KONGSKILDE

DEMETER CLASSIC CS/CSA

Operating Instructions

Contents

Introduction

⚠️ Before using the seed drill read these operating instructions carefully.

Make sure that all safety instructions are distributed to other users.

Note that the terms left, right, forward and backward used in these instructions refer to the seed drill seen in the direction of travel. Proper operation without accidents and long seed drill life can only be guaranteed if all instructions and safety precautions are closely followed.

Application

The Demeter Classic seed drill is designed exclusively for general agricultural applications. All other purposes lie outside the scope of the machine and the manufacturer cannot be held liable for damage resulting from incorrect use. In such cases the user is entirely responsible for damage. Intended use is to be understood as operation in accordance with the information the manufacturer stipulates in operating, service and maintenance instructions.

The Demeter Classic seed drill may only be operated, serviced and maintained by persons who are conversant with the instructions, who are familiar with the machine, and who are aware of the dangers that can arise in using it.

The following accident prevention stipulations, normal safety rules, and health and traffic safety regulations must be observed unconditionally.

Unauthorised changes to the machine and its construction exempt the manufacturer from any form of responsibility or consequential damage and injury!

General safety and accident prevention stipulations

Before operating the seed drill and tractor, all traffic and operating safety measures must always be observed!

- In addition to the rules stated in these operating instructions, general safety rules and stipulations must be observed!

- The warnings and information labels give important information about reliable operation. Do not ignore them - they are there for your safety!

- Always observe current traffic regulations when driving on public highways!

- Before starting to operate the machine, make yourself familiar with the equipment and the operating elements and their function. It might be too late to do so when running!

- The tractor driver's clothes must be tight fitting. Loose clothes are an invitation to accidents!

- Before starting up, check to make sure that no one is near to the machine (especially children). Make sure you have good visibility!

- No persons other than the driver may be carried during operation or transport!

- Implements must be coupled correctly at the stipulated points!

- Remember to place supports when coupling or decoupling implements so that they do not tip up.

- Permissible axle loads, total weights and transport dimensions must not be exceeded!

- Transport equipment such as lights, warning signs and any protection devices must be checked and in position!

- Cables for releasing the three-point linkage quick coupling must hang loose so that they cannot release the coupling when the seed drill is lowered with the tractor lift.

- Never leave the cab while the tractor is moving!

- Driving, steering and braking characteristics can be affected by implements and weight. Make sure there is sufficient steering and braking capacity!

- The total length/width of tractor and implement must be taken into consideration when turning!

- The implement must only be operated when all protective devices are in working order!

- No persons other than the operator may be allowed in the working area!

- No person may be allowed in the turn and swing area!

- Hydraulically extendible parts may only be activated when no person is in the swing area!

- Remote controlled parts (e.g. hydraulic parts) present crushing and cutting hazards at certain points!

- Before leaving the tractor, lower the implement onto the ground, switch off the engine and remove the ignition key!

- No person may be allowed to stand between tractor and implement without the tractor being secured with the parking brake and/or chocks!

- Markers in transport position must be locked!

Built-on implements

- Before mounting or removing implements in the three-point linkage, control levers must be set so that unintentional raising or lowering cannot occur!

- When coupling to the three-point linkage, make sure that the coupling category of tractor and implement match each other!

- The three-point linkage area presents crushing and cutting hazards!

- Never stand between the three-point linkage and tractor or implement when operating the linkage!

- Check that the drawbars, etc. are secured against sideways movement when the implement is in its transport position!

- When driving on public highways with raised implement, the lift control lever must be secured against dropping!

The hydraulic system

- The hydraulic system is under high pressure!

- When connecting hydraulic cylinders the stipulations on connecting hoses must be observed!

- When hoses are connected to the tractor hydraulics, there must be no pressure on the tractor and implement hydraulics!

- When making hydraulic connections between tractor and implement the male and female couplings should be marked to prevent operating errors. If function connections are swapped (e.g. raise and lower functions are swapped over) the result could be dangerous!

- Hydraulic hoses should be regularly inspected and replaced if damaged, and before they become too old. New hoses must be of the same technical specification as stated by the original hose manufacturer.

- When looking for leaks, a suitable detection method is advisable to prevent damage!

- Escaping hydraulic fluid (oil) under pressure can penetrate the skin and cause severe injury! Such accidents can cause infection. Consult a doctor immediately!

- Before working on the hydraulics, lower the implement onto the ground. Release pressure from the system and stop the engine!

Tyres

- When working on the tyres, lower the implement onto the ground and use chocks to prevent rolling!

- Fitting tyres requires adequate knowledge and the correct tools!

- Repairs to tyres and wheels must only be carried out by authorised personnel using prescribed tools!

- Check tyre pressures regularly and ensure they are inflated to the prescribed pressure!

Maintenance

- Repair, maintenance, cleaning and inspection in relation to malfunction must only be carried out with the engine stopped!

- Under all circumstances, remove the ignition key!

- Nuts and screws must be inspected regularly and tightened if necessary!

- If maintenance work is carried out with the implement raised, it must always be well supported!

- When replacing sharp components, use the correct tools and wear gloves!

- Waste oil and grease must be disposed of in accordance with regulations!

- Always switch off electrical systems before working on them!

- When using electrical welding equipment on the tractor or implement, disconnect cables on generator and battery!

- Spare parts must be of the same specification as those stated by the manufacturer! Original spare parts meet this requirement!

Starting up

General

Seed drills are normally delivered ready for operation. However, for transport it can be necessary to supply some parts loose or not mounted in the actual working position.

- **Note! Do not lay loose parts down in the seed hopper as the agitation shaft might rotate and consequently be damaged when the machine is moved.**

Coupling the seed drill

The seed drill can be mounted either directly after the tractor or after a soil preparation implement, via the three-point linkage. The drawbar supplied is standard for category II. The bolt for the top link suits both category I and II. The top link must be adjusted so that the seed drill stands vertically during sowing. The lift arms must have a certain amount of clearance so that the seed drill is able to line up with the tractor during sowing. When attaching the seed drill to a soil preparation implement equipped with connection hooks, account must be taken of the required clearance of 825 mm. The drawbars must be secured so that they cannot disengage in operation. Normally the top link must be set in its upper position.

Note! Make sure that the seed drill does not collide with the tractor when the tractor lift is raised.

Lights

When driving the seed drill on public highways all regulations in relation to the transport of agricultural equipment, including those governing lights, reflectors and warning signs, must be observed.

Markers - Transport position

When transporting the seed drill on public highways the markers must be pushed in and placed in their holders.

Filling the seed hopper

Before filling the seed hopper the seed drill must be coupled to the tractor or stand on firm ground, with support legs in place so that it cannot tip. Make sure that no foreign bodies, e.g. pieces of paper, enter the seed hopper as these can block the delivery tubes. When the seed drill lid is lifted, the level indicator ball automatically lifts. On closing the lid, the ball comes down onto the seeds. Also make sure that the seed is distributed evenly in the hopper. If sowing takes place on slopes, the seed becomes displaced and causes the level indicator to give a false reading. Hopper dividers to prevent seed displacement can be supplied as extra equipment.

Note! If the seed hopper is to be filled with seed from sacks, the easiest method is to lay the sack above the open lid rather than down into the hopper.

Note! Do not place your hands down into the seed hopper when the agitation shaft is rotating!

Gear and seed drill settings

Gears

The gearing can be changed infinitely by loosening the adjustment handle with the cross key. The settings on the scale correspond to those in the sowing table. The higher the scale reading, the larger the seed rate.

Note! The cross key must be tightened firmly so that the gearing cannot adjust itself.

Fig. 1
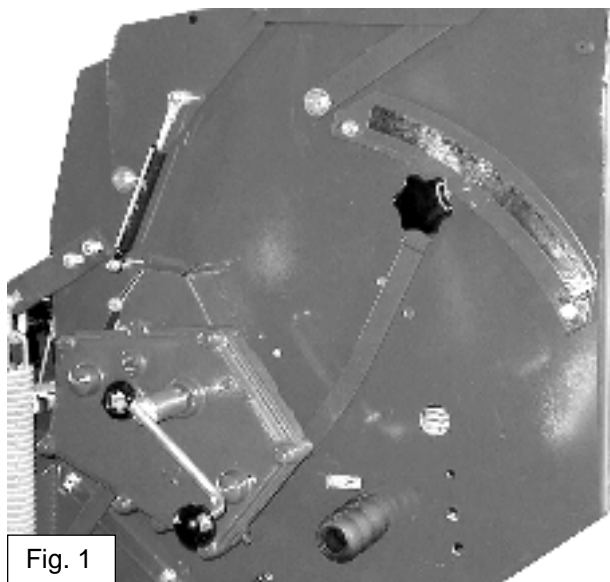
Combi seed rollers

Full seed roller:
This setting, where both roller halves are coupled in, is used for all types of grain and large seeds.

Fine seed roller:
This setting, where the righthand sowing roller half only is coupled in, is used for fine seeds.

Fig. 2
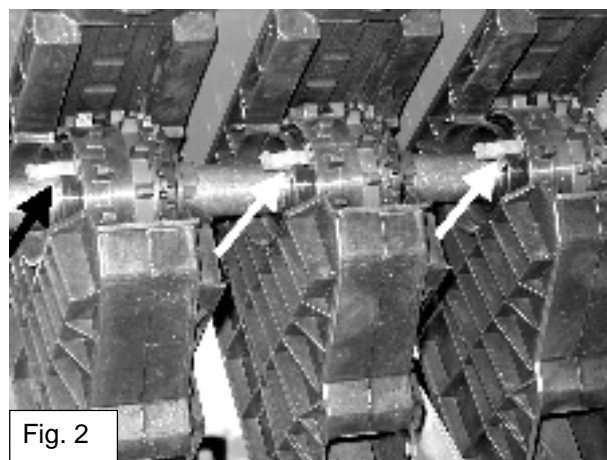
Coupling in and out seed roller halves:

Moving the changeover cam outwards uncouples the seed roller halves. These are then pressed against the seed hopper so that they cannot rotate.

Bottom flaps

To ensure gentle seed delivery, spring-loaded adjustable bottom flaps are placed under the combi seed roller. The adjusting lever (fig. 3) can be set in six different positions:

1st groove, e.g. rape
2nd groove, e.g. wheat
3rd groove, e.g. spelt
4th groove, e.g. lupines
5th groove, e.g. peas
6th groove, e.g. beans

Fig. 3
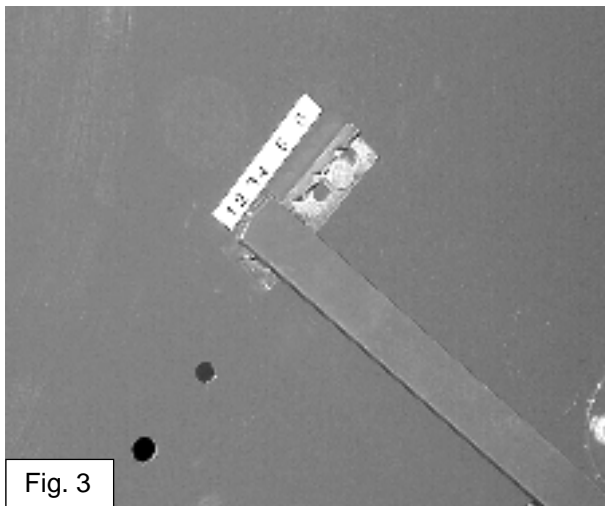
Note!
With large seeds (e.g. peas, beans) and depending on their size, grooves 5 or 6 are suitable. Quantity adjustments must not be made with the bottom flap lever because open flaps will result in irregular sowing while closed flaps might result in damaged seeds.

Setting the bottom flaps

a: **Check bottom flap pretension:**

•   On about three bottom flaps, measure the clearance with slide callipers (fig. 4) through the emptying flaps. (When taking the measurement the bottom flap lever must be in position 3).

•   With correct pretension the measurement must be 8.5 mm (fig. 4).
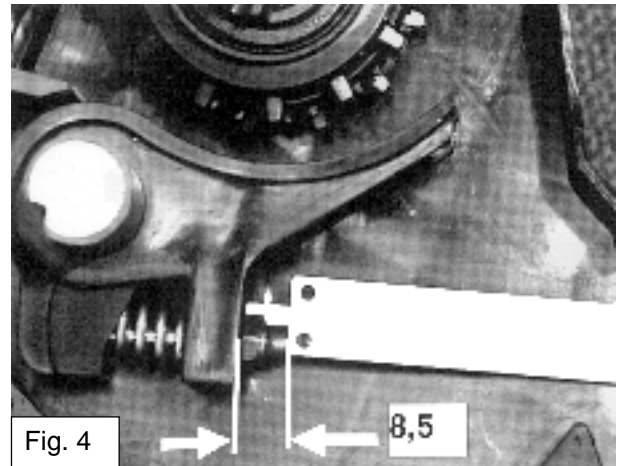
Fig. 4

b: **Setting of bottom flap clearance:**

•   Using an 8 mm socket spanner (fig. 5) to set the clearance as required (fig. 4).

•   When correcting the settings of the three bottom flaps chosen, note the average number of spanner turns required to produce the necessary pretension in these bottom flaps.

•   All bottom flaps can then be adjusted (without further measurement) by turning the spanner the average number of times.

Fig. 5
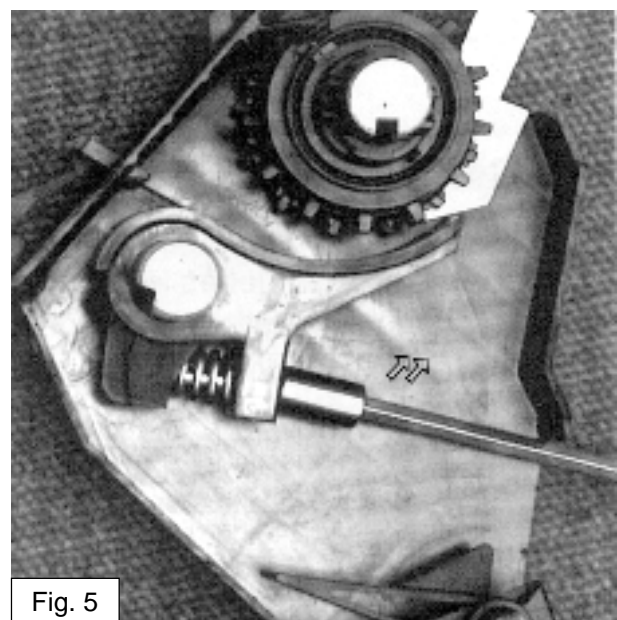
c: **Checking the bottom flap setting:**

• The bottom flap lever must be activated until slight resistance is met (excess force must not be used). In this position the setting element must be opposite the lever pointer for the bottom flaps (see fig. 6). If a variation occurs it must be corrected.

d: **Setting the setting element:**

• Loosen the screws in the setting element (fig. 6) and adjust to the correct position. Retighten the screws after adjustment.

Fig. 6
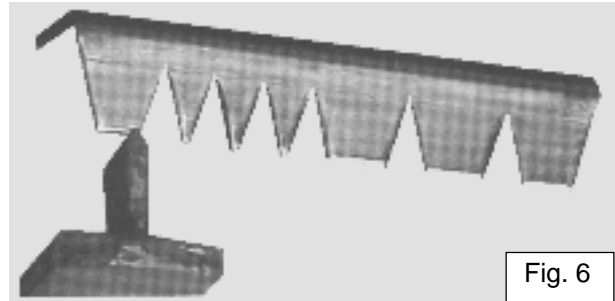
e: **Fine adjustment of seed roller bottom flap:**

• Using the adjustment gauge "E" (optional equipment) the bottom flap must be set precisely in relation to the seed roller.

