



Pneumatic seeders

DS 200 - DS 300 - DS 500

FR - 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 specifications 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 specifications 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 delivery 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.

To get the most out of your AGRISEM INTERNATIONAL machine and ensure it operates at its best, please read this manual carefully before use and strictly follow the instructions provided herein. In particular, please carefully follow the instructions for adjusting settings, maintenance and safety.

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

Information AGRISEM INTERNATIONAL

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.: 02.51.14.14.40 – Fax: 02.40.96.32.36

1.4. Understanding the instruction manual version

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

Feature	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 unavoidable serious injury.



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.

**CROSSED-OUT DUSTBIN**

Indicates that the waste must not be disposed of in a standard bin but must be collected by a specific waste management service.

**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,
- it has been sorted correctly.

2. Presentation of the machine

2.1. Intended use of the equipment

The DS 200, DS 300 and DS 500 series of seeders from AGRISEM INTERNATIONAL are designed exclusively for professional use. These seeders comply with recognised standards in agricultural practice.

The DS 200, DS 300 and DS 500 pneumatic seeders with electrically driven dosing rollers. They are designed to fit a wide range of equipment and make it possible to:

- sow seeds in meadows and fields.

The DS 200, DS 300 and DS 500 seeders should only be operated, maintained or repaired by individuals who are fully familiar with the machinery and aware of the potential 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.

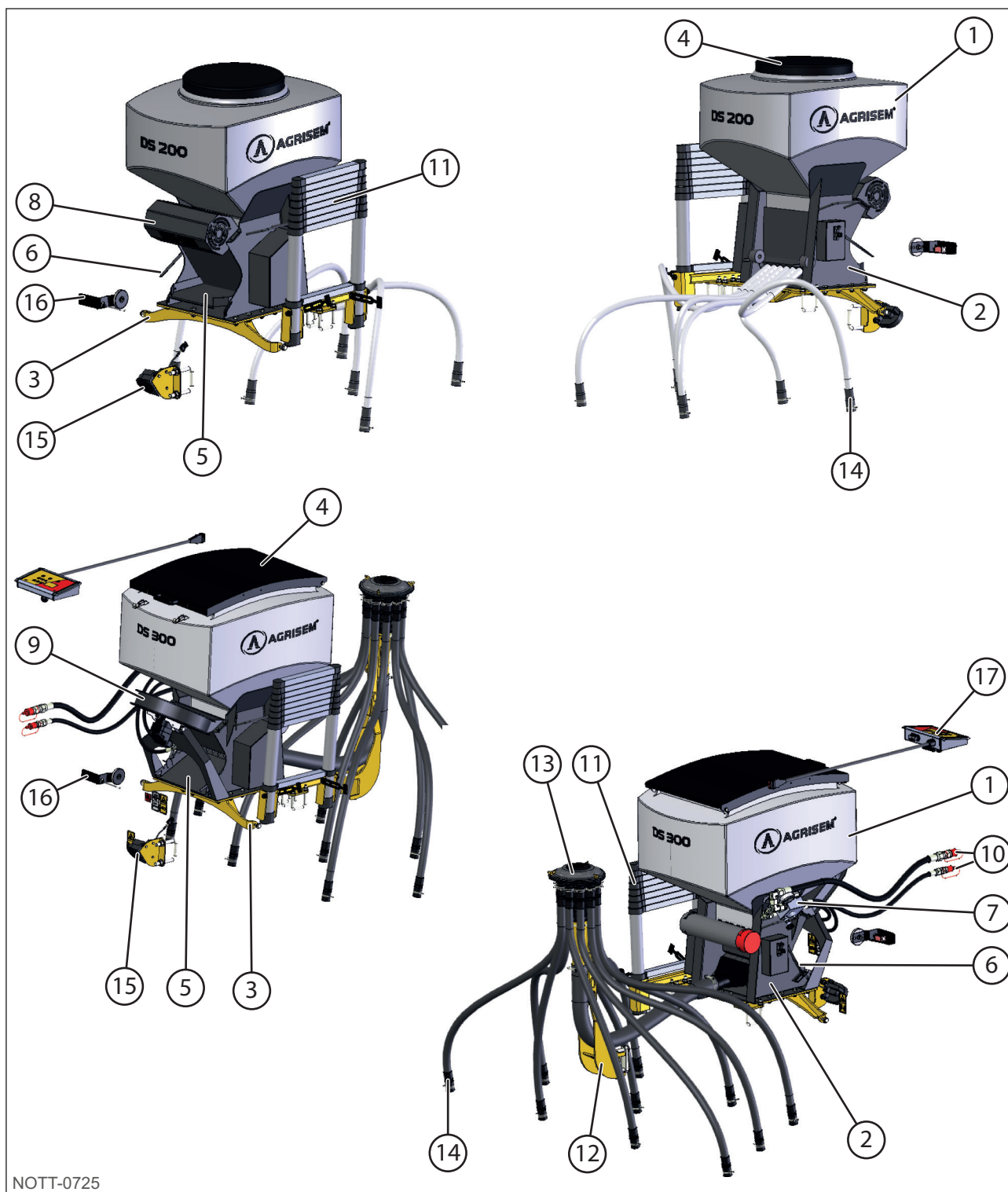
The user and the owner are responsible for complying with the specific accident prevention regulations and well as the general rules relating to safety, occupational medicine and highway legislation.

Any use other than that defined above shall be considered non-compliant with the intended purpose and shall release the manufacturer from any liability in the event of damage; the user shall bear sole responsibility for any risks resulting from such use.

Competencies and level of training

Activity	Instructed person	Person who has 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 machine



NOTT-0725

Fig. 1

Marking	Designation
1	Hopper
2	Frame
3	Hopper support + frame
4	Filling cover
5	Discharge plate
6	Brush setting lever
7	Motor module
8	Electric turbine
9	Hydraulic turbine
10	Hydraulic hoses/couplings
11	Telescopic ladder
12	Manifold head bracket
13	Distribution head
14	Supply pipe
15	Radar beam
16	Sensors
17	Electrical control system

3. Identification

3.1. Validity of the user manual

This user manual is valid for the following machines.

Machine	Type	Serial number
DS 200 - DS 300 - DS 500	Pneumatic seeders	04037-xxxxx



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. Description and location of identification plate

The type plate is located on the steel frame, on the carrying handle above the engine cover, on the left-hand side.



Fig. 2

The identification plate includes the following information.

Marking	Designation
1	Description
2	Model
3	Serial number
4	Empty weight of the equipment
5	Year of manufacture

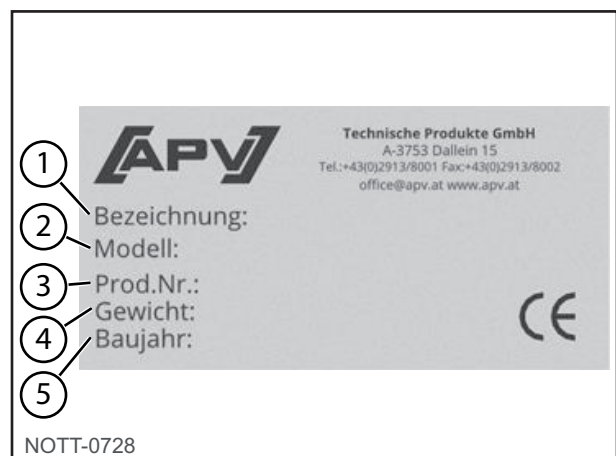


Fig. 3

3.3. Identification of the machine

Upon receipt of the machine, please enter the relevant details 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 following warranty terms apply to machines fitted exclusively with genuine AGRISEM INTERNATIONAL parts.

When selling new products to its dealers, the manufacturer provides a warranty guaranteeing that the goods are free from defects in materials and workmanship, subject to certain conditions. Customers purchasing new AGRISEM INTERNATIONAL equipment should contact the dealer from whom they purchased the equipment to obtain any further necessary information.

As part of its policy of constant improvement of its products, the manufacturer reserves the right to change the specifications of its equipment without notice and accepts no liability in the event of possible differences between the specifications 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.: 02.51.14.14.40 – Fax: 02.40.96.32.36

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' refers exclusively to 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 will be voided if any modifications are made to the machine without the express consent of AGRISEM INTERNATIONAL, or if parts other than those manufactured by the company are fitted (e.g. non-genuine 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 23 and "Servicing - Maintenance", page 127.

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 regulations. 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 or malfunctions due to use beyond the scope of the applications specified by AGRISEM INTERNATIONAL.
- In the event of improper use of the machine. On this point, please refer to chapter "Intended use of the equipment", page 9.
- If the manufacturer's regulations 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 resulting from the machine being used in conjunction with other machines or devices without the prior written consent of AGRISEM INTERNATIONAL and/or failure to comply with the instructions provided by the manufacturers of the tractor and other devices or machines.
- In the event that the machine is used with improperly attached or non-functioning protection and safety devices.
- If modifications have been made to the machine without the prior written consent of AGRISEM INTERNATIONAL, or if spare parts, ACCESSORIES or equipment that are not original or have not been recommended by AGRISEM INTERNATIONAL have been fitted to the machine.
- 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 choosing the right product and selecting a machine that is capable of achieving the desired result. 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 - Return of the warranty certificate, duly completed and signed by the retailer and the purchaser.
- 2 - The claim must be made using the "WARRANTY CLAIM FORM" (see appendix) provided by AGRISEM INTERNATIONAL and sent by the reseller to the company's technical department by registered post with acknowledgement of receipt within 10 days of the date 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 the malfunction,
 - 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,
 - Soil type % clay,
 - Proof of purchase for wear parts,
 - 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 claim request on my.agrisem.com

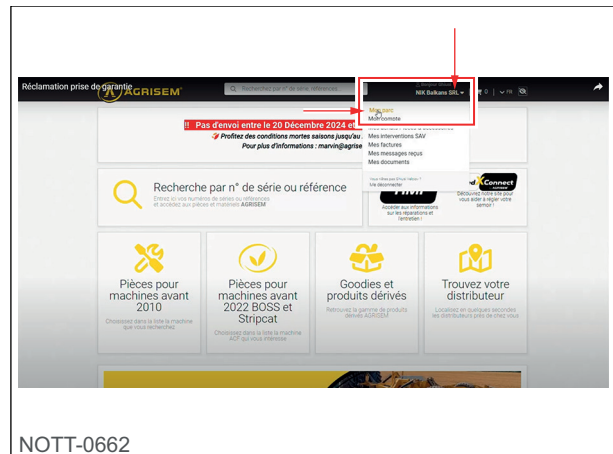
To make a warranty claim, follow the procedure described below or go to the following link:
<https://www.youtube.com/watch?v=1X-EzCbnooA>



NOTE

Preferably use Google Chrome to avoid nuisance bugs.

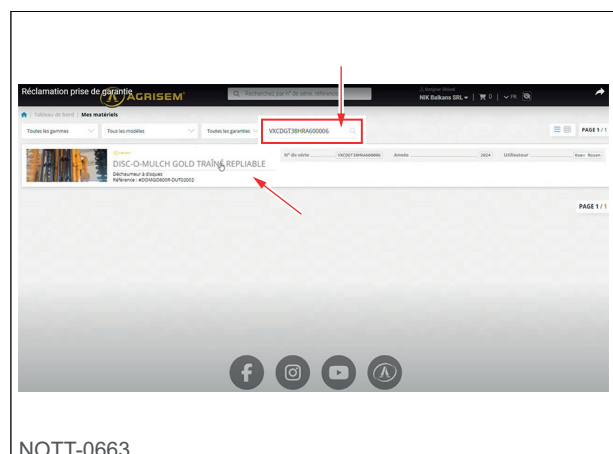
- 1 - Go to my.agrisem.fr and log in to your account.
- 2 - Then go to "My fleet".



NOTT-0662

Fig. 4

- 3 - In the search field, enter the serial number of the machine in question.
- 4 - Click on the appropriate machine when it appears.



NOTT-0663

Fig. 5

5 - Click on “Warranty claim”.

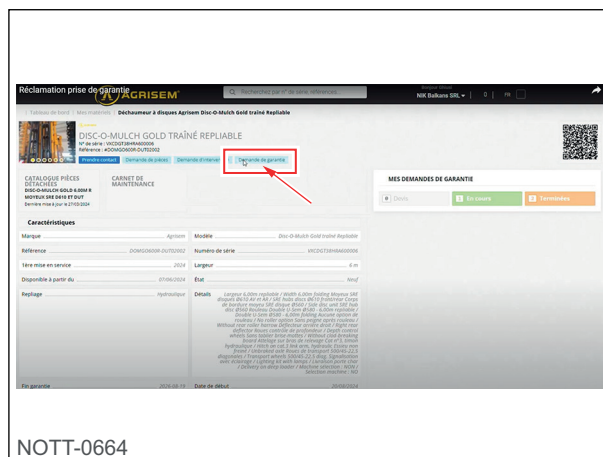


Fig. 6

6 - Fill in the fields :

- subject of the request,
- date of the malfunction,
- detailed description.

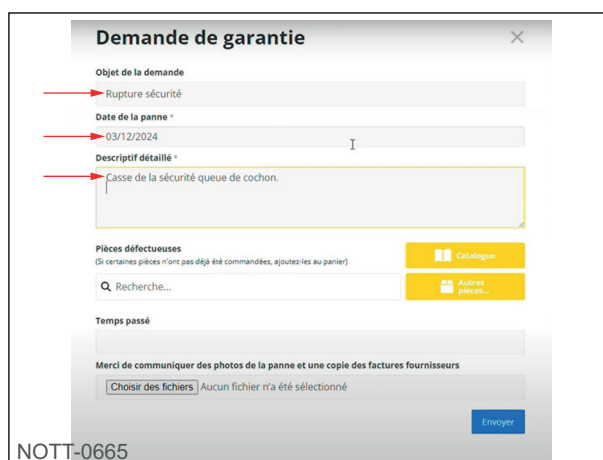


Fig. 7

7 - Click on “Catalogue” to complete the “Defective parts” section.

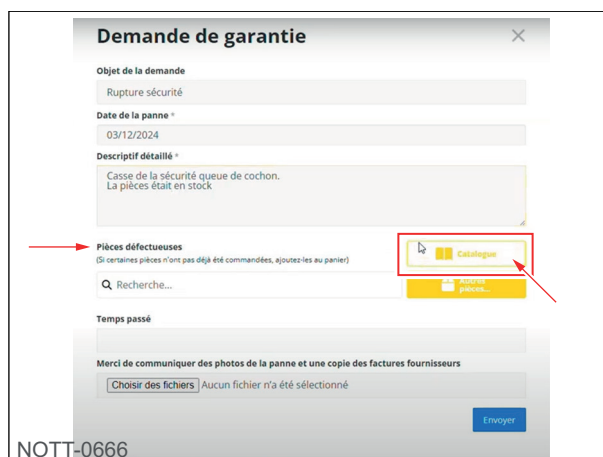


Fig. 8

- 8 - Browse through the catalogue until you find the part that is defective. Copy the reference number.

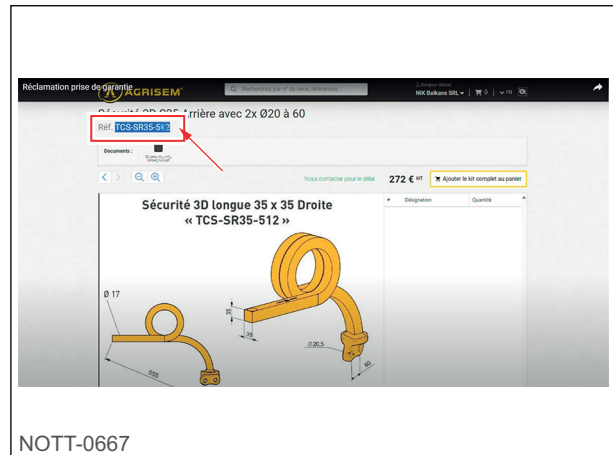


Fig. 9

- 9 - Paste the part reference into the search field and select the corresponding part from the drop-down menu.

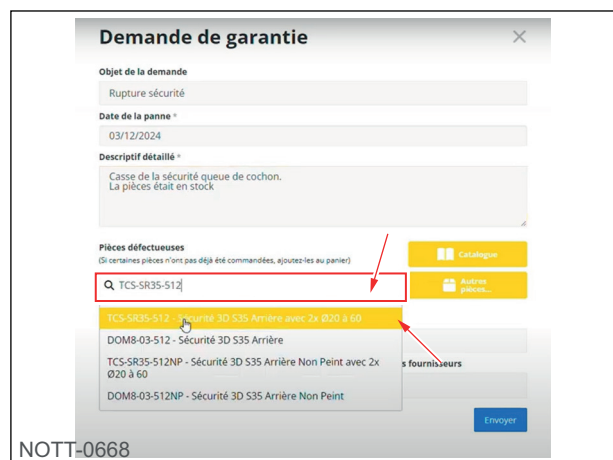


Fig. 10

- 10 - Complete the rest of the form :
- quantity (Qt)
 - elapsed time
- 11 - Upload photos of the fault and copies of supplier invoices by clicking on "Select files".
- 12 - Click on "Submit".

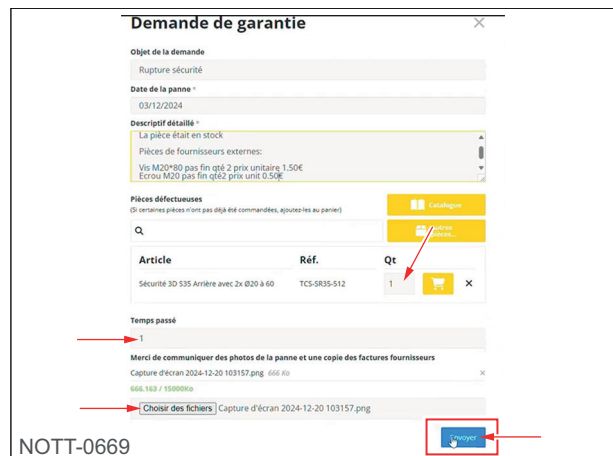


Fig. 11

4.1.10. 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. Register commissioning

To register the initial commissioning and the warranty certificate, follow the procedure described below or go to the following link: <https://www.youtube.com/watch?v=0E5fU9Wcv8Q>



NOTE

Preferably use Google Chrome to avoid nuisance bugs.

- 1 - Go to my.agrisem.fr and log in to your account.
- 2 - Then go to "My fleet".

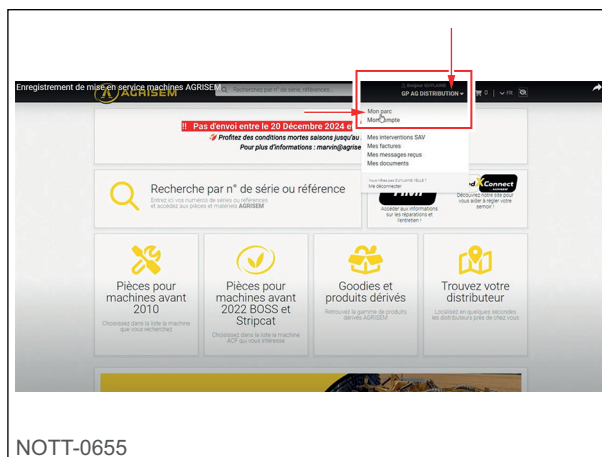


Fig. 12

- 3 - In the search field, enter the serial number of the machine to be registered.
- 4 - Click on the appropriate machine when it appears.

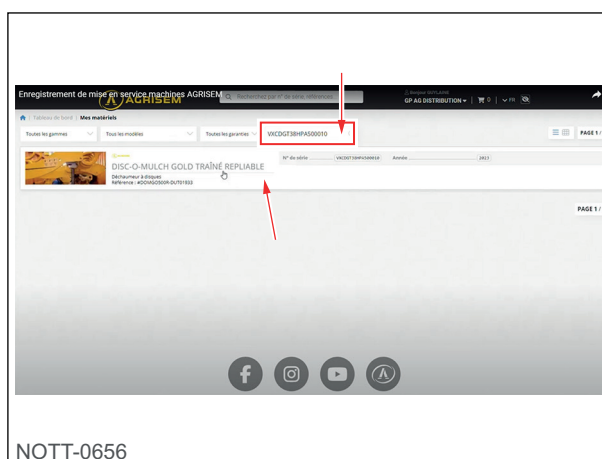


Fig. 13

- 5 - Click on "Initial commissioning".

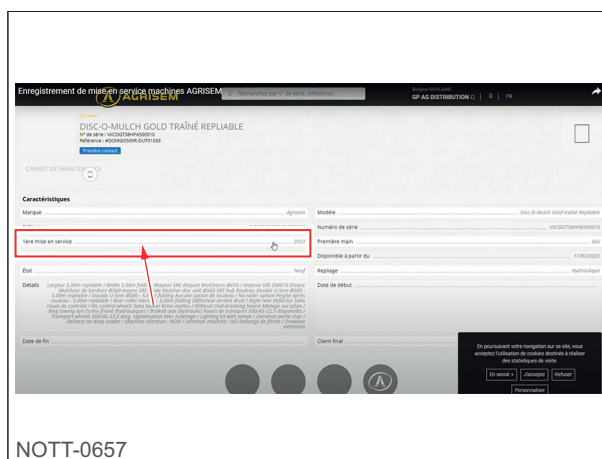
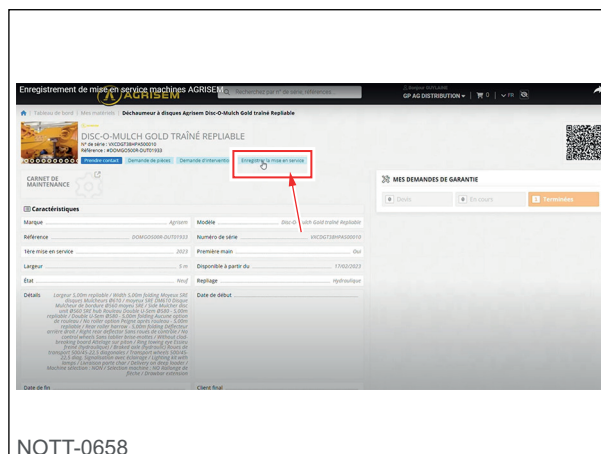


Fig. 14

6 - Click on “Register commissioning”.



NOTT-0658

Fig. 15

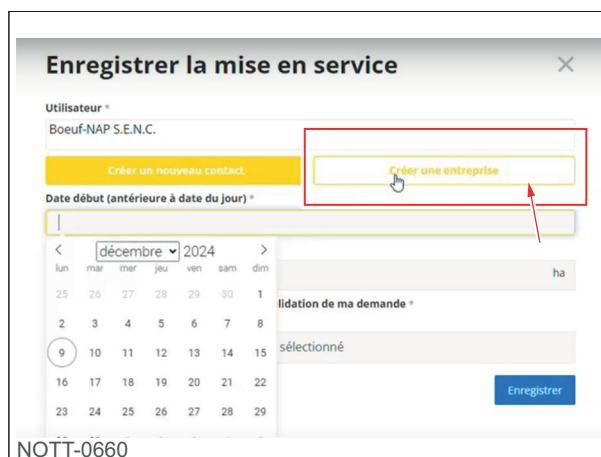
7 - Enter the name of the machine's owner in the “User” field. If the name already exists in the database, select it.



NOTT-0659

Fig. 16

8 - If the owner's name does not exist in the database, enter the name and then click on “Create a company”.



NOTT-0660

Fig. 17

- 9 - Complete the rest of the form :
 - start date
 - usable area
- 10 - Download the completed warranty certificate by clicking on “Select a file”.
- 11 - Click on “Save”.



Fig. 18

4.3. Exclusion of liability clause

AGRISEM INTERNATIONAL accepts no liability for any damage (or any related consequential loss) arising from one or more of the following causes.

- Non-compliant use of the machine.
- Failure to follow the manufacturer's regulations 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.
- Using the machine with defective or incorrectly installed or non-operational protective and safety devices.
- Combining the machine with other equipment or machines without the written consent of AGRISEM INTERNATIONAL, and/or without complying with the manufacturers' instructions for the tractor and other equipment or machines.
- Modifications to the machine without the written consent of AGRISEM INTERNATIONAL.
- Fitting spare parts, accessories or equipment to the machine that are neither original parts nor not recommended by AGRISEM INTERNATIONAL.
- Failure to monitor the machine's wear parts.
- 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 regulations

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 regulations 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/equipment) 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. Consequently, it is essential that anyone who may work with this machine strictly complies with the following basic rules and the safety regulations stated 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 genuine AGRISEM INTERNATIONAL spare parts.

This machine must only be operated, maintained and repaired by competent personnel who are familiar with its specifications and operating procedures, and who are aware of the safety regulations regarding accident prevention 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 that could compromise safety must be rectified immediately.

The user is required to strictly adhere to the safety regulations 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 health, 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 operating 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 is not liable for any damage (personal injury or property damage) resulting from one or more of the following causes:

- Failure to follow the manufacturer's regulations 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.
- Using the machine with defective or incorrectly installed or non-operational protective and safety devices.
- Attaching the machine to other equipment or machinery without the written consent of AGRISEM INTERNATIONAL, or without complying with the manufacturers' instructions for the tractor and other equipment or machinery.

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 to the machine without the written consent of AGRISEM INTERNATIONAL.
- Fitting spare parts, accessories or equipment to the machine that are neither original parts nor not recommended by AGRISEM INTERNATIONAL. Spare parts are available via the online spare parts catalogue (accessible at <http://parts.agrisem.com/>) or from your authorised after-sales network.
- Failure to monitor the machine's wear parts.
- 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 warranty claim relating to damage resulting from one or more of the causes listed above is precluded.

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 even narrow soil cultivation equipment has sharp components (such as blades, ploughshares and discs). These 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. Make sure there is sufficient visibility to fulfil this condition for use.

Before starting any work, ensure that the weight distribution on the tractor is such that the whole machine is stable. To avoid any danger of the front lifting, the tractor must be sufficiently ballasted at the front. If necessary, add weights to the front.

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.

During unfolding and folding manoeuvres, no one is permitted to stand within 50 metres of the machine.

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.

Inspect the machine for any external damage and check the condition of the protective devices. Protective devices must be clean, visible and in good condition. If this is not the case, please contact AGRISEM INTERNATIONAL's after-sales service to have them replaced.

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.

Do not use the machine on very uneven or steeply sloping ground.

Do not use the machine in the event of thunderstorms and lightning.

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 regulations regarding safety at work and accident prevention.

Immediately disinfect any cut or injury that comes into contact with the substances 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 after-sales service network .

Check that the tractor has the specifications necessary for hitching the machine (see “Specifications”, page 137).

WARNING



If the tractor is not compatible with the attached machine, you may be exposed to the following risks:

- Defective hitch
- Instability under load
- Instability during manoeuvring
- Insufficient braking capacity

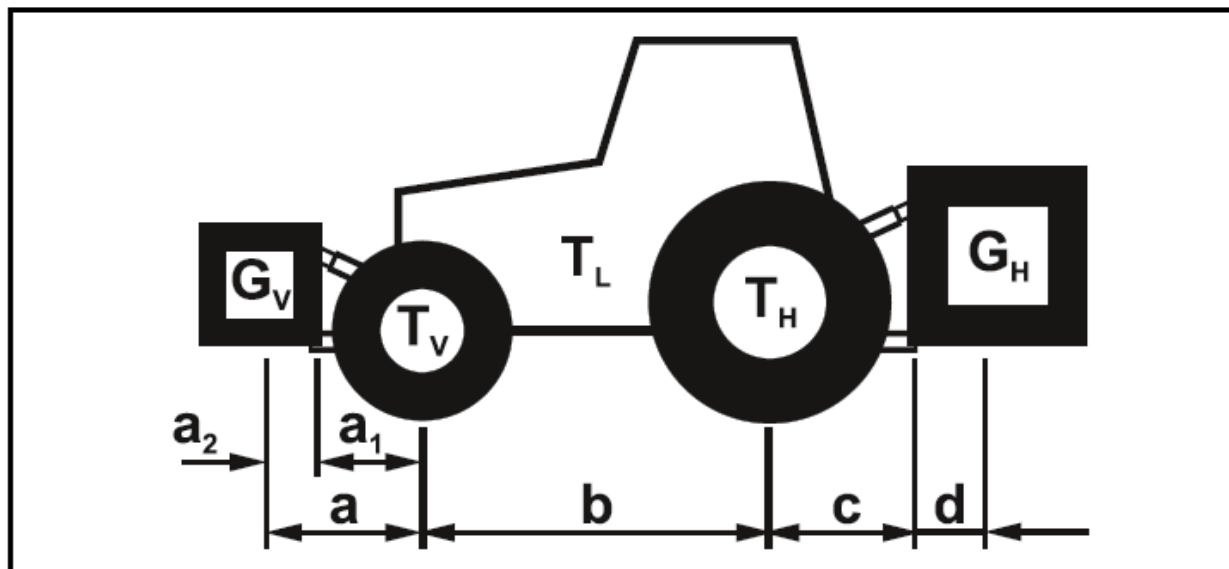
Check that the tractor meets the necessary requirements before installing or hitching the machine.

