Original inside

GB

Operator‘s manual

+ INSTRUCTIONS FOR PRODUCT DELIVERY . . . Page 3

"Translation of the original Operating Manual"

Nr. 99 8537.GB.80K.0

VITASEM A 251

Type 8537 : + . . . 01001

VITASEM A 301

Type 8538 : + . . . 01001

VITASEM A 401

Type 8539 : + . . . 01001

Seed drill

Chassis Nr.

(GB) Dear Farmer

You have just made an excellent choice. Naturally we are very happy and wish to congratulate you for having chosen Pöttinger. As your agricultural partner, we offer you quality and efficiency combined with reliable servicing.

In order to assess the spare-parts demand for our agricultural machines and to take these demands into consideration when developing new machines, we would ask you to provide us with some details.

Furthermore, we will also be able to inform you of new developments.

Important information concerning Product Liability.

According to the laws governing product liability, the manufacturer and dealer are obliged to hand the operating manual to the customer at the time of sale, and to instruct them in the recommended operating, safety, and maintenance regulations. Confirmation is necessary to prove that the machine and operating manual have been handed over accordingly.

For this purpose,

- **document A** is to be signed and sent to Pöttinger,
- **document B** remains with the dealer supplying the machine,
- and the customer receives **document C**.

In accordance with the laws of product liability, every farmer is an entrepreneur.

According to the laws of product liability, property damage is damage caused by a machine and not to it. An excess of Euro 500 is provided for such a liabilioty.

In accordance with the laws of product liability, entrepreneurial property damages are excluded from the liability.

Attention! Should the customer resell the machine at a later date, the operating manual must be given to the new owner who must then be instructed in the recommended regulations referred to herein.

(GB) INSTRUCTIONS FOR PRODUCT DELIVERY

Dokument D

PÖTTINGER Landtechnik GmbH
Industriegelände 1
A-4710 Grieskirchen
Tel. 07248 / 600 -0
Telefax 07248 / 600-2511

According to the product liability please check the above mentioned items.

Please check. [X]

- ❑ Machine checked according to delivery note. All attached parts removed. All safety equipment, drive shaft and operating devices at hand.
- ❑ Operation and maintenance of machine and/or implement according to operating instructions explained to the customer.
- ❑ Tyres checked re. correct pressure.
- ❑ Wheel nuts checked re. tightness.
- ❑ Drive shaft cut to correct lenght.
- ❑ Correct power-take-off speed indicated.
- ❑ Fitting to tractor carried out: to three-point linkage
- ❑ Trial run carried out and no defects found.
- ❑ Functions explained during trial run.
- ❑ Pivoting in transporting and operating position explained.
- ❑ Information given re. optional extras.
- ❑ Absolute need to read the operating manual indicated.

In order to prove that the machine and the operating manual have been properly delivered, a confirmation is necessary.
For this purpose please do the following:

- sign the **document A** and send it to the company Pöttinger or via the internet to www.poettinger.at
- **document B** stays with the specialist factory delivering the machine.
- **document C** stays with the customer.

Table of contents

Diagram identification: (13/1) means Fig. 13, Position 1

Before commissioning the seed drill, you should carefully read this operating manual and the safety instructions (”For your safety”) – and observe them; you should also read the instructions for a soil finishing tool.

The operating person should be qualified in safety requirements and be instructed about the dangers by the instruction for use and maintenance. Please pass on all safety instructions to other users.

The relevant safety regulations and the other generally recognised technical safety, health care and traffic regulations are to be observed.

Beware of the ”warning” signs!

Instructions in this manual with this sign and warning graphical symbol on the tool warn of danger! (for explanations of the warning graphical symbol see appendix ”pictogram symbols”)

Loss of guarantee

The drill has been manufactured exclusively for usual agricultural uses. Any other use is considered as not in accordance with the requirements of the law and the manufacturer is not liable for any damage resulting from this use .

Observing the prescribed operating, maintenance and upkeep conditions is considered use in accordance with the requirements of the law as is the exclusive use of original spare parts.

By using external equipment and/or external parts (high-usage/wear and tear spare parts and other spare parts) which are not allowed by the Poettinger manufacturer any guarantee is cancelled.

Unauthorised repairs or changes to the device and failure to monitor use (that all blades sow) exclude any liability for any damage which arises from this.

Possible complaints on delivery (damage in transit, incomplete units) are to be immediately communicated in writing.

Guarantee demands and guarantee conditions to be observed or liability disqualification are in accordance with our delivery conditions.

Safety Instructions

Before coupling and uncoupling, set the tractor’s hydraulic unit to „position control“!

When coupling and uncoupling, do not allow anyone to stand between the tractor and the machine; also stay clear of the tractor and machine when the external hydraulic console is in use. Risk of injury!

Ensure that when lifted, the seed drill (with its row markers folded in) does not come into contact with other objects – e.g. with a rear-hinged window!

Ensure that there is sufficient space to manoeuvre (when the hopper is full), and attach a suitable weight to the front of the tractor.

Before operation, ensure that the tractor and machine are both in safe operating condition and that the relevant guards have been attached.

The operator is responsible for safety.

Do not transport the machine with a full hopper!

Never allow anyone to climb onto or to ride on the machine (or loading platform), and keep clear of danger zones (swivel area)!

Before leaving the tractor, lower the machine, switch off the engine and remove the ignition key.

Always lower the machine prior to performing adjustments or repairs.

Do not reach into the hopper or place objects into it when empty. The agitator (if installed) may turn if the machine is pushed (when the spur wheel is turned) with transmission in > „0“ position. Danger of injury or damage to machine!

When filling the hopper with treated seed and cleaning with compressed air, please note that seed dressing is toxic and irritant. Wear appropriate protective clothing!

Ensure that no one is near the machine before operating or towing.

On steep slopes, allowances are to be made for the centre of gravity of the purchased combination.

Before using the machine for the first time – and after long downtimes – check the oil level in the transmission and that all bearings are adequately greased. Check that all screws are tightened, and that there is no leakage in the hydraulic unit.

CE sign

The CE sign, which is affixed by the manufacturer, indicates outwardly that this machine conforms to the engineering guideline regulations and the other relevant EU guidelines.

EU Declaration of Conformity (see supplement)

By signing the EU Declaration of Conformity, the manufacturer declares that the machine being brought into service complies with all relevant safety and health requirements.

Recommendations for work safety

All points referring to satety in this manual are indicated by this sign.

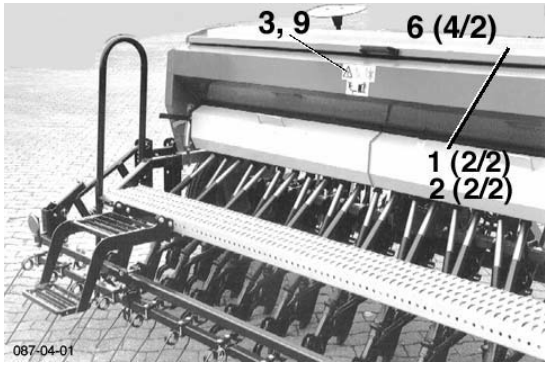
Warning Signs (symbols)

Warning signs are used to indicate possible hazards; their purpose is to help ensure the safety of all those involved in operating the machine.

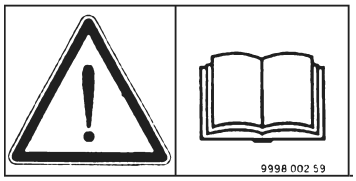
An explanation of these symbols is enclosed in the appendix „Explanation of Symbols“. Please refer to Fig. 1 for their positioning (3 etc. = respective number in „Explanation“ document, r = right, l = left side of machine).

Replace any missing warning signs.

If you wish to obtain these from PÖTTINGER, please indicate the article number listed in the appendix.



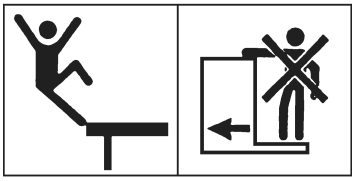
Meaning of warning signs



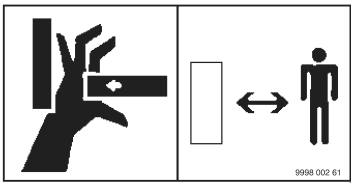
Read operating manual before initial operation

Observe safety hints

Observe transport and linkage advice

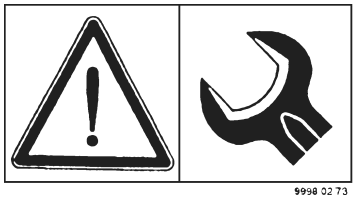


Travelling on implement during operation and transportation is not permitted. Use loading plate or platform only when machine is mounted and standing dormant, or when safely supported.



Danger of crushing.

Keep your distance

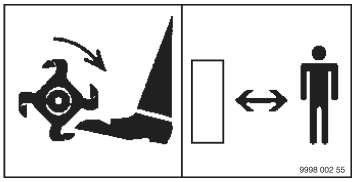


After initial operation retighten all screws; furthermore check regularly for firm fitting.

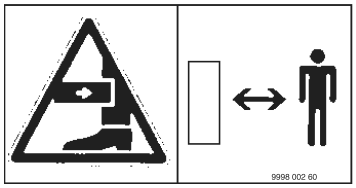
For special removal torques see operating manual or spare parts list.

Use torque wrench.

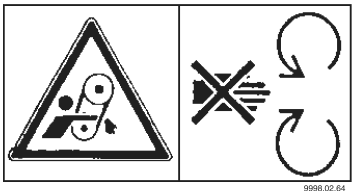
Swivel out side components. Keep your distance. Do not enter swivelling range. Ensure sufficient free space when swivelling out.



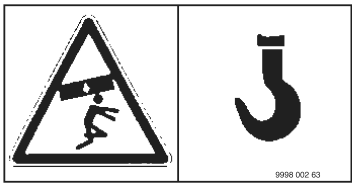
Rotating implements. Keep your distance. Do not reach in behind protection devices or covering plates, etc.



Legs could be hit through components suddenly swivelling out or sliding out. Keep your distance.

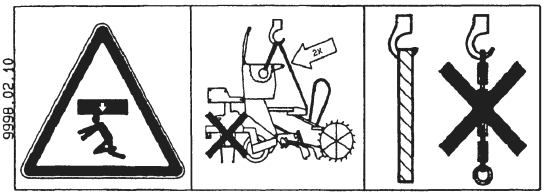


Never open or remove protection devices when drives are running. Keep your distance

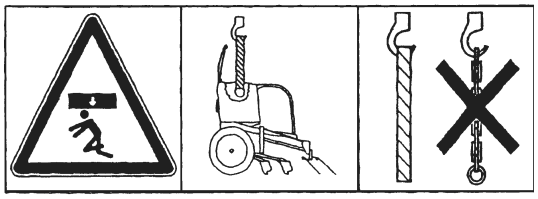


Put notice here

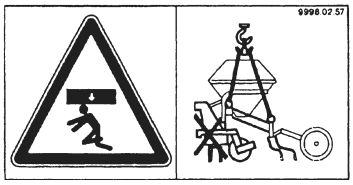
Do not stand in the area of raised load.



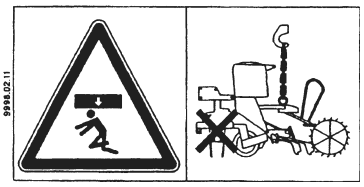
Danger from load above. Lift “Vitasem A” seed box bulkhead wall and transport rings. Use belts. Never lift drill machine together with agricultural implement.



Danger from load above. Lift “Vitasem” in bulkhead wall of seed box. Only use textile belts, no chains.



Danger from load above. Lift “Aerosem” only by transport rings. In the course of this, never lift drill machine together with agricultural implement.



Danger from load above. Lift “Vitasem A” only by transport rings. In the course of this, never lift drill machine together with agricultural implement.

Brief Description of Machine

„VITASEM A“ are mechanical superstructure drill machines supported by the packer roller on the combined machine, enabling for example a PÖTTINGER LION rotary harrow to avoid running over stones.

With that there would be less load on the rotary harrow tines and therefore greater prevention of tine breakage.

Simple coupling links are used to facilitate hitching and uncoupling; when parked, the machine sits on four removable supports.

“VITASEM A” is fitted optionally with :

- shoe coulters
- single-disc coulters
- broad-shoe coulters

The drive is provided by the spur wheel – on both sides for the 3 and 4m models if requested – via a continuously adjustable two-directional oil-bath transmission, which is capable of roughly halving the speed of the sowing shaft, and when set up for „over seeding“, will also reverse the direction of rotation of the seed shaft.

For 3m and 4m machines the sowing shaft links can be switched off for each side individually.

What is special about the “VITASEM” is that with its multi-seeding wheels it normally produces “under seeding” and when set up for “over seeding” (optional extra) by changing the direction of rotation of the seed shaft, will produce single dosing e.g. with rape seeds.

To facilitate handling and safe operation the design includes, among others features, a water-proof hopper lid, a functionally shaped hopper, a feed funnel for each sowing roller, level indicator, individual and central coulter pressure adjustment and easy-to-perform calibration using the crank.

To adapt the „Vitasem A“ to the various types of operation, suitable equipment is available:

e.g.

various types of harrows,

hydraulic row marker switching and lifting,

electronic tramline control incl. a hectare meter and calibration,

level indicator and sowing shaft controller,

demarcation of tramlines,

hydraulic coulter pressure and seed rate adjustment,

self-aligning agitator shaft for grass seed and others.

Technical data

VITASEM	251					301					401			
Working with cm	250					300					400			
Seed box-runouts	25	21				31	25				41			
Series number	25	21	19	17	14	31	25	21	19	17	41	33	29	27
In-line pitching cm	10,0	11,9	13,1	14,7	17,9	9,7	12	14,3	15,7	17,7	9,8	12,1	13,8	14,8
Weight kg (without accessories)														
.. with drag blade	430/443	412/423	403/413	394/403	381/388	502/518	482/495	468/479	461/471	454/463	691/712	673/690	663/678	659/673
.. with wide seed blades	-/461	-/439	-/427	-/416	-/403	-/536	-/510	-/491	-/482	-/473	-/736	-/709	-/695	-/689
.. with sngle blade	-/-	456/467	442/452	428/437	407/415	-/-	542/555	518/529	506/516	474/503	-/-	752/769	732/747	723/737
Seed-box content l	410					510 / 700					720 / 1000			
Haulage distance ca.cm	250*					300*					400			
Filling amount ca. cm	165													
Oil bath trans. fill. amount	2,5 l (hydraulic oil HLP 32)													
sound pressure level	< "70 dB (A)"													

* Observe the transport width of the soil conditioner

(Subject to alteration)

** haulage distance more than 3m observe instructions page 29.

Equipment

· Coulter exchanger for shoe coulters and broad-shoe coulters
- Hopper with level indicator and hinged lid
- Driving spur wheel,
- Continuously adjustable two-directional oil-bath transmission,
- Multi-sowing rollers with reducers
- for „3 m“ and „4 m“ sowing shaft, may be switched off on left side,
- Calibration unit with crank and unloading troughs,
- Central and individual coulter pressure adjustment,
- Removable parking stands for uncoupling/parking,
- Light frame (not available for „4 m“ machine)

Necessary connections

• 1 double-action hydraulic connection
  pressure min.: 140 bar
  pressure max.: 180 bar
• 1 single-action hyfraulic connection
  pressure min.: 140 bar
  pressure max.: 180 bar
• 7-pole electric connection for lighting (12 Volt)
• 3-pole electric connection (12 Volt) (only for Multitronic II)

Defined use of the machine

The machine is intended solely for normal use in agricultural work.

Any other uses outside of this are regarded as not in accordance with the defined use.

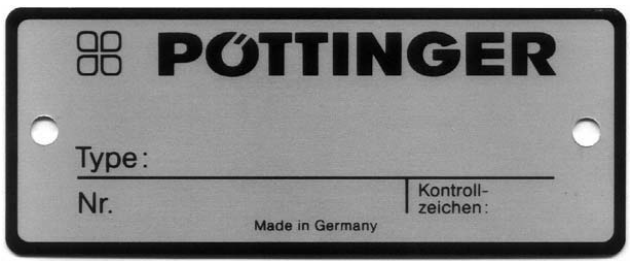
The manufacturer will not be held liable for any damages resulting from misuse. The risk is carried by the user alone.

• The keeping of operating, servicing and maintenance requirements as specified by the manufacturer also come under the heading of „defined use“.

Position of Vehicle Identification Plate

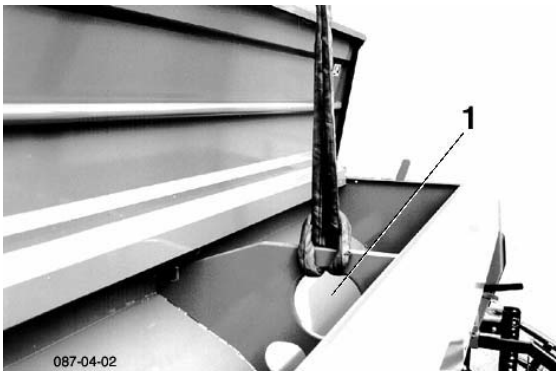
The factory number is imprinted on the accompanying Vehicle Identification Plate (as shown) and on the frame. Guarantee issues and further inquiries cannot be processed without the factory number being stated.

Please enter the number onto the front page of the operating manual immediately after taking delivery of the vehicle/implement.



Auxiliary Equipment

- Extension set for superstructure; approx. 35 kg,
- Fixture for over seeding (e.g. rape seed)
- Coulter harrow; approx. 0,6 kg/pair
- Sowing harrow, 2-piece, with after-running tines; approx. 17 kg/m,
- Harrow extension for side overlap; approx. 3 kg
- Perfect following harrow, with individual, spring mounted elements; approx. 22 kg/m
- Transport tine guard for perfect following harrow (2,5 and. 3 m),
- Disc markers with shear protection and hydraulic lift; approx. 60 kg
- Hydraulic hose extension 0.5m and 1.6m
- Electronic tramlining control with sowing roller stop - for 2 or 3 rows per track - incl. hectare meter and calibration function
- Seed level and sowing shaft monitor (only available in conjunction with tramlining control)
- Battery connection cable
- Adapter cable for 7-pole socket
- Control cable 2m, 4m, 7m as an extension for machine combinations
- Disc tramline marker (only available with tramlining control and loading platform); approx. 35 kg
- Hydraulic coulter pressure adjustment
- Hydraulic seed rate adjustment
- Agitator shaft - rotating or self-aligning agitator shaft
- Sow casing cover - for unused spouts
- Loading platform with tread step and handrail; approx. 14 kg/m
- Hectare meter (mech.)
- Depth gauge for shoe coulters
- Pinch roller for single-disc coulters
- Second spur wheel, left, for 3 and 4 m; approx. 50 kg.
- Hydraulic trailing wheel lift (right = standard drive)
- Hydraulic harrow pressure adjustment for perfect harrow
- Transport aids



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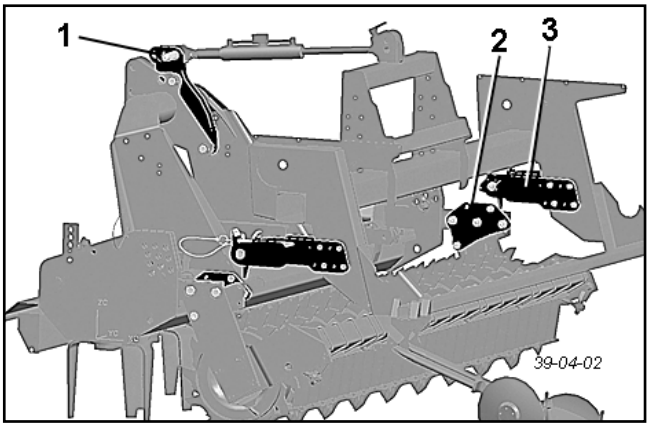

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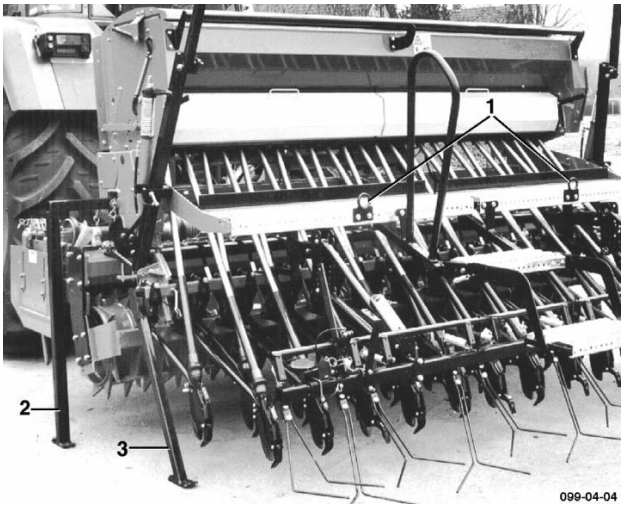

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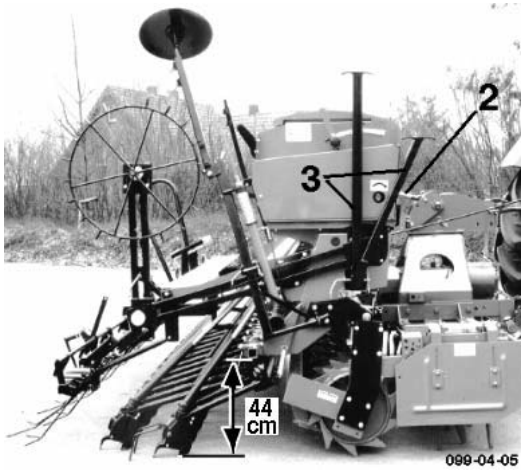


5

Loading

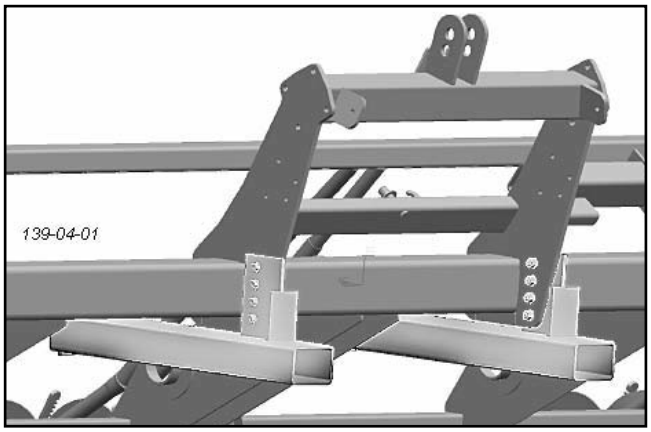
Hook in with the textile belt in the middle wall opening (**2/1**) and 2 eyes (**4/1**) - at “4 m” 2x middle wall opening.

Lift only by itself and with empty hopper (without soil-working machine).

Ensure sufficient load bearing capacity of belts.

Handle carefully, keep balanced.

Keep clear of suspended loads.



Transportation and loading components

Set-up

The combined soil-working machine must be suitable for the superstructure:

... sufficiently stable for carrying the seed drill, (e.g. additional supports for Pöttinger Rotary Harrow „2.5 m“ and „3 m“ wide),

.... „load bearing“ packer roller (e.g. toothed packer roller 510 mm Ø or polygon roller 450 mm Ø).

Perform set-up on level ground and with empty hopper only.

Mount the superstructure set on the soil-working machine.

Mount the couplings on both sides (**3/1+2+3**) in such a way that that the seed drill rests close to the packer roller and the distance between the lower edge/coulter rail and the ground **is approx. 44 cm for operation**. (**5/1**)

Drive under the empty, supported “Vitasem A” with the soil-working machine and couple; secure with plugs (**3/3**).

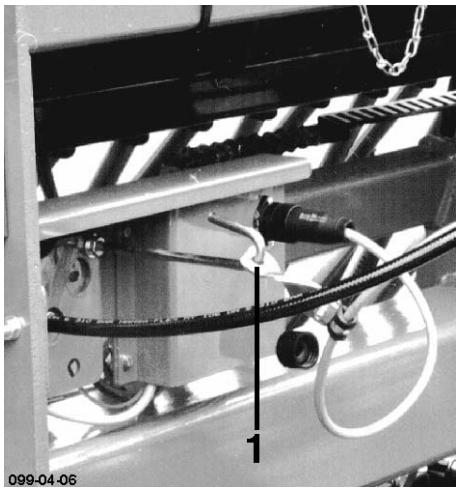
Lift the machine and remove front supports (**4/2**) then lower and connect upper link (**5/2**).

Lift the machine again and remove back supports (**4/3**).

(The supports may remain attached to the seed drill; insert the front supports, pointing upwards, into the holders, then insert the back supports, **5/3**.)

Adjust the upper links so that the soil-working machine and the seed drill are horizontal during operation (side of upper edge of hopper).

Connect the hydraulic hose - for row markers or others - to a single-action control unit.



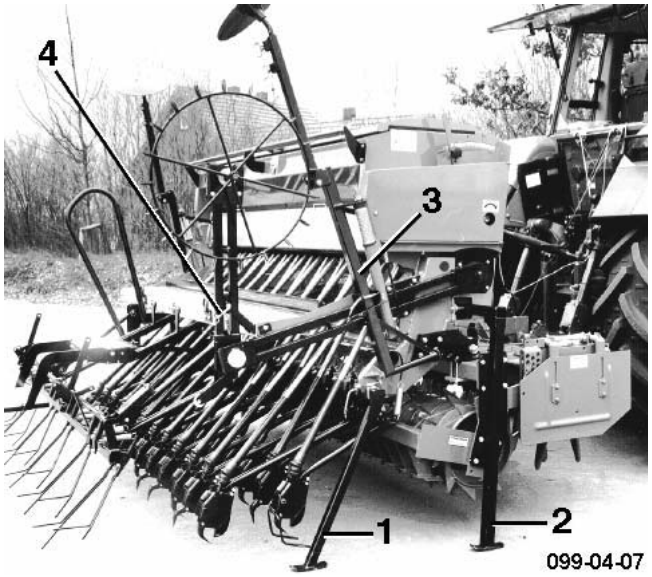
6

Power supply for electronic tramlining control:

12 V from 3-pole constant current socket (DIN 9680).

(If this is not available, a battery connection cable with socket or an adapter for the 7-pole trailer socket (requires parking light to be switched on) can be supplied by PÖTTINGER as additional equipment.).

Place the cable in the hooks on the seed drill side to take strain off plug connection - see **(6/1)**.



7

Uncoupling / Parking

Use reverse procedure (first attach back supports, uncouple upper link, then attach front supports).

Secure parking supports (**7/1+2**) with plug; ensure that the surface is firm and level!

The hopper must be emptied beforehand.

Transport Preparations

Transport with empty hopper only.

Close the hopper lid.

Fold up the emptying trays ensuring they lock in.

Fold up the collapsible tread-step.

After folding in the row markers secure with plug (**7/3**).

Fold up and lock the spur wheel in place (**7/4**).

Fold up the tramline markers - plug (**10/1**).

Attach the tine guard to the perfect following harrow “2.5 and 3 m” (**56/3** = auxiliary equipment),

When transporting the machine on public roads, mark the outline with warning signs and connect lights.

Observe transporting hints!

- see chapter “Transport”

9

Operating Instructions

- Bring the seed drill into a horizontal position with little lower link play (use the upper link to bring the upper edge of hopper into a horizontal position)
- For operation, set the tractor hydraulics to „floating position“: Lifting hydraulics (or seed drill lift) and row markers,
- ensure the seed drill is raised high enough on headland
- To prevent the coulter from clogging, lower the seed drill while driving away (not in a standing position).
- to avoid blade clogging
- Adjust the driving speed to suit the conditions to ensure that the seed is placed at a consistent depth. (Solo operation at approx. 12 km/h in favourable conditions).

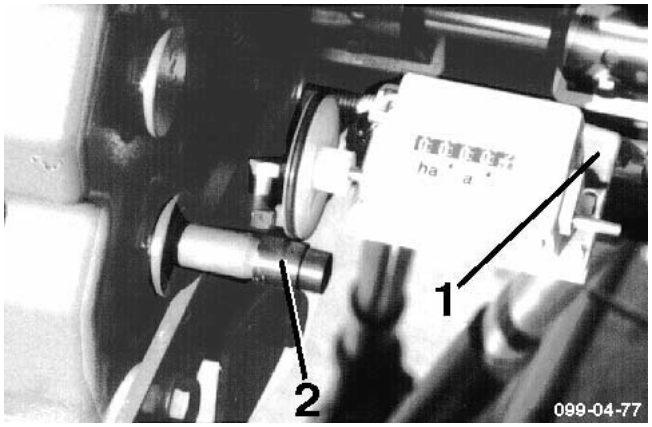
- Check all settings such as the calibration test: batching, shutters, gate, transmission setting (fold up emptying trays and lock in position)
- While beginning to sow – and then at regular intervals – ensure that all coulters are sowing (no clogging) and that the seed rate is correct.
- Seed dressing residue may hinder the seed flow. It is therefore useful to perform another test calibration after approx. 2 hopper loads.

- No liability will be accepted for deviations in seed quantity or damages resulting from clogging.

- Give the spur wheel enough pressure on the ground – spring tension
- Please ensure that the row marker settings and the tramline rhythm, including sowing roller stop, are correct.
- Gap between lower edge of share plate and ground approx. 44cm.

- Never fill the hopper unless it has been hitched and always empty before unhitching.
- When filling, ensure that no foreign materials (bits of paper, sack tags) enter the hopper.
- Close the hopper lid.
- Observe the seed level using the level indicator and ensure even distribution.
- For operation, fold up the collapsible tread step on the loading platform.
- Given the hygroscopic nature of the seed (including dressing), always empty the hopper when not in use for long periods.

Please note that seed dressings are irritants and may be poisonous!



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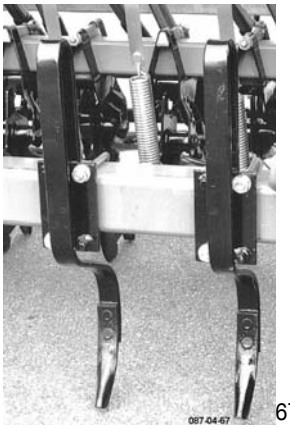

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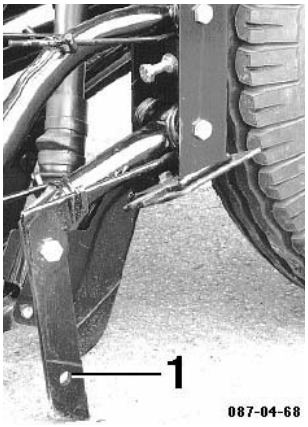


68

69

Hectare Meter

(if Multitronic is not installed)

The counter begins to move as soon as the driving wheel starts to turn.

