second beam of the main frame. Tighten the nuts to torque.
- Place the hopper on its support and attach it with the M12 screws + nuts **C**. Tighten the nuts to torque.

Mounting the walkway

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.

Platform and hopper support assembly diagram

DTX - DD & STD

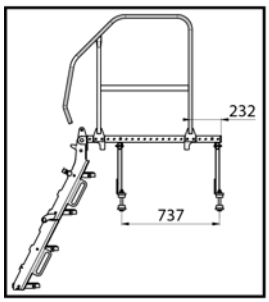


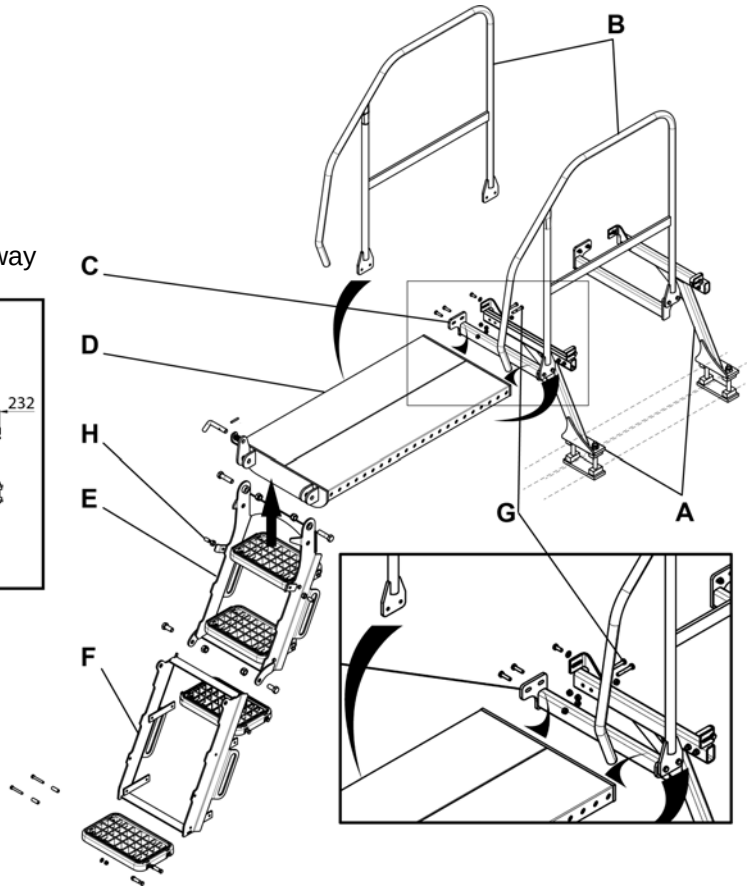
A	Platform
B	Hopper support

Mounting the walkway

Procedure

Assembled walkway





A	Hopper support
B	Guardrail
C	Reinforcement crossbar
D	Platform
E	Upper part of stairs
F	Lower part of stairs
G	Screws attaching the stairs to the hopper support
H	Ball screw

- Position the support arms **A** of the walkway on the frame, respecting the dimensions indicated on the diagram page 59.
- Install the walkway **D** on the support arms **A** using the fixing screws **G**.
- Install the guardrail **B** on the platform **D**.
- Install the reinforcement crossbars **C** under the platform, respecting the indications on the above diagram.
- Fix the upper part **E** of the stairs to the extremity of the platform **D**.
- Adjust the ball screw **H** to ensure the lower part of the stairs **F** is maintained on the upper part **E**.

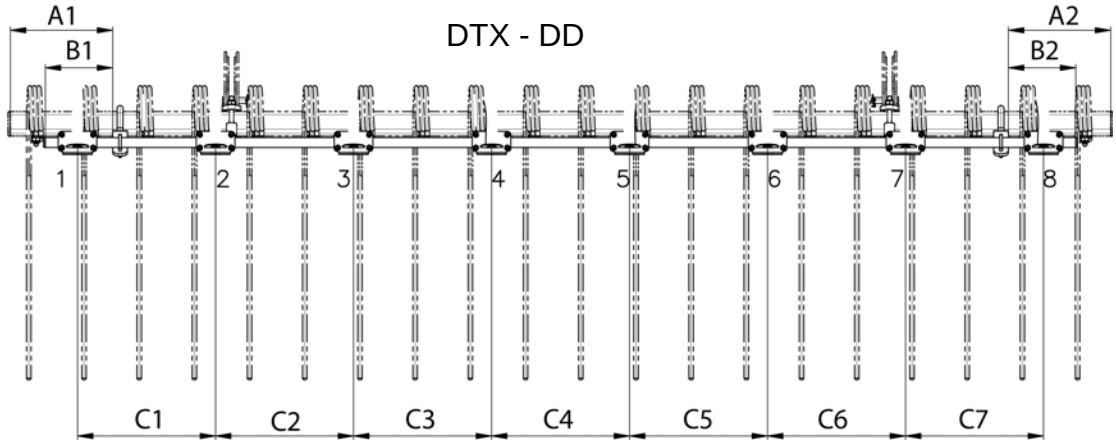
Positioning the spreaders

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:

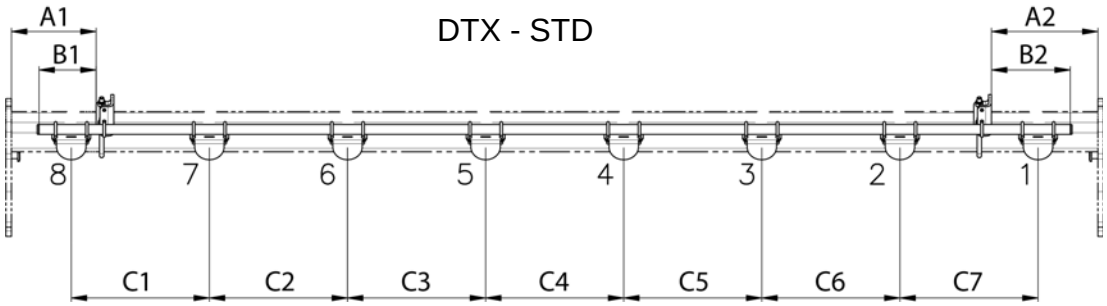
Diagrams

DTX - DD



Reference	DTX - DD
A1 & A2	278 / *10 15/16”*
B1 & B2	183 / *7 13/64”*
C1 to C7	375 / *14 49/64”*

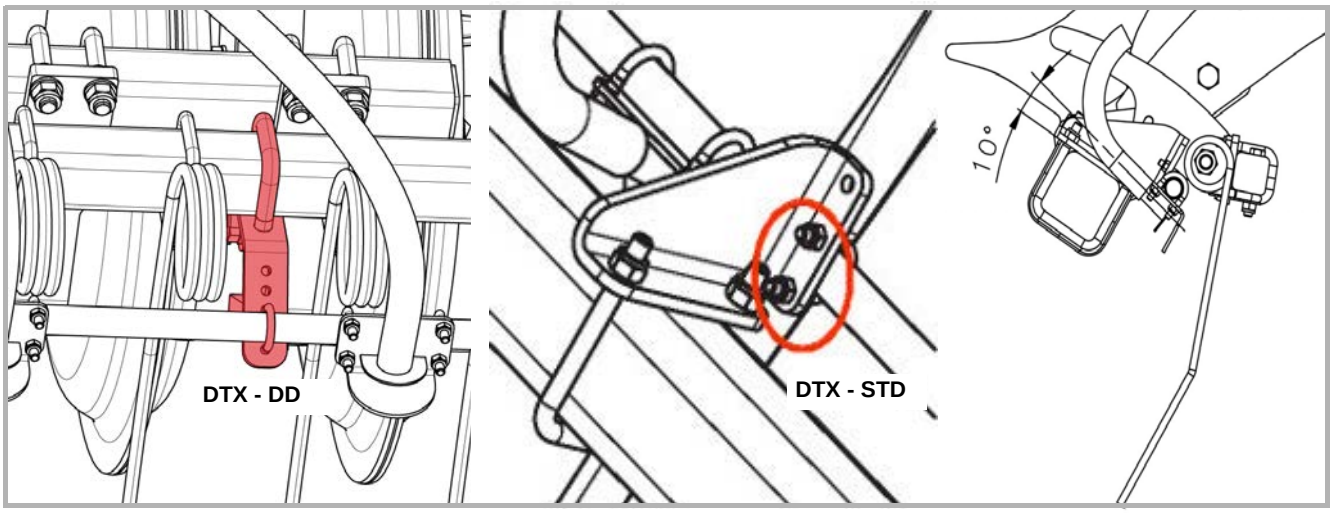
DTX - STD



Reference	DTX - DD
A1	230 / *9 1/16”*
A2	289 / 11 *3/8”*
B1	155 / *6 7/64”*
B2	214 / *8 27/64”*
C1 to C7	375 / *14 49/64”*

Procedure

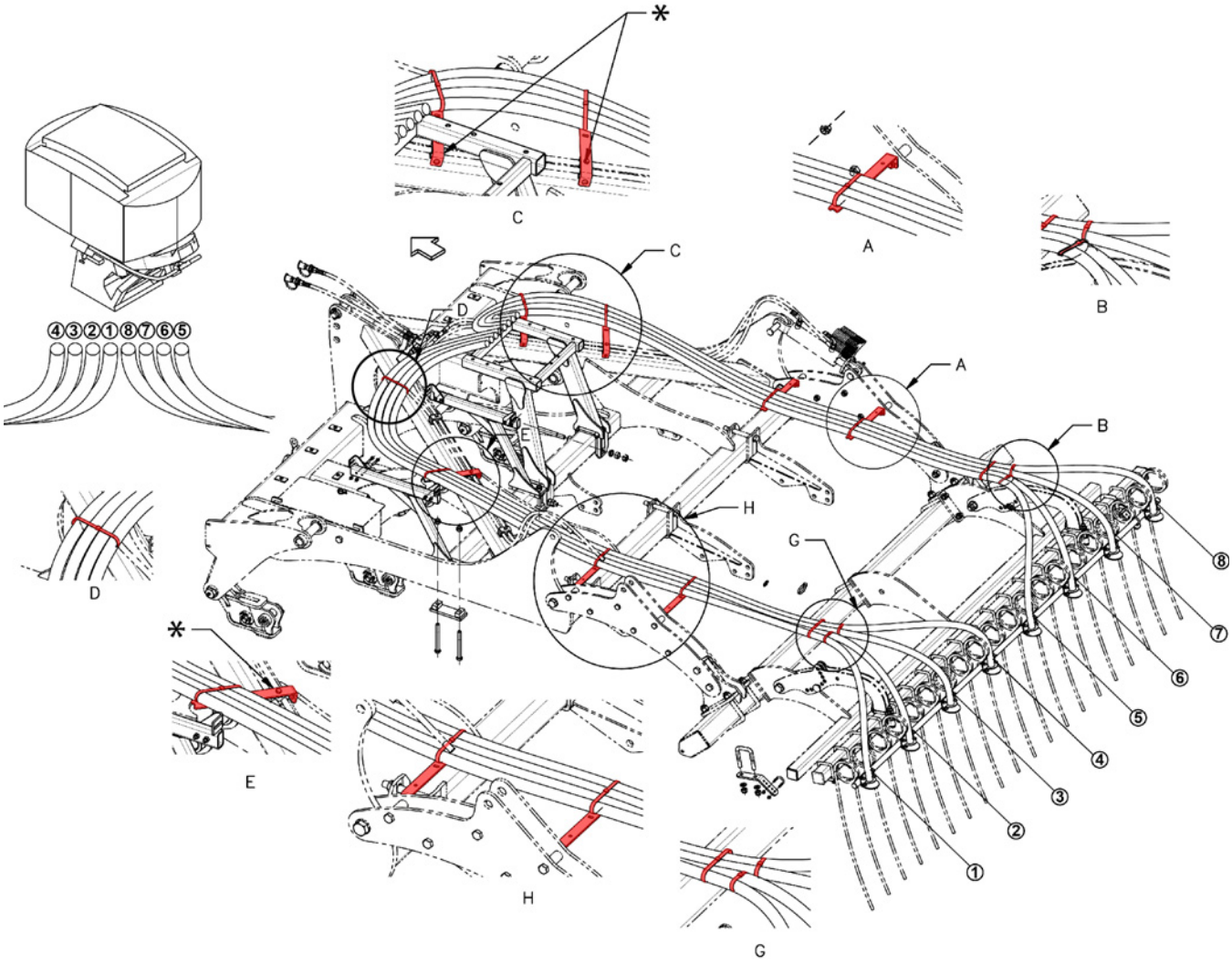
Assembling the roller supports:



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

Passage of hoses

Order of distribution for seed hoses - DTX DD

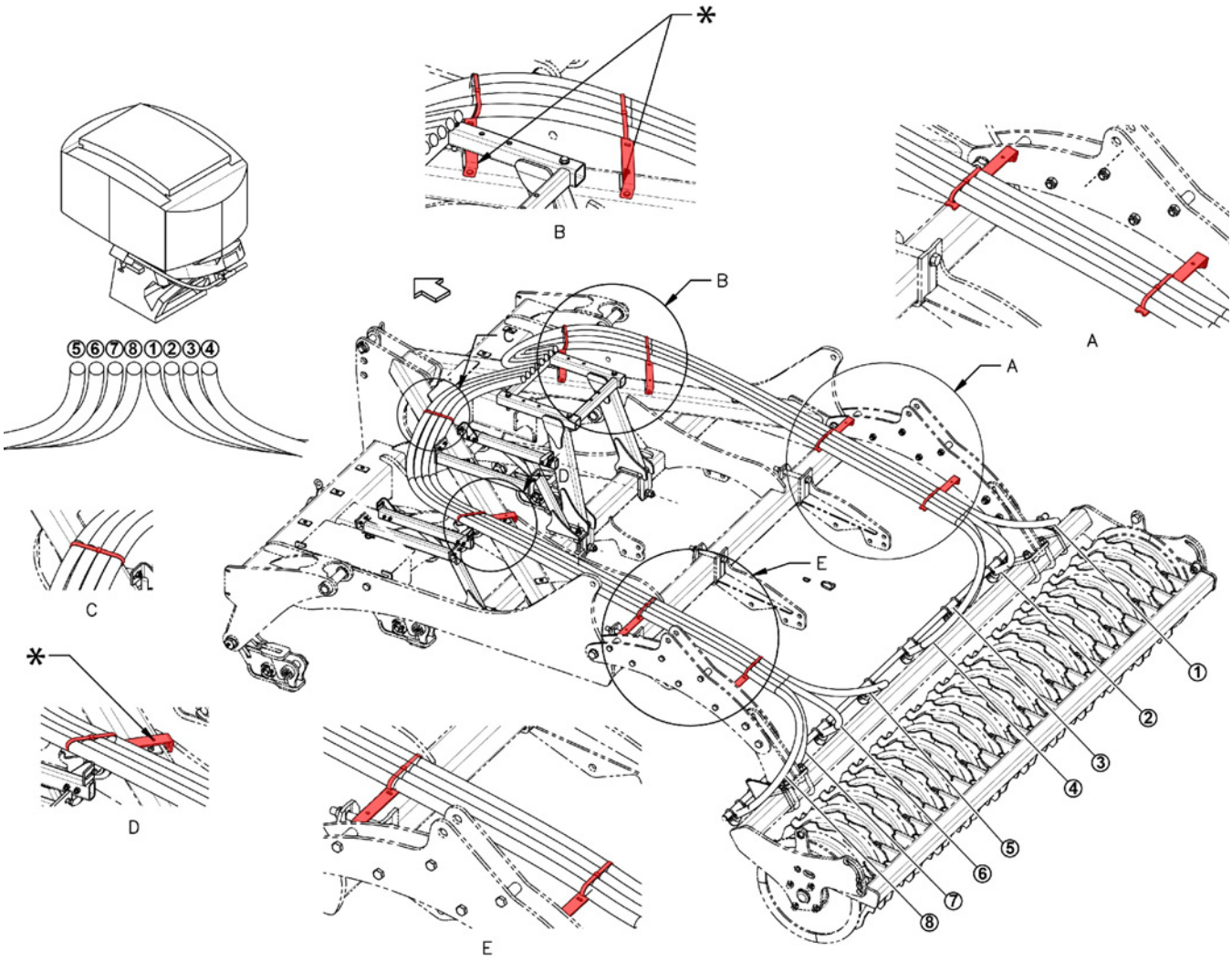


(*): Mounting the hose support instead of the metal plate closing the plastic ring for hoses.

DTX DD	Hose length (mm/*in*)
Hose❶	4880 / *192''*
Hose❷	4420 / *174''*
Hose❸	4190 / *165''*
Hose❹	4310 / *165 1/2''*
Hose❺	4310 / *165 1/2''*
Hose❻	4190 / *165''*
Hose❼	4420 / *174''*
Hose❽	4880 / *192''*

- Ensure you respect the seed outlet numbers compared to the spreader positions.

Order of distribution for seed hoses - DTX STD



(*): Mounting the hose support instead of the metal plate closing the plastic ring for hoses.

DTX STD	Hose length (mm/*in*)
Hose❶	4880 / *192''*
Hose❷	4420 / *174''*
Hose❸	4190 / *165''*
Hose❹	4310 / *165 1/2''*
Hose❺	4310 / *165 1/2''*
Hose❻	4190 / *165''*
Hose❼	4420 / *174''*
Hose❽	4880 / *192''*

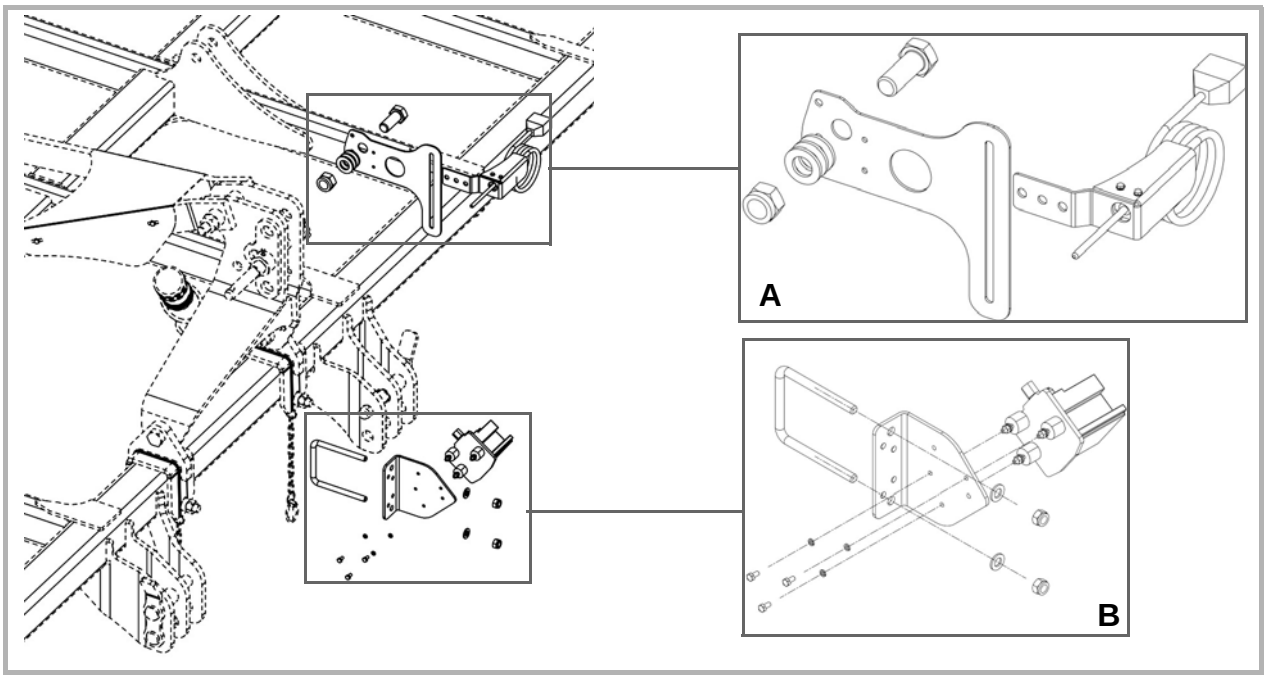
- Ensure you respect the seed outlet numbers compared to the spreader positions.

