

Instruction Manual

AMAZONE Xact



MG 800
B 170 GB 04.02
Printed in Germany



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



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H. Dreyer GmbH & Co. KG
D-49202 Hasbergen-Gaste / Germany

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The AMAZONE till- and drill combination Airstar Xact is yet another high quality product from the large range of farm machinery manufactured by AMAZONEN-WERKE, H. Dreyer GmbH & Co. KG.

In order to make fullest use of your trailed sprayer and to ensure trouble-free operation, we recommend that this instruction manual is carefully read and that the content is observed and the advice given therein is adhered to. Please ensure that this instruction manual is made available to all operators before commencing to operate the machine.

This instruction manual refers to all AMAZONE till and drill combinations Airstar Xact.

Please also observe the attached instruction manual for the soil tillage implement.

We wish you an always successful operation with best results.

AMAZONEN-Werke
H. Dreyer GmbH & Co. KG

Hints for this instruction manual

Please keep this instruction manual always at hand. In case you sell your machine, pass on this instruction manual to the next owner.

The design and manufacture of the till and drill combination Airstar Xact is state of the art. As AMAZONE always endeavours to introduce technical improvements we reserve the right for changes at any time without any obligation.

Symbols in this instruction manual



Danger symbol (DIN 4844-W9)

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



Attention symbol

This symbol will always be found in such places of this instruction manual which should especially be adhered to in order to comply with rules, advice, hints and the correct procedure of the operation as well as to prevent damage to the implement.



Hint symbol

This symbol marks machine's specific points which should be observed to ensure the correct operation.

On receipt of the machine

Check that no damage has been caused in transit and all parts are present. Only immediate claims to be filed with the forwarding agency may lead to replacement.



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2.0 Details about the machine

2.1 Range of application

The Airstar Xact is designed for the seed bed preparation and for transport, metering and application of all common commercial kinds of seed.

2.2 Manufacturer

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

2.3 Conformity declaration

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

2.4 Details when requesting after sales service and parts

When ordering options or spare parts, the machine model and the serial number have to be quoted. All components of your machine have been carefully matched in order to supply you with a high safety standard. Any arbitrary changes will affect the operational safety of your machine. This also applies to non original spare parts and not optional equipment nor authorised by the manufacturer.



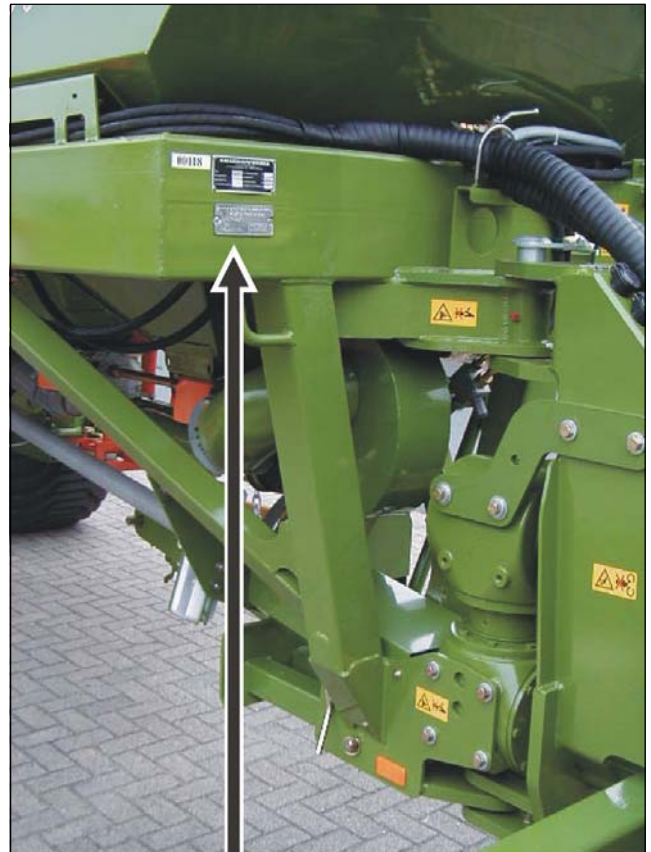
For your own safety we therefore recommend that you only use original AMAZONE spare parts and original AMAZONE optional equipment.

Original spare parts and original options are especially designed for your machine. Using non original AMAZONE spare parts, options and components as well as any arbitrary technical changes on the machine will rule out the liability of AMAZONE for resulting damage.

2.5 Type plate



The entire type plate is of documentary value and should not be changed or removed.



Please take the data from the type plate on your machine (see above) and add the missing details:

Type of machine
AMAZONE Airstar Xact

Serial-No.:

Running gear No.:

Permissible total weight: kg

Axle load rear kg

Axle load front / support load kg

Fig. 2.1

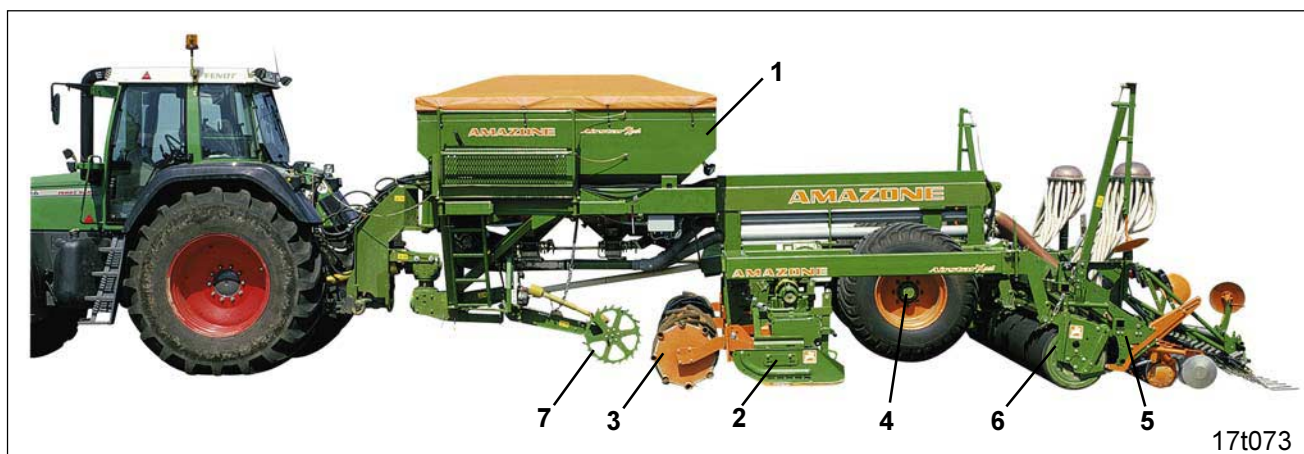


Fig. 2.2

2.6 Technical data

The PTO driven till- and drill combination Airstar Xact allows soil tillage and sowing in one operational pass with large working width at 3 m transport width.

The transport frame combines the proven AMAZONE components consisting of soil tillage and sowing technique including the large seed tank (Fig. 2.2/1).

The AMAZONE large acreage till- and drill combination Airstar Xact has been developed for especially high area productivity of approx. 5 ha/h for accurate seed placement with or without prior ploughing. Cost saving mulch sowing and conventional plough-following sowing are in the same way possible without any limitation. The combination mixes, crumbles, recompacts the soil and places the seed optimally into the ground.

During soil tillage the rotary cultivator (Fig. 2.2/2) rides on the pre-running roller (Fig. 2.2/3) and this way, accurately maintains the working depth. The roller and the rotary cultivator can adapt themselves to ground undulations due to a parallel guidance. The rotary cultivator gives way to stones and other obstacles, preventing damage to tines and gear boxes.

The large seed hopper when filled with seed brings additional load to the tractor rear axle which improves the traction for a high pulling force.

The transport axle (Fig. 2.2/4) is raised during operation so that the sowing coulter module finds a wheel mark free seed bed.

The following sowing seed rail (Fig. 2.2/5) with its coulters also rides on a roller (Fig. 2.2/6). This roller receives additional load from the frame and the transport axle (Fig. 2.2/4) which is raised during operation.

| Airstar Xact | 602-2 |
|---|----------------------|
| Working width | 6,0 m |
| Transport width (folded for transport on public roads) | 3,0 m |
| Seed tank capacity without extension | 3000 l |
| Seed tank capacity with extension | 4300 l |
| Total net weight | 10140 kg |
| Total length | 8800 mm |
| Total height folded in transport position | 3850 mm |
| Two circuit-air brake system | Standard-execution |
| Hydraulic brake system | Export-equipment |
| Wheels | 700/50 – 26,5 8PR A8 |
| Cage roller pre-running the soil tillage implement | ø 620 mm |
| Required oil quantity for blower fan drive | 30 l/min at 140 bar |
| Row spacing of coulters | 12,5 mm |

| Travelling on public roads | |
|--------------------------------|----------|
| permissible max. speed | 40 km/h |
| permissible total weight | 10200 kg |
| permissible rear axle load | 9000 kg |
| permissible front support load | 3000 kg |

t170gb01



Fig. 2.3

The rotary cultivator provides an excellent crumbling effect when following the plough. At mulch sowing the rotary cultivator mix and distributes the straw and this way provides an optimum pre-condition for an accurate seed placement.

The star wheel (Fig. 2.2/7) drives the sowing units.

2.7 AMAZONE WS-Coulter

Suffolk coulter with exchange coulter tip

The AMAZONE WS-coulter (Fig. 2.4) is provided with an hard cast iron exchange coulter tip (Fig. 2.4/1). Due to its superb wear resistance hard cast iron has best proven as coulter tip material. However, in large acreage operation wear cannot be avoided on aggressive, sandy and sharp edged soils. Worn coulter tips can be exchanged.

The coulter supports (Fig. 2.4/2) prevents blockage of the coulter run when the machine is lowered on soft soil. During operation the coulter support moves to the rear. There is hardly any wear on the coulter support. However, the coulter supports can easily be exchanged.

The guide funnel inside the coulter unit (Fig. 2.4/3) guides the seed to the rear of the coulter tip providing an accurate seed placement prior to coverage of the seed furrow. Only this way an accurate and even working seed depth placement is achieved.

Especially in conjunction with a pre-running wedge ring roller (Fig. 2.5/A) the WS/Suffolk coulter provides after ploughing an optimally even placement depth on a highly recompactd soil strip with a seed coverage by loose, coarse structured soil, see Fig. 2.5:

- 1 = loose, open soil
- 2 = medium recompactation
- 3 = high recompactation

This procedure also considerably reduces the danger of blockage during mulch sowing as the dragging coulters only rake little straw or other organic matter in the furrow of the wedge ring roller.

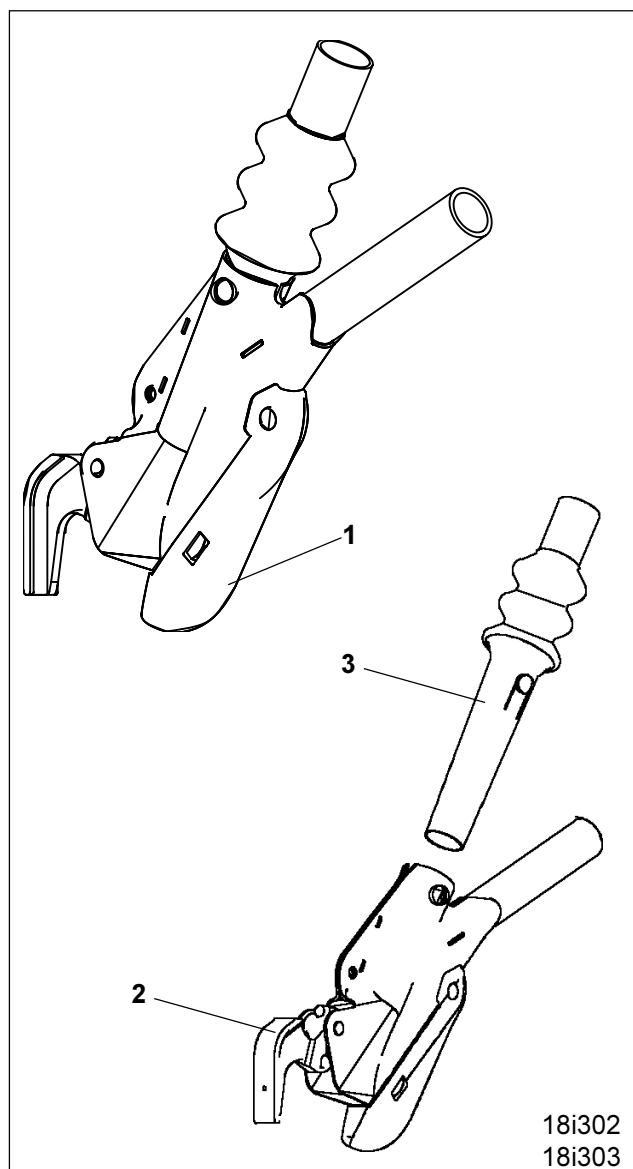


Fig. 2.4

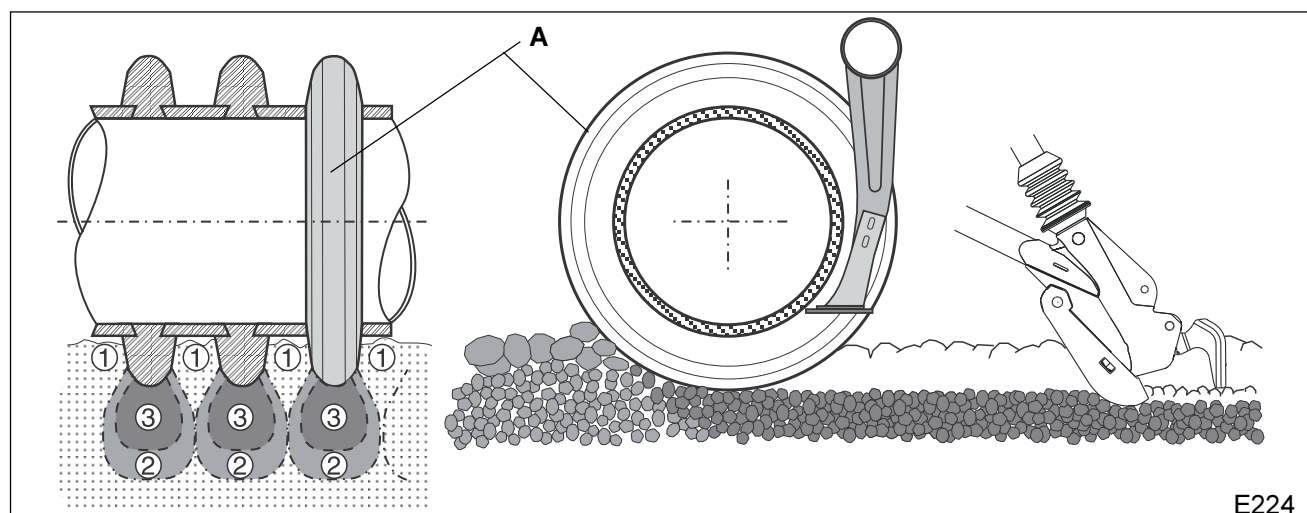


Fig. 2.5

E224

2.8 AMAZONE RoTeC-(roll disc) Coulter

The AMAZONE RoTeC-coulter (Fig. 2.6) optimised sowing accuracy, acreage efficiency and operational life when sowing after the plough or mulch sowing.

The steel disc (Fig. 2.6/1) operates at a small angle of only 7° from the driving direction so that they throw only little soil even at high forward speeds.

A coulter corpus cast from hard steel alloy shapes a rectangular seed groove right behind the discs so that a uniform seed depth placement is achieved. Due to the slight angling only little soil sticks to the front side of the disc even on sticky soils. The rear of the disc is cleaned by a polyurethane (PU) disc (Fig. 2.6/2). This PU-disc can quickly and easily be fitted and removed without any tool.

The PU-disc (Fig. 2.6/2) operates as a depth limiter. It rolls on the soil surface and this way limits the soil penetration depth of the steel disc. This penetration depth can be set by hand in three steps from 2 to 4 cm (Fig. 2.7, item 1-3)

The naps (Fig. 2.6/3) on the PU-disc increase its carrying capacity. For shallow seed placement on very high soils a depth limiting disc with wider naps is available.

For deep sowing of more than 4 cm (Fig. 2.7, item 4) the depth limiting disc is removed without any tool.

The high coulter pressure of up to max. 35 kg, the depth guidance by the PU-disc and the accurate seed guidance in the hard steel alloy corpus until the dropping point provide a very smooth coulter run and an especially even depth placement.

The non-corrosive steel disc and the PU disc operate free from wear. The hard cast corpus has a long operational life and can easily be exchanged by slackening just one bolt

The AMAZONE-RoTeC-coulter operates excellently in both following the plough and blockage-free mulch sowing.

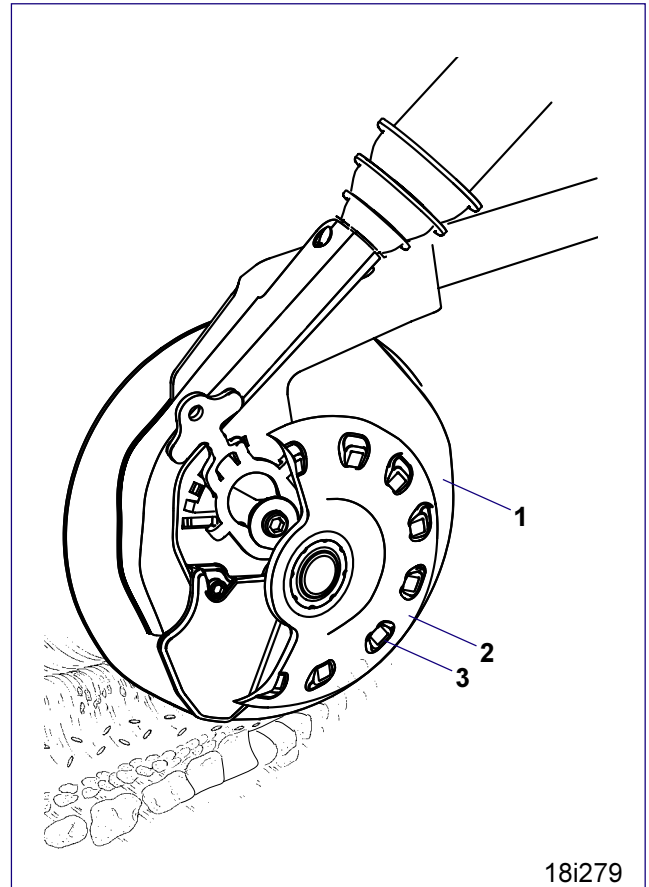


Fig. 2.6

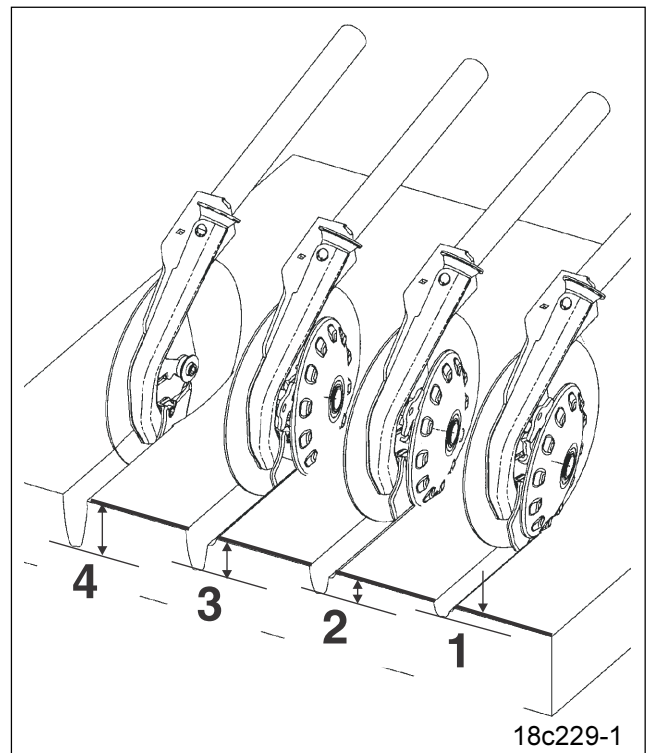


Fig. 2.7



2.9 Details about noise level

The tractor operator seat related emission value is 74 dB (A), measured when operating with shut tractor cab at the ear of the tractor operator.

Measuring implement: OPTAC SLM 5.

The emission value depends on the tractor type used.

ZONE Airstar Xact by the owner/user may result in consecutive damage and the manufacturer does not accept any liability for such damage.

2.10 Designated use of the machine

The AMAZONE till- and drill combination Airstar Xact is designed for the exclusive operation in agriculture for soil tillage as well as for the transport, metering and application of common commercial seeds.

Any use beyond the use stated above is no longer considered as designated use. The manufacturer does not accept any responsibility for damage resulting from non-compliance and therefore the operator himself carries the full risk.

Under "designated use" also the manufacturer's prescribed operation, maintenance and repair conditions must be adhered to as well as the exclusive use of original AMAZONE spare parts.



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

Deviations of the seed rate or even total misses of individual rows cannot fully be excluded, even though we have produced the machine with utmost care and you have used the machine according to the intention of its design. Such faults can e.g. be caused by:

- varying composition of the seed (e.g. distribution of grain size, dressings, bulk density, geometrical shape).
- Blockage or bridging, e.g. due to swollen or germinating seed residue, foreign particles, residue of bags etc.
- Undulations of the terrain.
- Wear to wearing parts (e.g. metering wheel etc.).
- Damage from outside influence.
- Wrong PTO speeds and forward speeds.
- Wrong setting of the machine (incorrect mounting, incorrect determination of the gearbox setting).



Therefore, check and ensure that your machine is functioning correctly before and during any operation.

Claims regarding damage not occurring to the implement itself will be rejected. This also applies to damage due to sowing errors. Modifications made to the AMA-

3.0 Safety

In order to ensure a trouble free operation we recommend that you thoroughly read and adhere to this instruction manual.

Please ensure that this instruction manual has been read by the operator before he starts to operate the machine.

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

The descriptions are supplemented by many illustrations in order to explain all functions and to offer you hints for operational safety and the different operational conditions.

Please strictly adhere to all safety advice.

3.1 Danger when not adhering to the safety advice

Not adhering to the safety advice

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

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

- Failure of important functions within the machine.
- Failure of carrying out prescribed measures of maintenance and repair.
- Danger to persons through physical or chemical contact.
- Danger to persons, or the environment by leaking hydraulic oil.

3.2 Qualification of operator

The implement 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 danger advice, safety advice and hints are identified by symbols. You will find the explanation for these symbols in the following.



General danger symbol (DIN 4844-W9)

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



Attention symbol

Attention symbols which may cause dangers to the machine and it's function when not being adhered to, are identified with the attention symbol.



Hint Symbol

This symbol marks machine's specific points that should be observed to ensure the correct function of the implement.

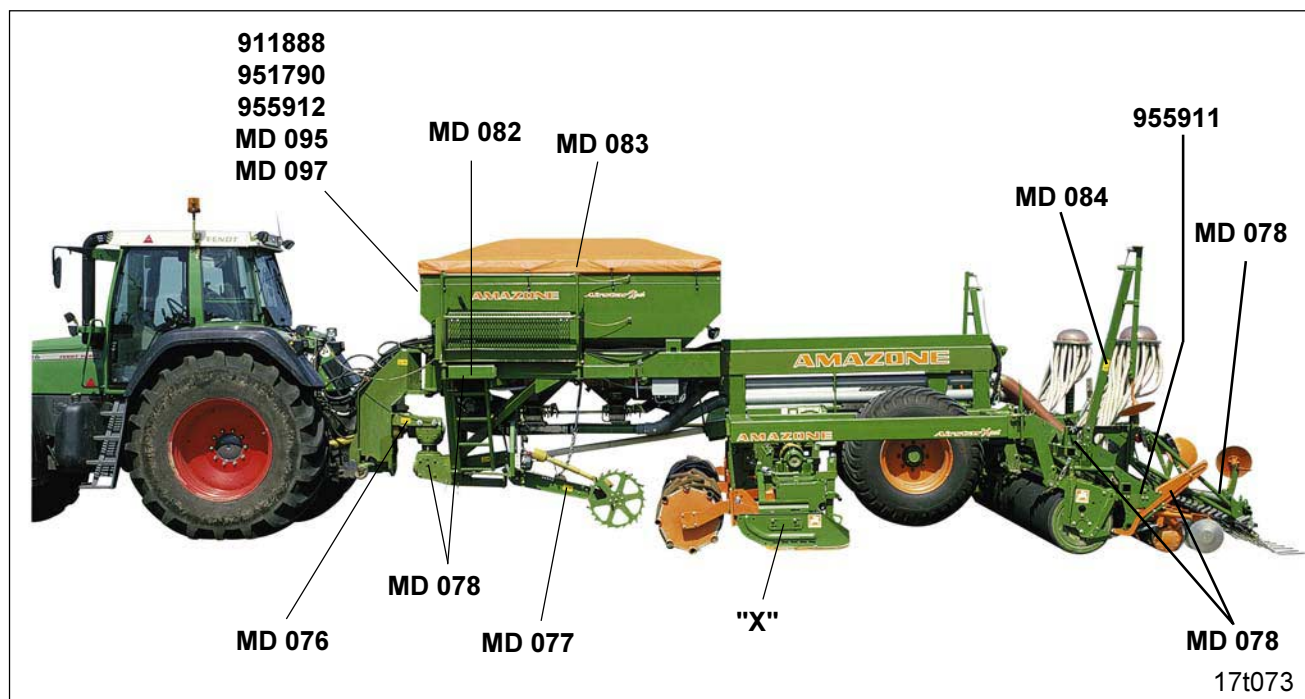


Fig. 3.1

3.4 Warning and advice pictographs on the machine

The fixing points on the machine for the warning and advice pictographs are illustrated in Fig. 3.1. Strictly observe all warning and advice pictographs. Please pass on all safety advice also to other users. Please refer to the relevant explanations on the following pages.

The symbols and plates marked with an "X" you will find in the attached instruction manual for the soil tillage implement.

Please always keep all attention and advice signs clean and in an easily readable condition. Please ask for immediate replacement of damaged or missing decals from your dealer and attach to relevant place! (picture-No.: = Order-No.)

The attention pictographs (e.g. Fig. 3.2)

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

The advice pictographs (e.g. Fig. 3.3)

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

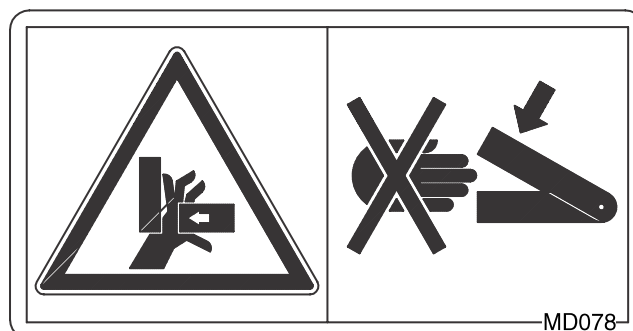


Fig. 3.2

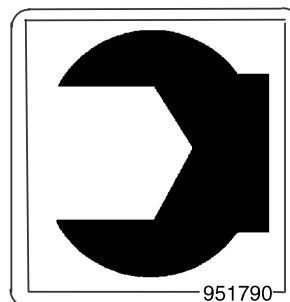


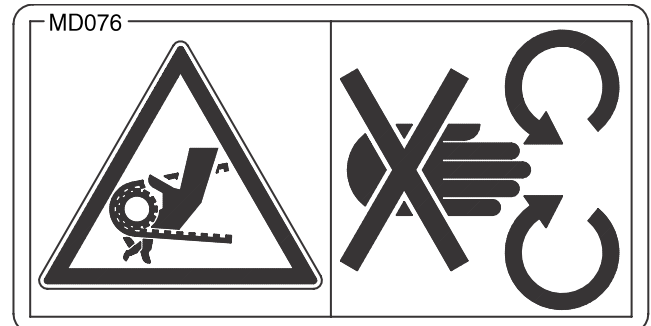
Fig. 3.3

3.4.1 Explanation for the warning and advice pictographs

Picture No.: MD 076

Explanation

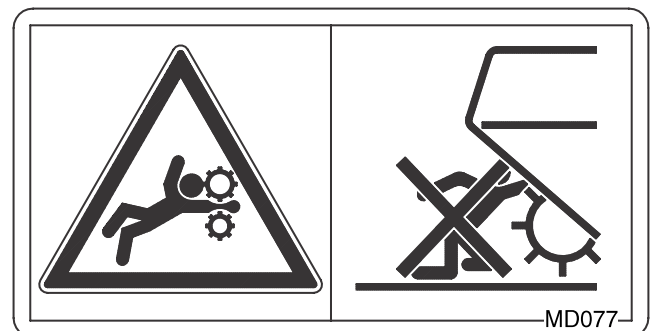
Start to operate the machine only with all guards fitted.
Do not remove guards while the engine is running.
Switch off PTO shaft, stop the engine and remove ignition key before removing the guards.



Picture No.: MD 077

Explanation:

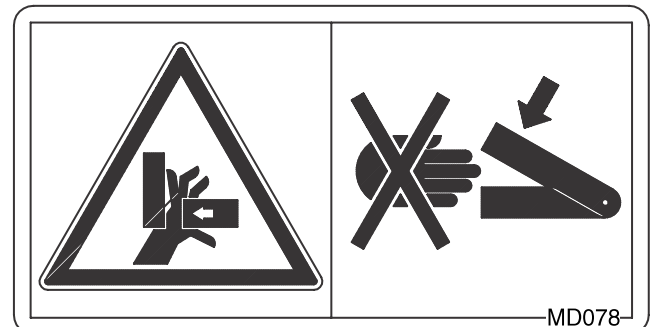
Danger of squeezing while the machine is running.
Keep sufficient distance from starting or running implement.
Advise people to leave the danger area as long as parts are still moving.



Picture No.: MD 078

Explanation

Never enter into bruising zones without first isolating any further movement.
Advise people to leave the danger zone.



Picture No.: MD 082

Explanation

Sitting or standing on the implement or on the loading board during operation or during road transport is not permissible.

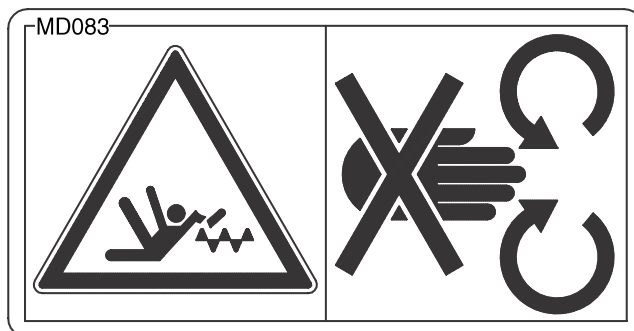


Picture No.: MD 083

Explanation:

Danger of injury.

Never reach into the seed box.



Picture No.: MD 084

Explanation

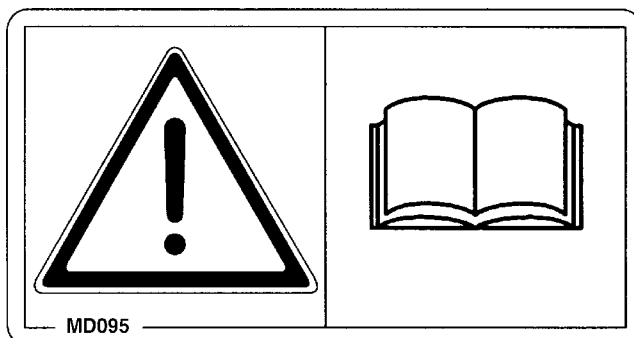
Never stay within the operational area of the track markers.



