USER MANUAL

Pneumatic seeders

DSF1600 | DSF2200

GB - Original manual

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FOREWORD

We thank you for the confidence you have shown in AGRISEM INTERNATIONAL by purchasing this item of equipment.

This manual is provided with your machine to enable you to make best use of your equipment, and in particular in compliance with the safety requirements.

All owners are reminded that the manual is an essential accessory which must remain with the machine at all times, and that in the event of resale, article 1615 of the Civil Code requires that as such it must be handed over to the new owner.

You are also reminded that as the manual is essential to the machine, all owners must undertake to leave it physically available with the machine for all users to consult.

This manual contains details of the characteristics of your new equipment. Please read it and ensure that all users scrupulously follow the instructions contained. The following pages provide essential information on your machine, read them carefully.

Your AGRISEM INTERNATIONAL dealer will provide high quality servicing, as well as any assistance you may require. For servicing, remember that your dealer is the person who is most familiar with your machine and wishes to give you complete satisfaction.

All information and characteristics given in this manual are current at the time of publication. However, the policy of continuous improvement of our products requires us to reserve the right to make changes at any time without prior notice.

This user manual is published for wide circulation and the availability of the equipment indicated, whether on the basic machine or as accessories, may vary according to the region in which the machine is used. All combinations available at the time of publishing the manual will be described therein.

1. Introduction

1.1. Purpose of the user manual

You have just taken ownership of your AGRISEM INTERNATIONAL machine. This machine has been designed to ensure complete satisfaction.

The equipment has been specially designed to incorporate new solutions for lowering the costs of operation.

However, for the best and most cost-effective use of your AGRISEM INTERNATIONAL machine, please read this manual carefully before starting it up and strictly follow the instructions. In particular, follow the instructions for adjusting and servicing the machine, as well as the safety precautions, very carefully.

Please contact our distributor for any information or advice.

This user manual is an integral part of the machine and must always accompany it, especially in the event of resale.

AGRISEM INTERNATIONAL is constantly seeking to improve its products and reserves the right to modify or improve its products with no obligation to apply these modifications or improvements to products already on the market.

The instructions in this manual are not exhaustive and cannot cover all eventualities. The user must comply with the applicable legislation, in particular with regard to safety, ensure that the rules of safety and caution dictated by the situation are applied, use common sense and adapt the use of the machine to the circumstances.

It is the Purchaser's responsibility to check that the AGRISEM INTERNATIONAL machine complies with the legislation and regulations applicable to its final destination.

DANGER

The instructions in this user manual must be read, understood and applied by any persons who will be carrying out work on or with the machine, in particular:

- use of the machine (including preparation, repairs required during work and maintenance),
- maintenance (servicing and inspection),
- transport.

AGRISEM INTERNATIONAL cannot be held liable for personal injury or damage to equipment and malfunctions resulting from failure to comply with the instructions given by the manufacturer in this manual.

IMPORTANT

AGRISEM INTERNATIONAL information

Return the warranty certificate within 15 days together with a copy of the invoice (*without these documents the warranty procedure cannot be implemented*).

1.2. Using the manual

1.2.1. Functional organisation

Wherever possible, the contents of the user manual are classed by function.

1.2.2. Search help

The table of contents helps you to find information.

1.3. Ordering the manual

You can order the user manual by sending a request to:

AGRISEM INTERNATIONAL S.A.

535 Rue Pierre Levasseur

CS 60263

44158 ANCENIS - France

Tel.: +33 (0)2.51.14.14.40 – Fax: +33 (0)2.40.96.32.36

1.4. Interpreting the version of the manual

The version of the manual is indicated on the cover page and consists of the following.

Description of manual version

Example: NOTT-GB-705-A

Character	Description
NOTT	User manual
FR	French
GB	English
DE	German
PL	Polish
RU	Russian
705	Type of machine
A	Version of the manual

1.5. Description of warning terms

DANGER

This pictogram indicates a hazardous situation for the user.

Consequences: death or serious injury are inevitable.

WARNING

This pictogram indicates a hazardous situation for the user.

Consequences: death or serious injury may occur.

CAUTION

This pictogram indicates a hazardous situation for the user and the equipment.

Consequences: the user may suffer minor injuries, the equipment may suffer minor damage.

IMPORTANT

This pictogram indicates required information.

Consequences: material damage, physical risks, financial risks.

NOTE

This pictogram provides advice.

Consequences: more efficient use.

BARRED BIN

Indicates that waste must not be disposed of in a conventional dustbin but collected through special channels.

MOEBIUS LOOP

The universal recycling symbol. It indicates that the product or its packaging is technically recyclable, not that it is or will be recycled.

The products will only be recycled under two conditions:

- the sorting and recycling channel exists in your region,
- the products have been correctly sorted.

2. Presentation of the machine

2.1. Intended use of the equipment

The AGRISEM INTERNATIONAL DSF 1600 and DSF 2200 front-mounted hopper ranges are exclusively designed for professional use in accordance with the recognised rules for the purposes of performing agricultural work.

The vineyard range of machines is designed and adapted for hitching onto the 3-point hitch a tractor for the purpose of:

- Combivigne:
- Cultivigne:
- Disc-o-vigne:
- Maxivigne:
- Activigne:
- Rotavigne: is a machine designed to be used solely for agricultural purposes, for ground preparation, ploughing and clod-breaking operations.

The vineyard range of machines must be operated, maintained and repaired only by persons who are entirely familiar with the machine and who are aware of the possible risks.

Correct use implies strictly adhering to the instruction given in the user manual as well as the operating, servicing and repair rules defined by the manufacturer.

The operator must be in the tractor driving cab during working phases.

The user and the owner are responsible for complying with the specific accident prevention instructions and well as the general rules relating to safety, occupational medicine and highway legislation.

Any use other than that defined above will be deemed to be inconsistent with the intended use and will exempt the manufacturer from all from any liability in the event of damage or injury. The risks of such use shall be borne by the user alone.

Competencies and level of training

Activity	Person having received instruction	Person having undergone specialised training	Person specially trained for this activity
Loading/transport	-	x	x
Start-up	x	x	-
Installation and set-up of equipment	-	x	-
Operation	x	x	-
Servicing	x	x	-
Troubleshooting and resolution of faults and incidents	x	x	-
Waste reprocessing/disposal	-	-	x

2.2. General view of the machines

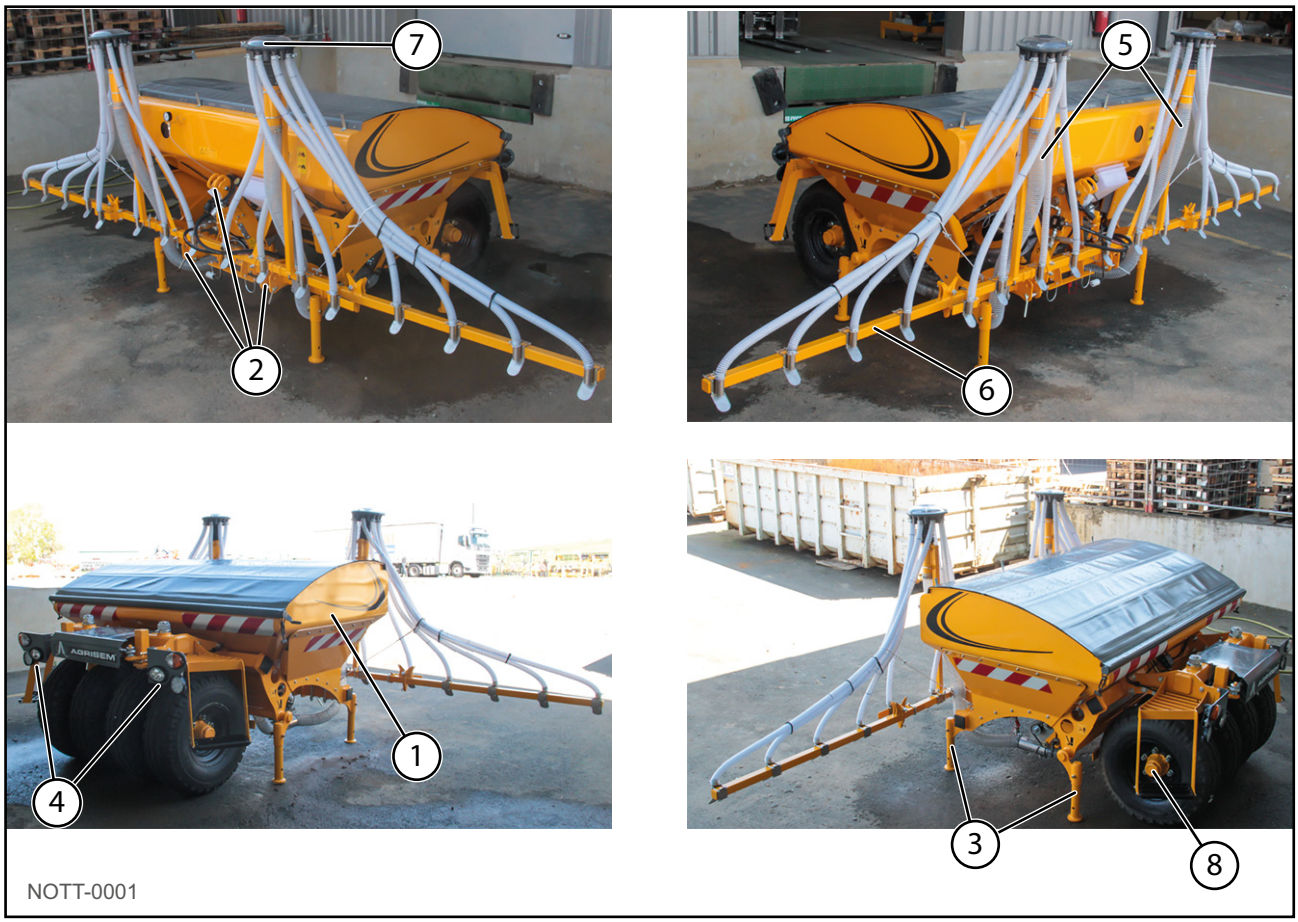

Fig. 1

No.	Description
1	Hopper
2	Hitching frame
3	Parking stand
4	Signal lights
5	Pipeline
6	Radar

3. Identification

3.1. Validity of the user manual

This user manual is valid for the following machines.

Machine	Type	Serial number	
		From	A
Pneumatic seeders	DSF1600	18S1600105	
Pneumatic seeders	DSF2200	18S2200101	

IMPORTANT

This user manual is published for wide circulation and the availability of the equipment indicated, whether on the basic machine or as accessories, may vary according to the region in which the machine is used. All combinations available at the time of publishing the manual will be described therein.

3.2. Location and description of data plate

The data plate is located on the lower hitching beam.

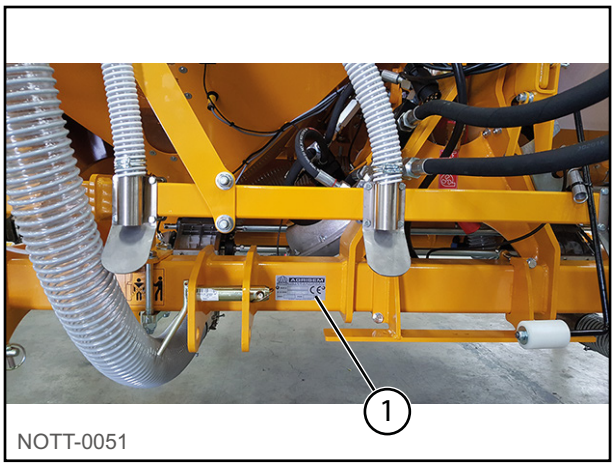

Fig. 2

The data plate includes the following information:

No.	Description
1	Model
2	Serial number
3	Year of manufacture
4	Empty weight of the equipment

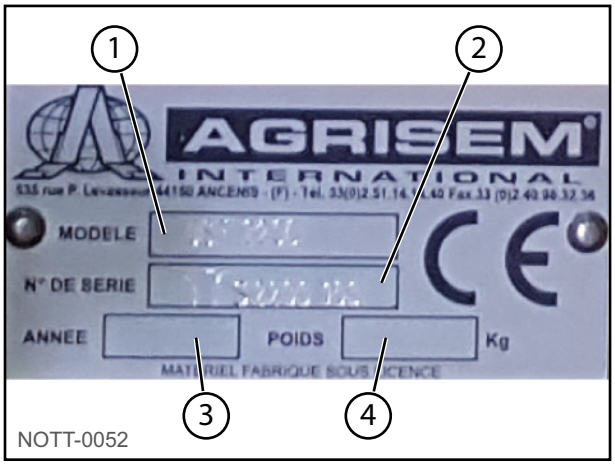

Fig. 3

The serial number is made-up of the following elements.

No.	Description
1	Year of manufacture
2	S = pneumatic seeder
3	Hopper capacity in litres
4	Incremental number

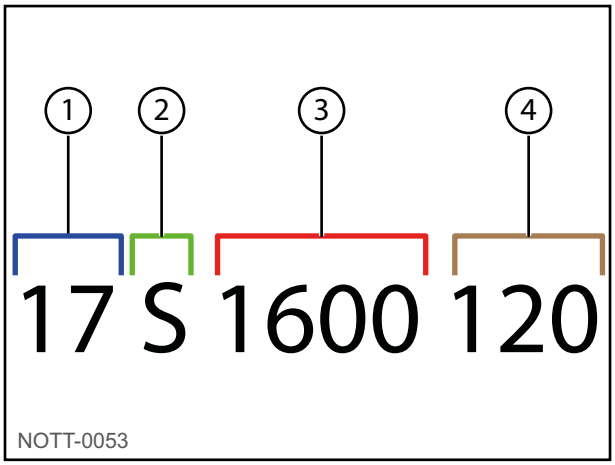

Fig. 4

3.3. Identification of the machine

On receipt of the machine, please enter the corresponding information below:

Information	Fill-in the column with the requested information
Type of machine	.....
Serial number	.....
Year of manufacture	.....
Date of first use	.....
Name of the dealer	.....
Dealer's address	....
Dealer's telephone number	.....

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IMPORTANT

This document should be kept inside this user manual.

4. Warranty

4.1. Warranty conditions

NOTE

Return the warranty certificate within 15 days together with a copy of the invoice (without these documents the warranty procedure cannot be implemented).

The warranty conditions applicable to machines fitted exclusively with original parts from AGRISEM INTERNATIONAL are as follows:

By selling new products to its dealers, the manufacturer provides a guarantee according to which, subject to certain conditions, the goods are free of material or workmanship defects. The purchasers of new AGRISEM INTERNATIONAL equipment shall request all necessary information from the dealer having supplied them the equipment.

As part of its policy of constant improvement of its products, the manufacturer reserves the right to change the characteristics of its equipment without notice and accepts no liability in the event of possible differences between the characteristics of its products and the description of said products in its publications.

4.1.1. Duration

If a defect is observed on a structural part within a period of 12 months as from the date of delivery of the machine, and if this defect is due to faulty raw materials, or its manufacture at the factory. The parts alleged to be faulty must be returned to the Company's address for expert inspection:

AGRISEM INTERNATIONAL S.A. – 535 Rue Pierre Levasseur – CS 60263 – 44158 ANCENIS - France
Tel.: +33 (0)2.51.14.14.40 – Fax: +33 (0)2.40.96.32.36

The following shall be considered to constitute proof of the date of delivery of the equipment:

- the date of the delivery note and the purchaser invoice date.
- the return of the warranty certificate (stamped and signed by the dealer and the purchaser) within 15 days of the delivery of the equipment.

4.1.2. Machines and parts concerned

For the purposes of this warranty, the term “Machine” is exclusively used to designate machines and parts manufactured by AGRISEM INTERNATIONAL. (It does not include external components, in particular tyres, hydraulic hoses, etc. even though these parts are also supplied by the company)

NOTE

The warranty is void if any modifications have been made to the machine without the formal approval of AGRISEM INTERNATIONAL or if parts other than those manufactured by the company have been fitted (e.g. counterfeit wear parts).

4.1.3. Scope of the warranty

The warranty is limited to the reimbursement or repair of parts accepted as faulty with regard to their raw materials or machining, in our factories and by our Technical Departments.

Any costs associated with the dismantling and replacement of the faulty part are not covered by the warranty. The costs of transporting machines or machine parts to the place of repair and their return to their owner are also not covered.

Wear parts are not covered by the warranty.

4.1.4. Preconditions

The machine must be maintained and used in accordance with the instructions in this user manual.

All of the safety measures described in the user manual and in the manuals of any additional equipment must be complied with.

All protection and safety components are to be inspected regularly and replaced if necessary, including cylinders, hydraulic hoses, spring and turbo safety devices. refer to the chapters “Safety instructions”, page 17 and “Servicing - Maintenance”, page 121.

The warranty is only applicable if the customer has complied with the general obligations of the contract and, in particular, the payment terms.

4.1.5. Pre-delivery inspection

When supplying a machine, the dealer is required to perform a number of operations. These involve, firstly, a complete inspection of the machine prior to delivery so that the machine is supplied ready for immediate use. They also involve providing comprehensive training to the purchaser regarding the basic principles of machine operation and servicing. This training covers the instruments and controls, routing servicing and safety instructions. All those who will be involved in the use and the servicing of the machine are required to attend this training.

4.1.6. Warranty exclusions

The warranty will not apply:

- If the faults are due to normal wear, incorrect use, lack of maintenance, inadequate monitoring or negligence.
- If the machine is damaged by an accident or develops a fault due to being used for purposes other than those specified by AGRISEM INTERNATIONAL.
- In the event of improper use of the machine. Please refer to the chapter “Intended use of the equipment”, page 9 regarding this point.
- If the manufacturer's instructions and requirements given in this manual are not complied with, particularly those regarding safety, assembly, start-up, use, operation and servicing.
- In the event of improper handling on the part of the user.
- Causes due to the passage of foreign bodies.
- In the event of damage due to the machine being combined with other machines or instruments without the prior written agreement of AGRISEM INTERNATIONAL, and/or without complying with the instructions given by the manufacturers of the tractor and other instruments or machines.
- In the event that the machine is used with improperly attached or non-functioning protection and safety devices.
- If the machine has been modified without prior written permission from AGRISEM INTERNATIONAL, or if spare parts, accessories or equipment have been fitted to the machine which were not recommended by AGRISEM INTERNATIONAL.
- In the event of non-compliant repair.
- In the event of damage during transport or handling by a carrier. The recipient shall be responsible for taking any corrective action against the carrier.
- The harmful consequences of the immobilisation of the instrument due to a fault or incident on the machine are not covered by the warranty.
- Personal injury to the owner or a third party and the indirect consequences resulting therefrom are not covered by the warranty.

Moreover, AGRISEM INTERNATIONAL shall not be liable for the payment of compensation for any reason whatsoever in the event of the loss of crops or any damage whatsoever due to a fault, hidden defect or machine breakdown.

The purchaser is always responsible for the choice of product and the suitability of the machine for the result it is wished to obtain. The purchaser is responsible for its correct use in line with good professional practice and the regulations.

Under no circumstances will AGRISEM INTERNATIONAL have any obligation with regard to the final result.

4.1.7. Limitations and liability

The warranty cannot be assigned or transferred to any other person without the prior written permission of AGRISEM INTERNATIONAL.

Under no circumstances do those selling our machines have the right or power to make any decision whatsoever, either express or tacit, in the company's name.

The technical assistance given by the company or its representatives with the repairing or operation of equipment does not make it liable for any costs and in no way alters or leads to the waiving of the conditions of this warranty.

4.1.8. Warranty enforcement procedure

TO BE STRICTLY ADHERED TO BY THE DISTRIBUTOR AND BY THE PURCHASER

The warranty's enforcement is subject to strict compliance by the dealer and the user with the following requirements:

1 - Returning by the dealer of the warranty certificate duly completed and signed by the dealer and the purchaser.

2 - Claims must be made without fail using an AGRISEM INTERNATIONAL "WARRANTY CLAIM FORM" (see appendix) and sent by registered letter with acknowledgement of receipt by the dealer to the company's technical department within 10 days of the incident. This form must be completed legibly by the dealer and must include the following information:

- Name and address of the dealer, code No.,
- Name and address of the purchaser,
- Type of machine,
- Working width,
- Machine serial number,
- Date of delivery to purchaser,
- Date of breakdown,
- Precise references of the parts replaced, No. and date of invoice,
- Make and model of tractor used,
- Detailed description and alleged cause of the incident.
- Surface worked with the Disc-O-Mulch,
- Utilised agricultural area of the farm,
- Type of soil % clay,
- Proof of wear part invoice,
- Stones (yes/no),
- Parts replaced (yes/no) (send the photocopy of the invoice).

3 - Allegedly faulty parts are to be returned by the dealer to the company's address for an expert inspection, together with the copy of the warranty claim form provided for this purpose. The dealer must order the faulty part from the spare parts department. Any transport costs incurred by the returning of said parts are payable by the sender.

4 - The final decision regarding payment under the terms of the warranty shall be made by the company's technical or general management. Whatever the reason for the warranty claim, this decision is final and irrevocable and the purchaser undertakes to accept this decision both with regard to the fault and the replacement of the part or parts.

Under no circumstances are the company's salespersons authorised to make such a decision, which would be deemed null and void.

NOTE

In the event of refusal, the part remains at the customer’s disposal for eight days. After this time it will be disposed of with no appeal possible.

Under no circumstances do those selling our machines have the right or power to make any decision whatsoever, either express or tacit, in the Company's name.

4.1.9. Warranty extension

If the customer subscribes to the warranty extension, please see this agreement for the terms and conditions of the enforcement of this warranty extension.

4.2. Exclusive liability clause

AGRISEM INTERNATIONAL accepts no liability for damages (and any related indirect consequences) resulting from one or more of the following causes:

- Non-compliant use of the machine.
- Failure to follow the manufacturer's instructions given in this manual, particularly those regarding safety, assembly, start-up, use, operation and servicing.
- Improper assembly, start-up, use and maintenance of the machine.
- Use of the machine with faulty protection and safety devices or safety and protection devices that are incorrectly installed or not working.
- Combining of the machine with other instruments or machines without the written agreement of AGRISEM INTERNATIONAL and/or without complying with the instructions given by the manufacturers of the tractor and the other instruments or machines.
- Modifications made to the machine without the written permission of AGRISEM INTERNATIONAL.
- Fitting of spare parts, accessories or equipment on the machine which are not genuine or which have not been recommended by AGRISEM INTERNATIONAL.
- Failure to monitor the wear parts on the machine.
- Use of the machine other than for the purposes specified by the manufacturer.
- Non-compliant repair and maintenance.
- Catastrophes resulting from the presence of foreign bodies, unforeseeable circumstances and cases of force majeure.

Moreover, AGRISEM INTERNATIONAL cannot be held liable for injury to the owner or a third party or for the indirect consequences of such an injury, whether or not it results from a fault. You are also reminded that a safe distance of 50 m must be maintained around the machine.

Any claim for compensation for damage that did not occur directly on the machine is excluded.

AGRISEM INTERNATIONAL cannot be held liable for damage caused by driving or use errors.

AGRISEM INTERNATIONAL cannot be held liable for compensation for the consequences of the instrument's immobilisation due to a fault or an incident on the machine.

5. Safety instructions

5.1. Safety instructions

5.1.1. Introduction

The instructions in this user manual must be read and understood before the machine is used for the first time.

This user manual is published for wide circulation and the availability of the equipment indicated, whether on the basic machine or as accessories, may vary according to the region in which the machine is used.

Always consult the dealer/retailer if you do not understand any part of this manual. It is important that you understand and observe these instructions.

The safety instructions given in this chapter are in addition to those given in other chapters of this manual.

The machine is used in conjunction with an agricultural tractor. Only careful reading of the user manuals of both items of equipment (tractor + machine/tool) will ensure the complete safety of property and people when working.

Most accidents which occur during work, maintenance or travel from one place to another are due to a failure to observe the most basic safety rules. It is therefore essential for anyone likely to be working with this machine to strictly adhere to the basic rules set out below and to the safety instructions displayed on the stickers affixed to the machine.

This machine has been designed for a specific task. It must always be in good working order and must only be repaired using AGRISEM INTERNATIONAL OEM parts.

This machine must be used, maintained and repaired only by competent persons who are familiar with its features and its operating procedures and who are aware of the accident prevention safety rules and the hazards to which they may be exposed.

This machine must only be used in accordance with its purpose and in a condition that does not present any safety risks. Any malfunctions likely to be detrimental to safety must be corrected immediately.

The user is required to strictly adhere to the safety instructions in this manual and the stickers affixed to the machine. The safety panels and guards have been omitted from some illustrations in this manual for the sake of clarity. Never use the machine if these items are not installed. If any of these items have been removed to carry out a repair, they must be reinstalled before operation.

The user is also required to strictly comply with the current legislation with regard to accident prevention, safety at work (labour code), occupational medicine, highway legislation and waste treatment.

Before using the machine for the first time, read all of the safety instructions in this user manual carefully and familiarise yourself with the controls.

The machine must never be entrusted to a person who is not trained to use it.

Liability and warranty

In addition to the other cases mentioned in this manual, the manufacturer denies any liability for any injury or damage to equipment resulting from one or more of the following causes:

- Failure to follow the manufacturer's instructions given in this manual, particularly those regarding safety, assembly, start-up, use, operation and servicing.
- Non-compliant use of the machine.
- Improper assembly, start-up, use and maintenance of the machine.
- Use of the machine with faulty protection and safety devices or safety and protection devices that are incorrectly installed or not working.
- Combining of the machine with other instruments or machines without the written agreement of AGRISEM INTERNATIONAL and/or without complying with the instructions given by the manufacturers

of the tractor and the other instruments or machines.

List of compatible AGRISEM INTERNATIONAL machines

- Combiplow: Disc-O-Mulch / Maximulch / Actimulch
- DSF: Disc-O-Mulch / Maximulch / Actimulch
- DSA: Disc-O-Mulch / Maximulch / Actimulch
- DS500/200: Disc-O-Mulch / Maximulch / Actimulch

- Modifications made to the machine without the written permission of AGRISEM INTERNATIONAL.
- Fitting of spare parts, accessories or equipment on the machine which are not genuine or which have not been recommended by AGRISEM INTERNATIONAL. Spare parts are available via the online spare parts catalogue (accessible via http://parts.agrisem.com/) or through your approved customer service network.
- Failure to monitor the wear parts on the machine.
- Use of the machine other than for the purposes specified by the manufacturer.
- Non-compliant repair and maintenance.
- Catastrophes resulting from the presence of foreign bodies, unforeseeable circumstances and cases of force majeure.

Similarly, in addition to the other cases referred to in this manual, any claim under the warranty relating to damage resulting from one or more of the above-mentioned causes shall be excluded.

5.1.2. Instructions to be followed before using the machine

Wear close-fitting clothes. Loose clothing may become caught in moving parts.

Wear the appropriate personal protective equipment (PPE) for the tasks to be performed (gloves, shoes, goggles, helmet, ear protection, etc.).

Be aware that tillage equipment, even if not very wide, has very sharp parts (blades, shares, disks, etc.) which can cause serious injury in the event of an accident.

Operate the controls with care.

Before each use, check the area around the machine, no-one must be within 50 metres of the machine. Check that there is sufficient visibility to ensure this condition of use.

Before carrying out any work, ensure that weight distribution on the tractor ensures a stable assembly. The tractor must be sufficiently ballasted at the front to avoid any risk of the front lifting. If not, add weights to the front of the tractor.

Check before each use that screws, nuts and bolts are correctly tightened in accordance with the maintenance operation described in this manual. Re-tighten if necessary.

No-one must be within 50 metres of the machine during folding and unfolding operations.

Check that the machine is correctly hitched.

Always install the pins and locking systems.

Check that the machine meets personal safety requirements.

Whenever you use the machine, check that the safety and protection devices (safety devices, emergency stop, wheel chock, extinguisher) are in place and working. Replace any worn or damaged safety guards immediately.

Move any people or animals likely to be in the area where the machine is being manoeuvred or used. A 50-metre safety zone must be kept clear around the machine.

Go around the machine looking for any external damage and checking the condition of the protection devices. The protection devices must be clean, legible and in good condition. If this is not the case, contact the AGRISEM INTERNATIONAL customer service department in order to replace them.

Only persons authorised by the owner of the machine and who have been trained and instructed are allowed to work on and with this machine. The operator is liable towards third parties while working on and with the machine.

The owner of the machine must:

- Provide the operator with the user manual.
- Ensure that the operator has read it and understands it.
- Ensure that the operator knows the basic instructions regarding safety at work and accident prevention.

Immediately disinfect any cut or injury that comes into contact with the products contained in the machine.

5.1.3. Instructions to be followed for hitching and unhitching

Ensure good compatibility of the tractor-to-machine hitching device. Only combine equipment that is compatible (machine and tractor). If in doubt, contact the AGRISEM INTERNATIONAL customer service network .

Check that the tractor has the characteristics necessary to hitch the machine (see"Characteristics", page 135.

WARNING

Use of a tractor that is non-compliant with the machine to which it is attached will incur the following risks:

- Coupling failure
- Instability under load
- Instability during manoeuvring
- Insufficient braking capacity

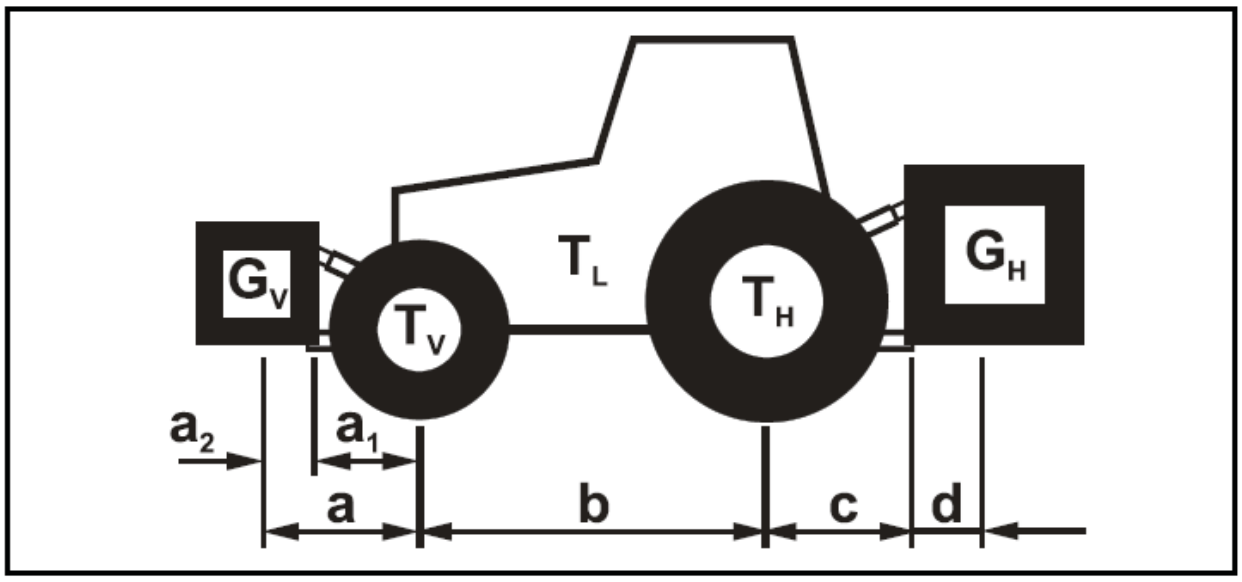
Check that the tractor meets the necessary requirements before installing or hitching the machine.

The machine must only be mounted on or hitched to a tractor that meets the necessary requirements.

Perform a braking test to check that the tractor can provide the regulatory deceleration power even with the machine mounted or hitched.

Refer principally to the tractor user manual, the reference below are for guidance only.

Data needed for calculation



NOTT-0222

Fig. 5

No.	Unit	Description	Comment
T_L	[kg]	Empty weight of tractor	see the tractor's user manual or registration papers
T_V	[kg]	Front axle load of the empty tractor	
T_H	[kg]	Rear axle load of the empty tractor	
G_H	[kg]	Total weight of rear-mounted machine or rear ballast	See technical characteristics of the machine or the rear ballast
G_V	[kg]	Total weight of front-mounted machine or front weight	see technical characteristics of the front-mounted machine or front ballast
a	[m]	Distance between the centre of gravity of the front-mounted machine or front ballast and the centre of the front axle (sum of $a_1 + a_2$)	see technical characteristics of the tractor and the front-mounted machine or front ballast, or measurement
a_1	[m]	Spacing between the centre of the front axle and the centre of lower arms' hitch point	see the tractor's user manual, or measurement
a_2	[m]	Distance between the centre of the lower arms' hitch point and the centre of gravity of the front-mounted machine or front ballast (distance from the centre of gravity)	see technical characteristics of the front-mounted machine or front ballast, or measurement
b	[m]	Wheel base of the tractor	see the tractor's user manual or registration papers or measurement

No.	Unit	Description	Comment
c	[m]	Spacing between the centre of the rear axle and the centre of lower arms' hitch point	see the tractor's user manual or registration papers or measurement
d	[m]	Distance between the centre of the lower arms' hitch point and the centre of gravity of the rear-mounted machine or rear ballast (distance from the centre of gravity)	see technical characteristics of the machine

Calculation of the required minimum ballasting at the front $G_{V\ min}$ of the tractor to ensure manoeuvrability

Enter the value for the calculated minimum ballast ($G_{V\ min}$) required on the front of the tractor in the table on page 22.

$$G_{V\ min} = \frac{G_H \bullet (c+d) - T_V \bullet b + 0{,}2 \bullet T_L \bullet b}{a+b}$$

NOTT-0223

Fig. 6

Calculation of the actual front axle load of the tractor $T_{V\ tat}$

Enter the value for the calculated actual front axle load and the permissible tractor front axle load specified in the tractor user manual in the table on page 22.

$$T_{V\ tat} = \frac{G_V \bullet (a+b) + T_V \bullet b - F_H \bullet c}{b}$$

NOTT-0224

Fig. 7

Calculation of the actual total weight of the combined tractor and machine

Enter the value for the calculated actual total weight and the authorised total tractor weight specified in the tractor user manual in the table on page 22.

$$G_{tat} = G_V + T_L + F_H$$

NOTT-0225

Fig. 8

Calculation of the actual rear axle load of the tractor $T_{H\ tat}$

Enter the numeric value for the calculated actual rear axle load and the approved tractor rear axle load specified in the tractor user manual in the table page 22.

$$T_{H\ tat} = G_{tat} - T_{V\ tat}$$

NOTT-0226

Fig. 9

Load capacities of the tyres

Enter the double value (two tyres) of the permissible load capacity (see for example the tyre manufacturer's documents) and enter the result in the table on page 22.

Table

	Actual value obtained by calculation		Authorised value according to the tractor user manual		Double the permissible load capacity of the tyres (two tyres)
Minimum ballast front / rear	/ kg	≤	--		--
Total weight	kg	≤	kg		--
Front axle load	kg	≤	kg	≤	kg
Rear axle load	kg	≤	kg	≤	kg

NOTE

Refer to the tractor's registration documents to obtain the authorised values for the total weight, axle loads and tyre load capacities.

The calculated actual values must be less than or equal to (≤) the authorised values.

WARNING

Risk of crushing, cutting, entanglement, entrapment and impact through insufficient stability of the tractor under load and insufficient tractor manoeuvrability and braking power.

It is forbidden to couple the machine to the tractor used as the basis for calculation if:

- even if one of the actual, calculated values is greater than the authorised value.
- there is no front weight (if required) attached to the tractor corresponding to the minimum required front ballast ($G_{V\ min}$).

Ballast the tractor with a front or rear weight when the tractor's axle load is exceeded on only one axle.

Special cases

If the minimum required ballast at the front ($G_{V\ min}$) is not obtained with the weight of the front-mounted machine (G_V), you must use ballast weights in addition to the front-mounted machine.

If the minimum required ballast at the rear ($G_{H\ min}$) is not obtained with the weight of the rear-mounted machine (G_H), you must use ballast weights in addition to the rear-mounted machine.

Immobilising the tractor / machine

WARNING

Accidents involving crushing, shearing, cutting, tearing, entanglement, winding, entrapment or impact may occur when working on the machine in the following cases:

- accidental lowering of a non-immobilised machine, raising of the tractor's three-point hitch via the hydraulic circuit.
- accidental lowering of raised, non-immobilised components of the machine.
- accidental start-up and movement of the combined tractor-machine.

Before carrying out any operations on the machine, take all necessary measures to prevent any accidental start-up or movement of the combined tractor-machine.

Operations performed on the machine, e.g. fitting, adjustment, troubleshooting, servicing and repair, are prohibited:

- if the machine is running,
- while the tractor's engine is running with a connected transmission shaft / hydraulic system,
- when the ignition key has not been removed and the tractor's engine with a connected transmission shaft / hydraulic system can be accidentally started,
- when the tractor and machine are not immobilised with their respective parking brakes and/or chocks,
- when moving parts are not blocked against accidental movement.

These operations in particular carry a risk of contact with non-immobilised components.

Lower the machine / parts of the machine that are raised and not immobilised.

The way to avoid any accidental lowering is as follows:

1 - Switch off the tractor engine,

2 - Remove the ignition key,

3 - Apply the tractor's parking brake.

4 - Immobilise the machine (only for a hitched machine):
  - on a flat surface using the parking brake (where applicable) or chocks,
  - on sloped or uneven ground using the parking brake and chocks.

The requirements relating to the tractor include:
- the authorised total weight (including ballasting),
- the authorised axle loads,
- the authorised vertical load on the tractor coupling point,
- the permissible load capacities of the tyres mounted on the tractor,
- sufficient authorised load on the coupling point,
- the Power Take-Off (PTO) sleeves (6/21 splines),
- the compatibilities of the hitching devices,
- the load capacities of the tyres.

This information is shown on the data plate or in the vehicle's registration papers and in the tractor user manual. If it is missing, contact the tractor customer service network in order to confirm this information.

The front axle must systematically support at least 20 % of the tractor's empty weight. Refer to the tractor user manual for further details.

Calculating the actual values for the total tractor weight, tractor axle loads and load capacities, as well as the minimum ballast required

The total authorised weight of the tractor indicated in the vehicle’s registration papers must be greater than the sum of:
- the tractor's empty weight,
- the ballast
- the total weight of the mounted machine or the vertical load of the hitched machine.

This instruction only applies in Germany:

If the axle loads and/or the total authorised weight are not complied with after all the possibilities have been exhausted, the competent authority according to the law of the Land may issue a waiver based on the report of an approved expert in the field of motor vehicle circulation and with the agreement of the manufacturer, in accordance with article 70 of the German law governing the authorisation of vehicles to use the public highway, and the obligatory authorisation under the German highway code.

Combining of machines: do not combine machines that are incompatible or are incompatible with the tractor when combined.

List of compatible AGRISEM INTERNATIONAL machines
- Combiplow: Disc-O-Mulch / Maximulch / Actimulch
- DSF: Disc-O-Mulch / Maximulch / Actimulch
- DSA: Disc-O-Mulch / Maximulch / Actimulch
- DS500/200: Disc-O-Mulch / Maximulch / Actimulch

AGRISEM INTERNATIONAL accepts no liability in the event of damage resulting from a combination of machines that has not been authorised in writing by AGRISEM INTERNATIONAL.

Accidents linked to the failure of components during operation may result from unauthorised combinations of hitching equipment.

Hitching and unhitching operations involve a risk of injury.

Before hitching or unhitching
- Place the machine on stable ground..
- Lower the pressure in all hydraulically controlled systems.
- Before climbing down from the tractor, take all of the necessary measures to avoid the accidental movement of the tractor.
- Chock the machine and take all of the necessary measures to avoid the accidental movement of the machine.

The machine must only be hitched to the hitching points provided for this purpose and in accordance with the applicable rules.

5.1.4. Instructions to be followed when using the machine

WARNING

A failure to take movement or operating safety measures may result in accidents involving crushing, cutting, entanglement, entrapment or impact.

Before start-up, check that the machine and the tractor are able to move and operate in complete safety.

Never climb onto the machine or stand on it when it is moving.

Never work in reverse.

Never allow children to climb on the tractor or the machine, or to play near the equipment, even if the machine is stopped.

When using or manoeuvring the machine ensure that no-one is within the manoeuvring or working area. A 50-metre safety zone must be kept clear around the machine.

The elements of the machine that are controlled by an external force have crushing and shearing zones. Keep away from these hazardous areas.

Be aware of hidden obstacles (stones, roots, pipes, cables, etc.). In the event of a collision with an obstacle, you must stop the drive, switch off the tractor engine, remove the ignition key and wait for the machine to come to a complete stop. Some parts may have inertia, wait 5 minutes after switching off the ignition before working on the machine. Before resuming work, check the machine for any damage.

If the obstacle is an electric cable or gas pipe, inform the appropriate authorities.

When using the machine, stones or other foreign objects are likely to be thrown a considerable distance. A 50-metre safety zone must be kept clear around the machine.

Move any people or animals likely to be in the danger area around the machine.

Do not stand in the machine's working area nor in the machine's rotation or swivel area.

Each time the machine is used, carry out a careful visual inspection of the machine to detect any external damage and ensure the correct operation of safety and protection devices. Also carry out regular inspections of the various adjustments. The protection devices must be clean, legible and in good condition.

With regard to driving

Adapt your driving to ensure that you are in control of the tractor with the machine mounted or hitched under all circumstances.

Take into account your personal faculties, the conditions of the ground or road, the traffic, visibility and weather, the tractor’s driving characteristics and the conditions of use when the machine is mounted or hitched.

Ensure that the rules of safety and caution dictated by each situation are observed in respect of the applicable regulations.

The speed and driving style must always be appropriate to the ground, roads and tracks.

Reduce your speed on uneven ground or tight corners.

On bends, take into account the overhang and the inertia of the mounted tool.

Avoid sudden changes of direction at all times.

Do not leave the driver's seat until the equipment has come to a complete stop, the engine is switched off and the parking brake is on.

Do not transport any people or animals on the machine and the additional tools during work or transport.

When driving on the public highway

Observe with the highway code applicable in your country.

Before going out onto the public highway, check the dimensions of the machine and unbolt or remove elements that exceed its regulatory dimensions.

Take into account the widths authorised for transport and the transported height depending on the hitched machine, in line with current legislation.

Take account of a higher centre of gravity with a vertically folding machine. The stability of the whole unit will be different in the folded up position and the folded out position and you should adapt your driving accordingly.

Before setting off on the road, ensure that the hitched machine is fitted with the lighting and signalling devices required by the highway code and any other devices required by the current regulations.

