

Instruction Manual

AMAZONE-Avant Profi Front packer seed tank FPS-03 Pack Top seed rail AS-02



MG 799
B 182 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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D-49202 Hasbergen-Gaste / Germany

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The front seed tank and the pack top seed rail are quality products from the large range of farm machinery produced by AMAZONEN-Werke, H. Dreyer GmbH & Co. KG.

In order to ensure that you obtain trouble-free operation, we recommend that you carefully read and observe the information within this instruction manual and adhere to the advice given therein.

Please ensure that this instruction manual is made available to any operator before he or she starts to operate the implement combination.

This instruction manual refers to combinations consisting of front seed tank and pack top seed rail of the following series::

- Front packer seed tank FPS 103 with 1 metering unit for pack top seed rails AS up to 4,5m working width,
- Front packer seed tank FPS 203 with 2 metering units for pack top seed rails AS with 6m working width

- Pack top seed rails AS 302 with 3m working width
- Pack top seed rails AS 402 with 4m working width
- Pack top seed rails AS 452 with 4,5m working width
- Pack top seed rails AS 602 with 6m working width.

Please also refer to the instruction manual for soil tillage implements.

We wish you every success with the operation of your new machine and obtain the best results.

AMAZONEN-Werke
H. Dreyer GmbH & Co. KG

Hints for this instruction manual

Keep this instruction manual so that it is always to hand. Also in the event of sale, you can pass on the instruction manual to the next owner.

At the time of printing all data and information is correct. However, AMAZONE always endeavours to introduce improvements, we therefore reserve the right to make changes to and or alter the specification of our products without liability to existing users, past and present machines.

Symbols in this instruction manual

In this instruction manual many warning and precautionary hints are given by the use of symbols. The identification and explanations for these symbols are given in the following.



General warning pictographs (DIN 4844-W9)

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



Attention symbol

This symbol refers to safety advice. Not adhering to this safety advice implies danger to the implement and its functions.



Hint symbol

Hints regarding machine's specification, which have to be followed in order to obtain faultless function of the machine are identified with the hint symbol.

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2.0 Details about the machine

2.1 Range of application

Der Front-seed tank in combination with a soil tillage implement with seed rail is suited for containing within it's hopper seeds which are then metered out for sowing. The machine is constructed for the application of all commercially available arable seeds.

2.2 Manufacturer

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

2.3 Conformity

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

2.4 Details when making enquiries and ordering

When ordering special options and spare parts, please always indicate the type and serial number of your machine.

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

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



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

Original AMAZONE spare parts and options have been especially designed for your machine and have been checked.

In cases where spare parts, and / or options have been fitted, which have not been approved by AMAZONE as well as any other arbitrary technical changes made to the machine, no liability will be accepted by AMAZONE for consequential losses or resulting damage.

2.5 Type plate



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

2.5.1 Type plate

Front packer-seed tank FPS-03



Fig. 2.1

Insert here the machine type and serial number of your machine..

Maschine type:

AMAZONE
Front packer-seed tank FPS

Serial No .:

2.5.2 Type plate Pack top seed rail AS



Fig. 2.2

**Insert here the machine type and serial number
of your pack top seed rail**

Machine type:

AMAZONE
Pack top seed rail AS

Serial No.:

2.6 Technical data

During operation the seed is transported in the large seed hopper. Each hopper is provided with one or two metering units. The number of metering units depends on the working width of the used seed rail.

Front packer-seed tanks FPS 103 with one metering unit are suited for pack top seed rails AS up to 4.5 m working width.

Front packer-seed tanks FPS 203 with two metering units are suited for pack top seed rails AS with 6 m working width.

The star wheel attached to the seed tank drives the metering units.

Fix the seed tanks on to the front hydraulic of your tractor

The front packer seed tank FPS rides on a steerable tyre packer. The tyre packer rolls the soil in a width of 1.60 m in front of the tractor. During operation the tractor front axle is not burdened by the seed tank. The self steering of the tyre packer follows the steering of the tractor operator and allows driving round narrow curves. For turning at the headlands the front packer seed tank should be raised.

Usually an AMAZONE soil tillage implement with roller mounted to the rear of the tractor is used for field bed preparation. For seed application this combination can be equipped with an AMAZONE pack top seed rail AS, at random available with WS(Suffolk) coulters or RoTeC (roll disc) coulters. The seed rails can be attached to all AMAZONE rollers. The soil tillage implement is not burdened by the weight of the seed rail and can give way to stones in upward direction without any problem.

In the distributor head which is attached to the seed rail, the seed which is delivered from the seed tank to the seed drill is evenly distributed to all coulters. The number of distributor heads depends on the number of metering units on the front seed tank. Seed rails with a working width of 3 m to 4.50 m are equipped with one distributor head. Seed rails with a working width of 6 m are equipped with two distributor heads

2.6.1 Technical data

Front packer-seed tank FPS-03



Front packer seed tank
FPS 103 / FPS 203

	FPS 103	with hopper extensi on P2000	with hopper extensi on P2300	FPS 203	with hopper extensi on P2000	with hopper extensio n P2300
Weight (without seed)	1135 kg	1170 kg	1185 kg	1205 kg	1240 kg	1255 kg
Seed tank capacity	1500 l	2000 l	2300 l	1500 l	2000 l	2300 l
Filling height	1,63 m	1,80 m	1,90 m	1,51 m	1,68 m	1,78 m
Height (until upper edge of folding cover)	1,83 m	2,00 m	2,10 m	1,71 m	1,88 m	1,98 m
Transport width	2,67 m	2,67 m	2,67 m	2,67 m	2,67 m	2,67 m
for seed rails with a working width of	3,0 m to 4,5 m			6,0 m		
Blower fan drive	hydraulic					

Fig. 2.3

t182gb01

2.6.2 Technical data

Pack top seed rail AS


	Pack Top seed rail AS 02							
	AS 302 SN	AS 302 SR	AS 402 SN	AS 402 SR	AS 452 SN	AS 452 SR	AS 602 SN	AS 602 SR
Working width	3,0 m		4,0 m		4,50 m		6,0 m	
WS (Suffolk) coulters	<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>	
RoTeC (roll disc) coulters		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>		<input type="radio"/>
Number of rows	24		32		36		48	
Row spacing	12,5 cm							
Number of distributor heads	1		1		1		2	

Fig. 2.4

t691gb06

2.6.3 Fitting data

Before starting to operate determine the axle loads and tyre load capacities as well as the required minimum ballast weight at the combination tractor / mounted machine as described in para. 3. Please take the required data from the figures Fig. 2.5, Fig. 2.6 and Fig. 2.7.

The spacing "a" results from the sum of the spacings a_1 and a_2 .

a_1 = Distance from centre front axle till centre lower tractor link point. Please take this value from the tractor instruction book.

a_2 = Centre lower tractor link point until centre of gravity front mounting machine. Please take this value from Fig. 2.7.

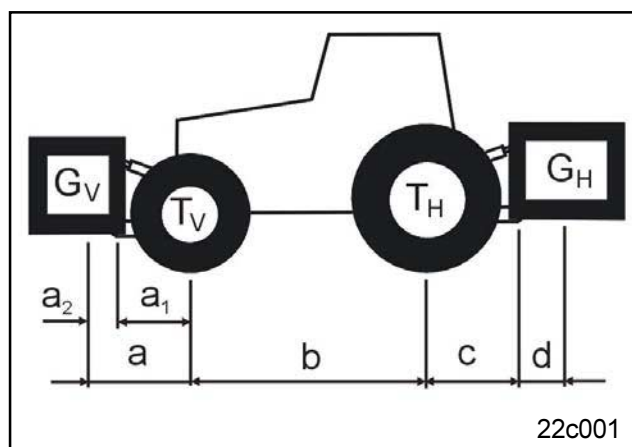


Fig. 2.5

Rear mount combination with Pack Top seed rail	AS 302	AS 402	AS 452	AS 602
Spacing d	0,8 m			

Fig. 2.6

t182gb07

Front packer-seed tank	FPS 103 / FPS 203
Spacing a_2	0,8 m

Fig. 2.7

t182gb08

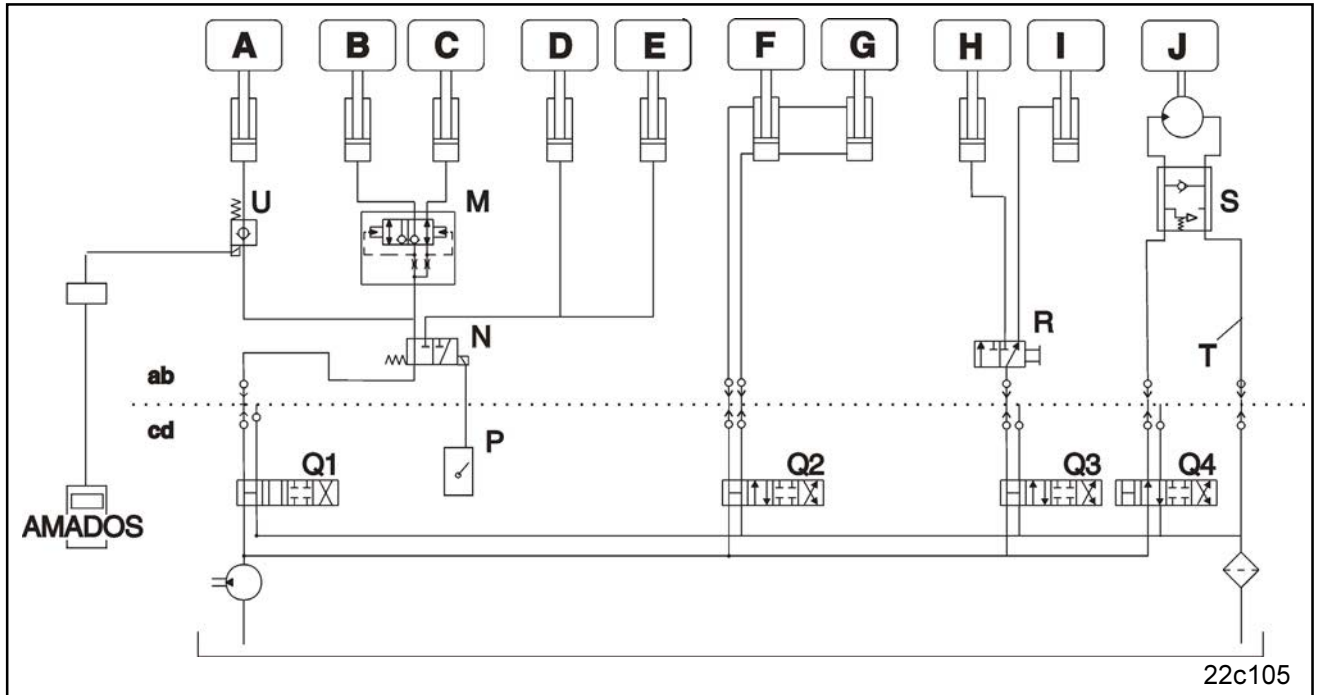


Fig. 2.8

2.7 Hydr. connections

Install the hydraulic connections in accordance with the hydraulic circuit (Fig. 2.8). In the following, please find the hydraulic circuit drawing and the permissible hydraulic oils:

ab = implement side
cd = tractor side

Hydraulic ram on tractor control spool valve Q1

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

Double acting hydraulic ram on tractor control spool valve Q2

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

Hydraulic ram on tractor control spool valve Q3

H = Tractor front hydraulics
I = Star wheel lift

Hydraulic ram on tractor control spool valve Q4

J = Blower fan hydrostatic motor $N_{max.} = 4000 \text{ 1/min.}$

Valves

Q1, 2,... = Tractor control spool valves, illustrated is the "working" position
Q4 = Valve for hydraulic blower fan drive with "priority" approx. 30 l/min.

max. 200 bar

955912

M = Track marker shuttle valve
S = DBV-valve with hydraulic freewheel
T = Free return flow (minimum DN16)
U = Electr. hydr. valve
P = Electr. hand switch

Only required, if no tractor control spool valve is available any more:

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 commencing work on the hydraulic system ensure that the tractor hydraulic system is without pressure.



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

2.8 On receipt of the machine

When receiving the machine check that no damage has been caused in transit and all parts are present. Only the immediate claim will lead to compensation. Please check whether all parts mentioned in the delivery note are present.



Therefore, check and ensure that your machine is functioning correctly before and during any use and observe sufficient sowing accuracy.

2.9 Details about noise level

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

Measuring instrument: OPTAC SLM 5.

The emission value depends on the tractor type used.

Claims regarding damage not having occurred on the machine itself will be rejected. This also applies to damage due to sowing errors. Arbitrary changes on the machine may cause damage and rule out the responsibility of the manufacturer for this damage.

2.10 Designated use of the machine

The AMAZONE Airstar Avant has exclusively been designed for usual soil tillage, and the metering and sowing commercially available seeds in agriculture.

Any use beyond that mentioned 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.

