



Instruction Manual

AirstarProgress

AMAZONE

Pack Top Seed Drill Pneumatic AD-PL 2



MG 476
B 145-1 GB 02.00
Printed in Germany



**Before starting operation
carefully read and adhere to
this instruction manual and
the safety advice.**

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D-49202 Hasbergen-Gaste / Germany

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The Pack Top Seed Drill AD-PL is yet another product from the large range of AMAZONE farm machinery. This technique in conjunction with correct operation allows an optimum use. Therefore carefully read and observe this instruction manual.

Please ensure that this instruction manual has been made available to the operator before starting to operate the machine.

This instruction manual refers to the Pack Top Seed Drill AD-PL.

We wish you an always successful work with best results.

AMAZONEN-Werke
H. Dreyer GmbH & Co. KG

Hints for this instruction manual

Keep this instruction manual so that it is always at hand. In case you sell your machine, pass on this instruction manual to the next owner..

At the time of printing all data and indications are on their latest state. As AMAZONE is always endeavouring to introduce improvements, we reserve the right for changes at any time without any engagement.

Symbols in this instruction manual

In this instruction manual many warnings, precaution hints and advices are identified by symbols. The explanations for these symbols are given in the following:



General warning pictographs (DIN 4844-W9)

The warning pictographs indicate dangerous points on the machine. Observing these pictographs means safety for all persons using this machine.



Attention symbol

This symbol refers to safety advice, not adhering to them means danger to the implement and its functions.



Hint symbol

Hints regarding machine's specific particularities, which have to be adhered to for a faultless function of the machine are identified with the hint symbol.



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2.0 Details about the machine

2.1 Operational range

In combination with a soil tillage implement, the Pack Top Seed Drill is suited for storing, metering and sowing of all commercially available seeds.

2.2 Manufacturer

AMAZONEN-Werke
H. Dreyer GmbH & Co. KG
Postfach 51, D-49202 Hasbergen-Gaste / Germany

2.3 Conformity declaration

The implement combination fulfills the requirements of the EC-guide line Machine 89/392/EC and the corresponding additional guide lines.

2.4 Details when making enquiries and ordering

When ordering options or spare parts the machine type and the serial number have to be included.

All components of your machine have carefully been matched in order to provide you with a high safety standard.

Please be aware, that any technical deviation from the original state of your machine may affect its safety. This does not only apply to unsuited spare parts but also for options which do not have our approval.



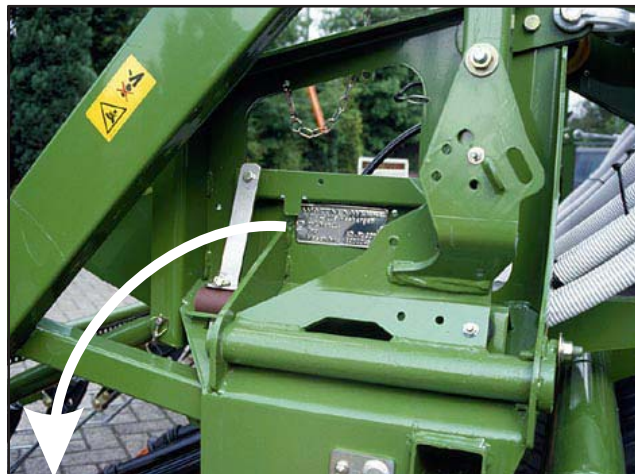
For your own safety we therefore recommend you only to use original spare parts and original options.

Original spare parts and options have been especially designed for your machine and have been checked. For all spare parts, options and fitting parts which have not been approved by AMAZONE as well as in case of any other arbitrary technical changes the liability of AMAZONE for resulting damage is ruled out.

2.5 Type plate



The type plate is of documentary value and may not be changed or disguised!



AMAZONEN-WERKE	
D - 49205 Hasbergen	
zul. Nutzl. :	
Typ :	
Masch. Nr. :	

16c019

Insert here the machine type and serial number of your Pack Top Seed Drill.

Machine type:

AMAZONE

Pack Top Seed Drill AIRSTAR PROGRESS

AD-PL

Serial-No.:

2.6 Technical data

Airstar Progress	AD-PL 302
Coulter exchange module	K-(Suffolk) coulters or roll disc coulters
Number of rows	24
Row spacing	12,5 cm
Working width = transport width	3,0 m
Height until upper edge of base seed box	2,0 m
until upper edge of distributor head	2,79 m
Weight (without soil tillage implement and without packer roller)	approx. 795 kg
Contents of seed box	1000 l

T145-d03

Seed box, metering unit, distributor head and blower fan of the Airstar progress are fixed to the frame of the soil tillage implement. The coulter exchange module rests on the strong packer roller. Thus the soil tillage implement can give way to stones and other obstacles in the soil and the danger of tine breakages or gearbox damage is reduced.

A star wheel drives the sowing devices when the combination is equipped with a wedge ring- or a tooth packer roller.

The tyre packer roller is used for driving the metering units.

The translucent distributor head being fixed on the seed drill within sight of the operator distributes the seed evenly to all coulters.



Fig. 2.1

2.7 Hydraulic connections

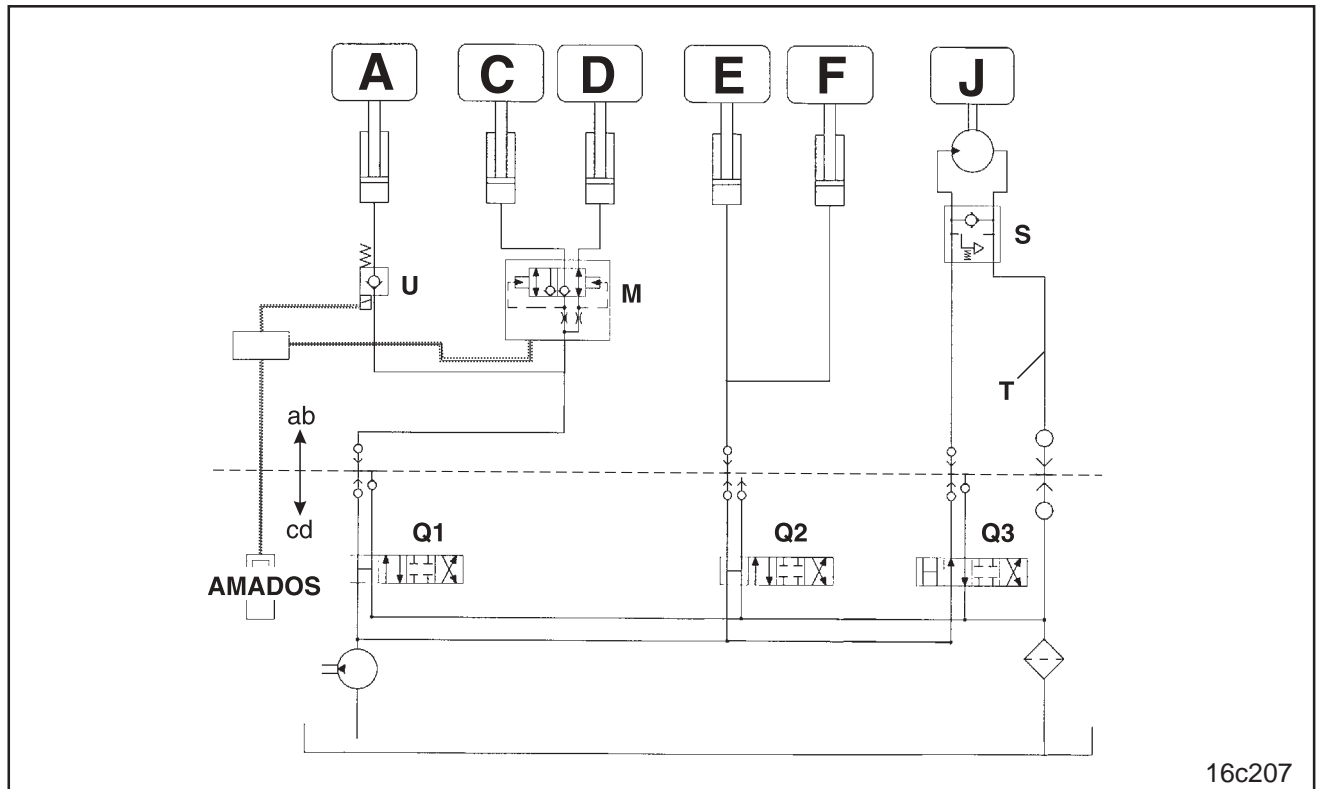


Fig. 2.2

Hydr. circuit diagram for Pack Top Seed Drill AD-PL AIRSTAR PROGRESS

Description

ab = implement side
cd = tractor side

Tractor control valves Q1 to Q3

Q1 to Q3 = 3 tractor control valves,
illustrated in position "operation"

Q3 = Valve for the hydraulic blower fan drive
with "priority" approx. 30 l/min.

Hydraulic ram

A = pre emergence marker
C = track marker left hand side
D = track marker right hand side
E = coulters pressure adjustment
F = extra coverage harrow adjustment

Hydr. drive

J = Blower fan hydraulic motor
N_{max} = 3800 R.P.M.

M = Track marker shuttle valve
S = DBV-valve with hydr. free wheel
T = free return flow (minimum DN16)
U = electr. hydr. valve



2.8 Details about noise level

The tractor operator seat related emission value (sound pressure level) is 74 dB (A), measured when operating with closed tractor cab at the ear of the tractor operator. Measuring implement: OPTAC SLM 5.

The value of the sound pressure level mainly depends on the vehicle used.



Therefore check before any use and also during operation your machine for the proper function and sufficient seed rate accuracy..

2.9 Declined use of the machine

The AMAZONE-Pack Top Seed Drill AD-PL has exclusively been designed for the usual operation for storing, metering and sowing common seeds in agriculture..

Any use beyond the one stipulated above is no longer considered as designed use. The manufacturer does not accept any responsibility for damage resulting from this; therefore, the operator himself carries the full risk. Under "designed use" also the adhering to the manufacturer's prescribed operation maintenance and repair conditions as well as the exclusive use of original AMAZONE spare parts is to be understood.



Any damage resulting from arbitrary changes on the machine rule out the responsibility of the manufacturer.

Though machines having been manufactured with great care, certain deviations from the seed rate or even a total failure of individual rows cannot totally be excluded, even at a declined use. These deviations may be caused e. g. by:

- varying composition of the seed (e.g. grain size, dressing, specific density, grain shape)
- drifting on slopes or mistakes by driving the following
- blockage or bridging, e.g. by swollen or germinating seed residue, foreign particles, bag residue etc.)
- undulated terrain
- wear of wearing parts (e.g. seed metering wheels etc.)
- damage by external influence
- wrong drive R.P.M. and travelling speed
- wrong setting of the machine (incorrect mounting, incorrect determination of the gearbox position).

3.0 Safety

This operation manual contains basic hints, which have to be observed when mounting, operating and maintaining the machine. Thus, this operation manual has implicitly to be read by the operator before starting to operate and has to be made available to him..

In this instruction manual you will find many hints which will provide you with a trouble-free operation.

These descriptions have been supplemented by many illustrations in order to explain all functions and to give you hints for safety and operation under varying operation conditions. Please observe and adhere strictly to all safety advice.

3.1 Dangers when not adhering to the safety advice

Not adhering to the safety advice

- may result in endangering persons, also the environment and on the machine itself.
- may result in the loss of any claim for damage.

Not paying attention to the safety advice may cause the following risks:

- Failure of important functions of the machine
- Failure of prescribed measures for maintenance and repair
- Danger for persons by mechanical or chemical affects
- Danger to persons or to the environment by leaking hydraulic oil.

3.2 Qualification of operator

The AMAZONE-Pack Top Seed Drill AD-PL may only be operated, maintained and repaired by persons, who are acquainted with it and have been informed of the relevant dangers.

3.3 Symbols in this instruction manual

In this instruction manual many warning, attention and hints are identified by symbols. The explanation for these symbols please find in the following:



General danger symbol (DIN 4844-W9)

The safety advice in this operation manual, which may lead to a danger of persons when not being observed, are identified with the general danger symbol.



Attention symbol

Attention symbols which may cause dangers for the machine and its function when not being adhered to, are identified with the Attention symbol.

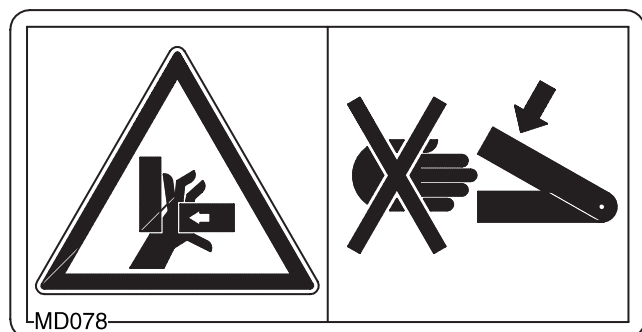


Hint symbol

Hints regarding machine's specific particularities, which have to be adhered to for a faultless function of the machine are identified with the hint symbol.

3.4 Warning pictographs and hint symbols on the machine

The warning pictographs, e. g.:



indicate dangerous points on the machine. Observing these pictographs means safety for all persons using this machine.

The hint symbols, e.g.:



mark machine's specific points which have to be observed to ensure correct function of the machine.

Fig. 3.1 shows the fixing points of warning pictographs and hint signs. Please refer to the following pages for relevant explanations. Please make these explanations also available for other users.

Please always keep all warning pictographs and hint signs clean and in readable condition. Please ask for replacement of damaged or missing signs from your dealer and attach to relevant place.
(Picture No. = Order-No.).

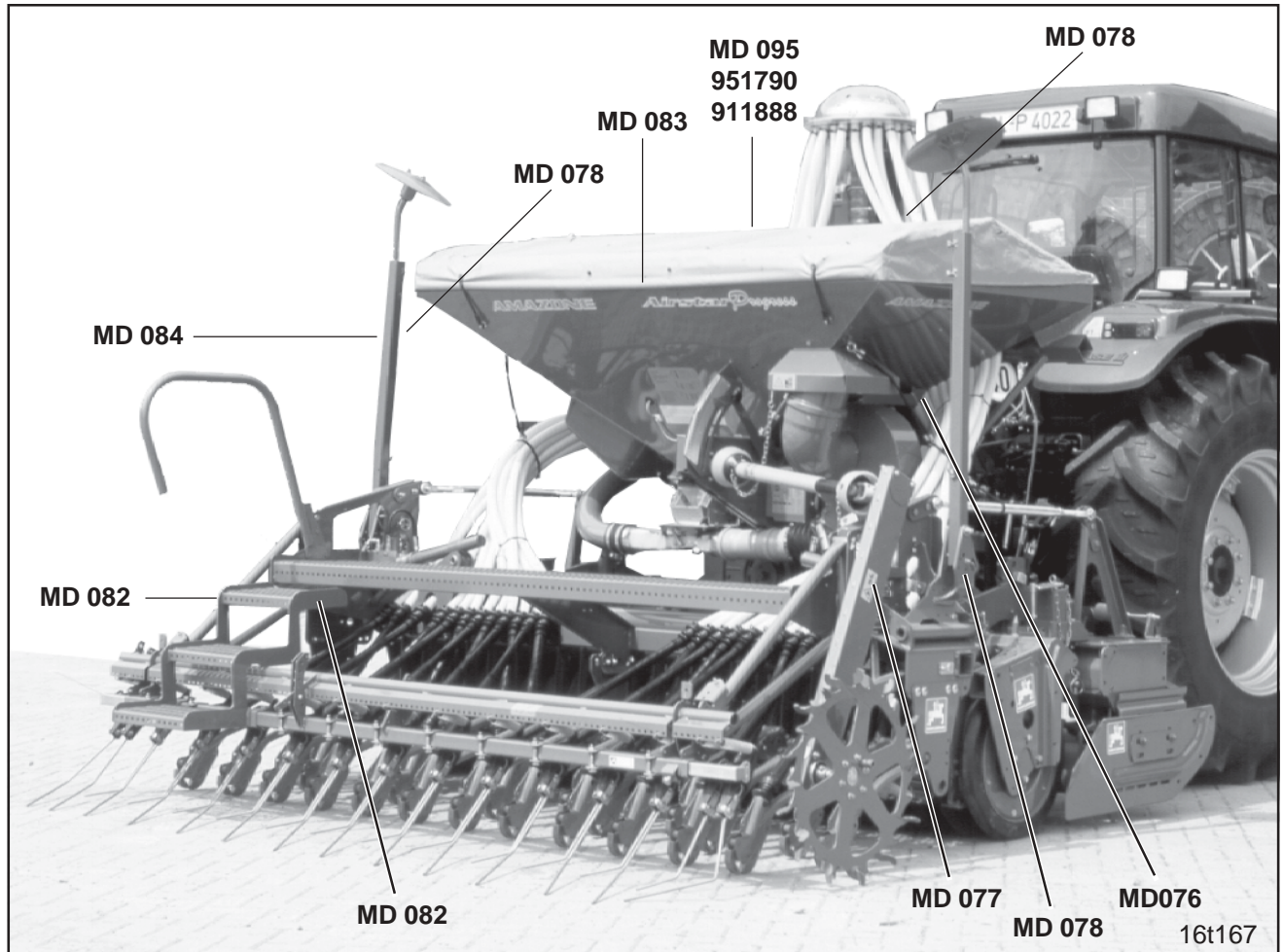
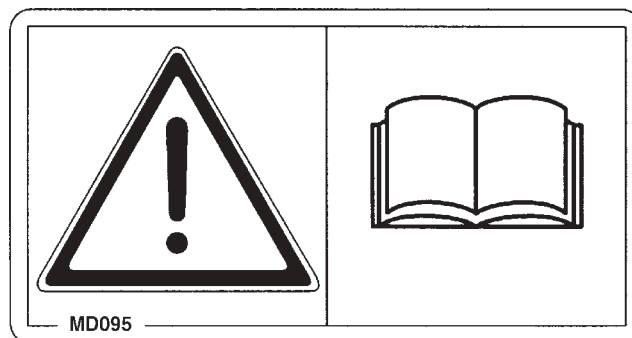


Fig. 3.1

Picture No.: MD 095**Explanation**

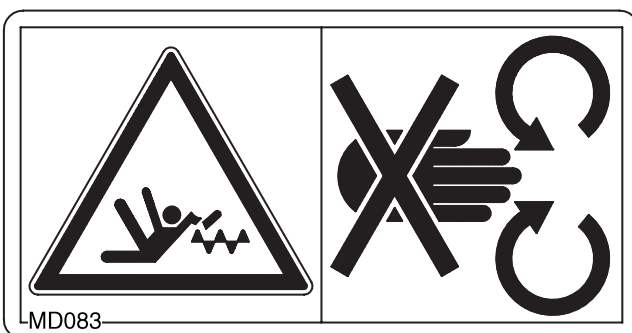
Before commencing work read the operation manual and safety advice thoroughly!

**Picture No.: MD 082****Explanation**

Sitting or standing on the implement (not even on the loading board) during operation or road transport is not permissible!

**Picture No.: MD 083****Explanation****Danger of injury!**

Never reach inside the seed box while tractor engine is running!

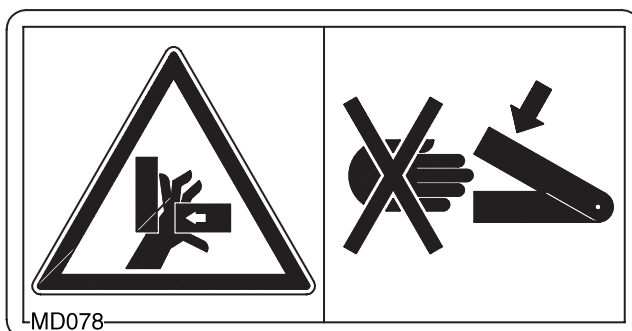
**Picture No.: MD 084****Explanation**

Never stay within the swivel area of the marker arms!

**Picture No.: MD 078****Explanation:**

Never touch zone of bruizing danger as long as parts can still be moving!

Advise people to leave the danger area!

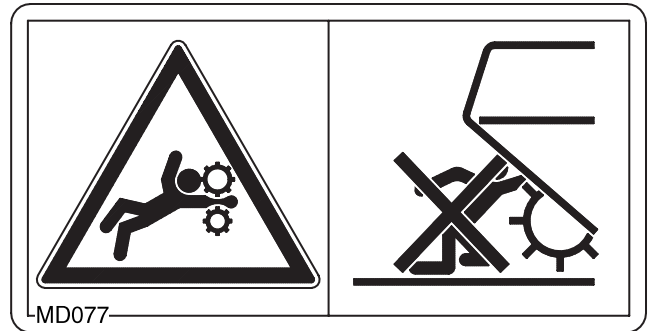


Picture No.: MD 077
Explanation:

Danger of bruizing while the tractor engine is running!

Keep sufficient clearance from the implement when it is started or running!

Advise people to leave the danger area as long as parts may still be moving!

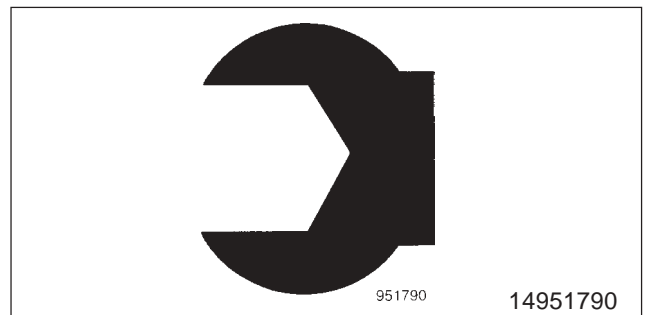

Picture No.: MD 076
Explanation:

Commence operating the implement only with all guards fitted.!

Do not remove guards while the engine is still running!
Before removing the guard disengage pto shaft. Switch off engine and remove ignition key!


Picture No.: 951790
Explanation

Retighten bolts after some hours of operation!


Picture No.: 911888
Explanation

The CE-mark indicates, that the machine fulfills the requirements of the EC-guide lines Machine ine 89/392/ EWG and the corresponding additional guide lines!





3.5 Safety conscious operation

Besides the safety advice in this operation manual the national, and generally valid operation safety and accident preventive descriptions of the authorised trade association are binding, especially UVV 3.1, die UVV 3.2 und die UVV 3.3.

When travelling on public roads observe the traffic regulations in force in your country.

3.6 Safety advice for the operator

3.6.1 General safety and accident preventive advice

Basic principle:

Always check traffic and operational safety before putting the implement into any operation!

1. Adhere to the general rules of health- and safety precautions as well as to the hints in this instruction manual!
2. The warning- and hint signs fixed to the machine give important hints for the safe operation of the machine. Adhering to them serves your safety!
3. When making use of public roads adhere to the applicable traffic rules!
4. Become acquainted with all devices and controlling elements as well as their function before beginning the operation. Doing this during operation would be too late!
5. The clothing of the operator should fit tight. Avoid wearing loose clothing!
6. To avoid risk of fire keep the machine clean!
7. Before beginning to drive check your surroundings (children). Ensure sufficient visibility!
8. Sitting or standing on the implement during operation or during transport is not permissible!
9. Mount the implement only with the prescribed tools!
10. Special care should be taken when the implement is coupled to or off the tractor!
11. When mounting or dismounting bring parking supports into correct position (otherwise danger of tipping over)!
12. Affix any ballast weights always as prescribed to the correct fixing points!
13. Check maximum permissible axle loads of the tractor (see vehicle documents)!
14. Do not exceed maximum permissible transport measurements of the traffic department!
15. Check and fit equipment for road transport, e. g. traffic lights, warning plates guards!
16. The release ropes for quick coupler should hang freely and in the low position these must not release the quick coupling by themselves!
17. Never leave tractor seat during driving!
18. Moving characteristics, steering and braking ability are affected by mounted implements, trailers and ballast weights. Therefore, take account of these effects and allow sufficient steering and braking!
19. When lifting the implement the front axle load of the tractor is relieved by different amounts depending on the size of the tractor. Always check that the necessary front axle load of the tractor (20 % of the tractor's net weight) is maintained!
20. When driving into bends mind the projection to the sides and the gyrating mass of the implement!
21. Take implement only into operation when all guards are fixed in position!
22. Never stay or let anyone stay within the operation area!
23. Filling the seed box may only be done with the tractor engine stopped, removed ignition and parking brake applied.
24. Do not stay in the rotating- and swivelling range of the implement!
25. Hydraulic folding frames may only be actuated when nobody is standing in the moving range!
26. On all hydraulically actuated pivoting parts exists danger of injury by bruising and trapping!
27. Before leaving the tractor lower the implement to the ground. Actuate the parking brakes, stop the engine and remove ignition key!
28. Nobody should stand between tractor and implement if the tractor is not secured against rolling away by the parking brake and/or by chocks!
29. Lock track markers in transport position!

3.6.2 General safety and accident regarding the implement mounted to the tractors three-point linkage

1. Before mounting- and dismounting implements to the three-point-linkage bring all control levers into a position that unintended lifting or lowering is impossible.
2. When fitting to the three-point linkage the mounting categories on the tractor and the implement must coincide!
3. Within the range of the three-point linkage danger of bruising and shearing!
4. When actuating the control levers for the three-point linkage never stand between tractor and implement!
5. In transport position always take care for sufficient lateral locking of the tractors' three-point linkage.
6. When driving on public roads with lifted implement the control lever has to be locked against unintended lowering!
7. Mount and dismount implements as described. Check braking systems for function. Mind manufacturer advice!
8. Working implements should only be transported and driven on tractors which are designed to do this!

3.6.3 General safety and accident preventive advice regarding the operation with seed drills

1. During calibration mind danger areas by rotating and oscillating implement parts!
2. Use platforms only for filling. Standing on them during transport or operation is prohibited!
3. Before road transport remove the carriers and marker discs of the pre-emergence marker!
4. When filling the seed box observe the hints of the implement manufacturer!
5. Lock markers in transport position!
6. Do not place any parts into the seed box!
7. Observe the permissible filling quantity!



3.6.4 General safety and accident preventive advice regarding the hydraulic system

1. The hydraulic system is under high pressure!
2. When connecting hydraulic rams and engines the described connection of the hydraulic hoses has to be noted!
3. When connecting the hydraulic hoses to the tractor's hydraulics take care that the hydraulics are pressureless on the tractor as well as on the implement side!
4. At hydraulic function connections between tractor and implement, the sockets and plugs should be colour coded in order to avoid incorrect operation! When mixing up connections, danger of reverse function, e. g. lifting instead of lowering. Danger of accident!
5. Regularly check hydraulic hoses and exchange in case of damage or ageing. The replacement hoses have to correspond to the technical demands of the implement manufacturer!
6. When searching for leaks appropriate aids should be used due to danger of injury!
7. Liquids (hydraulic oil) penetrating under high pressure may penetrate the skin and cause severe injuries!
In case of injuries immediately see a doctor. Danger of infection!
8. Before starting to do any repair work on the hydraulic system, lower implement, relieve system from pressure and switch off the engine!
9. The period of use of any hose circuit should not exceed six years including a possible storing period of two years in maximum. Also when stored and used properly, hoses and hose circuits age. Therefore, their longevity and period of use is limited. Deviations from the above may be accepted depending on the experience made and the danger potential. For hoses and hose circuits made of thermoplasts other guide lines may prevail.

3.6.5 General safety and accident preventive advice regarding the pto shaft

1. Use only pto shafts prescribed by the manufacturer!
2. Guard tubes and cones of the pto shaft as well as tractor and implement pto guards must be fitted and kept in the correct place!
3. Note the described pto-shaft tube guards in transport- and operating position!
4. Mounting and dismounting pto shaft only with disengaged pto shaft, stopped motor and removed ignition key!
5. Always care for correct fitting and securing of the pto shaft!
6. Prevent pto guard from spinning by fixing the chains provided!
7. Before engaging the pto shaft ensure that the chosen pto-speed of the tractor corresponds to the allowable implement input speed!
8. When using the ground speed related pto shaft note that the speed is related to the forward speed and that the sense of rotation reverses when backing up!
9. Before switching on the pto-shaft nobody is allowed to stand in the area of the spinning pto- or universal joint shaft!
10. Never switch on the tractor pto while the engine is stopped!
11. When operating with the pto shaft nobody is allowed to stand in the area of the spinning pto- or universal joint shaft!
12. Always switch off pto shaft when it is in an adverse position or not needed!
13. Attention! After switching off the pto shaft the mounted implement may still continue to run by its dynamic masses. During this period never come too close to the implement. Begin work only after the implement has come to a full standstill!
14. Clean and grease the universal joint shaft and the pto-driven implement only after the pto-shaft and engine have been stopped and ignition key removed!
15. Deposit removed pto shaft on the provided carrier!
16. After removal of the pto shaft replace protective cap over the tractor's pto.!
17. Remedy of damage is to be undertaken before starting to operate with the implement!