• Set the lever for the bottom flaps in pos. 2 (fig. 3). Now guide the gauge between the row of the seed roller studs and seed hopper and push down towards the bottom flaps (figs. 7). Do not use excess force.

• The notched edge "K" must lie close to the upper edge of the feed box (figs. 8).

• Adjustments can be made with the setting screw (fig. 5). Turning the screw clockwise increases the distance between bottom flaps and seed roller, i.e. the gauge moves to a position below feed box edge "G". Turning the screw counterclockwise reduces the distance and the gauge moves to a position above the feed box edge "G".

Fig. 7

Fig. 8
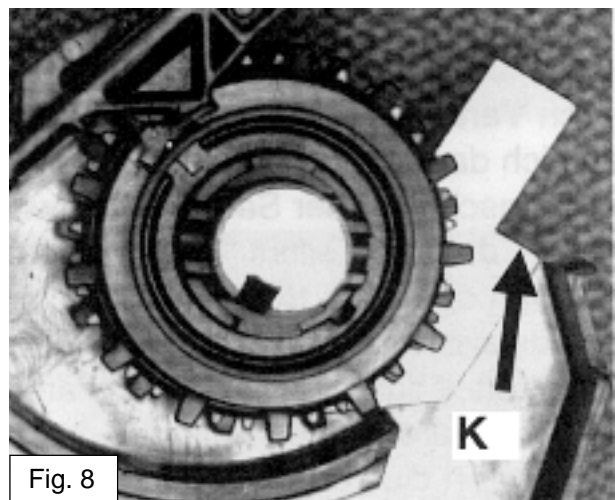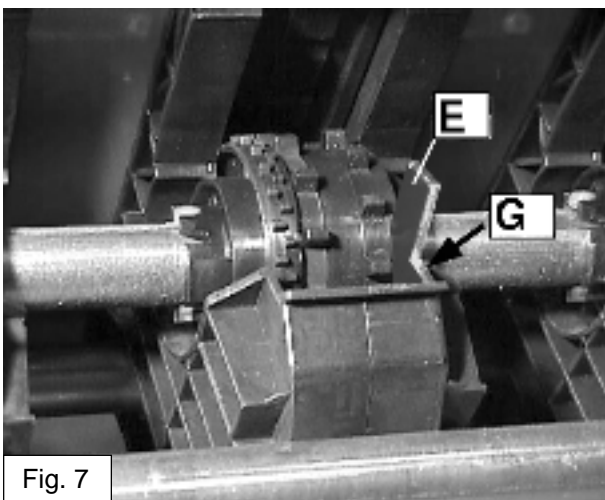
Seed shutter

The seed shutter can be moved in four stages to regulate the quantity of seed in the feed box (fig. 10).

Position „0" - to cut out a single row

Position „1" - for fine seed, e.g. rape

Position „2" - for all grain and other large seeds

Position „3" - for light seed with much chaff, e.g. grass

Warning:
The seed shutter must never be placed in an intermediate position as this will damage the spring action created by the groove positions.

Fig. 9

Fig. 10
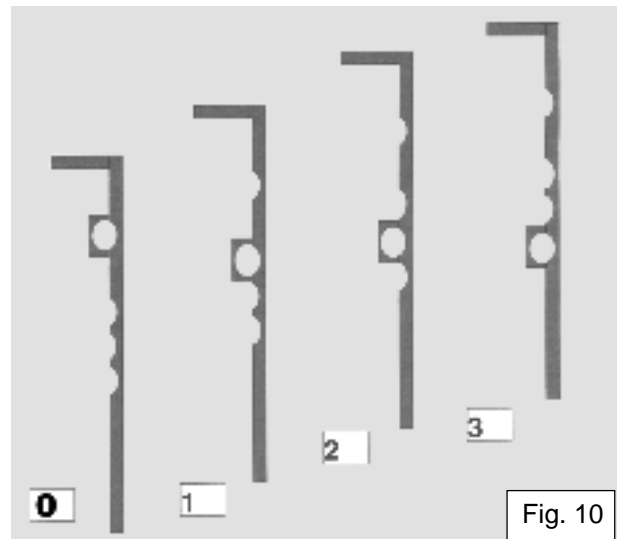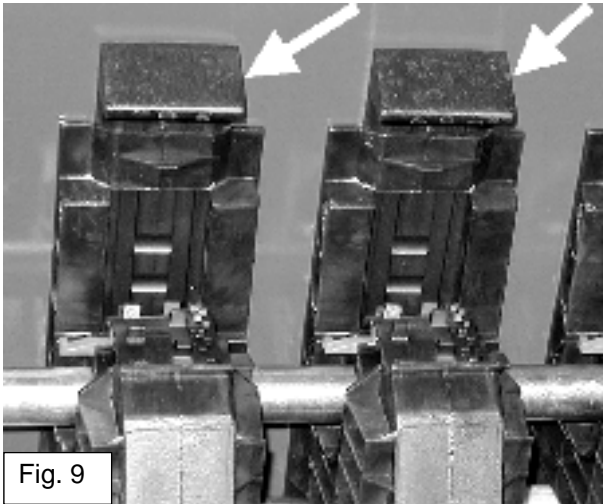
Agitation shaft

With fine seed the agitation shaft must be uncoupled. Remove the split pin from the chainwheel (fig. 11) and place in the marker fitting.

Note! The split pin must only be fitted as shown.

With very light types of grass seed it can be necessary to use a special agitation shaft for grass seed (extra equipment).

Fig. 11
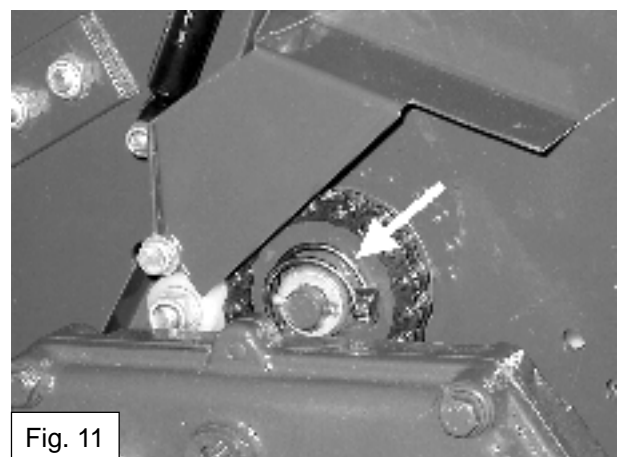
Test sowing

A test sowing can be conducted to check the quantity of seed necessary.

- Adjust gear, bottom flaps, seed shutter and seed roller as described.

- Half fill the seed hopper with seed.

- Fold down the emptying trough (fig. 13).

- Open the emptying flaps (fig. 14).

- Turn the gear crank (fig. 15) about 30 times and tip discharged seed back into the seed hopper.

- Turn the crank the necessary number of times (according to the table), depending on the working width and tyres (fig. 12).

Fig. 12	Calibration of the level					
Tyred wheel						
m	5.00-15		6.00-16 Land wheel		10.00-15	
	ha	1/40 ha	ha	1/40 ha	ha	1/40 ha
2,50	5091	127	4378	109,5		
3,00	4242	106	3648	91	3394	85
4,00			2736	68,5	2815	70,4
4,50			2432	61	2467	62

The table gives the number of turns for 1 hectare and 1/40 hectare (e.g. 3648/91). The first figure is for 1 hectare, the second for 1/40 hectare. As a rule 1/40 hectare is sown and the weight of seed is multiplied by 40. With smaller sowing quantities (rape) it is recommended that 1/10 be used to avoid weighing errors. Test sowing must not be run with

Fig. 13

Fig. 14

Fig. 15

Fig. 16
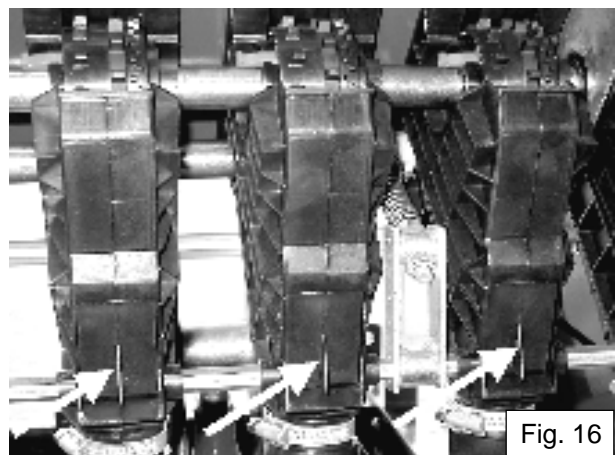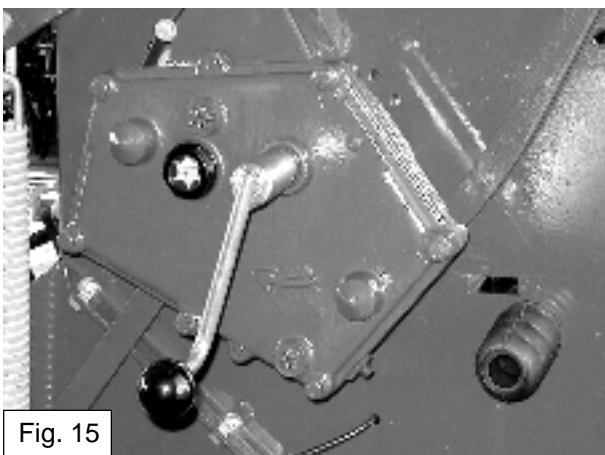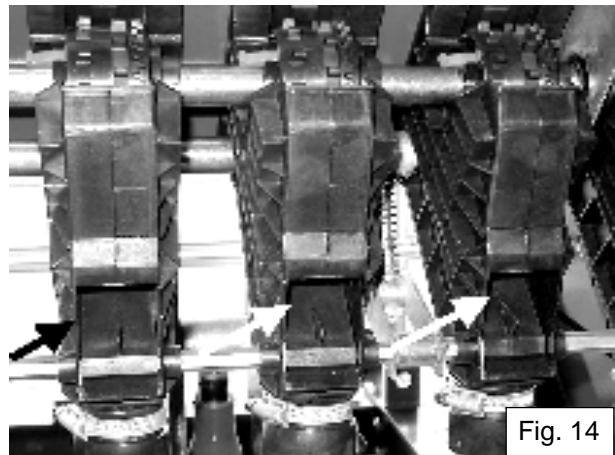
uncoupled seed roller for tramlines. If variations from the desired value occur, the gearing must be adjusted and the test run again. When the desired value is achieved, a further test is necessary to check the seed rate.

• Close emptying flaps (fig. 16).

• Fold up the emptying trough and secure it.

Example:
Machine working width: .... 3,0 m
Number of rows: 25
Tyres: 6.00-16
Desired quantity: .... 200 kg/ha
Seed: .... Wheat

Setting from the sowing table:
Bottom flap: .... 2nd groove
Seed shutter: .... 2nd groove
Seed roller: .... Full
Gear setting: 60
RPM for 1/40 ha: 91

Seed quantity in emptying
trough: .... 4,5 kg x 40 = 180 kg
Gear setting increased to: 66
Seed quantity in emptying
trough: .... 5,0 kg x 40=200 kg/ha

The jolt that might occur during test sowing comes from the transmission coupling engagement and is not a machine fault.

Warning:
The sowing table gives approximate values and is therefore indicative only because each seed type is different in size, condition and density from year to year. In addition, the flow characteristics of dressed seed differ. See also "Sowing control" below. When spacing with two closed rows per tramline the seed rate is reduced in relation to the sowing table values by up to approx. 7%, depending on the tractor tramlines.

Sowing control

The test sowing simulates general field sowing where unforeseen circumstances can affect the seed rate.

In stated lever positions and wheel speeds/ha, account has been taken of a certain amount of wheel slip. In practice there can also be considerable deviation, in spite of the large wheels. If liquid seed dressing is used, flow characteristics during sowing can be different over time. After sowing 500 m, operational values will become more or less constant.

Especially when combinations of soil cultivation implements are used, strong vibrations may affect

the seed drill. As a rule, these increase the seed rate.

If one or several of the above factors occur, trial sowing should be repeated after 500 m. The most accurate control can be achieved by a short trial, i.e. for 100 m drive with at the usual speed and by opening the bottom flaps allow the seed to be caught in the emptying trough. Depending on the working width, the collected quantity must be multiplied by:

2,5 m working width x 40,0
3,0 m working width x 33,3
4,0 m working width x 25,0
4,5 m working width x 22,22

Emptying the seed hopper

To empty the seed hopper, fold down the emptying trough (fig. 17). Open the emptying flaps (fig. 18) with the key (fig. 19). If necessary, open all seed shutters (fig. 20). Fully open the bottom flaps by positioning the setting lever (fig. 21) fully forward so that remaining seed is able to run down into the emptying trough.

When the emptying trough is full, the bottom flap lever must be closed again and the emptying trough similarly emptied.

If the machine is to be stored for a long period it must always be empty. Clean the bottom flaps and leave them fully open. Failure to do this encourages mice to try entering the seed hopper by gnawing their way through the flaps and seed roller.

Fig. 17

Fig. 20

Fig. 18

Fig. 19

Fig. 21
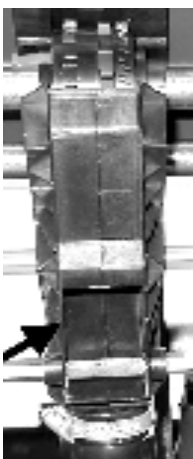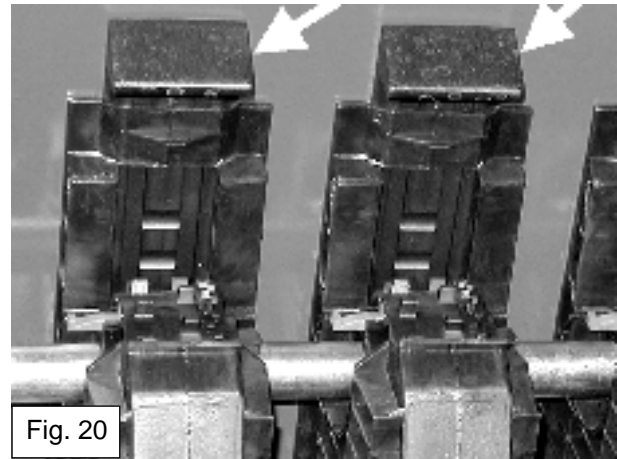
Setting coulter pressure

Generally the coulter pressure determines the sowing depth. That is why implements are designed to ensure that the pressure is as uniform as possible across the entire swing area.

Central setting of coulter pressure

Coulter pressure can be set via the spindle, using the pressure adjustment crank (fig. 22 + 23).

Turning the crank clockwise increases the pressure and turning it counterclockwise reduces the pressure. When marking, the spindle and thereby also the pressure can be read off.

Setting individual coulter pressure

Individual coulter pressure can be set using the springs (fig. 24 + 25).