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

Perform a brake test to verify that the tractor can provide the required deceleration effort, including when the machine is attached/ hitched.

Refer in the first instance to the tractor's operating instructions; the following information is provided for guidance only.

Data needed for calculation



NOTT-0222

Fig. 19

Marking	Unit	Designation	Comment
T_L	[kg]	Empty weight of tractor	see the tractor's user manual or registration document
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 specifications of the machine or the rear ballast
G_V	[kg]	Total weight of front-mounted machine or front weight	see technical specifications of the front-mounted machine or front ballast
a	[m]	The distance between the centre of gravity of the front-mounted machine or front ballast and the centre of the front axle can be calculated (sum of $a_1 + a_2$)	or consult the technical specifications of the tractor and the front-mounted machine or front ballast, or measurement
a_1	[m]	For the distance 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]	For the 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 specifications 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

Marking	Unit	Designation	Comment
c	[m]	For the distance 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]	For the 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 specifications of the machine

Calculation of the required minimum front ballast $G_{V \min}$ 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 28.

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

NOTT-0223

Fig. 20

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

Enter the value for the calculated actual front axle load and the permissible tractor front axle load specified in the tractor's user manual in the table page 28.

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

NOTT-0224

Fig. 21

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

Enter the value for the actual total weight calculated and the total permitted weight indicated in the tractor's operating instructions in the table page 28.

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

NOTT-0225

Fig. 22

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

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 28.

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

NOTT-0226

Fig. 23

Tyre load capacity

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 28.

Table

	Actual value obtained by calculation	Authorised value according to the tractor user manual	Double the permissible load capacity of the tyres (2 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 values for the permitted total weight, axle loads and tyre load capacities.

The calculated actual values must be less than or equal to ($\leq$) the permitted 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 permitted 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 ballast required at the front ($G_{V \min}$) is not achieved with the weight of the front-mounted machine (G_V), use additional weights in addition to the front-mounted machine.

If the minimum required ballast at the rear ($G_{H \min}$) is not reached 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, adjusting, 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 permitted axle loads,
- the authorised vertical load on the tractor coupling point,
- the permissible load capacities of the tyres mounted on the tractor,
- the permitted hitching capacity must be sufficiently high,
- 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 identification plate or in the vehicle's registration papers and in the tractor user manual. If it is missing, contact the tractor after-sales 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 applies only to Germany:

If the axle loads and/or the permissible total weight are exceeded and all other options have been exhausted, the competent authority of the respective federal state may, based on an expert opinion from a certified motor vehicle expert and with the consent of the manufacturer, grant an exemption in accordance with Section 70 of the German Road Traffic Licensing Regulations and the prescribed approval in accordance with the German Road Traffic Regulations .

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
- DS200/300/500: Disc-O-Mulch / Maximulch / Actimulch

AGRISEM INTERNATIONAL accepts no liability for any damage resulting from the use of unauthorised combinations of machines.

Accidents linked to the malfunction 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 designated hitching points and in accordance with the relevant regulations.

5.1.4. Instructions to be followed when using the machine



WARNING

Risks of accidents involving crushing, cutting, entanglement, trapping and impact due to a safety defect relating to movement or operation.

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.

It is essential never to work while reversing.

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

The machine must only be used or manoeuvred in areas that are clear of people. A 50 metre safety zone must be kept clear around the machine.

The machine components, which are driven by an external power source, 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, it is essential to stop the drive, switch off the tractor engine, remove the ignition key and wait for the machine to come to a complete standstill. 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.

Keep all persons and animals away from the danger zone surrounding 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 check the various settings regularly. Protective devices must be clean, visible and in good condition.

Do not use the machine on very uneven or steeply sloping ground.

Do not use the machine in the event of thunderstorms and lightning.

With regard to driving

Adapt your driving style so that you can control the tractor with the mounted or attached machine under all circumstances.

In this regard, take into account the operator's abilities, the condition of the ground or road surface, traffic, visibility and weather conditions, the tractor's handling characteristics, and the operating specifications when the machine is mounted or attached.

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.

On uneven terrain or in tight bends, reduce your speed.

When cornering, take the overhang and inertia of the mounted implement into account.

At all times, avoid sudden changes of direction.

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 persons or animals on the machine / additional tools during operation or transport.

When travelling on public roads

Observe with the highway code applicable in your country.

Before driving on public roads, check the machine's road clearance and remove any components that exceed the clearance limits.

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

Take into account the higher centre of gravity with a vertical folding machine, as the stability of the unit will differ between the unfolded and folded positions. Adjust your driving accordingly.

Before setting off on the road, ensure that the hitched appliance is equipped with lighting and signalling devices that comply with the Highway Code, and any other features required by the regulations in force.

The AGRISEM INTERNATIONAL rear warning lights can be removed during work. Check that they have been correctly refitted before driving on public roads.

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

The user must not consume alcohol, medication or any substance that could affect their perception, causing a loss of alertness or coordination. A user who takes prescription or non-prescription drugs should seek medical advice regarding their ability to safely 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 lines,
- 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, please contact AGRISEM INTERNATIONAL's after-sales service to have them replaced.

Ensure that the machine or additional equipment does not obstruct the tractor's lights.

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

Never exceed a speed of 25 km/h when carrying a 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 comply with applicable rules and regulations.

5.1.5. Instructions to be followed during any work on the machine

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

Observe the instructions for machine maintenance set out in this operating manual.

Before working 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 when handling sharp objects.

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 specifications and operation.

Only genuine AGRISEM INTERNATIONAL spare parts may be used to repair the machine.

To protect exposed metal parts, use either a rust inhibitor that leaves an oily film or thick grease.

Depending on the type of machine: before carrying out any work on the electrical circuit or before welding, disconnect the electrical cables 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 regulations are not observed.

- In the event that electrical devices and/or components are retrofitted to the machine and connected to the on-board electrical system, the user must first check that the installation does not cause any interference with the vehicle's electronics or other components.
- Ensure that any retrofitted electrical and electronic components comply with Directive 2004/108/EEC on electromagnetic compatibility in its current version and bear the CE marking.

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

Only use the recommended fuses. Using fuses with an unsuitable amperage can cause damage to the electrical installation, resulting in a fire hazard.

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 driven by pressurised hydraulic fluid. Working on a pressurised circuit may result in the risk of injury due to contamination. All work must be carried out by professionals trained in the handling of hydraulic systems.

For assistance with replacing hydraulic components, please contact AGRISEM INTERNATIONAL's after-sales service.

Mark the sockets and connectors of the hydraulic connections between the tractor and the machine to avoid handling errors. Refer to “Operation”, page 38 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 inspect flexible hydraulic hoses for any signs of damage or abnormal wear.

When replacing hydraulic hoses, ensure that only hoses with the specifications and quality specified by the machine manufacturer are used. If in doubt, please contact the AGRISEM INTERNATIONAL after-sales 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 prevent accidents caused by unexpected movement of hydraulic equipment or by unauthorised persons, the control valves on the tractor must be locked or secured when not in use or locked in the 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 after-sales 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. Specific instructions for AGRISEM INTERNATIONAL seeders

In addition to the requirements applicable to all machinery, users of AGRISEM INTERNATIONAL seeders must comply with the following requirements.

Always use the AGRISEM walkway when climbing onto the machine.

Only climb onto the machine when it is stationary.

When carrying out maintenance work on the AGRISEM INTERNATIONAL seeder or when measuring flow rates, the seeder must be switched off, and a 50-metre safety zone must be cleared. 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 grain 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:

- take care to avoid the impact of flying debris (e.g. soil, oil, stones or metal) when starting up the turbine.
- while using the machine

When using the front hopper, the user must comply with the road traffic regulations in their country.

If the tractor's signalling equipment is not sufficient (or not sufficiently visible) ensure that the front hopper is fitted with lighting and signalling plates.

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

On many AGRISEM INTERNATIONAL tools, pre-compressed spring assemblies ensure safety. If all necessary precautions are not taken, they can pose a serious safety risk during technical work on the machine.



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 3 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.

If you have any doubts regarding unloading procedures or the loading, securing and anchoring 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. Make sure there is sufficient visibility to fulfil this condition for use.

5.1.14. Overwintering

If the machine is to be stored outdoors over the winter, it must be stored in its unfolded state.

5.2. Safety symbols on the machine



DANGER

You are the sole guarantor of safety. Correctly applying the safety regulations 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. Accidents that result in serious injury or death can be avoided.



IMPORTANT

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

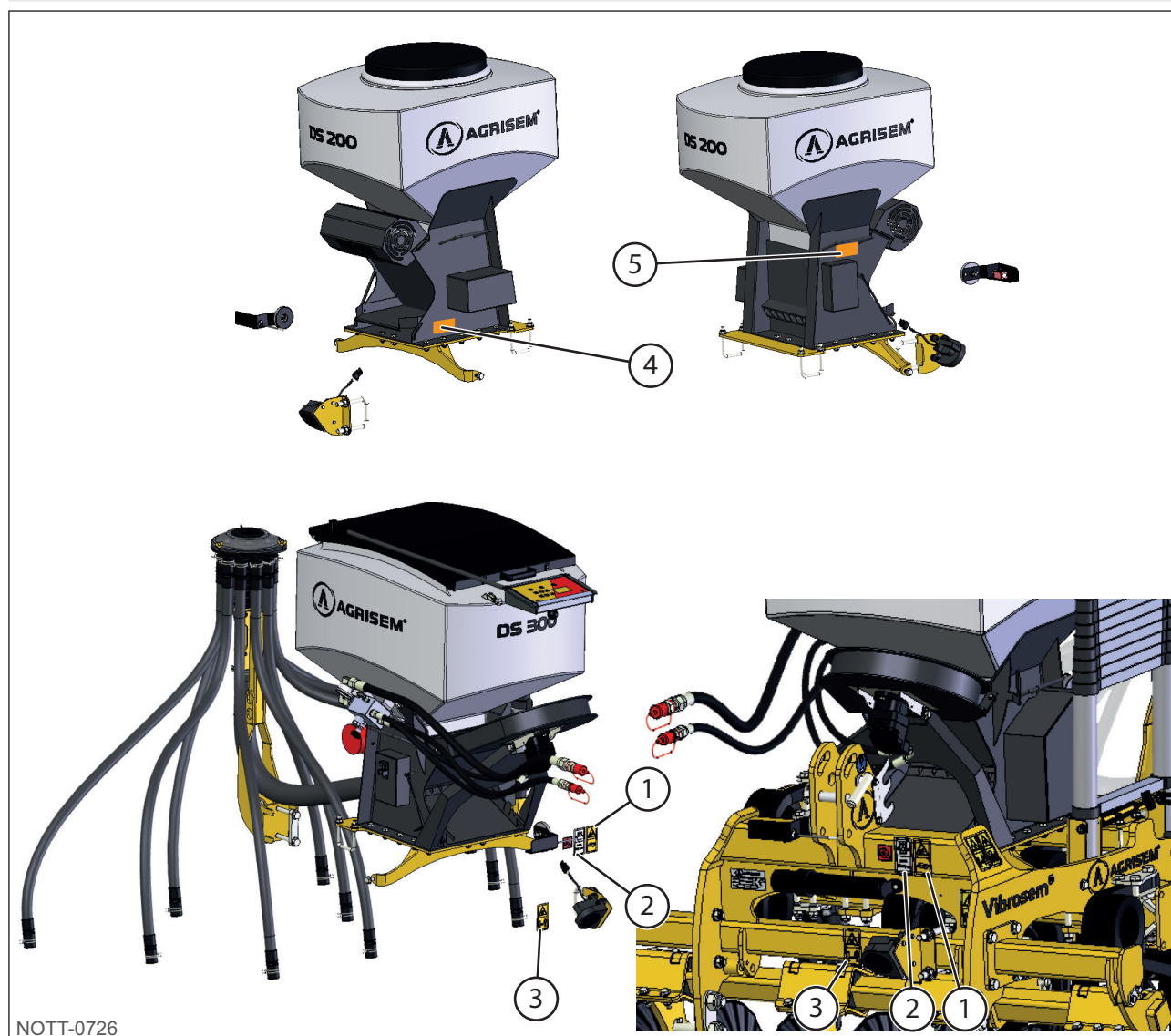


Fig. 24

Marking	Reference	Symbol	Meaning
1	ETIQ01-641		RISK OF INFECTION THROUGH SKIN PENETRATION Follow the servicing and maintenance instructions in the user manual.
2	ETIQ01-505		DANGER WARNING Stop the engine and remove the ignition key before carrying out servicing or repair operations.
3	ETIQ01-635		RISK OF EYE INJURY To avoid any risk of eye injury, do not look at the radar sensor surface when it is in operation.
4			Follow the instruction for use Incorrect handling or misuse of the machine can result in death or serious injury. Before each start-up: - Read and follow the instructions for use. - Follow the instructions.
5			Rotating parts can cause death or serious injury. - Always ensure that safety guards are closed and securely fastened before operating the machine. - Keep guards closed during operation and never remove them.

6. Operation

6.1. Location and description of operating controls

Marking	Designation
1	12-pin socket
2	6-pin socket
3	3-pin socket
4	Fuse 30 A

Secure the bracket supplied to the cab using two screws.



IMPORTANT

Do not wind the cable onto a reel.



NOTE

For optimal viewing, please install the module. If necessary, the bracket can be bent slightly to correct the angle.

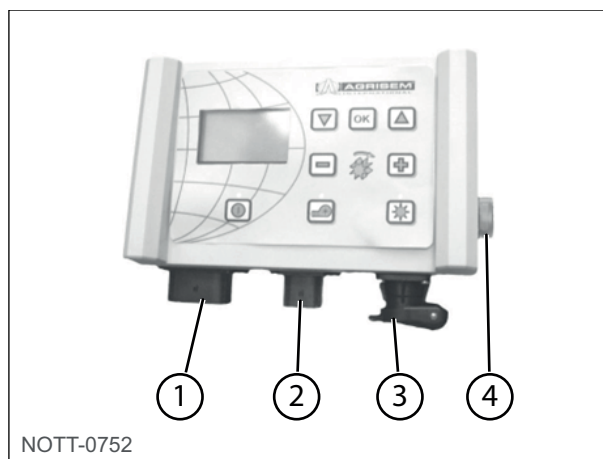


Fig. 25

See 7. Operating control unit screen 5.2, page 64 for details of the operating controls.

6.2. Commissioning

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. Recording of initial commissioning

When commissioning the machine, it is necessary to register it on my.agrisem.fr.

Refer to paragraph 4.2. Register commissioning, page 20.

6.2.3. Tractor/machine compatibility



NOTE

The information listed below is provided for informational purposes only and does not replace the assembly instructions. Please contact the after-sales service network.



CAUTION

Check the compatibility of the tractor and the machine.

- The tractor is suitable for the machine to which it is to be hitched and has been tested accordingly (see specifications section).
- The tractor's hydraulic, mechanical and electrical connections are suitable for the machine to which it will be hitched.

Required specifications for the tractor



CAUTION

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

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



NOTE

The permitted 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.

6.3. Electrical connection



CAUTION

The 12 V supply should NOT be plugged into a cigarette lighter socket. After using the device, switch off the operating controls (for safety reasons).



CAUTION

Failure to follow these instructions may result in damage to the operating control module.



CAUTION

If the battery is charged using a charger set to "Start" mode, voltage spikes may occur. Do not connect the operating control module while the battery is charging, as this may damage the electronics.

Connect the supplied cable directly to the tractor's standard three-pole socket in the cab. Connect the other end to the operating module.



Fig. 26

6.4. Hydraulic connectors

Where the machine is fitted with a hydraulic turbine, two hoses are provided for connection to the tractor:

- the pressure-free return line (yellow) must discharge into the tractor oil tank.
- the pressure line (red) can be easily connected to the tractor's control unit.

Before connecting the hydraulic hoses to the tractor's hydraulic system, ensure that both the tractor and equipment sides are depressurised.



CAUTION

Close the flow regulator completely before starting the turbine to prevent accidental overload.

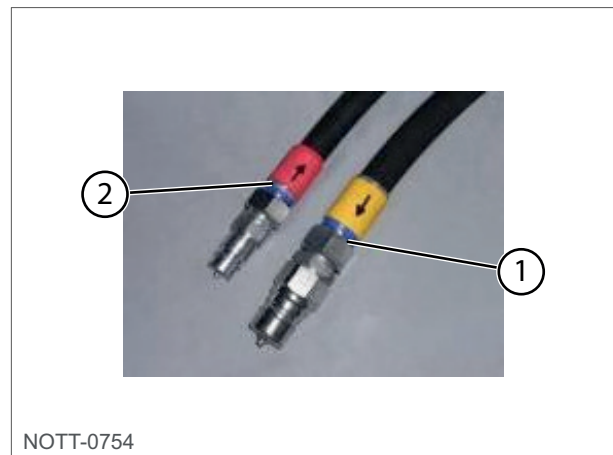


Fig. 27

6.5. Operation of the seeder

6.5.1. Electric fan

- 1 - The operator sets up the machine for use and fills the hopper with seed grains.
- 2 - The operator activates the seeder from the operating control unit.

Result:

- The dosing roller rotates.
 - The agitator rotates.
 - The fan produces a stream of forced air.
- 3 - The seed flows from the grain hopper through the dosing roller, and compressed air carries the seed to the spreading discs via the flexible hoses.
 - 4 - The seed is spread.

6.5.2. Hydraulic fan

Operation of the sensors

The turbine speed sensor monitors the speed of the hydrostatic fan.

As soon as the sensor reports an error, the message "Fan error" appears on the operating control unit.

Function of the temperature measuring strip

The segments of the temperature measuring strip (on the engine) change to black when the corresponding temperature range is reached or exceeded.

The hydraulic motor's seals will be damaged if temperatures exceed 80°C.

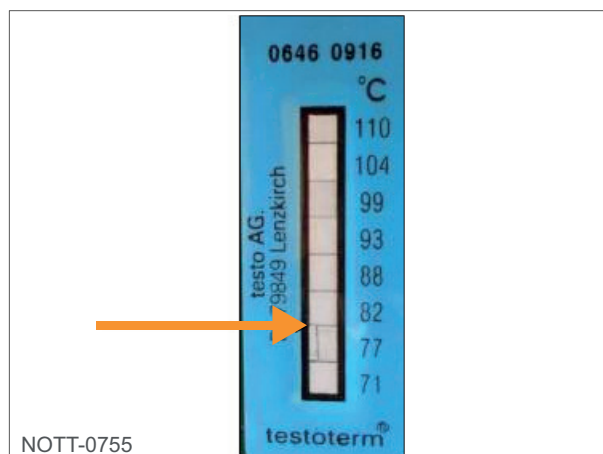


Fig. 28

6.6. Settings

6.6.1. Adjusting the hydraulic fan

Marking	Designation
1	Hydraulic block
2	Flow controller

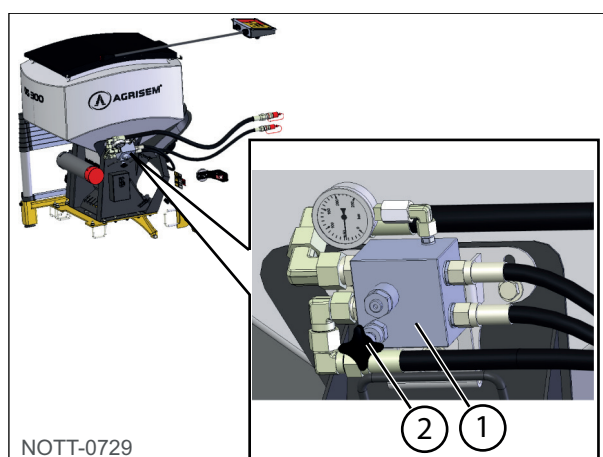


Fig. 29

Objective

The hydraulic fan generates a flow of air that carries the seed to the spreading elements via the flexible hoses.

The required air pressure and volume depend largely on the type and weight of the seed, its quantity, the working width, and the speed. It is therefore not possible to specify a precise setting for the fan; this must be determined by field testing. The reference settings for the fan are shown in the flow controller settings table.

Procedure

Variant 1 (constant-displacement pump – oil flow rate cannot be adjusted on the tractor)

- 1 - The flow regulator (2) on the hydraulic unit (1) must be fully closed.
- 2 - Switch on the fan (tractor motor speed as in field operation).
- 3 - Set the turbine speed using the flow regulator (2) on the operating control unit.

Variant 2 (variable displacement pump - oil flow adjustable on the tractor)

- 1 - The flow regulator (2) on the hydraulic unit (1) must be fully open.
- 2 - Close the flow regulator on the tractor completely (set the oil flow to zero).
- 3 - Switch on the fan and bring it to the desired speed (by slowly increasing the oil flow).

Flow regulator setting chart

(applies at an oil temperature of approx. 50°C)

Working width 3 m			
Seed	Quantity	Pressure	Regime
Fine seeds	5 kg/ha	5 bar	1400 rpm
Fine seeds	30 kg/ha	15 bar	2900 rpm
Coarse seed	50 kg/ha	18 bar	3000 rpm
Coarse seed	100 kg/ha	19 bar	3100 rpm

Working width 6 m			
Seed	Quantity	Pressure	Regime
Fine seeds	5 kg/ha	8 bar	1550 rpm
Fine seeds	30 kg/ha	20 bar	3300 rpm
Coarse seed	50 kg/ha	21 bar	3400 rpm
Coarse seed	100 kg/ha	22 bar	3500 rpm

Working width 12 m			
Seed	Quantity	Pressure	Regime
Fine seeds	5 kg/ha	10 bar	1650 rpm
Fine seeds	30 kg/ha	35 bar	4000 rpm
Coarse seed	50 kg/ha	39 bar	4200 rpm
Coarse seed	100 kg/ha	41 bar	4300 rpm

6.6.2. Flowrate adjustment

Objective

The setting for the seed rate during seeding has a major influence on the seeding result.

- 1 - Perform a calibration test to determine the current flow rate, see 6.6.3. Setting the seeding rate (calibration test), page 43.
- 2 - If necessary, take measures to adjust the flow rate.

Appropriate measures:

- Selection of the dosing roller.
- Selection of the brush pressure.
- Adjusting the working width.
- Adjusting the tractor speed.

Calculation of flow rate

The flow rate is calculated using the following formula:

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

NOTT-0730

Fig. 30

6.6.3. Setting the seeding rate (calibration test)

Objective

The calibration test determines the quantity of seeds required for a specific area.

Conditions

The machine must be switched off.

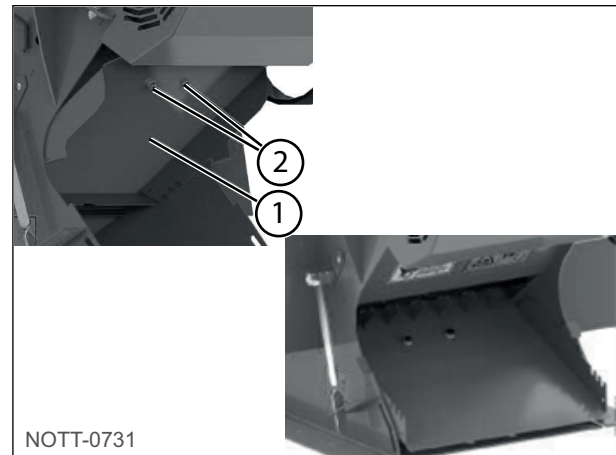
Required components and tools

The following components and tools are required for operation:

- Flow control bag
- Hex key

Procedure

- 1 - Loosen hexagon bolts (2) on discharge plate (1).
- 2 - Remove the discharge plate from its mounting, then rotate it through 180°.
- 3 - Attach the discharge plate to the seeder.
- 4 - Attach the flow control bag to the discharge plate.
- 5 - Choose an appropriate brush pressure, see 6.6.4. Setting the brush pressure, page 43.
- 6 - Switch on the operating control unit.
- 7 - Start the seeder calibration program, see 7. Operating control unit screen 5.2, page 64.



NOTT-0731

Fig. 31

6.6.4. Setting the brush pressure

Objective

The brush setting lever allows the pressure exerted by the brush on the dosing roller to be adjusted.

Overview

Marking	Designation
1	Brush setting lever
2	Setting scale

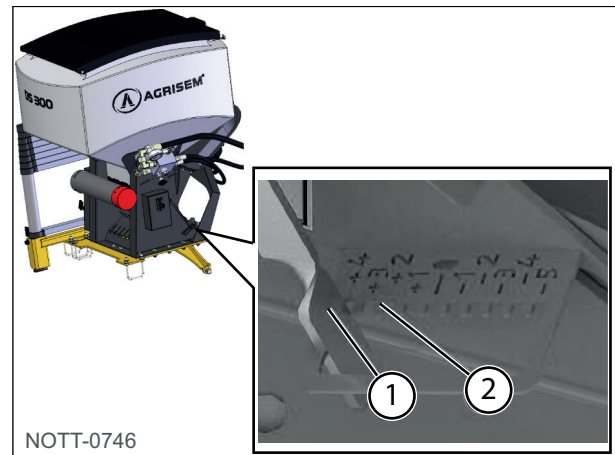


Fig. 32

Procedure

- 1 - Pull the brush setting lever (1) out of the setting scale.
- 2 - Move the brush lever to the desired position and insert it into the corresponding notch on the setting scale.

Please note the following rules:

- Increase the brush pressure to -5 for fine seed.
- Reduce the brush pressure up to +4 for coarse grain.

6.6.5. Hopper-end sensor

The hopper-end sensor is only available in conjunction with an electronic control unit featuring DPA (feed rate proportional to forward speed)

The hopper-end sensor is tripped when it is no longer covered by seed.

Both the height of the sensor and the amount of product remaining in the hopper after triggering can be adjusted.

The sensor can also be adjusted to suit the seeding intensity. This purpose is served by the small slotted screw located at the back of the sensor.

The sensor is activated and illuminates when the hopper is full.

Cover the front sensor with a hand, and it should begin to flash.

It is therefore easy to check whether the sensor is functioning and whether the intensity is appropriate.



Fig. 33

6.7. Dosing roller

6.7.1. Choice of dosing roller

Objective

Choosing the right dosing roller for the seed significantly improves the seeding result.