3.6.6 General safety and accident preventive advice for maintenance, repair and cleaning

1. Repair, maintenance- and cleaning operations as well as remedy of function faults should principally be conducted with a stopped drive and engine. Remove ignition key!
2. Check nuts and bolts regularly for tightness and retighten if necessary!
3. When doing maintenance work on the lifted implement make sure that it is secured by proper supports!
4. When exchanging parts with cutting edges use appropriate tools and wear gloves!
5. Dispose of oil, grease and filters in the appropriate manner!
6. Before doing any repair work on the electric disconnect power supply!
7. Before conducting electric welding operations on tractor or on the mounted implement, remove cable from generator and battery!
8. Any spare parts fitted must, in minimum, meet with the implement manufacturers' fixed technical standards. This is, for example, ensured by using original AMAZONE spare parts!

3.6.7 General safety- and accident preventive advice when retrofitting electric and electronic devices and/or components

The implement can be provided with electronic components the function of which - due to their electromagnetic transmittance - may affect other implements. Such affects may cause danger for persons in case the following safety advice will not be adhered to:

When retrofitting electric devices and/or components to the implement with connection to the on-board power supply, the user has to check by himself whether the installation causes failures on the vehicle's electronic or on other components.

Special attention has to be paid that the retrofitted electric and electronic parts correspond to the EMV-guide line 89/336/EWG in its valid edition and that they wear the CE-sign.

5.0 Equipping rollers with carrying arms for mounting to rotary harrows KE / rotary cultivators KG

For mounting the coulter exchange module, the roller has to be provided with carrying arms (Fig. 5.1/1) which can retain the coulter exchange module (Fig. 5.1/2).



Before fitting support the roller especially carefully (secure against tipping over or rolling away)!

For AMAZONE-rollers the following carrying arms are available:

1. Carrying arm (Fig. 5.2) for Tooth Packer Roller PW 500 and Wedge Ring Roller KW 450
2. Carrying arm left hand (Fig. 5.3/1) and
3. Carrying arm right hand (Fig. 5.3/2) for Tyre Packer Roller RP and Wedge Ring Roller KW 580.

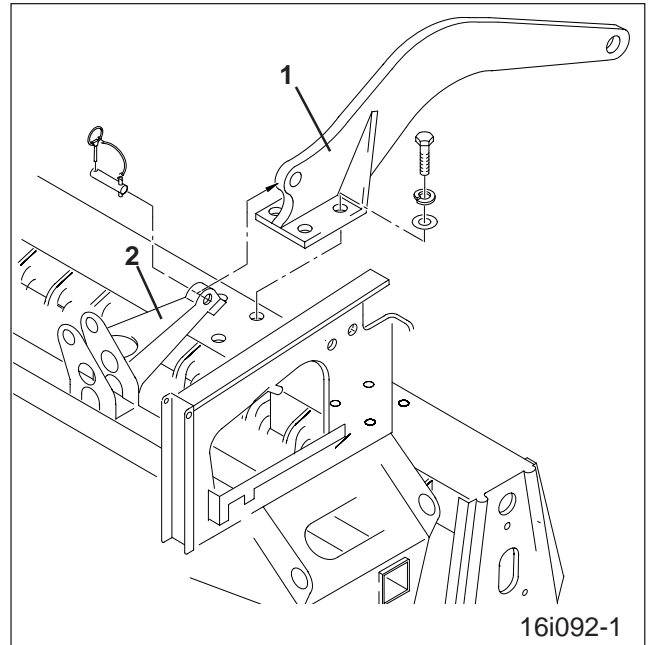


Fig. 5.1

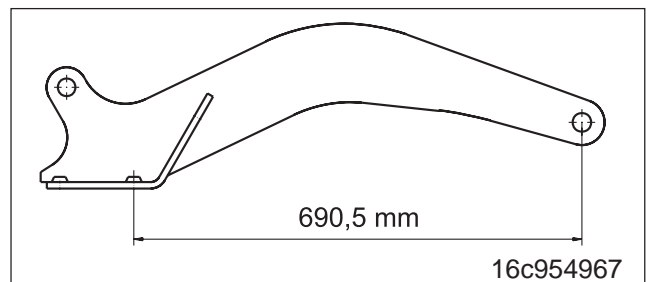


Fig. 5.2

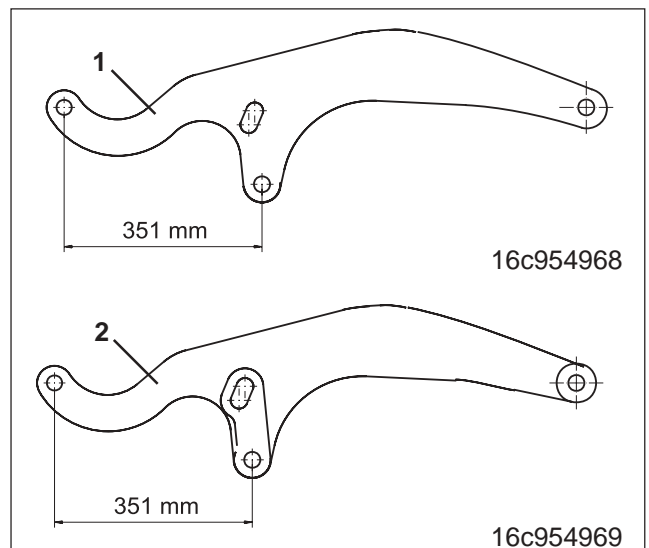


Fig. 5.3

Together with the carrying arms also fix the brake lever (Fig. 5.4/1) to the Tyre Packer Roller. The Tyre Packer Roller drives the sowing units of the seed drill. In order to ensure that no seed gets lost when turning at the headlands, switch off the drive of the sowing units immediately when the tyre packer is raised by the tractor hydraulics. While the Tyre Packer Roller is lifted the carrying arm presses the brake skid (Fig. 5.4/1) onto the running surface of one or more tyres and stops the tyre packer roller immediately.



The carrying arms of the Tyre Packer Roller and the Wedge Ring Roller KWS 580 must always be fixed with each two carrying arm pins (Fig. 5.4/2) to the roller

Affix a damper (Fig. 5.5/1) to every setting segment of the soil tillage implement and secure by a setting ring (Fig. 5.5/2).

Couple the roller to the soil tillage implement according to the instruction book and set the working depth as described in the instruction manual.

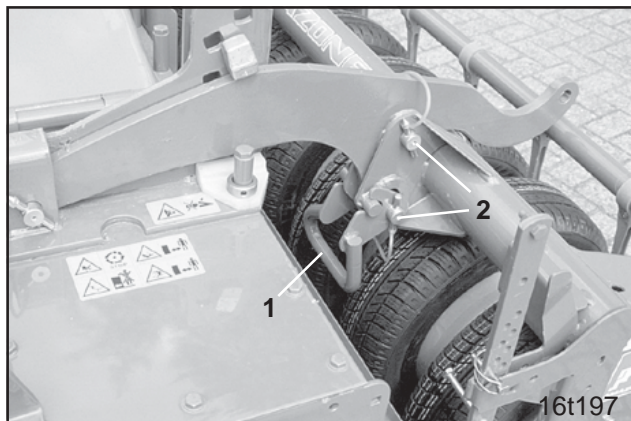


Fig. 5.4

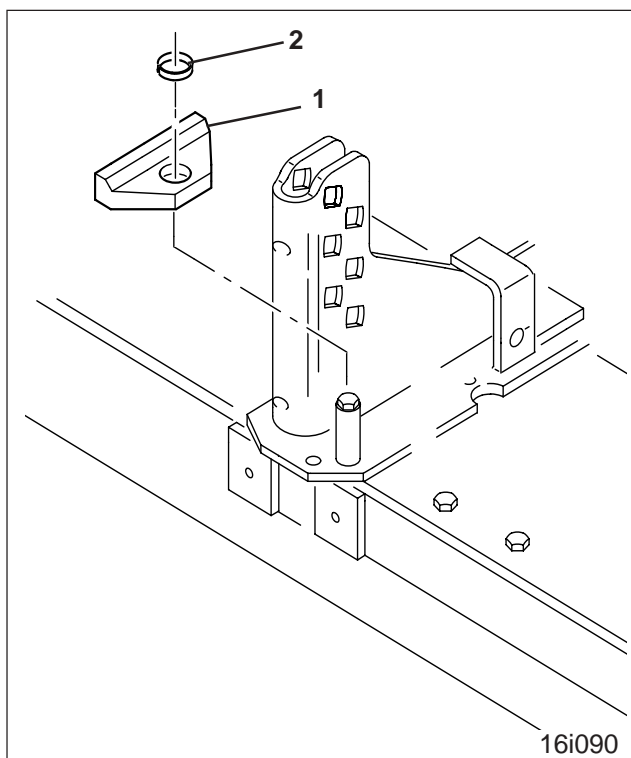


Fig. 5.5

6.0 Combining Pack Top Seed Drill AD-PL with rotary harrows KE / rotary cultivators KG

6.1 Fitting KE/KG-fixing brackets

- bolt two pulling shackles (Fig. 6.1/1) onto the top link of the rotary harrow/rotary cultivator.
- before drill holes $\varnothing 12,5\text{mm}$ according to Fig. 6.3 into the top link tower.
- Bolt on coupling points (Fig. 6.1/2) and connect with the pulling shackles (Fig. 6.1/1). The spacing between the coupling points (Fig. 6.2) is 820mm.

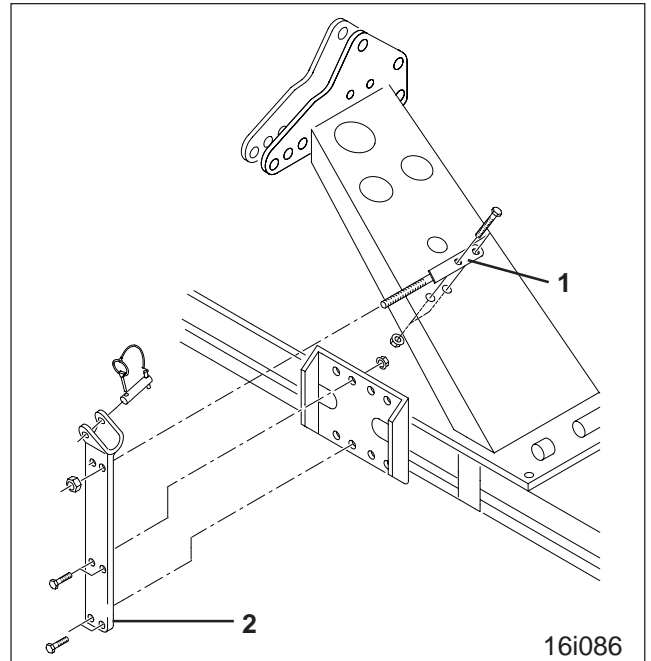


Fig. 6.1

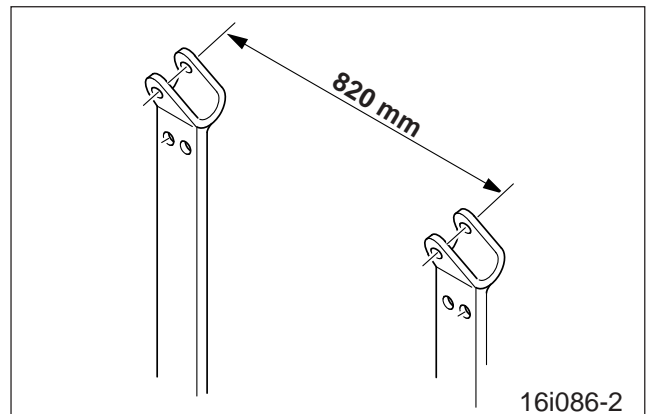


Fig. 6.2

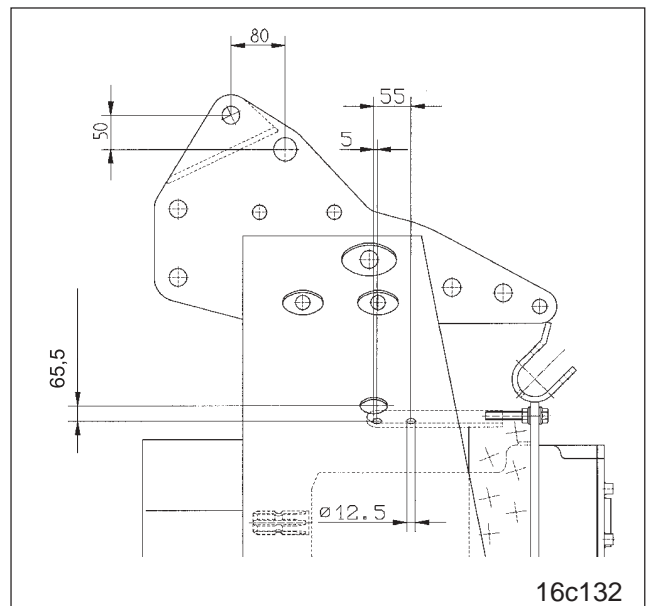


Fig. 6.3

Bolt on top link brackets (Fig. 6.4/1). Hereby observe:

- the front bolt connection has additionally to be provided with a sleeve (Fig. 6.4/2).
- place a 10 mm plate (Fig. 6.4/3) underneath every top link bracket in the rear, in case the soil tillage implement has not got a levelling rod.

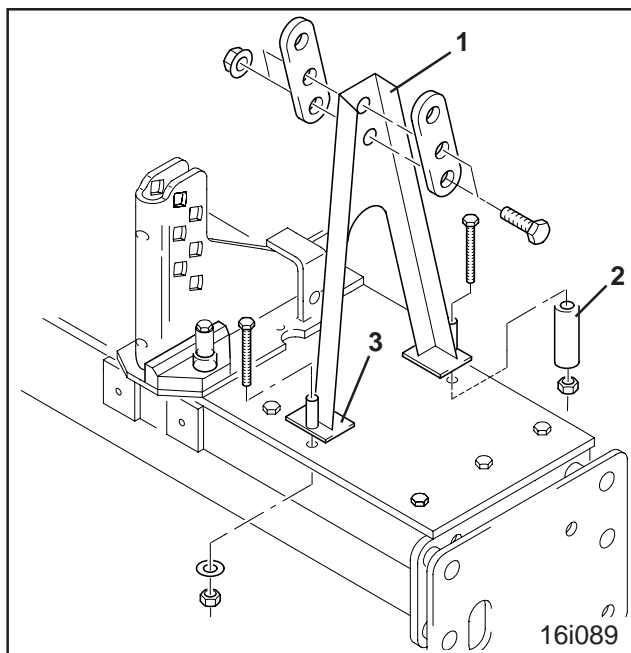


Fig. 6.4

6.2 Coupling seed drill and coulter module

Park seed drill and coulter module on level ground on the supporting legs (Fig. 6.5/1) provided.

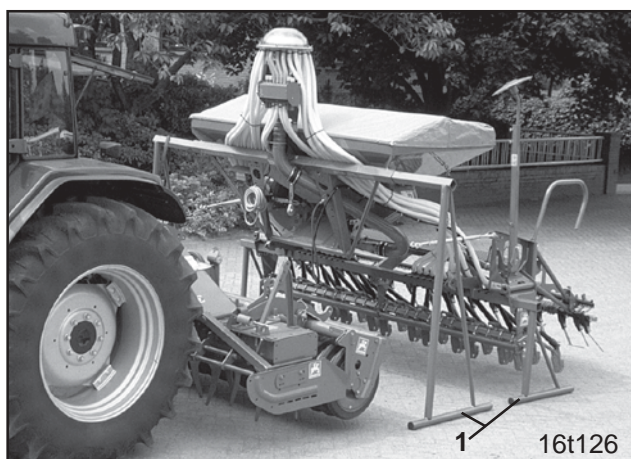


Fig. 6.5

Pick up bearing shaft (Fig. 6.6/1) of the AD-PL with the catching pockets (Fig. 6.6/2), set with pins (Fig. 6.6/3) and secure with clip pins.

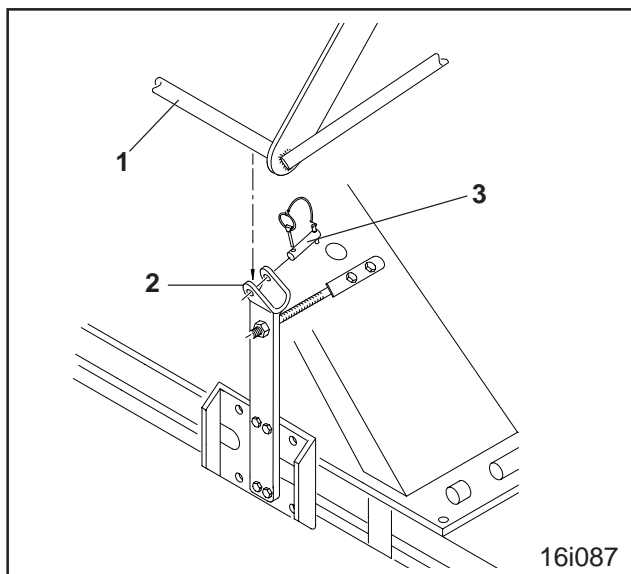


Fig. 6.6

Set top link (Fig. 6.7/1) on seed drill and soil tillage implement (upper hole) and secure the fixing pins with clip pins.

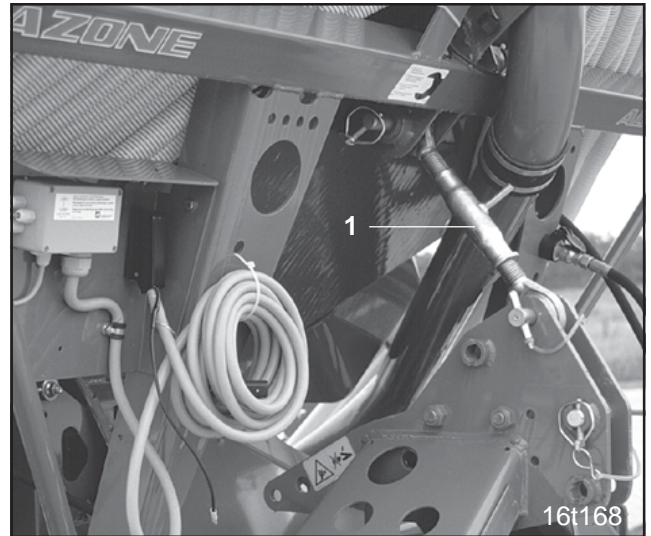


Fig. 6.7

In case you have an elder soil tillage implement without fixing holes, you have to equip it with a welded part (Fig. 6.8/1) before. You may order this welding part under the order-No. 950130 from our spare parts department..

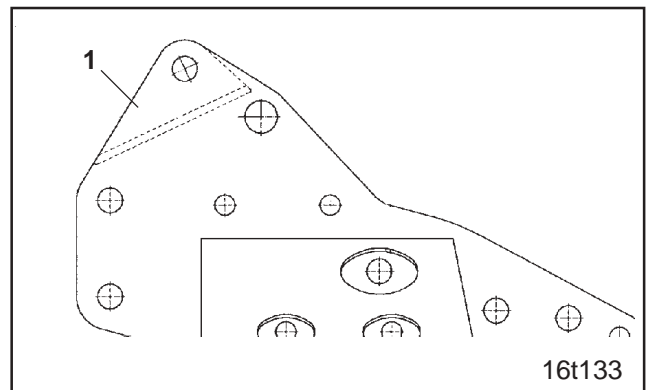


Fig. 6.8

Set the top link length (Fig. 6.7/1) in such a way that the trough lid of the soil tillage implement is parallel to the upper edge of the seed box.



Observe parallelism (see above) so that the belt pulleys align.



Changing the top link length (Fig. 6.7/1) effects on the belt-tensioning of the V-belt drive.

Pick up coulter exchange module (Fig. 6.9/1) by the carrying arm extensions (Fig. 6.9/2),

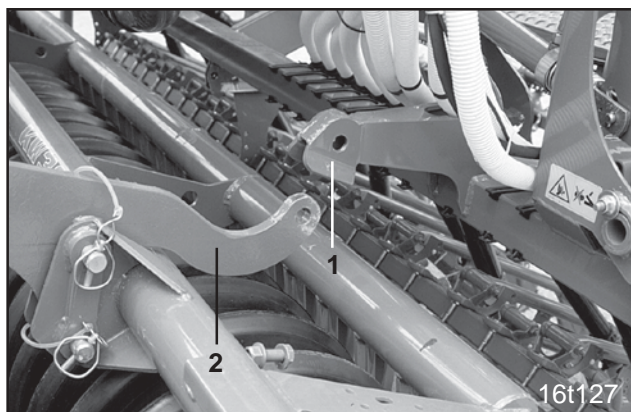


Fig. 6.9

set with pins (Fig. 6.10/1) and secure by clip pins.

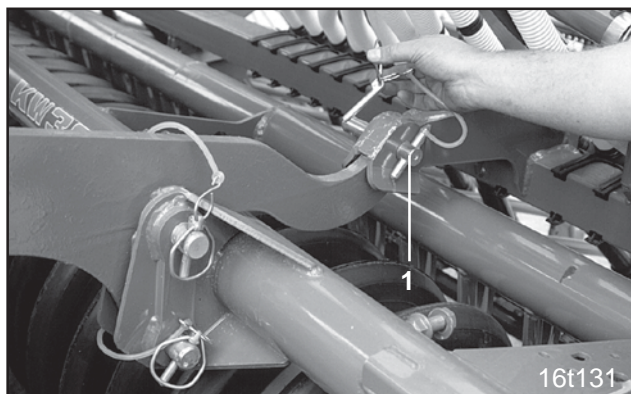


Fig. 6.10

Bolt shroud tensioner (Fig. 6.11/1) following description in Fig. 6.12 to the soil tillage implement and set on the coulter exchange module. Secure fixing pins with clip pins



Fig. 6.11

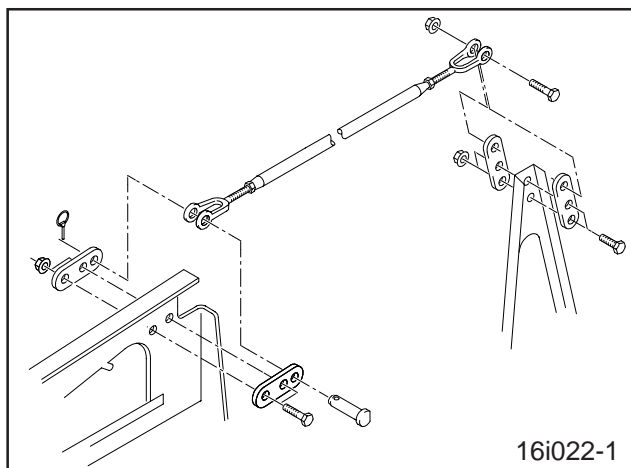


Fig. 6.12

Set the length of the shrouds (Fig. 6.11/1) in such a way that the coulter exchange module frame is parallel to the surface resting on the ground respectively that the spacing between extra coverage carrier and the ground is 230 to 280 mm (see Fig. 6.13).

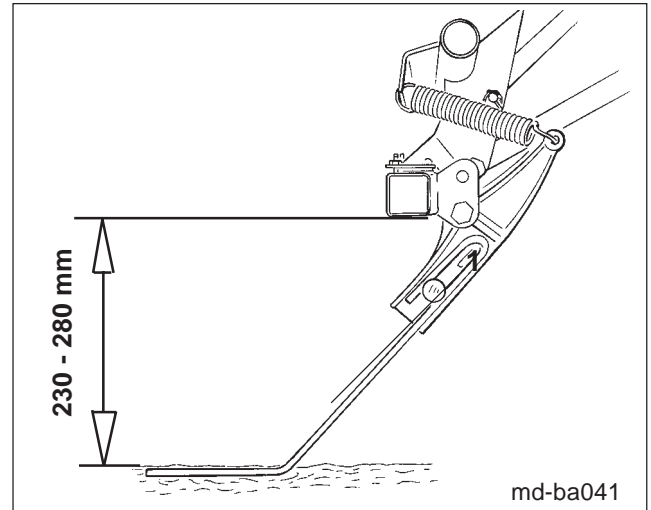


Fig. 6.13

Only for the first fitting:

allocate the seed guide hoses (Fig. 6.14/1), identified by figures, to the coulters, beginning with coulter No. 1 from the left hand to the right hand side. Affix the seed guide hoses (Fig. 6.14/1) by coil spring clamps, (Fig. 6.14/2) to the seed tubes (Fig. 6.14/3) and with a clip (Fig. 6.14/4) to the coulter exchange module.

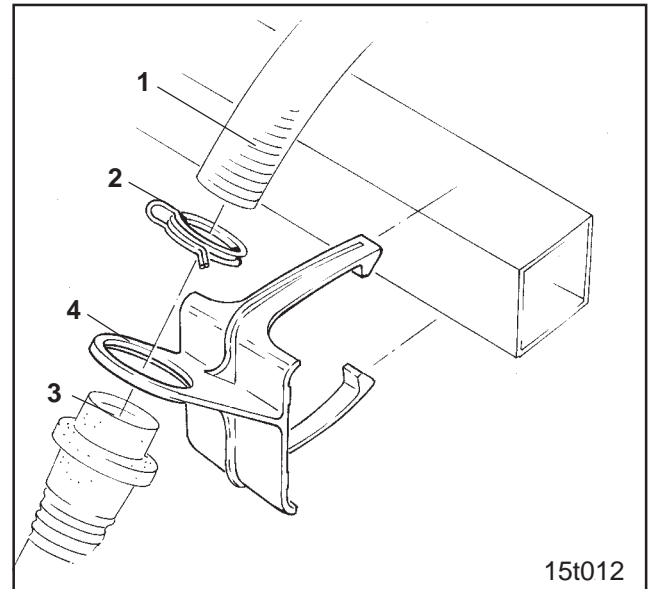


Fig. 6.14

Only for first fitting:

Affix the seed guide hose bundle by rubber tighteners (Fig. 6.15/1) to the seed box and to the shroud tensioners.



Fig. 6.15

6.3 Fit belt drive

The blower fan of the AD-PL can either be driven hydraulically or mechanically by a belt drive.

If the blower fan of the AD-PL shall be driven by a belt drive, the gearbox of the rotary harrow or rotary cultivator has to be equipped with a pto through drive (Fig. 6.16).



The soil tillage implement must only be driven with a tractor pto shaft speed of 1000 R.P.M. after the AD-PL has been connected to the V-belt drive!

Push the large belt pulley (Fig. 6.16/!) onto the shaft of the pto through drive until it is in alignment with the small belt drive (Fig. 6.17/3) which is fixed to the blower fan drive shaft of the AD-PL.

Affix the belt pulleys with Taper-roll pins as described in chapter 6.4.



Retighten bolts (Fig. 6.22/5) of the taper roll pins after the first operating hour!

The blower fan of the AD-PL is driven by two V-belts (Fig. 6.17/1). The V-belts must have the prescribed belt-tensioning:

At 5 kg load (see Fig. 6.18) it must be possible to batter the V-belt in the centre between the V-belt pulleys by approx. 12 mm.

Set the V-belt tensioning by adjusting the small V-belt pulley with a turnbuckle. Secure setting by the counter nut which had been slackened before (Fig 6.17/2).



Fig. 6.16

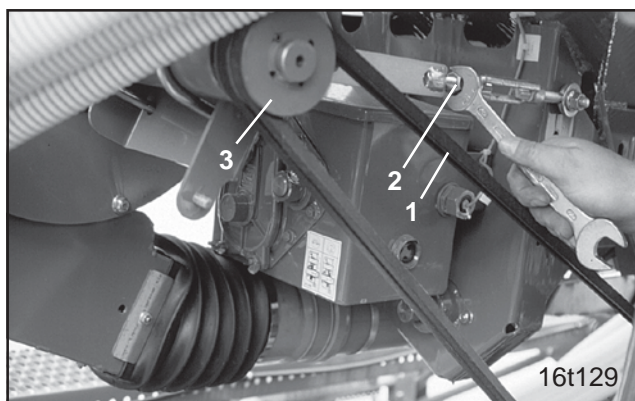


Fig. 6.17

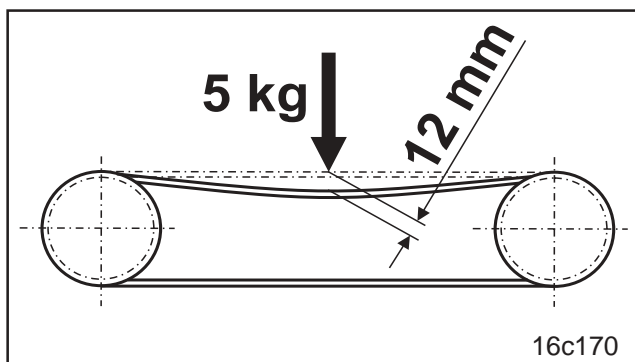


Fig. 6.18

After every setting cover V-belt pulley by the guard hood (Fig. 6.19/1) and affix with hex. bolts..