Values are given in a and ha.

Use the crank (**77/1**) to set to „0“.

Depending on the machine width, please ensure that the hectare meter is driven by the correct „step“ and that the spring tension is sufficient to hold it in place.

Shaft cowl (**77/2**): Ø 13,6 mm – “2,5 m”
Ø 16,3 mm – “3,0 m”
Ø 21,8 mm – "4,0 m"

Tractor Track Loosener [1)]

These may be adjusted sideways and in working depth, which means they may be used more for loosening or closing over the track – do not set too deep.

Fold up when parking the seed (Fig. **67**).

Drill Track Loosener [1)]

The looseners are spring-loaded and can therefore skip over stones.

The loosener’s coulter (**68/1**) may be swung forwards when parking the machine. It is simple to remove (e.g. on soil with a lot of trash) and may be reversed when worn..

Loading platform (Fig. 69)

The loading platform with tread and guide rail makes it easier to fill the seed box

Fold up the tread when using!

Climbing and standing on the loading platform during operation is prohibited.

Keep the tread surfaces clean

1) only for VITASEM (not for VITASEM A)

10

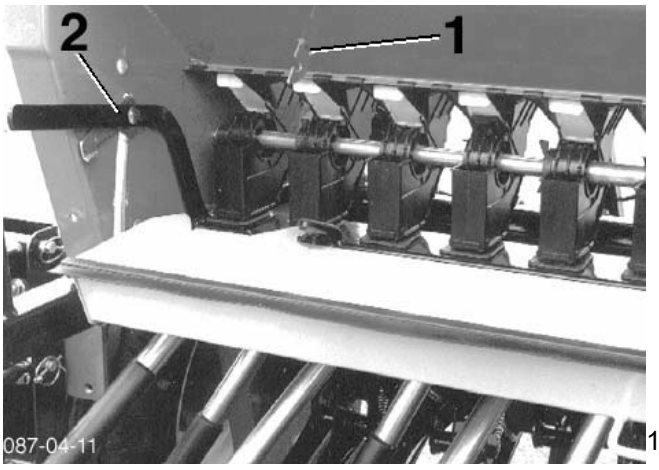
Hopper: Filling/Emptying

The seed drill should only be filled after it has been mounted and lowered.

The seed level is shown on the indicator (front hopper wall).

Observe the swimmer when filling the seed drill (**10/1**).

Do not run the hopper „on empty"; when seed level is low, ensure even distribution.



11

Emptying

Lower the combination.

Lift the emptying trays so that they unlock (at **11/1**), and place horizontally.

Unlock the seed guide rail on both sides (**11/2**) - and lower.

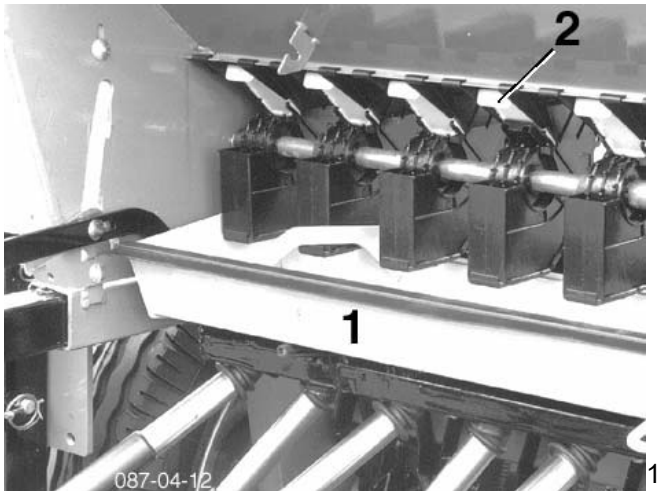
Place the trays on the seed guide rail (**12/1**).

Open all shutters (**12/2**).

Open the gates as far as possible – move lever to full extent (**13/1**).

Take note!

- **Empty only small residue amounts over the drop bottom. If drop bottom is full, danger exists of readjustment when closing.**
- **Empty large residue amounts from seed tank with suitable container (bucket).**

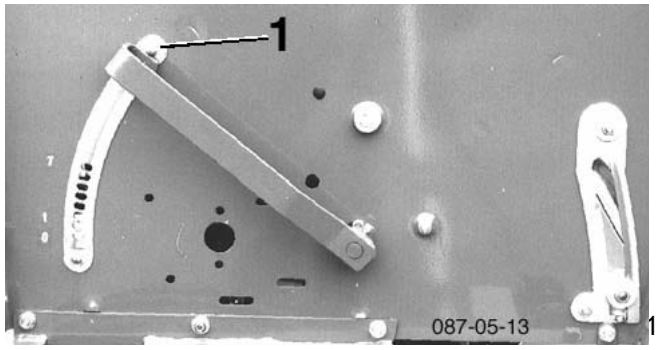


12

Cleaning the Hopper:

- Blow out residue with compressed air,
- Wear protective clothing against toxic seed dressing dust!
- Leave the gates wide open,

  so mice, for example, do not smell the seed and attempt to chew through the hopper on the parked drill.



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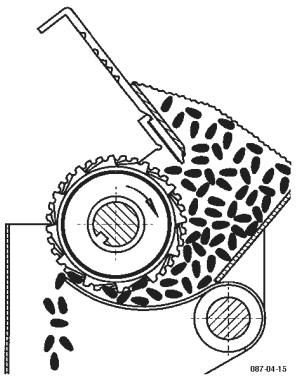

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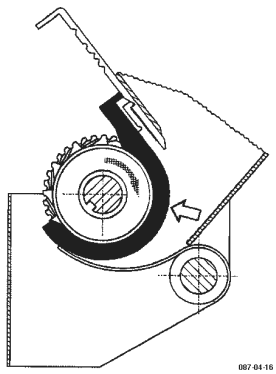

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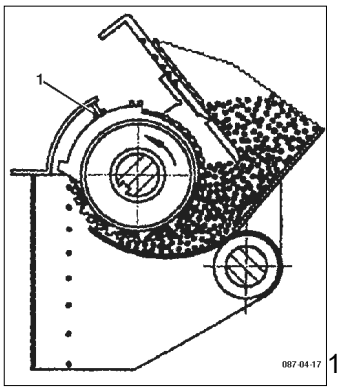

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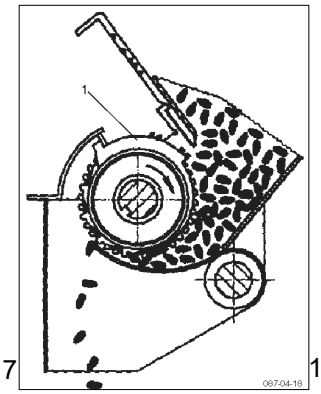


18

Multidrill Sowing System

In order to provide the best possible performance for each size of drillable seed type, seed rate and spacing requirements, the Multidrill also offers four types of batching in addition to the **continuously adjustable sowing shaft speed**:

1. Undersowing

- for „normal seed types“ such as grain, etc. (**Fig. 15**).

2. Undersowing with reducer

- for small quantities of fine seed, e.g. rape seed, phacelia, mustard (max. seed size: 3.3 mm)

  (**Fig. 16**, with reducer - available in yellow plastic).

3. Overseeding *

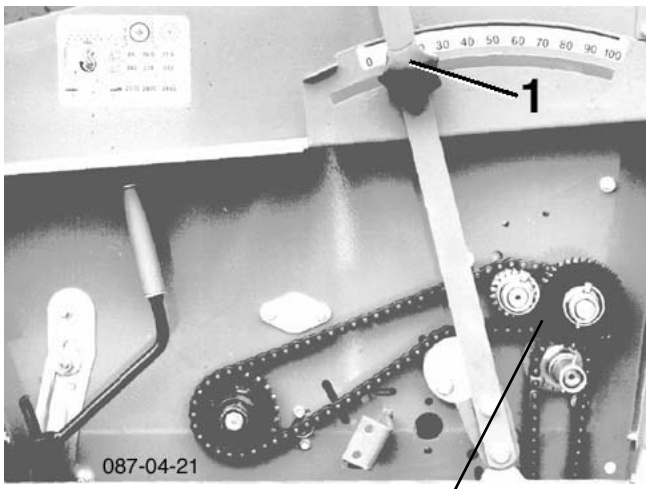
- single seed dosage for fine seed, e.g. rape seed (**Fig. 17**, with cover **17/1**).

4. Reduced undersowing *

- for „normal seed types“ at a low seed rate, e.g. hybrid trye (**Fig. 18**, with cover **18/1**).

The undersowing variations also offer the option of **halving the sowing shaft speed** by using the reduction gears.

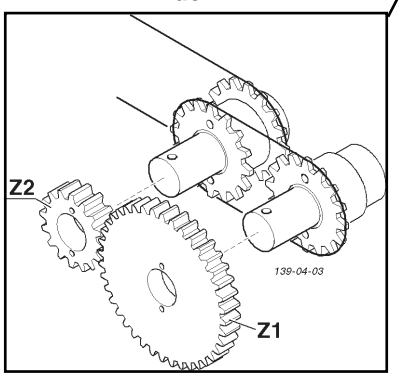
* Additional „overseeding“ equipment only: changer of sowing seed shaft direction and covers available.



Attention!

Positions (Z2, Z1) of both gearwheels must not be interchanged!

true



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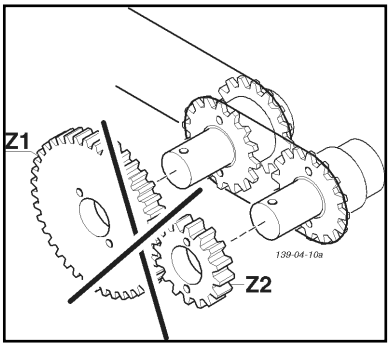

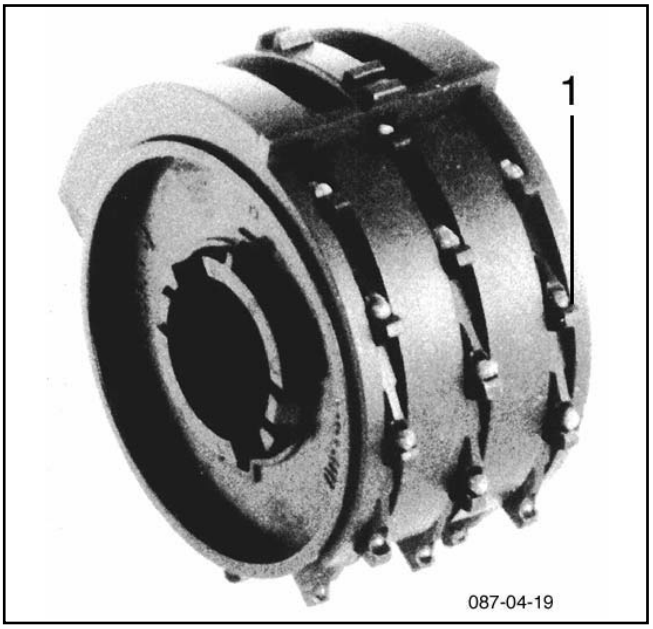

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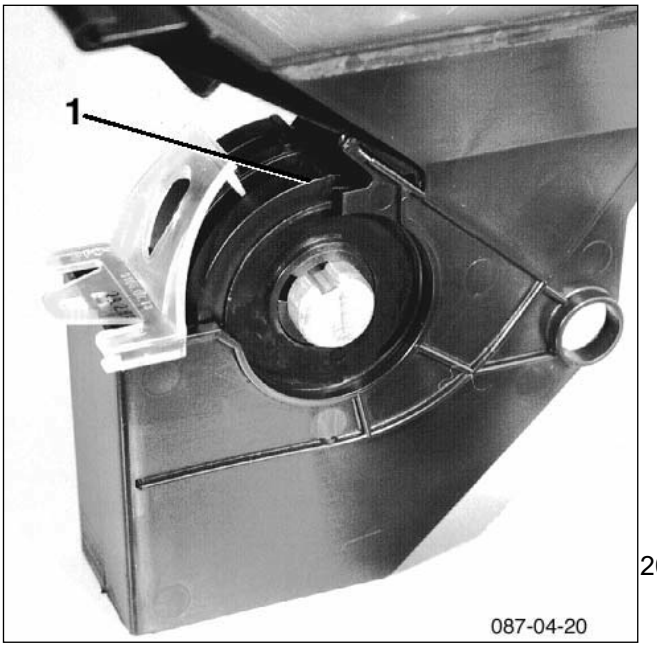

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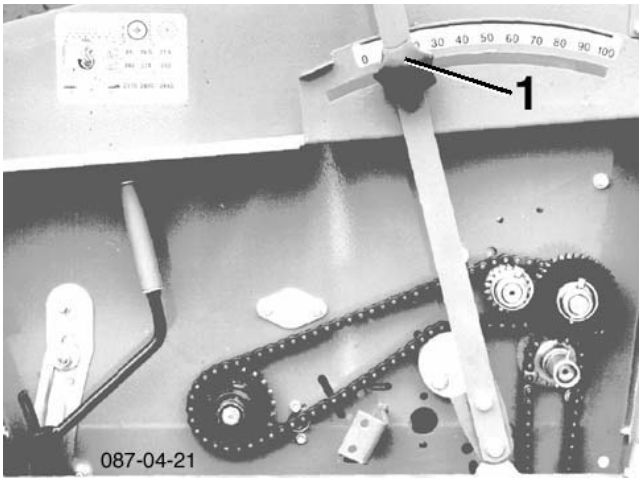


21

The Advantages of Overseeding (*

By reversing the direction of rotation of the seed shaft, each sowing roller cam – with its specially shaped cups (**19/1**) – picks up a seed, transports it through a cover (**20/1**), and then releases it for „free fall" into the seed drill coulters.

Individual seed dosage enhances growing space distribution and plant development and leads to greater yields while also saving on seed stock.

The Vitasem overseed system is only suited for round, regular seed of approx. **1.8 - 2.8 mm Ø** – especially for rape seed and kale-like seed:

... the seed must be free of any loose dressing rub-off and its surface may not be sticky (brush off any seed dressing residue in the cups).

Seed containing additives such as additional dressing and slug pellets is **not** suitable for overseeding.

... to achieve even seed distribution, we recommend to never drive faster than **6 km/hr**.

Strong vibrations, caused by stones and large clods of earth for example, will affect the quality of distribution.

... the angle of inclination should not exceed **15%**.

For conditions other than those described above, we recommend „Undersowing with reducer". This also applies for hybrid rape types with irregular seed sizes.

Setting Seed Rates

Use the seeding chart to determine the correct seed rate and make appropriate settings.

The sowing shaft direction changer and covers incl. locks are included in the additional „overseed" accessory.

Control devices:

a) Transmission setting (direction of rotation of the seed shaft)
b) Shutters
c) Gate
d) Fine seed reducer
e) Covers
f) Agitator

Lever position on gearing (gear position)

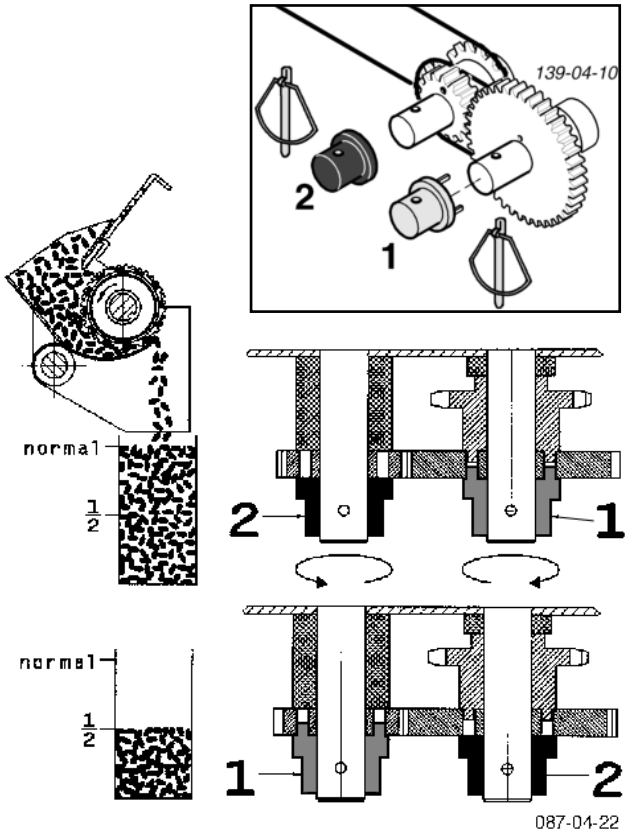
Select sowing shaft r.p.m. by adjusting lever

Adjusting range: 0 – 100 continuous

0 = Sowing shaft standstill

Value reading = on front edge of adjusting lever (towards 100)

Set adjusting lever with star grip (21/1)



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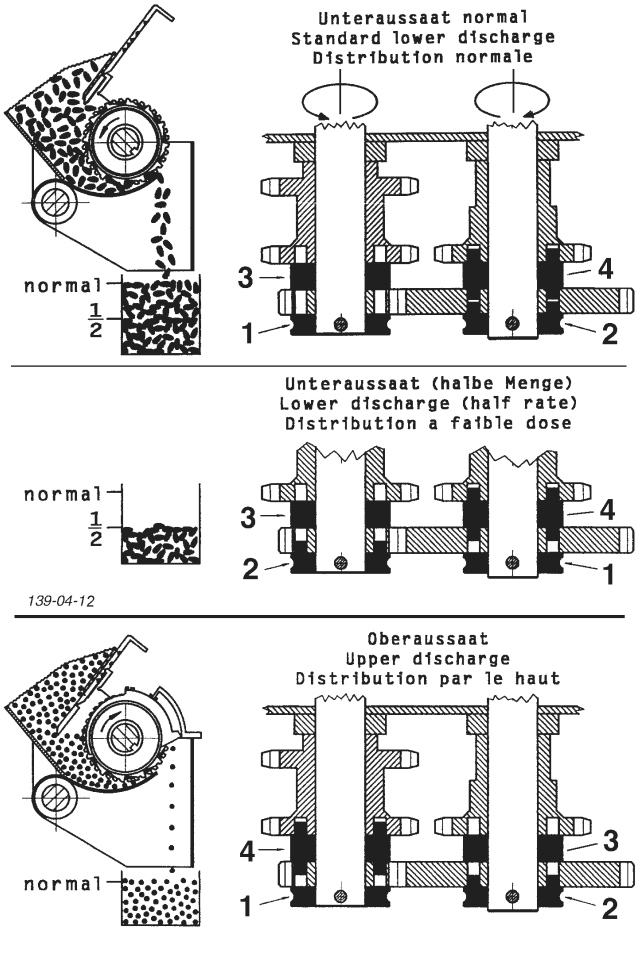


23

Halving sowing shaft r.p.m.

Using the reduction gears the sowing shaft speed may be halved for „undersowing“.

Open the guard on the right-hand

Standard fitting:

- Position carrier (1) and sleeve (2) on the appropriate shaft.
  carrier red: (**1**)
  sleeve black: (**2**)

Usual rpm**:** carrier to the right (**1**), sleeve to the left (**2**)

ca. 1/2 rpm**:** sleeve to the right (**2**), carrier to the left (**1**)

It may happen with a very low discharge rate that the gearing position value will be below 10 (on the scale)

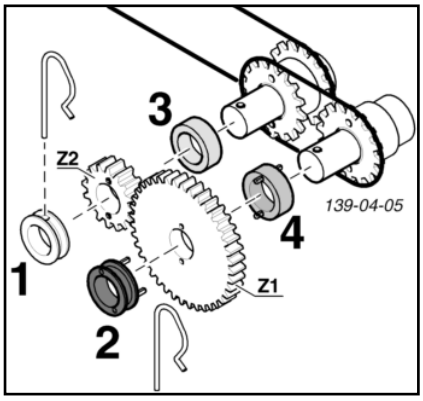
So when gearing down, approx. halve the sowing shaft r.p.m. and approx. double the gearing position value.

- sleeve to the right (**2**), carrier to the left (**1**)

Then test run once again (calibrate)

Changing the Direction of Rotation of the Seed Shaft

Mount the carrier (**3, 4**) and spacer (**5, 6**) as required:



Undersowing (Normal rpm)

- carrier to the right: black, blue (**2**, **4**)
- spacer discs to the left: red, green (**1**, **3**)

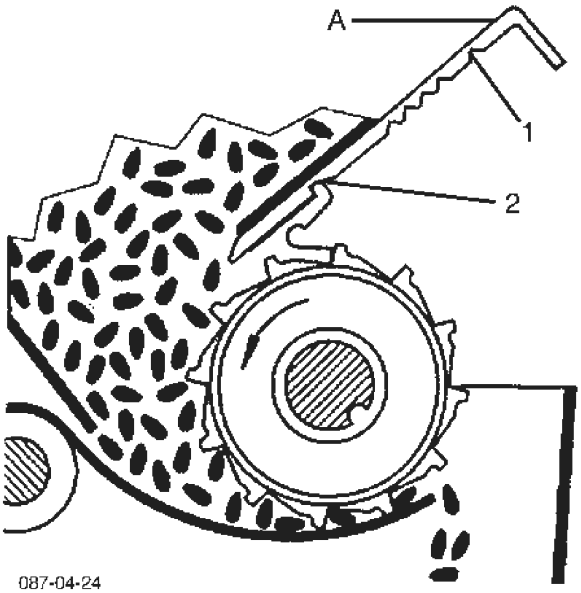
Undersowing (1/2 rpm**)**

- carrier to the left: black (**2**)
- carrier to the right: blue (**4**)
- spacer discs to the right: red (**1**)
- spacer discs to the left: green (**3**)

Overseeding (*

- carrier to the right: black (**2**)
- carrier to the left: blue (**4**)
- spacer discs to the right: green (**3**)
- spacer discs to the left: red (**1**)

Close the cover after making the settings



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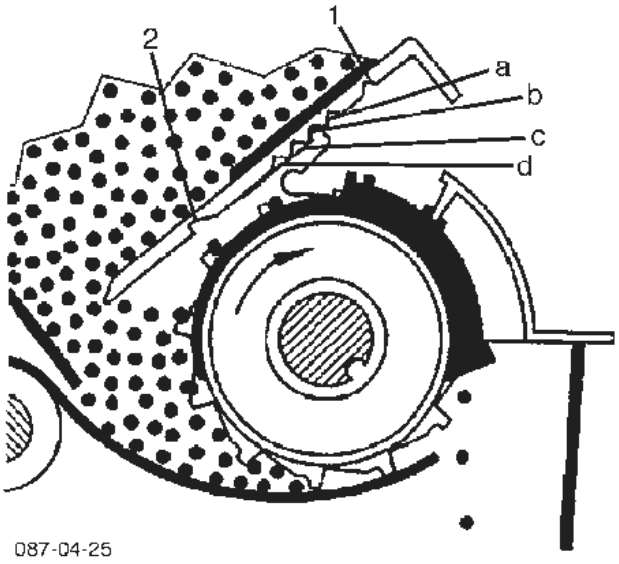

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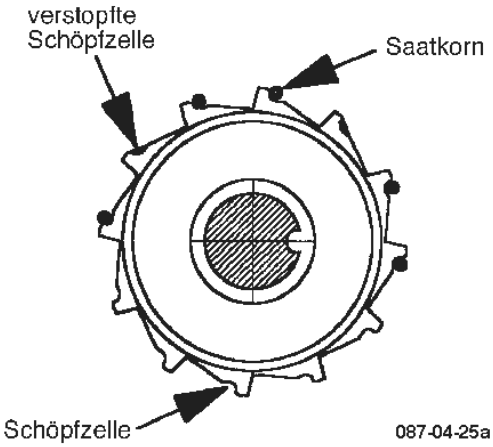


25a

Shutters

Shutters (24/A) have 2 functions:

- Closing / Opening the hopper outlet
- Setting the seed stock height in the sowing roller for overseeding.

Shutters are not designed to regulate the seed rate!

An incorrect shutter setting can result in variations in seed rates when sowing on a slope.

Shutter Settings for Undersowing:

The shutter must always be fully opened (**24/2**).

Shutter closed = position 1 (**24/1**)

Do not use intermediary settings.

Shutter Settings for Overseeding: (Additional accessory.)

Here the shutters on the sowing roller are used to set the seed level.

This shutter setting depends on how well the seed stock flows. This may be determined by a seed test. (See also page 2 of the Seed Chart)

Seed Test for Overseeding

Preparations for seed test:

- Close shutter
- Fill hopper with seed (rape seed)
- Put emptying trays in place
- Secure shutter in position **a**
- Gate remains in position 0
- Turn the sowing shaft for at least 10 rotations

Seed test procedure:

Catch the seed from one or more spouts while continuing to turn the hand crank until the sowing shaft has made exactly one rotation.

The shutter setting is correct **(Fig. 25)** when **36 +/- 4** seeds are released during one rotation of the sowing shaft.

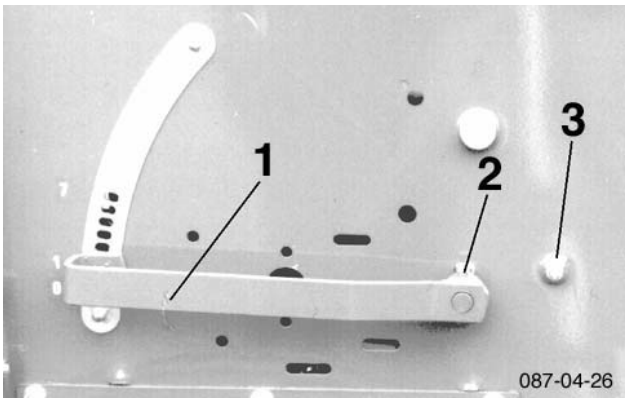
The seed is not suitable for overseeding if more than **40** seeds are released per rotation of the sowing shaft with the shutter in the position **a**.

If fewer than **32** seeds are counted per rotation, secure the shutters in the next highest position (first „**b**“, then „**c**“ or „**d**“). (**Fig. 25**)

The seed test must be repeated each time.

- **Important Note:**
- After each change of shutter position, turn the sowing shaft for at least 10 rotations!
- The seed test should also be performed during operation to ensure proper overseeding.

Clogged cups may sometimes cause a decrease in seed rate. Clean cups with a brush!



26

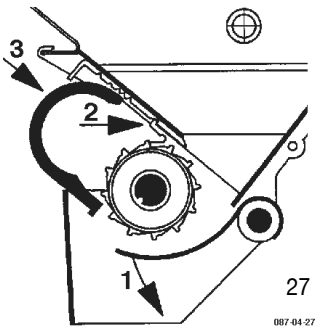
Gate

Setting-locks 0 - 7 for different seed sizes - described in Seed Chart - lever (**26/1**).

If calibration for large amounts of seed causes stalling or seed breakage, set one lock higher than stated in the Seed Chart.

(For grain, fine seed with reducer and overseeding rape use gate position **„0“**.

Adjust gates in lock **„1“** - see Maintenance.)



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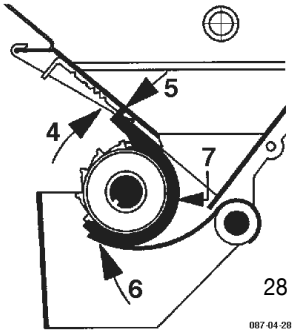


28

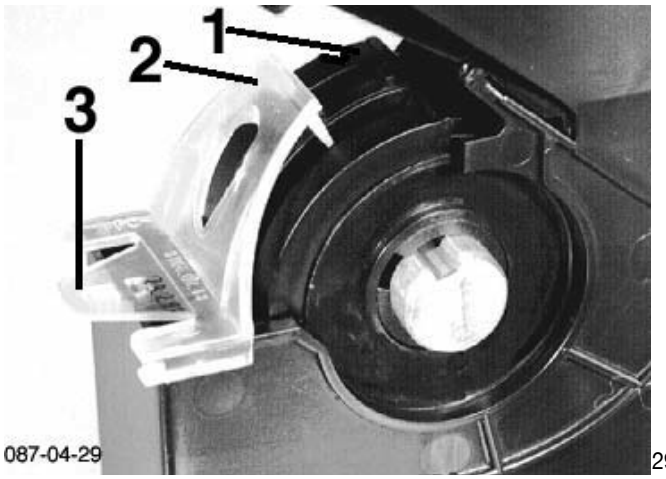
Fine Seed Reducer

Reducers are used for undersowing fine seed (e.g. rape seed) - for installation see **Fig. 27+28**:

1. Open gates (lever in lock **„3“**).
2. Shutter **„open“**.
3. Mount reducer on sowing roller (**Fig. 27** and
4. turn towards hopper (**Fig. 28**) until
5. the limiter of the reducer rests against the shutter.
6. Move gates to position **„0“**.
7. Reach into hopper and press the reducer against the sowing roller.

The reducers are installed correctly when they rest against the shutter (**28/5**), the gate (**28/6**) and the sowing roller (**28/7**).

Sow setting: Gate lock **„0“**
Shutter **„open“**



29

Covers (Additional equipment)

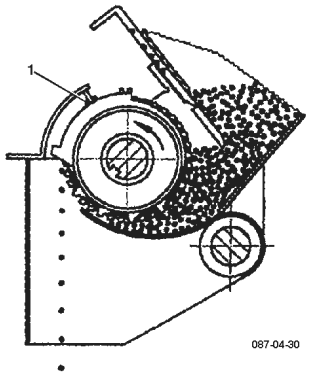
The covers incl. locks are only installed for „Overseeding“ and „Undersowing with reducer“ (**29/1+2**).

(When mounting the locks, ensure that they audibly lock in. To remove, (**29/3**) lift slightly and pull off backwards.)

Secure the covers in the correct position with the locks:

Overseeding - middle groove (**30/1**)

Undersowing with reducer - back limiter (**31/1**)



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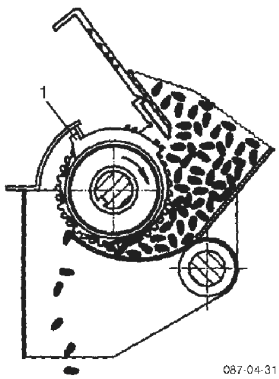

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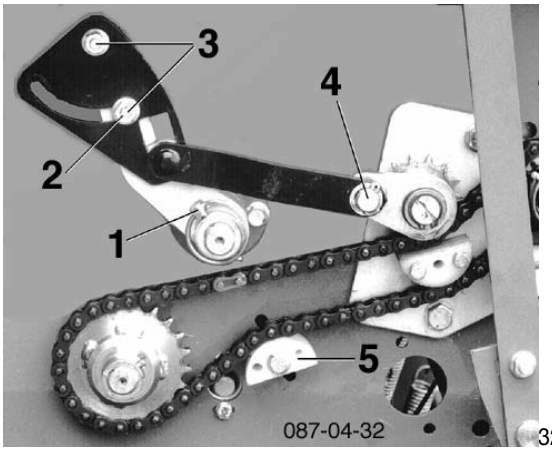


32

Agitator

Steep hopper walls and the smooth feed funnels ensure consistent seed flow.