AGRISEM INTERNATIONAL rear signalling lights and panels may be removed when working. Check that this signalling equipment has been correctly refitted before driving on the road.

Check that the equipment is clean and in good working order. Replace any missing or damaged equipment before driving on the road.

Users must not consume alcohol, medication or any other products that will affect their faculties of perception, leading to a loss of alertness or coordination. A user who takes prescription or non-prescription drugs should seek medical advice regarding their ability to safety operate a machine.

Before travelling on the road, secure all of the machine's pivoting parts in their transport position to avoid dangerous changes of position. Also check that the screws, nuts and bolts are tightened and that all of the machine parts are correctly attached and cannot move or become detached.

If the machine is a folding machine, the locking system must be engaged.

Follow the instructions in this manual on how to prepare the machine for transport.

If necessary, also check:

- the connection of the supply pipes,
- the braking system and the hydraulic circuit.

Ensure that no movement can be made involuntarily.

If the equipment does not already have them, fit signalling devices: lighting board, reflectors, reflective plates or adhesive strips. The signalling devices must be clean, legible and in good condition. If this is not the case, contact the AGRISEM INTERNATIONAL customer service department in order to replace them.

Ensure that the machine or additional equipment does not hide the tractor’s lights.

Ensure that the inflation pressure of the tractor tyres is correct and suitable for the situation.

Never drive at more than 25kph when under load.

Clean off any soil stuck to the machine before taking to the road.

After using the public highway, ensure that the road is cleaned of any mud left by the tractor and tools.

The driver/owner has sole responsibility when transporting the machine on the public highway. Always abide by the applicable regulations and legislation.

5.1.5. Instructions to be followed when performing operations on the machine

These instructions in particular relate to cleaning, servicing and repair operations.

Follow the recommendations relating to the maintenance of the machine contained in this user manual.

Before carrying out any work on the machine

Before carrying out any work on the machine, ensure that it cannot be accidentally started.

- Take care to ensure that the machine is placed on stable ground.

- Switch off the tractor engine, remove the ignition key, wait for all of the moving parts to come to a stop and engage the hand brake.
- Set the machine on the ground, depressurise the hydraulic circuit and allow the machine to cool down.
- Secure the machine or elements that are in a raised position to avoid any accidental lowering.
- Chock the machine.

If using a high-pressure washer or steam cleaner, it is essential to comply with the following points:

- Do not clean the electrical and hydraulic components.
- Never direct the high-pressure washer or steam cleaner nozzle directly at the lubrication points or bearings.
- Systematically keep the nozzle a reasonable distance from the machine.
- Comply with the rules for using high-pressure washers.

Wear appropriate personal protective equipment for the work to be performed. In particular, wear safety shoes and gloves to handle sharp parts.

Take all of the necessary precautions when fitting working parts that are both heavy and sharp.

The machine must be used, serviced and repaired only by competent persons who are familiar with the machine's features and operation.

The machine must only be repaired with original AGRISEM INTERNATIONAL parts.

Protect bare metal parts using either thick grease or an anti-rust product that leaves a greasy film.

According to the type of machine: before carrying out any work on the electrical circuit or before any welding operations, disconnect the wiring harnesses coming from the tractor. Disconnect the battery and alternator cables.

Do not weld or use blow torches near pressurised fluids or inflammable products.

5.1.6. Instructions regarding installation

The machine may be fitted with electronic components and elements which may be affected by electromagnetic emissions from other devices. This type of interference may be a source of danger for people if the following safety instructions are not followed:

- If electrical components and/or devices are installed on the machine and connected to the on-board electrical circuit at a later date, the user must first check that installing these items will not interfere with the vehicle's electronics or other components.
- Ensure that electrical and electronic components subsequently installed comply with the current version of electromagnetic compatibility directive 2004/108/EEC and that they have a CE marking.

Before carrying out any work on the electrical system, disconnect the battery's negative terminal.

Only use the recommended fuses. Using fuses of unsuitable capacity may damage the electrical system and create a risk of fire.

Always comply with the safety rules for carrying out work on a machine fitted with a battery. Refer to the user instructions of the machine concerned for more details.

5.1.7. Instructions regarding the hydraulic system

If your machine is fitted with a hydraulic circuit, the following instructions must be followed:

The machine is powered by pressurised hydraulic energy. Working on a pressurised circuit may give rise to risks of injury by contamination. All operations must be carried out by professionals trained to handle hydraulic technical equipment.

Contact the AGRISEM INTERNATIONAL customer service department for the replacement of any hydraulic components.

Mark the sockets and connectors of the hydraulic connections between the tractor and the machine to avoid handling errors. Refer to “Operation”, page 34 for more details.

Before connecting a hose to the tractor's hydraulic circuit, ensure that the circuits on both the tractor side and the machine side are perfectly clean and not under pressure.

Before carrying out any work on the hydraulic circuit, lower the machine, depressurise the circuit, switch off the tractor engine, engage the parking brake and remove the ignition key.

Allow the machine to cool before carrying out any work.

Check the hydraulic hoses regularly. Damaged or worn hoses must be replaced immediately. Visually examine the hydraulic hoses to detect any signs of tear or abnormal wear.

When replacing hydraulic hoses, ensure that you only use hoses of the characteristics and quality recommended by the machine's manufacturer. If in doubt, contact the AGRISEM INTERNATIONAL customer service network .

After each use of the machine, clean the hydraulic quick connectors' end fittings and fit the protective caps. Replace connectors which do not lock correctly or which leak.

Hydraulic hoses must never trail on the ground.

If a leak is detected, take all of the necessary precautions to avoid accidents. Never try to plug the leak with your hand or fingers.

Any pressurised liquid, in particular oil in the hydraulic circuit, can penetrate the skin and cause serious injury and infection.

In the event of injury, seek immediate medical attention.

To avoid accidents caused by unexpected hydraulic movements or by third parties, the distributors on the tractor must be locked or immobilised when they are not being used or in their transport position.

5.1.8. Instructions relating to the braking system

The braking system must be checked and serviced regularly. Servicing and repair work and adjustments must only be carried out by brake system specialists. Contact the AGRISEM INTERNATIONAL customer service network .

Stop the tractor immediately in the event of a brake system malfunction and have it repaired.

Before carrying out any work on the braking system, place the machine on stable ground and chock it.

For fitted machines, after carrying out any adjustment or repair operation on the braking system, perform a braking test in accordance with the appended procedure.

5.1.9. Instructions specific to AGRISEM INTERNATIONAL seeders

In addition to the instructions applicable to all of machines, users of AGRISEM INTERNATIONAL seeders must comply with the following instructions:

Never climb onto the machine elsewhere than on the AGRISEM INTERNATIONAL walkway provided for this purpose.

Only climb onto the machine when it is stationary.

When operations are performed on the AGRISEM INTERNATIONAL seeder or during flow tests, the seeder must be stationary and a 50-metre safety area must be enforced around it. The hydraulic system must be depressurised (e.g. turbine stopped) and the rear window of the tractor must be shut, the tractor switched off and the ignition keys removed.

Ensure that no one is on or near the seeder when the seed is being loaded. The AGRISEM INTERNATIONAL walkway must only be used when the seeder is stationary.

Always ensure that the entire area corresponding to the seeder's overall dimensions is completely clear.

Enforce the 50 m safety zone:

- when the turbine is started up to avoid any impact due to ejected objects (e.g. soil, oil, stones, metal, etc.).
- while using the machine

Users must comply with the highway regulations applicable in their country with regard to the front hopper.

If the tractor’s signalling equipment is not sufficient (or not sufficiently visible) ensure that you fit your front hopper with lighting and signalling plates.

5.1.10. Instructions relating to machines fitted with spring-assembly safety systems

Safety devices with pre-compressed spring assemblies are fitted on many AGRISEM INTERNATIONAL tools. These can be very dangerous when performing technical operations on the machine if all of the necessary precautions are not taken.

CAUTION

Written authorisation must be obtained from AGRISEM INTERNATIONAL before carrying out any operations on the "Spring Assembly".

5.1.11. Instructions relating to machines equipped with universal-joint transmission shafts

Consult the tractor manufacturer’s instructions when performing any operations on universal-joint transmission shafts.

5.1.12. Instructions relating to shipments and transport

Unless covered by a special transport contract, all shipments shall comply with the regulations applicable in the territories through which the assembly passes.

- For deliveries of less than three tonnes: the carrier is responsible for the loading, chocking, securing and unloading of the equipment from when he takes charge of it until its delivery.
- For deliveries of more than three tonnes: loading, chocking and securing on the one hand, and unloading on the other hand, are the responsibility of the contracting party or the recipient respectively. The responsibility for any equipment damage that occurs during these operations lies with the person carrying them out.

Unless there is a specific transport agreement, and for deliveries of more than 3 tonnes, the Purchaser will therefore unload the machine under his own responsibility.

Similarly, if the Purchaser sells the machine and has it delivered, as the sender, he will be responsible for the loading, chocking and securing of the equipment when it is sent.

In case of doubt regarding the unloading or loading, chocking and securing of the machine, please contact AGRISEM INTERNATIONAL.

The user shall acknowledge receipt of the machine and the official documents once handed-over by the dealer.

To do this, go to https://my.agrisem.com and follow the instruction given on the web site.

5.1.13. User's workstation

The machine must be operated by one person only, from the tractor driver's seat. Before each use, check the area around the machine, no-one must be within 50 metres of the machine. Check that there is sufficient visibility to ensure this condition of use.

5.2. Safety symbols on the machine

DANGER

You are the sole guarantor of safety. Correctly applying the safety instructions will not only serve to protect you but also those around you. Before using the machine, carefully study the instructions given in this manual as well as all the safety and instruction stickers affixed to the machine: consider them as an integral part of your safety programme. Also study all the usual work protection measures and above all, do not forget:

Safety depends on you. You can avoid accidents causing serious injury or death.

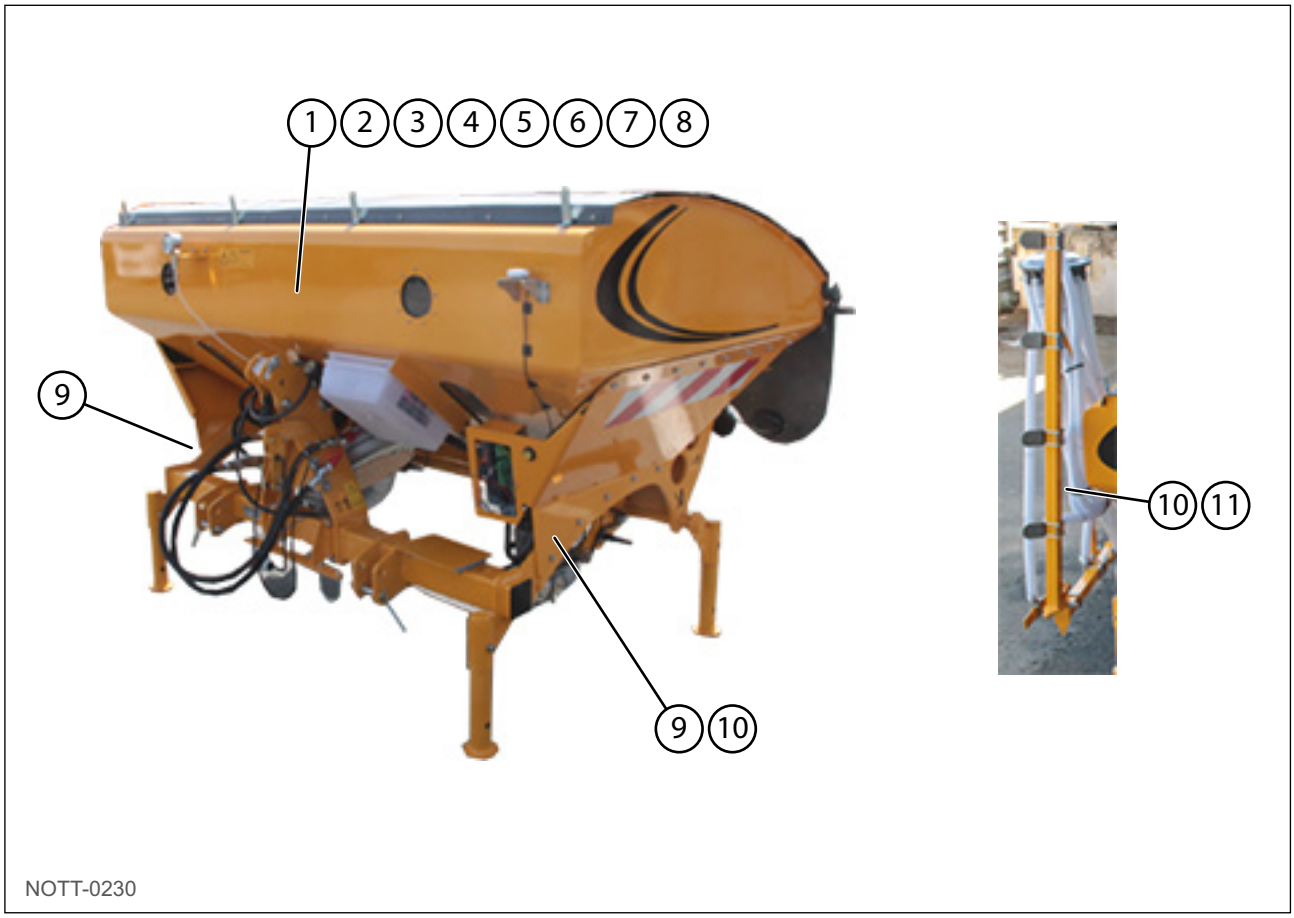


Fig. 10

No.	Reference	Symbol	Meaning
1	ETIQ01-603		***WARNING: DANGER*** Read the instruction manual and safety instructions before starting up the machine and abide by them during operation.
2	ETIQ01-611		***WARNING: DANGER*** Caution: never exceed a maximum air pressure indicated in the manual at the risk of damaging the turbine.
3	ETIQ01-601		***WARNING: DANGER*** Stop the engine and remove the ignition key before carrying out servicing or repair operations.
4	ETIQ01-635		***RISK OF EYE INJURY*** To avoid any risk of injury to the eyes, do not stare at the surface of the radar sensor while it is in operation.

No.	Reference	Symbol	Meaning
5	ETIQ01-641		***RISK OF INFECTION BY INJECTION IN THE BODY*** Follow the servicing and maintenance instructions in the user manual.
6	ETIQ01-647		***RISK OF CUTS*** Do not open or remove the protective guards while the engine is running.
7	ETIQ01-649		***RISK OF CRUSHING*** Never climb on the machine while the tractor engine is running.
8	ETIQ01-631		***RISK OF CUTS*** Wait until all machine components have come to a complete stop before touching.

No.	Reference	Symbol	Meaning
9	ETIQ01-607		***RISK OF CRUSHING BETWEEN THE TRACTOR AND THE MACHINE*** Always remain outside the working area of the three-point linkage when using remote control.
10	ETIQ01-633		***RISK OF CRUSHING / CUTS*** Keep away from the machine to avoid the risk of cuts or crushing.
11	ETIQ01-627		***RISK OF CRUSHING*** Stay clear of swinging area of implements.
12	ETIQ01-619		***RISK OF CRUSHING*** Moving component to be secured during servicing and maintenance.

IMPORTANT

These safety symbols must be present on the machine and legible. If any symbols are missing or damaged, contact AGRISEM INTERNATIONAL.

6. Operation

6.1. Location and description of controls

6.1.1. Hitch

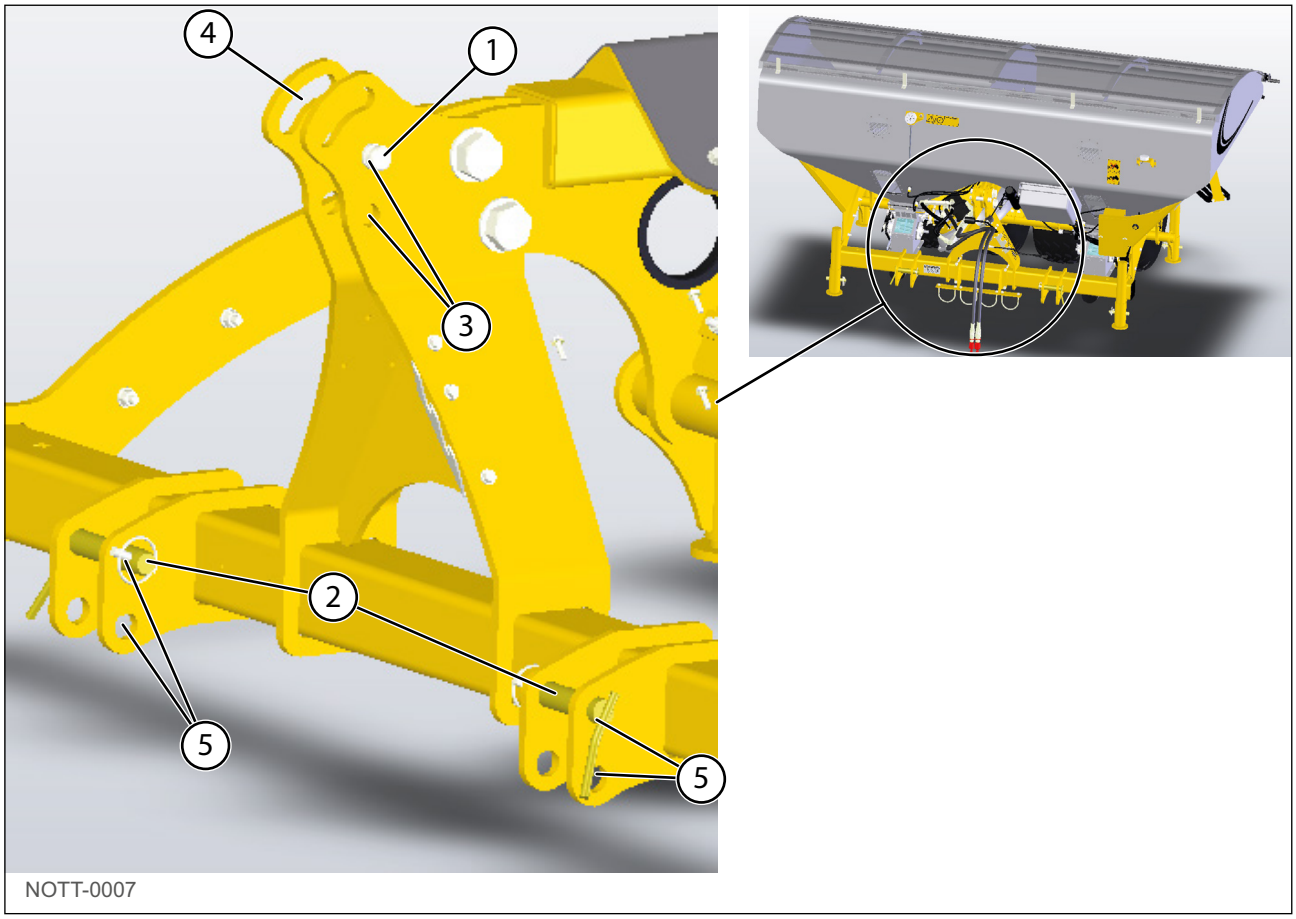


Fig. 11

No.	Description
1	Top link coupling pin
2	Lower link coupling pin
3	Fixed top link pin position
4	Floating top link pin position
5	Fixed bottom link pin position

6.1.2. Hopper

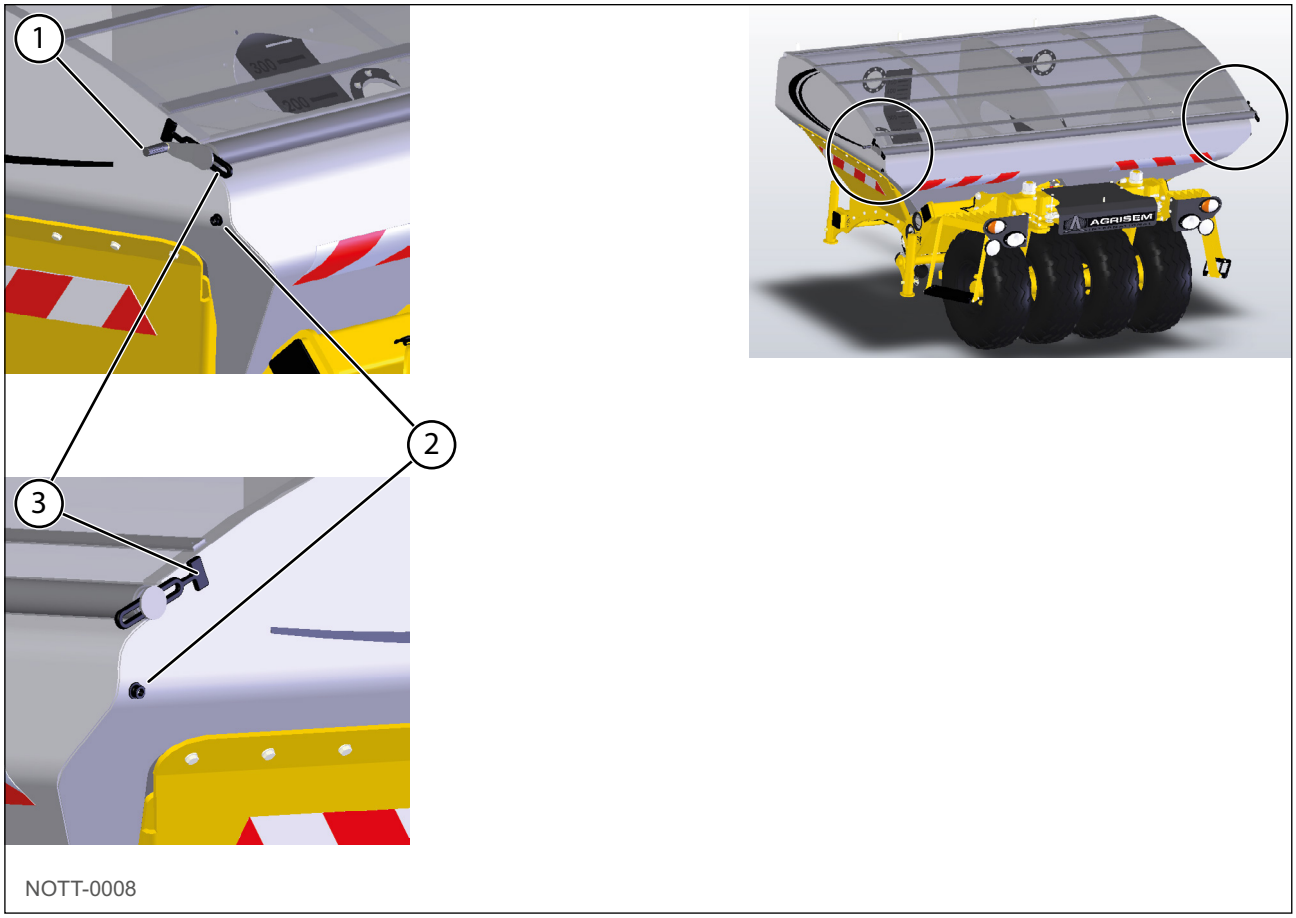


Fig. 12

No.	Description
1	Hopper cover handle
2	Cover lock rubber
3	Lock retention pin

6.1.3. Distribution unit

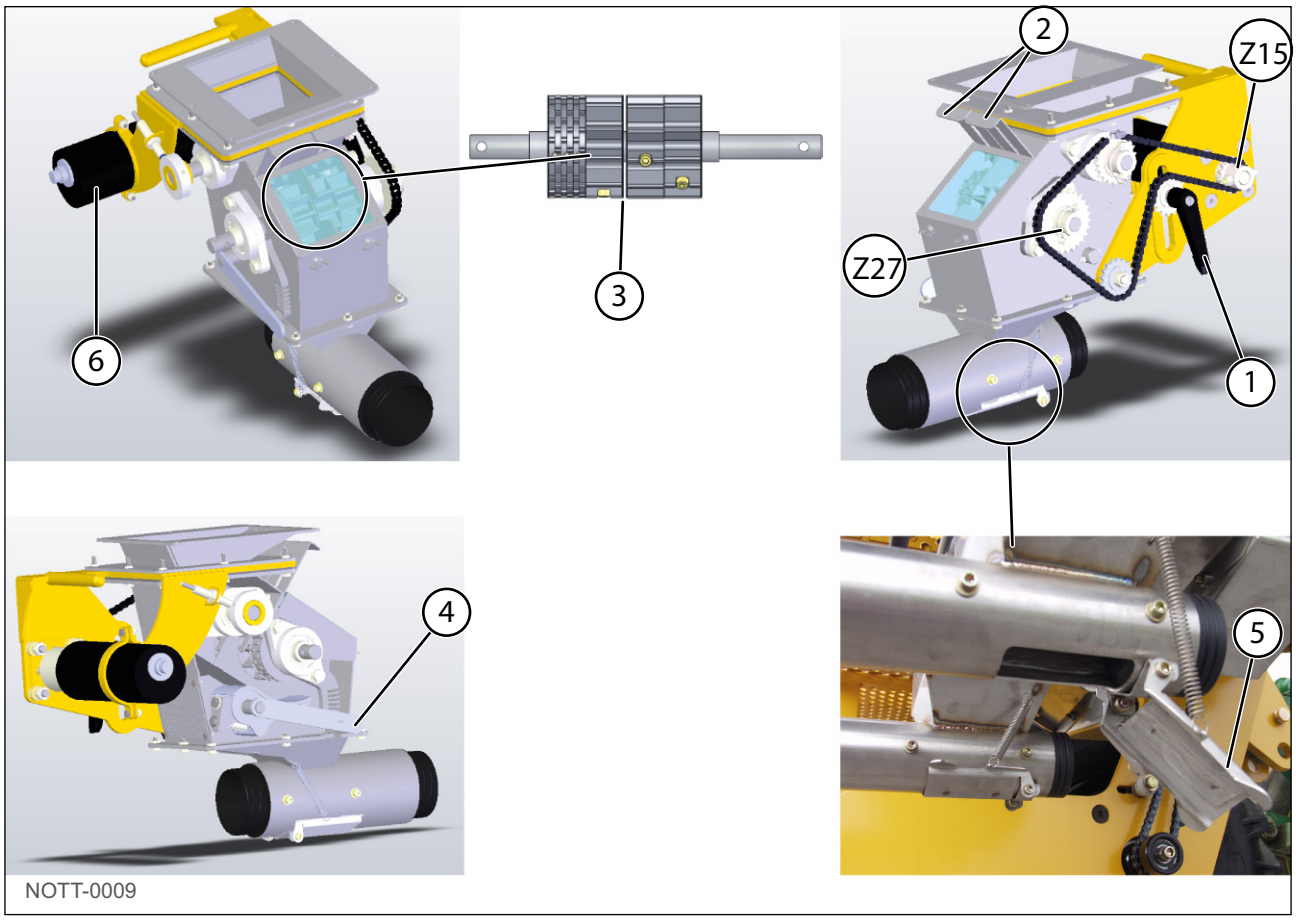


Fig. 13

No.	Description
1	Distribution unit transmission chain tensioner
2	Distribution unit opening/closing flaps
3	Fluted distribution shaft
4	Feed cup opening lever
5	Shutter flap
6	Electric drive motor
7	Distribution unit manual activation control

6.1.4. Ventilation

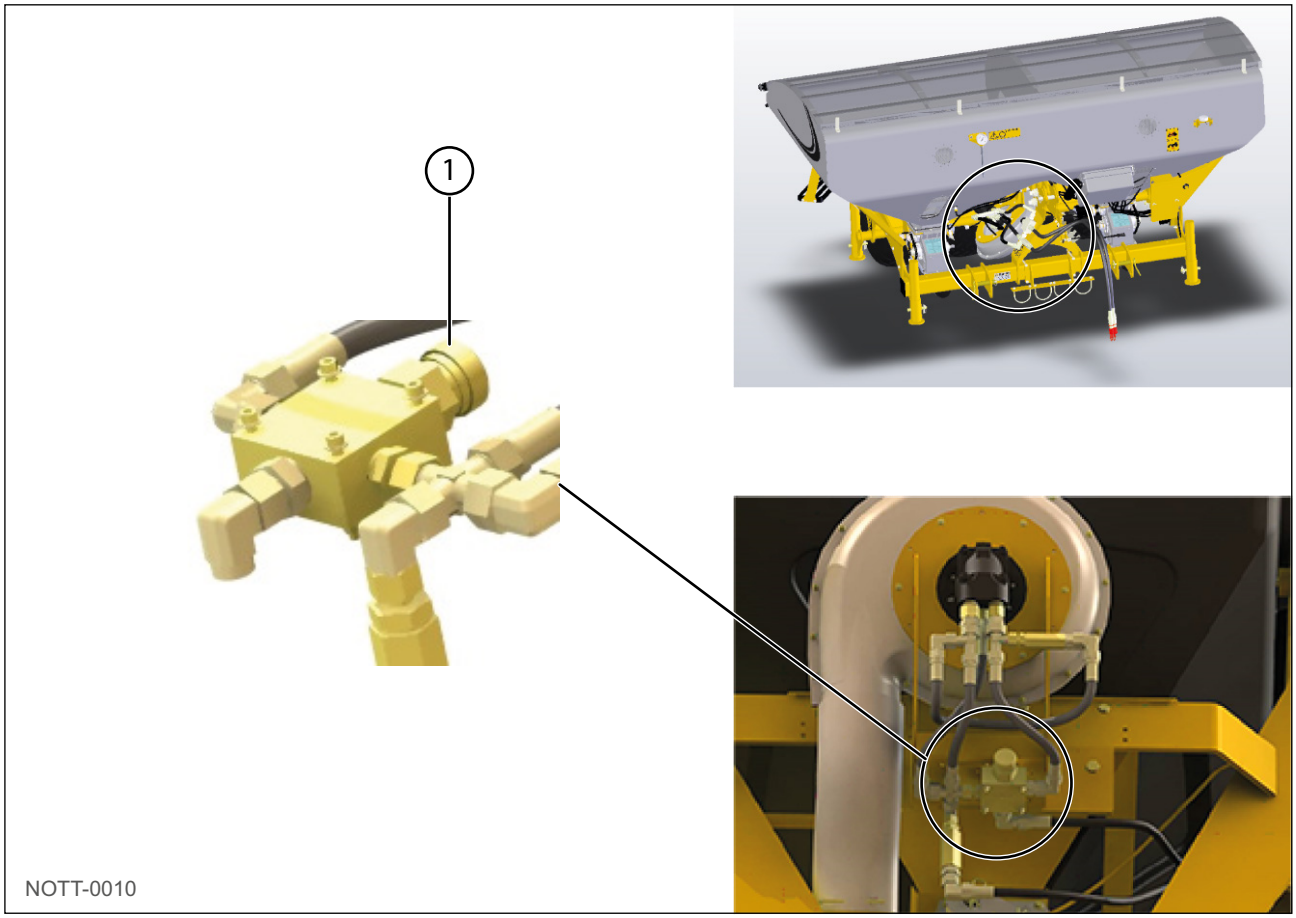
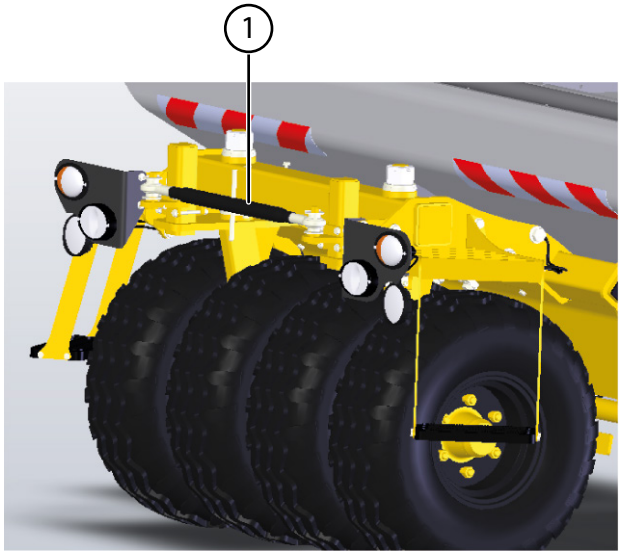
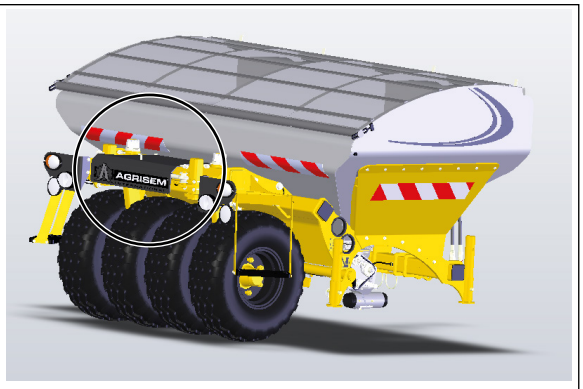


Fig. 14

No.	Description
1	Turbine speed controller

6.1.5. Front packer





NOTT-0011

Fig. 15

No.	Description
1	Front packer parallelism adjustment rod

6.1.6. A-Manager terminal

See separate Müller A-Manager terminal manual

6.1.7. A-Touch terminal

See separate Müller A-Touch terminal manual

6.2. Start-up

6.2.1. Foreword

NOTE

When you take delivery of the seeder, check that it meets your specifications. Then carry out all of the preliminary operations prior to start-up as described in this manual.

6.2.2. Tractor/machine compatibility

NOTE

The information listed below is given for information only and is not in any way a substitute for an installation instruction manual, contact the after sales network.

CAUTION

Check the compatibility of the tractor and the machine.

- Front link arm of sufficient capacity
- Double-acting hydraulic control valve
- Single hydraulic line connected to the pressure-free return
- A 7-pin 12 V female connector for the tractor front lighting kit

6.2.3. Hitching/unhitching

CAUTION

Always carry out hitching and unhitching operations carefully and smoothly, without sudden movements.

CAUTION

Before carrying out hitching and unhitching operations, you must refer to the safety instructions.

CAUTION

No-one must be within 50 metres of the machine during the hitching or unhitching operation.

Before hitching or unhitching the machine, it is important to ensure that:

- The machine is on stable ground and there is no-one within a radius of 50 metres.
- The top-links of the tractor's three-point hitch are set to the same length.
- The tyres of the tractor are inflated to the same pressure.
- The tractor is suitable for the machine to which it is to be hitched and has been tested accordingly (see characteristics section).
- The tractor's hydraulic, mechanical and electrical connections are suitable for the machine to which it will be hitched.

Required tractor characteristics

CAUTION

Check that the tractor meets the necessary requirements before hitching the machine:

- Total authorised weight
- Permissible load capacities of the tyres
- The authorised axle loads of the tractor

NOTE

The authorised values for the total weight, the axle loads and the tyre load capacities can be found in the tractor's registration papers and user manual.

6.2.4. Hopper

Check that grills are correctly installed in the bottom of the hopper (1).

Depending on the task to be carried out, the hopper can be divided into two separate hoppers by means of a separating panel (2).

Check that the configuration corresponds to the task to be performed.

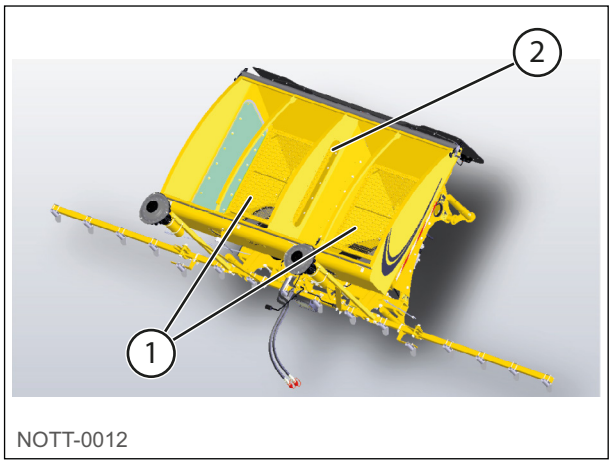


Fig. 16

Examples:

- Single type of seed: no partition panel

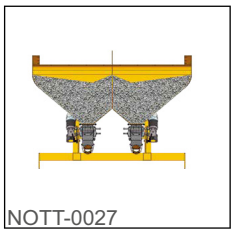


Fig. 17

- 1 seed + 1 fertiliser or seed: partition panel installed.

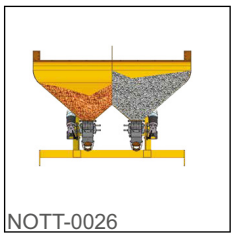


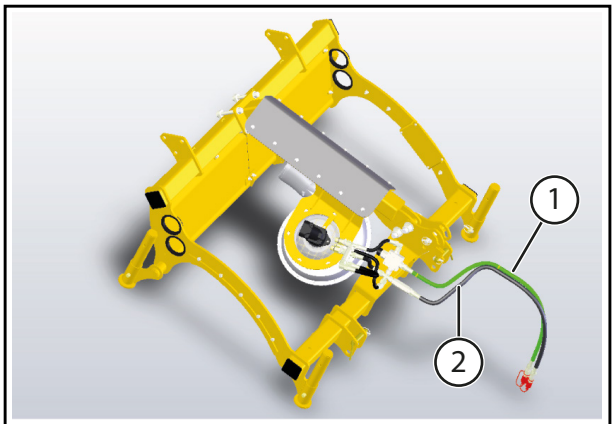
Fig. 18

6.2.5. Ventilation

Connection of hydraulic hoses

The ventilation system is driven by a hydraulic motor. It is supplied by 2 hydraulic hoses.

No.	Description
1	½” oil supply hose to be connected to a hydraulic control valve on the tractor side
2	¾” oil return hose to be connected to a pressure-free return on the tractor side



NOTT-0013

Fig. 19

NOTE

Identify the type of coupler used on the tractor pressure-free return (screw-on coupler, valved coupler, etc.).

NOTE

The free return of the turbine motor is fitted with a ¾” hose. Adapt the tractor in order to connect the hose.

IMPORTANT

Check that the tractor pressure-free return does not generate a residual pressure. Otherwise, turbine operation risks to be disrupted.

NOTE

The turbine will not rotate if the hoses are reversed. A non-return valve incorporated within the circuit protects the motor and thus prevents reverse rotation.

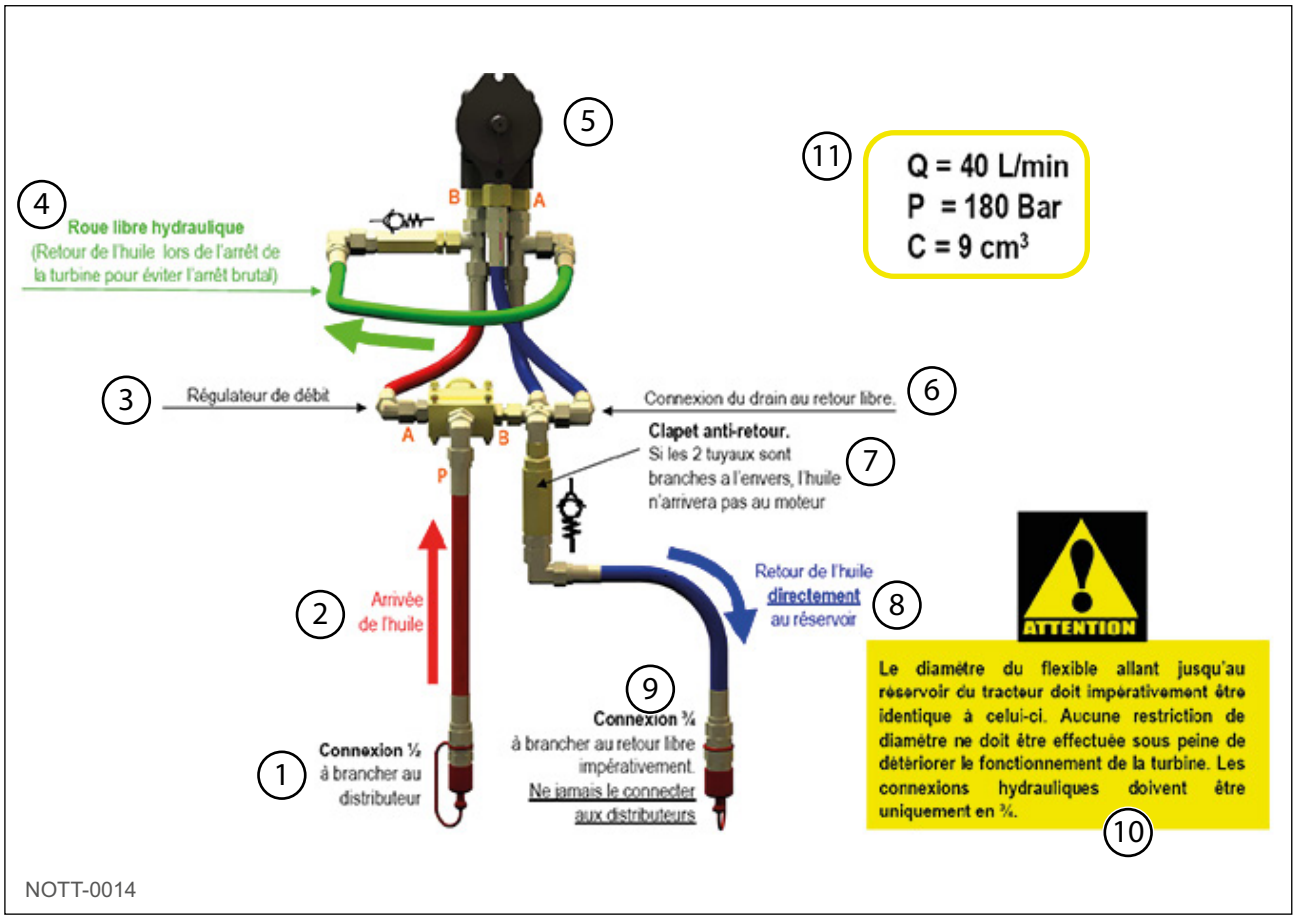


Fig. 20

No.	Description
1	½" connector to be connected to the control valve
2	Oil supply
3	Flow controller
4	Hydraulic free wheel (oil return when turbine is stopped to avoid sudden shut-down)
5 11	Turbine hydraulic motor: - Flow rate: 40 l/min - Max. pressure: 180 bar - Cubic capacity: 9 cm³
6	Connection of drain to pressure-free return
7	Non-return valve (protection in the event of reverse connection, oil does not reach the motor).
8	Pressure-free return directly to tank
9	***CAUTION*** ¾" connector MUST be connected to the pressure-free return. Never connect it to the control valves!
10	***CAUTION*** The diameter of the hose leading to the tractor tank must be identical to this hose. There must be no constriction of the diameter as this may impair turbine operation. ¾" diameter hydraulic return connectors are to be used.