Routing and attaching the hoses:

- Assemble the hose supports according to the distribution order specified on diagram DD page 63 and diagram STD page 64.
- Route the hoses and group them on the supports.
- Fold the hoses ensuring that their curve is as natural as possible.
- Always attach each group of hoses with a clamping ring.
- Otherwise, simply secure with a clamping ring as specified on diagram DD page 63 and diagram STD page 64.
- Check in the upper and lower positions that there are no blocking, tension or crushing points for the hoses.

Equipment available

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.

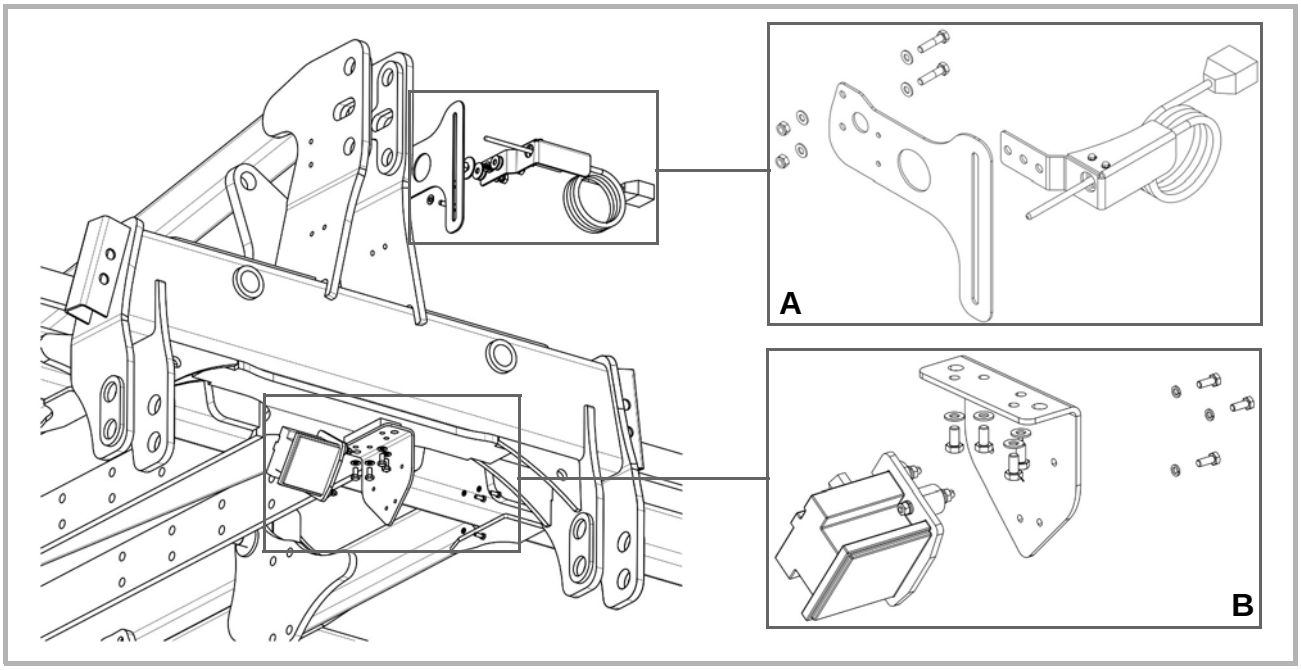
Radar sensor (B)

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

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

- 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)

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

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

- Install the radar support on the reinforcement plate located under the front beam of the frame.
- Fix the support using 4 M8x16 screws.
- Install the radar on the support.
- Fix the radar using 4 M6x16 screws.

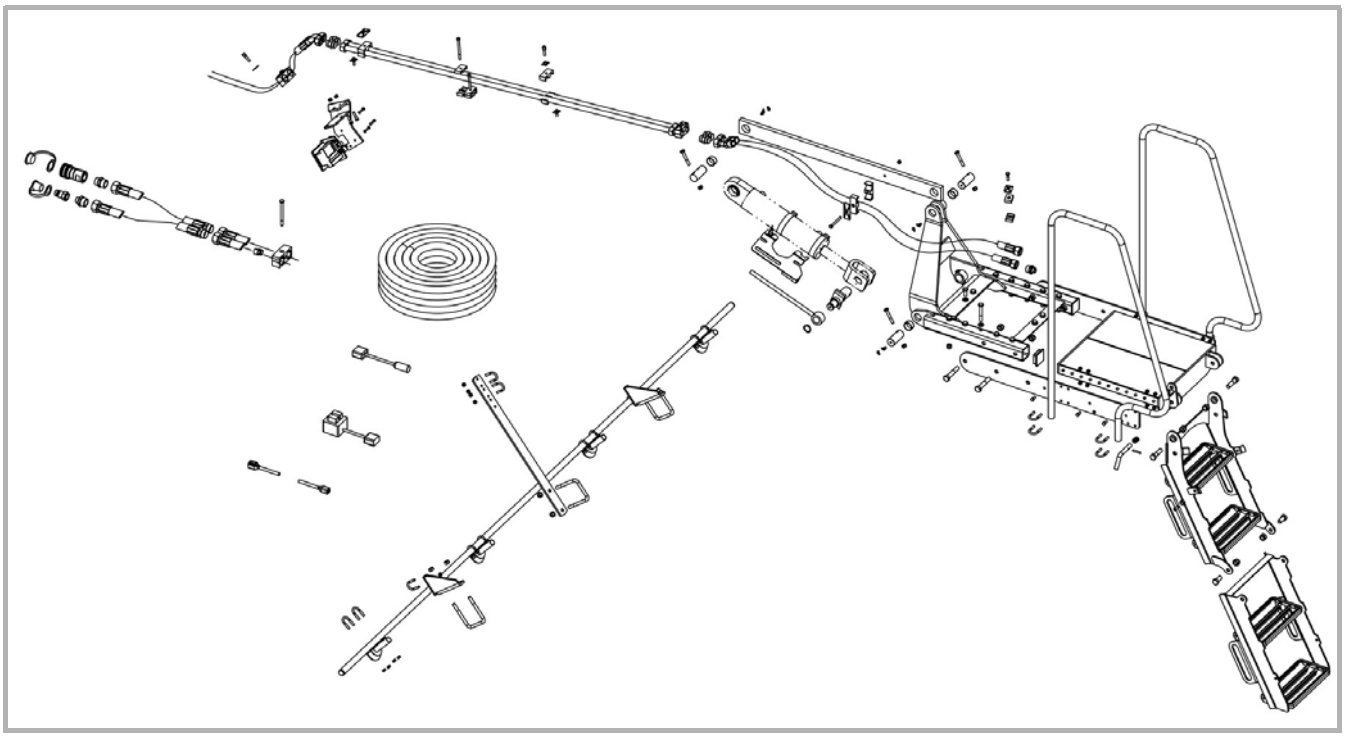
Rigid and folding machines



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)

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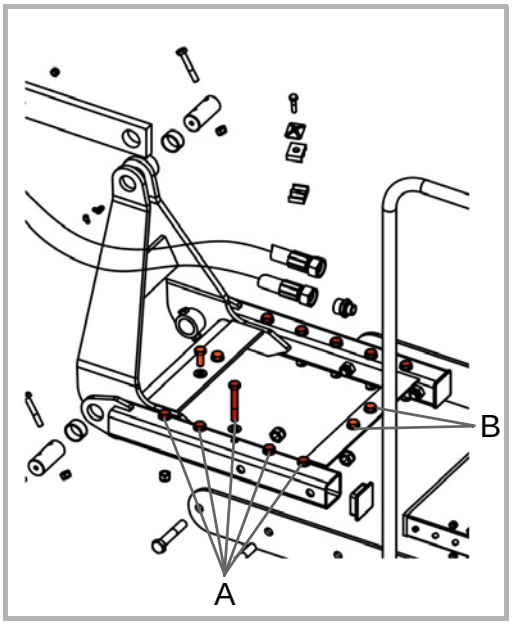


Mounting the hopper support

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



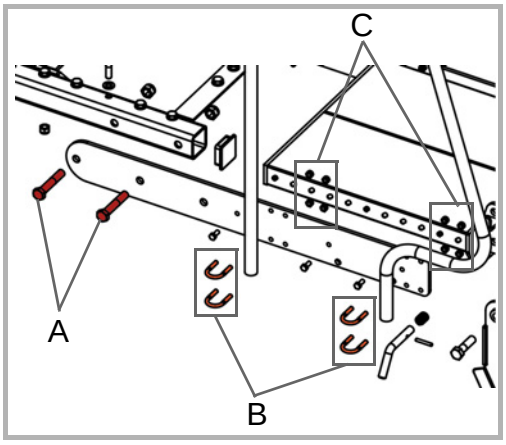
- Turn the hopper so that the hoses come out from the front of the machine.
- Place the hopper on the support.
- Align the fixing holes.
- Position the 10 screws M12x80 **A** on the sides of the support.
- Place the 4 screws M12x30 **B** at the front and rear of the support.
- Fix all to the recommended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

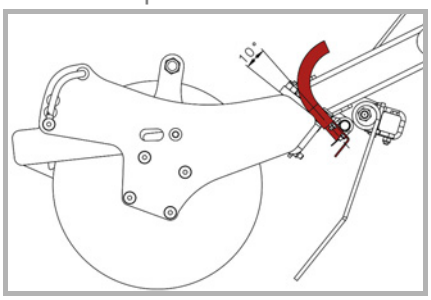
Procedure



- Mount the walkway on the hopper support.
- Position the 4 screws M16x90 **A** in the holes provided.
- Tighten the screws **A**.
- Install the 2 guardrails.
- Position the 8 brackets **B** in the holes provided.
- Fix the brackets using M8x8 nuts and bolts **C**.

Positioning the spreaders

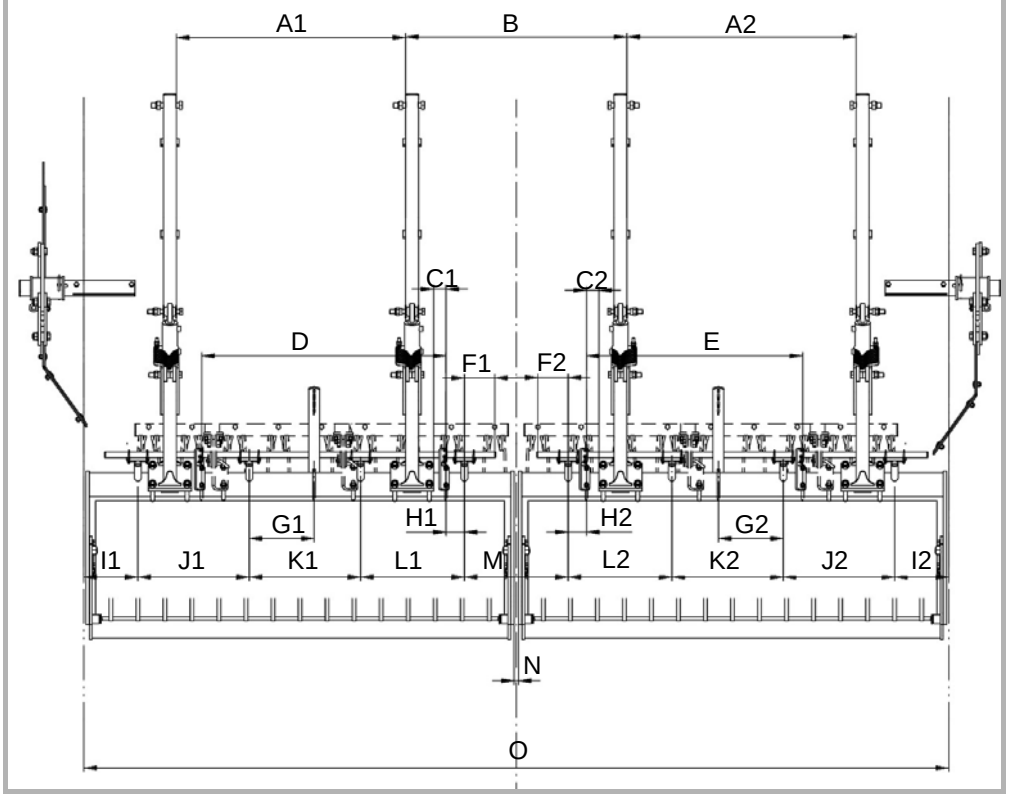
Task description



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:

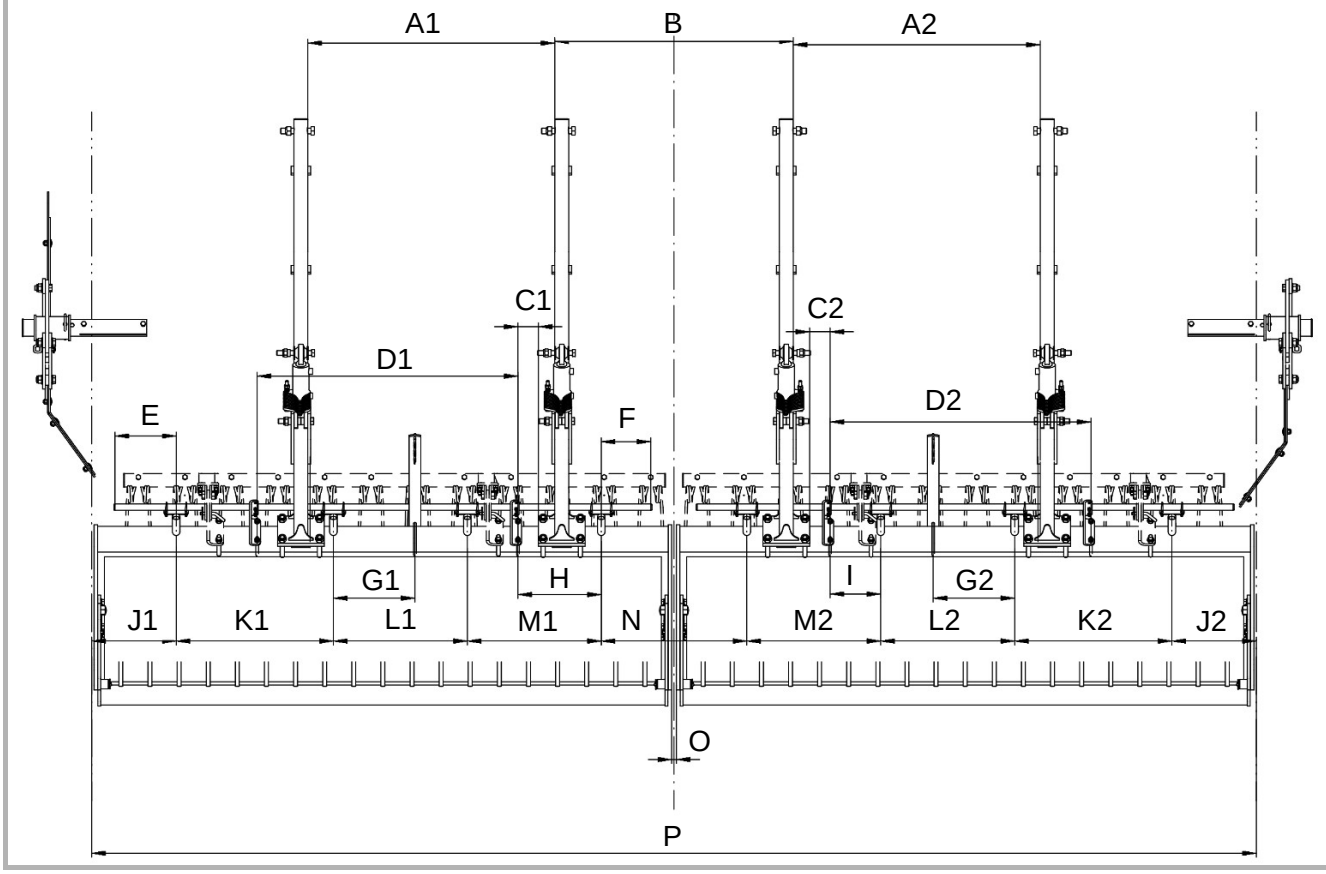
Diagrams

Compact trailed discs cultivator - 4.00 m (*13'1"*)



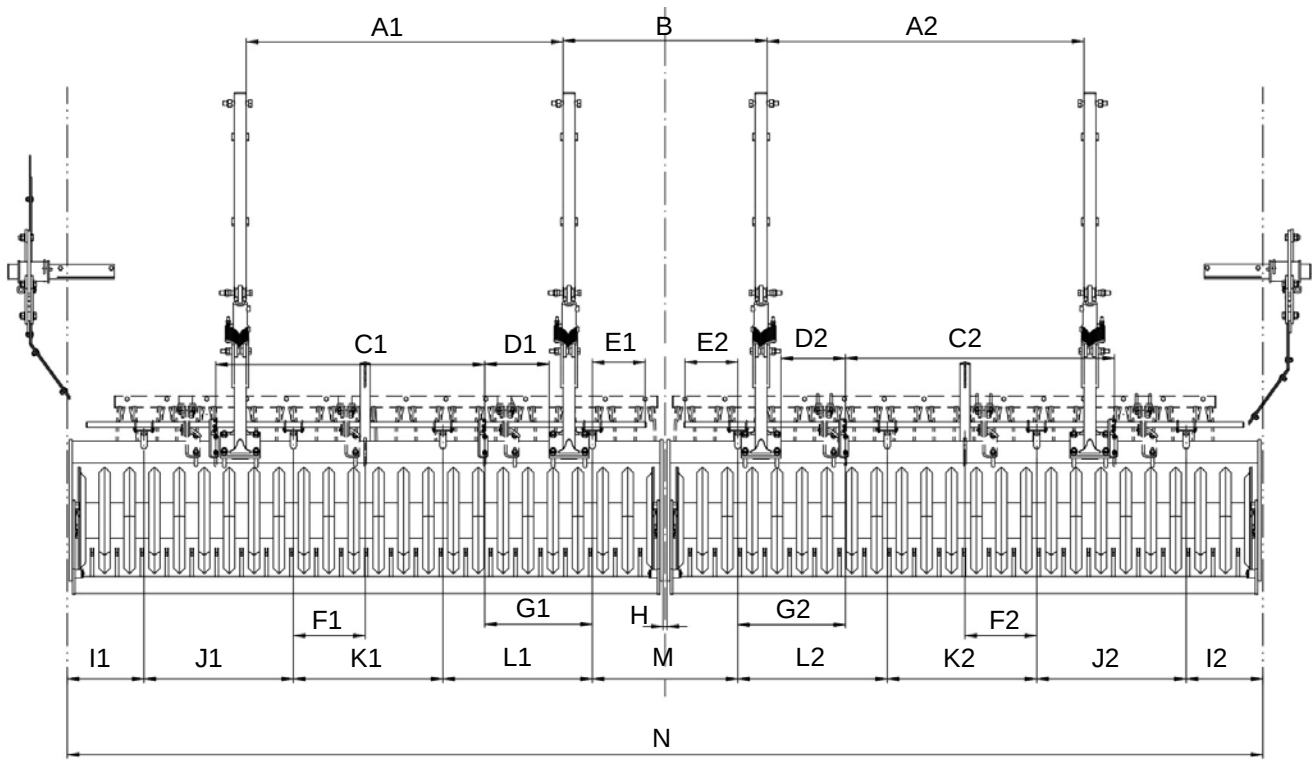
Reference	4.00 m (*13'1"*)	Reference	4.00 m (*13'1"*)
A1 & A2	1060 / *42"*	**I1 & I2**	250 / *9 13/16"*
B	1024 / *40 5/16"*	**J1 & J2**	515 / *20 5/16"*
C1 & C2	57 / *2 1/4"*	**K1 & K2**	515 / *20 5/16"*
D	1130 / *45"*	**L1 & L2**	480 / *18 15/16"*
E	1000 / *39"*	**M**	480 / *18 15/16"*
F1 & F2	140 / *5 1/2"*	**N**	480 / *18 15/16"*
G1 & G2	300 / *11 13/16"*	**O**	4000 / *157"*
H1 & H2	85 / *3 3/8"*	**-**	-