Fig. 22

Fig. 23

Fig. 24

Fig. 25
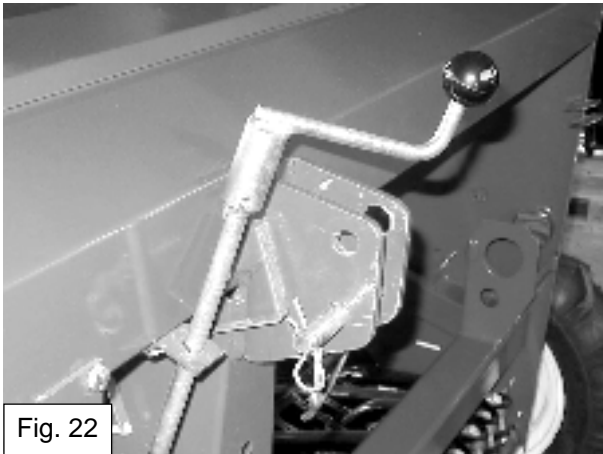
Tramline

Pitch	Seed drill working width	Spraying width	Symmetrical tramline placement in one pass Asymmetrical tramline placement in two passes
3	2.50 m 3.00 m 4.00 m	7.50 m 9.00 m 12.00 m	
4	2.50 m 3.00 m 4.00 m	10.00 m 12.00 m 16.00 m	1/2
5	2.50 m 3.00 m 4.00 m	12.50 m 15.00 m 20.00 m	
6	2.50 m 3.00 m	15.00 m 18.00 m	1/2
7	2.50 m 3.00 m	17.50 m 21.00 m	
8	2.50 m 3.00 m	20.00 m 24.00 m	1/2
3/4	2.50 m 3.00 m 4.00 m	10.00 m 12.00 m 16.00 m	
5/6	2.50 m 3.00 m 4.00 m	15.00 m 18.00 m 24.00 m	
7/8	2.50 m 3.00 m	20.00 m 24.00 m	

Tramline controls

These controls can be used to determine tramline placement so that seeding does not occur in the tramlines where the tractor will subsequently run during fertiliser spreading, spraying, etc. The distance between tramlines will depend on the working width of the seed drill and following implements such as fertiliser spreaders and sprayers. Normally, when the required distance between tramlines has been determined, two seed rollers per row are closed - in some circumstances three or more. The tramline distance will depend on the wheel base of the tractor used for fertiliser spreading and spraying.

Tramline placement

Different types of tramlines

Symmetrical tramlines (fig. 26)
With symmetrical tramlines the two are placed in a single pass with the seed drill.
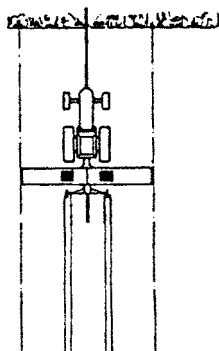
Fig. 26

Asymmetrical tramlines (fig. 27)
With asymmetrical tramlines one tramline is placed in each of two successive passes with the seed
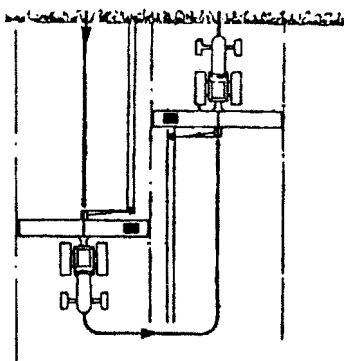
Fig. 27

drill. The disadvantage with this method is that if the seed drill is not driven precisely, on slopes for example, tramline placement will not be correct.

Selecting the tramline type

Symmetrical tramlines (fig. 28)
In most cases symmetrical tramlines are preferable. When odd-number pitches are used, e.g. 3/5/7/9, only symmetrical tramlines can be used (fig. 28).

(**Pitch** = spraying width divided by seed drill width E.g. 12:4=3)

With even-number pitches, e.g. 4/6/8, asymmetrical tramlines can also be used (fig. 27)
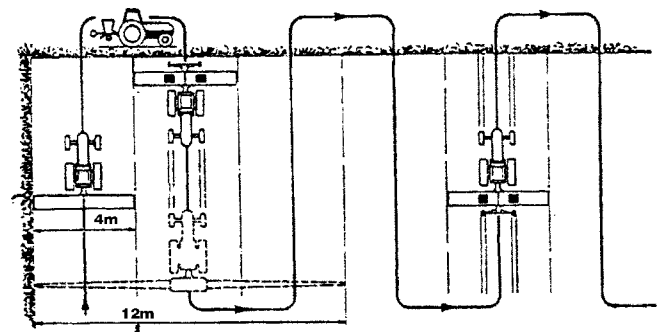
Fig. 28

If symmetrical tramlines are used with even-number pitches 4/6/8, the seed drill width and spraying width do not match at the start of the field. Depending on where the first tramlines are placed, either overlapping or an unsprayed section will appear at the start of the field.

There are two ways of solving this problem:

a) **Placement of tramlines in one pass using pitches 4/6/8.**

   When using seed drills of smaller working width, tramlines can be placed in the first pass. However, for spraying, half the boom must be shut off.

b) Uncoupling half the seed drill width (fig. 29).

Another possibility is to shut off half the machine's seed shutter so that only half the working width is used on the first pass.

Remember to open the closed seed shutter before the next pass with the seed drill.

For the next pass with the seed drill the machine cannot be driven using the marked tramline. Instead, the centreline of the tractor must be on the edge of the first tramline. There will normally be a difference in colour between worked and unworked soil, which makes it easier to follow the edge of the first tramline.

Asymmetrical tramlines (fig. 30)
Asymmetrical tramlines can only be used with pitches 4, 6 and 8.
With asymmetrical tramlines, the full width of the seed drill can be used already on the first pass since the seed drill and spraying widths can be matched without meeting the problems described in "Selecting the tramline type". Since asymmetrical tramlines must be placed in two successive passes, on which side of the seed drill the seed rollers are to be shut off must be selected. This means that a decision has to be made whether to sow from the right to left or vice versa.

Fig. 29

Fig. 30

16
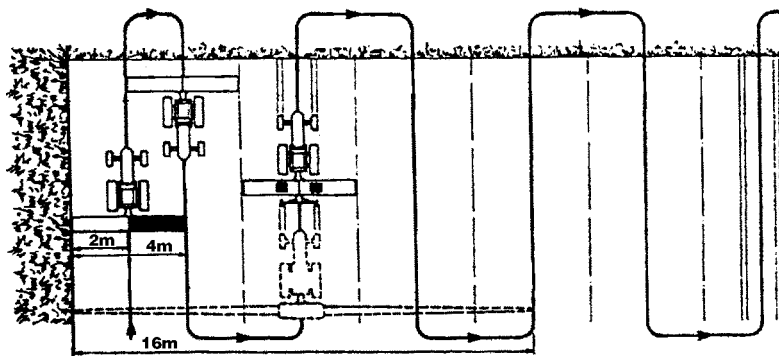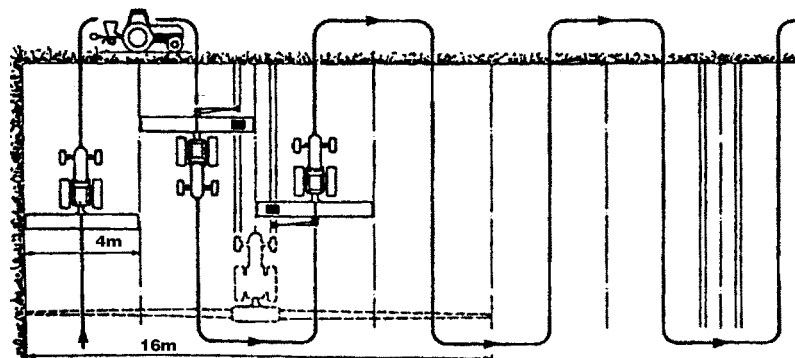
Setting the distance between tramlines

Symmetrical tramlines

The distance between tramlines must correspond to the wheel base of the tractor used for spraying and fertiliser spreading.

The tramlines must be placed by the seed coulters on each end of the seed drill. These are located at half wheel base from the centreline of the machine. When supplied by the factory, the wheel base is normally 1.5 m. If this distance does not suit the tractor used for spraying and fertiliser spreading, the seed drill must be modified as described below.

Asymmetrical tramlines

First, the seed coulters to be used to place the tramlines must be selected:
From the outer seed coulter on righthand or left-hand side (depending on the chosen sowing direction) place a measuring tape so that its end is half a row pitch outside the coulter, e.g. 3 metre working width divided by 25 seed rollers = 6 cm. Then measure a half wheel base, e.g. 0.75 m in towards the seed drill centre. The tramlines must placed by the two coulters nearest the measured point.

Changing the distance between tramlines

- Decide which seed roller best matches the required distance between tramlines.

- Turn the seed shaft with the crank so that the keyway is visible (fig. 31).

- Loosen the clamping bands that secure the gearwheels to the countershaft so that they can be slid sideways (fig. 32).

- Pull the countershaft back and slide the gearwheels to the new position (fig. 33).
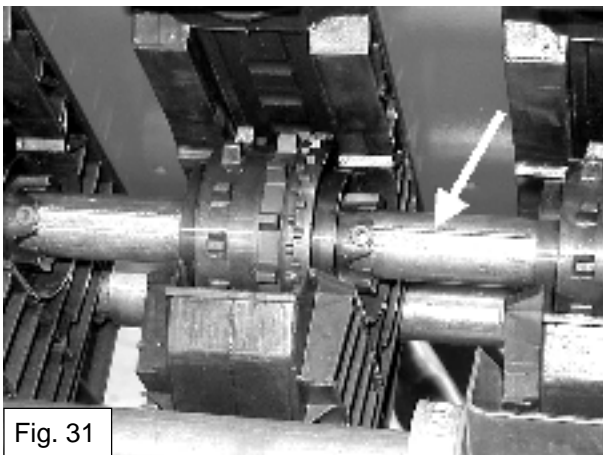
Fig. 32

Fig. 31
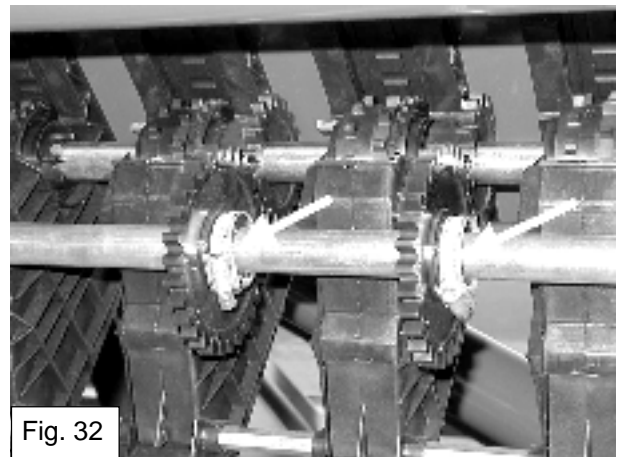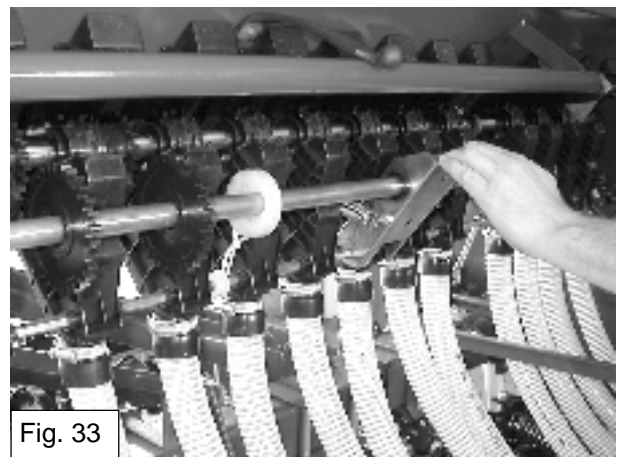
Fig. 33

If a bearing plate is installed by the selected seed rollers, it must be moved to the neighbouring roller as follows:

- Remove all springs holding the bearing plates in position.

- Pull the countershaft back and turn the bearing plate free of the hexagonal spindle.

    Note! Turn the hexagonal spindle with the handle for the emptying shutters so that the hexagon bar lines up with the cut-outs in the bearing plate (fig. 34).
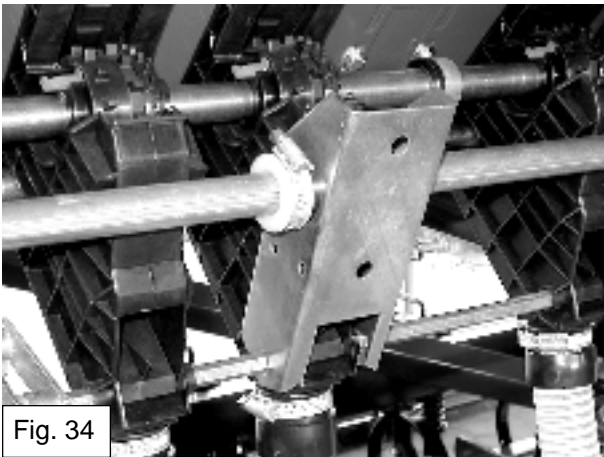
Fig. 34

- Move the bearing plate to the new position and turn it back on the hexagonal spindle. Now refit the springs to hold the bearing plate in position.

- Remove the two gearwheel halves from the seed roller (fig. 35).
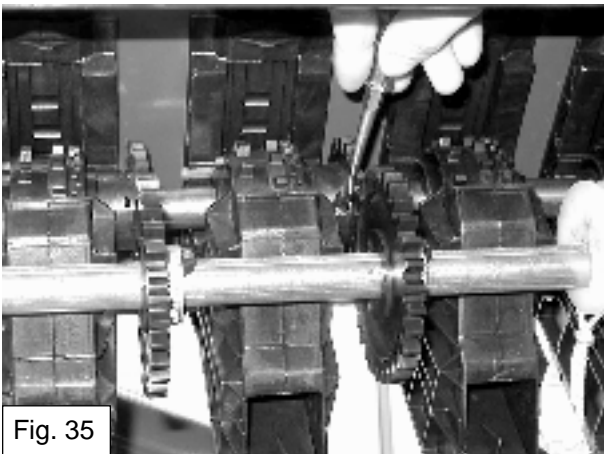
Fig. 35

- Using a pointed tool, extract the key from the selected seed roller (fig. 36).
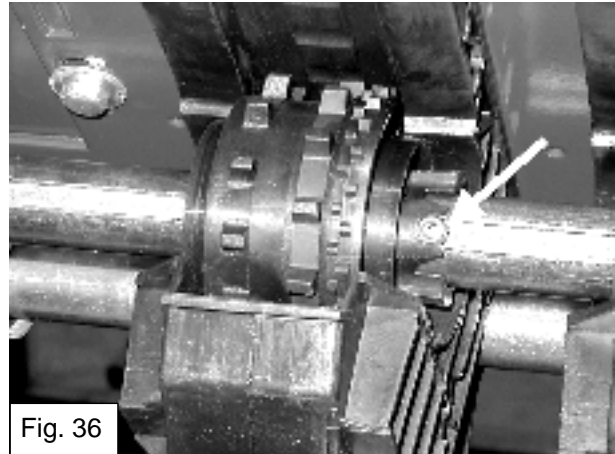
Fig. 36

- Fit the key in the seed roller where the drive is mounted (it should click when engaging).

- Fit the two gearwheel halves on the selected seed roller: Press the one half securely onto the seed roller from above.

    Note! The spigots on the gearwheel halves mate with the round recesses on the seed roller coupling side.

- Turn the seed roller 180° so that the first half turns in towards the feed box bearing.

- Now fit the other half and fasten the two halves together using the two screws.

- Finally, check to make sure that the gearwheels on the countershaft line up with the gearwheel halves and that the gearwheels are firmly secured.

Changing over the seed drill from symmetrical to asymmetrical tramlines

The seed rollers which are not to be used must be uncoupled from the drive.

Loosen the clamping band that secures the gearwheel on the countershaft (fig. 37)

Extract the key with a screwdriver

Slide the gearwheel along the countershaft and retighten it.