Use agitator shaft for extremely „sticky“ seed stock only:

- Self-aligning agitator shaft or
- rotating agitator.

Self-aligning Agitator Shaft - 3 settings

1. Agitator off - Plug (**32/1**) in bore (**34/0**),
2. Long path - Plug in bore (**34/1** = same direction as „0“), lever in slit / right to limiter (**32/2**),

... for non-flowing grass/grass mixture.

3. Short path - Plug in bore (**34/2**), lever in slit /left to limiter (**33/1**),

... for large, clogging seed.

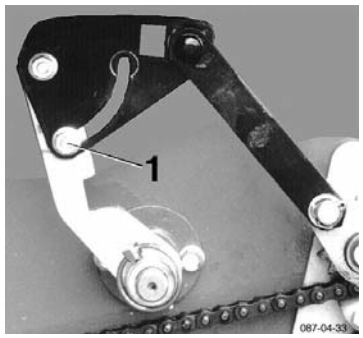
To change lever setting, loosen both screws (**32/3**) - and re-tighten.

In the „long path“ position, ensure a distance of

6 mm between agitator hook and sow casing wall when fully extended (**32/4**) – secure the agitator elements in the appropriate positions on the shaft.

In the „short path“ position the short agitator arms will point downwards.

In the „Agitator shaft off“ position turn the agitator until the long agitator arms rest against the front wall of the hopper.



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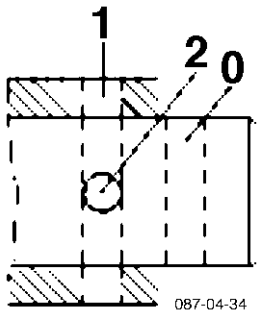

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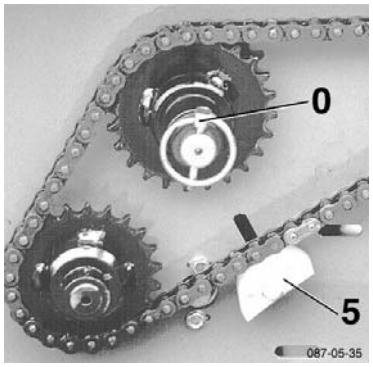

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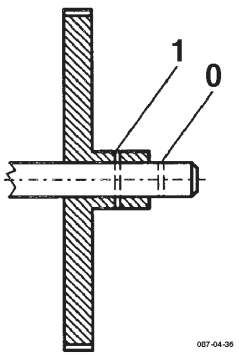


36

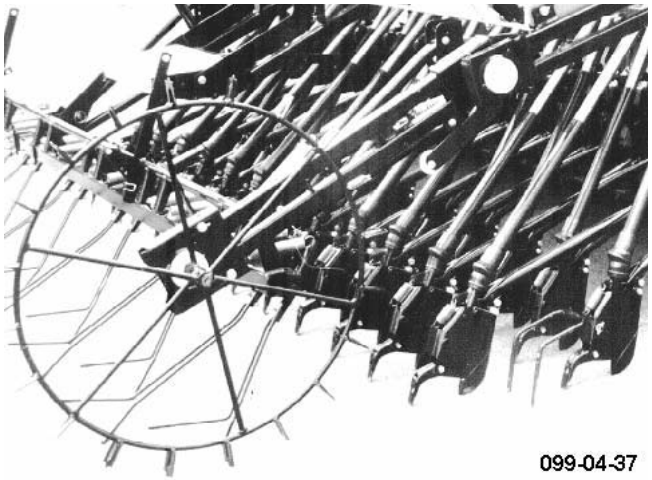
Rotating Agitator

Agitator off - Plug in bore (**36/0**, **35/0**)

Agitator on - Plug in bore (**36/1**)

For rape seed, always switch agitator off.

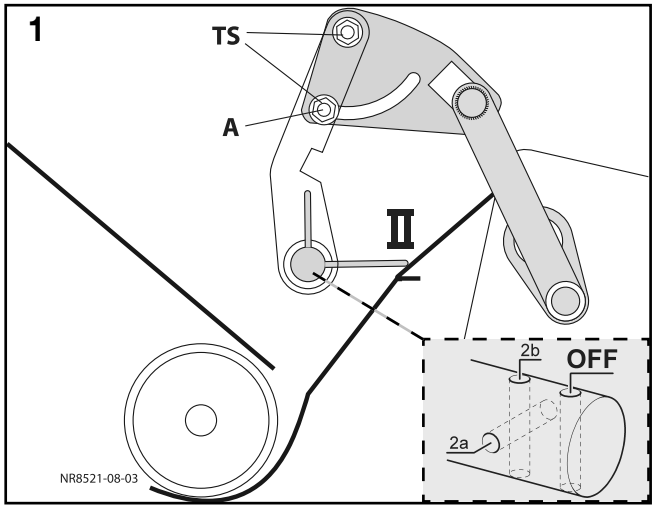
Also switch „Rotating agitator“ off for grass and bring agitator arms into upright position.

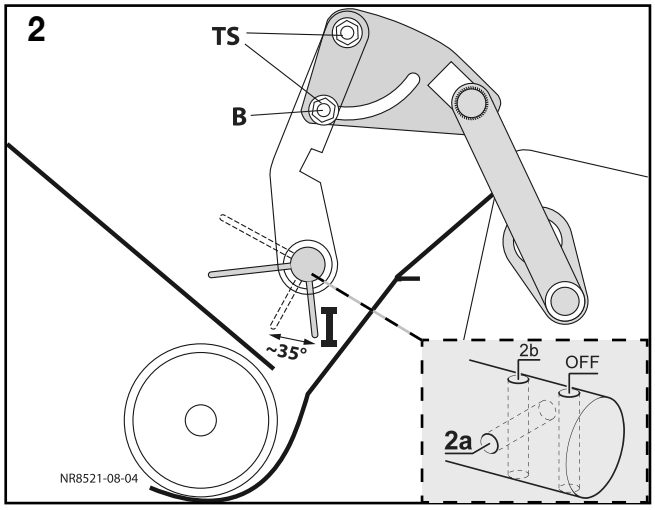


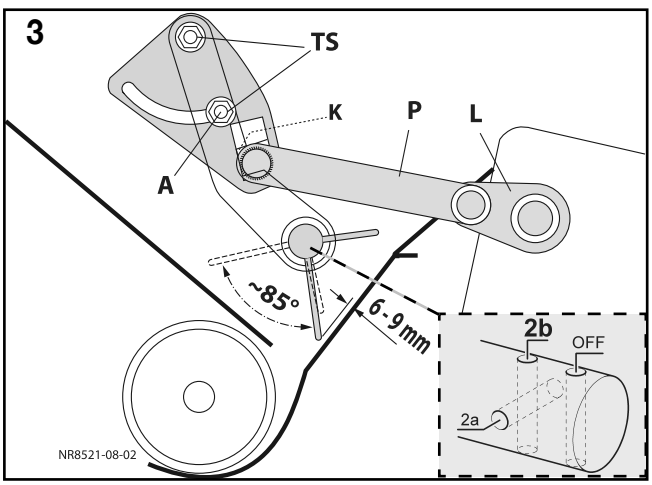
Spur Wheel

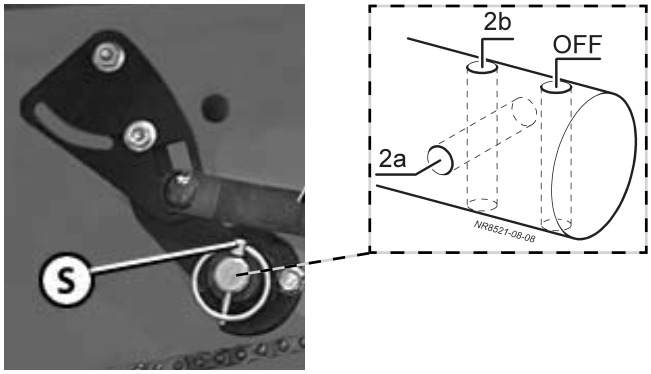
Sowing is driven by a spur wheel, which runs on the surface to be worked. The pressure with which it presses onto the ground may be set by adjusting the spring tension.

Swivelling agitator shaft









1) Swivel function switched off

- Lever to pos. A
  To adjust loosen both “TS” screws
- Insert linch pin “S” into hole “OFF” and secure
- Turn agitator shaft clockwise until the long agitating hooks lie against the front wall of the seed box (pos. II).

Application:

For all free flowing seed types

For most grass seeds and grass seed mixtures

Generally for over sowing

2) Small swivel range (approx. 35°)

- Lever to pos. A
  To adjust loosen both “TS” screws
- Turn agitator shaft clockwise until linch pin “S” fits into hole “2a” of the shaft
- Short agitating hooks show the direction of seed housing outflow opening (pos. I)

Application:

Large grained seed types

Bridging seed types

3) Wide swivel range (approx. 85°)

- Lever to pos. A
  To adjust loosen both “TS” screws
- The plastic block (K) must sit free from backlash in the lever recess
- Turn the agitator shaft 90° anticlockwise
- Insert linch pin “S” into hole “2b” and secure

Application:

Exclusively for non-flowing grass seeds and mixes

Observe when setting!

The measurement 6-9 mm for connecting rod and cam (P – L) in flat angle position

Attention!

Always ensure the linch pin “S” is in the correct position otherwise danger of collision will occur

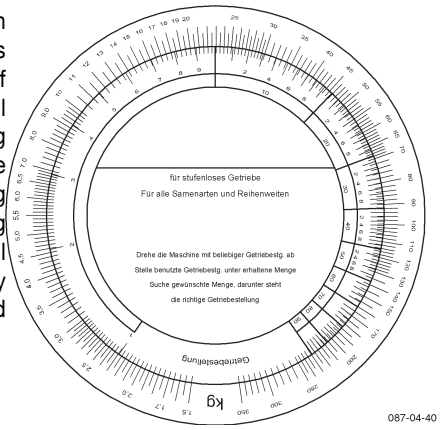
Adjusting seed quantity per hectare

The Calibration Process (Abdrehen)

* **Remark:** In German word usage it is normal to use the term „Abdrehen“ (which basically means turning the dosing device by hand) instead of „Kalibrieren“ (meaning to calibrate, electronically). In this manual we use the term „Kalibrieren“ in order to avoid any misunderstandings with text translations.

In principle this also applies to terms such as “calibration test” and “calibration shutter”.

So-called ”calibration process” establishes what quantity (kg) of seed per hectare will be sown by adjusting the dosing device accordingly. Doing this enables the dosing device on the seed drill to be adjusted exactly to the desired seed quantity.



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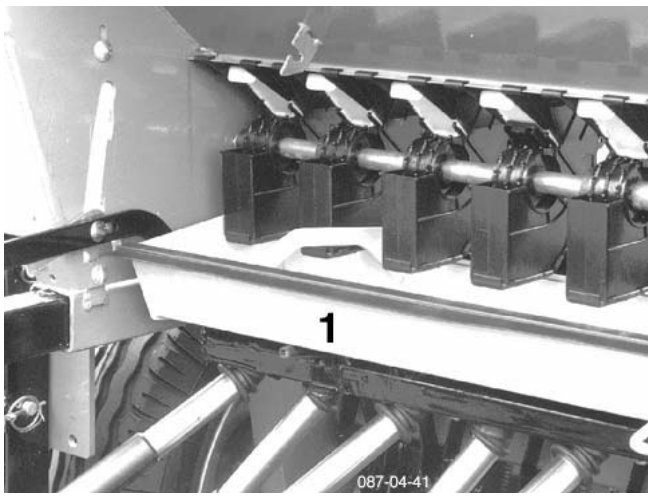

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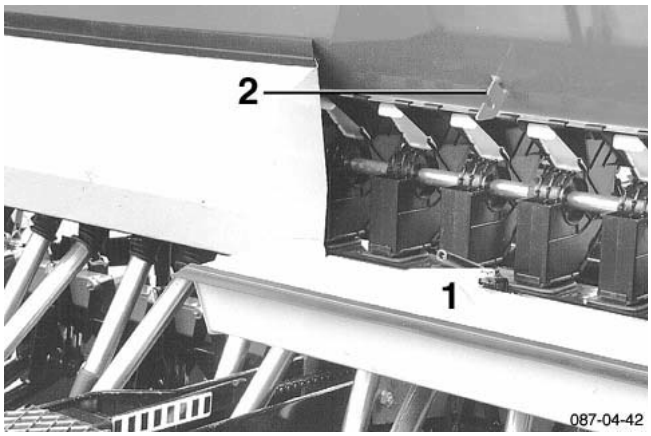

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Calibration process

As seed varies greatly in specific weight, size, shape and dressing the values given in the Seed Chart are only a guideline.

For this reason a calibration test must always be performed. In case of deviation, re-calibrate the device using a different transmission setting.

The new „correct“ transmission setting can also be determined without the Seed Chart, using the values of a first calibration test (with random transmission setting). (Use the „sowing disc“ supplied, **Fig. 40**).

Example: Set seed rate: 160 kg/ha

calibrated at 120 kg/ha with transmission setting 30

160 kg/ha = ?

120 kg/ha = 30

$$\frac{\text{Transmission setting (30) x Set seed rate (160)}}{\text{Calibration seed rate (120)}} = 40$$

(40 = new „correct“ transmission setting)

The „Vitasem“ may be calibrated during standstill – without lifting.

Ensure machine is horizontal. (top edge of hopper side)

Close unused shutters.

Tramlining control must not be switched on (all sowing rollers rotate).

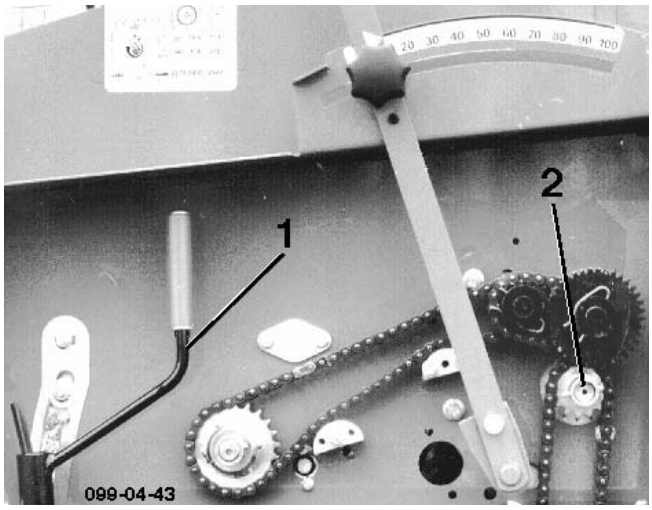
Batching
Transmission setting
Shutter
Gate
Reducers
Agitator shaft

} set according to seed chart!

Place emptying trays on seed guide rail (**41/1**) – see „Emptying“ page 8.

Change back after calibration:

- return seed guide rail to upright position/lock in,
- hook in emptying trays **42/1** and lock at **42/2**.
- Fill in seed (approx. half of the normal amount).



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Seed volume trial

- First, rotate the agitator shaft approx. 10 times using the crank handle (43/1 with 43/2) so that all filled sowing wheel casings and possibly seed dressing agent deposits on the casing surfaces stabilize the flow rate.
- Empty the emptying trays into the seed box
- Now perform the calibration process test at the stated rotation; for 1/40 or 1/10 ha.

  For very small seed rates (e.g. rape seed) the calibration process test for 1/10 ha is preferable.

  Rotate evenly, approx. 1 rotation per sec.
- Multiplying the weighed amount of seed from the seed volume trial (weigh exactly) with the "area factor" gives the seed distribution volume kg/ha:

  x 40 (bei 1/40 ha; 250 m^2)

  x 10 (bei 1/10 ha; 1000 m^2)

Hand crank rotations for the seed volume trial

VITASEM 250 / 300 / 400				
Tyres	6,00-16	6,00-16	10,0/75-15,3	10,0/75-15,3
Area	1/40 ha	1/10 ha	1/40 ha	1/10 ha
working width				
2,5 m	100	402	~	~
3,0 m	84	335	79,5	317
4,0 m	~	~	59,5	238

VITASEM A 251 / A 301 / A 401		
Area	1/40 ha	1/10 ha
working width		
2,5 m	93	371
3,0 m	77,5	309
4,0 m	58	232

Note: The electronic tramlining control **Multitronic II** has a „Calibration process" feature. The sowing monitor calculates and counts the number of required hand crank rotations for the calibration area selected.

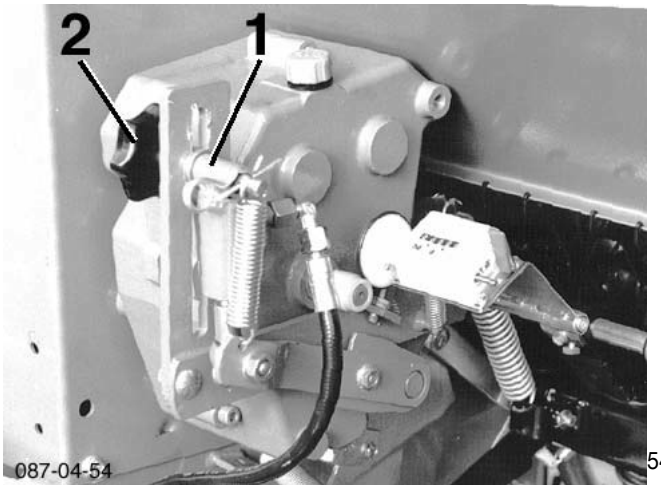
See Operating Instructions for „Multitronic II" in appendix A or „Power Control".

Hydraulic Seed Rate Adjustment

It maybe advisable to adjust to maximum seed rate in connection with the hydraulic coulter pressure adjustment.

To operate, switch the path valve to the appropriate setting (on the coupling).

Settings „Normal“ and „Maximum Amount“:



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„Normal Amount“ – calibrate as usual; star handle (**21/1**, page 10) but set as limiter behind the lever (towards 0) – fasten tightly.

(Cylinder remains retracted.)

„Maximum Amount“ – Fully extend the cylinder, select „Max. Amount“ by moving cylinder – at (**54/1**) – and secure (**54/2**).

Re-calibrate.

Note: Do not clamp down the transmission select lever!

Highest transmission setting for „Normal Amount“ = „100“ minus required extra amount (cylinder path).

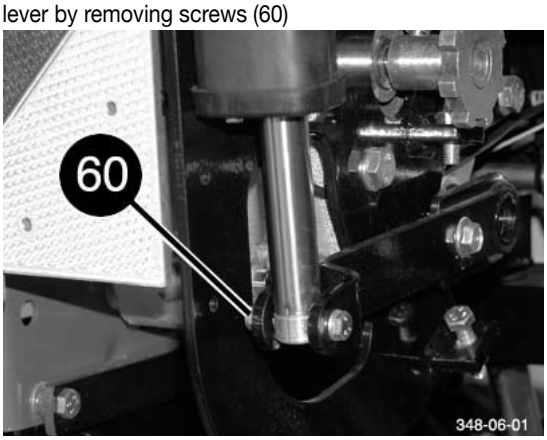
Electric sowing quantity adjustment [1)]

Emergency operation:

If the electronics fail the sowing quantity can be manually adjusted

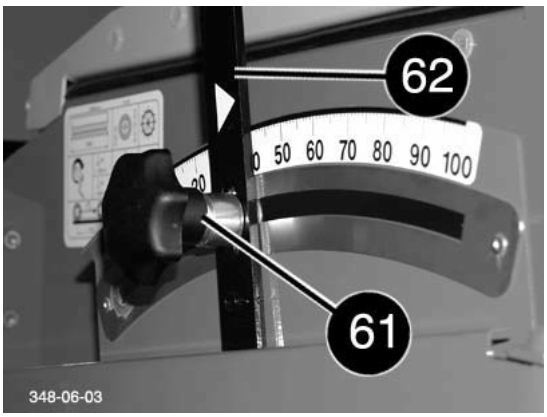
Take the following steps:

- Release connection between setting cylinder and adjusting lever by removing screws (60)



- Unscrew star grip (61)

- Determine work setting (using seed table or from Power Control Menu)
- Move lever (62) into calculated position and clamp tight using star grip (61)



1) Optional extra

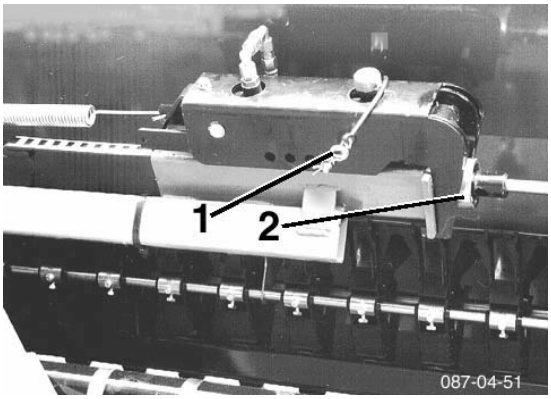
50

Coulter Pressure Adjustment

The coulter pressure - and thus the seed depth - is continuously adjustable; as (**50/1**, with hand crank) indicated (**50/2**).

Individual coulters - e.g. in the tractor tracks - may be adjusted to work at a higher pressure by changing the connection point of the spring.

Spring in front (**52/1**) - higher coulter pressure.



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Hydraulic Coulter Pressure Adjustment

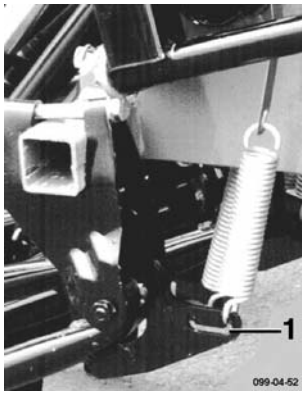
This allows for pressure adjustment during operation for varying soil structures.

Set normal pressure at (**50/1**), pre-select the required „maximum“ pressure by inserting the plug into the appropriate socket of the plug gauge (**51/1**).

A single-action tractor control unit is required for operation; to reduce pressure to „normal“ hold the control unit „Down“ for a sufficient length of time (return oil flow).

Fit the hydraulic cylinder for attaching machines underneath the spindle housing **(51/2)**

NOTE! When reducing pressure danger of crushing at teh "shaft bearing" (51/2).



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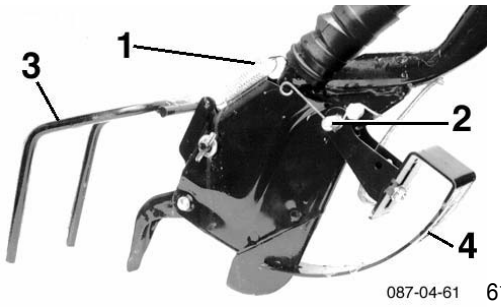

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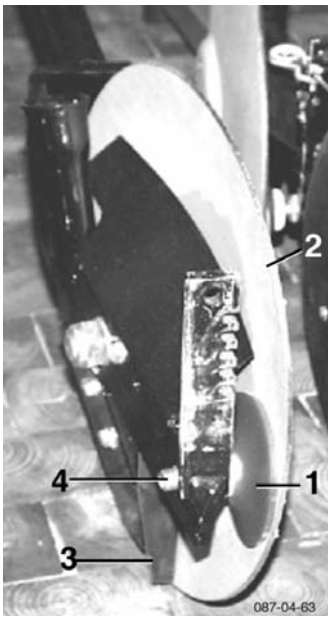

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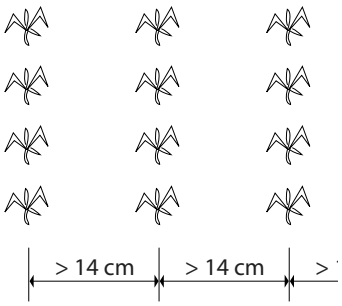

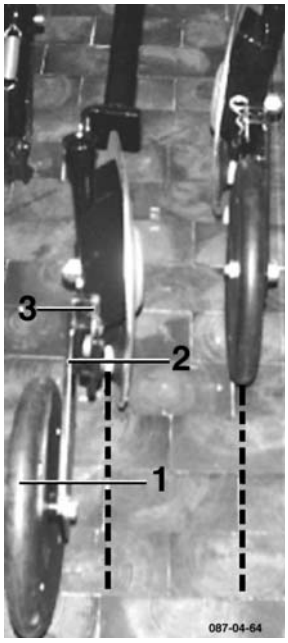

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Coulter Exchanger

In the case of the „Vitasem, Aerosem", the shoe and broad-shoe coulters may be exchanged without tools.

Unhook the spring (**61/1**) and pull the spring-secured pin (**61/2**).

Re-secure the pin after mounting.

Shoe Coulter (Fig. 61) – Normal 0

For shallow seed placement, adjustable depth limiters may be attached to the shoe coulters at any time (**61/4**).

Broad-Shoe Coulter (Fig. 62) – Approx. 8,5 cm wide

For wide, yield-increasing seed spread; suitable for clean soils with fine tilth.

Shoe and broad-shoe coulters have a clogging-protection support; fold forwards elastically to avoid bending while lowering.

Single-Disc Coulter (Fig. 63)

Ideal for crop residue with long stalks.

The rotating scraper (**63/1**) cleans sticky soil off the inner side of the clearing disc (**63/2**). The curved outer side cleans itself.

The rubber skirt (**63/3**) prevents the seed from jumping out of the furrow.

The pressure of the rotating scraper may be adjusted by screwing the threaded axle (**63/4**) in or out. Secure the threaded axle with lock nut.

Ensure that the PVC disc of the rotating scraper does not connect in front, as this would produce a braking effect on the clearing disc.

Pinch Roller (Fig. 64) (Additional equipment)

Press roller on the seed drill

- Seeds in the drill are pressed lightly into the ground

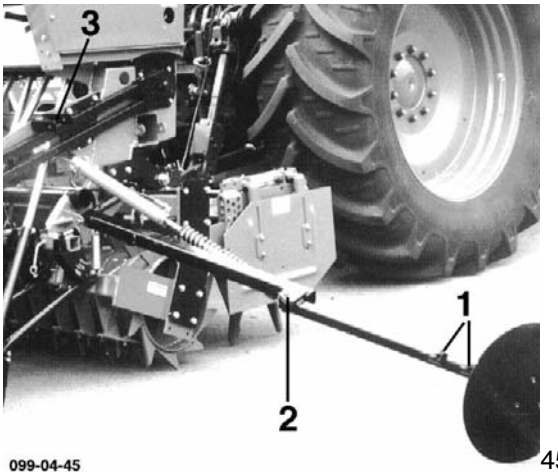
Press roller near the seed drill

Only for machines with at least a 14 cm gap between rows

- Seed drill is pressed shut by roller
  With that roller (64/1) can be screwed again to its holder (64/2)

Depth setting of single-disc coulters

Single-disc coulters are guided deep by press roller. Depth setting can be adjusted by inserting spring pin (64/3) in 1 cm stages



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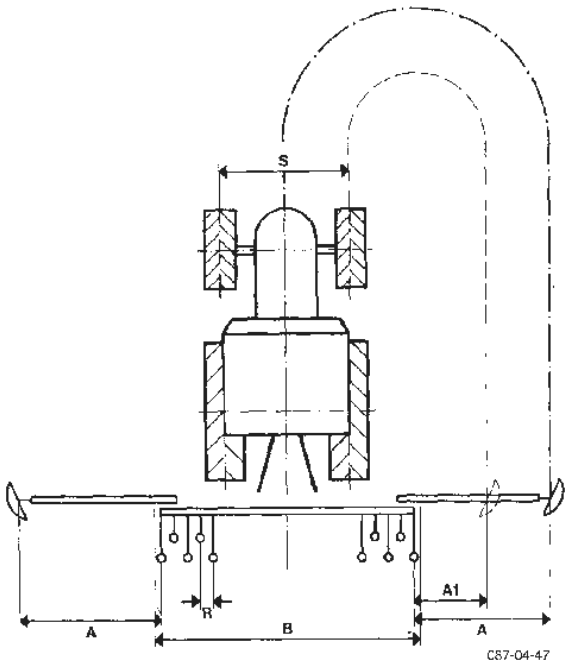

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Row Markers

The disc markers of the „2,5m and 3,0m“ are set to the middle of the tractor, those of the „4m“ may be set to middle or track.

Overload protection (**45/2**): Sleeve bolt M 8 x 35 DIN 931 - 8.8

Setting: bring the booms into the operating position (do not leave „transport plugs“ **45/3** in the holders).

Set the point where the disc touches the ground - secure at (**45/1**);

(Depends on working width and row spacing of the drill as well as the track width of the tractor for row marking).

The disc may be adapted to light or heavy soil by turning the disc axle.

Row marking at centre of tractor, measured from outer coulter:

$$\frac{\text{Working width + row spacing}}{2} = \mathbf{A}$$

Row marking on tractor track, measured from outer coulter:

$$\frac{\text{Working width+ row spacing - track width of tractor}}{2} = \mathbf{A1}$$

Example: 3 m working width (B = 300 cm)
12 cm row spacing (R = 12 cm)
170 cm tractor track (S = 170 cm)

$$\frac{B + R}{2} \quad \frac{300 + 12}{2} = 156 \text{ cm} = A \text{ (Fig.47)}$$

$$\frac{B + R - S}{2} \quad \frac{300 + 12 - 170}{2} = 71 \text{ cm} = A1 \text{ (Fig.47)}$$

The row markers are switched using a single-action tractor control unit on the headland

.... at the end of the row set to „Up“ - both row markers are lifted,

... at the beginning of the row set to „Down“ - **during operation, the control unit must always be set to „Down“ (floating position).**

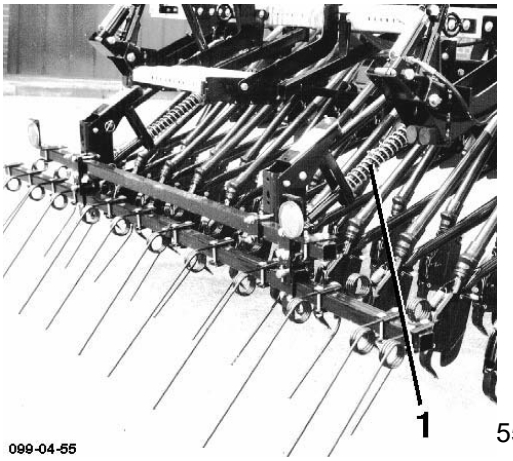
Switching and counter impulse for the electronic tramlining control occur when the row marker is in its end position during lifting/folding in.