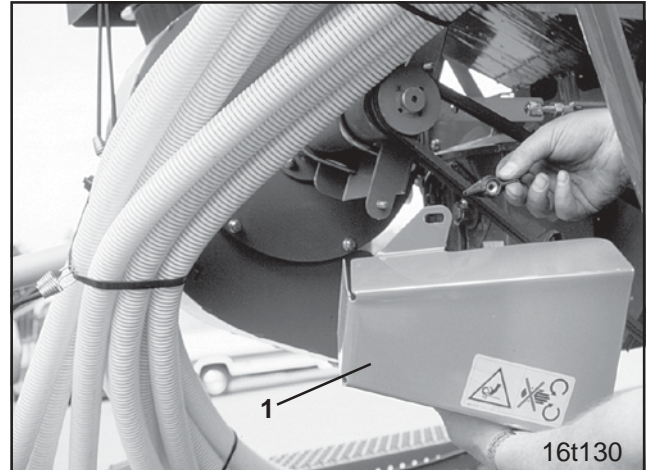


Fig. 6.19

Lift up combination and remove supports of the seed drill and of the coulter exchange module (Fig 6.20).



Fig. 6.20



Due to its very close centre of gravity design parts of the combination may damage the rear window of the tractor when being lifted.

If necessary adjust tractor top link accordingly.



Fig. 6.21

6.4 Handling the Taper-tensioning bushings for V-belt pulleys

For mounting and dismantling the V-belt pulley an Allen key DIN 911 is required.

Fixing a V-belt pulley with a taper tensioning bushing

- Clean all bright surfaces of the taper-tensioning (Fig. 6.22/1) as well as the tapered bore of the V-belt pulley (Fig. 6.22/2)
- Insert the taper tensioning bushing into the tapered bore of the V-belt pulley in such a way that all connecting bores coincide (half threaded bores [Fig. 6.22/3] have to be opposite half smooth bores (Fig. 6.22/4).)
- Slide V-belt pulley with taper tensioning bushing onto the shaft.
- Position V-belt pulley with taper tensioning bushing on the shaft in such a way that driving- and power take-off pulley are in alignment.
- Bolt tensioning bolts (Fig. 6.22/5) into the threaded holes being opposite to each other and tighten with spanner for hex nuts DIN 911. To improve the seating of the inner bushing knock them when tightening. .
The torque of the tensioning bolt (Fig. 6.22/5) is for
 - the small belt pulley: 5,7 Nm
 - the large belt pulley: 49,0 Nm.



Retighten bolts (Fig. 6.22/5) of the taper tensioning bushings after the first operating hour.

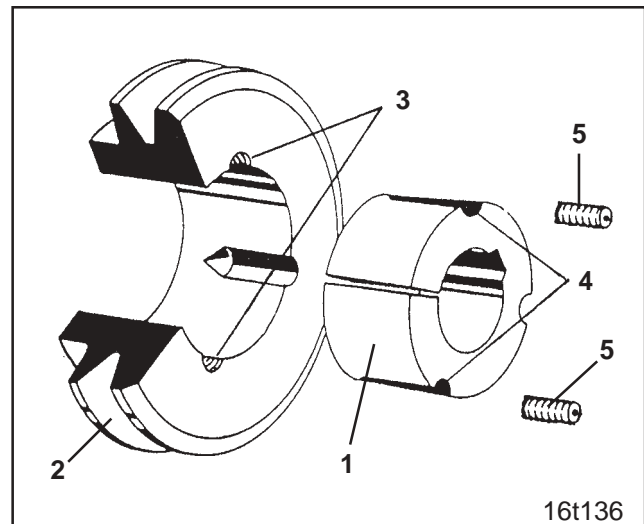


Fig. 6.22

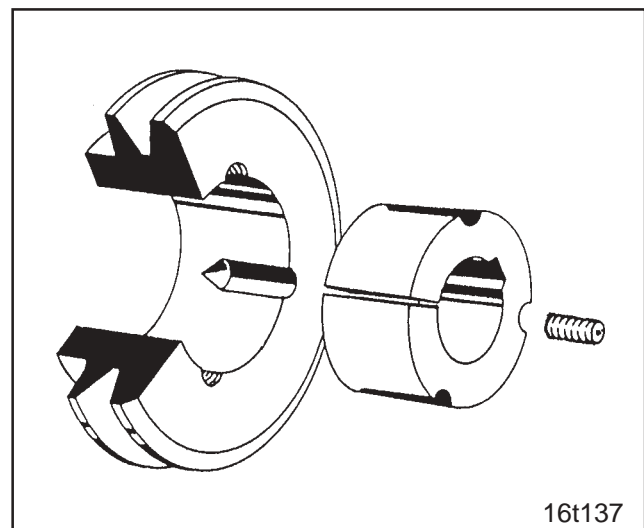


Fig. 6.23

Loosening a V-belt pulley with the taper tensioning bushing

- Slacken tensioning bolt (Fig. 6.22/5) with Allen key
- Turn out one bolt and bolt into the bore (Fig. 6.23)
- Tighten bolt until the bushing gets loose from the hub and the pulley can be moved freely on the shaft.
- Pull pulley with bushing off the shaft.

7.0 Blower fan with hydrostatic drive

The air flow for the seed delivery from the injector sluice to the coulters is provided by a blower fan.

To drive the blower fan with a hydrostatic motor (Fig. 7.2/1) it has to be connected to the tractor's hydraulics according to the circuit diagram (chapter 7.2).



For safety advice, please observe chapter 3.6.4!

7.1 Blower fan speeds

You may find the required blower fan speed in table Fig. 7.1.



Do not exceed the maximum blower fan speed of 3800 R.P.M.!

Set the blower fan speed at the pressure limiting valve (Fig. 7.3 or Fig. 7.2/3) or at the current regulating valve of the tractor (see below).

For setting the blower fan speed at the pressure limiting valve (Fig. 7.3 or Fig. 7.2/3):

- remove dust cap (Fig. 7.3/1)
- slacken counter nut
- Set the speed with a screw driver at the valve as follows:
 - Turn to the right hand side = speed is increased
 - Turn to the left hand side = speed is reduced.

After setting, secure valve with counter nut and cover with dust cap (Fig. 7.3/1).

On tractors with controllable hydraulic pump the necessary oil volume should be set at the current regulating valve and the pressure limiting valve (Fig. 7.2/3) should be set in such a way that the oil volume is as little as possible. Larger oil volumes than necessary are led back into the oil tank by the pressure limiting valve and result in unnecessary heating up of the hydraulic oil.

The blower fan speed is changing until the hydraulic oil has reached its operational temperature. At the first use the blower fan speed should be corrected until the operational temperature of the hydraulic oil has been reached.

If the blower fan is used after a longer period of stand-still, the reset blower speed will only be reached after the hydraulic oil has reached the operational temperature.

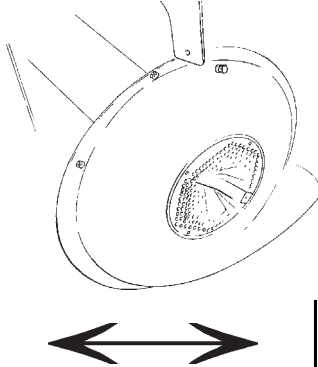

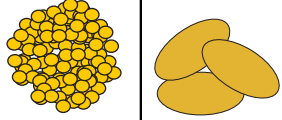
952794		
		
AD-P / AD-PL FRS / FPS		
		
		
3,0 m	2700	3400
4,0 m	2700	3500
4,5 m	2800	3600
6,0 m	2800	3600
Working width of coulters	Blower fan speed (R.P.M.)	
	fine seeds (rape)	legumes (grain)

Fig. 7.1

t145-d04

The settings will be shown in the display of (please refer to instruction manual AMADOS).

7.2 Circuit diagram for blower fan with hydraulic drive

No	Description (please refer to Fig. 7.2)
1	blower fan hydr.stat motor N = 3800 R.P.M. max.
2	DBV-valve with hydr. free wheel
3	adjustable pressure relief valve
4	check valve
5	tractor hydraulic pump required capacity: - for 1 metering unit minimum 30 l/min. at 140 bar
6	Free return flow - tube nominal width min. Ø16 mm - use couplings with sufficiently large diameter - the back pressure in the return flow may be in maximum 10 bar
7	filter
8	single or double acting control valve
9	hydraulic oil tank
10	plug coupling
11	plug coupling "large"
A	implement side
B	tractor side

T145-d01

Do not conduct other connections than shown in this circuit diagram.

7.2.1 Explanations for the circuit diagram

On the pressure side the blower fan hydraustatic motor (Fig. 7.2/1) may be connected to either a single or to a double acting control valve (Fig. 7.2/8).

In order not to damage the hydraustatic motor, the oil pressure in the return flow (Fig. 7.2/6) must not exceed 10 bar. Therefore, never connect the return flow to the control valve (Fig. 7.2/8) but to a pressure-less return flow with a large plug coupling (Fig. 7.2/11)! Should it become necessary to install a new return flow tubing, use only tubes DN16, z.B. Ø20 x 2,0 mm and short return flow ways.

The hydraulic oil must be guided through an oil filter (Fig. 7.2/7) at any place of choice.

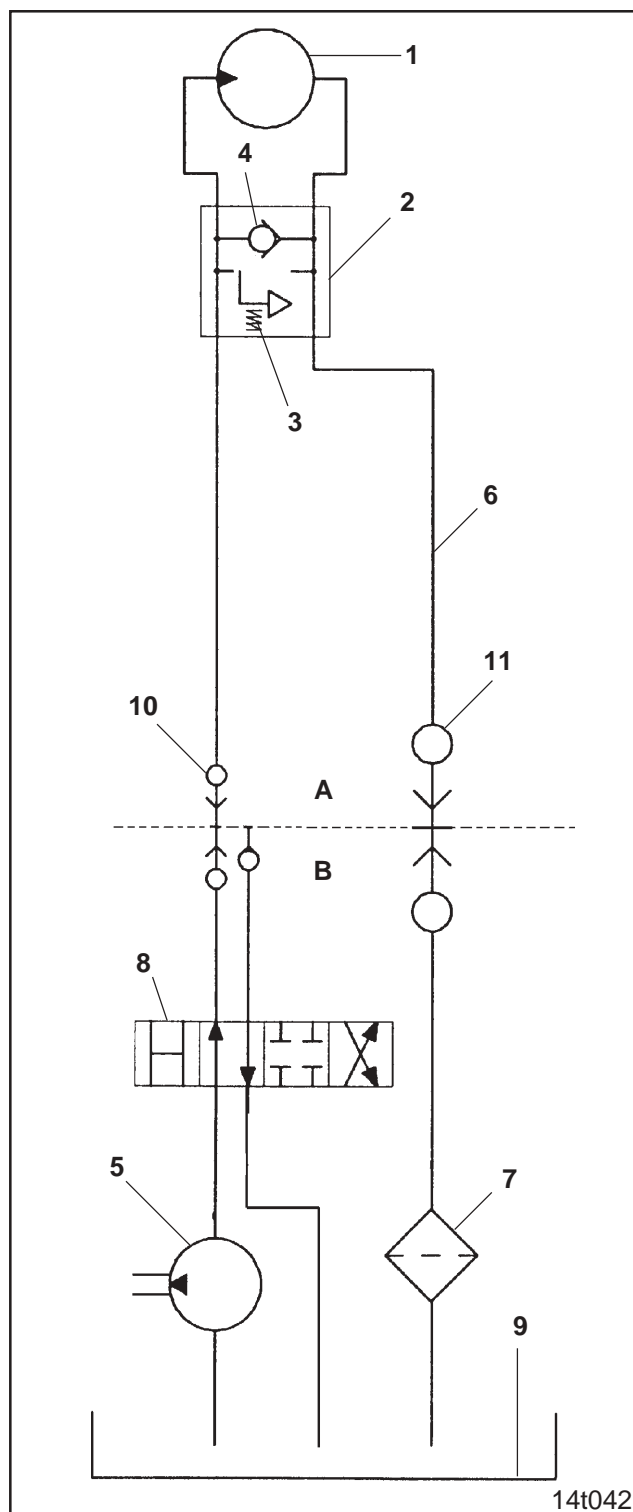


Fig. 7.2

14t042

The return flow hydraulic oil must never be guided through control valves as the oil pressure would hereby exceed the maximum pressure of 10 bar.

The check valve (Fig. 7.2/4) allows the blower fan to run after as soon as the control valve (Fig. 7.2/8) has been shut off.



The hydraulic oil must never get too hot!
If large amounts of oil are fed into small oil tanks, the hydraulic oil will heat up. The capacity of the oil tank (Fig. 7.2/9) should at least have the double of the oil delivery amount. If the oil heats up too much, the installation of an oil cooler on the tractor by a professional workshop is necessary.

Particles of dirt may damage the blower fan hydrostatic motor (Fig. 7.2/1) and the pressure limiting valve (Fig. 7.2/3). For this reason, always keep clean the coupling parts when connecting the blower fan hydrostatic motor to the tractor's hydraulic to avoid the hydraulic oil becoming dirty.

Should it be necessary to drive besides of the blower fan hydrostatic motor yet another hydrostatic motor, both motors should be switched parallel. When switching both motors in line the maximum permissible oil pressure of 10 bar will be always exceeded behind the first motor.

If the blower fan hydrostatic motor has to be connected to different tractors, one should make sure that the type of oil in the hydraulic circuits is compatible. Unpermissible mixing of various hydraulic oils may lead to defects on hydraulic components.

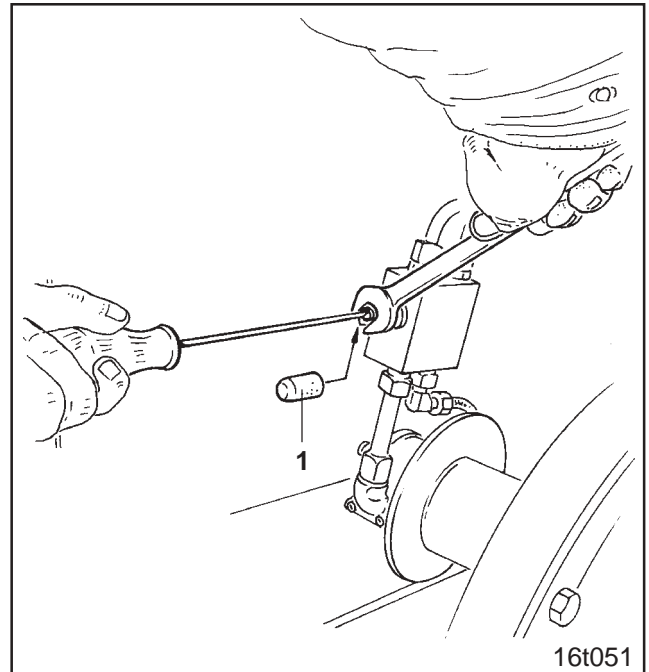


Fig. 7.3

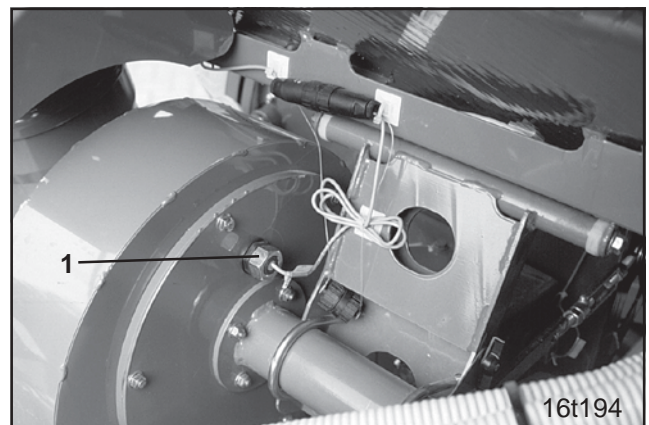


Fig. 7.4

7.3 Blower fan speed monitoring

Precondition for a continuous flow of seed is a constant speed of the blower fan. Therefore, the blower fan speed is shown in the AMADOS-display (please refer to AMADOS instruction book). The blower fan speed is monitored by a sensor (Fig. 7.4/1) which is fixed to the blower fan and connected with AMADOS.

8.0 Seed box filling and emptying



Before filling the seed box couple the seed drill to the soil tillage implement.



First empty the seed box before uncoupling the seed drill!

8.1 Filling the seed box

The seed box can be filled from the loading platform (Fig. 8.2) with a shovel loader (Fig. 8.3) or with big bags.

For filling the seed box from the loading platform the railing (Fig. 8.2/1) can be fixed at random to the right hand or left hand side.

The seed box can be rain proof covered by the swivelable cover canvass (Fig. 8.2). The swivelable cover canvass is secured with rubber strips (Fig. 8.4/1).



**Refill seed box early enough!
Never drive the drill until the seed box is completely empty.**

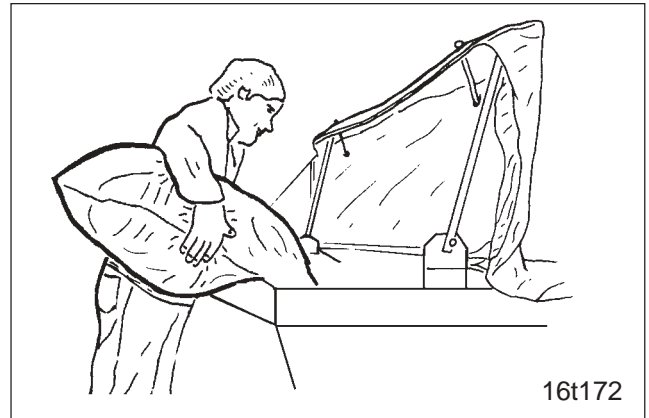


Fig. 8.1



Fig. 8.2

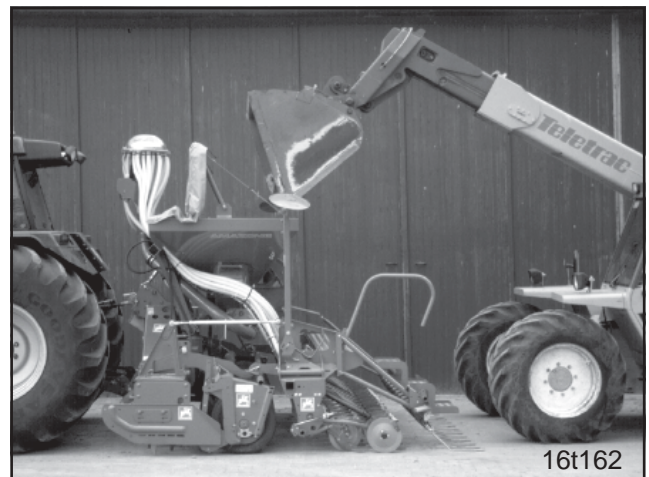


Fig. 8.3

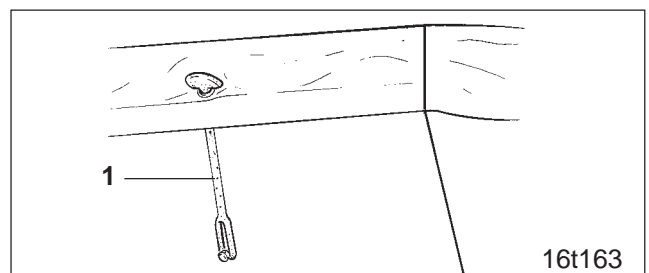


Fig. 8.4

8.2 Emptying the seed box



It is of great importance that the seed box and the seed metering wheels are cleaned after having finished operation.

If the seed metering wheels are not emptied completely even there seed residue swells and germinate. A blockage of the seed metering wheels would be the result causing damage to drive or gearbox.

For emptying the seed box take the calibration tray (Fig. 8.5/1) into your hands. The calibration tray is fitted with a retainer to the seed box and secured with a clip pin Fig. 8.5/2).

Place the calibration tray (Fig. 8.6/1) below the metering unit. If necessary slightly lift soil tillage implement with the seed box.

Push downwards lever (Fig. 8.6/2) and arrest. With the lever the outlet behind the metering unit is opened.

Open the outlet as long as the calibration tray has been filled with seed. Empty the calibration tray and repeat this procedure as long as no seed will flow from the outlet into the calibration tray.

For a complete emptying open the injector sluice flap (Fig. 8.7/1).

For emptying the metering wheels, drive the metering wheels by the calibration crank in the same way as mentioned for determining the gearbox setting lever position.

Then, let the blower fan briefly run to remove any residue of seed.

Close outlets and place calibration tray to the seed box again.

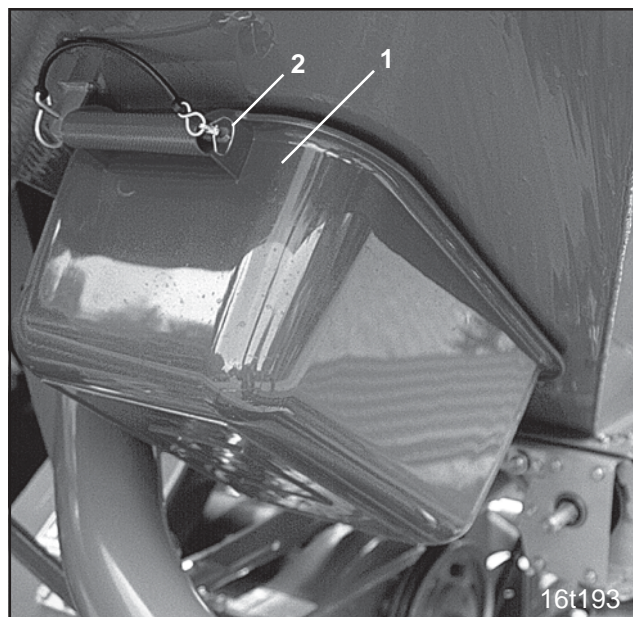


Fig. 8.5

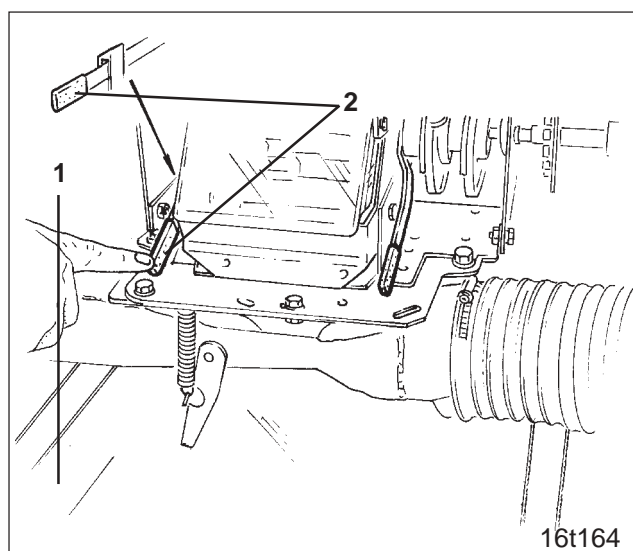


Fig. 8.6

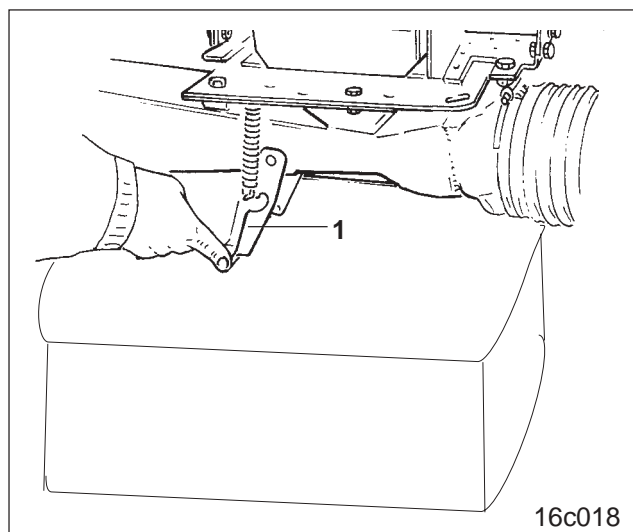


Fig. 8.7

9.0 Setting the metering unit to a particular seed

Every metering unit is provided with

- a white coloured main seed wheel (Fig. 9.1/1)
- an orange coloured main seed wheel (Fig. 9.1/2)
- a red/black coloured fine seed wheel (9.1/3).

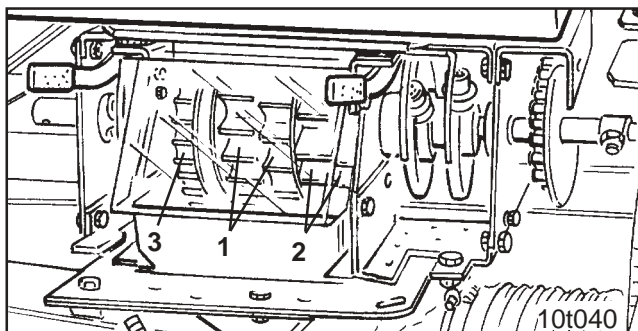


Fig. 9.1



When the table indicates: “Main seed wheels” (“Hauptsäräder”) (see table Fig. 9.2) always sow with both main seed wheels at the same time!



* The required metering wheel(s) may be taken from the table (Fig. 9.2)

For seeds which have not been mentioned in the table (Fig. 9.2) please refer to a seed with a similar grain size when choosing the seed wheel.



** Only blower fans with a belt drive (not with a hydraulic drive) are equipped with a throttle flap. Please take the correct throttle flap position from table Fig. 9.2.

Seeds	Metering wheel*	Throttle valve position**
Beans	main seed wheels	open
Spelt	main seed wheels	open
Peas	main seed wheels	open
Flax (dressed)	main seed wheels	open
Grass seed	main seed wheels	open
Oats	main seed wheels	open
Millet	main seed wheels	open
Lupine	main seed wheels	open
Lucerne	main seed wheels	open
Lucerne < 20kg/ha	fine seed wheel	closed
Oilseed (moist dressed)	main seed wheels	open
Oilseed (moist dressed) < 20kg/ha	fine seed wheel	closed
Oil radish	main seed wheels	open
Oil radish < 20kg/ha	fine seed wheel	closed
Phacelia	main seed wheels	open
Phacelia < 20kg/ha	fine seed wheel	closed
Rape	fine seed wheel	closed
Rye	main seed wheels	open
Red clover	fine seed wheel	closed
Mustard	fine seed wheel	closed
Soya beans	main seed wheels	open
Spring barley	main seed wheels	open
Sunflowers	main seed wheels	open
Late turnip	fine seed wheel	closed
Wheat	main seed wheels	open
Vetches	main seed wheels	open
Winter barley	main seed wheels	open

Fig. 9.2

t145-d07

9.1 Switching the metering wheels on and off

In the position “metering wheel on” (“**Särad ein**”) the thumb bolt (Fig. 9.3/1) is driven in till the stop.

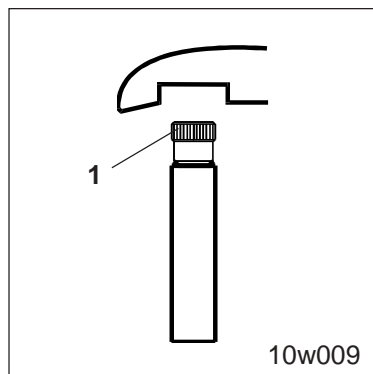


Fig. 9.3

In Position “metering wheel off” (“**Särad aus**”) the thumb bolt (Fig. 9.4/1) has been driven out till the stop (Fig. 9.4/2).

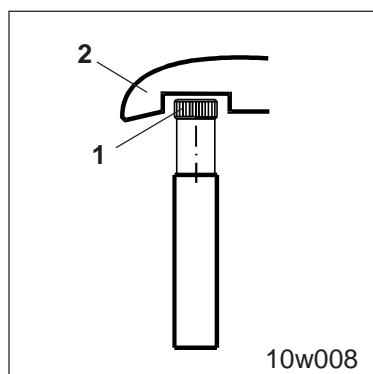


Fig. 9.4



Drive the thumb bolts either in position “metering wheel on” or “metering wheel off”
Never tighten thumb bolts too firmly or drive them too tightly to the stop (Fig. 9.4/2)!