The key removed from the countershaft must be fitted in the seed roller gearwheel, fig. 38 (a click will be heard when it engages).
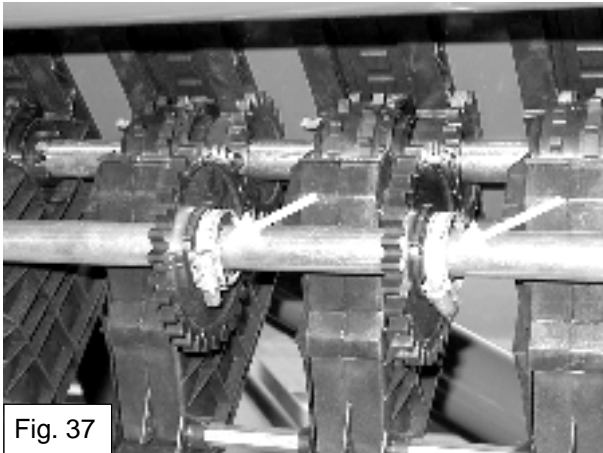
With electronic tramline control, similar adjustments must be made.

Setting up a third row

The width of the tramlines is determined by the row pitch and the number of seed rollers that are stopped. When a track width wider that can be achieved with two seed rollers is required, a third row can be set up.

Extract the key from the selected seed roller with a screwdriver.

Fit the two gearwheel halves on the side of the seed roller. Slide the extra gearwheels to the required position along the countershaft and secure them with clamping bands and the key removed from the seed roller.

Fig. 37

Fig. 38
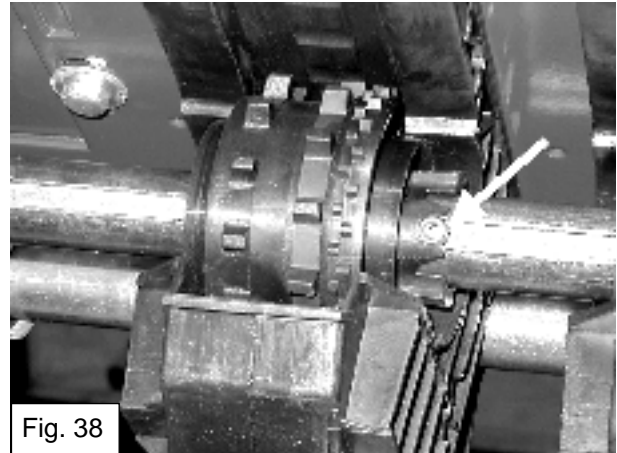
Checking

During operation, the function of the equipment used in tramline placement can be checked using a vertical scale on the front of the seed hopper. When tramlines are placed (seed rollers do not turn round) the indicator remains stationary. The numbers on the scale give a more accurate reading of the seed rate when the needle moves very slowly, as when sowing rape seed for example.

Fig. 39

19
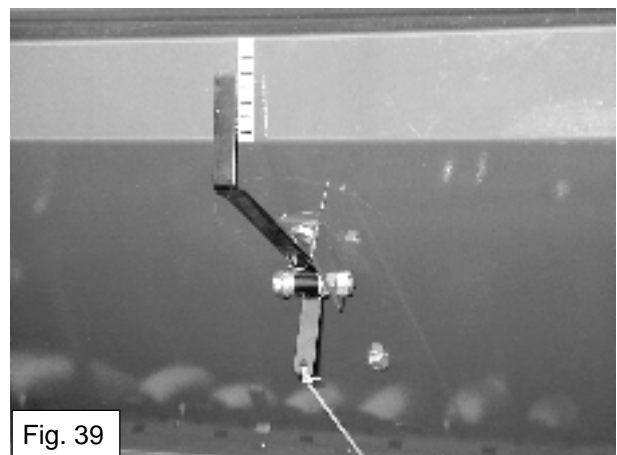
Maintenance

The life and reliability of the seed drill depend on good maintenance. Therefore the following points must be observed. See also section "Maintenance" in the general safety and accident prevention instructions.

Gearbox

The infinite oil-bath gearbox is filled with oil at the factory. The sight glass can be used to verify the oil level. The quantity of oil is correct when the level is halfway up the sight glass. Oil change is not necessary, but to replenish the oil check with the table on page 21. The total quantity of oil in the gearbox is 1 litre.

Driving wheels

See also "Tyres" in the general safety and accident prevention instructions. Check the air pressure in the driving wheel tyres regularly. The correct pressure is 2.5 bar.

Chain drives

Chain drives must be retensioned after the first 10 hours of operation and then once each year. Clean and grease chains after each season.

Sowing coulters

The sowing coulters need no maintenance. If they become loose, retighten the hexagon screws, M10 x 90. With safety coulters the tips should be checked once each year and replaced as necessary. Only in this way can the correct placing of seeds be guaranteed.

• The disc coulters have double ball bearings which are supplied lubricated for life. The scrapers, must be replaced when they become worn.

Depth wheels

The depth wheels must be lubricated daily. When the machine is stored after a season, make sure that the depth wheels are not under load.

Markers

Marker discs are fitted with double ball bearings and must be lubricated weekly. The mechanical tramline control must be lubricated every day.

Plastic parts

These parts must be cleaned after each season, but not with cleaning agents containing solvents or thinners, nor with petrol, diesel fuel or waste oil.

Hydraulic hoses

See also "The hydraulic system" in the general safety and accident prevention instructions. Retighten screwed connections after the first 10 hours of operation. At the start of each season, check the hoses and replace them when necessary.

Monitor

Even though the monitor is located close to the water spray, it must not be subjected to direct rainfall. A dry place is recommended for after-season storage.

Cleaning the seed hopper

After the season the seed hopper must be completely emptied and thoroughly cleaned. It must be stored with bottom flaps and seed shutter fully open. Seed residue in the seed hopper encourages mice to try entering the seed hopper by gnawing their way through the flaps and seed roller.

Gearbox oil

ARAL	ARAL OEL DEGOL BG 46
BP	BP Energol GR-XP 46
CHEVRON	CHEVRON ATF CHEVRON EP industrial 46
ESSO	NUTO H 46
MOBIL	MOBIL DTE 25
SHELL	DONAX TM
TEXACO	RANDO OIL HD B 46

D-01 COMPUTER
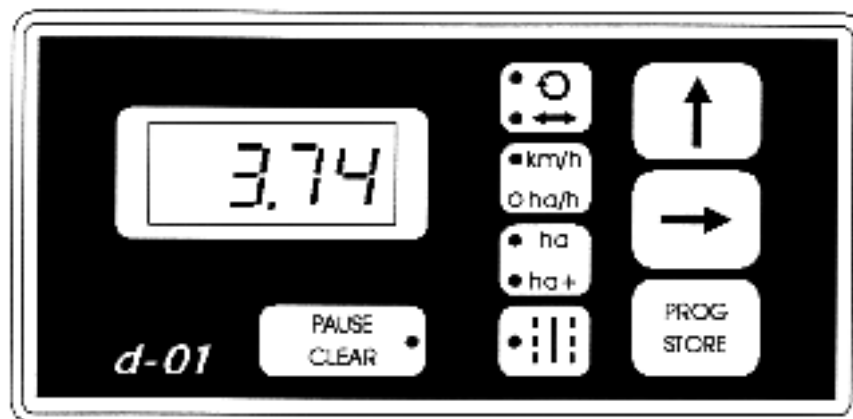
Contents

General Information

D-01 controller is a computer system used for control and measurement on drills and other agriculture machines. The main function of D-01 controller is tram line marking and monitoring. Moreover it enables the measurement of working speed, area, and area total. Owing to the surface mounted device technology, the modules of the controller are compact and reliable.
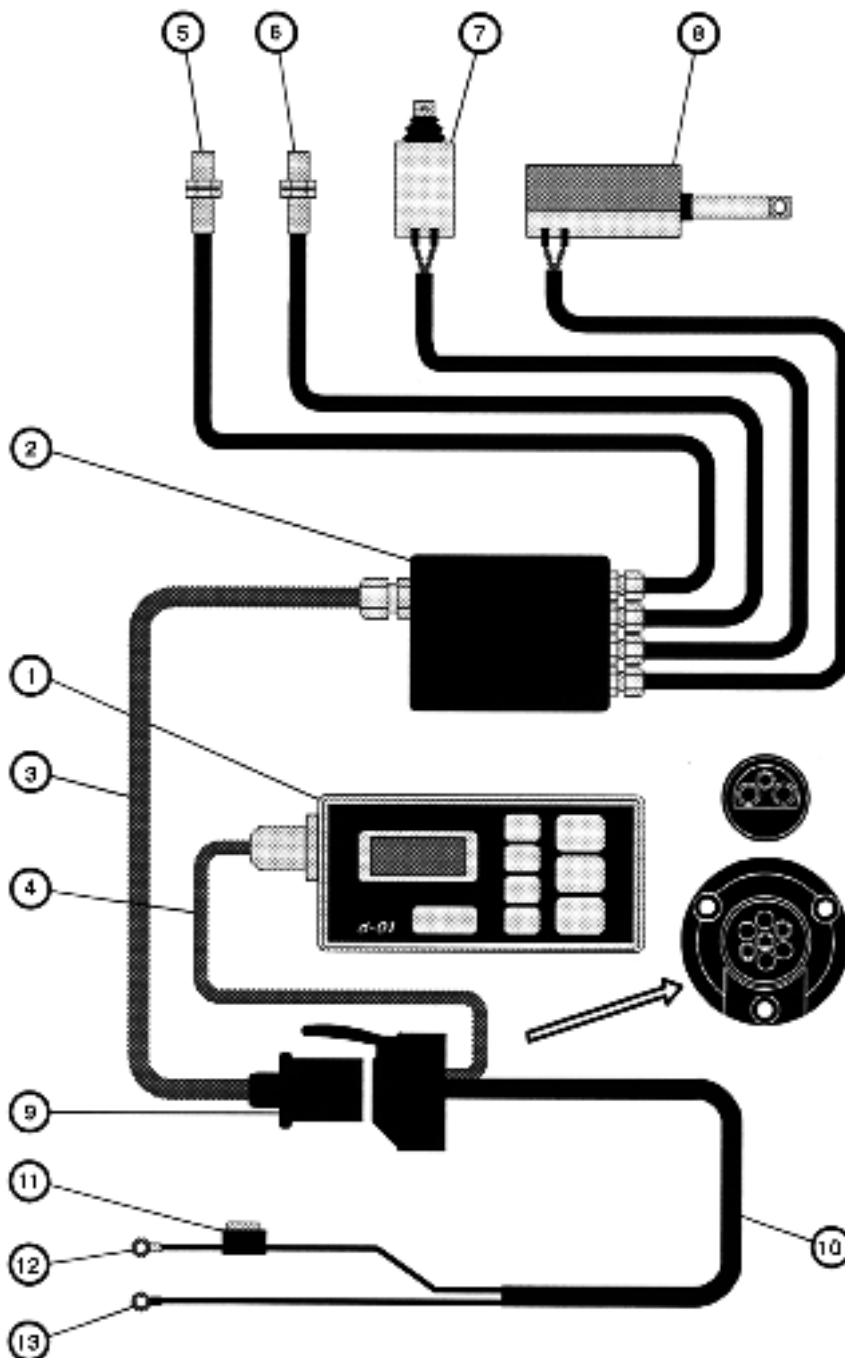
Fig. 1 Modules of D-01 controller

System description

D-01 system consists of the following modules (Fig. 1)

1. **D-01 control computer** with a keyboard and a display

2. **Implement computer**. This module connects the D-01 control computer with sensors, an actuator and a solenoid.

3. **External control cable**. It connects the D-01 computer with the implement computer.

4. **Internal control cable**. It connects the D-01 computer with a socket.

5. **Wheel sensor**. The wheel sensor sends electric impulses to the implement box when it detects wheel rotations. It interacts with a magnet placed on a rotating part of a machine (or the wheel itself). The rotating part must be synchronised with wheel rotations.

6. **Implement sensor**. It detects a moment when a machine is lifted (lowered). It interacts with a magnet which is placed on a moving part of the machine.

7. **Solenoid**. It switches on/off the tramline markers.

8. **Actuator**. It lifts/lowers the pre-emergence markers.

9. **Main plug**. It is connected with the socket.

10. **Internal power supply cable 12V** which is connected to an accumulator and the socket.

11. **Fuse 20A**

12. **Contact terminal** for 12V accumulator (+)

13. **Contact terminal** for 12V accumulator (-)

All sensors and control components (5..8) are equipped with cables for connection with the implement computer.

Technical specification

- Resolution of speed measurement – [km/h] .... 0.1 km/h

- Resolution of hectar per hour measurement - [ha/h] .... 0,01 ha/h

- Resolution of the area counter [ha/h] .... 0,1 ha/h

- Resolution of the area total counter ...... 0,1/1 ha

- The spacing between tramlines .... 2-9 spor

- Double (symmetrical) tramline function

- Automatic electronic storage of all counters in case of power shutdown

- The durability of counter and parameter memory .... > 10 years

- Optical signalling of function settings

- 4 digit illuminated liquid crystal display

- Pressed-key and special device modes acoustic signalling

- The maximum work time of the pre-emergence actuator (one way direction movement). .... 15 seconds

- The power saving mode of the implement computer

- The time delay of the power saving mode activation .... 25 seconds

- The power load of the implement computer in the power saving mode .... < 20 mA

- The diagnostic lamp in the implement computer for simple and easy testing of the control and implement computers

- Acoustic signalling when there is no data transmission between the control and implement computers

D-01 computer description

D-01 computer:

1. Illuminated liquid crystal display
2. Control cable socket
3. Screw sockets for control cable plug

4 - 14. Function keys and lamps that indicate the selected function
15. - 19. Setting and control keys, the PAUSE function lamp
20. Power on/off switch
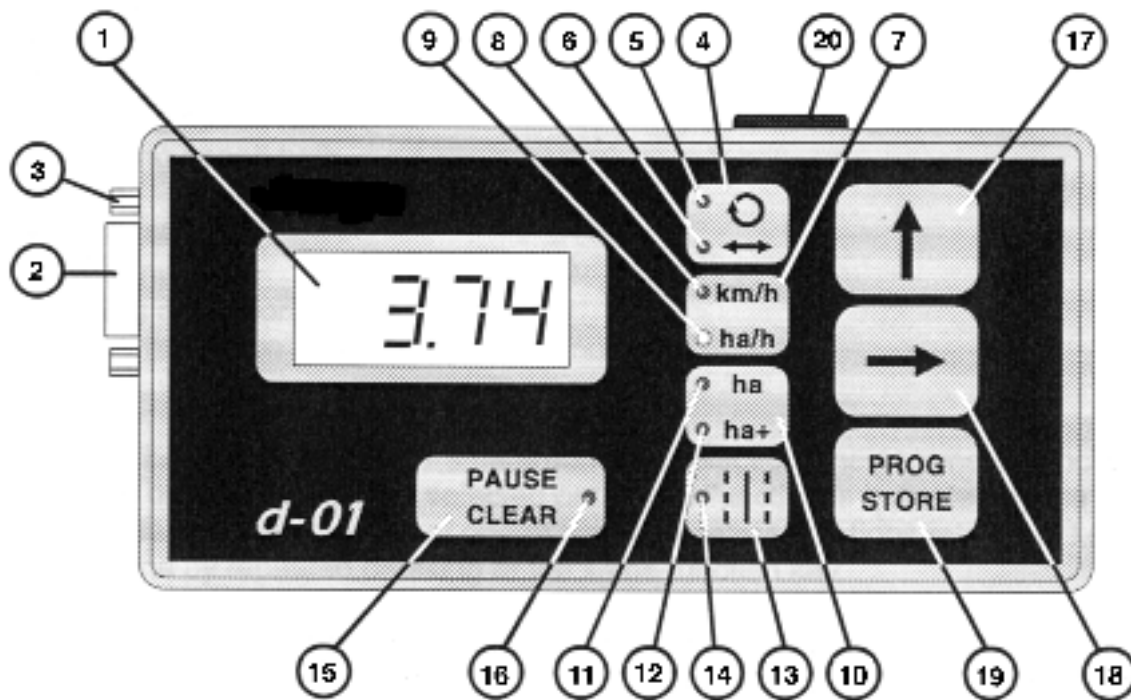
Fig. 2 Keyboard and display of D-01

D-01 computer operation

The user of D-01 can perform the following actions:

1. The programming of:
   - Implement wheel circumference
   - Implement working width
   - Single or double tram lines

2. The read-out of:
   - Working speed km/h
   - Working speed ha/h
   - Area
   - Area total
   - Track number

3. The blocking of sensor signals

4. The manual correction of the current track number

The function keys are used for parameter/function selection. The parameter/function value is shown on the display. The selected parameter/function is indicated by the corresponding lamp. The selection of one of two parameters/functions related to keys 4, 7, 10 can be done by repeated pressing of the same function key.