Compact trailed discs cultivator - 5.00 m *(16'5")*



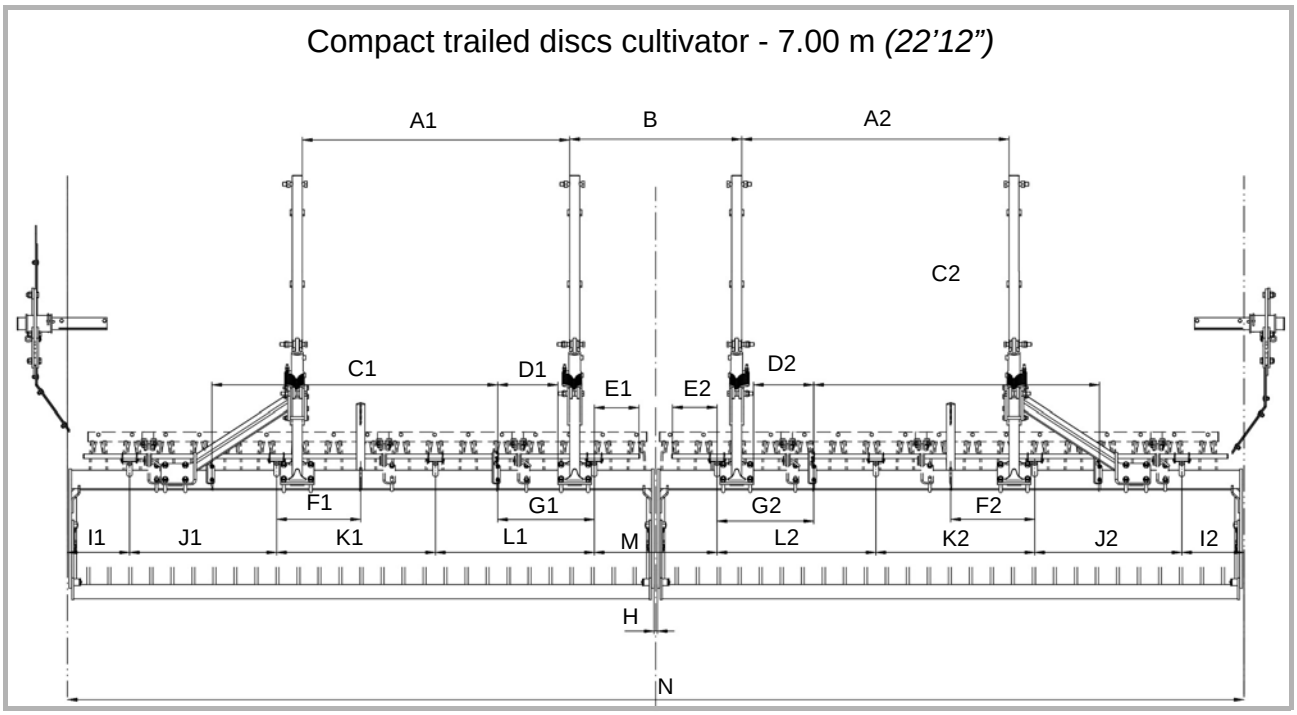
Reference	5.00 m *(16'5)*	Reference	5.00 m *(16'5)*
A1 & A2	1060 / *42"*	**I**	217 / *8 1/2"*
B	1024 / *40"*	**J1 & J2**	362.5 / *14 1/4"*
C1 & C2	88 / *3 7/16"*	**K1 & K2**	675 / *26 1/2"*
D1 & D2	1120 / *44"*	**L1 & L2**	575 / *22 5/8"*
E	263 / *10 3/8"*	**M1 & M2**	575 / *22 5/8"*
F	213 / *8 3/8"*	**N**	625 / *26 3/8"*
G1 & G2	350 / *13 3/4"*	**O**	20 / *3/16"*
H	357 / *14"*	**P**	5000 / *197"*

Compact trailed discs cultivator - 6.00 m (*19'8"*)



Reference	6.00 m (*19'8"*)	Reference	6.00 m (*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"*

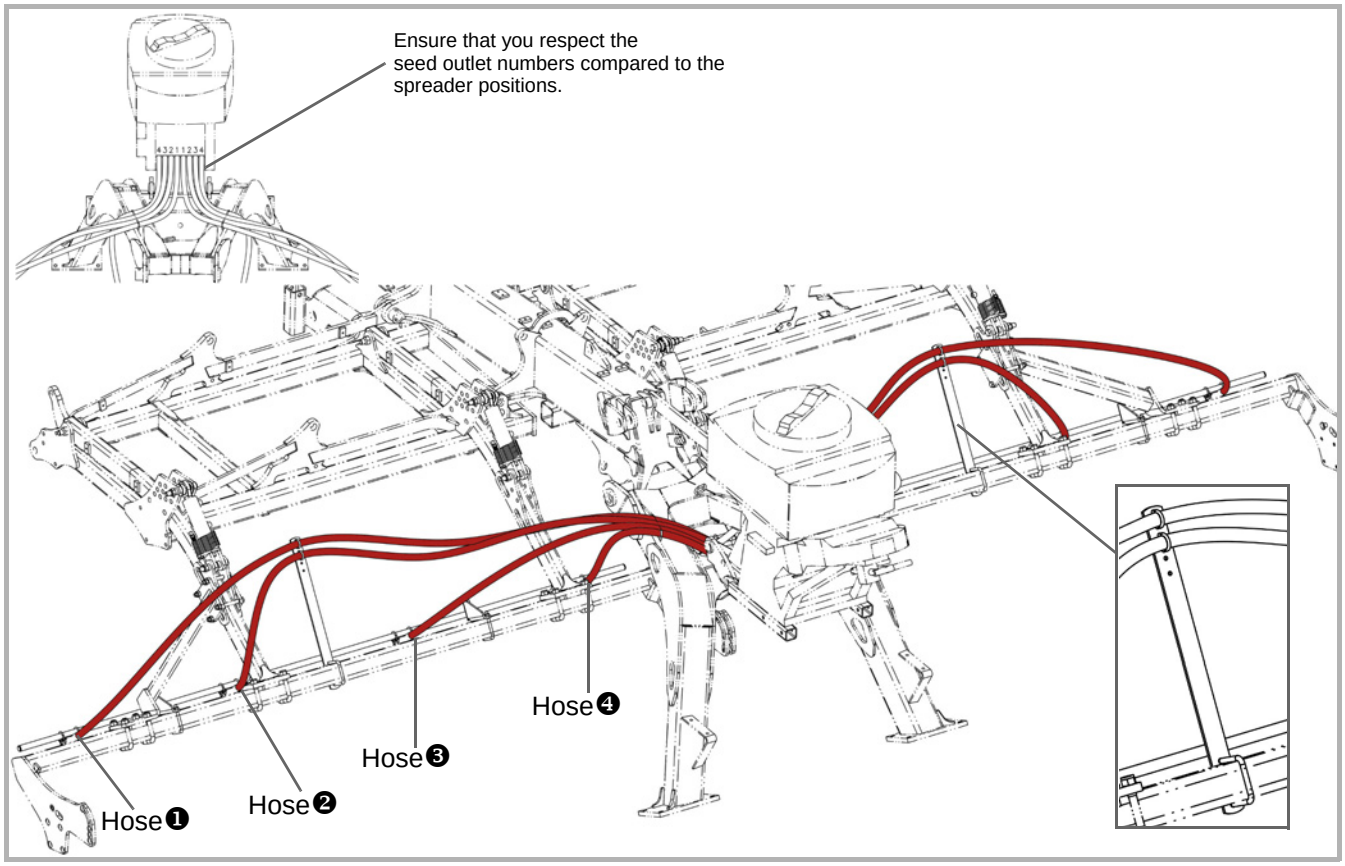
Compact trailed discs cultivator - 7.00 m *(22'12")*



Reference	7.00 m *(22'12")*	Reference	7.00 m *(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"*

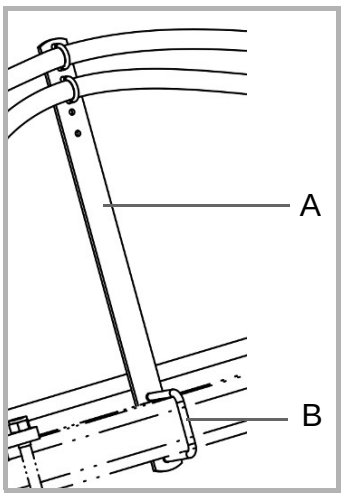
Passage of hoses

Order of distribution for seed hoses



Length of hoses

	4.00 m (*13'1"*)	**5.00 m (*16'5"*)**	**6.00 m (*19'8"*)**	**7.00 m (*20'12"*)**
Hose ❶	3110 / *122"*	3140 / *134"*	3780 / *149"*	4275 / *168"*
Hose ❷	2750 / *108"*	2880 / *113"*	3200 / *126"*	3475 / *137"*
Hose ❸	2250 / *89"*	2345 / *92"*	2510 / *99"*	2675 / *105"*
Hose ❹	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 ❶ and ❷:

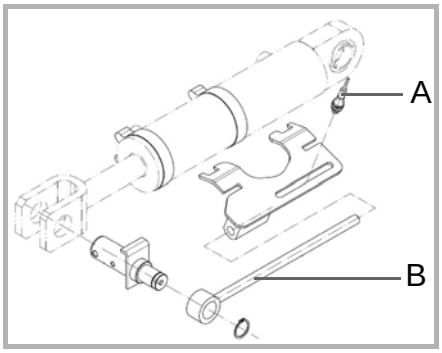
- Mount the bracket **B** on the roller arm.
- Mount the hose support **A** on the bracket.
- Bolt the hose support to the bracket.

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

- Connect hoses ❸ and ❹ to the spreaders.
- Pass hose ❶ in the upper bracket of the hose support.
- Pass hose ❷ in the lower bracket of the hose support.
- Connect hoses ❶ and ❷ to the spreaders.

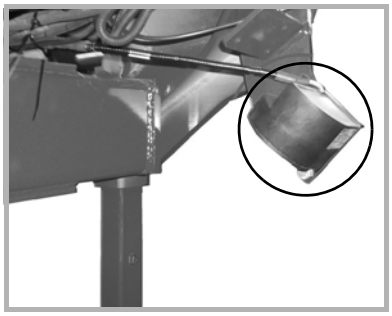
Equipment available on Qualidisc T

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



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

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

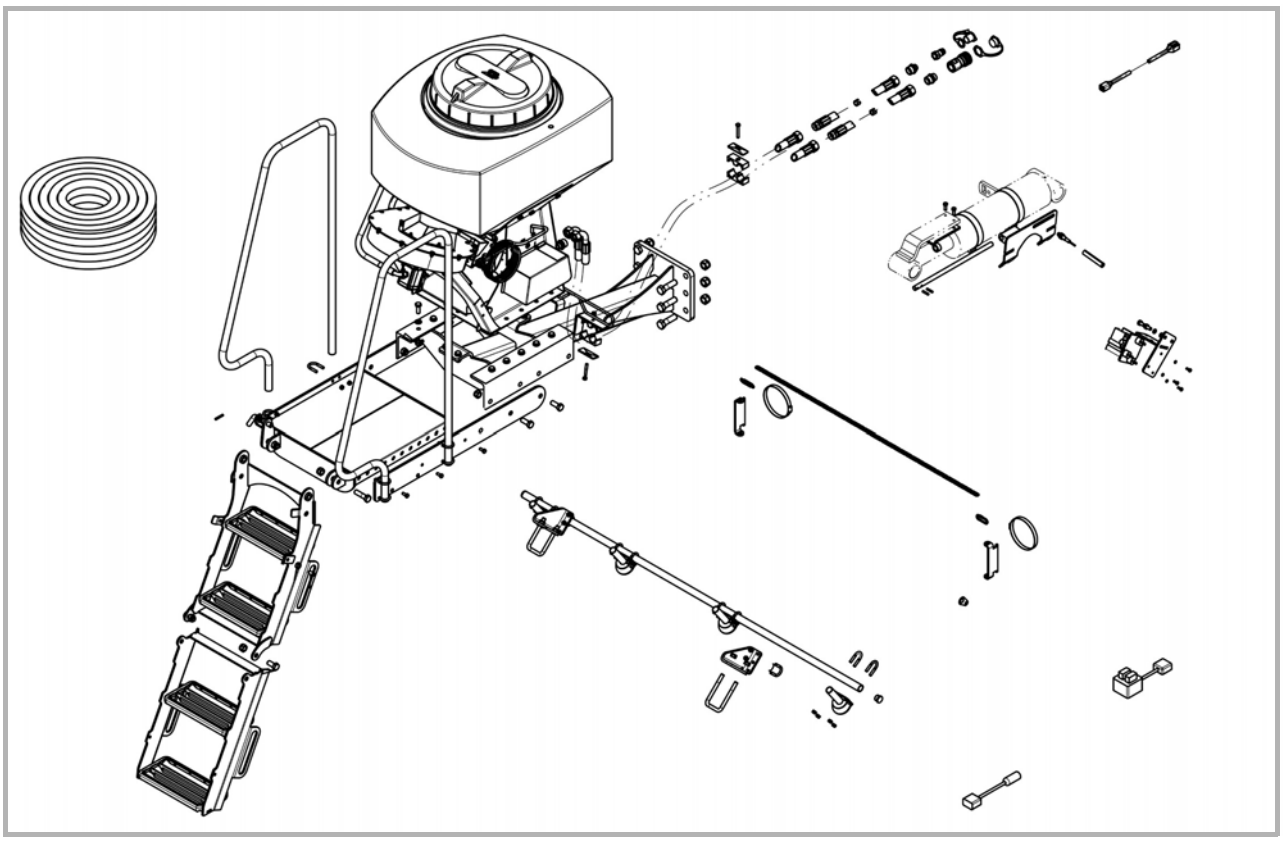
Tractor speed information cable



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)

CTC

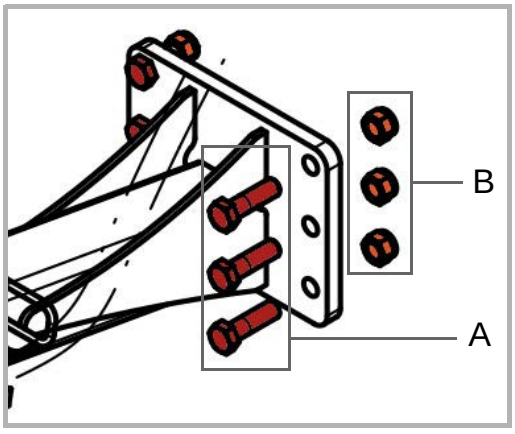


Mounting the hopper support

Task description

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

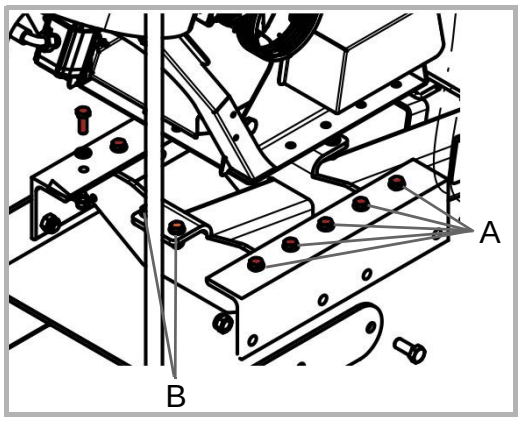
Procedure



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

Mounting the hopper

Procedure



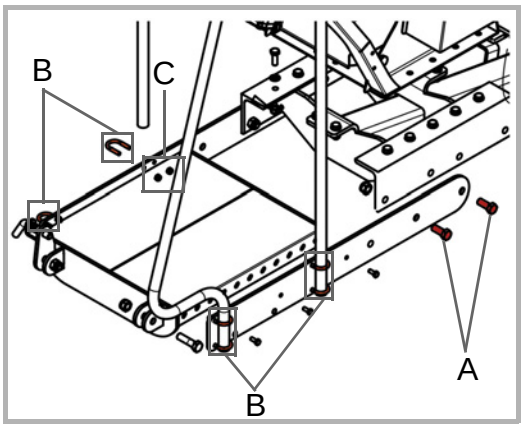
- Turn the hopper so that the hoses come out from the front of the machine.
- Place the hopper on the support.
- Align the fixing holes.
- Position the 10 screws M12x80 **A** on the sides of the support.
- Place the 4 screws M12x30 **B** at the front and rear of the support.
- Fix all to the recommended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

Positioning the spreaders

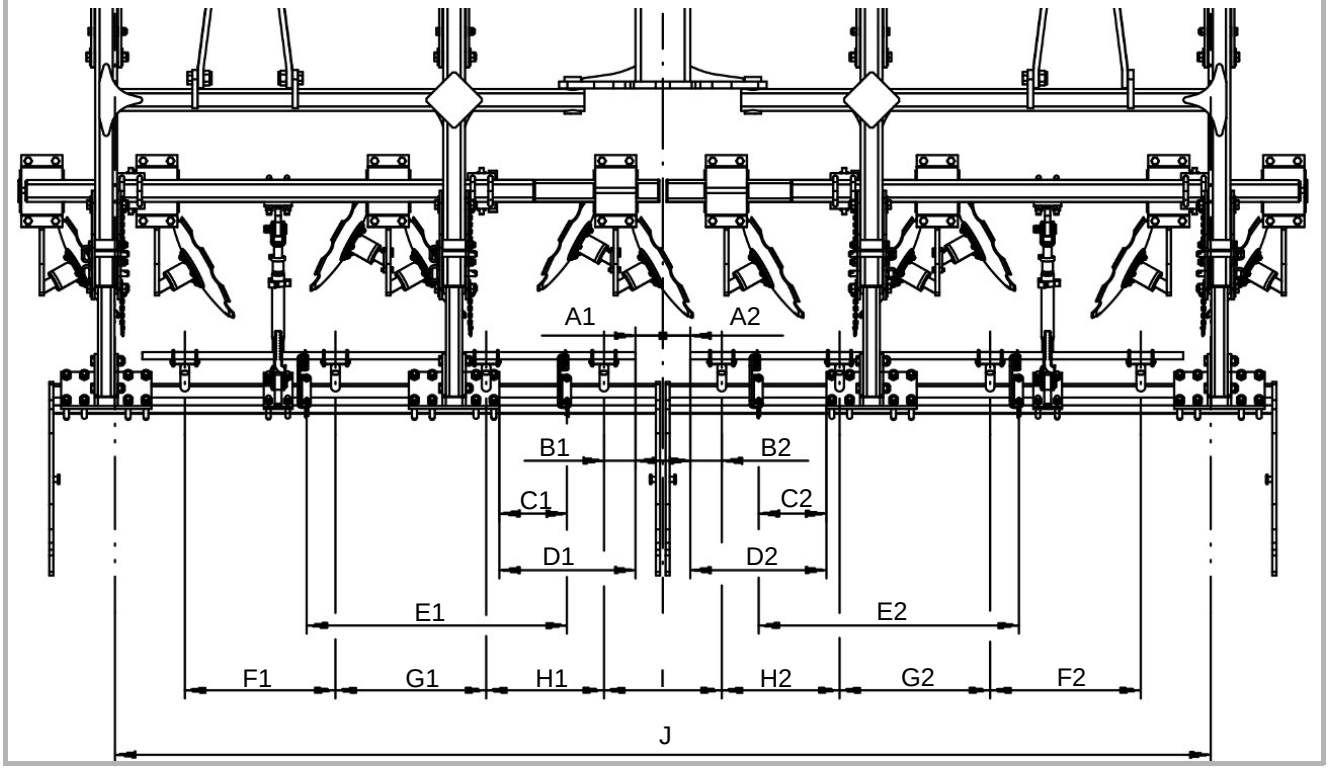
Task description

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:

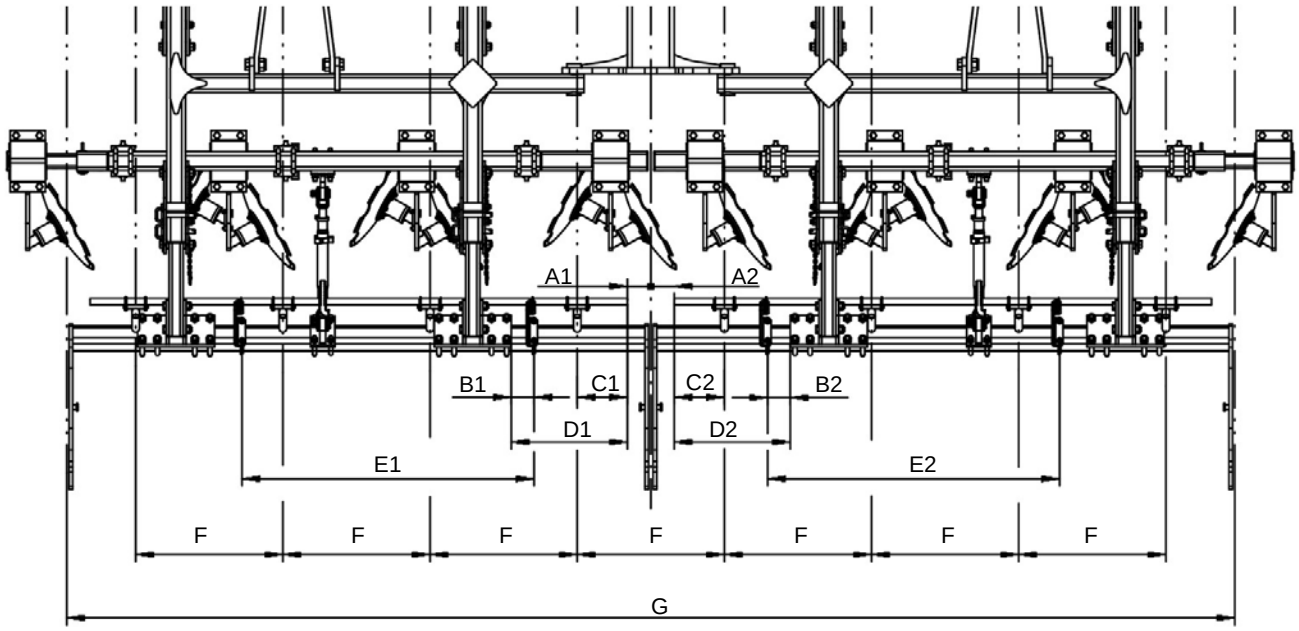
Diagrams

Trailed tine cultivator - 4.00 m (*13'1"*)

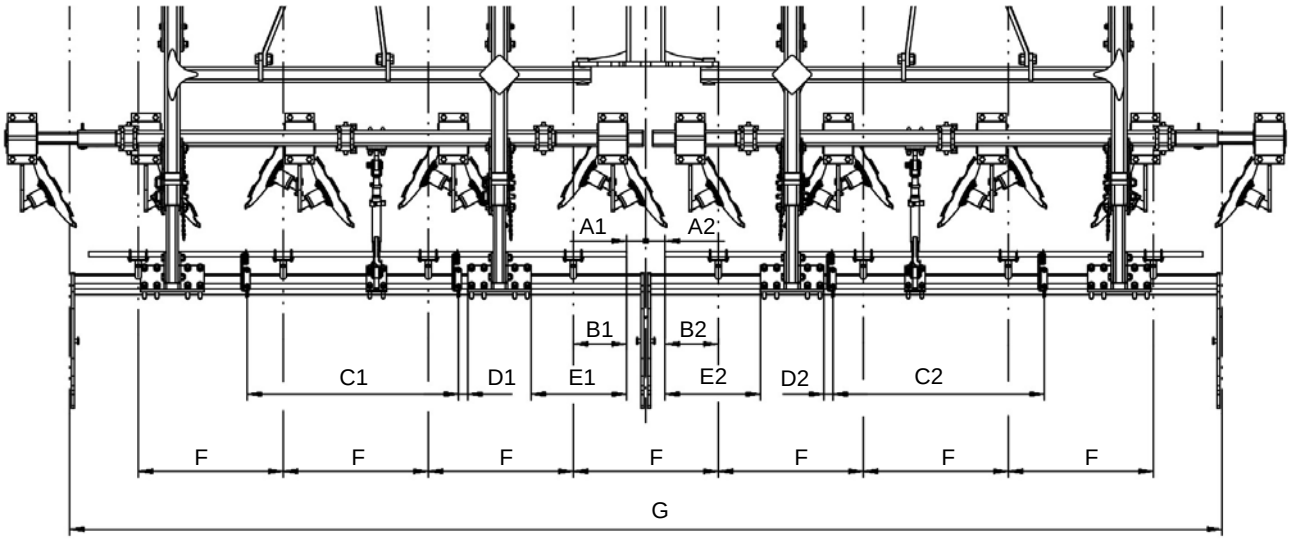


Reference	4.00 m (*13'1"*)	Reference	4.00 m (*13'1"*)
A1 & A2	100 / *3 15/16"*	**F1 & F2**	550 / *21 5/8"*
B1 & B2	115 / *4 1/2"*	**G1 & G2**	550 / *21 5/8"*
C1 & C2	247 / *9 3/4"*	**H1 & H2**	430 / *16 15/16"*
D1 & D2	497 / *19 9/16"*	**I**	430 / *16 15/16"*
E1 & E2	950 / *37 7/16"*	**J**	4000 / *157"*

Trailed tine cultivator - 5.00 m (*16'5"*)



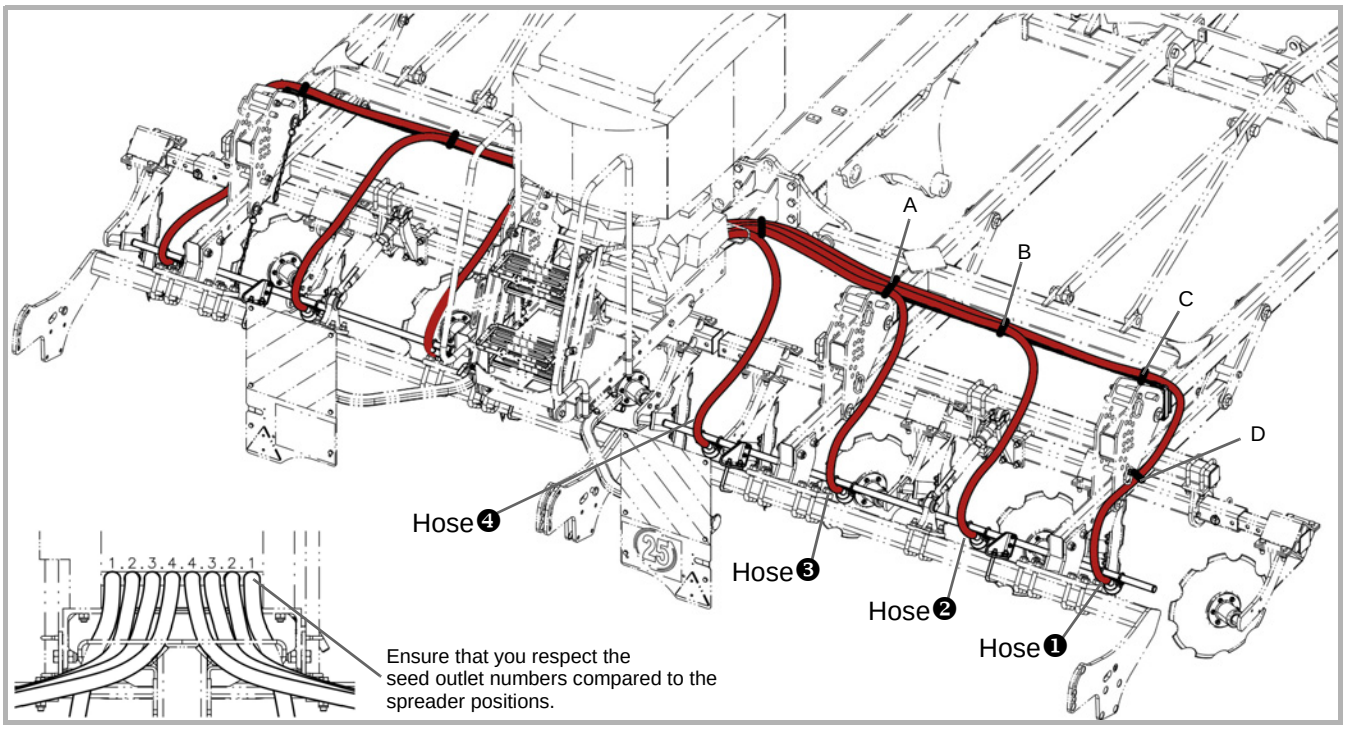
Trailed tine cultivator - 6.00 m *(19'8")*



Reference	5.00 m (*16'5"*)	6.00 m (*19'8"*)	Reference	5.00 m (*16'5"*)	6.00 m (*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"*	**-**	-	-

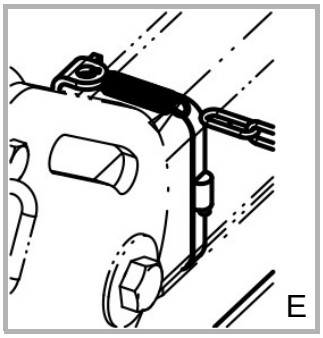
Passage of hoses

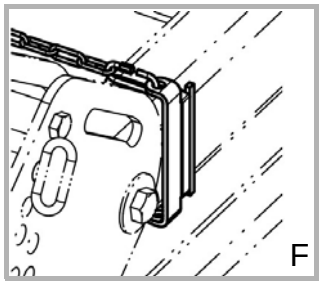
Order of distribution for seed hoses



Length of hoses

	4.00 m (*13'1"*)	**5.00 m (*16'5"*)**	**6.00 m (*19'8"*)**
Hose ❶	3200 / *126"*	3800 / *150"*	4200 / *165"*
Hose ❷	2600 / *102"*	3000 / *108"*	3400 / *134"*
Hose ❸	2000 / *79"*	2300 / *91"*	2500 / *98"*
Hose ❹	1600 / *63"*	1600 / *63"*	1600 / *63"*



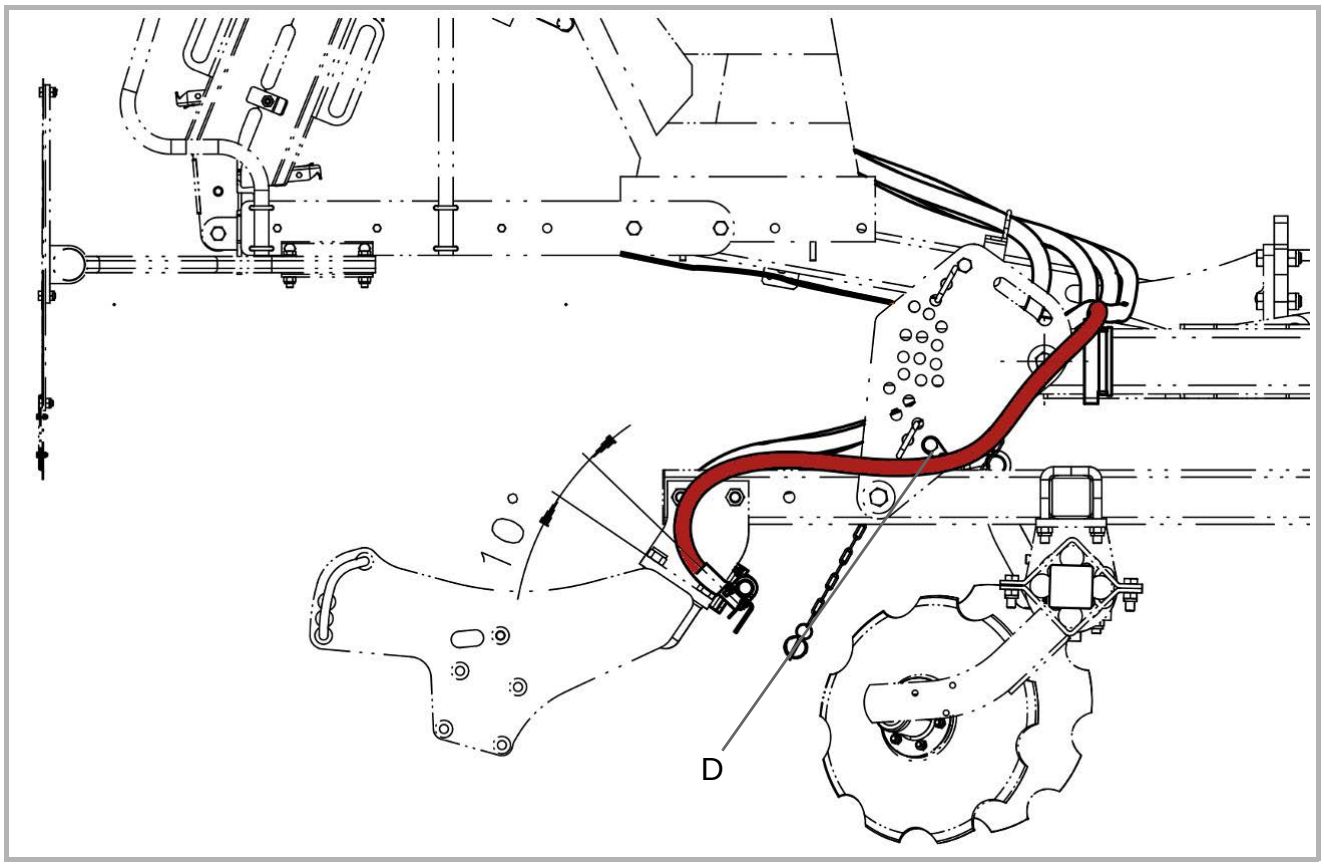


Mounting the hose support chain

- 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 support with the link **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.

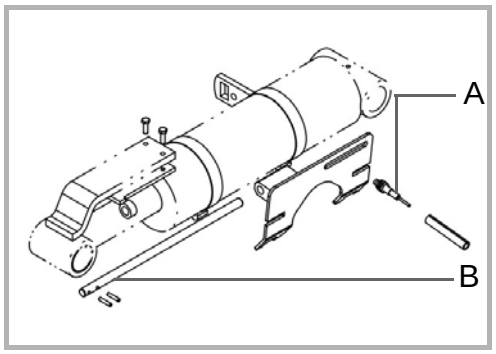
Passage of hoses

- At the hopper outlet, connect the hose❹ to the spreader.
- Group the 3 remaining hoses in position '**A**'.
- Attach the 3 hoses to the chain using clamping rings.
- Connect the hose❸ to the spreader.
- Group the 2 remaining hoses in position '**B**'.
- Attach the 2 hoses to the chain using clamping rings.
- Connect the hose❷ to the spreader.
- Attach the hose❹ in position '**C**'.
- Attach the hose❹ to the screw located on the drilled plate using a washer M16 **D**.
- Connect the hose❹ to the spreader.



Equipment available on CTC

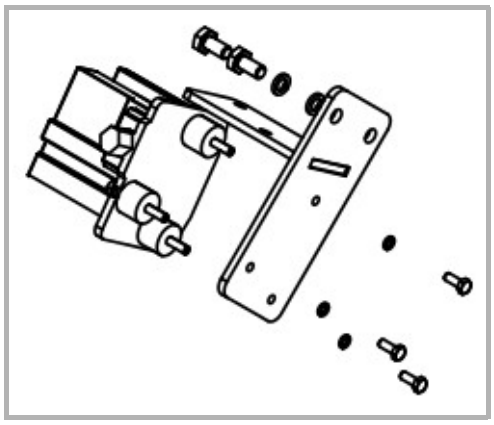
The end of field sensor



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

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



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

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

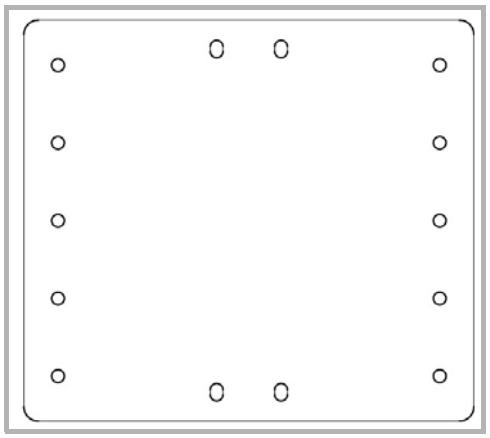
This kit is designed to facilitate the installation of the seed drill on your machine. It includes the following elements:

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

The following equipment is optional:

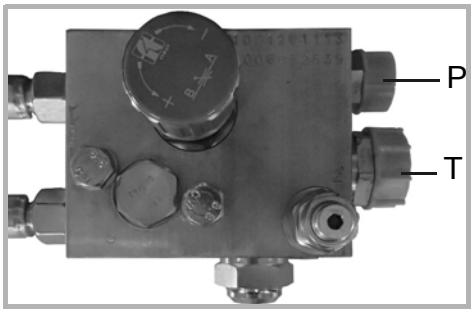
- A set of 3m00 hydraulic hoses.
- A set of 11m00 hydraulic hoses.
- The tractor speed information cable.
- The radar.
- The control box **1.2** or **5.2**.

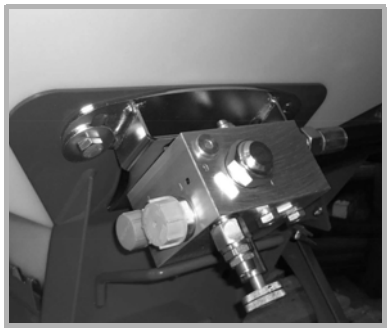
Installing the seed drill

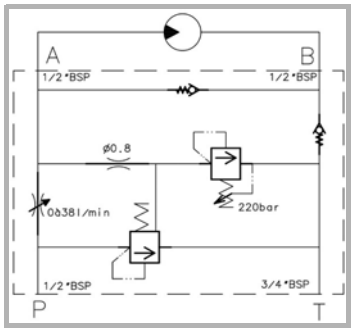


- Install the hopper fixing plate **A** on your machine.
- Turn the hopper so that the hoses come out from the front of the machine.
- Place the hopper on the support.
- Align the fixing holes.
- Place the 14 screws M12x30.
- Fix all to the recommended tightening torques.
- Position the spreaders on 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 located on the seed drill hydraulic unit.
- Connect this hose to the free return socket located on the tractor.