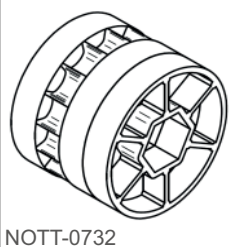
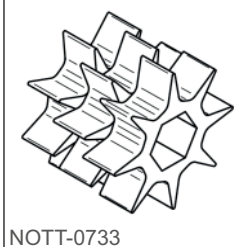
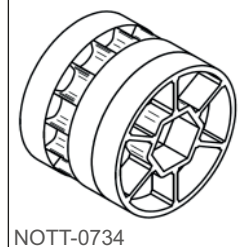
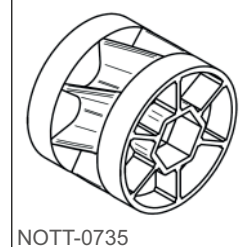
Table of available dosing rollers

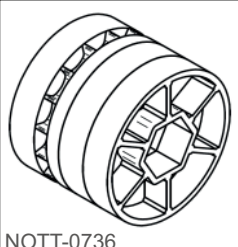
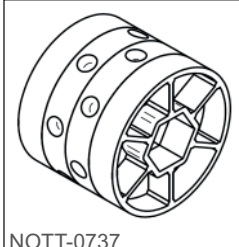
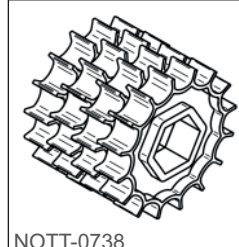
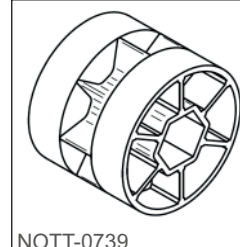


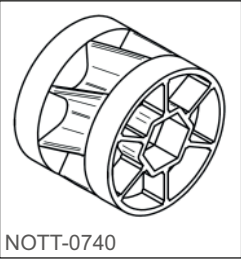
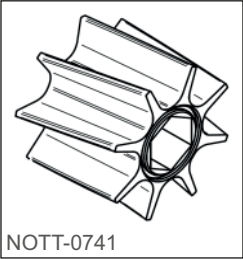
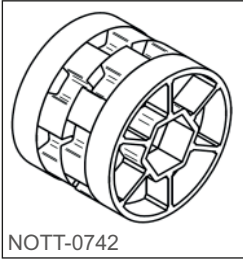
CAUTION

Select the distributor channel combination on the operating control unit so that the dosing roller is set to between 20% and 80%. Thus, good regulation and consistent speed output are ensured, even at very low or high speeds.

Select the appropriate dosing roller for the desired application from the following tables.

fb-f-fb-fb	GGG	fb-f-fb-fb	fb-Flex20-fb
 NOTT-0732	 NOTT-0733	 NOTT-0734	 NOTT-0735
Mustard Phacelia	Grass Cereals	Microgranular fertiliser Mustard Phacelia	Microgranular fertiliser Weight Beans

fb-fb-ef-eb-fb	fb-efv-efv-fb	ffff	GB-G-GB
 NOTT-0736	 NOTT-0737	 NOTT-0738	 NOTT-0739
Poppy	Rape	Buckwheat Mustard Watercress	Buckwheat Fodder radish

fb-Flex20-fb	Flex40	fb-fv-fv-fb
 NOTT-0740	 NOTT-0741	 NOTT-0742
Weight Beans Lupins Vetch Fertiliser	Weight Beans Lupins Vetch Fertiliser	Clover Watercress

6.7.2. Changing the dosing roller

Objective

Fitting a suitable dosing roller significantly improves seeding results.

Conditions

This operation can only be performed if the following conditions are met:

- The equipment is switched off.
- The grain hopper is empty.
- The correct dosing roller has been chosen and is ready.

Overview

Access to agitator and required tools

Marking	Designation
1	Bearing cover
2	Hex wrench support
3	Cap nuts
4	Drive belts
5	Bearing flange
6	Knurled nuts

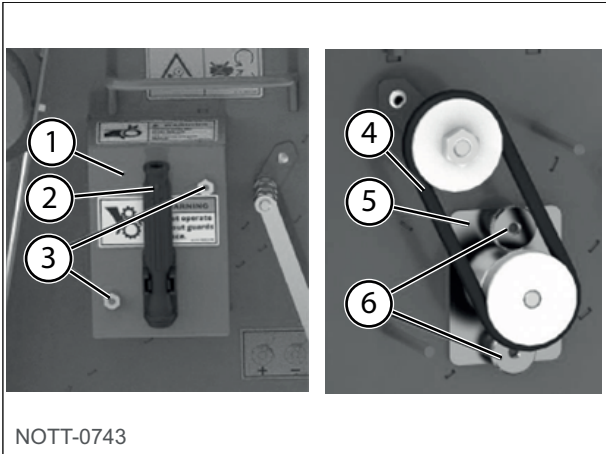


Fig. 34

Procedure

- 1 - Remove the hex key from the support (2).
- 2 - Loosen cap nuts (3) on bearing cover (1).
- 3 - Remove bearing cover (1).
- 4 - Remove the drive belt (4).
- 5 - Loosen knurled nuts (6).
- 6 - Remove bearing flange (5).

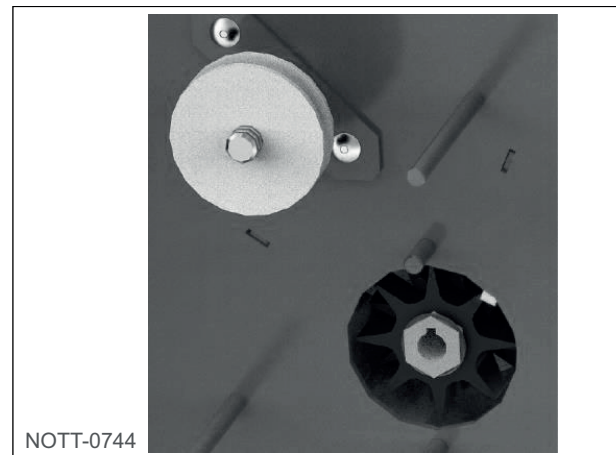


Fig. 35

- 7 - Remove the dosing roller.



NOTE

Residual seeds may fall out.

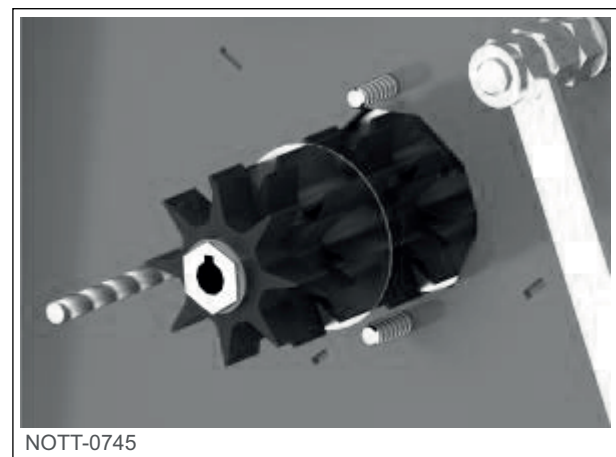


Fig. 36

- 8 - Insert the new dosing roller into the steel frame, with the free end of the shaft facing forward.
- 9 - Turn the dosing roller until the key on the gear motor engages in the matching groove.
- 10 - Insert the bearing flange key carefully into the dosing roller's keyway.
- 11 - Tighten the knurled nuts on the bearing flange by hand.
- 12 - Fit the drive belt around the two drive wheels.
- 13 - Place the bearing cover over the 2 threaded rods and use the hex key to tighten the cap nuts.
- 14 - Check that the dosing roller runs smoothly.

6.7.3. Checking the roller function

Objective

The smooth running of the dosing roller must be checked after each mounting or change. This check is carried out by listening for smooth running.

Conditions

This operation can only be performed if the following conditions are met:

- The grain hopper is empty.

Procedure

- 1 - Switch on the seeder.
- 2 - Perform for quiet running.
- 3 - If the dosing roller is particularly noisy or irregular in operation, contact AGRISEM INTERNATIONAL.

6.8. Turning off the system

Objective

Before opening the hopper cover, always disconnect the power supply or hydraulic system.

For troubleshooting, adjusting settings and maintenance operations, it is often necessary to switch off the seeder.

Overview

Marking	Designation
1	Motor module power supply connector (only for electric fan PLUS)

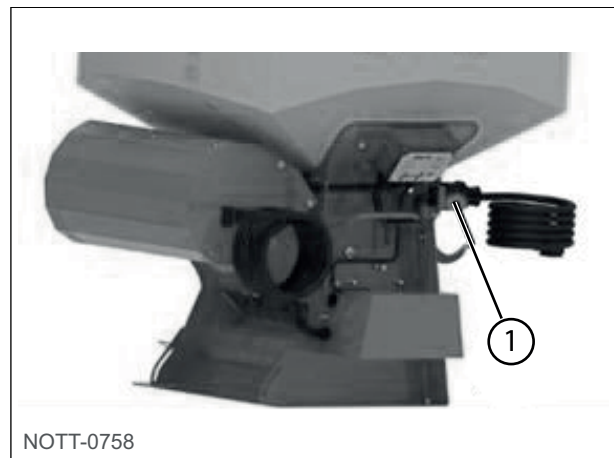


Fig. 37

Procedure

- Control 5.2: disconnect the power supply plug from the operating control unit. If an electric fan PLUS is fitted, also disconnect the power supply plug from the motor module on the seeder.
- Isobus: disconnect the plug from the tractor connection socket.

6.9. Filling the hopper

Objective

The grain hopper contains the seed to be sown.

Conditions

This operation can only be performed if the following conditions are met:

- The equipment is switched off.
- The appropriate dosing roller is fitted.
- Comply with the operating instructions for the soil cultivation machine.
- Follow the manufacturer's instructions for handling seeds.

Required components and tools

The following components and tools are required for operation:

- Seed

Overview

Marking	Designation
1	Grain hopper cover
2	Grain hopper



Fig. 38

Procedure

- 1 - To open the grain hopper, turn the cover (1) anticlockwise.
- 2 - Pour the grains into the grain hopper (2).



DANGER

Dust from seeds can be harmful to health.

- 3 - Avoid the formation of dust.
 - Wear respiratory protection.
 - Open the bags carefully.
 - Fill the hopper slowly.
 - Leave the dust at the bottom of the bag in the bag.
- 4 - Turn the cover (1) clockwise to close the seed hopper.

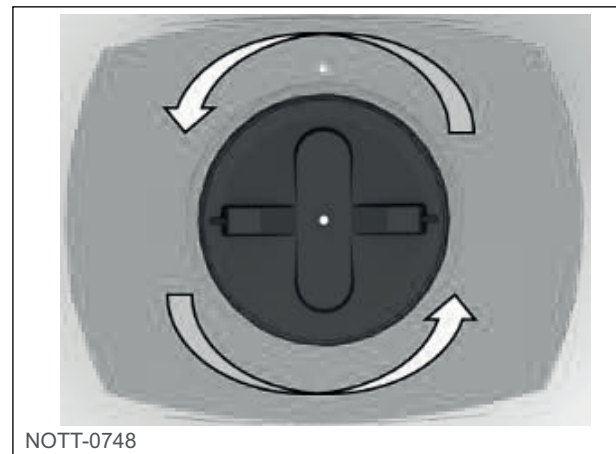


Fig. 39

6.10. Deactivating the agitator

Objective

The agitator is only necessary for seeds that form clumps or are very light (e.g., grasses).

Conditions

This operation can only be performed if the following conditions are met:

- The equipment is switched off.

Required components and tools

The following components and tools are required for operation:

- Hex key
- Drive belt

Overview

Marking	Designation
1	Bearing cover
2	Hex wrench support
3	Cap nuts
4	Agitator
5	Dosing roller

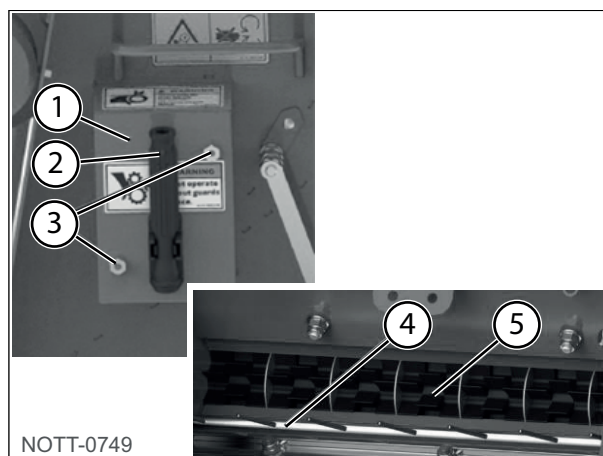


Fig. 40

Procedure

- 1 - Open bearing cover (1).
 To do this, loosen the cap nuts (3) using the hexagon wrench.
- 2 - Remove the drive belt (7) from the dosing roller drive pulley (8) and the agitator drive pulley (6), then set them aside.
- 3 - Close bearing cover (1).

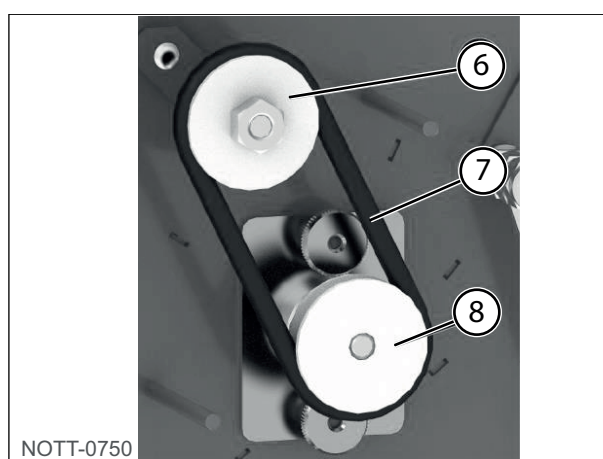


Fig. 41

6.11. Motor module display

Objective

The status of the fan is displayed on the motor module.

Required components and tools

The following components and tools are required for operation:

- Usage of the PLUS electric fan with a 5.2 controller or an Isobus system

Overview

Marking	Designation
1	Fan overload indicator If the motor is subjected to an excessive load within its operational limits for an extended period, the red LED will illuminate.
2	Fan not connected indicator The red LED is illuminated if the wiring is incorrect. When only one ventilator is used, both connection cables must be connected to this ventilator.
3	Fan status indicator The green LED illuminates when the power supply is connected.

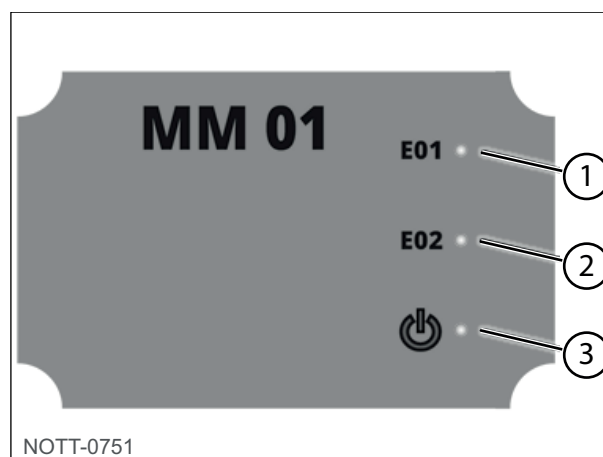


Fig. 42

Procedure

- 1 - The operating control unit displays the error message "Error (fan)!".
- 2 - Check the display on the motor module.
- 3 - Rectify the malfunction (see 11. Malfunctions, page 136).

6.12. Use in the field

- 1 - Start the tractor.
- 2 - Switch on the operating module with the "On/Off" key.
- 3 - Start the blower by pressing the 'Blower' key.
- 4 - To start the seed feed, press the "Distribution shaft" key to start the gear motor.
- 5 - At the end of the field, hold down key "Distribution shaft" key until the green LED switches off.
- 6 - When the work is completed, first switch off the distribution shaft, then the blower, and finally the entire operating module using the "On/Off" key.

The following points must be observed when operating in the field:

- The blower must always be switched on during use in the field.
- Check the required spreading rate.
- Ensure that the spreaders are evenly spaced
- Check the height of the spreaders: distance from the ground approx. 20–40 cm.
- The delivery hoses should be angled slightly downwards or laid horizontally on the equipment.
- The container cover must be sealed tightly.

6.13. Discharging the hopper

To ensure complete discharging, remove the distribution cover located beneath the blower, turn it around, and place it at the front of the lower panel so that it acts as a guide.

Next, select the Discharge menu option on the operating control module. The distribution shaft will then start to rotate automatically. Let the distribution shaft continue to turn until the hopper is empty and the distribution rollers no longer carry any seed.

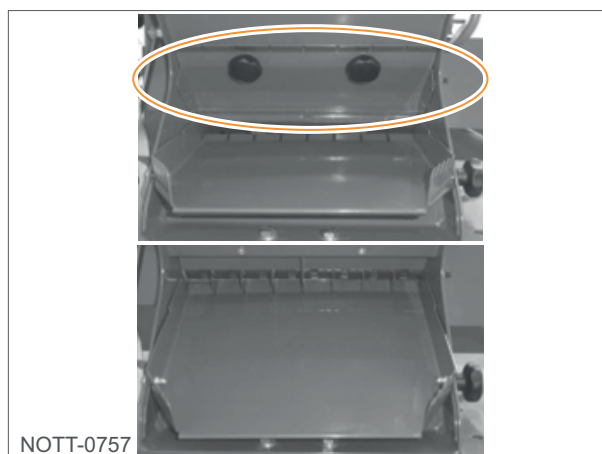


Fig. 43



NOTE

Instead of the distribution cover, the distribution plate can be used. It has the advantage of being larger and easy to fit under a bag or container.

6.14. Dosing tables

Grass (perennial ryegrass)			
Quantity	kg/min	kg/min	kg/min
Distribution shaft	fff	BG-G-BG	GGG
2	0.06	0.26	0.27
5	0.22	0.45	0.61
10	0.49	0.76	1.17
15	0.76	1.07	1.73
20	1.03	1.39	2.30
25	1.30	1.70	2.86
30	1.38	1.98	3.42
35	1.47	2.26	3.98
40	1.55	2.54	4.55
45	1.64	2.83	5.11
50	1.72	3.11	5.67
55	1.82	3.30	6.23
60	1.93	3.50	6.79
65	2.03	3.69	7.36
70	2.13	3.89	7.92
75	2.23	4.08	8.48
80	2.34	4.28	9.05
85	2.44	4.47	9.61
90	2.54	4.67	10.17
95	2.67		10.73
100	2.81		11.30

Wheat (triticum)				
Quantity	kg/min	kg/min	kg/min	kg/min
Distribution shaft	fff	GGG	fb-Flex20-fb	Flex40
2	0.13	0.52	0.344	0.480
5	0.16	1.18	0.584	1.030
10	0.20	2.30	0.985	1.945
15	0.24	3.41	1.386	2.681
20	0.28	4.52	1.787	3.776
25	0.32	5.64	2.188	4.692
30	1.58	6.70	2.589	5.607
35	2.85	7.76	2.990	6.523
40	4.11	8.82	3.391	7.438
45	5.37	9.88	3.792	8.354
50	6.63	10.94	4.193	9.269
55	6.96	11.21	4.593	10.185
60	7.28	11.48	4.994	11.100
65	7.61	11.76	5.395	12.016
70	7.93	12.03	5.796	12.931
75	8.26	12.30	6.197	13.847
80	8.58	12.57	6.598	14.762
85	8.91	12.84	6.999	15.678
90	9.23	13.12	7.400	16.593
95	9.86	13.93	7.801	17.509
100	10.48	14.75	8.202	18.424

Barley (hordeum)		
Quantity	kg/min	kg/min
Distribution shaft	fff	GGG
2	0.18	0.54
5	0.48	0.87
10	0.97	1.41
15	1.47	1.96
20	1.96	2.51
25	2.45	3.06
30	2.95	3.61
35	3.44	4.16
40	3.94	4.71
45	4.43	5.26
50	4.93	5.81
55	5.02	6.70
60	5.12	7.59
65	5.22	8.48
70	5.32	9.38
75	5.41	10.27
80	5.51	11.16
85	5.61	12.05
90	5.71	12.95
95	5.80	13.84
100	5.90	14.73

Radish (raphanus raphanistrum)		
Quantity	kg/min	kg/min
Distribution shaft	ffff	GGG
2	0.24	0.66
5	0.62	1.18
10	1.27	2.05
15	1.91	2.92
20	2.55	3.79
25	3.19	4.66
30	3.60	
35	4.29	
40	4.98	
45		
50		
55		
60		
65		
70		
75		
80		
85		
90		
95		
100		

Vesce (vicia)		
Quantity	kg/min	kg/min
Distribution shaft	fb-f-fb-fb	ffff
2	0.76	3.37
5	1.42	3.89
10	2.51	4.75
15	3.61	5.61
20	4.71	6.48
25	5.81	7.34
30		8.00
35		
40		
45		
50		
55		
60		
65		
70		
75		
80		
85		
90		
95		
100		

Black wheat (fagogyrum)				
Quantity	kg/min	kg/min	kg/min	kg/min
Distribution shaft	fff	GGG	fb-Flex20-fb	Flex40
2	0.09	0.54	0.33	0.27
5	0.39	0.99	0.50	0.70
10	0.90	1.74	0.78	1.40
15	1.41	2.49	1.07	2.11
20	1.92	3.24	1.35	2.82
25	2.43	3.99	1.64	3.53
30	2.86	4.68	1.92	4.23
35	3.30	5.38	2.21	4.94
40	3.74	6.07	2.49	5.65
45	4.18	6.76	2.78	6.36
50	4.62	7.45	3.07	7.07
55	4.84		3.35	7.77
60	5.06		3.64	8.48
65	5.28		3.92	9.19
70	5.50		4.21	9.90
75	5.72		4.49	10.60
80	5.94		4.78	11.31
85	6.16		5.06	12.02
90	6.38		5.35	12.73
95			5.63	13.44
100			5.92	14.14

Blue lupine (lupinus angustifolius)	
Quantity	kg/min
Distribution shaft	GGG
2	0.42
5	1.11
10	2.26
15	3.41
20	4.56
25	5.71
30	6.87
35	8.03
40	9.19
45	10.35
50	11.51
55	12.48
60	13.44
65	14.41
70	15.37
75	16.33
80	17.30
85	18.26
90	19.23
95	21.71
100	24.20

Green Rye (secale cereale)	
Quantity	kg/min
Distribution shaft	GGG
2	0.46
5	0.99
10	1.87
15	2.74
20	3.62
25	4.50
30	5.33
35	6.16
40	6.98
45	7.81
50	8.64
55	9.45
60	10.27
65	11.08
70	11.89
75	12.71
80	13.44
85	14.18
90	14.92
95	15.14
100	18.10

Oats (avena)		
Quantity	kg/min	kg/min
Distribution shaft	fb-f-fb-fb	GGG
2	0.01	0.15
5	0.02	0.46
10	0.04	0.98
15	0.06	1.50
20	0.07	2.02
25	0.09	2.54
30	0.12	3.03
35	0.14	3.52
40	0.17	4.01
45	0.19	4.50
50	0.22	4.99
55	0.23	5.42
60	0.24	5.85
65	0.25	6.29
70	0.26	6.72
75	0.27	7.15
80	0.27	7.58
85	0.27	8.02
90	0.27	8.45
95	0.28	8.73
100	0.31	10.23

Mustard (sinapis alba)		
Quantity	kg/min	kg/min
Distribution shaft	fb-f-fb-fb	ffff
2	0.04	0.33
5	0.15	0.75
10	0.33	1.45
15	0.50	2.15
20	0.68	2.86
25	0.86	3.56
30	1.00	4.23
35	1.15	4.89
40	1.29	5.56
45	1.43	6.22
50	1.58	6.89
55	1.65	7.25
60	1.72	7.61
65	1.79	7.97
70	1.86	8.33
75	1.93	8.69
80	2.00	9.05
85	2.07	9.41
90	2.14	9.77
95	2.31	10.35
100	2.48	10.92

Alfalfa (medicago sativa)		
Quantity	kg/min	kg/min
Distribution shaft	fb-f-fb-fb	ffff
2	0.10	0.30
5	0.21	0.70
10	0.40	1.38
15	0.60	2.05
20	0.79	2.73
25	0.98	3.40
30	1.15	4.05
35	1.32	4.71
40	1.49	5.36
45	1.65	6.01
50	1.82	6.67
55	1.86	7.03
60	1.90	7.40
65	1.93	7.77
70	1.97	8.14
75	2.01	8.50
80	2.04	8.87
85	2.08	9.24
90	2.12	9.61
95	2.24	10.33
100	2.36	11.06

Red clover (trifolium)		
Quantity	kg/min	kg/min
Distribution shaft	fb-f-fb-fb	ffff
2	0.04	0.56
5	0.15	1.37
10	0.33	2.72
15	0.51	4.06
20	0.70	5.41
25	0.88	6.76
30	1.06	6.99
35	1.23	7.22
40	1.41	7.45
45	1.58	7.68
50	1.76	7.91
55	1.82	8.14
60	1.87	8.36
65	1.93	8.59
70	1.98	8.82
75	2.04	9.05
80	2.09	9.28
85	2.15	9.51
90	2.20	9.74
95	2.33	10.34
100	2.46	10.94

Phacelia (phacelia tanacetifolia)		
Quantity	kg/min	kg/min
Distribution shaft	fb-f-fb-fb	ffff
2	0.14	0.34
5	0.31	0.77
10	0.61	1.49
15	0.90	2.22
20	1.19	2.94
25	1.49	3.66
30	1.52	
35	1.56	
40	1.59	
45	1.63	
50	1.66	
55	1.75	
60	1.85	
65	1.94	
70	2.04	
75	2.13	
80	2.23	
85	2.32	
90	2.42	
95	2.52	
100	2.62	

Rapeseed (brassica napus)			
Quantity	kg/min	kg/min	kg/min
Distribution shaft	fb-f-fb-fb	fb-fb-ef-eb-fb	fb-efv-efv-fb
2	0.110	0.037	0.010
5	0.211	0.060	0.019
10	0.380	0.099	0.047
15	0.548	0.138	0.075
20	0.717	0.177	0.103
25	0.885	0.216	0.13]
30	1.031	0.294	0.159
35	1.178	0.371	0.187
40	1.324	0.449	0.215
45	1.470	0.526	0.243
50	1.617	0.603	0.271
55	1.685	0.636	0.299
60	1.754	0.669	0.327
65	1.823	0.701	0.355
70	1.892	0.734	0.383
75	1.960	0.766	0.41]
80	2.029	0.799	0.439
85	2.098	0.831	0.467
90	2.167	0.864	0.496
95	2.303	0.908	0.524
100	2.440	0.952	0.552

Poppy (papaver)	
Quantity	kg/min
Distribution shaft	fb-fb-ef-eb-fb
2	0.029
5	0.049
10	0.083
15	0.116
20	0.150
25	0.183
30	0.260
35	0.336
40	0.412
45	0.489
50	0.565
55	0.602
60	0.638
65	0.675
70	0.711
75	0.748
80	0.784
85	0.821
90	0.857
95	0.900
100	0.942

Peas (pisum sativum)		
Quantity	kg/min	kg/min
Distribution shaft	fb-Flex20-fb	Flex 40
2	0.46	0.95
5	0.67	1.45
10	1.02	2.29
15	1.37	3,]2
20	1.72	3.96
25	2.07	4.80
30	2.42	5.63
35	2.77	6.47
40	3.12	7.30
45	3.48	8,]4
50	3.83	8.98
55	4.18	9.81
60	4.53	10.65
65	4.88	11.49
70	5.23	12.32
75	5.58	13.16
80	5.93	13.99
85	6.28	14.83
90	6.64	15.67
95	6.99	16.50
100	7.34	17.34

Beans (macrotyloma uniflorum)		
Quantity	kg/min	kg/min
Distribution shaft	fb-Flex20-fb	Flex 40
2	0.46	1.02
5	0.66	1.57
10	1.00	2.49
15	1.34	3.40
20	1.68	4.32
25	2.02	5.23
30	2.36	6.15
35	2.70	7.06
40	3.04	7.98
45	3.38	8.89
50	3.71	9.81
55	4.05	10.72
60	4.39	11.64
65	4.73	12.55
70	5.07	13.47
75	5.41	14.38
80	5.75	15.30
85	6.09	16,2'1
90	6.43	17.13
95	6.77	18.05
100	7.11	18.96

White chia		
Quantity	kg/min	kg/min
Distribution shaft	fb-f-fb-fb	fb-fb-ef-eb-fb
2	0.050	0.029
5	0.119	0.049
10	0.235	0.082
15	0.351	0.115
20	0.467	0.149
25	0.614	0.182
30		0.249
35		0,3'16
40		0.383
45		0.450
50		0.517
55		0.550
60		0.583
65		0,6'15
70		0.648
75		0.681
80		0.713
85		0.746
90		0.779
95		0.790
100		0.797

Florex	
Quantity	kg/min
Distribution shaft	fb-f-fb-fb
2	0 00
5	0 08
10	0,2'1
15	0.33
20	0.46
25	0.59
30	0.72
35	0.85
40	0.98
45	1.10
50	1 23
55	1.36
60	1.49
65	1.62
70	1.75
75	1.88
80	2.00
85	2.13
90	2.26
95	2.39
100	2.52

DC37-lose	
Quantity	kg/min
Distribution shaft	GGG
2	0.60
5	1.64
10	3.05
15	4.54
20	6.25
25	7.72
30	9,16
35	10.60
40	12.02
45	13.15
50	14.67
55	15.69
60	16.99
65	18.65
70	19.68
75	20.81
80	21.73
85	22.36
90	22.84
95	23.26
100	23.51

NACKAS-lose	
Quantity	kg/min
Distribution shaft	GGG
2	1.27
5	2.25
10	3.67
15	5.38
20	6.73
25	7.94
30	9.54
35	10.66
40	11.95
45	13.52
50	14.80
55	16.11
60	17.46
65	18.79
70	19.78
75	20.38
80	20.99
85	21.69
90	21.90
95	22.31
100	22.72

DC25-loose	
Quantity	kg/min
Distribution shaft	GGG
2	0.90
5	1.81
10	3.82
15	5.18
20	6.90
25	8.56
30	10.08
35	11.56
40	13.11
45	14.64
50	16.15
55	17.63
60	18.85
65	20.99
70	22.08
75	23.16
80	23.91
85	24.66
90	25.41
95	26.15
100	26.90

7. Operating control unit screen 5.2

7.1. Quick Startup Guide

7.1.1. Scope of delivery and fixing

Marking	Designation
1	Operating module
2	Electrical cable
3	Module support

Secure the standard bracket to the cab using two bolts.