9.2 Sowing with both main metering wheels

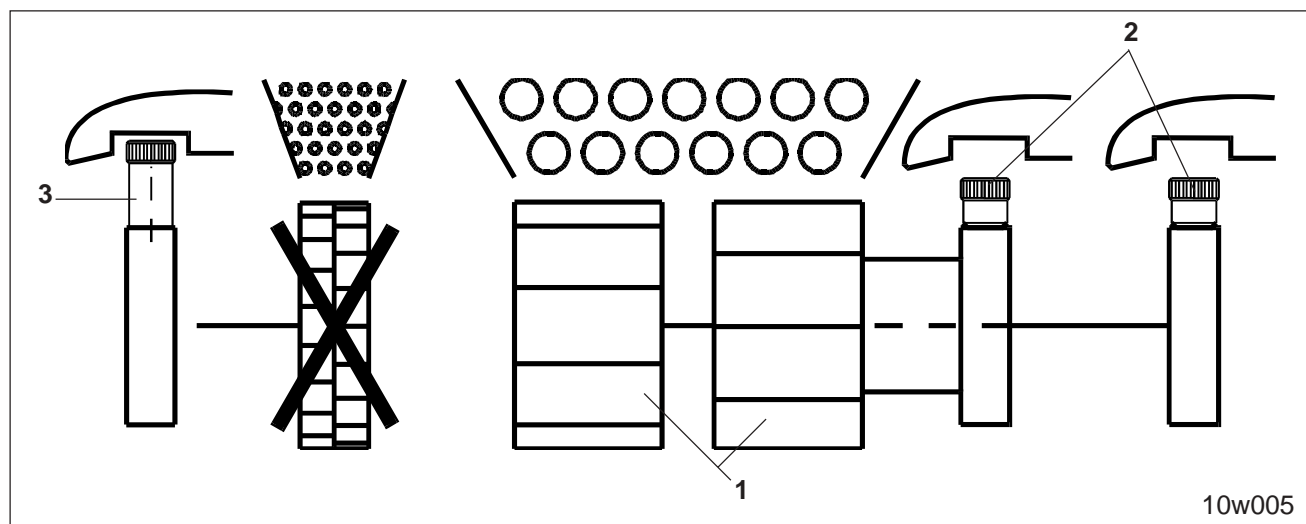


Fig. 9.5

For sowing with both metering wheels (Fig. 9.5/1)

- Turn the hand wheel (Fig. 9.7/1) until the thumb nuts (Fig. 9.7/2) can be seen
- Drive in thumb bolts (Fig. 9.5/2) of the main metering wheels
- Drive out thumb nut (Fig. 9.5/3) of the fine seed metering wheel.

9.3 Sowing with the fine seed metering wheel

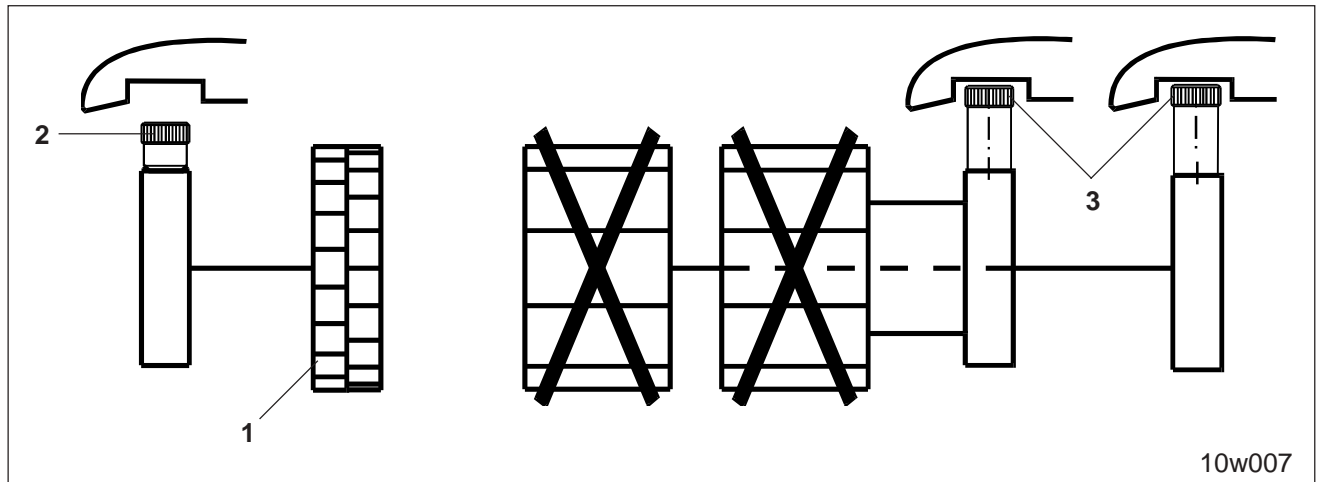


Fig. 9.6

When sowing with the fine seed metering wheel (Fig. 9.6/1)

- Turn hand wheel (Fig. 9.7/1) until the thumb bolts (Fig. 9.7/2) can be seen
- Drive **in** thumb bolt (Fig. 9.6/2) of the fine seed metering wheel
- Drive **out** thumb bolt (Fig. 9.6/3) of both main seed metering wheels.

9.4 Shear off safety

In order to avoid damage on driving components in case of blockage of the seed wheels, the connection of drive and metering unit is protected by a shear off safety bolt.

In case of blockage of the seed wheels, a plastic bolt (Fig. 9.8/1) shears off and the power supply to the metering unit is interrupted. After removal of the blockage and replacement of the shear off bolt, the machine is ready for operation again. You will find 5 replacement shear off bolts (Fig. 9.8/2) in a retainer above the hand wheel.



For a faultless function only use a plastic bolt M 8 (Order-No. 917420).

In case of a standstill of the metering wheels during operation a warning is given on the AMADOS-display. The warning is released by a sensor (Fig. 9.8/3).

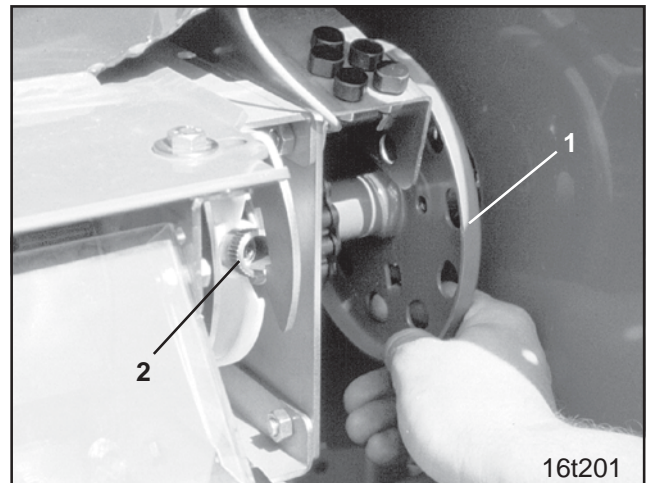


Fig. 9.7

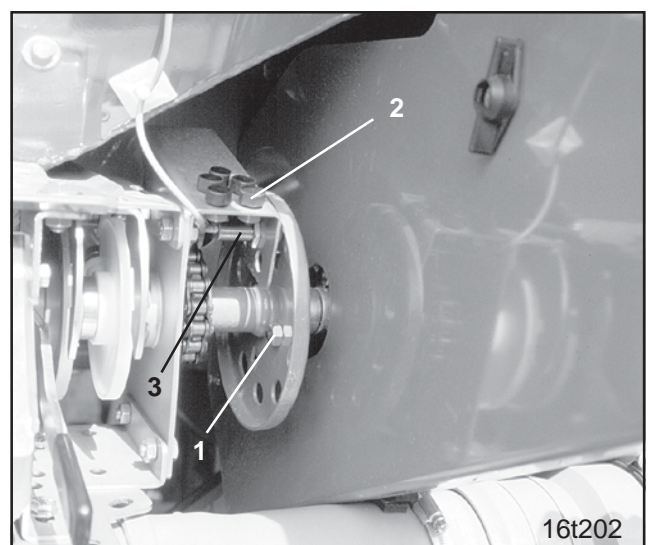


Fig. 9.8

9.5 Throttle flap

As the blower fan speed cannot be changed on implements which are equipped with a belt drive, such implements are equipped with a throttle valve to reduce the air flow rate.

The throttle flap lever (Fig. 9.9/1) or the throttle flap can be brought into two positions:

open: (see Fig. 9.9)
shut: (see Fig. 9.10).



Take the required throttle flap lever position from table (Fig. 9.2).

When swivelling the throttle flap lever (Fig. 9.10) upwards the air flow rate is reduced.

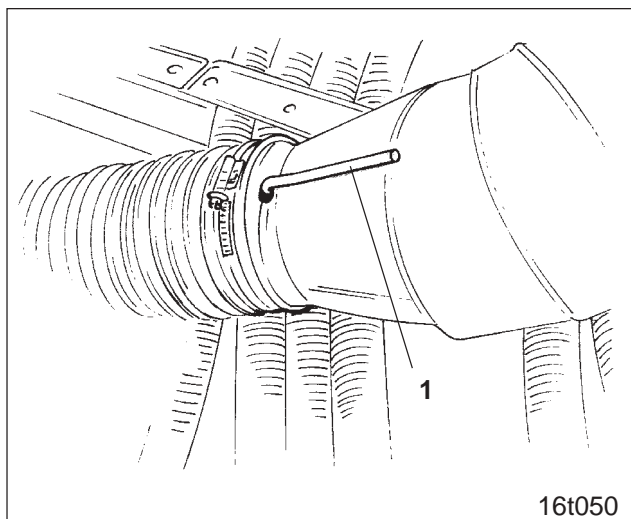


Fig. 9.9

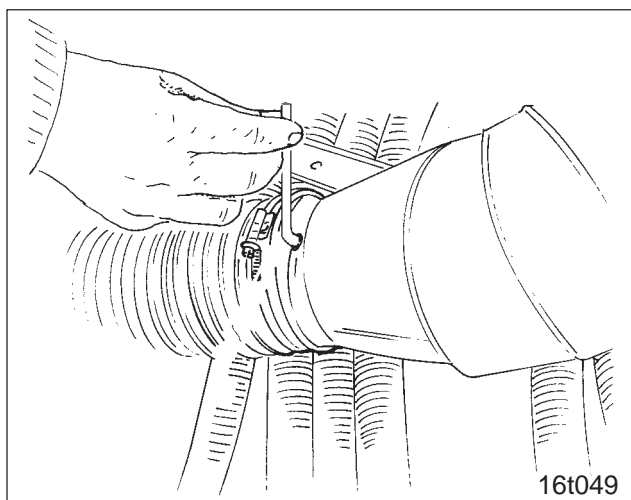


Fig. 9.10

A symbolic illustration (Fig. 9.11) of the throttle flap lever positions is fixed to your seed drill

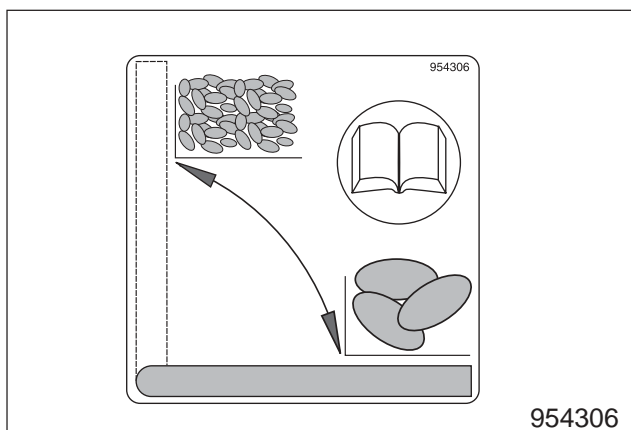


Fig. 9.11

10.0 Determining the gearbox setting for the desired seed rate

Set the metering unit according to para. 9.0.

Fill the seed box with seed to at least 1 / 4 of its capacity.

The desired seed rate is set on the gearbox (Fig. 10.1/ 1). The gearbox (Fig. 10.2/1) is illustrated in Fig. 10.2.

By the gearbox setting lever (Fig. 10.2/2) the speed of the metering shaft and thus the seed rate can be set steplessly. The higher the figure on the scale (Fig. 10.2/ 3) has been chosen by the gearbox setting lever, the higher the seed rate will get.



After every setting on the gearbox setting lever a calibration test should be conducted to confirm that at the later sowing the desired seed rate is obtained.

This test should also be conducted

- when changing to another seed wheel, e.g. from the main seed wheels to the fine seed wheel.
- before sowing a new supply of seed (reason: deviations in grain size, grain shape, bulk density and seed dressings).



Fig. 10.1

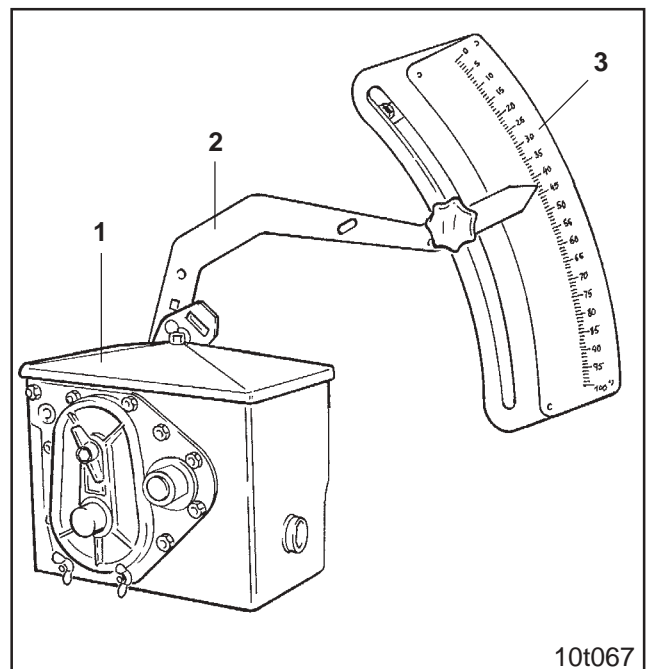


Fig. 10.2

Place the calibration tray (Fig. 10.3) below the metering unit. If necessary slightly lift the soil tillage implement with the seed box before.

The calibration tray (Fig. 10.4/1) is fixed in a retainer to the seed box and secured by a clip pin (Fig. 10.4/2).

Open the injector sluice flap (Fig. 10.3/1).

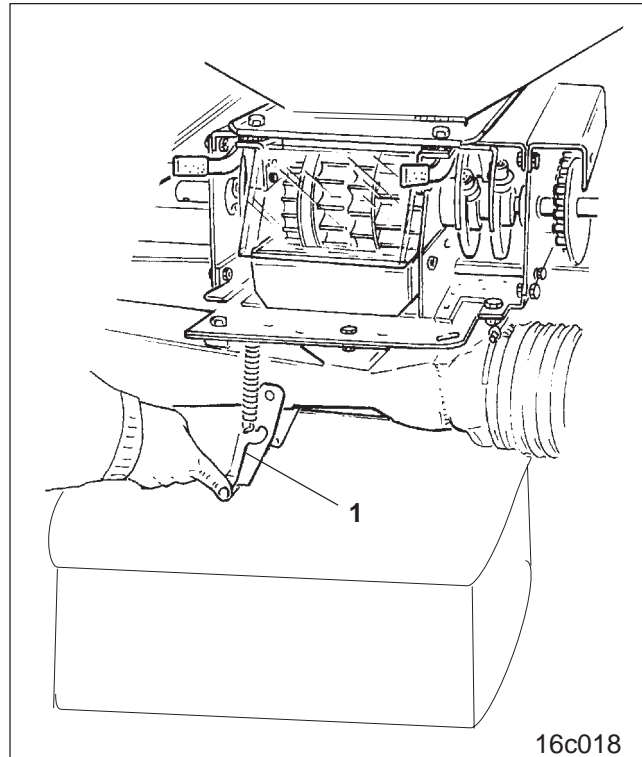


Fig. 10.3

Slacken the star knob (Fig. 10.5/1) on the gearbox setting lever.

Slide the gearbox setting lever (Fig. 10.5/2) to the following gearbox setting:

**For sowing by both main seed wheels:
Gearbox setting „50“**

**For sowing by the fine seed wheel:
Gearbox setting „15“**

Firmly tighten star knob (Fig. 10.5/1).

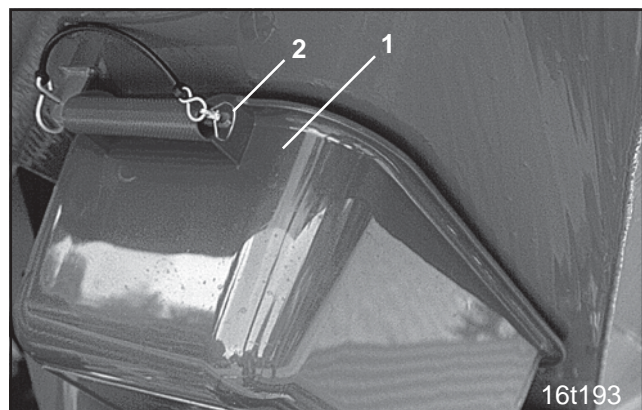


Fig. 10.4

In the past it was common to indicate in a seed rate table values for the first gearbox setting. However, these values deviate depending on the grain properties, especially regarding dressing agents and dressing procedures, so heavily that using a seed rate table does not have any advantage. The correct gearbox setting can very quickly be determined by using the calculating disc rule described in para. 10.2.

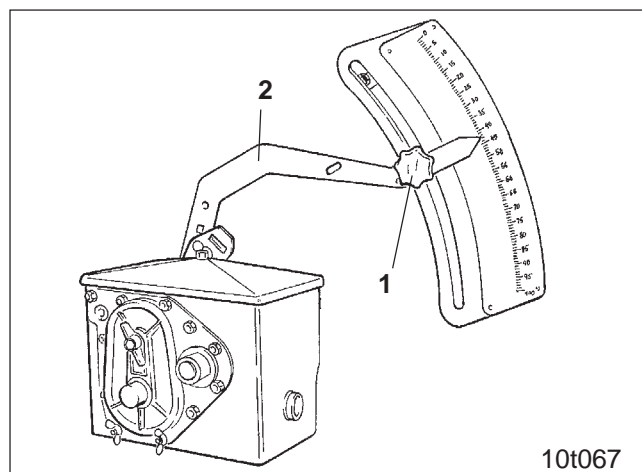


Fig. 10.5

10.1 Calibration test

Take the calibration crank in your hand. You will find the calibration crank (Fig. 10.6/1) in a retainer on the right hand lateral frame part and is secured with a clip pin.

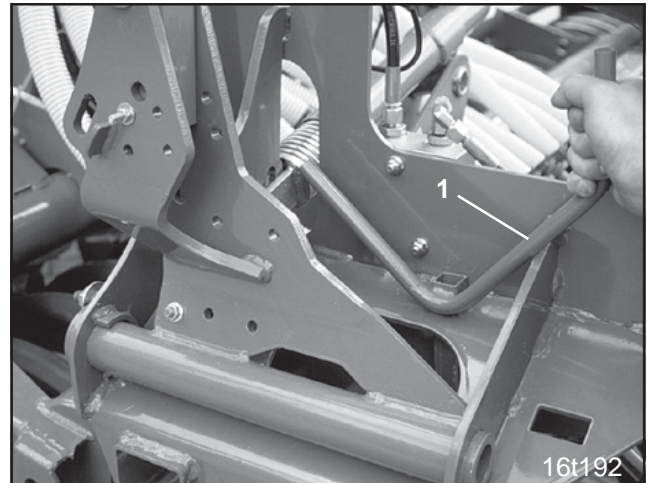


Fig. 10.6

Applicable only in combination with an AD-PL with star wheel:

Insert the calibration crank (Fig. 10.7/1) into the take-up of the star wheel and turn the crank until all metering wheel housings have been filled with seed and a uniform flow of seed runs into the calibration tray. Empty the contents of the calibration tray into the seed box and turn the crank clockwise in number of turns taken from the table (Fig. 10.10).



Fig. 10.7

Applies only in combination with Tyre Packer Roller:

In order to conduct a stationary calibration test with the pack top seed drill, the clip (Fig. 10.8/1) has to be pulled off the intermediate drive of the tyre packer roller.

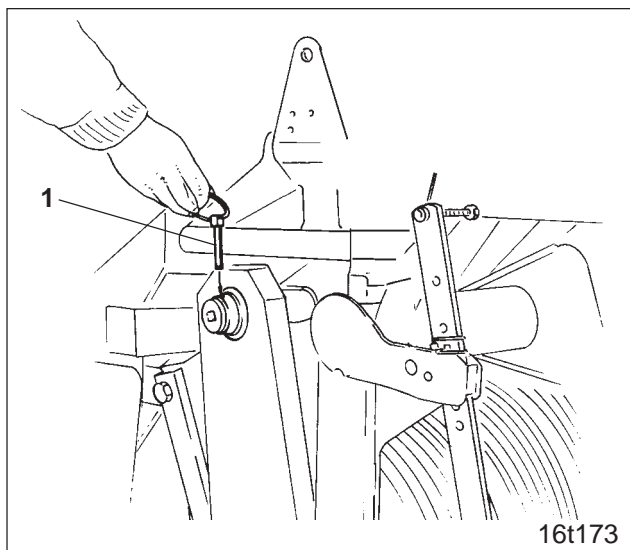


Fig. 10.8

Applies only in combination with a Tyre Packer - Roller:

Insert calibration crank (Fig. 10.9/1) into the intermediate drive and turn the calibration crank until all housings of the seed wheel(s) have been filled and an even flow of seed runs into the calibration tray. Empty the contents of the calibration tray into the seed box and turn the crank clockwise in number of turns taken from the table (Fig. 10.10).

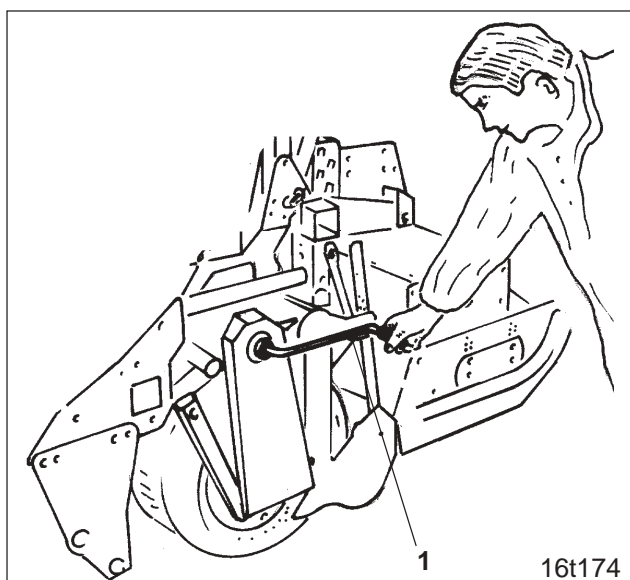


Fig. 10.9

The number of crank turns (Fig. 10.10) depends on the working width of your seed drill.

The number of crank turns refers to an area of 1/40 ha (250 m²) or 1/10 ha (1000 m²).

Common is the crank turn for 1/40 ha. In case of very small seed rates, e. g. for rape or when using balances with coarse scales it is recommended to conduct the crank turn for 1/10 ha.

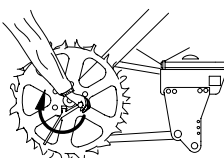
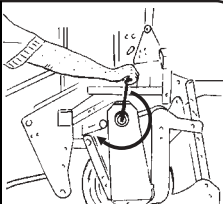
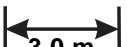
955347					
working-width 	Pack Top – Seed Drills AD-PL		Tyre packer Pack Top-Seed Drills RP-AD-PL		
	1/40 ha	1/10 ha	1/40 ha	1/10 ha	
	38,5	154,0	49,0	196,0	
Crank turns					
on star wheel			on intermediate drive		

Fig. 10.10

t145-d02

Weigh the seed collected in the calibration tray (Fig. 10.11/1) (consider the bucket own weight) and multiply

- by factor „40“ (at 1/40 ha) or
- by factor „10“ (at 1/10 ha).

Calibrating for 1/40 ha:

Seed rate [kg/ha] =
collected seed rate [kg/ha] x 40

Calibrating for 1/10 ha:

seed rate [kg/ha] =
collected seed rate [kg/ha] x 10

Example:

Calibrating for 1/40 ha
collected seed rate 3,2 kg

Seed rate [kg/ha] = 3,2 [kg] x 40/ha
= 128 [kg/ha]



Disc rule

The desired seed rate usually is not obtained after the first calibration test. However, with the aid of the disc rule according to para. 10.2 it is possible to determine the correct gearbox setting by using the gearbox setting figure of the first calibration test at the calculated seed rate.



Ex works the gearbox has been set to the „fast speed“. In case of extremely small seed rates it might become necessary to choose the „slow speed“. A detailed description you will find in para. 10.3.

After you have determined the correct gearbox setting

- Insert calibration crank (Fig. 10.6/1) into its retainer
- Shut injector sluice flap (Fig. 10.3/1, fit calibration tray to the seed box and secure with a clip pin.

Applies only in combination with Tyre Packer Roller:

- Insert clip pin (Fig. 10.8/1) into the intermediate drive of the Tyre Packer Roller.

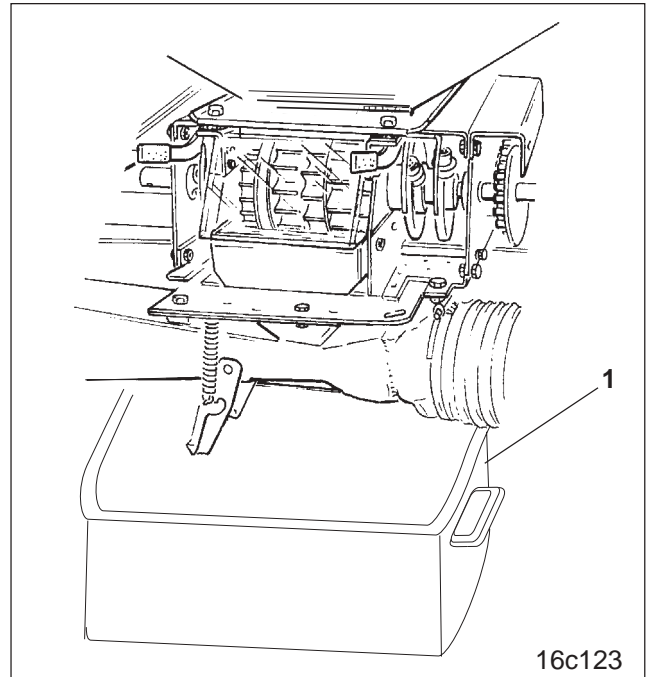


Fig. 10.11

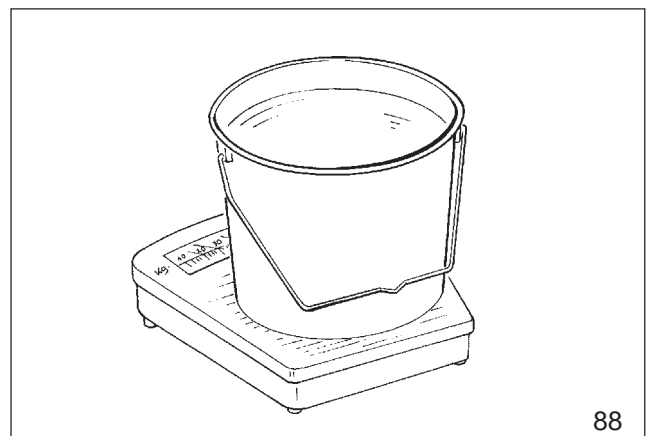


Fig. 10.12

10.2 Determining the gearbox setting with the aid of the disc rule

The desired seed rate usually is not obtained after the first calibration test. However, with the aid of the disc rule it is possible to determine the correct gearbox setting by using the gearbox setting figure of the first calibration test at the calculated seed rate.

The disc rule consists of three scales: an outer white scale (Fig. 10.13/1) for all seed rates above 30 kg/ha and an inner white scale (Fig. 10.13/2) for all seed rates of less than 30 kg/ha. On the centre coloured scale (Fig. 10.13/3) the gearbox settings from „1 to 100“ are indicated.

Example:

Desired seed rate: 125 kg/ha.

- At the first setting the gearbox setting lever is brought to the setting position „70“ (you may also choose any other gearbox setting figure). In this case a seed rate of 175 kg/ha has been calculated.
- Align the seed rate 1765 kg/ha (Fig. 10.13/A) and the gearbox setting figure „70“ (Fig. 10.13/B) on the disc rule.
- Now read off the disc rule the gearbox setting figure for the desired seed rate of 125 kg/ha (Fig. 10.13/C). In our example that is the gearbox setting figure „50“ (Fig. 10.13/D).
- Recheck the gearbox setting which you have determined by the disc rule by a calibration test as described under para. 10.1.