This hose must be connected to the free return socket.
For an adaptation on a DTX equipped with "Auto-reset" tines, the "free return" hose of the DTX must be connected to a distributor of the tractor in "floating" position.

- Connect another hose to the '**P**' outlet 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.

Equipment available on all machines

Calibration button



If a **Calibration button** is fitted and set to “**YES**”, the calibration time can no longer be adjusted.

When you press **Start the test**, a new screen is displayed, indicating that the calibration switch must now be pressed.

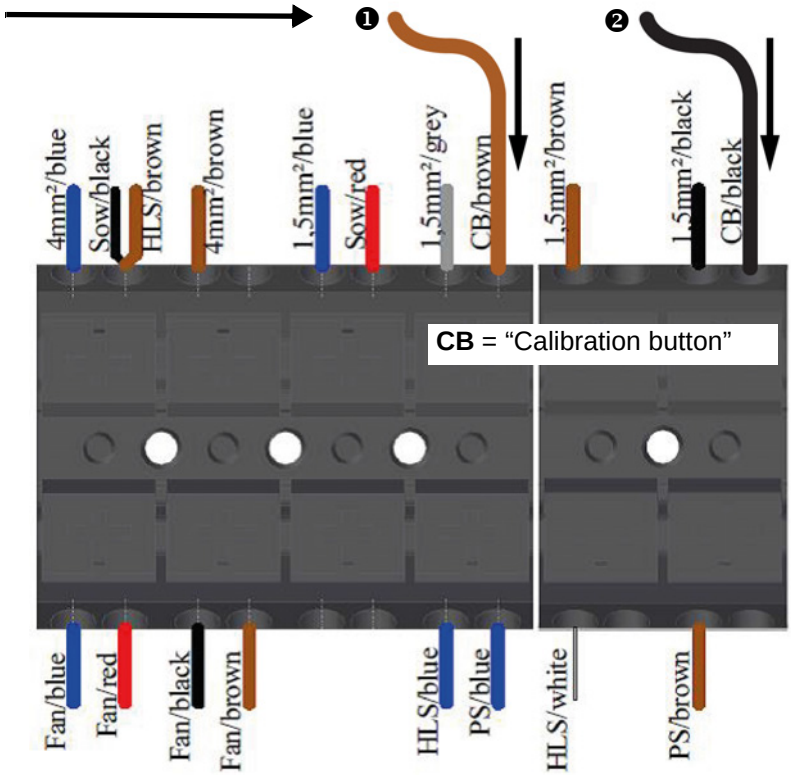
When the calibration switch is pressed, distribution starts. Calibration can be carried out for a random duration. When the calibration switch is released, distribution stops and the quantity measured can now be entered on the screen of the box 5.2 only. The control unit calculates the required output volume, which must be reintegrated. Consequently, the farmer can determine the calibration duration.

NOTE The hopper can also be emptied with the calibration button by allowing distribution to continue until there is no more seed.

Mounting the calibration button



- Connect the two cables “**CB**” ❶ and ❷ as shown on the following figure.



GPS option



Used as a speed sensor, it operates like a traditional highly accurate GPS. It reacts very quickly when your machine stops and starts to move.

This sensor must be installed horizontally, with the arrow pointing towards the sky and in the driving direction.

It can be used as soon as it is connected.

Advantages:

- Quick and easy installation.
- Ready to use.
- The speed of displacement operates even when sliding.
- No calibration required.
- Accurate to 0.1 m/s.
- Highly reactive
- Very strong
- Relatively insensitive to disturbance, even on the edge of a forest or underneath power transmission lines.

Disadvantages:

- The accelerometer can only detect acceleration on starting. If the GPS signal is not available after starting, the speed is not detected

Mounting the GPS

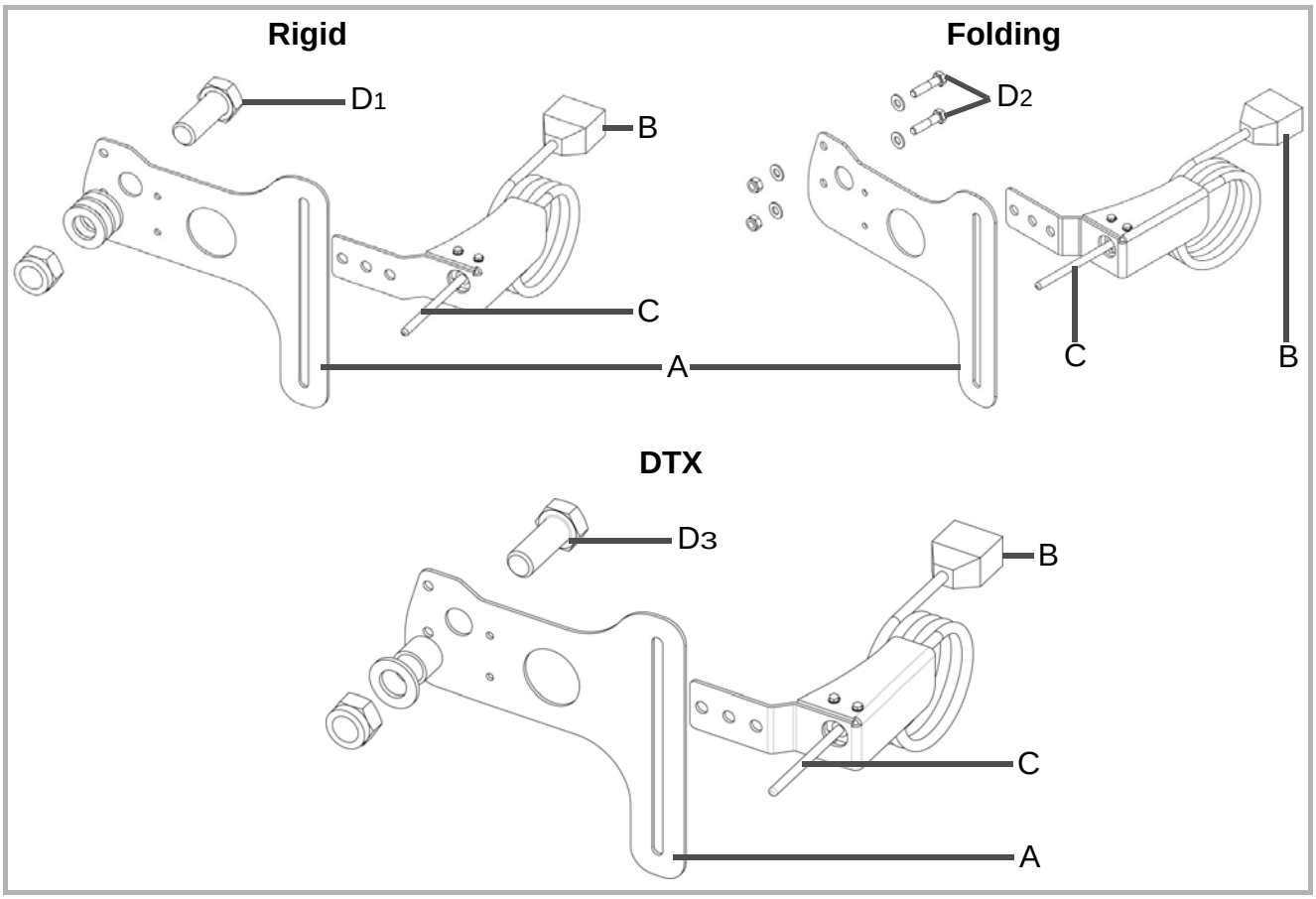
The sensor must be mounted horizontally, at the highest point on the machine.

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 in turn stops the seed distribution.



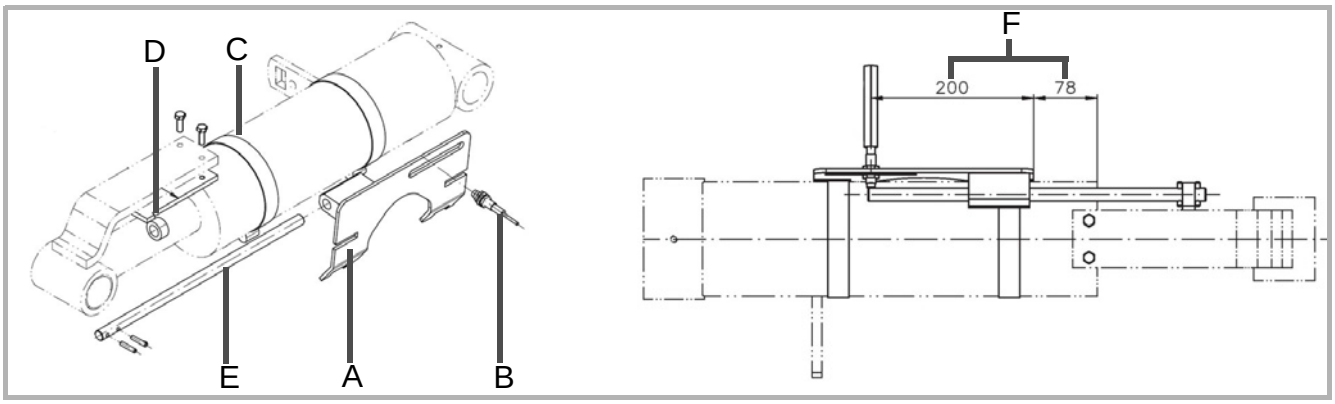
A	Sensor support plate
B	Lifting sensor
C	Sensor detection rod
D_1	Screw M24x8 + Nut + Washers
D_2	Screws M8x35 + Nuts + Washers
D_3	Screw M24x35 + Nut + Bush Ø31x25 + Washer

- Mount the support plate **A** on the coupling head of the machine.
- Fix all:
  - **Rigid** machines: Insert the screw - M24x8 - put on the nut and tighten.
  - **Folding** machines: Insert the screws - M8x35 - put on the nut and tighten.
  - **DTX** machines: Insert the screw - M24x8 - put on the nut and tighten, not forgetting the bush.
- Position the sensor detection rod **C** under the upper link bar.

Trailed machines

The detection device consists of a detection rod **E** attached to the cylinder rod by a support **D**. The detection rod **E** then follows the stroke of the cylinder rod, slides in the support plate of sensor **A** then moves in front of the inductive sensor **B**, which stops seed distribution immediately.

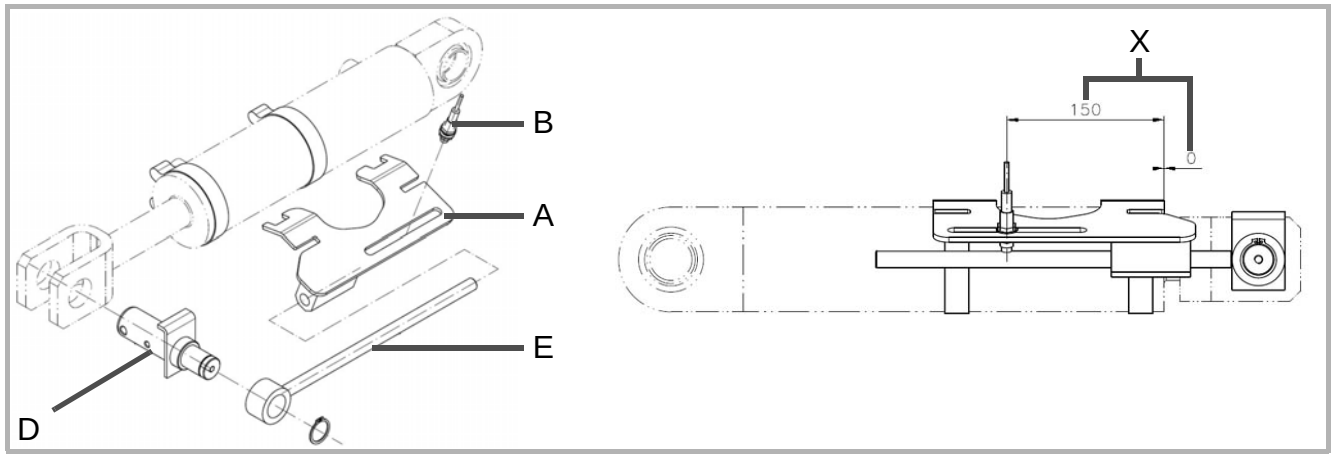
CTC



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

Qualidisc T

Same principle as on the CTC, except that seed distribution is stopped immediately when the detection rod is not near the inductive sensor.

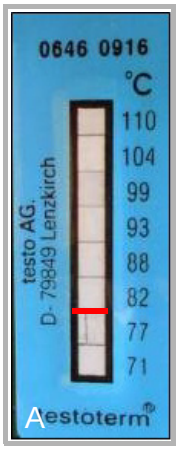


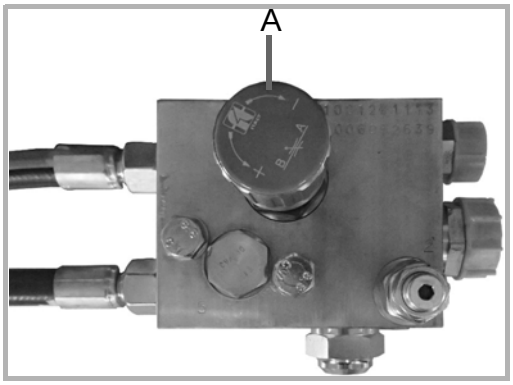
A	Sensor support plate
B	Inductive sensor
C	Detection rod
D	Rod support
X	Default factory values

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 No. 1
The pump is constant and the oil flow to the tractor is not adjustable.

- Fully tighten the adjustment knob **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.

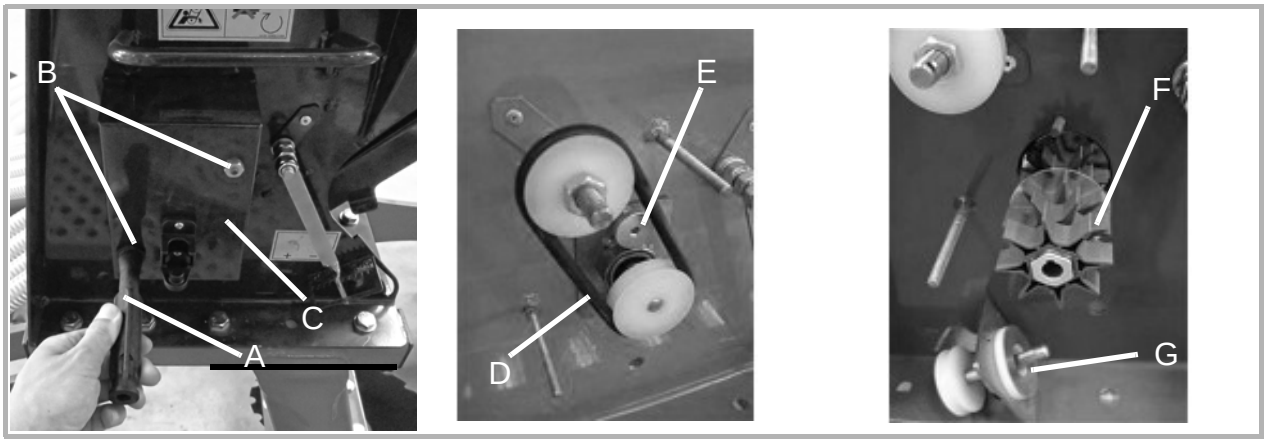
Adjustment variant No. 2
The tractor is equipped with an adjustable flow distributor.

- Fully loosen the adjustment knob **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 **80 L/minute**. If the tractor produces more oil, the system risks overheating, particularly if the tractor does not have an oil cooling system.

Distribution

Choice of distribution rotor

The choice of distribution rotor depends on the sowing required. Consult the sowing tables on page 93 as well as the list of distribution rotors on page 13 to choose the most suitable rotor.



To replace the distribution rotor, proceed as follows:

- Fully empty the hopper.
- Unhook the plastic tool **A** from its housing.
- Unscrew with the two screws **B**.
- Remove the side cover **C**.
- Remove the drive belt from the agitator **D**.
- Unscrew the knurled screws from the rotor bearing **E**.
- Remove the distribution rotor **F** and the bearing **G**.
- Install the new distribution rotor.
- Carry out the reverse procedure to re-mount.

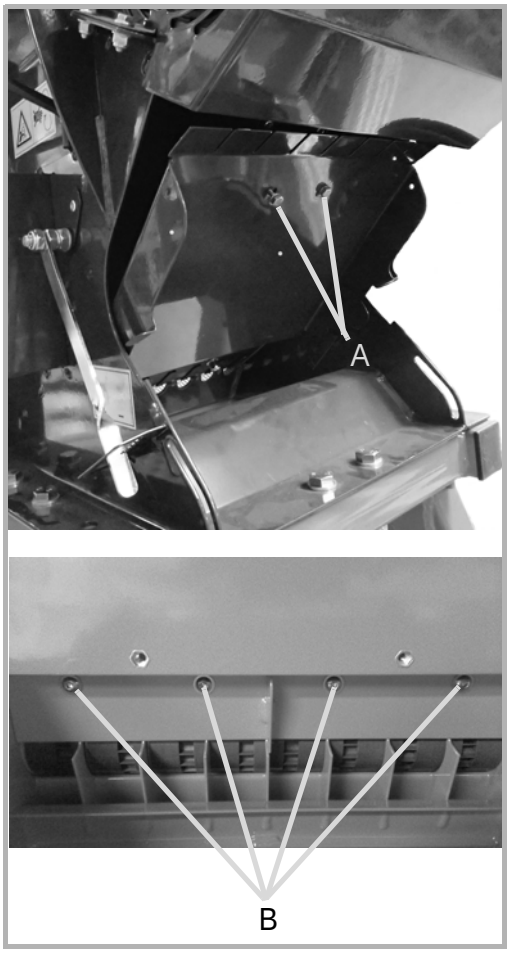
Hopper bottom sheet

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

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

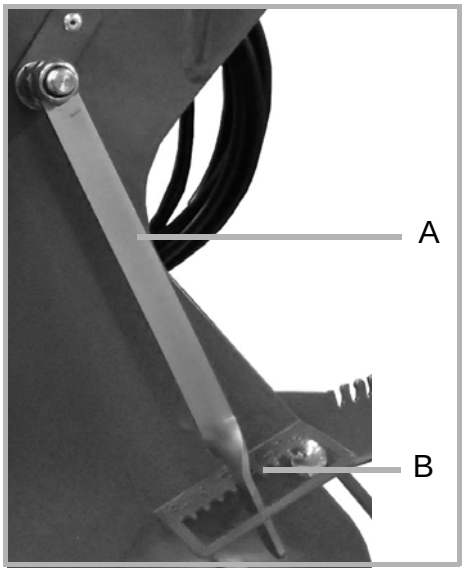
We also recommend using Flex distribution rotors as these are flexible and do not break.

Procedure



- Unhook the plastic tool from its housing.
- Unscrew the 2 nuts **A**.
- Remove the sheet.
- Unscrew the 4 Allen screws M6x12 **B**.
- Remove the hopper bottom sheet.

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 closest 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	Decrease	Small
0	No impact	Standard
+1 to +4	Increase	Large

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

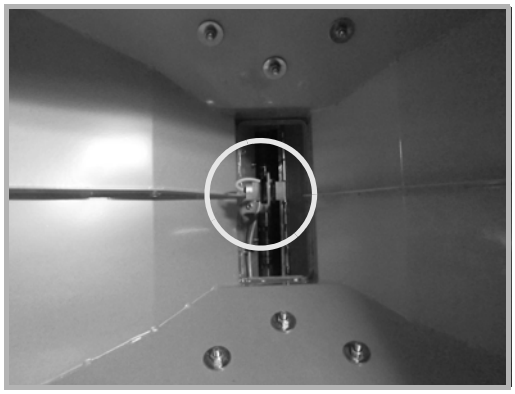
Agitator

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 screws located on the side cover.
- Remove the side cover.
- Remove the agitator drive belt.