IMPORTANT

Do not wind the cable onto a reel.



NOTE

For optimal viewing, please install the module. If necessary, the bracket can be bent slightly to correct the angle.

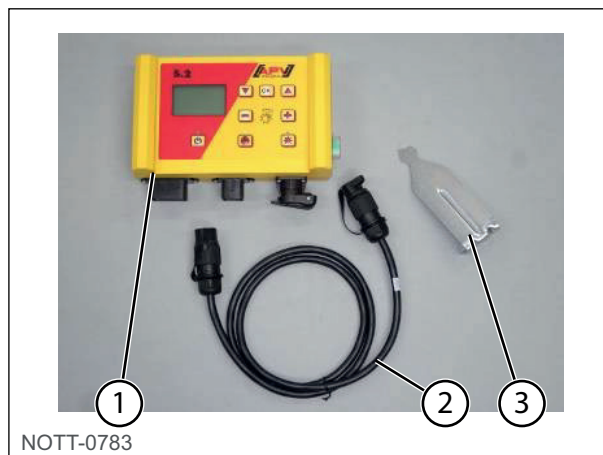


Fig. 44

7.1.2. Electrical connection

Connect the supplied serial cable directly to the tractor's standard three-pin socket located in the cab. Connect the other end to the operating module.

The fuse (30 A) is located on the right side of the operating module.

Secure any excess cables in the driver's cab to prevent them from becoming trapped.



Fig. 45



IMPORTANT

The 12 V power supply must NOT be taken from a cigarette lighter socket!

For safety reasons, it is mandatory to switch off the control panel after using the equipment.


CAUTION

Failure to observe these instructions may result in damage to the operating module!


CAUTION

Voltage spikes may occur if the battery is charged using a charger in “Start” mode! These can damage the operating module electronics when the operating module is connected while the battery is charging!

Marking	Designation
1	12-pin socket
2	6-pin socket
3	3-pin socket
4	Fuse 30 A

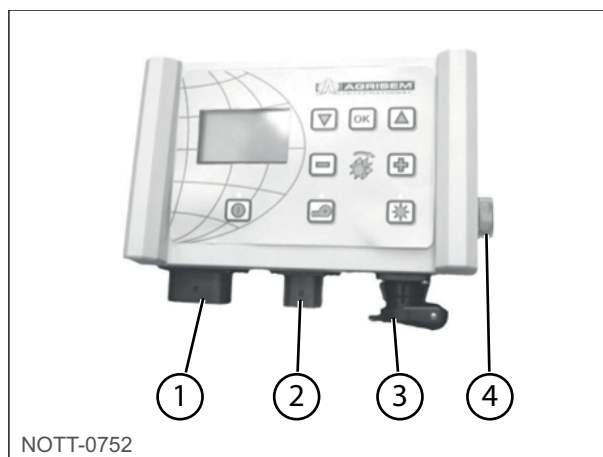


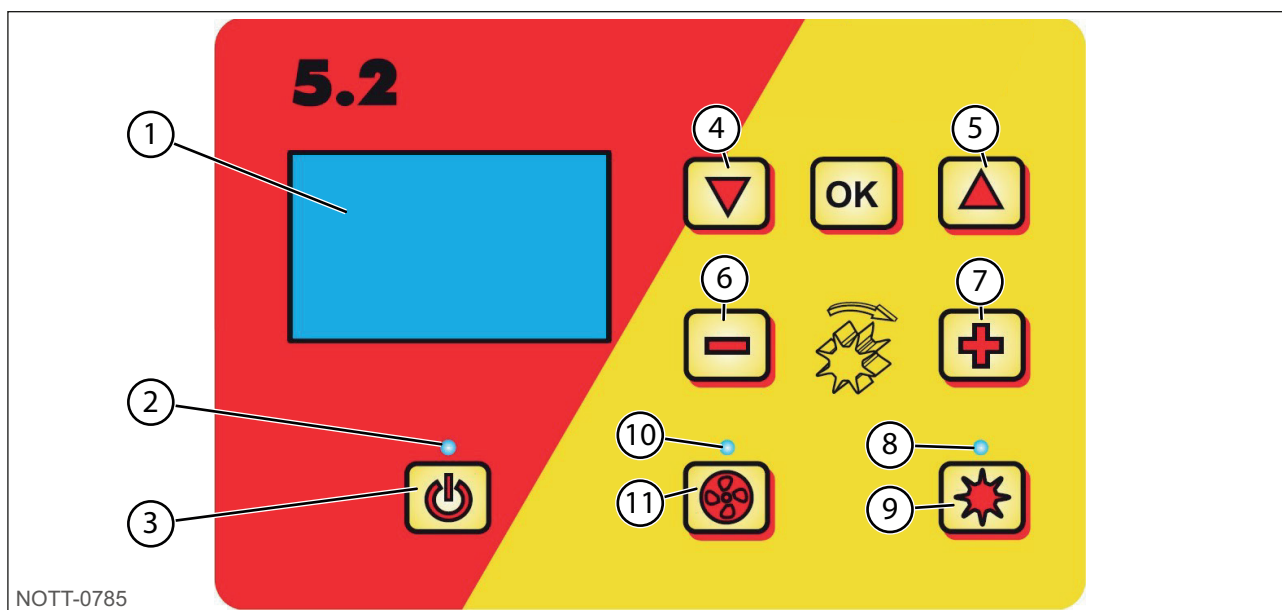
Fig. 46

12-pin socket	6-pin socket	3-pin socket
Driven wheel	Connection to the seeder (seeder cable)	Connection to battery (electrical cable)
Amphenol sensor (for standard socket)		
Lifting mechanism sensor		
Wheel sensor		
Radar sensor		

The various types of sensor explained in more detail in the accessories section.

These are available as accessories on request!

7.1.3. Operating module



Marking	Designation
1	Graphic display
2	Illuminates when the operating control terminal is switched on
3	On/Off power button
4	Cursor down
5	Cursor up
6	Reduce the rotational speed of the distribution shaft
7	Increase the rotational speed of the distribution shaft
8	Illuminates when distribution shaft is rotating
9	Distribution shaft On/Off
10	Turbine/spreader plate On/Off
11	Illuminates when the turbine/spreader plate is in operation

	The 'On/Off' button is located at the bottom left and is used to switch the device on and off.
	Use these keys to adjust the speed of the dosing roller and to change the settings in the Options menu.
	The On and Off keys for the dosing roller are located below. The dosing roller begins to rotate when the On/Off key is pressed. The indicator lamp illuminates.
	Operating module for navigating through menu options.
	Starts or stops the turbine or the spreading plate (on MDD types). - On electric turbine/spreader plate: The indicator flashes when the fan/spreader plate is activated. When the motor is started, the indicator remains illuminated. - for a hydraulic blower (with pressure sensor): The indicator illuminates immediately after the blower has built up pressure.

7.1.4. First commissioning

When commissioning the unit for the first time, or when the factory settings have been reset in the programming menu, configure the 5.2 operating module as follows.



NOTE

Depending on the selected settings, not all points are applicable. You can also modify the options as described in § 7.6. Programme 5.2 (after-sales service), page 88.

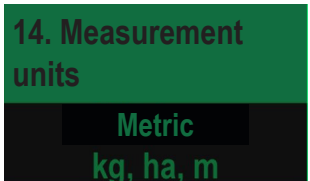
Languages

Select the menu language here.

	Select the desired language with the keys   and confirm with the key  .
---	--

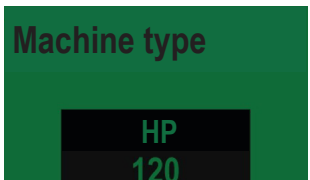
Units of measurement

Select metric (m, ha, km/h, kg) or imperial (ft, ac, mph, lb) units.

	Use the keys to select   metric (kg, ha, m) or imperial (lb, ft, ac) and confirm with the key  .
--	---

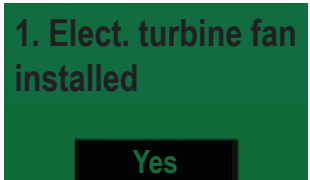
Type of machine

Select your machine type here.

	Select with the keys   and confirm with the key  .
---	---

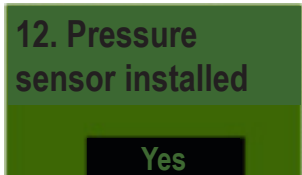
Turbine

Choose here between an electric or hydraulic turbine in your DS.

	YES - with electric turbine NO - with hydraulic turbine (or external) Select with the keys   and confirm with the key  .
---	---

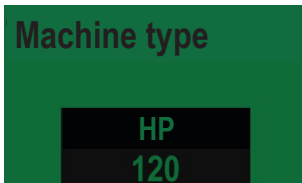
Pressure switch (turbine start-up indicator)

If the DS has a pressure sensor (which measures the air flow from the hydraulic turbine), adjust it here. A hydraulic turbine is a standard feature of all DS models from 2017.

	Select YES or NO with the keys   and confirm with key  .
---	--

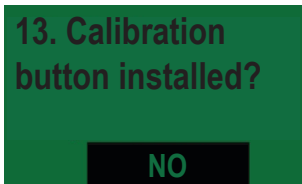
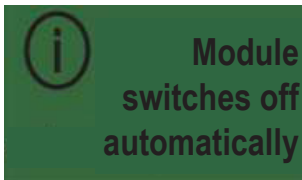
Type of machine

Enter your DS model here.

	Select with the keys   and confirm with the key  .
---	---

Calibration button (distribution switch) available

Here you can indicate whether a distribution switch is mounted on your device (available as an accessory).

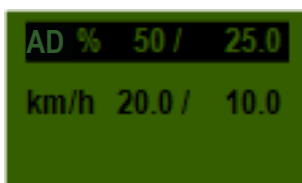
	Select YES or NO with the keys   and confirm with key  .
	After the data has been successfully entered, the operating module switches off automatically and saves the entries.

7.1.5. Main display

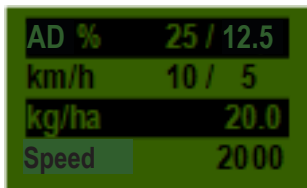
Start-up display

	Appears during the boot process and displays the device types and versions! This information can be very useful during a service call. In the event of a fault, these are necessary to enable a diagnosis to be made!
---	---

Mode operate

	AD %: set speed for the dosing roller (in %) Set using keys   on the operating module or automatically during the calibration process. km/h: the travel speed [km/h] is preset in the menu item "Calibration".
---	--

MDD operating mode

	AD %: the dosing roller is set as (in %) km/h. The travel speed [km/h] is preset in the menu "Calibration". kg/ha: current flow rate (only displayed if calibration is valid)
	Settings: the settings for the current spreader plate can be adjusted using the keys   on the second page of the menu. This page can be accessed by pressing the relevant keys.

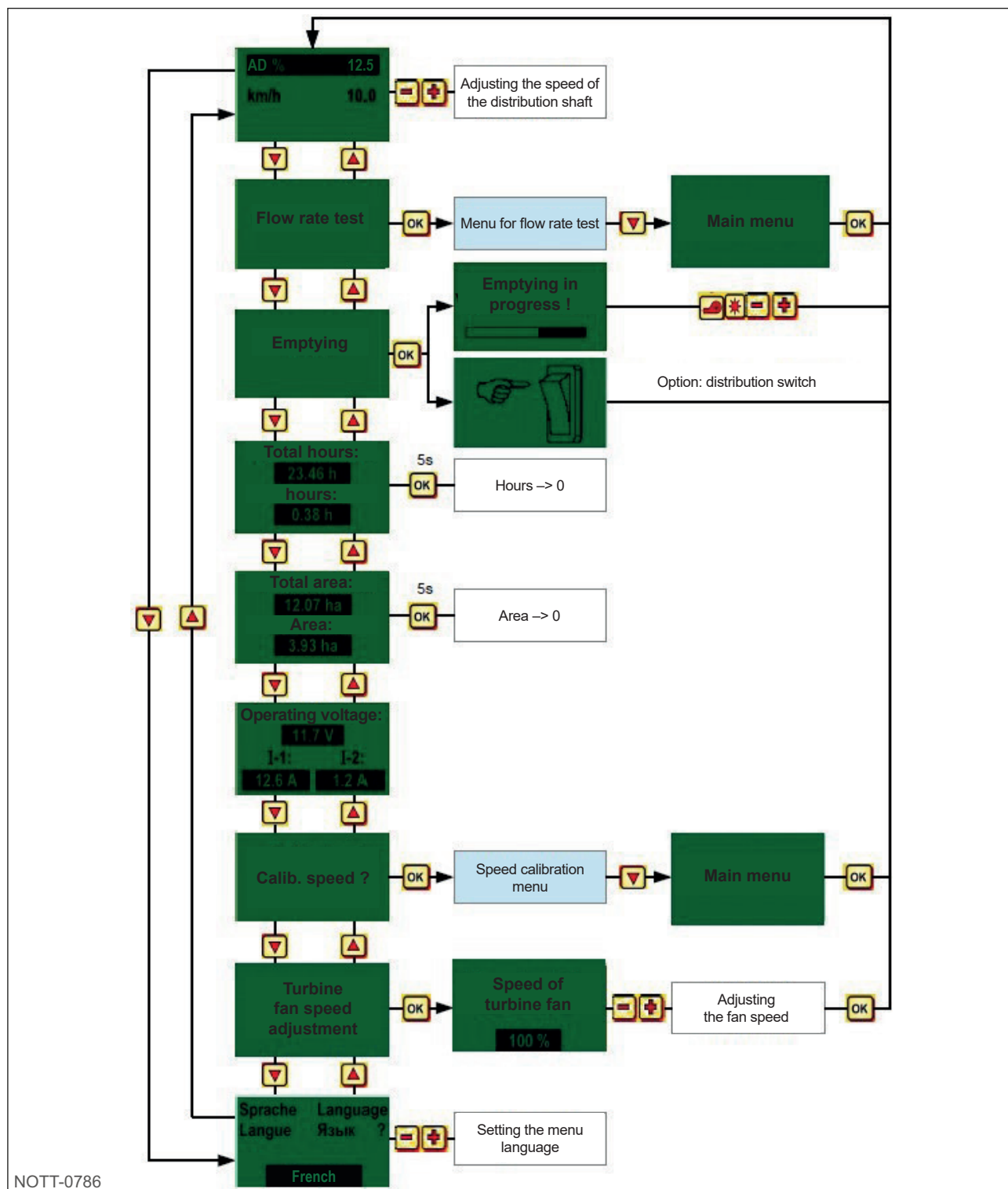
7.1.6. Selection menu

After the equipment has started up, you can navigate through the menu using the following three keys:



Use the arrow keys in the menu to move between the different options.

The following menu options are available:



7.1.7. Quick start video instructions

Click the link below to view the various videos:

www.apv.at > Service > Videos > User Guide

The following instructional videos can be viewed:

- Calibration in kg/ha using operating module 5.2
- Calibration in grains/m² using the 5.2 operating module

- Speed calibration using operating module 5.2 (100 m, manual, calibration value)
- DS 200-500 adaptation for operating module 5.2 with hydraulic turbine

7.1.8. Commissioning the control system without a connected machine

The operating module can also be commissioned without the machine being connected. However, error messages such as “Motor not connected (...)” are displayed.



These error messages must be acknowledged within 15 seconds, otherwise, they will reappear. This allows the operating hours, hectare counter and various settings to be recorded without the need for the operating module to be connected to the machine.

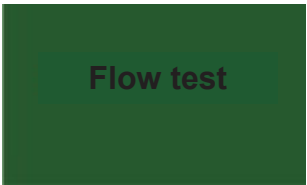
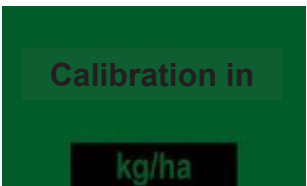
7.2. Description of Functions

7.2.1. Calibration (general information)



NOTE

In addition to performing a calibration (setting of the discharge roller speed), this menu item is also used to adjust the working width and travel speed. The entered values are also used for the area calculation (seeded area).

	Go to the calibration menu item and press the key  .
	The following settings can be adjusted in the Settings menu:
	Here you can select whether the calibration should be in kg/ha or in grains/m ² (with a weight of one thousand grains and germination capacity).



The settings can be changed using the keys



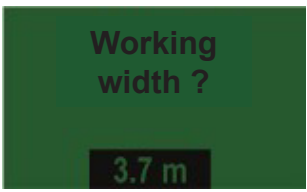
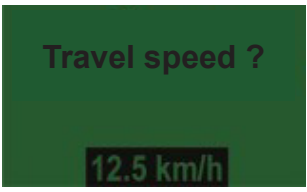
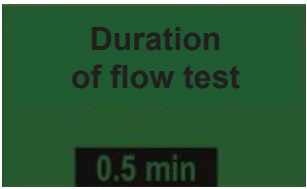
Pressing the key  or the key  changes the display to the next menu option.

Calibration in kg/ha

Video instructions for “kg/ha calibration” can be found here:

www.apv.at > Service > Videos > User Guide

If you have selected “Calibration in kg/ha” in the setup menu, the following options appear in the calibration menu:

	Enter the working width here. (Overlapping must be ensured!)
	Enter the travel speed here.
	Enter the desired flow rate here. (e.g. 103.5 kg/ha)
	Set the calibration duration here. If a distribution switch is present and the “Calibration button?” option in the programming menu is set to YES, then this option will not appear.

NOTE



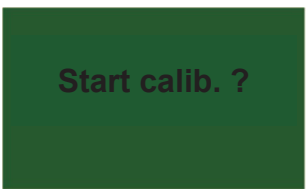
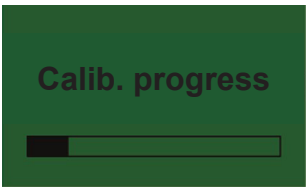
- For small seeds such as rapeseed, phacelia or poppy, it is best to calibrate for 2 minutes.
- The default calibration time is 1 minute.
- For large seeds such as wheat, oats, peas, etc., calibrating for 30 seconds is more than sufficient.

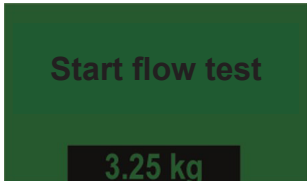
NOTE



before beginning calibration, ensure that all the necessary preparation steps have been completed (e.g., removal of the calibration cover). Full instructions can be found in the user manual! Make sure the calibration bag or collection container is positioned directly beneath

it! Calibration can be interrupted at any time by pressing the  or  key on the operating module.

	If all values are set correctly, start the calibration with  .
	Calibration in progress: After start-up, the dosing roller starts to rotate automatically without the turbine motor. After the specified time, the dosing roller stops automatically.

	If a calibration switch is installed, calibration continues until it is pressed (see § Calibration using the calibration switch (distribution switch), page 76). Now weigh the amount of seed harvested and enter the weight, confirm with .
---	---

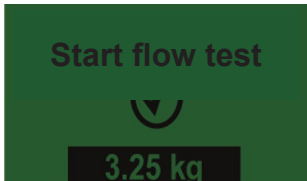

NOTE

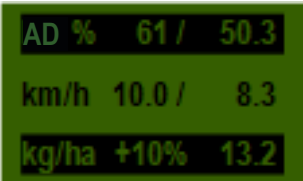
subtract the weight of the collection container or calibration bag.

To achieve the desired result, we recommend repeating the calibration process as many times as necessary until the “Calibration inaccurate!” message is displayed! Restart?” is no longer displayed. If the message “Dosing roller speed too high” appears, it means that the dosing roller is not rotating slowly enough. If the message “Dosing roller speed too low” appears, the dosing roller cannot rotate slowly enough (see § 7.4.1. Instructions,



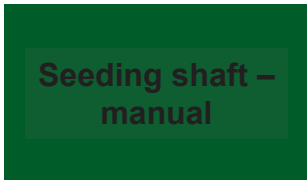
page 82). Pressing the key  reverts to the last value displayed. If the automatic calibration of the dosing roller differs by less than 3%, the “tick symbol” will appear and the quantity dosed will be displayed in kg/ha on the main screen.

	The automatic calculation of the distribution shaft speed is now correct. The display then reverts to the main menu.
--	---

	The set kg/ha is now shown on the display.	If the operation is carried out using a speed sensor, a two-column display appears.
DS		


NOTE

if a fill-level sensor is fitted to your machine and the message “Hopper almost empty” appears on the screen during calibration, the process will continue regardless. if there is too little seed in the hopper, the accuracy of the calibration may be impaired.

	This menu item allows a rough pre-setting of the distribution shaft speed. The speed (%) of the dosing roller must not be (pre)set manually as the settings are calculated and applied automatically as per the calibration.
---	---

Calibration of grains/m²

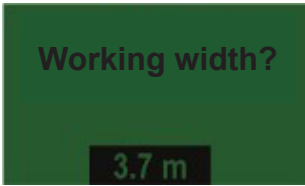
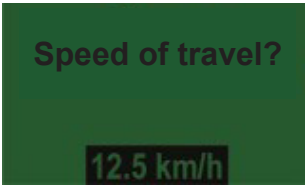
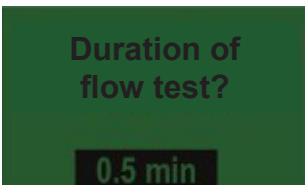
Video-based instructions for “Calibration of grains/m²” can be found here:

www.apv.at > Service > Videos > User Guide

Calculation of flow rate:

$$\text{Quantity spread (kg/ha)} = \frac{\text{Weight of one thousand grains (g)} \times \text{grains / m}^2 \times 100}{\text{Germination rate (in \%)}}$$

If you have selected “Calibration in grains/m²” in the configuration menu, the following options will appear in the calibration menu:

	Enter the working width here. (Overlapping must be ensured!)
	Enter the travel speed here.
	Enter the desired grains/m² here.
	Enter the weight of one thousand grains here.
	This is where the germination ability of the seed is set.
	Set the calibration duration here. If a distribution switch is installed and the “Calibration button?” option in the programming menu is set to YES, then this option will not appear.



NOTE

- For small grains such as rapeseed, phacelia, poppy, etc., calibrate preferably for 2 minutes.
- The default calibration time is 1 minute.
- For coarse grains such as wheat, oats, peas etc. 30 seconds calibration is ideal.

NOTE


before beginning calibration, ensure that all the necessary preparation steps have been completed (e.g., removal of the calibration cover). Full instructions can be found in the user manual! Make sure the calibration bag or collection container is positioned directly beneath

it! Calibration can be interrupted at any time by pressing the  or  key on the operating module.

Start calib.?	If all values are set correctly, start the calibration with .
Calib. progress 	Calibration in progress: After start-up, the dosing roller starts to rotate automatically without the turbine motor. After the specified time, the dosing roller stops automatically.
Start flow test 3.25 kg	If a calibration button is available, calibration continues until it is pressed (see § Calibration using the calibration switch (distribution switch), page 76). Now weigh the harvested seed, enter the weight, and press  to confirm.

NOTE

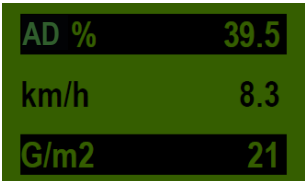
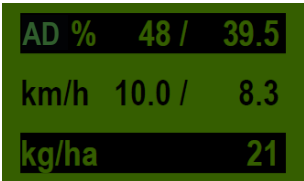

subtract the weight of the collection container or calibration bag.

To ensure that the correct amount is distributed, we recommend repeating the calibration as often as necessary, until the message “Calibration imprecise!” appears! “Restart?” no longer appears. If the message “Dosing roller speed too high” appears on the display, the dosing roller is not rotating fast enough. If the message “Dosing roller speed setting too low” appears, the dosing roller cannot rotate slowly enough (see § 7.4.1. Instructions, page 82).



Pressing the key  reverts to the last displayed value. The “tick symbol” will only appear and the amount spread in kg/ha will only be displayed on the main screen if the automatic adjustment of the discharge roller is less than 3%.

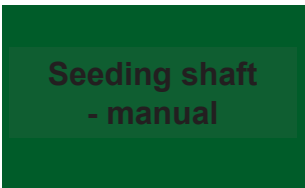
Start flow test  3.25 kg	The distribution shaft speed is now calculated automatically and correctly. The display then reverts to the main menu.
---	---

	The set kg/ha is now shown on the display.	If the operation is carried out using a speed sensor, a two-column display appears.
DS 200 - DS 300 - DS 500		



NOTE

if a fill-level sensor is installed in your machine and the message “Hopper almost empty” appears on the screen during calibration, calibration will continue. if there is too little seed in the hopper, the accuracy of the calibration may be impaired.

	This menu item allows a rough pre-setting of the distribution shaft speed. The speed (%) of the dosing roller must not be (pre)set manually as the settings are calculated and applied automatically as per the calibration.
---	--

Calibration using the calibration switch (distribution switch)

	If a calibration button is installed on your machine and it is set to YES in the programming menu (see § 7.6.12. Units of measurement, page 91), the “Calibration time” menu option does not appear. Adjust the settings as required. Then press “Start calibration”. The display opposite then appears on the screen until the calibration button is pressed. The dosing roller rotates as long as the distribution switch is depressed. The operating module uses the calibration time to calculate the specified quantity and displays it on the display. Now weigh the collected quantity and enter it in the operating module. Repeat the procedure if necessary to adjust the setting more precisely.
--	--



NOTE

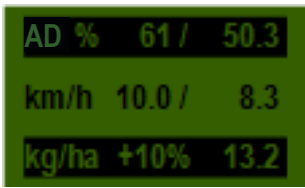
to achieve suitable accuracy, hold down the calibration button for at least 20 seconds. Otherwise, the information message ‘Calibration time too short!’ will be displayed, and neither kg/ha nor grains/m² will be shown in the main display.



NOTE

with the calibration button activated, the hopper can also be emptied.