- The counter impulse can be switched off when travelling around obstacles
  - Press tram lines button, indicator is switched to “OFF”
  - Raise machine and drive around obstacle
  - After lowering machine, press tram lines button once again and tramlines switch is reactivated.
  - For further information see “Multitronic II” operating manual

Max. lowering point for sufficient working depth of the discs may be set using the cylinders with lock nuts (**46/2**) - lower boom first.

(Do not turn nuts **46/2** too far to the right. Otherwise the booms may fold in fully before the cylinder is fully retracted.)

For transport, fold the row markers up and secure (see 46/1).



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Harrow Models

Coulter Harrow: For shoe coulters only.

May be attached to the coulters in the back row, spring-loaded (**61/3**). Suitable for light to medium soil, without trash.

Sowing Harrow: Two parts, double rows - suitable for all soils.

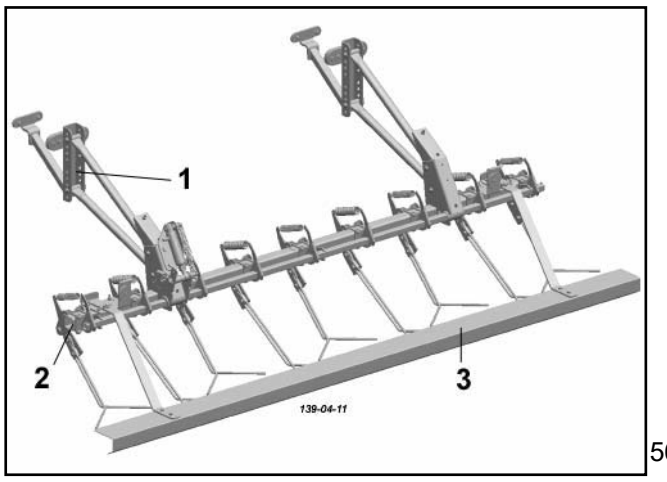
Spring-adjustable tine pressure:

Turn spring (**55/1**) to the right - higher pressure,

to the left - lower pressure.

(To comply with the 3 m legal width on public roads, harrow extensions attached on the sides of the sowing harrow on the **„3m“** must be removed for transport)!

(Stow harrow extensions in the transport holders provided!)



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Perfect Following Harrow: For all soils and conditions. The individual spring-loaded harrow elements may be centrally adjusted; select pressure (intensity) by the placing plug in the appropriate socket of the plug gauge (**56/1**).

„VITASEM A 301“: For road transport, push in and secure outer harrow element to the left (**56/2**) (transport width 3 m).

For “2,5 and 3 m” attach tine guard (**56/3** = additional equipment),

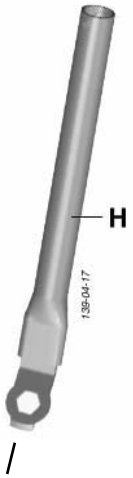
or swing the harrow forwards and downwards and secure with plug (**59/1**).

Ensure correct order of harrows:

Spacing of harrow guides for,

... sowing harrow (**57**) - 150 mm

... perfect following harrow (**58**) - 200 mm



Harrow limiter,

... sowing harrow - (**57/1**)

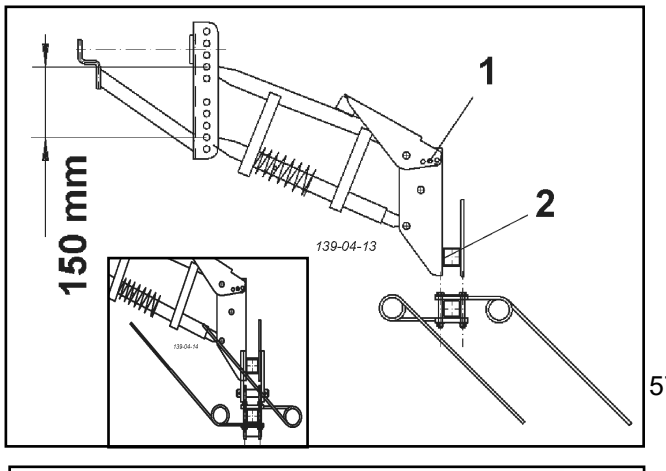
... perfect following harrow - (**59/1**)

- Adjusting lever

Height adjustments,

... change both harrow guides to (**56/1**)

... move holding bags (**57/2**)



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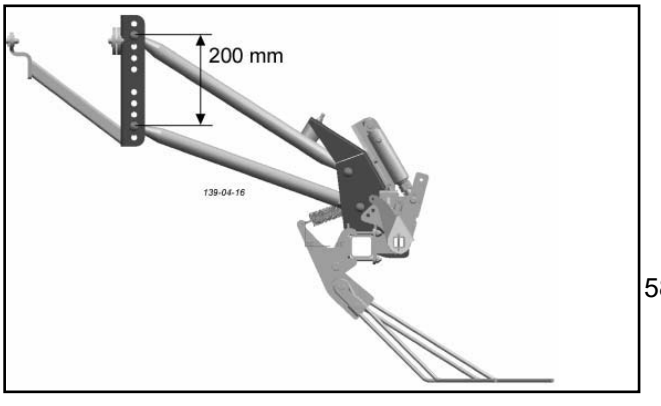

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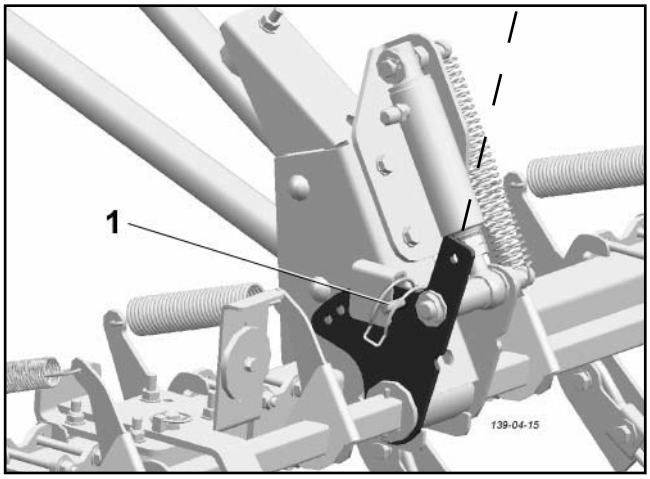

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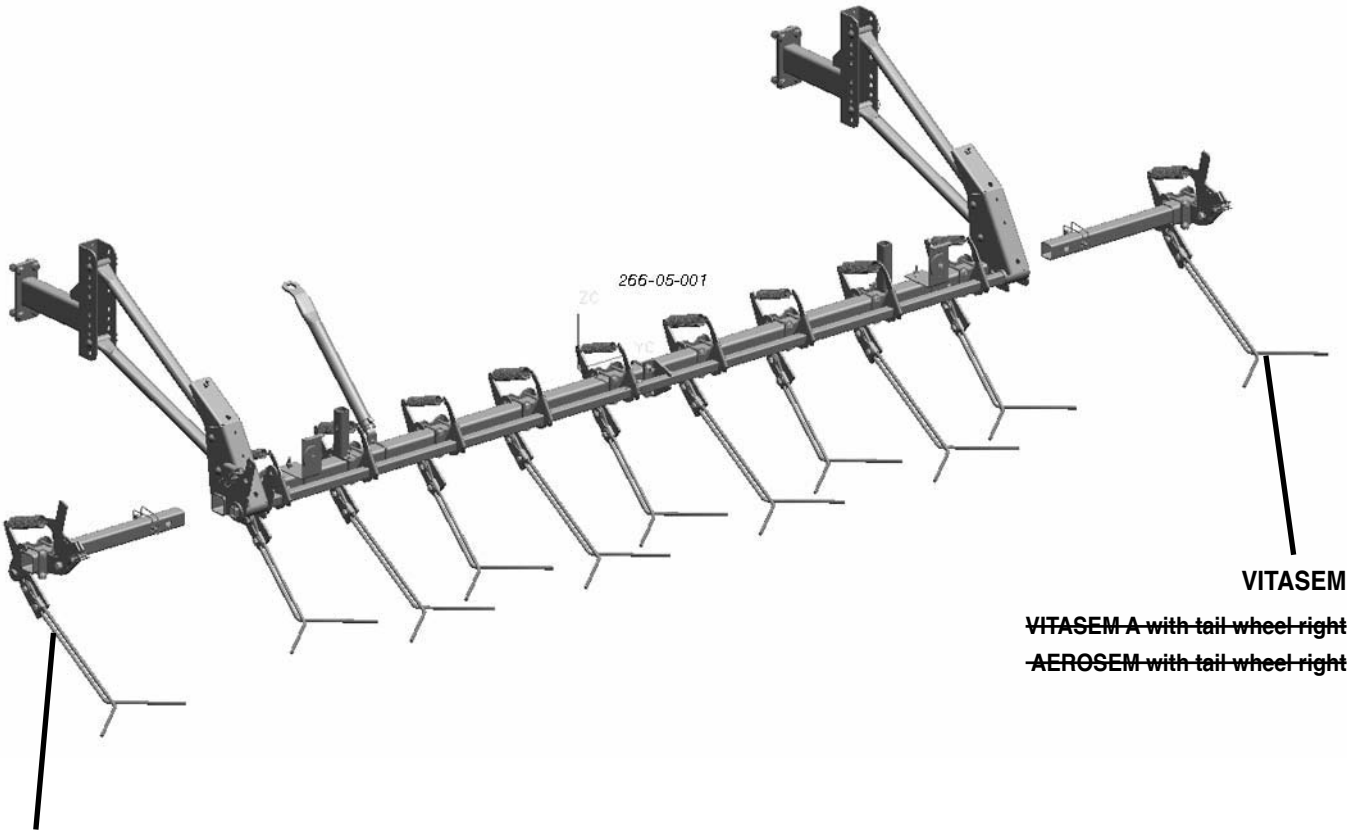
Perfect Harrow (+ 2005 model)

Depending on the machine model (see diagrams), additional extensions can be added to this perfect harrow either

- left and right
- right only
- left only

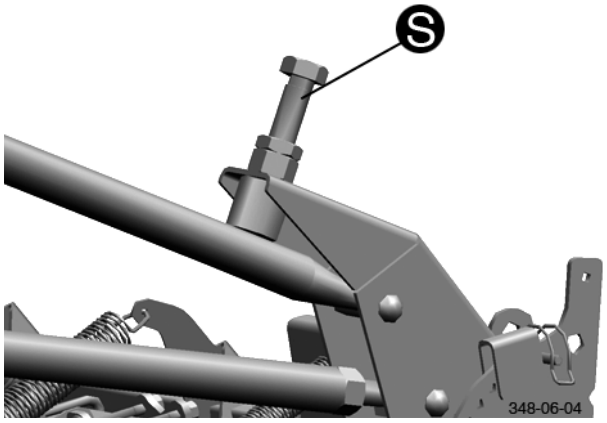
Advantages:

Harrow operation in the boundary area is improved, particularly in the removal of obstructions in the deflector plate area of a rotary harrow.



Setting the tine inclination

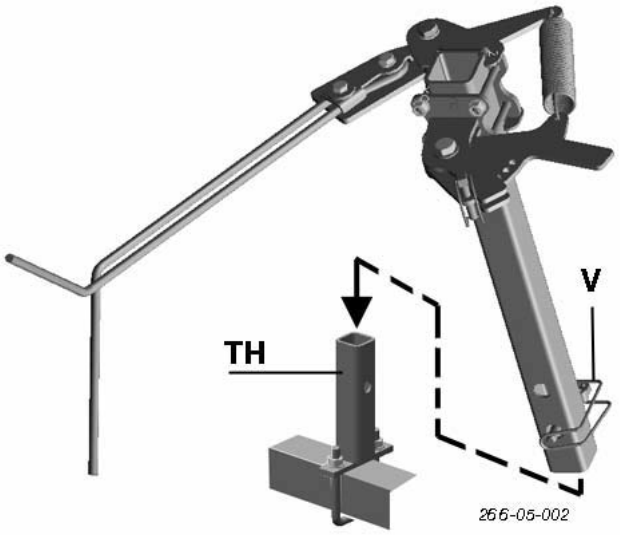
- The optimum tine inclination setting is possible using the adjusting screw (S)
  - The tine ends should lay horizontal to the ground
  - Adjustment range: 40 mm



Road transport

* To reduce the transport width, place the harrow extensions in the transport holder (TH)

- secure with linch pin (V)



Examples of Tramlines

At the edge of the field (row marker lowered on field-side) set the tramlining cycle to the correct starting number – e.g. for rhythms 3 and 4 set to **2**.

Sensors handle the automatic switching, e.g. when changing row markers.

For **symmetrical** tramlining cycles with even numbers, begin at the edge of the field with _ drill working width; switch off the left machine half by disconnecting the plug in the middle of the sowing shaft.

If the fertiliser spreader is equipped with a spread limiter, begin at the edge of the field with full drill working width **and Tramline**.

Two or three sowing rollers may be switched off per wheel track (magnetic switch/sowing roller – connection sleeves **73/1**+**2**).

The magnetic switch switches „off“ when it receives power; this ensures that operation may continue for the full number of rows in the case of a power failure. (Shutters may then be closed if necessary.)

For **asymmetrical** tramlining, switching occurs only on one single-sided wheel track during each of two passes in opposite directions. Depending on the turn direction chosen, the unneeded magnet on the outer side of the turn must be deactivated by uncoupling.

ATTENTION:

When changing over from asymmetric to asymmetric marking, the distances that were marked are not the same

e.g. Track = 1.80 m

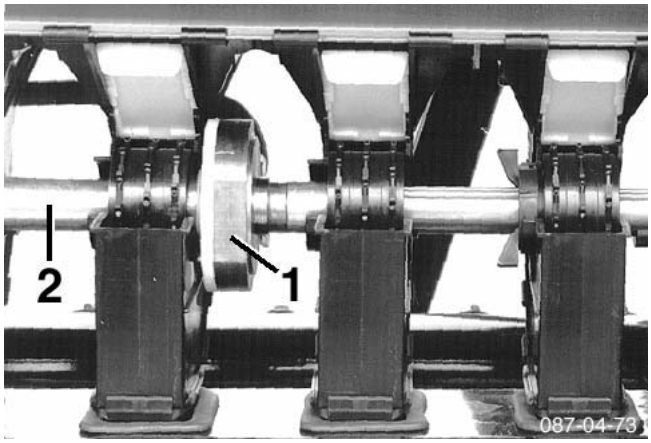
symmetric = 90 cm

(Centre track width = centre drill machine)

asymmetric = 90 cm

(Centre track width = outside drill machine)

(Note: The unit is supplied with both magnet couplings connected. For this reason the magnets must be checked after selecting the tramlining rhythm and drive direction!)



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If no tramlines are to be made but the electronic monitor is to remain active, select rhythm „**0**“.

(Adjusting the tramlining rhythm: see **appendix A**, **section 5.1.1**)

Current operation data is stored so that operation may continue in the correct rhythm after e.g. an interruption.

If the seed drill has been out of operation for a longer period, the tramlining control must be inspected. Check that the sowing roller connection sleeves (**73/2**) are not restricted by seed dressing residue and move easily on the sowing shaft.

When driving on public roads, disconnect all electronic equipment from the on-board power supply (disconnect plug on tractor side).

Demarcation of Tramlines

(In connection with „Multitronic“ and loading platform only.)

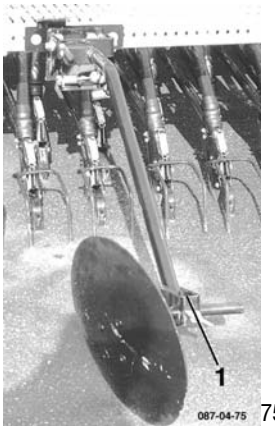
The tramline may be marked using track discs for pre-emergence spraying.

Switching is handled automatically. The electromagnetic valve is located on the front end of the machine.

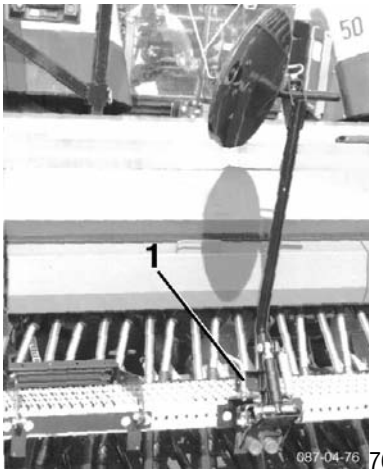
Adjust the disc markers to tramline track-width (**75/1**).

To make an asymmetrical tramline in off-set tracks, fold up and secure the unneeded tramline marker.

For transport, the disc booms must be folded up and locked – plug (**76/1**).



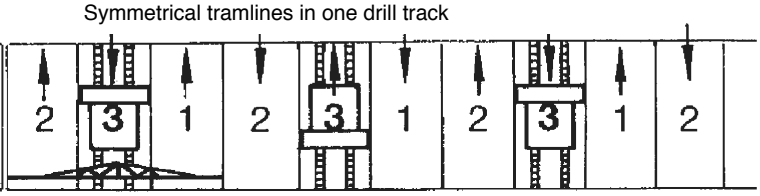
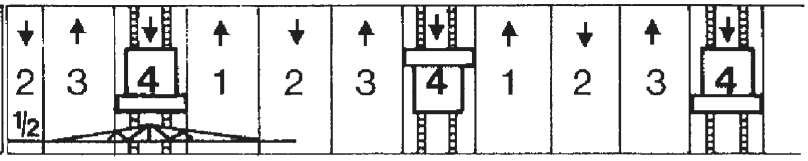
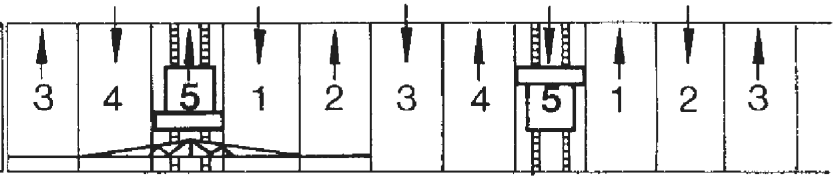
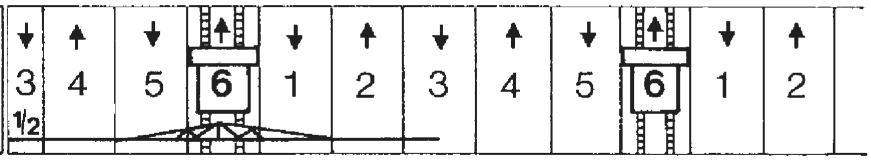
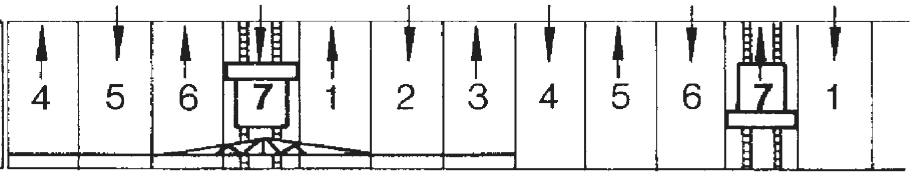
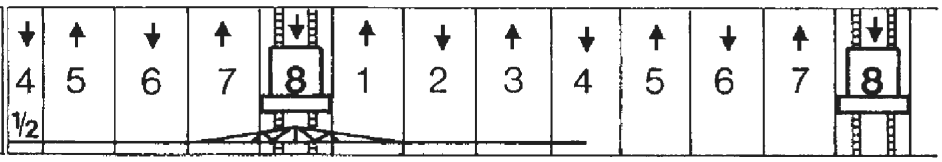
75



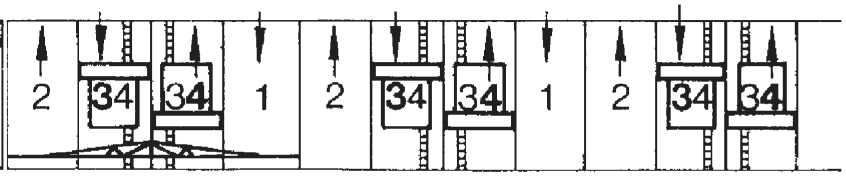
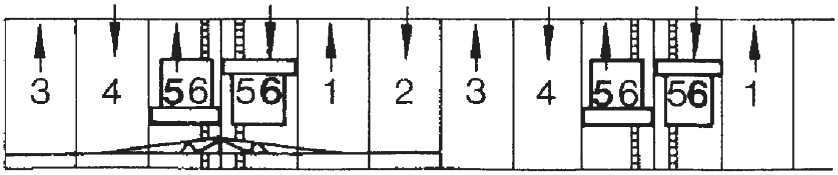
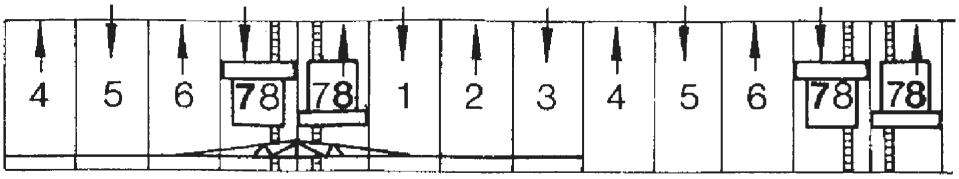
76

Working width Seed drill	Spraying width Distribution width	Switch rhythm	Examples for setting the tramlines

Symmetrical tramlines in one drill track

3,00 m 4,00 m	9 m 12 m	3	
2,50 m 3,00 m 4,00 m 4,50 m	10 m 12 m 16 m 18 m	4	
2,50 m 3,00 m 4,00 m	12,5 m 15 m 20 m	5	
2,50 m 3,00 m 4,00 m 4,50 m	15 m 18 m 24 m 27 m	6	
3,00 m 4,00 m	21 m 28 m	7	
2,50 m 3,00 m 4,00 m	20 m 24 m 32 m	8	

Tramlines in different drill tracks (asymmetric)

2,50 m 3,00 m 4,00 m 4,50 m	10 m 12 m 16 m 18 m	4 S	
2,50 m 3,00 m 4,00 m 4,50 m	15 m 18 m 24 m 27 m	6 S	
2,50 m 3,00 m 4,00 m	20 m 24 m 32 m	8 S	

087-04-77

„MULTI tronic“ Sowing Monitor

Useful Features

The Multitronic II – sowing monitor is a compact on-board computer with many useful features. It manages important control and monitoring tasks and simplifies operation by providing help functions and easy to understand displays.

The sowing monitor was designed for compatibility. It may be used for the mechanical drill series „**VITASEM**“ and for pneumatic drill series **„AEROSEM, TERRASEM“**.

Here is a short overview of its useful features:

Control:

- Tramlining
- Setting additional tramline markers
- Automatic or manual switching of tramlining cycle
- Interruption of automatic switching of tramlining cycle (when driving around obstacles)

Display:

- Tramlining cycle and rhythm display
- Sub-total area hectare meter
- Total area hectare meter
- Speed
- Sowing shaft rotation
- Fan unit turning speed [1)]

Monitor:

- Sowing shaft
- Seed level
- Fan unit monitoring [1)]

Help Functions:

- Sensor test
- Calibration for the calculation and counting of hand crank rotations
- Calibration of hectare meter (adapting hectare meter to soil conditions)
- Adjustable delay for automatic switching of tramline rhythm
- Programmable time delay for sowing shaft monitor
- Language selection for menu; German, French, English
- Switching the control signals
- Onboard voltage display

Installation Instructions

Mount the monitor in the tractor cabin.

Power supply: 12 V from 3-pole socket for constant current (if this is not installed, a battery connection cable with a socket or an adapter for the 7-pole trailer socket (parking light must be switched on) may be ordered from PÖTTINGER; see Parts List).

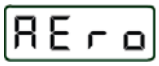
Fuse: integrated into plug – re-activates automatically after maintenance followed by power up.

Connect the cable to the seed drill. Take strain off connection). If the cable to the „VITASEM, AEROSEM, TERRASEM“ is too short, an extension is available as additional equipment.

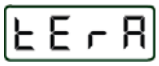
Commissioning of Sowing Monitor

The Multitronic II sowing monitor is switched on by inserting the power supply plug into the socket. After a short acoustic signal the display will show the number of the software version for 0.5 second, and then the programmed machine type for 2 seconds.

for **VITASEM** series or



for **AEROSEM** series.



for **TERRASEM** series.


Note!

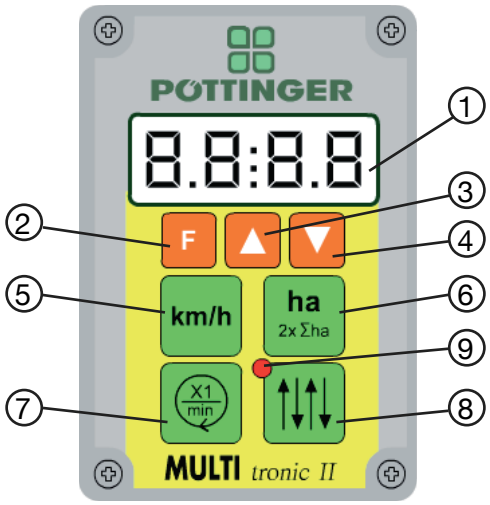
If the wrong machine type is displayed, set to the correct type

- see operator's manual **“Multitronic II”**

This is essential for correct operation.

[1)] Only for AEROSEM, TERRASEM

User the Interface of the Multitronic II – Sowing Monitor



① Display
② F-Key (Function Key)
③+④ Arrow keys
⑤ Drive Speed
⑥ Hectare meter
⑦ Sowing shaft rotation
⑧ Tramline
⑨ LED

Leaving the main menu:

You can exit the main menu at any time by pressing one of the four display pushbuttons.

To save settings:

F Keep the F key pressed for 6 sec.

The display will start flashing after 2.5 sec

An acoustic signal will sound after 6 sec.

When the sound stops, the setting is saved.

The F key can be released.

If the F key is released any earlier, the old setting will be retained.

Note!

- For detailed Operating Instructions for the Multitronic Sowing Monitor see Appendix of these Operating Instructions.
- When driving on public roads, disconnect all electronic equipment from the on-board power supply (disconnect plug on tractor side).

Button indication:

F-key

F

- Activating the main menu
- Activating the help functions (sensor test, calibration help)
- Saving the machine settings

Arrow keys

- Changing the menu settings
- Menu navigation (up/down)

Display Drive Speed

km/h

Press 1x = Drive Speed Display

Display Hectare Meter

ha 2x Σha

Press 1x = Displays Sub-total hectare meter

Press 2x = Displays Total hectare meter

Reset Sub-total hectare meter = press both arrow keys and for 2 seconds

Reset both hectare meters = both arrow keys and for 10 seconds

Display Rotations

X1 min

Press 1x = Displays Sowing shaft rotations

Press twice to display fan unit turning speed [1)]

Display Tramlining Cycle and Tramlining Rhythm

The tramlining cycle and rhythm are displayed.

Left: **Tramlining Cycle**

right: **Tramlining Rhythm** (current row)

Switching the tramlining cycle:

The tramlining cycle is switched automatically using sensors or pressure switches.

Manual corrections can be made during automatic counting:

The tramlining cycle may be corrected using the arrow keys or .

If automatic switching is disabled, the tramlining cycle may also be switched manually using the arrow keys or . (e.g. when driving around obstacles)

Press 2x = Displays <AUS>

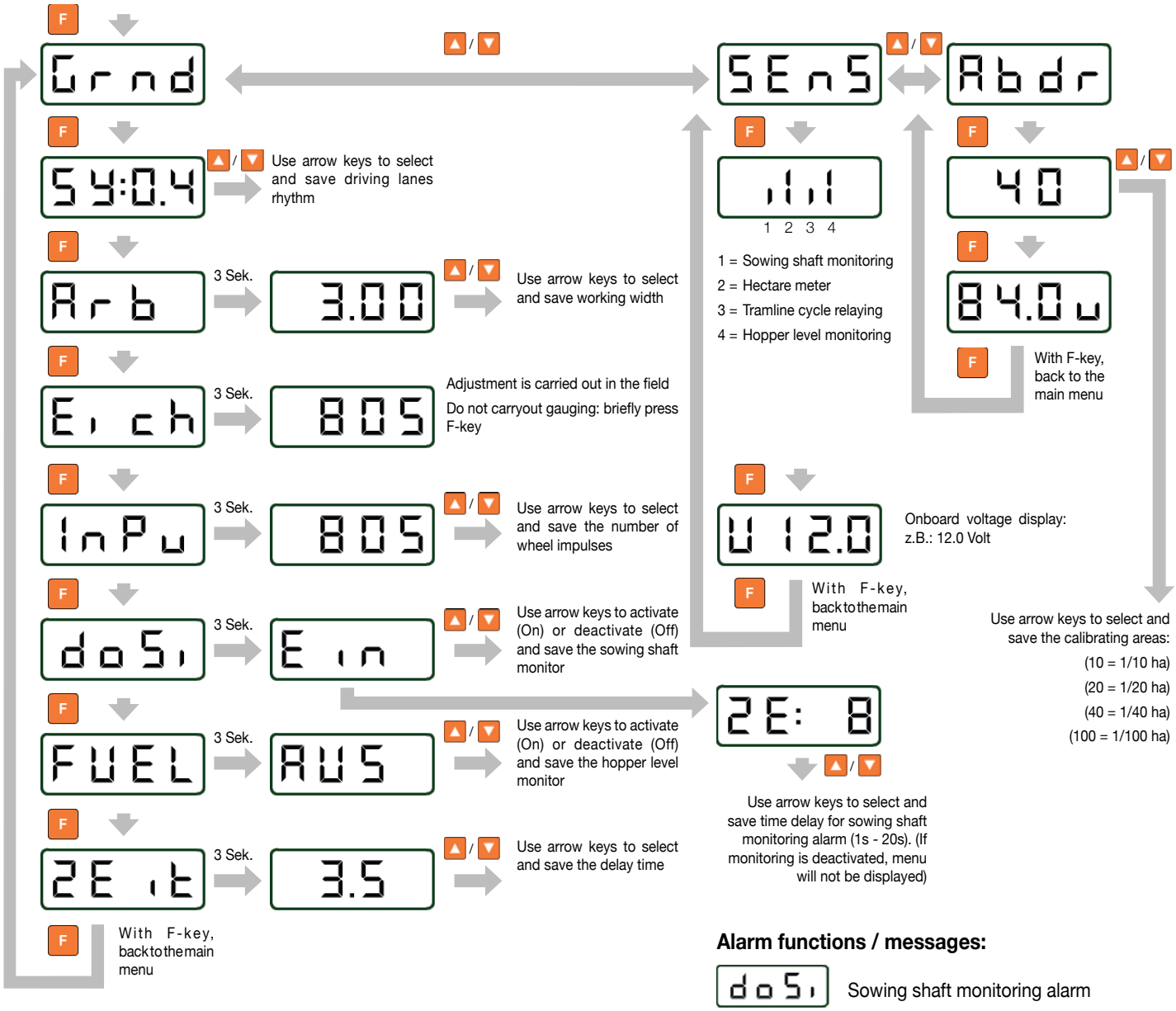
LED on = Tramlining switched on

LED off = Tramlining not switched on

[1)] Only for AEROSEM, TERRASEM

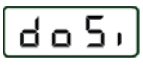
Main menu

Press the F function key to activate the main menu. The seed drill unit is now running with its default settings <AdJU>. This operation also activates the system utility functions sensor test <SEns> and calibration assistance <CAL>.