The selected parameter can be changed in the programming mode. To enter the programming mode you must press and hold key 19 (approx. 3 seconds) until the long sound is heard. In the programming mode, it is possible to change selected parameters (keys 4, 13) and zero the area counters (key 10). The area counters can be zeroed by pressing key 15.

The setting of parameters is a little bit complicated. To select one of the four digits on the display that we want to modify, we must use key 18 (the

selected digit starts to flash). Key 17 is used to change the chosen digit value in the range 0..9

In the tramline programming mode, only one digit is active. Key 18 is used for setting/resetting of tramlines in the range 2..9

To exit the programming mode you must press key 19 (STORE). The modified parameter is stored in the memory.

When you press key 15 (PAUSE) during a normal operation of the computer the red lamp 16 will be switched on. In this mode the wheel and implement sensors are disconnected from the computer.

The intermittent acoustic signal generated by D-01 computer is an alarm that there is no connection with the implement computer.

Start-up test

When the power supply is connected to the controller, the computer should work in the following way:

The long acoustic signal, all the display segments and control lamps are switched on.
The control lamps are switched off. The display should show "D-01"
The "D-01" notice is deleted and the computer enters the tramline function, the display shows the current track number.

IMPORTANT!
If any failure is observed during the test, we recommend to switch off and switch on the power

supply. If the failure persists we recommend to contact your dealer

Entry of implement parameters
In order to ensure the correct measurement of speed and area, you must make encodements of wheel circumference and working width before putting your agriculture machine into use. The encoded parameters are stored in the non-volatile memory of the computer. This memory does not require power supply. The stored parameters are retrieved from the memory every time the computer is switched on.

You must take care of proper setting of implement parameters, otherwise the area/speed measurement will be incorrect.

Entry of implement wheel circumference

- Press key 4 until the lamp next to the wheel sign is switched on.

- The display will show the previously set value of wheel circumference in centimeters.

- Enter the programming mode using key 19

- Select the digit that you want to modify using the arrow key 18. The active digit is flashing.

- Using the arrow key 17 set the required value of the selected digit.

- If it is needed return to the step 4

- When the required wheel circumference is selected, press key 19 to store this value and exit the programming mode.

The wheel sensor magnet on CS drills is mounted on a moving part that rotates faster than the wheel itself (the ratio of rotations is 28:11). To ensure the correct area and speed measurement the wheel circumference encodement must be made according to the following formula:

Wheel circumference = real wheel circumference x 0,393 (11/28=0,393)

Wheel specifications for DK drills:

Type of wheel	Real circumference [cm]	wheel circumference [cm]
6,00-16	229	90
10,00-15	239	94

Entry of wheel circumference. The practical method.

This method is an alternative to the one from the previous section. It is independent of the machine type and tyres. To apply this method you need to mark a trial distance.

1. Mark the trial distance in the field for example: 100m.

2. As a working width enter the number 1000 into the D-01 computer.

3. As a wheel circumference enter the number 1000 into the computer.

4. Reset the area counter [ha], keep the read-out of area counter active.

5. Drive the machine along the trial distance.

6. After you have driven the trial distance read the area counter.

7. Use the following formula to calculate the wheel circumference:

Wheel circumference

in centimeters $= \dfrac{\text{Trial distance in meters}}{\text{Area counter value [ha]}}$

8. Enter the calculated wheel circumference into the computer.

9. Enter the real working width into the computer.

10. The D-01 controller is configured and ready to work.

Example
The trial distance is 100 meters.
After the trial distance has been driven, read the area counter.
The area counter value is 1.04.

The data obtained enter into the formula in step 7.

Wheel circumference [cm] $= \dfrac{100 \text{ m}}{1,04} = 96,2$

Enter the number **96** into the computer.

Implement working width

1. Press the key 4 until the lamp next to the working width sign is switched on.

2. The display will show the previously set value of working width in centimeters.

3. Enter the programming mode using key 19

4. Select the digit that you want to modify using the arrow key 18. The active digit is flashing

5. Using the arrow key 17 set the required value of the selected digit

6. If it is needed return to step 4

7. When the required working width is selected, press key 19 to store this value and exit the programming mode.

IMPORTANT!
The wheel circumference and working width parameters are entered in centimeters.

Tram line function

• *Press key 14 to select the tramline function
The display shows the current (one-digit) track number. If the digit flashes, it means that the current track is a tramline.*

The controller D-01, when programmed, can be used for automatic tramlinining. The distance between tramlines can be selected from the interval 2..9. It is also possible to make double tramlines for example: 2&3, 3&4 etc.

While tramlining the computer controls the solenoid (10 fig. 1) which selectively suppresses seeding. If you have the D-01 kit with rear tramline actuator the rear tramlines can also be made automatically. The track number is incremented automatically when the machine is lifted. This is possible due to the implement sensor (9 fig. 1). If the sensor detects the liftning of the machine, the computer makes the short sound. Any false impulses from the sensor are eliminated by the computer.

Note: In order to test the implement sensor manually you must keep a magnet near the sensor for at least 3 seconds. If you want to make the next impulse keep magnet away from the sensor for at least 10 seconds and move it closer again.

When PAUSE function is activated the automatic tramlining is disabled.

When tramling function is on (the lamp 14 is switched on) you can manually change the current track using the arrow key 17.

The current track/tramline setting is stored in the non-volatile memory.

Tramline programming

1. Select the tramline function (key 13). Lamp 14 will be switched on.

2. The display will show the current track number.

3. Enter the programming mode by pressing key 19. This is confirmed by a long sound and the red lamp 16.

4. Using the arrow key 17 select the track number that you want clear or set a tramline.
   When the track digit flashes it means this track is programmed as a tramline.

NOTE: It is easy to notice, that D-01 computer prompts the user to enter only the proper tracks. It is possible to program only a single track (from the range 2…9) or two tracks close to each other (double tracks, for instance:2,3; 4,5 etc.).

For example: If the programmed track is 5 the computer permits you to select tracks: 4,5,6. If you want to set track 7 as a tramline you should clear the track 5 first. Otherwise the computer will not allow you to select the track 7.

5. Using the arrow key 18 clear or set the selected track as a tramline.

6. If it is needed return to the step 4

7. When you have finished, store the selected tracks and exit the programming mode (press key 19).

Area and area total counters

Press key 10 to select the required function. The lamp 11 will be turned on if you have selected function [ha] (area counter) or the lamp 12 will be switched on if the selected function is area total counter [ha+]. The display will show the selected counter value.

The D-01 controller can measure the worked in area and area total counters. The result of area calculation depends on the number of impulses from the wheel sensor, the programmed working width and wheel circumference.

The counters work simultaneously and independently. They differ only in capacity and resolution (see section 3). They can be cleared individually however the initial state of the counters cannot be set. When the PAUSE function is active the counters are stopped.

NOTE:
Ha -area counter in hectars (for example: the worked area during one day or week).
Ha + -area total counter (for example: the worked area during one month or year).

Area counters- Reset function

1. Using key 10 select the area counter that you would like to clear.

2. The display will show you the value of the selected counter.

3. Enter the programming mode by pressing key 19. The programming mode is confirmed by a long sound. Simultaneously the selected counter value starts flashing.

4. To exit the programming mode without clearing the counter press key 19. To clear the counter press key 15 (CLEAR).

Speedometers

• *Press key 7 to select the kilometer per hour [km/h] meter or the hectar per hour [ha/h] meter. The display will show the current status of the selected meter.*

The speed measurement is based on the frequency of impulses from the wheel sensor and on the programmed values of working width and wheel circumference.

If the wheel sensor does not send any impulses for more than 10 seconds the machine has stopped. The speedometers are zeroed.

The speedometers do not work if the PAUSE function is enabled.

Pause function

Press key 15 if you want to hold the signals from the sensors (the red lamp switches on). When you press the key again the function is deactivated and the red lamp is switched off.

IMPORTANT!

The activation of PAUSE function:
• Stops the area counters
• Disables the automatic incrementing of the current track number

When PAUSE function is activated (lamp 14 is switched on) you can manually change the current track using the arrow key 17.

Implement computer

The inside of the implement computer is shown in Figure 3.
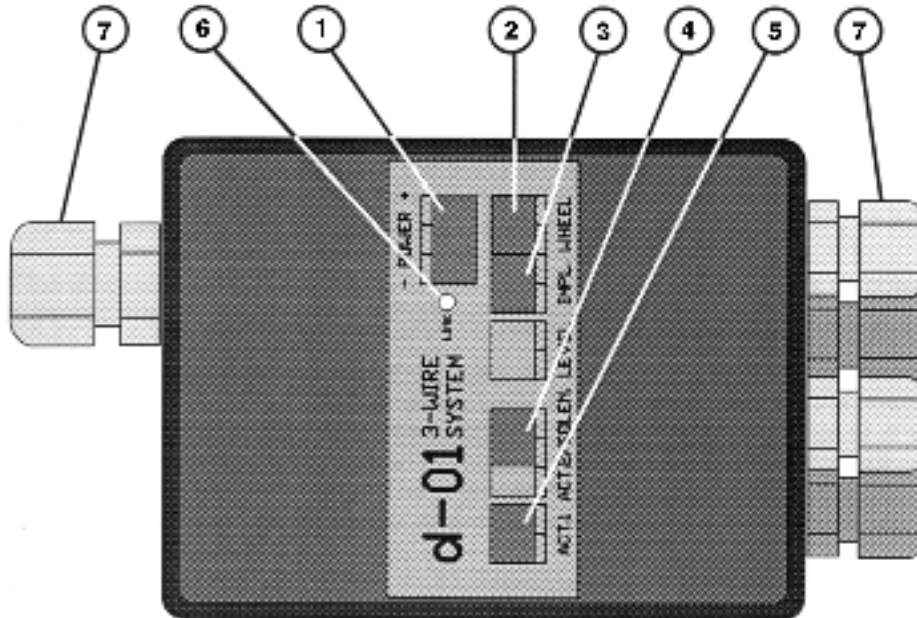
Figure 3. The inside of the implement computer.

1. Connector of the external control cable (3-wire cable)
2. Wheel sensor connector
3. Implement sensor connector
4. Solenoid connector
5. Pre-emergence actuator connector
6. Implement computer diagnostic lamp
7. Cable fasteners

The functioning of the implement computer

The implement computer has the diagnostic lamp 'LINK' which can be used to test the whole D-01 system. When the D-01 system is working properly the diagnostic lamp can be in one of the two modes:

1. Slow flashing (around 5 times a second). It means that the D-01 control computer is not communicating with the implement computer. The control computer is either disconnected from the implement computer or is switched off.

2. Very fast flashing. It means that the D-01 control computer and the implement computer are connected with each other and are working properly.

(**PLEASE NOTE!** This is the working state of the D-01 system)

If the diagnostic lamp is constantly turned on or off it means there is no power supply in the implement computer or the implement computer is damaged.

If there is no connection between the control and implement computer and the machine is not moving for more than 25 seconds the implement computer enables the power saving mode. In the power saving mode the solenoid is turned off to save the power of the accumulator (it is the situation when the solenoid was already working: for example when the D-01 system was tramlining). The power saving mode is cancelled when the communication between the control and implement computer is re-established.

Seedtable
DEMETER CLASSIC
CS/CSA 2500 (2,5 m)

Type	Tyred wheel	Calibration of the level			
		1 Ha	1/4 Ha	1/10 Ha	1/40 Ha
CS	5.00 - 15	5091	1273	509,1	127,3
	6.00 - 16	4378	1095	437,8	109,5
CS-A	Land wheel	4378	1095	437,8	109,5

Demeter Classic CS/CSA 2500 (2,5 m)

Wheat, L.weight 880 g/l, TSW 48 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha					
Tyred wheel					Number of rows			
6.00 -16	5.00 -15	1	17	19	21	23	25	
15	14	2,54	43	48	53	58	64	
18	18	3,17	54	60	67	73	79	
21	20	3,48	59	66	73	80	87	
24	22	3,88	66	74	81	89	97	
27	25	4,38	74	83	92	101	109	
30	27	4,82	82	92	101	111	121	
33	30	5,28	90	100	111	121	132	
36	33	5,77	98	110	121	133	144	
39	35	6,22	106	118	131	143	156	
42	38	6,75	115	128	142	155	169	
45	41	7,21	123	137	151	166	180	
48	44	7,73	131	147	162	178	193	
51	45	8,27	141	157	174	190	207	
54	48	8,76	149	166	184	201	219	
57	52	9,46	161	180	199	217	236	
60	54	9,77	166	186	205	225	244	
63	57	10,37	176	197	218	238	259	
66	60	10,95	186	208	230	252	274	
69	63	11,48	195	218	241	264	287	
72	65	12,06	205	229	250	277	302	
75	68	12,44	212	236	261	286	311	
78	71	13,28	226	252	279	305	332	
81	73	13,91	236	264	292	320	348	
84	76	14,12	245	274	300	332	360	
87	79	15,15	258	288	318	349	379	
90	82	15,55	264	296	327	358	389	
93	84	16,12	279	312	345	378	410	
96	87	16,89	287	321	355	388	422	
99	90	17,64	300	335	370	406	441	
102	92	18,47	314	351	388	425	462	

Demeter Classic CS/CSA 2500 (2,5 m)

Barley, L.weight 797 g/l, TSW 52 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha					
Tyred wheel					Number of rows			
6.00 -16	5.00 -15	1	17	19	21	23	25	
15	14	2,08	35	40	44	48	52	
18	18	2,59	44	49	54	60	65	
21	20	2,85	48	54	60	65	71	
24	22	3,17	54	60	67	73	79	
27	25	3,58	61	68	75	82	90	
30	27	3,95	67	75	83	91	99	
33	30	4,32	73	82	91	99	108	
36	33	4,72	80	90	99	109	118	
39	35	5,09	87	97	107	117	127	
42	38	5,53	94	105	116	127	138	
45	41	5,90	100	112	124	136	147	
48	44	6,32	108	120	133	145	158	
51	45	6,77	115	129	142	156	169	
54	48	7,17	122	136	151	165	179	
57	52	7,74	132	147	163	178	194	
60	54	8,00	136	152	168	184	200	
63	57	8,49	144	161	178	195	212	
66	60	8,96	152	170	188	206	224	
69	63	9,39	160	178	197	216	235	
72	65	9,87	168	188	207	227	247	
75	68	10,18	173	194	214	234	255	
78	71	10,87	185	207	228	250	272	
81	73	11,38	194	216	239	262	285	
84	76	11,80	201	224	248	271	295	
87	79	12,40	211	236	260	285	310	
90	82	12,73	216	242	267	293	318	
93	84	13,44	228	255	282	309	336	
96	87	13,82	235	263	290	318	346	
99	90	14,44	145	274	303	332	361	
102	92	15,12	257	287	317	348	378	

Demeter Classic CS/CSA 2500 (2,5 m)