7.2.2. Changing the flow rate during operation

	Once calibration has been completed, pressing the keys on the distribution shaft   increases or decreases the flow rate by 5%. Each time the key  is pressed, the flow rate increases by 5%.
---	---

7.2.3. Operation with a speed sensor

If you are using a speed sensor, the display appears as follows:

Marking	Designation
1	Set value
2	ACTUAL values

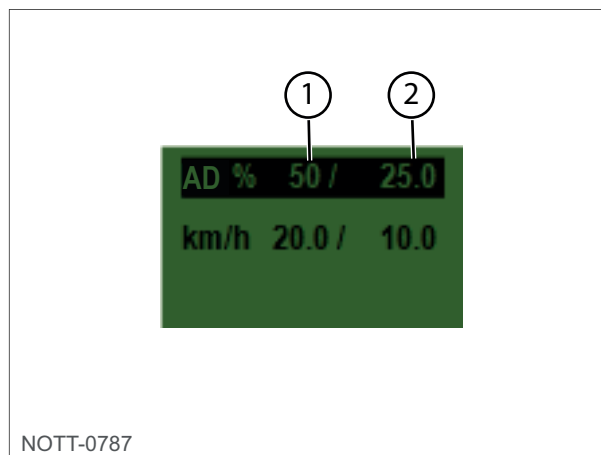


Fig. 47

	SET value	ACTUAL value
RD % (dosing roller)	Set speed of the dosing roller (in %). Settings can be adjusted using key  on the operating module or by performing a calibration.	Actual speed of the dosing roller (in %). Is calculated by the operation module according to the travel speed and displayed.
km/h (travel speed)	This is set in the "Calibration" menu item.	Actual travel speed in km/h. Measured by the sensor and displayed in the operating module.

Pre-dosing

If the key is held down for 1 second, the dosing roller begins to rotate at the speed set during calibration, and

continues to do so as long as the  key remains depressed. This allows the operator to exclude non-seeded areas (at the start of the field or when stopping). When the key is released, the operating module resumes processing signals from the corresponding speed sensor. If the work is carried out using a lifting mechanism, the soil preparation tool must be in the working position.

Calibration of travel speed (tachometer)

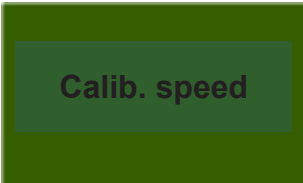
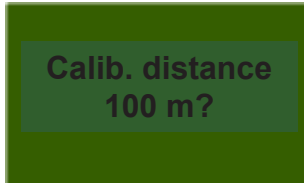
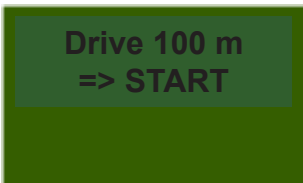
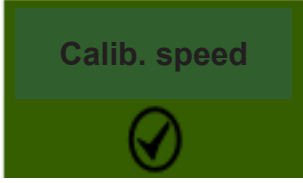
Calibration should therefore be carried out because the operating module uses this value as the basis for all calculations (speed display, dosing, area calculation).

There are 3 calibration options available.

Automatic calibration (100 m test distance)

Video instructions for “100 m test distance” can be found here:

www.apv.at > Service > Videos > User Guide

	>		>		>	
	>					
	Drive exactly 100 m. While driving, the module counts the pulses for the distance travelled on the display. Press the stop key  to stop after 100 m.					
	Appears when calibration is complete.					



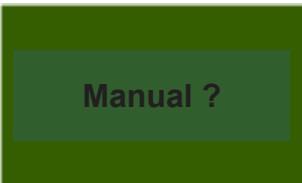
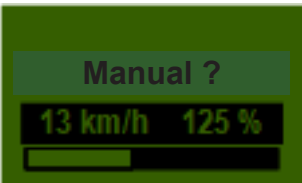
NOTE

the maximum values for the wheel sensor are 1500 pulses per 100 m, all other sensors have a maximum of 51200 pulses per 100 m.

Manual calibration

Video instructions for “Manual calibration” can be found here:

www.apv.at > Service > Videos > User Guide

	>		>	
---	---	---	---	---

While driving, compare the speed shown on the screen with the speed on the tachometer.



Correct the value using the arrow keys until both values match.


NOTE

calibration can be carried out manually without requiring a 100-metre test run.

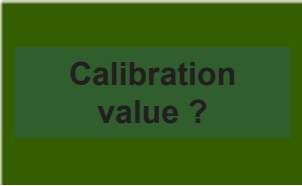

NOTE

calibration is only truly accurate if your tractor is fitted with a GPS tracker or radar. Otherwise, the gap is not included in the travel speed measurement!

Calibration values

Video instructions for “Adapting the calibration value” can be found here:

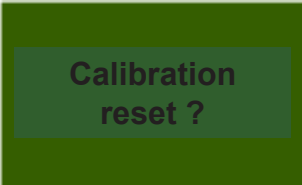
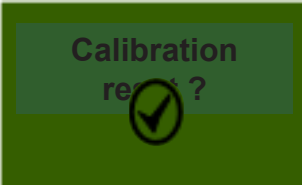
www.apv.at > Service > Videos > User Guide

	The pulses per 100 m can be set manually here.
---	--


NOTE

If you have calibrated your device before, note down the value and adjust it here if necessary.

Resetting the calibration

	Press the key  to confirm. Resets the value to the factory settings.
	Appears after calibration reset.

7.2.4. Operation with a lifting mechanism sensor

The machine's dosing roller can start and stop automatically via a lifting mechanism sensor when the machine is raised or lowered. This eliminates the need to manually start and stop the dosing roller.

There are 4 types of lifting mechanism sensors:

- 7-pin signal cable
- Chassis lifting mechanism sensor
- 3rd-point sensor
- Lifting mechanism sensor with pull switch



By pressing the key  for 2 seconds, the dosing roller can be activated regardless of the position of the lifting mechanism's sensor. However, this is only possible if the work is carried out without a speed sensor.

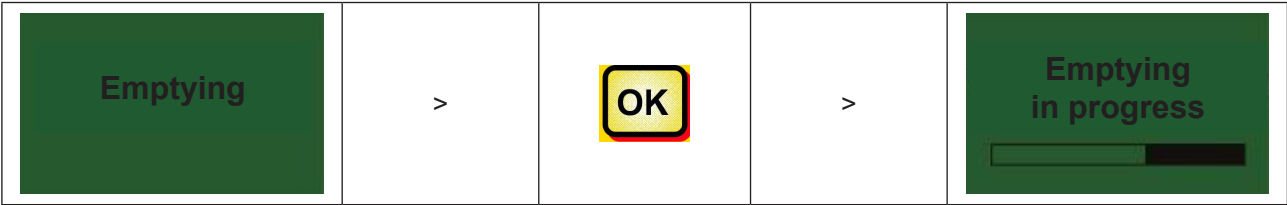


NOTE

the audible signal emitted when the dosing roller is switched on and off can be deactivated, as described in § 7.6.2. Signal at start/stop of dosing roller (warning signal), page 88.

7.2.5. Discharge

This menu option makes it easy to discharge the hopper at the end of a job, when changing seed types or when changing the seed distribution shaft.



The dosing roller motor runs at full speed (without turbine).



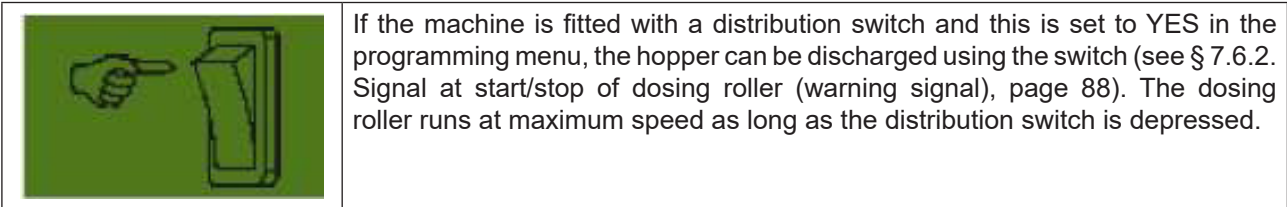
Discharging can be terminated at any time by pressing the keys    or key . The display then reverts to the main menu.



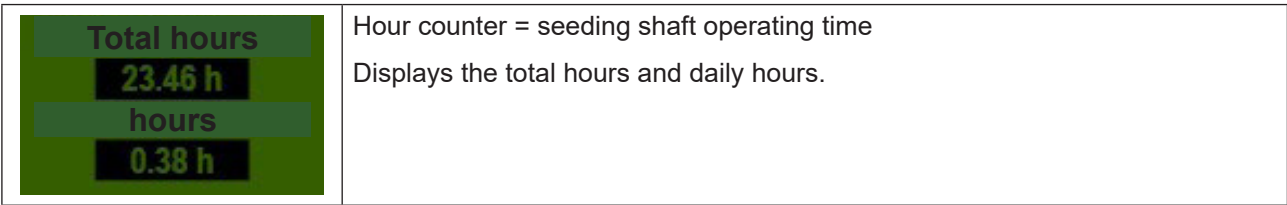
NOTE

before beginning the discharge process, ensure that all the necessary measures have been taken with regard to the machine, (e.g., removal of the calibration cover). Full details can be found in the user manual for the machine! Make sure the calibration bag or collection container is positioned directly beneath it!

Discharge using the calibration switch (distribution switch)



7.2.6. Hour counter



NOTE

Press and hold key  for 5 seconds to reset the daily hours. Total hours cannot be reset to zero.

7.2.7. Hectare counter (distributed area)

	Displays the number of hectares that have been sown.
---	--

The settings are adjusted automatically when the distribution test is carried out.

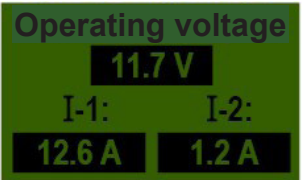
Only measure the area while the seed is being spread (i.e. while the dosing roller is turning).



NOTE

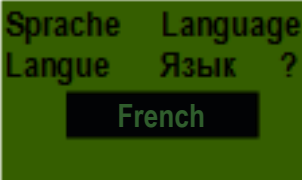
Press and hold  for 5 seconds to reset the area value to zero. The total area cannot be reset to zero.

7.2.8. Operating voltage/display of current

	Displays the actual operating voltage. A fluctuation in this value whilst the vehicle is running indicates a problem with the on-board electronics. These can lead to an unsatisfactory distribution result!
--	--

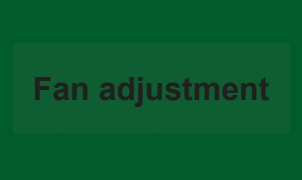
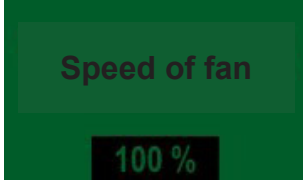
- I-1: indicates the current consumption of the turbine electric motor in amperes.
- I-2 indicates the current consumption of the electric motor driving the distribution shaft in amperes.

7.2.9. Languages

	Select the desired language with the keys   and confirm with the button .
---	---

7.2.10. Turbine settings

The speed of the electric turbine and, thus, the airflow can be adjusted via this menu. This can be useful if the work is done with very small (light) grains (e.g. microgranulate, rapeseed, ...) or if air separators are installed. Furthermore, if full power is not required, the turbine's power consumption can be reduced.

	>		>	
---	---	---	---	---



NOTE

This display only appears if working with an electric turbine.

7.3. Operating module 5.2 (language selection)

The following languages are available from software version V1.25 onwards:

- German
- English
- French
- Dutch
- Danish
- Polish
- Italian
- Spanish
- Czech
- Hungarian
- Finnish
- Portuguese
- Romanian
- Swedish
- Estonian
- Latvian
- Lithuanian
- Norwegian
- Slovenian (Slovenia)
- Russian
- Serbian
- Turkish



Press key  to revert to the main menu.

7.4. Command Messages

7.4.1. Instructions

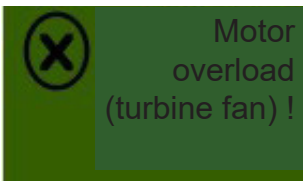
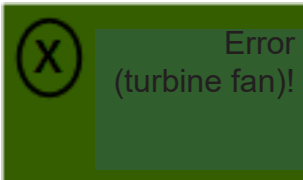
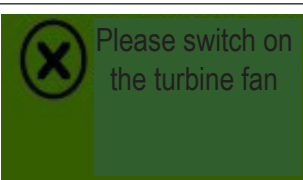
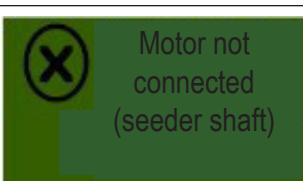
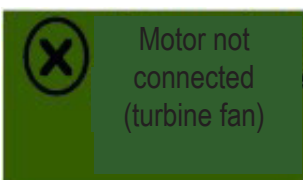
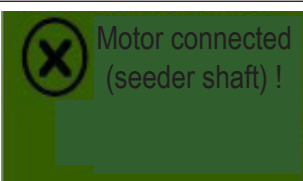
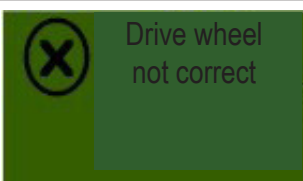
Display	Cause	Solution
 Internal control voltage VCC (5V) incorrect	Appears when the internal control voltage falls below a minimum value.	- Send the operating module to the factory
 Operating voltage, too low	Appears when the operating voltage is too low.	- Reduce consumption - Check battery - Check cabling - Check alternator - The operating voltage must be greater than 10 V

Display	Cause	Solution
 Operating voltage, too high	Appears when the operating voltage is too high.	- Check alternator
 Fill level sensor exposed	This message appears when the fill level sensor is no longer covered by seed (for more than 30 seconds).	- Replenishing seed stock - Adjust the sensor (turn it downwards) - Adjust the sensitivity of the level sensor
 Pulses during calibration, too high	Appears if the number of pulses during calibration is too high.	Wheel sensor: - Reduce number of magnets on wheel sensor - Mount the sensor on a slowly rotating shaft
 Pulses during calibration, too low	Appears if the number of pulses during calibration is too low.	- Check the sensor - Check cabling - Check speed sensor settings Wheel sensor: - Increase the number of magnets
 Shaft speed too low during calibration !	This occurs when the distribution shaft speed is too low during calibration.	This occurs when the distribution shaft speed is too low during calibration.
	This message appears when several extension cables are connected to devices in use in the field and a high distribution shaft speed is required but cannot be achieved.	This message appears when several extension cables are connected to devices in use in the field and a high distribution shaft speed is required but cannot be achieved.
 Shaft speed too high during calibration !	Appears when the distribution shaft speed is too high during calibration.	- Use larger/coarser distribution channels - Use more distribution splines per outlet - Decrease travel speed - Reduce the flow rate
 Calibration duration is too short !	Displayed when the calibration duration is too short.	- Press and hold the distribution switch for at least 20 seconds

Display	Cause	Solution
 Travel speed is too high	Displayed when the travel speed is too high and the dosing roller can no longer be regulated.	- Decrease travel speed - Use larger/coarser distribution channels - Use more distribution splines per outlet - Reduce the flow rate
 Travel speed is too low	Displayed when the travel speed is too low and the dosing roller can no longer be regulated.	- Increase travel speed - Use thinner distribution channels - Use fewer distribution channels per outlet - Increase the flow rate
 Automatic shutdown !	Displayed during the shutdown process. The message disappears after a few seconds.	

7.4.2. Errors

Display	Cause	Solution
 Incorrect operating voltage !	Displayed when the operating voltage falls below a minimum value or when excessive voltage fluctuations occur.	- Reduce consumption - (e.g. switch off work lamp) - Check battery - Check cabling - Check connectors - Check alternator
 Overloaded motor (seeder shaft) !	Appears when the seeder shaft cannot rotate or when the motor is subjected to a load within the specified range for too long!	Stop the operating module! - Remove any foreign objects or similar from the dosing roller or agitator - Stop the agitator (if seed flows well) - Remove 1–3 spacers from the dosing roller - Check the selected motor types. Check that the motor is operating correctly at idle speed. To do this, switch off the operating module, remove the motor, then switch the operating module back on again. Then, start the distribution shaft motor

Display	Cause	Solution
	Appears if the motor is subjected to a load within the limit range for too long!	- Check or mount calibration cover - Check that all distribution hoses are mounted - Remove foreign bodies or similar from the turbine - Check proper operation of the turbine
	Displayed when the hydraulic turbine is not generating any air flow OR when the return pressure in the hydraulic turbine motor tank line is too high.	- Switch on the hydraulic turbine - The turbine does not have a pressure gauge (§ 7.6.11. Distribution switch present, page 91) - Change the return filter - Do not use a reducer in the tank line (e.g., coupling BG3) - Use a larger tank line
	If the hydraulic blower has not been activated, the pressure sensor is not triggered by the airflow, which causes this status message to appear!	- Check that the device cable is connected - Check cabling - Check connectors
	Displayed when wiring is not connected or faulty.	- A hydraulic turbine is fitted, see § 7.6.1. Turbine, page 88, check that the device cable is connected - Check cabling - Check connectors
	Displayed when wiring is not connected or faulty.	- Check the coupling clamp on the spreader - Please contact after-sales service
	Motor is connected, not overloaded, but not running.	- Check the coupling clamp on the spreader - Please contact after-sales service
	Appears if the operating module does not receive a signals from the speed sensor!	- Check the ground wheel - Check the sensor - Check cabling - Check connectors - If the ground wheel is not faulty, please contact after-sales service

Display	Cause	Solution
 Sensor cable short-circuit !	Displays when the sensor power cables are overloaded or when there is a short circuit.	- Check wiring for damage and short circuits
 Motor not connected (rotating disc) !	Even though the motor is connected and not overloaded, it still does not run.	Please contact after-sales service
 Motor not connected (rotating disc) !	Displayed if wiring is not connected or faulty.	Check cables and plugs!
 Motor overloaded (rotating disc) !	Displayed when the spreader plate cannot rotate or when the motor is overloaded for too long within a critical range!	Stop the machine and check whether foreign objects or other objects prevent the spreading plate from rotating or make it difficult to rotate!

7.5. Troubleshoot

Problem	Cause	Solution
The dosing roller rotates when the device is raised!	Faulty signal from lifting mechanism	- Reverse signal from lifting mechanism, see § 7.6.8. Lifting signal, page 90 - Change the position of the lifting mechanism sensor
The dosing roller does not rotate when the machine is in the working position!	- Dosing roller is not running - The travel speed is zero - No signal from lifting mechanism	- Switch on the dosing roller; it must be started manually once at the start - Check speed sensor settings - Check the speed sensor - Check lifting mechanism sensor
Level sensor mounted but not responding!	No signal from level sensor	- Adjust the sensitivity of the level sensor (screw on the back) - Change position of level sensor - Check plugs and cables
The level sensor triggers continuously!	- Incorrect sensor setting - Incorrect sensor position	- Adjust the sensitivity of the level sensor (screw on the back) - Change position of level sensor

Problem	Cause	Solution
No speed signal!	- Speed sensor not detected - Incorrect speed sensor selection - Y-cable (combination cable) incorrectly connected - Y-cable (combined cable) defective	- Check speed sensor settings - Connect Y-cable correctly, observe markings/labelling - Test without Y-cable (only connect speed sensor)
No signal from lifting mechanism!	- Lifting mechanism sensor is not detected - The tractor's 7-pin signal connector is not receiving a signal from the lifting mechanism - Y-cable (combination cable) incorrectly connected - Y-cable (combined cable) defective - Magnetic sensor: sensor/magnet incorrectly mounted	- Check lifting mechanism sensor - Connect Y-cable correctly, observe markings/labelling - Test without Y-cable (only connect lifting mechanism sensor) - Magnetic sensor: the sensor and the magnet must be positioned directly opposite each other, both in the working position and in the elevated position
Operating module does not switch on!	- Incorrectly connected electrical cable - No power supply voltage - Defective fuse	- Check connectors - Check polarity of electrical cable (pin 15/30 12 V +, pin 31 ground -, pin 82 ignition on +) - Switch on - Check battery - Replace the fuses
The operating module switches off when the motors are switched on!	- Low battery, supply voltage drops - Voltage drop due to poor contact	- Checking the battery voltage - Check plug contacts - Check the power supply cable
Travel speed 0.0 km/h is displayed or continuously returns to 0.0 km/h!	- Incorrect speed signal detected or selected	- Check speed sensor settings, if all settings are AUTO, set first signal DIN 9684-1 to NO
The flow rate in kg/ha or grains/m ² is not displayed!	- Invalid calibration - Values subsequently modified in the calibration menu	- Performing calibration - Reload the seed from the library
Flow rate too low or too high! (Check hectare counter!) Check speed!	- Incorrect speed - The sensor on the lifting mechanism switches during operation - Seed properties have changed	- Calibrate speed sensor (not required for GPS sensor) - Check lifting mechanism sensor - Performing calibration - Reduce speed of hydraulic turbine
Return pressure too high (turbine error message)	- Line cross-section is too small - Line length is too long - Return filter clogged - Restrictions in the hydraulic coupling	- Use a larger diameter line - Use new return filter - Use a larger hydraulic coupling

7.6. Programme 5.2 (after-sales service)

To access the programming menu, press and hold the keys (as shown in the illustration) simultaneously during the activation process until the customer service menu appears.

	Browse the programming menu
	Editing the parameters
	Finish and confirm the schedule



Fig. 48



NOTE

If a value has been changed in the programming menu and this menu has been closed, the operating module shuts down automatically.

Then start the operating module to apply the changed settings.

If set to AUTO, the module automatically detects the connected sensor and sends signals.

0. Machine type: HP, MDP, MDG, MDG	Select the type of machine for which you wish to change the settings.
---	---

7.6.1. Turbine

This menu option is required when the hydraulic or PTO-driven turbine is installed instead of an electrically driven turbine.

1. Turbine fan installed YES	YES - Electric blower available NO - Hydraulic blower available Use the  keys to make a selection
---	---

7.6.2. Signal at start/stop of dosing roller (warning signal)

The audible warning signal that sounds when the distribution shaft starts or stops can be activated or deactivated here.

0. Start/stop signal for distribution shaft YES	Select with the keys  YES/NO.
--	---

7.6.3. Ground wheel

This menu option allows users to select whether to work with or without a ground wheel.

3. Drive wheel installed AUTO	Select with the keys   YES/NO/AUTO.
---	---

7.6.4. Wheel sensor

Here it is possible to select whether the wheel sensor operates with the tractor or the guide wheel.

4. Speed sensor fitted to tractor's wheel AUTO	Select with the keys   YES/NO/AUTO.
--	---

7.6.5. DIN 9684 Signal (7-pin signal connector)

Select here, if the work is carried out using signals from the tractor. There are 3 different signals:

- Lifting signal
- Theoretical speed (of the drive)
- Actual speed (usually from a radar sensor)



NOTE

if both speed signals are available, the actual speed signal (which is more accurate) should be used.

Indicate here whether the actual speed signal is available (pin 1 of the 7-pin connector).

5. DIN signal for "actual speed" installed AUTO	Select with the keys   YES/NO/AUTO.
---	---

Indicate here whether the theoretical speed signal is available (pin 2 on the 7-pin connector).

6. DIN signal "theoretical speed" installed AUTO	Select with the keys   YES/NO/AUTO.
--	---

7.6.6. Radar sensor

It is possible to select here whether the work is carried out with or without a radar sensor (or GPS).

7. Radar sensor fitted AUTO	Select with the keys   YES/NO/AUTO.
--	--

7.6.7. Lifting mechanism sensor

Here, you can choose whether to use a signal from the lifting mechanism (which may come from the tractor or from the mechanism's sensor).

8. Lift installed AUTO	Select with the keys   YES/NO/AUTO.
---	--

7.6.8. Lifting signal

If the work is to be controlled by the tractor's lifting signal or by its sensor, please specify the sensor's position here.

The sensor's position can be flipped here and thus adapted to the prevailing conditions.

9. Position signal "Raise to working position" LO	Use the keys   to select HI or LO.
--	---



NOTE

If your DS is set to the incorrect lifting position, you can change the setting here.

7.6.9. Buzzer (warning signal)

This menu option allows you to choose whether to use audible alerts (for example, a warning sound when an error message appears).

10. Buzzer START-UP	Use the keys   to select ON or OFF.
--	--

7.6.10. Seeding shaft motor

Specify the drive being controlled here.

11. Seeding shaft motor P16 MOTOR	Use the keys   to select motor P8.
---	--

7.6.11. Distribution switch present

Here, you can indicate whether a distribution switch is present on your machine.

13. Calibration button installed? NO	Use the keys   to select YES or NO.
--	---

7.6.12. Units of measurement

Here it is possible to switch between metric units (m, ha, km/h, kg) and imperial units (ft, ac, mph, lb).

14. Measurement units Metric kg, ha, m	Use the keys   to select Metric or Imperial units.
--	--

7.6.13. Type of machine

15. Request machine type on start-up? NO	Here, you can set whether the system should prompt for the machine type when the control unit is switched on.
--	---



NOTE

using the same command for several types means that the programming menu need not be entered to change the type!

7.6.14. Restoring the factory settings

Restore factory settings ?	Press key  .
	Use the keys   to select YES, then press key  again.

Language, total hours and total areas are retained.

8. ISOBUS

8.1. Device identification

The following details on the nameplate allow the equipment to be unambiguously identified.

Marking	Designation
1	Hardware version
2	Article number
3	Serial number
4	Software version

Position of the type plate

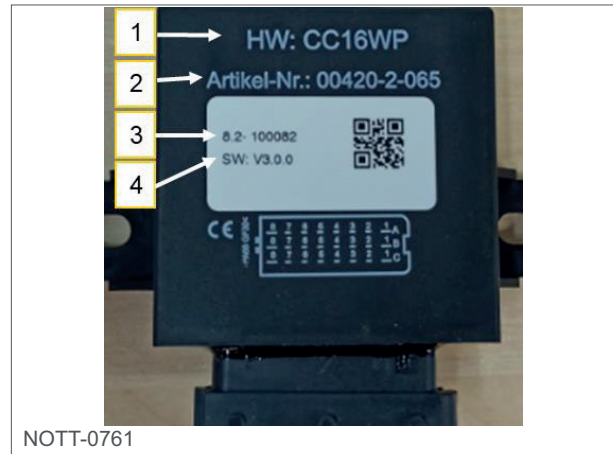
The type plate is located directly on the operating control unit.

Remove the operating module cover to gain access.



NOTE

In the event of questions or warranty claims, please provide the serial number and software version.



NOTT-0761

Fig. 49

8.2. Commissioning

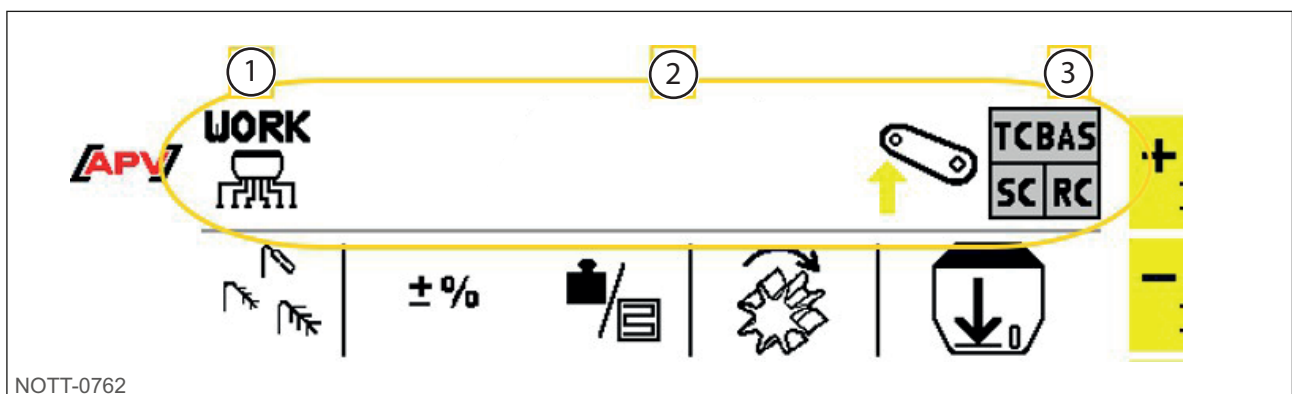
8.2.1. General information about the operating control unit

Downloading the object pool (IOP)

The first terminal to which the object pool (IOP) is downloaded is saved as a favourite terminal. If the device is connected a second time, the prompt is displayed immediately. If the device is connected to another tractor/terminal, it takes approximately 5 minutes for the prompt to be displayed in the terminal.