Machine type	Working width	Impulses / 100 m
Vitasem 250	2,5m	805
Vitasem 300 avec roue 6,00-16	3,0m	805
Vitasem 300 avec roue 10,0-15,3	3,0m	762
Vitasem 400	4,0m	762
Vitasem A 251	2,5m	743
Vitasem A 301	3,0m	743
Viatsem A 401	4,0m	743

Alarm functions / messages:



Sowing shaft monitoring alarm

Hopper level monitoring alarm

Leaving the main menu:

You can exit the main menu at any time by pressing one of the four display pushbuttons.

To save settings:

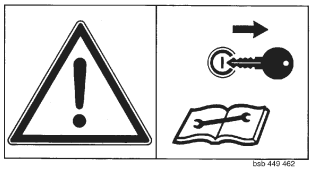
Keep the F key pressed for 6 sec. The display will start flashing after 2.5 secAn acoustic signal will sound after 6 sec. When the sound stops, the setting is saved. The F key can be released. If the F key is released any earlier, the old setting will be retained.

General Transport Instructions

- Bring machines into transport position; ensure suitability for transport.
- Before driving on public roads, disconnect the „MULTI tronic“ from the power supply (remove plug from tractor socket).
- Riding on the machine or standing in the danger area is not permitted.
- Adjust the transport speed to suit the road conditions.
- Caution on bends: hitched implements swing outwards!
- Any applicable road safety regulations must be observed. The operator is responsible for the safe coupling of the tractor and machine when driving on public roads.
- Machinery must not compromise the safe driving of the tractor. Permissible axle-loads, total weight, and tyre load capacity (depending on speed and air pressure) must be adhered to. For safe steering, the load on the front axle must be at least 20 % of the dead weight of the vehicle.
- The highest permissible transport width is 3 m.
- Special permission is required for over-wide machines.
- Transport “4 m” combinations on a low-loader.
- Fit tine protection to perfect following harrow
- Swing row marker up and secure
- Swing sowing harrow in
- Ensure that protruding parts at the outline of the machine do not pose a danger to traffic. If this cannot be avoided, these parts must be covered and clearly marked.
- The outline and back of the machine must also be made clearly visible
  - e.g. use red/white striped warning signs 423 x 423 mm (DIN 11030; 100 mm wide strips, at a 45° angle running outwards/ downwards).
- Light fixtures are necessary if hitched machinery obstructs the tractor lights or when required by the weather conditions. Also mount lights at the front and back when the hitched machine extends more than 40 cm over the tractor lights, or at the back, if the distance between the tractor tail-lights and the machine is greater than 1 metre.
- Required warning signs and light fixtures should be bought from the respective dealers.
- For transport on a low-loader, attach warning signs, red tail-lights and yellow side reflectors to the low-loader. Always drive with lights switched on - even in daylight.

Safety point

- Turn engine off when adjustment, service and repair work is to be done.



General maintenance hints

In order to keep the implement in good condition after long periods of operation, please observe the following points:

- Tighten all screws after the first hours of operation.

In particular check:

- blade screws on the mowers
- tine screws on the swather and tedder.

Spare part

a. The **original components and accessories** have been designed especially for these machines and appliances.

b. We want to make it quite clear that components and accesories that have not been supplied by us have not been tested by us.

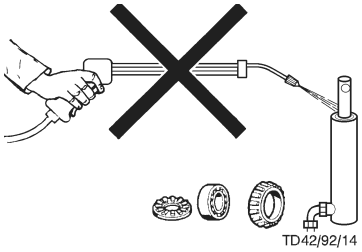
c. The installation and/or use of such products can, therefore, negatively change or influence the construction characteristics of the appliance. We are not liable for damages caused by the use of components and accessories that have not been supplied by us.

d. Alterations and the use of auxiliary parts that are not permitted by the manufacturer render all liability invalid.

Cleaning of machine parts

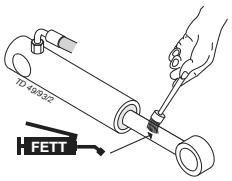
Attention! Do not use high-pressure washers for the cleaning of bearing- and hydraulic parts.

- Danger of rust!
- After cleaning, grease the machine according to the lubrication chart and carry out a short test run.
- Cleaning with too high pressure may do damage to varnish.



Parking in the ope

When parking in the open for long periods of time, clean piston rods and then coat with grease.



Winter storage

- Thoroughly clean machine before storage.
- Put up protection against weather.
- Change or replenish gear oil.
- Protect exposed parts from rust.
- Lubricate all greasing points according to lubrication chart.

Drive shafts

- see notes in the supplement

For maintenance please note!

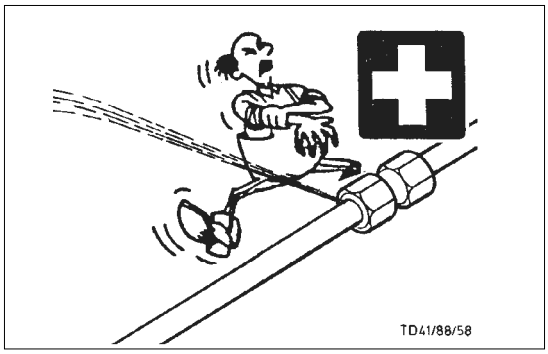
The instructions in this operating manual are always valid.

In case there are no special instructions available, then the notes in the accompanying drive shaft manufacturer´ instructions are valid.

Hydraulic unit

Caution! Danger of injury or infection!

Under high pressure, escaping fluids can penetrate the skin. Therefore seek immediate medical help!



After the first 10 operating hours and then every consecutive 50 operating hours

- Check the hydraulic unit and lines for tightness and retighten screw connections if necessary.

Before operation

- Check hydraulic hoses for wear.

  Replace worn or damaged hydraulic hoses immediately. The replacement hoses must meet the manufacturer's technical requirements.

  Hose lines are subject to natural ageing. The period of use should not exceed 5 – 6 years.

Safety points!

• Turn engine off when adjustment, service and repair work is to be done.

• Do not work under the machine without safe support.

• Retighten all screws after the first hours of operation..

Repair Instructions

Please refer to repair instructions in supplement (if available)

Maintenance

Before working on the hitched machine, turn off the engine and remove ignition key!

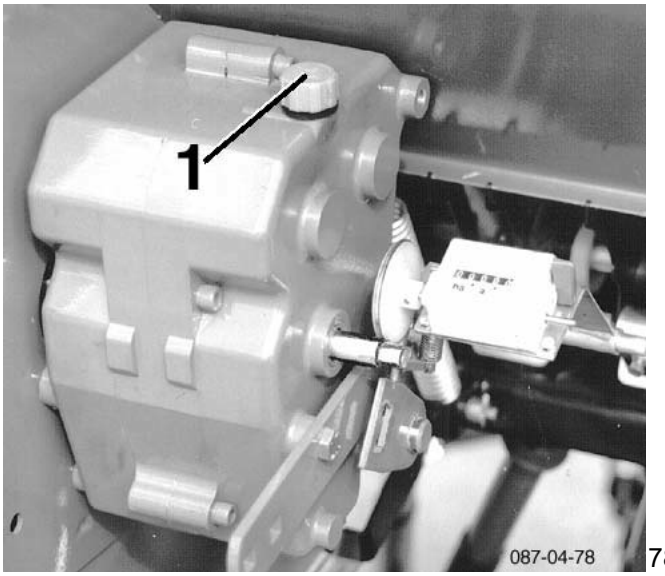
Do not work on a raised seed drill!

If working on a raised drill is necessary, use additional safety supports to prevent unintentional lowering!

De-pressurize the hydraulic system before commencing any work!

Ensure proper disposal of oil! (Hydraulics oil is mineral based).

Retighten all screws after initial operation (approx. 8 hrs), then check at regular intervals.



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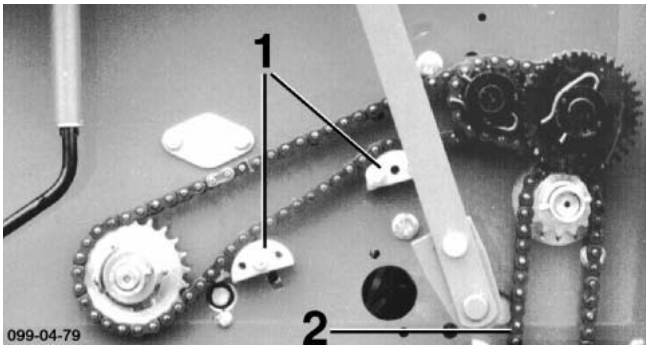
Grease all bearings, including the disk bearings of the row marker and the tramlines markers approx. every 50 running hours (lithium-based multi-purpose grease).

Check the oil level in the transmission – oil stick (**78/1**). Permanent fill – filling amount: 2.5 l – if oil needs to be refilled use: Hydraulic Oil HLP 32.

Grease chain drives.



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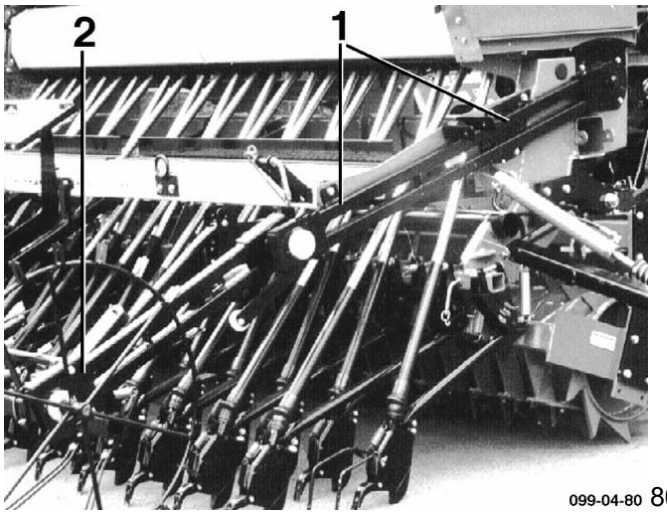
Maintain the movement of joints, spindles and sowing roller sleeves (**73/2** – for tramlining control).

(Do not oil the sowing shaft or seed-pipes).

Retighten the chain drives – at (**79/1+2**),

or, for agitator see pages 12+13 (**32/5** or **35/5**);



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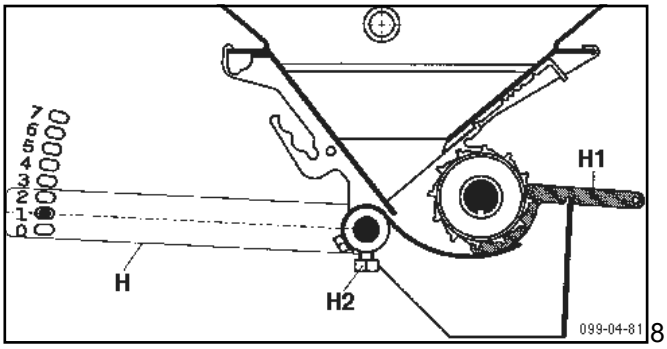
For disc coulters, keep the discs clean and check the scrapers.

Check the hydraulic pipes at regular intervals and replace if damaged or worn (see Spare Parts List). Pipes deteriorate naturally with age. Do not use for more than 5-6 years.

When cleaning with a water jet (especially high-pressure), do not point directly at electrical components (e.g. magnet couplings, cable connections) or bearings (e.g. single-disc coulter bearings).

Retouch any damage to paint.

Use a damp cloth and mild household detergent to remove any dirt on the „Multitronic“ keyboard. Do not immerse the casing in liquid!



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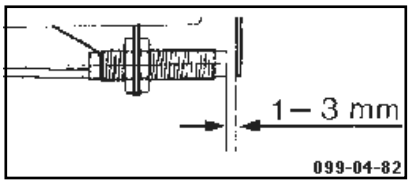
Inspection of Gates:

Before commencing sowing and with empty hopper, use the adjusting gauge (**71/H1**) to check the settings of all the gates; set the gate control lever (**81/H**) to „**1**“ and turn the sowing shaft until the groove points downwards.

Slide the adjusting gauge between the sowing roller and the gate beside the middle row of sowing roller cams and turn from top to bottom until the handle rests on the sowing box.

The adjusting gauge must „fit“ without any play; slacken the screws to make any readjustments (**81/H2**) and then retighten in the correct position ensuring there is no play.



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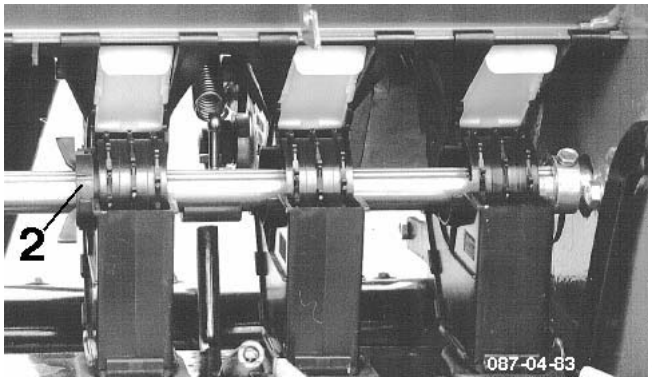
Setting of Sensors:

The sensors are spaced 1-3 mm apart (Fig. **82**).

An operation control (LED) has been integrated into the sensor, giving a visible indication of whether the sensor is working during corrective adjustments or test runs. (See also section Sensor Testing - Operating Instructions for Multitronic appendix A).



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Removal of Sowing Shaft:

Open the shutter and - after loosening and moving the ring (**83/1**) -rotate the shaft in such a way that the clutch (on the right) is more or less horizontal.

Turn the bearings (**83/2**) to the right (90°; press ratchet) and slide to one side.

Remove the shaft from the rear. (Follow the instructions in reverse order to mount the shaft: replace the bearings and rotate 90° to the left. Lock the ring (**83/1**) in place „over“ the clutch. Ensure that „side play“ of the sowing shaft is restricted by a limiter screw (**26/3**, page 12). Adjust as necessary.

When performing welding work on the tractor or an attached machine and when charging the tractor battery or connecting a second battery (jump start) always disconnect from the electronics box.

Operating instructions
Seed drill monitor
Multitronic II for

VITASEM
VITASEM A

Table of contents

1 General information

In order to avoid operating and adjustment errors, please read the following references and explanations thoroughly before operating the unit.

2 Operating features of the seed drill monitor

2.1 Electrical connection

Power is supplied to the seed drill monitor from the tractor's 12V electrical system via a DIN 9680 plug connection. These three-pin plugs also exist in two-pin format, as only the two main terminals (+12V, earth) are required here.

On request, the seed drill monitor can also be fitted to operate via an ISO 11786 signal socket.

Attention!

Other types of plugs and plug sockets are not permitted, as functional safety cannot be guaranteed.

2.2 Technical data

Operating voltage:	+10V .....+15V
Power consumption of the seed drill monitor:	70 mA
Operating temperature range:	-5°C ..... +60°C
Storage temperature:	-25°C .... +60°C
Protection rating:	IP65
Fuse:	6A multi-fuse in power supply plug

The circuit breaker resets itself automatically, once the short circuit has been dealt with and after a delay period of approx. 2 min has passed.

LCD unit:	Four-line back-lit display

2.3 Operating functions

The Multitronic II seed drill monitor is a compact on-board computer, which carries out a number of useful functions. It helps run important control and monitoring functions, providing practical display and system utility functions designed to simplify operation and save work.

The monitor is designed as a highly versatile unit, suitable for trouble-free application throughout both the "VITASEM" range of mechanical seed drill machines and the AEROSEM / TERRASEM range of air-operated units.

There now follows a brief overview of these operating functions:

Control functions:

- Tramline setup
- Additional tramline marking setup
- Automatic or manual relaying of tramline cycles
- Interruption of automatic relaying of tramline cycles driving in order to drive around obstacles

Display functions:

- Tramline cycle and tramline rhythm display
- Partial surface area hectare meter
- Total surface area hectare meter
- Drive speed
- Sowing shaft revolutions

Monitoring functions:

- Sowing shaft monitoring
- Hopper level monitoring

System utility functions:

- Sensor test
- Calibration assistance for calculation and inclusion of crank handle revolutions
- Calibration of hectare meter (adaptation of hectare meter to ground conditions)
- Adjustable time delay for automatic relaying of tramline cycle
- Programmable time delay for the sowing shaft monitor
- Menu language selection in English, German or French
- Switching the sensor signals
- Onboard voltage display

3 Starting the seed drill monitor for the first time

The Multitronic II seed drill monitor is activated by inserting the power supply plug in the socket. A short horn signal indicates that the unit is active. Display will show the number of the software version for 0.5 seconds, and then the programmed machine type for 2 seconds.

 should be displayed for the **VITASEM** range.

 should be displayed for the **AEROSEM** range.

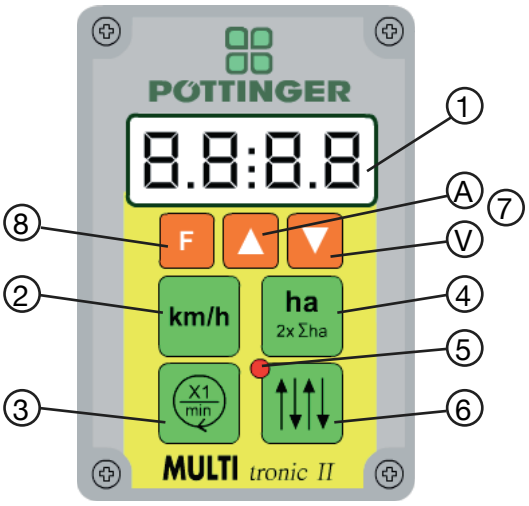
 should be displayed for the **TERRASEM** range.

If the wrong type of machine is displayed, the unit must be readjusted according to machine type (see sect. 8). Before the seed drill monitor can operate correctly.

Displays can now be activated for drive speed, hectare meter, sowing shaft revolutions or tramline circuit.

4 Multitronic II quick startup instructions for the VITASEM

4.1 Control panel of the Multitronic II seed drill monitor



1

Readout/Display (**1/1**), Function key Drive speed (**1/2**),
Sowing shaft revolutions (**1/3**), Hectare meter (**1/4**),
LED (**1/5**), Tramline (**1/6**),
Arrow keys (**1/7, A,V**), **F**-key (**1/8**)

4.2 Readout pushbuttons

The green keys are readout pushbuttons

Drive speed indicator (**1/2**)

Push once to readout drive speed

Readout Hectare meter (**1/4**)

Push once to display partial surface area hectare meter

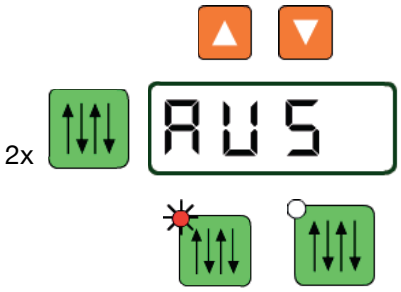
Push twice to display total surface area hectare meter

To reset the partial surface area hectare meter, press both arrow keys A and V for 2 sec.

To reset both hectare meters, press the two arrow keys A and V for 10 sec.

Display Turnings (**1/3**)

Press once to display sowing shaft revolutions



Tramline cycle and Tramline rhythm indicator (**1/6**)

Use the arrow keys **A** or **V** to alter the tramline cycle manually.

Press twice to switch <**AUS**>

LED (1/5) ON = tramline active
LED (1/5) OFF = tramline inactive

4.3 Alarm messages

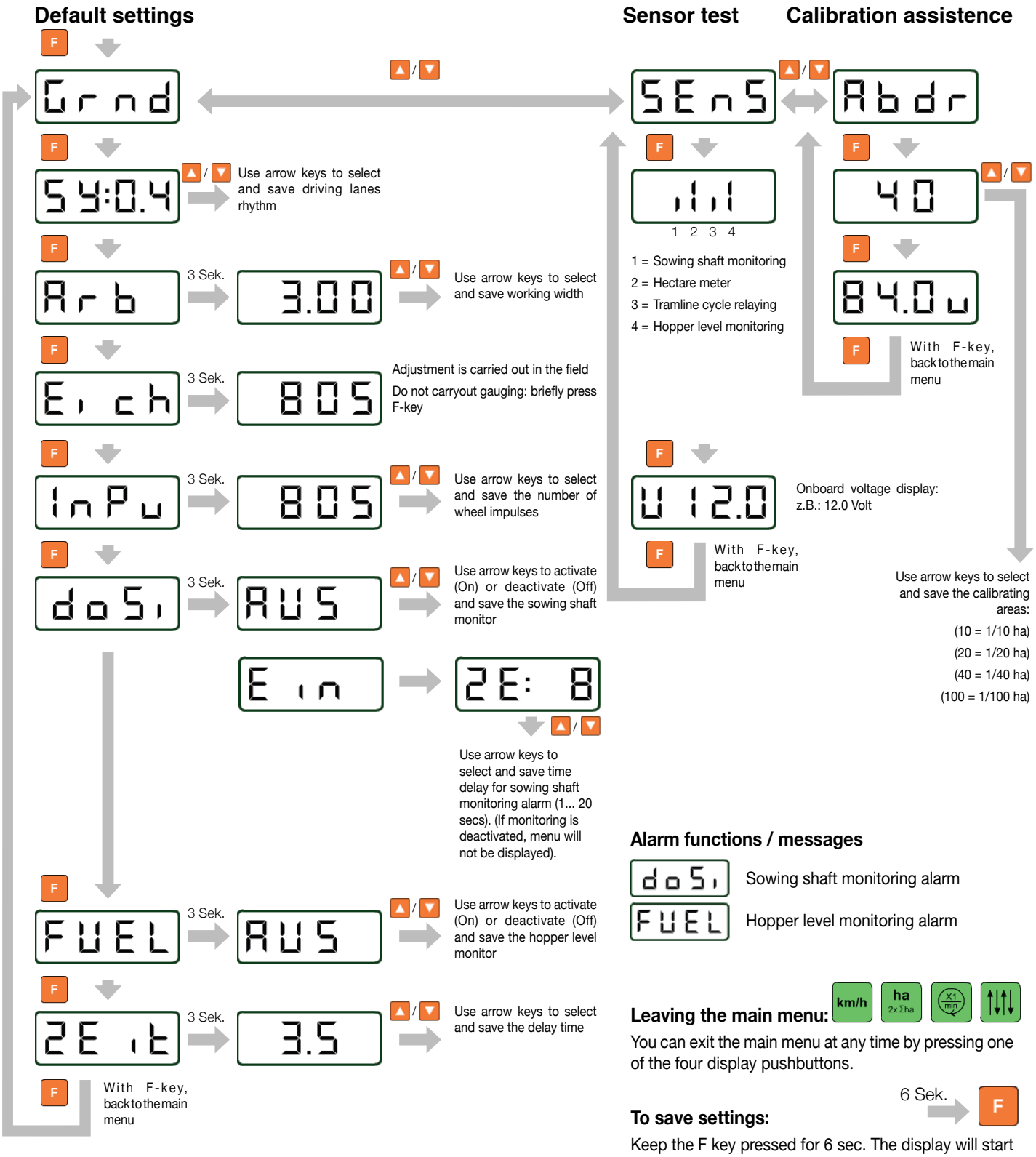
<**doSi**> = Sowing shaft monitoring alarm

<**FUEL**> = Hopper level monitoring alarm

4.4 Main menu

Press the F function key to activate the main menu. The seed drill unit is now running with its default settings <AdJU>. This operation also activates the system utility functions sensor test <SEns> and calibration assistance <CAL>.

Quick guide Multitronic II VITASEM



Alarm functions / messages

Sowing shaft monitoring alarm

Hopper level monitoring alarm

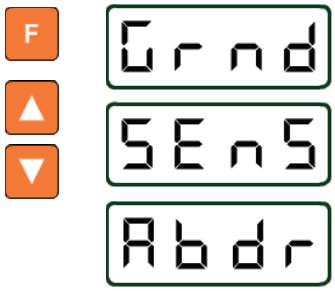
Leaving the main menu:

You can exit the main menu at any time by pressing one of the four display pushbuttons.

To save settings:

6 Sek. F

Keep the F key pressed for 6 sec. The display will start flashing after 2.5 sec. An acoustic signal will sound after 6 sec. When the sound stops, the setting is saved. The F key can be released. If the F key is released any earlier, the old setting will be retained.



5 Multitronic II main menu for VITASEM

Three different functions can be activated via this menu:

Seed drill unit default settings <**Grnd**>

Sensor test <**SEns**>

Calibration assistance <**Abdr**>

Press the F key and use arrow key **A** or **V** to select the desired function.

Press the **F** key again to activate the selected function.

5.1 Default settings

The default settings must be established before the seed drill monitor can be used for the first time. This operation allows the seed drill monitor to receive data on the configuration of the seed drill unit.

Erroneous default settings lead to functioning errors and incorrectly calculated readouts.

Press the **F** key and use **A** or **V** to select the default setting. Press the F key again to activate the default setting. This operation displays the tramline rhythm setting.

5.1.1 Tramline rhythm

This menu allows adjustment of the symmetric and asymmetric tramline rhythms, or deactivation of the tramline circuit.

Symmetric tramline rhythms:

<**SY:02**>, **03**, **04**, **05**, **06**, **07**, **08**, **09**, **10**, **11**, **12**

Asymmetric tramline rhythms:

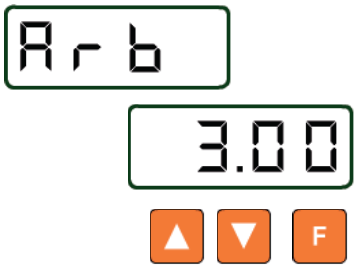
<**AS:02**>, **04**, **06**, **08**, **10**, **12**

Deactivated tramline circuit: <**FG:00**>

Use **A** or **V** to select the tramline rhythm and press F to save. (See sect. 5.1.7)

The next stage is adjustment of the seed drill unit operating width

5.1.2 Operating width



The operating width symbol <**LArG**> is now displayed and, after three seconds, the previously set operating width.

Use **A** or **V** to select the operating width and press **F** to save. (See sect. 5.1.7)

The following stage is hectare meter calibration.

5.1.3 Calibration of the hectare meter or entry of wheel impulses

An impulse count for an operating length of 100 m is required for accurate hectare metering and correct drive speed display.

This can be determined in two different ways:

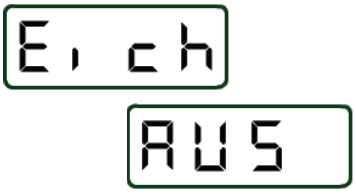
- Entry of wheel impulses using the table

  or

- by taking an actual reading of the number of impulses

The table value should always be entered first. Calibration of the hectare meter should only be carried out if the unit is giving inaccurate readings.

5.1.3.1 Calibration of the hectare meter



Calibration of the hectare meter involves adapting it to the ground conditions of the land being cultivated. This operation should only be carried out if the unit is giving inaccurate readings.

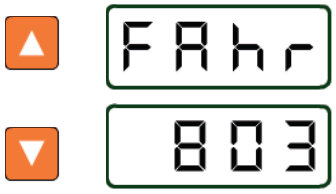
Calibration is carried out directly in the field.

The calibration symbol <GAUG> will appear first, followed after 3 seconds by the previously set wheel impulse count.

Stop calibration:

If you need to stop the calibration procedure, or carry it out later, briefly press the F key. The program will then jump directly to the next adjustment setting menu, wheel impulses <InPu>.

Calibrating the unit:



Proceed as follows if calibration is required:

Drive the machine to the beginning of the field test section.

Measure out a 100 m stretch of field

Press arrow key **A**, <FAhr> = "drive off" indication appears

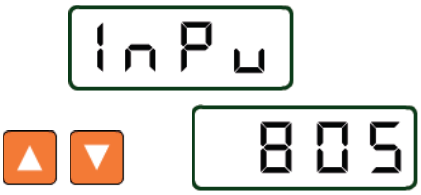
Drive along the test section. The seed drill monitor will now total up the number of hectare meter impulses.

After reaching the end of the test section, press arrow key **V** and the seed drill monitor will stop recording the number of impulses.

Press the **F** key to save the impulse reading. (See sect. 5.1.7)

After adjustment the inputting of wheel impulses is inapplicable. The program will now move on to the next adjustment setting menu: wheel impulses <InPu>.

5.1.3.2 Entry of wheel impulses



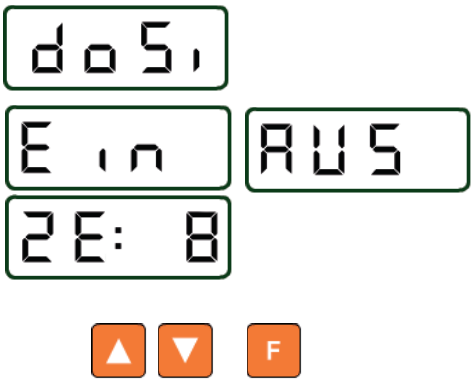
The wheel impulse symbol <InPu> will be displayed first, followed after 3 sec by the previously set impulse count.

In the case of the VITASEM, impulse count depends on the size of the drive wheel:

VITASEM	Impulse count / 100 m
Tyre 6.00-16	805
Tyre 10.0/75-15.3	762
Ground wheel	743

Use arrow key **A** or **V** to select impulse count and press the **F** key to save. (See sect. 5.1.7)

The following step is sowing shaft monitoring adjustment.