Picture No.: MD 095

Explanation

Before starting operation read and observe instruction manual and safety advice.

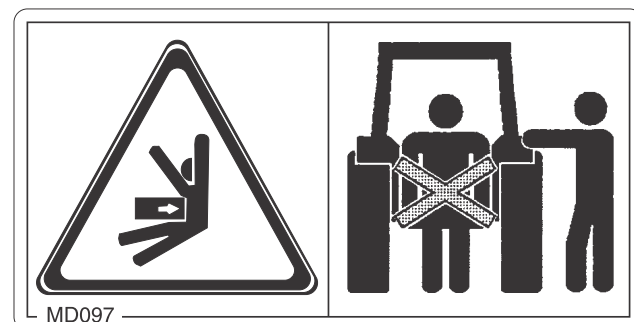


Picture No.: MD 097

Explanation

Danger of squeezing when standing between tractor and implement.

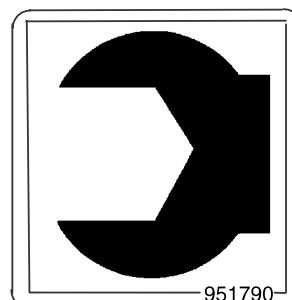
When coupling the combination on to the tractor ensure that no one is standing between tractor and implement. When actuating the control levers for the three-point linkage from outside the tractor cab never step between tractor and implement.



Picture No.: 951790

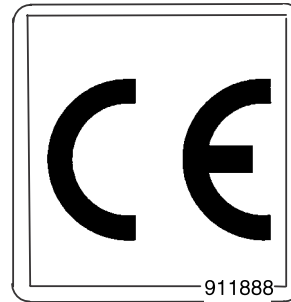
Explanation

After a couple of operational hours retighten bolts.



Picture No.: 911888**Explanation**

The CE-mark indicates that the machine fulfils the requirement of the EC guide lines Machine 89/392/EC and the corresponding additional guide lines.

**Picture No.: 955912****Explanation:**

The operational pressure of the hydraulic system must not exceed 200 bar.





3.5 Safety conscious operation

Besides the safety advice in this instruction manual additionally, the national, and generally valid operation safety and accident prevention advice of the authorised trade association are binding, especially UVV 3.1, UVV 3.2 and UVV 3.4.

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 prevention advice

Basic principle:

Always check traffic and operational safety before putting the tractor and machine to operation.

1. Adhere to the general rules of health- and safety precautions besides the advice in this instruction manual.
2. The fitted warning- and advising decals give important hints for a safe operation; adhering to them protects your own safety.
3. When making use of public roads adhere to applicable traffic rules.
4. Become acquainted with the machines controls and functions before beginning the operation. Doing this during operation would be too late.
5. Avoid wearing any loose clothing that would possibly wrap or catch on moving machinery.
6. Avoid danger of fire by keeping the machine clean.
7. Before beginning to move, check surrounding area (children etc.). Ensure sufficient visibility.
8. Sitting or standing on the implement during operation or during transport is not permissible.
9. Attach implements as advised and only to the advised devices.
10. Special care should be taken when the implement is coupled to or off the tractor.
11. When attaching or removing the machine bring any parking or storing devices into the corresponding position (standing safety).
12. Fit weights always to the fixing points provided and as advised for that purpose.
13. Adhere to the maximum permissible axle loads, total weights and transport dimensions.
14. Ensure that the outer transport dimensions correspond to your national applicable traffic rules.
15. Fit and check transport gear, traffic lights, warnings and guards.
16. The release ropes for quick coupling three point linkages should hang freely and in the lowered position must not release by themselves.
17. During driving never leave the operator's seat.
18. Mount the implement as prescribed. Moving behaviour, steerability and braking are influenced by mounted implements, trailers and ballast weights. Check sufficient steerability and braking.
19. When lifting a three-point-implement the front axle load of the tractor is reduced depending on its size. The sufficient front axle load (20 % of the tractor net weight) has to be observed.
20. When driving round bends note the width of the machine and/or the changing centre of gravity of the implement.
21. Put implement into operation only when all guards are fixed in position.
22. Never stay or allow anyone stay within the operation area of the machine.
23. Filling the seed hopper of the machine may only be done with the tractor engine stopped, removed ignition key and actuated parking brake.
24. Never stay or allow anyone stay within the pivot and swivel area of the implement.
25. Hydraulic folding frames should only be actuated if no persons are staying in the slewing area.
26. On all hydraulically actuated pivoting parts exists danger of injury by bruising and trapping.
27. Before leaving the tractor lower the machine to the ground. Actuate the parking brake, stop the engine and remove ignition key.
28. Allow nobody to stand between tractor and implement if the tractor is not secured against rolling away by the parking brake and/or by the supplied chocks.
29. Secure marker arms in transport position.



3.6.2 General safety and accident prevention advice for implements mounted to the tractor's three point hydraulic

1. When fitting the machine to the three point linkage of the tractor bring all control levers into such a position that unintended lifting or lowering is impossible.
2. When fitting to the three-point linkage the mounting categories at the tractor and the implement must be compatible.
3. In the area of the three point linkage there is danger of injury by its crushing and shearing areas.
4. When actuating the control levers for the three-point linkage outside the tractor cab 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 lock the control lever against unintended lowering.
7. Mount and dismount implements as described. Check braking system 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 prevention advice for operating seed drills

1. During the calibration test watch out for rotating or oscillating parts of the machine.
2. Use steps only for filling. It is not allowable to travel on the steps during operation.
3. For road transport remove marker discs and carriers of the pre-emergence marker.
4. Adhere to the manufacturer's advice when filling the seed box.
5. Secure markers in transport position.
6. Never place any parts inside the seed box.
7. Never exceed the maximum allowable filling quantity.



3.6.4 General safety and accident prevention advice regarding the hydraulic system

1. The hydraulic system is under high pressure.
2. Connect hydraulic hoses to the hydraulic rams and motors according to the advice in the instructions.
3. When fitting the hydraulic hoses to the tractor hydraulic sockets always ensure that the hydraulic system on the tractor as well as on the implement is without pressure.
4. To avoid wrong hydraulic connection, sockets and plugs should be marked (e. g. colour coded). This helps to prevent contrary function (lifting instead of lowering or vice versa) and reduces the danger of accident.
5. All hydraulic hoses must be checked for their operational safety by a skilled person before the first operation of the machine and then at least once a year. In case of damage or ageing replace the hydraulic hoses! The replacement hoses must correspond to the technical demands of the implement manufacturer.
6. When searching for leaks appropriate aids should be used because of the danger of injury.
7. Liquids leaking under high pressure (hydraulic oil) can penetrate the skin and cause severe injury. When injured see a doctor immediately! Danger of infection.
8. Before starting to do repair work to the hydraulic system release the pressure by actuating the control lever accordingly, lower machine to the ground and stop tractor engine.
9. The period of use of any hose circuit should not exceed six years including a possible storing period of two years maximum. Also when stored and used properly hoses and hose circuits do age. Therefore their longevity and period of use is limited. Deviations from the above may be accepted by the Health- and Safety Authorities depending on the experience they have had and the danger potential. For hoses and hose circuits made of thermoplasts other guide lines may prevail.

3.6.5 General safety and accident prevention advice for maintenance, repair and cleaning

1. Repair-, maintenance- and cleaning operations as well as the remedy of function faults should principally be conducted with drive and engine stopped. Remove ignition key.
2. Check nuts and bolts for tightness and retighten if necessary.
3. When carrying out maintenance work on a lifted implement always secure the machine with appropriate supports.
4. When replacing any tools with cutting edges, always use suitable tools and wear gloves.
5. Dispose of old oils, grease, and filters as prescribed by law.
6. Before working on the electric gear disconnect battery cables.
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, as a minimum meet with the implement manufacturers' fixed technical standards. Using original AMAZONE spare parts for example ensures this. Non original parts invalidate warranty and contravene these documentation for safe use.

3.6.6 General safety and accident prevention advice when retrofitting electric and electronic devices and/or components

The function of the implements' electronic components and parts may be affected by the electric-magnetic transmittance of other devices. Such effects may endanger people when the following safety advice will not be adhered to:

When retrofitting electric and electronic devices and / or components to the implement with connection to the on-board electric circuit, the user must ensure by himself that the installation will not cause any disturbance to the tractor electronic or other components.

Special attention must be paid that the retrofitted electric and electronic parts correspond to the EMV-guide 89/336/EC in the relevant valid edition and that they bear the CE-sign.

3.6.7 General safety and accident prevention advice with regard to PTO shafts

1. Use only PTO shafts which are designed for the implement by the manufacturer and which are equipped with all legally requested guards.
2. Guard tubes and cones of the PTO shaft as well as a tractor and implement side PTO guard must be fitted and kept in a proper condition.
3. On PTO shafts always ensure the tube has sufficient overlap in transport- and operating position! (Observe instruction manual of the PTO shaft manufacturer.).
4. Fit and remove the PTO shaft only when engine is stopped and ignition key is removed.
5. Ascertain correct fitting and securing of the PTO support.
6. Prevent PTO guard from spinning by fixing the provided chain to a nearby static part.
7. Before switching on the PTO shaft ensure that the chosen PTO speed of the tractor corresponds to the allowable implement input speed.
8. When using the ground-related PTO take into account that the PTO speed depends on the driving speed and that the turning direction is reversed when driving backwards.
9. Before switching on the PTO shaft take care that no one stays in the danger zone of the implement.
10. Never switch on the tractor PTO while engine is stopped.
11. When operating with a switched on PTO shaft allow no one to stay near to the spinning PTO or universal joint shaft.
12. Always stop PTO when it is not needed or when the shaft is in an adverse position.
13. Attention! After switching off the PTO the mounted implement may continue to run by its dynamic mass.
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 pulled out.
15. Place the uncoupled PTO shaft on the retaining support provided.
16. After removal of PTO shaft apply guard cap onto PTO stub.
17. Immediately repair any damage before operation to avoid consequential problems.



3.6.8 Brakes and tyres

1. Check functions of brake before travelling on public roads.
2. Brake systems should regularly be carefully checked.
3. Setting and repair work on the braking system must be conducted only by specialist workshops or approved repairers. Only use appropriate brake fluid and exchange as prescribed.
4. When working in the tyres make sure that the implement is safely parked and secured against rolling away (chocks).
5. Repair work to the tyres may only be conducted by trained personnel and with specialist mounting tools.
6. Setting and repair work on the braking system must be conducted only by specialist workshops or approved repairers.
7. Check air pressure regularly. Note the prescribed air pressure.

4.0 Putting into operation

Before the first operation carefully read and observe the instruction manual and the safety advice.

Acquaint yourself with the correct handling and with the operating devices. Never allow the machine being operated by unacquainted personnel.

Maintain your machine in a good operational order. Changes to the machine not allowed by the manufacturer may endanger the functionality and/or safety and may reduce the life span of the machine. Claims under warranty will be rejected in case of operational mistakes.

Liability claims can only be accepted if exclusively original spare parts and wearing parts are used for replacement.



Never place any parts inside the seed box as the metering devices may be damaged.

4.1 Setting before the first operation

How to link up tractor connecting valves for the initial operation

- see para. 6.

Fitting the roller to the rear of the Airstar Xact

- see para. 7.

Mounting the seed rail on to the wedge ring roller KW580 and fixing

- see para. 8.

Fixing the separately provided extra coverage following harrow on the seed rail

- see para. 25.1.

Observing the mounting hints for the track markers

- see para. 24.1.

4.2 Settings prior to any operation

Connecting implement with the tractor

- see para. 6.

Checking the air brake system

- see para. 40.11.

Installation of the hydraulic drive of the blower fan

- see para 12.

Checking the tyre air pressure

- see para. 40.2.

Filling the seed tank

- see para. 14.1.

Setting the metering unit according to the type of seed

- see para. 15.

Determining the gearbox setting for the desired seed rate


- see para. 16.




4.3 Settings in the field

Calibrating the distance sensor

- Find the value "Imp./100 m" in table Fig. 4.1 and enter this value into the computer following the AMADOS instruction manual.

 The calibration value "Imp./100 m" is ground related. If you carry out the calibration test with another number of crank turns than indicated in table Fig. 4.1, the calibration value should also be re-determined.

 Only take the calibration value "Imp./100 m" from table Fig. 4.1, if the distance sensor (Fig. 4.2/1) has been fitted as illustrated.

- Bringing the track marker into operational position
- see para. 24.2.
- Setting the track marker to the correct length
- see para. 24.3.
- Setting the track marker in such a way that they mark on the correct side.
- Bringing the pre emergence marker discs into operational position
- see para. 28.2.
- Setting the AMADOS-tramline control
- see para. 26.2.
- Setting the hectare counter to "zero"
- see AMADOS-instruction manual.
- Bring blower fan with hydraulic drive to the correct speed
- see para. 12.1.



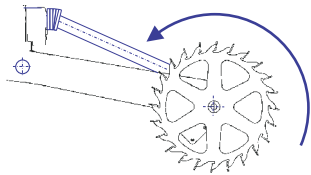
| | | |
|--|---|---------|
|  956268  |  | |
| | 1/40 ha | 1/10 ha |
| 3,0 m | 38,5 | 154,0 |
| 4,0 m | 29,0 | 117,0 |
| 4,5 m | 26,0 | 104,0 |
| 6,0 m | 19,5 | 78,0 |
| Working width | Crank turns on the star wheel | |
| AMADOS II Imp./100 m | 1011 | |

Fig. 4.1 t170gb02

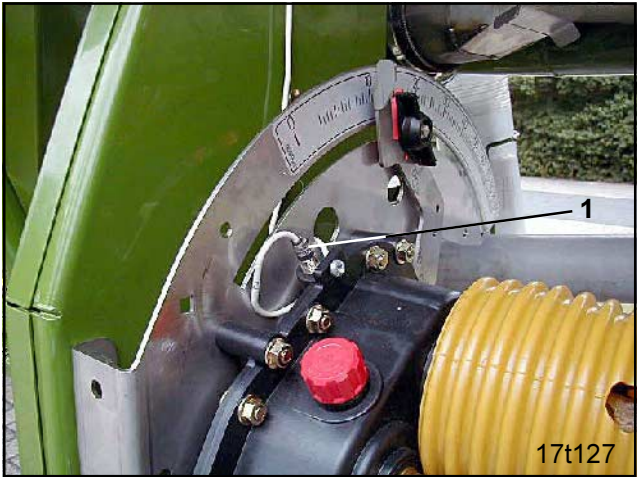


Fig. 4.2



Fig. 4.3

4.4 Putting into operation in the field

In the field bring transport folding frame into operational position according to para. 29.1.

Set the rotor rev. speed of the rotary cultivator with the aid of the gearbox setting lever (Fig. 4.4/1). Take the rotor rev. speeds and the gearbox settings from the rotary cultivator instruction manual.



Before actuating the control lever switch off the tractor universal joint shaft, stop tractor engine and remove ignition key. Await the stand still of the rotors. Do not touch the hot gearbox housing or parts of the gearbox. Wear gloves.

Set the working depth of the rotary cultivator according to para. 18.

The star wheel (Fig. 4.5/1) is fixed on a hydraulic ram with the aid of a chain (Fig. 4.5/2). This hydraulic ram is connected with the hydraulic rams of the transport axle. When lifting the transport axle before starting to operate in the field, the star wheel is set to operational position.

Before turning at the headlands bring the transport axle into transport position again. The star wheel will be automatically raised to protect it from damage.

For turning at the headlands the implement is not folded.



Fig. 4.4

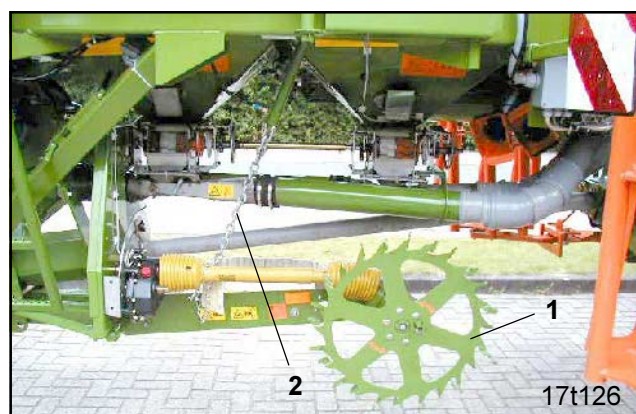


Fig. 4.5



Fig. 4.6

4.5 Checking after the first 30 m

Travel approx. 30 m in the field in the later forward speed and check the following settings:

- Placement depth of the seed, see para. 23
- Seed coverage of the extra coverage following harrow, see para. 25.2 to 25.5
- Check working intensity of the marker discs.

4.6 During operation

The seed level inside the seed tank can be checked with the electr. seed level indicator AMFÜME (special option) (see para. 14.2).



Never empty the seed tank completely.

The sensor (Fig. 4.7/1) monitors the seed shaft. If the seed shaft stops during operation AMADOS gives a fault message by an audible signal.

Stand still of the rotary cultivator tines during operation

The tines of the rotary cultivator can come to a standstill in stony soils or when a firm obstacle is hit. To prevent gear damage the PTO shafts are provided with a ratchet clutch.

The PTO shafts positioned crosswise to the travelling direction are equipped with sensors. In case of a standstill AMADOS shows a fault message, e.g:

Error 5, standstill of the left hand implement side

Error 6, standstill of the right hand implement side.

If the rotors come to a standstill due to one or both ratchet clutches being deactivated, observe the advice given in the attached instruction manual for the rotary cultivator.



**Fault message
in case of PTO shaft standstill is only
displayed from version AMADOS II dtd.
12.08.1999.**

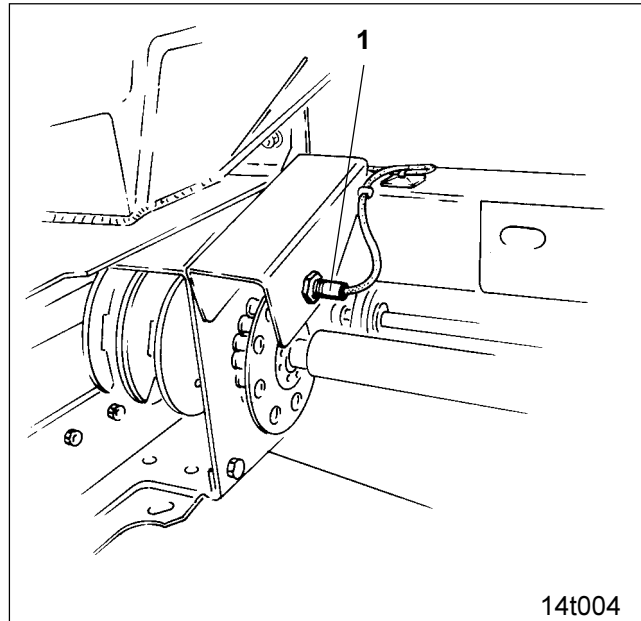


Fig. 4.7

4.7 Maintenance work after the first hours of operation

Carry out maintenance work according to para. 40.



Check all bolted connections after the first 10 hours of operation. Retighten if necessary.

4.8 Parking the pack top seed rail

Deposit the pack top seed rail AS on the provided supports before dismounting the seed rail from the frame of the Airstar Xact.

Lift the combination in such a way that you can fix

- outer supports (Fig. 4.8/1)
 - inner supports (Fig. 4.9/1) for AS 602
- on the pack top seed rail. Secure the support of AS 602 in the machine's centre by using a clip pin.

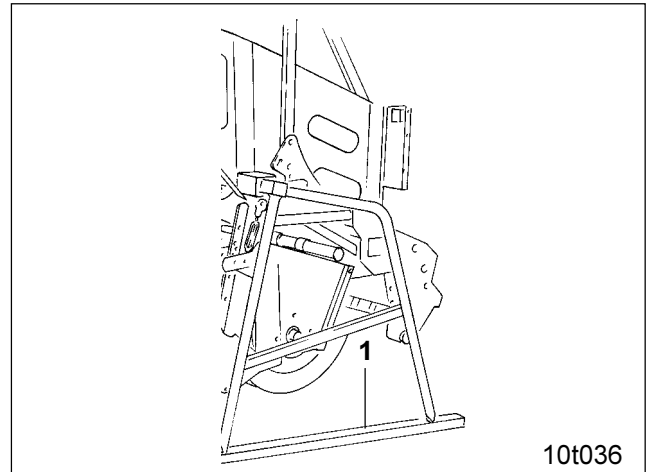


Fig. 4.8

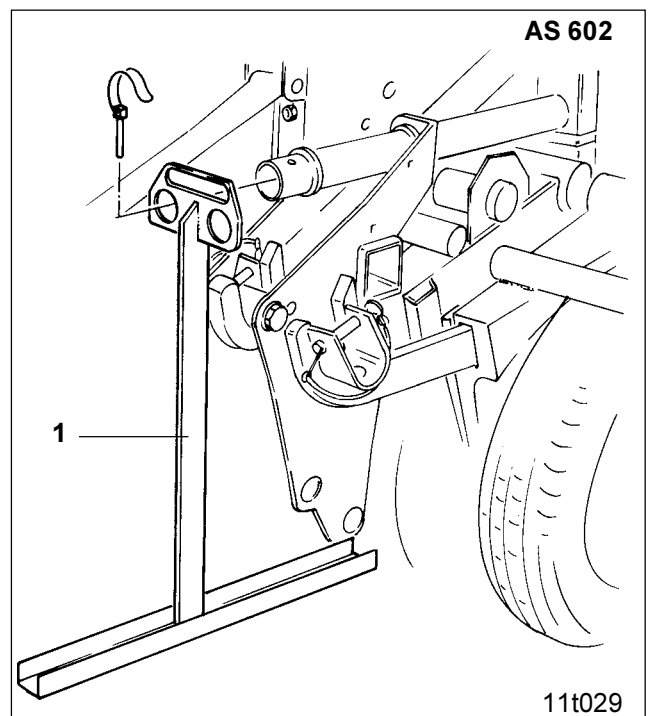


Fig. 4.9

6.0 Coupling the Airstar Xact on to the tractor

For coupling the Airstar Xact slide the tractor's lower link arms on to the pins (cat. III, Fig. 6.1) of the lower link pivoting pendulum. Use linch pins to secure.



Observe para. 3.6.2.

Observe the permissible tractor lower link support load.

Never exceed the permissible tractor rear axle load.

When coupling the implement the front axle load of the tractor is reduced depending on its size. The sufficient front axle load (20 % of the tractor net weight) has to be observed!

Ensure that the lower link arms of the tractor have no lateral play so that the implement centrally follows the tractor and does not swing during operation.

Park the machine only on firm ground. Where soft ground prevails, e.g. in the field, ensure that the parking support (Fig. 6.20/1) does not subside into the soil. This would make a later coupling of the machine impossible.

6.1 Folding upwards the parking supports

Raise the tractor lower link arms until the parking support (Fig. 6.20/1) gets free from the ground. Fold the parking support (Fig. 6.2/1) upwards and fix with the previously slackened locking pin (Fig. 6.2/2) and secure using a linch pin.

The axle can be adjusted with the aid of hydraulic rams. For transport set the axle in such a way that the operating implements have sufficient ground clearance. The seed tank should slightly tilt towards the tractor (see Fig. 6.4).



Fig. 6.1



Fig. 6.2

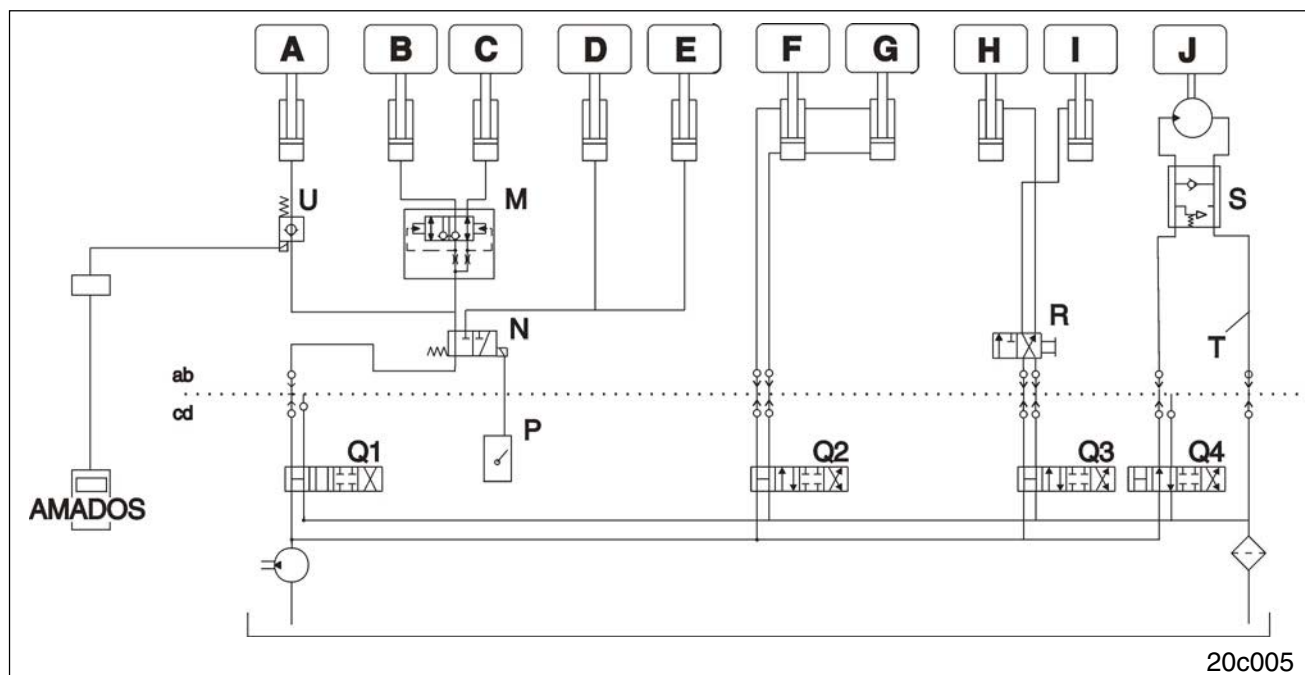


Fig. 6.3

6.2 Installing hydraulic connections

Install the hydraulic connections following the circuit plan (Fig. 6.3).

Terms used in the circuit plan (Fig. 6.3):

ab = implement side
cd = tractor side

Hydraulic ram on the tractor spool valve Q1:

A = Pre emergence marker
B = Track marker left hand side
C = Track marker right hand side
D = Coulter pressure adjustment
E = Extra coverage following harrow pressure adjustment

Double acting hydraulic ram on tractor spool valve Q2:

F = Transport folding frame left hand side
G = Transport folding frame right hand side

Hydraulic ram on tractor spool valve Q3:

H = Axle lifting
I = Star wheel lifting

Hydraulic ram on tractor spool valve Q4:

J = Blower fan hydraulic motor
N_{max.} = 4000 R.P.M.

Valves

Q1, Q2, Q3 = 3 tractor spool valves, illustrated in position „operation“
Q4 = Valve for the hydraulic blower fan drive

max. 200 bar

955912

M = „with priority“ approx. 30 l/min.
S = DBV-valve with hydraulic free wheel
T = free return flow (min. DN 16)
U = electr.-hydr.-valve
P = electr. manual switch

Only required if no tractor spool valve is free to use:

N = 3/2-way valve
R = 3/2-way valve

Permissible hydraulic oils

HD-SAE 20W-20 according to MIL-L-2104 C or API-CD, and
STOU SAE 15W-30 according to MIL-L-2105 or API GL4.



Before doing any work on the hydraulic system take care that the tractor hydraulic is pressureless.



**The operational pressure must not exceed 200 bar .
You will find a relevant advice on your machine.**



Fig. 6.4

6.3 Connecting the air brake

Connect the air brake according to table Fig. 6.5 an.



All checks which should be conducted on the air brake system in regular intervals before any travel are listed up in para. 40.11.

| Connection | Color and no. of hose coupling | Connection to tractor |
|------------|--------------------------------|-----------------------|
| Air brake | yellow (2) | Brake line |
| | red (3) | Supply line |

Fig. 6.5

t510gb04

6.4 Conduct power supply connections

Connect the power supply cable to the electr. traffic lights to your tractor and check for proper function.

6.5 PTO shaft

Tractor - Airstar Xact

For transmission of the driving powers of the tractor's pto shaft to the rotary cultivator only use the pto shaft P600-PG30-810 which can be pushed on to the drive shaft (1 3/4" 20-spline) of the swivel gearbox (Fig. 6.6/1) of the Airstar Xact.

The PTO shaft P600-PG30-810 is available for the following tractor connections:
1 3/4" 6-spline, 1 3/4" 20-spline and 1 3/8" 21-spline.



Seen in driving direction, the pto shaft P600 rotates in clockwise direction).

6.5.1 Attach PTO shaft and secure

Clean and grease the pto shaft studs of the tractor and the implement.

Mount the pto shaft half with the tractor symbol on to the pto shaft stud of your tractor and the other pto shaft half on the pto shaft stud of the swivel gearbox (Fig. 6.6/1) and secure as follows:

The pto shaft P600 is equipped with removable guard cones (Fig. 6.8/1).

The guard cone disturbing the fitting of the universal joint on a pto shaft can be moved on the pto shaft (see Fig. 6.8) until the universal joint is getting free and an easy fitting has become possible.

The guard cone can be removed after having pressed two buttons (Fig. 6.7). Take as an aid broad screw drivers.

As soon as the pto shaft has been connected to the universal joint shaft and after having been secured as prescribed (see fitting advice of the pto shaft manufacturer), slide the guard cone (Fig. 6.9/1) over the universal joints until the guard cone engages on the clamping ring (Fig. 6.8/2).



Before first fitting and coupling the implement to another tractor, please observe para. 6.5.2.



Fig. 6.6

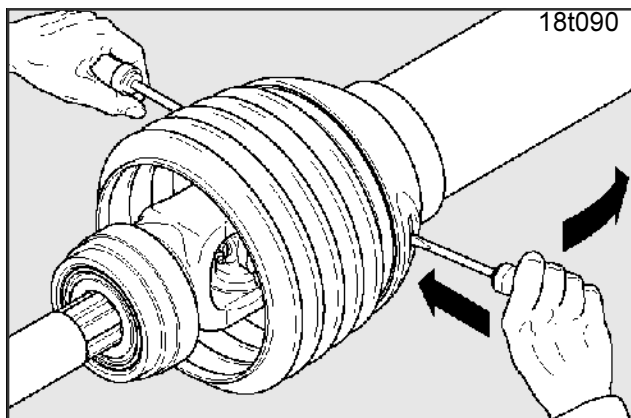


Fig. 6.7

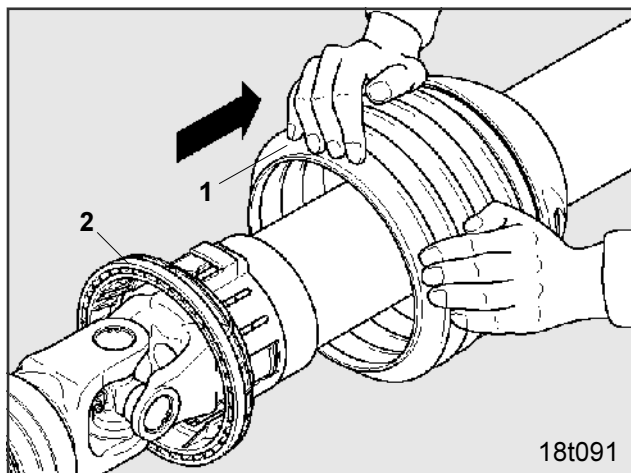


Fig. 6.8

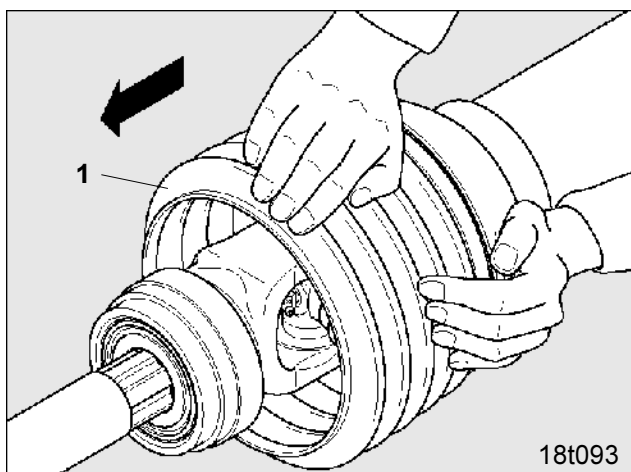


Fig. 6.9



Mount and remove the PTO shaft only with disengaged universal joint shaft, tractor engine switched off and ignition key removed!