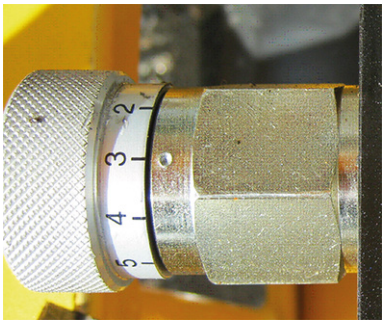
Turbine motor start-up

CAUTION

Hydraulic motor protection

Always ensure that the flow controller is set to mark 3 when starting-up the turbine.

1 - Check that the controller is set to mark 3.



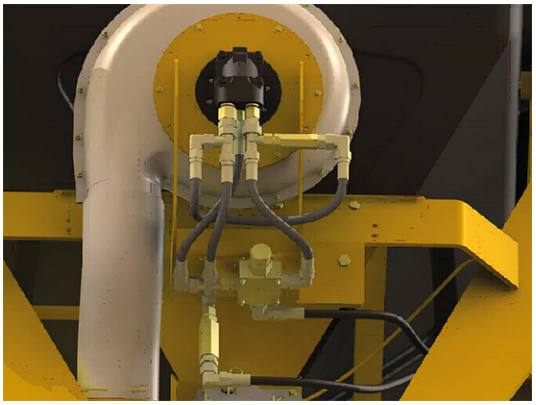
NOTT-0171

Fig. 21

2 - Move the control valve to its continuous flow position. The turbine should rotate.

3 - If this is not the case, check the hydraulic installation, check that the return line is correctly connected to the pressure-free return on the tractor.

4 - Move the control valve to its continuously open position again. The turbine should rotate.



NOTT-0172

Fig. 22

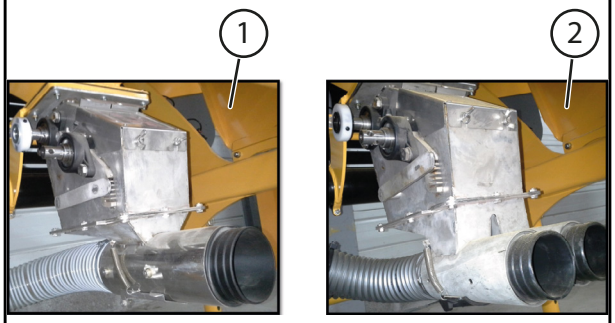
6.2.6. Distribution unit

Check the cleanliness of the whole distribution unit before each use to ensure correct operation.

Specification

There are 2 available distribution unit configurations:

No.	Description
1	1 x 90 outlets
2	2 x 70 outlets



NOTT-0017

Fig. 23

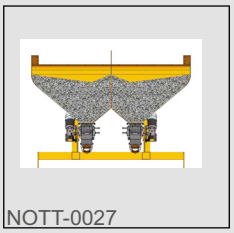
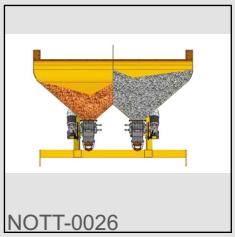
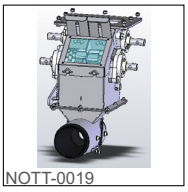
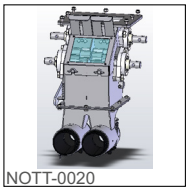
The maximum working speed depends on:

- The working width of the machine,
- The desired seed rate per hectare,
- The maximum deliverable flow rate (varies according to configuration).

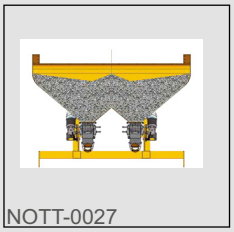
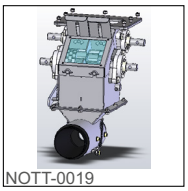
The formula for determining the maximum working speed without saturating the distribution unit is as follows:

[(Max flow rate (kg/h) / seeder width (m)) / quantity per ha (kg/ha)] X 10 = max speed (km/h)

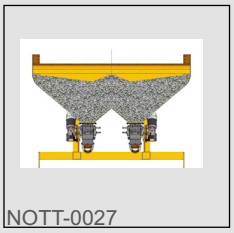
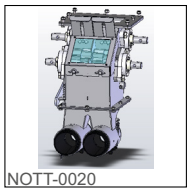
Delivery flow rates according to hopper configuration:

Hopper	Large capacity  NOTT-0027	Partitioned  NOTT-0026	
Distribution	**Seed type 1**	**Seed type 1**	**Seed type 2 or Fertiliser 1**
1 x Ø 90 cm  NOTT-0019	1000 kg/h	500 kg/h	500 kg/h
2 x Ø 70 cm  NOTT-0020	1200 kg/h	600 kg/h	600 kg/h

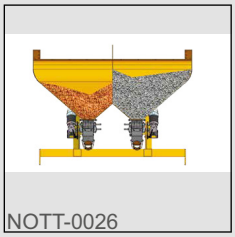
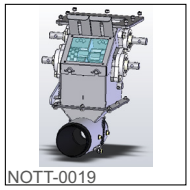
For sowing one type of seed with a 1 x Ø 90 cm distribution unit:

Hopper	Large capacity  NOTT-0027
Distribution	**Seed type 1**
1 x Ø 90 cm  NOTT-0019	[(1000 / seeder width) / quantity per ha] X 10 = max speed

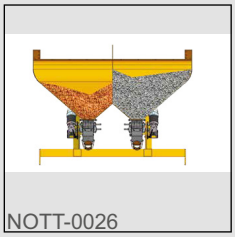
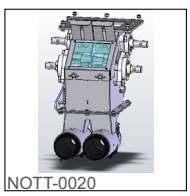
For sowing one type of seed with a 2 x Ø 70 cm distribution unit:

Hopper	Large capacity  NOTT-0027
Distribution	**Seed type 1**
2 x Ø 70 cm  NOTT-0020	[(1200 / seeder width) / quantity per ha] X 10 = max speed

For sowing two seed types and/or fertilisers with a 1 x Ø 90 cm distribution unit:

Hopper	Partitioned  NOTT-0026
Distribution	**Seed type 1**
1 x Ø 90 cm  NOTT-0019	[(500 / seeder width) / quantity per ha] X 10 = max speed

For sowing two seed types and/or fertilisers with a 2 x Ø 70 cm distribution unit:

Hopper	Large capacity  NOTT-0026
Distribution	**Seed type 1**
2 x Ø 70 cm  NOTT-0020	[(600 / seeder width) / quantity per ha] X 10 = max speed

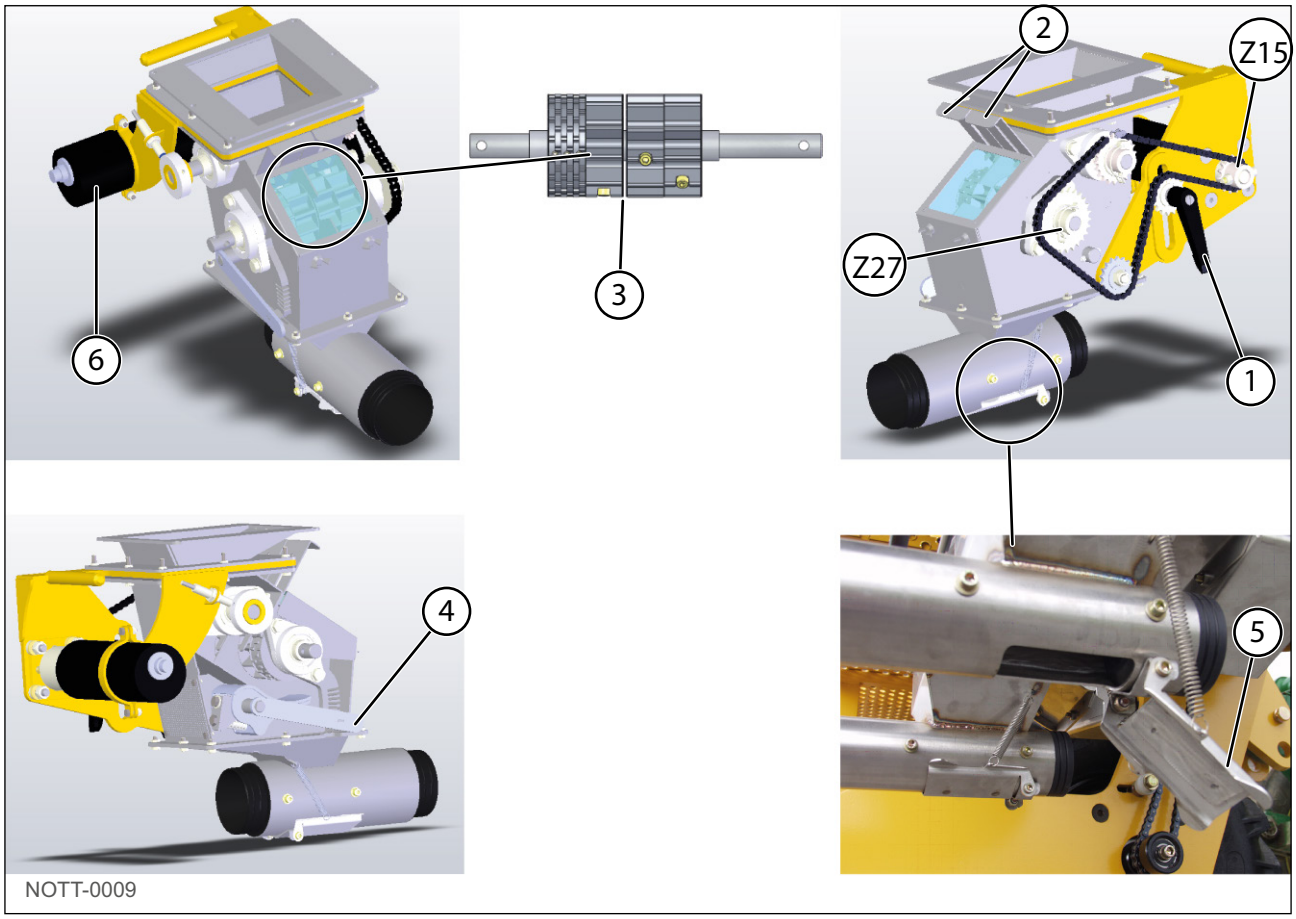


Fig. 24

No.	Description	Comment
1	Distribution unit transmission chain tensioner	
2	Distribution unit opening/closing flaps	
3	Fluted distribution shaft	
4	Feed cup opening lever	
5	Shutter flap	
6	Electric drive motor	
Z15	15 tooth drive pinion	Distribution/drive ratio 1.8
Z27	27 tooth distribution pinion	

Each hopper has a volumetric type distribution unit with one or two delivery channels. The metering is adjusted by engaging or disengaging certain types of flutes. Interchangeable pinions (Z15) (Z27) are used to vary the speed of rotation of the distribution shaft and thus the metered volume.

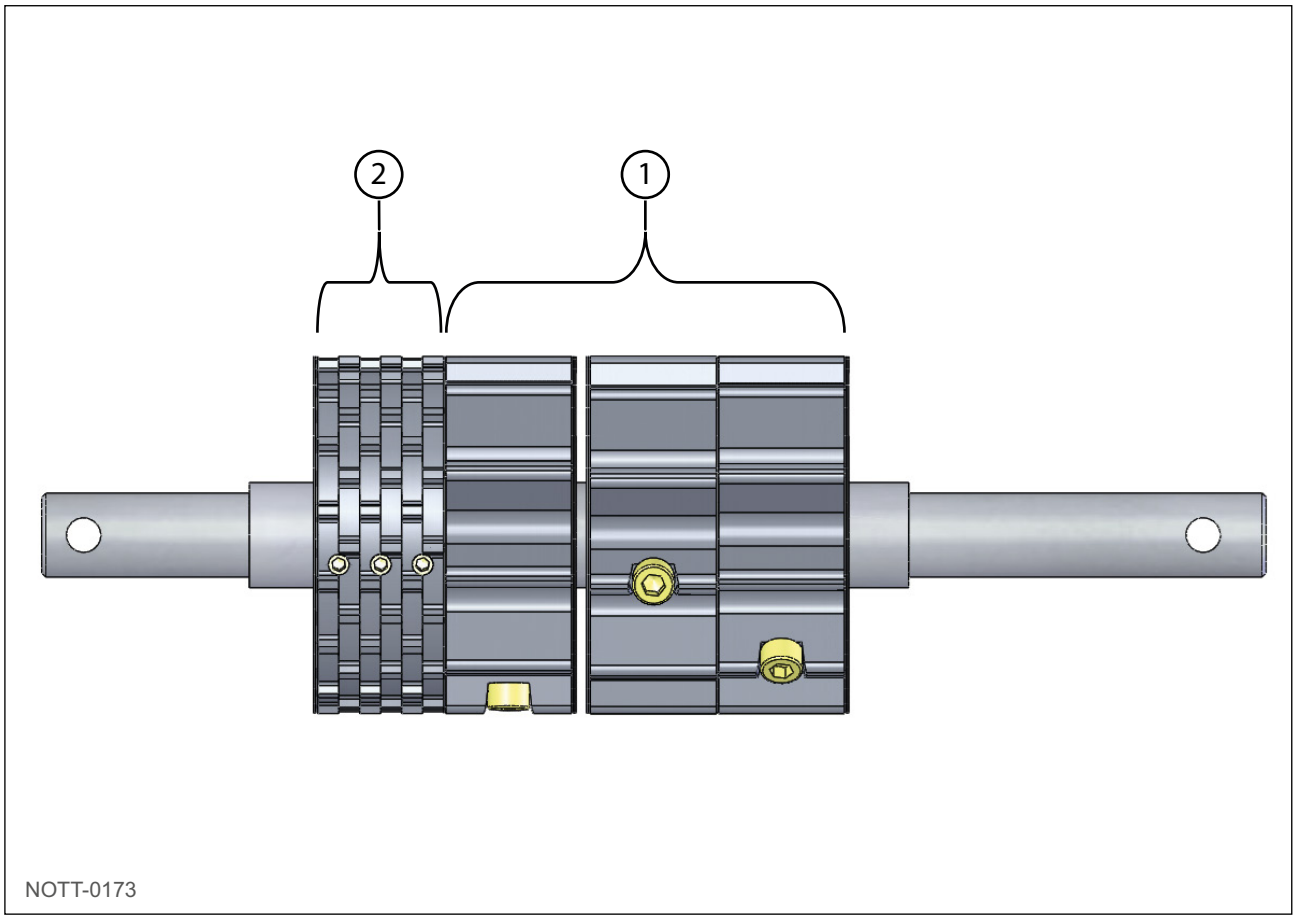


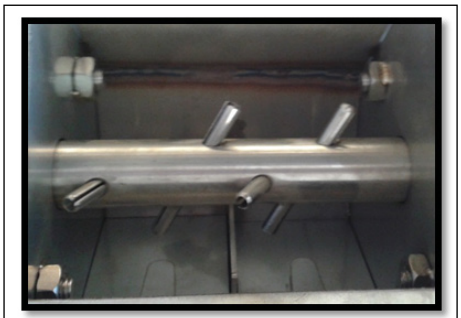
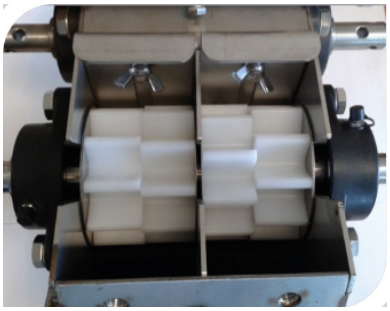
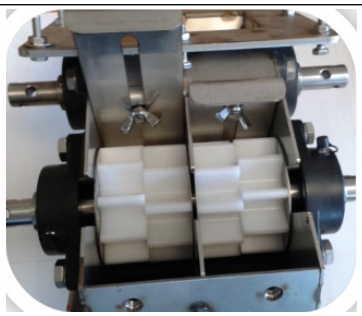
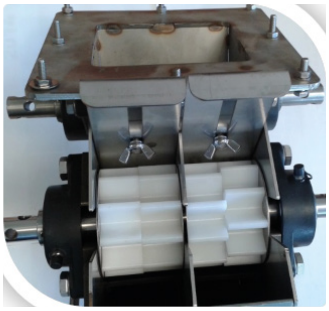
Fig. 25

The fluting configuration is as follows:

- 3 large fluted wheels (coarse seeds) (1),
- 3 small fluted wheels (fine seeds) (2),
- Option of 4 large fluted wheels (coarse seeds) by replacing the 3 small fluted wheels with 1 large fluted wheel.

Opening flaps

The flaps open or close the distribution unit. In sowing mode, the flaps must be open.

Position	Inside view of the distribution unit	View of flaps
Flaps closed	 NOTT-0178 *Fig. 26*	 NOTT-0179 *Fig. 27*
1 flap open out of 2	 NOTT-0174 *Fig. 28*	 NOTT-0175 *Fig. 29*
Flaps opened	 NOTT-0177 *Fig. 30*	 NOTT-0176 *Fig. 31*

Feed cup opening adjustment

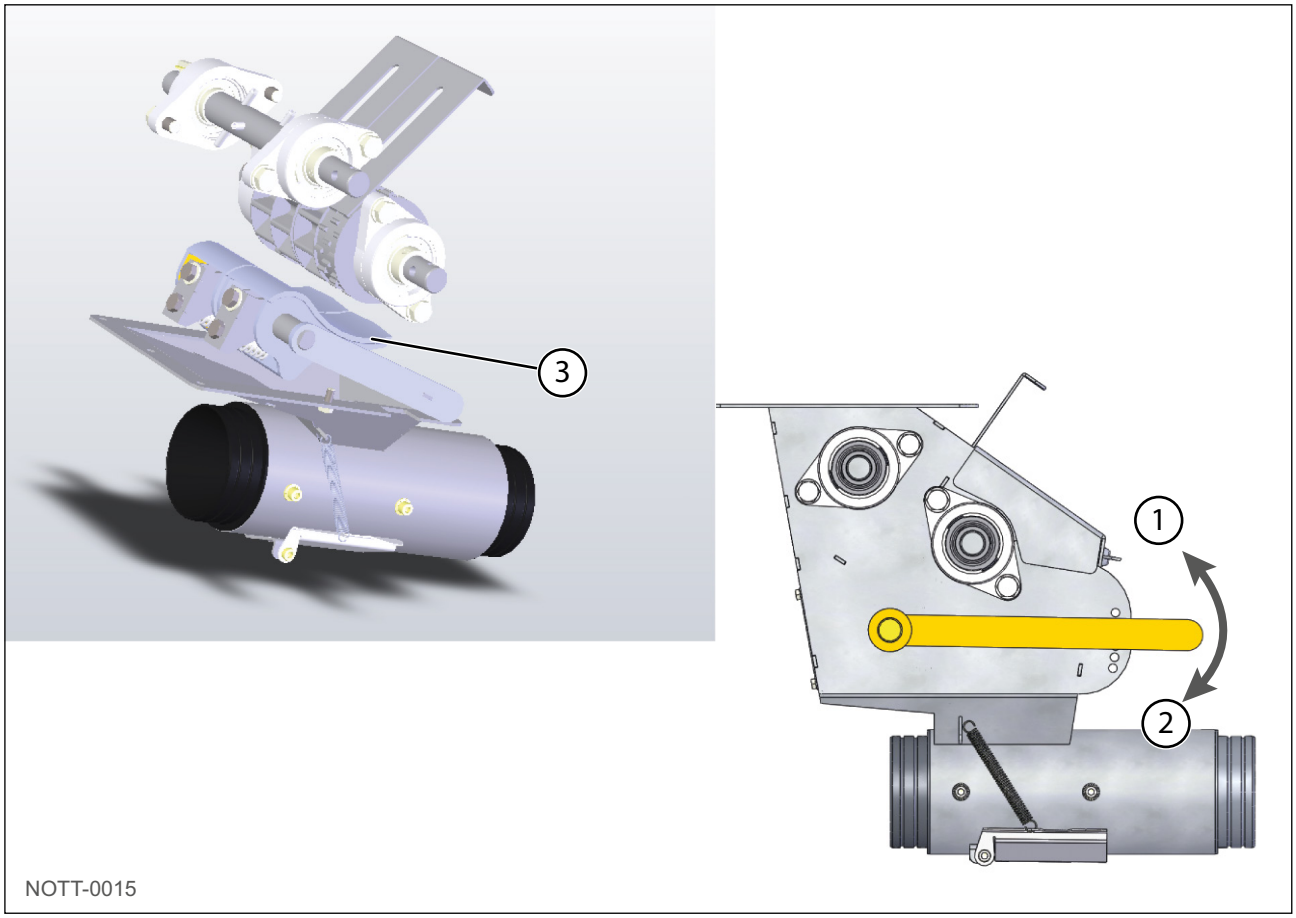
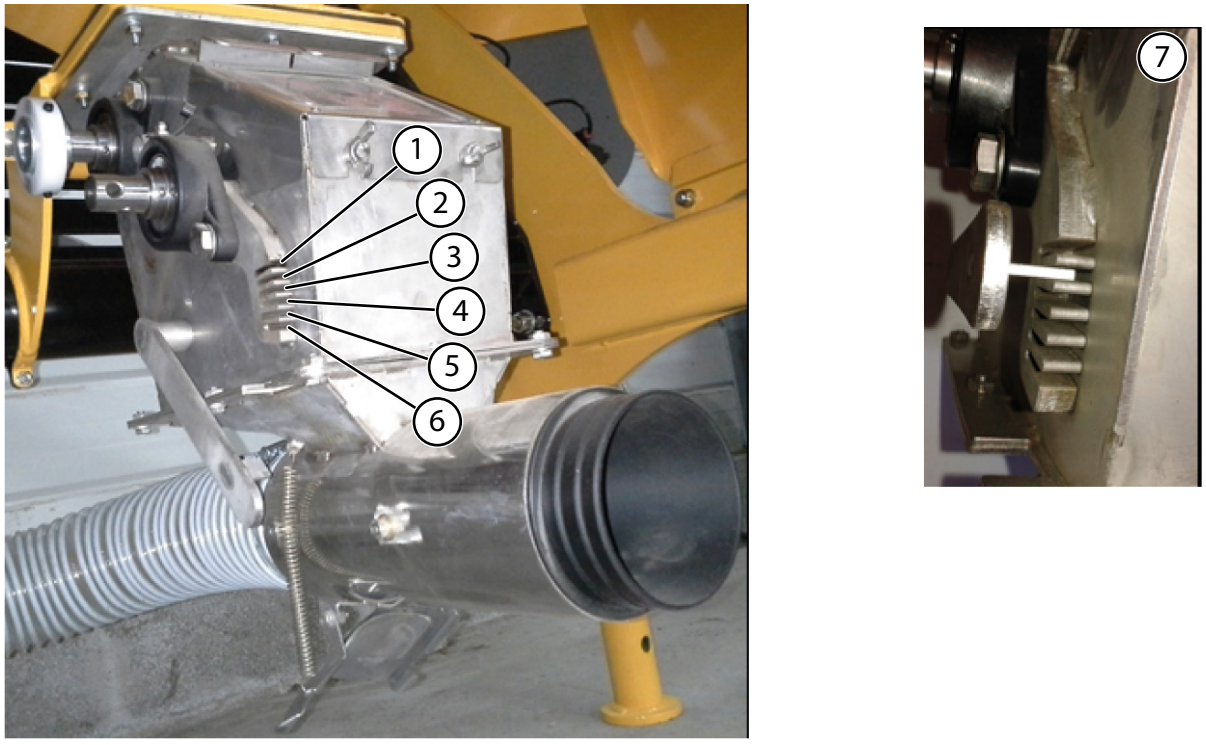


Fig. 32

No.	Description
1	Minimum opening position (closed)
2	Maximum opening position
3	Feed cups



NOTT-0016

Fig. 33

Depending on the type of seed used, the working width considered, as well as the desired seed density (kg/ha), refer to the metering table below.

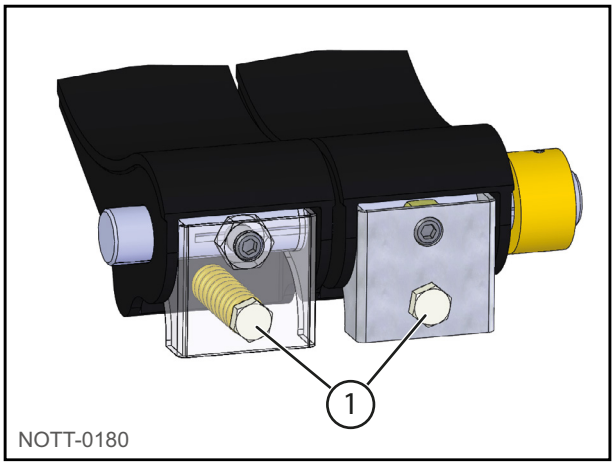
This defines the flutes to be used, as well as the feed cup opening lever setting position. The finer the seed, the higher the lever needs to be placed (closed position).

No.	Feed cup opening lever	Recommended type of seed (indicative)	Recommended flutes 1 x 90	Recommended flutes 2 x 70
1	position 1	Rape	1 small fluted wheel	2 small fluted wheels
2	position 2	Wheat / Barley	3 large fluted wheels	2 large and 2 medium fluted wheels
3	position 3	Oats	4 large fluted wheels	2 large and 4 medium fluted wheels
4	position 4	Peas / Field beans	4 large fluted wheels	2 large and 4 medium fluted wheels
5	position 5		4 large fluted wheels	2 large and 4 medium fluted wheels
6	position 6	Peas / Field beans	4 large fluted wheels	2 large and 4 medium fluted wheels
7	position No. 2 by default		3 large and 3 small fluted wheels	2 large, 2 medium and 2 small fluted wheels

The opening lever is shown in the hopper emptying position in the in the illustration in “Fig. 33”, page 50.

No.	Description
1	Adjustment screw

The metering unit comprises feed cups. The 2 feed cups of the distribution unit are installed on the same shaft. They are controlled by the same device. However, they both need to be adjusted separately for optimum precision. A factory pre-set is performed as standard.



NOTT-0180

Fig. 34

To change this standard setting:

- Place the feed cup opening lever to position 2 (see “Fig. 33”, page 50).
- Adjust the lower screw to obtain the desired adjustment. The adjustment should bring the feed cup into contact with the flutes.

NOTE

The feed cups should lightly press against the flutes when the feed cup opening lever is in position 2. The feed cups must be at the same level.


NOTT-0181

Fig. 35

ALL feed cups must be checked each time the seeder is used (see “Checking feed cup adjustment”, page 53).

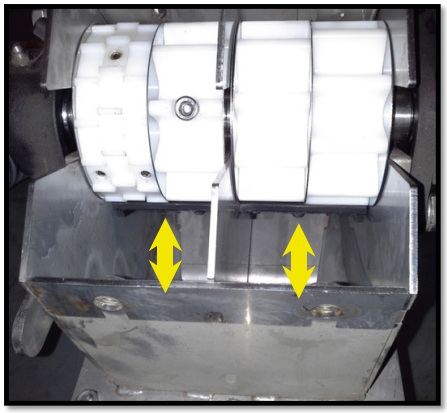
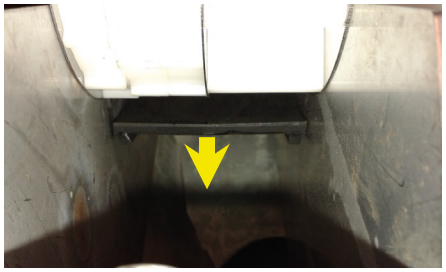
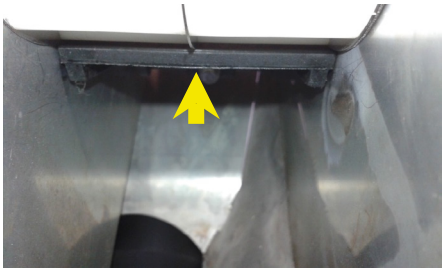

NOTT-0182

Fig. 36

Screw turning direction	Action on the feed cup	Comment
 NOTT-0183 *Fig. 37*	 NOTT-0185 *Fig. 38*	Tightening the adjustment screw, feed cup opened.
 NOTT-0184 *Fig. 39*	 NOTT-0186 *Fig. 40*	Loosening the adjustment screw, feed cup closed.

CAUTION

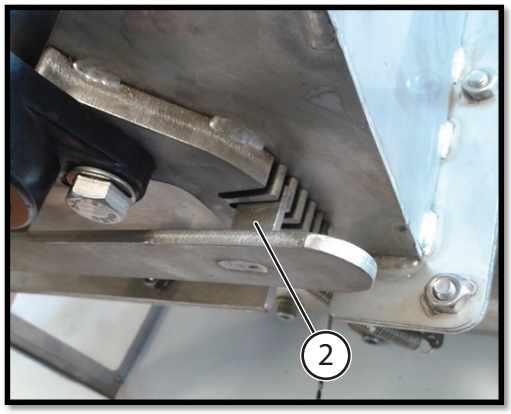
Once adjustment is completed, put the safety and protective devices back in place.

Checking feed cup adjustment

The correct positioning of the feed cups is checked simply by moving the feed cup opening lever to position (2).

The feed cups should lightly press against the flutes as shown in the photograph “Fig. 41”.

If this is not the case, the position of each feed cup will need to be adjusted (see “Feed cup opening adjustment”, page 49).



NOTT-0187

Fig. 41

NOTT-0188

Fig. 42

NOTT-0189

Fig. 43

Choosing the fluted wheels in operation

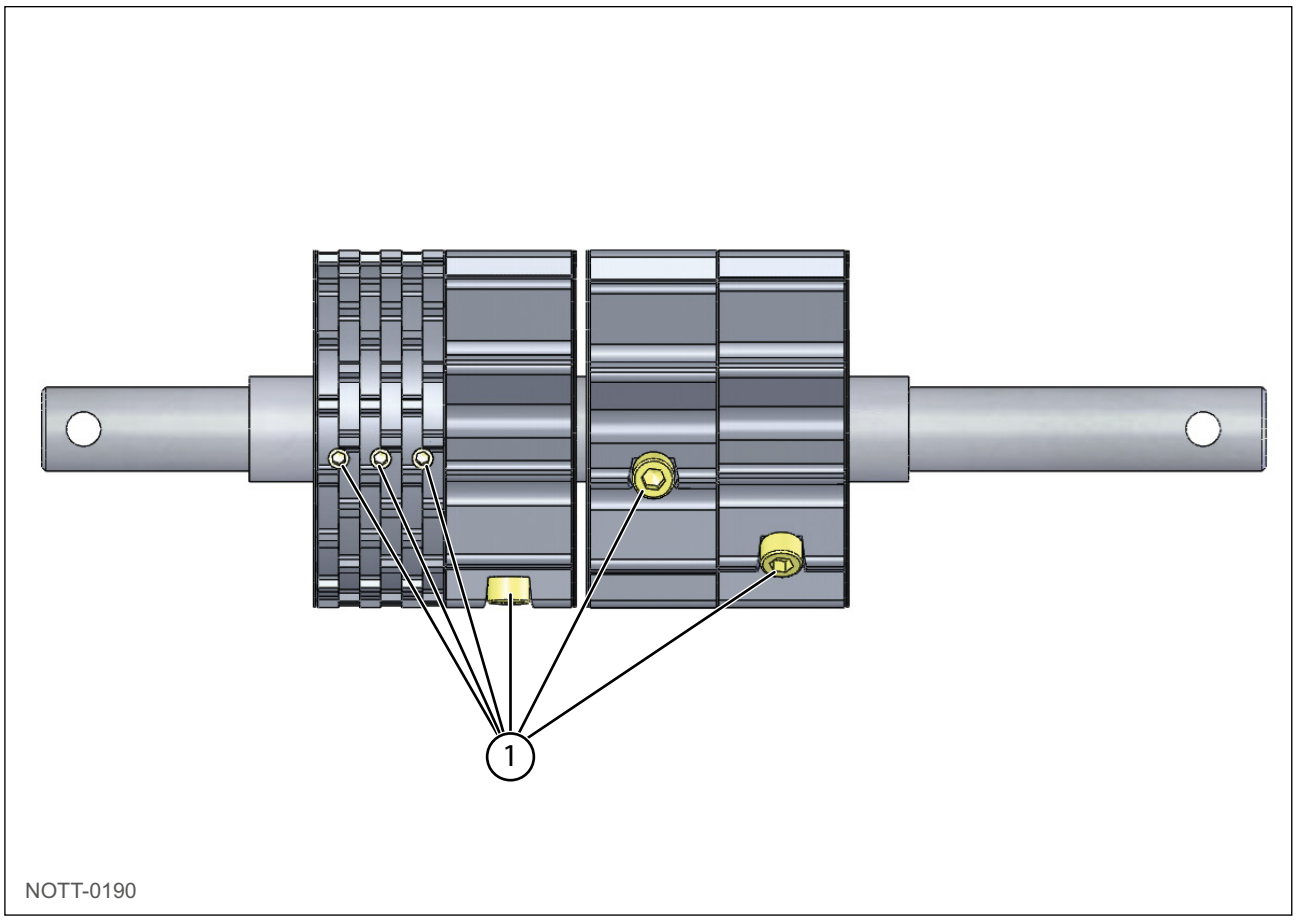


Fig. 44

No.	Description
1	Engagement/disengagement screw

The fluted wheels in operation are to be selected to suit the type of seed use (see “Specification”, page 43).

This is done by unscrewing the screw on the unused fluted wheel. This will disengage the fluted wheel from the shaft.

The fluting configuration is as follows:

- 3 large fluted wheels (coarse seeds),
- 3 small fluted wheels (fine seeds),
- option of 4 large fluted wheels (coarse seeds).

Possible configurations:

- Fluted wheel size: large and/or small,
- Number of fluted wheels coupled.

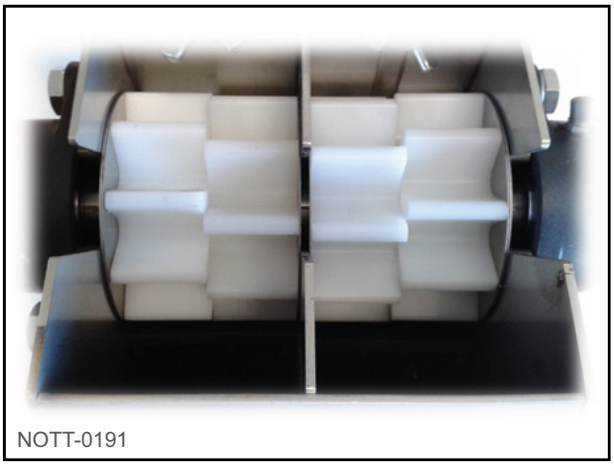

NOTT-0191

Fig. 45

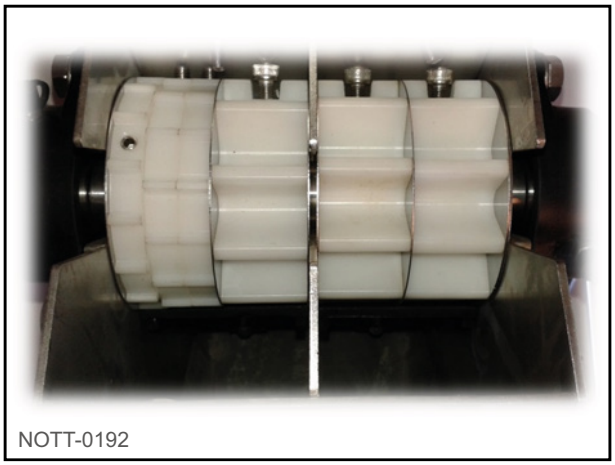

NOTT-0192

Fig. 46

Fluted wheel engagement/disengagement

NOTE

The example described below shows the engagement/disengagement of the small flute wheels. Proceed in the same way for large fluted wheels.

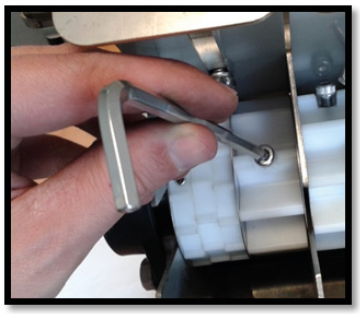
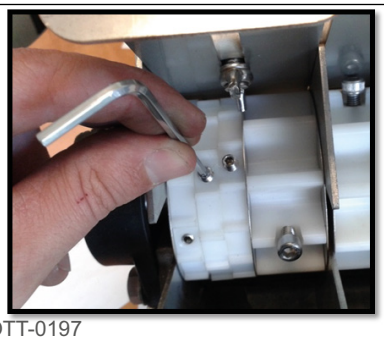
Illustration		Comment
 NOTT-0193 *Fig. 47*	 NOTT-0194 *Fig. 48*	To use only the small fluted wheels, close the right-hand side flap of the distribution unit. This will avoid the need to disengage the 2 large fluted wheels.
 NOTT-0195 *Fig. 49*	 NOTT-0196 *Fig. 50*	Disengage the large fluted wheel on the left-hand side by unscrewing the coupling screw until it comes into contact with the closing flap (see photograph opposite).

Illustration	Comment
 NOTT-0197 *Fig. 51*  NOTT-0198 *Fig. 52*	Disengage the desired number of fluted wheels by unscrewing their coupling screw until it comes into contact with the closing flap (see photograph opposite).

NOTE

After having selected the engaged fluted wheel configuration, perform a flow rate test (see DSF Flow Rate Test). This test serves only to confirm that the flow rate values match the desired values

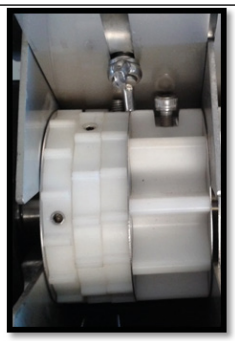
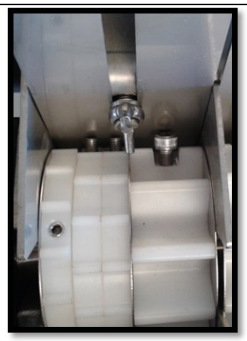
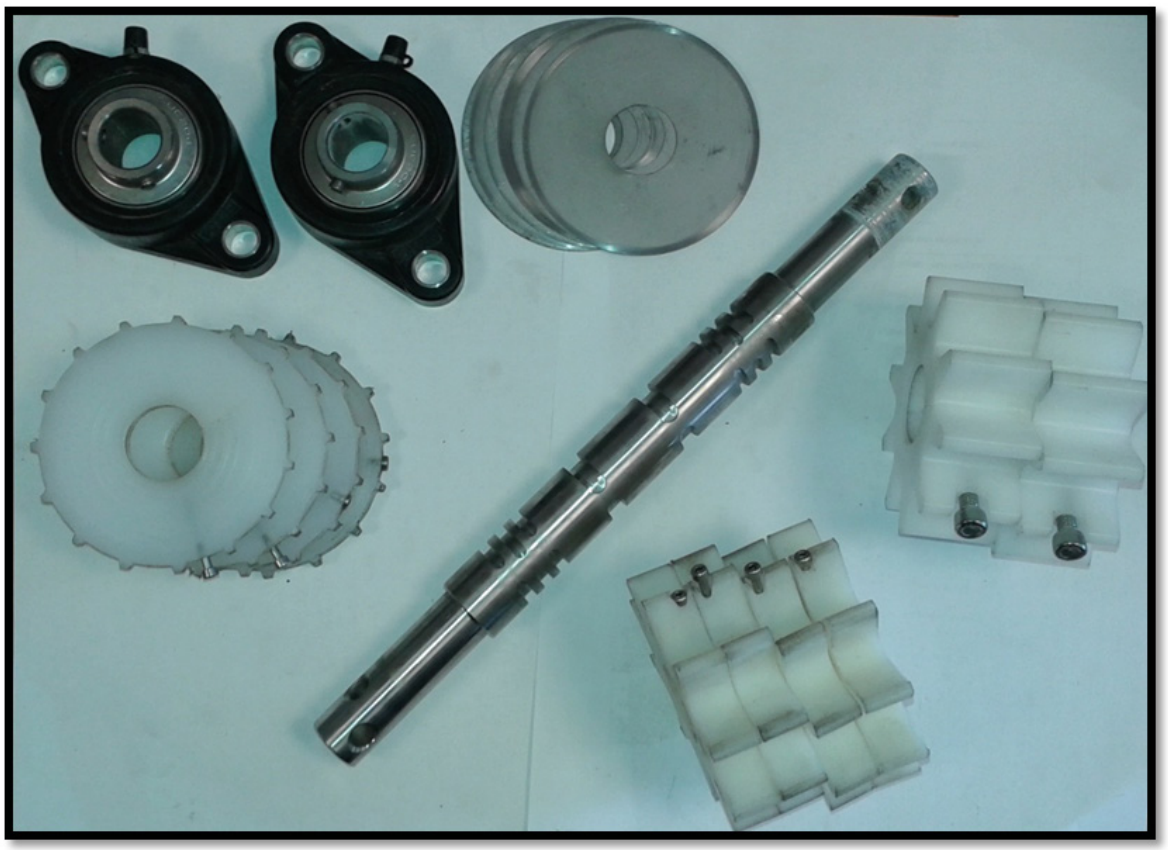
Illustration	Comment
 NOTT-0199 *Fig. 53*	3 small fluted wheels engaged
 NOTT-0200 *Fig. 54*	2 small fluted wheels engaged
 NOTT-0201 *Fig. 55*	1 small fluted wheel engaged

Illustration	Comment
 NOTT-0202 *Fig. 56*	Blocking of fluted wheels

Changing fluted wheels

The fluting kit for each distribution unit comprises:

- the shaft,
- 2 bearings,
- 8 shim ring washers,
- 4 small fluted wheels,
- 2 medium fluted wheels,
- 2 large fluted wheels.



NOTT-0203

Fig. 57

1 - To change the fluted wheels, first unscrew the screws of the bearings then remove the set of fluted wheels from the distribution unit. Set the fluted wheels down on a flat surface to facilitate the wheel changing operation.