5.1.4 Sowing shaft monitoring

Sowing shaft monitoring is enabled or disabled in this menu.

Firstly, the sowing shaft monitor symbol appears: <doSi> = Dosing, and 3 secs. later the monitoring state

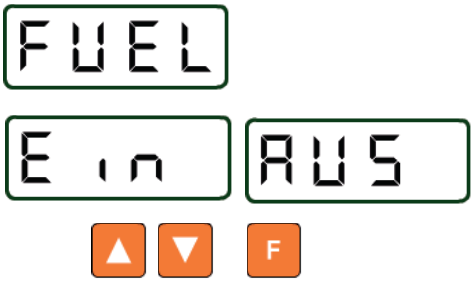
Sowing shaft monitoring on = <**Ein**>

Entry field for the for sowing shaft monitoring alarm time delay will appear. Time is programmable from 1 ... 20 secs. using arrow keys.

Sowing shaft monitoring off = <**AUS**>

Use arrow key **A** or **V** to enable or disable the monitoring function and press the **F** key to save. (See sect. 5.1.7)

The following step is hopper level monitoring adjustment.



5.1.5 Hopper level monitoring

This menu is used to enable or disable hopper level monitoring.

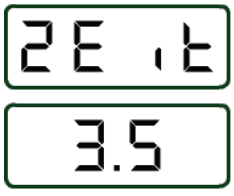
Firstly, the hopper level monitor symbol appears: <doSi> = Dosing, and 3 secs. later the monitoring state

Hopper level monitoring on = <**Ein**>

Hopper level monitoring off = <**AUS**>

Use arrow key **A** or **V** to enable or disable the monitoring function and press the **F** key to save. (See sect. 5.1.7)

The following step is delay time adjustment.



5.1.6 Delay time

Delay time t3 (t=time) involves delaying the switching impulses for automatic relaying of the tramline cycles. The purpose of this function is to avoid incorrect activation.

Delay time is adjustable between 0.5 sec and 20.0 sec, steps of.

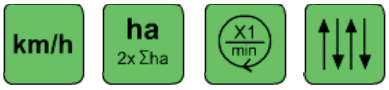
0 to 10 sec steps of 0,5 sec

10 to 20 sec steps of 1 sec

The following values should be entered before operating the unit.

Automatic relaying via::		Display readout (= delay time in sec)
Shuttle valve pressure switch		1,5
Fendt signal plug socket		1,5
Ground wheel sensor	min	3,5
Level compensator sensor	min	3,5

Other values can also be entered however. Use arrow keys **A** or **V** to select delay time and press the F key to save. (See sect.5.1.7)



The seed drill unit default adjustment setting procedure is now complete. The program will now return to the main menu and the default setting symbol <AdJU> will be displayed once more.

Press any of the four green display pushbuttons to exit this menu.

6 Sek.

5.1.7 Saving the machine settings

If the pre-set default settings are altered, they must be saved to memory.

All settings can be saved in the same way:

Keep the **F** key pressed for 6 sec.

The display will start flashing after 2.5 sec and an acoustic signal will sound after 6 sec.

When the sound stops, the setting is saved.

The **F** key can now be released, giving automatic access to the following menu.

If the **F** key is released early, access is gained to the following menu, but any new setting that may have been entered will be ignored and the previous setting retained.

5.2 Sensor test and onboard voltage display

The sensor test offers a method of testing the function of the seed drill unit sensors.

Press the **F** key and use arrow keys **A** or **V** to select the sensor test function, then press the F key again to start the test.

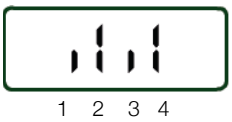
A four-bar display will now appear:

1= Sowing shaft monitoring

2= Hectare meter

3= Tramline cycle relaying

4= Hopper level monitoring



Each bar shows the activation status of its corresponding control function.

For sowing shaft monitoring, hectare meter and hopper level monitoring (sensors with opening function):

Long bar = no metal detected

Short bar = metal detected

Tramline cycle relaying via

Level compensator sensor (Sensor with opening function)

Long bar = no metal detected

Short bar = metal detected

Shuttle valve pressure switch

Long bar = Switch under pressure

Short bar = Switch pressure released

Fendt signal plug socket

Long bar = lifting gear raised

Short bar = lifting gear lowered

Ground wheel sensor (sensor with closing function):

Long bar = metal detected

Short bar = no metal detected

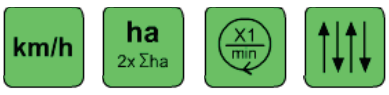
You can test the functioning of a sensor by holding a metallic object (e.g. a screwdriver) in front of the it and then moving it away again. Pressure switch functioning, with closed hydraulic circuit, can be tested by raising the marker arms.

If the F-key is pressed again, the onboard voltage display occurs

The first character “U” stands for voltage

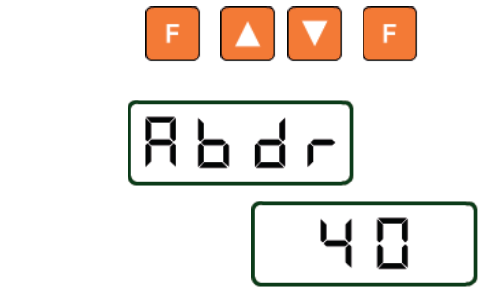
The three numerical values indicate the onboard voltage e.g. 12.0 volt

Return to the sensor test <SEnS> by pressing the F-key



Press any of the four green display pushbuttons to exit this menu.

5.3 Calibration assistance



Calibration assistance is a system utility for the seed calibration test.

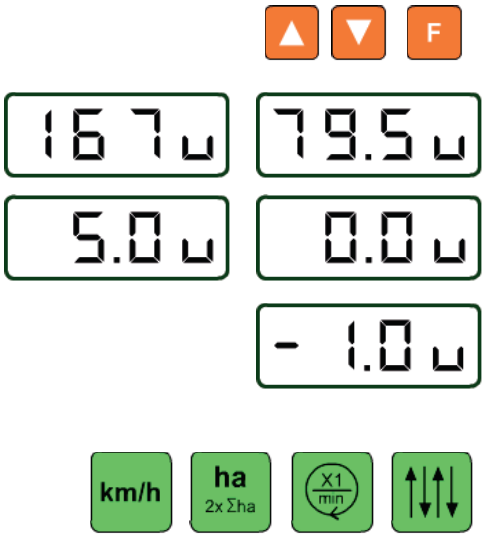
This function computes the number of crank rotations, showing them on the display, and also counts the number of crank rotations during the calibration test.

Press the **F** key and use arrow keys **A** or **V** to select calibration assistance<**CAL**>. Press the F key again to activate the function.

The following choice of surface areas for calibration will now be displayed:

1/10 ha	display <**10**>
1/20 ha	display <**20**>
1/40 ha	display <**40**>
1/100 ha	display <**100**>

Use arrow keys **A** or **V** to select the size of surface area to be calibrated and confirm the selection by a short press on the **F** key.



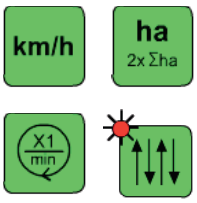
The seed drill monitor will now compute the number of crank rotations and display the figure. During this operation, values greater than 100 revolutions are displayed as whole figures. Values under 100 revolutions are shown exactly to the nearest half-turn.

The calibration test can now start. The seed drill monitor will now count the number of hand crank rotations, starting from the displayed value and running in reverse, thus providing a constant display of the crank turns that remain to be carried out. The final five turns of the crank are accompanied by an additional acoustic signal, in order to warn the operator of the impending end of the calibration procedure. Once the value reaches zero <0> a constant acoustic signal is activated to warn the operator to stop calibration immediately.

If calibration does continue, the display will show the corresponding negative value and the constant acoustic signal will continue to be heard until no more impulses are being detected at the hectare meter.

To repeat the calibration test: press the **F** key, the calibration test will restart from the beginning.

To stop the calibration test, press any one of the four green display pushbuttons to leave this menu.



6 Display (readout) pushbuttons

The green keys are the display pushbuttons, which are used to operate the following functions:

- Display drive speed
- Display / reset hectare meter
- Display sowing shaft revolutions
- Display / alter tramline cycle

6.1 Drive speed display

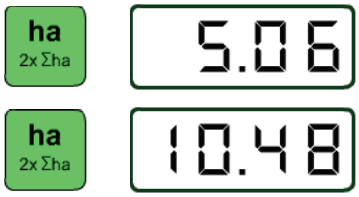
Press the display key to show drive speed in km/h.

6.2 Hectare meter

The seed drill monitor operates via two separate hectare meters: namely a partial area meter and a total surface area meter.

Data are displayed as follows, with floating decimal point:

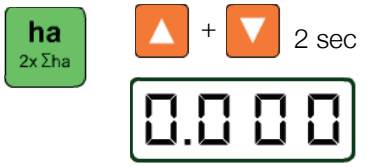
0.000 – 9.999 10.00 – 99.99 100.0 – 999.9 1000 – 9999



6.2.1 Partial / total surface area meter display

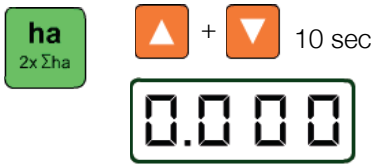
Press the display key to show the partial surface area count.

Press the display key again. The total surface area count will appear for 5 sec, followed once more by the reading for the partial surface area hectare meter.



6.2.2 Partial hectare meter reset

Press the display key to show the partial surface area meter. Now press both arrow keys **A** and **V** at the same time and maintain pressed for 2 sec. The display will now start flashing and will reset to zero <0> after a further 2 sec, when it will stop flashing. This completes the reset procedure.



6.2.3 Partial surface area and total hectare meter reset

Press the display key again to show the total hectare meter. Now ress both arrow keys **A** and **V** at the same time and maintain pressed for 10 sec. The display will now start flashing and will reset to zero <0> after a further 10 sec, when it will stop flashing. This completes the reset procedure.

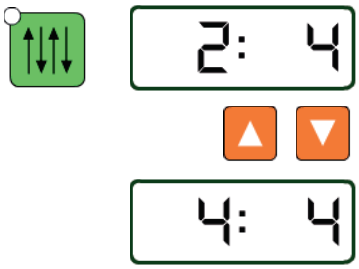
6.3 Sowing shaft revolutions display

Press the display key to show sowing shaft revolutions as a rotating <0>.

6.4 Tramline cycle

The tramline cycle can be displayed and altered, with tramline cycle relaying being carried out either automatically or manually. It is also possible to interrupt automatic relaying, when avoiding obstacles for example, without altering the tramline cycle itself.

6.4.1 Tramline cycle display / adjustment



Press the display key to show the tramline cycle and rhythm.

Left : Tramline cycle

Right : Tramline rhythm

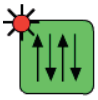
Please refer to sect. 5.1.1 for details of tramline rhythm adjustment.

Tramline cycle relaying:

The tramline cycle is automatically relayed by means of sensors or pressure switches. Further switching the driving lane cycle is signalled with a short acoustic sound

But the driving lane cycle can also be manually switched:

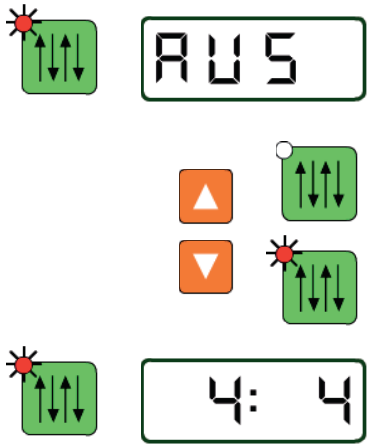
Use arrow keys **A** or **V** to alter the tramline cycle



Once a tramline is established, the red LED in the tramline display key will light up.

Driving lane activation is signalled by 5 short acoustic sounds

6.4.2 Automatic relaying interruption



Press the display key again to make <**AUS**> appear. This operation interrupts automatic relaying of the tramline cycle. It is now possible to operate the marker arms or raise the seed drill unit, without relaying the tramline cycle. The tramline can now also be directly activated or deactivated:

Tramline ON: press arrow key **A** (LED lights up)

Tramline OFF: press arrow key **V** (LED goes out)

Press the display key again to return to normal tramline cycle relaying. The tramline cycle that was active before the interruption will now reappear on the display.

Attention!

While the indicator <**OFF**> is activated, the other indicators are useless

The <**OFF**> function is deactivated when one of the green keys is pressed

Take note!

Only use the <**OFF**> function briefly e.g. for shunting work or driving around obstacles

To permanently deactivate driving lane switching

- see 5.1.1

7 Alarm functions / messages

Seed hopper level and sowing shaft revolutions can be monitored, on condition that the seed drill unit is fitted with the corresponding activated monitoring device. (See sections 5.1.4 and 5.1.5 for information on activating hopper level and sowing shaft monitoring.)

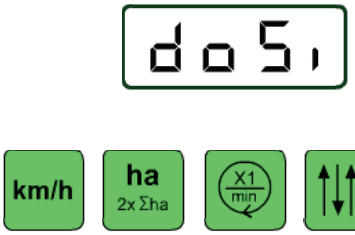
The monitoring systems are only active when the seed drill unit is in operating position (with lowered seed drill unit and/or marker arms).

The monitoring systems are not active when the seed drill unit is in transport position (with raised seed drill unit and/or marker arms).

7.1 Sowing shaft alarm

The sowing shaft monitoring system controls the turning of the sowing shaft. (Please refer to sect. 5.1.4 for information on how to activate sowing shaft monitoring).

A sensor receives impulses from a transmitter on the sowing shaft. If, while the machine is in the working position, no impulses are received within the time delay (1... 20 secs.) programmed in the "Time delay for the sowing shaft monitoring alarm" entry field, a visual and acoustic alarm will be triggered.



Acoustic alarm = intermittent sound

Visual alarm = <**doSi**>

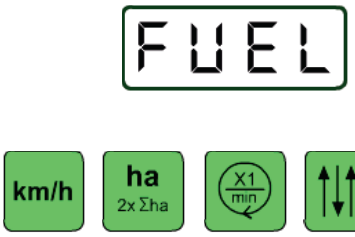
The alarm can be stopped by pressing one of the green display keys, but will nevertheless be reactivated if the marker arms are operated or the machine is raised.

In the event of a fault occurring that cannot be dealt with immediately (e.g. a faulty sensor), it is possible to disable the monitoring system completely as a temporary measure, until the fault can be rectified. (Please refer to sect. 5.1.4 for details on how to disable sowing shaft monitoring).

7.2 Hopper level alarm

The hopper level monitoring system controls the amount of seed in the hopper. (Refer to sect. 5.1.5 for details of how to activate hopper level monitoring).

The level display receives a sensor signal when the quantity drops to a certain level, activating an acoustic and visual alarm signal.



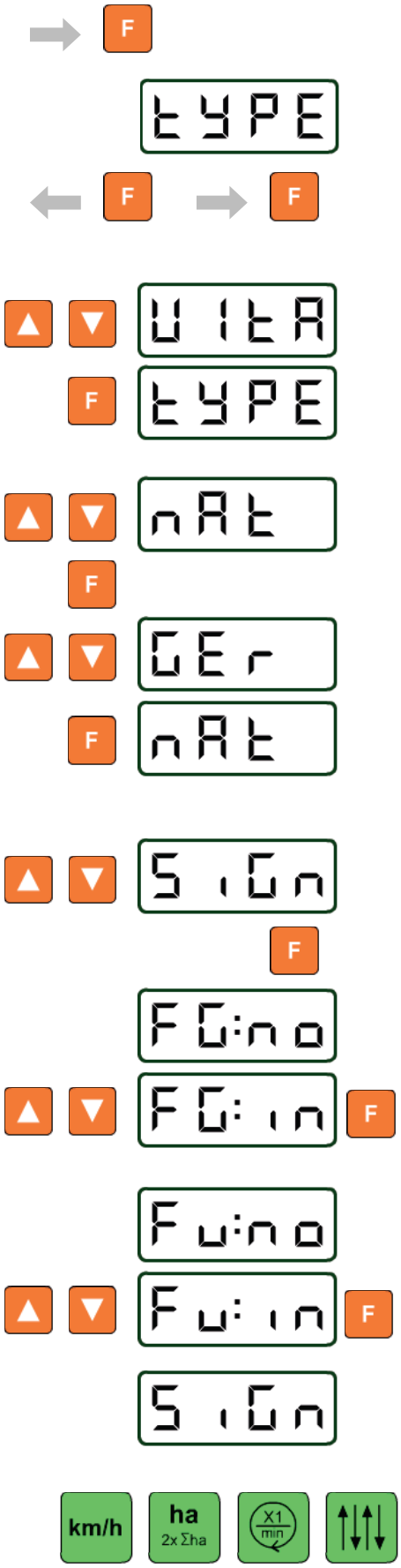
Acoustic alarm = intermittent sound

Visual alarm = <**FUEL**>

The alarm can be stopped by pressing one of the green display keys, but will nevertheless be reactivated if the marker arms are operated or the machine is raised.

In the event of a fault occurring that cannot be dealt with immediately (e.g. a faulty sensor), it is possible to disable the monitoring system completely as a temporary measure, until the fault can be rectified. (Please refer to sect. 5.1.5 for details on how to disable hopper level monitoring).

8 Setting the machine type, the local language and switching the control signals



The Multitronic II seed drill monitor can be operated with both the VITASEM range of mechanical seed drill machines and the AEROSEM, TERRASEM range of air-operated units.

The menus can be configured to appear in English, German or French.

The seed drill monitor is supplied factory-adjusted for the corresponding machine, but the user can change these parameters at any time:

Remove the power supply plug from its socket

With the **F** key pressed, push the plug back into the socket.

The display will show <**tYPE**> for the corresponding type of machine

Release the **F** key once more

Press the **F** key again to activate machine type configuration.

Use arrow keys **A** or **V** to select machine type VITASEM (display U itA) and press the F key to save. (See sect. 5.1.7)

The display will show <**tYPE**> once more

Use arrow keys **A** or **V** to activate local language configuration (and to display <nAt>)

Press the **F** key to activate the language selection feature.

Use arrow keys **A** or **V** to select the desired language

German	display <**GEr**>
French	display <**FrAn**>
English	display <**EnGL**>

Press the **F** key to save the selected language. (See sect. 5.1.7).

The display will show <**nAt**>once more

Using arrow keys **A** or **V** will activate the menu for switching the sensor signals (display <**SiGn**>)

This menu serves to reverse a sensor signal. That means sensors that have an opener function can be used for a closer function (and vice versa).

Press **F**-key

Firstly the menu for switching driving lane sensors will be called.

The sensor signal is utilized as normal

Using arrow keys A or V the signal utilization can be changed

Save with **F**-key

Now the menu for switching the hopper level sensor will be called.

The sensor signal is utilized as normal

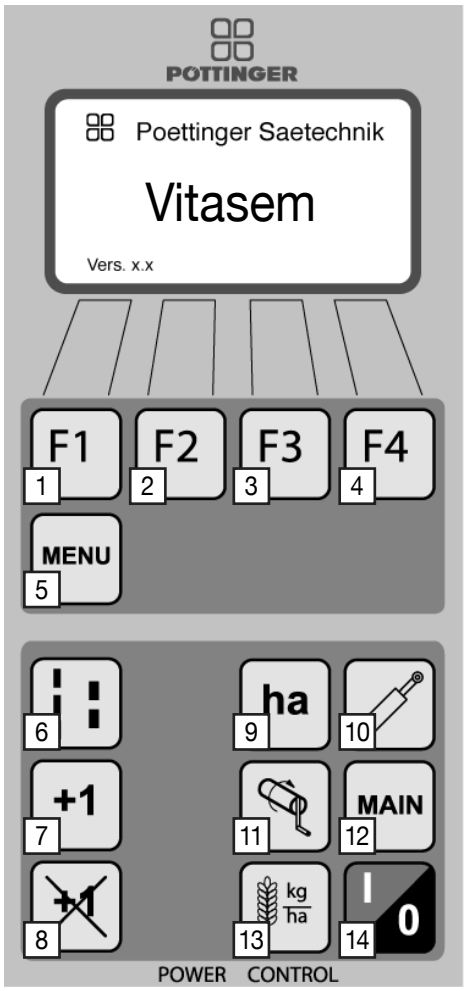
Using arrow keys **A** or **V** the signal utilization can be changed

Save with **F**-key

The display will show <**SiGn**>once more

Configuration is now complete. Press any one of the green display pushbuttons to leave the menu.

Control panel



Button indication

Display indicator:

Information on start-up screen

- Manufacturer
- Machine model
- Software version

"WORK MENU" overlays 3 seconds later

Keys:

1 - 4 Function keys for menu operation

5 Special menu

6 Stutter switch ON/OFF

7 Increase driving lane meter by 1

8 Lock/release driving lane metering

9 Hectare meter

10 -

11 Calibration process menu (Abdrehmenü)

12 Main menu

13 Seed menu

14 ON-OFF

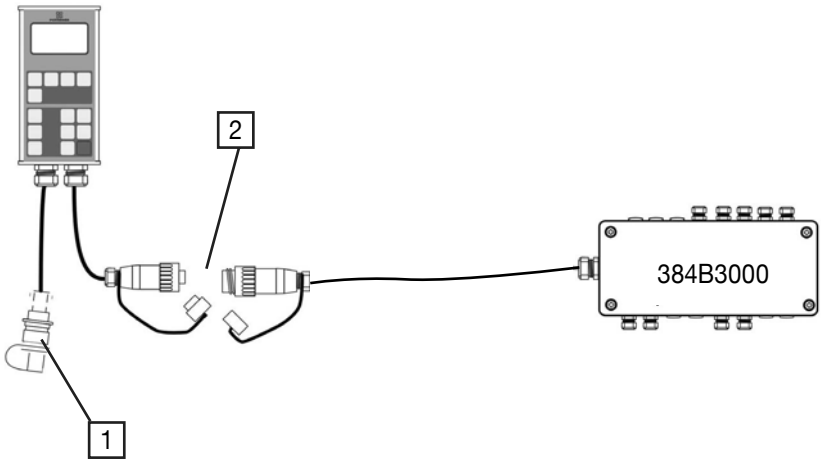
Note!

In order to avoid operating and adjustment errors, please read the following references and explanations thoroughly before operating the unit.

Initial Power Control operation

In order to ensure the correct power control function, the following connections must be checked:

1. 12 V power supply from tractor
2. Connection to job calculator on machine



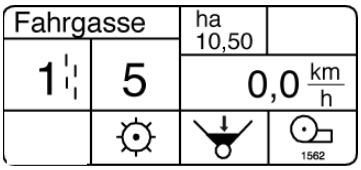
Switching on operating device

Switching on operating device

- briefly pressing I/O button

Start-up screen appears

Work menu overlays 3 secs. later



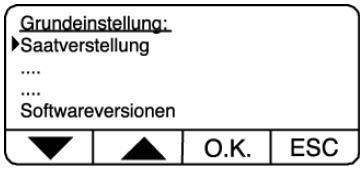
System-New Start

With this the pre-programmed standard values are activated.

After System-New Start the

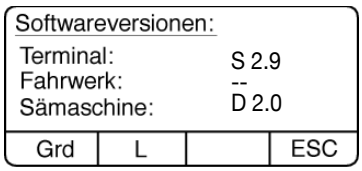
- base settings for the seed drill are to be checked
- and adapt the control to the seed drill if necessary.

- Press **"MENU" key** MENU
  - Menu base setting appears



Select from the menu using

- wiht keys " ▼ or ▲" F1 or F2
  Auswahl von Menüpunkt
  ▶ **Software versions** (= Software-Versionen)
- Press **"OK" key** F3
- "Software versions" menu appears



- Press **"GRD" key** F1
  - Question "Implement normal state?" (=Grundzustand herstellen?)

- Press **"OK" key** F3 until tone signal is heard
  - System-New Start will be carried out

Note! All data will be reset to the pre-programmed standard values.

- Press **"ESC" key** F4
  - procedure is interrupted

Pre-programmed standard values

Function	Standard	Your own
Seed quantity adjustment	On	
Seed type	Wheat	
Quantity of seed	180 kg/ha	
Variation in seed quantity in %age	10 %	
Quantity reduction	On	
Closed seed tubes	4	
Driving lane rhythm	symmetrical – 8	
Stutter switch	Off	
Length of strips	5m	
Sowing shaft monitor	5s On	
Level monitor	15% On	
Blower monitor	3000 UpM On	
Monitoring of Calibration flapss	On	
Time-invariant driving lane sensor	3,5 secs	
Ha.meter impulses	805	
Driving lane sensor setting	normal	
Level sensor setting	normal	
Sensor setting for Calibration flapss	normal	
Machine type	Vitasem	
Working width	3 m	
No. of sowing tubes	24	
No. of head outlets	24	
Language	english	

Note!

Check the base settings of the power control before initial operation.

Attention!

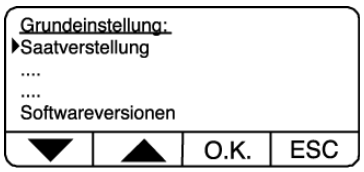
System-New Start should only be carried if problems occur during "Power Control" operation.

Note!

The desired language for the menu guide can be set here. Press "L" key F2

Base settings menu

- Press **"MENU" key** MENU
  - Menu base setting appears



  - Select the desired menu level

    with Keys " ▼ or ▲" F1 or F2

  - Press **"OK" key** F3
    - Accepts the new setting
  - Press **"ESC" key** F4
    - Indicator springs back to special menu

Menu levels

▶ **Seed quantity adjustment** (= Saatmengenverstellung)
- Seed reference: (Seed quantity and density)
  15 various seed types can be stored
- Variation in %: (see Seed menu also)
  Set the adjustment steps for the seed menu
- Calibrate servomotor:
  Servomotor must be calibrated before the first drive adjustment.

▶ **Driving lane rhythm** (= Fahrgassenrhythmus)
- Adjust according to field spray and machine width.

▶ Stutter switch (= Stotterschaltung)
- Section length of between 2 and 20 mm is adjustable when stutter switch is turned on

▶ **Monitoring** (= Überwachung)
- Set the limit for the alarm
- Activate and deactivate individual monitoring functions

▶ **time-invariant** (= Zeitverzögerung)
- Set the driving lane relay between 0.5 and 25 secs. (in 0.5 sec.steps)

▶ **100m equalization** (= 100m Abgleich)
- Determining no. of impulses of hectare meter while travelling over a 100 m section.

▶ **Hectare meter impulses** (= Impulse ha-Zähler)
- Possibility to input no. of impulses independent of the respective machine.
  Note! Value input will be overwritten during a 100 m equalization.

▶ **Sensor test** (= Sensortest)
- No setting necessary

▶ **Machine type** (= Maschinentyp)
- Must be accurately set as many functions are dependent upon the machine type.

▶ **Working width** (= Arbeitsbreite)
- Important for dosing, hectare metering, calibrating (Abdrehen), ….

▶ **Sensor setting** (= Sensoreinstellung)
- Possible for switching a sensor between break contact and make contact

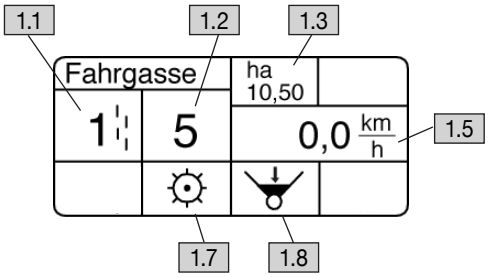
▶ **Software versions** (= Softwareversionen)
- Indicates software versions

Note!

The control obtains data for the drill machine from the base settings. Incorrect information leads to incorrect calculations!

Main menu

- Press **"MAIN" key** MAIN
  - The actual control status is shown on the display.



1.1 Driving lane cycle

- Relaying the driving lane cycle occurs automatically through a sensor.
- However the driving lane cycle can also be relayed manually.

  Press "Increase driving lane cycle by 1" **key** +1
  - The driving lane cycle increases by 1 every time the key is pressed
  - When driving lane cycle and driving lane rhythm are in phase, the driving lane is put down.
  - The "driving lane" (= Fahrgasse) stroke will then appear inverted on the display
- The automatic relaying of the driving lane cycle can also be interrupted.

  Press "Lock/release driving lane counter" **key**
  - The actual driving lane cycle value is now clearly shown
  - The automatic driving lane relay sensor and "key 7" are locked
  - If "key 8" is pressed the automatic relay is reactivated and the value for the driving lane cycle is shown in large scale again.

1.2 Driving lane rhythm

- A symmetrical driving lane is shown without index (see diagram above)
- An asymmetrical driving lane is shown with index "A"
- Nothing appears in the indicator field when driving lane is deactivated (Driving lane off)
- For special driving lanes the relative driving lane rhythm is shown in the indicator field

For further information on setting the driving lane rhythm see section "Driving lane switch"

1.3 Reference surface hectare meter

- Displays the actual status

For further information see section "Hectare meter"

1.5 Drive speed

- Displays the actual drive speed

1.7 Seed shaft monitor

- Graphic data display of actual status

  = Rotating shaft

  = Shaft at stand still
- If only the lower graphic data function key is actuated, extensive information is displayed (see section "Alarms")
- Press ESC to return to main menu.

1.8 Level monitor

- Graphic data display of actual status

  = Seed container empty

  = Seed container full
- Bar indicator between 0 and 100%
- If only the lower graphic data function key is actuated, extensive information is displayed (see section "Alarms")
- Press ESC to return to main menu.

Note!

The main menu can be exited in the following ways:

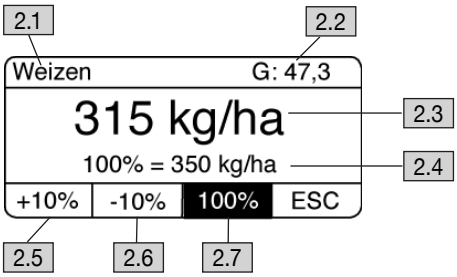
Use the keys MENU, ha, , , or

Note!

For further information on the respective monitoring functions see the section "Monitoring Functions"

Seed Menu

- Press **"Seed menu" key**
  - Information about seed type and amount of seed is shown on the display



2.1 Seed type (= Saat)

- Indicates the selected seed type

see section „Setting seed amount".

2.2 Gearing position (= Getriebestellung)

- indicates the calculated gearing position through the control

2.3 Actual quantity (= Istmenge)

- The actual quantity selected by the user is shown here
- The actual quantity changes if the keys F1 or F2 are pressed.
  (Seed quantity change in %)

2.4 Set quantity (= Sollmenge)

- Indication of the set quantity (= seed quantity) according to seed reference

see section „Seed reference".