Always observe the correct mounting and securing of the PTO shaft!

Ensure the prescribed tube overlapping of universal joint shafts in transport- and operational position!

Before engaging the PTO shaft observe the safety advice in para. 3.6.7..

Before engaging the PTO shaft make sure that the PTO shaft speed selected on the tractor matches the permissible speed for the implement!

Before engaging the PTO shaft, ensure that no persons are within the danger area of the implement!

Never remove the PTO shaft covers of the implement and the tractor.

Switch off the engine and make sure that the PTO shaft is at a standstill before making adjustments, establishing connections or cleaning PTO shaft-driven machines.



To prevent damage, only engage the pto shaft slowly in idling gear or at a low tractor engine speed.

6.5.2 First use of the universal joint shaft and adapting to another tractor

Before attaching the universal joint shaft, clean and grease the pto shaft splines on the tractor and the implement.

Hitch the machine to the tractor. Attach the universal joint shaft halves as prescribed to the pto shaft spline of the implement and the tractor, but do not slide the universal joint shaft tubes into each other.

Regarding Fig. 6.10:

By holding the two universal joint shaft tubes next to each other, check whether the universal joint shaft tubes can overlap by at least $A = 185 \text{ mm}$ in every position of the soil tillage implement.

Regarding Fig. 6.11:

When the two universal joint shaft halves are slid into each other, their ends must never touch the yokes of the universal joints. A spacing of at least 10 mm must be maintained.

Regarding Fig. 6.12:

To match the lengths of the universal joint shaft halves, hold them next to each other in the shortest operating position and mark them.

Regarding Fig. 6.13:

Shorten the inner and outer guard tubes by the same amount.

Regarding Fig. 6.14:

Shorten the inner and outer sliding profile tubes by the same amount as the guard tube.

Regarding Fig. 6.15:

Smooth any rough edges and carefully remove any shavings.

Regarding Fig. 6.16:

Grease the sliding tubes and slide them into one another.



Also follow the universal joint shaft manufacturer's notes regarding assembly and maintenance attached to the universal joint shaft.

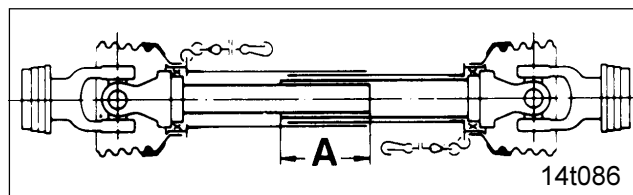


Fig. 6.10

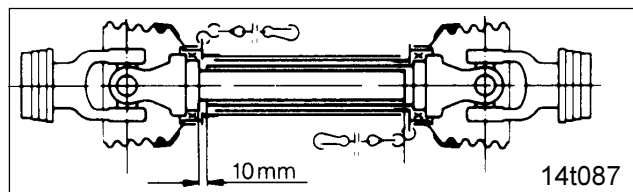


Fig. 6.11

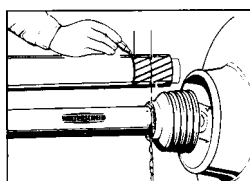


Fig. 6.12

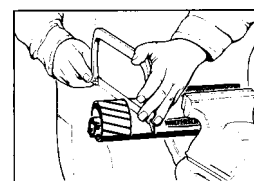


Fig. 6.13

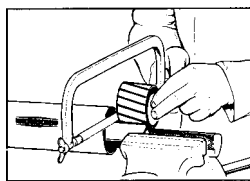


Fig. 6.14

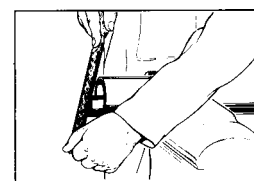


Fig. 6.15

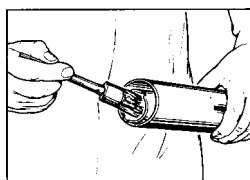


Fig. 6.16

6.6 Release parking brake

The actuation of the parking brake on machines with an air brake system is established by a crank (Fig. 6.17). For releasing the parking brake turn the crank in left direction until the stop.

6.7 Uncoupling the Airstar Xact

Before uncoupling the machine from the tractor, secure the machine with two chocks (Fig. 6.18/1) against unintended rolling away. During transport the chocks (Fig. 6.19) are placed in retainers at the side of the frame and secured by springs.



**During coupling, no person may stand between tractor and implement.
Secure the machine by two chocks against unintended rolling away.**



Fig. 6.17



Fig. 6.18



Fig. 6.19

Folding down the parking support

Fold down parking support (Fig. 6.20/1), affix with the prior slackened setting pin (Fig. 6.20/2) and secure by using a clip pin.

Apply parking brake

Applying the parking brake on machines with an air brake system is established by a crank (Fig. 6.17). For applying the parking brake turn the crank in right hand direction until the stop.

Pull off PTO shaft

Pull the PTO shaft off the drive shaft of the tractor and deposit carefully.

Uncouple the Airstar Xact.

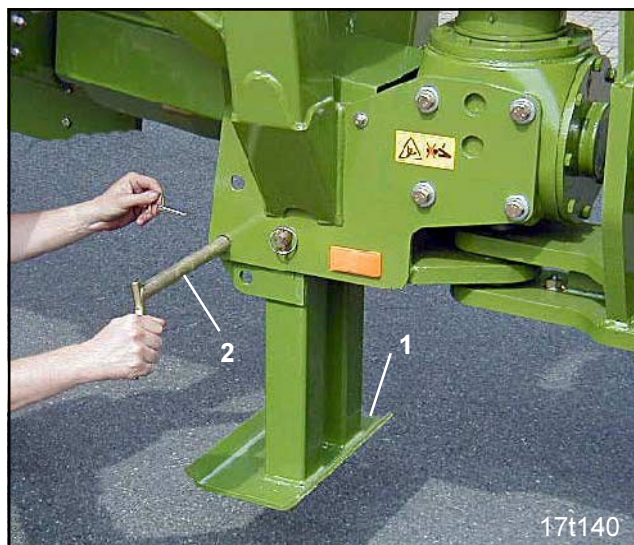


Fig. 6.20

7.0 Fitting the roller to the machine's rear end

During operation the seed rail rests on an AMAZONE roller. Implements with 6 m working widths should be equipped with each two rollers and two seed rails.

For this AMAZONE Airstar Xact can be provided with rollers of the type:

- AMAZONE-wedge ring roller KW580 (Fig. 7.2).

7.1 Fixing the wedge ring rollers KW580

Fix the wedge ring rollers KW580 on to the carrying arms of the folding frame (Fig. 7.2/1).

For fitting of removal always secure the fixing arms (Fig. 7.1/1) with two (Fig. 7.1/2 and Fig. 7.1/3).



Remove the upper pins (Fig. 7.1/3) when the combination is equipped with a top mount seed rail and the top mount seed rail has been fixed on the roller and on the frame of the Airstar Xact.



Carefully support the roller before coupling or uncoupling (secure against tipping over and rolling away).



Great care must be taken when fixing the roller on the Airstar Xact as in case of inappropriate support the roller might fall over

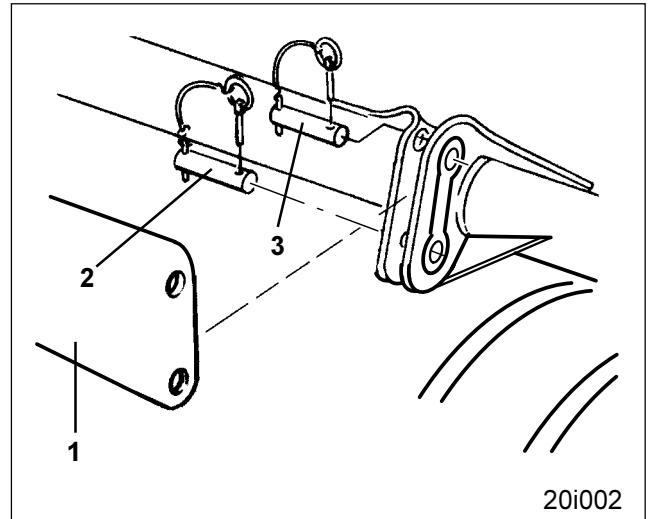


Fig. 7.1



Fig. 7.2



8.0 Mounting and fixing the seed rail on the wedge ring roller KW580

For mounting the seed rail on the wedge ring roller KW 580 affix two plastic supports (Fig. 8.1/1) on the carriers of the seed rail.

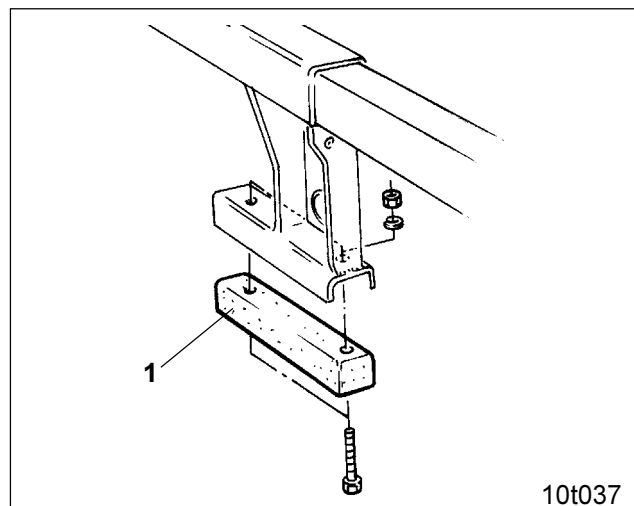


Fig 8.1

Affix two catching pockets (Fig. 8.2/1) on the wedge ring roller.

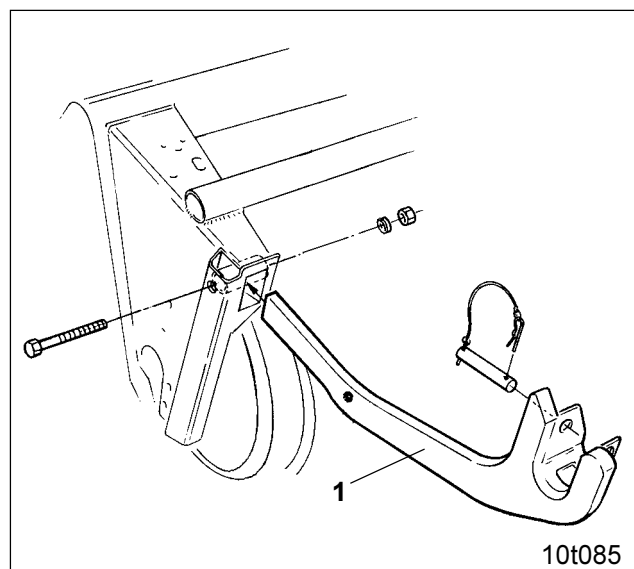


Fig 8.2

Back up with the wedge ring roller to the seed (Fig. 8.3/1) resting on its supports. Carefully guide the catching pockets (Fig. 8.3/2) underneath the square tube (Fig. 8.3/3) of the seed rail.

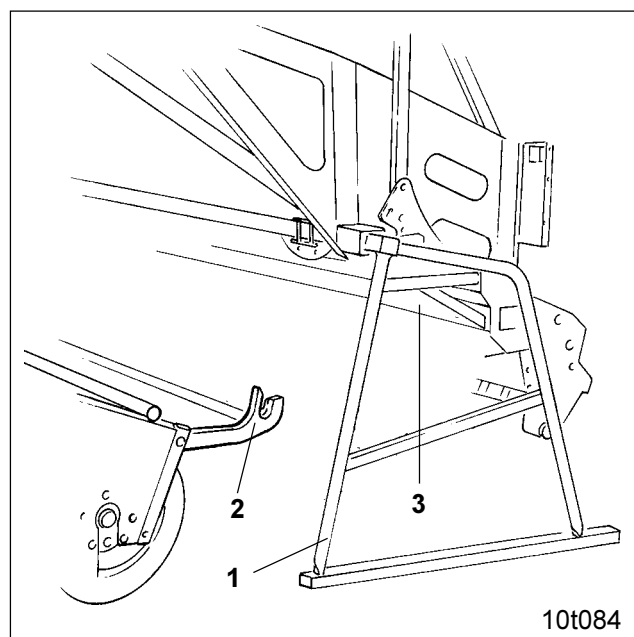


Fig 8.3

On the right hand front side the wedge ring roller is provided with a centring aid (Fig. 8.4/1) which, when coupled, engages in a slotted hole of the seed rail.

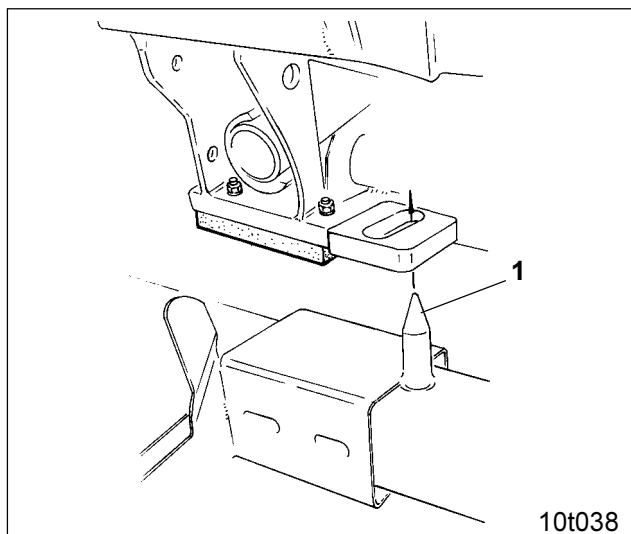


Fig 8.4

With the aid of the catching pockets (Fig. 8.5/1) of the wedge ring roller catch the bearing shafts (Fig. 8.5/2) of the seed rail, lock with pins (Fig. 8.5/3) and secure using linch pins..

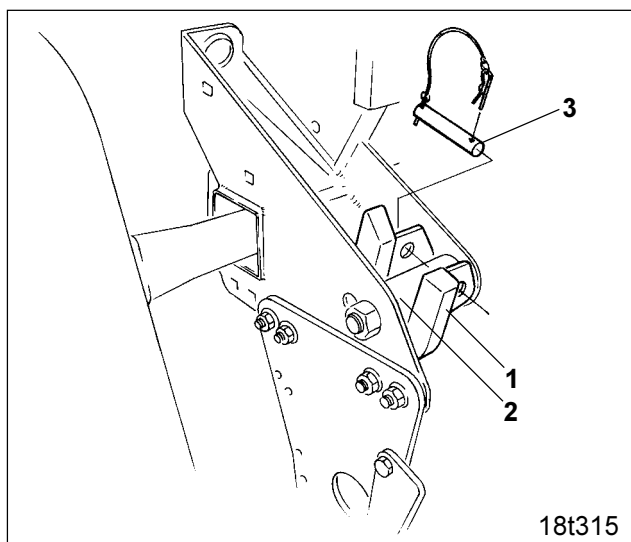


Fig 8.5

Affix the seed rail with 2 turnbuckles (Fig. 8.6/1) on the wedge ring roller. Secure pins (Fig. 8.6/2) using linch pins.

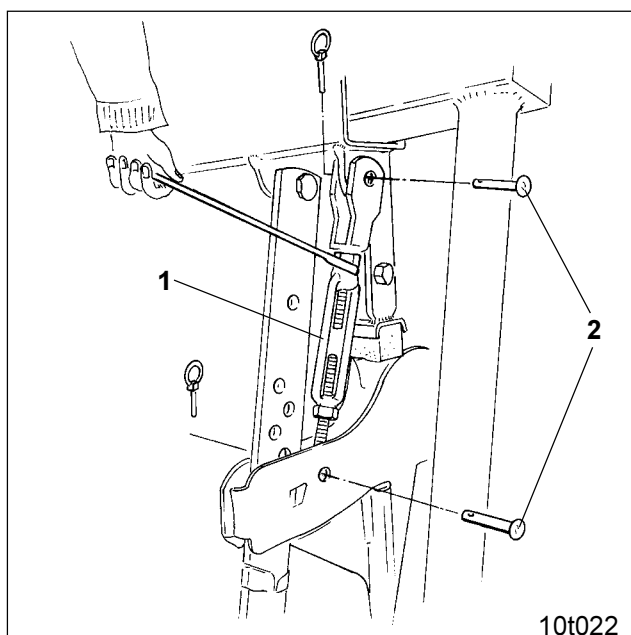


Fig 8.6

Lock the top link (Fig. 8.7/1) on the seed rail and on the frame of the Airstar Xact and secure the fixing pins using linch pins.

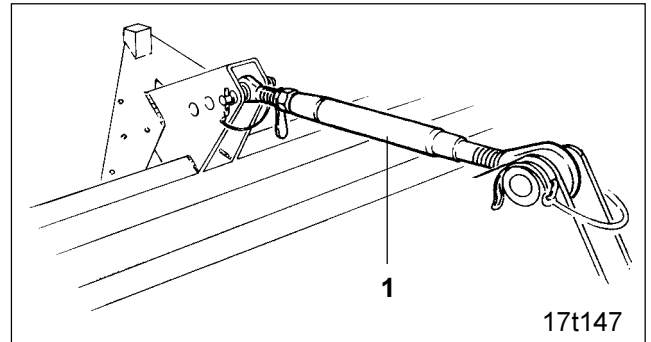


Fig 8.7



After coupling the seed rail remove the upper carrying arm pins from their holes (Fig. 8.8/1) to ensure a free movement of the seed rail in the parallel suspension. Prior to that adjust the top link (Fig. 8.7/1) until the two carrying arm pins can easily be.

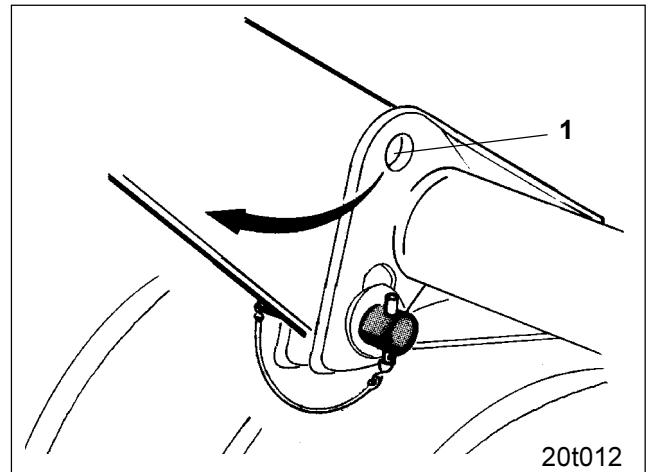


Fig 8.8

Connect the seed guide tubes (Fig. 8.9) with quick couplings (Fig. 8.10).

Lift the entire combination and remove the parking supports (Fig. 8.11/1).

Set the top link arm length (Fig. 8.7/1) so that the seed rail is in about level position.



Uncoupling the seed rail is done in reverse order.

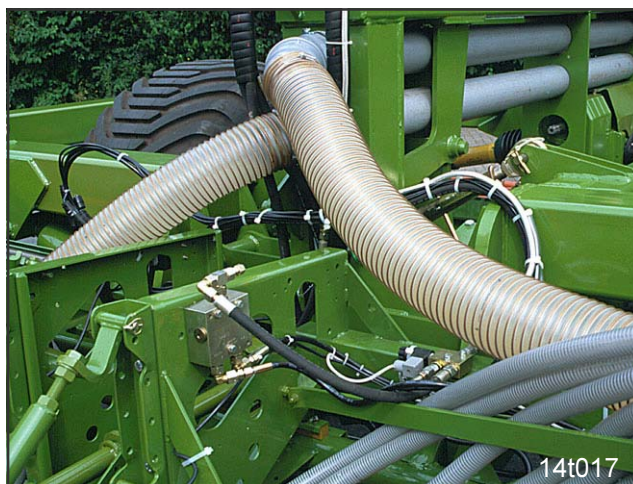


Fig 8.9

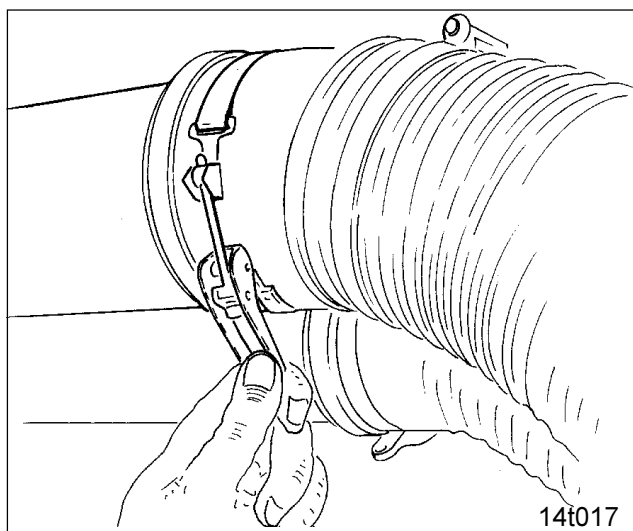


Fig 8.10

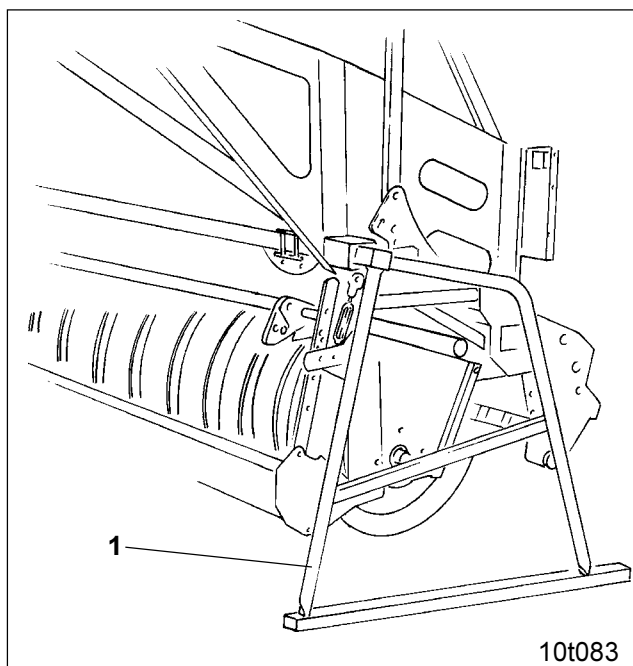


Fig 8.11

12.0 Blower fan with hydraulic drive

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

For driving the blower fan by a hydrostatic motor (Fig. 12.3) it should be connected with the tractor's hydraulic in accordance with the hydraulic circuit (para. 12.3).



Please adhere to the safety advice given in para. 3.6.4 beachten!

12.1 Blower fan speed

The rev. speed of the blower fan hydrostatic motor can be checked by the electronic monitoring, controlling and governing system AMADOS (please refer to para. 12.2).

You may find the required blower fan speed in the table (Fig. 12.1).



Do not exceed the max. blower fan rev. speed of 4000 R.P.M.

Set the blower fan rev. speed on the pressure limiting valve (Fig. 12.2 or Fig. 12.5/3) or on the oil stream control valve of the tractor (see below).

Procedure for setting the blower fan rev. speed on the pressure limiting (Fig. 12.2 or Fig. 12.5/3):

- Remove protective cap (Fig. 12.2/1)
- Slacken counter nut
- Set the rev. speed on the valve by using a screw driver, i.e.:

Turn to r.h. side = Speed increase

Turn to l.h. side = Speed reduction.

After setting secure valve by using a counter nut and apply protective (Fig. 12.2/1).

On tractors with controllable hydraulic pump (Fig. 12.5/5) the necessary oil volume should be set at the oil stream control valve of the tractor and the pressure limiting valve (Fig. 12.5/3) should be set in such a way that the oil volume is as little as possible. Larger oil volumes than necessary are returned into the oil tank by the pressure limiting valve and unnecessarily heat up 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

| | | |
|--|---------------------------------------|------------------------|
| 956901 | | |
| | | |
| AD-P / AD-PL FRS / FPS AIRSTAR Xact | | |
| | | |
| | | |
| 3,0 m | 2800 | 3500 |
| 4,0 m | 3000 | 3800 |
| 4,5 m | 3000 | 3800 |
| 6,0 m | 3200 | 3900 |
| Working width | Blower fan rev. speed (R.P.M.) | |
| | Fine seeds (rape) | Legumes (grain) |

Fig. 12.1

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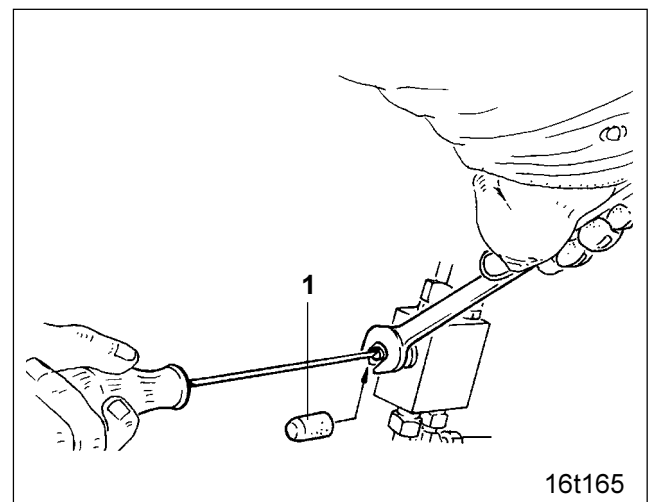


Fig. 12.2

16t165

operational temperature has been reached. If the blower fan is used after a prolonged period of standstill, the pre-set blower fan rev. speed will only be reached after the hydraulic oil has reached the operational temperature.

12.2 Rev. speed monitoring

The rev. speed of the blower fan can be monitored with the electric control and governing system AMADOS.

By pressing

key



the actual rev. speed of the blower fan which is provided with a rev. speed sensor (Fig. 12.3/1) is displayed.

If the required rev. speed deviates by more than 10 % an audible signal sounds and the black triangle (Fig. 12.4) flicks above the rev. speed symbol.



Enter the required rev. speed as described in para. “Blower fan rev. speed monitoring” in the AMADOS instruction book.



An alarm is only given when AMADOS receives impulses from the distance sensor.



Fig. 12.3

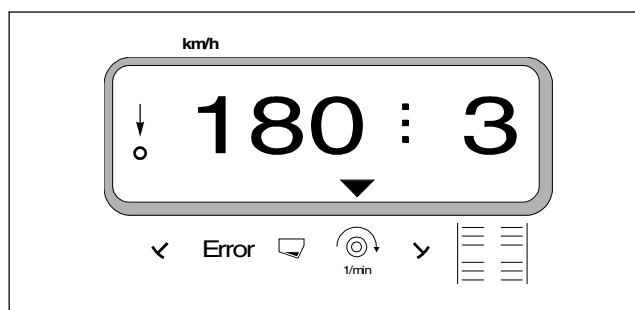


Fig. 12.4

12.3 Circuit diagram Blower fan with hydraulic drive

| No | Description |
|----|--|
| 1 | blower fan hydr.stat.drive $N_{max.} = 4000 \text{ R.P.M.}$ |
| 2 | pressure relief valve with hydr. free wheel |
| 3 | adjustable pressure relief valve |
| 4 | return valve |
| 5 | Tractor hydraulic pump (the capacity of the tractor's hydraulic pump has at least to be 40 l/min at 150 bar) |
| 6 | free return flow - tube nominal width min. Ø16 mm - Use couplings with sufficiently large cross section - the back pressure in the return flow may max. be 10 bar |
| 7 | Filter |
| 8 | single- or double acting control valve |
| 9 | hydraulic oil tank |
| 10 | plug coupling |
| 11 | plug coupling "large" |

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Do not create other connections than illustrated in the circuit diagram.

12.3.1 Explanations for the circuit diagram

On the pressure side the blower fan hydrostatic motor (Fig. 12.5/1) may be connected either to a single or to a double acting spool valve (Fig. 12.5/8).

In order not to damage the hydrostatic motor the oil pressure in the return (Fig. 12.5/6) must not exceed 10 bar. Therefore, never connect the return flow to the spool valve (Fig. 12.5/8) but to a pressure-free return flow with a large plug coupling (Fig. 12.5/11). Should it be necessary to install a new return flow tubing, use only DN16, e.g. Ø20 x 2,0 mm and short return flow ways.

The hydraulic oil must be guided through an oil filter (Fig. 12.5/7) at any place of choice.

The returning hydraulic oil must not be guided through the spool valves as then the max. allowable oil pressure of 10 bar would be exceeded.

The check valve (Fig. 12.5/4) allows the blower fan to run after as soon as the spool valve (Fig. 12.5/8) has been shut off.

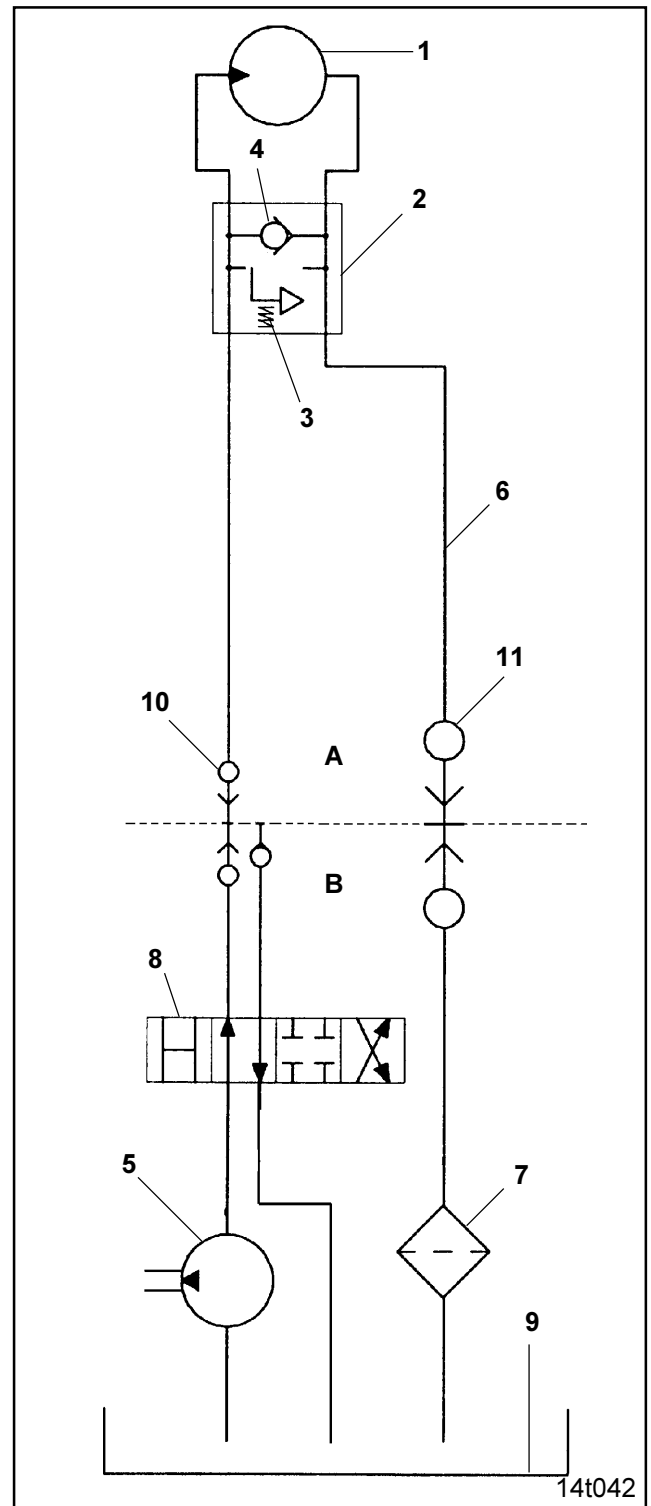


Fig. 12.5



The hydraulic oil must never get too hot. Large oil delivery amounts in conjunction with small oil tanks promote the quick heating of the hydraulic oil. The capacity of the oil tank (Fig. 12.5/9) should at least have double the oil delivery amount. If the oil gets too hot the installation of an oil cooler on the tractor by a professional workshop is necessary.