Rye, L.weight 775 g/l, TSW 40 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha					
Tyred wheel				Number of rows				
6.00 -16	5.00 -15	1	17	19	21	23	25
15	14	2,10	36	40	44	48	52
18	18	2,62	44	50	55	60	65
21	20	2,87	49	55	60	66	72
24	22	3,20	54	61	67	74	80
27	25	3,62	61	69	76	83	90
30	27	3,98	68	76	84	92	100
33	30	4,36	74	83	92	100	109
36	33	4,76	81	90	100	110	119
39	35	5,14	87	98	108	118	128
42	38	5,58	95	106	117	128	139
45	41	5,95	101	113	125	137	149
48	44	6,38	108	121	134	147	160
51	45	6,83	116	130	143	157	171
54	48	7,23	123	137	152	166	181
57	52	7,81	133	148	164	180	195
60	54	8,07	137	153	169	186	202
63	57	8,56	146	163	180	197	214
66	60	9,04	154	172	190	208	226
69	63	9,48	161	180	199	218	237
72	65	9,96	169	189	209	229	249
75	68	10,28	175	195	216	236	257
78	71	10,97	186	208	230	252	274
81	73	11,49	195	218	241	264	287
84	76	11,91	202	226	250	274	298
87	79	12,52	213	238	263	288	313
90	82	12,85	218	244	270	295	321
93	84	13,56	231	258	285	312	339
96	87	13,95	237	265	293	321	349
99	90	14,57	248	277	306	335	364
102	92	15,25	259	290	320	351	381

Demeter Classic CS/CSA 2500 (2,5 m)

Oats, L.weight 552 g/l, TSW 38 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha					
Tyred wheel				Number of rows				
6.00 -16	5.00 -15	1	17	19	21	23	25
63	57	5,95	101	113	125	137	149
66	60	6,28	107	119	132	145	157
69	63	6,59	112	125	138	152	165
72	65	6,92	118	132	145	159	173
75	68	7,14	121	136	150	164	179
78	71	7,62	130	145	160	175	191
81	73	7,98	136	152	168	184	200
84	76	8,28	141	157	174	190	207
87	79	8,70	148	165	183	200	217
90	82	8,93	152	170	188	205	223
93	84	9,42	160	179	198	217	236
96	87	9,69	165	184	204	223	242
99	90	10,13	172	192	213	233	253
102	92	10,60	180	201	223	244	265
105	94	10,95	186	208	230	252	274
108	97	11,31	192	215	238	260	283
111	99	11,70	199	222	246	269	292
114	102	12,34	210	234	259	284	308
117	105	12,57	214	239	264	289	314
120	109	13,05	222	248	274	300	326
123	112	13,57	231	258	285	312	339
126	114	14,14	240	269	297	325	353
129	117	14,44	245	274	303	332	361
132	120	15,08	256	287	317	347	377
135	123	15,42	262	293	324	355	386
138	126	16,16	275	307	339	372	404
141	129	16,55	281	314	348	381	414
144	132	16,96	288	322	356	390	424
147	134	17,63	300	335	370	405	441
150	137	18,00	306	342	378	414	450

Demeter Classic CS/CSA 2500 (2,5 m)

Rape, L.weight 617 g/l

Bottom flaps: 1. pos

Seed shutter: 1. pos

Fine seed roller

Cut-off agitator shaft

Adjustment of Gear Box		Quantity of seed distributed kg/ha						
Tyred wheel					Number of rows			
6.00 -16	5.00 -15	1	17	19	21	23	25	
9	8	0,09	1,5	1,7	1,9	2,1	2,3	
12	11	0,12	2,1	2,3	2,6	2,8	3,1	
15	14	0,14	2,1	2,7	3,0	3,2	3,5	
18	18	0,18	3,0	3,3	3,7	4,0	4,4	
21	20	0,19	3,3	3,7	4,1	4,4	4,8	
24	22	0,22	3,7	4,1	4,5	5,0	5,4	
27	25	0,24	4,1	4,6	5,1	5,6	6,1	
30	27	0,27	4,6	5,1	5,6	6,2	6,7	
33	30	0,29	5,0	5,6	6,2	6,7	7,0	
36	33	0,32	5,4	6,1	6,7	7,4	8,0	
39	35	0,35	5,9	6,6	7,3	7,9	8,6	
42	38	0,38	6,4	7,1	7,9	8,6	9,4	
45	41	0,40	6,8	7,6	8,4	9,2	10,0	
48	44	0,43	7,3	8,2	9,0	9,9	10,7	
51	45	0,46	7,8	8,7	9,6	10,6	11,5	
54	48	0,49	8,3	9,2	10,2	11,2	12,2	
57	52	0,53	8,9	10,0	11,0	12,1	13,1	
60	54	0,54	9,2	10,3	11,4	12,5	13,6	
63	57	0,58	9,8	10,9	12,1	13,2	14,4	
66	60	0,61	10,3	11,6	12,8	14,0	15,2	
69	63	0,64	10,8	12,1	13,4	14,7	15,9	
72	65	0,67	11,4	12,7	14,1	15,4	16,8	
75	68	0,69	11,8	13,1	14,5	15,9	17,3	
78	71	0,74	12,5	14,0	15,5	17,0	18,4	
81	73	0,77	13,1	14,7	16,2	17,8	19,3	
84	76	0,80	13,6	15,2	16,8	18,4	20,0	
87	79	0,84	14,3	16,0	17,7	19,4	21,0	
90	82	0,86	14,7	16,4	18,1	19,9	21,6	
93	84	0,91	15,5	17,3	19,2	21,0	22,8	
96	87	0,94	15,9	17,8	19,7	21,6	23,5	

Demeter Classic CS/CSA 2500 (2,5 m)

Peas, L.weight 780 g/l, TSW 327 g

Bottom flaps: 5. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box		Quantity of seed distributed kg/ha						
Tyred wheel					Number of rows			
6.00 -16	5.00 -15	1	17	19	21	23	25	
30	27	4,47	76	85	94	103	112	
33	30	4,89	83	93	103	112	122	
36	33	5,34	91	101	112	123	133	
39	35	5,76	98	109	121	132	144	
42	38	6,25	106	119	131	144	156	
45	41	6,67	113	127	140	153	167	
48	44	7,15	122	136	150	165	179	
51	45	7,65	130	145	161	176	191	
54	48	8,11	138	154	170	186	203	
57	52	8,76	149	166	184	201	219	
60	54	9,05	154	172	190	208	226	
63	57	9,60	163	182	202	221	240	
66	60	10,13	172	193	213	233	253	
69	63	10,63	181	202	223	244	266	
72	65	11,67	190	212	235	257	279	
75	68	11,52	196	219	242	265	288	
78	71	12,30	209	234	258	283	307	
81	73	12,88	219	245	270	296	322	
84	76	13,35	227	254	280	307	334	
87	79	14,00	239	267	295	323	351	
90	82	14,40	245	274	302	331	360	
93	84	15,20	258	289	319	350	380	
96	87	15,64	266	297	328	360	391	
99	90	16,34	278	310	343	376	408	
102	92	17,10	291	325	359	393	428	
105	94	17,65	300	335	371	406	441	
108	97	18,24	310	347	383	420	456	
111	99	18,87	321	359	396	434	472	
114	102	19,90	338	378	418	458	498	
117	105	20,27	345	385	426	466	507	

Demeter Classic CS/CSA 2500 (2,5 m)

Graas, L.weight 324 g/l

Bottom flaps: 1. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box		Quantity of seed distributed kg/ha						
Tyred wheel			Number of rows					
6.00 -16	5.00 -15	1	17	19	21	23	25
15	14	0,56	9,4	10,6	11,7	12,8	13,9
18	18	0,69	11,8	13,2	14,5	15,9	17,3
21	20	0,76	12,9	14,4	16,0	17,5	19,0
24	22	0,85	14,4	16,1	17,8	19,5	21,2
27	25	0,96	16,3	18,2	20,1	22,0	23,9
30	27	1,05	17,9	20,0	22,1	24,2	26,4
33	30	1,15	19,6	21,9	24,2	26,5	28,8
36	33	1,26	21,4	23,9	26,5	29,0	31,5
39	35	1,36	23,1	25,8	28,5	31,3	34,0
42	38	1,48	25,1	28,0	31,0	33,9	36,9
45	41	1,58	26,8	29,9	33,1	36,2	39,4
48	44	1,69	28,7	32,1	35,5	38,8	42,2
51	45	1,81	30,7	34,3	37,9	41,5	45,2
54	48	1,91	32,5	36,4	40,2	44,0	47,8
57	52	2,07	35,1	39,4	43,4	47,5	51,7
60	54	2,13	36,3	40,6	44,8	49,1	53,4
63	57	2,27	38,5	43,1	47,6	52,1	56,6
66	60	2,39	40,7	45,4	50,2	55,0	59,8
69	63	2,51	42,6	47,6	52,7	57,7	62,7
72	65	2,64	44,8	50,1	55,4	60,6	65,9
75	68	2,72	46,2	51,7	57,1	62,5	68,0
78	71	2,90	49,3	55,1	60,9	66,8	72,6
81	73	3,04	51,7	57,7	63,8	69,9	76,0
84	76	3,15	53,6	59,9	66,2	72,5	78,8
87	79	3,31	56,3	62,9	69,5	76,2	82,8
90	82	3,40	57,8	64,6	71,4	78,2	85,0
93	84	3,59	61,0	68,2	75,3	82,5	89,7
96	87	3,69	62,7	70,1	77,5	84,9	92,3
99	90	3,86	65,5	73,2	81,0	88,7	96,4
102	92	4,04	68,6	76,7	84,8	92,8	

Seedtable
DEMETER CLASSIC
CS/CSA 3000 (3,0 m)

Type	Tyred wheel	Calibration of the level			
		1 Ha	1/4 Ha	1/10 Ha	1/40 Ha
CS	5.00 - 15	4242	1060	424,2	106
	6.00 - 16	3648	912	364,8	91,2
CS-A	Land wheel	3648	912	364,8	91,2

Demeter Classic CS/CSA 3000 (3,0 m)

Barley, L.weight 797 g/l, TSW 52 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha							
Tyred wheel				Number of rows						
6.00 -16	5.00 -15	1	19	21	23	25	27	29	35
24	22	2,64	50	56	61	66	71	77	93
27	25	2,99	57	63	69	75	81	87	105
30	27	3,29	63	69	76	82	89	95	115
33	30	3,60	68	76	83	90	97	104	126
36	33	3,93	75	83	90	98	106	114	138
39	35	4,24	81	89	98	106	115	123	149
42	38	4,61	88	97	106	115	124	134	161
45	41	4,92	93	103	113	123	133	143	172
48	44	5,27	100	111	121	132	142	153	184
51	45	5,64	107	118	130	141	152	163	197
54	48	5,97	113	125	137	149	161	173	209
57	52	6,45	123	135	148	161	174	187	226
60	54	6,66	127	140	153	167	180	193	233
63	57	7,07	134	149	163	177	191	205	248
66	60	7,46	142	157	172	187	202	216	261
69	63	7,83	149	164	180	196	211	227	274
72	65	8,23	156	173	189	206	222	239	288
75	68	8,49	161	178	195	212	229	246	297
78	71	9,06	172	190	208	226	245	263	317
81	73	9,48	180	199	218	237	256	275	332
84	76	9,83	187	206	226	246	265	285	344
87	79	10,34	196	217	238	258	279	300	362
90	82	10,61	202	223	244	265	286	308	371
93	84	11,20	213	235	258	280	302	325	392
96	87	11,52	219	242	265	288	311	334	403
99	90	12,03	229	253	277	301	325	349	421
102	92	12,60	239	265	290	315	340	365	441
105	94	13,00	247	273	299	325	351	377	455
108	97	13,44	255	282	309	336	363	390	470
111	99	13,90	264	292	320	348	375	403	487

Demeter Classic CS/CSA 3000 (3,0 m)

Wheat, L.weight 880 g/l, TSW 48 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha							
Tyred wheel				Number of rows						
6.00 -16	5.00 -15	1	19	21	23	25	27	29	35
24	22	3,23	61	68	74	81	87	94	113
27	25	3,65	69	77	84	91	98	106	128
30	27	4,02	76	84	92	101	109	117	141
33	30	4,40	84	92	101	110	119	128	154
36	33	4,80	91	101	111	120	130	139	168
39	35	5,18	98	109	119	130	140	150	181
42	38	5,63	107	118	129	141	152	163	197
45	41	6,01	114	126	138	150	162	174	210
48	44	6,44	122	135	148	161	174	187	225
51	45	6,89	131	145	158	172	186	200	241
54	48	7,30	139	153	168	182	197	212	255
57	52	7,88	150	165	181	197	213	229	276
60	54	8,14	155	171	187	204	220	236	285
63	57	8,64	164	181	199	216	233	251	302
66	60	9,12	173	192	210	228	246	264	319
69	63	9,56	182	201	220	239	258	277	335
72	65	10,05	191	211	231	251	271	291	352
75	68	10,37	197	218	238	259	280	301	363
78	71	11,07	210	232	255	277	299	321	387
81	73	11,59	220	243	267	290	313	336	406
84	76	12,01	228	252	276	300	324	348	420
87	79	12,63	240	265	290	316	341	366	442
90	82	12,96	246	272	298	324	350	376	454
93	84	13,68	260	287	315	342	369	397	479
96	87	14,07	267	295	324	352	380	408	492
99	90	14,70	279	309	338	368	397	426	515
102	92	15,39	292	323	354	385	416	446	539
105	94	15,89	302	334	365	397	429	461	556
108	97	16,42	312	345	378	410	443	476	575
111	99	16,98	323	357	391	425	459	492	594

Demeter Classic CS/CSA 3000 (3,0 m)

Rye, L.weight 775 g/l, TSW 40 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha							
Tyred wheel						Number of rows				
6.00 -16	5.00 -15	1	19	21	23	25	27	29	35
24	22	2,67	51	56	61	67	72	77	93
27	25	3,01	57	63	69	75	81	87	105
30	27	3,32	63	70	76	83	90	96	116
33	30	3,63	69	76	84	91	98	105	127
36	33	3,97	75	83	91	99	107	115	139
39	35	4,28	81	90	98	107	116	124	150
42	38	4,65	88	98	107	116	126	135	163
45	41	4,96	94	104	114	124	134	144	174
48	44	5,32	101	112	122	133	144	154	186
51	45	5,69	108	119	131	142	154	165	199
54	48	6,03	114	127	139	151	163	175	211
57	52	6,51	124	137	150	163	176	189	228
60	54	6,72	128	141	155	168	182	195	235
63	57	7,14	136	150	164	178	193	207	250
66	60	7,53	143	158	173	188	203	218	264
69	63	7,90	150	166	182	197	213	229	276
72	65	8,30	158	174	191	208	224	241	291
75	68	8,56	163	180	197	214	231	248	300
78	71	9,14	174	192	210	229	247	265	320
81	73	9,57	182	201	220	239	258	278	335
84	76	9,92	188	208	228	248	268	288	347
87	79	10,43	198	219	240	261	282	302	365
90	82	10,70	203	225	246	268	289	310	375
93	84	11,30	215	237	260	282	305	328	395
96	87	11,62	221	244	267	291	314	337	407
99	90	12,14	231	255	279	304	328	352	425
102	92	12,71	242	267	292	318	343	369	445
105	94	13,12	249	276	302	328	354	381	459
108	97	13,56	258	285	312	339	366	393	475
111	99	14,03	266	295	323	351	379	407	491

Demeter Classic CS/CSA 3000 (3,0 m)