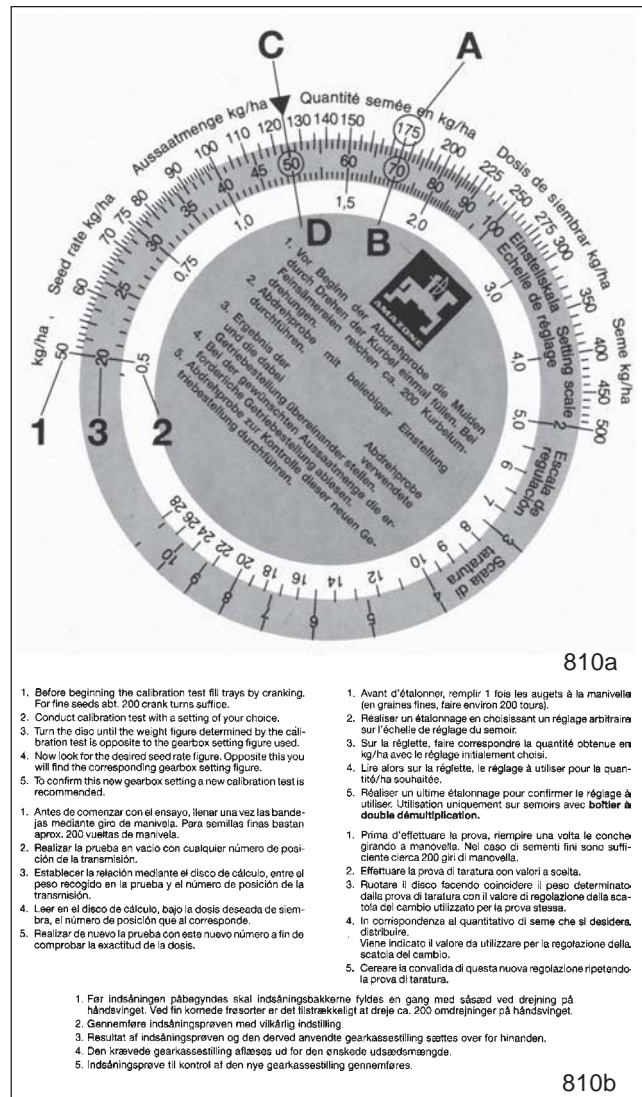


Fig. 10.13

10.3 Setting the gearbox gear ratio

Inside the gearbox a set of exchange pinions is mounted by which two speeds can be set:

slow speed (see Fig. 10.14)

fast speed (see Fig. 10.15).

Changing the gearing:

- Slacken the blower fan and swivel outwards
- Open lid (Fig. 10.14/2) after having removed the thumb nut (Fig. 10.14/3) and the two wing nuts (Fig. 10.14/4)
- Remove the pinion from the shaft and reinsert after turning:
in the „slow speed“ the pinion (Fig. 10.14/1) is matching with the second pinion,
in the „fast speed“ the pinion (Fig. 10.15/1) runs freely unengaged
- Put lid (Fig. 10.14/2) back in place

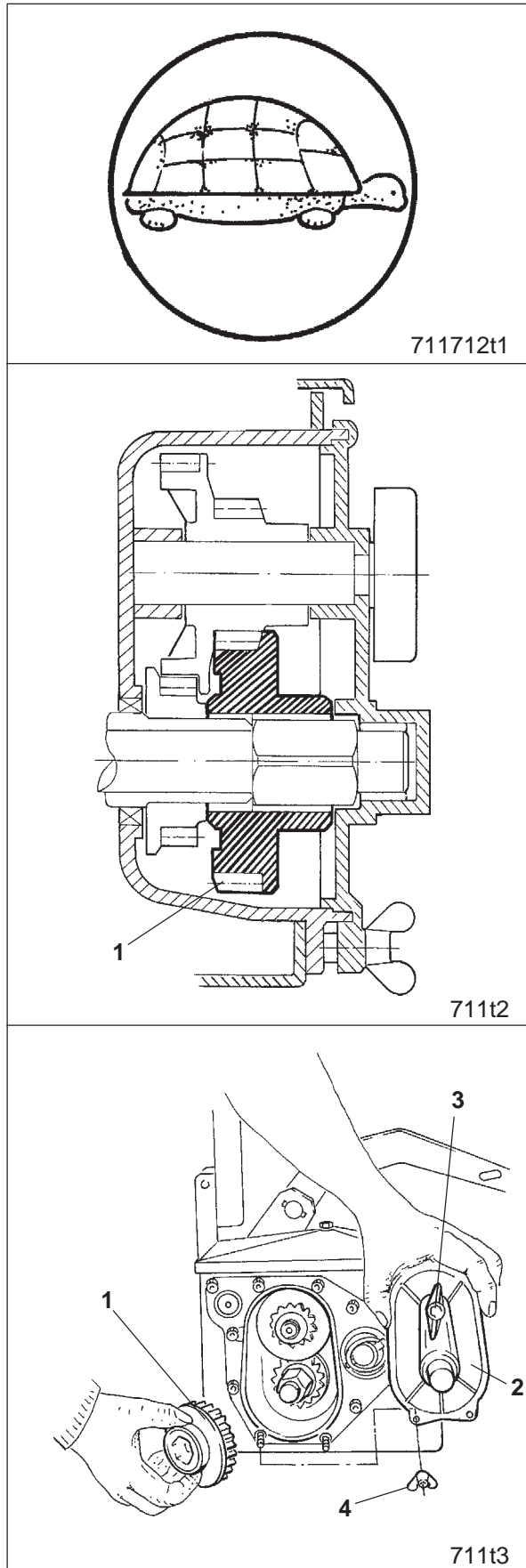


Fig. 10.14

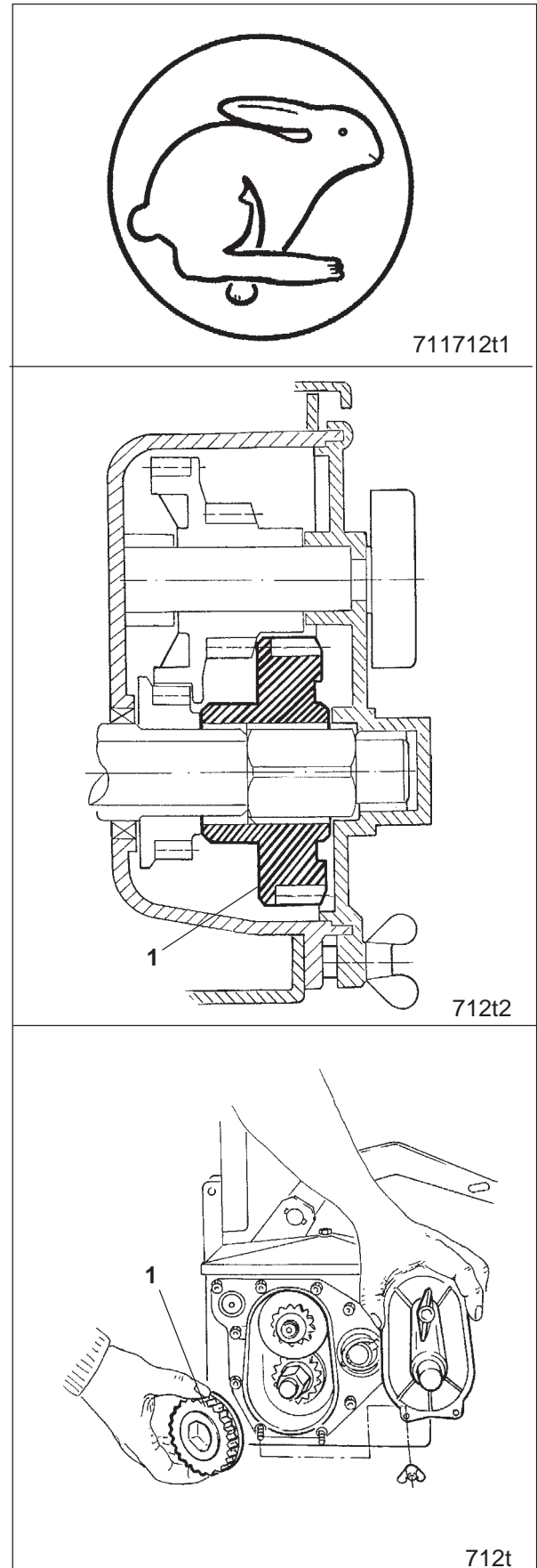


Fig. 10.15

- Bring blower fan in its former position, tighten bolts firmly and tension V-belt if necessary.



After any changing of the gearbox into another speed range the desired seed rate should be determined and set as described in para. 21.0.

10.4 Seed rate deviations between the setting and sowing

To avoid deviations between the setting of the seed rate and the later sowing and to achieve a uniform distribution of the seed to all coulters, please note the following hints:

When sowing dressed seeds

The distributor head should be regularly be checked and cleaned.

In case of wheel slip

In case of wheel slip the drive wheel for the metering units turns on very light and loose soil less than at a same distance on very firm cloddy soils. In case of high wheel slippage the number of crank turns for determining the gearbox setting should be newly determined.

For this one measures in the field an area of 250 m². This corresponds to a machine with:

3,00 m Working width	=	83,3 m travelled distance
4,00 m Working width	=	62,5 m travelled distance
4,50 m Working width	=	55,5 m travelled distance
6,00 m Working width	=	41,7 m travelled distance

The number of crank turns is then counted when travelling the measured distance. With this number of crank turns then gearbox setting should be determined according to para. 10.0.

11.0 Track marker

The seed drill is equipped with two markers (Fig. 11.1) for **marking a trace in the tractor centre**. After turning on the headland the tractor follows the centrally marked trace when travelling the next bout.

The trace is marked during sowing from one marker disc (Fig. 11.1/1).

After turning on the headland the marker (Fig. 11.2) is lifted and the opposite marker begins to operate.

When the single acting control valve is actuated, the markers

- are brought on the field end from transport position (Fig. 11.2) into operating position (Fig. 11.1) or vice versa
- lifted before turning at the field's end
- lifted prior to obstacles and after passing these obstacles lowered into working position again.



When the control valve is actuated, danger of injury on moving parts!
Before actuating the tractor control valve, ask people to leave the danger area!
It is prohibited to stay within the swinging area of the marker arms!



Fig. 11.1



Fig. 11.2

11.1 Bring markers into operating position

For transport, each marker arm (Fig. 11.3/1) is fixed with a clip pin (Fig. 11.4/1) in the hole (Fig. 11.4/2),

- remove clip pin (Fig. 11.4/1) only immediately prior to the operation in the field
- when not needed, insert the clip pin (Fig. 11.4/1) into hole (Fig. 11.4/3).



After removal of the clip pin (Fig. 11.4/1) the marker arm is tilting slightly to the side.



Ask people to leave the danger area and bring the marker arms to operating position by actuating the tractor control valve inside the tractor cab.

When the tractor control valve is pressurised, both markers (Fig. 11.2) are leaning closely to the seed box:

1. for transport
2. for turning on the headlands
3. when passing an obstacle in the field.

When the tractor control valve is brought into floating position, one of the markers (Fig. 11.1) is lowering:

1. when starting to operate
2. after turning on the headland.

Before transport, the marker arms have to be fixed to the seed drill in reverse order and to be secured with clip pins (Fig. 11.4/1).



For transport fold track markers upwards and secure with each one clip pin!



The buffer blocks (Fig. 11.5/1) must never be removed and in case of wear must be replaced!
The buffer blocks prevent the transport securing of the markers by the clip pins / Fig. 11.4/1) to be forgotten.

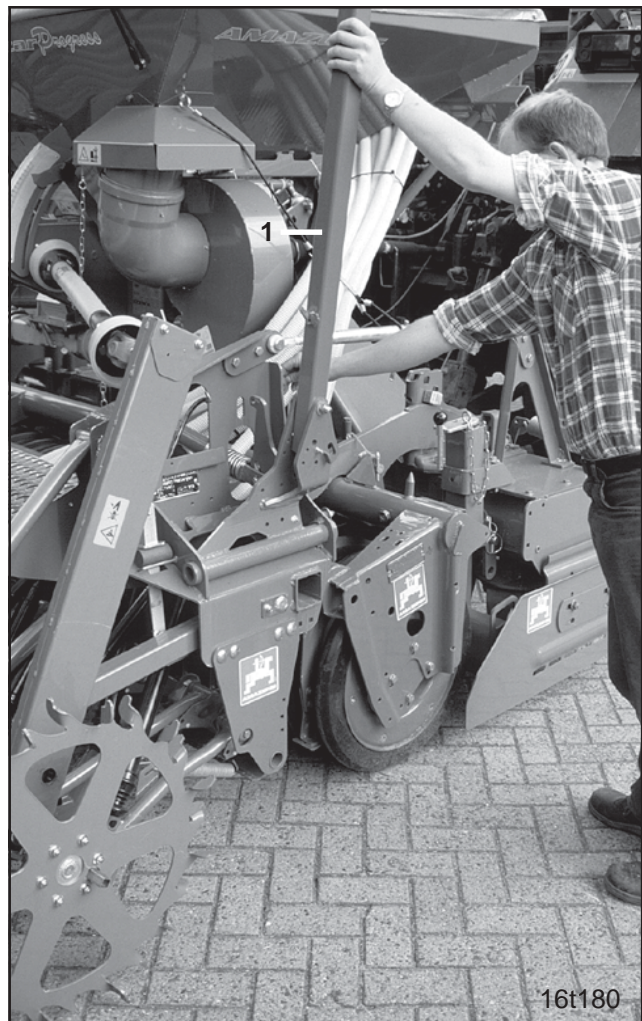


Fig. 11.3

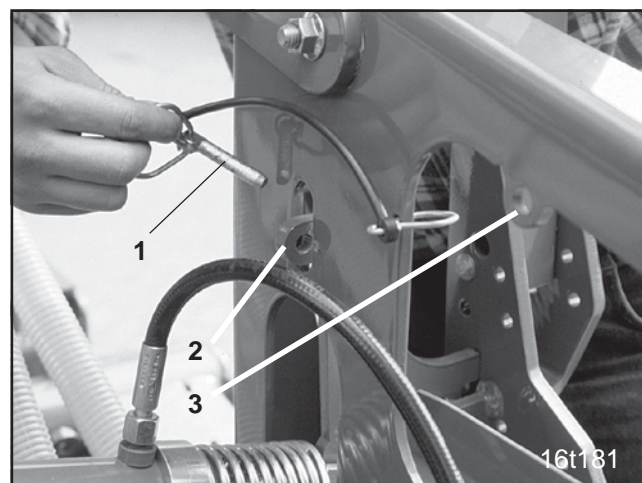


Fig. 11.4

11.2 Setting the markers to the correct length

The seed drill is equipped with markers for marking a trace in the tractor centre.

The spacing is measured either from the centre of the machine or from the outer sowing coulters (see Fig. 11.6).

The spacing "A" (Fig. 11.6) from marker disc to the machine's centre is at the seed drills

AD-PL 302

with 24 rows / 12,5 cm row spacing:

Spacing A = 300,0 cm

The spacing "B" (Fig. 11.6) from marker discs to the outer sowing coulter is at the seed drills:

AD-PL 302

with 24 rows / 12,5 cm row spacing:

Spacing B = 156,0 cm.

The marker discs (Fig. 11.7) can be moved in the marker arms. Prior to it, two hex. bolts (Fig. 11.7/1) should be slackened and retightened.



Right from the beginning set the marker discs (Fig. 11.7) in such a way that on light soils they are about parallel with the direction of operation and on heavy soils more "on grip".

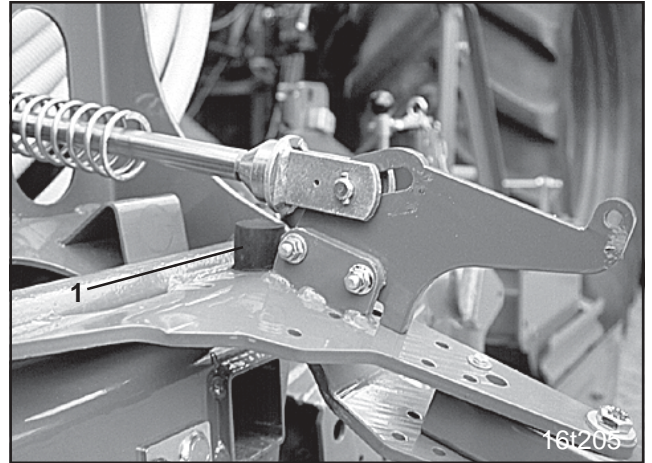


Fig. 11.5

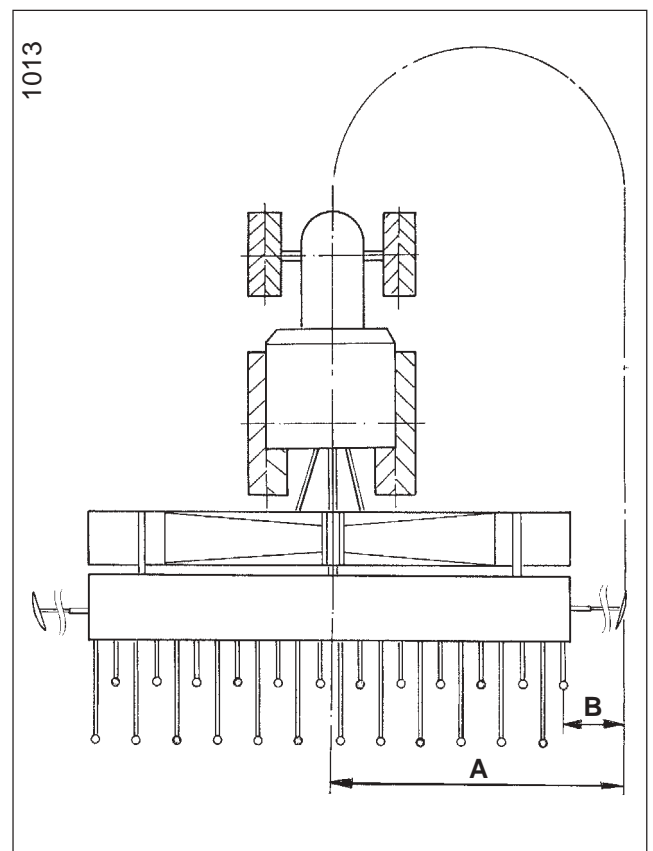


Fig. 11.6

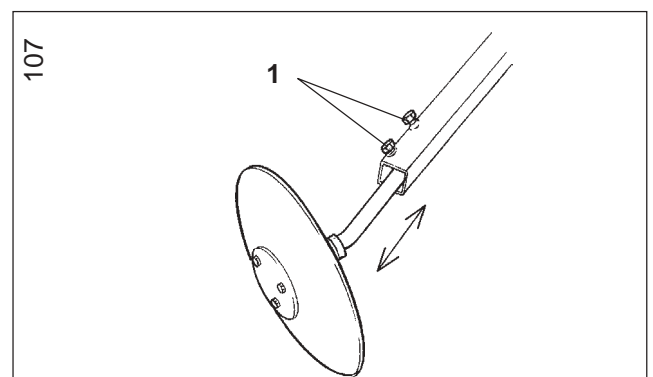


Fig. 11.7

11.3 Obstacles in the field

To avoid damage, the markers should be raised before hitting an obstacle in the field. Behind this obstacle the marker should be lowered again. However, when actuating the tractor control valve, the opposite marker is lowered.

Apply again pressure to the tractor control valve and as soon as the markers are raised, bring the control valve to floating position so that the correct marker is lowered.



To prevent that the AMADOS-computer continues to shift on the tramlining control (if existing) press the "AMADOS-Stop-button" (see AMADOS instruction book) before lifting the marker arms.

11.4 Shear bolt safety

If a marker hits an obstacle during operation, the marker arm can give way to the obstacle by moving to the rear. In this case a hex. shear bolt M6 x 90, 8.8 DIN 931, (Fig. 11.8/1) will shear off.

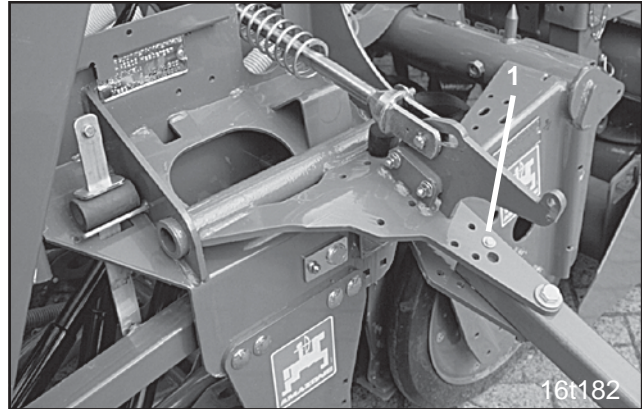


Fig 11.8

12.0 Setting the placement depth of the seed

One of the most important preconditions for high yields is maintaining the constant placement depth of the seed.

The placement depth is achieved by the coulter pressure. The sowing module is equipped as standard with a central coulter pressure adjustment which applies to an even pressure to all coulters.



Check the seed placement depth always before starting to operate:

Travel with the implement on the field approx. 30 m with the later operational speed, check the placement depth of the seed and readjust if necessary.

The central coulter pressure adjustment can either be conducted by an adjustment spindle (Fig. 12.1) or by a hydraulic ram (Fig. 12.4, option).

The seed placement adjustment by hydraulic ram (Fig. 12.4) is recommended preferably when having varying types of soil within one plot. It allows to control the coulter pressure on a pointer (Fig. 12.3/1) from the tractor cab during operation when changing from normal soil to heavier soil or vice versa.

12.1 Setting the placement depth of the seed by the adjustment spindle

The coulter pressure and thus the placement depth of the seed is increased by turning the spindle (Fig. 12.1/1) clockwise, by turning it counter clockwise it is reduced.

In case the machine is equipped with roll disc coulters with depth limiters (option) and if the desired planting depth cannot be achieved by turning the adjustment spindle (Fig. 12.1/1) all roll disc coulter depth limiters would have to be readjusted according to para. 12.3.1.

The fine adjustment then is again conducted by the adjustment spindle.



The placement depth of the seed should be checked after every setting according to para. 12.0!

For actuating the adjustment spindle (Fig. 12.1/1) the coulter pressure adjustment crank (Fig. 12.1/2) has to be plugged onto the square end of the adjustment spindle.

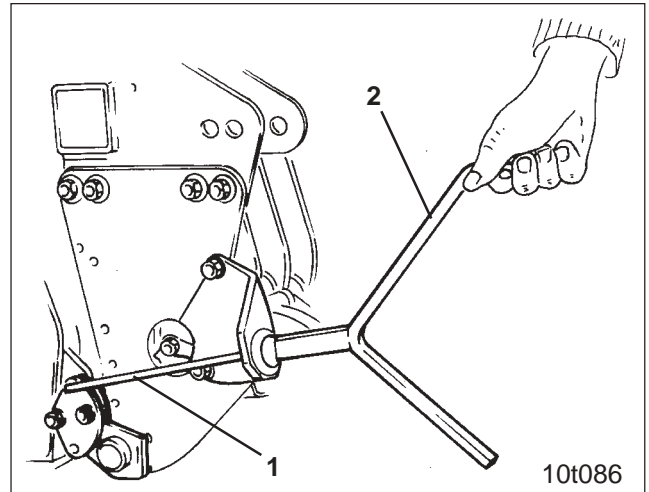


Fig. 12.1

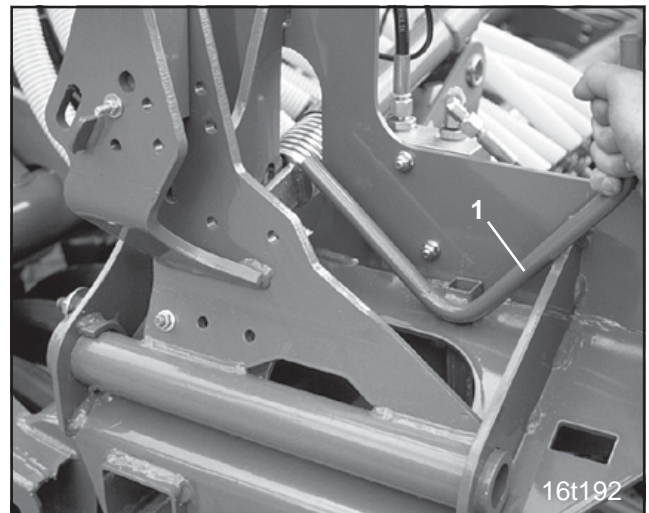


Fig. 12.2

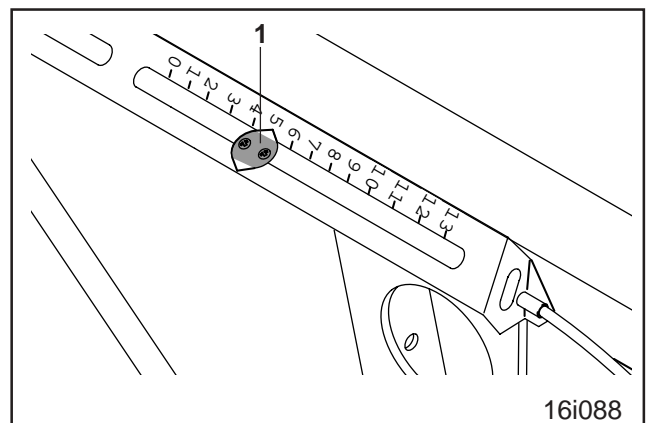


Fig. 12.3

The coulter pressure adjustment crank (Fig. 12.2/1) is placed in a retainer on the left hand frame part.

12.2 Setting the placement depth of the seed by a hydraulic ram (option)

The coulter pressure and thus the placement depth can centrally be set by a hydraulic ram (Fig. 12.5/1) During the operation the coulter pressure can be increased in areas with heavier soils.

When ordered the setting mechanism (Fig. 12.4/1) is mounted to your implement by the factory. Connect the hydraulic ram (Fig. 12.5/1) to a single acting tractor control valve (see para. 3.6.4) and actuate the control valve only from the tractor cab.

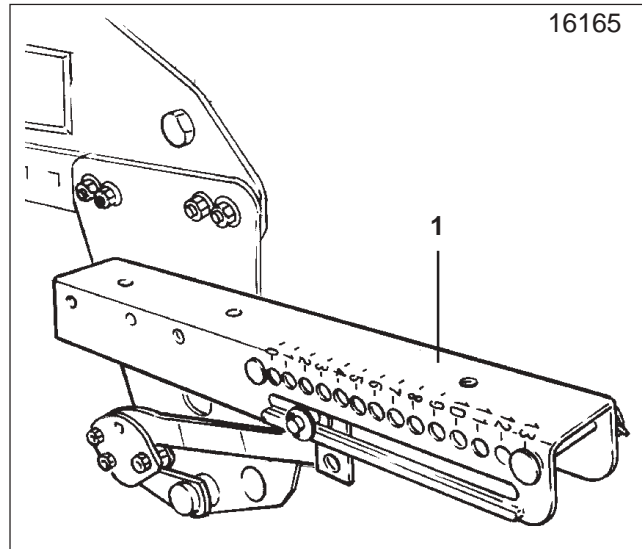


Fig. 12.4



The hydraulic coulter pressure adjustment is coupled with the hydraulic extra coverage following harrow pressure adjustment (if existing). If the coulter pressure is increased automatically also the extra coverage following harrow pressure will be increased.



**When actuating the control valve simultaneously the hydraulic ram of the coulter pressure adjustment and the extra coverage following harrow pressure adjustment is pressurised. Ask people to leave the area of danger!
Danger of injury on moving parts!**

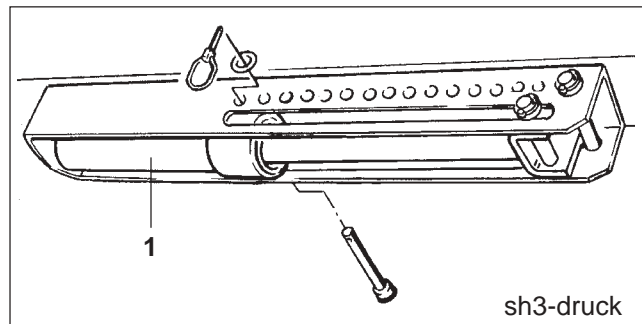


Fig. 12.5

Two pins (Fig. 12.6/3 and Fig. 12.6/4) function as limiter for the hydraulic ram (Fig. 12.6/1) in the setting segment. When the hydraulic ram is without pressure the top of it rests on the pin (Fig. 12.6/3) and when the hydraulic ram is pressurised it rests on the pin (Fig. 12.6/4).

Setting the normal coultter pressure

- Pressurise hydraulic ram (Fig. 12.6/1).
- Insert pin (Fig. 12.6/3) into one of the holes of the quadrant plate and secure by a clip pin (Fig. 12.6/2). Each hole is identified by a figure. With increasing figures the coultter pressure will become higher.

Increasing the coultter pressure

- Relieve the hydraulic ram (Fig. 12.7/1) from pressure.
- Insert the pin (Fig. 12.7/3) into a hole of the quadrant plate and secure with clip pin (Fig. 12.7/2). Each hole is identified by a figure. With increasing figures the coultter pressure will become higher.

Seed drill with roll disc coulters

If your seed drill is equipped with roll disc coulters with depth limiters (option) and if the desired planting depth cannot be achieved by resetting the pins, all roll disc depth limiters will have to be readjusted according to para. 12.3.1.

The fine adjustment then will have to be done by reinserting the pins.