Particles of dirt can damage the hydrostatic motor (Fig. 12.5/1) and the pressure limiting valve (Fig. 12.5/3). 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 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 is connected to different tractors, ensure that the type of oil in the hydraulic circuits is compatible. Impermissible mixing of various hydraulic oils may lead to defects on hydraulic components.

14.0 Seed tank filling/emptying and monitoring the seed level

14.1 Filling the seed tank

The seed tank can be filled with a shovel loader or with big-bags (Fig. 14.1). The seed tank is easily accessible via a platform (Fig. 14.2)



Observe the permissible filling amounts and the total weights.



Do not place any foreign particles into the seed tank.



Before stepping on the ladder or the platform, switch off the tractor engine and remove the ignition key.

The seed tank is rain proof covered by the folding cover canvass. The folding cover canvass is secured with rubber strips (Fig. 14.3/1).

Never drive the drill until the seed tank is completely empty. The seed level inside the seed tank can be checked by the electr. seed level indicator AMFÜME (see para. 14.2).



Refill seed tank early enough!



Fig. 14.1



Fig. 14.2

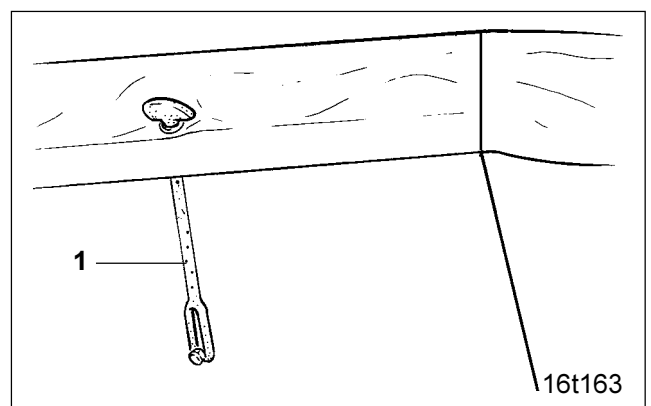


Fig. 14.3

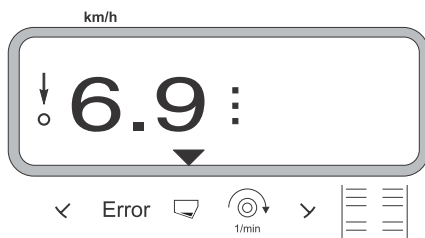
When not in use, the loading board with ladder (Fig. 14.4) is folded on the seed tank, fixed with a pin (Fig. 14.5/1) and secured with a linch pin (Fig. 14.5/2).



Before travelling on public roads fold in loading board and secure.

14.2 Electr. seed level indicator AMFÜ-ME (special option)

A capacitive sensor (Fig. 14.6/1), connected with AMA-DOS, monitors the seed level inside the seed tank. If the sensor does not dive any more into the seed, an audible signal sounds and on the display the black triangle above the tank symbol flicks:



The seed tank should never be emptied completely as this may result in differing seed rates. For changing the seed residue amount in the seed tank the carrier (Fig. 14.6) with the sensor should be moved accordingly. The sensitiveness of the sensor can be adapted to the different kinds of seed by adjusting the bolt (Fig. 14.6/2).



Fig. 14.4



Fig. 14.5

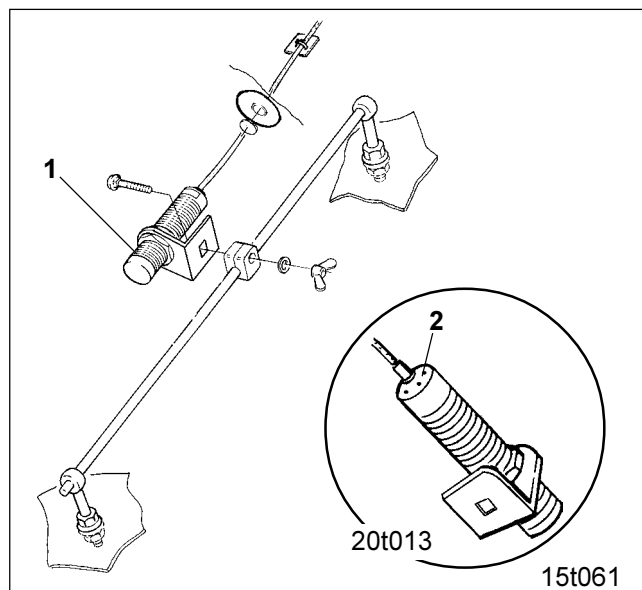


Fig. 14.6

14.3 Emptying the seed tank



It is of great importance that the seed tank and the seed metering wheels are emptied cleaned after having finished operation. If the seed metering wheels are not emptied completely, even there seed residue swell and germinate. A blockage of the seed metering wheels would be the result, causing damage to drive or gearbox.

For emptying the seed tank place a calibration tray (Fig. 14.7/1) underneath the first metering unit and take the provided tube (Fig. 14.7/2) in your hand.

Open the emptying flap (Fig. 14.7/3) until the calibration tray is filled with seed. Empty the calibration tray and repeat this procedure until not seed will flow into the calibration tray.

For a complete emptying open the injector sluice flap (Fig. 14.8/1) push the lever (Fig. 14.8/2) downwards and arrest. With the lever another outlet behind the metering unit is opened.

Proceed with the second metering unit in the same way.

For emptying the metering wheels as when carrying out a calibration test, turn the metering wheels with the calibration crank several times. Then briefly drive the blower fan to remove all seed residues.

Close the outlet opening.

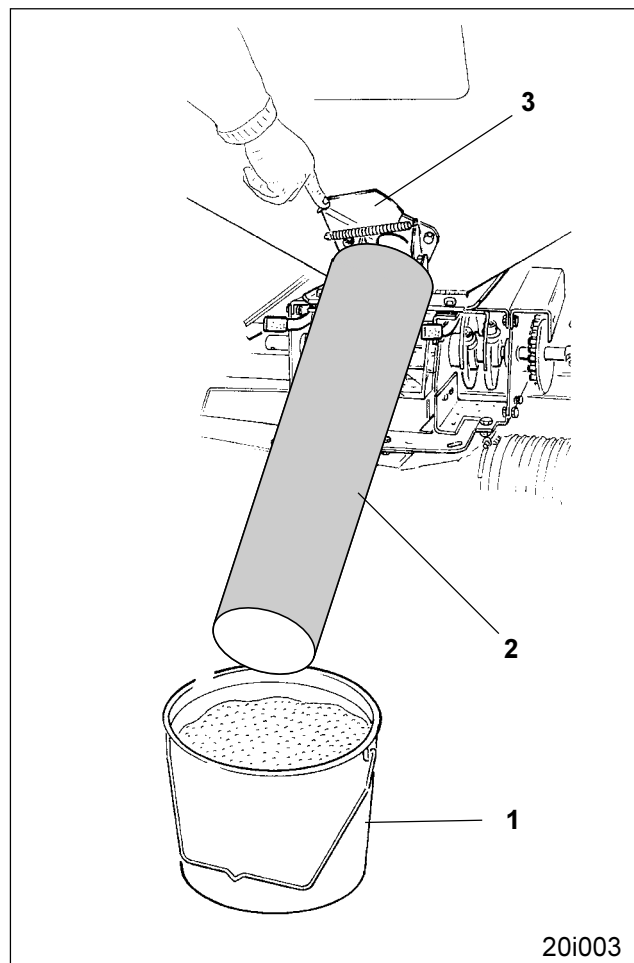


Fig. 14.7

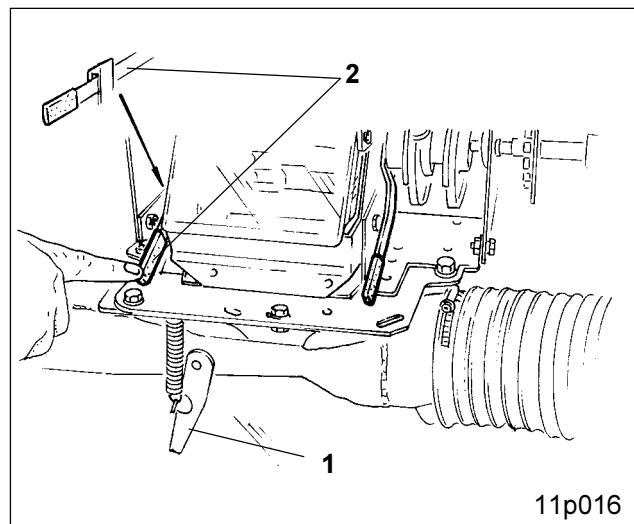


Fig. 14.8

15.0 Setting the metering unit to a particular seed

Every metering unit is provided with

- one white coloured main metering wheel (Fig. 15.1/1)
- one orange coloured main metering wheel (Fig. 15.1/2)
- one red/black coloured fine seed metering wheel (Fig. 15.1/3).

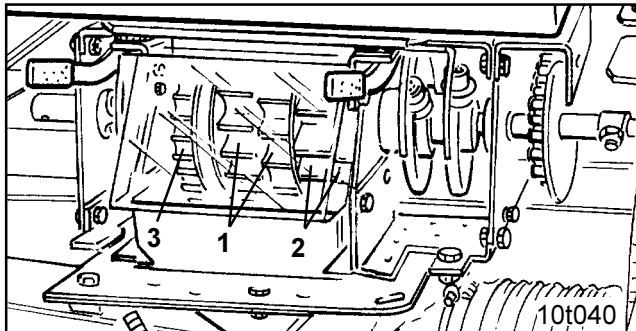


Fig. 15.1



When the table indicates “main seed metering wheels” (see table Fig. 15.2) always sow with both main seed metering wheels simultaneously.



The required metering wheel(s) may be taken from the table (Fig. 15.2).

For seeds which are not mentioned in the table (Fig. 15.2), you should take the figures of another seed with a similar grain size.

| Seed | Metering wheel |
|----------------------------|---|
| Spelt | Main seed metering wheels |
| Oat | Main seed metering wheels |
| Rye | Main seed metering wheels |
| Summer barley | Main seed metering wheels |
| Winter barley | Main seed metering wheels |
| Wheat | Main seed metering wheels |
| Beans | Main seed metering wheels |
| Peas | Main seed metering wheels |
| Flax (dressed) | Main seed metering wheels |
| Grass seed | Main seed metering wheels |
| Millet | Main seed metering wheels |
| Lupine | Main seed metering wheels |
| Alfalfa | Main seed metering wheels or Fine seed metering wheel |
| Oil linnen (moist dressed) | Main seed metering wheels or Fine seed metering wheel |
| Oil radish | Main seed metering wheels or Feinsärad |
| Phacelia | Main seed metering wheels or Fine seed metering wheel |
| Rape | Fine seed metering wheel |
| Red clover | Fine seed metering wheel |
| Mustard | Fine seed metering wheel |
| Soya beans | Main seed metering wheels |
| Sunflower | Main seed metering wheels |
| Stubble turnips | Fine seed metering wheel |
| Vetches | Main seed metering wheels |

Fig. 15.2

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15.1 Switching the metering wheels on and off

In position “**metering wheel on**” the knurled bolt (Fig. 15.3/1) is driven in till the stop.

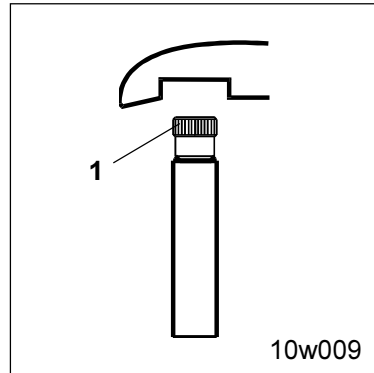


Fig. 15.3

In position “**metering wheel off**” the knurled bolt (Fig. 15.4/1) is driven out till the stop (Fig. 15.4/2).



Drive the setting bolts either in position “**metering wheel on**” or “**metering wheel off**”.

Never tighten knurled bolts too firmly against the stop (Fig. 15.4/2) .

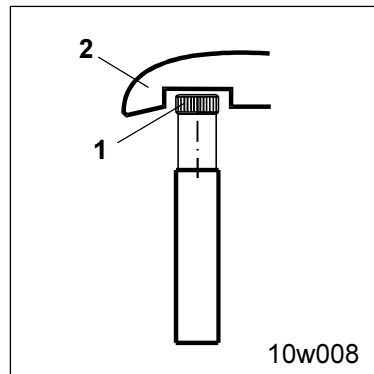


Fig. 15.4

15.2 Sowing by both main metering wheels

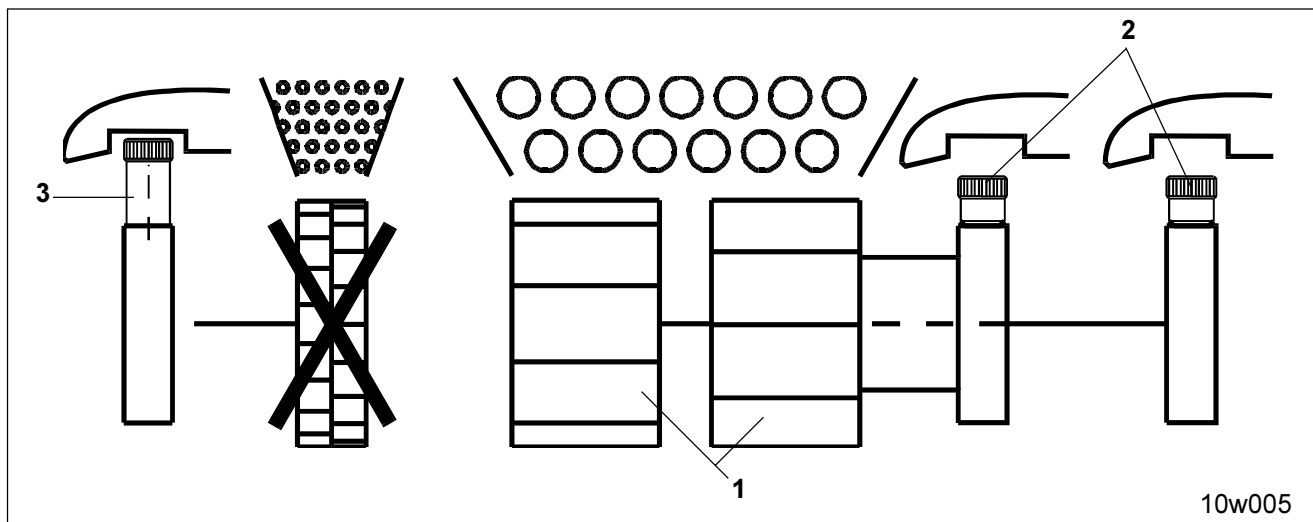


Fig. 15.5

For sowing with both main metering wheels (Fig. 15.5/1)

- Turn hand wheel (Fig. 15.7/1) until the knurled bolts (Fig. 15.7/2) can be seen
- Drive in the knurled bolt (Fig. 15.5/2) of the main metering wheels
- Drive out knurled bolt (Fig. 15.5/3) of the fine seed metering wheel.

15.3 Sowing by the fine seed metering wheel

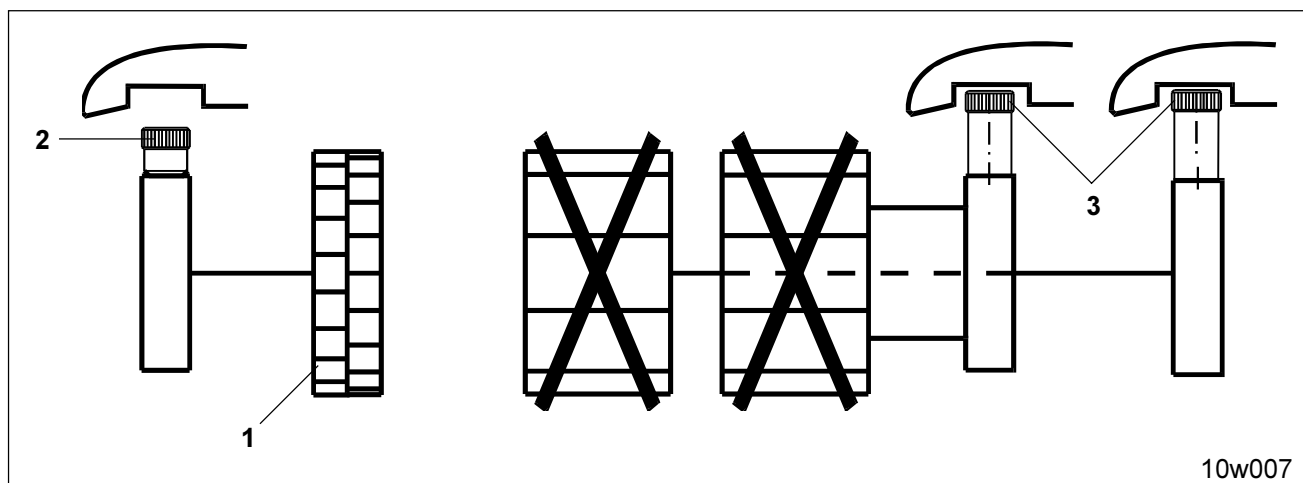


Fig. 15.6

For sowing by the fine seed metering wheel (Fig. 15.6/1)

- Turn hand wheel (Fig. 15.7/1) until the knurled bolts (Fig. 15.7/2) can be seen
- Drive in knurled bolt (Fig. 15.6/2) of the fine seed metering wheel
- Drive our knurled bolt (Fig. 15.6/3) of both main metering wheels.

15.4 Shear off safety

To prevent damage on the driving components in case of blockage of the seed metering wheels the connection between drive and metering unit is protected by a sheaf off safety.

In case of a blockage of the seed metering wheels a plastic bolt (Fig. 15.8/1) shears off and the power transfer to the metering unit is interrupted. After removal of the blockage and replacement of the shear bolt the machine is ready for operation again. You will find 5 spare shear bolts (Fig. 15.8/2) in a retainer above the hand wheel.



For a faultless function only use a plastic shear bolt M 8 (order No. 917420).

In case of a standstill of the metering wheels during operation AMADOS gives an alarm on the display. This alarm is released by a sensor (Fig. 15.8/3).

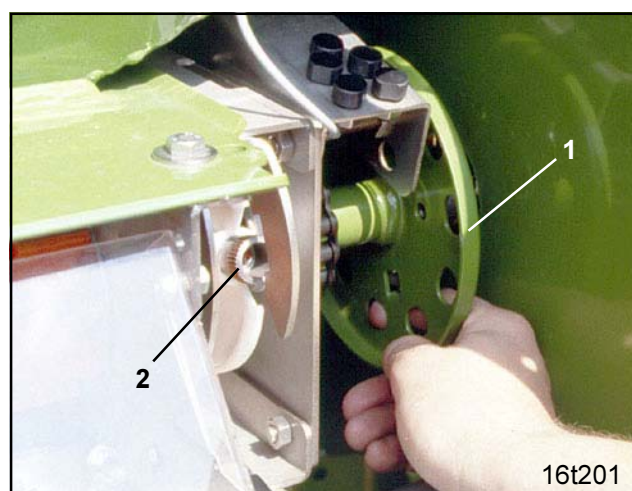


Fig. 15.7

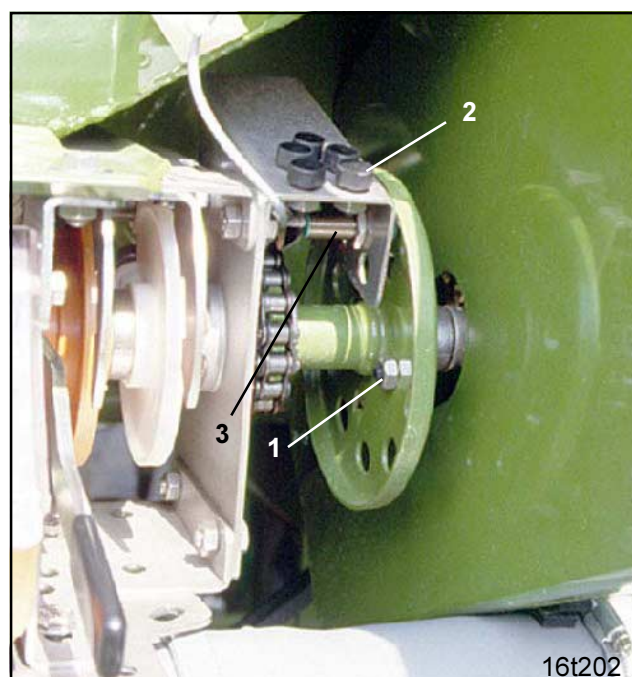


Fig. 15.8



16.0 Determining the gearbox setting for the desired seed rate

Set the metering unit according to para. 15.

At least 1/4 of the seed tank should be filled with seed.

Set the desired seed rate on the gearbox (Fig. 16.1/1).

By the gearbox setting lever (Fig. 16.1/2) the speed of the metering wheels and thus the seed rate can infinitely variably be set. The higher the figure on the scale (Fig. 16.1/4) has been chosen by the pointer (Fig. 16.1/3), the higher the seed rate will get.



If your machine is equipped with the AMA-DOS-seed rate remote control, please set the gearbox as desired according to para. 17.



After every setting on the gearbox setting lever check by a calibration test that at the later sowing the desired seed rate is obtained.

This test should also be conducted

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

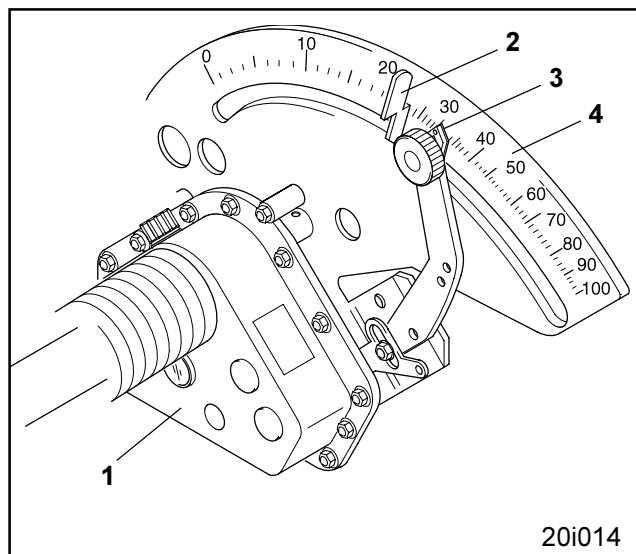


Fig. 16.1

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Open the injector sluice flap (Fig. 16.2/1) on every metering unit and place a calibration tray (Fig. 16.2/2) below every metering unit.

The calibration tray (Fig. 16.3/1) is fixed in a retainer (Fig. 16.3/2) and are hooked in an eyelet (Fig. 16.3/3).

Slacken the star knob (Fig. 16.4/1) of the gearbox setting lever (Fig. 16.4/2) to one of the following gearbox settings:

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

**For sowing by the fine seed wheel:
Gearbox setting "15".**

Firmly tighten the star knob (Fig. 16.4/1).

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. 16.2.



Fig. 16.2



Fig. 16.3

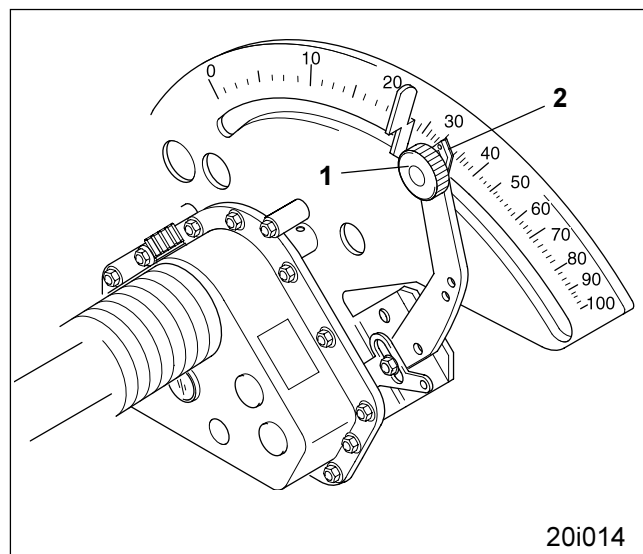


Fig. 16.4

16.1 Calibration test

Take the calibration crank (Fig. 16.5/1) in your hand. You will find the calibration crank in a retainer underneath the seed tank and is secured with a clip pin (Fig. 16.5/2).

Use the calibration crank (Fig. 16.6/1) to turn the star wheel anticlockwise until all metering wheel housings have been filled with seed and a uniform flow of seed runs into the calibration tray(s) (Fig. 16.6/2). Empty the contents of the calibration tray into the seed tank and turn the crank anticlockwise in number of turns taken from the table (Fig. 16.7).

The number of crank turns depends on the working width of your seed drill.

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

Common is the crank turn for 1/40 ha. In case of very small seed rates, e.g. for rape we recommend to conduct the crank turn for 1/10 ha.



Fig. 16.5



Fig. 16.6



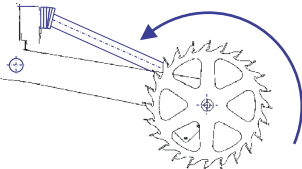
| | | |
|--|---|---------|
|  956268  |  | |
| | 1/40 ha | 1/10 ha |
| 3,0 m | 38,5 | 154,0 |
| 4,0 m | 29,0 | 117,0 |
| 4,5 m | 26,0 | 104,0 |
| 6,0 m | 19,5 | 78,0 |
| Working width | Crank turns on the star wheel | |
| AMADOS II Imp./100 m | 1011 | |

Fig. 16.7

t170gb02

Weigh the seed collected in the calibration trays (Fig. 16.8/1) and consider the bucket own weight (Fig. 16.9).
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 [1/ha] = 125 [kg/ha]



The desired seed rate usually is not obtained after the first calibration test. However, with the aid of the disc rule according to para. 16.2 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.

After you have determined the correct gearbox setting

- Insert calibration crank (Fig. 16.5/1) into its retainer
- Fix calibration tray (Fig. 16.3/1) on the carrier (Fig. 16.3/2)
- Shut injector sluice flap (Fig. 16.2/1).



Fig. 16.8

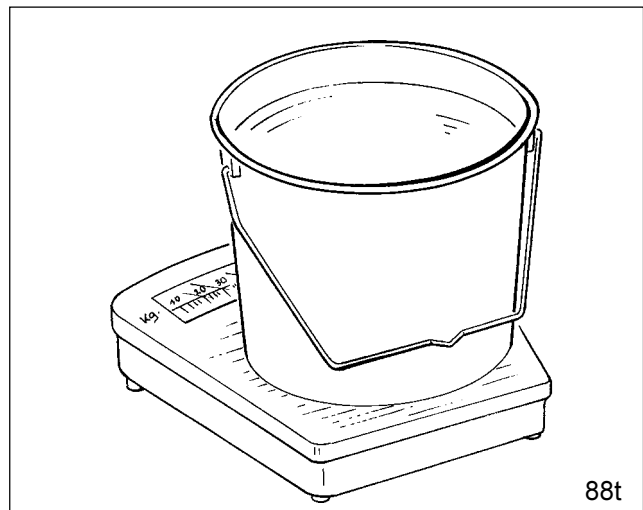


Fig. 16.9

16.2 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. 16.10/1) for all seed rates above 30 kg/ha and an inner white scale (Fig. 16.10/2) for all seed rates of less than 30 kg/ha. On the centre coloured scale (Fig. 16.10/3) 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 moved 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 175 kg/ha (Fig. 16.10/A) and the gearbox setting figure "70" (Fig. 16.10/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. 16.10/C). In our example that is the gearbox setting figure "50" (Fig. 16.10/D).
- Recheck the gearbox setting which you have determined by the disc rule by a calibration test as described under para. 16.1.

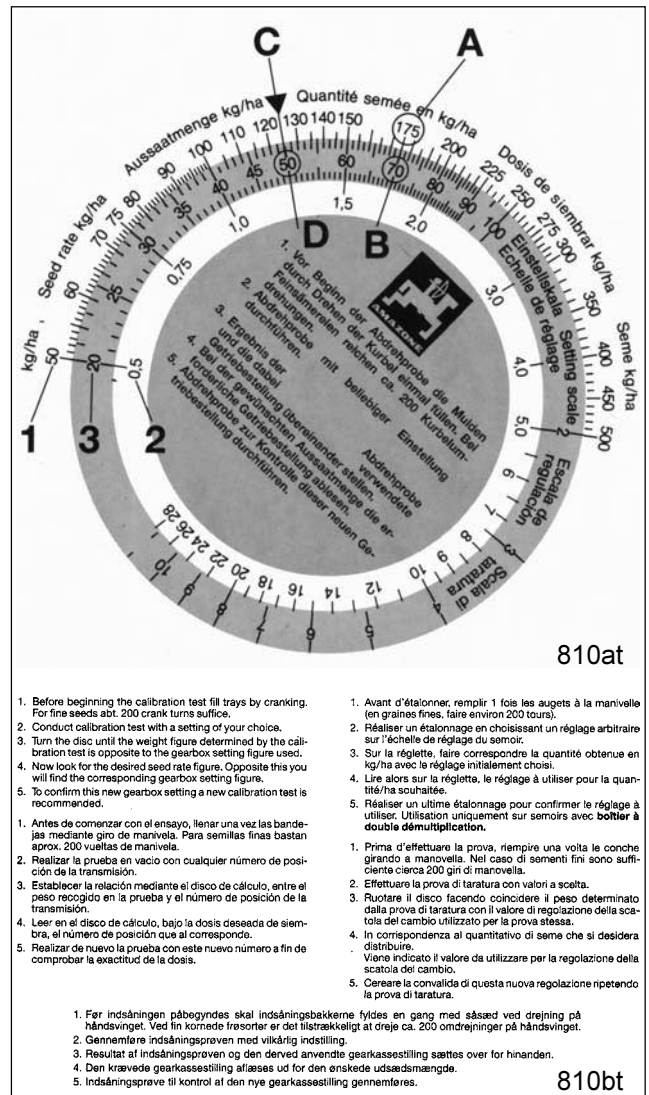


Fig. 16.10



16.3 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 checked and cleaned.

When sowing moist dressed seeds

The seed should "age" at least for one week (better two weeks) after moist dressing and sowing, to avoid deviations between the calibration test and the seed rate.