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

- Varying composition of the seeds (e.g. distribution of grain size, dressing, bulk density, geometrical shape)
- Drifting on slopes or incorrect bout driving
- Blockage or bridging, e.g. by swollen or germinating seed residue, foreign particles, residue of bags etc.
- Undulated terrain
- Wear of wearing parts (e.g. seed wheels etc.)
- Damage by external influence
- Wrong drive speeds and forward speeds
- Wrong setting of the machine (incorrect mounting, incorrect determination of the gearbox position).

3.0 Safety

To ensure trouble free operation we recommend that you carefully read this instruction manual and to strictly adhere to the advice given therein.

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 provide you with a trouble free operation.

These descriptions have been supplemented by many illustrations in order to explain all functions and to give you hints for safe operation under varying operational conditions.

Please observe and adhere strictly 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 the machine itself.
- may result in the loss of any claim for damage.

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

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

3.2 Qualification of operator

The machine described in this instruction manual may only be operated, maintained and repaired by persons, who are acquainted with it and have been informed of the relevant dangers.

3.3 Symbols in this instruction manual

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



General danger symbol (DIN 4844-W9)

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



Attention symbol

The attention advice in this operation manual which may cause dangers for the machine and its function when not being adhered to, are identified with the attention symbol.



Hint symbol

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

3.4 Warning pictographs and hint symbols on the machine

The warning pictographs (e.g. Fig. 3.1) indicate dangerous points on the machine. Observing these pictographs means safety to all persons using this machine.

The hint symbols (e.g. Fig. 3.2) mark machine's specific points which have to be observed to ensure correct function of the machine.

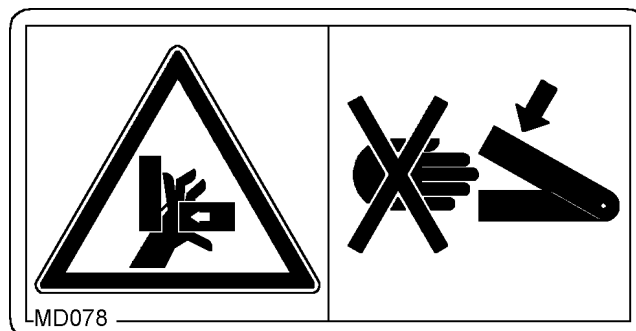


Fig. 3.1

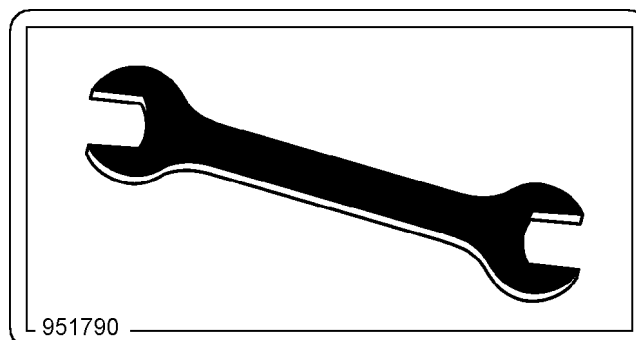


Fig. 3.2

The machine's fixing points for the warning pictographs and hint signs are illustrated in Fig. 3.3 to Fig. 3.5. Please refer to the following pages for relevant explanations. Please make these explanations also available for other users.

Please always keep all warning pictographs and hint signs clean and in readable condition. Please ask for replacement of damaged or missing warning signs from your dealer and attach them in the relevant place.

(Picture-No. = Order-No.).



Fig. 3.3

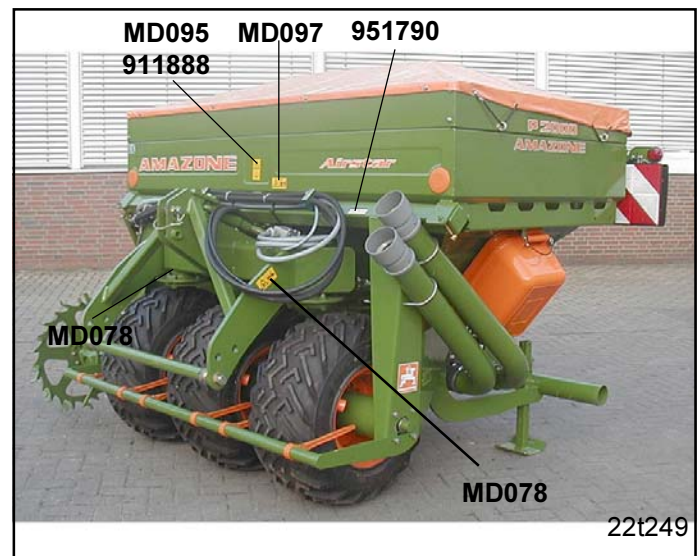


Fig. 3.4

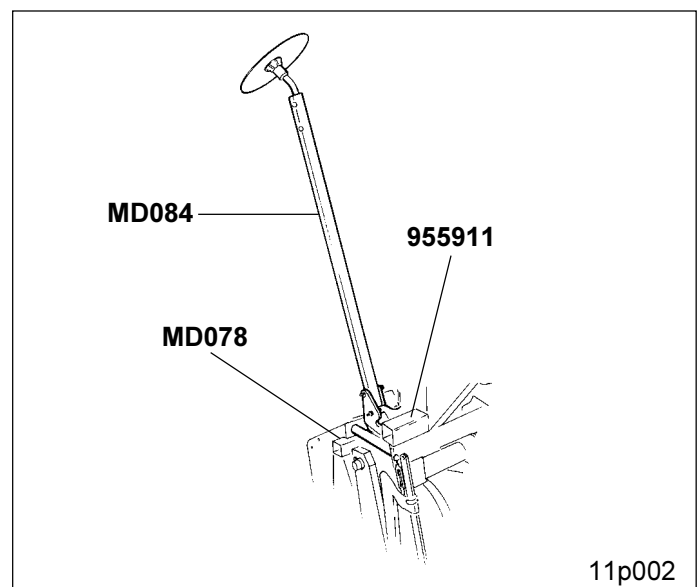


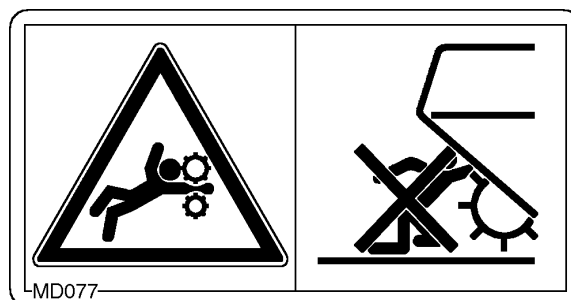
Fig. 3.5

Picture No.: MD 077

Explanation:

Danger of bruising when machine is running.
Ensure sufficient distance from starting or running machine.

Advise people to leave the danger area as long as parts are still moving.

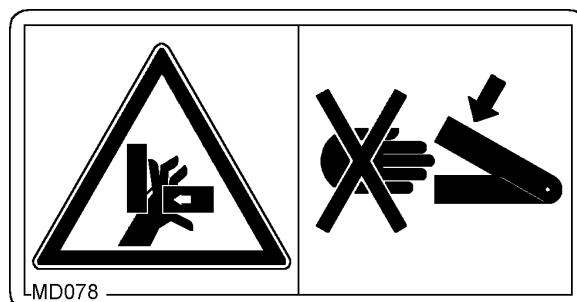


Picture No.: MD 078

Explanation

Never reach into the zone . There is danger of bruising
as long as parts are still moving!

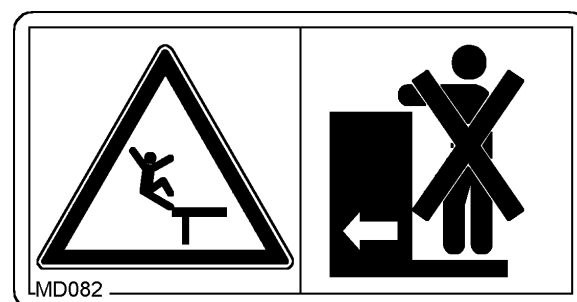
Advise persons to leave the danger zone.



Picture No.: MD 082

Explanation

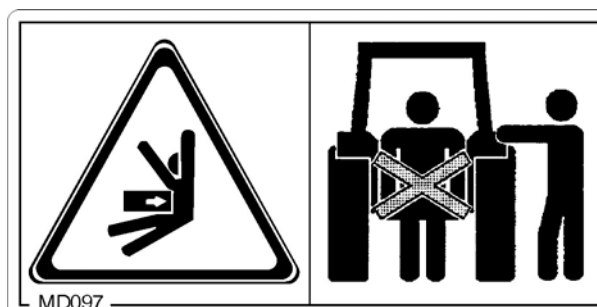
Sitting or standing on the implement (not even on the
loading board) during operation or during road transport
is prohibited.



Picture No.: MD 083

Explanation

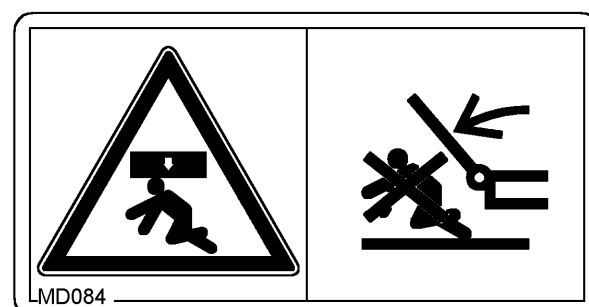
Danger of injury!
Never reach into the seed box.



Picture No.: MD 084

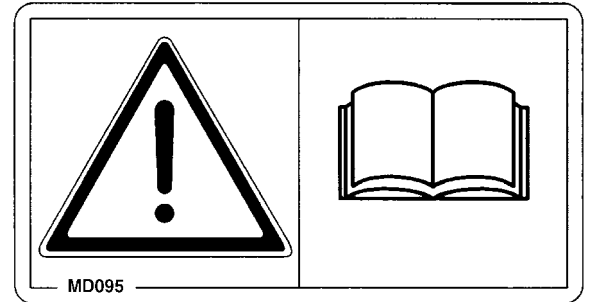
Explanation

Never stay within the operational area of the marker
arms.



Picture No.: MD 095
Explanation

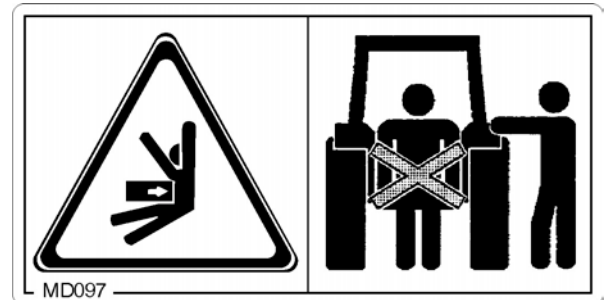
Before starting operation read and observe instruction manual and safety advice.


Bild-Nr.: MD 097
Explanation

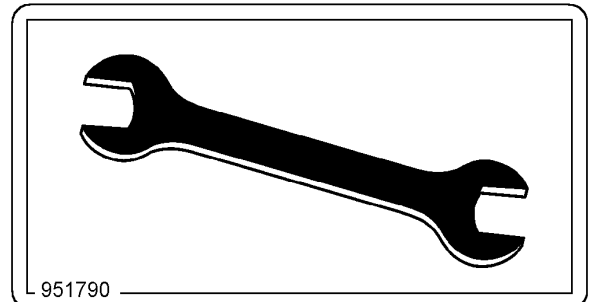
Danger of bruising while standing between tractor and implement.

When coupling the combination to the tractor no persons may stay between tractor and machine.

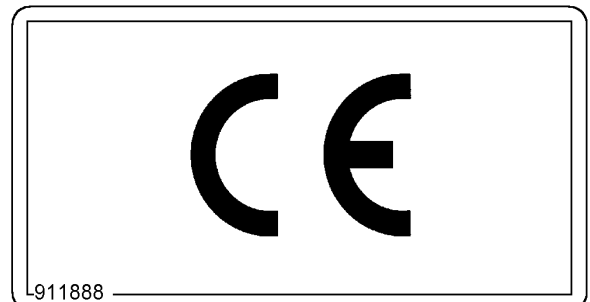
Do not stay between tractor and implement while actuating the three point linkage outside the tractor cab.


Picture No.: 951790
Explanation

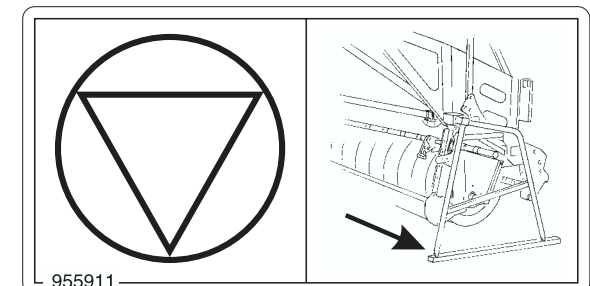
Retighten bolts after some hours of operation.


Picture No.: 911888
Explanation

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


Picture No.: 955911
Explanation:

The standing safety of the machine is only ensured when it is parked on the provided parking supports.