Hopper level sensor



This sensor equips 500 L / *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 1.2 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:

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

Example:

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

Sowing tables

Grass Herbe *Lolium perenne*									Wheat Blé *Triticum*									
Rotor de distribution	ffff		BG-G-BG		GGG				**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			**En % de la vitesse max.**	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min	kg/min	lbs/min	
2	0,06	0,13	0,26	0,57	0,27	0,60			**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

Hordeum



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

Radish
Radis

Raphanus raphanistrum



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

Vetch
Vesce

Vicia



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

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

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

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

Oat
Avoine

Avena



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

Mustard
Moutarde

Sinapis Alba



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

Alfalfa
Luzerne

Medicago Sativa



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

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

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

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

Poppy Pavot *Papaver*												
Rotor de distribution	fb-fb-*ef-eb* -fb		**Rotor de distribution**	fb-Flex20-fb		Flex 40		**Rotor de distribution**	fb-Flex20-fb		Flex 40	
En % de la vitesse max.	kg/min	lbs/min	**En % de la vitesse max.**	kg/min	lbs/min	kg/min	lbs/min	**En % de la vitesse max.**	kg/min	lbs/min	kg/min	lbs/min
2	0,029	0,064	**2**	0,46	1,01	0,95	2,09	**2**	0,46	1,01	1,02	2,25
5	0,049	0,108	**5**	0,67	1,48	1,45	3,20	**5**	0,66	1,46	1,57	3,46
10	0,083	0,183	**10**	1,02	2,25	2,29	5,05	**10**	1,00	2,20	2,49	5,49
15	0,116	0,256	**15**	1,37	3,02	3,12	6,88	**15**	1,34	2,95	3,40	7,50
20	0,150	0,331	**20**	1,72	3,79	3,96	8,73	**20**	1,68	3,70	4,32	9,52
25	0,183	0,403	**25**	2,07	4,56	4,80	10,58	**25**	2,02	4,45	5,23	11,53
30	0,260	0,573	**30**	2,42	5,34	5,63	12,41	**30**	2,36	5,20	6,15	13,56
35	0,336	0,741	**35**	2,77	6,11	6,47	14,26	**35**	2,70	5,95	7,06	15,56
40	0,412	0,908	**40**	3,12	6,88	7,30	16,09	**40**	3,04	6,70	7,98	17,59
45	0,489	1,078	**45**	3,48	7,67	8,14	17,95	**45**	3,38	7,45	8,89	19,60
50	0,565	1,246	**50**	3,83	8,44	8,98	19,80	**50**	3,71	8,18	9,81	21,63
55	0,602	1,327	**55**	4,18	9,22	9,81	21,63	**55**	4,05	8,93	10,72	23,63
60	0,638	1,407	**60**	4,53	9,99	10,65	23,48	**60**	4,39	9,68	11,64	25,66
65	0,675	1,488	**65**	4,88	10,76	11,49	25,33	**65**	4,73	10,43	12,55	27,67
70	0,711	1,567	**70**	5,23	11,53	12,32	27,16	**70**	5,07	11,18	13,47	29,70
75	0,748	1,649	**75**	5,58	12,30	13,16	29,01	**75**	5,41	11,93	14,38	31,70
80	0,784	1,728	**80**	5,93	13,07	13,99	30,84	**80**	5,75	12,68	15,30	33,73
85	0,821	1,810	**85**	6,28	13,84	14,83	32,69	**85**	6,09	13,43	16,21	35,74
90	0,857	1,889	**90**	6,64	14,64	15,67	34,55	**90**	6,43	14,18	17,13	37,76
95	0,900	1,984	**95**	6,99	15,41	16,50	36,38	**95**	6,77	14,93	18,05	39,79
100	0,942	2,077	**100**	7,34	16,18	17,34	38,23	**100**	7,11	15,67	18,96	41,80

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

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

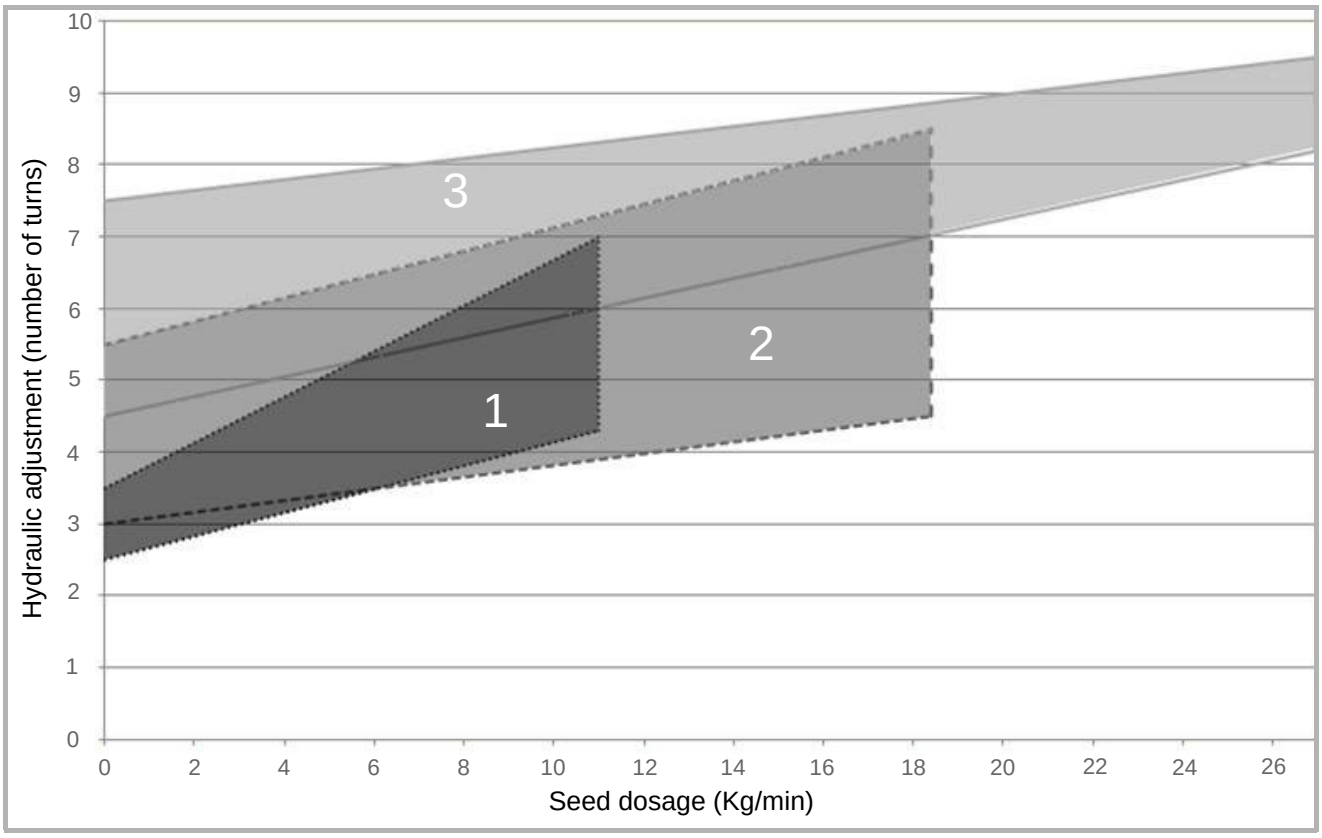
Pre-adjustment of hydraulic motor

- Take the result of your calculation (the formula can be found page 92)
- Define the seed category used with the following table:

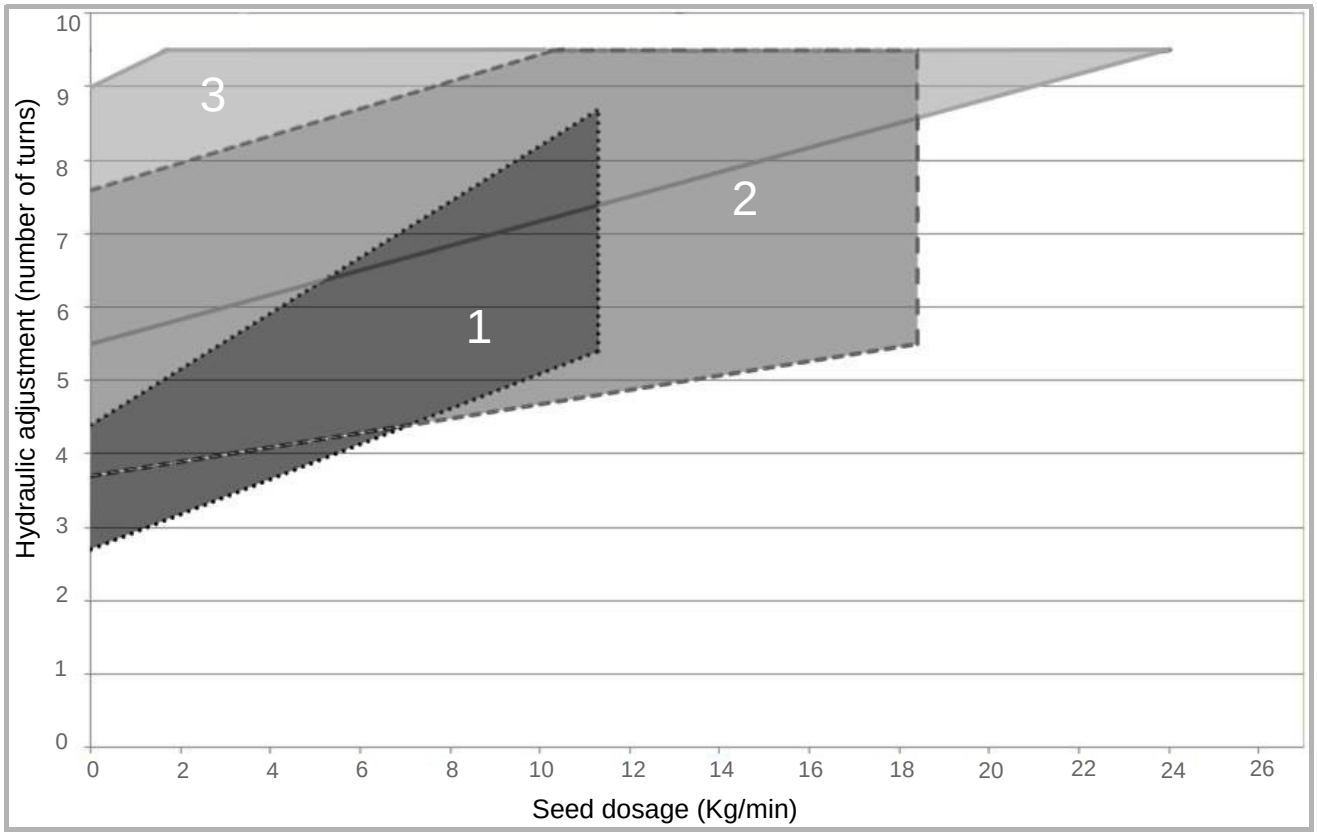
Designation	Seed category	Designation	Seed category
Rapeseed	1	Physiostart	2
Poppy	1	Buckwheat	2
Alfalfa	1	Barley	2
Red clover	1	Green rye	2
Mustard	1	Wheat	2
Phacelia	1	Vetch	3
Radish	1	Peas	3
Grass	1	Beans	3
Oats	1	Fertiliser	3

- 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.

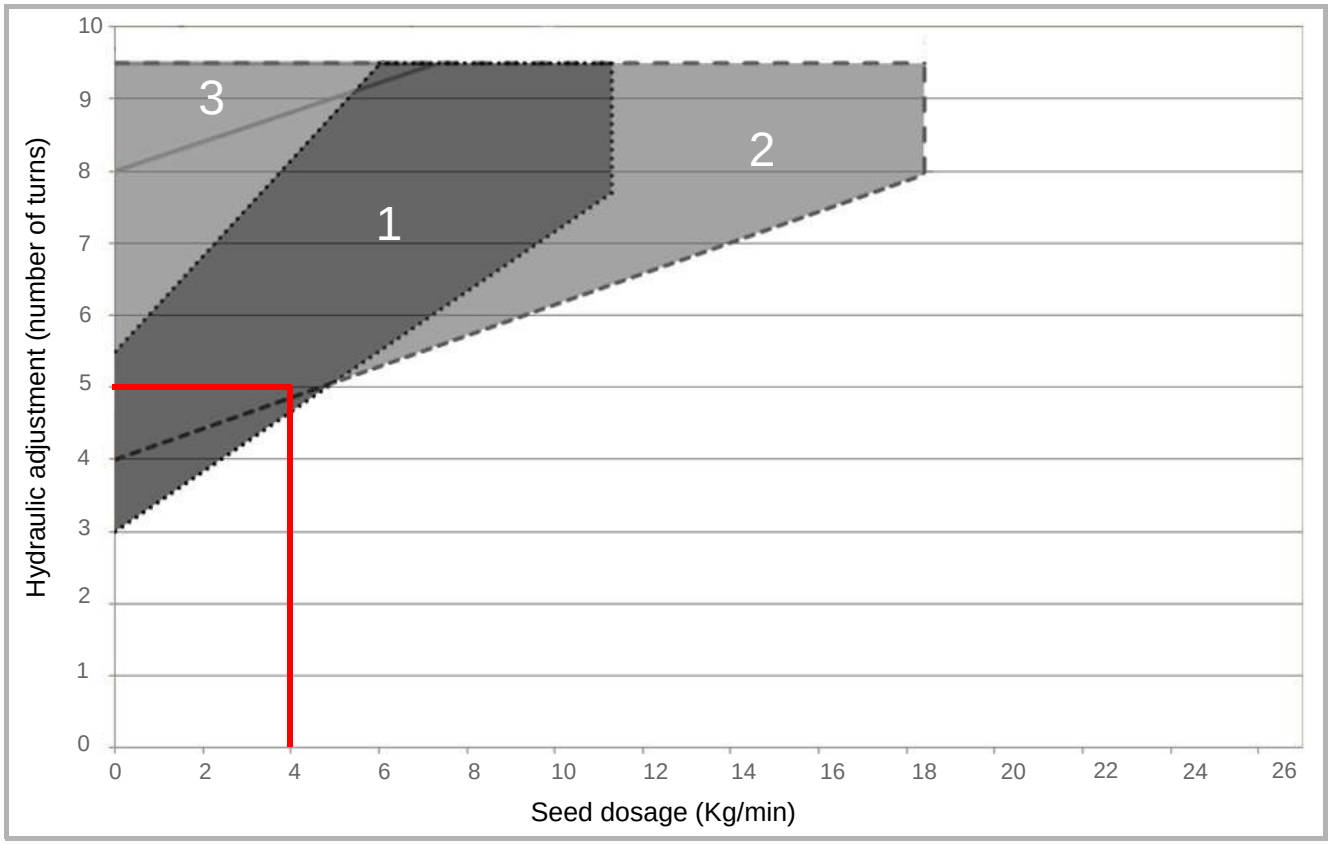
Sowing width of 3.00 m and 3.50 m (*9'10"* and *11'6"*)



Sowing width of 4.00 m and 5.00 m (*13'1"* and *16'5"*)


Hydraulic adjustment (number of turns)
10
9
8
7
6
5
4
3
2
1
0
3
2
1
0
2
4
6
8
10
12
14
16
18
20
22
24
26
Seed dosage (Kg/min)

Sowing width of 6.00 m and 7.00 m (*19'8"* and *22'12"*)

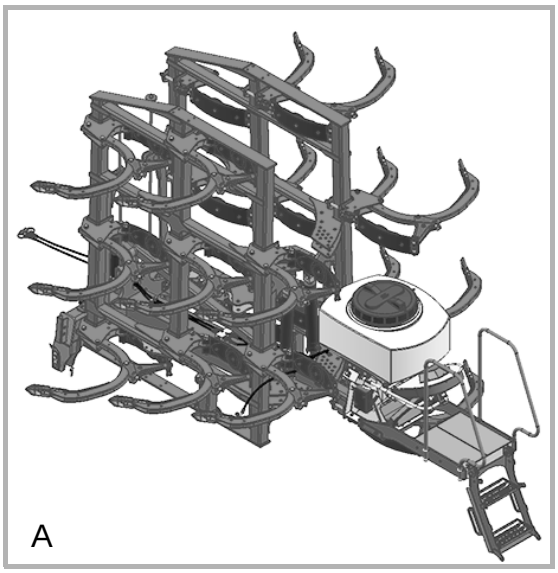


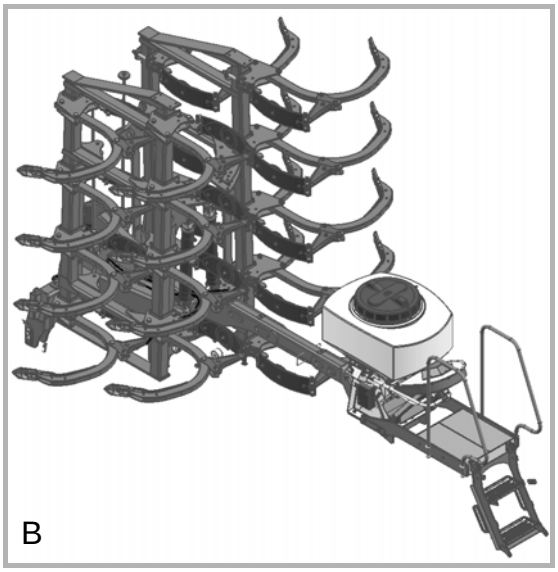
Example: Sowing width of 6.00 m (*19'8"*). 4 kg/min in category "1", tighten the valve to the maximum then loosen 5 turns.

Safety

To prevent accidents, always fill the hopper when the machine is on the ground.