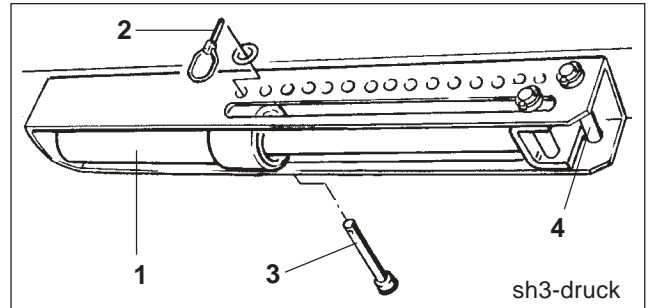


Fig. 12.6

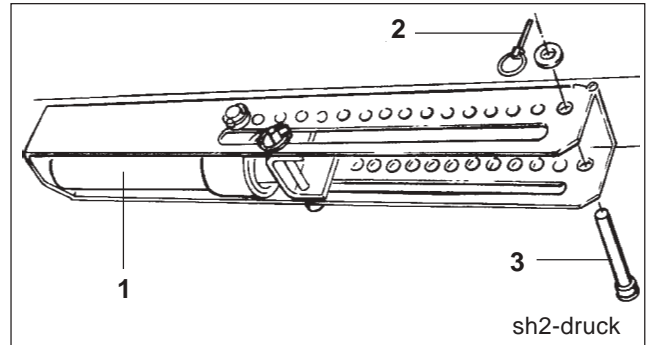


Fig. 12.7



Always check the planting depth of the seed before starting the operation:
Travel with the implement in the field a distance of approx. 30 m with the later intended forward speed and check the planting depth of the seed and readjust if necessary.

12.3 Setting the planting depth of the seed by resetting the depth limiters of the roll disc coulters (option)

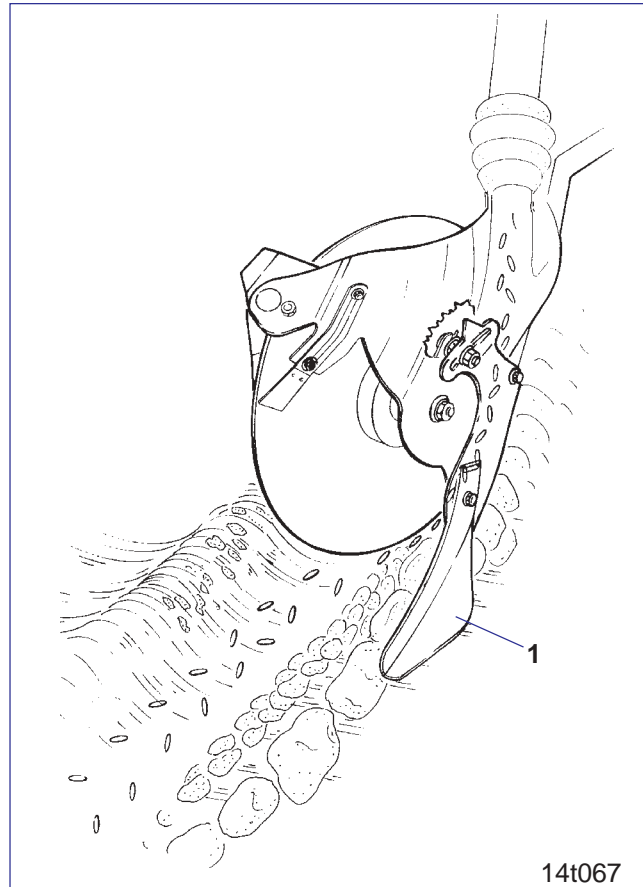
To ensure the seed depth placement will be maintained throughout the field even in changing soil conditions, the roll disc coulters can be equipped with depth limiters (Fig. 12.8/1).

When having ordered the depth limiters have been fitted by the factory to a placement depth of approx. 2.5 cm for medium heavy soils (always check the placement depth of the seed before starting the operation!) For slightly increasing the planting depth the coulters pressure may be increased with the aid of the coulters pressure adjustment according to para. 12.1 or to para. 12.2.



Extremely high coulters pressure may lead to pre-mature wear of the depth limiters!

If the desired placement depth cannot be achieved by changing the coulters pressure or if the wear of the depth limiters should be avoided by too high a coulters pressure, all depth limiters (Fig. 12.8/1) should uniformly be readjusted according to para. 12.3.1.



14t067

Fig. 12.8

12.3.1 Fitting and setting roll disc depth limiters

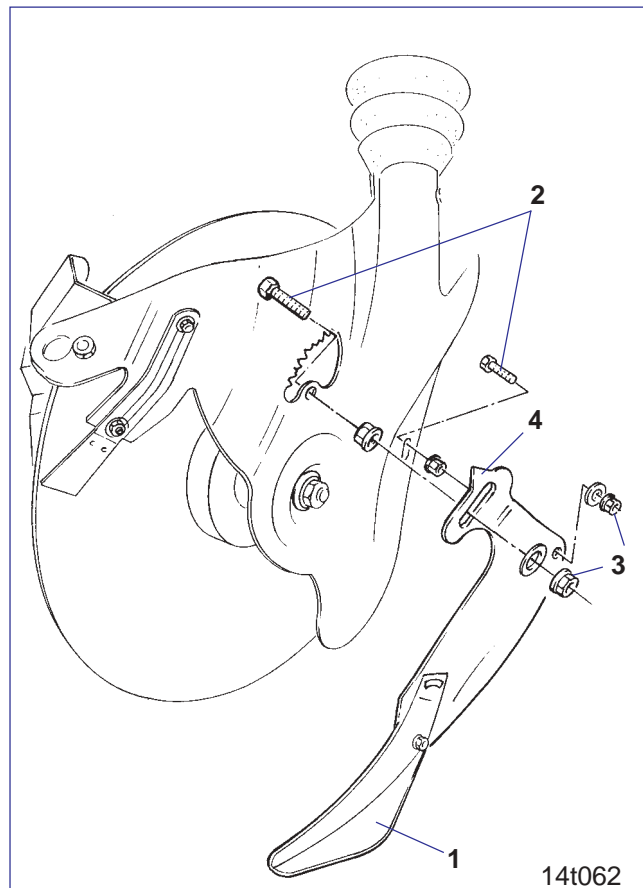
First fitting

Bolt hex. bolts (Fig. 12.9/2) on to the roll disc coulter. Plug depth limiters (Fig. 12.9/1) onto hex. bolts (Fig. 12.9/2) and affix loosely with fixing nuts (Fig. 12.9/3).

Setting the depth limiters

Readjust all depth limiters (Fig. 12.9/1) uniformly, e. g. all pointers (Fig. 12.9/4) should be set into the same position. The V-cuttings of the roll disc coulters function as a setting aid.

Slacken (do not remove) hex. nuts (Fig. 12.9/3) before and retighten firmly afterwards.



14t062

Fig. 12.9

The setting of the depth limiter from one V-cutting (Fig. 12.10) to the next corresponds to a change in the seed placement depth by approx. 1.5 cm on medium heavy soils. The more the pointer (Fig. 12.10/1) is moved to the right hand, the deeper the seed placement will become. The setting as shown in Fig. 12.10 corresponds to a seed placement depth of approx. 2.5 cm on medium heavy soil.



Check the seed placement depth after every setting!

Slight changes in the placement depth of the seed may then be set with the aid of the coulter pressure adjustment according to para. 12.1 or to para. 12.2!



In sticky soil conditions

the roll coulter discs may come to a standstill by the scrapers on the disc's front side.

Remove scraper and carrier from the disc's front side so that the disc will rotate again. In this case, however, soil will stick to the front side of the disc.

Set the depth limiters in such a way, that one has to operate with high coulter pressure. The seed placement depth will not change, even if soil sticks to the front side of the roll coulter disc.

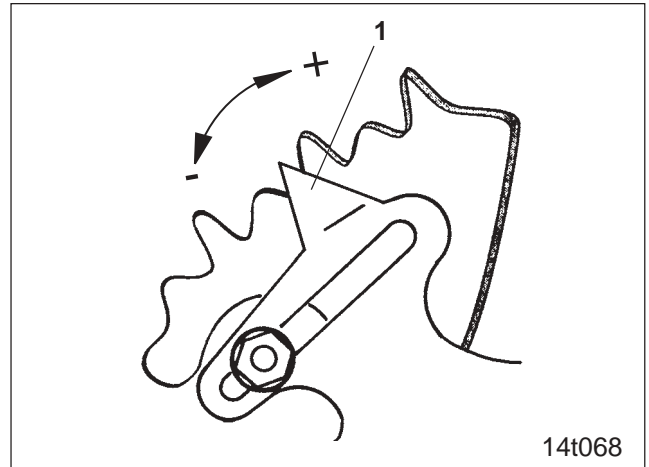


Fig. 12.10

14t068

13.0 Extra coverage following harrow

The extra coverage following harrow (Fig. 13.1) evenly covers the seed sown with soil.

13.1 Mounting the extra coverage following harrow to the coulter exchange module frame

- Bolt on swing-metal buffer (Fig. 13.2/1).
- Set fixing tubes (Fig. 13.2/2) with pins (Fig. 13.2/3) on the retainers (Fig. 13.2/4) of the extra coverage following harrow and secure with clip pins (Fig. 13.2/5).
- Set fixing tubes (Fig. 13.2/2) with pins (Fig. 13.2/6) on the pockets (Fig. 13.2/7) and secure with clip pins (Fig. 13.2/8).

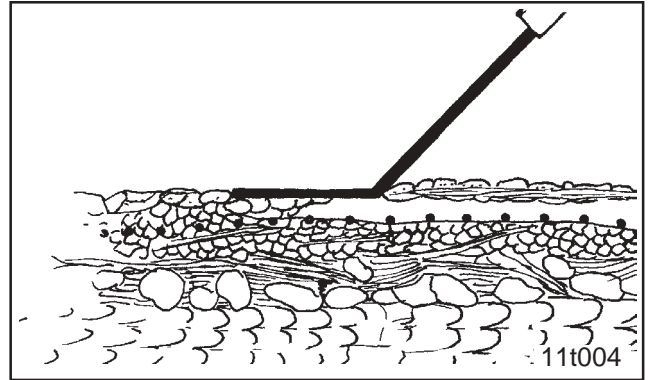


Fig. 13.1

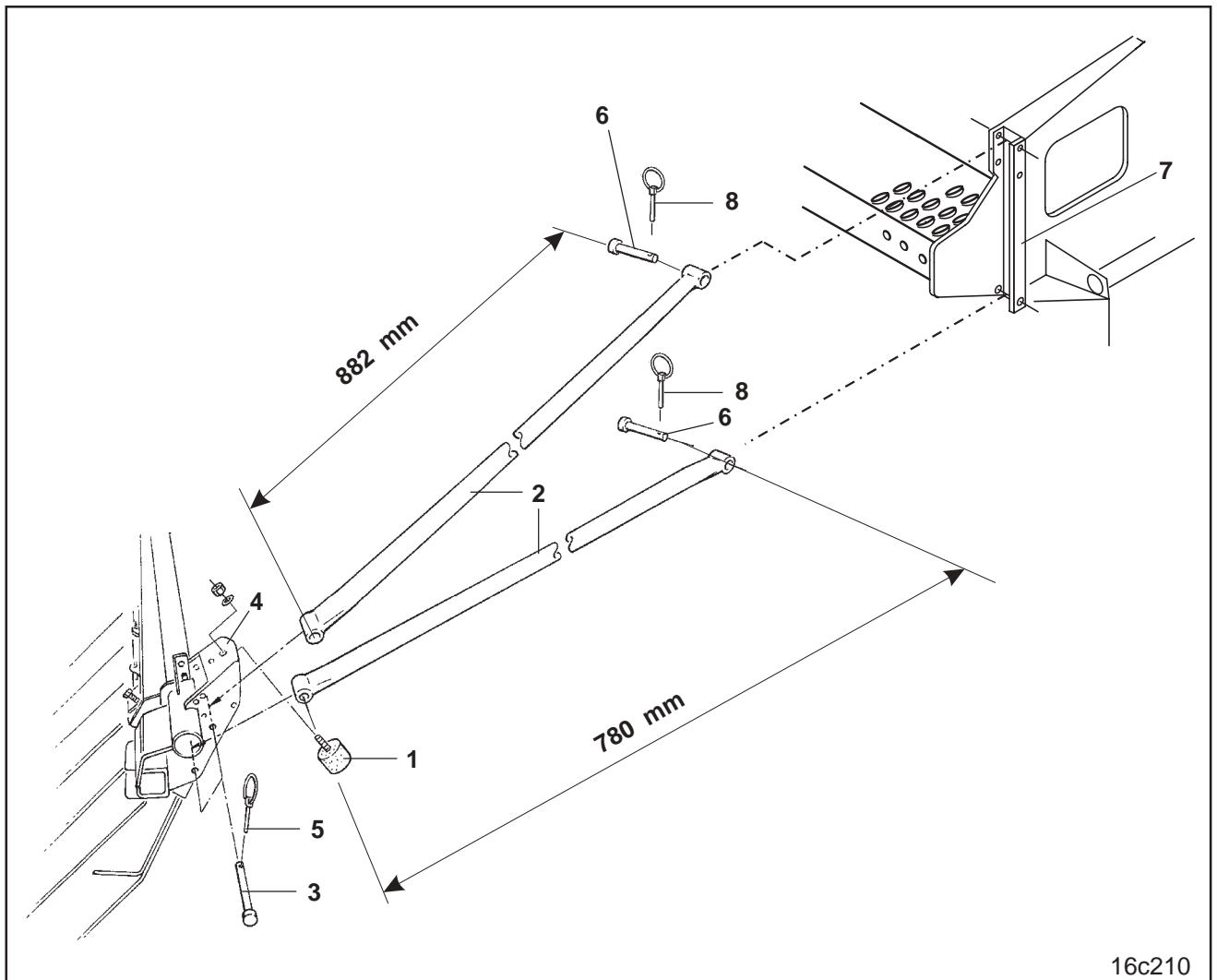


Fig. 13.2

13.1.1 Connecting hydraulic ram (option)

The hydraulic ram (Fig. 13.3/1) is fitted to the extra coverage following harrow when supplied. Connect the hydraulic hose (Fig. 13.3/2) to the hydraulic ram (Fig. 13.3/1).



Allow the hydraulic hose (Fig. 13.3/2) to have a sufficiently large bend when fitting to the pivoting points of the link arms of the extra coverage following harrow to prevent the hose being torn apart by movement of the extra coverage following harrow.

Connect the hydraulic ram (Fig. 13.3/1) to a single acting tractor control valve (see para. 3.6.4) and actuate the control valve only from the tractor's cab.



The hydraulic pressure adjustment of the extra coverage following harrow is coupled to the hydraulic coulter pressure adjustment (if existing). If the coulter pressure is increased, simultaneously also the pressure on the extra coverage harrow tines is increased.



When actuating the control valves in the tractor cab, simultaneously the hydraulic rams of the coulter pressure adjustment and of the extra coverage following harrow are pressurised!

**Ask people to leave the area of danger!
Danger of injury on moving parts!**

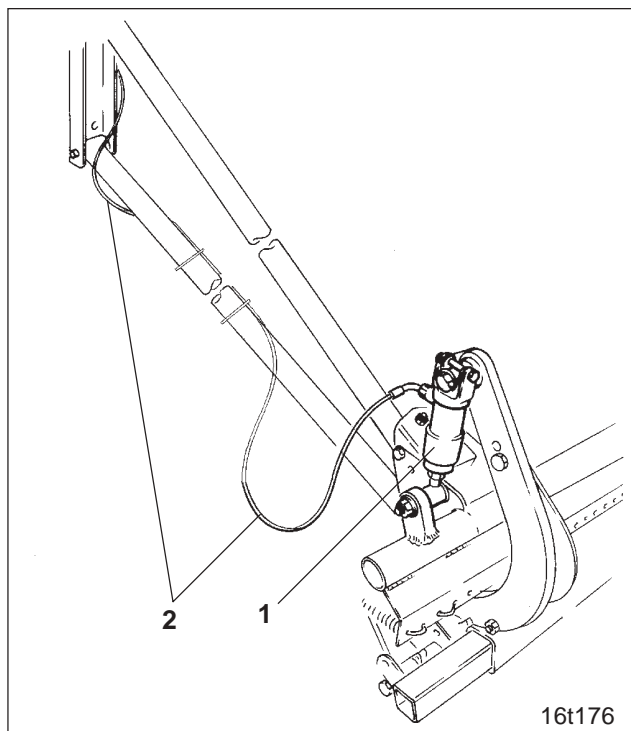


Fig. 13.3

13.2 Bring outer following harrow tines into operating position

During operation the packer roller and the coulters throw the soil in different distances to the sides, depending on the forward speed and the soil condition. The outer following harrow tines (Fig. 13.4/1) have to be set in such a way that the soil is guided backwards for achieving a mark-free seed bed.

The higher the forward speed the more the square tube (Fig. 13.4/2) with the outer harrow tines has to be moved outwards.

The square tubes with the outer harrow tines have to be fixed in position after every setting by the clamping bolts (Fig. 13.4/3).



Check the setting prior to beginning the operation! Travel with the later operational speed a distance of approx. 30 m in the field. Check settings and correct if necessary.

13.3 Position of harrow tines

The spring tines (Fig. 13.5) of the extra coverage following harrow have to be set in the field in such a way that they lay about horizontally on the soil and still can move downwards by about 5 to 8 cm. The spacing between the soil and the square tube should then measure between 230 and 280 mm, depending on the kind of soil.

This setting is conducted by lengthening or shortening the shrouds tensioner (Fig. 13.6/1).

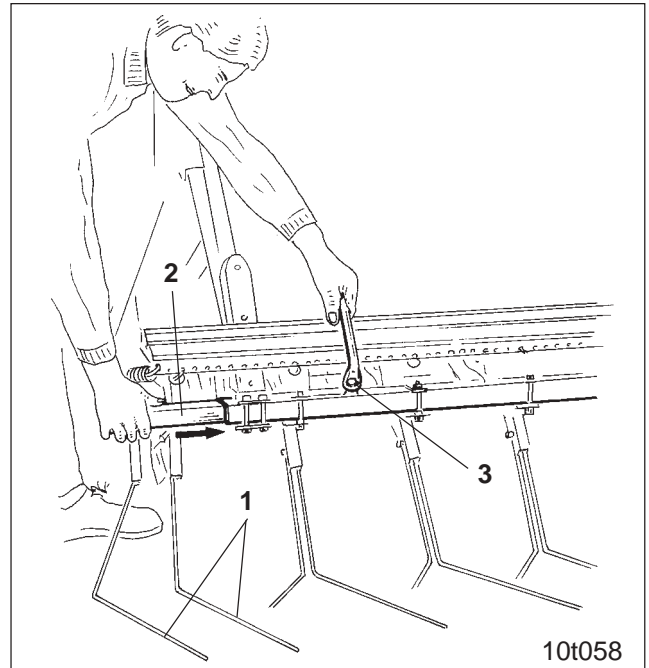


Fig. 13.4

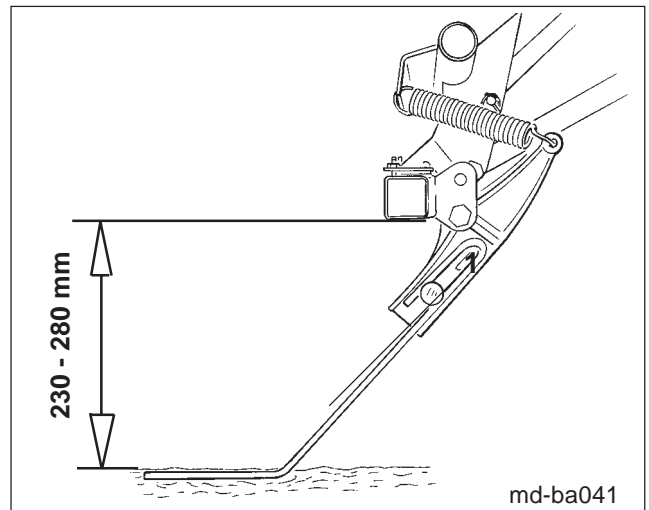


Fig. 13.5

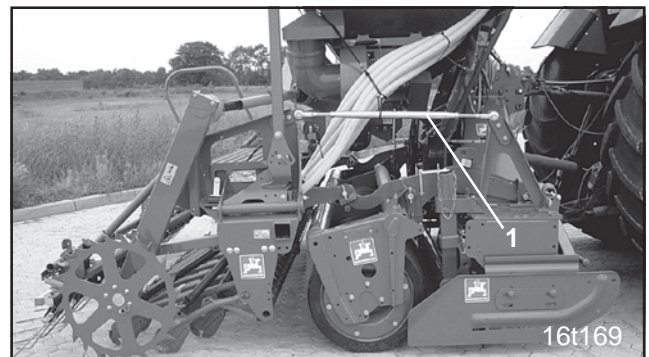


Fig. 13.6

13.4 Setting the harrow pressure on extra coverage following harrow without hydraulic ram

The pressure by which the spring tines (Fig. 13.7/1) of the extra coverage following harrow are pressing onto the soil should be set in such a way that after the seed coverage no ridge of soil remains visible in the field.

Set the harrow tine pressure as follows:

Pull the stop lever (Fig. 13.7/2) **upwards**. Insert the pin (Fig. 13.7/3) into a hole **below** the stop lever (Fig. 13.7/2) and secure by a clip pin (Fig. 13.7/4). The higher the pin is inserted into the quadrant plate, the higher the pressure of the extra coverage following harrow will be. The stop lever (Fig. 13.7/2) is actuated with the coulter pressure adjustment crank (Fig. 13.7/5).

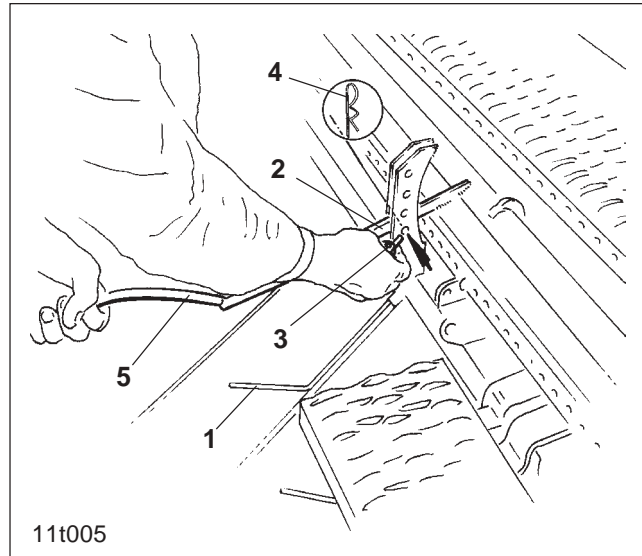


Fig. 13.7



Check the settings before commencing work!

Travel with your implement at the later operational speed a distance of approx. 30 m in the field to be sown and check whether the seed is uniformly covered with soil and no soil ridge remains in the field.

13.5 Setting harrow tine pressure on the extra coverage following harrow with hydraulic ram

The pressure by which the spring tines (Fig. 13.7/1) of the extra coverage following harrow are pressing onto the soil should be set in such a way that after the seed coverage no ridge of soil remains visible in the field.

When changing from normal soils to heavy soils or vice versa, the coulter pressure is readjusted by a hydraulic ram (Fig. 13.8/1).

Two pins (Fig. 13.9/1 and Fig. 13.9/2) are placed as a stop for the lever (Fig. 13.9/3) in the setting segment. The lever (Fig. 13.9/3), which is actuated by the hydraulic ram (Fig. 13.8/1) lays on the pin I (Fig. 13.9/1) when the hydraulic ram is without pressure and it lays on pin II (Fig. 13.9/2) when the hydraulic ram has been pressurised.

For setting an increased harrow pressure

- make the hydraulic ram (Fig. 13.8/1) pressureless.
- insert pin II (Fig. 13.9/2) into a hole in the setting segment above the lever (Fig. 13.9/3) and secure by a clip pin (Fig. 13.9/4).

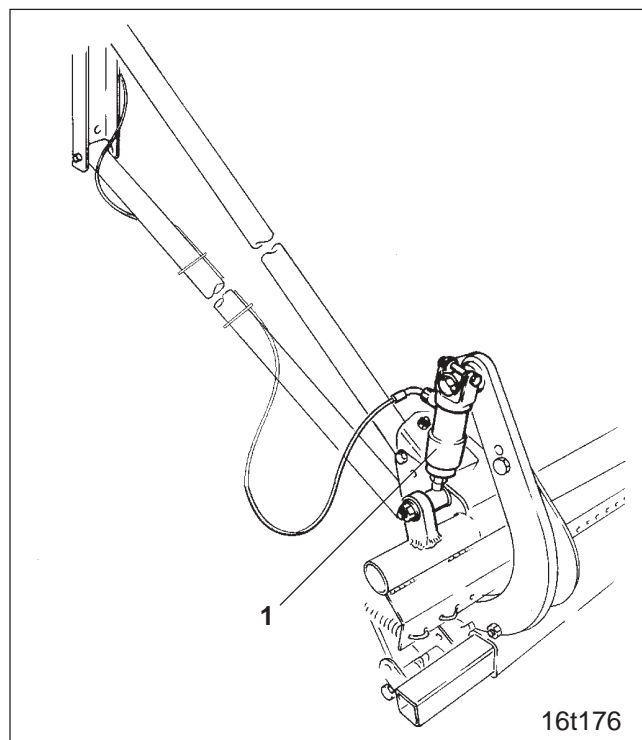


Fig. 13.8

For setting the normal harrow pressure

- Pressurise hydraulic ram (Fig. 13.8/1).
- Insert pin I (Fig. 13.9/1) into a hole in the setting segment below the lever (Fig. 13.9/3) and secure by a clip pin (Fig. 13.9/4).



The higher you place a pin into the hole segment, the higher the harrow pressure will get.



Checking settings prior to operation!
Travel with your implement a distance in the field of approx. 30 m with the later intended operational speed and check whether the seed on light to medium soils is covered with a normal harrow pressure and on heavy soils with increased pressure evenly with soil and that no ridge of soil is noticeable.

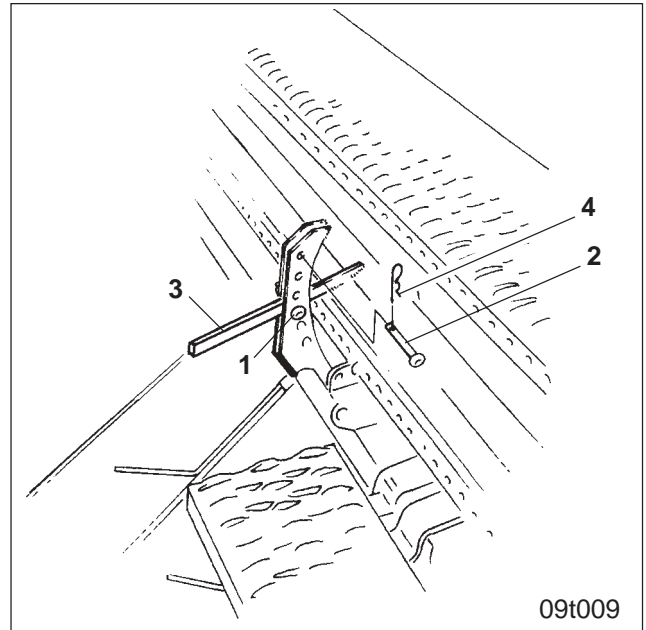


Fig. 13.9

13.6 Road transport

For transport on public roads, the square tubes (Fig. 13.10/1) with the outer harrow elements (Fig. 13.10/2) should be inserted till the stop into the larger carrier tube. Prior to this slacken clamping bolt. (Fig. 13.10/3) and retighten firmly.

In the field the outer harrow elements (Fig. 13.10/2) should be brought back into operating position according to para. 13.2.



Insert outer square tubes (Fig. 13.10/1) all the way to the stop and secure with clamping bolts before transporting on public roads.

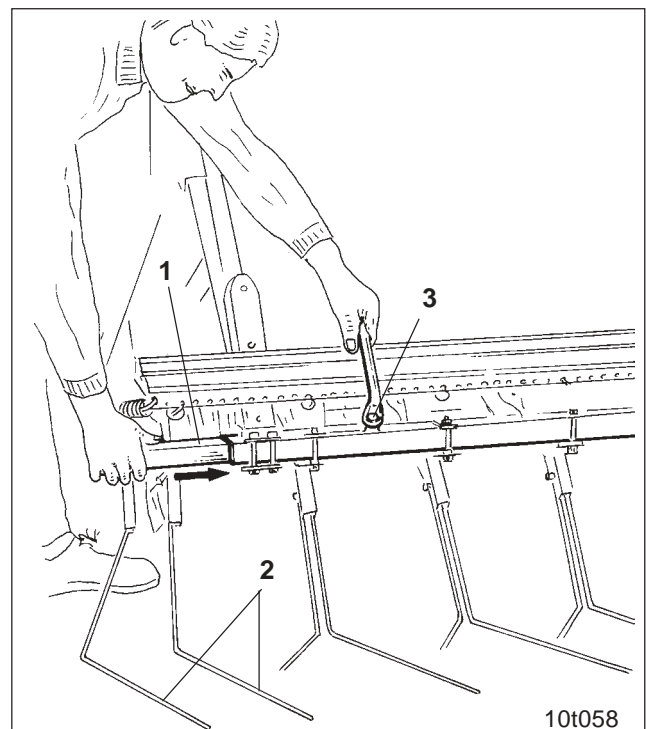


Fig. 13.10

14.0 Creating tramlines with AMADOS-tramlining control

Tramlines are marks (Fig. 14.1/1), in which no seed is sown. The husbandry tractor determines the track width. The spacing between the tramlines corresponds to the working width of the sprayer (Fig. 14.1/2) and of the centrifugal broadcaster.