Picture No.: 955912
Explanation:

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





3.5 Safety conscious operation

In addition to the safety advice in this operation manual the national, and general operational safety and accident preventive descriptions of the authorised trade association are binding, especially UVV 3.1, UVV 3.2 and UVV 3.3.

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

3.6 Safety advice for the operator

3.6.1 General safety and accident preventive advice

Basic principle:

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

1. Adhere to the general rules of health- and safety precautions as well as to the hints in this instruction manual!
2. The warning- and hint signs fixed to the machine give important hints for the safe operation of the machine. Adhering to them serves your safety.
3. When making use of public roads adhere to the applicable traffic rules.
4. Become acquainted with all devices and controlling elements as well as their function before commencing work. Doing this during operation would be too late.
5. The clothing of the operator should fit tight. Avoid wearing loose clothing.
6. To avoid risk of fire keep the machine clean.
7. Before beginning to drive check your surroundings (children). Ensure sufficient visibility.
8. Sitting or standing on the implement during operation or during transport is prohibited.
9. Mount the implement only with the prescribed tools.
10. Special care should be taken when the implement is coupled to or from the tractor.
11. When mounting or dismounting bring parking supports into their correct position (otherwise danger of tipping over).
12. Affix any ballast weights always as prescribed to the correct fixing points.
13. Check maximum permissible axle loads, total weights and transport dimensions.
14. Do not exceed maximum permissible transport measurements of the traffic department.
15. Check and fit equipment for road transport, e. g. traffic lights, warning plates and road safety guards.
16. The release ropes for quick couplings must be hanging freely without any possibility of being actuated and releasing the quick couplings by themselves.
17. Never leave the tractor seat during driving!
18. The machines stability, steering and braking are affected by mounted implements, trailers and ballast weights. Therefore, take account of these effects and allow for changes to the steering and to stopping distances when braking.
19. When lifting the implement the front axle load of the tractor is reduced by differing amounts depending on the size of the tractor. Always check that the necessary front axle load of the tractor (20 % of the tractor's net weight) is maintained. (Please also adhere to the instruction manual of the tractor manufacturer.)
20. When driving into corners and/or bends watch out for the projection to the sides and the gyrating mass of the implement.
21. Operate the implement only when all guards are fixed in position.
22. Never allow yourself or others to stay within the operational area!
23. Filling the seed box may only be carried out with the tractor engine stopped, a removed ignition key and the parking brake applied.
24. Do not stay within the operational range of rotating and swivelling parts of the implement.
25. Hydraulically folding parts may only be actuated when there is nobody standing within the moving range.
26. On all hydraulically actuated pivoting parts there exists danger of injury by bruising and trapping.
27. Before leaving the tractor lower the implement to the ground. Actuate the parking brakes, stop the engine and remove the ignition key.
28. Nobody should stand between tractor and implement unless the tractor is secured against rolling away by engaging the parking brake and/or by the use of wheel chocks with engine switched off and ignition key removed.
29. Lock track markers in transport position.

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

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

3.6.3 General safety and accident prevention advice regarding the operation of seed drills

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



3.6.4 General safety and accident prevention advice regarding the hydraulic system

1. The hydraulic system is under high pressure!
2. When connecting hydraulic rams and motors the described connection of the hydraulic hoses has to be followed!
3. When connecting the hydraulic hoses to the tractor's hydraulics take care that the hydraulics are pressure less on the tractor as well as on the implement side!
4. At hydraulic function connections between tractor and implement, the sockets and plugs should be colour coded in order to avoid incorrect operation.
When mixing up connections, there is a danger of reverse function, e. g. lifting instead of lowering. Danger of accident.
5. Regularly check hydraulic hoses and exchange them in cases of damage or ageing. The replacement hoses have to correspond to the technical demands of the implement manufacturer!
6. When searching for leaks appropriate aids should be used due to danger of injury!
7. Liquids (hydraulic oil) under high pressure may penetrate the skin and cause severe injuries! In case of injuries immediately consult a doctor. Danger of infection!
8. Before starting to do any repair work on the hydraulic system, lower implement to the ground, switch off the engine, relieve the hydraulic system from pressure and switch off the engine.
9. The period of use of any hose circuit should not exceed six years including a storage period of two years in maximum. Even when stored and used properly, hoses and hose circuits age. Therefore, their longevity and period of use is limited. Deviations from the above may be accepted depending on the experience made and the danger potential. For hoses and hose circuits made of thermoplastics 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 correction and remedy of a function or fault should in principal be conducted with the engine and drive to the implement stopped. Remove ignition key.
2. Check nuts and bolts regularly for tightness and retighten if necessary.
3. When doing maintenance work on a raised implement make sure that it is secured by proper supports.
4. When exchanging parts with cutting edges use appropriate tools and wear gloves.
5. Dispose of oil, grease and filters in the appropriate environmentally approved manner!
6. Before doing any repair work on the electric disconnect power supply.
7. Before conducting electric welding operations on tractor or on the mounted implement, remove cable from generator and battery.
8. Any spare parts fitted, as a minimum requirement, must meet with the implement manufacturers' fixed technical standards. This is, for example, ensured by using original AMAZONE spare parts.

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

The implement can be fitted with electronic components the function of which creates electro-magnetic transmittance during normal use. This may affect other implements. Such transmittance effects may cause danger for other people, when the following safety advice is not adhered to:

When retrofitting electric devices and/or components to the implement with connection to the on-board power supply, the user has to check for himself whether the installation may failure of the vehicle's electronic components or on other associated components.

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



3.6.7 Determining the total weight, the axle load and the tyre carrying capacity as well as the required minimum ballast weights on a combination tractor / mounted implement



The mounting of implements to the front- and rear three point arms may not result in an exceeding of the permissible total weight, axle loads and tyre carrying capacity of the tractor. The front axle of the tractor must always be loaded with at least 20 % of the tractor's net weight.

Before purchasing an implement ensure that these pre-conditions are fulfilled by carrying out the following calculations or by weighing the tractor-implement-combination.

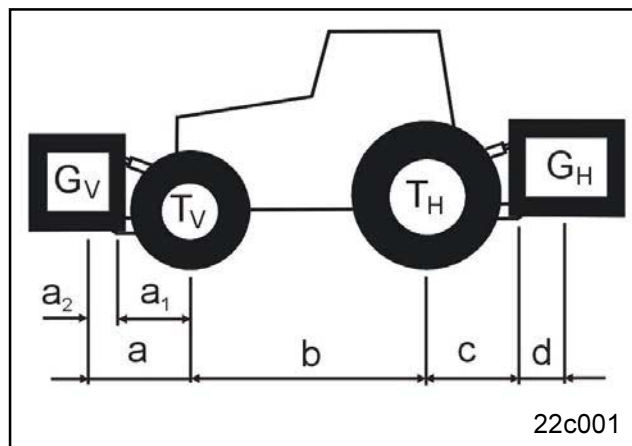


Fig. 3.6

For calculation you need the following data (please also refer to Fig. 4.5):

T_L [kg]	Net weight of tractor	❶
T_V [kg]	Front axle load of the empty tractor	❶
T_H [kg]	Rear axle load of the empty tractor	❶
G_H [kg]	Total weight rear mounted implement / rear ballast weight	❷
G_V [kg]	Total weight front mounted implement / front ballast weight	❷
a [m]	Distance between centre of gravity of the front mounted implement / front ballast weight and centre of the front axle	❷ ❸
b [m]	Tractor wheel base	❶ ❸
c [m]	Distance between rear axle centre and lower link ball centre	❶ ❸
d [m]	Distance between lower link ball centre and centre of gravity rear mounted implement / rear ballast weight	❷

- ❶ see tractor instruction book
- ❷ see price list and/or instruction manual of the implement (Para. 2.6)
- ❸ take measurements

t178gb04

Rear mounted implements or front-/rear-mounted combinations

1) Calculation (see Fig. 3.7) of the minimum ballast weights front $G_{V \min}$

Insert the calculated minimum ballast weight which is required in the front of the tractor into table Fig. 3.11.

Front mounted implement

2) Calculation (see Fig. 3.8) of the minimum ballast weights rear $G_{H \min}$

Insert the calculated minimum ballast weight which is required in the rear of the tractor into table Fig. 3.11. Take "x" from the indications of the tractor manufacturer. If no data available, insert for "x" = 0.45.

3) Calculating (see Fig. 3.9) of the actual front axle load $T_{V \text{ real}}$

If with the front mounted implement (G_V) the required minimum ballast weights front ($G_{V \min}$) will not be achieved, the weight of the front mounted implement must be increased so that it is equal the minimum ballast weight in the front.

Insert the calculated actual front axle load and the permissible axle load indicated in the instruction manual for your tractor into table Fig. 3.11.

4) Calculation (see Fig. 3.10) of the actual total weight G_{real}

If with the rear mounted implement (G_H) the required minimum ballast weight rear ($G_{H \min}$) will not be achieved, the weight of the rear mounted implement must be increased so that it is equal to the minimum ballast weight in the rear.

Insert the calculated actual total weight and the permissible total weight indicated in the instruction manual for your tractor into table Fig. 3.11.

5) Calculation (see Fig. 3.11) of the rear actual rear axle load $T_{H \text{ real}}$

Insert the calculated actual axle load and the permissible axle load indicated in the instruction manual for your tractor into table 3.11.

6) Tyre carrying capacity

Insert double the value (two tyres) of the permissible tyre carrying capacity (see e. g. documentation of the tyre manufacturer) into the table.

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

Fig. 3.7

$$G_{H \min} = \frac{G_V \cdot a - T_H \cdot b + x \cdot T_L \cdot b}{b + c + d}$$

Fig. 3.8

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

Fig. 3.9

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

Fig. 3.10

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

Fig. 3.11



The minimum ballast has to be applied as a mounted unit or a ballast weight to the tractor!

The calculated values must be smaller or equal to the permissible values.



Table Fig. 3.11	Actual value according to calculation	Permissible value according to instruction manual	Double permissible Tyre load capacity (two tyres)
Minimum ballast weight Front / rear	<div>/</div> kg	---	---
Total weight	<div></div> kg	≤ <div></div> kg	---
Front axle load	<div></div> kg	≤ <div></div> kg	≤ <div></div> kg
Rear axle load	<div></div> kg	≤ <div></div> kg	≤ <div></div> kg

t178gb03

Fig. 3.12

4.0 Preparing for machine operation

Carefully read and adhere to the instruction manual and safety advice before putting your seed drill into operation!

Acquaint yourself with the correct methods of handling and with all operating devices. Never allow the machine to be operated by persons that have not been informed about the operation of the machine.

Maintain your machine in a good operational order. Changes to the machine that are not approved by the manufacturer may endanger the functionality and/or safety and may reduce the life span of the machine. Claims for warranty on the machine and / or for spare parts will be rejected in cases of operational errors.

Liability claims will only be considered if exclusively original AMAZONE spare parts and wearing parts are used for replacement.



Never place any parts inside the seed box, as the agitator and the metering units may be damaged.

4.1 Attaching the implement components to the tractor

Rotary cultivator / rotary harrow and roller

Attach the combination consisting of rotary cultivator / rotary harrow and roller to your tractor according to the supplied instruction manual for the rotary cultivator/ rotary harrow.

Pack top seed rail AS

Attach the pack top seed rail AS on to a combination

- with tyre packer or wedge ring roller (KW 580) according to para. 16
- with tooth packer- or wedge ring roller (KW 450) according to para. 17.

Fit the loosely supplied parts to your pack top seed rail AS

- Track markers according to para. 24.1
- Extra coverage following harrow according to para. 25.1.

Front seed tank

Attach the front seed tank on to your tractor see para. 5.0.

4.2 Settings and checking prior to any operation



Observe the safety advice according to para. 3.6.4 .

Only actuate the control spool valves inside the tractor cab.

When actuating the control valves, the hydraulic rams for actuating the track markers, the switch box of the tramlining control and the tramline marker unit are pressurised, depending on the switching position.

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

Hydraulic connections

Install hydraulic connections to the tractor see para. 2.7.

Hydraulic blower fan drive

Connect the hydraulic blower fan drive to the tractor hydraulics see para. 7.



Check the hydraulic hoses before and during operation according to para. 50.9.

Check air pressure

Check the air pressure of the front packer tyres see para. 50.3.

Filling the front seed tank

Filling the front seed tank see para. 9.1.

Setting the metering unit

Set the metering unit(s) according to the seed to be sown see para. 11.

Determine the gearbox setting position for the desired seed rate:

- without AMADOS-seed rate remote control see para. 12
- with AMADOS-seed rate remote control see para. 13.



4.3 **Setting up the machine in the field**
Calibrating the distance sensor

Take the value "Imp./100m" from table Fig. 4.1 and enter this value into the computer according to the AMADOS instruction manual.



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



Take the calibration value "Imp./100m" only then from table Fig. 4.1 if the distance sensor (Fig. 4.2/1) is fitted as illustrated.

Track marker

Bring track marker into operational position see para. 24.2.

Setting the track marker to the correct length see apra. 24.4.

Set the markers in such a way that they mark on the correct side.

Setting AMADOS-tramline control

see para. 26.2.

Set hectare counter to "zero"

(see AMADOS-instruction manual).