In case of wheel slip

In case of wheel slip the drive wheel for the metering units turns on very light the number of crank turns for determining the gearbox setting should be newly determined.

For this measure 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 the gearbox setting should be determined according to para. 16.0.

18.0 Setting the working depth of the rotary cultivator

During operation the rotary cultivator (Fig. 18.1/1) is supported by the pre-running rollers (Fig. 18.1/2) and thus maintains accurately the set working depth.

The rotary cultivator KG 3-2 is divided in its centre. To both machine halves is attached each one pre-running cage roller SW620 (Fig. 18.1/2) with 2 carrying arms (Fig. 18.1/3).

Use the pins (Fig. 18.1/4) to lock the carrying arms (Fig. 18.1/3) on the supporting points of the rotary cultivator and secure using linchp pins.

Two depth setting pins are inserted in each quadrant setting block. The depth setting pin (Fig. 18.1/5) underneath the roller carrying arm is used as a stop. With the upper pin (Fig. 18.1/6) the working width of the rotary cultivator is set according to para. 18.2.

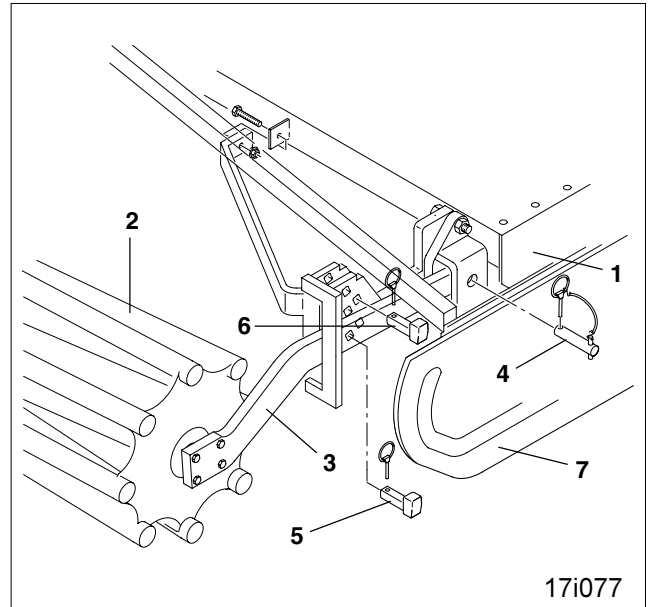


Fig. 18.1

18.1 Setting the working depth of the rotary cultivator

To set the working depth lift the rotary cultivator briefly by the axle hydraulic and insert the depth setting pins (Fig. 18.2/1) into the desired hole of the quadrant setting block (Fig. 18.2/2) above the carrying arms (Fig. 18.2/3) and secure using linch pins (Fig. 18.2/4).



Make settings only when the PTO shaft is disengaged, the engine is switched off and the ignition key has been removed.



When re-inserting, hold the depth-setting pins (Fig. 18.2/1) in such a way that your hand never gets between the pin and the carrying arm.

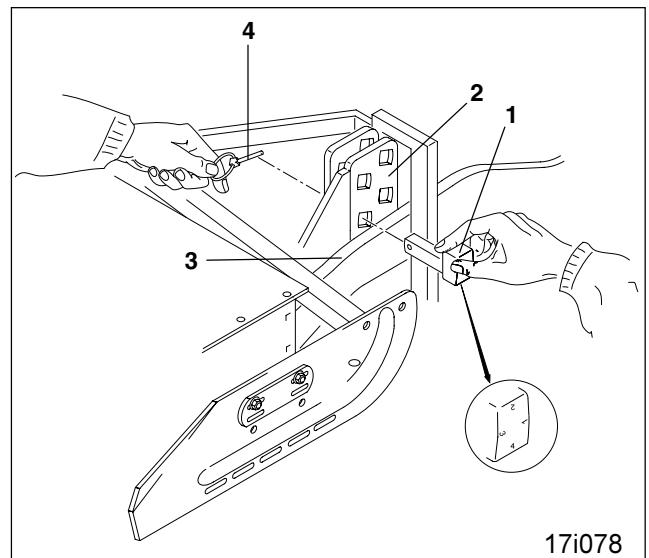


Fig. 18.2

The depth setting pins have an eccentric square head, the sides of which are at different distances to the centre of the pin. These sides are marked with the figures "1 - 2 - 3 - 4" (see Fig. 18.2). Ensure that the depth setting pins (Fig. 18.2/1) rest in the same position (bearing the same figure) on all carrying arms (Fig. 18.2/3).



The higher the depth-setting pins are inserted into the holes of the quadrant setting adjustment blocks and the higher the figures on the sides resting against the carrying arms, the deeper the working depth will be.

The varying spacings of the eccentric square head of the depth setting pin allow a fine tuning for the depth guidance of the soil tillage implement, even in between the individual square holes of the quadrant setting block.



Always secure the depth setting pins using linch pins (Fig. 18.2/4).



If the working depth is adjusted, check whether the side plates (Fig. 18.1/7) of the rotary cultivator have to be adapted to the new working depth.

For this you will find the description in the attached instruction manual for the rotary cultivator.

23.0 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 forward speed and the soil condition. The machine is equipped as standard with a central coulter pressure adjustment which applies an even pressure to all coulters.



Check the seed placement depth always before starting to operate:
Travel with the implement in 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 is actuated with the aid of hydraulic rams (Fig. 23.1).

With the aid of the hydraulic rams the coulter pressure can be adapted to the soil when changing from normal to heavy soil or vice versa.



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Fig. 23.1

23.1 Setting the placement depth of the seed by a hydraulic ram

The coulter pressure and thus the placement depth can centrally be set by a hydraulic ram (Fig. 23.2). During the operation the coulter pressure can be increased in areas with heavier soils.

Connect the hydraulic ram (Fig. 23.3/1) to a single acting tractor spool valve (see para. 6.2) and actuate the spool valve only from the tractor cab.



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 spool valve simultaneously the hydraulic rams of the coulter pressure adjustment and the extra coverage following harrow adjustment are pressurised. Advise people to leave the area of danger. Danger of injury from moving parts.

Two pins (Fig. 23.3/3 and Fig. 23.3/4) function as limiter for the hydraulic ram (Fig. 23.3/1) in the setting segment. When the hydraulic ram is without any pressure the top of it rests on the pin (Fig. 23.3/3) and when the hydraulic ram is pressurised it rests on the pin (Fig. 23.3/4).

Setting the normal coulter pressure

- Pressurise hydraulic ram (Fig. 23.3/1).
- Insert pin (Fig. 23.3/3) into one of the holes of the quadrant plate and secure by a clip pin (Fig. 23.3/2). Each hole in the quadrant plate is identified by a figure. With increasing figure the coulter pressure will become higher.

Increasing the coulter pressure

- Relieve the hydraulic ram (Fig. 23.4/1) from pressure.
- Insert the pin (Fig. 23.4/3) into a hole of the quadrant plate and secure with clip pin (Fig. 23.4/2). Each hole in the quadrant plate is identified by a figure. With increasing figure the coulter pressure will become higher.



Fig. 23.2

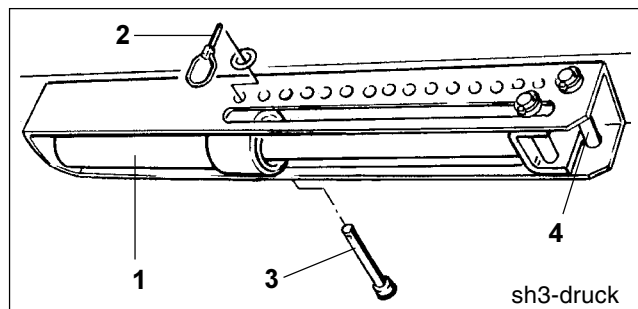


Fig. 23.3

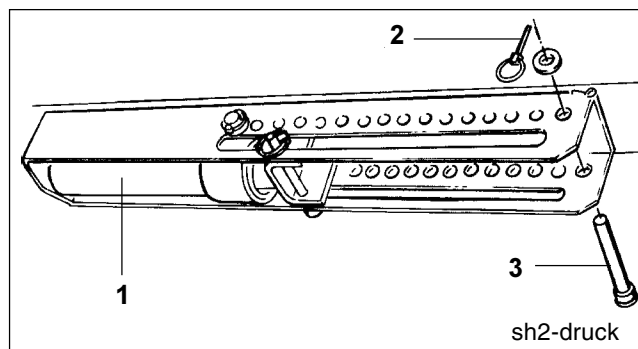


Fig. 23.4

Seed drill with RoTeC-(roll disc) coulters

If your seed drill is equipped with RoTeC (roll disc) coulters with depth limiters (option) and if the desired placement depth cannot be achieved by resetting the pins, all roll disc depth limiters will have to be readjusted according to para. 23.2.1.

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



Always check the placement 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 placement depth of the seed and readjust if necessary.

23.2 Setting the placement depth of the seed by resetting the depth limiting discs (option) of the RoTeC coulters

To ensure the seed depth placement will be maintained throughout the field even in changing soil conditions, the RoTeC coulters can be equipped with depth limiting discs (Fig. 23.5/1).

When having ordered the depth limiters have been fitted by the factory to position 1 (see para. 23.2.1) for a placement depth of approx. 2 cm for medium heavy soils. For slightly increasing the placement depth the coulter pressure may be increased with the aid of the coulter pressure adjustment according to para. 23.1. Before any operation check the proper seating of the depth limiters and the placement depth of the seed.

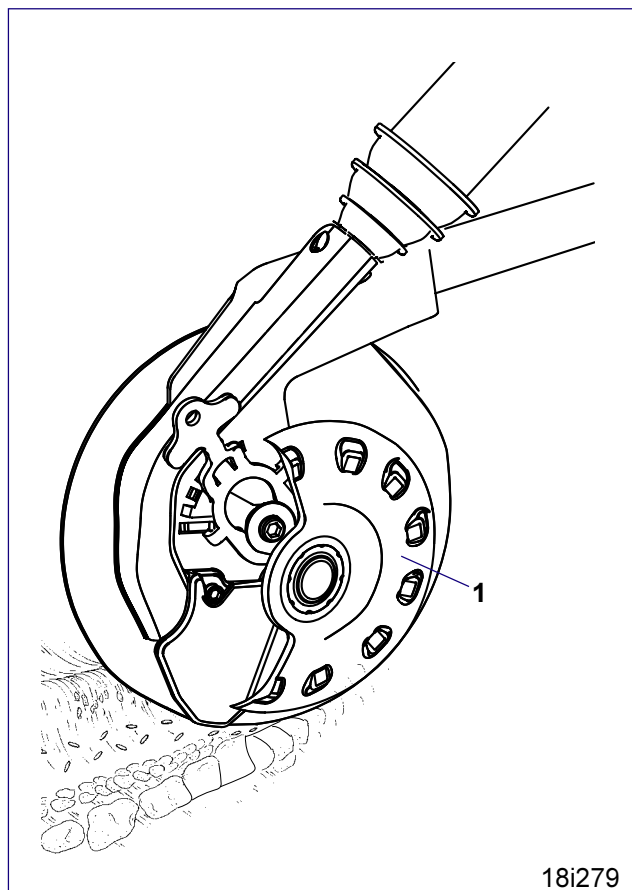


Fig. 23.5

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23.2.1 Fitting and setting RoTec depth limiting discs

First fitting

Take the RoTec depth limiting disc (Fig. 23.6/1) by its grip (Fig. 23.6/2) and press the depth limiting disc (Fig. 23.7/1) from below against the locking (Fig. 23.7/2) of the RoTec coulter. The collar (Fig. 23.6/3) must catch into the detent slit (Fig. 23.7/3). Then pull the grip to the rear. A slight tap on the discs' centre facilitates engagement.

For setting the working depth pull the grip upwards (Fig. 23.8) over the locking pawl (Fig. 23.7/4).



Fig. 23.6

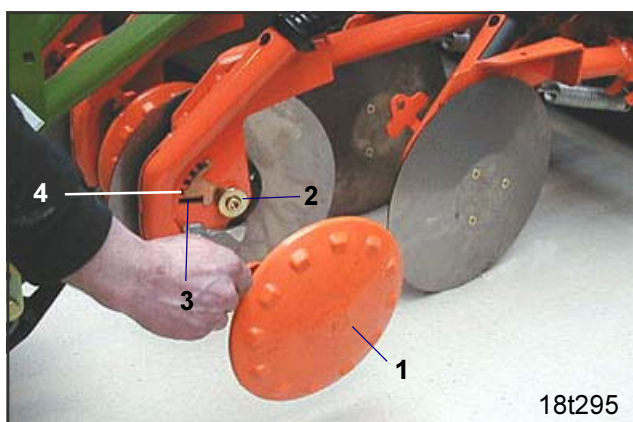


Fig. 23.7



Fig. 23.8

Setting the depth limiters

The RoTeC-depth limiting disc (Fig. 23.9/1) can be set in 4 positions. For medium heavy soils the following placement depths (see Fig. 23.10) result:

| | |
|---------------|-----------------------------|
| Positionen 1: | Placement depth approx. 2cm |
| Positionen 2: | Placement depth approx. 3cm |
| Positionen 3: | Placement depth approx. 4cm |

without depth limiting disc: Placement depth > 4cm

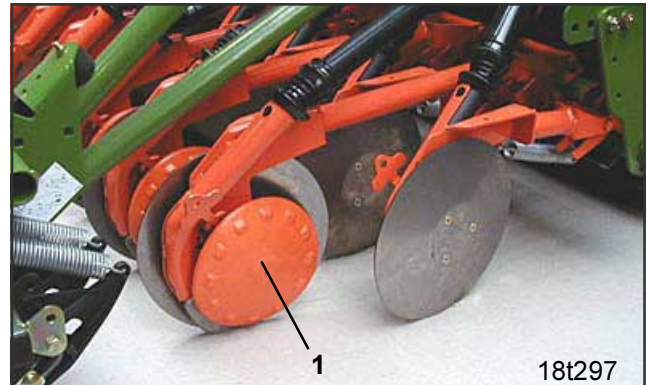


Fig. 23.9



Check the placement depth of the seed after every setting as described in para. 23.0.

Slight changes in the placement depth of the seed may then be set with the aid of the coulter pressure adjustment according to para. 23.1.

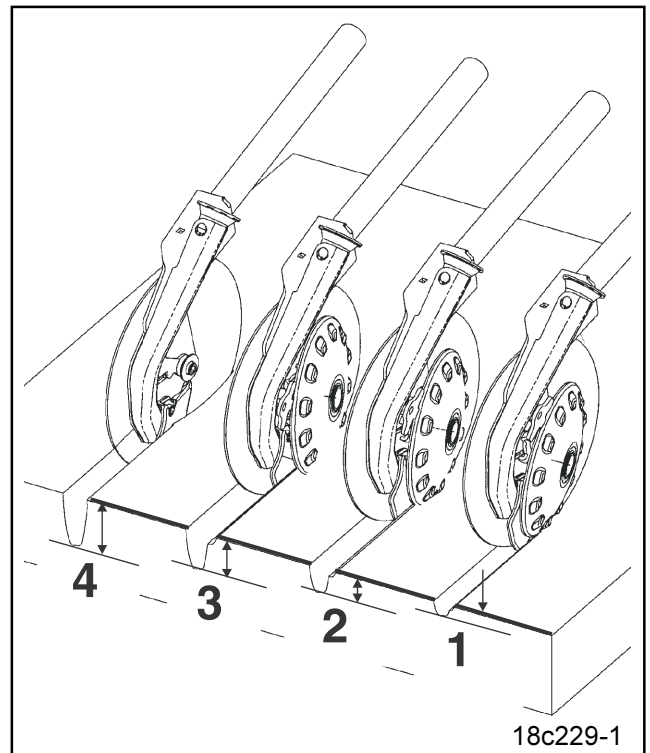


Fig. 23.10



24.0 Track marker

The implement is equipped with two hydraulically actuated track markers (Fig. 24.1) for marking a trace in the soil in line with the tractors' centre. After turning at the headlands the tractor follows the centrally marked trace when travelling the next bout.

The tract is marked during sowing from one marker disc (Fig. 24.1/1).

After turning on the headlands one marker (Fig. 24.2) is lifted up and the opposite marker drops down and begins to operate.

Connect the hydraulic rams (Fig. 24.3/1) of the track marker according to para. 6.2 to a single acting spool valve and actuate this valve only from the tractor cab. When pressurising the track marker shuttle valve the track marker being in operation is raised and in floating position the second marker drops down.

When the spool valve is actuated the markers

- are brought from the transport position (Fig. 24.2) into the operating field position (Fig. 24.1) or vice versa
- are lifted before turning at the field's end
- are lifted to negotiate around obstacles and after passing these obstacles lowered into working position again.



When the control spool valve is actuated, danger of injury from moving parts. Before actuating the tractor's control spool valve advise people to leave the danger area. Standing within the operational range of the track marker arms is prohibited.

Lift both marker arms

- before turning at the headlands
- at obstacles in the field
- before transport.

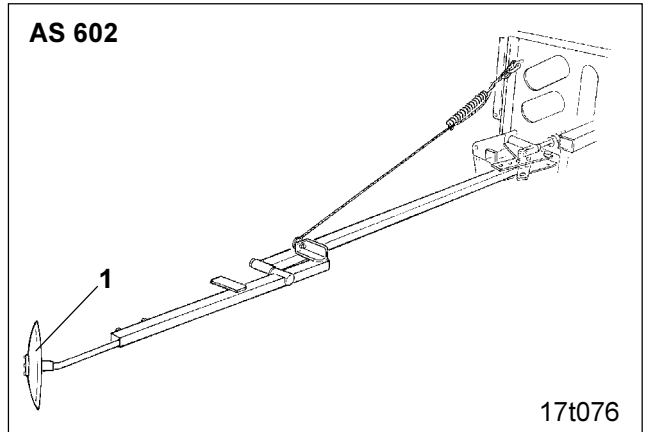


Fig. 24.1

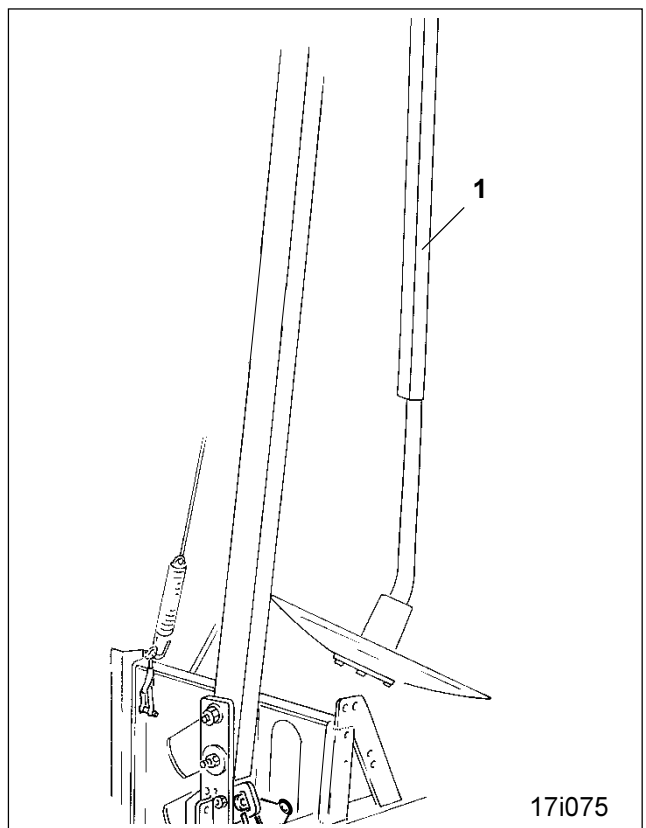


Fig. 24.2

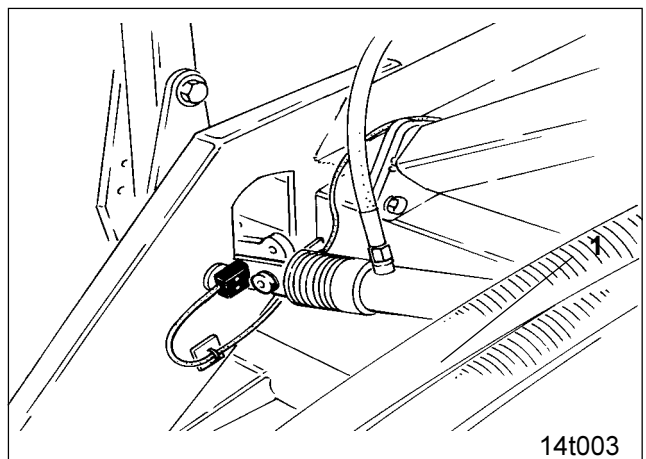


Fig. 24.3

24.1 Fitting advice

6,0 m working width:

The piston (Fig. 24.4/1) of the hydraulic ram must be fixed on the bracket (Fig. 24.4/2) in the short slotted hole (Fig. 24.4/3). If necessary, re-bolt the bracket (Fig. 24.4/2).

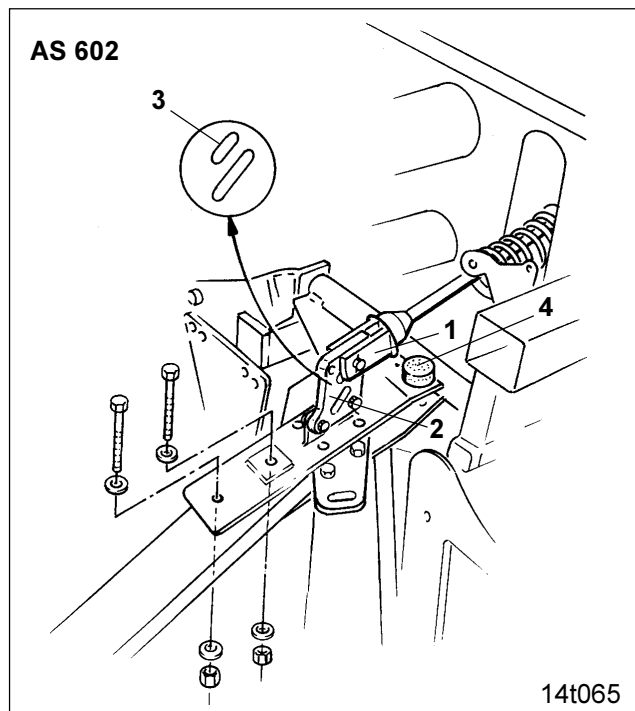


Fig. 24.4

Fix marker pendulum rube (Fig. 24.5/1) on the marker arm and secure by using a washer 36 x 50 x 2 (Fig. 24.5/2) and an expansion pin 10 x 50 DIN 1481 (Fig. 24.5/3).

Fix wire cable (Fig. 24.5/4) by tensioning spring.

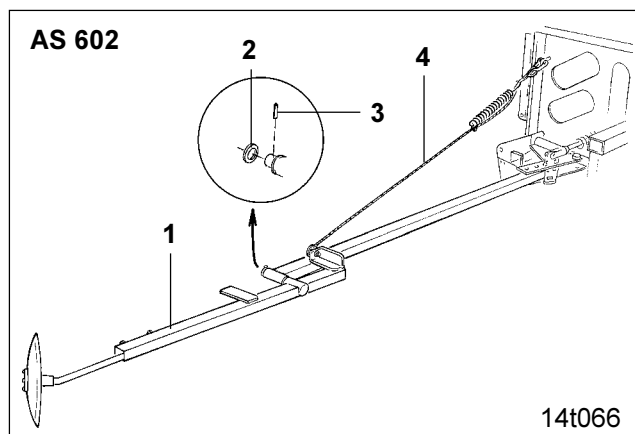


Fig. 24.5

Clamp track marker discs by two hex. bolts (Fig. 24.6/1).

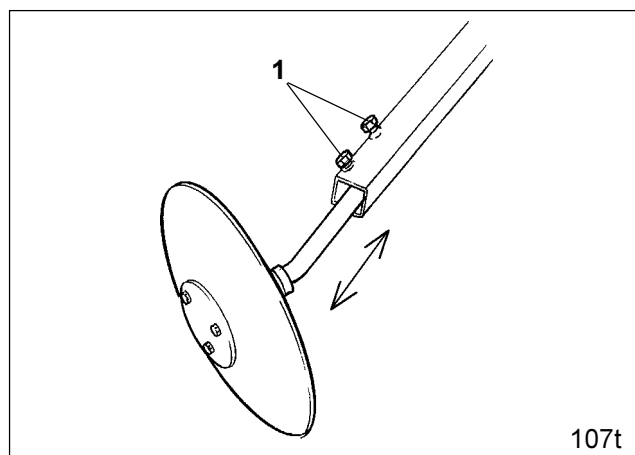


Fig. 24.6

24.2 Bring markers into operating/transport position

For transport, each marker arm (Fig. 24.7/1) is fixed with a clip pin (Fig. 24.7/2).

6,0m working width:

Prior to operation in the field

- Hold marker arm (Fig. 24.7/1) and remove the clip pin (Fig. 24.7/2) (required for transport)
- If not needed insert clip pin (Fig. 24.7/2) into the bracket (Fig. 24.7/3).



After removal of the clip pin (Fig. 24.7/2) the marker arm slightly moves out to the side.



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

When the tractor control spool valve is pressurised both markers are held closely to the machine:

1. for transport
2. before turning on the headlands
3. when passing obstacles in the field.

When the tractor control spool valve is brought into the "float" position, one of the markers will be lowering:

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

Before transport, the marker arms must be fixed to the machine in reverse order and secured with the clip pins (Fig. 24.7/2).

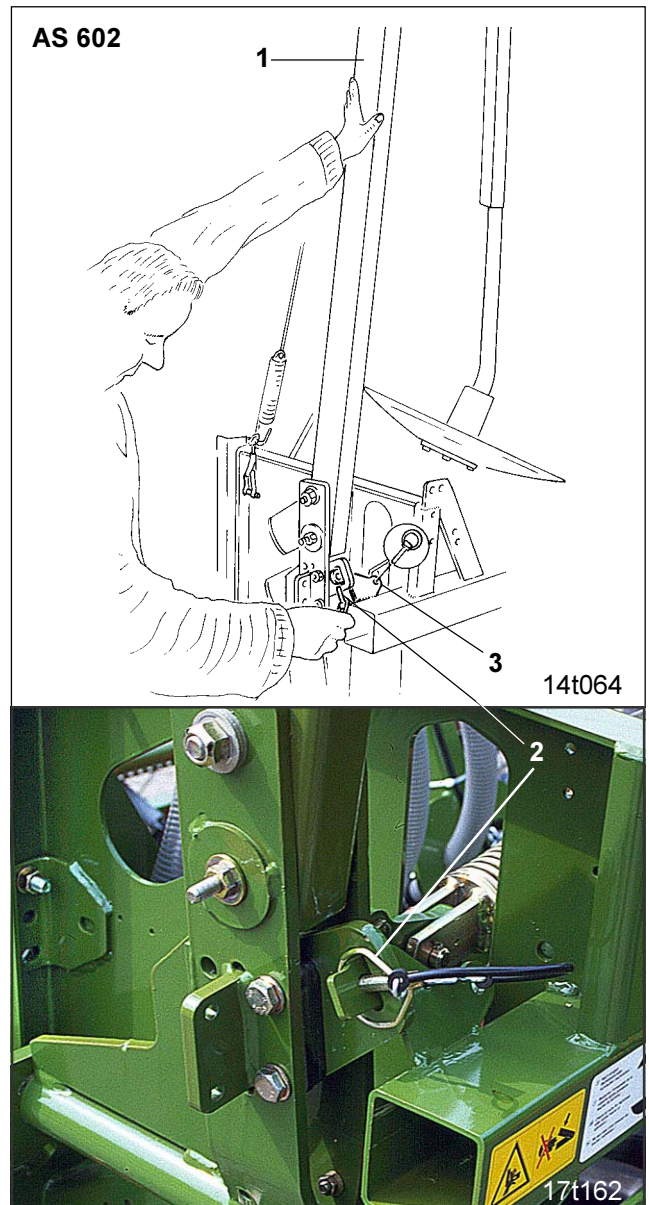


Fig. 24.7



For transport each marker arm must be folded upwards and secured with the lip pin (Fig. 24.7/2).



The rubber buffer blocks (Fig. 24.4/4) must never be removed and in case of wear must be replaced.

The rubber buffer blocks prevent the operator from forgetting to lock the markers into the transport position.

24.3 Setting the markers to the correct length

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

Please find the spacing "A" (Fig. 24.8), track marker disc to the machine's centre in the following table:

| Working width | Spacing A |
|---------------|-----------|
| 2,50 m | 250,0 cm |
| 3,0 m | 300,0 cm |
| 4,0 m | 400,0 cm |
| 4,50 m | 450,0 cm |
| 6,0 m | 600,0 cm |

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Prior to adjusting the marker discs (Fig. 24.9) slacken the two hex. bolts (Fig. 24.9/1). The discs can then be moved in the marker arms. Retighten the bolts firmly after adjustment.



Right from the beginning set the marker discs (Fig. 24.9) in such a way that on light soils they are about parallel with the direction of operation and on heavy soils they are angled more aggressively "on grip".

6m working width:

Fix the wire cable (Fig. 24.10/1) on the track marker arm in such a way that the marker disc is limited to a working depth of 60 to 80 mm.

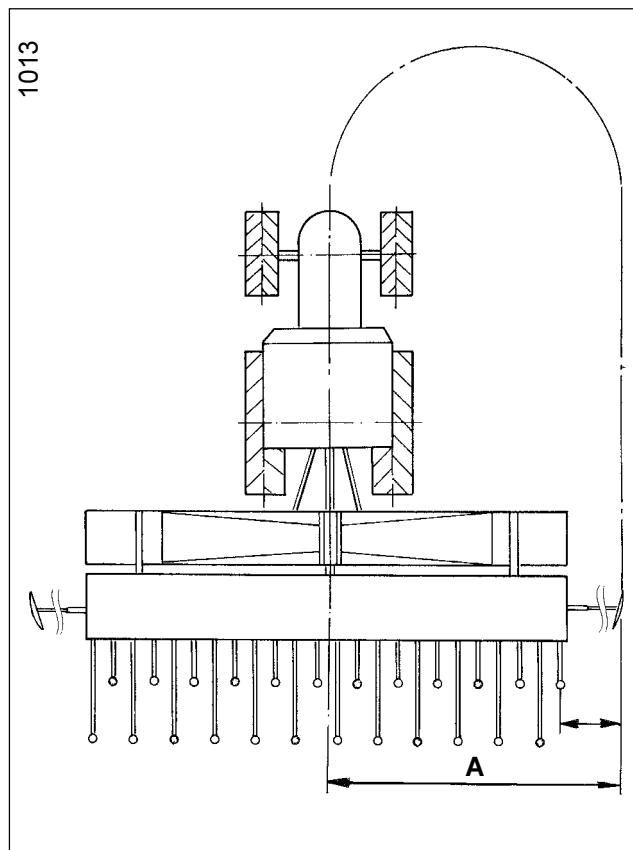


Fig. 24.8

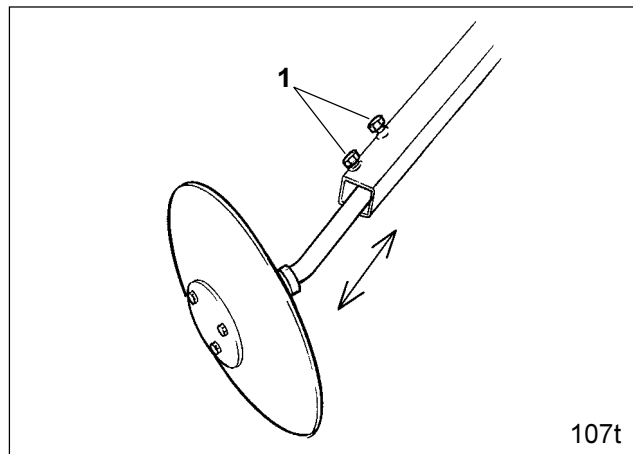


Fig. 24.9

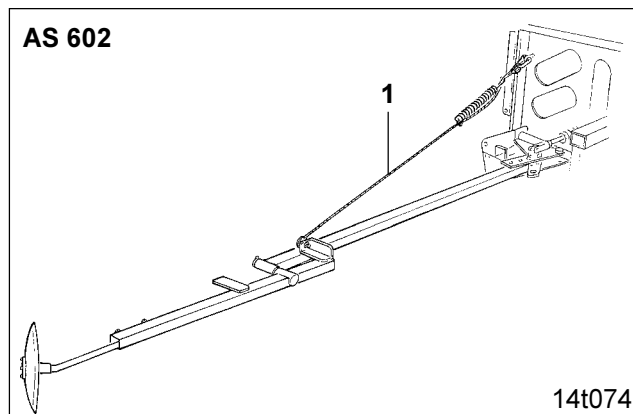
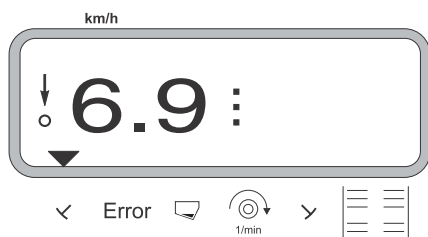


Fig. 24.10

24.4 During operation

Two sensors (Fig. 24.11/1) monitor the movements of the track markers. The display of AMADOS shows the actually operating marker by the black triangle:



The AMADOS computer receives the impulse for shifting on the tramlining control (see para. tramline control) by the sensors (Fig. 24.11/1).