Folding CLCs

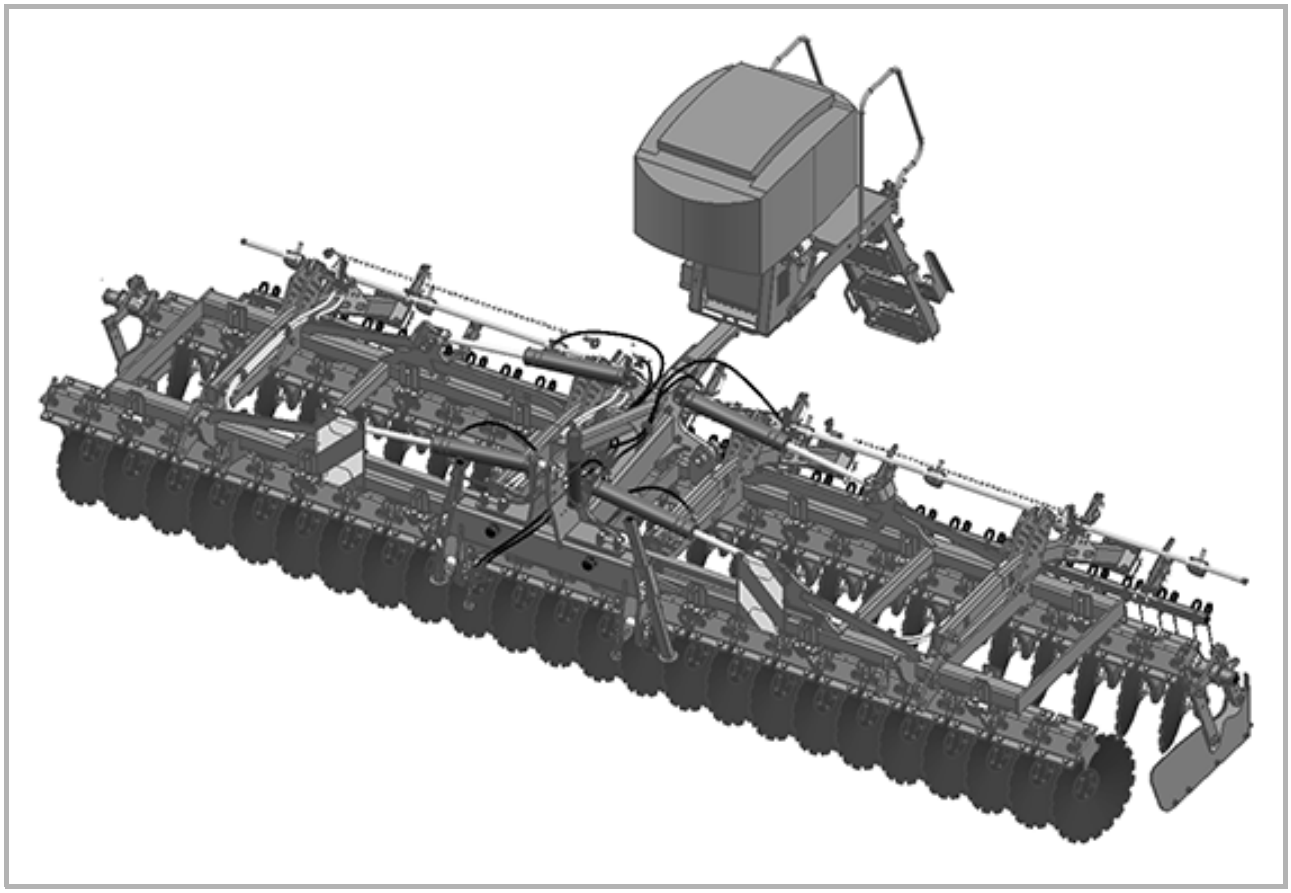




A	CLC PRO
B	CLC EVO

- Lower the machine to the ground.
- Fold the machine to access the hopper.
- Fill the hopper.

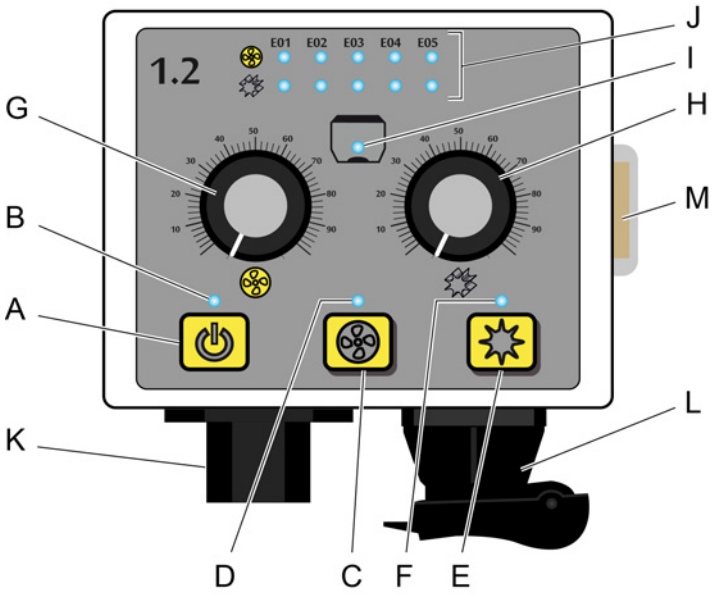
Qualidisc and Qualidisc Farmer



- Lower the machine to the ground.
- Unfold the machine.
- Fill the hopper.

Using the seed drill with the box 1.2

Description of the control module



A	Pushbutton: Box **On** / **Off**
B	Control box indicator light: Lit steady if box **On** and off if box **Off**
C	**Blower** on button
D	Blower status indicator light: - Off: Blower **Stopped** - Flashing: Blower starting - Lit steady white: blower motor started - Lit steady green: Blower **Operational**
E	**Distribution** on button
F	Indicator light: - Off: Distribution **Stopped** - Flashing: Distribution starting - Lit steady white: Distribution motor started - Lit steady green: Distribution **Operational**
G	Potentiometer: Adjust the **Blower** between **0** and **100 %**
H	Potentiometer: Adjust the **Distribution** between **0** and **100 %**
I	Indicator light: Lit if the seed tank is empty.
J	Indicator light: Indicates that an **error** concerning the **Blower and/or** the **Distribution** has occurred
K	Connector / Electrical connection to the battery.
L	Connector / Connection to the seed drill.
M	**25 A** fuse access cover

Switching on

You are recommended to turn the blower and distribution potentiometers to “0” after ending work each time.



- Press the button to switch on the control box

☑ The indicator light is lit steady.



- Use the left potentiometer to set the required blower speed.



- Use the right potentiometer to set the required distribution speed.



- Press the button to start the blower.

☑ The indicator light is lit steady, the blower is operational.



- Press the button to start the distribution.

☑ The indicator light is lit steady, the distribution is operational.

Use in the field

☑ Start the control box 1.2.

- Start work in the field.



- At end of field, start your turn and keep the button pressed until the green indicator light goes out.

☑ Distribution is now stopped.

☑ The blower continues to operate.

- Continue working in the field and so on.



- At end of working, press the button
- to switch off the blower and the distribution.

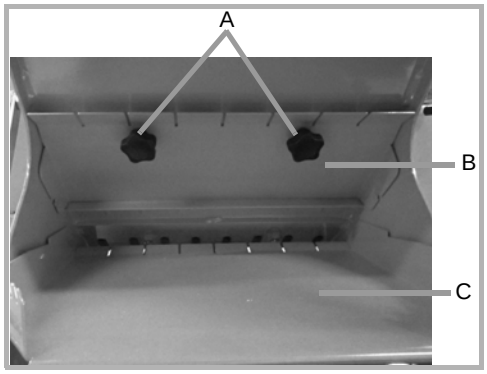
☑ Distribution is off.

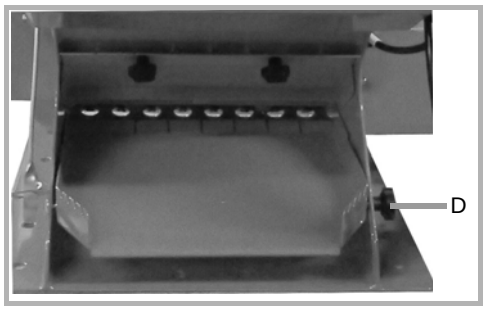
☑ The blower is off.

☑ All the indicator lights and the control box are off.

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 “Sowing tables” at page 93, 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.
- Make sure that the blower is off during this test. If it is not:
  - Press the blower On/Off button.





- Set the distribution speed using the left potentiometer.



- Keep the button pressed for about 3 s to start the test.

  ☑ Distribution alone starts for 1 minute.



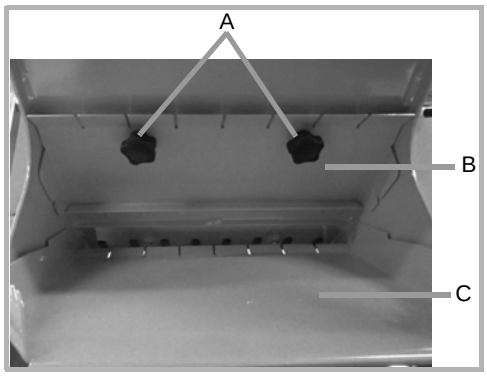
- Press the button at any time to stop the test, or



- When the test is finished, remove the bag or recipient and weigh it.
- Adjust the distribution rotor speed according to the results obtained during the test.

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.
- To start emptying, turn the blower potentiometer to 0.





- Press the button to start the distribution.



- Turn the distribution potentiometer to obtain the required emptying speed.
  - To empty the hopper quickly, turn the potentiometer fully to the right.



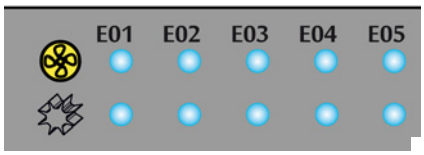
- Press the button to stop emptying,
  or 
- Check that the seed drill is completely empty.

Automatic box stop

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

Status and trouble-shooting messages

Troubleshooting



5 errors are reported to the operator on the box.

A lit LED indicates the error code and either blower or distribution.

The following troubleshooting table provides its code [**E01** to **E05**], origin and the actions required to solve the problem.

Stop the seed drill and confirm the error code before working on the machine
When an error code occurs, it is essential to make sure that the seed drill is stopped and that the error code is confirmed.
To do this, press the key.

Code	Source	Procedure
E01	**Distribution electrical fault** Indicates that the distribution shaft geared motor is not connected.	▸ Check the condition of the geared motor ▸ Check the condition of all the electrical wiring. ▸ Check the condition of the connectors.
E02	**Distribution overload** Is displayed when the distribution shaft cannot rotate or when it is used for too long in a limit range.	▸ Stop the distribution immediately. ▸ Remove any solid body or other object preventing or hindering rotation of the distribution shaft and/or correct operation of the agitator.
E03	**Distribution motor fault** Is displayed when the distribution motor is blocked without an electrical connection fault and without an overload.	▸ Stop the distribution immediately. ▸ Remove any solid body or other object preventing or hindering rotation of the distribution shaft. If this is not the case, contact the After Sales Service.
E01	**Blower electrical fault** Indicates that the blower motor has an electrical connection fault.	▸ Check the condition of the blower ▸ Check the condition of all the electrical wiring. ▸ Check the programming.
E02	**Blower overload** Is displayed when the blower motor cannot rotate or when it is used for too long in a limit range.	▸ Stop the blower immediately. ▸ Remove any solid body or other object preventing or hindering rotation of the fan.
E03	**Blower motor fault** Electric fan: Is displayed when the fan motor is blocked without an electrical connection fault and without an overload. Hydraulic fan: Is displayed when there is a turbine operating fault or when there is no signal from the turbine to the pressure switch.	▸ Electric fan: contact the After Sales Service. ▸ Hydraulic fan: check the inputs/outputs between the pressure switch and the turbine. Restart the blower.
E04	**Voltage fault** Is displayed when the operating voltage is too low.	▸ Reduce the consumers ▸ Check all the electrical wiring. ▸ Check the condition of the battery Check the condition of the alternator.
	Do not charge the battery when the control box is powered up Charging the box battery when on may lead to voltage peaks. This may damage the electrical equipment in the box.	
Other failures		
---	The box does not come after pressing the on/off button .	▸ Check all the box electrical wiring. ▸ Check that the box is connected correctly to the battery. Check that the box is connected to the correct battery terminal.
---	**E03 persistent** LED remains lit although the hydraulic fan is operating correctly.	▸ If no pressure gauge is fitted, check the programming.

Programming

Accessing the programming menu

- Press (or press and hold) the on/off button .
- Immediately afterwards, press briefly the  or key 
- Confirm the programming set by pressing the key 

Blower fan

This menu is required when a hydraulic fan has been fitted instead of the electric fan. In this case, adapt by selecting the following 3 options:

- **E01**: Electric fan
- **E02**: Hydraulic fan with pressure switch
- **E05**: Fan without pressure switch

- **Select the appropriate option**
  Press the  key repeatedly to move from options **E01** to **E05**.
- **Confirm the option**
  Press the  or  key to confirm selection of the option.

Distribution shaft motor

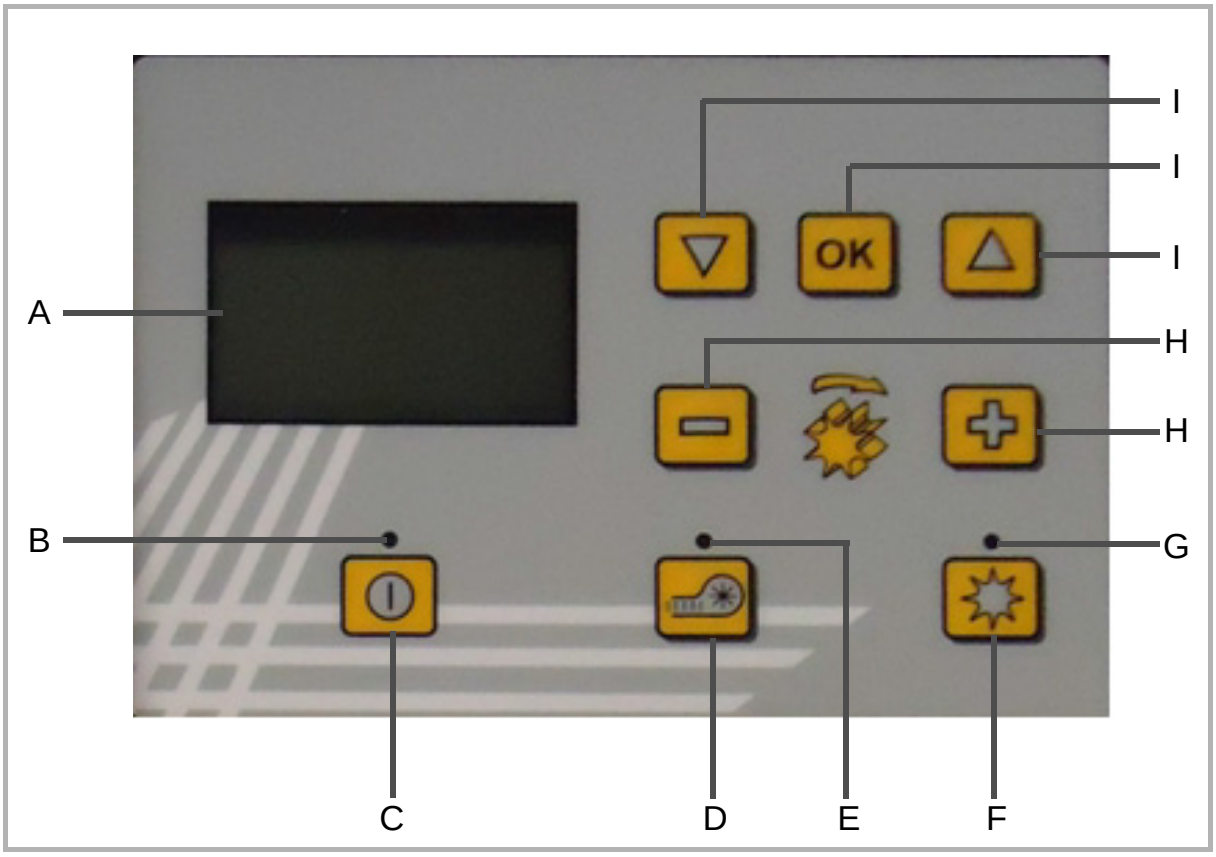
This menu is required to select the gear motor driving the distribution.

On the **SH200** and **SH500**, only option **E01** must be selected. It corresponds to the geared motor used on our **200**/**500L** pneumatic seed drills.

- **Select the appropriate option**
  Select option **E01**. Press the  key repeatedly to move from options **E05**.
- **Confirm option E01**
  Press the  or  key to confirm selection of option **E01**.

Using the seed drill with the box 5.2

Control module



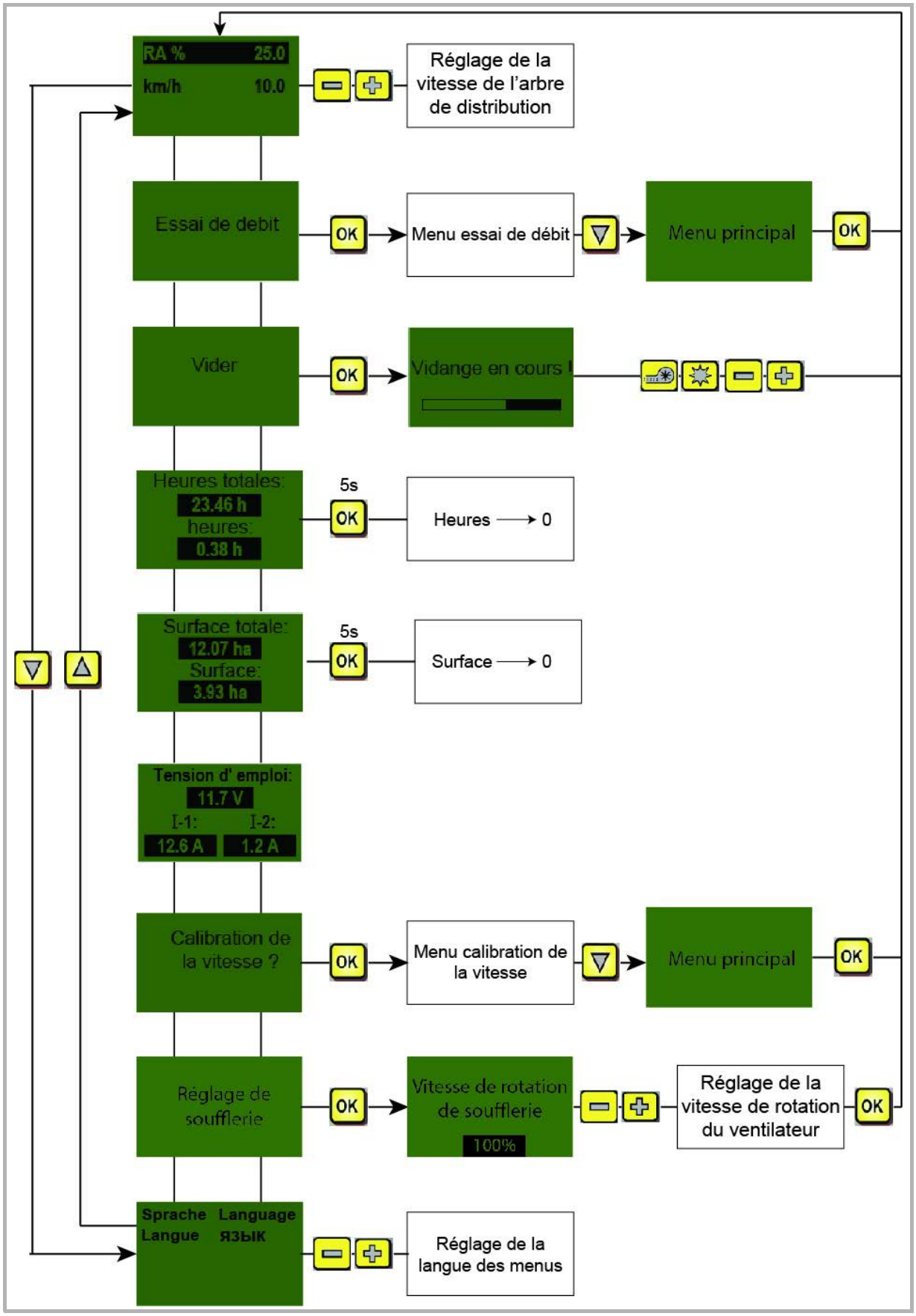
A	Graphic display of seed drill parameters
B	Box power on indicator. Lights if the box is activated.
C	"On/Off" button: Activates or deactivates the box.

D	Activate or deactivate the blower.
	• Electric blower:
	  • When starting, the indicator flashes.
	  • If the blower operates continuously, the indicator remains lit.
	• Hydraulic blower:
	  • 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	Control buttons for the on-board computer: • Surface calculations. • distribution tests, • emptying, • etc.