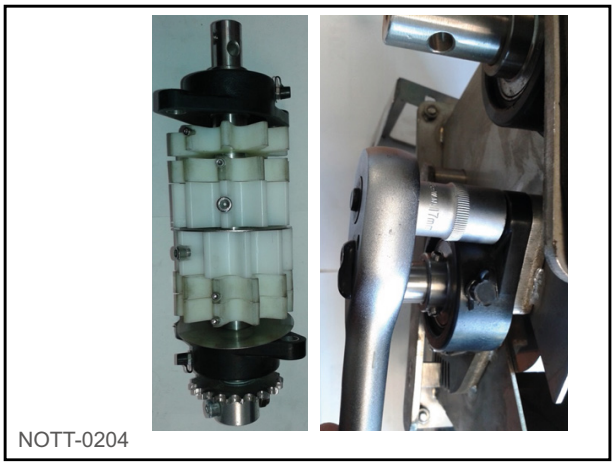


Fig. 58

2 - Remove the left-hand bearing from the fluted wheels.

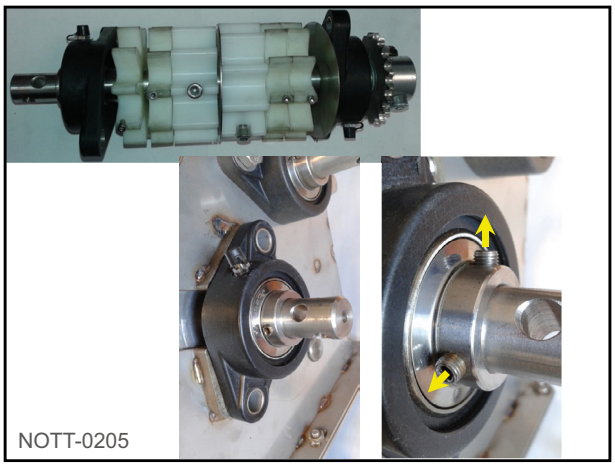


Fig. 59

3 - Remove the left-hand shims.

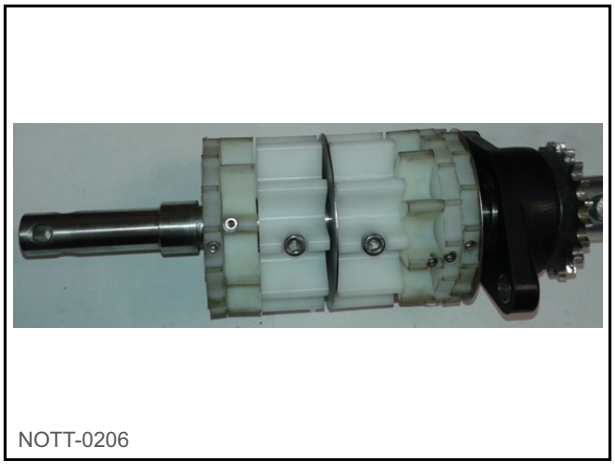
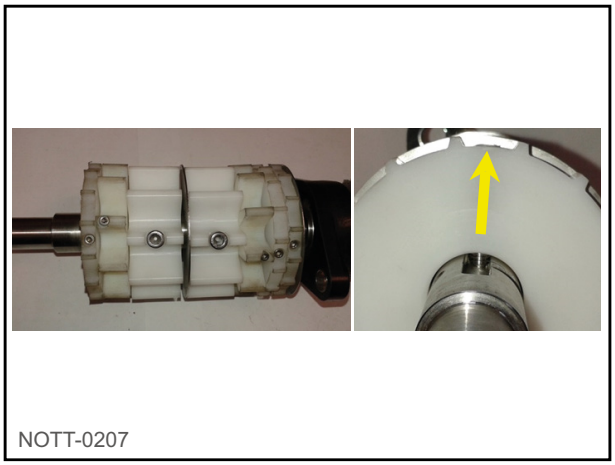


Fig. 60

4 - Disengage and remove the 1st small fluted wheel from the distribution shaft.

NOTE

Do not fully unscrew the coupling screw.

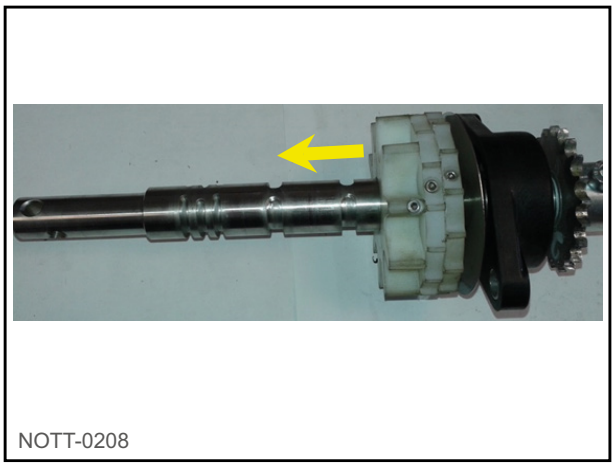


NOTT-0207

Fig. 61

5 - Repeat the operation for all the other fluted wheels and shim rings. Only one shim ring should remain.

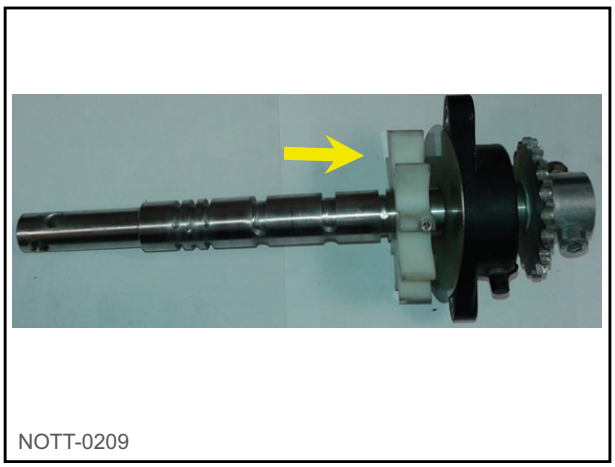
6 - Remove all the fluted wheels from the distribution shaft.



NOTT-0208

Fig. 62

7 - Insert the 1st medium fluted wheel. Make sure it is fitted in the correct direction, the clamping screw should be on the bearing side.



NOTT-0209

Fig. 63

8 - Tighten the screw of the 1st medium fluted wheel in the 1st groove of the distribution shaft.

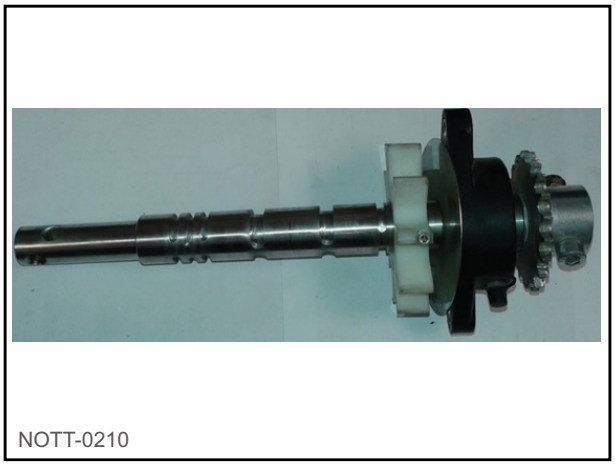


Fig. 64

9 - Insert the 2nd medium fluted wheel. Make sure it is fitted in the correct direction, the clamping screw should be on the same side as the first.

10 - Tighten the screw of the 2nd medium fluted wheel in the corresponding groove of the distribution shaft.

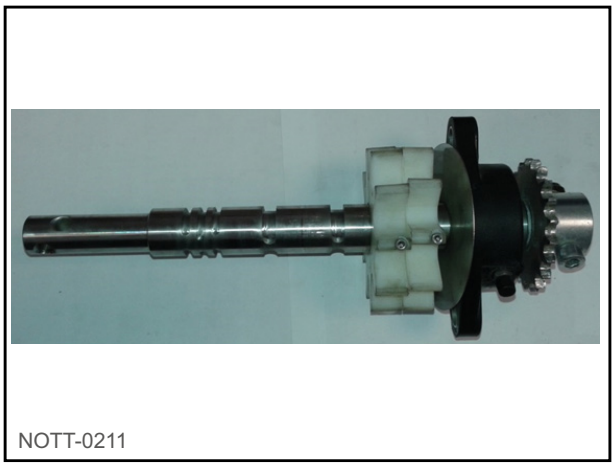


Fig. 65

11 - Insert the 1st large fluted wheel.

12 - Tighten the screw of the 1st large fluted wheel in the corresponding groove of the distribution shaft.

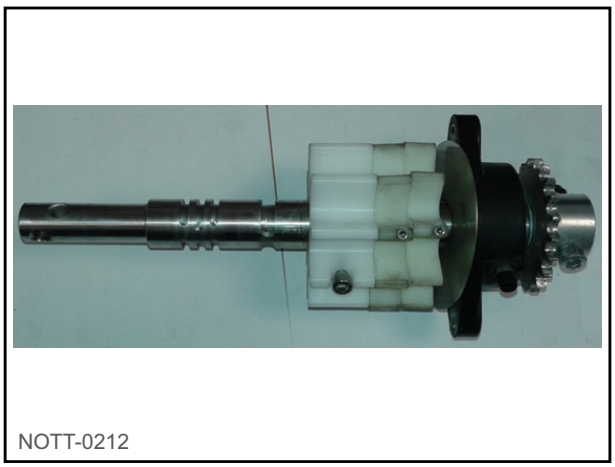
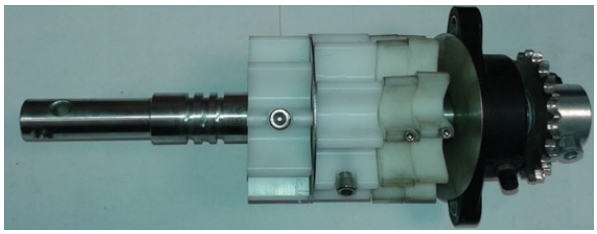


Fig. 66

13 - Insert the shim ring washers after the 1st large fluted wheel.

14 - Insert the 2nd large fluted wheel.

15 - Tighten the screw of the 2nd large fluted wheel in the corresponding groove of the distribution shaft.

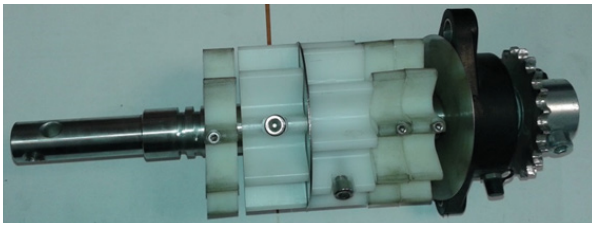


NOTT-0213

Fig. 67

16 - Insert the 3rd medium fluted wheel. Make sure it is correctly fitted in the opposite direction to the first two wheels.

17 - Tighten the screw of the 3rd medium fluted wheel in the corresponding groove of the distribution shaft.

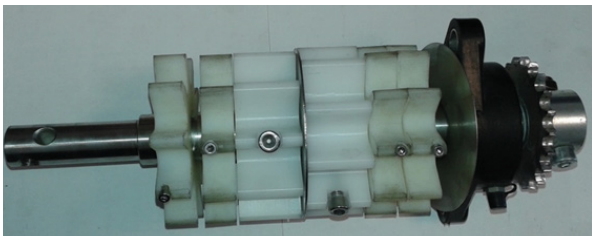


NOTT-0214

Fig. 68

18 - Insert the 4th medium fluted wheel. Make sure it is correctly fitted in the same direction as the 3rd medium fluted wheel.

19 - Tighten the screw of the 4th medium fluted wheel in the corresponding groove of the distribution shaft.

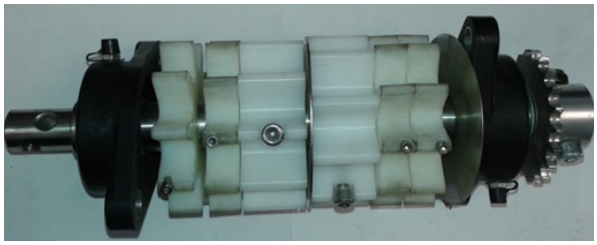


NOTT-0215

Fig. 69

20 - Insert the shim ring washers according to the clearance in the distribution unit.

21 - Refit the bearing and screw the 2 screws of the bearing onto the shaft.

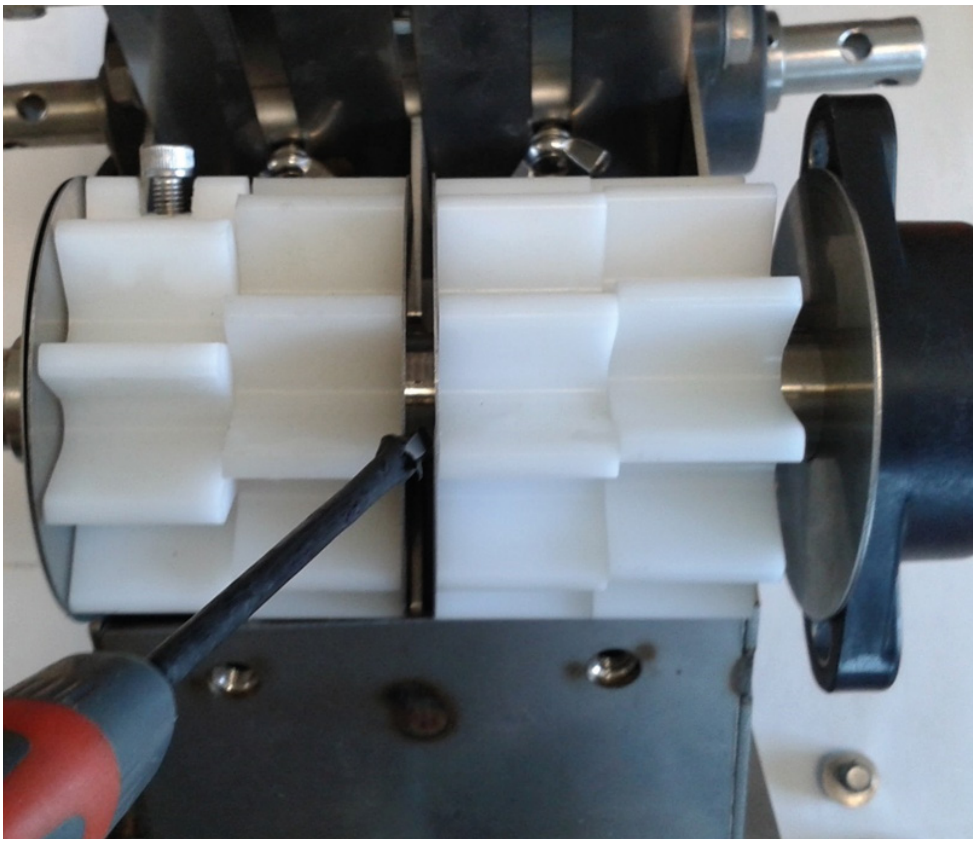


NOTT-0216

Fig. 70

When the fluted wheel set is inserted into the distribution unit, take care to place the shim rings on either side of the separation in the distribution unit.

The number of shim rings will depend on the clearance between the fluted wheels and the body of the distribution unit.



NOTT-0217

Fig. 71

IMPORTANT

Check that the fluted wheel set turns properly without sticking. This is done by turning the shaft by hand. It should turn freely without excessive axial play. If this is not the case, check the cleanliness of the distribution unit and/or remove some of the shim ring washers.

6.3. Distribution head

Each distribution head can feed 10, 16 or 24 outlets arranged along the seeding ramp. According to the working width, 4 returns have been incorporated within these heads to enable recycling of unused outlets.

Access can also be gained to the inside of the distribution head simply by unscrewing the removable cover.

Fig. 72

NOTE

Before using the distribution heads at the start of each season, it is recommended to clean and blow each outlet and to ensure that there is no clogging or damage.

6.4. DSF flow rate test

The flow rate test is the only test for determining the flow rate actually delivered by the distribution unit. It is performed in static mode.

If le flow rate measured during the test does not match the expected value, change the number or type of fluted wheels (see “Choosing the fluted wheels in operation”, page 54).

CAUTION

No-one must be within 50 metres of the machine during the flow rate test.

NOTE

Before use, check that the inside the different flutes is completely clean. Failing this, the flow rate test results would be incorrect.

Initial steps

1 - Define the number and type of flute wheels to be used according to the type of seed and the desired application rate.

2 - Adjust the feed cup lever (see “Feed cup opening adjustment”, page 49).

CAUTION

Be sure to wear the items of personal protective equipment (PPE) specified on the packaging of the sown product.

CAUTION

Some seed treatments can greatly disrupt the correct operation of the distribution unit.

CAUTION

In the case of a partitioned hopper, this operation must be carried out for each compartment of the hopper.

Implementation

1 - Open the shutter flaps.

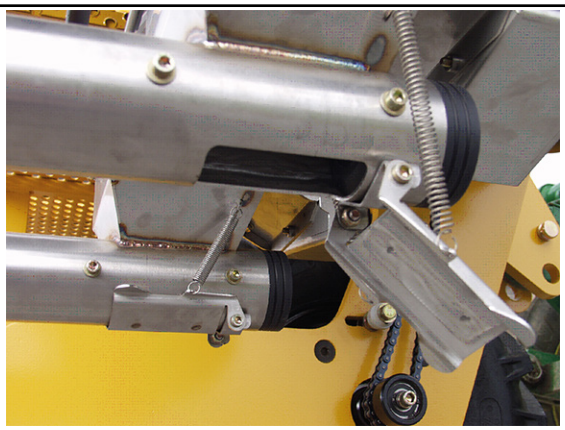

NOTT-0219

Fig. 73

2 - Place the weighing hopper or box.


NOTT-0220

Fig. 74

3 - Start the distribution system with the distribution unit manual activation control until a regular flow is obtained.

4 - Enter the desired metering rate on the electronic unit.

5 - Start the flow rate test procedure on the electronic unit (see manual of the unit concerned).

6 - Weigh the seed contained in the container (a weight indicator is provided with the machine).

7 - Enter the weight obtained in the electronic unit.

8 - Repeat the operation 3 times for accurate calibration.


NOTT-0221

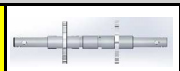
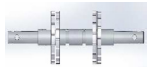
Fig. 75

6.5. Tables of delivery flow rate according to working width

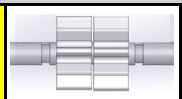
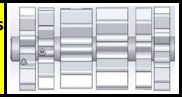
6.5.1. Maximum flow rate (kg) according to width for a 2x Ø70 distribution unit (600 kg/h) with a partitioned hopper

These flow rates are given for a specific average seed weight with wiring of all outlets of a 24 outlet distribution head.

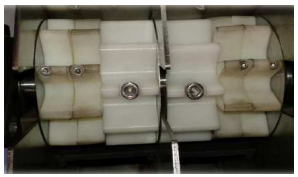
Pour graine type : colza

Positions de la cuillère		colza	1																	
Cannelures		Semence	3m			3,5m			4m			4,5m			5m			6m		
Vitesse (Km/h)			8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Avec 2 petites cannelures		colza	5,23	4,22	3,50	4,48	3,62	3,00	3,94	3,18	2,64	3,49	2,82	2,34	3,14	2,53	2,10	2,62	2,11	1,75
Avec 4 petites cannelures		colza	10,47	8,44	7,01	8,97	7,23	6,00	7,87	6,35	5,27	6,98	5,63	4,67	6,27	5,06	4,20	5,23	4,22	3,50

Pour graine type : le blé, l'avoine et les pois

Positions de la cuillère		Blé Avoine pois	2 3 5																	
Cannelures		Semence	3m			3,5m			4m			4,5m			5m			6m		
Vitesse (Km/h)			8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Avec 2 grosses cannelures		Blé	124	100	83	106	86	71	93	75	62	82	67	55	74	60	50	62	50	42
		Avoine	68	55	45	58	47	39	51	41	34	45	36	30	41	33	27	34	27	23
		pois	128	104	86	110	89	73	96	78	64	85	69	57	77	62	52	64	52	43
Avec 2 grosses et 2 moyennes cannelures		Blé	186	150	125	159	128	106	140	113	93	124	100	83	112	90	75	93	75	62
		Avoine	102	82	68	87	70	58	76	62	51	68	55	45	61	49	41	51	41	34
		pois	193	155	129	165	133	110	144	117	97	128	103	86	116	93	77	96	78	64
Avec 4 moyennes et 2 grosses cannelures		Blé	248	200	166	212	171	142	186	150	125	165	133	110	149	120	100	124	100	83
		Avoine	136	110	91	116	94	78	102	82	68	90	73	60	81	66	55	68	55	45
		Pois	257	207	172	220	177	147	193	155	129	171	138	114	154	124	103	128	104	86

Kit petites cannelures

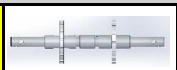
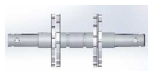


Kit grosses et moyennes cannelures

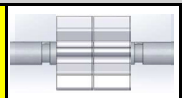
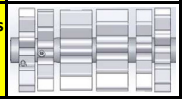
6.5.2. Maximum flow rate(kg) according to width for a 2x Ø70 distribution unit (600 kg/h) with a non-partitioned hopper

These flow rates are given for a specific average seed weight with wiring of all outlets of a 24 outlet distribution head.

Pour graine type : colza

Positions de la cuillère		colza	1																	
Cannelures		Semence	3m			3,5m			4m			4,5m			5m			6m		
Vitesse (Km/h)			8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Avec 2 petites cannelures		colza	10,47	8,44	7,01	8,97	7,23	6,00	7,87	6,35	5,27	6,98	5,63	4,67	6,27	5,06	4,20	5,23	4,22	3,50
Avec 4 petites cannelures		colza	20,93	16,88	14,01	17,93	14,46	12,00	15,75	12,70	10,54	13,96	11,26	9,35	12,55	10,12	8,40	10,47	8,44	7,01

Pour graine type : le blé, l'avoine et les pois

Positions de la cuillère		Blé	2																	
		Avoine	3																	
		pois	5																	
Cannelures		Semence	3m			3,5m			4m			4,5m			5m			6m		
Vitesse (Km/h)			8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Avec 2 grosses cannelures		Blé	248	200	166	212	171	142	186	150	125	165	133	110	149	120	100	124	100	83
		Avoine	136	110	91	116	94	78	102	82	68	90	73	60	81	66	55	68	55	45
		pois	257	207	172	220	177	147	193	155	129	171	138	114	154	124	103	128	104	86
Avec 2 grosses et 2 moyennes cannelures		Blé	372	300	249	318	257	213	279	225	187	247	200	166	223	180	149	186	150	125
		Avoine	204	164	136	174	140	117	153	123	102	135	109	91	122	99	82	102	82	68
		pois	385	311	258	329	266	220	289	233	193	256	207	171	231	186	155	193	155	129
Avec 4 moyennes et 2 grosses cannelures		Blé	496	400	332	424	342	284	372	300	249	330	266	221	298	240	199	248	200	166
		Avoine	272	219	182	232	187	155	204	164	136	181	146	121	163	131	109	136	110	91
		Pois	514	414	344	439	354	294	385	311	258	342	275	229	308	249	206	257	207	172

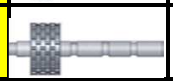
Kit petites cannelures

Kit grosses et moyennes cannelures

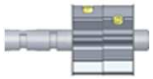
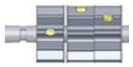
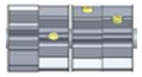
6.5.3. Maximum flow rate (kg) according to width for Ø90 distribution unit (500 kg/h) with a partitioned hopper

These flow rates are given for a specific average seed weight with wiring of all outlets of a 24 outlet distribution head.

Pour graine type : colza

Positions de la cuillère		colza	1																
Cannelure		semence	3m			3,5m			4m			4,5m			5m			6m		
Vitesse (Km/h)			8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Avec 1 cannelure		colza	3,48	2,81	2,33	2,99	2,41	2,00	2,62	2,11	1,75	2,33	1,88	1,56	2,10	1,69	1,40	1,75	1,41	1,17
Avec 2 cannelures		colza	6,98	5,63	4,67	5,98	4,82	4,00	5,23	4,22	3,50	4,65	3,75	3,11	4,19	3,38	2,81	3,48	2,81	2,33
Avec 3 cannelures		colza	10,47	8,44	7,01	8,97	7,23	6,00	7,87	6,35	5,27	6,98	5,63	4,67	6,27	5,06	4,20	5,23	4,22	3,50

Pour graine type : le blé, l'avoine et les pois

Positions de la cuillère		Blé	2																
		Avoine	3																
		pois	5																
Cannelures		Semence	3m			3,5m			4m			4,5m			5m			6m		
Vitesse (Km/h)			8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Avec 1 grosse cannelure		Blé	52	42	35	45	36	30	38	31	26	35	28	23	31	25	21	26	21	17
		Avoine	29	23	19	25	20	16	21	17	14	19	15	13	17	14	12	14	12	10
		pois	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Avec 2 grosses cannelures		Blé	104	84	70	89	72	60	77	62	51	69	56	46	62	50	42	52	42	35
		Avoine	57	46	38	49	40	33	43	35	29	38	31	26	34	28	23	29	23	19
		pois	108	87	73	93	75	62	80	64	54	72	58	48	64	52	43	54	44	36
Avec 3 grosses cannelures		Blé	156	126	105	134	108	90	115	93	77	104	84	70	93	75	62	78	63	52
		Avoine	86	69	58	74	59	49	64	52	43	57	46	38	52	42	35	43	35	29
		Pois	162	131	109	139	112	93	120	97	80	108	87	73	97	78	65	81	66	54
Avec 4 grosses cannelures		Blé	208	168	139	179	144	120	154	124	103	139	112	93	124	100	83	104	84	70
		Avoine	115	92	77	98	79	66	86	69	57	76	62	51	69	56	46	58	46	39
		Pois	217	175	145	186	150	124	160	129	107	144	116	97	129	104	86	108	87	73

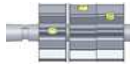
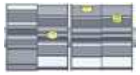
6.5.4. Maximum flow rate (kg) according to width for a Ø90 distribution unit (500 kg/h) with a non-partitioned hopper

These flow rates are given for a specific average seed weight with wiring of all outlets of a 24 outlet distribution head.

Pour graine type : colza

Positions de la cuillère		colza	1																	
Cannelure		semence	3m			3,5m			4m			4,5m			5m			6m		
Vitesse (Km/h)			8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Avec 1 cannelure		colza	6,97	5,62	4,66	5,98	4,82	4,00	5,23	4,22	3,50	4,66	3,76	3,12	4,19	3,38	2,81	3,50	2,82	2,34
Avec 2 cannelures		colza	13,96	11,26	9,35	11,95	9,64	8,00	10,47	8,44	7,01	9,30	7,5	6,23	8,38	6,76	5,61	6,97	5,62	4,66
Avec 3 cannelures		colza	20,93	16,88	14,01	17,93	14,46	12,00	15,75	12,7	10,54	13,96	11,26	9,35	12,55	10,12	8,40	10,47	8,44	7,01

Pour graine type : le blé, l'avoine et les pois

Positions de la cuillère		Blé	2																	
		Avoine	3																	
		pois	5																	
Cannelures		Semence	3m			3,5m			4m			4,5m			5m			6m		
Vitesse (Km/h)			8	10	12	8	10	12	8	10	12	8	10	12	8	10	12	8	10	12
Avec 1 grosse cannelure		Blé	104	84	70	89	72	60	77	62	51	69	56	46	62	50	42	52	42	35
		Avoine	57	46	38	49	40	33	43	35	29	38	31	26	34	28	23	29	23	19
		pois	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Avec 2 grosses cannelures		Blé	208	168	139	179	144	120	154	124	103	139	112	93	124	100	83	104	84	70
		Avoine	115	92	77	98	79	66	86	69	57	76	62	51	69	56	46	58	46	39
		pois	217	175	145	186	150	124	160	129	107	144	116	97	129	104	86	108	87	73
Avec 3 grosses cannelures		Blé	312	252	209	268	216	179	231	186	154	208	168	139	186	150	125	156	126	105
		Avoine	172	139	115	147	119	99	129	104	86	115	92	77	103	83	69	86	70	58
		Pois	325	262	218	279	225	186	240	193	161	217	175	145	193	156	129	162	131	109
Avec 4 grosses cannelures		Blé	417	336	279	357	288	239	308	248	206	278	224	186	248	200	166	208	168	139
		Avoine	229	185	153	196	158	131	172	138	115	153	123	102	138	111	92	115	93	77
		Pois	433	349	290	371	300	249	320	258	214	289	233	193	258	208	173	217	175	145

6.5.5. Seeding ramp

The front-mounted hopper can incorporate a seeding ramp. This spreads the seeds onto the surface of the soil by means of a number of spreaders mounted on a manually folding metal ramp. The seeding ramp is recommended for cover crop seeding, conventional seeding and fertilisers.

The ramp is available in various lengths from 3 to 9 metres.

Check that the connecting tubes are in good condition and properly connected.

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Fig. 76

If the machine is equipped with the working position detection device, calibrate as follows:

1 - Hitch the machine.

2 - Position the sensing roller (1) on the upper link arm shaft according to the orientation.

3 - Position the contact spring between the sensing roller and the lower attachment point (2) when the sensor is positioned on top of the lower link arm.

4 - Position the contact spring between the sensing roller and the upper attachment point (3) when the sensor is located under the bras de traction.

5 - Place the machine in the working position.

6 - Position the target (4) opposite the sensor (5).

7 - Perform working position teaching with the “working position reference calibration” process (see DRILL_ Controller instruction manual).

8 - Place the machine in the non-working position.

9 - Perform non-working position teaching with the “working position reference calibration” process (see DRILL_Controller instruction manual).

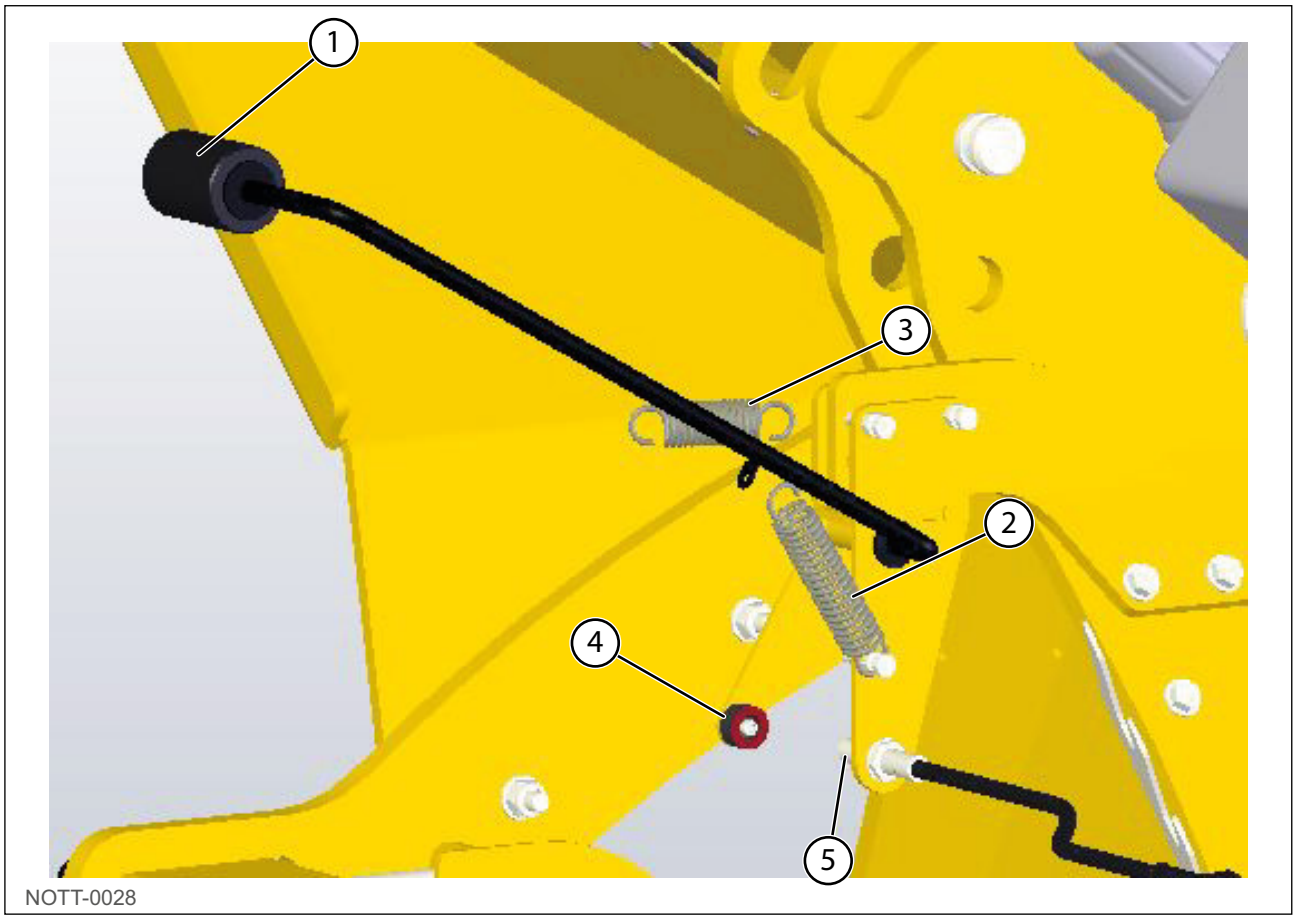


Fig. 77

6.6. Front packer

Check the tyre pressures (see Maintenance – Tyre pressure).

Check the parallelism of the front packer axle.

- Lengths (a) and (b) should be identical. Take the measurement along the edge of the wheel rim so as not to be affected by the deformation of the tyre.
- If lengths (a) and (b) are not identical, adjust with the rod (1).

In order to optimise its use, remember that the front link-arm must be in the “floating” position in order to better follow the ground.

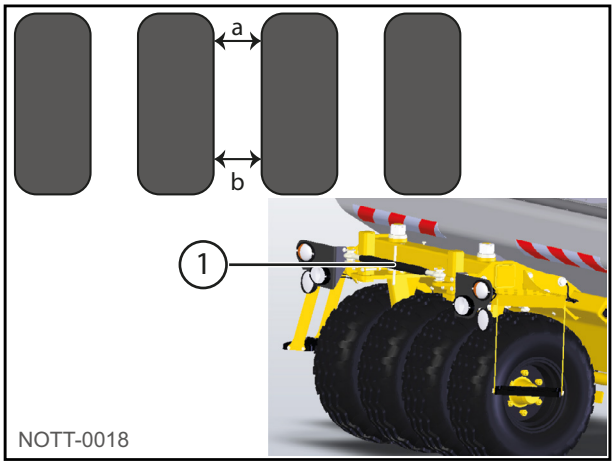


Fig. 78

6.7. A-Manager terminal

See chapter “Terminal”, page 71.

6.8. A-Touch terminal

See chapter “Terminal”, page 71.

7. Terminal

7.1. Characteristics of the A-Manager terminal

No.	Description
1	Navigation knob
2	Keys
3	Function keys
4	On/Off switch

 Turn the selection knob:

- Move the cursor up and down.
- Change parameter value.

 Press the selection knob:

- Click on the selected line.
- Activate the parameter.
- Confirm the input.

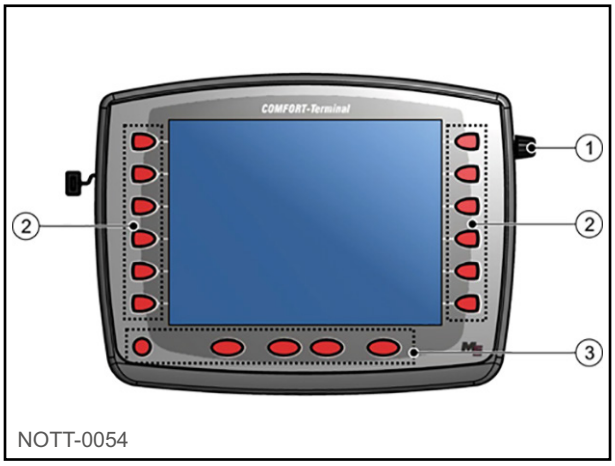


Fig. 79

No.	Description
1	Option GSM antenna connection - Only in the case of a terminal with a GSM modem installed
2	Not used
3	Option Analogue camera connection - Only in the case of a terminal with a GSM modem installed - Item - No. 30322527
4	Option Analogue camera connection - Only in the case of a terminal with a GSM modem installed
5	USB port - USB 1.1
6	Protective cap for USB port - protects the USB port against dust.
7	SIM card slot
8	Connection B - CAN-Bus connection
9	Connection A - CAN-Bus connection - For connecting the basic ISOBUS equipment
10	Connection C - For RS232 serial connection for: - GPS receiver - “GPS TILT-Module” tilt compensation - Guide bar

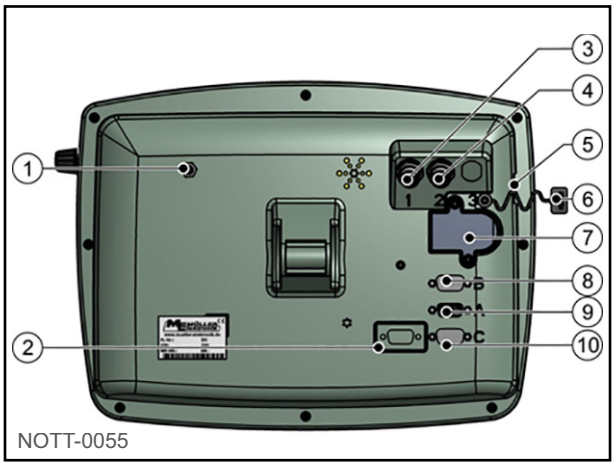


Fig. 80

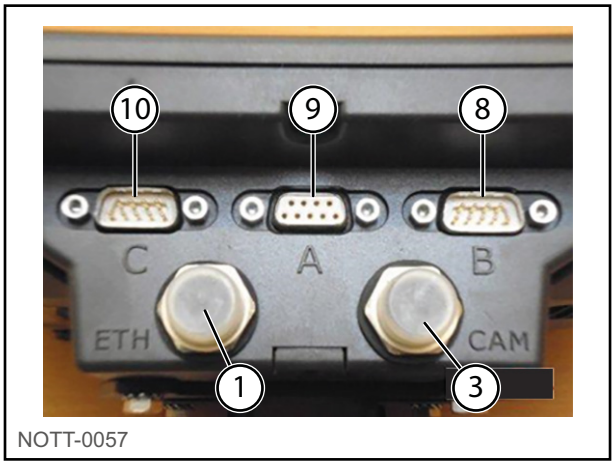
7.2. Characteristics of the A-Touch terminal

No.	Description
1	On/Off switch
2	Screen lock or USB screen capture keys
3	Function keys

NOTT-0056

Fig. 81

No.	Description
1	Option GSM antenna connection - Only in the case of a terminal with a GSM modem installed
3	Option Analogue camera connection - Only in the case of a terminal with a GSM modem installed - Item - No. 30322527
4	Option Analogue camera connection - Only in the case of a terminal with a GSM modem installed
8	Connection B - CAN-Bus connection
9	Connection A - CAN-Bus connection - For connecting the basic ISOBUS equipment
10	Connection C - For RS232 serial connection for: - GPS receiver - “GPS TILT-Module” tilt compensation - Guide bar



NOTT-0057

Fig. 82

7.3. Customer configuration

1 - Welcome screen then press key 9

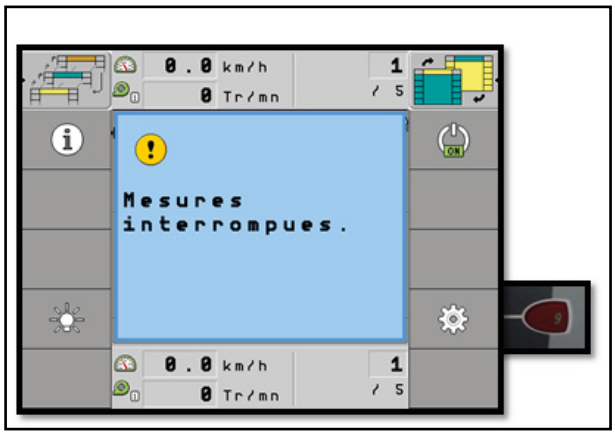


Fig. 83

2 - Press key 9 (a 2nd time)

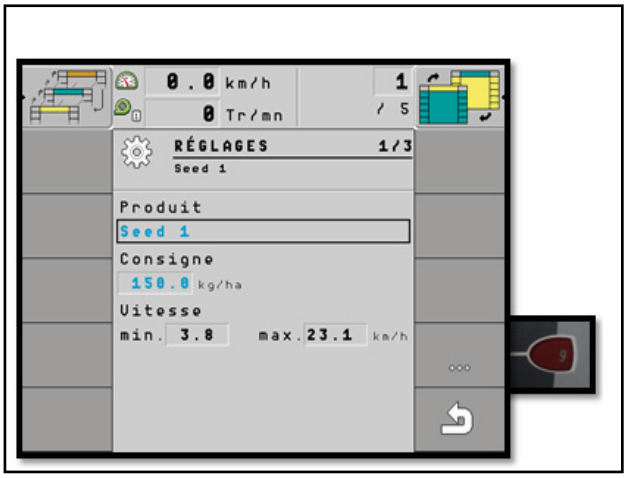


Fig. 84

3 - Press key 9 (a 3rd time)

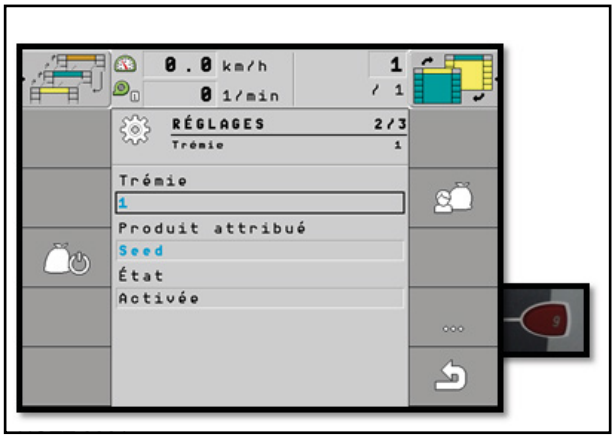


Fig. 85

4 - Press the knob or touch the screen if Touch 800

Fig. 86

5 - Select this function when the tool is equipped with a hectare cut-out sensor

Fig. 87

6 - Return to settings page 3/3, press key 3

Fig. 88

7 - Seeding ramp width setting. Carefully check the ramp number if there are 2 motors. In this case ramp 1

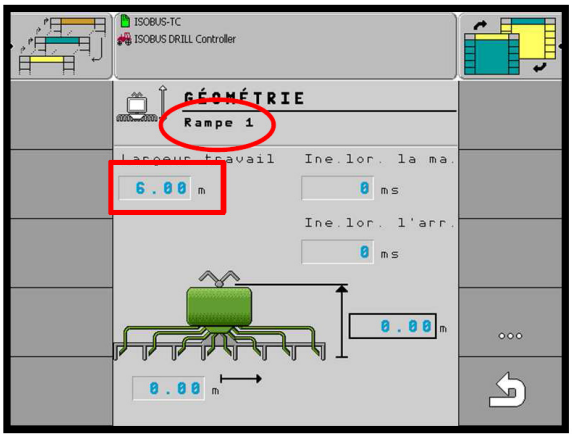


Fig. 89

8 - Define the working width of the selected ramp

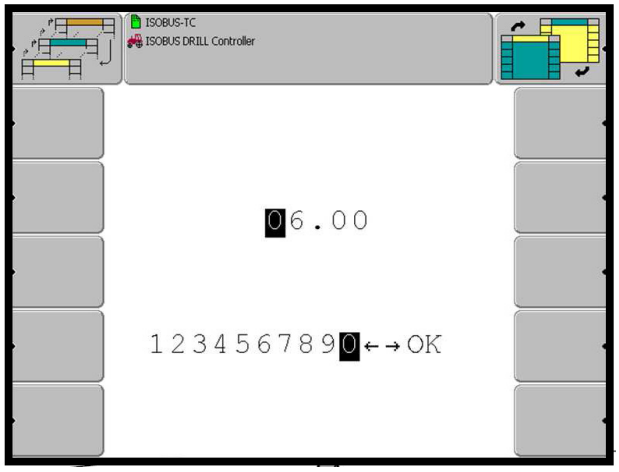


Fig. 90

9 - Return to settings page 3/3 if there are 2 motors, press key 3 again

Fig. 91

10 - Press key 9 to select ramp 2

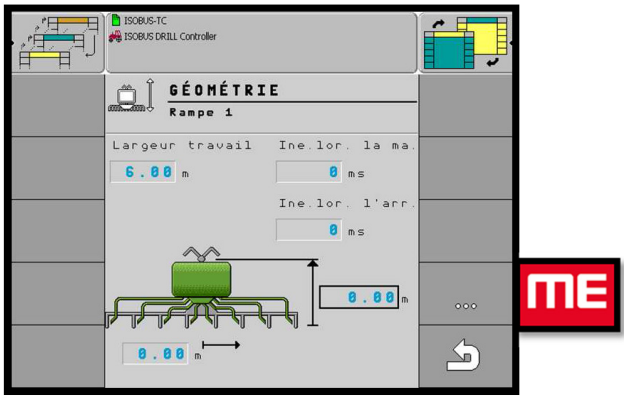


Fig. 92

11 - Define the working width of the selected ramp

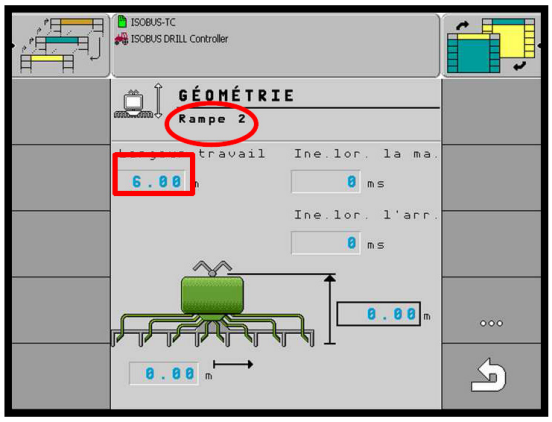


Fig. 93

12 - Define the working width

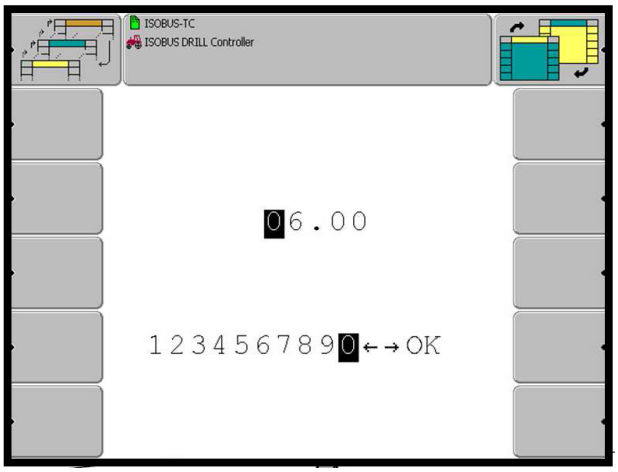


Fig. 94

7.4. Customer configuration

7.4.1. Radar calibration

13 - To calibrate the radar, accurately mark out a distance of 100 metres in the field

14 - Place the machine in the working position

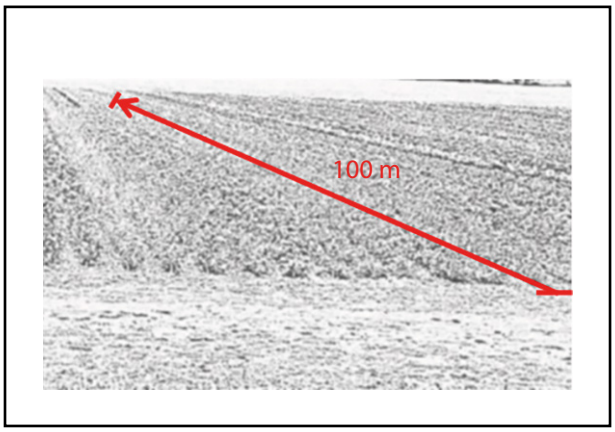


Fig. 95

15 - Switch on the terminal then press key 9.