2.5 Increase output

Press **key** F1

- Seed quantity is increased (in a definite example around 10%)
- If the machine should stop with this, the prompt "Turn crank handle" appears because the drive may not be adjusted upward when at a standstill.
- If the key is operated during travel or the crank handle is turned on the drive shaft front end, the hectare meter registers the turning of the drive shaft, the prompt "Turn crank handle" fades and the instruction is carried out.
- The electro-cylinder starts the new drive setting.

2.6 Reduce output

Press **key** F2

- Seed quantity is reduced (in a definite example around 10%)
- If the F2 (equals -10%) key is pressed twice the seed quantity is reduced by 20%
- The electro-cylinder starts the new drive setting.

2.7 Set output back to set value

(according to seed table)

Press **key** F3

- Set any previously altered actual value to set value again.
- For the time being set value and actual value are the same.
- If the reduced seed quantity (actual quantity) should be the same as the set quantity again, this can be achieved by pressing the 3 (100%) key once.
- If the machine should stop with this, the prompt "Turn crank handle" appears because the drive may not be adjusted upward when at a standstill.
- If the key is operated during travel or the crank handle is turned on the drive shaft front end, the hectare meter registers the turning of the drive shaft, the prompt "Turn crank handle" fades and the instruction is carried out.

Tip! If the actual quantity differs to the set quantity, the indicator field will be 100% black.

Note!

The seed menu can be exited in the following ways:

Use keys

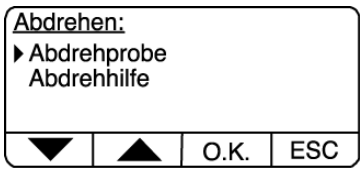
F4, MENU, ha

, , MAIN

or I/0

Calibration menu (Abdrehen)

- Press **" Calibration menu" key**
  - "Calibration" (Abdrehen) menu appears



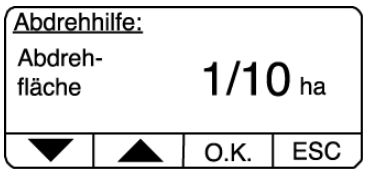
  - Select the desired menu with " ▼ or ▲" F1 or F2 keys
  - Press **"OK" key** F3
    - Call up highlighted menu
  - Press **"ESC" key** F4
    - Indicator springs back to main menu

Menu levels

▶ **Calibration aid** (= Abdrehhilfe)

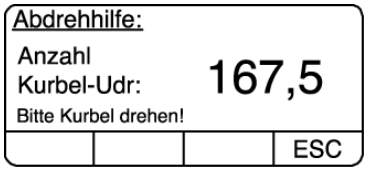
- The calibration aid is a numbers aid when calibrating the seed drill and gives the user valuable tips for carrying out calibration.

Using arrow keys select "calibration areas" and confirm with OK.



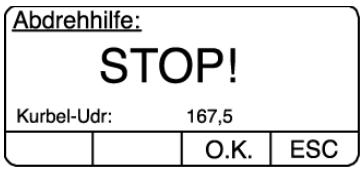
- Possible areas:
  1/10ha, 1/20ha, 1/40ha, 1/100ha.

The indicated crank handle rotations must be made using the crank handle.

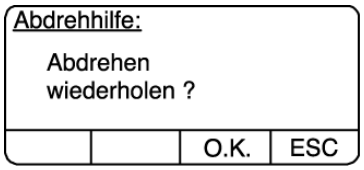


- The control keeps count and displays the remaining crank handle rotations.
- An acoustic signal is heard with the last 5 crank handle rotations to draw attention to the fact that the turning procedure will end soon.
- When the value reaches 0 the STOP indicator appears in the display and continuous acoustic signal is heard.
- Calibration must now end.
- The actual crank handle rotations are shown.

Press O.K. key (F3)



An inquiry asks if the calibration procedure is to be repeated.

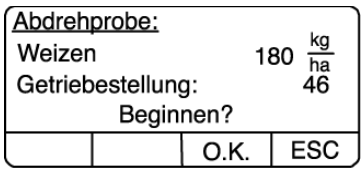


- With "OK" (key F3) the programme switches over to "Select calibration areas" (Abdrehfläche auswählen).
- Pressing the ESC key springs the programme back to the menu selection "calibration trial/calibration aid" (Abdrehprobe/Abdrehhilfe)

▶ **Calibration trial** (= Abdrehprobe)

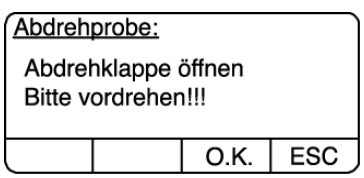
- The calibration trial supports calibrating the seed drill in activated seed quantity setting.
  In order to obtain an exact seed quantity it must be carried out without fail.

Using arrow keys select "Abdrehprobe" (Calibration trial) and confirm with OK.



  - Displayed is:
    Seed type, seed quantity and gearing position.
- Data for this is taken from the "Seed quantity setting" menu.
- OK will start the calibration process.
- First of all 10 rotations of the seed drive must be made using the crank handle so that the seed boxes are filled with seed and the grains are aligned in the direction of flow.

The control counts the seed drive rotations and advises when the process is finished.



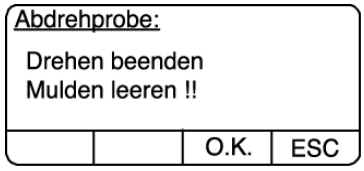
Note!

Calibration serves to determine the exact seed quantity.

The control "Power Control" supports calibration through auxiliary programmes.

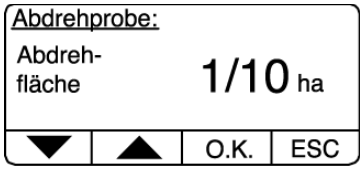
*** Remark: In German word usage it is normal to use the term „Abdrehen" (which basically means turning the dosing device by hand) instead of „Kalibrieren" (meaning to calibrate, electronically). In this manual we use the term „Kalibrieren" in order to avoid any misunderstandings with text translations.**

- After 10 registered seed drive rotations
- Indicator in display “Finish rotations” and “Empty troughs”
- Empty the troughs
- Re-install in calibrating position



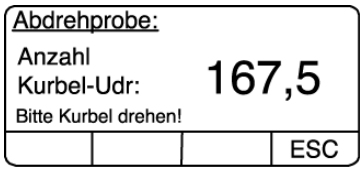
Confirm process with OK

Using arrow keys select “Calibration areas” (Abdrehfläche) and confirm with OK.

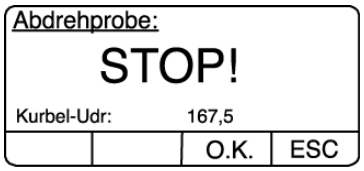


- Possible areas:
  1/10ha, 1/20ha, 1/40ha, 1/100ha

- The indicated crank handle rotations must be made using the crank handle.



- The control keeps count and displays the remaining crank handle rotations.
- An acoustic signal is heard with the last 5 crank handle rotations to draw attention to the fact that the calibrating process will end soon.
- When the value reaches 0 the STOP indicator appears in the display and continuous acoustic signal is heard.
- Calibration must now end.
- The actual crank handle rotations are shown.

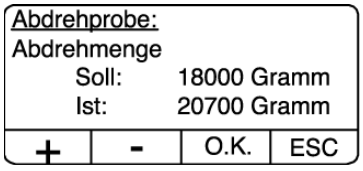


Press OK key (F3)

The control calculates a theoretical set quantity “Soll” from the given values

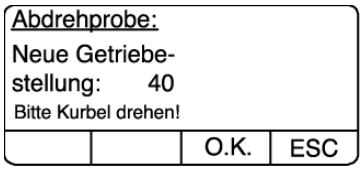
The actual quantity “Ist” is the real yielded seed quantity.

- Now weigh the actual quantity in the troughs
- Input this actual quantity using the “+/- keys”



- Confirm input with OK

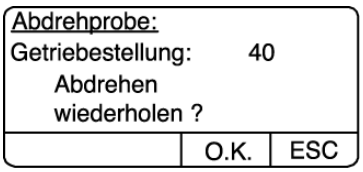
The programme calculates the new gearing position



- If a greater gearing position is calculated, the request “Please turn handle” appears because the drive must be adjusted upward.
- Turn the crank handle until the new gearing position is started.
- If a smaller gearing position is calculated, this will be started immediately.
- Turning the crank handle does not apply.

If the gearing position is started, the inquiry appears asking if the calibration trial (Abdrehprobe) should be repeated.

- With “OK” (key F3) the calibration trial (Abdrehprobe)



  can be repeated
- The programme goes back to “Select calibration areas” (Abdrehfläche auswählen)
- Calibration is ended with ESC
- The programme goes back to “(Select calibration trial/calibration aid” (Abdrehprobe/Abdrehhilfe auswählen)

Note!

The calibration menu (Abdrehmenü) can be exited in the following way:

Use keys

F4, MENU, ha

MAIN,

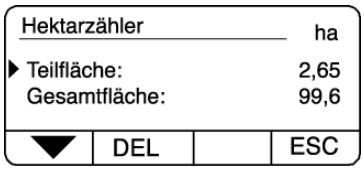
or

Hectare meter

- Press **"Hectare meter" key** ha
  - The power Control has 2 hectare meters at its disposal

  Shows the actual meter stand of the
  - reference surface hectare meter and
  - total surface hectare meter

  The menu is exited with ESC (F4).



- **Erase reference surface hectare meter**
  - Select "reference surface" using arrow key (F1)
  - ERASE with (F2) key
  - Value set at 0

- **Erase total surface hectare meter**
  - Select "total surface" using arrow key (F1)
  - ERASE with (F2) key
  - Value set at 0

  In this process both Reference surface" and "Total surface" hectare meters will always be set at 0 value.

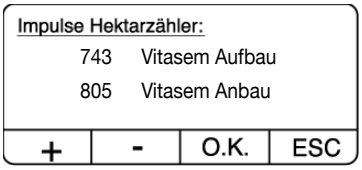
Calibrate hectare meter

To ensure a correct hectare meter function, the control must know how many impulses the tail wheel or the wheel sensor delivers over a distance of 100m.

- Ascertaining the number of impulses can be achieved in 2 ways
  - Directly input the number of impulses according to the information in the machine operator's manual.
  - A 100m equalization (is the more exact way).

Directly input the number of impulses

- Press **"Special menu" key** MENU
  - Select "Hectare meter impulses" using arrow keys



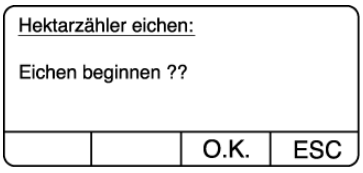
  - Confirm with OK
  - Using the +/- keys input the number of impulses specific to the machine according to the operator's manual.
  - save the input with OK (F3)

A 100m equalization

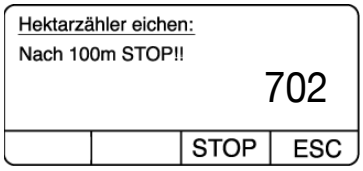
Adapting the hectare meter to the ground conditions.

- Peg out a 100m distance on the field and position tractor at the starting point.

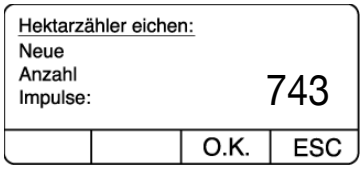
- Press **"Special menu" key** MENU
  - Select "100m equalization" with arrow keys
  - Confirm with OK
- Confirm "Begin calibration" with OK



  - Now drive off with the tractor
  - The control counts the impulses from the hectare meter sensor
- Press "STOP" after 100m



  - The new impulse value for the hectare meter is shown



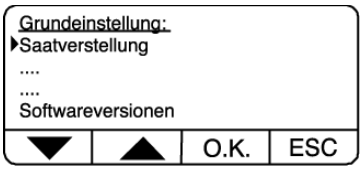
  - Save the result with OK and then back to main menu with ESC

  Reject result with "ESC" and retain old values. Back to main menu.

Electronic seed quantity adjustment

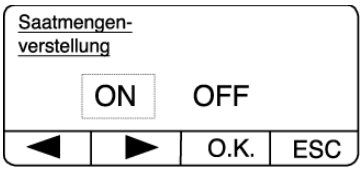
Press **"Special menu" key** MENU

- Base setting menu appears



  - Select menu level using arrow keys
    ▶ **Seed quantity adjustment**
  - Confirm with OK

- Select "ON" using arrow keys

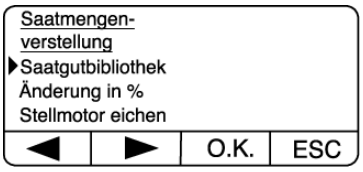


  - Confirm with OK

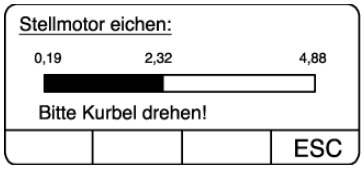
  (If "OFF" had been previously selected, OK must be pressed until an acoustic signal is heard.).

Calibrate servomotor

- Select "Calibrate servomotor" using arrow keys
  - Confirm with OK



- The servomotor is adapted to the gearing
  - The instruction "Please turn crank handle!" appears

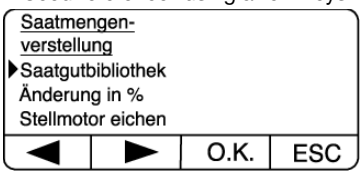


  (please turn handle)

  - Now turn the crank handle at the gearing front end.
  - The gearing movement is registered through the hectare meter sensor.
  - The servomotor comes up to the upper stopper and saves this value.
  - Then the lower stopper is reached and the value at that point is saved.
  - After that the actual gearing position is arrived at, which equals the desired seed quantity.
  - Calibration is finished
  - Finish crank handle rotations and exit the menu with ESC.

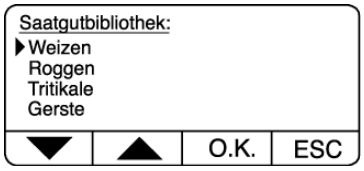
Seed reference

- Select "Seed reference" using arrow keys



  - Confirm with OK

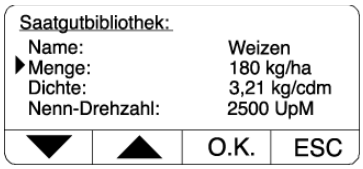
- Select "Seed" using arrow keys
  - The arrow always points at the last processed and with that active seed.



  - Select seed with OK or process adjustments.

    (OK must possibly be pressed for a few seconds until the parameter indicator appears.)

The seed reference contains 15 various seed types that the user can alter as desired (12 seed types are preset).



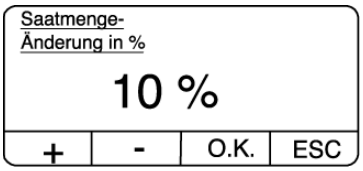
The following information is assigned per seed:

Name:	max. 15 characters
Quantity:	in kg/h
Density:	in kg/dm3
Nominal speed:	in rpm

- If the arrow is moved onto a parameter and OK is pressed, then this can be altered.
- To save the alteration, press OK until an acoustic signal is heard.
- In the seed menu and calibration menu (Abdrehmenü) the last processed seed is always activated.

Alteration in %

- Select "Alteration in %" using arrow keys



  - Confirm with OK

- The percentage can be adapted to the relevant needs.
- In the seed menu the user has the possibility to raise or lower the seed quantity by a certainpercentage.
- The value can be altered using the +/- keys, and be saved by pressing long on the OK key.

Note!

With help from the electronic seed quantity adjustment, the seed quantity can be adjusted exactly from the tractor seat in comfort.

- Gear lever adjustment takes place through an electro cylinder.

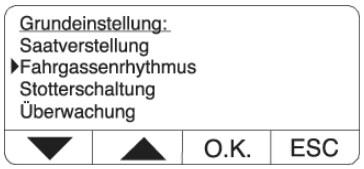
- Before the seed quantity adjustment can be used for the first time, the control must be calibrated with the electro cylinder.

- This is achieved through the "Calibrate the servomotor" function.

Driving lane switching

Press **“Special menu” key** MENU

- Menu base setting appears



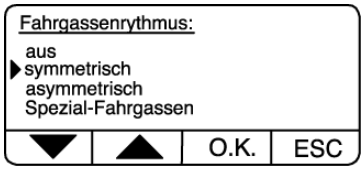
  - Select menu level using arrow keys
  - ▶ **Driving lane rhythm**
    - Confirm with OK

Turning driving lane switching off

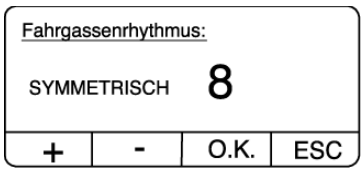
- Select “OFF” using arrow keys and confirm with OK
  - Driving lane switching is deactivated
- The indicator in the main menu for driving lane cycle and driving lane rhythm is now set at 0.

Symmetrical driving lanes

- Select “Symmetrical” using arrow keys and confirm with OK.



  - Select driving lane rhythm using +/- keys and confirm with OK

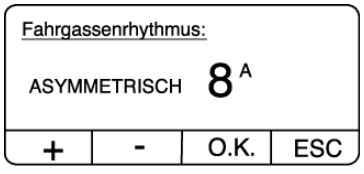


  - Possible driving lane rhythms:

    2, 3, 4 ,5 ,6 ,7 ,8 ,9, 10 ,11, 12, 13, 14, 15

Asymmetrical driving lanes

- Select “Asymmetrical” using arrow keys and confirm with OK
  - Select driving lane rhythm using +/- keys and confirm with OK



  - Possible driving lane rhythms:

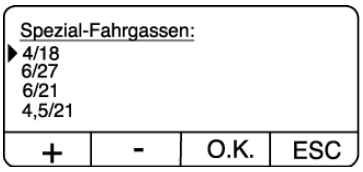
    2^A, 4^A, 6^A, 8^A , 10^A , 12^A, 14^A

Special driving lanes

Special driving lanes are special types

A selected timing sequence here always qualifies a special driving lane elements order on the seed drill.

- Select “Special driving lane” (Spezial-Fahrgasse“) using arrow keys and confirm with OK
  - Select driving lane rhythm using +/- keys and confirm with OK



  - Timing 4/18:

    Drill machine working width: 4 meters

    Trailing implement (fertilizer sprayer or spreader): 18 meters
  - Timing sequence:

    1L, 2, 3, 4, 5R, 6, 7, 8, 9, 10R, 11, 12, 13, 14L, 15, 16, 17, 18

    L = left side switched

    R = right side switched

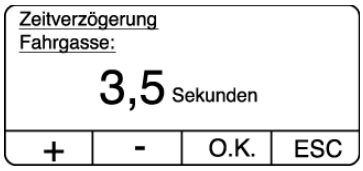
Driving lanes meter

Relaying the driving lane cycle takes place automatically through the “Running gear extended” sensor

- A time-invariant for relaying can be set
  - This can be necessary to prevent an unwanted relay when the machine is briefly raised.

Press **“Special menu” key** MENU

- Menu base setting appears
  - Select menu level using arrow keys
  - ▶ **Time-invariant**
    - Confirm with OK
  - The value can be altered using the +/- keys, and be



saved by pressing long on the OK key.

See also section “driving lane cycle and driving lane rhythm in Power Control operation main menu”

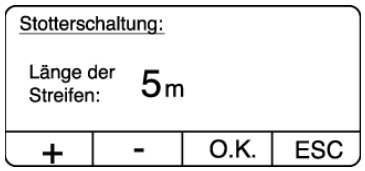
Stutter switch

With the stutter switch, when putting down the driving lane, the lane is not left open over the entire length but alternately seeded and left open.

Example: With a symmetrical cycle the left tractor lane is seeded for 5m while the right tractor lane is left open. After the 5m lanes are changed so that the right lane is seeded and left is left open, etc.

The section length must be entered into the operating device.

Press **“Special menu” key** MENU



- Menu base setting appears
  - Select menu level using arrow keys
  - ▶ **Stutter switch**
    - Confirm with OK
- Enter section length with +/- keys
  - Length settings of between 2 and 20 m
    - Confirm with OK

Switching the function on and off

The function is switched on or off with the “Stutter switch on/off” key

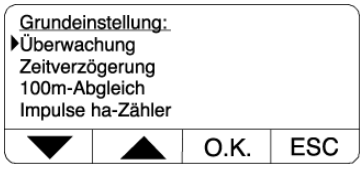
- As soon as it is switched on two vertical broken lines appear next to the driving lanes meter.

Monitoring functions

The Power Control can monitor the following machine functions: seed shaft, level, blower rpm, and calibration flaps.

Press **“Special menu” key** MENU

- Menu base setting appears

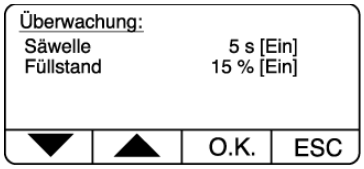


  - Select menu level using arrow keys
  - ▶ **Monitoring**
    - Confirm with OK

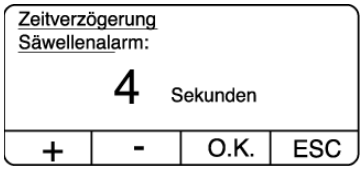
Monitoring: Seed shaft

Whether the dosing shaft turns with the tail wheel is monitored here.

- Select “Seed shaft” using arrow keys and confirm with OK.



  - Select “Seed shaft monitoring ON or OFF” using arrow keys and confirm with OK.
- With “Seed shaft monitoring ON” the “Time-invariant for seed shaft alarm” menu is called up.

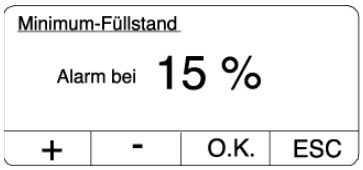


  - Enter time-variant with +/- keys
    - Adjustable in 1 sec steps from 1 to 20 secs .
  - Confirm with OK

Monitoring: Level

The tank content is acquired and monitored through an analogue level measurement.

- Select “Level” using arrow keys and confirm with OK.
  - Select “Level monitoring ON or OFF” using arrow keys and confirm with OK.
- With “Level monitoring ON” the “Minimum level” menu is called up.



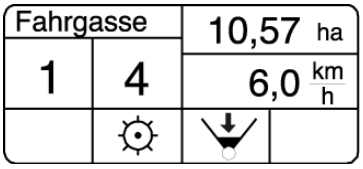
  - Enter minimum with +/- keys
    - Adjustable in 5% steps from 5 to 50% .
  - Confirm with OK

Note!

Basically it is so: If a monitoring function is deactivated, the respective symbol in the main menu fades out and no alarm will occur.

Alarms

- Monitoring will only become active when the seed monitor registers speed.
- If an activated monitor reacts then a corresponding alarm will respond.
  - An optical (blinking indicator) and acoustic alarm (intermittent tone)

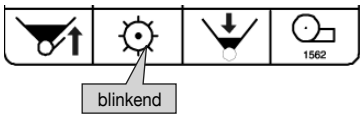


- Pressing the keys below shows the alarm report in total display.
  - With the instruction “Erase” the intermittent tone is suppressed (press key F1).
  - The optical remains however.
  - The acoustic alarm becomes active again if relaying of the driving lane through the driving lane sensor occurs, that is after driving through a U-turn.
  - Return to the main menu with the ESC key

Seed shaft alarm

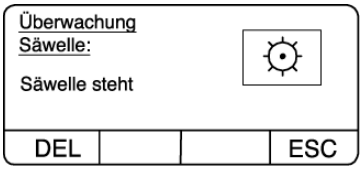
The seed shaft rotation is checked through the seed shaft sensor.

- If the seed monitor registers no impulses within



the pre-programmed time, an optical and acoustic alarm is triggered.

- Pressing the “F2” key below shows the alarm report



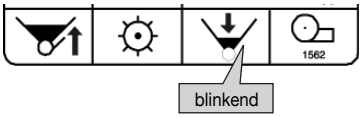
in total display.

= Seed shaft monitor: Seed shaft at standstill

- ERASE (see above)

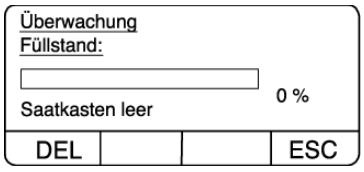
Level alarm

If seed level falls below a minimum level in the seed container, an optical and acoustic alarm is triggered.



- Pressing the “F3” key below shows the alarm report in total display

= Level monitor: Seed container is empty



- ERASE (see above)

Note!

Optical alarm: blinking indicator

Acoustic alarm: intermittent tone

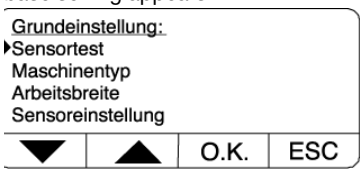
The alarms will only become active at a speed of 1 km/h

Sensor test

The sensor test enables all sensors, the servomotor and the onboard voltage to be checked.

Press **“Special menu” key** MENU

- Menu base setting appears



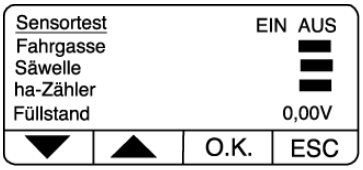
- Select menu level using arrow keys

  ▶ **Sensor test**

  - Confirm with OK

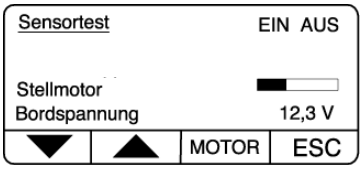
In the first screen check the sensors for:

driving lane, seed shaft, hectare meter and level:



- Metal on front of sensor: bar to ON
- No metal in front of sensor: bar to OFF

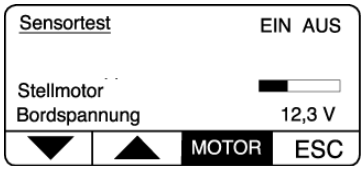
- Switch to second screen: press arrow keys
- Back to main menu: press ESC



In the second screen check the sensors for:

blower and calibration flaps:

- The actual position of the servomotor and the onboard voltage is shown
- In addition the electro-cylinder can be moved manually



- Switch to first screen: press arrow keys
- Back to main menu: press ESC

SUPPLEMENT

The original cannot be copied ...

GB

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Original inside

- **Quality and precise fitting**
  - Operating safety.
- **Reliable operation**
- **Longer lasting**
  - Economy
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Be sure you purchase the ”Original” with the cloverleaf symbol!

PÖTTINGER

Recommendations for work safety

All points refering to safety in this manual are indicated by this sign.

1.) Defined use

a. See "Technical Data".

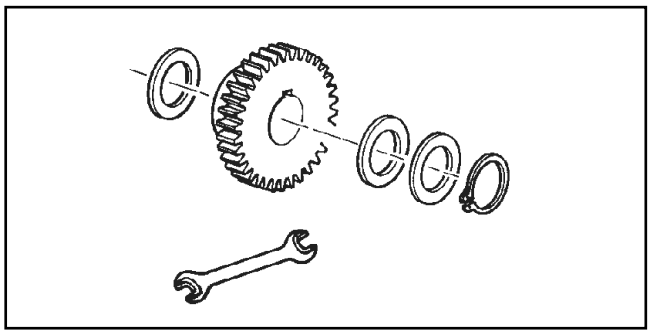
b. The keeping of operating, service and maintenance requirements layed down by the manufacturer also come under the heading of "defined use".

2.) Spare parts

a. The **original components and accessories** have been designed especially for these machines and appliances.

b. We want to make it quite clear that components and accesories that have not been supplied by us have not been tested by us.

c. The installation and/or use of such products can, therefore,



negatively change or influence the construction characteristics of the appliance. We are not liable for damages caused by the use of components and accessories that have not been supplied by us.

d. Alterations and the use of auxiliary parts that are not permitted by the manufacturer render all liability invalid.

3.) Protection devices

All protection devices must remain on the machine and be maintained in proper condition. Punctual replacement of worn and damaged covers is essential.

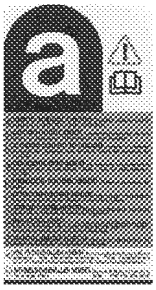
4.) Before starting work

a. Before commencing work, the operator must be aware of all operating devices and functions. The learning of these is too late after having already commenced operation!

b. The vehicle is to be tested for traffic and operating safety before each operation.

5.) Asbestos

- Certain sub-supplied components of the vehicle may contain asbestos due to technical reasons. Observe the warning on spare parts.



6.) Transport of persons prohibited

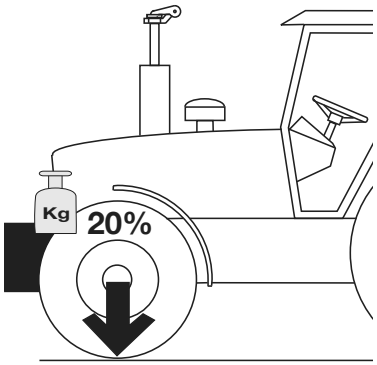
a. The transport of persons on the machine is not permitted.

b. The machine may only be driven on public roads when in the position stipulated for road transport.

7.) Driving ability with auxiliary equipment

a. The towing vehicle is to be sufficiently equiped with weights at the front or at the rear in order to guarantee the steering and braking capacity (a minimum of 20% of the vehicle's tare weight on the front axle).

b. The driving ability is influenced by ground conditions and by the auxiliary equipment. The driving must be adapted to the corresponding terrain and ground conditions.



c. When driving through curves with a connected appliance, observe the radius and swinging mass of the appliance.

d. When travelling in a curve with attached or semimounted implements, take into account the working range and swing mass of the implement!

8.) General

a. Before attaching implement to three-point linkage, move system lever into a position whereby unintentional raising or lowering is ruled out!

b. Danger of injury exists when coupling implement to tractor!

c. Danger of injury through crushing and cutting exists in the three-point linkage area!

d. Do not stand between tractor and implement when using three-point linkage external operation!

e. Attach and detach drive shaft only when motor has stopped.

f. When transporting with raised implement, secure operating lever against lowering!

g. Before leaving tractor, lower attached implement to the ground and remove ignition key!

h. Nobody is to stand between tractor and implement without tractor being secured against rolling using parking brake and/or wheel chocks!

i. For all maintenance, service and modification work, turn driving motor off and remove universal drive.