24.4.1 Shear off safety

To avoid damage, the markers should be raised before hitting an obstacle in the field.

If the 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. 24.12/1) will shear off.

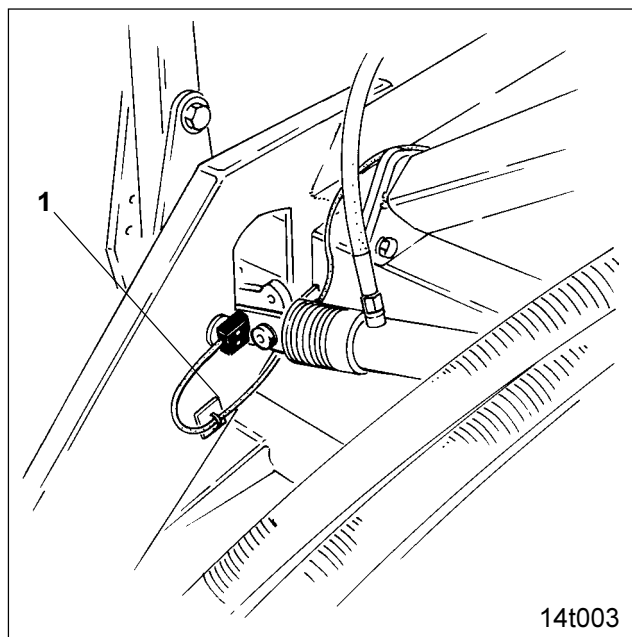


Fig. 24.11

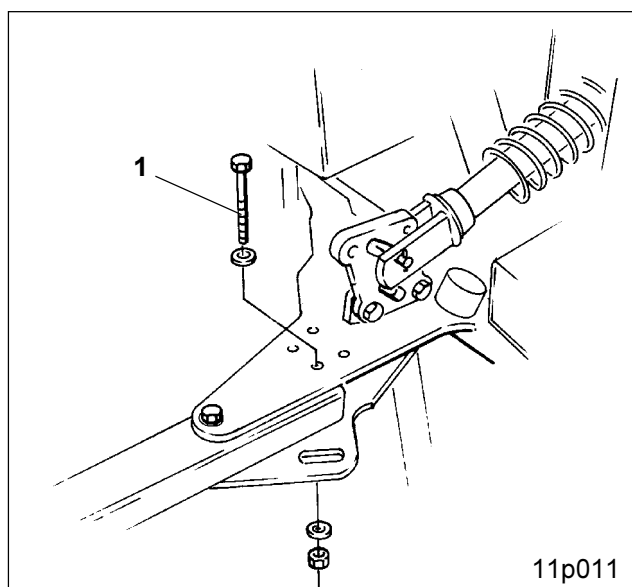


Fig. 24.12

25.0 Extra coverage following harrow

The extra coverage following harrow (Fig. 25.1) evenly covers the seed with soil.

25.1 Mounting the extra coverage following harrow onto the seed rail

Bolt the pockets (Fig. 25.3/1) to the side parts of the seed rail.

- Bolt on swing-metal buffer (Fig. 25.3/7).
- Locate fixing tubes (Fig. 25.3/2) with pins (Fig. 25.3/3) on the fixing brackets (Fig. 25.3/4) of the extra coverage following harrow and secure by using clip pins (Fig. 25.3/5).
- Locate fixing tubes (Fig. 25.3/2) with pins (Fig. 25.3/6) on the pockets (Fig. 25.3/1) and secure with clip pins (Fig. 25.3/8).

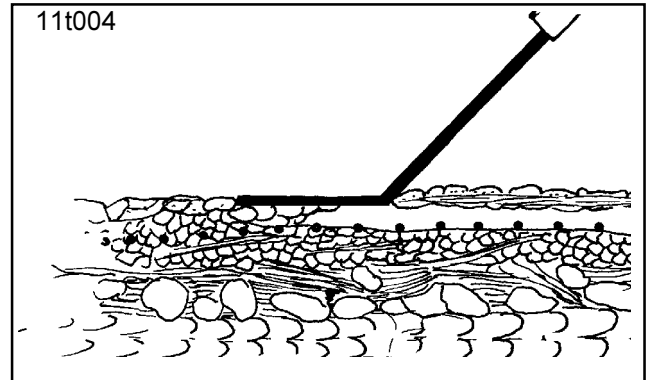


Fig. 25.1

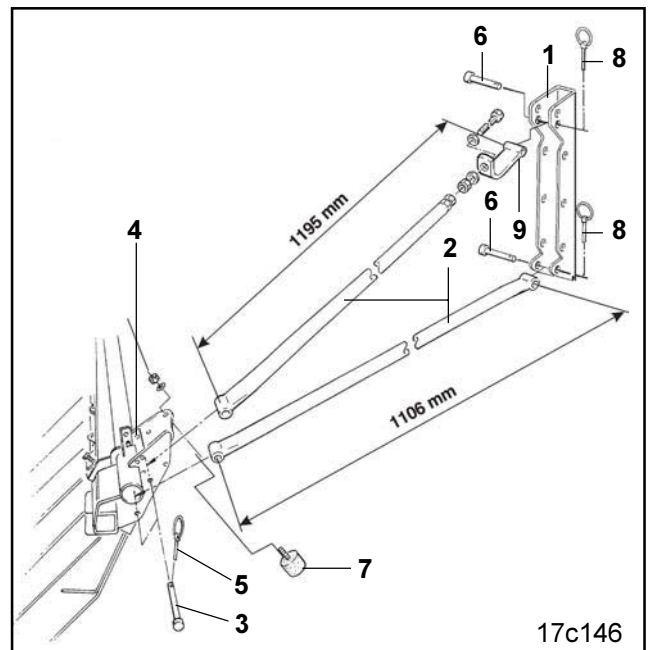


Fig. 25.3

25.1.1 Connecting hydraulic ram (special option)

The hydraulic ram (Fig. 25.4/1) is fitted to the extra coverage following harrow when supplied. Connect the hydraulic hose (Fig. 25.4/2) with the hydraulic ram (Fig. 25.4/1).



Allow the hydraulic hose (Fig. 25.4/2) to sufficiently large loop in it 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. 25.4/1) to a single acting tractor control spool valve and actuate the control spool valve only from inside the tractor 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 following harrow tines is increased.



When actuating the tractor control spool valves in the tractor cab, simultaneously the hydraulic rams of the coulter pressure adjustment and of the extra coverage following harrow are pressurised. Advise people to leave the area of danger. Danger of injury from moving parts.

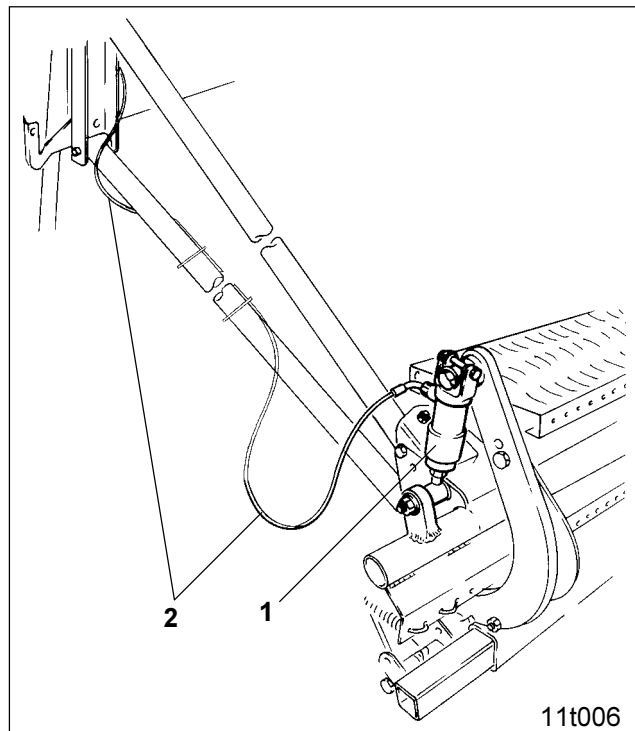


Fig. 25.4

25.2 Bring outer following harrow tines into operating position

During operation the packer roller and the coulters throw the soil in varying different distances to the side, depending on the forward speed and the soil conditions.

The outer following harrow tines (Fig. 25.5/1) should be set in such a way that the soil is guided back again for achieving a mark-free seed bed.

The higher the forward speed the more the square tube (Fig. 25.5/2) 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. 25.5/3).



Check the settings 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.

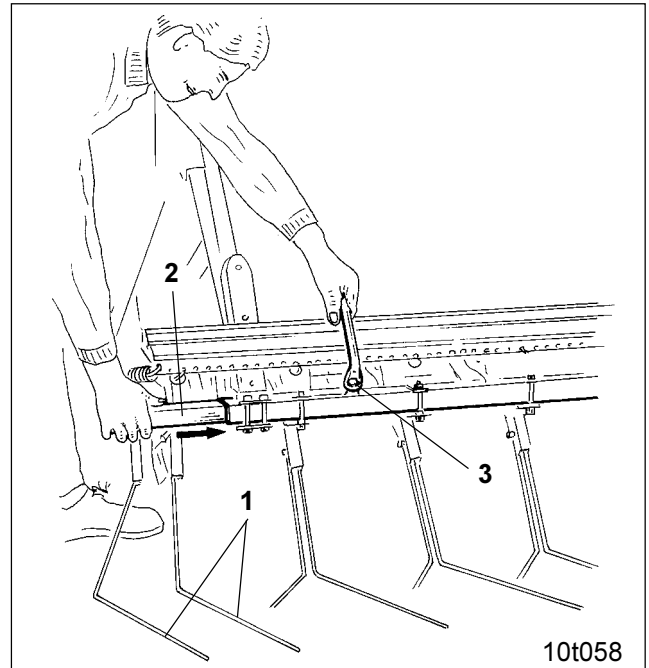


Fig. 25.5

25.3 Position of harrow tines

The spring tines (Fig. 25.6) 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 upper link (Fig. 25.7/1) with which the seed rail is fixed.

If the space for adjusting the upper link (Fig. 25.7/1) is not sufficient, the length of the upper fixing tubes on the brackets (Fig. 25.3/9) can be readjusted.

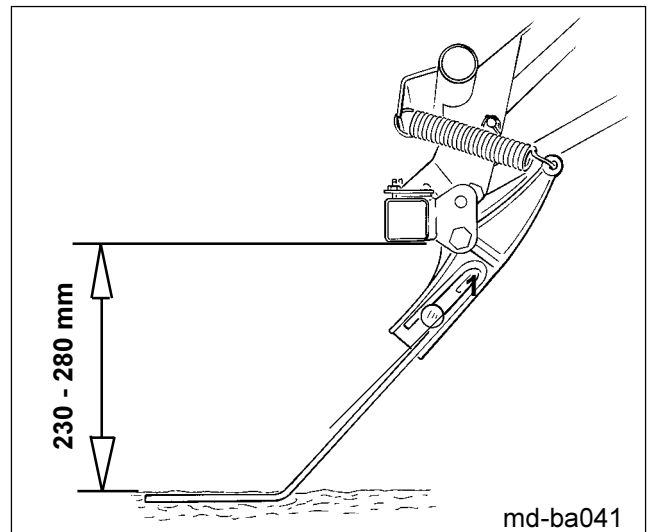


Fig. 25.6

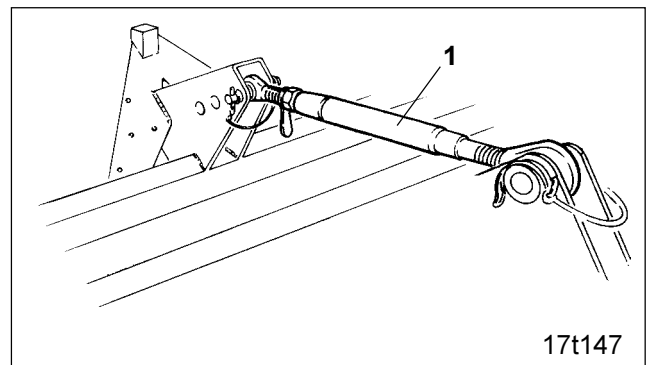


Fig. 25.7

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

The pressure by which the spring tines (Fig. 25.8/1) 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. 25.8/2) upwards. Insert the pin (Fig. 25.8/3) into a hole below the stop lever (Fig. 25.8/2) and secure by a clip pin (Fig. 25.8/4). 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. 25.8/2) is actuated with the coulter pressure adjustment crank (Fig. 25.8/5).

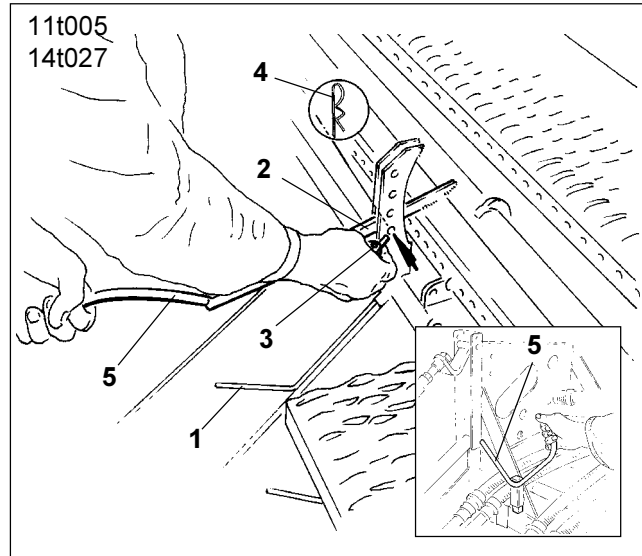


Fig. 25.8



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.

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

The pressure by which the spring tines (Fig. 25.8/1) 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. In fields that have many varying soil types, the harrow pressure can be increased on heavier soil with the aid of the hydraulic extra coverage following harrow pressure adjustment

When changing from normal soils to heavy soils or vice versa, the coulter pressure is readjusted by a hydraulic ram (Fig. 25.9/1).

Two pins (Fig. 25.10/1 and Fig. 25.10/2) are placed as a stop for the lever (Fig. 25.10/3) in the setting segment. The lever (Fig. 25.10/3) which is actuated by the hydraulic ram (Fig. 25.9/1) rests on the pin I (Fig. 25.10/1) when the hydraulic ram is without pressure and it rests on pin II (Fig. 25.10/2) when the hydraulic ram has been pressurised.

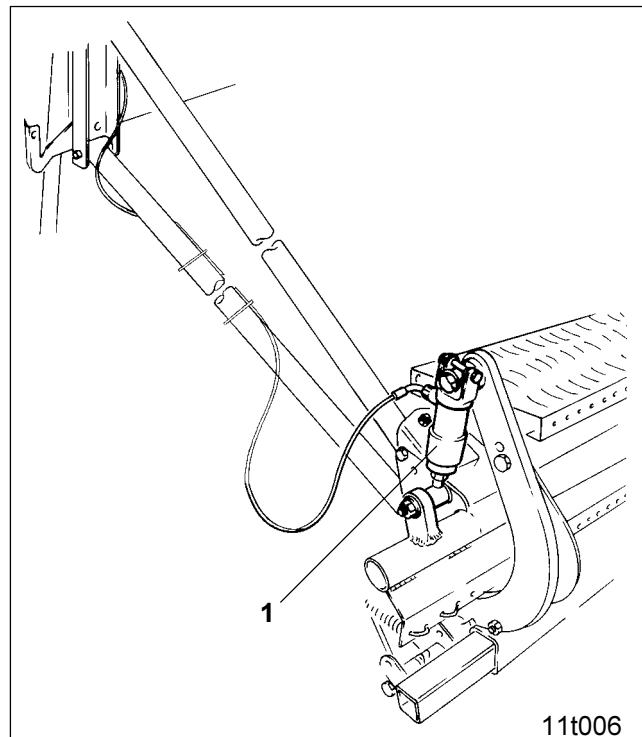


Fig. 25.9

For setting an increased harrow pressure

- Relieve the hydraulic ram (Fig. 25.9/1) from pressure.
- insert pin II (Fig. 25.10/2) into a hole in the setting segment above the lever (Fig. 25.10/3) and secure by a clip pin (Fig. 25.10/4).

For setting the normal harrow pressure

- Pressurise hydraulic ram (Fig. 25.9/1).
- Insert pin I (Fig. 25.10/1) into a hole in the setting segment below the lever (Fig. 25.10/3) and secure by a clip pin (Fig. 25.10/4).



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.

25.6 Road transport

For transport on public roads, the carrying tubes (Fig. 25.11/1) with the outer harrow elements (Fig. 25.11/2) should be inserted till the stop into the larger carrier tube. Prior to this slacken clamping bolt (Fig. 25.11/3) and retighten firmly.

In the field the outer harrow elements (Fig. 25.11/2) should be brought back into operating position according to para 25.2..



Insert carrier tubes (Fig. 25.11/1) with the outer harrow elements all the way to the stop into the larger harrow carrier tube and secure with clamping bolts before transporting on public roads.

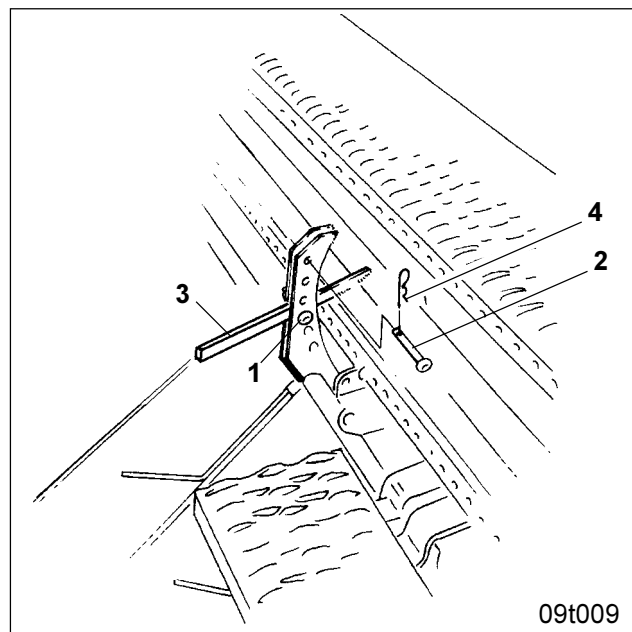


Fig. 25.10

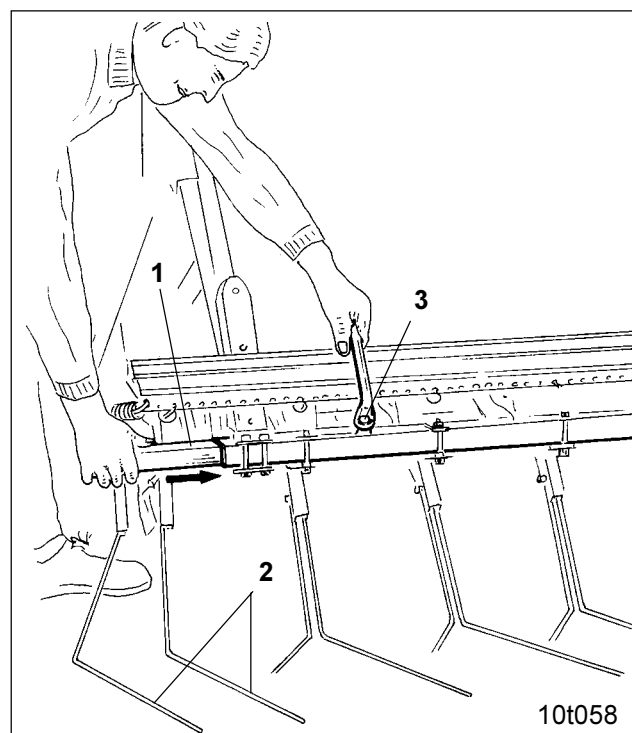


Fig. 25.11



26.0 Creating tramlines with the AMADOS-tramline control

With the aid of the tramlining control tramlines are created in the field so that other implements, e.g. fertiliser broadcasters or field sprayers, may travel accurately.

Tramlines are marks (Fig. 26.1/1), in which no seed is sown.

The spacing between the tracks corresponds to the track width between the wheels of the husbandry tractor and can be adjusted

The spacing between sets of tramlines corresponds to the working widths of later used machinery (Fig. 26.1/2), as e.g.

- Fertiliser spreaders and/or
- field sprayer.

The rhythm for creating tramlines is governed by the AMADOS-computer.

The desired tramline distance may only be created on seed drills with particular working widths. A choice of these tramline distances is shown in table (Fig. 26.2).

The required rhythm (see Fig. 26.2) results from the desired tramline distance and the working width of the seed drill.

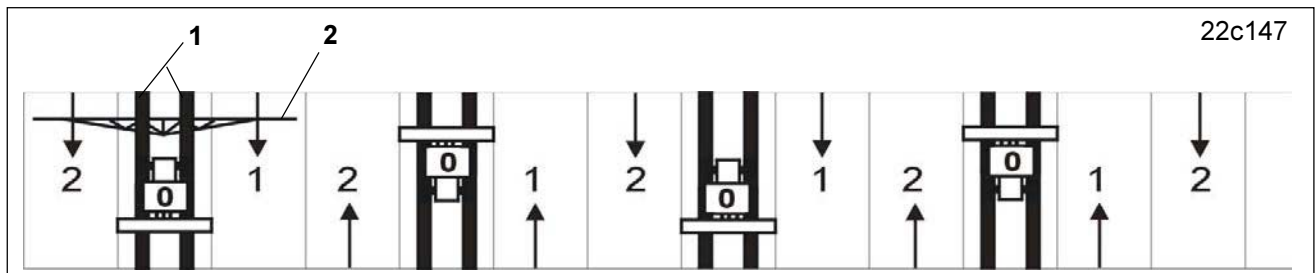


Fig. 26.1

| Switching rhythm | Working width of the machine | | | | |
|-------------------|------------------------------|-------|-------|-------|--------------|
| | 2,5 m | 3,0 m | 4,0 m | 4,5 m | 6,0 m |
| | Tramline spacings | | | | |
| 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 right hand | | | 18 m | | |
| 5 / 13 left hand | | | | | |

Fig. 26.2

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26.1 Way of function

On delivery of your seed drill the tramline metering wheels are set to the wheel mark of your husbandry tractor (as ordered by you).

When creating tramlines the seed supply to the tramline coulters is interrupted. With the aid of shutters (Fig. 26.3/3) an electric motor (Fig. 26.3/1) shuts off the outlets of the tramline coulters inside the distributor head.

With the aid of the sensor (Fig. 26.3/2) AMADOS monitors the shutter position and sends an alarm in case of a wrong position.

When the AMADOS display shows the figure "0" (Fig. 26.4) the seed drill is creating tramlines.

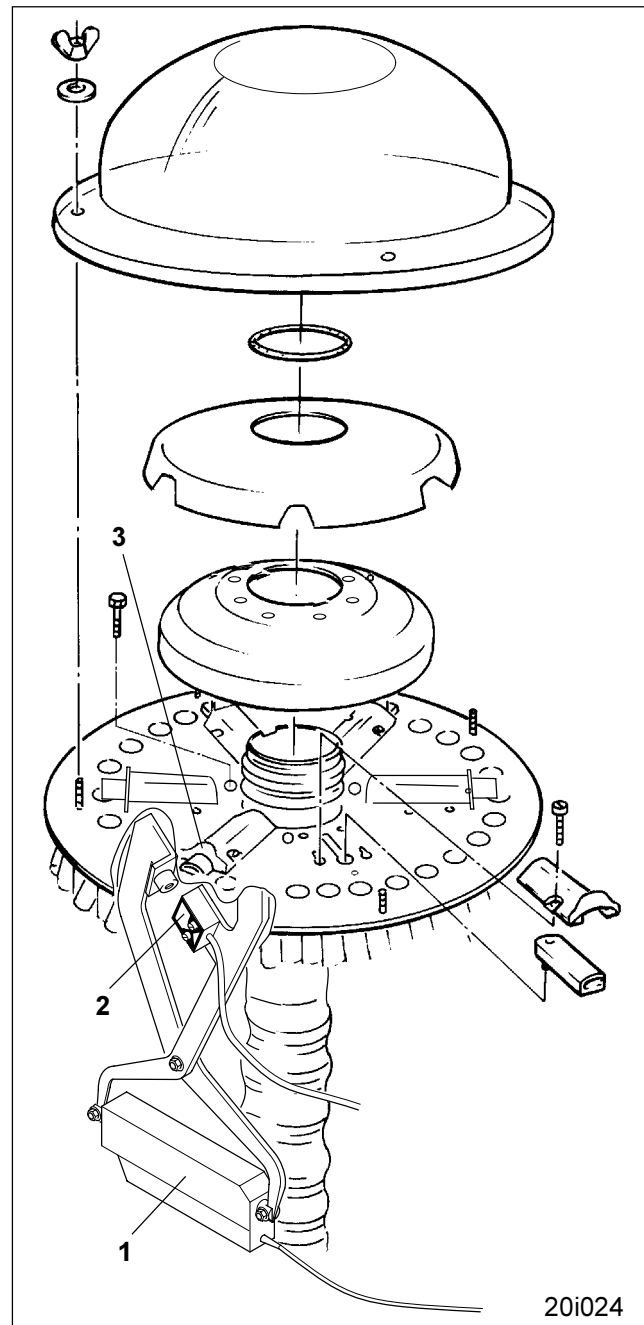


Fig. 26.3

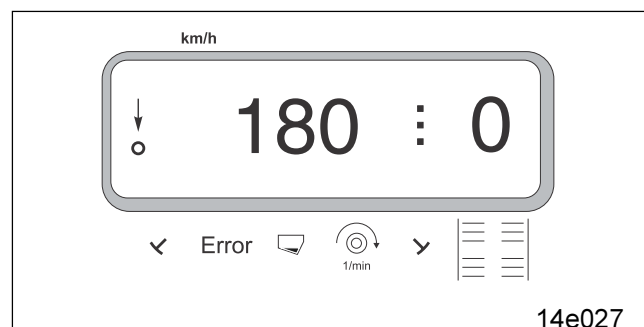


Fig. 26.4

For shifting on the tramline counter AMADOS receives the necessary information

- on implements with track markers from the sensors (Fig. 26.5/1) when changing the track marker
- on implements without track markers as soon as the distance sensor (Fig. 26.6/1) does not send any impulses, e.g. when raising the implement at the headlands or at a standstill in the field.



The shutter control in the distributor head is coupled with the hydraulically actuated pre emergence marker (if existent).

Actuate the control spool valves only from the tractor cab.

When actuating the control spool valves, simultaneously several hydraulic rams or electric motors may start to function.!

Advise people to leave the danger area. Danger of injury from moving parts.

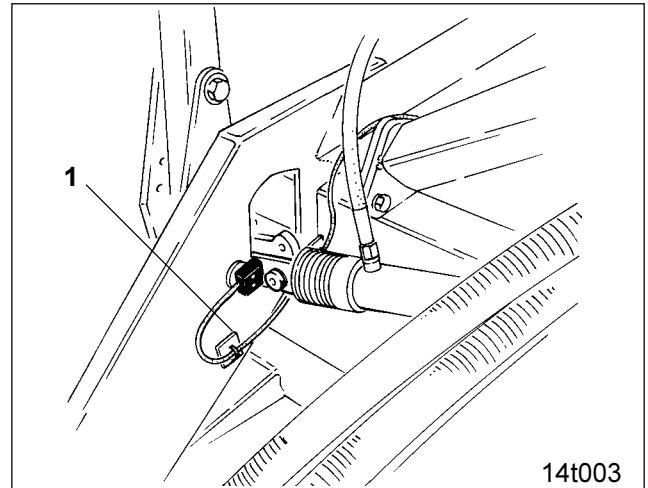


Fig. 26.5

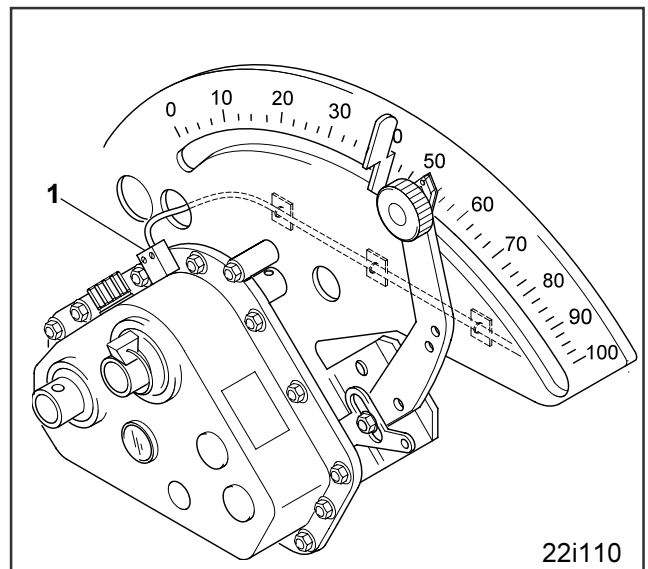


Fig. 26.6

26.2 Entering the switching rhythm and start figure prior to the begin of operation

The procedure of some switching rhythms is shown in Fig. 26.7.

Hints for Fig. 26.7:

A = Working width of the seed drill

B = Tramline spacing (= Working width of the fertiliser spreader or the field sprayer)

C = Switching position

D = Number of field travel, shown in the AMADOS tramline counter.

Please enter the desired switching rhythm in the AMADOS computer as described in the AMADOS instruction manual. Additional switching rhythms not shown in this instruction manual may be found in the instruction manual AMADOS.

During operation the field travels are counted. Prior to operation the number of the first travel in the field should be entered into the tramline counter of the AMADOS computer. Please determine the number of the first travel in the field according to Fig. 26.7 as follows:

Move to column "C" to the selected switching rhythm and find the figure for the first field travel in column "D" under "START".



Before setting the tramline counter for the first operation ensure that the correct track marker is lowered when starting to operate. If necessary actuate the track marker control once more before setting the tramline counter.