Working depth and tine rev. speed

Set the working depth and the tine rev. speed according to the instruction manual for rotary cultivator/rotary harrow.



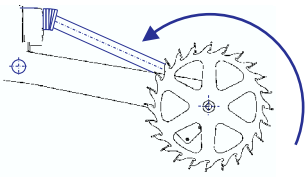
 		
	1/40 ha	1/10 ha
	3,0 m	38,5 154,0
	4,0 m	29,0 117,0
	4,5 m	26,0 104,0
	6,0 m	19,5 78,0
Working width	Crank turns on the star wheel	
AMADOS II Imp./100 m	1502	

Fig. 4.1

t182gb02



Fig. 4.2

Star wheel

For road transport the star wheel (Fig. 4.3/1) is lifted fixed to the frame using a chain und mit einer Kette (Fig. 4.3/2).

Pressurise the hydraulic ram (Fig. 4.3/3) so that the star wheel is lifted.

Briefly lift the star wheel by hand, remove the chain (Fig. 4.3/2) and lower (see Fig. 4.4).

4.4 Starting operation

Bring the blower fan on to the correct rev. speed
see para. 7.1.

Lower the seed tank

Lower the seed tank with the front packer roller to the ground and bring control spool valve into floating position.

Lowering the star wheel

Before commencing work lower the star wheel by actuating the control spool valve in the tractor cab. The star wheel drives the metering units.

Electric additional drive

If necessary start the electric additional drive (if existent), see para. 31.

Lower the rear combination

Bring the PTO shaft to its operational speed (see instruction manual for rotary cultivator /rotary harrow), start the tractor and lower the rear combination. The tines of the soil tillage implement start to operate in the soil. While the tractor is moving on the coulters get into touch with the soil where the soil tillage has been started.

4.5 Turning at the headlands

If it is intended to interrupt sowing at the headlands, raise the star wheel and/or the seed tank by actuating the control spool valve. Ensure that the seed supply from the metering unit to the injector sluice is interrupted, however the coulters will still go on sowing until all seed tubes are empty.



To avoid a loss of seed and damage on the star wheel, lift the star wheel before turning at the headlands.

Also ensure that before turning the rear mount combination is lifted from the ground sufficiently to avoid damage on the coulters.



Fig. 4.3



Fig. 4.4

Hints for the foldable combination

Usually, foldable combinations are not folded for turning at the headlands.

4.6 Check after the first 30m of operation

Travel 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
- Operation intensity of the track marker discs

4.7 During operation

The seed level inside the seed tank can be checked with the electr. seed level indicator AMFÜME (see para. 9.2). Set the seed level indicator so that an empty alarm is given early enough. In any case, the seed tank must never be emptied completely in order to avoid seed rate deviations.



Refill the seed tank early enough (never empty completely) to avoid seed rate deviations.

Monitoring the seed shaft

The sensor (Fig. 4.5/1) monitors the seed shaft. If the seed shaft stops during operation AMADOS sends a fault message. In the display "Error 2" appears together with an audible signal.

Standstill of the rotary cultivator/rotary harrow tines during operation

In stony soils or when hitting a firm obstacle the tines of the rotary cultivator may come to a standstill. To avoid damage on the gearbox, the PTO shafts are provided with friction clutches or ratchet clutches. For more detailed information, please refer to the instruction manual for the rotary cultivator/rotary harrow.

Only valid for foldable rotary cultivators:

The rotary cultivator is equipped with PTO shafts provided with ratchet clutches which are monitored by sensors (special option). At a standstill, AMADOS which is connected with these sensors, sends a fault message, i.e.:

Error 5, at a standstill on the left hand implement side
Error 6, at a standstill on the right hand implement side.

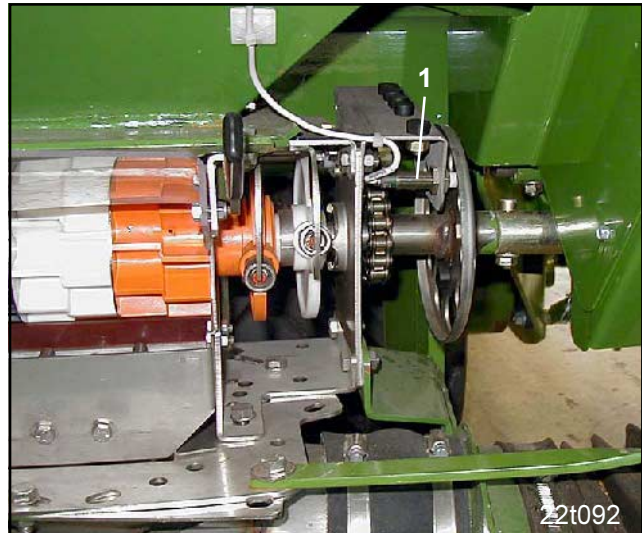


Fig. 4.5



The fault message which is given at a PTO shaft standstill is displayed only with AMA-DOS II in the version from 12.08.1999.

In case of a standstill of the rotors due to a disengagement of one or both ratchet clutches, please refer to the hints given in the attached instruction manual for the rotary cultivator.

4.8 Maintenance work after the first operational hours

Carry out maintenance work according to para. 50.1.

4.9 Parking the combination Pack top seed rail with roller

For parking the combination consisting of rotary cultivator/harrow and roller together with the pack top seed rail AS, please use the provided supports (Fig. 4.6/1) of the pack top seed rail.

The pack top seed rail AS 602 which is divided in its centre should in addition be supported by the support (Fig. 4.7/1). Secure the support by using a clip pin.

Before uncoupling the rear mount combination off the tractor insert the depth setting pins (Fig. 4.8/1) of the soil tillage implement in the upper most hole of the setting quadrant brackets (Fig. 4.8/2).



When re-inserting the depth setting pins (Fig. 4.8/1), please hold them only in such a way that your hand will never get between the pin and the carrying arm. After replacement of the pins, secure them with clip pins.



If it is intended to park the tyre packer roller, we recommend that you park the combination on the supports as described before. This way the tyres are relieved and damage on tyres and tyre bracing rings are avoided.

If it is intended to park the tyre packer roller without pack top seed rail, the tyres should be relieved from load as it is described in the operating instruction for the tyre packer roller.

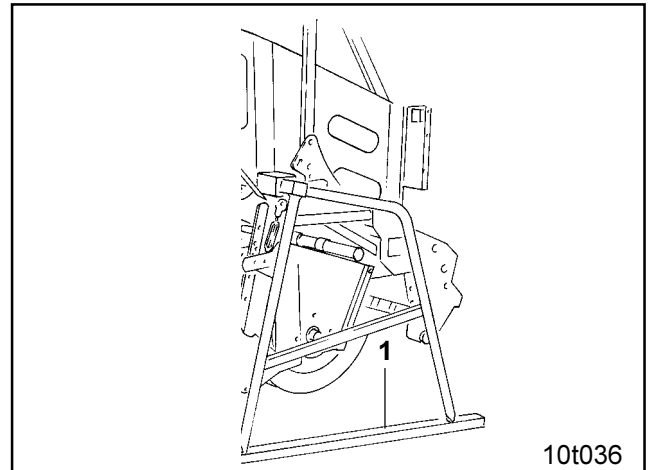


Fig. 4.6

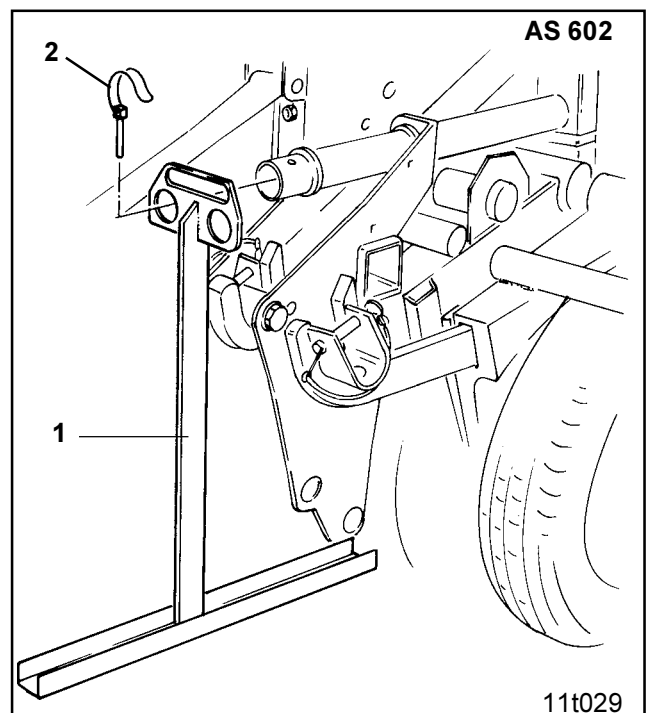


Fig 4.7

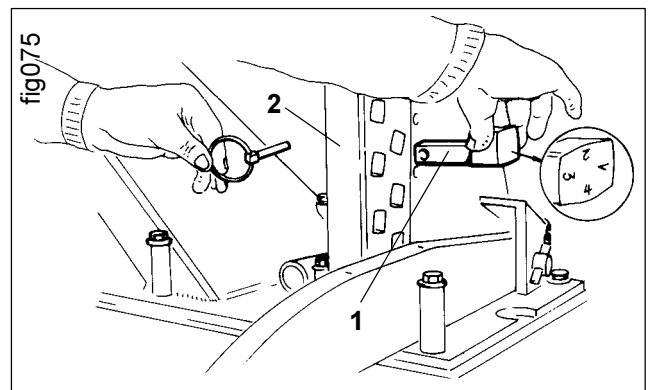


Fig 4.8



5.0 Coupling the front seed tank



When coupling the front seed tank read and adhere the safety advice for implements mounted on to the tractor three point hydraulic according to para. 3.6.2.

Couple the front seed tank as usual to the front hydraulics of your tractor

The lower link arm cat. II (Fig. 5.1/1) can be adjusted in its height and adapted to any type of tractor. Ensure that the lower link arm is locked (Fig. 5.1/2), secured against twisting (Fig. 5.1/3) and fixed with setting rings (Fig. 5.1/3) which should be firmly pressed on to the brackets (Fig. 5.1/5).

Affix the top link (Fig. 5.1/6) with top link pins cat. II (Fig. 5.1/7) and secure by using a clip pin. Adjust the top link length to align the front seed tank.

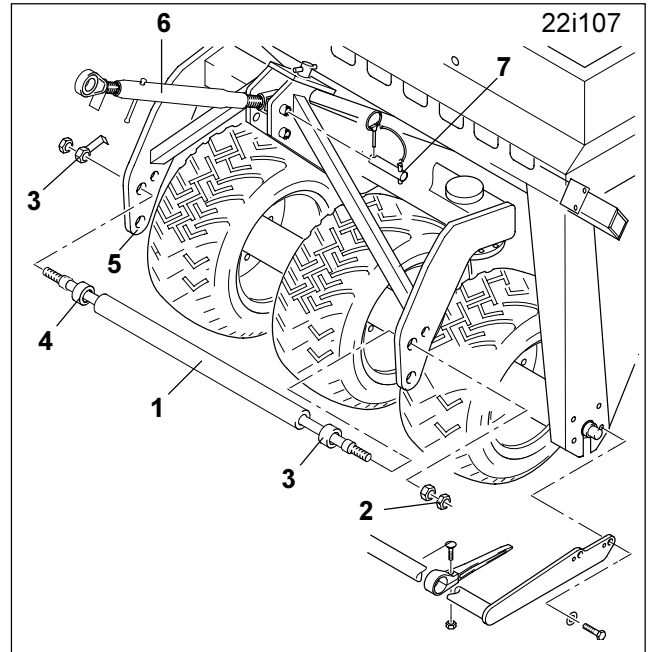


Fig. 5.1



Observe when fitting the front seed tank. The tractor lower links must be equipped with a pendulum equalisation to compensate terrain undulations and to avoid FPS frame deformation. The lower link arms of the tractor must have only little lateral play.



Hints for top link fixing

The tractor can lift the front seed tank easier when the top link is fitted to the front seed tank as low as possible and on the tractor as high as possible. Check whether the lifting height is bit enough.



After coupling the front seed tank to the tractor push the FPS-support stand (Fig. 5.2) upwards and before uncoupling the front seed tank off the tractor in downwards.

After any re-adjustment lock the support stand with the earlier slackened pin and secure using a clip pin.