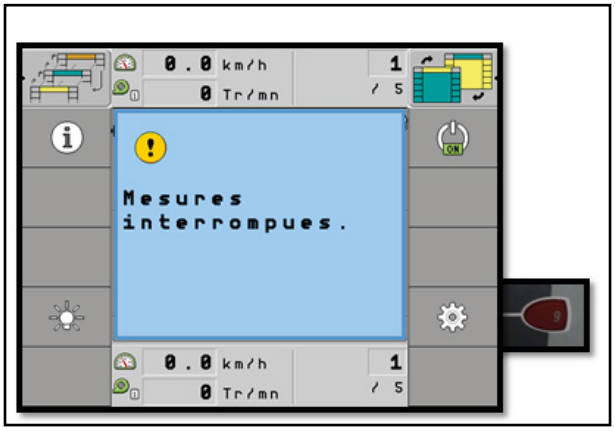


Fig. 96

16 - Press key 9 (a 2nd time).

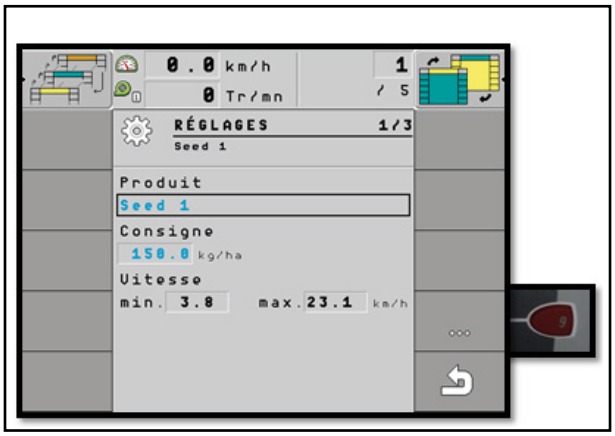


Fig. 97

17 - Press key 9 (a 3rd time).

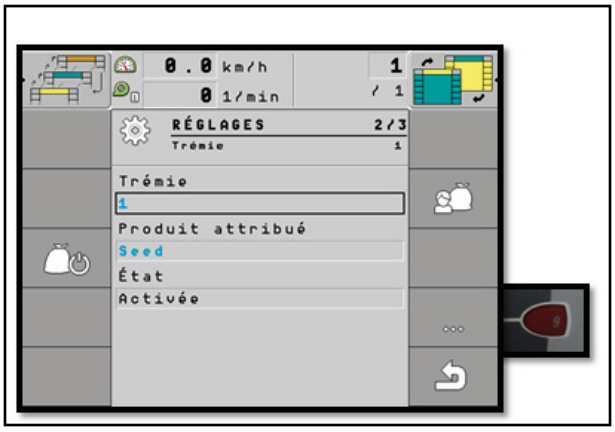


Fig. 98

18 - Now press key 2.

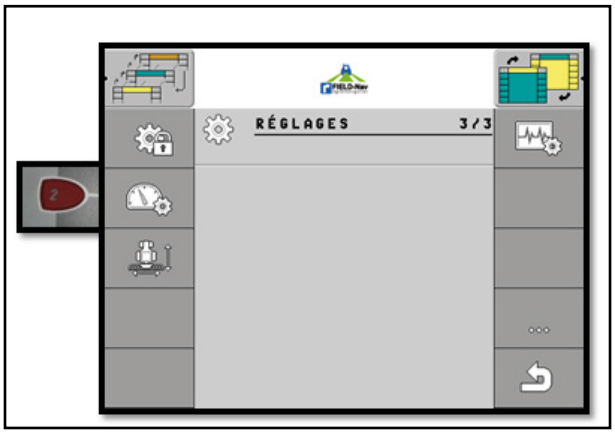


Fig. 99

19 - Select the speed source.

- Key 1 tractor
- Key 2 radar (select this key)
- Key 3 simulation

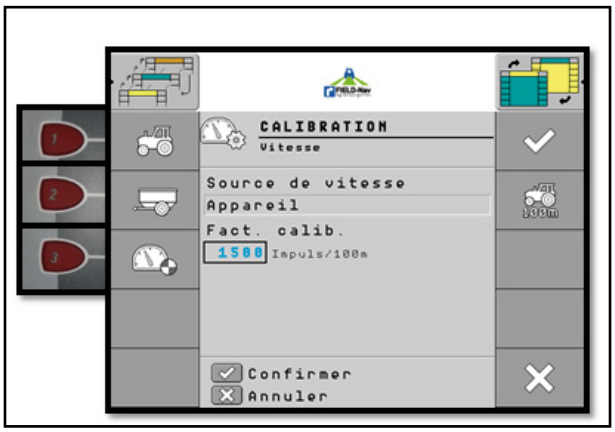


Fig. 100

20 - Validate the source with key 6.

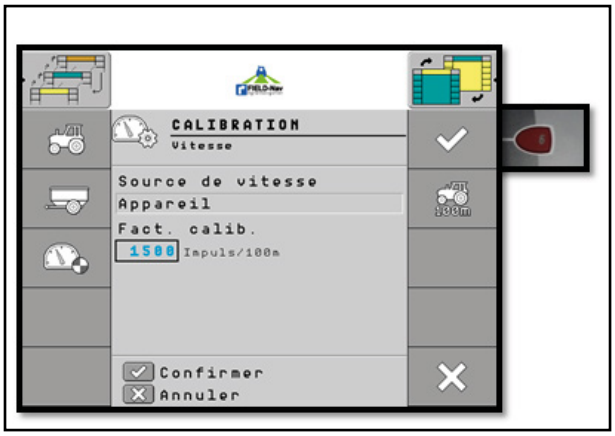


Fig. 101

21 - Now press key 2.

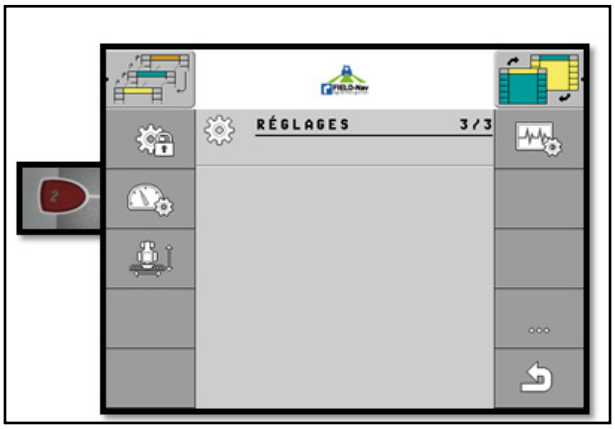


Fig. 102

22 - Now press key 7.

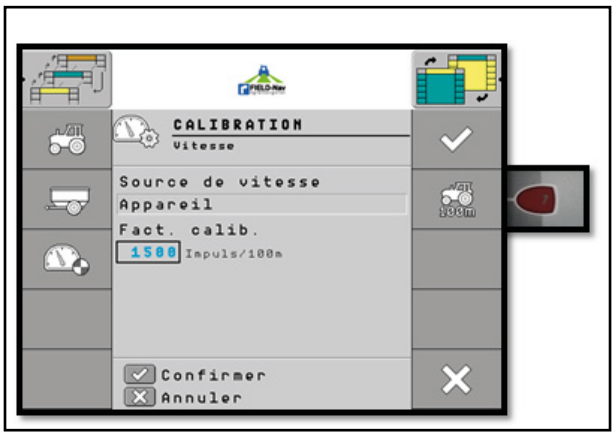


Fig. 103

23 - Press key 8.

Fig. 104

24 - Press key 8 and start driving the 100 metre distance with the tractor.

Fig. 105

25 - Now press key 6 to confirm.

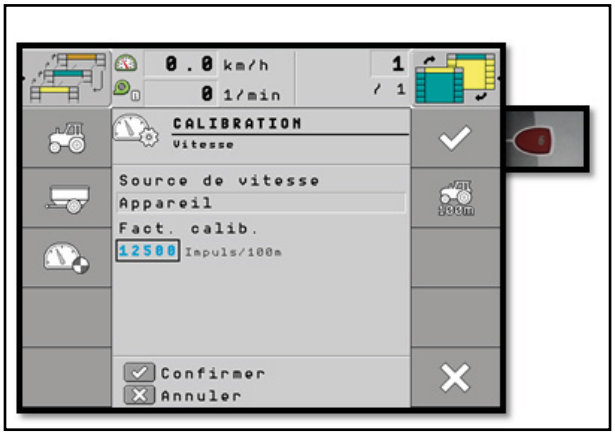


Fig. 106

26 - The monitor will return to this page, press key 10.

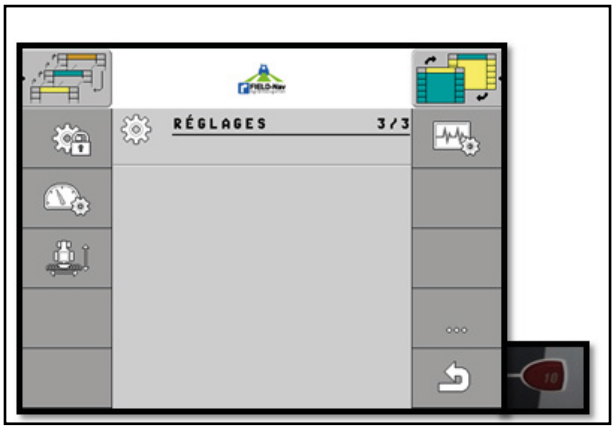


Fig. 107

27 - On the home page, check the speed by comparing with the tractor.

If the difference in speed is too great, repeat the operation.

Fig. 108

7.5. Product database

For ease of use, there is the option of a database for each product used.

The first part concerns the configuration of a product by the user, in which the data must be correctly communicated.

The second part, starting at mark 15, concerns the selection of the hopper (for 2 motors) and product assignment.

1 - When the control unit is started, press key 9 to enter the database.

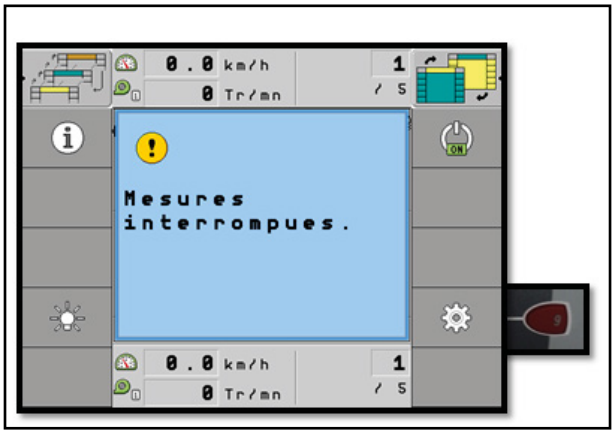


Fig. 109

2 - Press key 9 a second time.

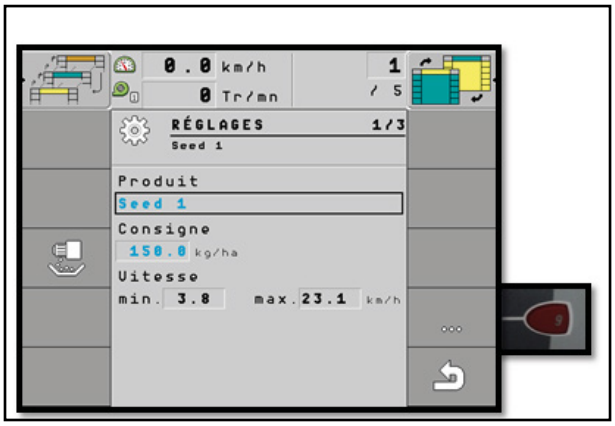


Fig. 110

3 - Press key 7.

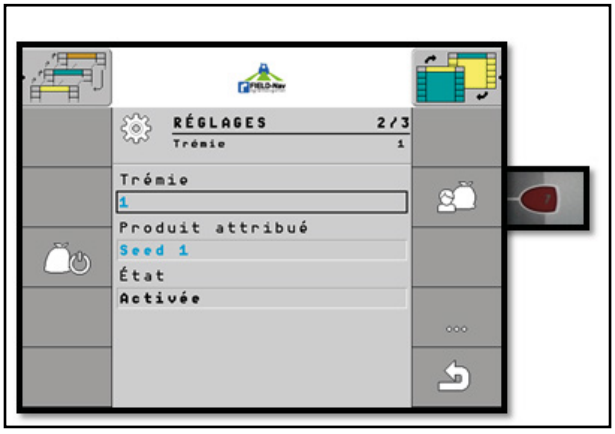


Fig. 111

4 - Use the knob to select “Product” and press on the knob to confirm.

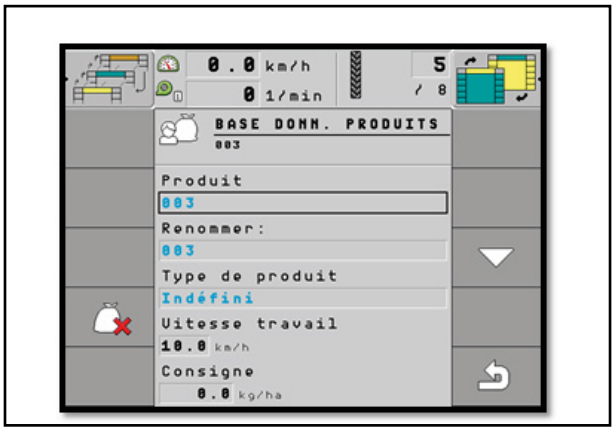


Fig. 112

5 - Use the knob to select the product assigned number 003 for example.

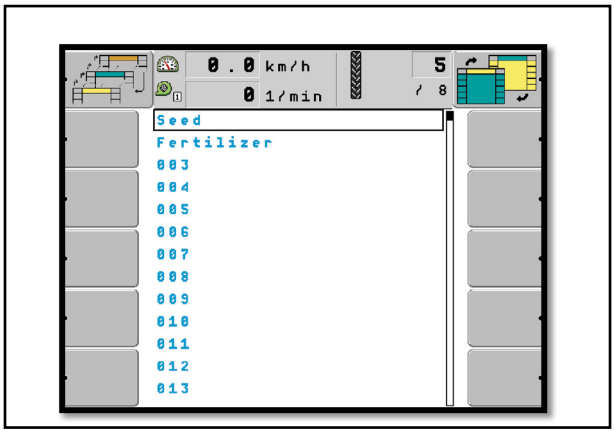


Fig. 113

6 - Select “Rename” with the knob.

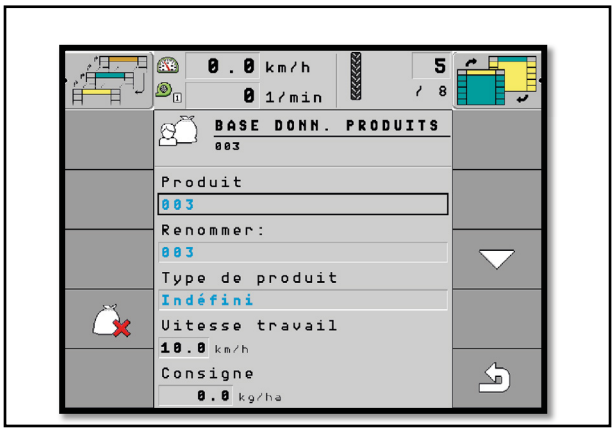


Fig. 114

7 - Select the letters with the knob and validate each letter by pressing the knob, then OK when the correct name is entered.

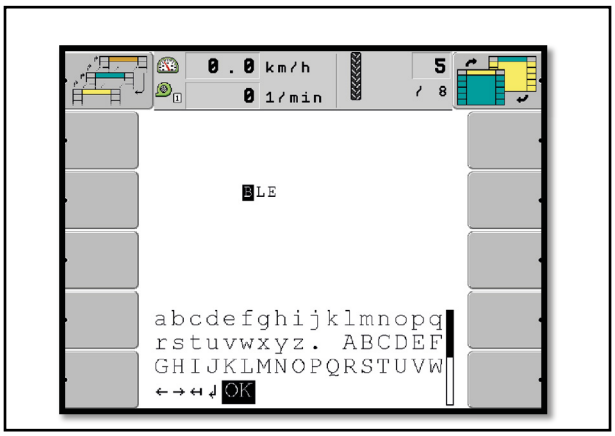


Fig. 115

8 - Select “Product type” to define it.

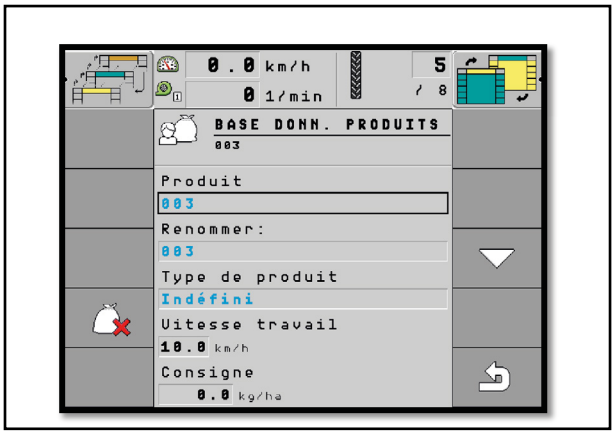


Fig. 116

9 - Use the knob to select the desired product.

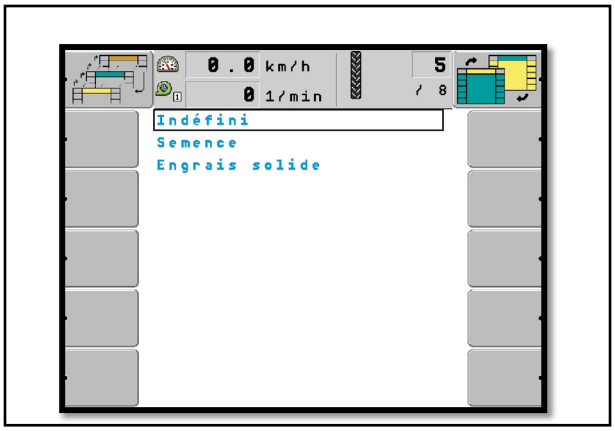


Fig. 117

10 - Press key 8.

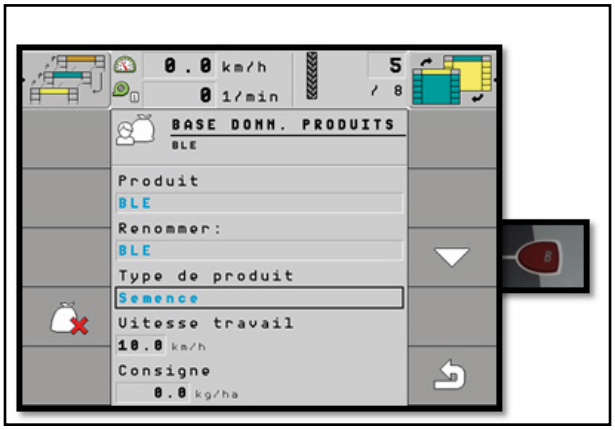


Fig. 118

11 - Check that the transmission ratio is 1/1 via the selection knob.

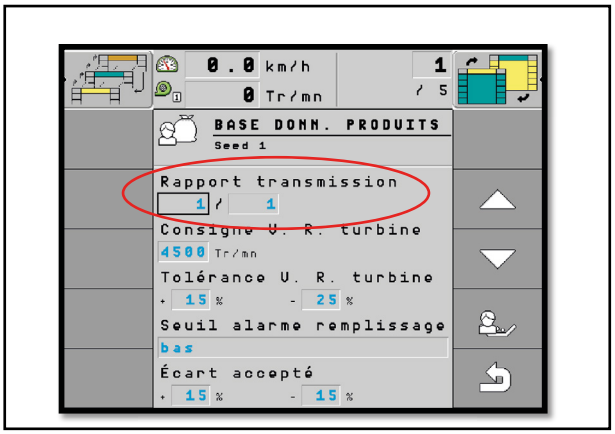


Fig. 119

12 - Use the knob to change the speed setpoint to 4500 rpm.

Fig. 120

13 - Check that the tolerance is set to + or – 25%.

Fig. 121

14 - Press key 10 once the changes have been made.

Fig. 122

15 - Use the knob to select hopper 1 or 2.

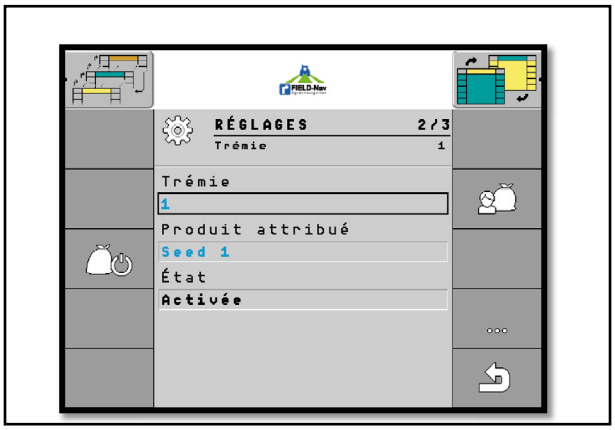


Fig. 123

16 - Once the hopper is selected, press the knob.

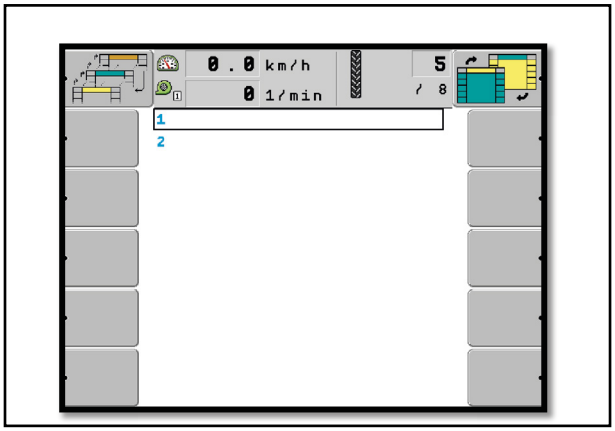


Fig. 124

17 - Use the knob to select the assigned product.

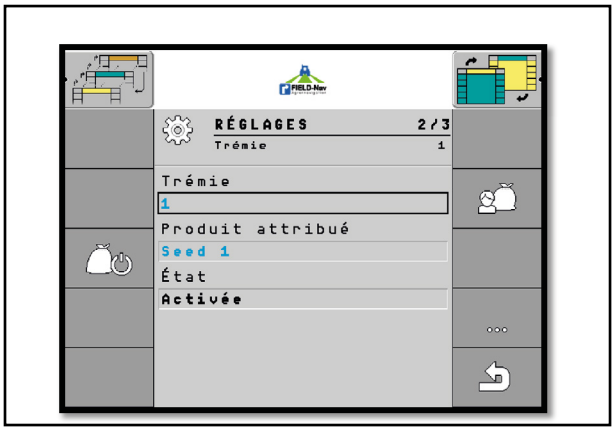


Fig. 125

18 - Select the desired product by pressing the knob (e.g. WHEAT).

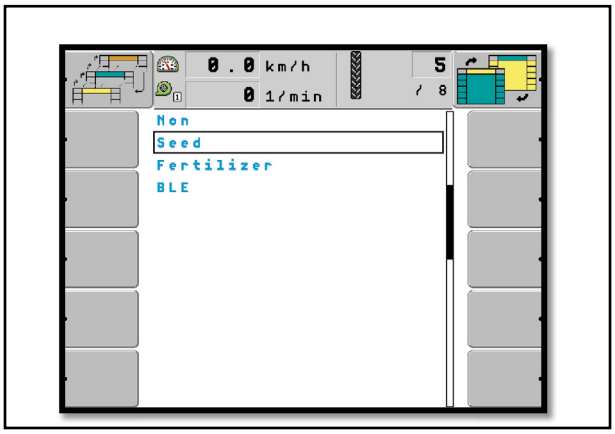


Fig. 126

19 - The configuration has been successfully entered.

Fig. 127

20 - Press key 10 to open the working page.

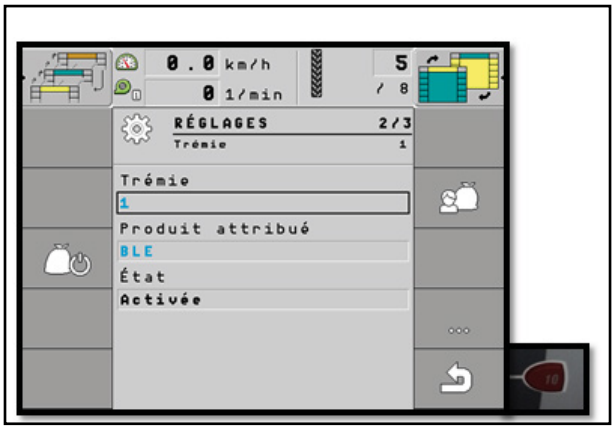


Fig. 128

7.6. 1 and 2 motor seed rate test

1 - Press key 6 on the main screen.

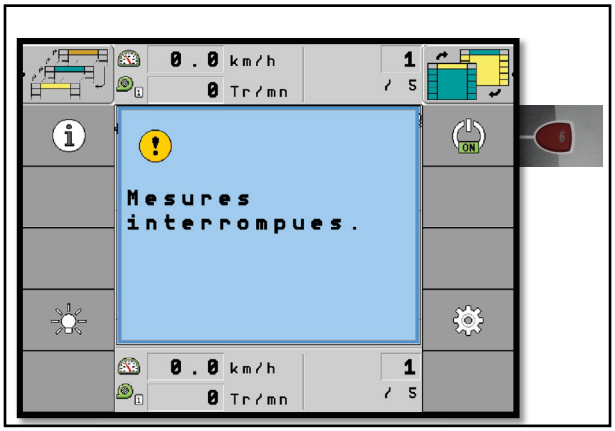


Fig. 129

2 - Press key 9 on the main screen.

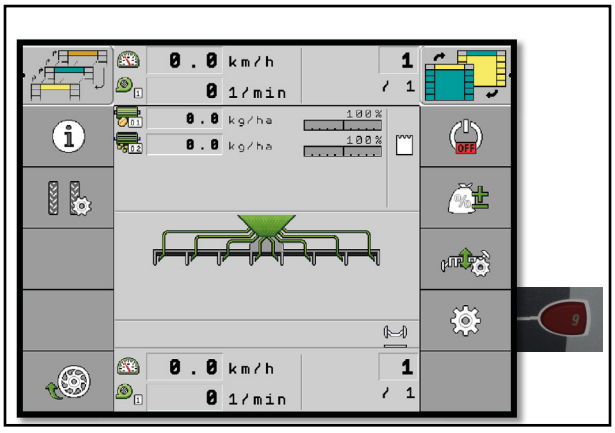


Fig. 130

3 - Press the knob to select the product.

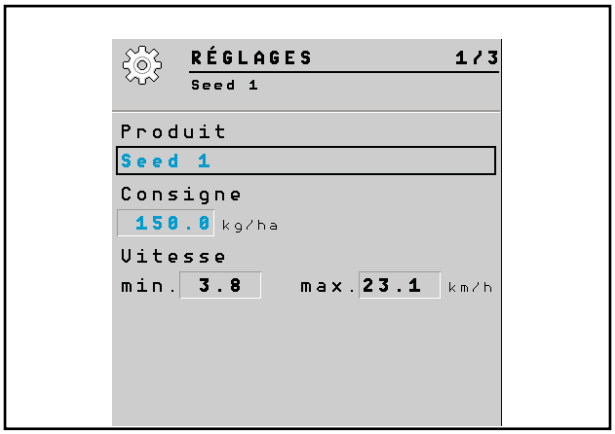


Fig. 131

4 - If there are 2 metering units - Select metering unit 1 or 2 and press the knob.

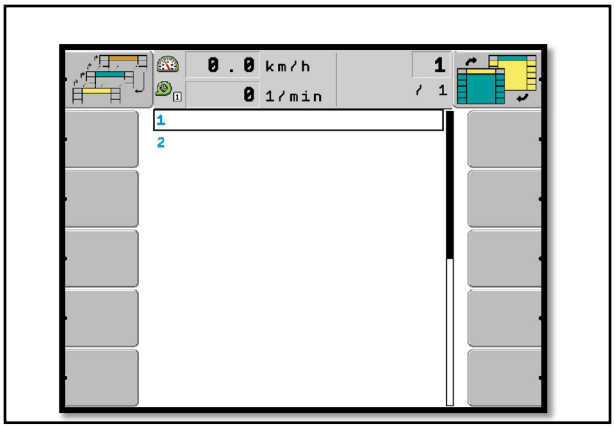


Fig. 132

5 - Turn and press the knob to select the desired target application rate per hectare.

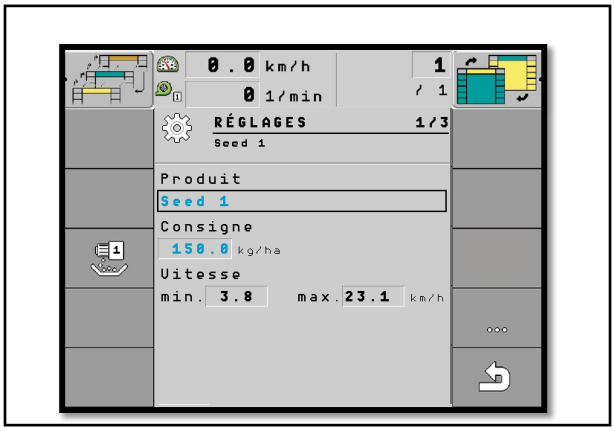


Fig. 133

6 - Enter the quantity by scrolling with the knob then press the knob to validate.

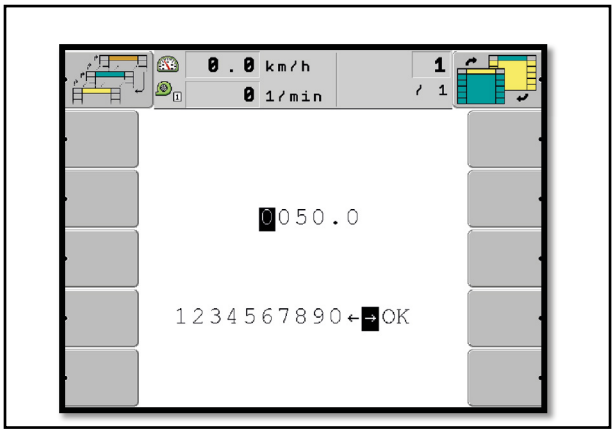


Fig. 134

7 - Press key 3.

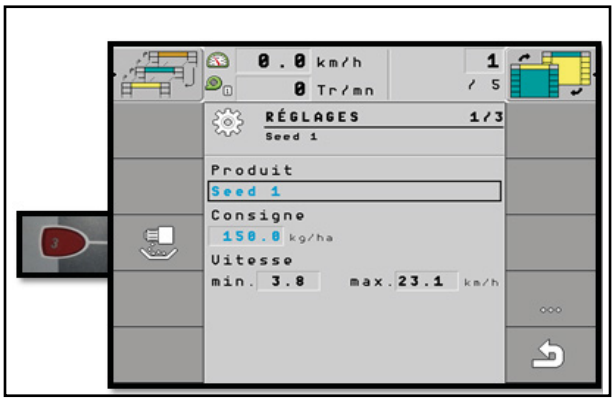


Fig. 135

8 - Select the correct metering unit

Fig. 136

9 - Select Manual mode to use the yellow Calibration button on the seeder

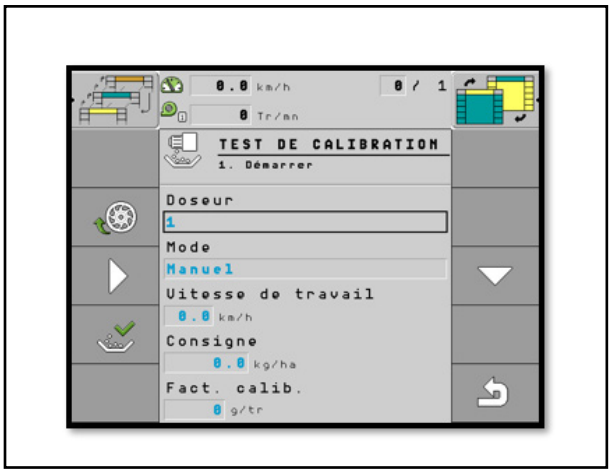


Fig. 137

10 - Select the working speed by pressing the knob.

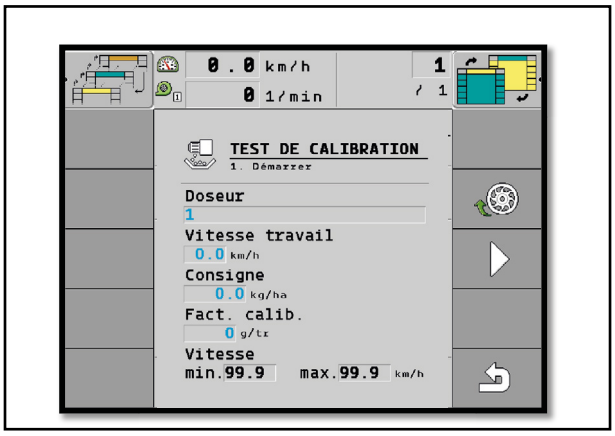


Fig. 138

11 - Choose the speed with the knob then press the knob to validate.

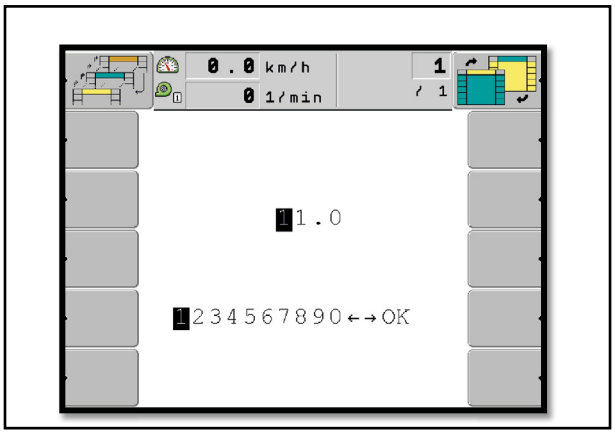


Fig. 139

12 - Select the target rate value if it is 0.

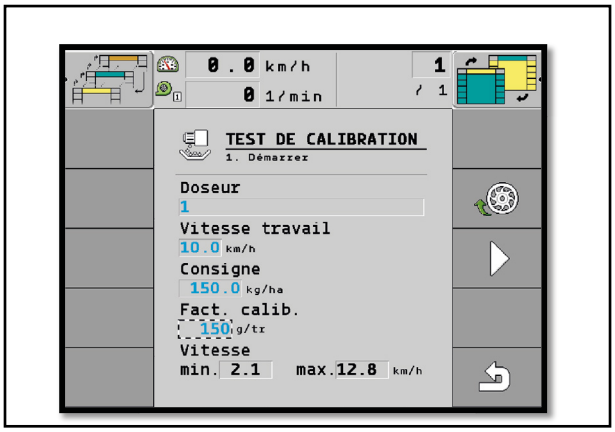


Fig. 140

13 - Set the target rate value to 150 kg/ha with the knob (if it is the first time) then press the knob to validate.

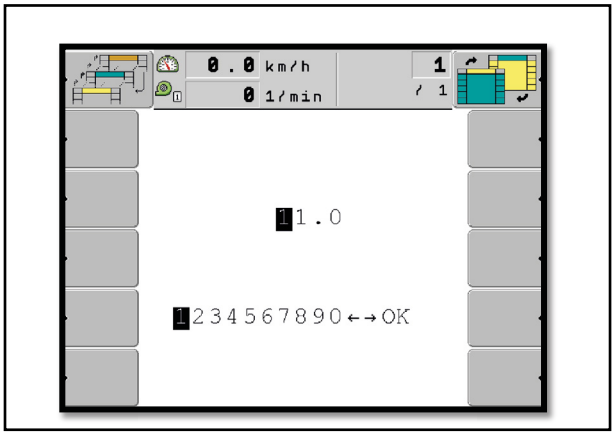


Fig. 141

14 - Select CALIB. FACT (calibration factor) if it is set to 0.

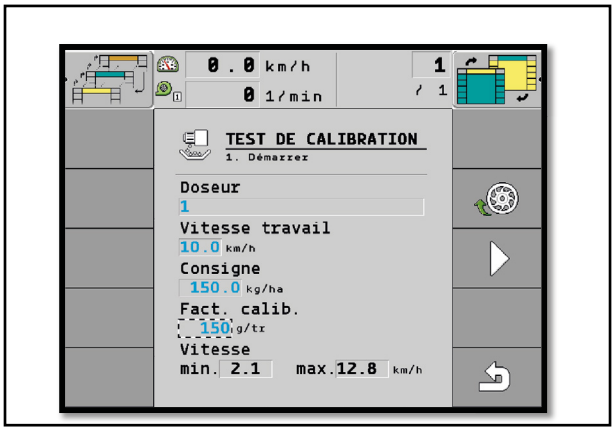


Fig. 142

15 - Set CALIB. FACT to 150 g/rev with the knob then press the knob to validate.