Oats, L.weight 552 g/l, TSW 38 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha							
Tyred wheel						Number of rows				
6.00 -16	5.00 -15	1	19	21	23	25	27	29	35
63	57	4,96	94	104	114	124	134	144	174
66	60	5,24	99	110	120	131	141	152	183
69	63	5,49	104	115	126	137	148	159	192
72	65	5,77	110	121	133	144	156	167	202
75	68	5,95	113	125	137	149	161	173	208
78	71	6,35	121	133	146	159	172	184	222
81	73	6,65	126	140	153	166	180	193	233
84	76	6,90	131	145	159	172	186	200	241
87	79	7,25	138	152	167	181	196	210	254
90	82	7,44	141	156	171	186	201	216	260
93	84	7,85	149	165	181	196	212	228	275
96	87	8,08	153	170	186	202	218	234	283
99	90	8,44	160	177	194	211	228	245	295
102	92	8,84	168	186	203	221	239	256	309
105	94	9,12	173	192	210	228	246	264	319
108	97	9,42	179	198	217	236	254	273	330
111	99	9,75	185	205	224	244	263	283	341
114	102	10,28	195	216	236	257	278	298	360
117	105	10,47	199	220	241	262	283	304	366
120	109	10,87	207	228	250	272	294	315	381
123	112	11,31	215	237	260	283	305	328	396
126	114	11,78	224	247	271	295	318	342	412
129	117	12,03	229	253	277	301	325	349	421
132	120	12,57	239	264	289	314	339	364	440
135	123	12,85	244	270	296	321	347	373	450
138	126	13,46	256	283	310	337	363	390	471
141	129	13,79	262	290	317	345	372	400	483
144	132	14,14	269	297	325	353	382	410	495
147	134	14,69	279	308	338	367	397	426	514
150	137	15,00	285	315	345	375	405	435	525

Demeter Classic CS/CSA 3000 (3,0 m)

Rape, L.weight 617 g/l

Bottom flaps: 1. pos

Seed shutter: 1. pos

Fine seed roller

Cut-off agitator shaft

Adjustment of Gear Box		Quantity of seed distributed kg/ha							
Tyred wheel			Number of rows						
6.00 -16	5.00 -15	1	19	21	23	25	27	29	35
9	8	0,08	1,4	1,6	1,7	1,9	2,0	2,2	2,6
12	11	0,10	2,0	2,2	2,4	2,6	2,8	3,0	3,6
15	14	0,12	2,2	2,5	2,7	2,9	3,2	3,4	4,1
18	18	0,15	2,8	3,1	3,4	3,7	4,0	4,3	5,1
21	20	0,16	3,1	3,4	3,7	4,0	4,3	4,7	5,6
24	22	0,18	3,4	3,8	4,1	4,5	4,8	5,2	6,3
27	25	0,20	3,9	4,3	4,7	5,1	5,5	5,9	7,1
30	27	0,22	4,2	4,7	5,1	5,6	6,0	6,5	7,8
33	30	0,24	4,6	5,1	5,6	6,1	6,6	7,1	8,6
36	33	0,27	5,1	5,6	6,1	6,7	7,2	7,7	9,3
39	35	0,29	5,5	6,0	6,6	7,2	7,8	8,4	10,1
42	38	0,31	5,9	6,6	7,2	7,8	8,4	9,1	10,9
45	41	0,33	6,3	7,0	7,7	8,3	9,0	9,7	11,7
48	44	0,36	6,8	7,5	8,2	8,9	9,7	10,4	12,5
51	45	0,38	7,3	8,0	8,8	9,6	10,3	11,1	13,4
54	48	0,41	7,7	8,5	9,3	10,1	10,9	11,8	14,2
57	52	0,44	8,3	9,2	10,1	10,9	11,8	12,7	15,3
60	54	0,45	8,6	9,5	10,4	11,3	12,2	13,1	15,8
63	57	0,48	9,1	10,1	11,0	12,0	13,0	13,9	16,8
66	60	0,51	9,6	10,6	11,7	12,7	13,7	14,7	17,7
69	63	0,53	10,1	11,2	12,2	13,3	14,3	15,4	18,6
72	65	0,56	10,6	11,7	12,8	14,0	15,1	16,2	19,5
75	68	0,58	10,9	12,1	13,2	14,4	15,6	16,7	20,2
78	71	0,61	11,7	12,9	14,1	15,4	16,6	17,8	21,5
81	73	0,64	12,2	13,5	14,8	16,1	17,4	18,7	22,5
84	76	0,67	12,7	14,0	15,3	16,7	18,0	19,4	23,4
87	79	0,70	13,3	14,7	16,1	17,5	18,9	20,3	24,6
90	82	0,72	13,7	15,1	16,6	18,0	19,4	20,9	25,2
93	84	0,76	14,4	16,0	17,5	19,0	20,5	22,0	26,6
96	87	0,78	14,9	16,4	18,0	19,5	21,1	22,7	27,4

Demeter Classic CS/CSA 3000 (3,0 m)

Peas, L.weight 780 g/l, TSW 327 g

Bottom flaps: 5. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box		Quantity of seed distributed kg/ha							
Tyred wheel			Number of rows						
6.00 -16	5.00 -15	1	19	21	23	25	27	29	35
30	27	3,72	71	78	86	93	101	108	130
33	30	4,07	77	86	94	102	110	118	143
36	33	4,45	85	93	102	111	120	129	156
39	35	4,80	91	101	110	120	130	139	168
42	38	5,21	99	109	120	130	141	151	182
45	41	5,56	106	117	128	139	150	161	195
48	44	5,96	113	125	137	149	161	173	209
51	45	6,38	121	134	147	159	172	185	223
54	48	6,76	128	142	155	169	182	196	236
57	52	7,30	139	153	168	182	197	212	255
60	54	7,54	143	158	173	188	204	219	264
63	57	8,00	152	168	184	200	216	232	280
66	60	8,44	160	177	194	211	228	245	296
69	63	8,85	168	186	204	221	239	257	310
72	65	9,31	177	195	214	233	251	270	326
75	68	9,60	182	202	221	240	259	278	336
78	71	10,25	195	215	236	256	277	297	359
81	73	10,73	204	225	247	268	290	311	376
84	76	11,12	211	234	256	278	300	323	389
87	79	11,69	222	246	269	292	316	339	409
90	82	12,00	228	252	276	300	324	348	420
93	84	12,67	241	266	291	317	342	367	443
96	87	13,03	248	274	300	326	352	378	456
99	90	13,61	259	286	313	340	368	395	476
102	92	14,25	271	299	328	356	385	413	499
105	94	14,71	279	309	338	368	397	427	515
108	97	15,20	289	319	350	380	410	441	532
111	99	15,72	299	330	362	393	425	456	550
114	102	16,58	315	348	381	415	448	481	580
117	105	16,89	321	355	388	422	456	490	591

Demeter Classic CS/CSA 3000 (3,0 m)

Graas, L.weight 324 g/l

Bottom flaps: 1. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box			Quantity of seed distributed kg/ha							
Tyred wheel			Number of rows							
6.00 -16	5.00 -15	1	19	21	23	25	27	29	35
15	14	0,46	8,8	9,7	10,6	11,6	12,5	13,4	16,2
18	18	0,58	11,0	12,1	13,3	14,4	15,6	16,7	20,2
21	20	0,63	12,0	13,3	14,6	15,8	17,1	18,4	22,2
24	22	0,71	13,4	14,8	16,2	17,6	19,1	20,5	24,7
27	25	0,80	15,1	16,7	18,3	19,9	21,5	23,1	27,9
30	27	0,88	16,7	18,4	20,2	22,0	23,7	25,5	30,7
33	30	0,96	18,3	20,2	22,1	24,0	25,9	27,9	33,6
36	33	1,05	19,9	22,0	24,1	26,2	28,3	30,4	36,7
39	35	1,13	21,5	23,8	26,1	28,3	30,6	32,9	39,6
42	38	1,23	23,4	25,8	28,3	30,7	33,2	35,7	43,0
45	41	1,31	24,9	27,6	30,2	32,8	35,4	38,1	45,9
48	44	1,41	26,7	29,5	32,4	35,2	38,0	40,8	49,2
51	45	1,51	28,6	31,6	34,6	37,6	40,6	43,6	52,7
54	48	1,59	30,3	33,5	36,7	39,9	43,0	46,2	55,8
57	52	1,72	32,7	36,2	39,6	43,0	46,5	49,9	60,3
60	54	1,78	33,8	37,4	40,9	44,5	48,0	51,6	62,3
63	57	1,89	35,9	39,6	43,4	47,2	51,0	54,8	66,1
66	60	1,99	37,9	41,9	45,8	49,8	53,8	57,8	69,8
69	63	2,09	39,7	43,9	48,1	52,2	56,4	60,6	73,1
72	65	2,20	41,7	46,1	50,5	54,9	59,3	63,7	76,9
75	68	2,27	43,0	47,6	52,1	56,6	61,2	65,7	79,3
78	71	2,42	45,9	50,8	55,6	60,5	65,3	70,1	84,6
81	73	2,53	48,1	53,2	58,2	63,3	68,4	73,4	88,6
84	76	2,62	49,9	55,1	60,4	65,6	70,9	76,1	91,9
87	79	2,76	52,4	57,9	63,5	69,0	74,5	80,0	96,6
90	82	2,83	53,8	59,5	65,1	70,8	76,5	82,1	99,1
93	84	2,99	56,8	62,8	68,8	74,7	80,7	86,7	99,1
96	87	3,07	58,4	64,6	70,7	76,9	83,0	89,2	99,1
99	90	3,21	61,0	67,5	73,9	80,3	86,7	93,2	99,1
102	92	3,36	63,9	70,6	77,3	84,1	90,8	97,5	99,1

Seedtable
DEMETER CLASSIC
CS/CSA 4000 (4,0 m)

Type	Tyred wheel	Calibration of the level			
		1 Ha	1/4 Ha	1/10 Ha	1/40 Ha
CS	10.00 - 15	2815	704	281,5	70,4
CS-A	Land wheel	2736	684	273,6	68,4

Demeter Classic CS/CSA 4000 (4,0 m)

Barley, L.weight 797 g/l, TSW 52 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15		Number of rows				
	1	29	31	33	35	39
30	2,40	70	75	79	84	94
33	2,63	76	82	87	92	103
36	2,87	83	89	95	101	112
39	3,10	90	96	102	108	121
42	3,37	98	104	111	118	131
45	3,59	104	111	119	126	140
48	3,85	112	119	127	135	150
51	4,12	119	128	136	144	161
54	4,36	127	135	144	153	170
57	4,71	137	146	155	165	184
60	4,85	141	151	161	170	190
63	5,17	150	160	170	181	201
66	5,45	158	169	180	191	213
69	5,72	166	177	189	200	223
72	6,01	174	186	198	210	234
75	6,20	180	192	205	217	242
78	6,62	192	205	218	232	258
81	6,93	201	215	229	243	270
84	7,18	208	223	237	251	280
87	7,55	219	234	249	264	294
90	7,75	225	240	256	271	302
93	8,18	237	254	270	286	319
96	8,41	244	261	278	294	328
99	8,79	255	273	290	308	343
102	9,20	267	285	304	322	359
105	9,50	275	294	313	332	370
108	9,82	285	304	324	344	383
111	10,15	294	315	335	355	396
114	10,71	311	332	353	375	418

Demeter Classic CS/CSA 4000 (4,0 m)

Wheat, L.weight 880 g/l, TSW 48 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15		Number of rows				
	1	29	31	33	35	39
30	2,94	85	91	97	103	115
33	3,21	93	100	106	112	125
36	3,51	102	109	116	123	137
39	3,79	110	117	125	133	148
42	4,11	119	127	136	144	160
45	4,39	127	136	145	154	171
48	4,70	136	146	155	165	183
51	5,03	146	156	166	176	196
54	5,33	155	165	176	187	208
57	5,76	167	178	190	201	224
60	5,95	172	184	196	208	232
63	6,31	183	196	208	221	246
66	6,66	193	207	220	233	260
69	6,99	203	217	231	245	272
72	7,34	213	228	242	257	286
75	7,57	220	235	250	265	295
78	8,08	234	251	267	283	315
81	8,47	245	262	279	296	330
84	8,77	254	272	290	307	342
87	9,23	268	286	304	323	360
90	9,47	275	294	312	331	369
93	9,99	290	310	330	350	390
96	10,28	298	319	339	360	401
99	10,74	311	333	354	376	419
102	11,24	326	349	371	394	438
105	11,61	337	360	383	406	453
108	11,99	348	372	396	420	468
111	12,41	360	385	409	434	484
114	13,08	379	406	432	458	510

Demeter Classic CS/CSA 4000 (4,0 m)

Rye, L.weight 775 g/l, TSW 40 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
		Number of rows				
Tyred wheel 10.00 -15	1	29	31	33	35	39
24	1,95	57	60	64	68	76
27	2,20	64	68	73	77	86
30	2,43	70	75	80	85	95
33	2,65	77	82	88	93	103
36	2,90	84	90	96	101	113
39	3,13	91	97	103	109	122
42	3,40	98	105	112	119	132
45	3,62	105	112	120	127	141
48	3,88	113	120	128	136	151
51	4,16	121	129	137	145	162
54	4,40	128	136	145	154	172
57	4,75	138	147	157	166	185
60	4,91	142	152	162	172	192
63	5,21	151	162	172	182	203
66	5,50	160	171	182	193	215
69	5,77	167	179	190	202	225
72	6,06	176	188	200	212	237
75	6,26	181	194	206	219	244
78	6,68	194	207	220	234	260
81	6,99	203	217	231	245	273
84	7,25	210	225	239	254	283
87	7,62	221	236	251	267	297
90	7,82	227	242	258	274	305
93	8,25	239	256	272	289	322
96	8,49	246	263	280	297	331
99	8,87	257	275	293	310	346
102	9,29	269	288	306	325	362
105	9,59	278	297	316	335	374
108	9,90	287	307	327	347	386

Demeter Classic CS/CSA 4000 (4,0 m)

Oats, L.weight 552 g/l, TSW 38 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
		Number of rows				
Tyred wheel 10.00 -15	1	29	31	33	35	39
66	3,82	111	119	126	134	149
69	4,01	116	124	132	140	156
72	4,22	122	131	139	148	164
75	4,35	126	135	143	152	170
78	4,64	135	144	153	162	181
81	4,86	141	151	160	170	190
84	5,04	146	156	166	176	196
87	5,30	154	164	175	185	207
90	5,44	158	168	179	190	212
93	5,74	166	178	189	201	224
96	5,90	171	183	195	207	230
99	6,17	179	191	203	216	240
102	6,45	187	200	213	226	252
105	6,66	193	207	220	233	260
108	6,88	200	213	227	241	268
111	7,12	207	221	235	249	278
114	7,51	218	233	248	263	293
117	7,65	222	237	252	268	298
120	7,94	230	246	262	278	310
123	8,26	240	256	273	289	322
126	8,61	250	267	284	301	336
129	8,79	255	272	290	308	343
132	9,18	266	285	303	321	358
135	9,39	272	291	310	329	366
138	9,84	285	305	325	344	384
141	10,08	292	312	332	353	393
144	10,33	299	320	341	361	403
147	10,73	311	333	354	376	418
150	10,96	318	340	362	383	427

Demeter Classic CS/CSA 4000 (4,0 m)