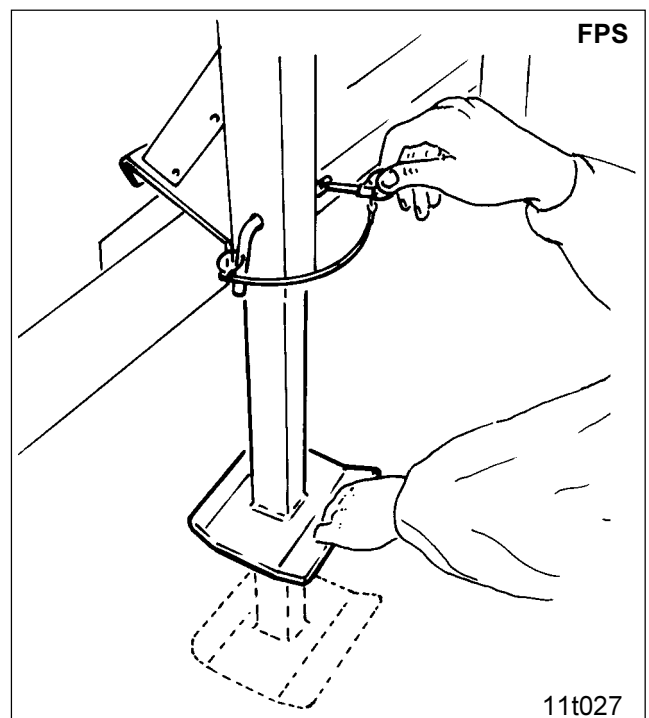


Fig. 5.2

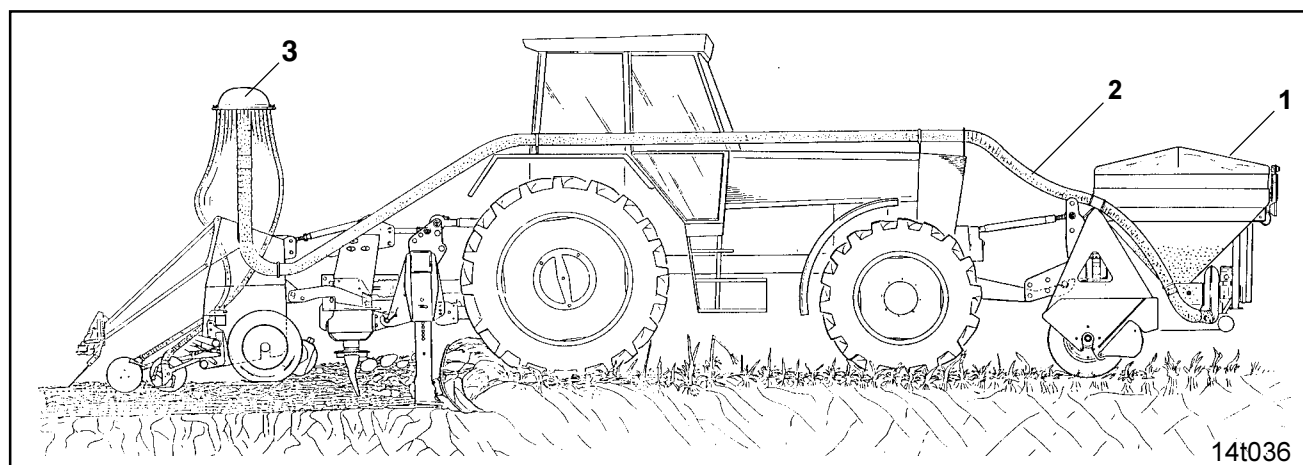


Fig. 5.3

Install seed guide tubes and electric cables only after the combination has been fixed to the tractor.

Via one or two seed guide tubes (Fig. 5.3/2) the seed is delivered from the front seed tank (Fig. 5.3/1) to the distributor(s) (Fig. 5.3/2) of the seed rail. Affix the seed guide tubes (Fig. 5.4/1) to the tractor with at least one bracket in front (Fig. 5.4/2) and one bracket at the rear (Fig. 5.5/1). Make these brackets suitable for your tractor type and fix them on the tractor.



When installing the seed guide tubes between front seed tank and distributor(s) take care for short distances.



Route the seed guide tubes in such a way that they will not be damaged during operation.

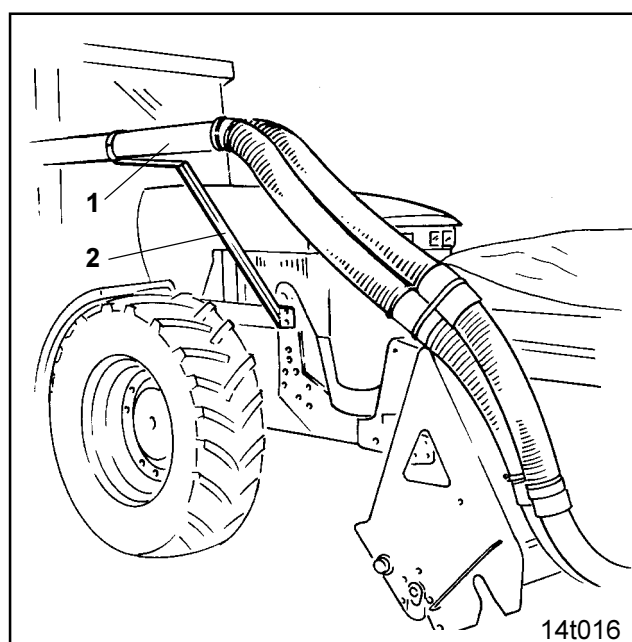


Fig. 5.4

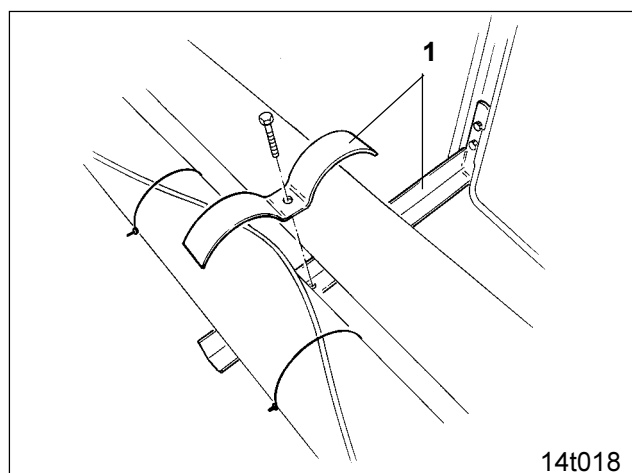


Fig. 5.5

Insert the seed guide tubes into one another and secure by using quick couplings (Fig. 5.6/1).

Install and affix to the tractor both the seed guide tubes and the set of cables (Fig. 5.7/5).

Install the distribution box (Fig. 5.7/1) in the tractor cab in such a way that the switch can conveniently be reached when travelling.

Connect the distribution box (Fig. 5.7/1) to the tractor battery (ensure correct polarity).

At the same time connect the earth cable (Fig. 5.7/2) to the negative pole of the battery.

Plug in the distribution box (Fig. 5.7/1) both, the plug (Fig. 5.7/3) for the power supply of the AMADOS on board computer and the plug (Fig. 5.7/4) for the power supply of the head lamps on the seed tank.

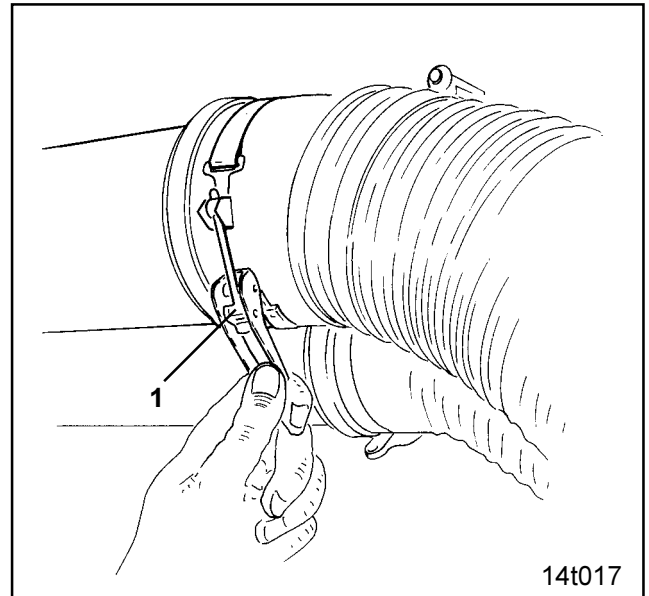


Fig. 5.6

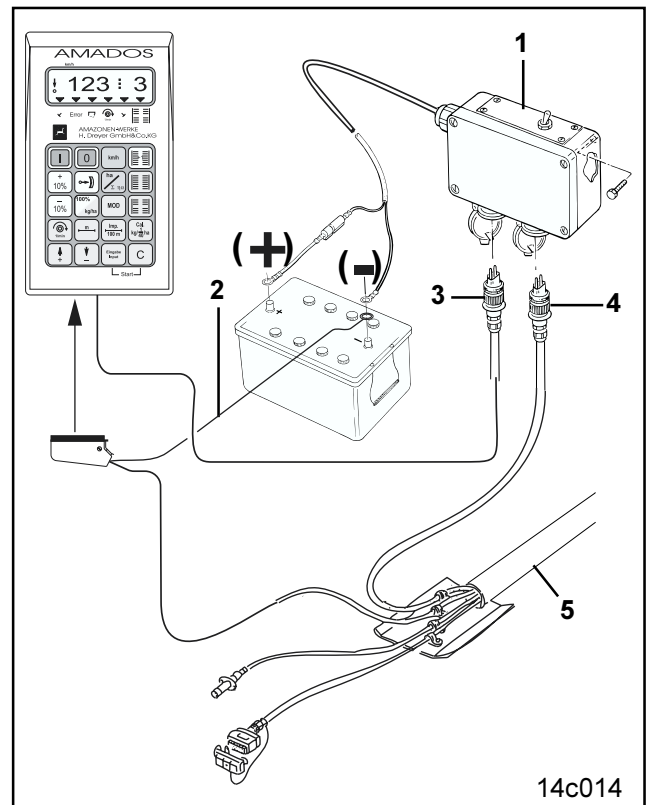


Fig. 5.7

The head lamps on the seed tank can be switched on or off on the switch of the distribution box (Fig. 5.8).

Additional plug connections belong to the set of cables (Fig. 5.7/5):

Rear plug connections:

- The plug (Fig. 5.9/1) for the indicators on the seed tank
Insert the plug (Fig. 5.9/1) in the supplied adapter and insert the adapter into the tractor socket (for the trailer traffic light).
The adapter has got two connectors. Also affix the plug of the seed rail lights on the second adapter connector.
- Plug (Fig. 5.9/2) with cables which lead to the AMADOS sensors on the seed rail. Insert the plug in the distributor of the seed rail.

Front plug connections:

Connect the combi-plug (Fig. 5.10/1) on the seed tank with the set of cables (Fig. 5.10/2) on the tractor.

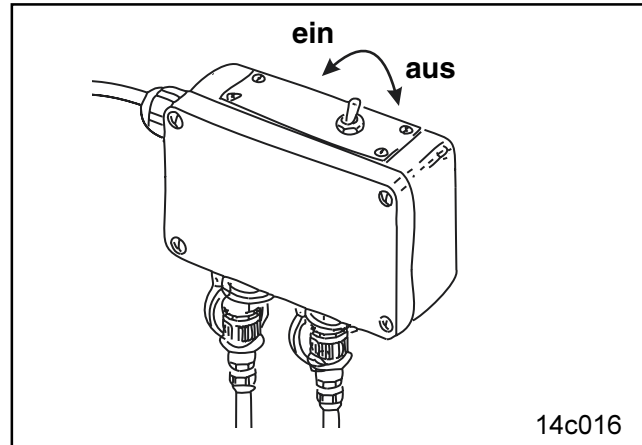


Fig. 5.8

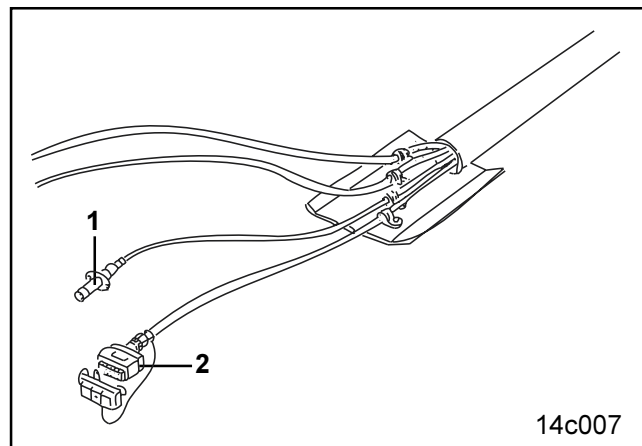


Fig. 5.9

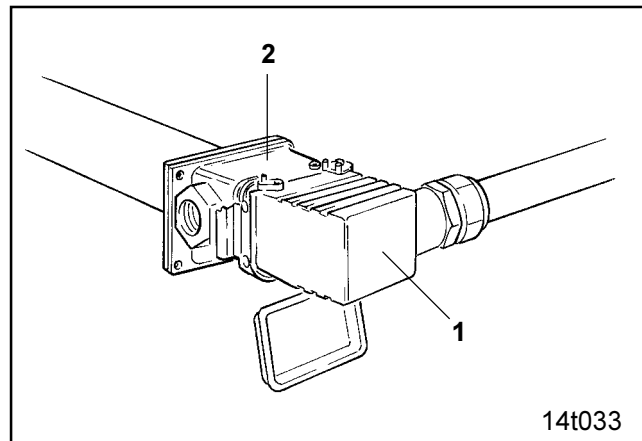


Fig. 5.10

7.0 Blower fan with hydraulic drive

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

To drive the blower fan with a hydrostatic motor (Fig. 7.3) it has to be connected to the tractor's hydraulics according to the circuit diagram (chapter 7.3).