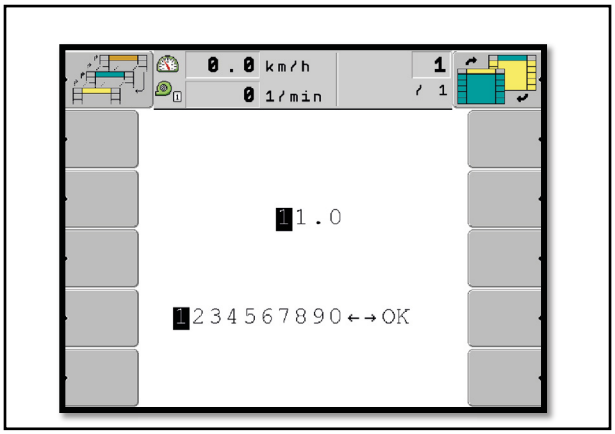


Fig. 143

16 - Press key 8 to fill the flutes (only for the first test of each seed) then press key 9.

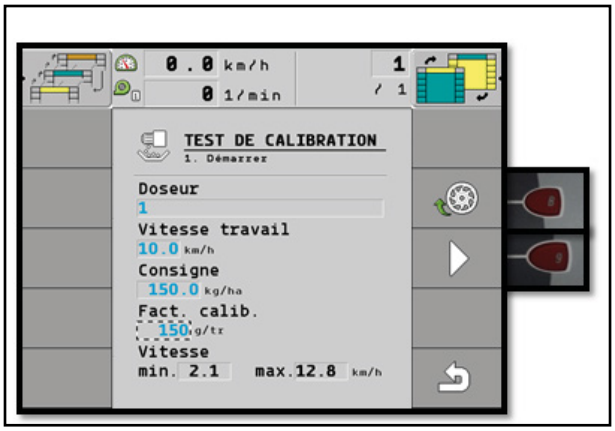


Fig. 144

17 - The monitor will switch to this screen.
The calibration button needs to be pressed.

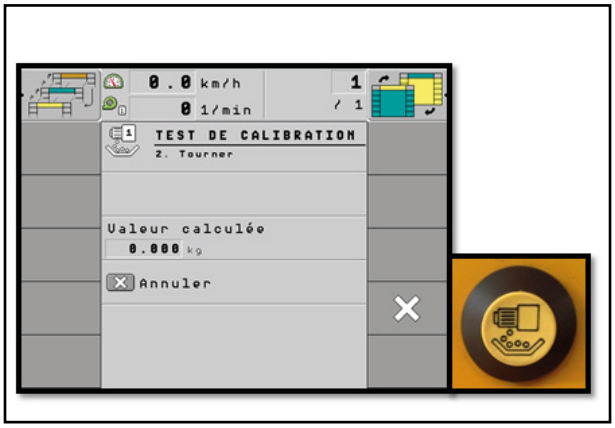


Fig. 145

18 - Press on the knob and enter the weight obtained.

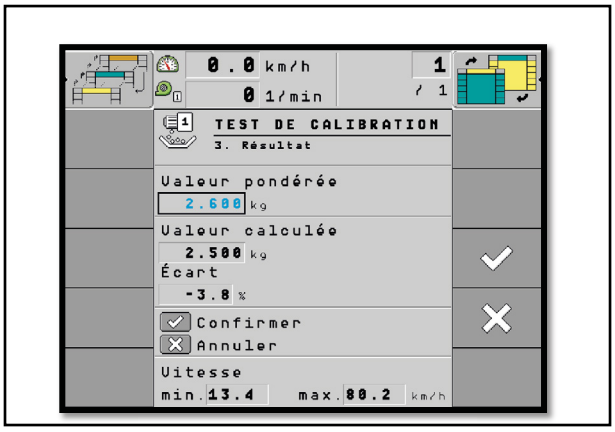


Fig. 146

19 - Enter the weight by scrolling with the knob then press the knob to validate. Repeat the test is the difference is greater than 5%

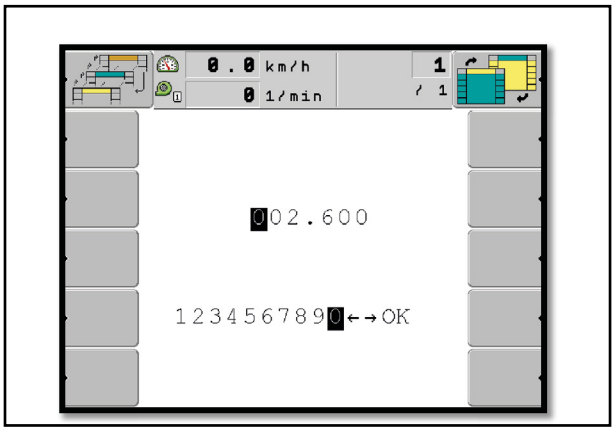


Fig. 147

20 - Then press key 8 to confirm.

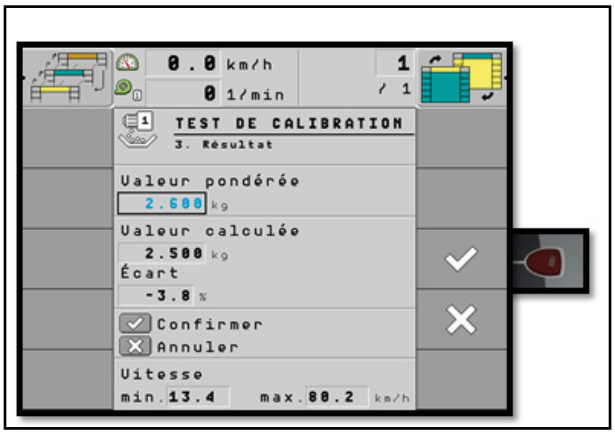


Fig. 148

21 - The calibration factor is changed after each test according to the result obtained. The operation must be repeated as long as the weight obtained is not close to the theoretical weight (error of less than 5 %). The speeds shown are the limits of the distribution system working range.

22 - Repeat the operation for the second motor.

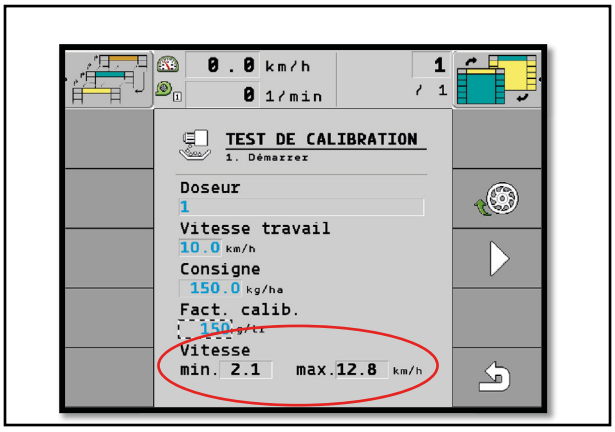


Fig. 149

7.7. Tramlining

1 - Press key 2 on the main screen.

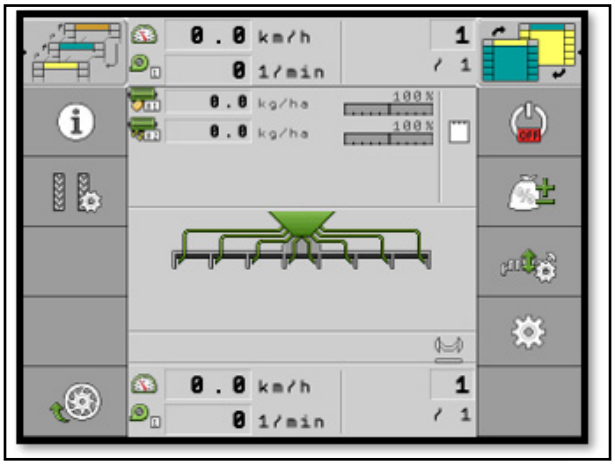


Fig. 150

2 - Press key 4 to programme the tramlines.

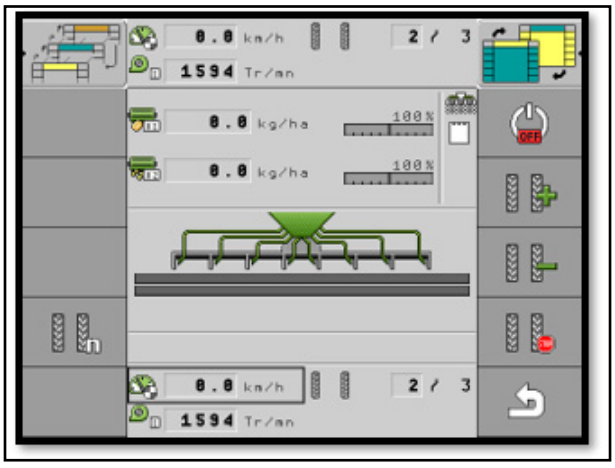


Fig. 151

3 - Press the knob.

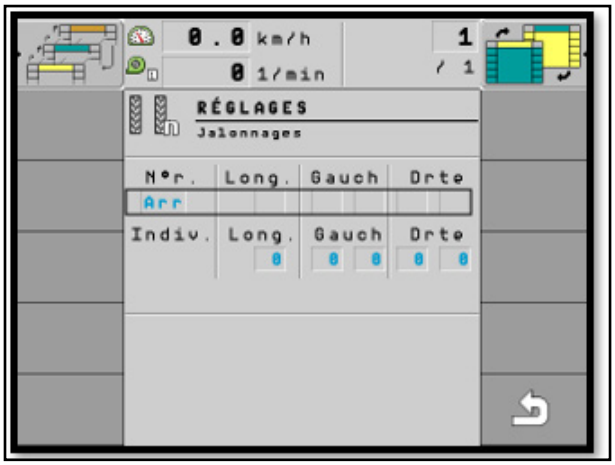


Fig. 152

4 - Use the knob to scroll in this screen and press the knob to validate.

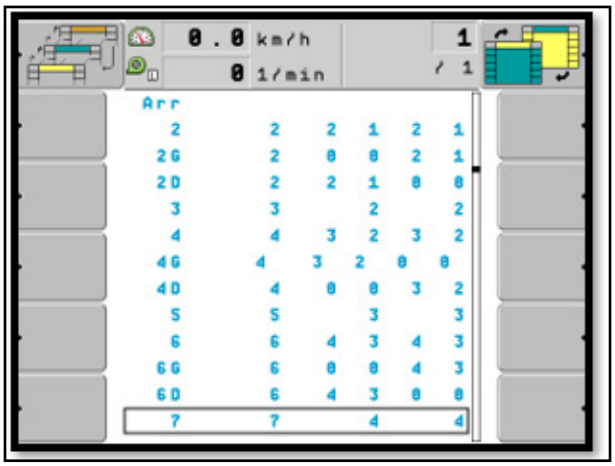


Fig. 153

7.7.1. Procedure

The procedure for choosing the appropriate tramline rhythm is as follows:

- You know the working width of your seeder.
- You know the working width of your sprayer.

1 - Decide whether you want to start working on the left or right field edge.

2 - Perform the following calculation:

Working width of the sprayer divided by working width of the seeder

e.g.: 12 : 3 = 4; 15 : 3 = 5; 20 : 3= 6.67

The following results are possible:

- even numbers (2, 4, 6, etc.),
- odd numbers (3, 5, 7, etc.),
- decimal numbers (1.5, 4.5, 5.33, etc.).

Depending on the result, you have to choose a different tramline rhythm.

7.7.2. Example 1: sprayer pass in the middle of a seeder pass

1 - Repeat steps 1 to 4 page 95.

2 - As a fist example, we will consider a 21 m sprayer and a 3 m seeder, giving (21/3 = 7) 7 passes of the seeder for one pass of the sprayer.

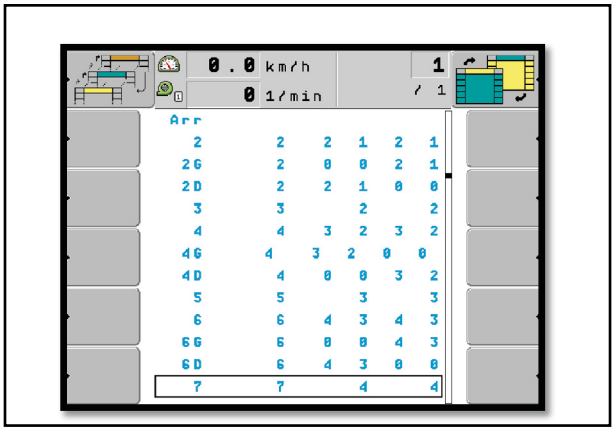


Fig. 154

3 - The left-hand and right-hand valves will be activated at the 4th pass, press key 10.

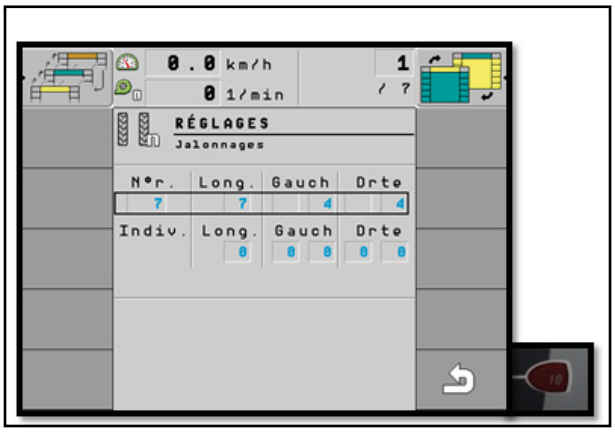


Fig. 155

4 - Press key 10 to return to the main menu.

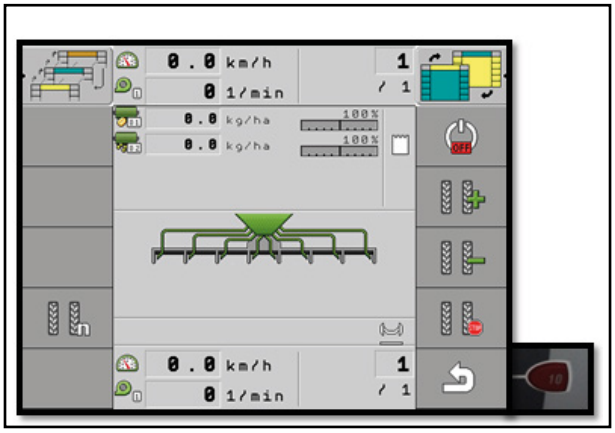


Fig. 156

5 - The tramline valves are actuated at the 4th pass.

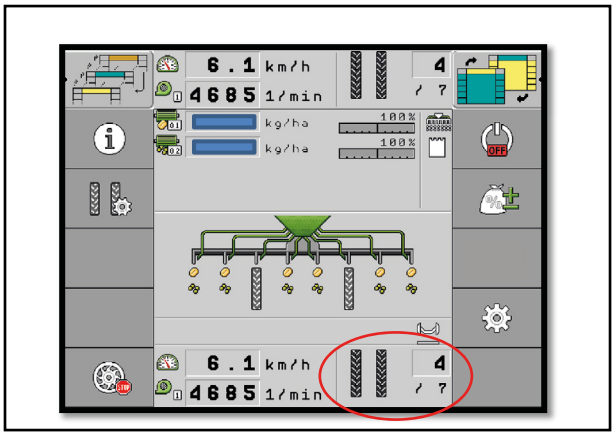


Fig. 157

No.	Description
1	3 m seeder with a 15 m sprayer 6 m seeder with a 30 m sprayer
2	Control table input
3	Tractor position

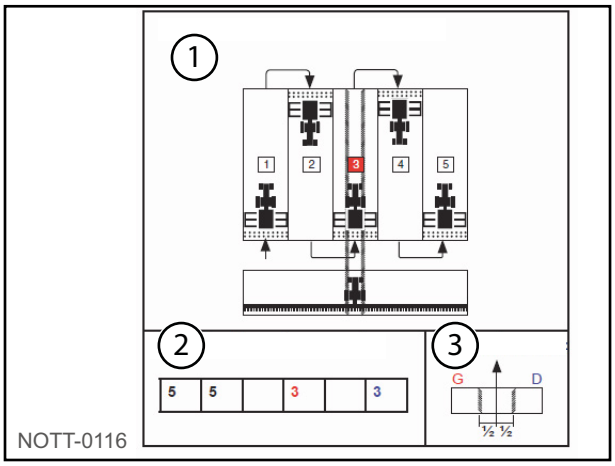


Fig. 158

7.7.3. Example 2: sprayer pass straddling 2 seeder passes

1 - Repeat steps 1 to 4 page 95.

For this example, we consider a 24 m sprayer and a 3 m seeder (24/3 = 8 passes). In this case, only one valve will be activated.

Choose the starting side of the field in order to select the left or right-hand valve.

Simple guide: if starting on the left-hand side of the field, select the left-hand valve.

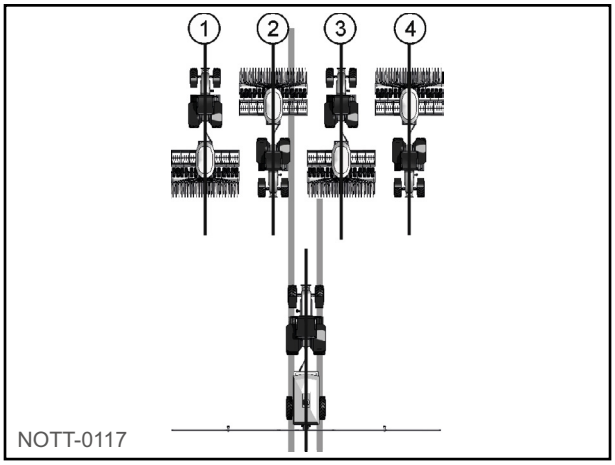


Fig. 159

2 - Scroll to line 8L with the knob and validate.

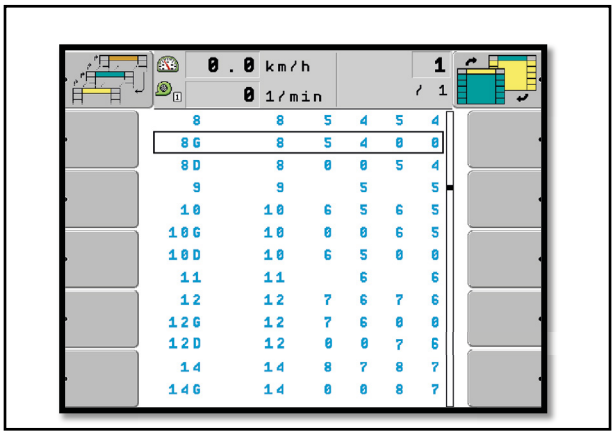


Fig. 160

3 - The left-hand valve will be activated on the 4th pass and the 5th pass. Press key 10.

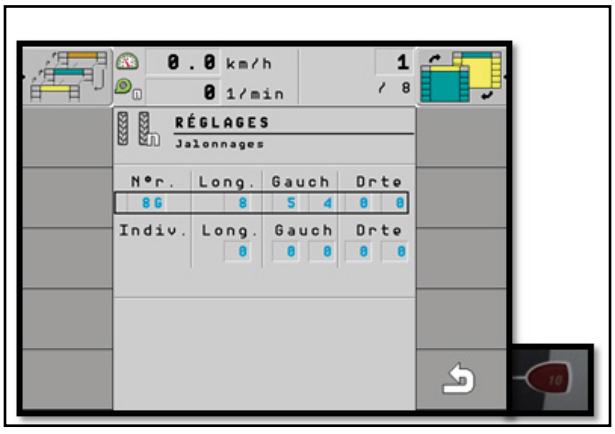


Fig. 161

4 - Press key 10 to return to the main screen.

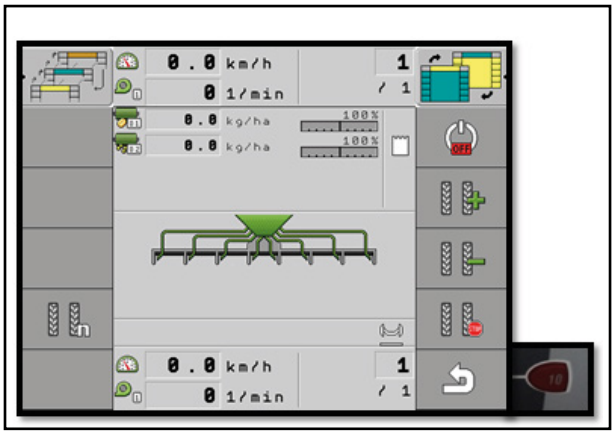


Fig. 162

5 - The left-hand valve will be activated a first time on the 4th pass.

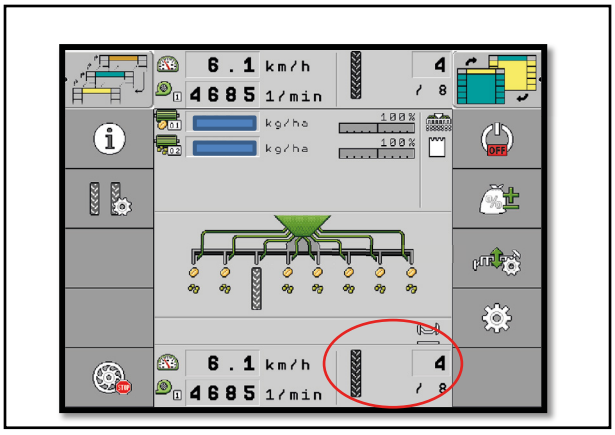


Fig. 163

6 - The left-hand valve will be activated a second time on the 5th pass.

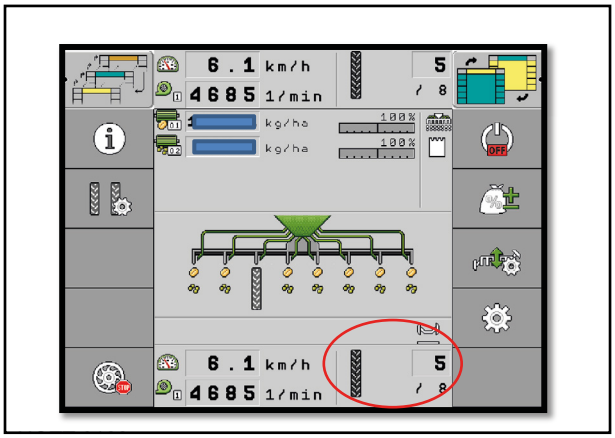


Fig. 164

7.7.4. Operation

Screen key 2 gives access to the tramline parameter settings.

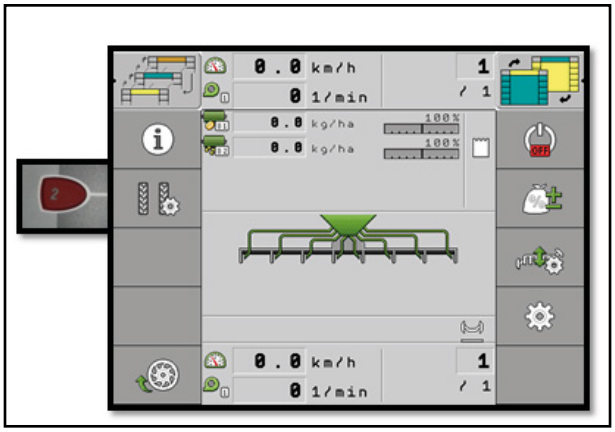


Fig. 165

Key 7 allows you manually to add a pass.

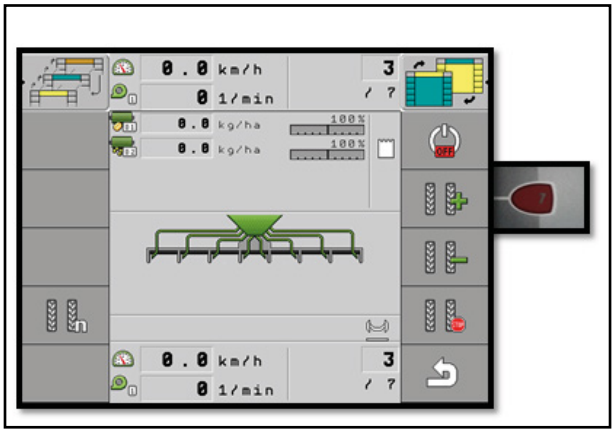


Fig. 166

Key 8 allows you manually to remove a pass.

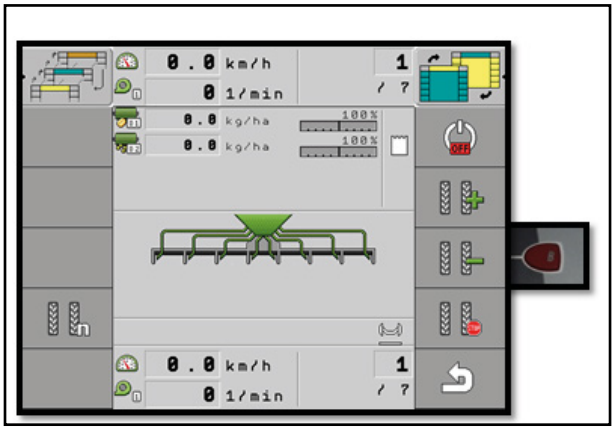


Fig. 167

Key 9 blocks the pass in progress (in the event of several raise/lower operations during the same pass).

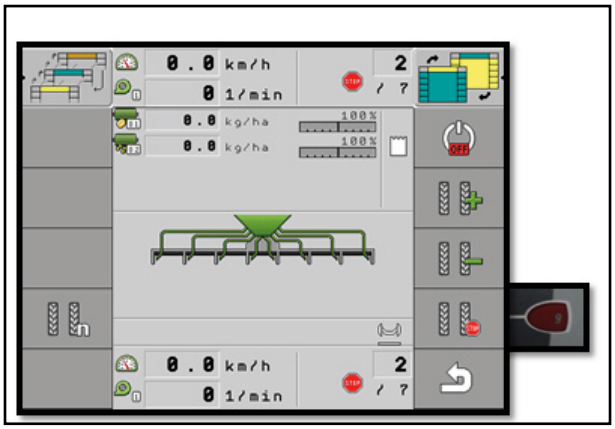


Fig. 168

7.8. Manual adjustment of application rate

Screen key 7 gives access to the temporary application rate adjustment settings.

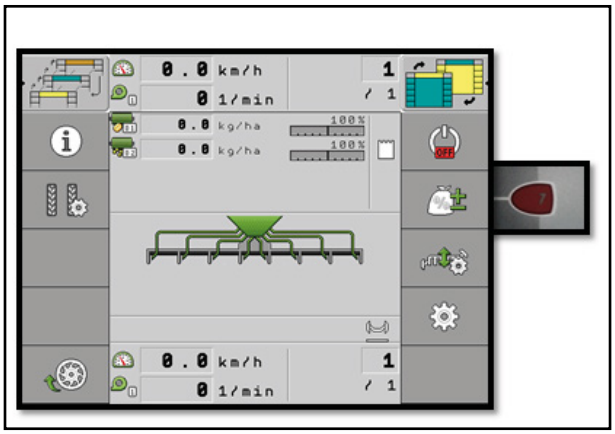


Fig. 169

Key 7 and/or 8 temporarily increase(s) the application rate by 10 % with each push.

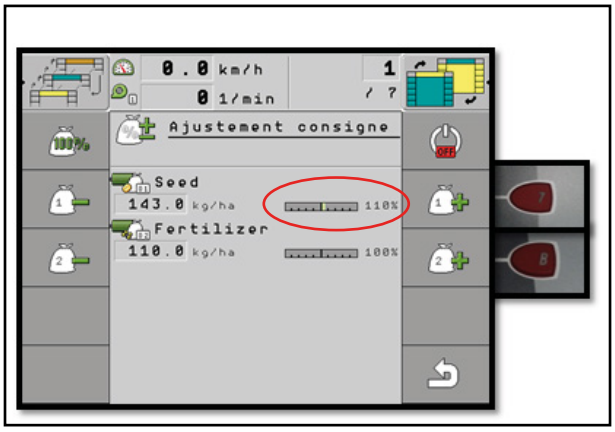


Fig. 170

Key 2 and/or 3 temporarily reduce(s) the application rate by 10 % with each push.

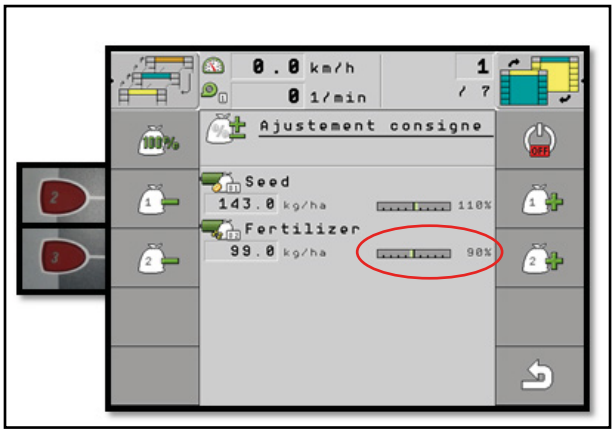


Fig. 171

Key 1 restores the application rate top its normal value.

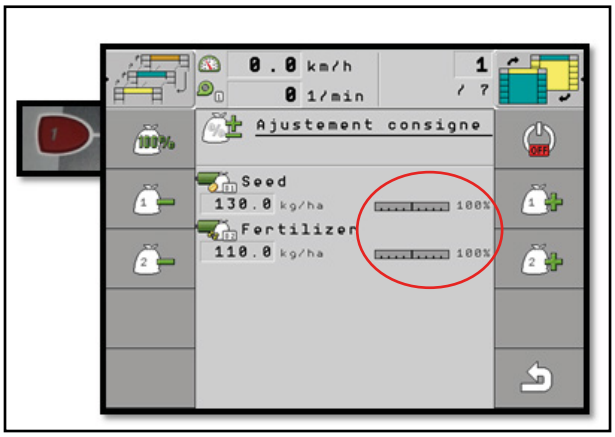


Fig. 172

7.9. Sown area information

1 - Each time the unit is started, this screen appears for activating seed sowing. You must press key 6.

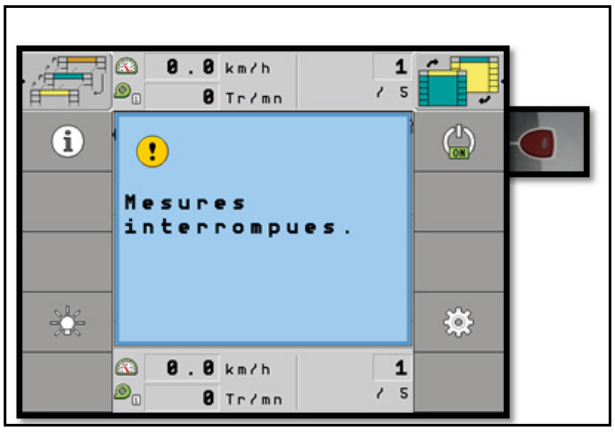


Fig. 173

2 - The seeder is only activated after completing this initial step.

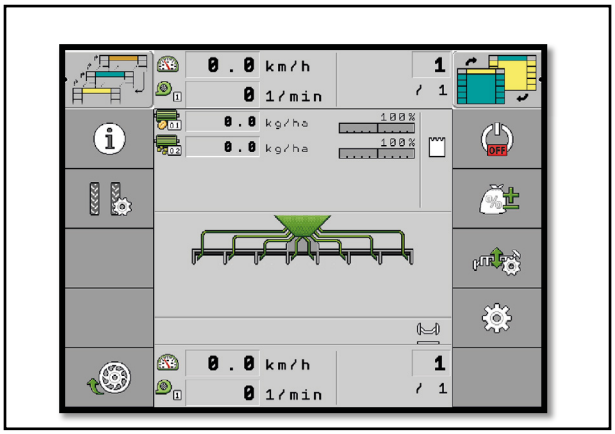


Fig. 174

3 - Key 1 gives access to an information screen.

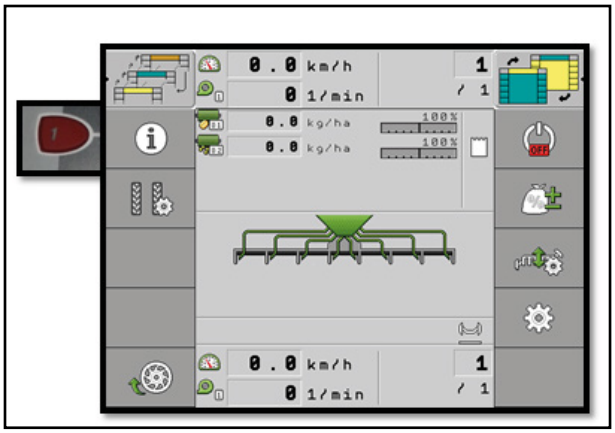


Fig. 175

4 - This screen shows the area sown since the last reset. This screen is reset to zero by pressing key 7.

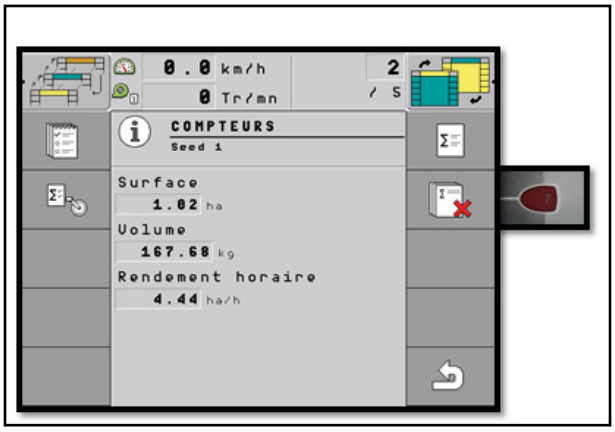


Fig. 176

5 - The area has been reset to 0. Press key 6 to see the total surface area.

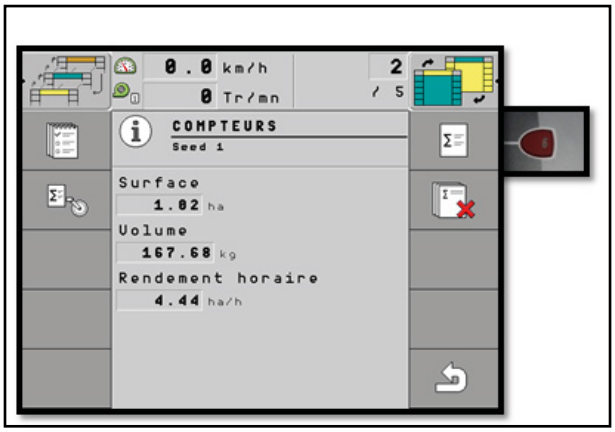


Fig. 177

6 - This screen displays the totals according to different criteria and cannot be reset to zero.

Fig. 178

7.10. Bout marker (solenoid valve option)

1 - To activate bout marker mode, the bout marker option should first have been selected in the factory configuration. Press key 6.

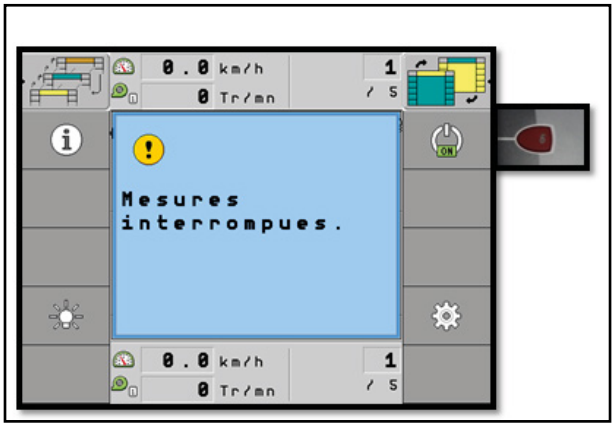


Fig. 179

2 - Press key 8.

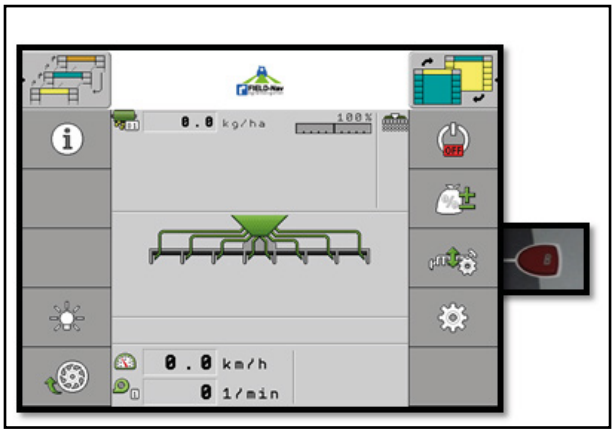


Fig. 180

3 - Press key 6.

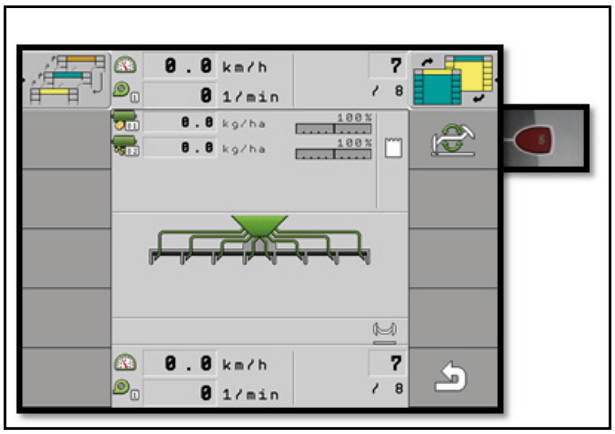


Fig. 181

4 - Press key 8 to activate the bout markers.

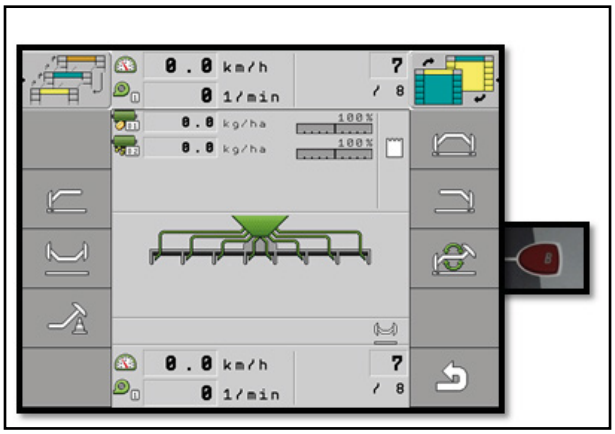


Fig. 182

5 - The bout marker are activated.

Key	Function
2	Left-hand bout marker activated, no left-to-right changeover at headlands
3	Deactivate bout markers
4	Obstacle mode, only the bout marker is controlled by the user
6	Left and right bout markers activated simultaneously, no changeover
7	Right-hand bout marker activated, no right-to-left changeover at headlands
8	Activate bout markers
9	Bout marker changeover control, only when machine lifted

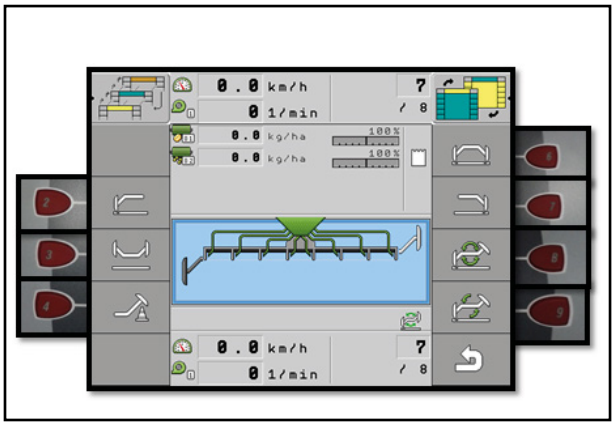


Fig. 183

7.11. Light (standard)

1 - To activate light mode, first select the light option in the factory configuration, then press key 9.

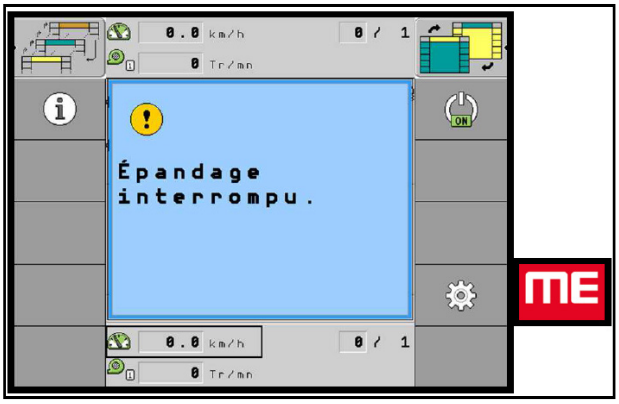


Fig. 184

2 - Press key 9 (twice) to access the settings menu page 3/3.