With the aid of the tramlining control, tramlines are created in the field, in which the fertiliser broadcaster or sprayer with exact working widths operate.

The switching rhythm (please refer to table Fig. 14.2) depends on the working width of the seed drill and the working width of the fertiliser broadcaster or of the field sprayer.

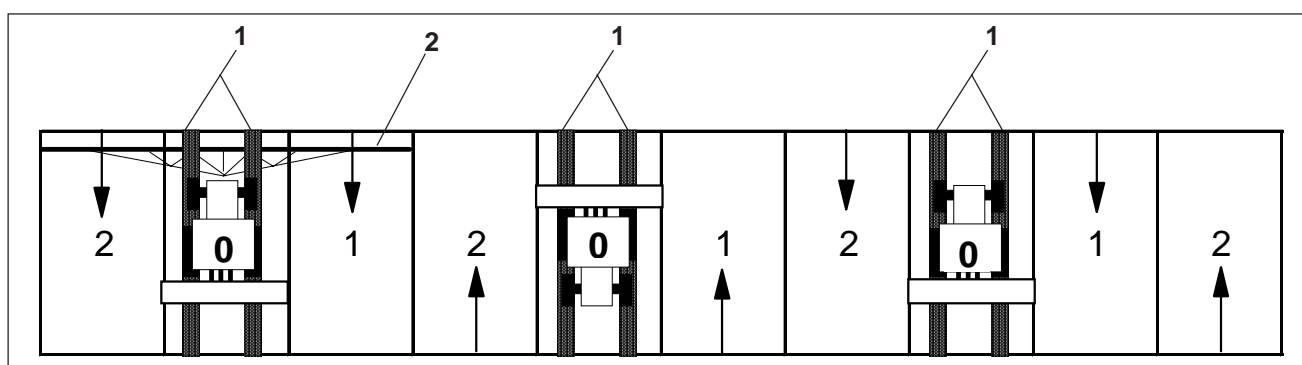


Fig. 14.1

Schaltung	Arbeitsbreite der Sämaschine				
	2,5 m	3,0 m	4,0 m	4,5 m	6,0 m
	Abstand der Fahrgassen (Arbeitsbreite des Düngerstreuers und der Spritze)				
3		9 m	12 m		18 m
4	10 m	12 m	16 m	18 m	24 m
5		15 m	20 m		30 m
6	15 m	18 m	24 m	27 m	36 m
7		21 m	28 m		42 m
8	20 m	24 m	32 m	36 m	
9		27 m	36 m		
2	10 m	12 m	16 m	18 m	24 m
6 plus	15 m	18 m	24 m	27 m	24 m 36 m
5 / 13 rechts			18 m		
5 / 13 links					

Fig. 14.2

t691-d01

When supplied, the tramline spacing of your implement has been set to the track width of your husbandry tractor according to your prior indication.

An electric lifting spindle motor (Fig. 14.3/1) or a Bowden control which is connected with the switch box, actuate the mechanism inside the tramline flap box (Fig. 14.3/2) which shuts the outlets (Fig. 14.3/3) towards the tramline coulters and which leads the seed through a tube (Fig. 14.3/4) back into the seed box.

When the figure "0" appears on the display of AMADOS or in the sight window of the switch box, the seed inside the flap box (Fig. 14.3/2) is not delivered towards the tramline coulters but back into the seed box and tramlines are created.

Through the flap box the seed is delivered towards 8 coulters which can be used as tramline coulters. If it is desired that when creating tramlines the seed flow should not be interrupted on all 8 coulters, the 8 tramline coulters may be converted to normally sowing coulters at any random number or vice versa. For this the relevant flap (Fig. 14.4/1) inside the flap box should be deactivated (for normally sowing coulters) or activated (for tramline coulters). Please find the detailed description in para. 14.5.

When the figure "0" appears on the display of AMADOS or in the sight window of the switch box the activated flaps (Fig. 14.4/1) are brought into position "return flow" (illustrated in a broken line). In this position the seed is delivered back into the seed box. Deactivated flaps do not move and the seed is going on to be delivered towards the coulters.

AMADOS checks the setting of the tramline flap box with the aid of a sensor and gives alarm in case of a wrong setting.

AMADOS receives the impulses for switching forward the tramline control by the track marker shuttle valve or by the marker arm sensors.

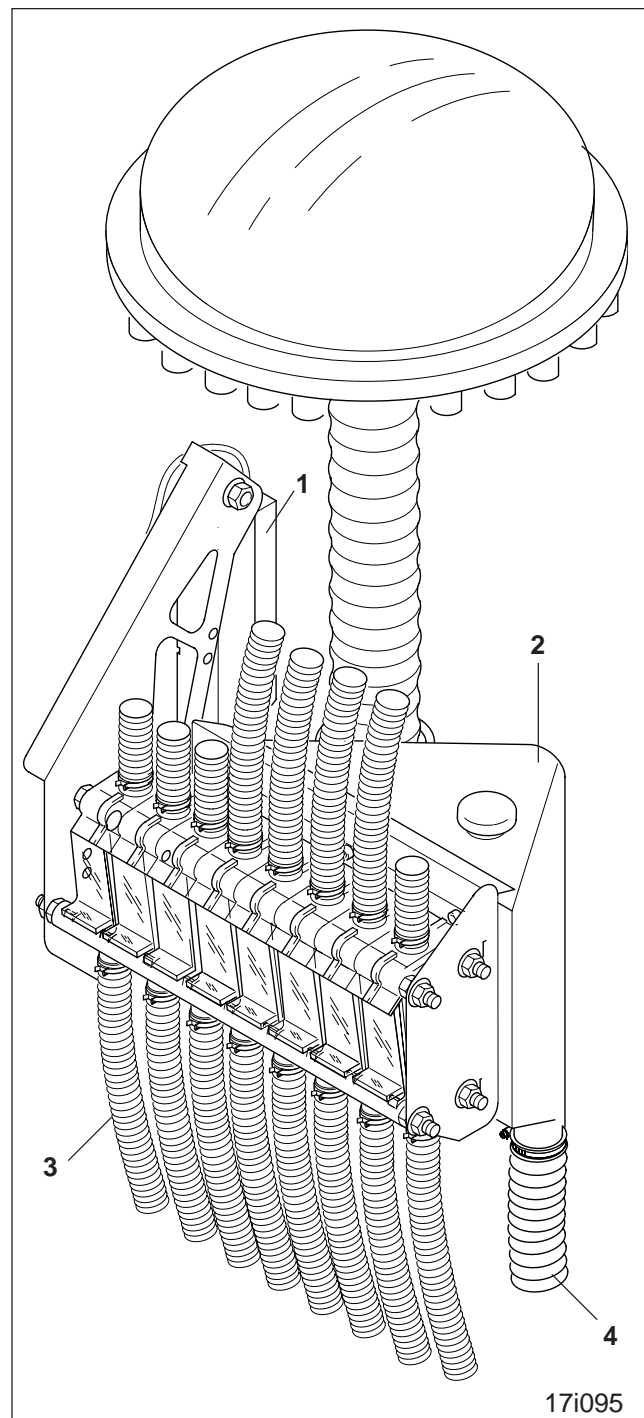


Fig. 14.3

14.1 Starting the operation

Take the "starting figure" from the tramline schedules (Fig. 14.5) and set the "starting figure" on the display of AMADOS prior to starting the operation.

Example:

"Starting figure" of switching rhythm "3"
In colum "C" move to figure "3" (switching rhythm 3).
Change to column "D". The operation in the field starts with the first figure below the letters "START" in colum "D". In our example with "3-fold rhythm" the operation begins with the figure "2" (start figure).



The setting mechanism of the tramline flap box switching is coupled with the hydraulically actuated track markers. Prior to setting the starting figure note, that the correct track marker arm lowers when starting the operation. If necessary, switch once more the track marker actuation before setting the starting figure.

AMADOS receives the necessary information for switching ahead the tramline control when the track marker is raised at the headlands but also when the track markers are raised in the field, e. g. in front of obstacles.



Please note the hints in the instruction manual AMADOS when lifting the track marker in front of obstacles!

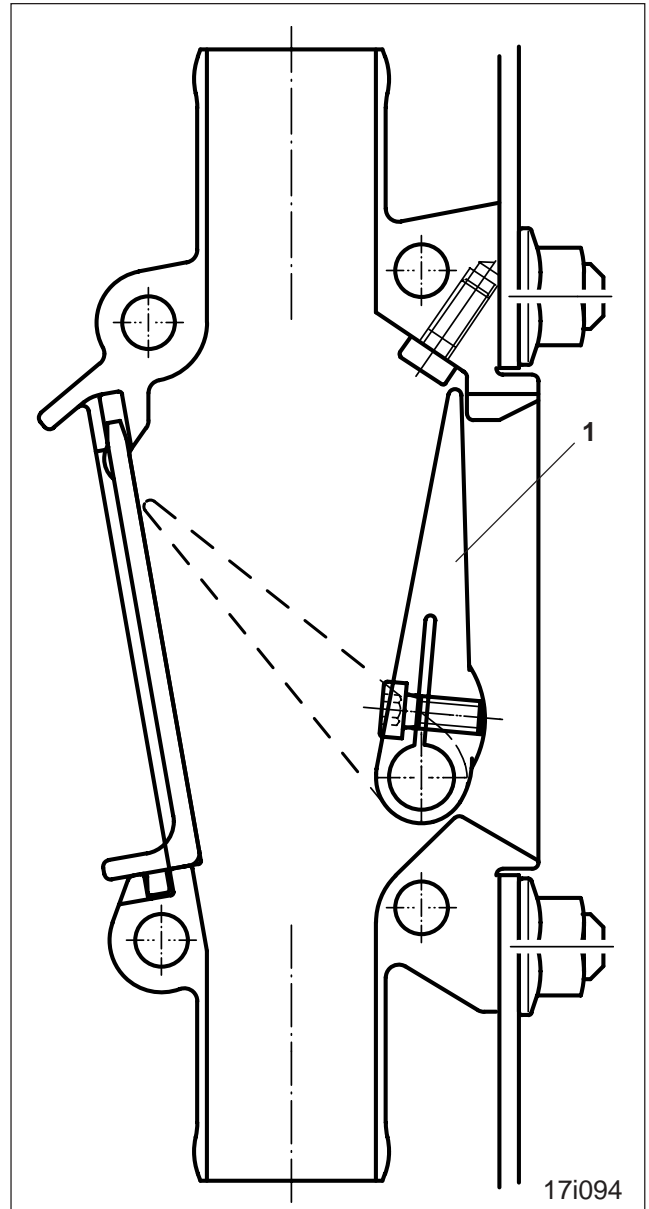


Fig. 14.4

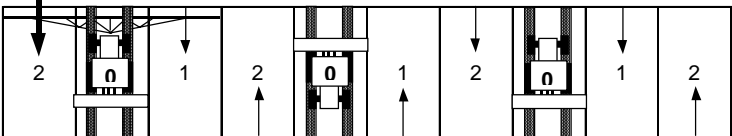
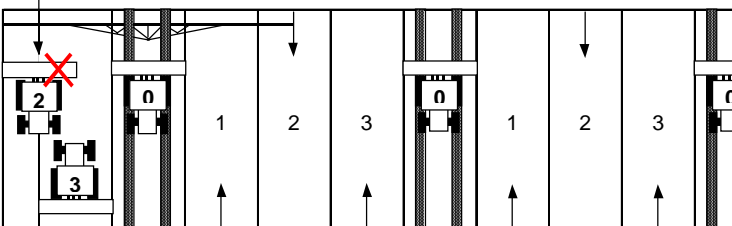
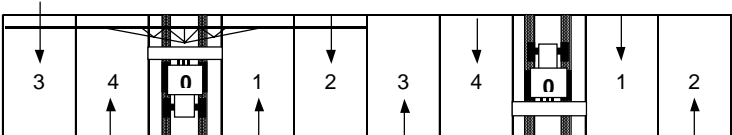
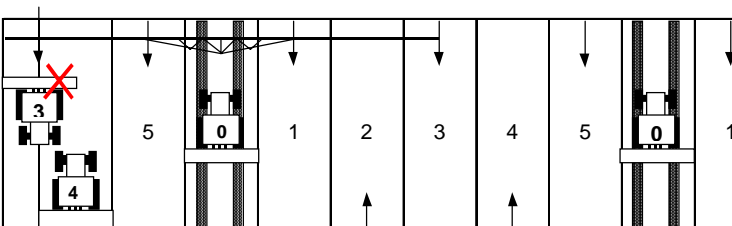
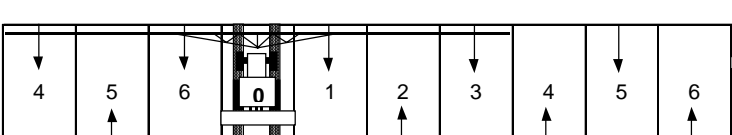
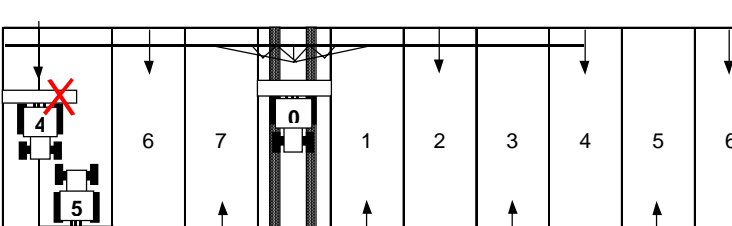
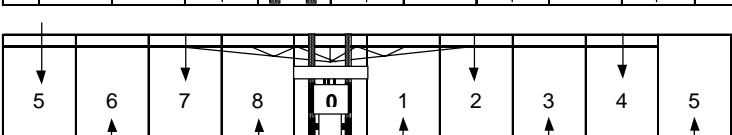
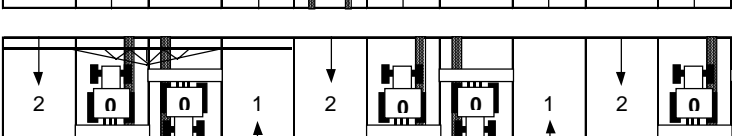
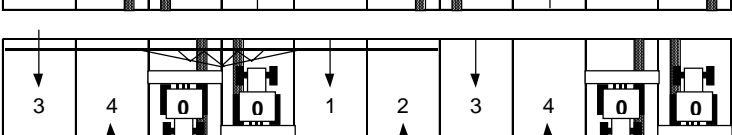
A	B	C	D
START			
3,0 m 4,0 m 6,0 m	9 m 12 m 18 m	3	
2,5 m 3,0 m 4,0 m 4,5 m 6,0 m	10 m 12 m 16 m 18 m 24 m	4	
3,0 m 4,0 m 6,0 m	15 m 20 m 30 m	5	
2,5 m 3,0 m 4,0 m 4,5 m	15 m 18 m 24 m 27 m	6	
3,0 m 4,0 m	21 m 28 m	7	
2,5 m 3,0 m 4,0 m	20 m 24 m 32 m	8	
3 m	27 m	9	
2,5 m 3,0 m 4,0 m 4,5 m	10 m 12 m 16 m 18 m	2	
2,5 m 3,0 m 4,0 m 4,5 m 6,0 m	15 m 18 m 24 m 27 m 36 m	6 plus	

Fig. 14.5

14.2 Hints for creating tramlines with 4-, 6- and 8-fold switching rhythm

Fig. 14.5 illustrates examples for creating tramlines with 4-, 6- and 8fold switching rhythms. The seed drill operates with half its working width during the first run in the field. Necessary for this is the insert (Fig. 14.6/1) for the half-side shut-off of the outlets inside the distributor head which is available as special option.

However, the first run in the field may also start by creating a tramline (see Fig. 14.7). If the operation is started with full working width and creating a tramline

- the fertiliser spreaders spread to one side with the aid of a border spreading disc or a border spreading device during the first run in the field.
- on field sprayers one boom is switched off during the first run in the field.

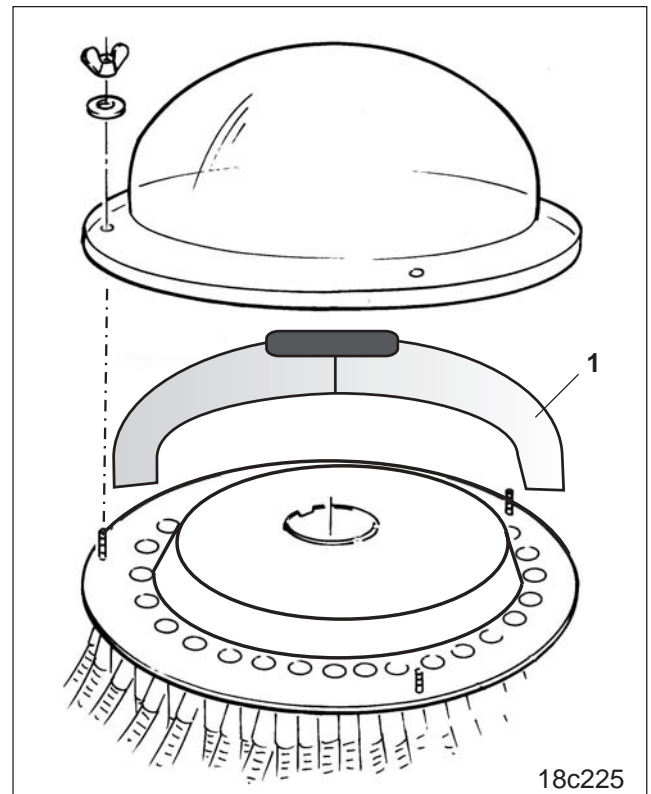


Fig. 14.6

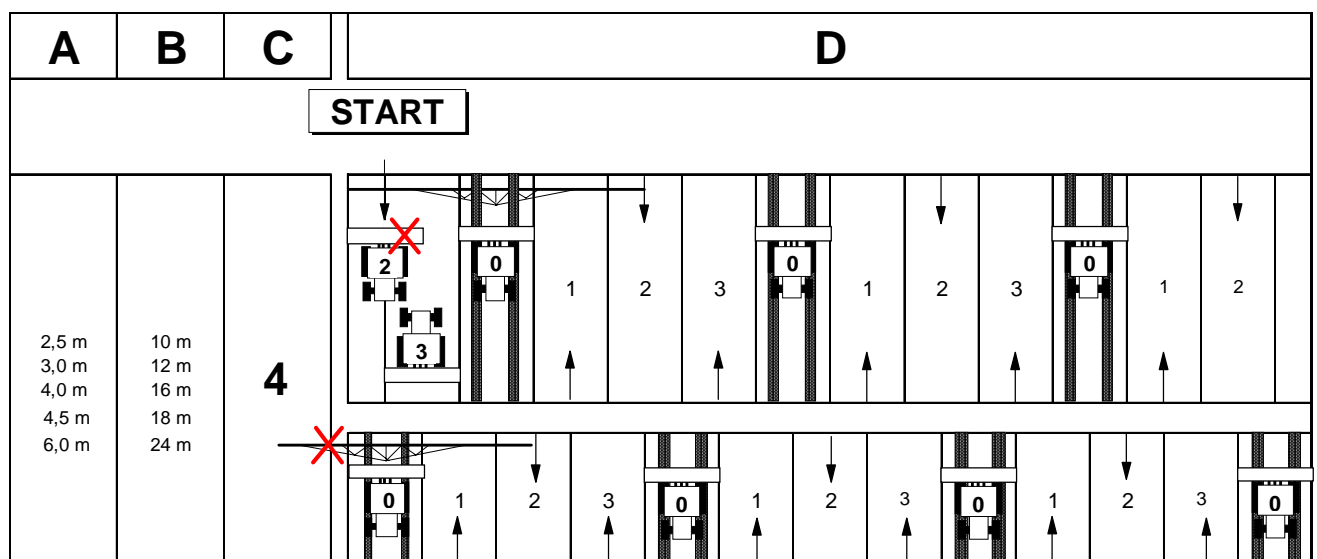


Fig. 14.7



14.3 Hints for creating tramlines with 2-fold and 6-plus switching rhythms

Tramlines with 2-fold and 6-plus switching rhythms (see Fig. 14.8) are created during one travel in the field to and fro.

The flow of the seed to the tramline coulters must only be interrupted on seed drills

- 2-fold switching rhythm on the right hand side of the seed drill
- 6-plus switching rhythm on the left hand side of the seed drill

The operation has always to start on the right hand side of the field.

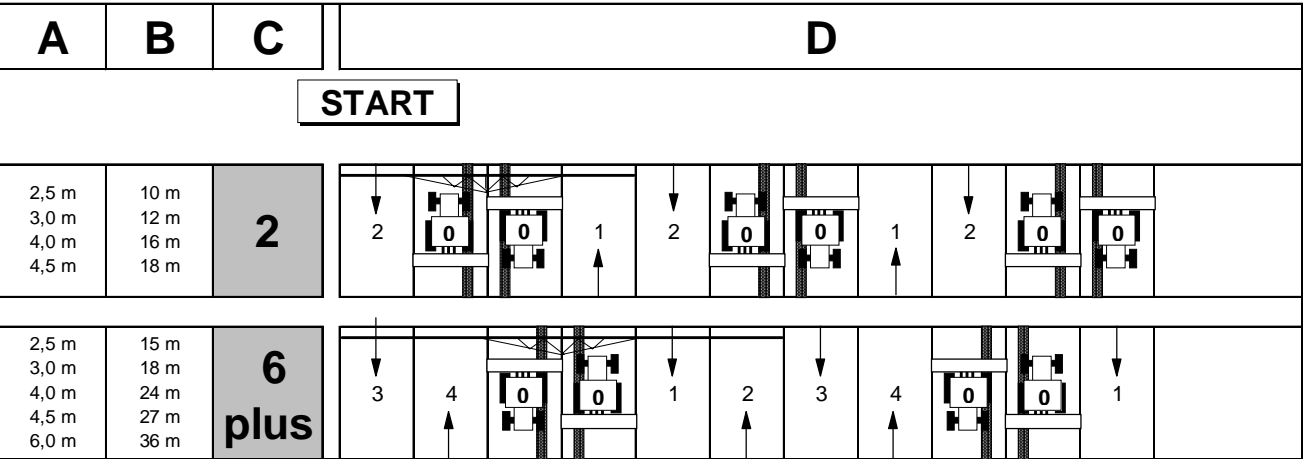


Fig. 14.8

14.4 Setting the tramline to the wheel marks of the husbandry tractor

Tramlines are marks in which no seed is sown. The spacing of the marks corresponds to the track width of the husbandry tractor. On supply of the seed drill the tramline kit has been set to the wheel marks of your husbandry tractor. Should it be necessary, e. g. when purchasing a new husbandry tractor, to set your tramline system onto the wheel marks of the new tractor, the seed tubes (Fig. 14.9/1) on the coulter frame have to be interchanged.



Seed drills with 2-fold switching rhythm have to be equipped with tramline coulters only on the right hand side of the seed drill (see para. 14.3).



Seed drills with 6-plus switching rhythm have to be equipped with tramline coulters only on the left hand side of the seed drill (see para. 14.3).



If your seed drill is equipped with a pre-emergence marker kit, adjust the marker discs accordingly..

14.5 Matching with the tyre width

If the number of tramline coulters should be changed, activate or deactivate flaps inside the tramline flap box (Fig. 14.10/1) according to the required tramline coulters (please also refer to para. 14.0).

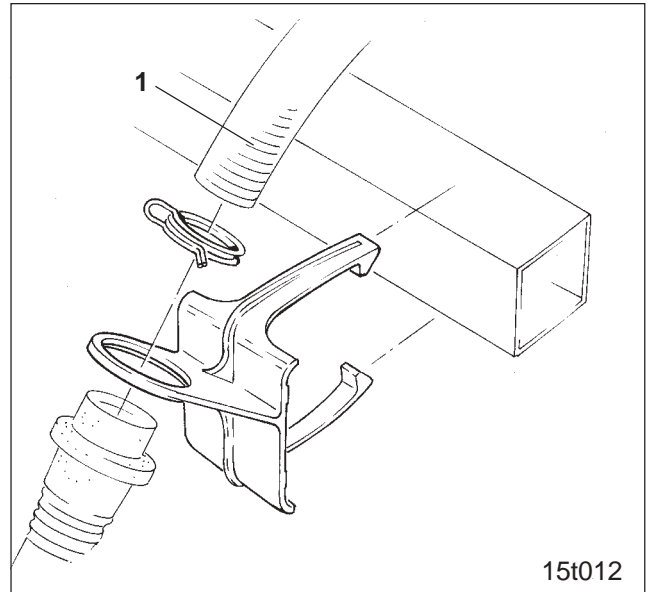


Fig. 14.9

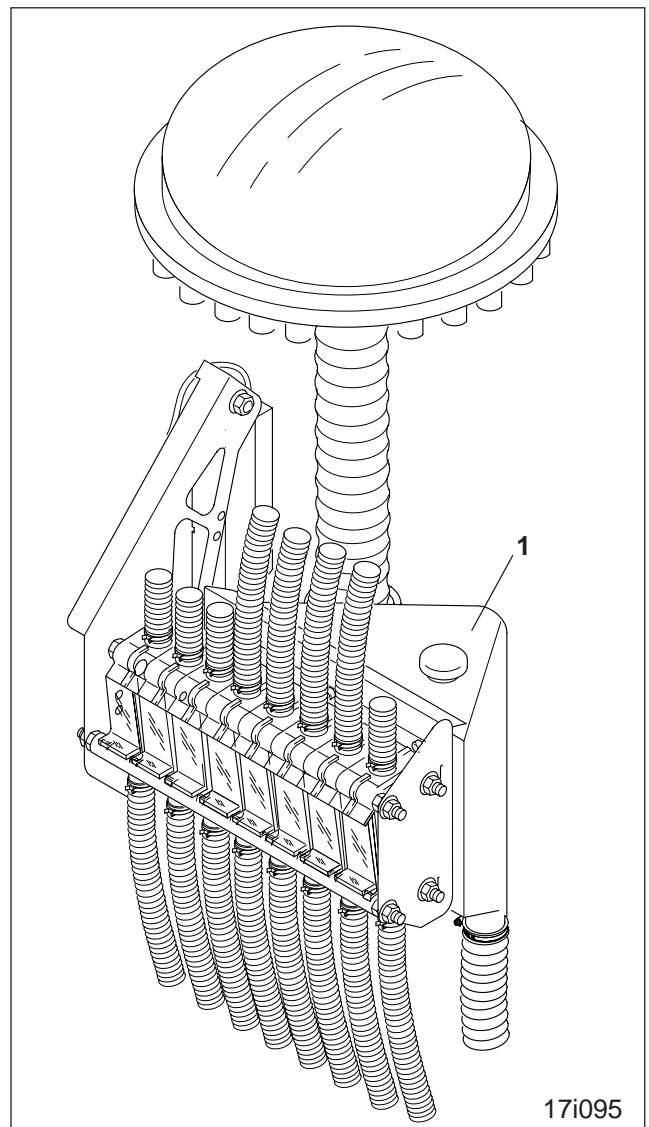


Fig. 14.10

Activate flap (for tramline coultter)

Every individual flap (Fig. 14.11/1) can be activated inside the flap box. In order to reach the flap, remove the relevant fitting window (Fig. 14.11/2). For this, push the fitting window upwards and remove it to the front.

Affix the flap to be activated (Fig. 14.11/1) with the inner hex. bolt (Fig. 14.11/3) on the shaft. When tightening the bolt, AMADOS or the switch box must not be in position "0" and the flap must be pressed – e. g. with your finger as shown in Fig. 14.12, against the stop (Fig. 14.12/5). Do not tighten the bolt too firmly so that the flap will not be strained.

Drive in the fixing bolt (Fig. 14.11/4) free of strain so that the flap may easily pass the bolt head.

Shut the fitting window.