For safety advice please observe chapter 3.6.4.

7.1 Blower fan speeds

The speed of the blower fan hydrostatic motor can be monitored by the electronic monitoring-, controlling and governing system AMADOS (please refer to chapter 7.2).

Please find the required blower fan speed in the table (Fig. 7.1).



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

Set the blower fan speed on the pressure relief valve (Fig. 7.2 or Fig. 7.6/3) or on the current regulating valve on the tractor (see below).

For setting the blower fan speed on the pressure relief valve (Fig. 7.2 or Fig. 7.6/3):

- remove dust cap (Fig. 7.2/1)
- slacken counter nut
- set the speed on the valve with a screw driver as follows:

Turn to the right hand side = speed is increased

Turn to the left hand side = speed is reduced.

After setting, secure the valve with counter nut and cover with dust cap (Fig. 7.2/1).

On tractors with controllable hydraulic pump (Fig. 7.6/5) the necessary oil volume should be set at the current regulating valve and the pressure relief valve (Fig. 7.6/3) in such a way that the oil volume is as little as possible. Larger oil volumes than necessary are led back into the oil tank by the pressure relief valve and result in unnecessary heating up of the hydraulic oil.

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

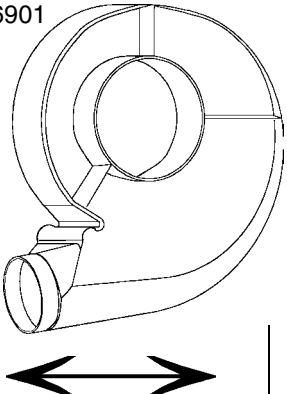

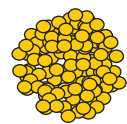
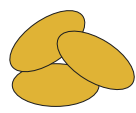
956901		
		
AD-P / AD-PL FRS / FPS AIRSTAR Xact		
		
		
3,0 m	2800	3500
4,0 m	3000	3800
4,5 m	3000	3800
6,0 m	3200	3900
Working width	Blower fan speeds (R.P.M.)	
	Fine seeds (rape)	Legumes (grain)
t170gb05		

Fig. 7.1

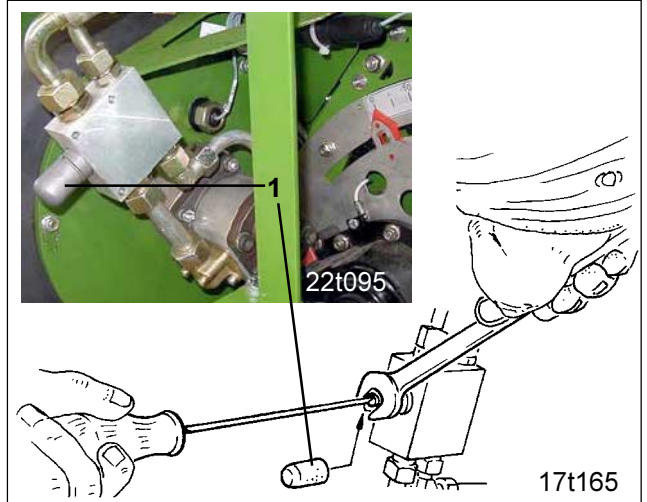


Fig. 7.2

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

7.2 Rev. speed monitoring

The blower fan speed can be monitored by the electr. controlling and governing system AMADOS.

The blower fan is equipped with a speed sensor (Fig. 7.3/1).

By pressing

key



the current speed is shown in the display.

If the desired rev. speed deviates by more than 10 % an audible alarm sounds and the black triangle (Fig. 7.4) above the speed figure symbol flicks on the display.



Enter the desired speed as described in para. "Rev. speed monitoring of the blower fan" in the AMADOS instruction book.



The alarm is released only if AMADOS receives impulses from the distance sensor Fig. 7.5/1).

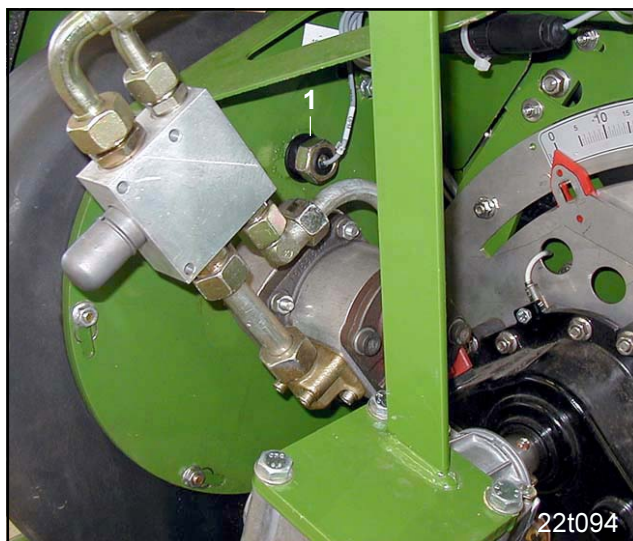


Fig. 7.3

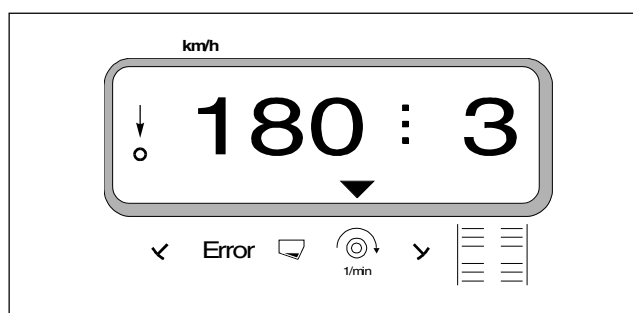


Fig. 7.4



Fig. 7.5

7.3 Circuit diagram Blower fan with hydraulic drive

No.	Description
1	Blower fan hydraulic motor N _{max.} = 4000 R.P.M.
2	DBV-valve with hydraulic freewheel
3	Adjustable pressure relief valve
4	Check valve
5	Tractor hydraulic pump (the capacity of the tractor hydraulic pump must be in minimum 40 l/m at 150 bar)
6	Free return flow - Tube nominal width min. Ø16 mm - Use couplings with sufficiently large diameter - The pressure in the return flow must not exceed 10 bar.
7	Filter
8	Single or double acting control spool valve
9	Hydraulic oil reservoir
10	Plug coupling
11	Plug coupling "large"

t691gb15

Do not create other connections than shown in the circuit diagram (Fig. 7.6).

7.3.1 Explanations for the circuit diagram

On the pressure side the blower fan hydrostatic motor (Fig. 7.6/1) may be connected to either a single or to a double acting control spool valve (Fig. 7.6/8).

In order not to damage the hydrostatic motor, the oil pressure in the return flow (Fig. 7.6/6) must not exceed 10 bar. Therefore, never connect the return flow to the control spool valve (Fig. 7.6/8) but to a non-pressurised return flow with a large plug coupling (Fig. 7.6/11). Should it become necessary to install a new return flow tubing, use only tubes DN16, e.g. Ø20 x 2,0 mm and short return flow ways.

The hydraulic oil must be guided through an oil filter (Fig. 7.6/7) at any place of choice.

The return flow hydraulic oil must never be guided through control spool valves as the oil pressure would then exceed the maximum pressure of 10 bar.
The check valve (Fig. 7.6/4) allows the blower fan to run after as soon as the control spool valve (Fig. 7.6/8) has been shut off.

Ensure that the hydraulic oil does not get too hot. If large amounts of oil are fed into small oil tanks the hydraulic

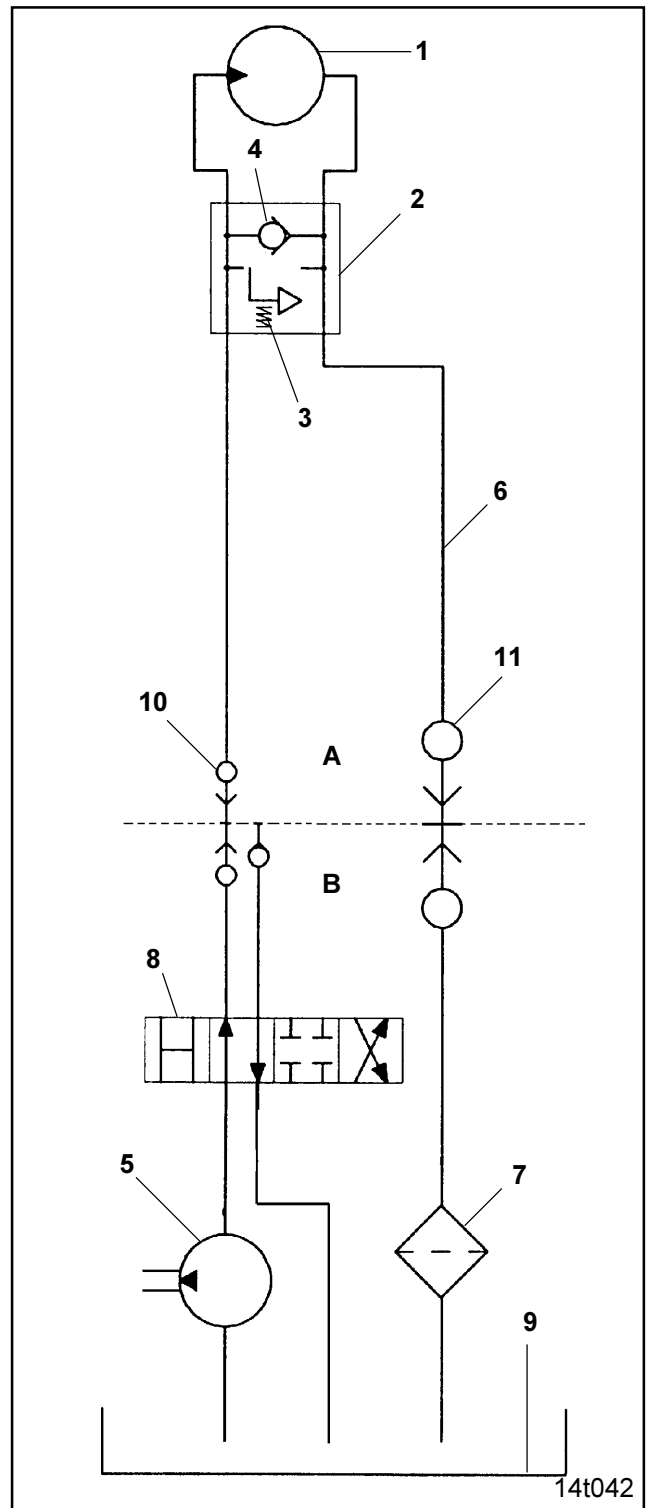


Fig. 7.6



oil will heat up. The capacity of the oil tank (Fig. 7.6/9) should at least have the double of 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 may damage the blower fan hydrostatic motor (Fig. 7.6/1) and the pressure relief valve (Fig. 7.6/3). 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 the blower fan hydrostatic motor yet another hydrostatic motor, both motors should be switched parallel. When switching both motors in line the maximum permissible oil pressure of 10 bar will be always exceeded behind the first motor.

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

9.0 Filling and emptying the seed tank and seed level monitoring

9.1 Filling the seed tank

The seed tank is rain proof covered by the folding cover canvass. The folding cover canvass is secured with rubber strips (Fig. 9.1/1).

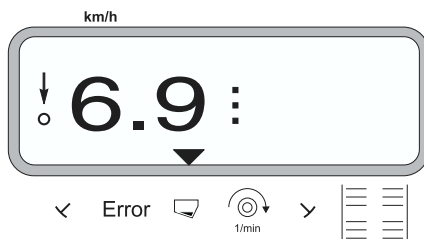
The seed tank can be filled from a tipping trailer or from big bags. The seed tank can conveniently be filled from the loading board (Fig. 9.2/1).



Refill the seed tank early enough!
Never drive the drill until the seed tank is completely empty. The seed level in the seed tank can be monitored with the electr. seed level indicator AMFÜME (see para. 9.2).

9.2 Electr. seed level indicator AMFÜME (special option)

A capacitive sensor (Fig. 9.3/1) which is connected to AMADOS monitors the seed level in the seed tank. If the sensor does not dip in the seed any more an audible signal sounds and the black triangle above the tank symbol flicks on the display:



The seed tank should never be emptied completely as this may result in differing seed rates. For changing the seed residue in the seed tank move the carrier (Fig. 9.3) with the sensor accordingly. The sensitiveness of the sensor can be adapted to the individual seeds by adjusting the setting screw (Fig. 9.3/2).