The status bar

The status bar appears at the top of the screen in each menu:



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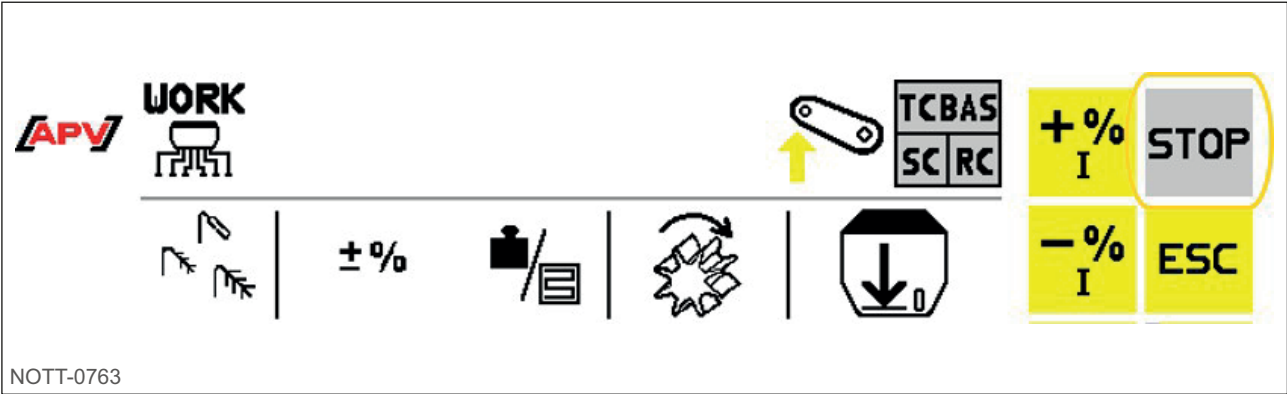
Description of the display elements

Marking	Designation
1	The current menu is displayed in the status bar on the left. In this case, this is the Work menu.
2	The logo is located in the middle of the status bar. In the event of errors, the logo is replaced by the corresponding error or warning message.
3	The icon representing the current working position or the position of the mounted equipment is displayed on the right-hand side of the status bar. The Task Controller status display is located next to it. It provides information about the currently active Task Controller function.

	The carrying device is in the working position.
	The carrying device is not in the working position.
  	The status display of the Task Controller shows which task function is currently activated on the ISOBUS. This field is coloured differently depending on the activated function. - TC-BAS This feature makes it easy to document assignments. For this purpose, relevant values are made available to the tractor. - TC-SC This function allows you to switch areas automatically. - TC-RC This function allows spreading at variable flow rates. When working with two areas (e.g.: PS Twin, 2x MDP, 2x MDG or 2x MDC) or with two seeding units (e.g., PS Twin), the RC display also changes to green as soon as a working width is operating at a variable rate. - Grey • The Task Controller is not connected. • The tractor does not support the ISOBUS function. • The ISOBUS function is not activated in the tractor. - Yellow • Task Controller is connected but not yet activated. - Green • The corresponding function is activated.

STOP button

The STOP button is available in each menu. This button is used to perform a general STOP of all motors.

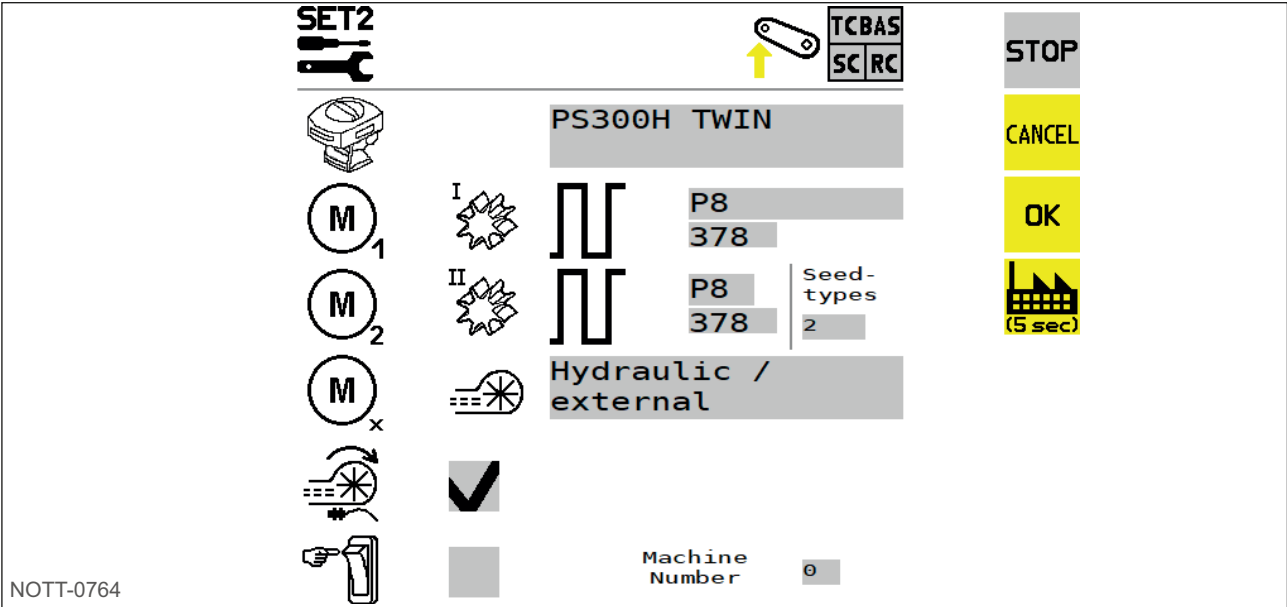


Description of functions of keys

	Grey: no actuator is activated.
	Red: the motors are running and can be stopped by using this key.

8.2.2. BASIC SETTINGS menu

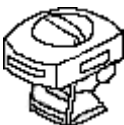
The basic settings of the seeder can be adjusted at the first start-up or by pressing and holding the 'Set' key in the Start menu for five seconds (see also § 8.3.1. Start-up menu, page 96). These settings include options for selecting the type of unit, fan and dosing roller motor.



Description of functions of keys

	Exit the basic settings menu without saving the changed settings.
	The basic settings menu closes without saving the changed settings. If the settings are changed, the control system restarts.
	Pressing and holding this key for 5 seconds performs a factory reset, i.e. all settings are reset and the basic settings menu opens again. The corresponding equipment must also be set up there.

Description of the display elements

	Select the equipment type. Here, 'E' denotes an electric fan and 'H' a hydraulic fan. If '2x' appears before a machine designation, this means that two units are being controlled.  NOTE If the correct equipment is selected, no further changes need to be made in the settings for "Dosing roller motors", "Number of pulses per revolution", "Fan", and "Fan speed sensor".
	Select the dosing roller motor or pump (mounted in the LF600) with the appropriate number of pulses per revolution. The DS TWIN device type allows a second motor to be selected.  NOTE Selecting the type of device and the dosing roller motor causes the default values to be displayed automatically. The following default values are defined: - Motor P8: 378 - Motor P17: 1024 - Pump: 400  CAUTION Changing the default settings (pulses per revolution) on the motors is prohibited!
Saat - güter 1	Selecting the number of seeds to be sown (based on the equipment) : - a seeder (with segment function) - two seeders (within the same working width)
	Select the PS fan currently installed. The following options are available: electric fan, electric fan PRO, hydraulic/external fan or no fan (OFF).
	If a hydraulic fan is used, check whether the DS is fitted with a rotational speed sensor to monitor the fan.

	Instructions for fitting a distribution switch to the equipment (available as an accessory).
Machine Number 	Machine number: if two APT devices are operated in parallel on the ISOBUS, numbers must be assigned to the devices.



NOTE

Depending on the selected settings, not all points will be applicable. It is possible to modify the settings again later, as described in § 8.2.2. BASIC SETTINGS menu, page 94.



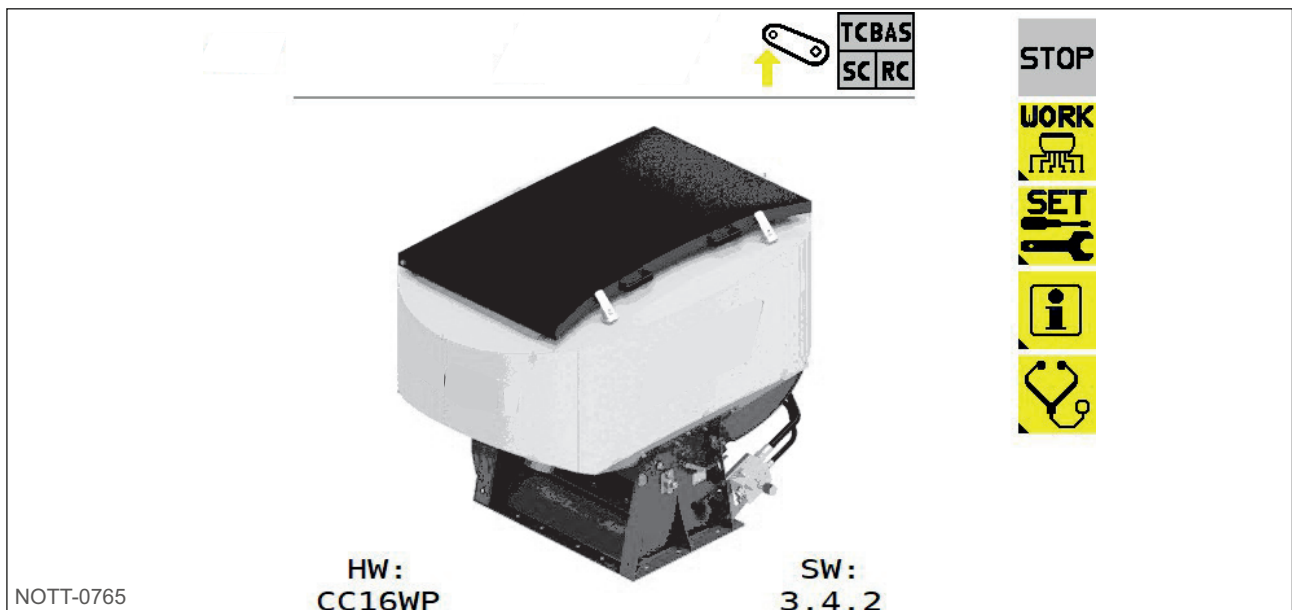
NOTE

When the basic setting menu is opened, all actuators are deactivated.

8.3. Menu structure

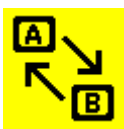
8.3.1. Start-up menu

This screen appears after starting the task. You can also access the different menus from here.

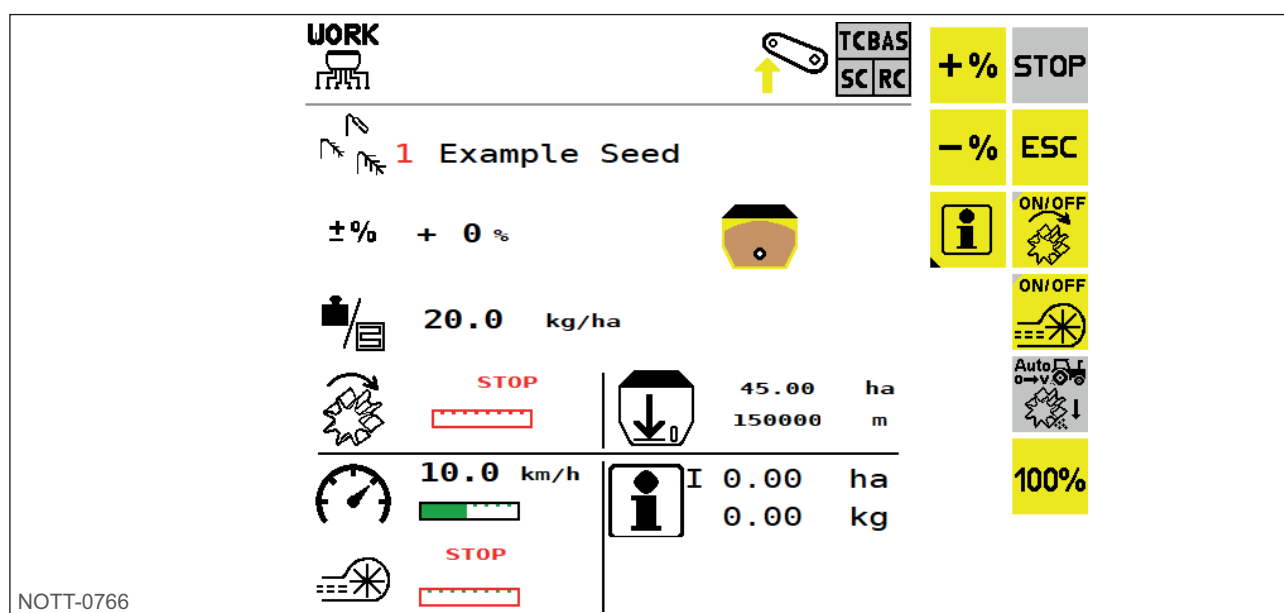


Description of functions of keys

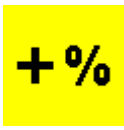
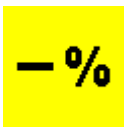
	The Work menu displays all the information you need for in-field use. Here, the motors can be started and stopped, and information regarding travel speed, working position and distribution shaft speed is displayed. The Work menu is described in more detail in § 8.3.2. WORK menu, page 97.
	The machine settings are configured in the Set menu. This menu is used to perform the calibration test, select the seed type or calibrate the travel speed. The Set menu is described in more detail in § 8.3.3. SET menu, page 100. To open the basic settings menu, press and hold this key for five seconds. The basic settings (e.g., motor types or fan types) can be configured here. The basic settings menu is described in more detail in § 8.2.2. BASIC SETTINGS menu, page 94.

	The area and hour counter is displayed in the Info menu. The Info menu is described in more detail in § 8.3.4. INFO menu, page 118.
	The Diagnostics menu displays the switching states of the sensors, the supply voltage and the current consumption of the motors. The Diagnostics menu is described in more detail in § 8.3.5. Diagnostic menu, page 119.
	This button is only displayed if there are several terminals on the ISOBUS and they are detected by the ECU. This button switches to the next terminal. This requires that the object pool be downloaded to the respective terminal before use. The duration can be up to 30 seconds. The terminal on which the request is made is always saved as a favourite terminal.

8.3.2. WORK menu



Description of functions of keys

	The flow rate can be increased in 5% increments using the +% key, up to a maximum of 95%, whilst the machine is running.
	The flow rate can be decreased in 5% increments using the -% key, to a minimum of 85%, whilst the machine is running.
	The ESC key is used to go back one menu level. In this case, it returns to the Start menu.
	The Info key displays the information menu for the currently selected seed.

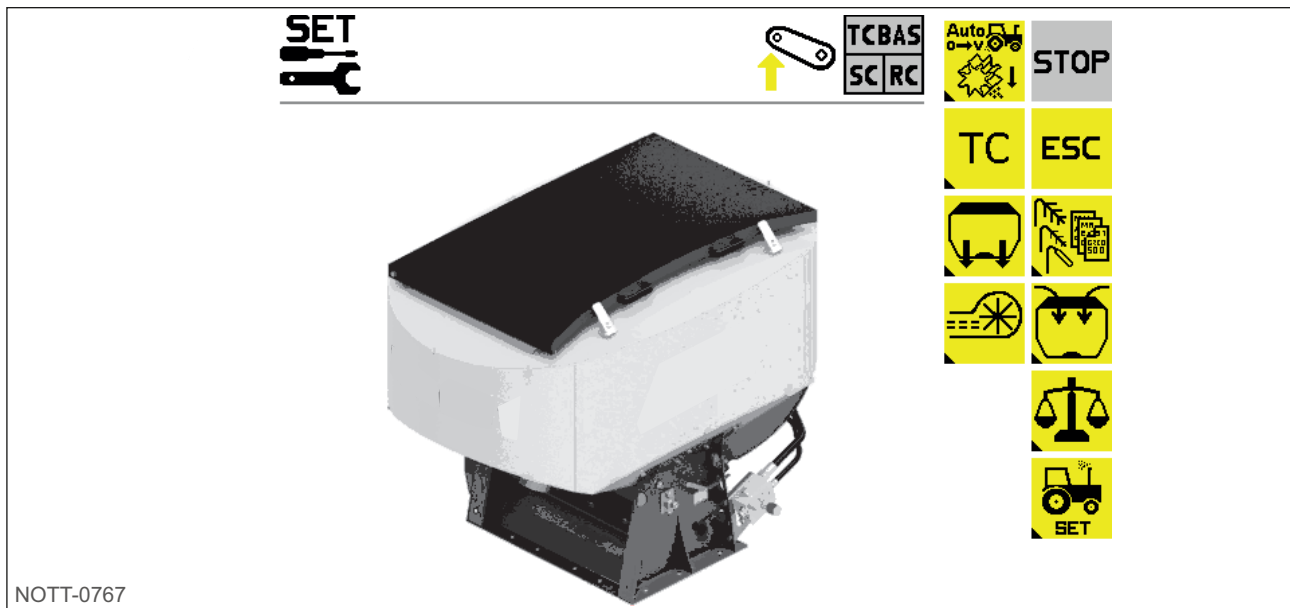
	This key is used to start or stop the dosing roller. If an electric fan is installed, it starts automatically. Only then does the dosing roller start to rotate.
	If the discharge roller is activated, the triangle at the top left of the green key is visible - if it is deactivated, it is greyed out.
	This key is used to start and stop the electric fan. If an electric fan is not fitted, this key is obscured.
	If the fan is switched on, the triangle in the top-left corner of the key is green. If it is switched off, it appears on a grey background.
	This key starts the pre-dosing process. If the key is pressed and held, the dosing roller rotates at the feed rate set in the pre-dosing menu. After releasing, the current travel speed is once again used to control the dosing roller. This makes it possible to avoid areas that have not been sown, either at the start of the field or when stopping within the field.
	The 100% key resets the flow rate to the value determined during the calibration test.

Description of the display elements

	Displays the currently selected seed, including its number in the seed library.
	Displays the current flow rate setting. NOTE The spreading rate can be reduced or increased by 95%. Due to the non-linear relationship between the increase in engine speed and the spread rate, it is no longer possible to ensure that the spread rates are correct.  Recommendation: Adjust the spread rate by a maximum of approximately 50% if the rate must be adhered to precisely. It is possible to save different seeding rates for the same seed variety in the seed library.
	Yellow-brown: according to the fill level sensor, the hopper is full.

	Red: according to the fill level sensor, the hopper is empty. The settings for the fill level sensor are described in § FILLING menu, page 104.
	Display of the currently set flow rate.  NOTE The value will only be displayed if a valid calibration test has been performed beforehand.
	Displays the current speed of the dosing roller in %. If the dosing roller is disabled, the message 'STOP' appears and the frame changes to red. If the required shaft speed is not reached, the display changes to red and an alarm sounds. If the dosing roller is blocked (the apparatus is raised or the travel speed is 0), the frame changes to orange.
	Display of the remaining fuel/distance still achievable according to calculations. For the calculation, the hopper filling quantity must be entered in the Set menu (§ FILLING menu, page 104).
	Display of the current travel speed. The black marking indicates the travel speed set during the calibration test. If the travel speed is either too high or too low to maintain the required speed of the dosing roller, the indicator bar changes to red and an alarm sounds.
	Display of the area sown and the quantity sown for each seed variety.
	Displays the current fan speed. The black mark indicates the selected speed. In the case of an electric fan, the speed is displayed in %. In the case of a hydraulic fan, the speed is displayed in rpm. If the upper or lower speed limits are violated, the bar changes to red and an alarm sounds. Details for setting the fan speed or speed limits are described in § FAN menu, page 116.

8.3.3. SET menu



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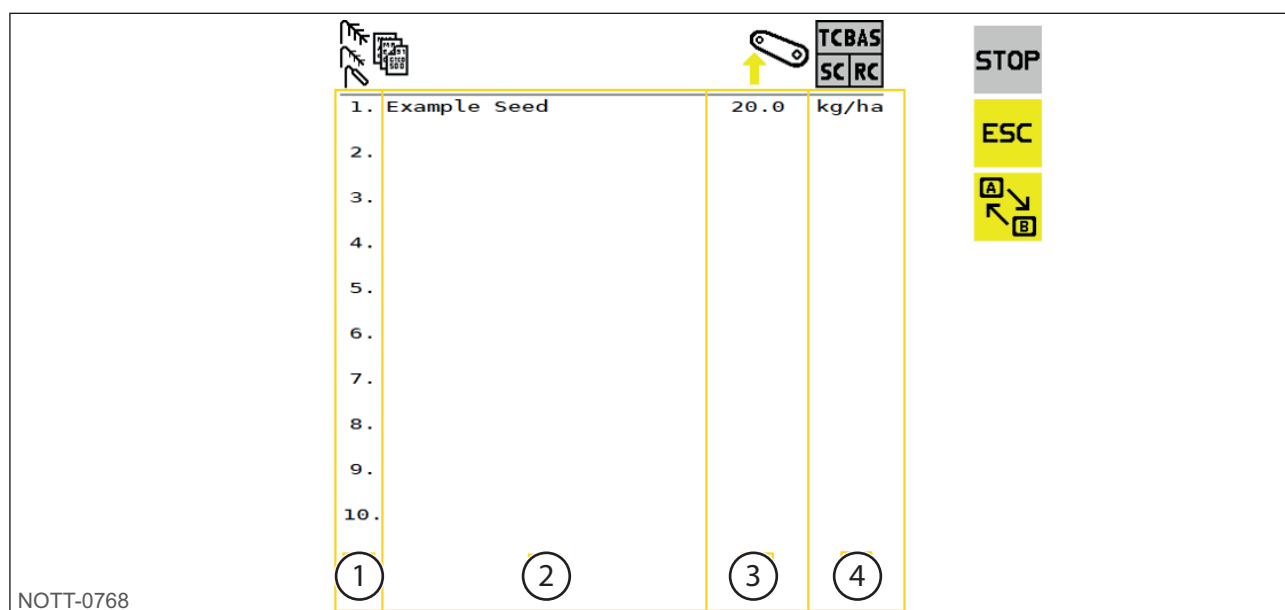
Description of functions of keys

	Pre-dosing menu: In addition to specifying the pre-dosing speed, this menu also allows you to select whether or not to carry out automatic pre-dosing and, if so, for how long. The Pre-dosing menu is described in more detail in § PRE-DOSING menu, page 111.
	Task Controller menu: allows you to configure the Task Controller settings, such as device mounting, the distances between the axles and the distribution rails, as well as the activation and deactivation times. The Task Controller menu is described in more detail in § TASK CONTROLLER menu, page 112.
	The ESC key returns to the previous menu level, in this case the Start menu.
	Empty hopper menu: here you can empty the hopper(s). The Empty hopper menu is described in more detail in § Discharging the hopper, page 115.
	Seed Library: seeds that have already been registered can be selected here, or new seeds can be added. The seed library is described in more detail in § Seed Library, page 101.
	Fan menu: the speed of the electric fan can be adjusted here. The alarm limits for a hydraulic fan with a speed sensor can be set here. The Fan menu is described in more detail in § FAN menu, page 116.
	Filling menu: The fill quantity can be entered here. The remaining distance or area can be calculated using this information and then displayed in the Work menu. The Filling menu is described in more detail in § FILLING menu, page 104.

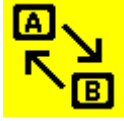
	Calibration menu: In the calibration menu, you can not only set the desired flow rate but also the desired driving speed, the working width, the dosing roller in use and the calibration time. The correct speed of the dosing roller is then determined. The calibration test is always carried out using the currently set seed rate. The Calibration menu is described in more detail in § FLOW CONTROL menu, page 105.
	Tractor settings menu: here it is possible to select and calibrate the source of the travel speed and the working position. If the working position is changed, it is also possible to select or deselect a signal. The Tractor settings menu is described in more detail in § TRACTOR SETTINGS menu, page 109.

Seed Library

This menu contains all registered seeds. Seeds can be created and registered using a calibration test.



Description of functions of keys

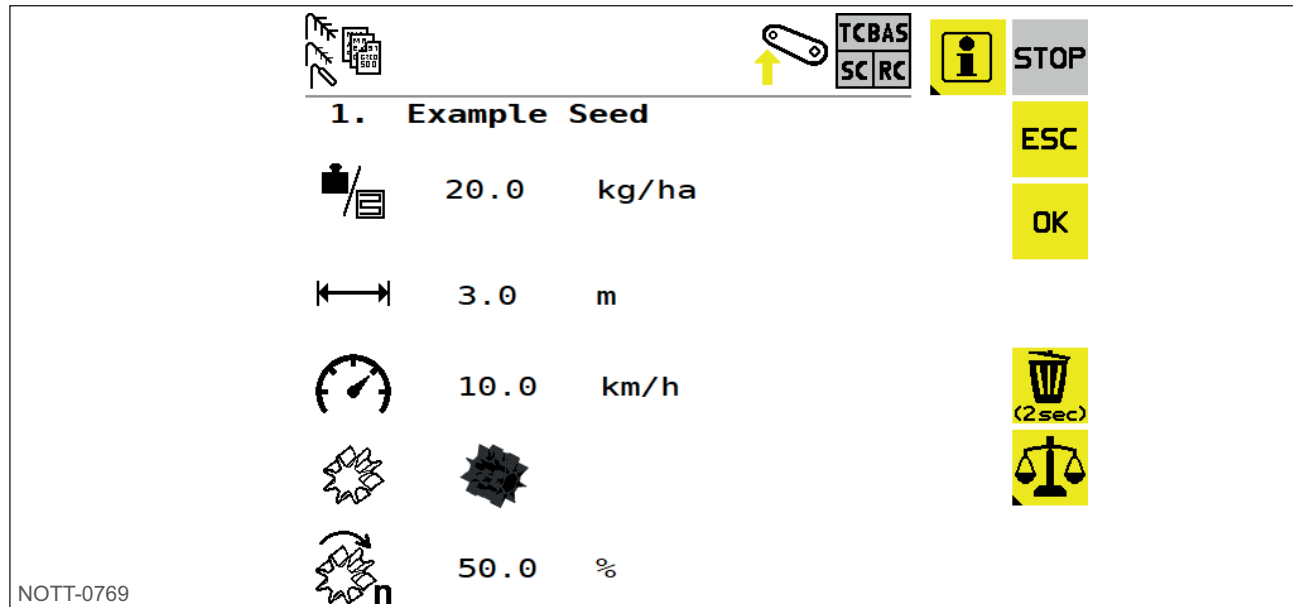
	The ESC key is used to go back one menu level, in this case to the Set menu.
	This button switches to the second page of the seed library.

Description of the display elements

Marking	Designation
1	Storage location
2	Seed name
3	Flow rate
4	Unit (kg/ha, grains/m2, l/ha)

SEED menu

This menu shows all the settings saved when the seed was last utilised.



Description of functions of keys

	This key is used to switch to the Seed information menu. The sown areas, hours, spread quantity and area output are displayed here. The Seed menu is described in more detail in § SEED INFORMATION menu, page 103.
	The ESC key is used to go back one menu level, in this case to the Seed Library menu.
	The OK key saves the seed and changes to the Work menu. The Work menu is described in more detail in § 8.3.2. WORK menu, page 97.
	Pressing and holding this key for two seconds deletes the seed and switches to the seed library. The seed library is described in more detail in § Seed Library, page 101.
	This key switches to the Flow Control menu. The parameters can be modified here and a new calibration test can be carried out. The Calibration menu is described in more detail in § FLOW CONTROL menu, page 105.

Description of the display elements

	Display of the seed number and name.
	Flow rate display in kg/ha or grains/m2.
	The working width of the machine.

	Display of working speed.
	Display of the dosing roller used.
	Display of the calculated dosing roller speed in %.

SEED INFORMATION menu

This menu is used to display a total and a daily counter specific to the seed.