Prior to operation ensure that AMADOS displays in the tramline counter the correct figure for the first operation.

26.3 Interrupting the sowing operation or folding in the markers during the sowing operation (Stop-Key)

In case if becomes necessary

- to raise the track markers, e.g. when giving way to obstacles
- or
- at seed drills without track marker to interrupt the sowing operation, e.g. by stopping in the middle of the field

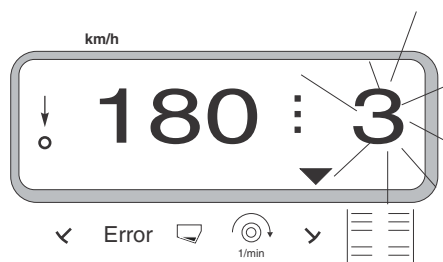
beforehand press

key



to avoid an unintended advancing the tramline counter.

After pressing the stop key the tramline counter (e.g. "3") on the AMADOS display flicks.



Immediately after continuing the sowing operation press

key



The tramline counter does not flick any longer in the operation display.

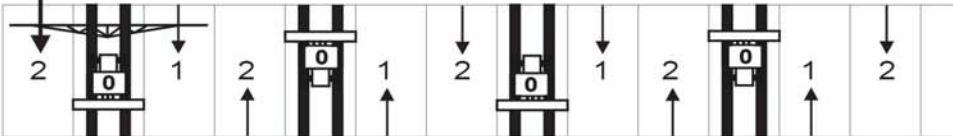
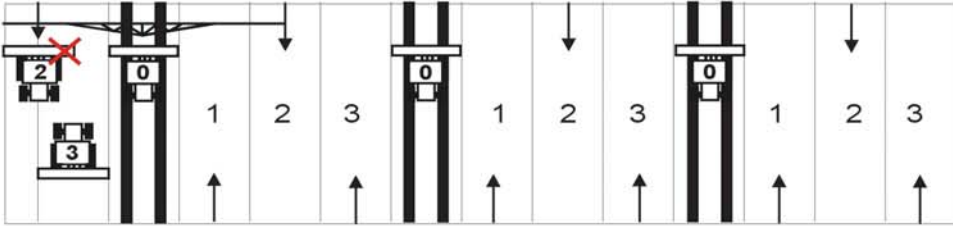
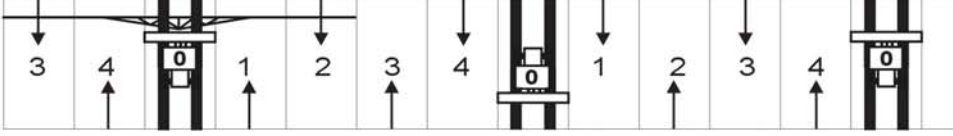
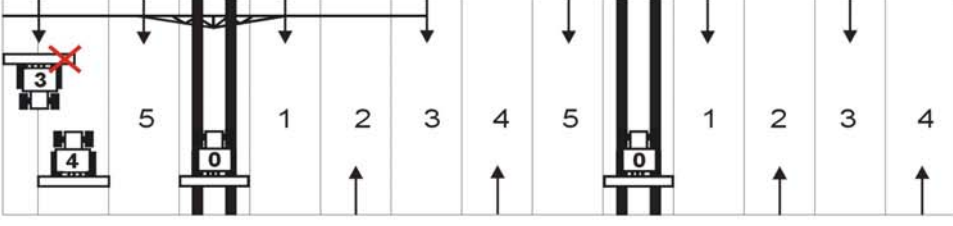
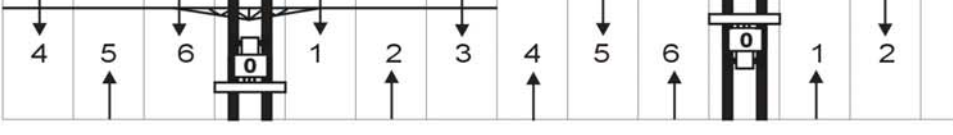
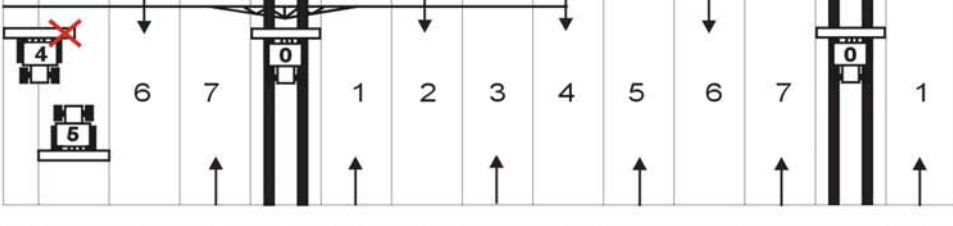
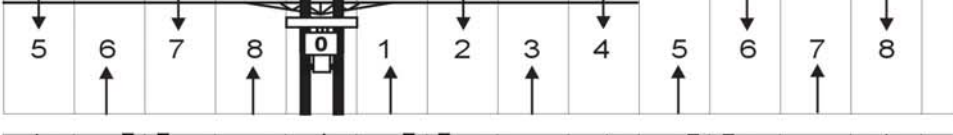
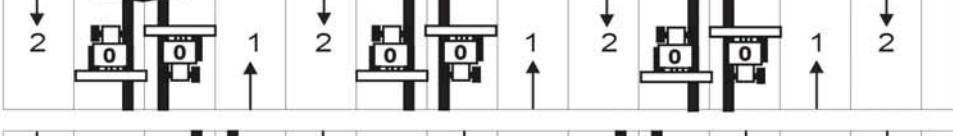
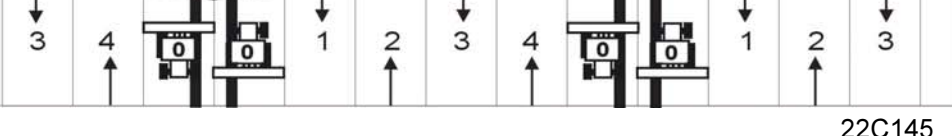
| A | B | C | D |
|---|--------------------------------------|--------|--|
| | | | START DÉPART |
| 3,0 m 4,0 m 6,0 m | 9 m 12 m 18 m | 3 |  |
| 2,5 m 3,0 m 4,0 m 4,5 m 6,0 m | 10 m 12 m 16 m 18 m 24 m | 4 |  |
| 3,0 m 4,0 m 6,0 m | 15 m 20 m 30 m | 5 |  |
| 2,5 m 3,0 m 4,0 m 4,5 m | 15 m 18 m 24 m 27 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 |  |
| 3,0 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. 26.7

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

Fig. 26.7 shows among others examples for creating tramlines with 4-, 6- and 8-fold switching. In our example the seed drill operates during the first run in the field with half its working width. The second possibility is to start operation at the entire working width and by creating a tramline (see Fig. 26.9). In this case the fertiliser broadcaster should spread to one side with boundary spreading devices during the first run in the field. On field sprayers one sprayer boom is switched off during the first run in the field.

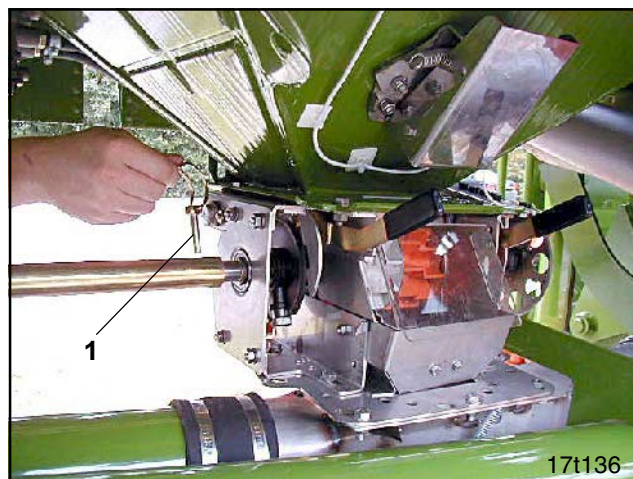


Fig. 26.8



Please do not forget after the seed drill's first run in the field to reset the fertiliser broadcaster or field sprayer to their full working width.

26.4.1 Operating with half the working width

Only for machines up to 4.5 m working width:

For operating a seed drill up to 4.5 m working width, the insert for half-sided shut off the outlets in the distributor head should be used (see para. 26.4.2). The operation has always to start on the right hand side of the field.

Only for machines from 6 m working width:

On 6 m combinations the metering drive of the left hand

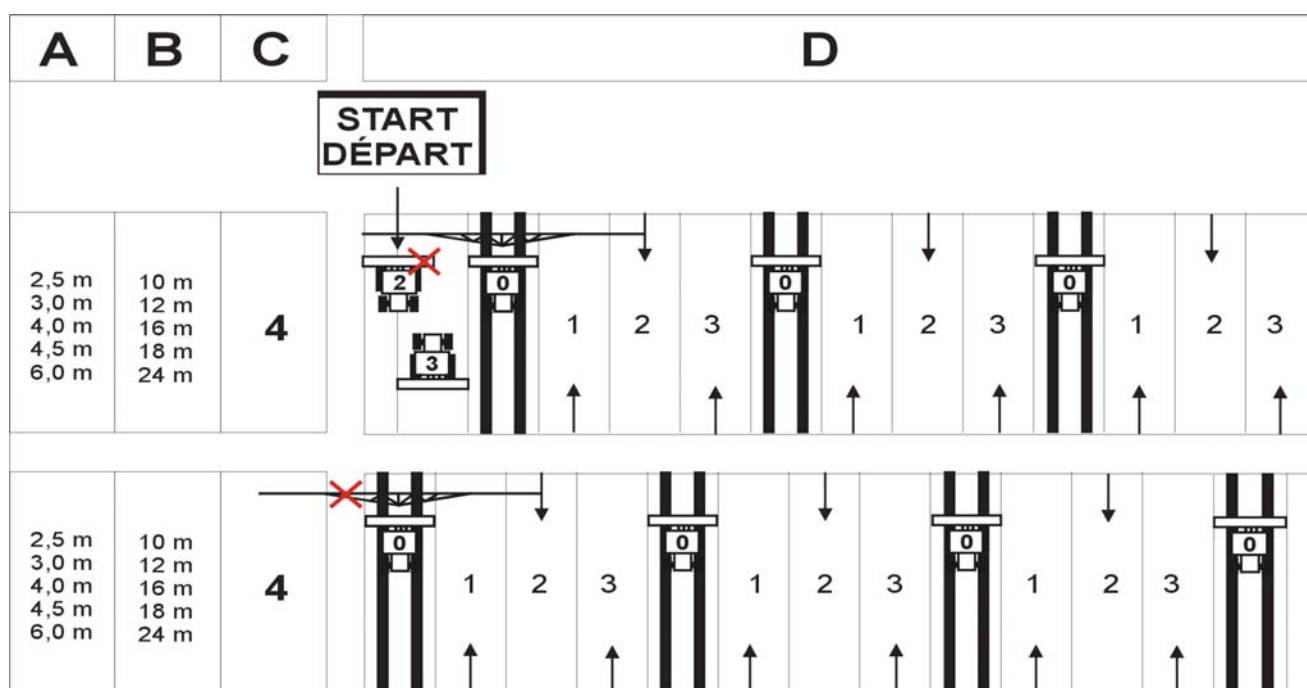


Fig. 26.9

implement side can be disengaged by pulling the clip pin (Fig. 26.8/1) out of the connecting tube of both metering units. The operation has always to start on the right hand side of the field.

26.4.2 Insert for half-side shutting off the outlets inside the distributor head

With the insert (Fig. 26.10/1) for the half-side shutting of the outlets in the distributor head the seed flow is guided to half of the outlets (Fig. 26.10/3) and thus to half of the coulters. This way, at random, the seed delivery to the coulters can be interrupted on the right or left hand implement side and you can sow with the other implement half.



In order to avoid that the open outlets are provided with the double amount of seed, reduce the seed rate on the gearbox by its half.

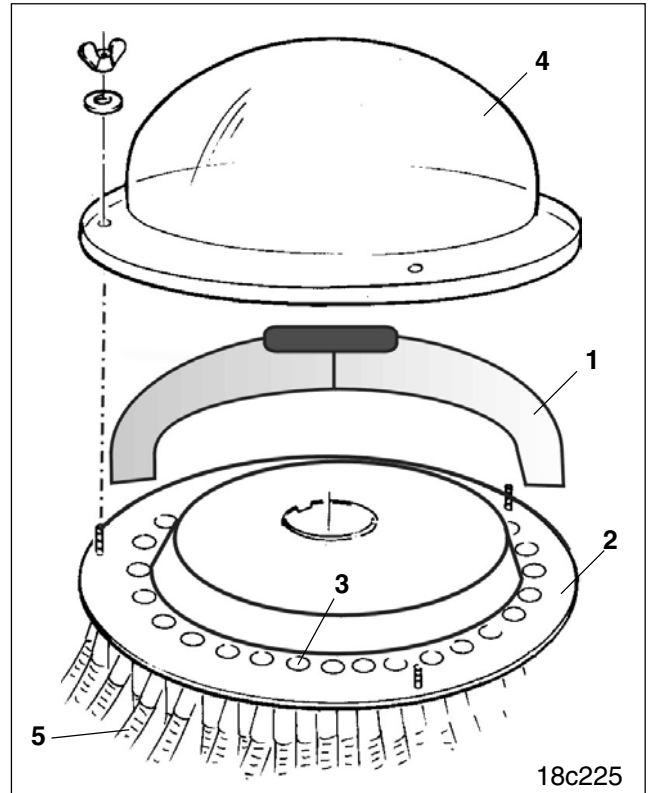


Fig. 26.10

Fitting and handling the insert

- Remove distributor hood (Fig. 26.10/4).
 - set the insert (Fig. 26.10/1 or Fig. 26.11/1) on to the distributor plate (Fig. 26.10/2 or Fig. 26.11/2) that the desired outlets will be shut off by the insert.
- In top view (see Fig. 26.11)
- shut off, not hatched outlets (Fig. 26.11/3) are on the side behind the corrugated tube (Fig. 26.11/4)
 - open, hatched outlets (Fig. 26.11/5) are on the side in front of the corrugated tube (Fig. 26.11/4).
- In any case check the routing of the seed guide tubes (Fig. 26.10/5) to ensure that the insert shuts off the seed flow to the correct coulters.
 - Mark the position of the insert with a suited pencil on the distributor plate (Fig. 26.11/2) so that you may quickly find the correct position of the insert on the distributor plate later on.
 - Fix the distributor hood (Fig. 26.10/4) on the distributor head. When fixing the distributor hood the insert (Fig. 26.10/1) is clamped.
 - Take the disc rule and determine the gearbox setting for half the seed rate. If your seed drill is equipped with the AMADOS seed rate remote control, set half the seed rate as described in the AMADOS instruction manual.

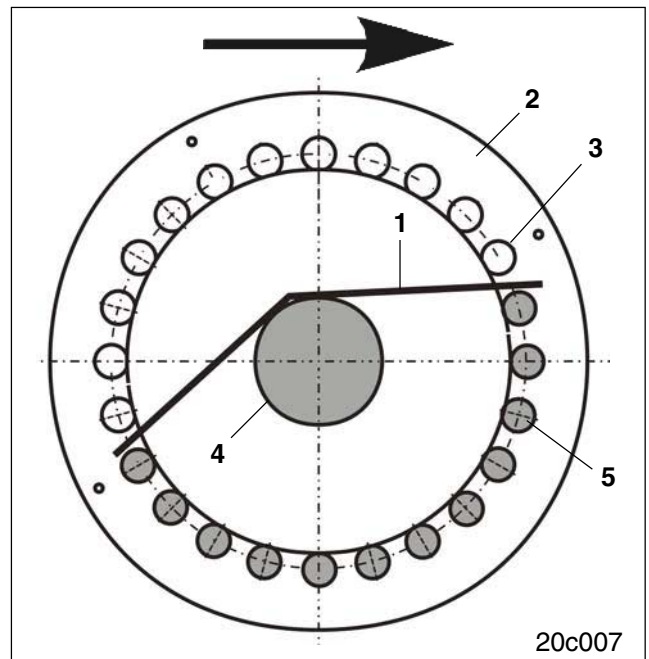


Fig. 26.11

If necessary carry out a new calibration test with the determined gearbox setting.



Removing the insert is done in the adverse order.



26.5 Hints for creating tramlines with 2-bout and 6-plus bout switching rhythm

The flow of seed to the coulters responsible for creating tramlines must only be interrupted on seed drills with

- Always start to operate on the right hand field side.

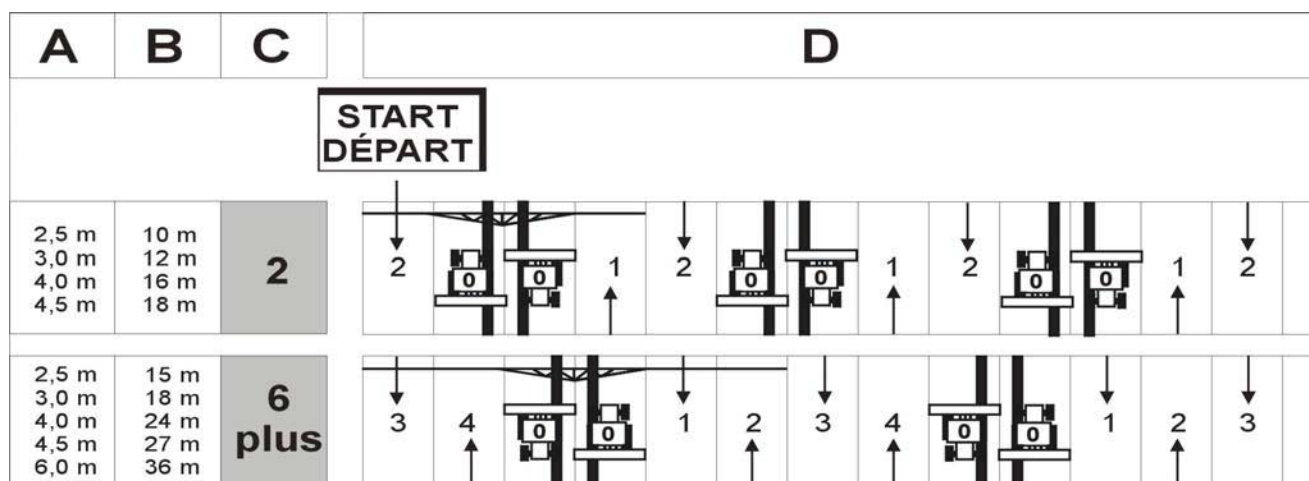


Fig. 26.12

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

On supply of the seed drill the tramline kit has been set to the wheel marks of your husbandry tractor. However, 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. 26.13/8) have to be interchanged for one another on the distributor head. Thereby it should be noted that the tramlining coulter are fixed to such outlets which can be shut by the shutter slides (Fig. 26.13/9).

For creating a tramline up to 3 seed outlets per track can be shut off in the distributor head.

Not needed shutter slides can be "parked" in the distributor head as described in para. 26.7.



If your machine is equipped with a pre-emergence marker unit, adjust the marker discs accordingly.

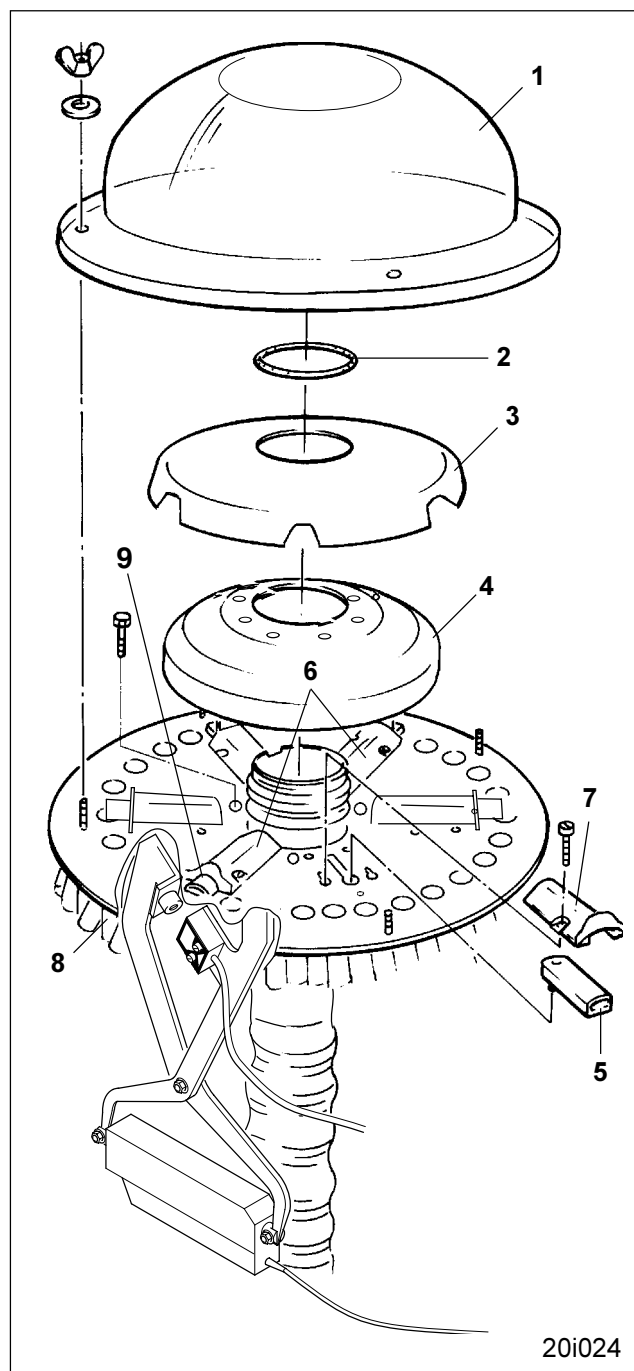


Fig. 26.13

26.7 Setting the width of the wheel marks

If it is wanted to change the number of tramlining coulters, fit as many shutter slides to the distributor head as tramlining coulters are required. The shutter slides interrupt the flow of seed to the tramlining coulters when creating tramlines.

Shutter slides not in use should be deactivated and can be "parked" inside the distributor head.

Activate or deactivate shutter slides:

- Relieve pressure from hydraulic system
remove
- Outer distributor hood (Fig. 26.13/1)
- O-Ring (Fig. 26.13/2)
- Inner distributor hood (Fig. 26.13/3) and
- Foam material insert (Fig. 26.13/4).

It is possible to fit up to 6 shutter slides. Always two shutter slides (Fig. 26.13/6) should be fitted on the base plate opposing each other. For mounting or dismounting the shutter slide (Fig. 26.13/5) the shutter slide funnel (Fig. 26.13/7) must be removed.

Insert not needed shutters (Fig. 26.15/1) in reverse order into the holes (Fig. 26.15/2) (parking position).

After the mounting is completed, check function of tramlining control.

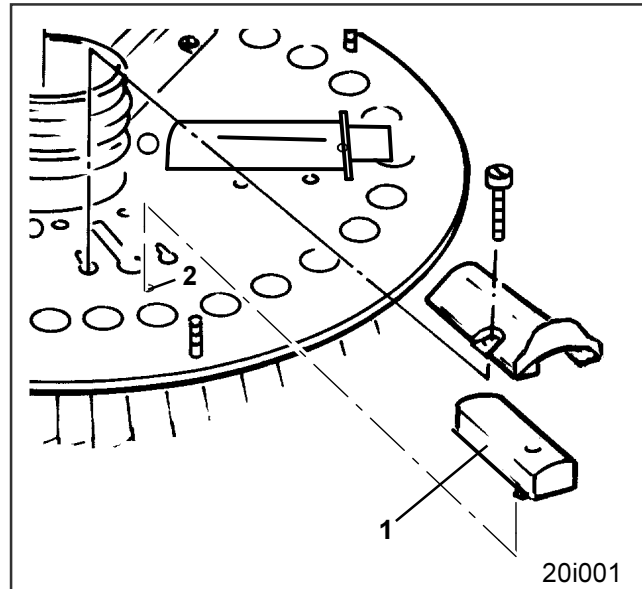


Fig. 26.15

28.0 Pre-emergence marker (special option)

With the aid of the tramlining control, during sowing operation, tramlines are created with determined spacings in which later on fertiliser broadcasters or field sprayers may travel. The marker discs (Fig. 28.1/1) of the pre-emergence marker mark these tramlines. The tramlines are visible in the field prior to the seed emergence. After sowing, it is then possible to travel along the tramlines which are not yet visible by the seed, e.g. for pre-emergence spraying.

If whilst creating tramlines the tramline coulters do not deliver any seed, both marker discs (Fig. 28.1/1) of the pre-emergence marker drop into work, marking the soil and creating tramlines.

The marker discs (Fig. 28.2/1) of the pre-emergence marker are lifted out of work when no new tramlines are created.



The hydraulically actuated pre-emergence marker, the electrically actuated shutters inside the distributor head and the hydraulically actuated track markers are coupled together (please refer to hydraulic circuit diagram at the beginning of this instruction manual). Connect the hydraulic rams on the tractor with a single acting control spool valve.



Before actuating the control spool valve, advise people to leave the danger area. Danger of injury from moving parts.

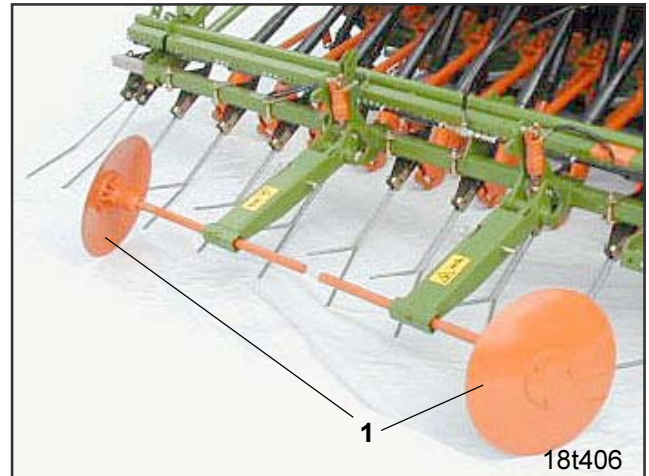


Fig. 28.1

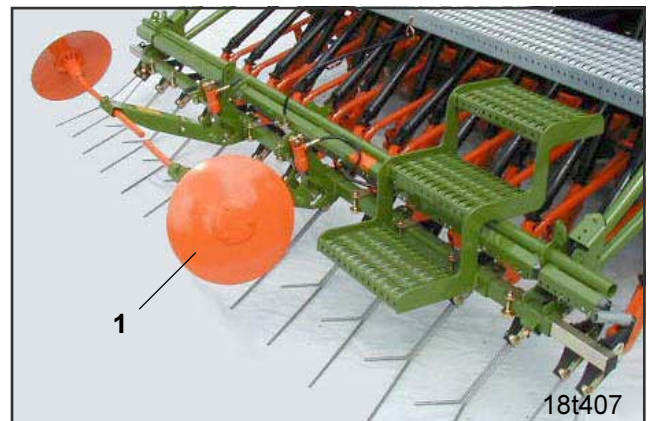


Fig. 28.2

28.1 Fitting

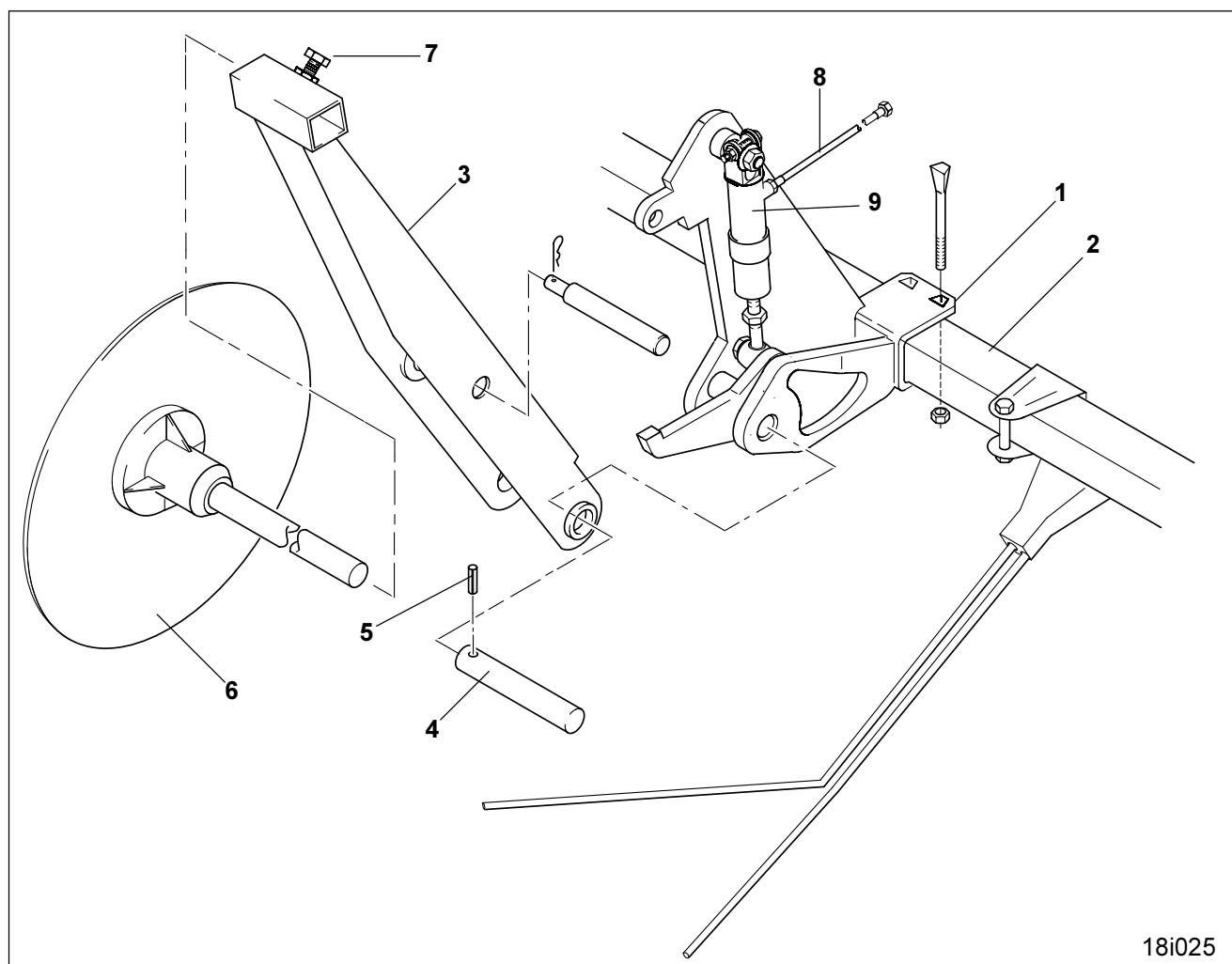
The pre-emergence marker unit is delivered pre-assembled by the factory

- Attach the extra coverage following harrow
- Attach two fixing brackets (Fig. 28.3/1) to the extra coverage following harrow
- Mount the marker disc carrier arm (Fig. 28.3/3) by means of the pins (Fig. 28.3/4) and expansion pin (Fig. 28.3/5) and secure.
- Insert the marker discs (Fig. 28.3/6) into the marker disc carriers (Fig. 28.3/3) and clamp by using hex. bolts (Fig. 28.3/7).
- Connect the hydraulic hoses (Fig. 28.3/8) to both hydraulic rams (Fig. 28.3/9) and connect together with the hydraulic ram for the tramline shutter inside the distributor head with the electr.-hydraulic valve (see circuit diagram para. 2).