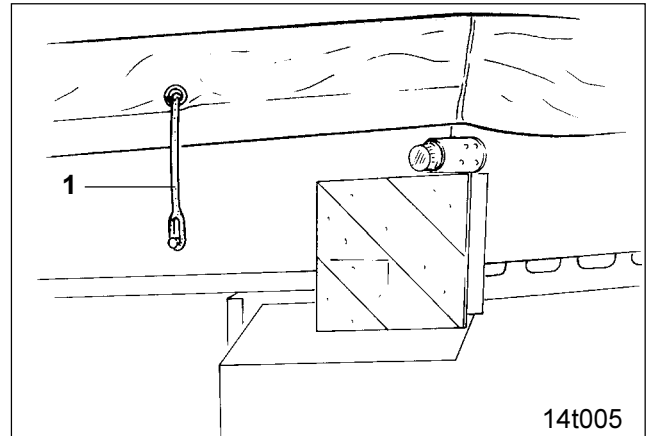


Fig. 9.1

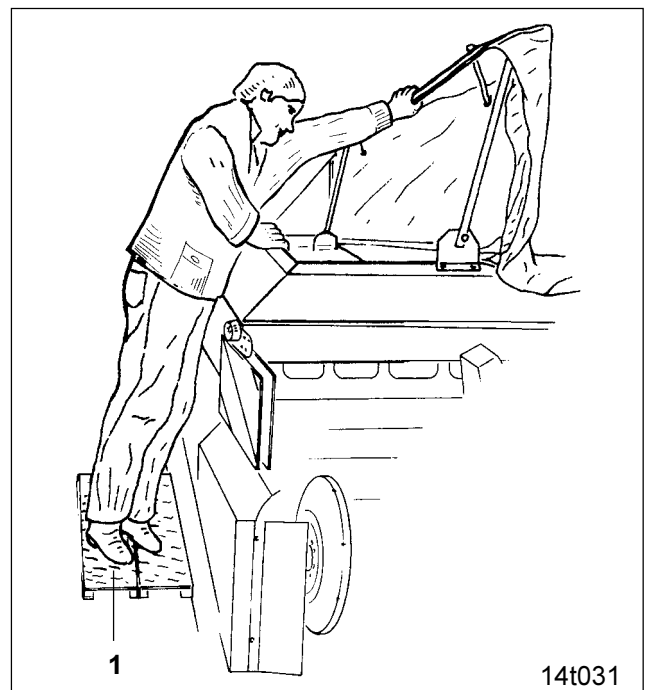


Fig. 9.2

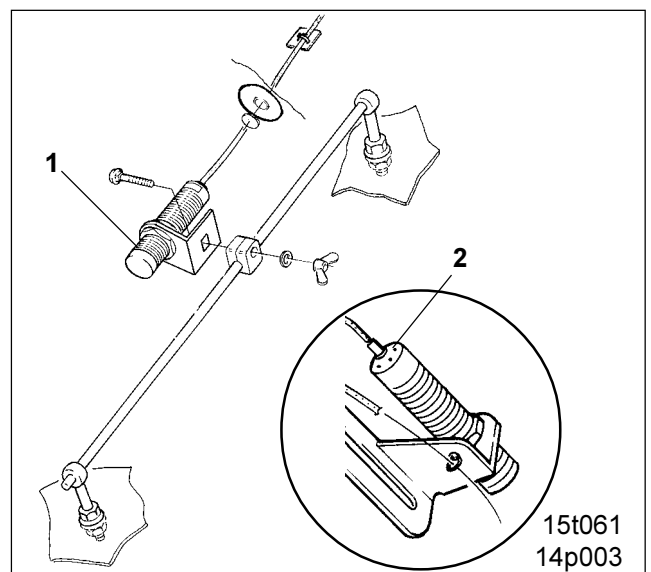


Fig. 9.3

9.3 Emptying the seed tank



After sowing operation implicitly empty and clean the seed tank and the metering wheels.

If the metering wheels are not emptied completely seed residue may swell or germinate even in the metering wheels. The metering wheels would block up and damage on drive or gearbox would be the result.

For emptying the seed tank place calibration buckets (Fig. 9.4) below the metering unit(s).

Open the injector sluice flap (Fig. 9.4/1) until the collecting bucket is filled with seed. Empty the bucket and repeat the procedure until no more seed will flow into the collecting bucket.

For residue emptying push the lever (Fig. 9.5/1) downwards and lock. With the lever an additional outlet behind the metering unit is opened.

For emptying the metering wheels turn them several times with the aid of the calibration crank in the same way as when carrying out the calibration test.

Then fix the calibration crank in its retainer and let the blower fan run briefly to remove all seed residue.

Shut off outlet opening.

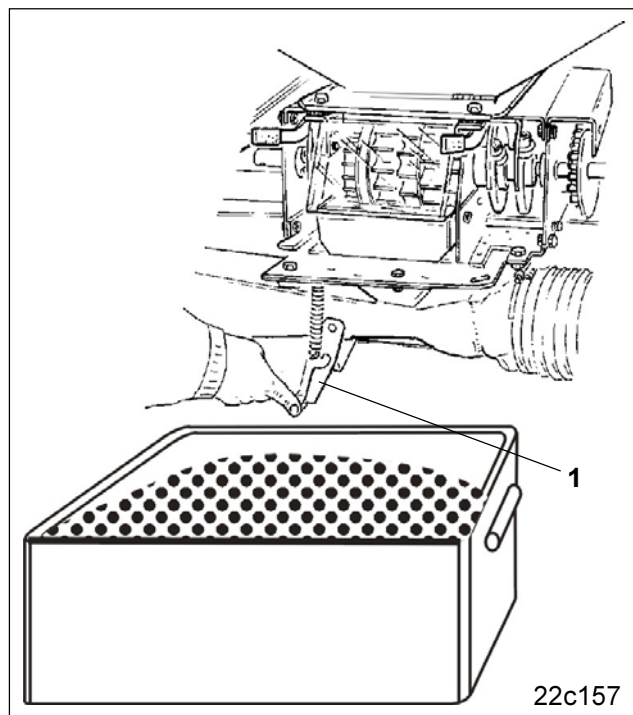


Fig. 9.4

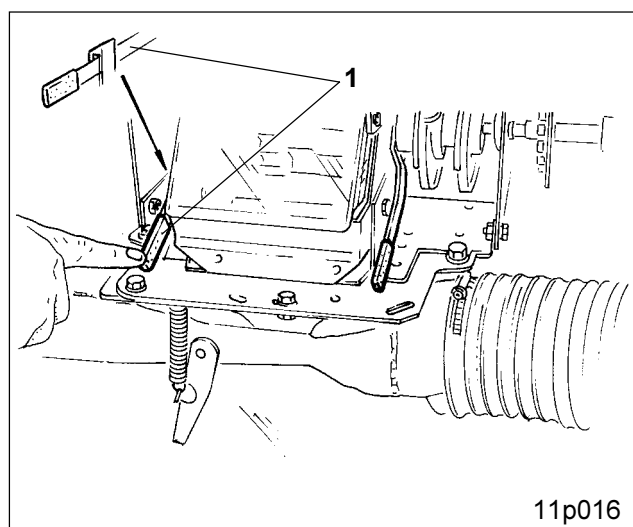


Fig. 9.5

11.0 Setting the metering unit to a particular seed

Every metering unit is provided with

- a white coloured main seed wheel (Fig. 11.1/1)
- an orange coloured main seed wheel (Fig. 11.1/2)
- a red/black coloured fine seed wheel (Fig. 11.1/3).



The required metering wheel(s) may be taken from the table (Fig. 11.2)

For seeds which have not been mentioned in the table (Fig. 11.2) please refer to a seed with a similar grain size when choosing the seed wheel.



When the table indicates: “Main seed wheels” (“Hauptsäräder”) (see table Fig. 11.2) always sow with both main seed wheels at the same time.

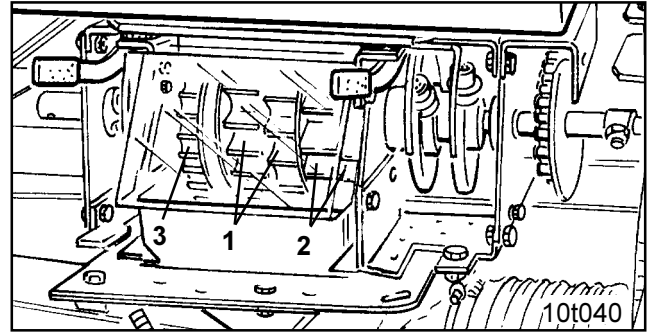


Fig. 11.1

Seed	Metering wheels	
Rye	Main seed wheels	Fine seed wheel
Triticale	Main seed wheels	Fine seed wheel
Barley	Main seed wheels	Fine seed wheel
Wheat	Main seed wheels	Fine seed wheel
Spelt	Main seed wheels	Fine seed wheel
Oats	Main seed wheels	Fine seed wheel
Rape	Fine seed wheel	-
Mustard	Fine seed wheel	-
Oil radish	Main seed wheels	Fine seed wheel
	Fine seed wheel	-
Phacelia	Main seed wheels	Fine seed wheel
	Fine seed wheel	-
Late turnip	Fine seed wheel	-
Grass	Main seed wheels	Fine seed wheel
Beans	Main seed wheels	-
Peas	Main seed wheels	-
Flax (dressed)	Main seed wheels	Fine seed wheel
Millet	Main seed wheels	Fine seed wheel
Lupines	Main seed wheels	-
Lucerne	Main seed wheels	Fine seed wheel
	Fine seed wheel	-
Oil seed (moist dressed)	Main seed wheels	Fine seed wheel
	Fine seed wheel	-
Red clover	Fine seed wheel	-
Soya	Main seed wheels	-
Sun flower	Main seed wheels	-
Vetches	Main seed wheels	-

Fig. 11.2

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11.1 Switching the metering wheels on and off

In the position "metering wheel on" ("Särad ein") the thumb bolt (Fig. 11.3/1) is driven in till the stop.

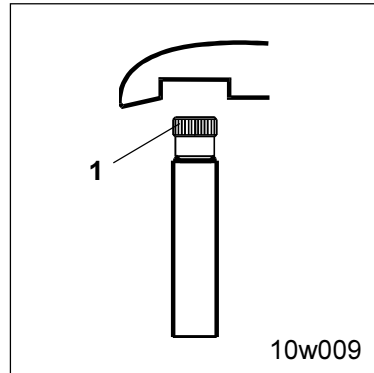


Fig. 11.3

In Position "metering wheel off" ("Särad aus") the thumb bolt (Fig. 11.4/1) has been driven out till the stop (Fig. 11.4/2).

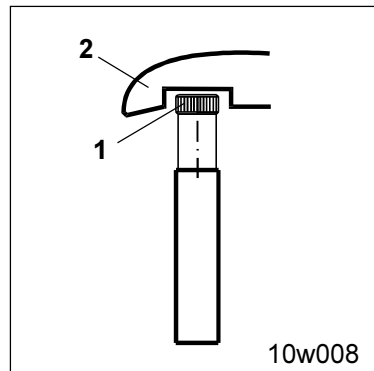


Fig. 11.4



Drive the thumb bolts either in position "metering wheel on" or "metering wheel off".
Never tighten thumb bolts too firmly or drive them too tightly to the stop (Fig. 11.4/2).

11.2 Sowing with both main metering wheels

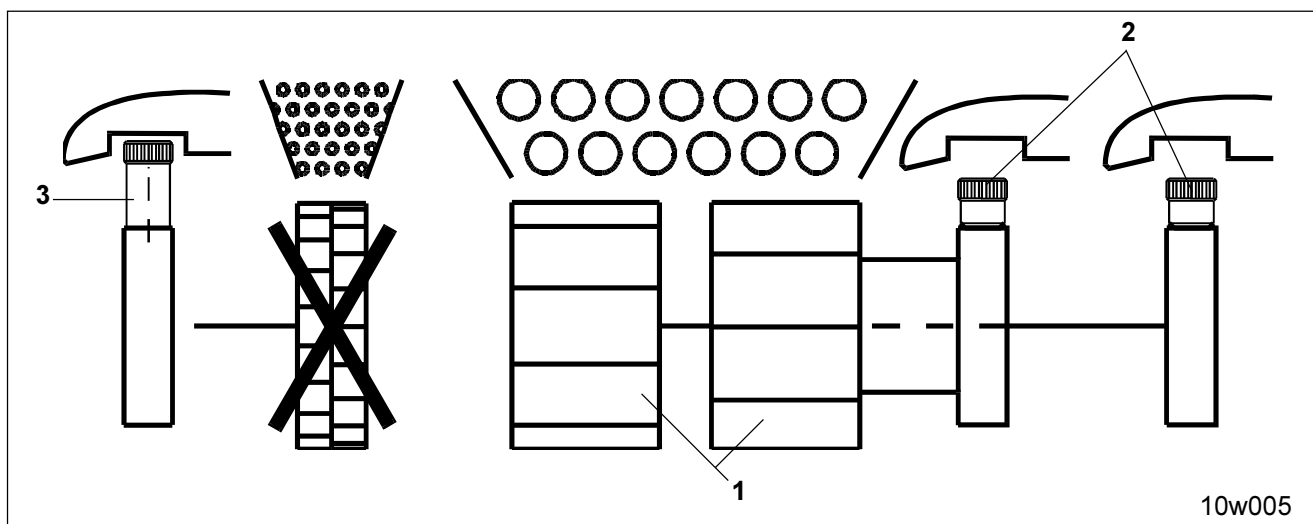


Fig. 11.5

For sowing with both metering wheels (Fig. 11.5/1)

- Turn the hand wheel (Fig. 11.7/1) until the thumb bolts (Fig. 11.7/2) can be seen
- Drive in thumb bolts (Fig. 11.5/2) of the main metering wheels
- Drive out thumb bolt (Fig. 11.5/3) of the fine seed metering wheel.