TCBAS

SC

RC

STOP

ESC



(2sec)

1 . Example Seed

Daily counter



0.00 ha

0.00 h

0.00 ha/h

Total counter



0.00 ha

0.00 h

0.00 ha/h

NOTT-0770

Description of functions of keys

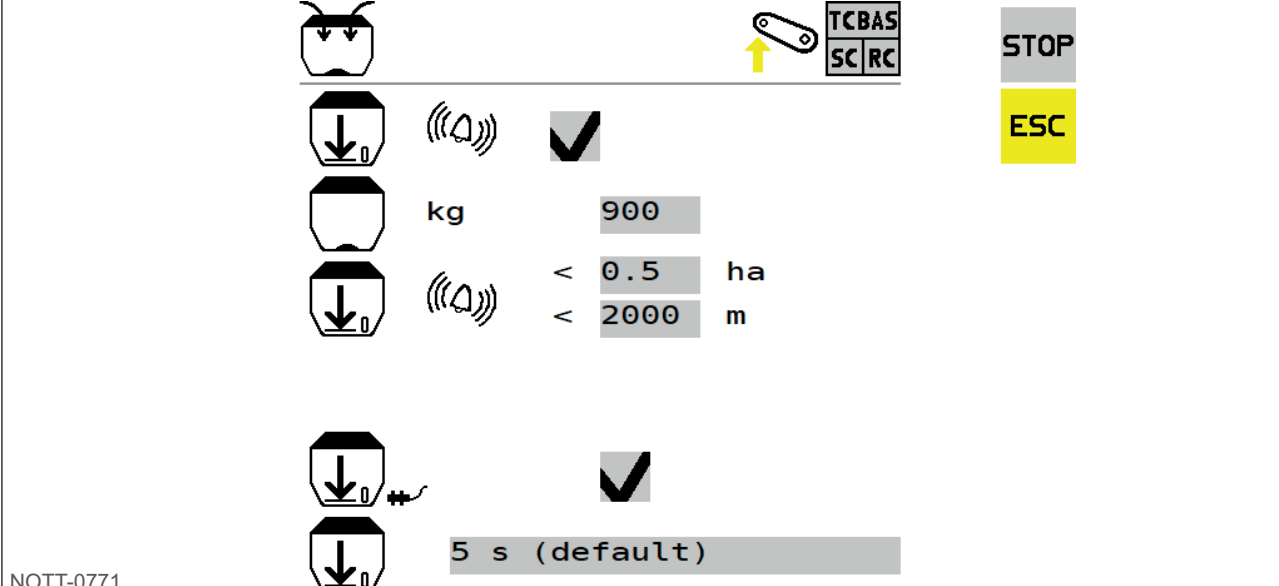
	The ESC key is used to go back one menu level, in this case to the Seed menu.
	The Clear key resets the daily counter to 0.

Description of the display elements

Tageszähler  0.00 ha 0.00 h 0.00 ha/h	Display of the daily counter. The trip counter can be reset by pressing and holding the Clear key (for 2 seconds).
Summenzähler  0.00 ha 0.00 h 0.00 ha/h	Total counter display. The totalizer can only be reset by clearing the seed.

FILLING menu

The current fill level of the hopper can be entered here. This serves as the basis for calculating the remaining distance or quantity, as shown in the Work menu (see [section 6.2](#)).

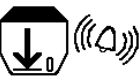


NOTT-0771

Description of functions of keys

	The ESC key is used to go back one menu level, in this case to the Set menu.
---	--

Description of the display elements

	Here you can activate and deactivate the calculation of the remaining area/distance.
	The current hopper fill level is entered or displayed here.
	Here you can specify the remaining area/distance after which the fill level message should appear.
	The output of the fill level sensor warning can be activated or deactivated here.
	Here it is possible to set the delay for the fill level sensor message once the sensor is no longer covered by seeds.

FLOW CONTROL menu

This menu is used to enter the parameters required for the calibration test.



1. **Example Seed**

20.0 kg/ha

 **3.0** m

 **10.0** km/h




 **30** s



TCBAS
SC RC

STOP

CANCEL




START
(2sec)

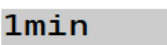
NOTT-0772

Description of functions of keys

	This key is used to go back one menu level. Depending on where the calibration menu was accessed from, this will be either the Set menu, the Seed library or the Seed menu.
	Here it is possible to select whether the calibration test is carried out in kg/ha or grains/m2.
	Pressing and holding the Start key (for 2 seconds) starts the calibration test.

Description of the display elements

1. Example Seed	The current number in the seed library and the name of the seed are displayed here. If a name has not yet been assigned, the seed can be named or renamed here.
20.0 kg/ha	The desired flow rate is set here in kg/ha.
grains /m² Thousand Germin. gr. wt. capaci. Target rate 100 G x 19.0 g / 95 % = 20.0 kg/ha	If you want to run a calibration test in seeds/m2, the number of grains per square meter, the weight of one thousand grains and the germination capacity must be set.
 3.0 m	The working width of the mounted device can be adjusted here.  NOTE subtract the overlap from the working width!
 10.0 km/h	The travel speed is set here. If working with a speed sensor, enter the average working speed.

 	The dosing roller used is adjusted here. This is then saved in the seed library with the seed. The next time the seed is called for, please ensure that the same calibrated roller is used. Otherwise, the calibration test will need to be repeated.
 	The desired calibration time (0.5, 1 or 2 minutes) or area (1/40, 1/20 or 1/10 hectares) can be set here. When an area is selected, the calibration time is calculated and displayed automatically. If a distribution switch (available as an accessory) is installed, this item is not visible.



CAUTION

A new calibration test must be performed if the values are changed in the Calibration Test menu.



NOTE

For small seeds (e.g. rapeseed, phacelia, poppy, etc.) a calibration time of 2 minutes is recommended. For larger seeds (e.g. wheat, barley, peas, etc.) a calibration time of 0.5 minutes is sufficient.

Calibration test results page



0.50 kg

0.00 kg

min. 0.0 km/h

max. 0.0 km/h



STOP

CANCEL

NOTT-0773

Please enter weighed quantity

Description of the display elements

	The calculated flow rate is displayed here.
	The determined weight of the calibrated seed is entered here.



The calculated minimum and maximum working speed is displayed here.

Performing a calibration test

The correct speed of the dosing roller for the selected settings is determined during the calibration test (see § FLOW CONTROL menu, page 105).



NOTE

A correct calibration test is important, as this is the only way to ensure the desired flow rate.

Proceed as follows for the calibration test.



- 1 - Press the calibration key. This key is located directly in the Set menu or in the Seed menu when a seed is selected.

- 2 - The settings described in § FLOW CONTROL menu, page 105 are applied.

- 3 - The hopper is filled with sufficient seed.



CAUTION

Ensure that there is sufficient seed in the seeder hopper for the calibration test. Running the hopper empty during the calibration test will falsify the results.

- 4 - Remove the calibration cover from the seeder, then place a calibration bag or a suitable container on the seeder (see the seeder's user manual for further details).

- 5 - Press and hold the start key (see § FLOW CONTROL menu, page 105) for 2 seconds, the calibration test results page opens automatically (see § SEED menu, page 102).

- 6 - **Without distributing switch:** the dosing roller starts to rotate, the calculated flow rate begins to increase (see § SEED menu, page 102).

With distribution switch:

- The control system waits until the distribution switch is activated. The message "Press calibration button!" is displayed.
- The distribution switch is activated until the calculated quantity exceeds 0.2 kg. If this weight is not reached, the message "Insufficient calibration quantity" will appear. "A longer calibration time is recommended!" appears on the screen. In this case, continue with the calibration test by pressing the distribution switch again.
- If the distribution switch is pressed, the dosing roller starts to turn and the calculated flow rate begins to increase (see § SEED menu, page 102).

- 7 - The flow rate calculation stops automatically once the calibration time has elapsed or when the distribution switch is released.

- 8 - The calibrated seed is weighed, and the weight obtained is entered in the grey field on the calibration test results page (see § SEED menu, page 102).



CAUTION

Subtract the weight of the flow control bag or container for manual flow control!

- 9 - After entry, the information “Calibration successful, confirm calibration test with OK” is displayed and can be confirmed with the OK key.

The dosing roller is calibrated to the values entered. The control unit calculates the dosing roller’s speed and the minimum and maximum operating speeds based on the settings and the entered weight.

If the calculated distribution shaft speed lies within the permissible motor speed range, the calibration test is successful.

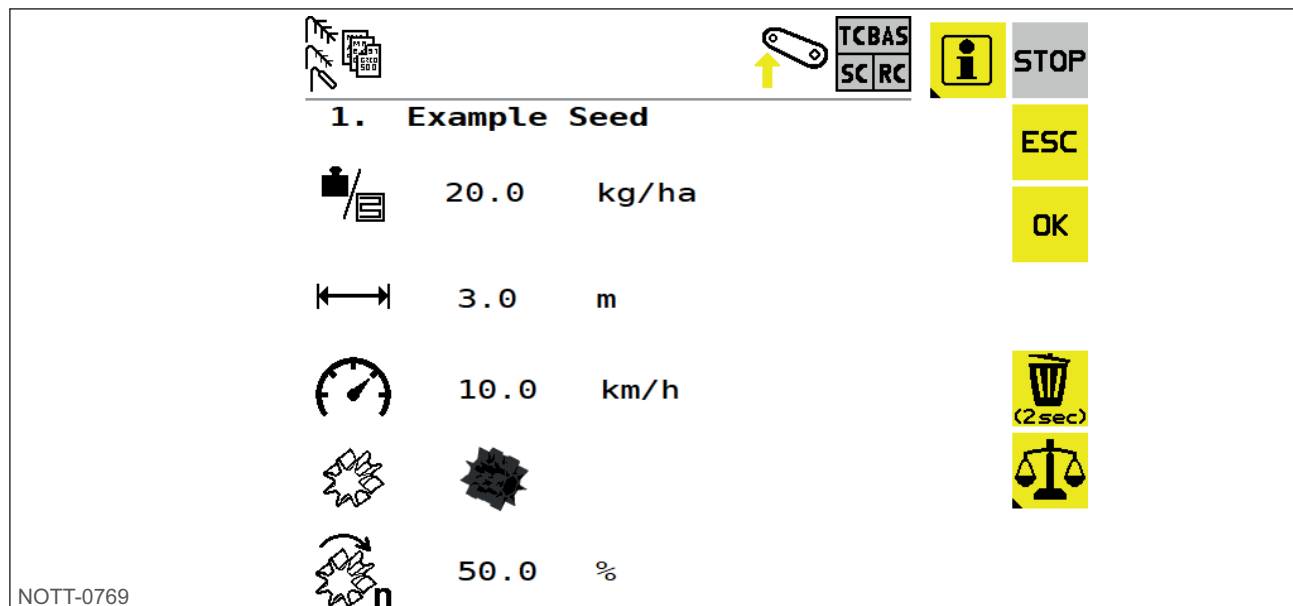
The message “Repeat calibration test” will appear if the difference between the calculated flow rate and the weight of the calibrated seed is greater than 20%.

In this case, it is essential to repeat the calibration test to ensure correct flow. To do this, press the distribution switch shown. The calibration test must then be repeated in accordance with § Performing a calibration test, page 107. The control unit then automatically adjusts the speed of the dosing roller to correct the deviation.

If the calibration test is not successful even after several repetitions, refer to point 9 for the cause of the error.

- 10 - After pressing the OK key, the seed details are displayed (see following illustration, the display elements are explained in § SEED menu, page 102). If the calibration test was successful, all current settings are already saved.

- 11 - To switch to the Work menu, confirm with the OK key. To switch to the seed library, press the ESC key.



CAUTION

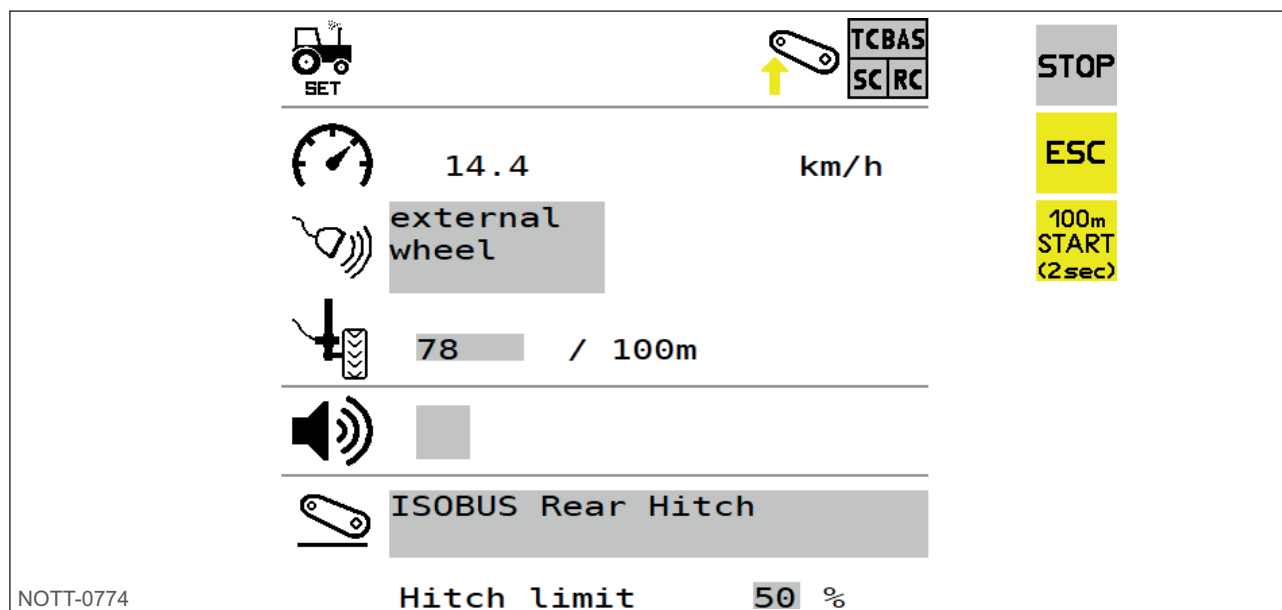
After the calibration test, the dosing roller must be operating at a speed of between 10% and 100%. When the machine is stationary, the dosing roller speed must be reduced to a maximum of 7.5%. However, at this low speed, seed distribution may be uneven (chequered pattern). To achieve a higher dosing rate, use the appropriate distribution discs.



NOTE

The calibration test must be repeated if any of the recorded calibration parameters are changed.

TRACTOR SETTINGS menu



The menu is used to set the source of the travel speed and working position signal. It is also possible to calibrate external speed sensors (wheel sensor, radar, GPS). If a speed sensor is used, the speed must be calibrated (exception: GPS sensor), as the distribution shaft speed is set to this value.



CAUTION

Note that not all tractors provide all speed or lifting signals on the ISOBUS!

Description of functions of keys

	The ESC key is used to go back one menu level, in this case to the Set menu.
	Pressing and holding this key for 2 seconds starts the 100 meter calibration. INFO: The screen displays: "Drive for 100 m, then press 100 m STOP". This key only appears if the speed input source is set to External Radar/GPS or External Wheel.
	The 100 m STOP key appears as soon as the calibration has started. By pressing this key (for 2 seconds), the 100 meter calibration is completed and the value is saved. If the value is valid, the message "Calibration successful, value applied" is displayed; otherwise, the message displayed is: "Calibration invalid, original value restored".

Description of the display elements

	Displays the currently measured travel speed. If the speed source is not available, "N/A" is displayed.
---	--

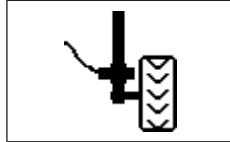
	Displays the currently set speed source. The following settings can be adjusted: - ISOBUS Machine Selected: the speed is taken from the tractor. The signals are checked in the following order, and the most accurate signal available is selected automatically (the order corresponds to the signal's accuracy): ISOBUS Ground Based, ISOBUS Wheel Based and ISOBUS GNSS Based. - ISOBUS Ground Based: the speed is taken from the tractor. The actual speed; generally taken from a radar sensor, is used. - ISOBUS Wheel Based: the speed is taken from the tractor. Theoretical gear speed is used here. - ISOBUS GNSS Based: the speed is taken from the tractor. The speed determined by the GNSS signal is used here. - External radar/GPS: The speed of a radar or GPS sensor installed in the device is used here. - Outer wheel: the speed from a wheel sensor fitted to the device is used here. - Simulated: the speed is taken from the speed set during the calibration test.
	Displays the current calibration value for the wheel, radar or GPS sensor. This symbol appears only if the speed source is set to External Radar/GPS or External Wheel.
	Shows whether the audible signal warning of a change in working position is enabled or not.
	Indicates the current source for the work position. The following settings can be adjusted: - ISOBUS rear lifting: the tractor transmits a signal indicating the current lift height of the lifting mechanism. The lifting mechanism limit setting allows adjustment of the height at which the mounted device takes its working position. - ISOBUS TECU rear lifting mechanism: binary signal from the rear lifting mechanism, allowing the tractor to determine whether the equipment is in the working position or not. - ISOBUS front lifting mechanism: the tractor sends a signal indicating the height of the lifting mechanism. The "lifting limit mechanism" makes it possible to adjust the height at which the equipment is in the working position. - ISOBUS TECU front lifting mechanism: the tractor determines whether the apparatus is in the working position via a binary signal from the front lifting mechanism. - External: the working position signal is transmitted by a sensor fitted to the equipment. - External reverse: the working position signal is used by a working position sensor fitted to the equipment. The input is reversed here. - Not available / OFF: there is no signal indicating the working position. The working position is always assumed to be active.
Hitch limit 50 %	You can set the position on the lifting mechanism at which the device is switched to "working position" or "raised position". This display only appears if the working position source is set to "ISOBUS rear lift" or "ISOBUS front lift".

Performing the calibration

There are two methods for calibrating the speed signal from the sensors:

- Manual calibration.
- Automatic calibration based on a distance of 100 metres.

Manual calibration



If the pulses per 100 metres for the relevant sensor are known, this value can be entered directly into the calibration value field.

Automatic calibration

During automatic calibration, the calibration value is determined automatically over a distance of 100 meters.

The procedure is as follows.

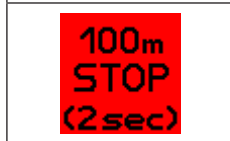
- 1 - A straight-line distance of 100 meters is measured. Mark the start and end of this trip.
- 2 - Position the tractor exactly on the start mark, e.g., the front axle exactly on the mark.



- 3 - Select the Tractor settings menu.



- 4 - Press the 100 m START button for 2 seconds.



- 5 - Start as soon as the message "Drive for 100 m, then press 100 m STOP" appears. The controller now counts the pulses coming from the sensor.

- 6 - Drive the tractor up to the end marker, e.g. position the front axle precisely on the marking again.

- 7 - As soon as the tractor is stationary, press the 100 m STOP button for 2 seconds.

If the calibration was successful, the message "Calibration successful, value applied" is displayed. The calibration value is now saved.

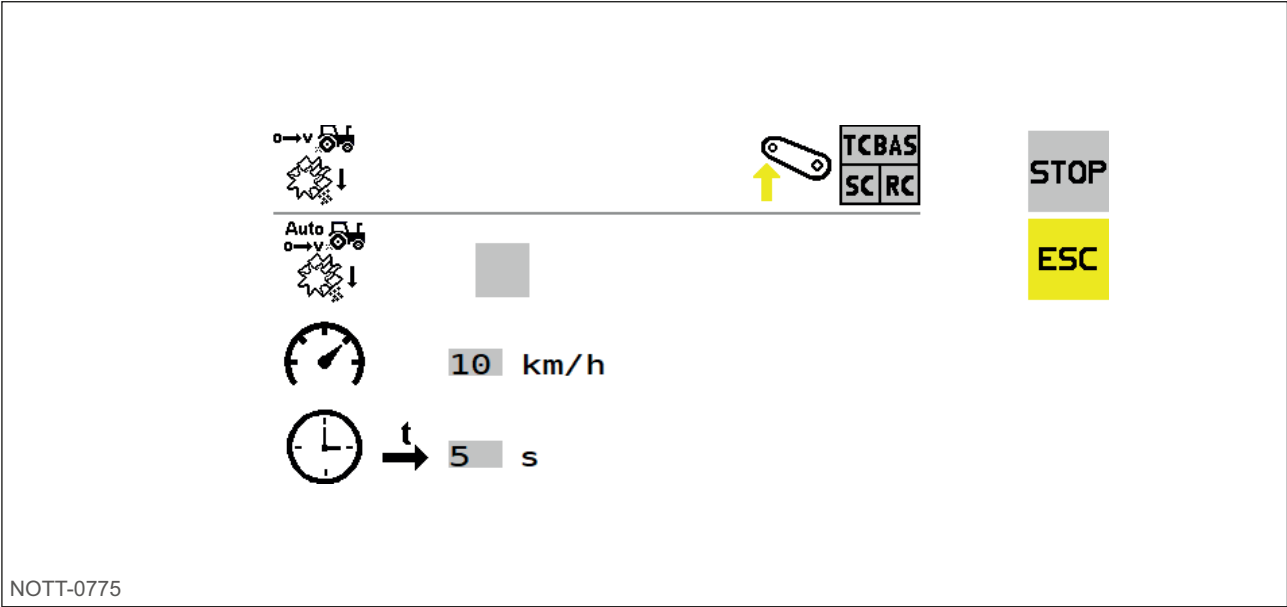
If calibration is unsuccessful, the message "Calibration invalid, original value restored" is displayed and the original value is set (see point 7 for possible causes of errors).

- 8 - The calibration should be tested by driving the tractor a distance and comparing the speed displayed on the control unit with the tractor speed.

If the speeds do not match, the calibration must be performed again.

PRE-DOSING menu

This menu is used to configure pre-dosing settings. When pre-dosing, as soon as a speed of 0.1 km/h or more is reached, the set speed is used to regulate the dosing roller. In this way, unsown areas can be avoided (e.g., at the beginning of the field or when stopping in the field).



Description of functions of keys

	The ESC key is used to go back one menu level, in this case to the Set menu.
---	--

Description of the display elements

	Automatic pre-dosing can be activated here. If this option is enabled, pre-dosing will take place at the start of each field application, when the machine moves into the working position at the set speed and for the set duration.
 10 km/h	The speed at which the pre-dosing should take place is set here. This speed is also used for manual pre-dosing.
 5 s	The duration of the automatic pre-dosing process is set here.

TASK CONTROLLER menu

The settings required for the Task Controller vary depending on the type of connector selected.



CAUTION

It is essential to observe the tractor's settings! All Task Controller settings can be changed even if the terminal or tractor vehicles are different. In this way, it is possible to overwrite set values.



NOTE

If there are no valid calibration tests, TC mode cannot be used.

TASK CONTROLLER menu on handheld device

TC TCBAS SC RC		STOP CANCEL OK
TC Mode	AUTO	
Connector Type	Fixed	
Connector Position	Rear	
A 500 cm AY 0 cm		
SC Turn On Time	0.7 s	SC Turn Off Time 0.7 s

NOTT-0776

Description of functions of keys

	The CANCEL key is used to CANCEL the values and return to the Set menu.
	The set value can be saved with the OK key.

Description of the display elements

TC Mode	The desired mode can be set here. ON, OFF or AUTO can be selected.
Connector Type	The integration of the equipment with the tractor can be set here.
Anhänge Position	If the device is "worn", it is also possible to select whether it is at the rear "Rear" or at the front "Front".
A 500 cm AY 0 cm	Here you can enter the horizontal distance (A) from the tractor's reference point to the distribution bar. The reference point for fixed-mounted equipment is the centre of the lower arm bracket. The distance (AY) is used to adjust the position of the distribution bar in the transverse direction. If 0 cm is entered here, the distribution bar will be positioned exactly in the middle of the tractor. A positive entry causes the distribution bar to move to the right (in the direction of the arrow). A negative entry causes the distribution bar to move to the left (opposite to the direction of the arrow).
SC Turn On Time	The time it takes for the seed to reach the ground once the dosing roller is activated is indicated here. This makes it possible to switch precisely at the field boundaries.

SC Turn Off Time	This measures the time it takes for the remaining seed to reach the ground after the dosing roller has stopped. This makes it possible to stop precisely at the field boundaries.
-------------------------	---

TASK CONTROLLER menu on towed equipment

TC



TCBAS
SCRC

STOP

TC Mode

AUTO

CANCEL

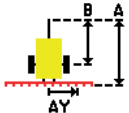
Connector Type

Trailed

OK

Connector Position

Rear



A 500 cm B 300 cm
AY 0 cm

SC Turn On Time

0.7 s

SC Turn Off Time

0.7 s

NOTT-0777

Description of functions of keys

The functions correspond to those of the keys on the portable devices (see § TASK CONTROLLER menu on handheld device, page 113).

Description of the display elements

 A 500 cm B 300 cm AY 0 cm	The horizontal distance (A) between the tractor's reference point and the trailer's axle, as well as the horizontal distance (B) between the tractor's reference point and the distribution bar, can then be entered. In the case of a drawbar coupling, the reference point for the towed equipment is the centre of the drawbar hitch. For a ball coupling, the reference point is either the centre of the ball or the lower linkage. The distance (AY) is used to adjust the position of the distribution bar in the transverse direction. If 0 cm is entered here, the distribution bar will be positioned exactly in the middle of the tractor. A positive entry causes the distribution bar to move to the right (in the direction of the arrow). A negative entry causes the distribution bar to move to the left (opposite to the direction of the arrow).
---	---

All other elements correspond to the displayed elements for mobile devices (see TASK CONTROLLER menu on handheld device, page 113).



NOTE

All Task Controller settings can be changed even if the terminal or tractor vehicles are different. It is therefore possible that the values set here may be overwritten.

Discharging the hopper

Selecting this menu option discharges the remaining seeds from the hopper.



CAUTION

Before discharging, remove the calibration cap and fit the flow control bag. Otherwise, the hoses may become blocked!



STOP

ESC

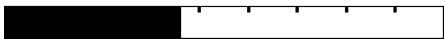


NOTT-0778

Description of functions of keys

	The STOP key stops the discharge and caves the mask.
	Pressing the ESC key stops discharging and automatically returns to the previous menu level, in this case, the Set menu.
	Press and hold the key for 2 seconds to begin the discharging procedure and activate the dosing roller at 100% capacity.

Description of the display elements

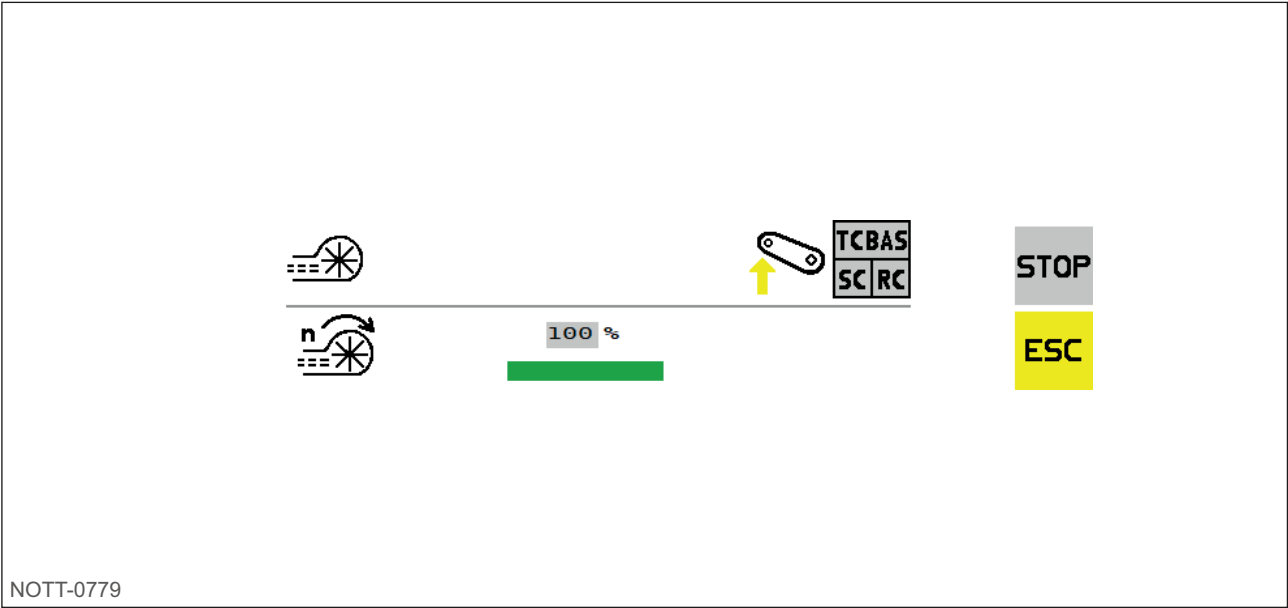
Emptying runs ! 	Indicates that the discharge procedure has started.
---	---

If the apparatus is also fitted with a calibration button, the message "Press the calibration button" is displayed.
If the distribution switch is activated, the dosing roller runs at full speed.