Guide the hydraulic hoses in such a way that they will not be torn off or damaged by the movement of the extra coverage following harrow.

- Connect hydraulic rams on the tractor to a single acting control spool valve.
- Check hydraulic hoses for leakage.



18i025

Fig. 28.3

28.2 Setting the marker discs

The marker discs (Fig. 28.4/1) trace the tramlines created by the tramlining control unit and have to be set to the correct track width:

- Slacken hex. bolts (Fig. 28.4/2)
- Move the marker discs (Fig. 28.4/1) in the marker disc carrier arm corresponding to the track width of the tramlines.
- Set the discs in such a way that they run on light soils about parallel to the operating direction and angle them aggressively (on grip) on heavier soils.
- Firmly retighten hex. bolts (Fig. 28.4/2).

Hints

for 2-bout switching rhythm and 6-plus switching rhythm

Tramlining control units with 2-bout switching rhythm or 6-plus switching rhythm are equipped in such a way that the track width of the husbandry tractor is traced when once driving up and down in the field. Therefore only fit one of the two marker rhythms (Fig. 28.4/1) when using these switching rhythms.

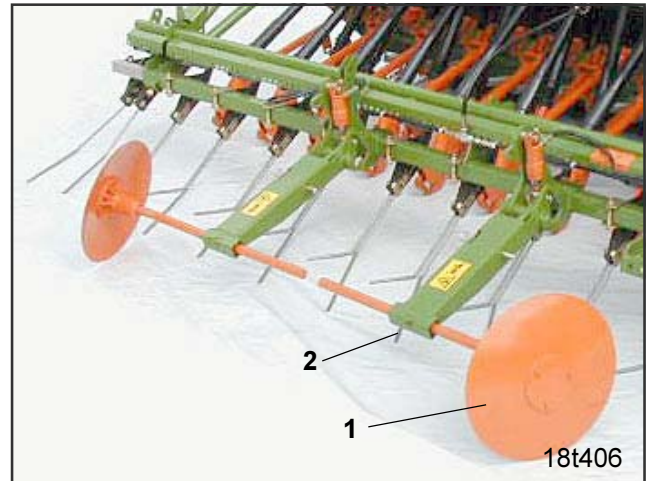


Fig. 28.4

28.3 Transport on public roads

For transport the marker disc carriers (Fig. 28.5/1) should be locked on the fitting brackets (Fig. 28.5/2) by pins (Fig. 28.5/3) and secured by using clip pins (Fig. 28.5/4). The marker disc carriers (Fig. 28.5/1) are then completely folded upwards and are positioned with the marker discs vertically above the extra coverage following harrow. If the seed drill shall be transported on public roads, remove the marker discs (Fig. 28.5/5).



Before any transport on public roads remove the marker discs (Fig. 28.5/5) from the marker disc carriers (Fig. 28.5/1).

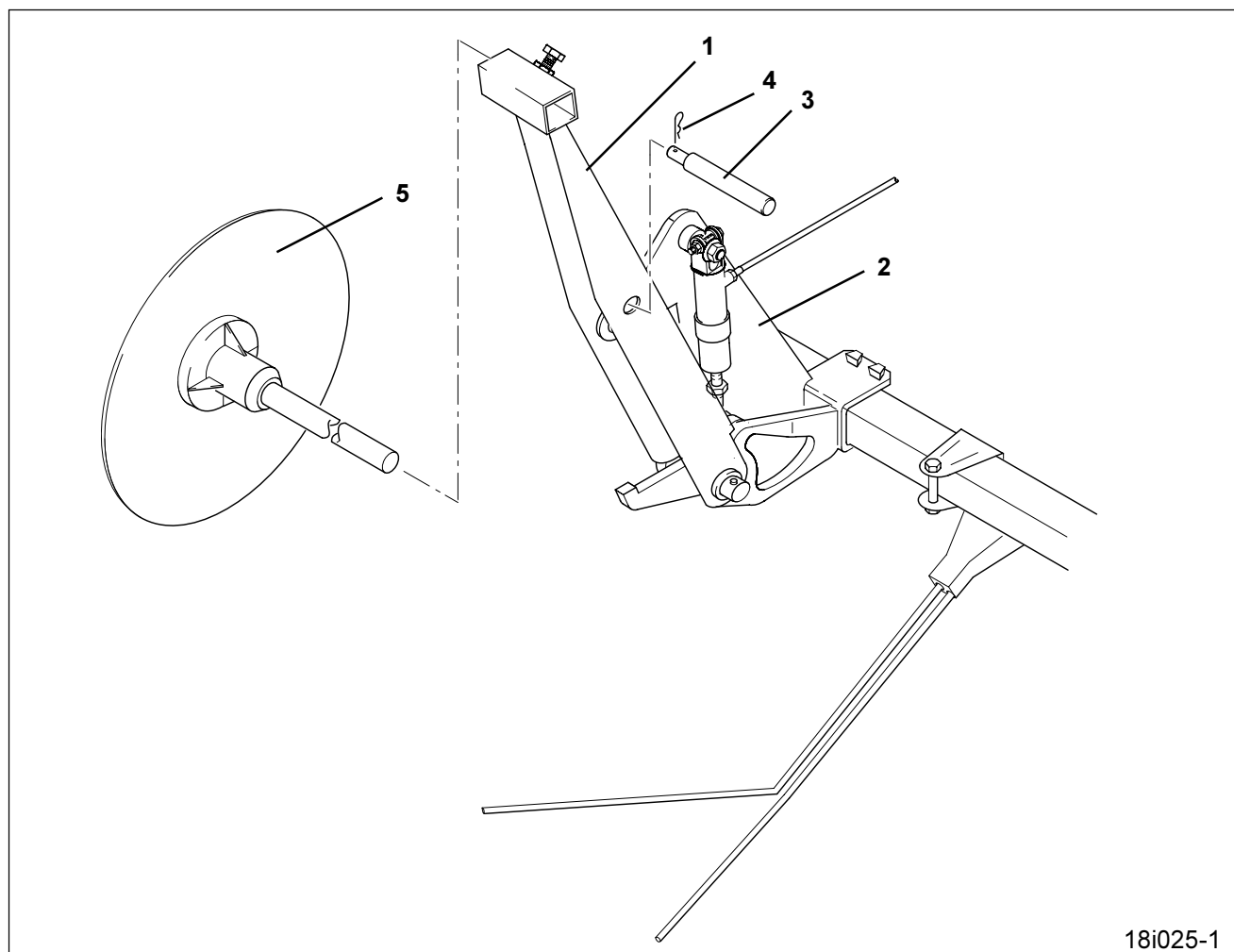


Fig. 28.5

29.0 Operating and transport position

The working units of the Airstar Xact are divided in the centre. They are fitted on to a strong swivellable frame (transport folding frame).

Two hydraulic rams fold the transport folding frame into the transport position (Fig. 29.3) or operating position (Fig. 29.4).

As described in para. 6.2 connect the hydraulic rams to a double acting tractor control spool valve.



Fig. 29.1



Fig. 29.2

29.1 Bring the Transport folding frame into operating position

Before you bring the Airstar Xact from the transport position (Fig. 29.3) into the operating position (Fig. 29.5) route the rope (Fig. 29.6/1) which is connected with the locking lever (Fig. 29.7/1) into the tractor cab and unlock the transport folding frame from inside the tractor cab.

By actuating the hydraulic frame of the axle lift raise the transport folding frame (Fig. 29.3) sufficiently so that a damage of the working units by hitting the ground when being unfolded – especially in the implements' centre (see Fig. 29.4) - is excluded.



Before folding raise the transport frame sufficiently as otherwise danger of damage will exist.



Advise people to leave the danger area.

By actuating the tractor control spool valve bring the working units of the Airstar Xact into operating position (Fig. 29.5) and bring the tractor control spool valve in the "float" position as soon as the working units are in operating position.

Lift the axle (Fig. 29.5/1) by actuating the hydraulic ram of the axle lift so that there is sufficient space between tyres and ground.



Fig. 29.3



Fig. 29.4



Fig. 29.5

29.2 Bringing the Airstar Xact into transport position

Before you bring the Airstar Xact into transport position, disengage the tractor universal joint shaft and lift the transport folding frame by actuating the axle lift sufficiently so that damage of the working units by hitting the ground when being folded – especially in the machine's centre – (see Fig. 29.4) will be excluded.



Switch off the tractor universal joint shaft.



Before folding lift the transport folding frame sufficiently as otherwise danger of damage exists.

By actuating the control spool valve from inside the tractor cab the transport folding frame is brought into the transport position.



Ensure that the locking lever (Fig. 29.7/1) engages and the pulling rope is relieved.

Before transport on public roads fit traffic light kit as described in para. 30.0.



Fig. 29.6



Fig. 29.7



30.0 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.

The following advice should be followed:

1. Before travelling on public roads empty the storage tank.
2. Do not exceed the transport width of 3 m.
Bring your combination in transport position according to para. 29.2.



Adhere to the advice for folding the rotary cultivator given in the rotary cultivator operation manual.

3. Before travelling on public roads protect the coulters with the traffic safety guard (special option).
4. Remove the marker discs of the tramline marker kit..
5. As standard the Pack Top sowing module AS has been provided with traffic safety equipment including the two warning plates facing to the rear and the traffic lights (Fig. 30.1/1).

After having finished the operation or after folding the rotary cultivator combination, bring the booms (Fig. 30.2/1) with the traffic lights and the warning plates into road transport position::

remove the pin (Fig. 30.3/1) secured by a clip pin and



Fig. 30.1

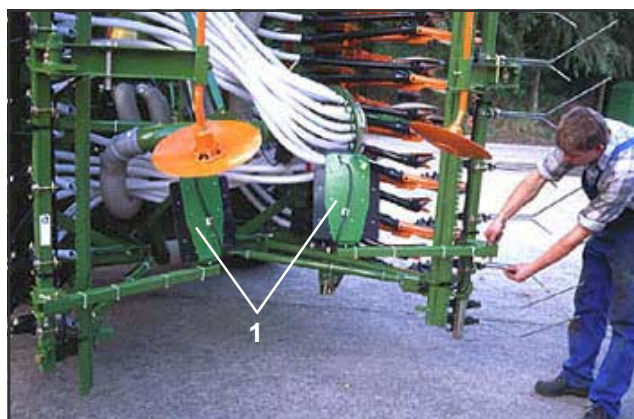


Fig. 30.2

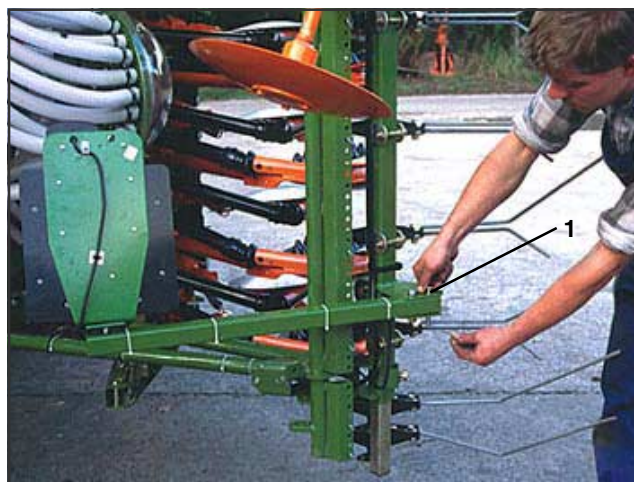


Fig. 30.3

bring the booms (Fig. 30.4) with the warning plates and the traffic lights into road transport position and



Fig. 30.4

lock the booms with the prior slackened pin (Fig. 30.4) and secure by using a clip pin.



Fig. 30.5

Fold extra coverage harrow inwards (Fig. 30.6) and



Fig. 30.6

secure by using a belt (Fig. 30.7).

Plug traffic light cable into the tractor socket and check traffic light kit for function. Guide the cable in such a way that any damage is excluded.



Fig. 30.7

6. Check and mount further transport equipment, as, e. g. warning beacon and laterally mounted lights (yellow).
7. The maximum speed of 40km/h must not be exceeded. Especially on roads or ways of bad condition, only driving with a much lower speed than indicated is allowed.
8. Only use pulling vehicles with permitted support load and permitted tyre load.

Before transporting the implement or the combination always check that the front axle load of at least 20 % of the tractor's net weight is maintained. Otherwise the sufficient steerability of the tractor is not ensured any longer. If necessary, apply front axle loads. The permitted tractor's rear axle load must not be exceeded. Also observe that the permissible total weight of your tractor is maintained.

9. Set brake pressure regulator to full load.
10. Riding and transport on the implement is not permissible.



11. Moving characteristics, steering and braking ability are affected by mounted and towed implements and ballast weights. Therefore, take these effects into account and allow sufficient steering and braking ability.
12. When driving into bends mind the projection to the sides and the gyrating mass of the implement.
13. When driving on public road with the lifted implement lock the control lever against unintended lowering.
14. When your machine is in transport position always ensure a sufficient lateral locking of the tractor's three-point arms.

Please observe these hints. They help to avoid accidents in public road traffic.

40.0 Maintenance and care



Adhere to the general safety and accident prevention advice when conducting maintenance and care operations.

40.1 Bolted connections

Check all bolted connections of the implement after the first 10 hours of operation and retighten if necessary. For torques of the wheel nuts, please refer to para. 40.10.

40.2 Air pressure

Check air pressure of the tyres (see Fig. 40.1) regularly.

40.3 Cleaning the implement

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



In case you wish to use air pressure to clean the 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 units. For this empty the seed tank.

Swollen or germinated seed residue in the metering unit may affect the seed rate or block the movement of the seed wheels. This would lead to breakage on the seed metering wheels.

For cleaning the metering unit open the

- transparent plastic flap (Fig. 40.2/1)
- injector flap (Fig. 40.2/2) and
- the residue emptying flap

For opening the seed residue emptying flap behind the metering unit push the lever (Fig. 40.2/3) downwards and arrest.

For emptying the metering wheels drive the metering wheels by some calibration crank turns.

Air pressure tyres Airstar Xact

| | |
|-------------------------------|-----------------------|
| Tyres | 700/50-26,5 8PR A8 |
| Air pressure normal operation | 1,8 bar |

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Fig. 40.1

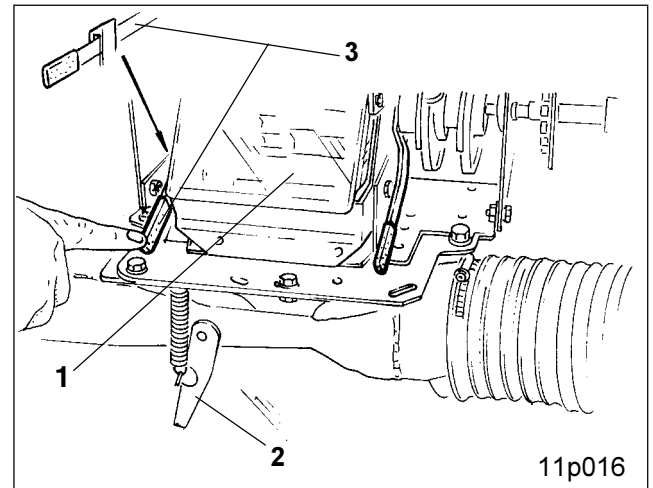


Fig. 40.2

40.4 Checking the oil level inside the gearbox

Check the oil level inside the gearbox at the oil gauge window (Fig. 40.3/1) on the implement horizontally. It is not necessary to change the gearbox oil.

For refilling oil unbolt the seal cap (Fig. 40.3/2) of the gearbox:

Filling quantity: 0,9 litres

Only use the following grades of oil:

Hydraulic oil WTL 16,5 CST/50°C

or

engine oil SAE10W.

40.5 Checking roller chain

The starwheel is driven by a roller chain (Fig. 40.4) which is automatically tensioned by a chain tensioner.

After the end of the season or before a prolonged spells of inactivity remove the chain guard, apply oil to the roller chain and reinstall the chain guard.

40.6 Greasing

During the sowing season regularly grease the joints of the Airstar Xact. The grease nipples on the machine are colour coded.

Before greasing thoroughly clean grease nipples and grease gun

Grease the PTO shafts according to the greasing advice of the PTO shaft manufacturer. When operating during winter, grease the guard tubes to protect them against freezing.

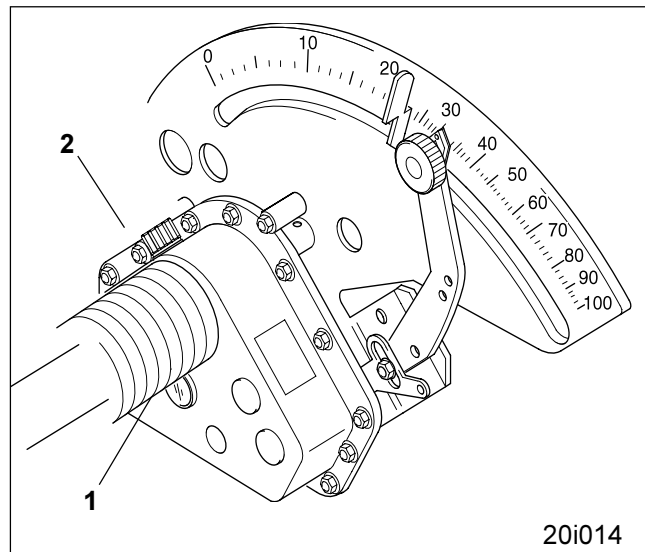


Fig. 40.3

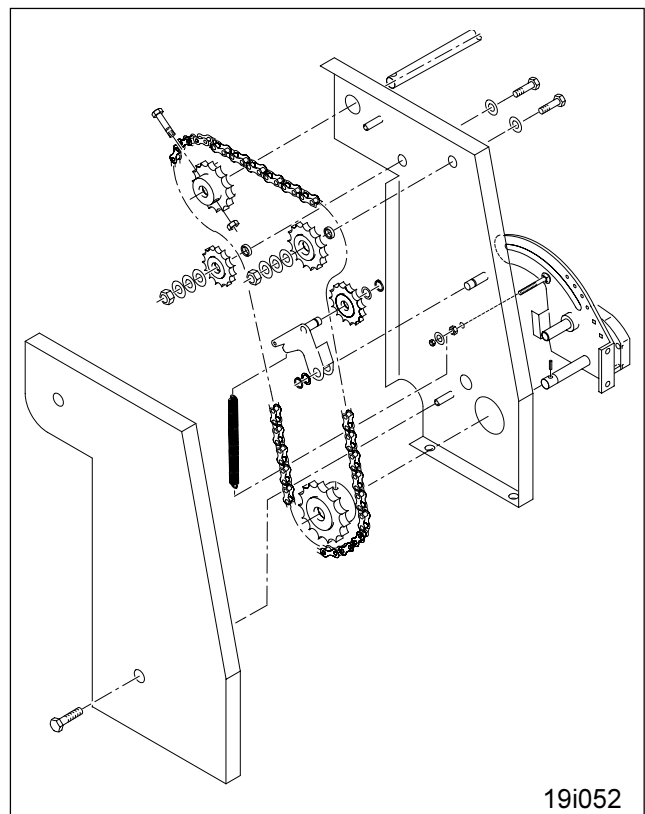


Fig. 40.4

40.7 Exchange of the coulter tip of the WS-coulter

Worn coulter tips (Fig. 40.5/1) on WS-coulters can be exchanged. It is not necessary to remove the coulter support (Fig. 40.5/2). However, pull the funnel (Fig. 40.5/3) out of the coulter unit. To do this, press two naps (Fig. 40.5/4) of the funnel into the coulter unit. When fitting ensure that the naps catch into the location slots (Fig. 40.5/6).

Remove the fillister head bolt (Fig. 40.5/6), remove the coulter tip (Fig. 40.5/1) from its bracing and affix the new coulter tip in reverse order.

40.8 Checking the distributor head for cleanliness

During operation check the distributor head for cleanliness in regular intervals from the tractor cab by looking through the transparent distributor hood. After operation give the distributor head an intensive sight check from outside. Dirt and seed residue should be removed immediately. Swollen or germinating seed residue might cause blockage.

For cleaning the distributor head:

- E-pressurise the hydraulic system
- Remove outer hood (Fig. 40.6/1).

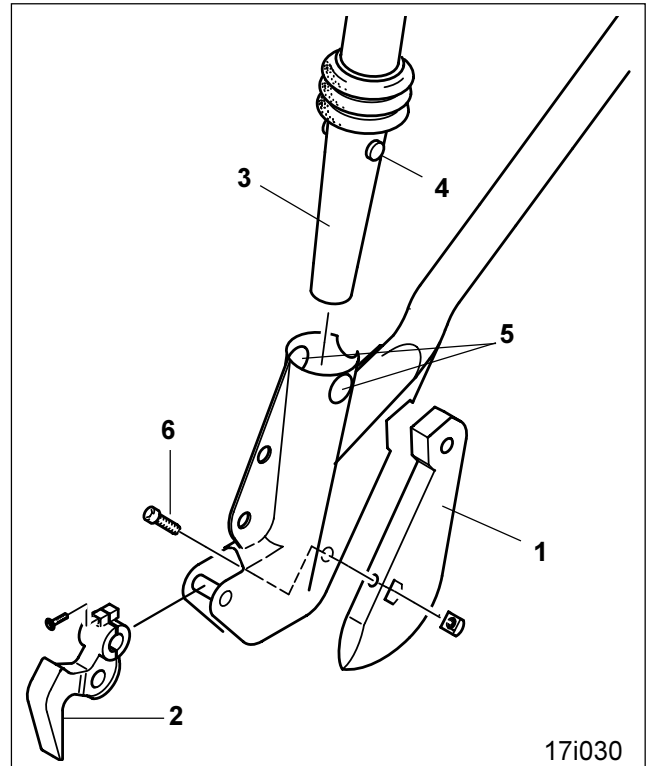


Fig. 40.5

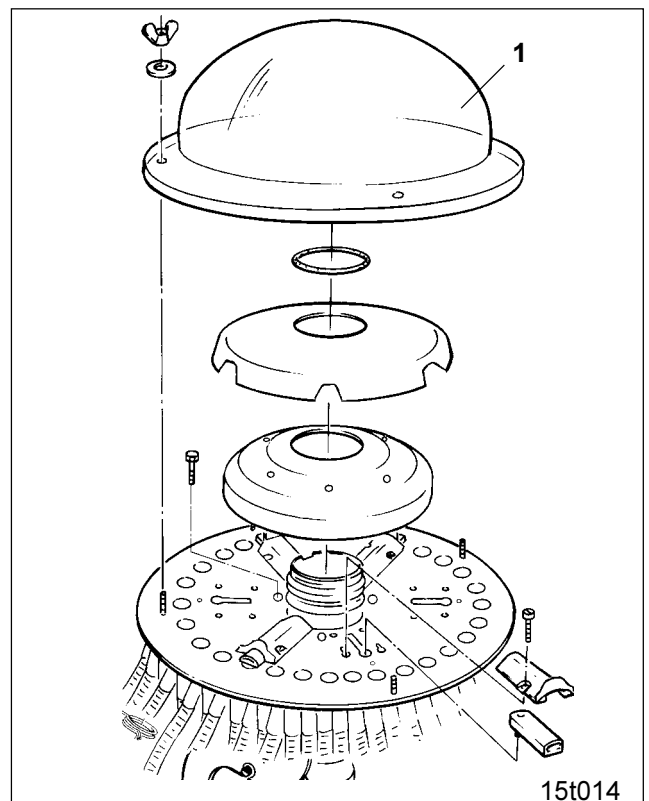


Fig. 40.6



40.9 Hydraulic hoses

40.9.1 Checking when starting and during operation

When starting and during operation the ordinary condition of the hoses should be checked by a skilled person in regular intervals (see below).

If the hoses are found defective in any way, exchange them immediately.

The maintenance of the checking intervals should be recorded by the operator.

Checking intervals

- for the first time when putting to operation
- thereafter at least once a year.

Checking points

- Check hose casing for damage (kinks, cuts and abrasion, trapping, rubbing points)
- Check whether the hose casing is brittle
- Check hose for deformation (bubbles, buckling, squeezing, separation of layers)
- Check for leakage
- Check the appropriate fitting of the hoses
- Check the hose for firm seating in the armature
- Check connecting armature for damage and deformation
- Check for corrosion between connecting armature and hose

40.9.2 Exchange intervals

The period of use of any hydraulic hose circuit should not exceed 6 years (including a possible storing period of two years maximum).

40.9.3 Marking

Hydraulic hoses are marked as follows:

- Name of the manufacturer
- Date of production
- Maximum dynamic operational pressure.

40.9.4 Please observe when fitting and removing



Before working on the hydraulics read para. 3.6.4 .

Affix the hydraulic hoses on the fixing points given by the manufacturer, e.g.

- Always ensure that hydraulic parts and connections are clean.
- The hoses have to be fitted in such a way that their natural placement and movement are not hindered.
- During operation the hoses should not be under tension, twisted or strained by external forces.
- The permissible bending radius must be observed.
- The hoses should not be painted.

40.9.5 Fitting hose armatures with O-ring seals with O-ring seals and clamping nut



The bolted connections with O-ring seals must not be tightened as firmly as the former cutting ring seals.

Tighten the clamping nut by hand and then tighten with the key by min. 1/4 and max. 1/2 turn.

If this connection is tightened more firmly the tapered bolted connections (especially the welding journal on the hydraulic rams) may burst.

40.10 Axles and brakes

The fitting and setting advice are part of the terms of guarantee. The manufacturer does not accept any warranty for natural wear and damage caused by over strain, not allowed welding and arbitrary changes.

As a matter of principle axles must not be overloaded. Overload shortens the life expectancy and will cause damage to the axles.

The following mistakes may lead to overload and should be avoided:

1. Driving over kerbs.
2. Exceeding the max. permissible speed .
3. Mounting wheels with wrong pressing depth.
4. Mounting over dimensioned tyres.
5. One sided load.



In order to maintain the operational safety, ensure that the wheel brakes are always correctly set (authorised workshop).

Exchange brake linings right in time, e.g. before the rivets may touch the brake drum. Only use the brake linings prescribed for the axles as otherwise the operational safety is not maintained. Never travel with missing hub caps as penetrating dirt will damage the wheel bearings.

Wheel nuts

Retighten wheel nuts after the on-load travel, at least, however, after 5 km.

For torques, please refer to the table.

| Bolt thread/ wheel nuts (mm) | Spanner size (mm) | max. torque (Nm) | |
|------------------------------------|----------------------|------------------|------------|
| | | black | galvanized |
| M 18 x 1,5 | 24 | 265 | 245 |
| M 20 x 1,5 | 27 | 323 | 294 |
| M 22 x 1,5 | 32 | 441 | 343 |

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Check list for maintenance work on axles and brakes

The setting and repair work listed up in the check list must only be conducted by specialists, workshops or approved services. The following plan is effective. In case of queries, please ask your authorised workshop, the axle manufacturer or his distribution network.

After the first on-load travel, at least after 5 km:

- retighten wheel nuts
(for torques, please refer to table "wheel nuts"),
- Wheel hubs: check bearing clearance.

After 50 hours of operation:

- Wheel hubs: check bearing clearance,
- Check steering axle and grease.

Every 100 hours of operation:

- Wheel hubs: check bearing clearance,
- Brake cam shaft: grease bearing,
- Check brake lever position, readjust if necessary.

Every 500 hours of operation:

- Readjust taper roller bearings:
Remove hub cap and cotter pin. Tighten axle nut until wheel hub or brake drum is slightly braked. Slacken axle nut until the next cotter pin hole. Check bearing clearance. Cotter axle nut and drive in hub cap.

Attention! Too tight setting will cause damage on the bearings.

Every 1000 hours of operation, at least twice a year:

- Grease wheel hub bearing with roller bearing grease: only use brand name article lithium soap grease (drop point 190°). Inappropriate grease or too large amounts of grease will cause damage on the wheel bearings.
- Check brake linings for wear and replace if necessary.

This check list is valid for implements used in normal operation. For heavy strain, reduce the maintenance intervals to avoid damage.

40.11 Air brake system

The following checking, maintenance and servicing list is effective. The components of the air brake on your machine might differ from illustration Fig. 40.7. In case of queries, please ask an authorised workshop or the manufacturer of the air brake or his distribution network.

Before any travelling check and do the following jobs:

1. Open check valve on the pulling vehicle.
2. Before coupling check whether the coupling heads are clean and observe proper fitting. The coupling head (Fig. 40.7/1) for the brake line is marked in yellow. The coupling head (Fig. 40.7/2) for the supply line is marked in red.
3. Hoses should not touch other parts. Check hoses for correct guidance.
4. Check hand brake position of braking power governor (Fig. 40.7/3).
5. If necessary drain water from air tank (Fig. 40.7/4).
6. Conduct a braking test.
7. Check the stroke of the braking ram pistons. When reaching 2/3 of the total ram piston stroke (Fig. 40.7/5) readjust wheel brake. Replace damaged bellows.
8. After coupling off, shut the coupling heads or hang them into the dead couplings (Fig. 40.7/6) on your implement.

Maintenance in regular intervals (approx. once a week):

1. Check and clean the inserts of the tube filters (Fig. 40.7/7).
2. Check the braking circuit for leaks. When the engine is stopped the operational pressure should decrease by 0.1 bar within ten minutes, i.e. by 0.6 bar per hour.
3. Check brake hoses for faultless condition. If necessary exchange damaged brake hoses.
4. Never weld or solder on control chests and pipes. Exchange damaged parts.
5. Greasing! For greasing only use grey special grease for air pressure implements.

Inspections of the brake system:

For brake inspections adhere to the traffic law in force in your country, for example:

1. Brake intermediate inspections
2. Brake special inspections
3. Brake main inspections.



In case faults are noted on the brake system, immediately ask skilled persons or an authorised workshop for a thorough inspection of all components.

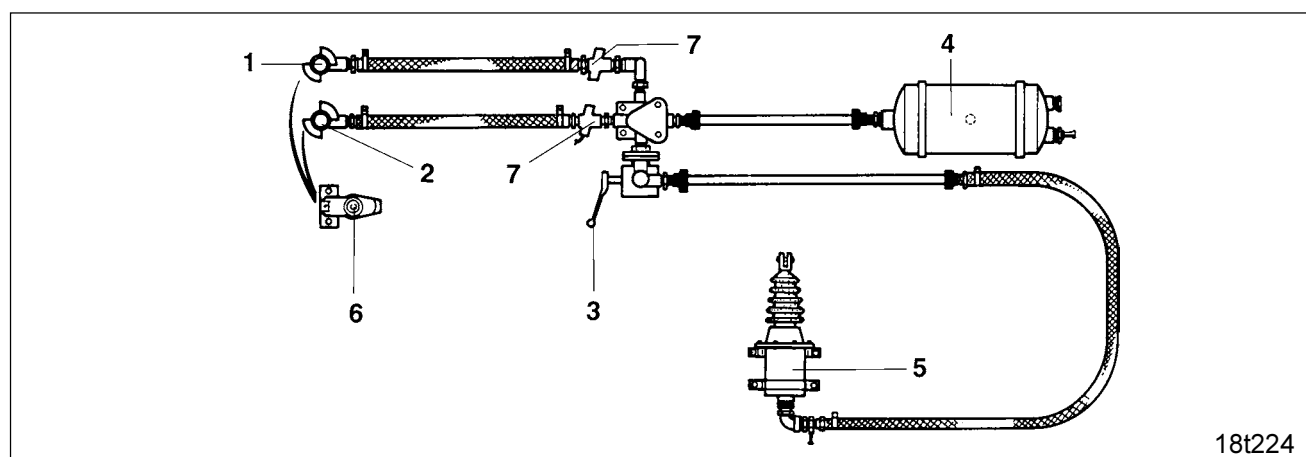


Fig. 40.7

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