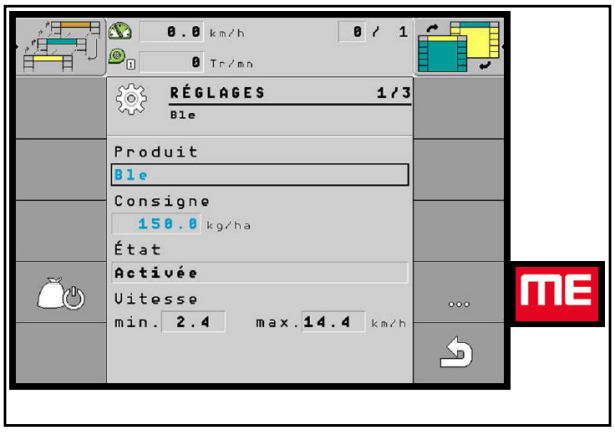


Fig. 185

3 - Press key 8 to access the lights menu

Fig. 186

4 - Press key 6 to light the working lights

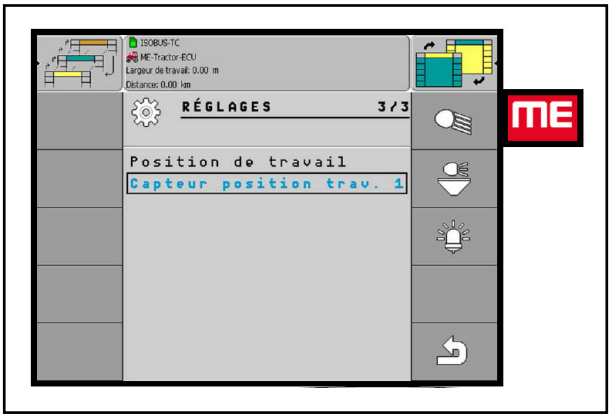


Fig. 187

7.12. Multiconfig mode

1 - Press key 9 (picture of cog)

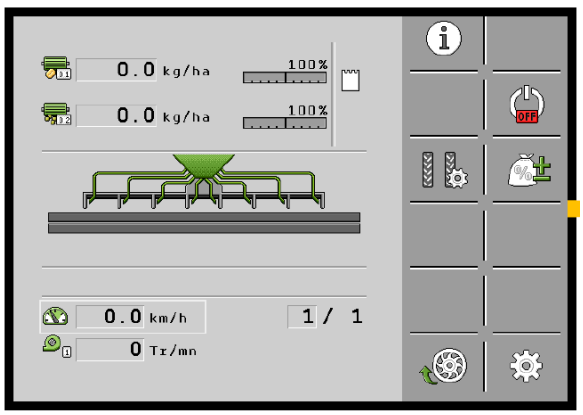


Fig. 188

2 - Press key 9 (twice) (picture of 3-point hitch) to access the settings menu page 3/3

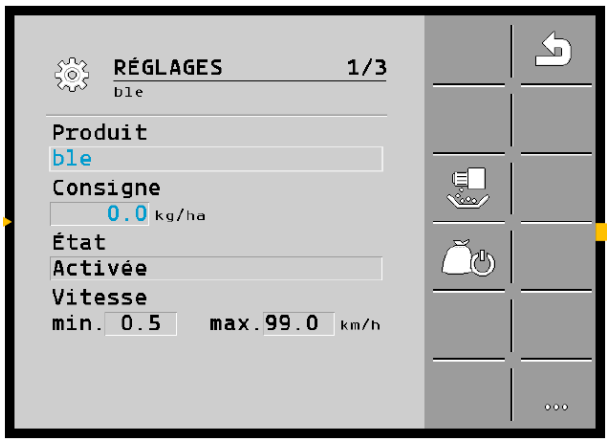


Fig. 189

3 - Press key 9 (picture of 3-point hitch) to access the settings: connected implement menu

Fig. 190

4 - Press key 9 (picture of 3-point hitch) to access the next page

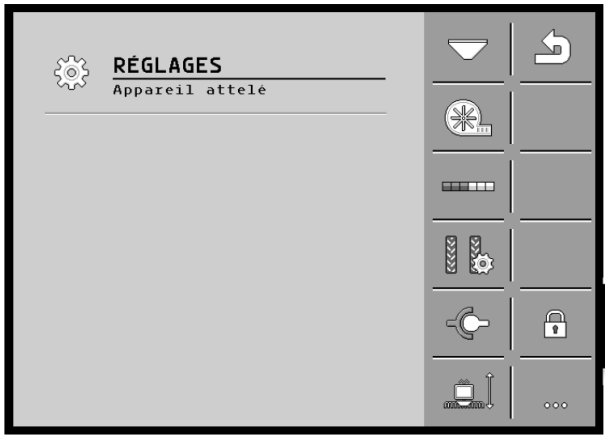


Fig. 191

5 - Press key 3 (picture of seeder) to access the config menu

Fig. 192

6 - Select the set machine config and validate

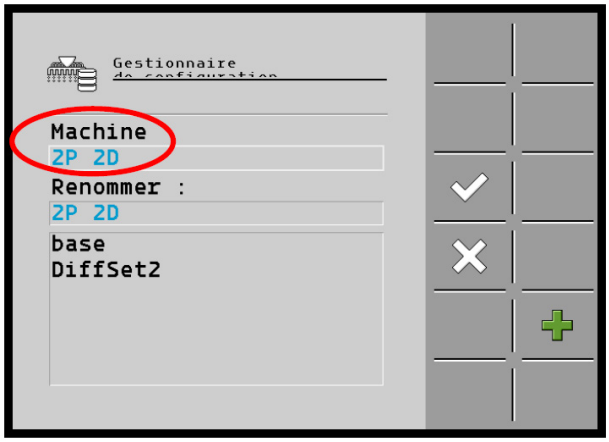


Fig. 193

7 - Select the required configuration

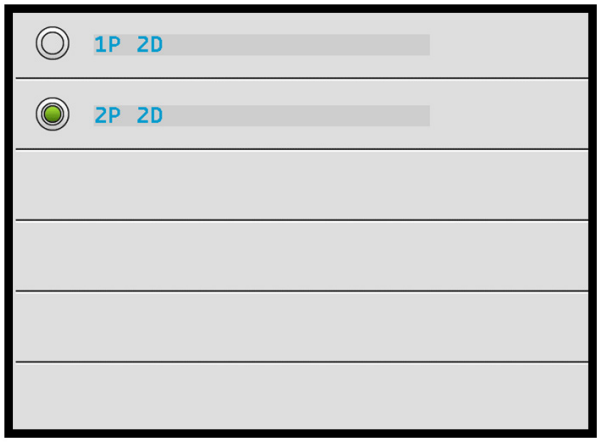


Fig. 194

8 - Validate the configuration and restart the terminal

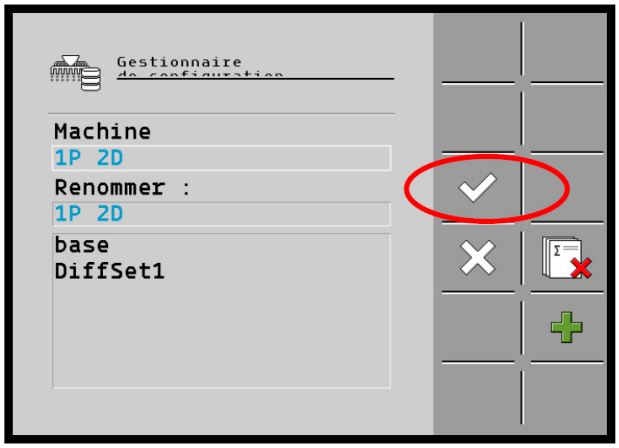


Fig. 195

7.13. Diagnostic mode

1 - To enter diagnostic mode, press key 9 on the main screen.

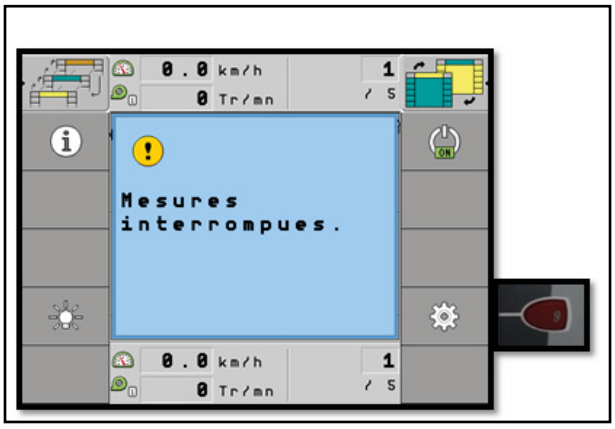


Fig. 196

2 - Press key 9 (a 2nd time).

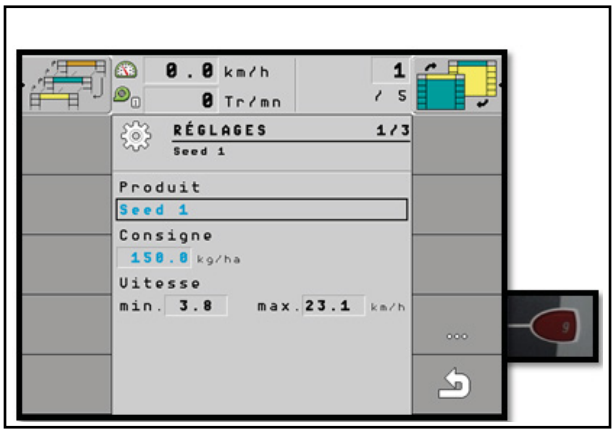


Fig. 197

3 - Press key 9 (a 3rd time).

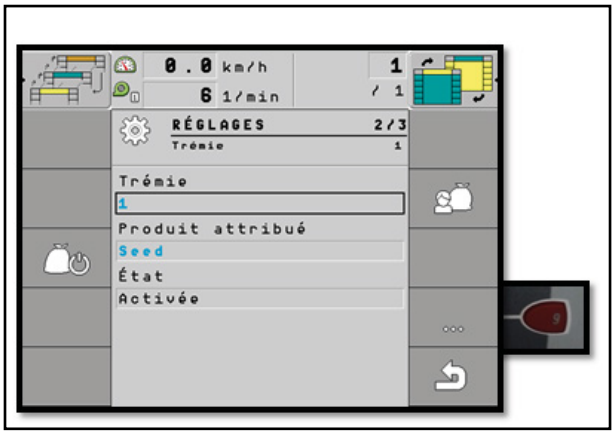


Fig. 198

4 - Press key 6 to enter diagnostic mode.

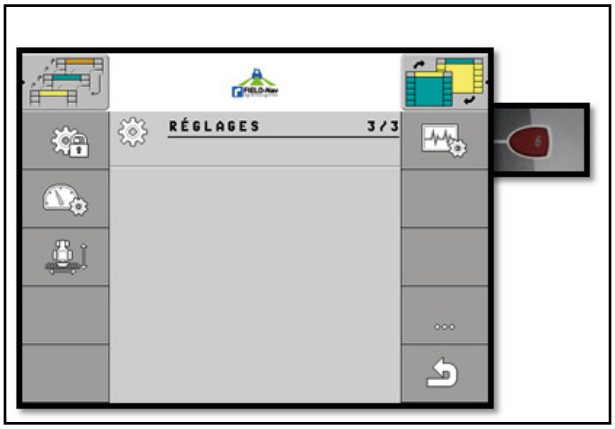


Fig. 199

5 - Press key 9 to navigate through the pages.

Page 0

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA41	Motor 1
MA15	Motor 1

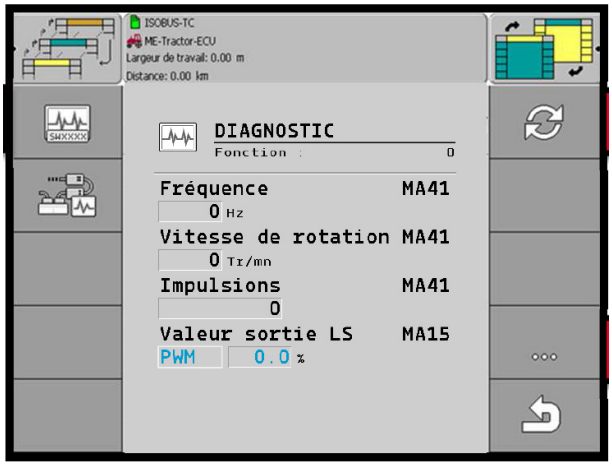


Fig. 200

NOTE

To test the motor, set the LS output value to 50%. The motor should rotate at 50% of its capacity, i.e. approximately 1125 rpm.

Page 1

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA35	Motor 2
MA28	Motor 2

NOTE

To test the motor, set the LS output value to 50%. The motor should rotate at 50% of its capacity, i.e. approximately 1125 rpm.

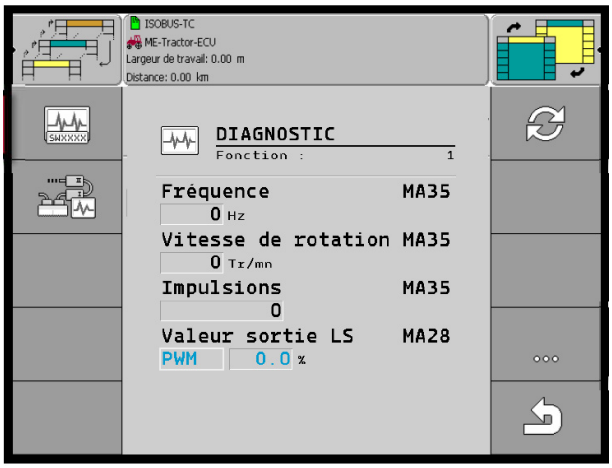


Fig. 201

Page 12

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA38	Turbine

Fig. 202

Page 14

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA40	Distribution sensor 1

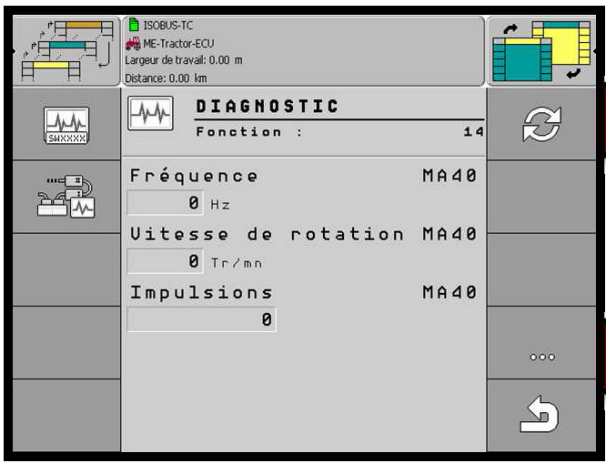


Fig. 203

Page 15

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA31	Distribution sensor 2

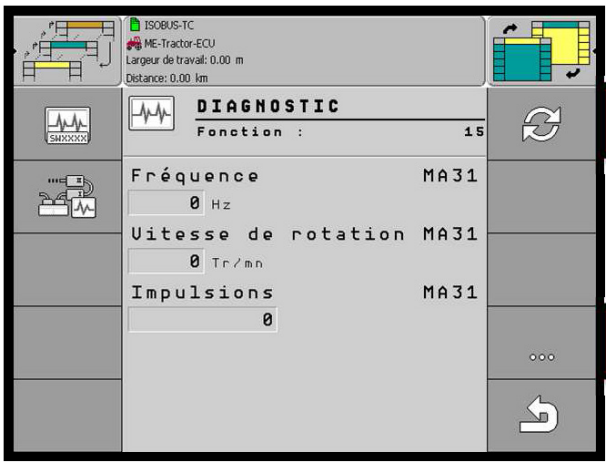


Fig. 204

Page 16

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA30	Radar (speed sensor)

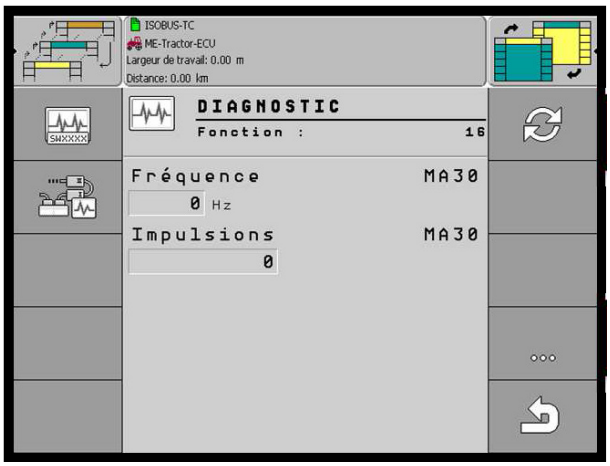


Fig. 205

Page 17

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA22/23	Tramlining valve

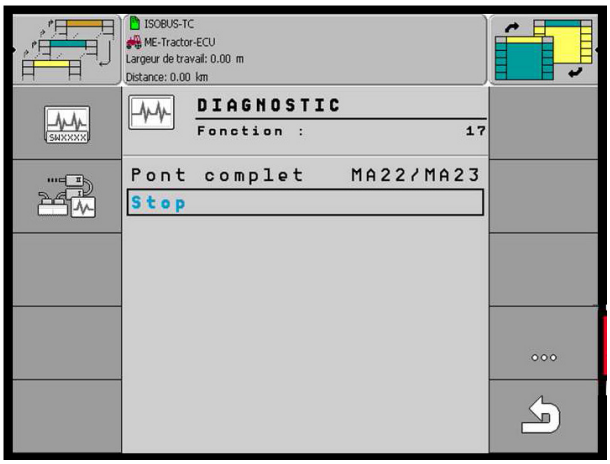


Fig. 206

Page 18

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA20/21	Tramlining valve

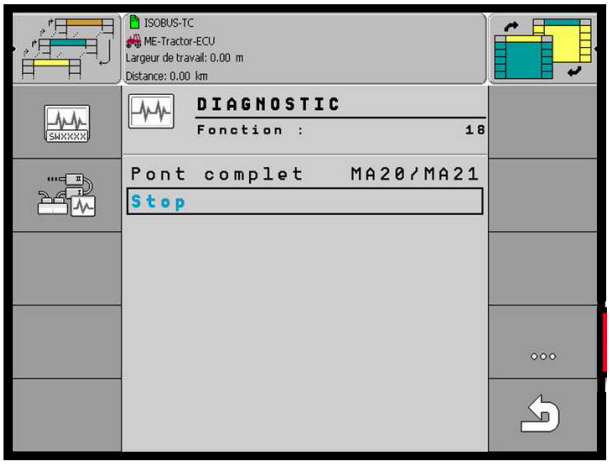


Fig. 207

Page 31

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA39	Work position sensor

Fig. 208

Page 47

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA34	Calibration button

Fig. 209

Page 60

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA27	Working light

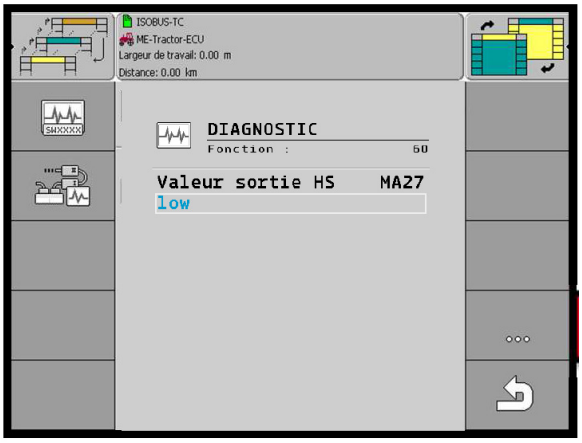


Fig. 210

Page 61

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA24	Hopper light

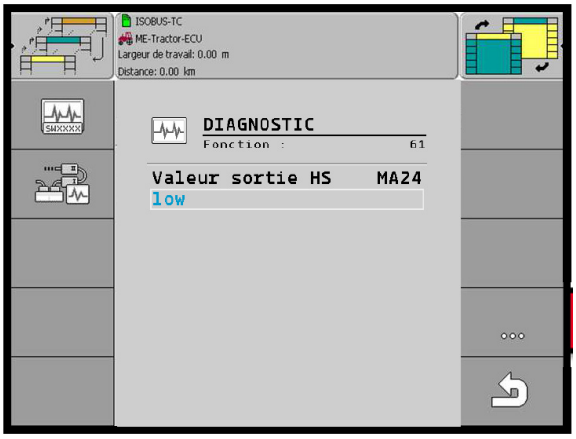


Fig. 211

Page 62

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA26	Beacon

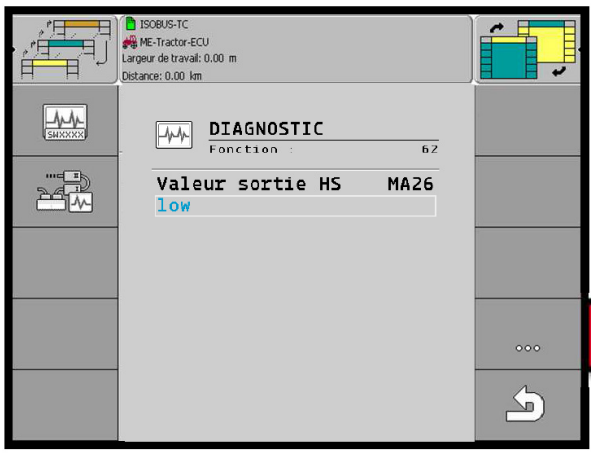


Fig. 212

Page 93

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA3	Hopper low level sensor 1

Fig. 213

Page 94

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA37	Hopper high level sensor 1

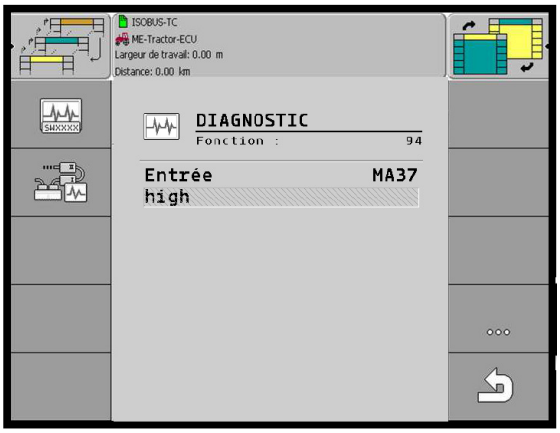


Fig. 214

Page 95

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA2	Hopper low level sensor 2

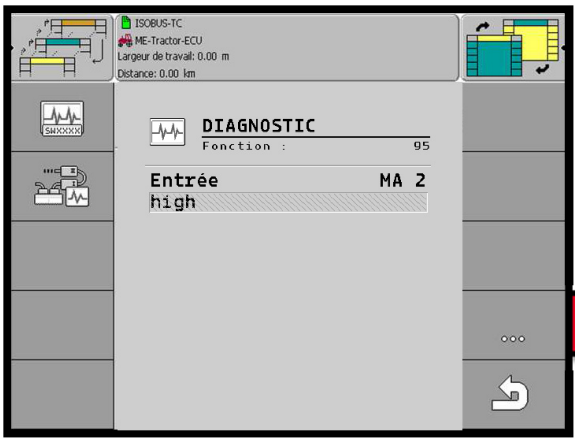


Fig. 215

Page 96

Key	Function
1	Version number
6	Reset to zero
9	Next page

No.	Description
MA36	Hopper high level sensor 2

Fig. 216

Diagnostic mode serves to check whether the commands issued by the monitor are correctly received by the different components of the machine and whether the information from the sensors is correctly transmitted to the monitor.

7.14. Installation mode - junction box table

7.14.1. Single motor

Junction box - Connectors

Function	Connector	
		#
12VL	12VL	1
-	S2	2
Hopper low level sensor 1	S4	3
-	S7	4
Left pre-emergence marker	A1	5
Right pre-emergence marker	A2/S5	6
Left bout marker	A3	7
Right bout marker	A4	8
-	A5	9
-	A6	10
-	A7	11
-	A8	12
Working light	A9/S12	13
Closing flap	S8	14
Motor 1 power supply	A20	15
Half width sensor on	S9	16
Half width sensor off	S10	17
-	S11	18
Filling auger	A10	19
Hopper light	S13	20
Unfold seeder	A12	21
Beacon	A13	22
Fold seeder	A14/S18	23
Right tramline	A15/S19	24
Right tramline	A16	25
Left tramline	A17	26
Left tramline	A18/S23	27
-	A19	28
12VL	12VL	29
Radar/DGPS	S14	30
-	S15	31
12VE	12VE	32
0VE	GNDE	33
Calibration button	S16	34
Motor 2 encoder	S17	35

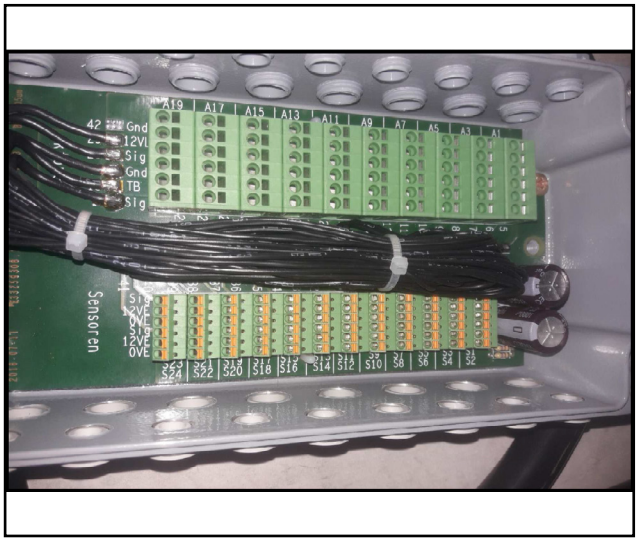


Fig. 217

Function	Connector	
		#
-	S1	36
Hopper sensor 1 High	S3	37
Turbine sensor	S20	38
Work position sensor	S21	39
Distribution sensor 1	S22	40
Motor sensor 1	S24	41
0VL	GNDL	42

Terminal block 3.2

ACTIONS

GNDL = neutral

12 VL

A19	A17	A15	A13	A11	A9	A7	A5	A3	A1
	Beacon	Hopper light	Left tramline valve + (SIG)	Right tramline valve + (SIG)					

GNDL = neutral

12 VL

A20	A18	A16	A14	A12	A10	A8	A6	A4	A2
Motor 1 (12VL + SIG) + S24	Working light (GNDL and SIG)		Left tramline valve - (SIG)	Right tramline valve - (SIG)					

SENSORS

S23	S21	S19	S17	S15	S13	S11	S9	S7	S5	S3	S1
	Work position sensor									High Hopper Level 1	

12 VE

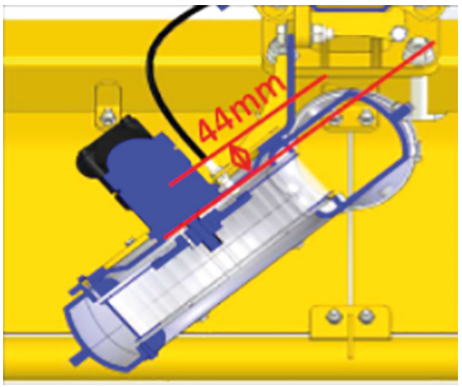
GNDE = neutral

S24	S22	S20	S18	S16	S14	S12	S10	S8	S6	S4	S2
Motor pulse sensor 1	Distribution sensor 1	Turbine speed sensor		Calibration switch	Radar/DGPS					Low Hopper Level 1	

12 VE

GNDE = neutral

1 - Turbine sensor attachment



NOTT-0162

Fig. 218

2 - Motor harness wiring

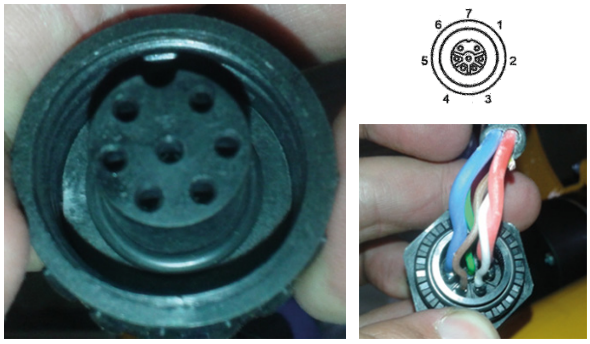
1 and 2 = + (blue)

3 = 0 VE (brown)

4 = 12 VE (white)

5 and 6 = - (red)

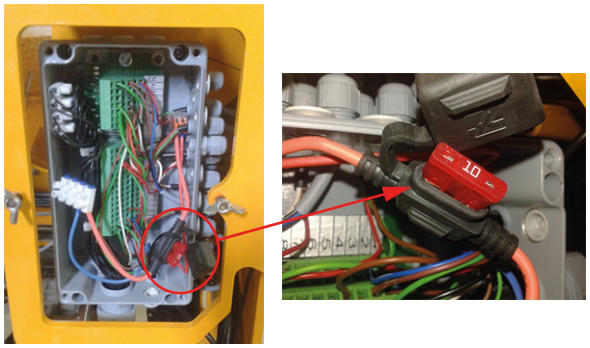
7 = Signal (green)



NOTT-0163

Fig. 219

3 - Check that the 10 A fuse is compliant. This fuse serves to protect the motor.



NOTT-0165

Fig. 220

4 - Fitting of collars to identify the sensors

Colours of sensor wire collars	Description
Yellow	Work position sensor
Blue / Red	Distribution sensor 1
Yellow / Green	Hopper high level sensor - Hopper 1
Yellow / Red	Hopper low level sensor - Hopper 1
Red	Turbine speed sensor
Green	Calibration button
Blue	Radar or DGPS
Red / Green	Motor 1
White	Working lights

5 - Take care when connecting the motor wires, they must always be connected in this order:

Colour	Terminal
Red	12VL
Blue	Sig
Green	Sig
Brown	12VE
White	0VE

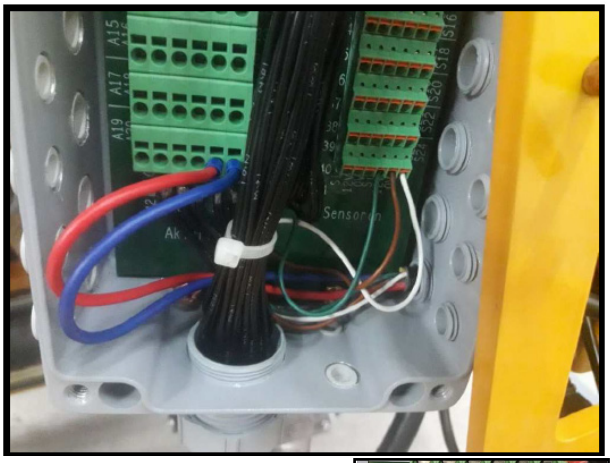


Fig. 221

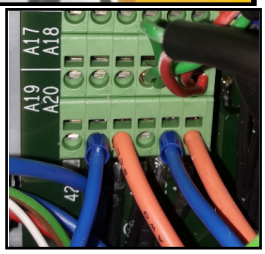


Fig. 222

6 - The hopper sensors are connected to S1 and S2

Colour			Terminal
Black	or	Green	Sig
Brown			12VE
Blue	or	Red	0VE

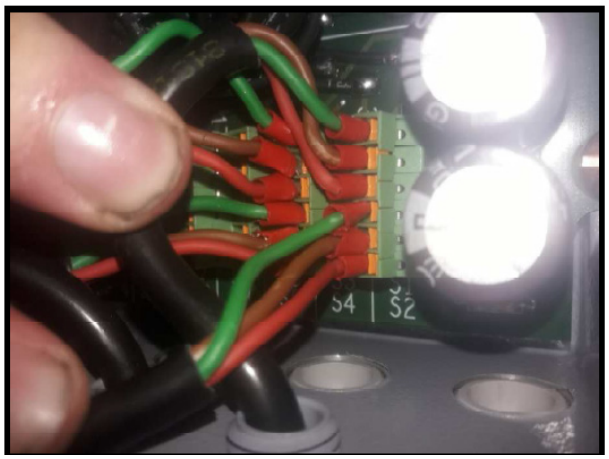


Fig. 223

7.14.2. Dual motor

ISOBUS wire connection table

Junction box - Connectors

Function	Connector	
		#
12VL	12VL	1
Hopper low level sensor 2	S2	2
Hopper low level sensor 1	S4	3
-	S7	4
Left pre-emergence marker	A1	5
Right pre-emergence marker	A2/S5	6
Left bout marker	A3	7
Right bout marker	A4	8
-	A5	9
-	A6	10
-	A7	11
-	A8	12
Working light	A9/S12	13
Closing flap	S8	14
Motor 1 power supply	A20	15
Half width sensor on	S9	16
Half width sensor off	S10	17
-	S11	18
Filling auger	A10	19
Hopper light	S13	20
Unfold seeder	A12	21
Beacon	A13	22
Fold seeder	A14/S18	23
Right tramline	A15/S19	24
Right tramline	A16	25
Left tramline	A17	26
Left tramline	A18/S23	27
Motor 2 (-)	A19	28
12VL	12VL	29
Radar/DGPS	S14	30
Distribution sensor 2	S15	31
12VE	12VE	32
0VE	GNDE	33
Calibration button	S16	34
Motor 2 encoder	S17	35

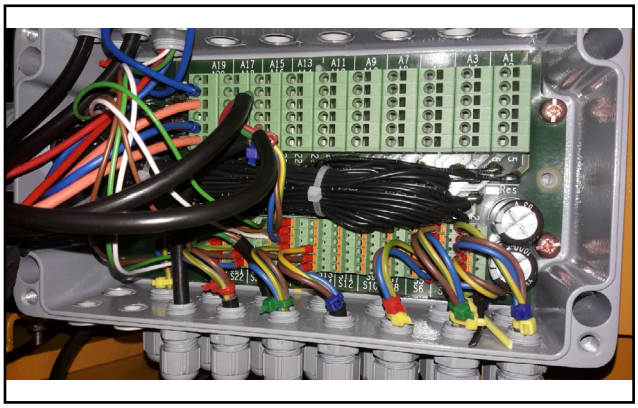


Fig. 224

Function	Connector	
		#
Hopper sensor 2 High	S1	36
Hopper sensor 1 High	S3	37
Turbine sensor	S20	38
Work position sensor	S21	39
Distribution sensor 1	S22	40
Motor sensor 1	S24	41
0VL	GNDL	42

Terminal block 3.2

ACTIONS

GNDL = neutral

12 VL

A19	A17	A15	A13	A11	A9	A7	A5	A3	A1
Motor 2 (12VL + SIG) + S17	Beacon	Hopper light	Left tramline valve + (SIG)	Right tramline valve + (SIG)					

GNDL = neutral

12 VL

A20	A18	A16	A14	A12	A10	A8	A6	A4	A2
Motor 1 (12VL + SIG) + S24	Working light (GNDL and SIG)		Left tramline valve - (SIG)	Right tramline valve - (SIG)					

SENSORS

S23	S21	S19	S17	S15	S13	S11	S9	S7	S5	S3	S1
	Work position sensor		Motor pulse sensor 2	Distribution sensor 2						High Hopper Level 1	High Hopper Level 2

12 VE

GNDE = neutral

S24	S22	S20	S18	S16	S14	S12	S10	S8	S6	S4	S2
Motor pulse sensor 1	Distribution sensor 1	Turbine speed sensor		Calibration switch	Radar/DGPS					Low Hopper Level 1	Low Hopper Level 2

12 VE

GNDE = neutral

1 - Turbine sensor position

Dimension to be observed = 44 mm at the end of the sensor on the motor support bracket.

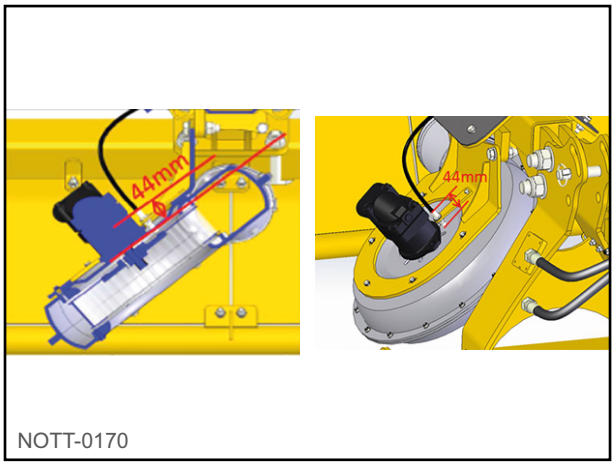


Fig. 225

2 - 2 motor harness wiring

1 and 2 = + (blue)

3 = 0 VE (brown)

4 = 12 VE (white)

5 and 6 = - (red)

7 = Signal (green)

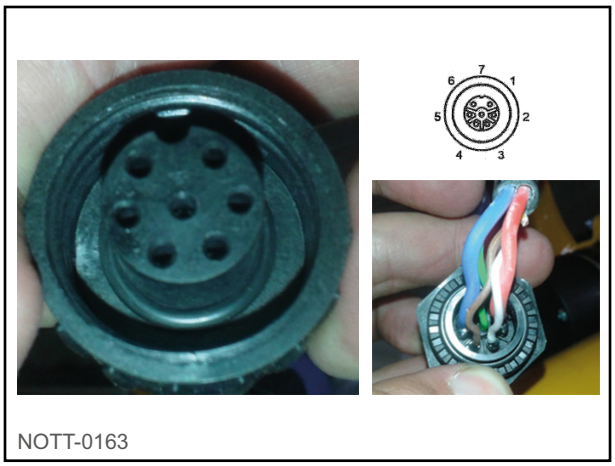


Fig. 226

3 - Check that the 10 A fuse is compliant. This fuse serves to protect the motor.

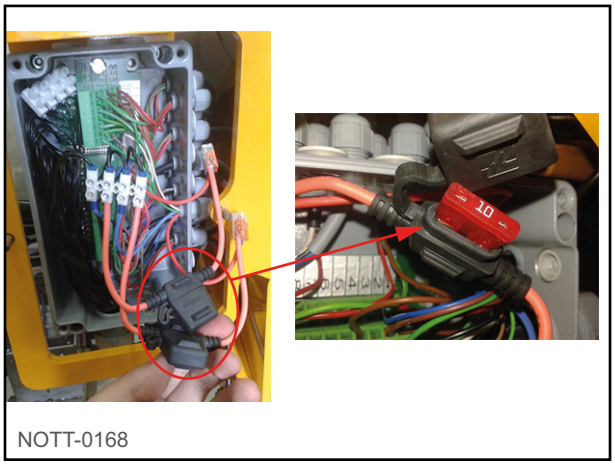


Fig. 227

4 - Fitting of collars to identify the sensors

Colours of sensor wire collars		Description
Yellow		Work position sensor
Blue	Red	Distribution sensor 1
Blue	Black	Distribution sensor 2
Yellow	Green	Hopper high level sensor - Hopper 1
Yellow	Blue	Hopper high level sensor - Hopper 2
Yellow	Red	Hopper low level sensor - Hopper 1
Yellow	Black	Hopper low level sensor - Hopper 2
Red		Turbine speed sensor
Green		Calibration button
Blue		Radar or DGPS
Red	Green	Motor 1
Red	Black	Motor 2
White		Working lights

5 - Take care when connecting the motor wires, they must always be connected in this order:

Colour	Terminal
Red	12VL
Blue	Sig
Green	Sig
Brown	12VE
White	0VE

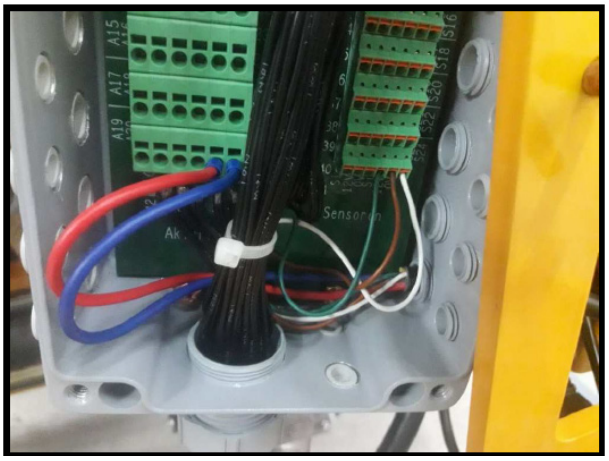


Fig. 228

6 - The hopper sensors are connected to S1/ S2/ S3 and S4

Colour			Terminal
Black	or	Green	Sig
Brown			12VE
Blue	or	Red	0VE

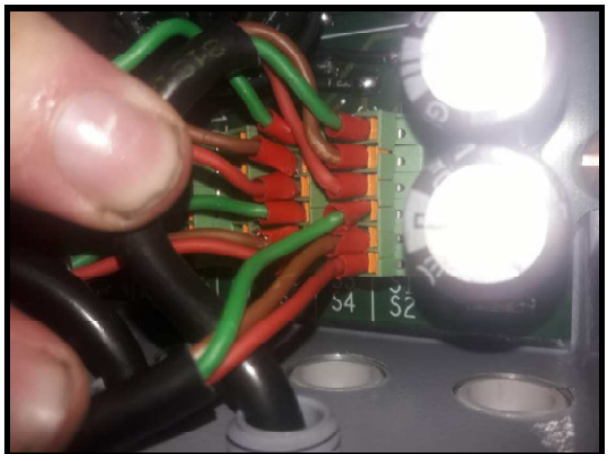
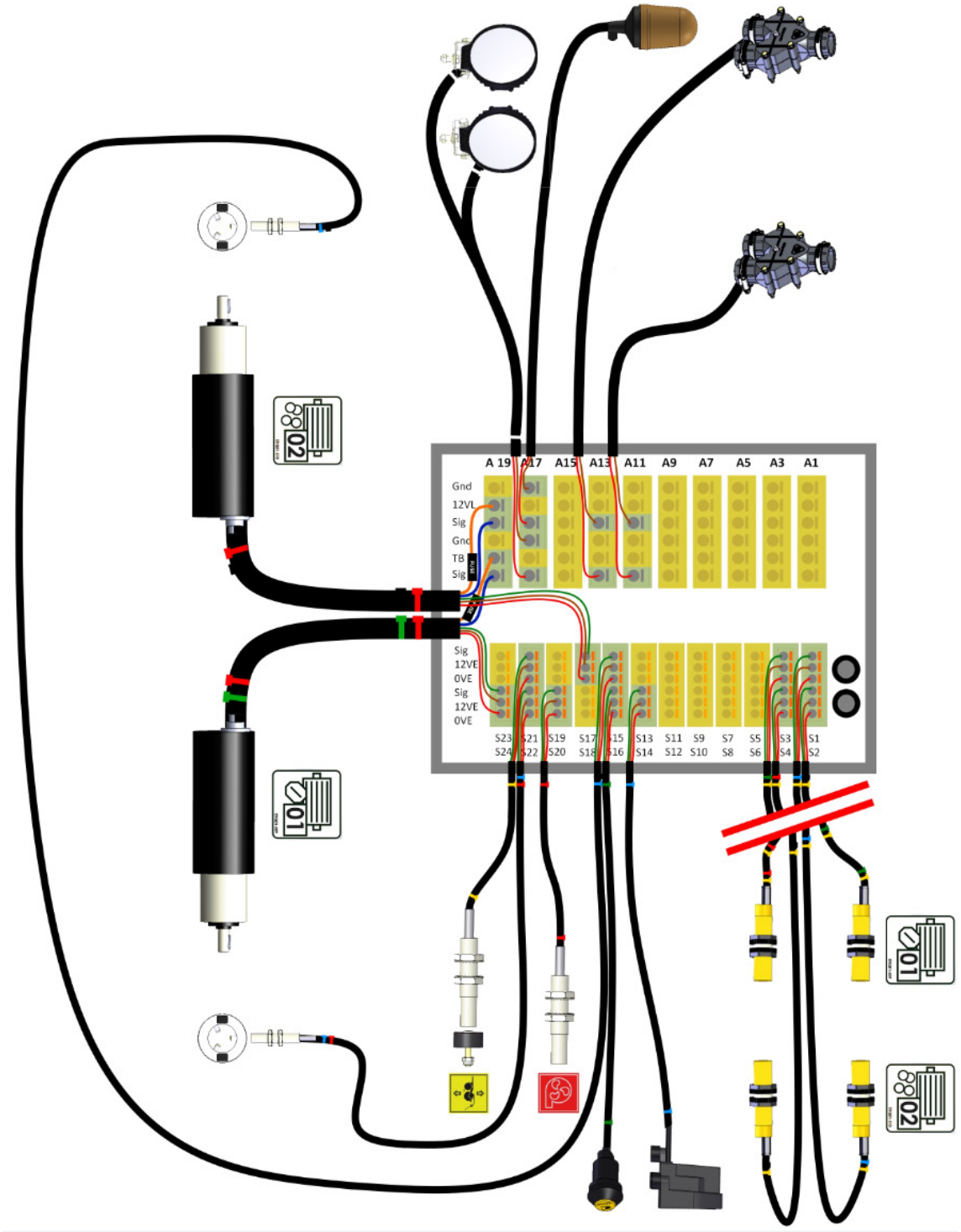


Fig. 229


A 19
A17
A15
A13
A11
A9
A7
A5
A3
A1
Gnd
12VL
Sig
Gnd
TB
Sig
Sig
12VE
0VE
Sig
12VE
0VE
S23 S21 S19 S17 S15 S13 S11 S9 S7 S5 S3 S1
S24 S22 S20 S18 S16 S14 S12 S10 S8 S6 S4 S2
802
801
801
802

7.15. Error messages

Message	Possible cause	Remedial solution
Metering drive speed too slow	The current metering drive speed of rotation is lower than the minimum speed.	Stop immediately! Eliminate the cause of the problem.
Metering drive speed too fast	You are travelling too fast. The metering drive cannot operate reliably at your speed of travel.	Travel more slowly or install a larger metering roller.
The metering drive cannot achieve the target rate	You are travelling too fast or too slowly. The target rate cannot be achieved at your current travel speed.	Travel faster or slower for the computer to control the specified application rate.
Metering drive outside adjustment range	The current metering drive speed of rotation is higher or lower than the predefined speed.	Travel slower or faster or install a larger metering roller.
Metering shaft stopped	The metering shaft rotation speed sensor no longer detects any shaft movement.	Stop immediately! Eliminate the cause of the problem.
Turbine too slow	Current turbine speed of rotation is lower than the value of the “Min revs” parameter value.	Increase the turbine speed of rotation or change its “Min rev.” parameter.
Turbine too fast	Current turbine speed of rotation is higher than the value of the “Max revs” parameter value.	Reduce the turbine speed of rotation or change its “Max rev.” parameter.
The pressure is too high	The pressure of a linear sensor is higher than the value of the “Maximum value” parameter.	Reduce the pressure or change the “Maximum value” parameter.
The pressure is too low	The pressure of a linear sensor is lower than the value of the “Minimum value” parameter.	Increase the pressure or change the “Minimum value” parameter.
Hopper tank level too low	There is too little seed or fertiliser in the hopper.	Fill the hopper.
Empty hopper	There is no seed or fertiliser in the hopper.	Fill the hopper.
Seeding controller error	A error has occurred in the seeding control system.	Check the seeding control system.
Seed flow rate detected	There is a seed flow rate in a tramline.	Check the tramlining system.
No seed flow rate detected	The seeding control system has detected no seed flow rate.	Check the seeding control system.
Input too high	The value input is too high.	Enter a lower value.
Input too low	The value input is too low.	Enter a higher value.
Charger anomaly	The charger alternator is faulty.	Check the charger alternator.