9.) Cleaning the machine

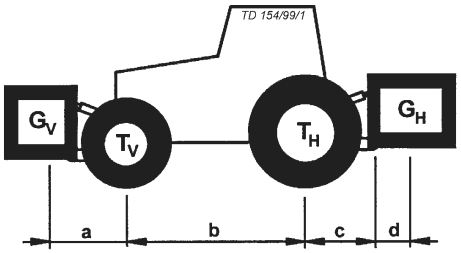
Do not use high-pressure washers for the cleaning of bearing- and hydraulic parts.

Combination of tractor and mounted implement

The mounting of implements on the front or rear three point linkage shall not result in exceeding the maximum permissible weight, the permissible axle loads and the tyre load carrying capacities ot the tractor. The front axle of the tractor must always to be loaded with at least 20 % of the unladen weight of the tractor.

Make sure before buying an implement that these conditions are fulfilled by carrying out the following calculations or by weighing the tractor/implement combination.

Determination of the total weight, the axle loads, the tyre load carrying capacity and the necessary minimum ballasting



For the calculation you need the following data:

T_L [kg]	unladen weight of tractor	1	**a** [m]	distance from centre of gravity for combined front mounted implement/front ballast to front axle centre	2 3
T_V [kg]	front axle load of unladen tractor	1			
T_H [kg]	rear axle load of unladen tractor	1	**b** [m]	Tractor wheelbase	1 3
G_H [kg]	combined weight of rear mounted implement/rear ballast	2	**c** [m]	distance from rear axle centre to centre of lower link balls	1 3
G_V [kg]	combined weight of front mounted implement/front ballast	2	**d** [m]	distance from centre of lower link balls to centre of gravity for combined rear mounted implement/rear ballast	2

1 see instruction handbook of the tractor
2 see price list and/or instruction handbook of the implement
3 to be measured

Consideration of rear mounted implement and front/rear combinations

1. CALCULATION OF MINIMUM BALLASTING AT THE FRONT $G_{V\ min}$

Record the calculated minimum ballasting which is needed at the front of the tractor into the table.

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

Front mounted implement

2. CALCULATION OF THE MINIMUM $G_{H\ min}$

$$G_{H\ min} = \frac{G_V \bullet a - T_H \bullet b + 0{,}45 \bullet T_L \bullet b}{b+c+d}$$

Record the calculated minimum ballasting which is needed at the rear of the tractor into the table.

3. CALCULATION OF THE REAL FRONT AXLE LOAD $T_{V\ tat}$

(If with the front mounted implement (G_V) the required minimum front ballasting ($G_{V\ min}$) cannot be reached, the weight of the front mounted implement has to be increased to the weight of the minimum ballasting at the front!)

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

Record the calculated real front axle load and the permissible front axle load of the tractor into the table.

4. CALCULATION OF THE REAL TOTAL WEIGHT G_{tat}

(If with the rear mounted implement (G_H) the required minimum rear ballasting ($G_{H\ min}$) cannot be reached, the weight of the rear mounted implements has to be increased to at least the weight of the minimum ballasting at the rear!)

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

Record the calculated real and the permissible total weight given in the instruction handbook for the tractor into the table.

5. CALCULATION OF THE REAL REAR AXLE LOAD $T_{H\ tat}$

Record the calculated real and the permissible rear axle load given in the instruction handbook for the tractor into the table.

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

6. TYRE LOAD CARRYING CAPACITY

Record double the value (two tyres) of the permissible load carrying capacity into the table (see for instance documentation provided by the tyre manufacturer).

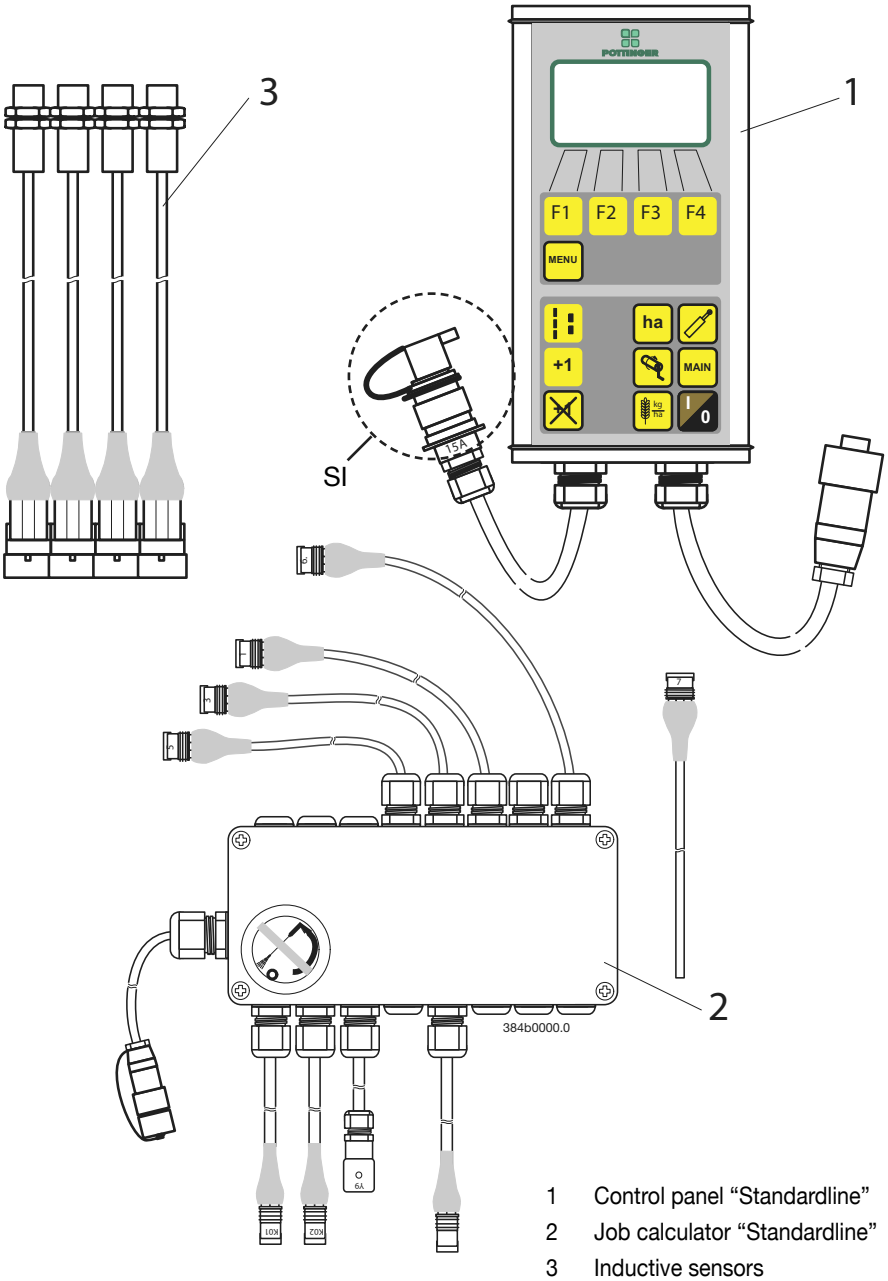
Table

	Real value according to calculation		Permissible value according to instruction handbook		**Double** permissible tyre load carrying capacity (two tyres)
Minimum ballasting front/rear	/ kg		---		---
Total weight	kg	≤	kg		---
Front axle load	kg	≤	kg	≤	kg
Rear axle load	kg	≤	kg	≤	kg

The minimum ballasting has to be attached to the tractor either in form of a mounted implement or ballasting weight!

The calculated values must be less or equal (<) the permissible values!

Layout plan - Control panel

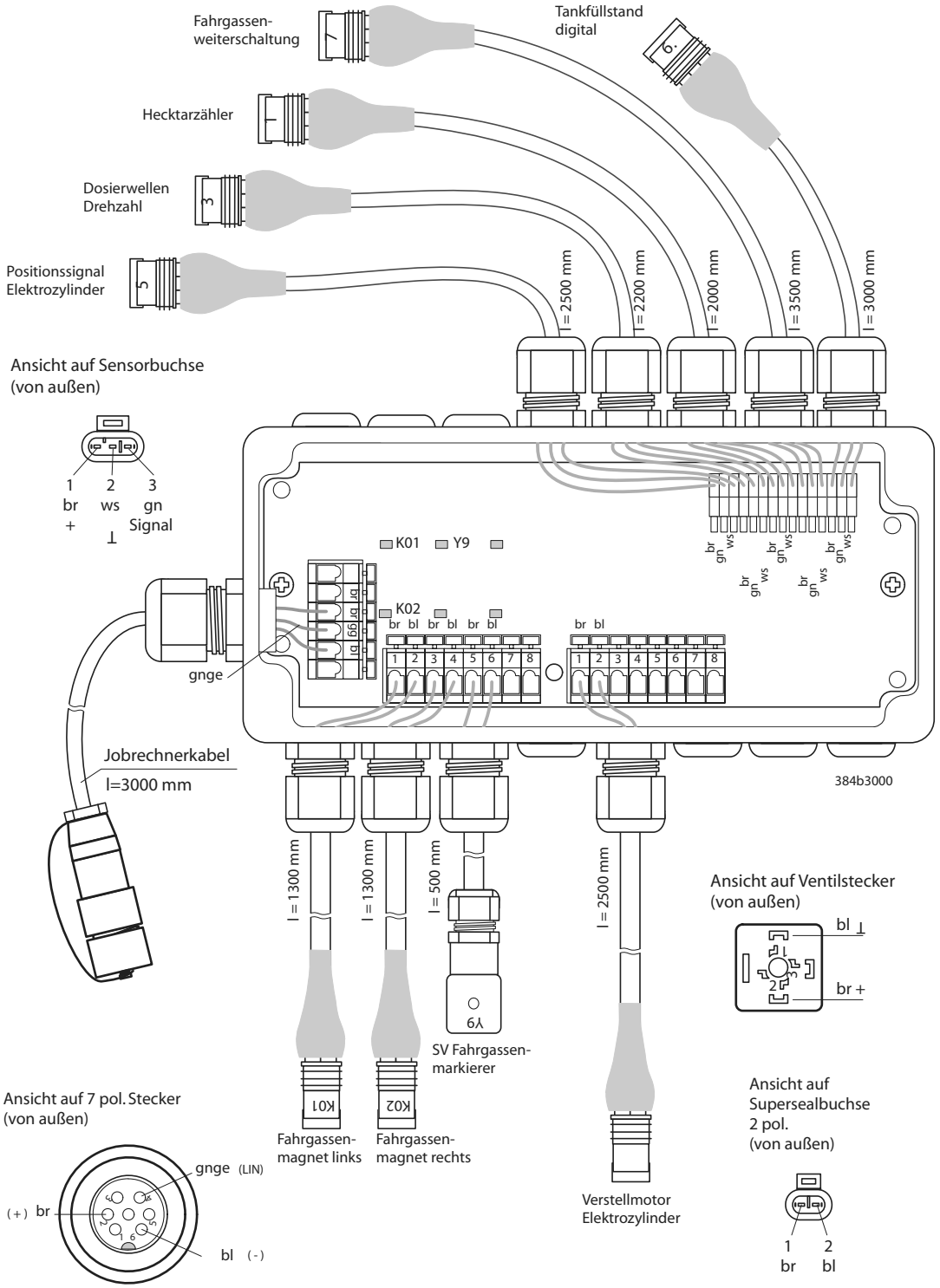


1 Control panel “Standardline”
2 Job calculator “Standardline”
3 Inductive sensors
SI Fuse

Safeguarding the electrical unit

The electrical unit for the operation functions is protected with a 15A fuse.

Job calculator layout plan “Standardline”



Note!

All connector diagrams are viewed from outside.

Colour code:

bl	blue
br	brown
gn	green
gnge	green/yellow
gr	grey
rt	red
sw	black
ws	white

GB Sowing tables

Nr. 99 8521.GB.40B.0

Seed drills

VITASEM
VITASEM A

Sowing tables

Seed drills

VITASEM
VITASEM A

Follow the instructions in the operating manual!

Because of the various thousand grain weights (Tausandkorngewichte – TKG), dressing and other seed –specific characteristics, the values in the sowing table are only shown as approximate values. In every instance a turning test should be carried out before sowing.

Important instructions!

1. A pre-turn of the sowing shaft is needed to fill the sowing elements.
   - ca. 10 rotations of the sowing shaft before the actual turning test
   - with grains around 1 turning trough full. Beforehand align the machine exactly horizontal behind the seed-box top

   After ca. 500m stretch a check of the control turning should be carried out.

2. With the upper discharge system seed types up to 3.5 mm thick (all grain types in the lower discharge system)are fundamentally drilled in chute position ”0”.

   Chute position ”1” is used when there is spraying or destruction (audible cracks) of seeds in the lower discharge system with large numbers of seed parts falling out.

3. With the upper discharge system, e.g. of rape, adjusting of the shut-off slide takes place depending on the free flow of seeds. The necessary practical monitoring of the free flow and the required adjusting of the shut-off slide is described in the chapter entitled ”Grain test” in the operating manual and on page 2 of the sowing table.

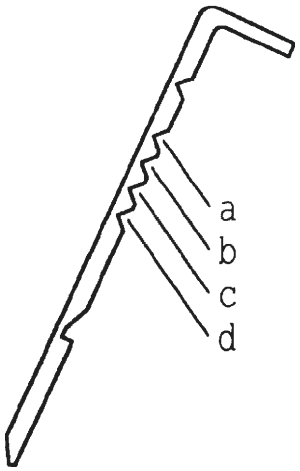
4. If rape-seeds are sown in the lower discharge system, fine seed finger is then always engaged and chute position ”0” is used.

5. In the lower discharge system with very low seed amounts a gear-setting of under 10 is necessary. Then with the support halve the sowing shaft speed and double the gear setting value. Next turn again.

Grain test (for the upper discharge system)

With the upper discharge system the correct position of the shut-off valve must absolutely be observed. This shutter position is dependent on the free flow of the seeds. It can be ascertained by the grain test.

To engage the correct shutter position the following procedure must be followed:



- **Preparing the grain test**
  - close the valve
  - fill the seed box with seeds (rape)
  - place the emptying trough on the seed line beam (see ”emptying” page 8)
  - lock the shut-off valve in position ”a”
  - the chute remains in position ”0”
  - make at least 10 sowing shaft pre-turns

Carrying out the grain test:

- The grain is to be collected in one or more spouts while the crank handle is turned until the sowing shaft has completed an exact rotation.

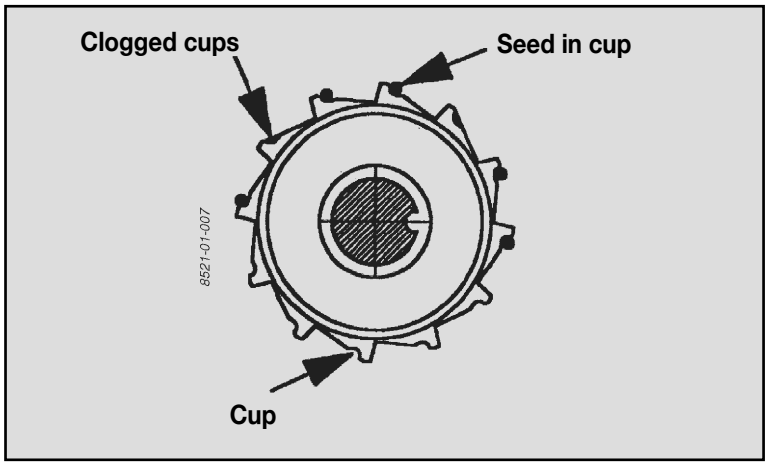
  The correct shutter position is reached when 36+/-4 seeds per spout have been run out in one sowing shaft rotation.

  If in shutter position ”a” more than 40 seeds per sowing shaft rotation are counted, the seed is not suitable for the upper discharge system.

  If less than 32 seeds per sowing shaft rotation are counted the shut-off slides are to be locked in the next biggest shutter position (first ”b”, then ”c” or ”d”).

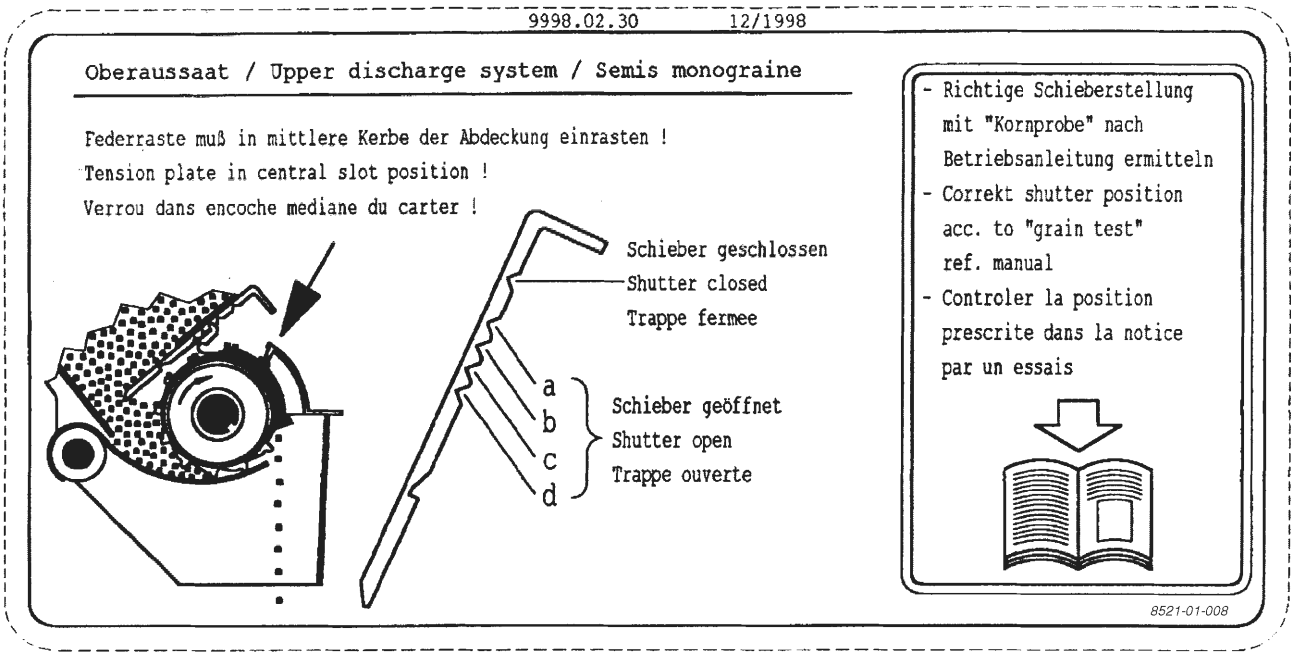
Important instruction

- after every change in the shutter position at least 10 sowing shaft rotations should again be made
- the grain test should also be carried out during the work in order that the orderly function of the upper discharge system is guaranteed. Sometimes the seed amount is reduced through clogged cups. When this happens the cups should be cleaned out with a brush.

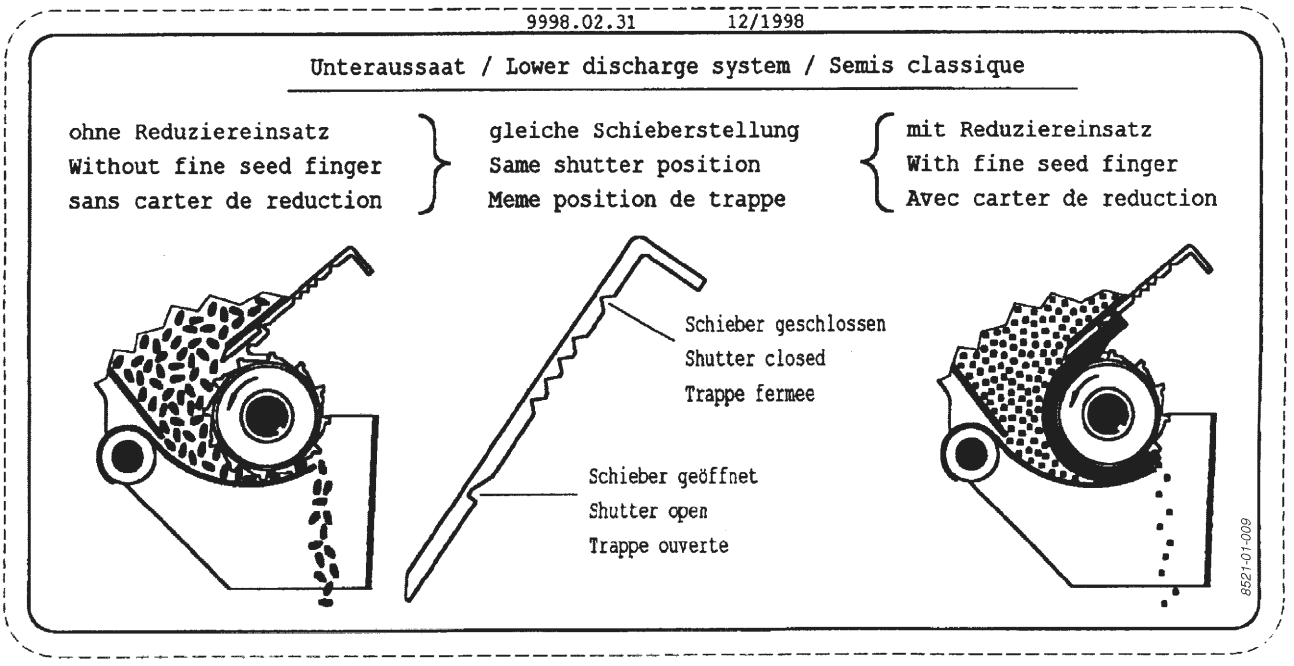


Position of the shut-off slide

1. for upper discharge system



2. for lower discharge system



VITASEM sowing table

Seed		Barley							Wheat, rye, triticale						
Chute position		0*							0*						
Shutter position		Fully opened							Fully opened						
Sowing shaft rotation direction		Lower discharge system							Lower discharge system						
Additional accessories		-							-						
Tier spacing (cm)		10	12	13	14	15	16	17	10	12	13	14	15	16	17
Gear choice	5														
	10														
	15														
	20														
	25	94							109	91	84				
	30	112	93						132	110	101	94	88		
	35	131	109	100	93				154	128	118	110	102	96	90
	40	149	124	114	106	99	93		175	146	135	125	117	109	103
	45	168	140	129	120	112	105	99	197	164	151	140	131	123	115
	50	190	158	146	135	126	118	111	220	183	169	157	146	137	129
	55	205	171	158	146	137	128	121	241	201	185	172	161	151	142
	60	224	187	171	160	150	140	132	262	219	202	188	175	164	154
	65		202	186	173	162	151	142		237	218	203	190	178	167
	70			200	186	174	162	153			234	218	204	192	180
	75				200	186	174	164				234	219	205	193
	80					199	185	175					233	219	206
	85						197	185						232	218
	90							197							231

Important: the seed amounts provided in the sowing table in kg/ha are only standard values. The exact seed amounts can only be ascertained by a turning test

* seed types up to 3.5 mm thick (all grain types) are fundamentally drilled with chute position ”0”.

Chute position ”1” is used with seeds of over 3.5mm thick when it comes to spraying or destroying (audible cracks) the seeds.

VITASEM sowing table

Seed		Oats							Pea						
Chute position		0*							4 oder 5 **						
Shutter position		Fully opened							Fully opened						
Sowing shaft rotation direction		Lower discharge system							Lower discharge system						
Additional accessories		-							-						
Tier spacing (cm)		10	12	13	14	15	16	17	10	12	13	14	15	16	17
Gear choice	5														
	10								122	102					
	15								184	153	141	131	122	115	
	20								245	204	188	175	163	153	145
	25								306	255	235	220	205	191	180
	30	80							367	306	282	262	245	230	216
	35	94	78						428	357	330	305	286	268	252
	40	107	89	82					490	408	376	350	326	305	288
	45	120	100	92	86				550	460	424	393	367	345	325
	50	133	111	102	95	89	83		612	510	470	437	408	382	360
	55	146	122	117	104	98	91	86							
	60	161	134	124	115	107	100	94							
	65	174	145	134	124	116	109	102							
	70	187	156	144	134	125	117	110							
	75		167	154	143	134	125	118							
	80			164	152	143	133	125							
	85				162	152	142	133							
	90						150	142							

Important: the seed amounts provided in the sowing table in kg/ha are only standard values. The exact seed amounts can only be ascertained by a turning test

* seed types up to 3.5 mm thick (all grain types) are fundamentally drilled with chute position ”0”.
Chute position ”1” is used with seeds of over 3.5mm thick when it comes to spraying or destroying (audible cracks) the seeds.

VITASEM sowing table

Seed		Grass							Phacelia						
Chute position		0							0						
Shutter position		Fully opened							Fully opened						
Sowing shaft rotation direction		Lower discharge system							Lower discharge system						
Additional accessories		Rotating agitator shaft "out" Hold agitator finger straight							Fine seed finger						
Tier spacing (cm)		10	12	13	14	15	16	17	10	12	13	14	15	16	17
Gear choice	5	12	10,0	9,2	8,5	8	7,5	7	3,7	3,1	2,8				
	10	24	20	18	17	16	15	14	7,4	6,2	5,7	5,3	5,0	4,6	4,3
	15	36	30	28	26	24	22	21	11,0	9,2	8,4	7,9	7,4	6,9	6,4
	20	48	40	37	34	32	30	28	14,8	12,3	11,3	10,5	9,8	9,2	8,7
	25	60	50	46	43	40	37	35	18,5	15,4	14,2	13,2	13,2	11,5	10,8
	30	72	60	55	51	48	45	42	22,2	18,5	17,0	15,8	14,8	13,8	13,0
	35	85	71	66	61	57	53	50		21,6	19,9	18,5	17,3	16,2	15,2
	40	97	81	75	69	65	60	57			22,8	21,2	19,8	18,5	17,4
	45												22,2	20,8	19,6
	50													23,1	21,7
	55														
	60														
	65														
	70														
	75														
	80														
	85														
	90														

Important: the seed amounts provided in the sowing table in kg/ha are only standard values. The exact seed amounts can only be ascertained by a turning test

VITASEM sowing table

Seed		Rape							Mustard						
Chute position		0							0						
Shutter position		Fully opened							Fully opened						
Sowing shaft rotation direction		Lower discharge system							Lower discharge (reduced) system						
Additional accessories		Fine seed finger*							Fine seed finger*						
Tier spacing (cm)		10	12	13	14	15	16	17	10	12	13	14	15	16	17
Gear choice	5	3,6	3,0	2,8					5,4						
	10	7,2	6,0	5,5	5,1	4,8	4,5	4,2	10,8	9,0	8,3	7,7			
	15	10,8	9,0	8,4	7,6	7,2	6,7	6,3	16,2	13,5	12,5	11,6	10,8	10,1	9,5
	20	14,4	12,0	11,1	10,1	9,6	9,0	8,4	21,6	18,0	16,6	15,4	14,4	13,5	12,7
	25	18,0	15,0	13,9	12,7	12,0	11,2	10,5		22,5	20,8	19,3	18,0	16,8	15,9
	30	21,6	18,0	16,8	15,2	14,4	13,5	12,6					21,6	20,3	19,0
	35	25,2	21,0	19,5	17,7	16,8	15,7	14,7							
	40		24,0	22,3	20,2	19,2	18,0	16,8							
	45				22,8	21,6	20,2	18,9							
	50						22,4	21,0							
	55														
	60														
	65														
	70														
	75														
	80														
	85														
	90														

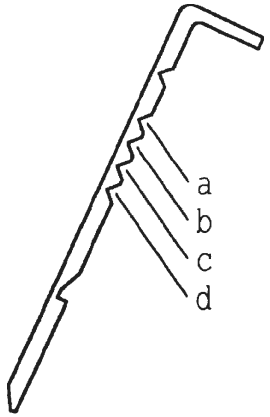
Important: the seed amounts provided in the sowing table in kg/ha are only standard values. The exact seed amounts can only be ascertained by a turning test

)* For foundations rape seeds and mustard seeds can also be sown without reducing sleeve.
Adjusting discharge rate is carried out using the accompanying coulter (see operating manual).

Rape

Upper discharge system

Chute position: 0



Slide position

1a for good flowing seed (incrusted, natural)

1b for normal flowing seed (powdered, abrasive)

1c for badly flowing seed (TGW > 6kg

1d for very good flowing seed and from vibrations caused through very clumpy, stony soil or vibration transference from agricultural implements.

Gear positionlung	Theoretical seed space (cm)	Max. speed (km/h)	Seed amount							
			TGW (thousand grain weight) = 5 g				TGW (thousand grain weight) = 4 g			
			Tier spacing 10cm		Tier spacing 12 cm		Tier spacing 10cm		Tier spacing 12 cm	
			kg / ha	K / m²	kg / ha	K / m²	kg / ha	K / m²	kg / ha	K / m²
80	8,8	5,5	5,4	108	4,5	90	4,3	108	3,6	91
70	10	6,2	4,7	94	3,95	79	3,75	94	3,2	79
60	11,8	7,3*	4,1	83	3,3	69	3,3	83	2,85	69
50	14,1	8,7*	3,4	67	2,8	56	2,7	67	2,25	56
40	17,8	8,7*	2,7	54	2,25	45	2,15	54	1,8	45
30	23,5	8,7*	2	41	1,7	34	1,65	41	1,4	35
20	35,5	8,7*	1,35	27	1,1	21,5	1,1	28	0,9	22

Max. speed for inclines from 15% is 3.5 km/h

* It is recommended that a max. speed of 6 km/h should not be exceeded

Important: The discharge rates in kg/ha as given in the seed table are only approximate values.
The exact discharge rate can only be determined through a trial run (= calibrating)

GB

PÖTTINGER

Appendix 1

EC Certificate of Conformity

conforming to EEC Directions 2006/42/EG

We PÖTTINGER Sätechnik GmbH

(name of supplier)

D-06406 Bernburg; Zimmerstr. 16

(full address of company - where this concerns authorized agents within the Common Market, also state the company name and manufacturer)

declare in sole responsibility, that the product

Seed drill

VITASEM A 251	Type: 8537
VITASEM A 301	Type: 8538
VITASEM A 401	Type: 8539

(make, model)

to which this certificate applies, conforms to the basic safety and health requirements of EEC Directions 2006/42/EG,

(if applicable)

and to the other relevant EEC Directions.

(title and/or number and date of issue of the other EEC Directions)

(if applicable)

To effect correct application of the safety and health requirements stated in the EEC Directions, the following standards and/or technical specifications were consulted:

(title and/or number and date of issue of standards and/or specifications)

(Place and date of issue)

(Name and job function of authorized person)

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