Rape, L.weight 617 g/l

Bottom flaps: 1. pos

Seed shutter: 1. pos

Fine seed roller

Cut-off agitator shaft

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel		Number of rows				
10.00 -15	1	29	31	33	35	39
9	0,06	1,6	1,7	1,8	1,9	2,2
12	0,08	2,2	2,3	2,5	2,6	2,9
15	0,09	2,5	2,7	2,8	3,0	3,4
18	0,11	3,1	3,3	3,5	3,8	4,2
21	0,12	3,4	3,6	3,9	4,1	4,6
24	0,13	3,8	4,1	4,3	4,6	5,1
27	0,15	4,3	4,6	4,9	5,2	5,8
30	0,16	4,7	5,1	5,4	5,7	6,4
33	0,18	5,2	5,5	5,9	6,2	7,0
36	0,20	5,7	6,0	6,4	6,8	7,6
39	0,21	6,1	6,5	6,9	7,4	8,2
42	0,23	6,6	7,1	7,5	8,0	8,9
45	0,24	7,1	7,6	8,0	8,5	9,5
48	0,26	7,6	8,1	8,6	9,1	10,2
51	0,28	8,1	8,7	9,2	9,8	10,9
54	0,30	8,6	9,2	9,8	10,4	11,5
57	0,32	9,3	9,9	10,6	11,2	12,5
60	0,33	9,6	10,2	10,9	11,6	12,9
63	0,35	10,2	10,9	11,6	12,3	13,7
66	0,37	10,7	11,5	12,2	13,0	14,4
69	0,39	11,3	12,0	12,8	13,6	15,1
72	0,41	11,8	12,6	13,5	14,3	15,9
75	0,42	12,2	13,0	13,9	14,7	16,4
78	0,45	13,0	13,9	14,8	15,7	17,5
81	0,47	13,6	14,6	15,5	16,5	18,3
84	0,49	14,1	15,1	16,1	17,1	19,0
87	0,51	14,9	15,9	16,9	17,9	20,0
90	0,53	15,3	16,3	17,4	18,4	20,5
93	0,56	16,1	17,2	18,3	19,4	21,7

Demeter Classic CS/CSA 4000 (4,0 m)

Peas, L.weight 780 g/l, TSW 327 g

Bottom flaps: 5. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel		Number of rows				
10.00 -15	1	29	31	33	35	39
30	2,72	79	84	90	95	106
33	2,97	86	92	98	104	116
36	3,25	94	101	107	114	127
39	3,51	102	109	116	123	137
42	3,81	110	118	126	133	148
45	4,06	118	126	134	142	158
48	4,35	126	135	144	152	170
51	4,66	135	144	154	163	182
54	4,94	143	153	163	173	192
57	5,33	155	165	176	187	208
60	5,51	160	171	182	193	215
63	5,84	169	181	193	205	228
66	6,17	179	191	204	216	241
69	6,47	188	201	213	226	252
72	6,80	197	211	224	238	265
75	7,01	203	217	231	245	274
78	7,49	217	232	247	262	292
81	7,84	227	243	259	274	306
84	8,13	236	252	268	284	317
87	8,54	248	265	282	299	333
90	8,77	254	272	289	307	342
93	9,25	268	287	305	324	361
96	9,52	276	295	314	333	371
99	9,94	288	308	328	348	388
102	10,41	302	323	344	364	406
105	10,75	312	333	355	376	419
108	11,10	322	344	366	389	433
111	11,49	333	356	379	402	448
114	12,11	351	376	400	424	472

Demeter Classic CS/CSA 4000 (4,0 m)

Graas, L.weight 324 g/l

Bottom flaps: 1. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15	Number of rows					
	1	29	31	33	35	39
15	0,34	9,8	10,5	11,2	11,8	13,2
18	0,42	12,2	13,1	13,9	14,8	16,4
21	0,46	13,4	14,3	15,3	16,2	18,0
24	0,52	15,0	16,0	17,0	18,0	20,1
27	0,58	16,9	18,1	19,2	20,4	22,7
30	0,64	18,6	19,9	21,2	22,5	25,0
33	0,70	20,4	21,8	23,2	24,6	27,4
36	0,77	22,2	23,8	25,3	26,8	29,9
39	0,83	24,0	25,7	27,3	29,0	32,3
42	0,90	26,1	27,9	29,7	31,4	35,0
45	0,96	27,8	29,7	31,6	33,6	37,4
48	1,03	29,8	31,9	33,9	36,0	40,1
51	1,10	31,9	34,1	36,3	38,5	42,9
54	1,16	33,8	36,1	38,4	40,8	45,4
57	1,26	36,5	39,0	41,5	44,0	49,1
60	1,30	37,7	40,3	42,9	45,5	50,7
63	1,38	40,0	42,8	45,5	48,3	53,8
66	1,46	42,2	45,1	48,0	51,0	56,8
69	1,53	44,3	47,3	50,4	53,4	59,5
72	1,60	46,5	49,7	52,9	56,2	62,6
75	1,66	48,0	51,3	54,6	57,9	64,5
78	1,77	51,2	54,8	58,3	61,8	68,9
81	1,85	53,6	57,3	61,0	64,7	72,1
84	1,92	55,6	59,4	63,3	67,1	74,8
87	2,02	58,5	62,5	66,5	70,6	78,6
90	2,07	60,0	64,1	68,3	72,4	80,7
93	2,18	63,3	67,6	72,1	76,4	85,2
96	2,25	65,1	69,6	74,1	78,6	87,6
99	2,35	68,1	72,8	77,4	82,1	91,5

KONGSKILDE

Seedtable
DEMETER CLASSIC
CS/CSA 4500 (4,5 m)

Type	Tyred wheel	Calibration of the level			
		1 Ha	1/4 Ha	1/10 Ha	1/40 Ha
CS	10.00 - 15	2467	617	247	62
CS-A	Land wheel	2432	608	243,2	60,8

Demeter Classic CS/CSA 4500 (4,5 m)

Barley, L.weight 797 g/l, TSW 52 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15		Number of rows				
	1	29	31	33	35	39
33	2,34	68	72	77	82	91
36	2,55	74	79	84	89	100
39	2,76	80	85	91	96	107
42	2,99	87	93	99	105	117
45	3,19	93	99	105	112	125
48	3,42	99	106	113	120	133
51	3,66	106	113	121	128	143
54	3,88	112	120	128	136	151
57	4,19	121	130	138	147	163
60	4,33	125	134	143	151	169
63	4,59	133	142	152	161	179
66	4,85	141	150	160	170	189
69	5,08	147	158	168	178	198
72	5,34	155	166	176	187	208
75	5,51	160	171	182	193	215
78	5,88	171	182	194	206	229
81	6,16	179	191	203	216	240
84	6,38	185	198	211	223	249
87	6,71	195	208	222	235	262
90	6,89	200	214	227	241	269
93	7,27	211	225	240	255	284
96	7,48	217	232	247	262	292
99	7,81	227	242	258	273	305
102	8,18	237	254	270	286	319
105	8,44	245	262	279	296	329
108	8,73	253	271	288	305	340
111	9,03	262	280	298	316	352
114	9,52	276	295	314	333	371
117	9,70	281	301	320	339	378

Demeter Classic CS/CSA 4500 (4,5 m)

Wheat, L.weight 880 g/l, TSW 48 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15		Number of rows				
	1	29	31	33	35	39
33	2,86	83	89	94	100	111
36	3,12	90	97	103	109	122
39	3,37	98	104	111	118	131
42	3,66	106	113	121	128	143
45	3,90	113	121	129	137	152
48	4,18	121	130	138	146	163
51	4,47	130	139	148	157	174
54	4,74	137	147	156	166	185
57	5,12	148	159	169	179	200
60	5,29	153	164	174	185	206
63	5,61	163	174	185	196	219
66	5,92	172	184	195	207	231
69	6,21	180	193	205	217	242
72	6,53	189	202	215	228	255
75	6,73	195	209	222	236	263
78	7,19	208	223	237	252	280
81	7,53	218	233	248	263	293
84	7,80	226	242	257	273	304
87	8,20	238	254	271	287	320
90	8,42	244	261	278	295	328
93	8,88	258	275	293	311	346
96	9,14	265	283	302	320	356
99	9,55	277	296	315	334	372
102	9,99	290	310	330	350	390
105	10,32	299	320	340	361	402
108	10,66	309	330	352	373	416
111	11,03	320	342	364	386	430
114	11,63	337	361	384	407	454

Demeter Classic CS/CSA 4500 (4,5 m)

Rye, L.weight 775 g/l, TSW 40 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15				Number of rows		
	1	29	31	33	35	39
33	2,36	68	73	78	83	92
36	2,58	75	80	85	90	101
39	2,78	81	86	92	97	108
42	3,02	88	94	100	106	118
45	3,22	93	100	106	113	126
48	3,45	100	107	114	121	135
51	3,69	107	115	122	129	144
54	3,91	113	121	129	137	153
57	4,23	123	131	139	148	165
60	4,37	127	135	144	153	170
63	4,63	134	144	153	162	181
66	4,89	142	152	161	171	191
69	5,13	149	159	169	180	200
72	5,39	156	167	178	189	210
75	5,56	161	172	184	195	217
78	5,94	172	184	196	208	231
81	6,22	180	193	205	218	242
84	6,44	187	200	213	225	251
87	6,77	196	210	224	237	264
90	6,95	202	215	229	243	271
93	7,34	213	227	242	257	286
96	7,55	219	234	249	264	294
99	7,88	229	244	260	276	308
102	8,25	239	256	272	289	322
105	8,52	247	264	281	298	332
108	8,80	255	273	291	308	343
111	9,11	264	282	301	319	355
114	9,61	279	298	317	336	375

Demeter Classic CS/CSA 4500 (4,5 m)

Oats, L.weight 552 g/l, TSW 38 g

Bottom flaps: 2. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15				Number of rows		
	1	29	31	33	35	39
66	3,40	99	105	112	119	133
69	3,57	103	111	118	125	139
72	3,75	109	116	124	131	146
75	3,87	112	120	128	135	151
78	4,13	120	128	136	144	161
81	4,32	125	134	143	151	168
84	4,48	130	139	148	157	175
87	4,71	137	146	155	165	184
90	4,83	140	150	159	169	188
93	5,10	148	158	168	178	199
96	5,25	152	163	173	184	205
99	5,48	159	170	181	192	214
102	5,74	166	178	189	201	224
105	5,92	172	184	195	207	231
108	6,12	177	190	202	214	239
111	6,33	184	196	209	222	247
114	6,68	194	207	220	234	260
117	6,80	197	211	224	238	265
120	7,06	205	219	233	247	275
123	7,34	213	228	242	257	286
126	7,65	222	237	252	268	298
129	7,81	227	242	258	273	305
132	8,16	237	253	269	286	318
135	8,35	242	259	275	292	325
138	8,74	254	271	289	306	341
141	8,96	260	278	296	313	349
144	9,18	266	285	303	321	358
147	9,54	277	296	315	334	372
150	9,74	282	302	321	341	380

Demeter Classic CS/CSA 4500 (4,5 m)

Rape, L.weight 617 g/l

Bottom flaps: 1. pos

Seed shutter: 1. pos

Fine seed roller

Cut-off agitator shaft

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15				Number of rows		
	1	29	31	33	35	39
9	0,04	1,2	1,3	1,4	1,5	1,7
12	0,06	1,7	1,8	1,9	2,0	2,3
15	0,07	1,9	2,1	2,2	2,3	2,6
18	0,08	2,4	2,6	2,7	2,9	3,2
21	0,09	2,6	2,8	3,0	3,2	3,5
24	0,10	2,9	3,1	3,3	3,5	3,9
27	0,11	3,3	3,5	3,8	4,0	4,4
30	0,13	3,6	3,9	4,1	4,4	4,9
33	0,14	4,0	4,3	4,5	4,8	5,4
36	0,15	4,4	4,7	5,0	5,3	5,9
39	0,16	4,7	5,0	5,3	5,7	6,3
42	0,18	5,1	5,5	5,8	6,2	6,9
45	0,19	5,4	5,8	6,2	6,6	7,3
48	0,20	5,8	6,2	6,6	7,0	7,9
51	0,22	6,2	6,7	7,1	7,5	8,4
54	0,23	6,6	7,1	7,5	8,0	8,9
57	0,25	7,1	7,6	8,1	8,6	9,6
60	0,25	7,4	7,9	8,4	8,9	9,9
63	0,27	7,8	8,4	8,9	9,5	10,5
66	0,29	8,3	8,8	9,4	10,0	11,1
69	0,30	8,7	9,3	9,9	10,5	11,7
72	0,31	9,1	9,7	10,4	11,0	12,3
75	0,32	9,4	10,0	10,7	11,3	12,6
78	0,35	10,0	10,7	11,4	12,1	13,5
81	0,36	10,5	11,2	12,0	12,7	14,1
84	0,38	10,9	11,6	12,4	13,1	14,6
87	0,39	11,5	12,2	13,0	13,8	15,4
90	0,41	11,8	12,6	13,4	14,2	15,8
93	0,43	12,4	13,3	14,1	15,0	16,7

Demeter Classic CS/CSA 4500 (4,5 m)

Peas, L.weight 780 g/l, TSW 327 g

Bottom flaps: 5. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box	Quantity of seed distributed kg/ha					
Tyred wheel 10.00 -15				Number of rows		
	1	29	31	33	35	39
33	2,64	77	82	87	93	103
36	2,89	84	90	95	101	113
39	3,12	90	97	103	109	122
42	3,38	98	105	112	118	132
45	3,61	105	112	119	126	141
48	3,87	112	120	128	135	151
51	4,14	120	128	137	145	162
54	4,39	127	136	145	154	171
57	4,74	137	147	156	166	185
60	4,89	142	152	162	171	191
63	5,20	151	161	171	182	203
66	5,48	159	170	181	192	214
69	5,75	167	178	190	201	224
72	6,04	175	187	199	212	236
75	6,23	181	193	206	218	243
78	6,65	193	206	220	233	260
81	6,97	202	216	230	244	272
84	7,22	209	224	238	253	282
87	7,59	220	235	251	266	296
90	7,79	226	242	257	273	304
93	8,23	239	255	271	288	321
96	8,46	245	262	279	296	330
99	8,84	256	274	292	309	345
102	9,25	268	287	305	324	361
105	9,55	277	296	315	334	373
108	9,87	286	306	326	345	385
111	10,21	296	317	337	357	398
114	10,77	312	334	355	377	420
117	10,97	318	340	362	384	428

Demeter Classic CS/CSA 4500 (4,5 m)

Graas, L.weight 324 g/l

Bottom flaps: 1. pos

Seed shutter: 2. pos

Full seed roller

Adjustment of Gear Box		Quantity of seed distributed kg/ha					
Tyred wheel 10.00-15		Number of rows					
	1	29	31	33	35	39
18	0,37	10,9	11,6	12,4	13,1	14,6
21	0,41	11,9	12,7	13,6	14,4	16,0
24	0,46	13,3	14,2	15,1	16,0	17,9
27	0,52	15,0	16,0	17,1	18,1	20,2
30	0,57	16,5	17,7	18,8	20,0	22,2
33	0,62	18,1	19,3	20,6	21,8	24,3
36	0,68	19,8	21,1	22,5	23,9	26,6
39	0,74	21,3	22,8	24,3	25,7	28,7
42	0,80	23,2	24,8	26,4	28,0	31,1
45	0,85	24,7	26,4	28,1	29,8	33,2
48	0,91	26,5	28,3	30,1	32,0	35,6
51	0,98	28,3	30,3	32,3	34,2	38,1
54	1,04	30,0	32,1	34,2	36,2	40,4
57	1,12	32,4	34,7	36,9	39,1	43,6
60	1,16	33,5	35,8	38,1	40,4	45,1
63	1,23	35,6	38,0	40,5	42,9	47,8
66	1,29	37,5	40,1	42,7	45,3	50,5
69	1,36	39,4	42,1	44,8	47,5	52,9
72	1,43	41,4	44,2	47,1	49,9	55,6
75	1,47	42,7	45,6	48,6	51,5	57,4
78	1,57	45,5	48,7	51,8	55,0	61,2
81	1,64	47,7	51,0	54,3	57,6	64,1
84	1,70	49,4	52,8	56,2	59,7	66,5
87	1,79	52,0	55,6	59,1	62,7	69,9
90	1,84	53,3	57,0	60,7	64,4	71,7
93	1,94	56,3	60,2	64,1	67,9	75,7
96	2,00	57,9	61,9	65,9	69,9	77,9
99	2,09	60,5	64,7	68,8	73,0	81,4
102	2,18	63,3	67,7	72,1	76,4	85,2