Main display

Organisation of the menus

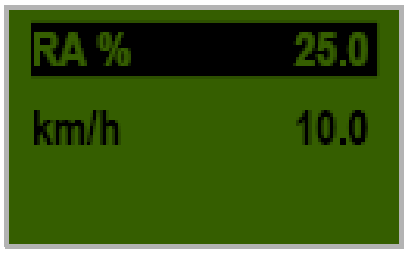


Start screen



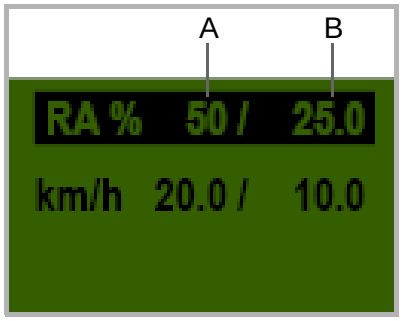
- Indicates the type of box. In this case: **5.2**.
- Indicates the software version installed.
- This information is essential for correct maintenance operations by the technical services.

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”.

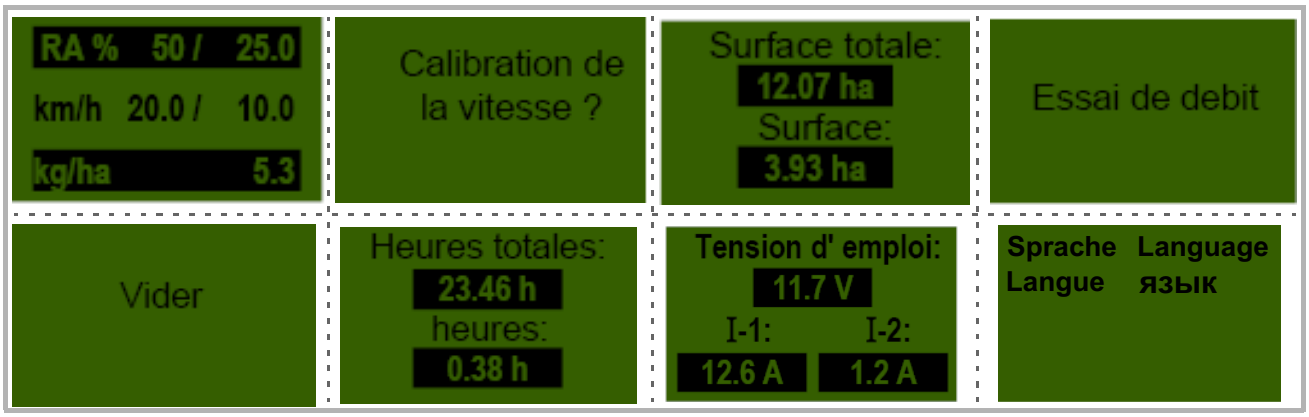
Operations with a speed sensor



	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



Navigating in the main menu

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

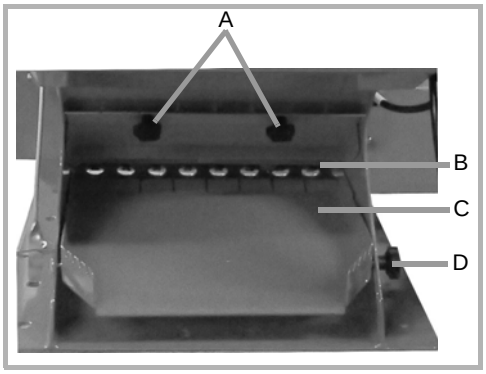
Menu tab

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.

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%, the following screen is displayed:



  - 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.



Main menu after the distribution test



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 113).
- The counter starts as soon as the distribution rotor starts turning.
- To reset the "Surface" tab to zero, press on the button OK for 5 seconds.

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

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 OK to select this tab.
- Choose the tab "Calibration distance 100m?".

- Press on OK.

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

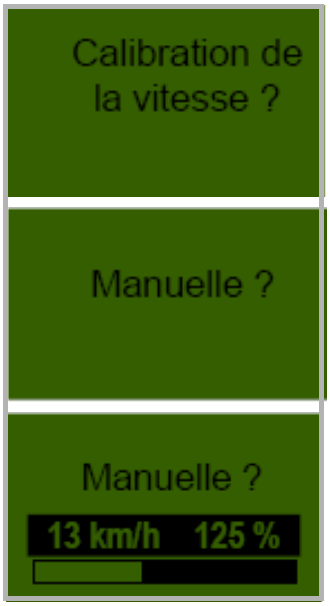
- Having travelled 100 metres (328'), press on OK to stop the calibration.

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



☑ The number of radar impulsions 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.

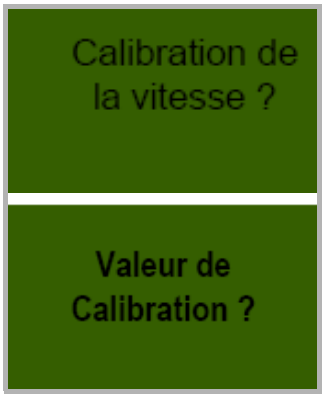
Manual calibration



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 OK to select this tab.
- Choose "Manual".
- Press on OK 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.

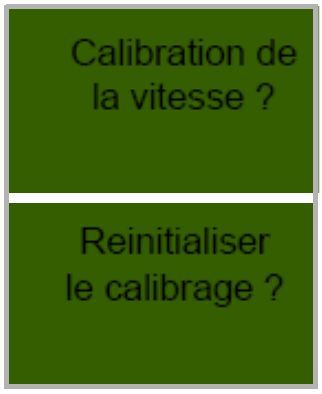
Calibration value



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 OK to select this tab.
- Choose the tab "Calibration value".
- Enter the number of impulsions over 100 m (*328'*) obtained during the previous calibration.
- Validate.

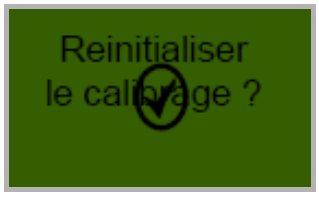
Resetting the calibration



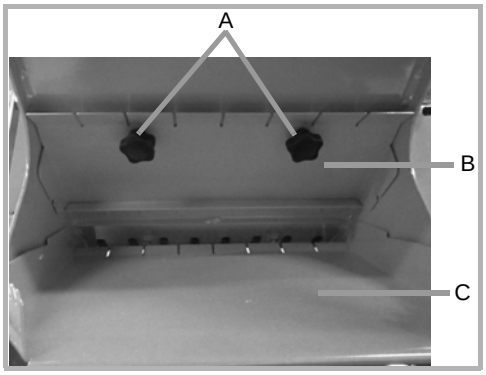
This function resets the calibrated value to its factory configuration.

- In the main menu of the box, choose the tab "Speed calibration?".
- Press on OK to select this tab.
- Choose the tab "Reset the calibration".
- Press on OK to validate.

☑ Once the calibration has been reset, the following message is displayed:

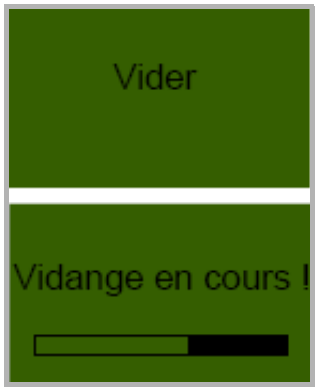


Emptying the hopper



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

- Unscrew the knobs located on the distribution sheet.
- Turn the sheet and place it on the lower sheet so that it can be used as a slide for the seeds.



- In the main menu of the box, choose the tab “Empty”.
- Press on OK 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.

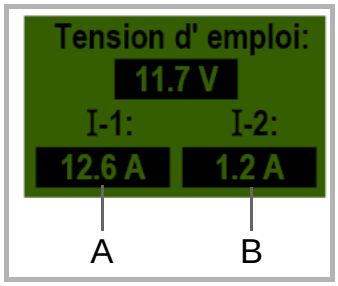
Hour counter



- 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 OK for 5 seconds.

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

Operating voltage and current intensity

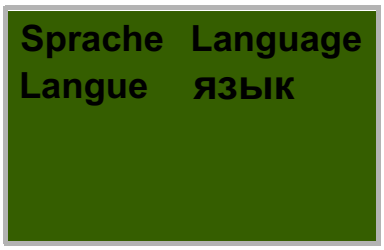


This screen displays the operating voltage and current intensity in the blower motor and distribution rotor motor.

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

Languages



Seed drills equipped with an electric blower

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

Seed drills equipped with a hydraulic blower

- Wait until the message "Motor not connected" is displayed.
- Press on OK
- You have 15 seconds to select the required language.
- Press on OK to validate the selection.

Changing the flow during operation

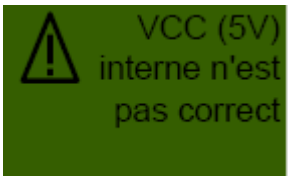
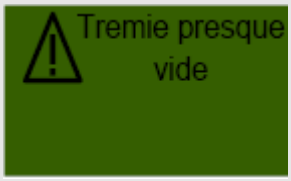
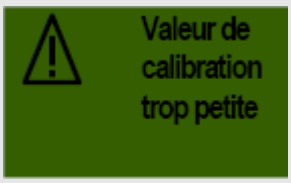
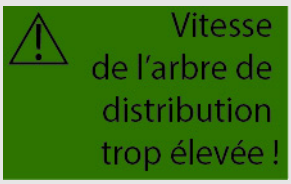


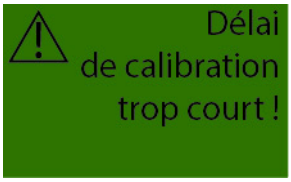
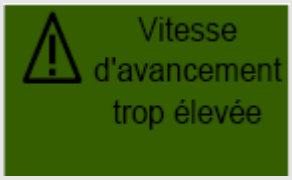
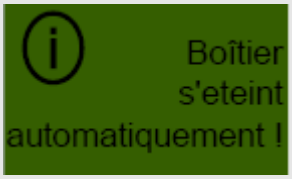
The flow can be increased or decreased to a maximum of 50%

- Press − or + to increase or decrease the flow.

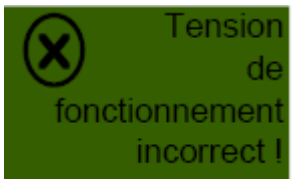
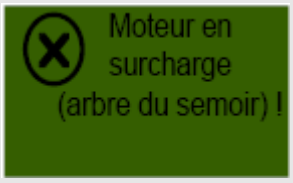
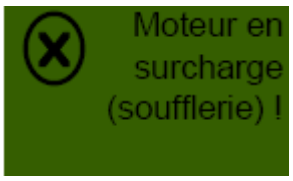
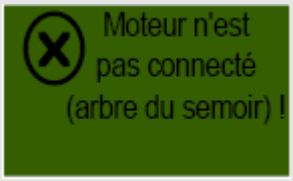
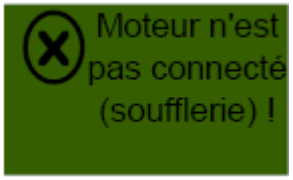
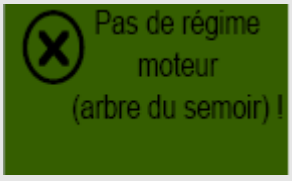
Status and trouble-shooting messages

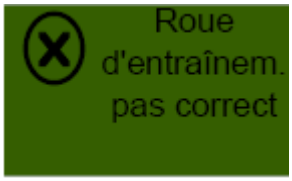
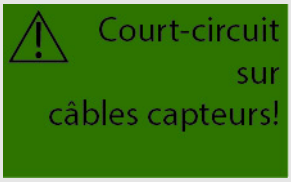
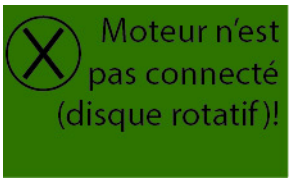
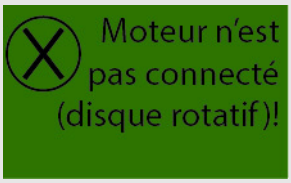
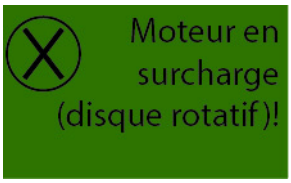
Warning messages

Display	Cause	Solution
	The box supply voltage is too weak.	▸ Return the box to the factory.
	The box operating voltage is insufficient.	▸ Reduce the number of devices connected to the tractor. ▸ Check the battery. ▸ Check the cabling. ▸ Check the tractor alternator.
	The box operating voltage is too high.	▸ Check the tractor alternator.
	The seed level sensor in the hopper has not been covered for more than 30 seconds.	▸ Top up the seeds.
	The number of impulsions between the radar and the ground during speed calibration is too high.	▸ Reduce the number of magnets on the wheel sensor. ▸ If this does not work, contact the After Sales Service.
	The number of impulsions between the radar and the ground during speed calibration is too low.	▸ Increase the number of magnets on the wheel sensor. ▸ If this does not work, contact the After Sales Service.
	Appears when the speed of the distribution shaft is too low during calibration.	
	Appears when the speed of the distribution shaft is too high during calibration.	▸ Use larger/coarser distribution grooves. ▸ Use more distribution grooves per outlet. ▸ Reduce the travel speed. ▸ Reduce the flow.

Display	Cause	Solution
	Appears when the duration of the calibration is too short.	▸ Press and hold the distribution switch for longer (at least 20 seconds).
	The driving speed is too high	▸ Compare with the pre-defined adjustments. ▸ Adjust your speed
	The driving speed is too low	▸ Compare with the pre-defined adjustments. ▸ Adjust your speed
	Screen displayed when the box stops	

Error messages

Display	Cause	Solution
	• The operating voltage is too low. • Excessive voltage deviations occur.	▸ Check the cabling. ▸ Check the connectors. ▸ Check the tractor alternator. ▸ Stop other devices connected to the tractor battery (work projector, etc.).
	The distribution rotor is blocked or the motor has suffered an overload.	▸ 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.
	The blower motor is blocked or in overload.	▸ Check that objects are not blocking the blower motor or affecting its operations. ▸ If this is not the case, contact the After Sales Service.
	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?	▸ Start the hydraulic turbine. ▸ Replace the return filter. ▸ Do not use a reducer in the tank pipe. ▸ Use a larger tank pipe.
	Appears when the hydraulic turbine is not activated. The pressure sensor is not actuated by the air flow.	▸ Check the cabling. ▸ Check the connectors.
	Not all connections are made or some cables are defective.	▸ Check the state of the cables and sockets.
	Not all connections are made or some cables are defective.	▸ Check the state of the cables and sockets.
	The distribution rotor motor is correctly connected, is not in overload but is blocked.	▸ Contact the After Sales Service.

Display	Cause	Solution
	The box does not receive a signal from the speed sensor	▸ Check the state of the cables and sockets. ▸ If no malfunctions are detected with the ground wheel, contact the After Sales Service.
	Appears when the power supply cables are overloaded or when there is a short circuit.	▸ Check the cables for damage and short circuits.
	Appears if: The motor is connected. The motor is not overloaded. The motor is not running.	▸ Contact After-Sales.
	Appears if: The cables are not connected. The cables are faulty.	▸ Check the cables. ▸ Check the connectors.
	Appears if: The spreader plate cannot turn. The motor is loaded in the limit range for too long.	▸ Stop the appliance. ▸ Check whether any foreign bodies are preventing the spreader plate from turning.

Trouble-shooting

Problem	Cause	Solution
The distribution rotor turns when the machine is raised.	Incorrect signal from the lifting mechanism.	▸ Change the position of the lifting mechanism sensor.
The distribution rotor does not turn when the machine is in the working position.	• The distribution rotor is not switched on. • The travel speed is zero. • No signal from the lifting mechanism sensor.	▸ 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.	▸ 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.	• Incorrect sensor settings. • Incorrect sensor position.	▸ 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.	• The speed sensor is not detected. • Incorrect selection of the speed sensor. • The cable is incorrectly connected or faulty.	▸ Connect the cable correctly according to the markings.
No signal from the lifting mechanism sensor.	• 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.	▸ Check the sensor and the lifting mechanism.
The control module does not switch on.	• Poorly connected electrical cable. • No power supply. • Faulty fuse.	▸ Check the connectors. ▸ Check the polarity of the electrical cable (15/30 12 V + pin, earth - pin 31, ignition on + pin 82) ▸ Switch on the ignition. ▸ Check the battery. ▸ Replace the fuse.
The control module switches off when the motors are switched on.	• Low battery level. Drop in the supply voltage. • Drop in voltage due to a poor contact.	▸ 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/m² is not displayed.	• Incorrect calibration. • The values have been changed in the calibration menu.	▸ Perform a calibration.
Flow too low or too high.	• Incorrect speed. • The lifting mechanism sensor switches when working. • The grain properties have changed.	▸ 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.	• Pipe cross-section too small. • The pipe is too long. • Return filter clogged.	▸ Use a larger pipe cross-section. ▸ Reduce the length of the pipe. ▸ Use a new return filter.

For your safety

Special safety instructions



Conditions necessary for maintenance work

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

Use original replacement parts

Use only original replacement parts for safety-related components. Dimensions, stability and material quality must be in conformity. If parts other than original replacement parts are fitted, the warranty is void.

Storage of the tool

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

Standard tightening torques

Unless otherwise stated, every screwed assembly must be tightened according to the table. The values given below are applicable to rigid connections with normal pitch screws without bearing washers.

Values provided for assembly with no special lubrication:

Diameter of screw (mm)	Quality 8.8		Quality 10.9		Quality 12.9	
	N.m	*ft.lbf*	N.m	*ft.lbf*	N.m	*ft.lbf*
3	1.41	*1.04*	2.07	*1.53*	2.43	*1.79*
4	3.22	*2.38*	4.74	*3.50*	5.5	*4.06*
5	6.4	*4.72*	9.4	*6.94*	11	*8.12*
6	11.1	*8.19*	16.3	*12.03*	19.1	*14.10*
8	27	*20*	39	*29*	46	*34*
10	53	*39*	78	*58*	92	*68*
12	92	*68*	136	*100*	159	*117*
14	148	*109*	218	*161*	255	*188*
16	232	*171*	341	*252*	399	*294*
18	330	*244*	469	*346*	549	*405*
20	471	*348*	667	*492*	781	*576*
22	648	*478*	920	*679*	1077	*795*
24	809	*597*	1148	*847*	1343	*991*
27	1201	*886*	1706	*1259*	1997	*1474*
30	1628	*1201*	2311	*1706*	2704	*1996*
33	2216	*1635*	3148	*2323*	3684	*2719*
36	2840	*2096*	4036	*2979*	4723	*3486*
39	3697	*2728*	5255	*3878*	6150	*4539*

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

The warranty will apply only if the conditions appearing on the delivery contract have been met by the buyer.

The guarantee cannot be granted if the accessory:

- has been repaired by the customer without the dealer's approval,
- has been modified by fitting non-original parts.

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 sewers used grease or other substances such as motor oil, hydraulic oil, coolant fluid, brake fluid, fuel, etc.

Metal parts

All metal parts may be sent to a scrap metal recycling centre.

Hydraulic fluid

- Collect hydraulic fluid in clean, sealed containers designed for this purpose.
- Avoid using food containers or drinks bottles.
- Take hydraulic fluid and hoses to an appropriate recycling centre.

Declaration of conformity

In accordance with Directive 2006/42/EC



We,

Kverneland Group Les Landes-Genusson SAS
9, rue du Poitou
FR-85130 Les Landes-Genusson

declare under our sole responsibility that the product

Pneumatic seed drill SH200 and SH500

to which this declaration relates, meets the relevant health and safety requirements stipulated in EC Directive **2006/42/EC**.

To implement the safety and health requirements stipulated in the EC Directive, the following standards have been taken into account:

- EN ISO 4254-1:2013

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

Les Landes-Genusson, 01-12-2020

Guillaume Hulin
Chief Executive Officer, Kverneland Group Les Landes-Genusson

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