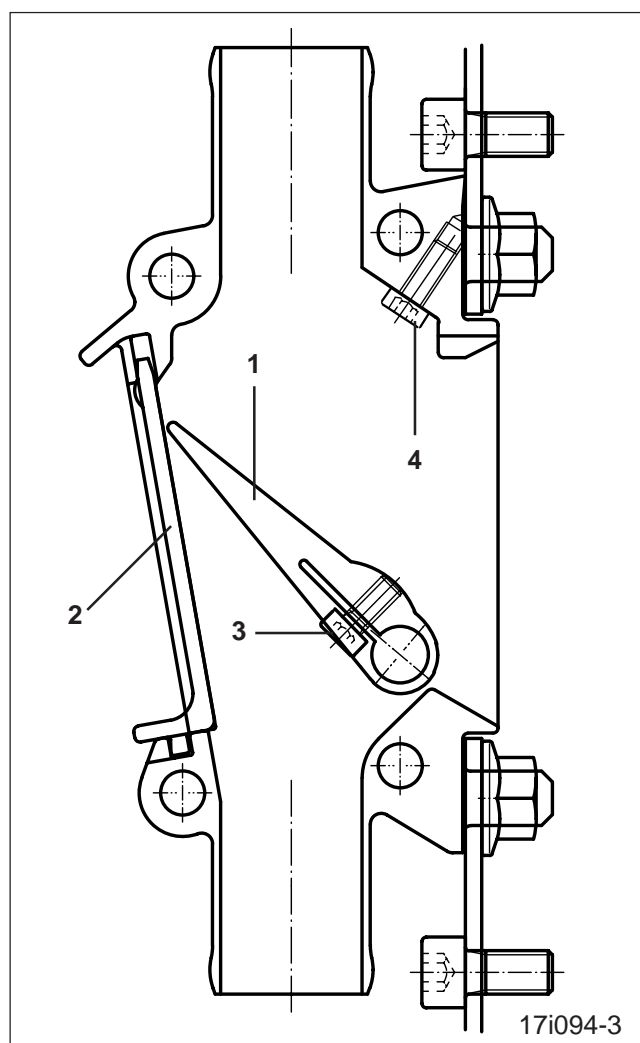


Fig. 14.11

Deactivate flap (for a normal sowing coultter)

Every individual flap may be deactivated (Fig. 14.12/1). In order to reach the flap, remove the relevant fitting window (Fig. 14.12/2). For this, push the fitting window upwards and remove it to the front.

AMADOS or the flap box may not be in switching position "0". Press the flap, e. g. with your finger, as illustrated in Fig. 14.12 against the stop (Fig. 14.12/5) and slacken the inner hex. bolt (Fig. 14.12/3) with which the flap to be deactivated is fixed onto the shaft until the flap can be moved freely on the shaft.

Turn out fixing bolt (Fig. 14.12/4) for approx. 5mm so that the deactivated flap cannot open and the opening towards the seed box remains shut.

Shut the fitting window.

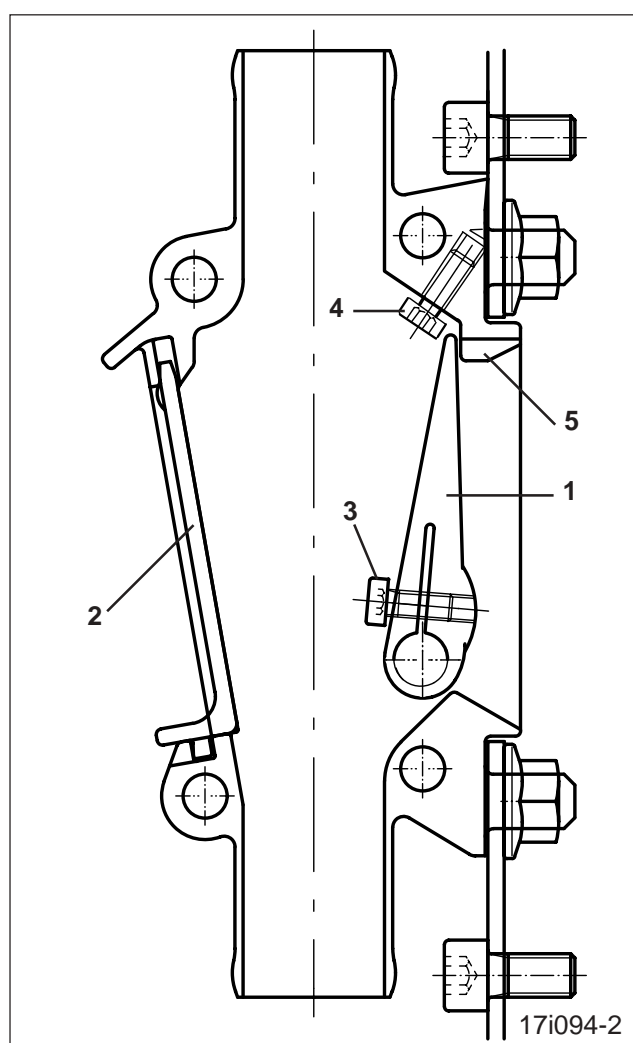


Fig. 14.12

15.0 Transport on public roads



When travelling on public roads and ways the execution of tractor and machinery should correspond to the national road transport and traffic rules. Both, the vehicle owner and operator, are responsible for adhering to the legal traffic rules.

When travelling on public roads and ways, the following advice should be followed:

Standing

on the seed drill during travel is prohibited.

Transport width

The transport width of 3 m must not be exceeded.

Track markers

Bring track markers into transport position (see para: markers).

Warning plates (red-white striped)

Front warning plates (Fig. 15.1/1) and rear warning plates (Fig. 15.2/1) should be fixed with a max. distance towards the outer edge of the implement of 10 cm, in max. height of 150 cm above ground.

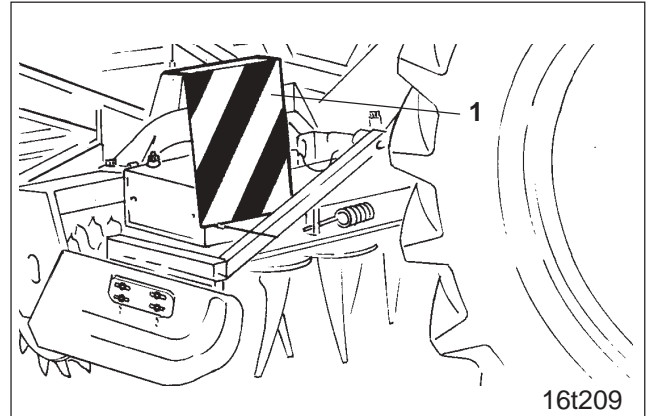


Fig. 15.1

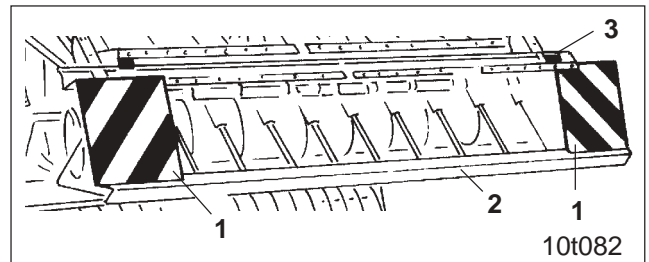


Fig. 15.2

Traffic light

Your seed drill should be equipped with legally permissible lights which should be checked on function before going on the road.

Before transport of the seed drill on public roads fit the clip-on traffic light on the lateral light carriers of the seed drill, i. e. on top for traffic lights in travel direction and below for traffic light to the rear. During operation in the field, the clip-on traffic light should be removed.

The seed drill can also be equipped with firmly mounted traffic lights (Fig. 15.3, option) which need not be removed in the field. The two warning plates, fixed to this traffic light carrier, would make the warning plates in Fig. 15.1 and Fig. 15.2 obsolete.

Extra coverage following harrow

Move outer square tube ends with the outer following harrow elements towards the centre (see para. extra coverage following harrows) and all tines of the extra coverage following harrow protruding to the rear should be guarded with the traffic safety guard (Fig. 15.2/2, option). A second set of lights (Fig. 15.2/3) should be fixed to the square tube of the extra coverage following harrow.

Transport height

Raise seed drill for road transport only so much that the following spacings are not exceeded:

- Distance upper edge of rear light towards the road: max. 1550 mm
- Distance between rear reflectors towards the road: max. 900 mm.

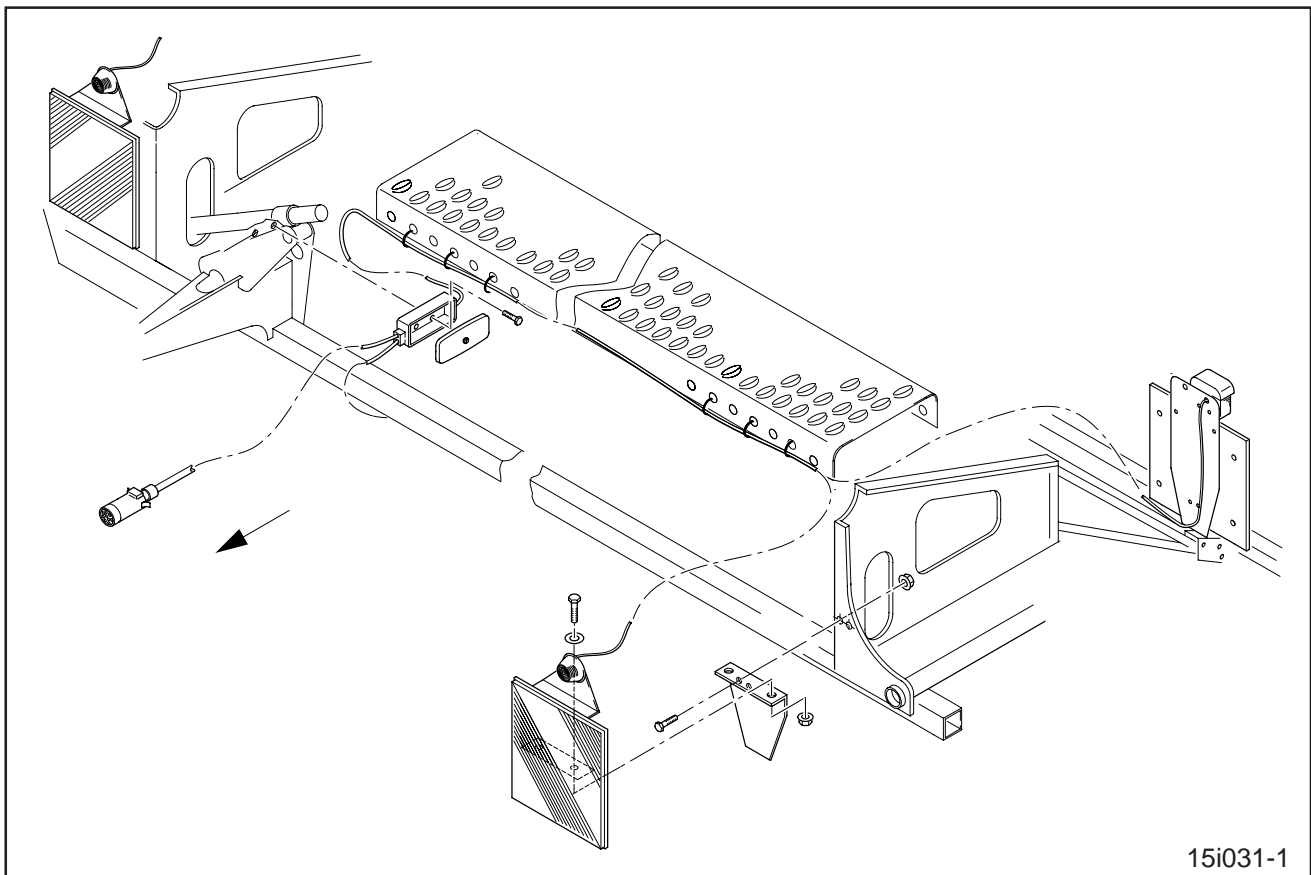


Fig. 15.3

Only for AD-P with star wheel:

Briefly lift swivelable drive with the star wheel and set with the clip pin (Fig. 15.4/1).



Fig. 15.4

Slacken clip pin (Fig. 15.5/1) pull star wheel of the drive (Fig. 15.5/2), slide into the transport retainer and set with the beforehand slackened clip pin (Fig. 15.5/1).

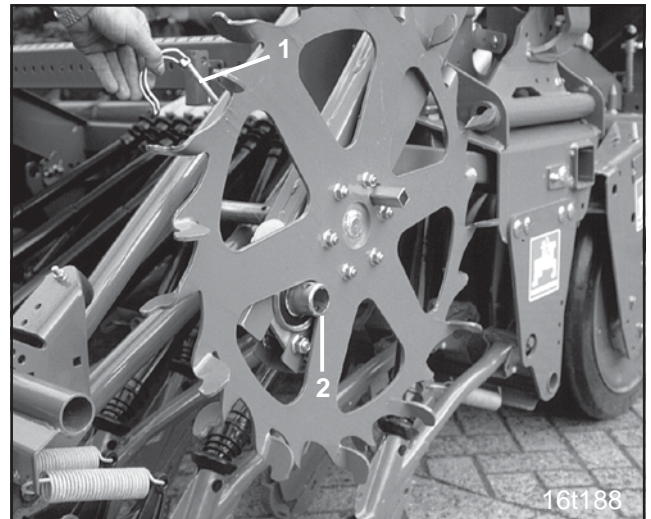


Fig. 15.5

After slackening the clip pin (Fig. 15.6/1) slide the star wheel carrier towards the machine's centre so that the max. transport width of 3.0 m is not exceeded.



Please do not forget to pull out the star wheel before commencing work and to secure it with the clip pin (Fig. 15.6/1).

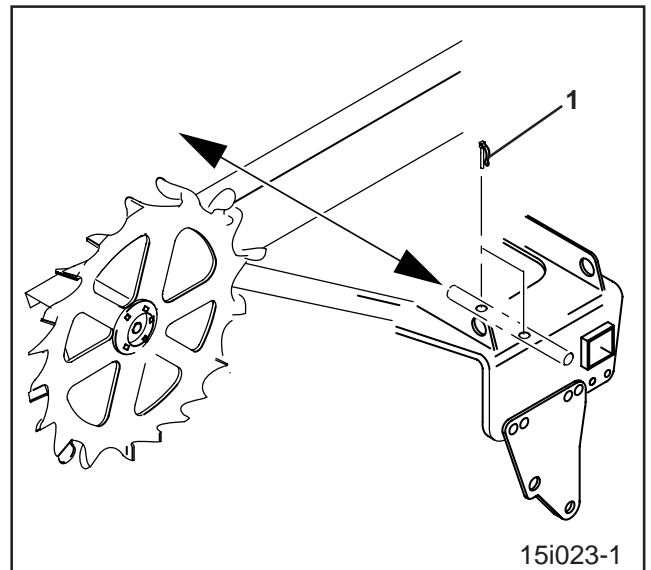


Fig. 15.6



After transport, directly before commencing work set the star wheel in the drive again (Fig. 15.7). You may pull out the star wheel so far that an optimum movement in the field is possible. Secure the setting by a clip pin (Fig. 15.7/1).

Soil tillage implement

Also the mounted soil tillage implement should correspond to the national traffic rules. Details you may find in the instruction books for the soil tillage implement.

Max. permissible tractor axle loads /total weight

The permissible tractor rear axle load, the permissible total weight of the tractor and the permissible carrying ability of the tractor tyres must not be exceeded (empty seed box if necessary).

When lifting the seed drill for transport, the front axle of the tractor is differently relieved of load, depending on the tractor type and size. For road transport the remaining front axle load of the tractor must at least be 20 % of the tractor's net weight. Otherwise the tractor cannot be steered with sufficient safety. If necessary, fit front weights to the tractor.

Please adhere to these hints. They help to prevent accidents in road traffic.



Fig. 15.7

16.0 Maintenance and care



Adhere to the safety and accident preventing advice when conducting maintenance and care according para. 3.6.6!

16.1 Checking bolted connections

All bolted connections of the implement should be checked after the first 10 hours of operation and tightened if necessary.

Retighten bolts of the Taper-extension bushings (para. 6) after the first hour of operation.

16.2 Cleaning the implement

The implement can be cleaned with a ray of water of a high pressure cleaner.



In case you wish to use air pressure to clean your seed box, please be reminded that the dust of seed dressing is poisonous and must not be inhaled.!

Regularly remove seed residue from the metering unit. Beforehand empty seed box.



Swollen or germinated seed residues in the metering units may affect the seed rate or block the moving of the seed wheels and lead to their breakage.

For cleaning the metering unit, open

- the transparent plastic flap (Fig. 16.1/1)
- the injector sluice flap (Fig. 16.1/2) und
- the emptying flap.

For opening the emptying flap behind the metering unit, press lever (Fig. 16.1/3) downwards and arrest.

Empty metering wheels by some turns on the hand wheel Fig. 16.2).

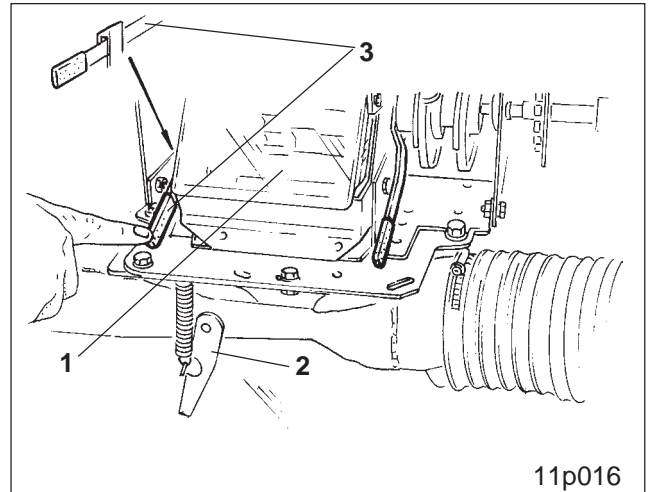


Fig. 16.1

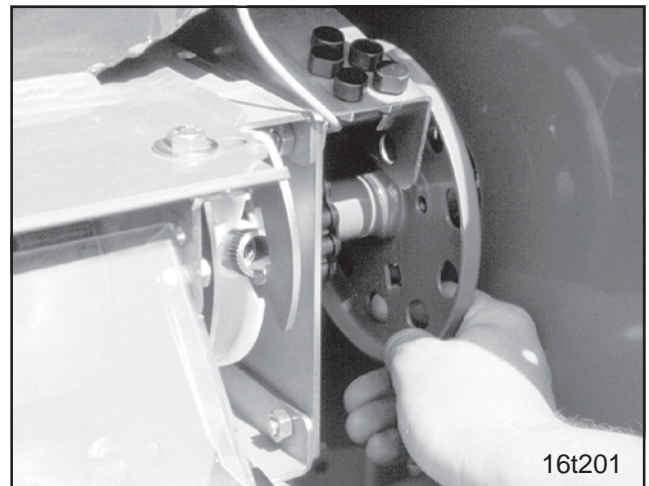


Fig. 16.2

16.3 Checking the oil level in the two-range gearbox

The oil level inside the two-range gearbox should be checked at the oil gauge window (Fig. 16.3/1) at the implement horizontally. It is not necessary to change the gearbox oil.

For refilling oil, the cover of the gearbox must be taken off

Filling quantity: 1,8 Liter

Use only the following kinds of oil:

Hydraulic oil WTL 16,5 CST/50° C

or

engine SAE 10 W.

16.4 Checking roller chain

The sowing systems of the seed drill are driven by roller chains. After the end of the season, or before a longer pause of operation, remove the roller chains and oil. Remove chain guard before and put on back onto place afterwards.

Illustrated is the chain guidance

- of the drive chain (Fig. 16.4)
- the star wheel drive (Fig. 16.5)

The drive chain (Fig. 16.4/1) is tensioned by an automatic chain tensioner (Fig. 16.4/2).

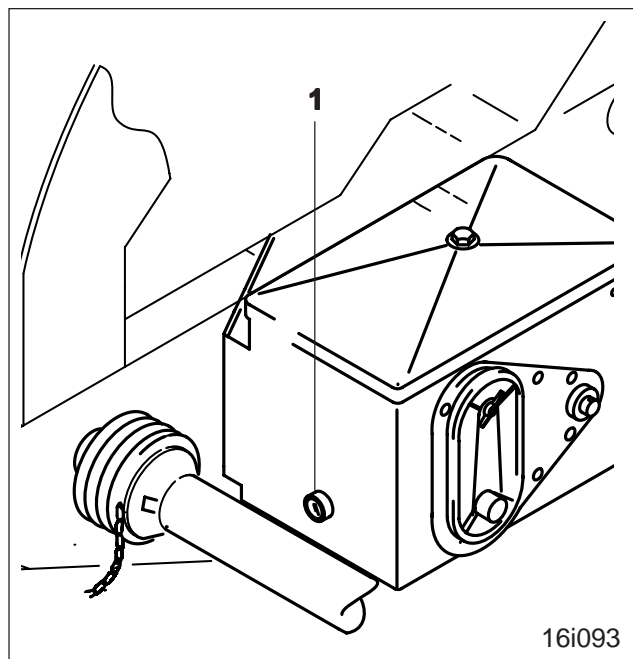


Fig. 16.3

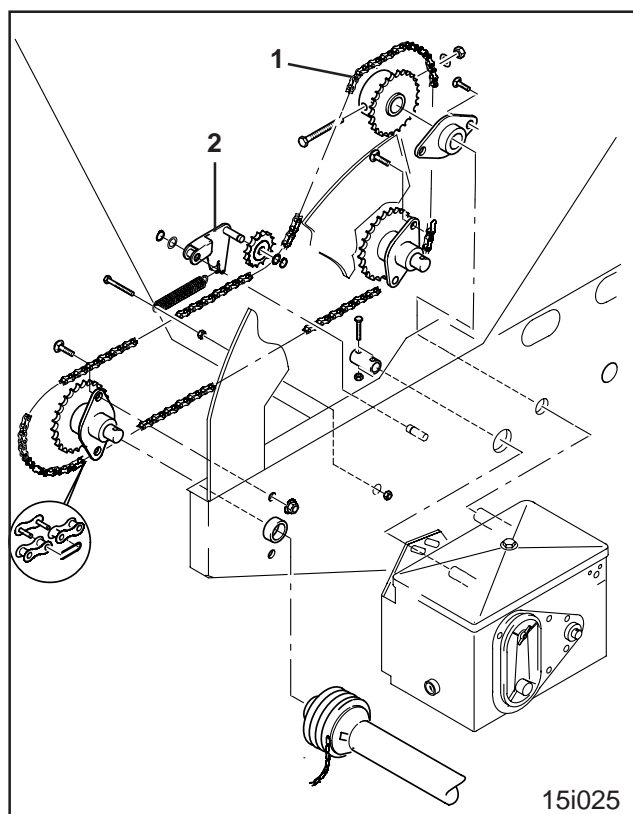


Fig. 16.4

Before every season, the roller chain (Fig. 16.5/1) has to be checked and tensioned, if necessary. For tensioning the roller chain, slacken hex. bolt (Fig. 16.5/2) and tighten eye bolt (Fig. 16.5/3) until the roller chain has got the correct tensioning. Tighten bolts firmly afterwards.

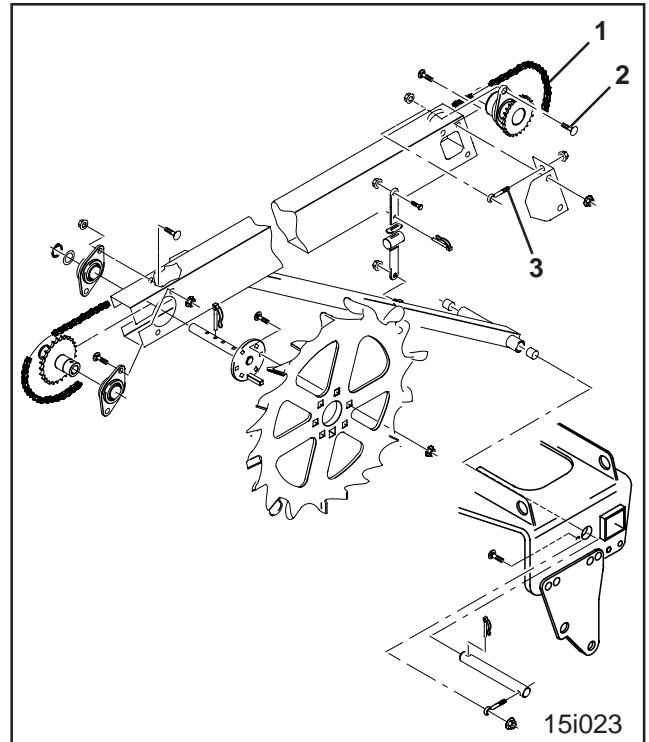


Fig.16.5

16.5 Cleaning the distributor head

Regularly check the distributor head, and especially when sowing dressed seeds, clean after every day of operation.:

- Remove distributor outer hood (Fig. 16.6/1) for cleaning.

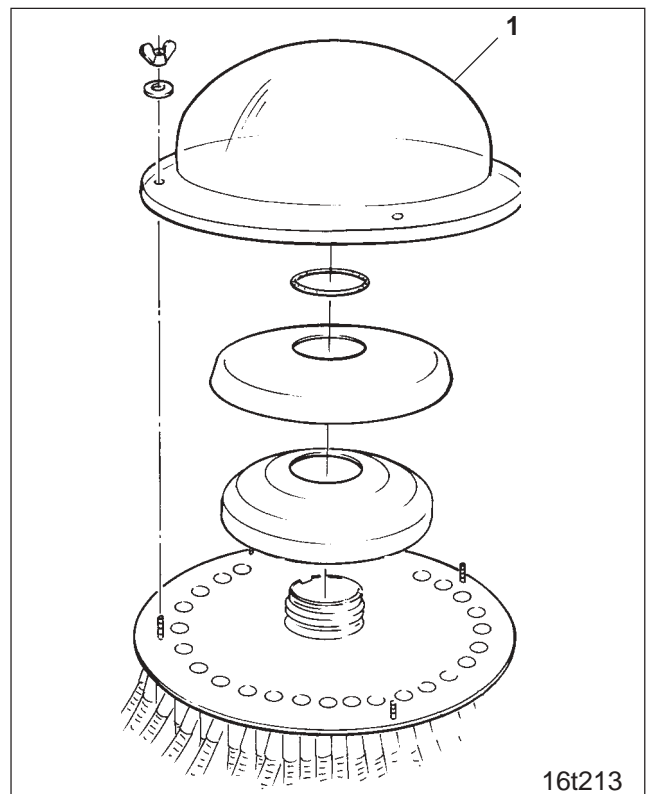


Fig. 16.6

16.6 Readjust roll disc coulter scraper

For cleaning the roll disc coulters from sticking soil, every roll disc is equipped with two scrapers (Fig. 16.7/1).

The scrapers undergo a certain wear and have to be reset if required. Set scrapers in such a way, that they grind slightly on the outer edge of the roll disc without braking the disc too much. Slacken bolts (Fig. 16.7/2) before every setting and tighten afterwards.

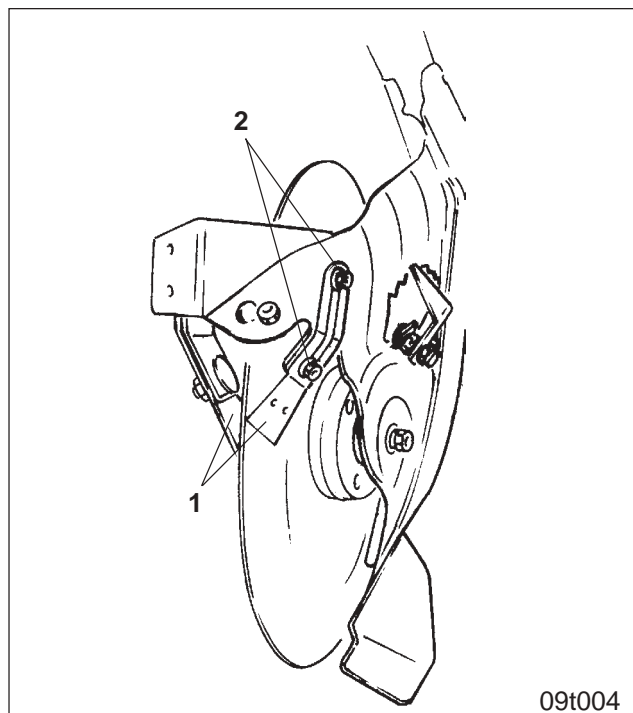


Fig. 16.7



AMAZONEN-WERKE **H.DREYER** GmbH & Co. KG

D-49202 Hasbergen-Gaste

Tel.: Hasbergen (0 54 05) *501-0
Fax: (0 54 05) 50 11 93

<http://www.amazone.de>

D-27794 Hude/Oldbg.

Tel.: Hude (0 44 08) *927-0
Fax: (0 44 08) 92 73 99

email: amazone@amazone.de

AMAZONE-Machines Agricoles S.A.

F- 57602 Forbach/France . rue de la Verrerie
Tél.: (0033) 38 78 46 57 0
Fax: (0033) 38 78 46 57 1