Message	Possible cause	Remedial solution
Metering has been stopped as the working position was not achieved. Lift the machine.	The machine is not in the working position.	Lift the machine.

8. Winter Storage - Handling - Transport

8.1. Storage

If the machine is not going to be used for an extended period:

- Perform the machine cleaning maintenance operation
- Store the machine away from moisture and bad weather.
- Place the machine on flat, solid, stable ground.
- Disconnect electrical control devices and store them in a dry place.
- Protect the machine against rust. Only spray with oils that are easily biodegradable, e.g. rape oil.
- Unload the wheels using lifting and wedging equipment and accessories that are in compliance with and have been checked in accordance with the applicable regulations. Use standard, secure wedging systems to avoid any risk of accident linked to unstable blocking.
- Protect the hydraulic cylinder piston rods against corrosion.
- Carry out lubrication in accordance with the maintenance plan in the user manual.

IMPORTANT

The machine should, as far as possible, be stored indoors to avoid premature ageing. However, if stored out of doors, it should be folded out to prevent moisture damage.

CAUTION

Never work on a machine that is raised off the ground without having first secured it using suitable hoisting and propping devices.

CAUTION

Do not spray plastic and rubber parts with oil or an anti-corrosion agent. Otherwise these parts may become brittle and break.

8.2. Handling

CAUTION

Never stand in the handling area as this could result in serious or fatal injury.

CAUTION

The lifting points must be used simultaneously for the safety of handling.

CAUTION

During handling, some components may have sharp edges. Wear suitable personal protective equipment (safety gloves, goggles, safety shoes) when handling the components.

The machines are equipped with attachment points for lifting operations. Pictograms enable them to be more quickly identified.

Fig. 230

Handling must be carried out using appropriate lifting and wedging equipment and accessories for the load to be moved, that are compliant and have been checked in accordance with the applicable regulations.

To know the approximate weight of the assembly, see page 135.

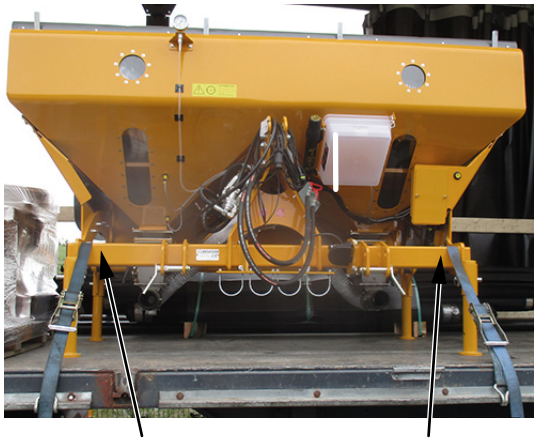
8.3. Transport

CAUTION

Firmly secure the machine on the flat-bed using straps that are compliant and have been checked in accordance with the applicable regulations.

Ensure that there are no unsecured items on the flat-bed which might be thrown against the machine during transport.

During transport, the machine must be secured as described below.



NOTT-0228

Fig. 231

9. Servicing - Maintenance

9.1. Maintenance tips

9.1.1. Introduction

Comply with the safety instructions regarding servicing and maintenance. The machine has been designed and built for maximum yield, profitability and comfort under many different usage conditions. It has been checked at the factory and by the dealer before its delivery to ensure that the machine is received in perfect condition. To maintain it in good working condition, it is important that servicing and maintenance operations are performed at the recommended frequency.

In order to ensure that the machine always operates correctly and to obtain an optimum performance, it must be cleaned and maintained at regular intervals. The hydraulic components and bearings must not be cleaned with a high-pressure washer or directly hosed down. The housings, screwed connectors and bearings are not watertight to VERY high pressure cleaning.

9.1.2. Personal protective equipment (PPE)

CAUTION

The maintenance operations involve the handling of loads and materials requiring the wearing of personal protective equipment.

This personal protective equipment must be worn while performing maintenance operations.

Risk	Examples of personal protective equipment
Cuts	Gloves
Crushing	Gloves, safety shoes, safety helmet
Hydrocarbons	Gloves
Dust	Mask
Noise	Ear protection

9.1.3. Shutting-down the machine

WARNING

Before performing any maintenance operation, the machine's hydraulic, mechanical and electrical power must be shut down. Chock the machine and take all of the necessary measures to avoid the accidental movement of the machine

9.1.4. Cleaning the machine

WARNING

Before performing any maintenance operations, the machine must be cleaned to prevent any risk of accidental injury.

9.1.5. Welding

NOTE

According to the type of machine: before carrying out any work on the electrical circuit or before any welding operations, disconnect the wiring harnesses coming from the tractor. Disconnect the battery and alternator cables.

WARNING

Do not weld or use blow torches near pressurised fluids or inflammable products.

CAUTION

Wear suitable personal protective equipment for welding work.

9.1.6. Protection devices

WARNING

Go around the machine looking for any external damage and checking the condition of the protection devices. The protection devices must be clean, legible and in good condition. If this is not the case, contact the AGRISEM INTERNATIONAL customer service department in order to replace them.

9.1.7. Tyres

DANGER

The tyres contain pressurised air. Never exceed the recommended inflation pressures.

WARNING

Regularly check the condition of the tyres over their entire surface.

WARNING

Remove all traces of oil from the tyres.

WARNING

The permissible load capacities of the tyres mounted on the tractor must not be exceeded.

9.1.8. Hydraulic system

The machine is powered by pressurised hydraulic energy. Working on a pressurised circuit may give rise to risks of injury by contamination. All operations must be carried out by professionals trained to handle hydraulic technical equipment. In the event of an injury caused by hydraulic oil, consult a doctor immediately. Risk of infection.

DANGER

Do not, under any circumstances, attempt to plug a leak in the hydraulic hoses with your hand or fingers. Use a suitable leak-detection tool.

WARNING

Depressurise the hydraulic circuit completely before working on it.

When connecting hydraulic hoses to the tractor's hydraulic circuit, ensure that the hydraulic circuits on the tractor and machine are not under pressure.

NOTE

Using lubricants and mineral products in line with the recommendations does not represent any risk to health. However, avoid prolonged contact with the skin or avoid inhaling the vapours.

WARNING

Protect against direct contact with oils by wearing gloves or protective cream. Avoid the skin coming into contact with clothes that are soaked in oil. Change clothes and rags when they are dirty. Carefully wash all traces of oil off your skin with soap and hot water. Do not clean your skin with petrol, diesel or other detergent products.

Oil is toxic. In the event of ingestion of oil, consult a doctor immediately. If oil splashes in your eyes, rinse with clean water and consult a doctor if necessary.

WARNING

Keep lubricants out of reach of children.

Never store lubricants in open containers or containers that are not labelled.

WARNING

Soak up spilt oil with a binder product and dispose of it.

Never extinguish fires caused by oil with water. Only use authorised, appropriate extinguishing products and wear breathing apparatus.

WARNING

Check that the hydraulic hoses are correctly connected.

Regularly check that the hydraulic hoses and connections are in good condition and are clean.

NOTE

Hydraulic hoses must not be used for more than six years, including a possible storage time of two years maximum. Even under appropriate storage and usage conditions in line with permissible stresses, it is completely normal for hoses and connectors to age, which is why they have a limited storage time and service life.

Have the hydraulic hoses checked by a specialist at least once a year to ensure that they are in good condition.

Replace damaged or worn hydraulic hoses.

Only use genuine AGRISEM INTERNATIONAL hydraulic hoses.

Nevertheless, the duration of use can be established in line with empirical values, in particular taking potential risks into account. Other reference values can be taken into consideration for thermoplastic hoses and pipes.

Waste must not be disposed of in a conventional dustbin but collected through special channels in accordance with the applicable standards.

Dispose of used oil in line with current regulations. If this poses a problem, contact your oil supplier.

Dispose of shoes impregnated with oil as hazardous waste.

The product or its packaging is technically recyclable, not that it is or will be recycled.

The products will only be recycled under two conditions:

- The sorting and recycling channel exists in your region,
- The products have been correctly sorted.

Waste polluted by oil and used oil must be disposed of in line with current regulations.

Ensure that you do not contaminate the soil or water with hydraulic oil, follow the instructions indicated on the container of the consumable in accordance with current regulations.

9.1.9. Electrical

WARNING

According to the type of machine: before carrying out any work on the electrical circuit or before any welding operations, disconnect the wiring harnesses coming from the tractor.

WARNING

Before carrying out any work on the electrical system, disconnect the battery's negative terminal.

WARNING

Ensure the battery terminals are correctly connected, starting with the positive terminal, then the negative terminal. When disconnecting the terminals, start with the negative terminal, then disconnect the positive terminal.

Systematically fit the cover provided for this purpose on the positive terminal on the battery. Beware of the risk of explosion when earthing.

DANGER

Risk of explosion: avoid sparks and naked flames near the battery.

9.2. Maintenance consumables

Consumable	Characteristics	Volume
Grease	lithium grease reinforced with molybdenum disulphide / Grade NLGI2	-

NOTE

Only use the specified consumables. AGRISEM INTERNATIONAL may not be held liable if another type of grease is used.

9.3. Maintenance schedule

NOTE

The servicing frequency is determined by many factors. Thus, different conditions of use, the weather, driving and working speeds, dust generation and the type of soil, etc. all influence the time before the next service is due, as does the quality of the lubrication and maintenance products used.

NOTE

The servicing frequencies indicated can therefore only serve as a guide. If you deviate from the normal conditions of use, you must adapt the frequency at which this maintenance and servicing is carried out to suit the conditions.

Maintenance operations to be carried out prior to each use
Check the hydraulic lines.
Check the lighting and signalling system.
Check the tyre pressure.

Maintenance operations to be carried out prior to folding
Clean the folding areas.

Maintenance operations to be carried out after the first 10 hours of operation
Check the tightness of the nuts and screws.
Check the hydraulic system (tightness and sealing).
Check the tightness of the wheel nuts.
Perform a complete diagnosis of the machine to ensure that there are no elements causing problems.
Clean the soil off the machine.

Maintenance operations to be carried out 50 hours or every 6 months
Check the tightness of the nuts and screws.
Check the hydraulic system (tightness and sealing).
Check the tightness of the wheel nuts.
Perform a complete diagnosis of the machine to ensure that there are no elements causing problems
Lubricate the joints with grease guns.
Clean the soil off the machine.

Maintenance operations to be carried out every 6 years
Replace the hydraulic hoses.

Maintenance operations to be carried out after each pressure wash
Lubricate the machine.

Maintenance operations to be carried out 100 hours or every 12 months
Wear rings

9.4. Maintenance operations

9.4.1. Check the hydraulic lines

Inspection criteria for hydraulic hoses

CAUTION

For your own safety, comply with the following inspection criteria.

If one of the following faults is observed, immediately change the hydraulic hose:

- Deterioration of the outer layer down to the lining (e.g. friction points, cuts, splits).
- Embrittlement of the outer layer (formation of cracks on the outer layer).
- Distortions which do not correspond to the natural shape of the hose or pipe, whether or not they are under pressure or bent (e.g. separation of the layers, bulges, crushed areas, bending).
- Areas that are leaking.
- Damaging or distortion of the end fitting (affecting its leak tightness). Slight superficial damage does not warrant replacement.
- Hose becoming detached from the end fitting.
- Corroded end fitting leading to reduced solidity and function.
- Non compliance with mounting specifications.
- Exceeding of the 6-year usage period. The following information is vital: the date of manufacture of the hydraulic hose marked on the end fitting, to which you must add 6 years. If the date of manufacture indicated on the connector is "2004" the usage period will end in February 2010.

Fitting and removing hydraulic hoses

WARNING

When fitting and removing hydraulic hoses, the following instructions must be strictly adhered to:

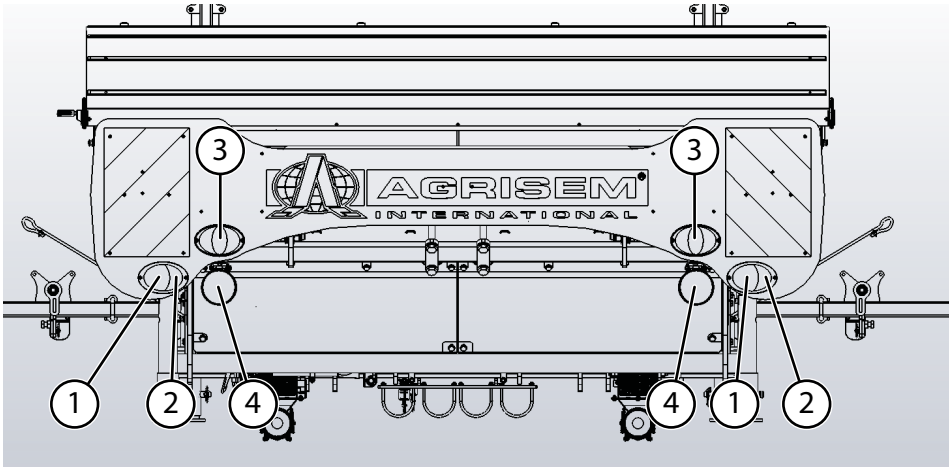
- Only use genuine AGRISEM INTERNATIONAL hydraulic hoses.
- Always ensure cleanliness.
- Always fit hydraulic hoses in such a way that in all operating conditions:
  - They are not subject to tension other than that caused by their own weight.
  - There is no crushing over short lengths.
  - There are no external mechanical stresses on the hydraulic hoses.
  - Avoid hoses rubbing against parts of the machine or against each other by arranging and attaching them correctly. Protect hydraulic hoses with protective sheaths if necessary. Cover parts with sharp edges.
  - The authorised bending radii are not exceeded.
- If hydraulic hoses are connected to moving parts, measure the length of the hose to ensure that the total range of movement is no less than the smallest authorised bending radius and/or that the hose is not subject to tension.

- Attach hydraulic hoses at the locations provided for this purpose. Avoid mountings that may hinder the natural movement of the hose and modifications to its length.

WARNING

Hydraulic hoses must not be painted.

9.4.2. Check the lighting and signalling system



NOTT-0002

Fig. 232

No.	Description	Characteristics
1	Dipped-beam headlight	12 V - 21 W
2	Indicator lamp	12 V - 21 W
3	Working light	12 V - 55 W
4	Working light	12 V - 8 x 3 W

Always check that your lighting system is in full working order and clean before driving on the road.

WARNING

Never set out on the public highway if one of these elements is not in good condition.

Replacing bulbs:

1 - Unscrew the protective glass.

2 - Remove the faulty bulb.

9.4.3. Clean the folding areas

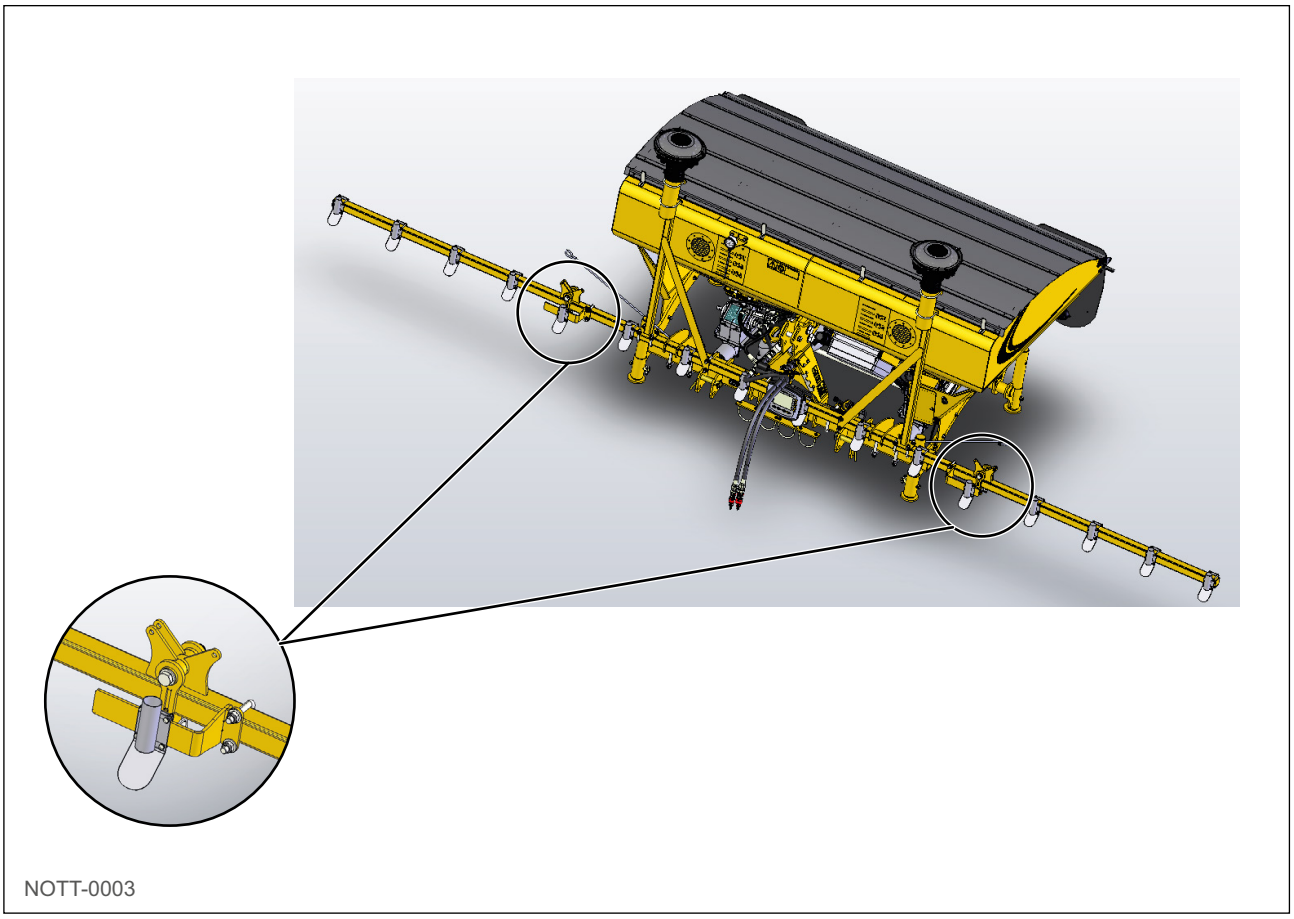


Fig. 233

The folding areas must be cleaned each time before folding. The accumulation of earth, of stones or other obstacles may result in damage to the machine

Failure to observe this requirement will void the warranty.

9.4.4. Check the tightness of the nuts and screws

Refer to the table.

ISO 272			Classe de qualité boulonnerie acier ISO898-1													
			5,6		5,8		6,8		8,8*		9,8**		10,9		12,9	
d mm	ISO mm	mm	Cs	Fo	Cs	Fo	Cs	Fo	Cs	Fo	Cs	Fo	Cs	Fo	Cs	Fo
1,6**	0,35	3,2	0,086	210	0,120	294	0,137	335	0,183	447	0,206	503	0,269	657	0,315	769
2**	0,40	4	0,183	349	0,256	488	0,293	558	0,390	744	0,439	837	0,573	1 093	0,671	1 279
2,5**	0,45	5	0,383	582	0,536	815	0,612	931	0,816	1 242	0,918	1 397	1,20	1 824	1,40	2 134
3	0,50	5,5	0,66	874	0,92	1 224	1,06	1 399	1,41	1 866	1,60	2 099	2,07	2 740	2,43	3 207
4	0,70	7	1,51	1 514	2,11	2 120	2,42	2 422	3,22	3 230	3,66	3 635	4,74	4 744	5,5	5 552
5	0,80	8	3,00	2 481	4,20	3 473	4,81	3 970	6,4	5 293	7,27	5 958	9,4	7 774	11,0	9 098
6	1	10	5,2	3 498	7,2	4 893	8,3	5 598	11,1	7 464	12,57	8 392	16,3	10 962	19,1	12 828
8	1,25	13	12,6	6 426	17,7	8 997	20	10 283	27	13 710	30,62	15 423	39	20 137	46	23 565
10	1,50	16	25	10 238	35	14 334	40	16 382	53	21 843	61	24 575	78	32 082	92	37 542
12	1,75	18	43	14 934	60	20 908	69	23 895	92	31 860	105	35 849	136	46 795	159	54 760
14	2	21	69	20 514	97	28 719	111	32 822	148	43 763	167	49 142	218	64 277	255	75 218
16	2	24	108	28 280	152	39 592	174	45 248	232	60 331	262	67 944	341	88 611	399	103 694
18	2,5	27	149	34 324	209	48 054	239	54 919	330	75 421			469	107 549	549	125 856
20	2,5	30	213	44 188	298	61 863	341	70 700	471	97 253			667	138 456	781	162 023
22	2,5	34	293	55 298	411	77 418	470	88 478	648	121 574			920	173 269	1 077	202 762
24	3	36	366	63 630	513	89 083	586	101 809	809	140 084			1 148	199 376	1 343	233 313
27	3	41	544	83 910	762	117 474	871	134 257	1 201	184 517			1 706	262 920	1 997	307 672
30	3,5	46	737	101 914	1 032	142 679	1 180	163 062	1 628	224 292			2 311	319 331	2 704	373 685
33	3,5	50	1 004	127 210	1 406	178 094	1 607	203 536	2 216	279 953			3 148	398 593	3 684	466 438
36	4	55	1 288	149 174	1 803	208 844	2 060	238 679	2 840	328 236			4 036	467 413	4 723	546 973
39	4	60	1 677	179 487	2 348	251 282	2 683	287 179	3 697	394 919			5 255	562 393	6 150	658 119
42**	4,5	65	2 070	205 323	2 898	287 452	3 312	328 516	4 554	451 710			6 486	643 344	7 590	752 849
45**	4,5	70	2 596	240 641	3 635	336 897	4 154	385 025	5 712	529 410			8 136	754 008	9 520	882 350
48**	5	75	3 130	270 321	4 383	378 449	5 009	432 514	6 887	594 706			9 809	847 006	11 478	991 177
52**	5	80	4 041	324 763	5 657	454 668	6 465	519 620	8 889	714 478			12 661	1 017 590	14 816	1 190 797
56**	5,5	85	5 034	374 739	7 048	524 635	8 054	599 582	11 075	824 426			15 773	1 174 182	18 458	1 374 043
60**	5,5	90	6 266	438 337	8 772	613 672	10 026	701 340	13 785	964 342			19 634	1 373 457	22 976	1 607 237
64**	6	95	7 533	495 676	10 546	693 947	12 052	793 082	16 572	1 090 488			23 603	1 553 119	27 620	1 817 480

*Classe 8-8a jusqu'a d=16 mm, 8-8b à partir de d=118 mm

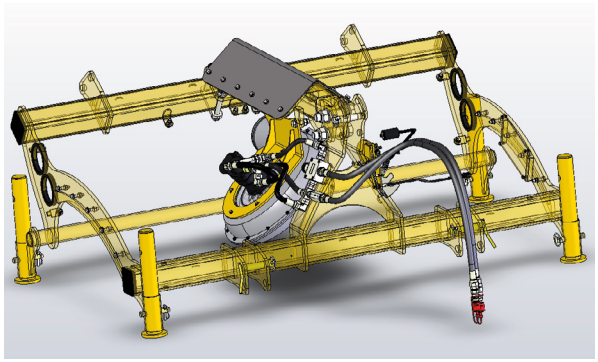
NOTT-0229

Fig. 234

9.4.5. Check the hydraulic system (tightness and sealing)

Check that all of the hydraulic circuit's components are sealed.

If necessary, tighten screwed connectors.



NOTT-0004

Fig. 235

9.4.6. Check the tightness of the wheel nuts

Refer to the instruction of the axle supplier attached.

9.4.7. Perform a complete diagnosis of the machine

Carry out all the operations of the start-up section.

Carry out all the maintenance operations to be performed prior to each use.

9.4.8. Clean the soil off the machine

Clean the soil on the machine with a high pressure cleaner.

CAUTION

If using a high-pressure washer or steam cleaner, it is essential to comply with the following points:

- Do not clean the electrical and hydraulic components.
- Never direct the high-pressure washer or steam cleaner nozzle directly at the lubrication points or bearings.
- Systematically keep the nozzle a reasonable distance from the machine.

Comply with the rules for using high-pressure washers.

The machine must be lubricated regularly and after each pressure wash.

9.4.9. Lubricate the joints with grease guns

The lubrication points are identified by this pictogram:

Fig. 236

The machine must be lubricated regularly and after each pressure wash.

This keeps the machine in good working order and reduces the costs of repairs and downtime.

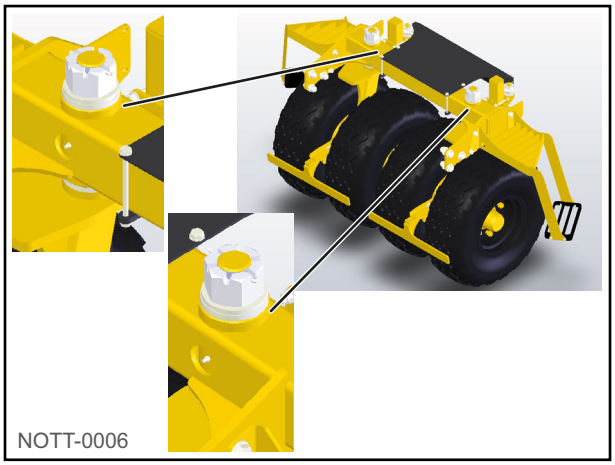


Fig. 237

Apply grease to the 2 transmission chains of the distribution units with a brush.

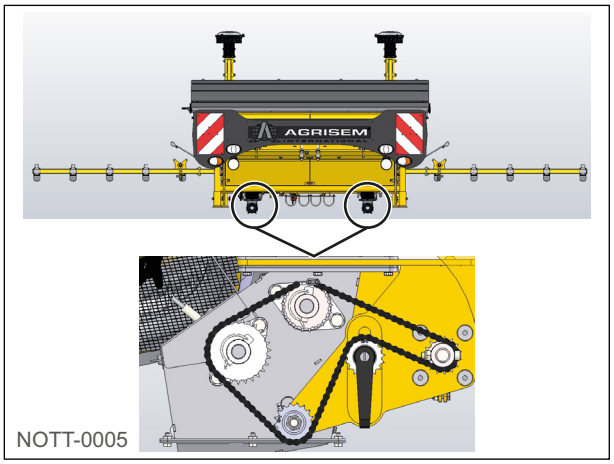


Fig. 238

Lubricate the distribution unit bearings with a grease pump.

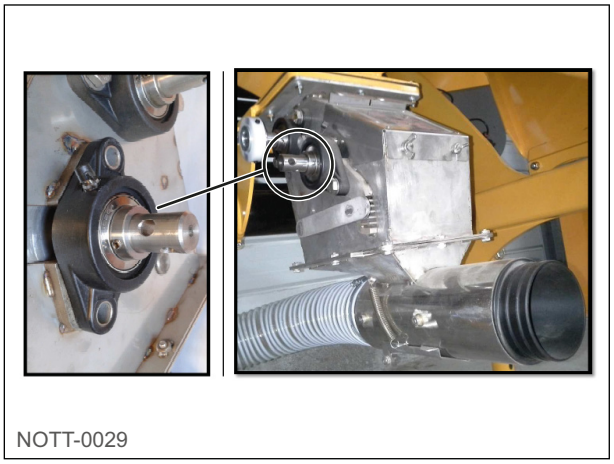


Fig. 239

CAUTION

The machine must be lubricated regularly and after each pressure wash.

This keeps the machine in good working order and reduces the costs of repairs and downtime.

9.4.10. Replace the hydraulic hoses

After replacing all the machine's hoses, check that all of the components of the hydraulic system are sealed, seepage 129.

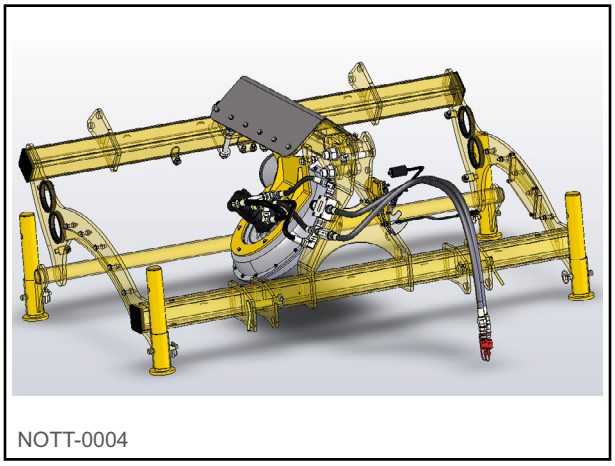


Fig. 240

9.4.11. Wear rings

Some joints on AGRISEM INTERNATIONAL tools are provided with wear rings. These must be changed at the first sign of lateral play.

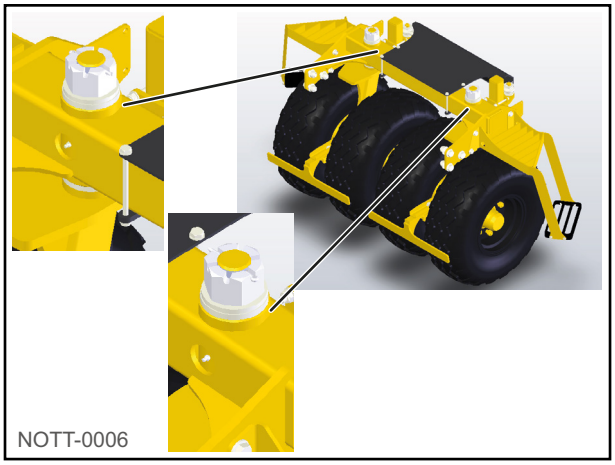


Fig. 241

9.4.12. Tyre pressures

System	Mean pressure	Maximum pressure
Front packer axle	2.5 bar	4.1 bar

1. Failures

1.1. Causes and remedies

Problem	Point to be checked	Remedial solution
Incorrect volume / Ha	Feed cup adjustment and position	Check the correct operation of the feed cups as well as the calibration of the feed cup springs.
	Flow rate test	Check during the flow rate test that no metered seed remains in the pneumatic lines.
Seed is not reaching the distribution head.	Hopper bottom flaps	Check that both flaps are open.
	Turbine connection	Check the turbine connections against the diagram.
	Angle of inclination of hoses and pipes	Try to limit the angles as much as possible to ease the flow.
	Tractor hydraulic pressure	Increase the distributor's hydraulic pressure
Seed is not flowing from certain seeding units.	Angle of inclination of Ø35 hoses	Re-tension the hoses if necessary to avoid horizontal runs.
	Seeding units	Check that certain seeding units are not obstructed.
Turbine motor oil leak	Internal seals	Change the motor seal.
Warning message from terminal	Refer to the user manual of the terminal concerned.	

1.2. Fuses

The machine is equipped with one or two electric motors that turn the distribution units. In order to “electrically” protect them and according to the configuration, the machine carries one or two protection fuses. These are located inside the electric panel situated at the rear right-hand side of the hopper (see below).

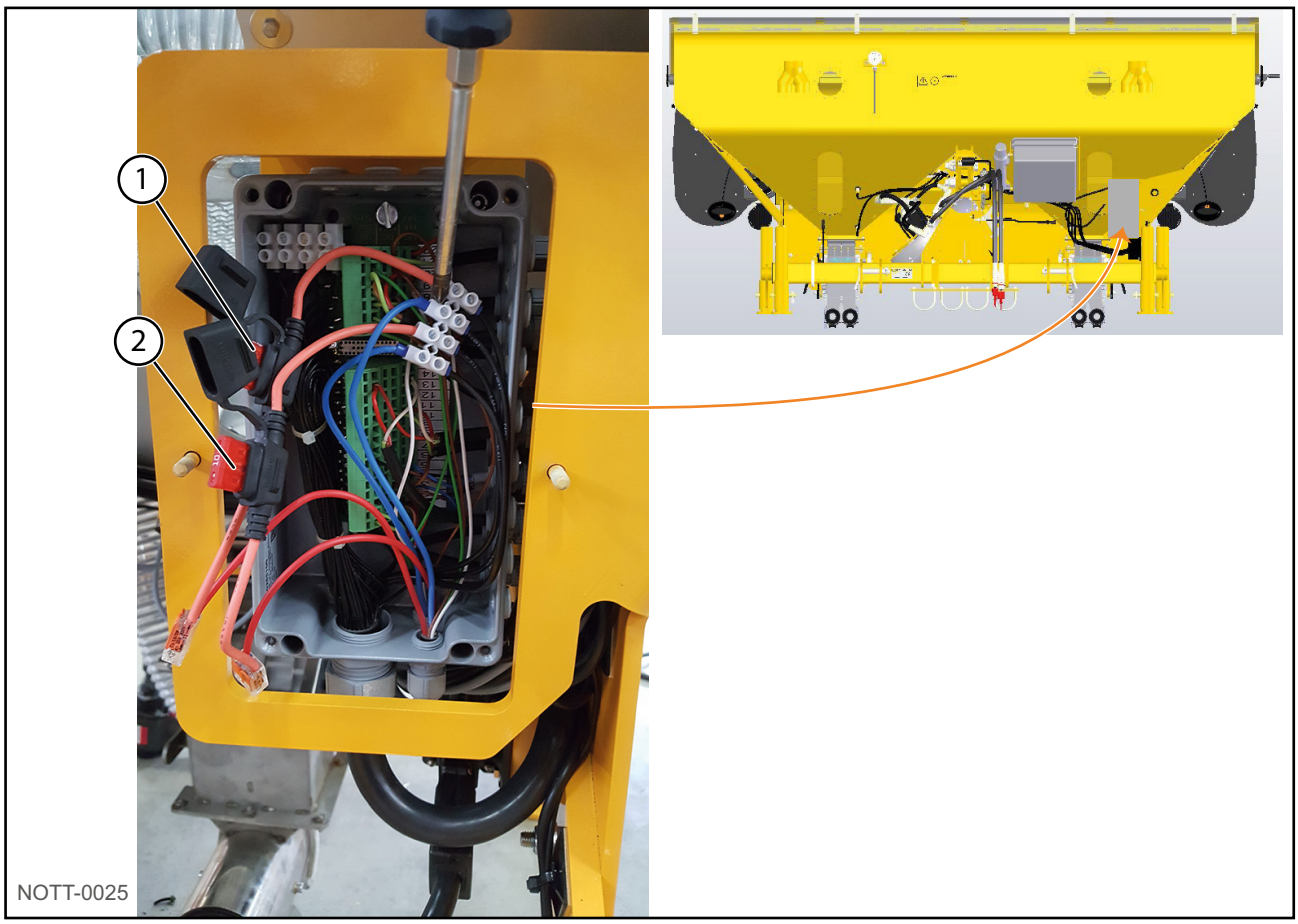


Fig. 1

No.	Assignment	Rating
1	Motor fuse	10 A
2	Motor fuse	10 A

11. Characteristics

Characteristics of DSF 1600			
Hopper volume	1600 l		
Type of tank	Steel	Stainless steel	
Distribution heads 2 x 70 mm	4 x 10 outlets	2 x 16 outlets	2 x 24 outlets
Distribution heads 1 x 90 mm	2 x 10 outlets	2 x 16 outlets	2 x 24 outlets
Distribution	Stainless steel		
Distribution drive	Electric		
Turbine drive	Hydraulic		
Maximum flow with 2x70 mm distribution units (2 outlets)	2 x (2 x 300) kg / h or 1200 kg / h		
Maximum flow with 2x90 mm distribution units (1 outlet)	2 x 500 kg / h or 1000 kg / h		
Weight	Min 835 kg Max 1753 kg		
Overall width	2440 mm		
Overall length	1700 mm		

Characteristics of DSF 2200			
Hopper volume	2200 l		
Type of tank	Steel	Stainless steel	
Distribution heads 2 x 70 mm	4 x 10 outlets	2 x 16 outlets	2 x 24 outlets
Distribution heads 1 x 90 mm	2 x 10 outlets	2 x 16 outlets	2 x 24 outlets
Distribution	Stainless steel		
Distribution drive	Electric		
Turbine drive	Hydraulic		
Maximum flow with 2x70 mm distribution units (2 outlets)	2 x (2 x 300) kg / h or 1200 kg / h		
Maximum flow with 2x90 mm distribution units (1 outlet)	2 x 500 kg / h or 1000 kg / h		
Weight	Min 873 kg Max 1787 kg		
Overall width	2440 mm		
Overall length	1700 mm		

12. Technical terms and abbreviations

Term	Meaning
A	ampere - unit of intensity of electrical current
bar	bar - unit of pressure
cm	centimetre - unit of length
cm^3	cubic centimetre - unit of volume
PPE	personal protective equipment
ha	hectare - unit of area
ISOBUS	standard data transfer system
kg/h	kilogram per hour - unit of mass flow
kg/ha	kilogram per hectare - unit of density
km/h	kilometre per hour - unit of speed
l	litre - unit of volume
l/min	litre per minute - unit of flow
LS	load sensing - hydraulic load detection system
m	metre - unit of length
mm	millimetre - unit of length
rpm	revolution per minute - unit of speed of rotation
V	volt - unit of voltage
W	watt - unit of power

13. Appendices

DECLARATION OF CONFORMITY WITH THE “MACHINERY” DIRECTIVE

The manufacturer referred to above certifies that the new equipment described below:

PNEUMATIC SEEDERS

Complies with the provisions of the amended "Machinery" directive (Directive 2006/42/EC) and with the applicable national legislation.

Ligné,

21 May 2013

Michal GUZOWSKI

CEO

AGRISEM INTERNATIONAL

WARRANTY CERTIFICATE No.

TO BE RETURNED UPON RECEPTION OF THE MACHINE

Dealer	Purchaser
Name	Name
Address	Address
Tel.:	Tel.:
Code no.	

Type of machine	
Working width	
Machine serial number	
Date of delivery to customer and user	
Make, model and et power of tractor used	
Type of soil - % clay	
Utilised agricultural land belonging to the farm	

Place: date:

Purchaser's signature and stamp	Dealer's signature and stamp

We acknowledge that we have read the whole of the user manual and the warranty terms to which we adhere.

AGRISEM INTERNATIONAL SA - 535 rue Pierre Levasseur - CS 60263 - 44158 ANCENIS - FRANCE
Tel.: +33 (0)2.51.14.14.40 - Fax: +33 (0)2.40.96.32.36

WARRANTY CLAIM FORM No.			
Name of the dealer		Dealer stamp	
Claim managed by			
Date of purchase of the machine		AGRISEM invoice number	
Name and address of user customer			
Date of delivery to user *(attach a copy of the invoice and the dealer's delivery slip)*		UAA of farm(s)	
Machine serial number		Working width	
Description of the equipment combination (make and type)			
Make of tractor used			
Model of tractor used		Power rating	
Detailed description and alleged cause of the incident			
Date of breakdown		Current date	
Part reference	Quantity	Description	
Send parts requested	**YES**	Credit note requested	**YES**
Photographs attached	**YES**	Parts returned *Freight costs payable by the sender*	**YES**
Result of inspection by AGRISEM INTERNATIONAL			
Comments			
Date		Signature	
Technical manager			
agrisem@agrisem.com			

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