FAN menu

Electric fan/electric fan PLUS

The speed of the electric fan can be adjusted in this menu.



Description of functions of keys

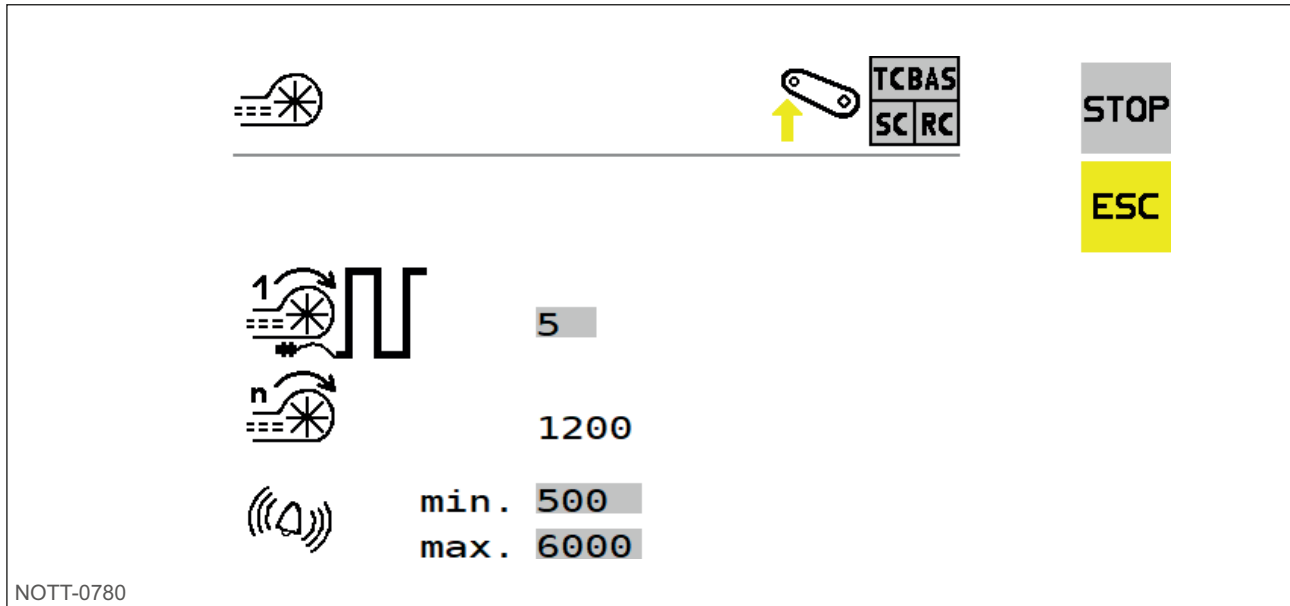
	The ESC key is used to go back one menu level, in this case to the Set menu.
---	--

Description of the display elements

	The desired speed of the electric fan can be set here. The fan speed is selected in accordance with the seeder's operating instructions. The setting range is between 20% and 100%.
---	---

Hydraulic fan

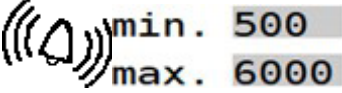
This menu is used to make various settings for the hydraulic fan. It is possible to adjust the number of pulses from the speed sensor. It is also possible to adjust the speed limits of the hydraulic fan.



Description of functions of keys

	The ESC key is used to go back one menu level, in this case to the Set menu.
--	--

Description of the display elements

	The number of pulses generated by the fan speed sensor per revolution can be adjusted here. The number of pulses must be selected in accordance with the sensor modification instructions. The default value is 5 pulses per revolution. Further information on this subject can be found in the user manual/modification instructions for the respective seeder.
	Displays the current fan speed.
	The speed and alarm limits of the hydraulic fan can be set here. If 0 rpm is entered as the minimum speed, the error message "Fan speed too low!" is disabled.  NOTE The flow rate can only be adjusted by changing the oil level, either on the tractor itself or on the seeder's hydraulic unit!

8.3.4. INFO menu

This menu displays 3 different daily counters and a total counter. Daily counters can be reset individually.

				
				
	0.00	ha		
	0.00	h		
	0.00	ha/h		
	0.00	ha		
	0.00	h		
	0.00	ha/h		
	0.00	ha		
	0.00	h		
	0.00	ha/h		
	0.00	ha		
	0.00	h		
	0.00	ha/h		

NOTT-0781

Description of functions of keys

	The ESC key returns to the previous menu level, in this case the Start menu.
	Press and hold the Clear key for 2 seconds to reset the respective daily counter.

Description of the display elements

	The daily counters display the area worked, the number of hours of use and the surface area covered since the last reset.
	The total counter displays the total area worked, the total number of operating hours and the average area output at the operating module.

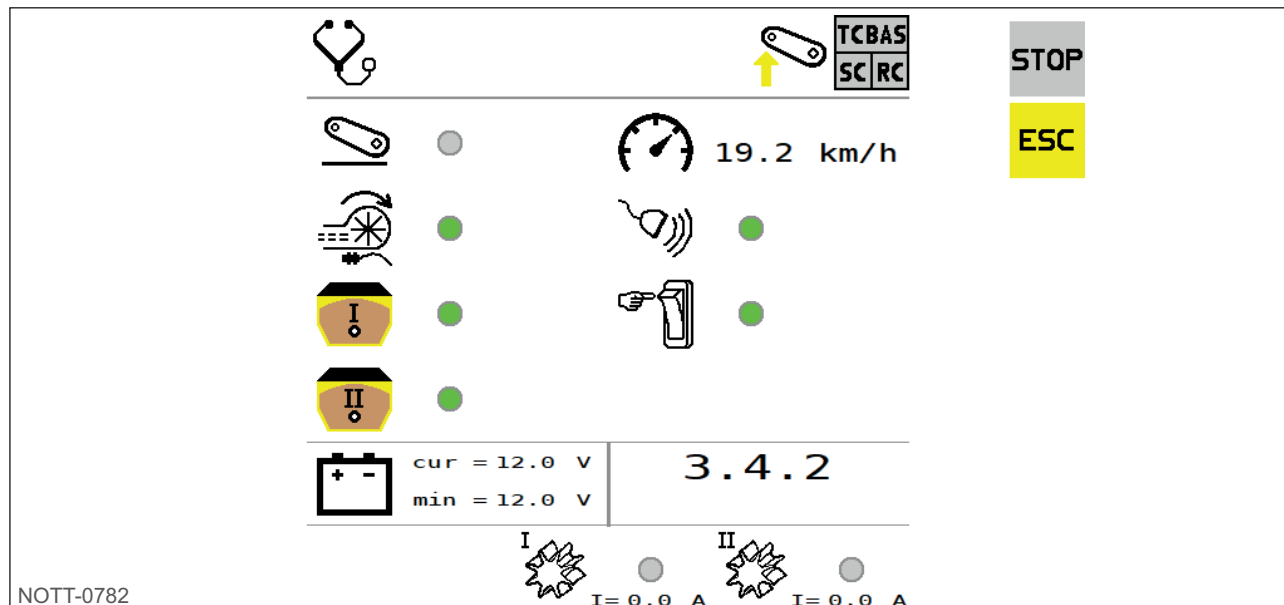


NOTE

For example, daily counters can be used on a plot-by-plot, day-by-day or year-by-year basis.

8.3.5. Diagnostic menu

All important information relating to after-sales service is displayed in this menu. Below you will find the sensor switching states, the supply voltage and the current consumption of the motors.

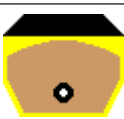


Description of functions of keys

	The ESC key returns to the previous menu level, in this case the Start menu.
---	--

Description of the display elements

Switching states of the various sensors are as follows:

	Field end sensor input
	Fan speed sensor input
	Fill level sensor input
	Distribution switch input

Speed sensor information:

	Current travel speed. If the speed source is not available, "N/A" is displayed.
	If a wheel, radar or GPS sensor is used to determine the travel speed, this indicator lights up green.

Measured voltage and currents:

 cur = 12.0 V min = 12.0 V	The supply voltage measured at the control unit and the minimum supply voltage since start-up are displayed here.
 I = 0.0 A	The current being drawn by the dosing roller motor is measured and displayed on the control unit. Two values are displayed for the PS TWIN device type.

8.4. Operating control unit messages

8.4.1. Suppress/acknowledge messages

At the same time, an acknowledgement key appears, through which messages can be suppressed for a certain period of time:

	Pressing the OK key will clear/delete messages after the error has been remedied.
	Pressing the Snooze key suppresses the messages. However, they are still displayed in the status bar. The Snooze function is only available for certain messages. In the event of critical errors, all actuators are shut down.

8.4.2. Warnings

Display	Cause	Solution
Battery voltage too low!	The supply voltage is less than 10V.	- Reduce consumers (e.g., work lamps). - Check the battery. - Check the cabling. - Check the connectors. - Check the alternator.
Battery voltage too high!	The supply voltage is too high.	Check the alternator.
Hopper I/II almost empty!	This message appears if the fill level sensor is not covered by seeds beyond the time set in § FILLING menu, page 104.	- Replenishing seed stock - Adjust the sensor (move down). - Increase the duration setting for the message.
Dosing drive outside the adjustment range!	The specified/required operating speed of the dosing roller cannot be sustained.	- Use larger/coarser distribution discs and reduce the speed. - Use smaller/thinner distribution discs and increase the speed. - Adjust the speed. - Reduce the flow rate
Vehicle speed too high!	The travel speed is too high, making it impossible to regulate the dosing roller.	- Reduce the travel speed. - Use larger/coarser distribution disks. - Use more distribution disks per outlet. - Reduce the flow rate.

Display	Cause	Solution
Vehicle speed too low!	The travel speed is too low, it is no longer possible to regulate the dosing roller.	- Increase the travel speed. - Use thinner distribution disks. - Use fewer distribution disks per outlet. - Increase the flow rate.
Fan speed too high!	The speed of the hydraulic fan exceeds the upper limit set in § FAN menu, page 116.	- Reduction of the hydraulic fan speed. - The parameter Pulses per revolution is incorrectly set, see § FAN menu, page 116.
ISOBUS working position signal not available!	No valid working position signal is being transmitted via ISOBUS from the tractor.	- Check that the signal is not deactivated in the tractor settings. - Use an alternative work position signal. - Consult the tractor manufacturer's after-sales service.

8.4.3. Warnings - TC mode "AUTO"

When the device is in AUTO mode, the Task Controller can issue the following warnings:

Display	Cause	Solution
TC units inconsistent!	The units for the values specified in the Task Controller do not match those expected.	Check the TC units.
TC setpoint is no longer available!	The TC setting on the tractor side is no longer available.	Check the Task Controller.
The TC setting is used	The TC setting is used, this is only an indication.	

8.4.4. Error

Display	Cause	Solution
Operating voltage not OK!	- The supply voltage is less than 8V. - Excessive voltage fluctuations.	- Reduce consumers (e.g. switch off work lamps). - Check the battery. - Check the cabling. - Check the connectors. - Check the alternator.

Display	Cause	Solution
Motor overload (dosing roller I)! Motor overload (dosing roller II)!	- A dosing roller cannot rotate. - The motor overloaded within the limit range for too long!	- Stop operation! - Remove foreign objects or similar from the dosing roller or agitator. - Stop the agitator (when the seed flows well). - Remove 1-3 spacers from the dosing roller. - Check the type of motor selected. - Check that the idling motor is operating correctly.
Motor overload (pump)!	Pump short circuit	Check connections
Error (fan)!	Only for electric fan: Displayed if the wiring is faulty or the device cable is not connected.	- Check the cabling. - Check the connectors on the motor unit. - First, check the error message displayed on the motor unit. This may indicate that the motor is overloaded or not connected. Follow the instructions in the seeder's user manual to remedy the problem.
Fan speed too low!	Only on hydraulic/external fan: - Dosing roller I AND/OR II activated. - The fan speed is below the minimum speed.	- Switch on the hydraulic fan. - Increase fan speed. - The parameter Pulses per revolution is incorrectly set, see § Hydraulic fan, page 117. - The fan speed limit has been set incorrectly, see § Hydraulic fan, page 117.
Motor not connected (dosing roller I)! Motor not connected (dosing roller II)!	Displayed if the wiring is faulty or the device cable is not connected.	Check the cabling.
Motor not connected (pump)!	The pump circuit breaker has tripped due to overpressure in the system.	- To reduce the pressure in the system, fit larger nozzles and provide more outlets. - Check for jamming and clear blockages, as necessary
Motor not running (dosing roller)!	Motor is drawing current, but there is no indication that it is running.	- Check the tightness of the connections on the seeder (particularly the ENC encoder). - Please contact after-sales service.

8.4.5. Error - TC mode "ON"

If TC mode is activated, the following error messages are output. All actuators are shut down when these warnings are issued.

Display	Cause	Solution
TC units inconsistent! Boom I TC units inconsistent! Boom II	The units for the values specified in the Task Controller do not match those expected.	Check the TC units on the terminal being used or on the tractor.
TC setpoint is no longer available I TC setpoint is no longer available II	The Task Controller must be used (TC mode: ON), but it is no longer available on the tractor side.	Check the task controller on the terminal or tractor used.

8.5. Troubleshoot

Problem	Cause	Solution
The dosing roller rotates when the device is raised!	- Incorrect signal from the lifting mechanism. - Lifting mechanism signal not available on ISOBUS.	- Reverse the signal on the lifting mechanism control unit, see § TRACTOR SETTINGS menu, page 109. - Change the position of the end-of-field sensor.
The dosing roller does not rotate when the device is in the working position!	- The dosing roller is not running. - The movement speed is 0. - No signal from lifting mechanism.	- Switch on the dosing roller; it must be activated once at the beginning by pressing the button. - Check the speed sensor settings - see § TRACTOR SETTINGS menu, page 109. - Check the speed sensor. - Check the end-of-field sensor.
Fill level sensor installed but not responding!	- No signal from fill level sensor. - The fill level sensor is deactivated, see § FILLING menu, page 104.	- Adjust the sensitivity of the fill level sensor (screw on the back of the sensor). - Change position of fill level sensor. - Check the mounting bracket and cables.
The fill level sensor triggers continuously!	- Incorrect sensor setting. - Incorrect sensor position.	- Adjust the sensitivity of the fill level sensor (screw on the back). - Change position of fill level sensor. - Deactivate the fill level sensor, see § FILLING menu, page 104.
No speed signal!	- Speed signal not available on ISOBUS. - Incorrect speed signal selected.	- Select an alternate speed signal - Check the speed sensor settings - see § TRACTOR SETTINGS menu, page 109.

Problem	Cause	Solution
No signal from lifting mechanism!	- Lifting mechanism sensor not detected. - No signal from lifting mechanism on ISOBUS.	- Check the signal source and adjust if necessary. - If external lifting mechanism sensors are used, they must be checked. - Magnetic sensor: the sensor and the magnet must be in the operating position or the raised position; they must be positioned directly opposite each other.
Travel speed 0.0 km/h is displayed or continuously returns to 0.0 km/h!	An incorrect or unavailable speed signal has been selected.	Check the speed settings (§ TRACTOR SETTINGS menu, page 109.).
The flow rate kg/ha or grains/m ² is not displayed!	- No valid calibration test performed. - Values subsequently modified via the Calibration Test menu.	- Perform a calibration test. - Reload the seed from the library.
Flow rate too low or too high!	- Incorrect speed. - Lifting mechanism is activated during work. - The properties of the seed have changed.	- Check the hectare counter on the control unit! - Check speed! - Calibrate speed sensor (not required for GPS sensor). - Check the lifting mechanism sensor. - Perform a calibration test. - Reduce the speed of the hydraulic fan.

9. Winter Storage - Handling - Transport

9.1. Storage - Warehousing



IMPORTANT

The machine should, as far as possible, be stored indoors to avoid premature ageing. However, if stored outdoors, it must be unfolded to prevent damage caused by moisture.



CAUTION

Never work on a machine that is raised off the ground without having first secured it using suitable lifting 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.

9.1.1. Decommissioning the seeder

Objective

To keep the seeder fully operational even after a long period of inactivity, proper storage measures must be taken.

Procedure

To prepare the seeder for storage, proceed as follows.

- 1 - Completely remove the grains from the seeder.
- 2 - Clean the seeder inside and outside.
- 3 - Set the brush setting lever to "+4".
- 4 - Store the seeder in a dry place to stop seeds from germinating inside it.

9.1.2. Storage of the seeder

Observe the following when storing the seeder:

- It must be stored in a dry place, protected from the elements, on a flat, hard surface, so that it remains in good working order even after a long period of storage.
- Take the necessary precautions to ensure that the device is stable, does not tip over and does not begin to move.
- Do not place or store any items on the machine.
- The apparatus must always be kept and stored in a safe place to prevent unauthorised use.
- If the machine is stored outdoors, it must be extended.

9.2. 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.

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 137.

9.3. Transportation



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 to prevent it from moving. Use the appropriate straps to secure the machine by its base.

10. Servicing - Maintenance

10.1. Maintenance advice

10.1.1. Introduction

Comply with the safety regulations 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.

10.1.2. 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

10.1.3. 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

10.1.4. Cleaning the machine



WARNING

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

10.1.5. 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.

10.1.6. Protection devices



WARNING

Inspect the machine for any external damage and check the condition of the protective devices. The protection devices must be clean, legible and in good condition. If this is not the case, please contact AGRISEM INTERNATIONAL's after-sales service to have them replaced.

10.1.7. 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.

10.1.8. Hydraulic circuit

The machine is driven by pressurised hydraulic fluid. Working on a pressurised circuit may result in the risk of injury due to 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



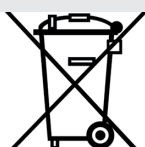
The service life of hydraulic hoses must not exceed six years, including a possible storage period of up to two years. Even when stored appropriately and used within the permissible limits, hoses and fittings undergo normal ageing, which limits their storage and service life.

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 original AGRISEM hydraulic hoses.

Nevertheless, the duration of use may be determined in accordance with empirical values, particularly taking into account potential risks. 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.

Take care not to contaminate the soil or water with hydraulic oil. Follow the instructions on the container of the consumable and comply with the regulations in force.

10.1.9. Electric



WARNING

Depending on the type of machine: before carrying out any work on the electrical circuit or before welding, disconnect the electrical cables 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.

You must always place the cover provided on the positive terminal of the battery. Beware of the risk of explosion when earthing.



DANGER

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

10.2. Maintenance consumables

Consumable	Specifications	Volume
Grease	lithium grease enhanced with molybdenum disulphide / Grade NLGI2	-



NOTE

Only use the specified consumables. AGRISEM INTERNATIONAL cannot be held liable in the event that other types of consumables are used.

10.3. Maintenance schedule



NOTE

The servicing frequency is determined by many factors. Various factors influence the required maintenance interval, including operating conditions, atmospheric influences, driving and working speeds, exposure to dust and soil type. The quality of lubricants and maintenance products also plays a role.



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 after the first 10 hours of operation

Check the tightness of the nuts and screws.

Check the hydraulic system (tightness and sealing).

Clean the seeder.

Maintenance tasks to be carried out every 50 hours

Check the tightness of the nuts and screws.

Check the hydraulic system (tightness and sealing).

Clean the seeder.

Maintenance operations every 6 years

Replace the hydraulic hoses.

10.4. Maintenance operations

10.4.1. Inspection of hydraulic hoses

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).
- Deformations that do not correspond to the natural shape of the hose or pipe, whether in a pressureless or pressurised state, or under bending (e.g. separation of layers, blistering, crushing points, kinks).
- 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.

Installation and removal of hydraulic hoses



WARNING

When fitting and removing hydraulic hoses, the following regulations must be strictly adhered with.

- Only use original AGRISEM hydraulic hoses.
- Always ensure cleanliness.
- Always lay hydraulic pipes in such a way that, under 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.
 - Prevent hoses from rubbing against machine components or each other by positioning and securing them correctly. Protect hydraulic hoses with protective sheaths if necessary. Cover parts with sharp edges.
 - The permitted bending radii must not be 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. In this regard, avoid supports that may hinder natural movement and changes in the length of the hose.
- After replacing all the hoses on the machine, check that all components of the hydraulic system are pressure-tight


WARNING

Hydraulic hoses must not be painted.

10.4.2. Check the hydraulic system (tightness and sealing)

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

If necessary, tighten screwed connectors.



Fig. 50

10.4.3. Discharging the grain hopper

Objective

Before cleaning or decommissioning the seeder, any seed remaining in the grain hopper must be removed.

Conditions

This operation can only be performed if the following conditions are met:

- The equipment is switched off.

Procedure

- 1 - Loosen hexagon bolts (2) on discharge plate (1).


NOTE

The screws are secured to the discharge plate by circlips.

- 2 - Remove the discharge plate from its mounting; rotate it 180°.
- 3 - Attach the discharge plate to the seeder.
- 4 - Start the discharge program on the operating control unit, see 7. Operating control unit screen 5.2, page 64.

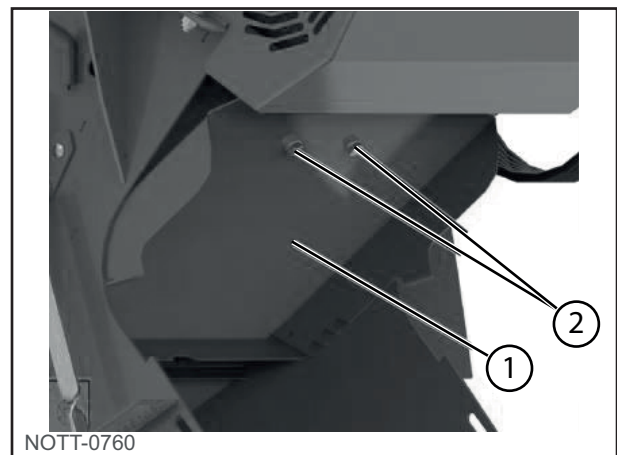


Fig. 51

10.4.4. Tightening the bolts

The following couplings must be used without lubrication.

	Dimensions	Preload force (N)			Tightening torque (Nm)		
Friction coefficient $\mu_{\text{tot}} = 0.20$	-	8.8	10.9	12.9	8.8	10.9	12.9
	M 4	3450	5050	5900	3.6	5.3	6.1
	M 5	5650	8250	9650	7.1	10.0	12.0
	M 6	7950	11700	13600	12.0	18.0	21.0
	M 8	14600	21400	25100	30.0	44.0	52.0
	M 10	23200	34100	39900	60.0	87.0	100.0
	M 12	33900	49800	58000	105.0	151.0	177.0
	M 14	46500	68500	80000	165.0	240.0	285.0
	M 16	64000	94000	110000	260.0	380.0	445.0
	M 18	80500	114000	134000	635.0	520.0	610.0
	M 20	103000	147000	172000	520.0	740.0	870.0
	M 22	129000	184000	216000	710.0	1000.0	1200.0
	M 24	149000	212000	248000	890.0	1250.0	1500.0
	M 27	196000	279000	327000	1350.0	1900.0	2200.0
	M 30	238000	339000	397000	1800.0	2550.0	3000.0

10.4.5. Cleaning the seeder



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.

Objective

The seeder should be cleaned regularly inside and out to ensure long-term trouble-free operation. Incorrect cleaning can cause residual seeds to germinate inside the seeder.

Conditions

This operation can only be performed if the following conditions are met:

- The equipment is switched off.

Required components and tools

The following components and tools are required for operation:

- Compressed-air device
- Damp cloth

Procedure

- 1 - Discharge the grain hopper.
- 2 - Remove the dosing roller.
- 3 - Open the grains hopper cover by turning it anticlockwise.
- 4 - Clean the inside of the seeder and the seed channels with compressed air.
- 5 - Clean the outside of the seeder with a damp cloth.

11. Malfunctions

11.1. Causes and remedies

Problem	Point to be checked	Solution
The dispensing roller does not rotate when the gear motor's shaft is turning.	The key has fallen from the drive shaft keyway.	Fit a new key.
The seed hoses are clogged.	The turbine speed is too low.	Check and, if necessary, increase the turbine speed.
The error message 'Error (fan) !' appears on the operating control unit. The red E01 indicator light (fan overload) is illuminated on the motor module.	One or both motors have been running for too long at maximum capacity.	Check or install calibration cover.
		Check that all the distribution hoses are fitted.
		Remove foreign bodies or other objects from the fan.
The error message 'Error (fan) !' appears on the operating control unit. The red E02 indicator light (fan not connected) is illuminated on the motor module.	Incorrect wiring.	Check that the fan operates correctly.
		Check the cabling.
		When only one fan is used, both connection cables must be connected to that fan.



NOTE

See section 7. Operating control unit screen 5.2, page 64 for malfunctions related to the operating control unit.



NOTE

If the problem persists, please contact AGRISEM INTERNATIONAL.

12. Specifications

12.1. Mechanical specifications

	DS 200	DS 300	DS 500
Height (cm)	100	110	125
Width (cm)	70	80	80
Depth (cm)	90	100	120
Unladen weight (kg)	60	70	93
Max. tank volume (in l)	200	300	500

12.2. Hydraulic variant

Hydraulic fan	
Height (cm)	27
Width (cm)	46
Depth (cm)	40
Weight (kg)	23

Hydraulic circuit	
Length of pressure line (m)	6
Length of the motor line (m)	< 1
Length of the hopper pipe (m)	6

12.3. Electrical specifications

Electric fan	
Power supply	12 V, 25 A

The motor module's battery cable is fitted with a 40 A fuse.

A 40 A internal fuse protects the motor module. If it needs replacing, it must be replaced with a fuse of the same rating. Under no circumstances shall the replacement fuse have a higher trip current.

12.4. Hydraulic specifications

Hydraulic fan drive	
Maximum pressure (bar)	180
Maximum oil flow rate (l/min)	38

12.5. Spreading width

Recommended spreading width: 1 - 6 m

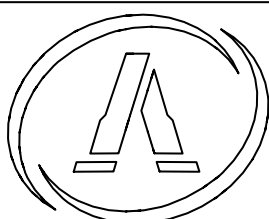
Maximum spreading width	
Electric fan (m)	6
Hydraulic fan (m)	12 (with 16 outputs)

13. Technical terms and abbreviations

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

14. Appendices

DECLARATION OF CONFORMITY WITH THE "MACHINERY" DIRECTIVE



AGRISEM®

535 rue P. Levasseur 44150 ANCENIS - (F) - Tél. 33(0)2.51.14.14.40 Fax. 33(0)2.40.96.32.36



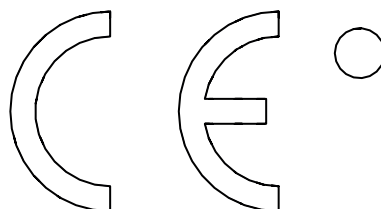
MODELE

N° DE SERIE

ANNEE

POIDS

Kg



MATERIEL FABRIQUE SOUS LICENCE

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

DS 200 - DS 300 - DS 500

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

Signed on behalf of Ancenis,

12 January 2021

Michal GUZOWSKI
CEO

**AGRISEM®****WARRANTY CERTIFICATE N°****TO BE RETURNED UPON RECEPTION
OF THE MACHINE**

Dealer
Name
Address
Tel.:
Code N°

Purchaser
Name
Address
Tel.:

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

Dated:

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.: 02.51.14.14.40 - Fax: 02.40.96.32.36

**WARRANTY CLAIM FORM N°**

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 <i>(attach a copy of the invoice and the dealer's delivery note)</i>		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 the malfunction		Current date	
Part reference	Quantity	Description	
Send parts requested	YES	Credit note requested	YES
Photographs attached	YES	Parts returned <i>Shipping costs payable by the sender</i>	YES
AGRISEM INTERNATIONAL expert assessment			
Comments			
Date		Signature	
Technical manager			
agrisem@agrisem.com			