11.3 Sowing with the fine seed metering wheel

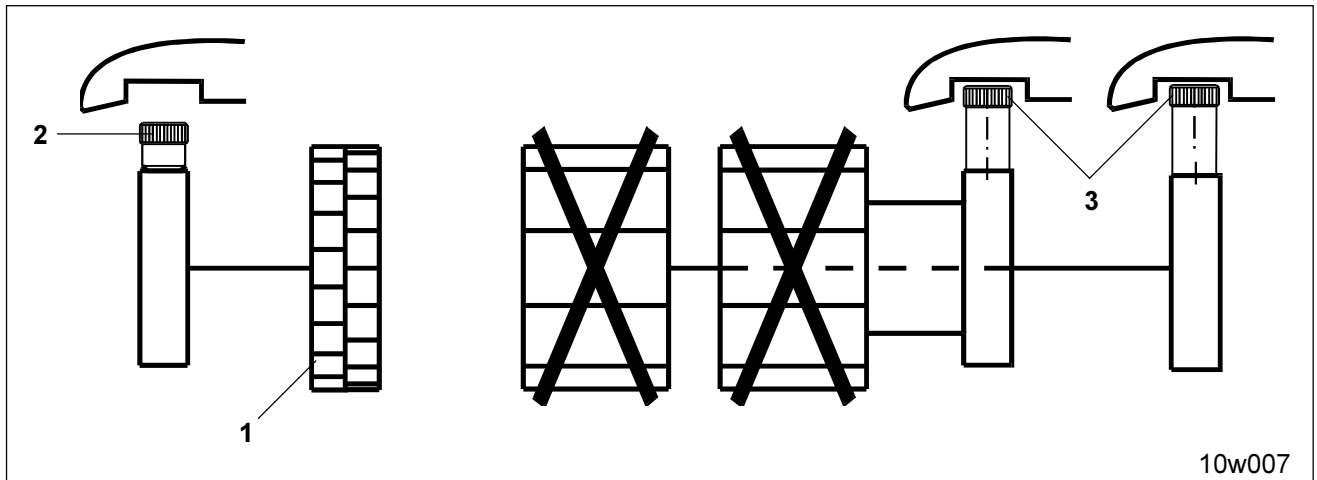


Fig. 11.6

When sowing with the fine seed metering wheel (Fig. 11.6/1)

- Turn hand wheel (Fig. 11.7/1) until the thumb bolts (Fig. 11.7/2) can be seen
- Drive in thumb bolt (Fig. 11.6/2) of the fine seed metering wheel
- Drive out thumb bolts (Fig. 11.6/3) of both main metering wheels.

11.4 Shear off safety

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

In case of blockage of the seed wheels a plastic bolt (Fig. 11.8/1) shears off and the power supply to the metering unit is interrupted. After removal of the blockage and replacement of the shear off bolt, the machine is ready for operation again. You will find 5 replacement shear off bolts (Fig. 11.8/2) in a retainer above the hand wheel.



For a faultless function only use a plastic shear off bolt M8 (order No. 917420).

In case of a standstill of the metering wheels during operation a warning is given on the AMADOS-display. The warning is released by a sensor (Fig. 11.8/3).

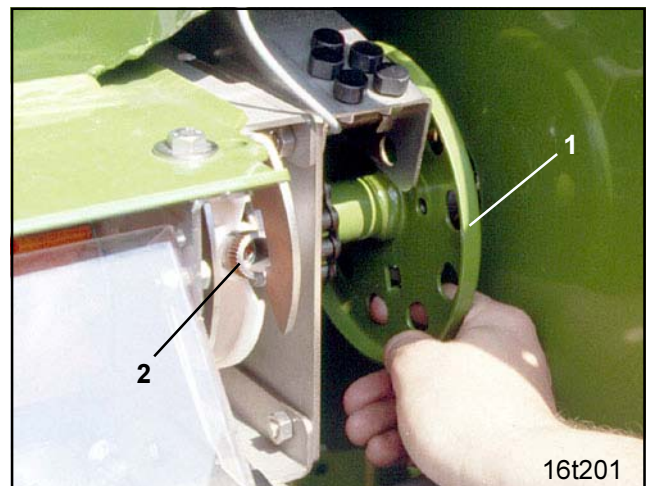


Fig. 11.7

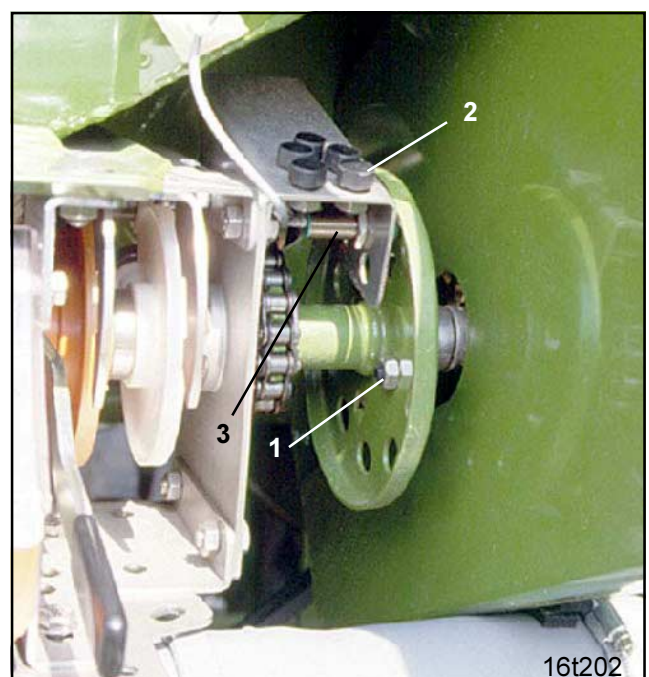


Fig. 11.8



12.0 Determining the gearbox setting for the desired seed rate

Set the metering unit according to para. 11.

Fill the seed tank with seed to 1/4 of its capacity.

The desired seed rate is set by the gearbox setting lever (Fig. 12.1/1).

By the gearbox setting lever (Fig. 12.1/2) the speed of the metering shaft and thus the seed rate can infinitely variably be set. The higher the figure on the scale (Fig. 12.1/4) has been chosen by the pointer (Fig. 12.1/3), the higher the seed rate will get.

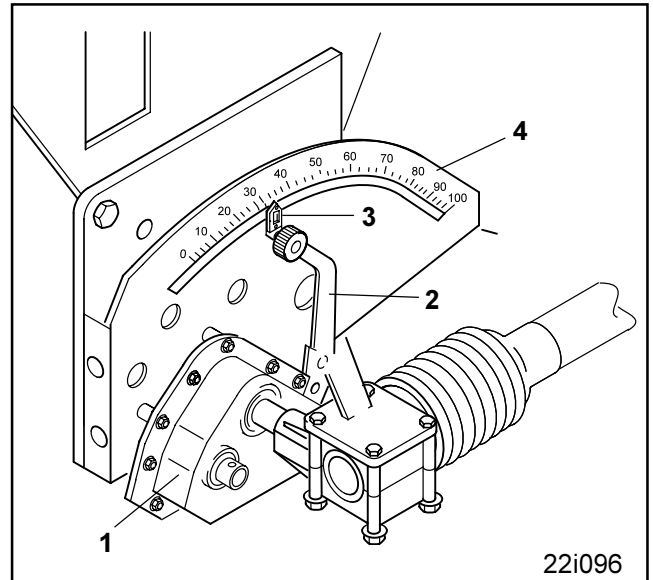


Fig. 12.1



If your machine is equipped with the AMADOS-seed rate remote control, set the desired gearbox position according to para. 13.



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

This test should also be conducted

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

Place a calibration tray (Fig. 12.2/1) below every metering unit and open the injector sluice flap (Fig. 12.2/2) on every metering unit.

The calibration trays (Fig. 12.3) are hold in a retainer and are secured with a clip pin (Fig. 12.3/1).

Slacken the star knob (Fig. 12.4/1) of the gearbox setting lever.

Move the gearbox setting lever (Fig. 12.4/2) to one of the following gearbox settings:

**For sowing by both main metering wheels:
gearbox setting "50"**

**For sowing with the fine seed metering wheel:
gearbox setting "15".**

Tighten star knob (Fig. 12.4/1).

In the past usually the values for the first gearbox setting were indicated in a sowing table. However, these values heavily differ depending on grain properties and especially depending on dressing agents and dressing procedures that the use of a sowing table has not got any advantage. The correct gearbox setting can be determined quickly by using the calculating disc rule, described in para. 12.2.

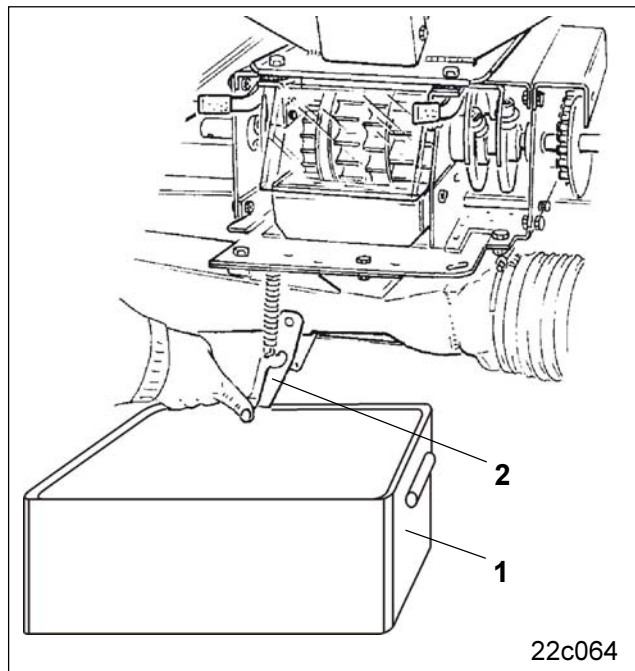


Fig. 12.2



Fig. 12.3

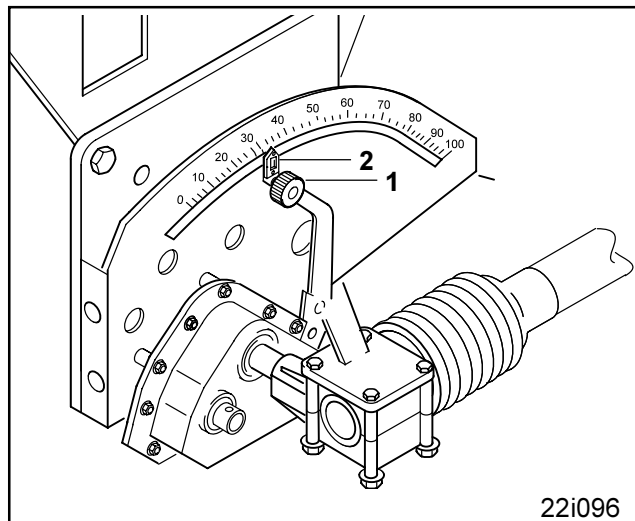


Fig. 12.4

12.1 Calibration test

Take the calibration crank (Fig. 12.5/1). The calibration crank is located in a retainer next to the vario gearbox.

With the calibration crank (Fig. 12.6/1) turn the star wheel **anticlockwise** until all metering wheel housings of the seed metering wheel(s) have been filled with seed and a uniform flow of seed runs into the calibration tray(s) (Fig. 12.2/1). Empty the contents of the calibration tray into the seed tank and turn the crank **anticlockwise** in times taken from the table (Fig. 12.7).

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

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

Usually the crank turns for 1/40 ha are used. At extremely small seed rates, e.g. for rape, we recommend that you take the crank turns for 1/10 ha.



Fig. 12.5



Fig. 12.6



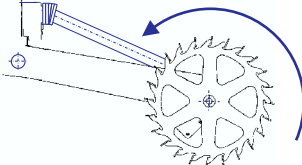
 956268 		
	1/40 ha	1/10 ha
3,0 m	38,5	154,0
4,0 m	29,0	117,0
4,5 m	26,0	104,0
6,0 m	19,5	78,0
Working width	Crank turns on the star wheel	
AMADOS II Imp./100 m	1502	

Fig. 12.7

t182gb02

Weigh the seed collected in the collecting trays (Fig. 12.2) under consideration of the weight of the bucket (Fig. 12.9) and multiply either by

- factor "40" (for 1/40 ha) or
- factor "10" (for 1/10 ha).

Calibrating for 1/40 ha:

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

Calibrating for 1/10 ha:

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

Example:

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

Seed rate [kg/ha] =
3,2 [kg] x 40 [1/ha] = 128 [kg/ha]

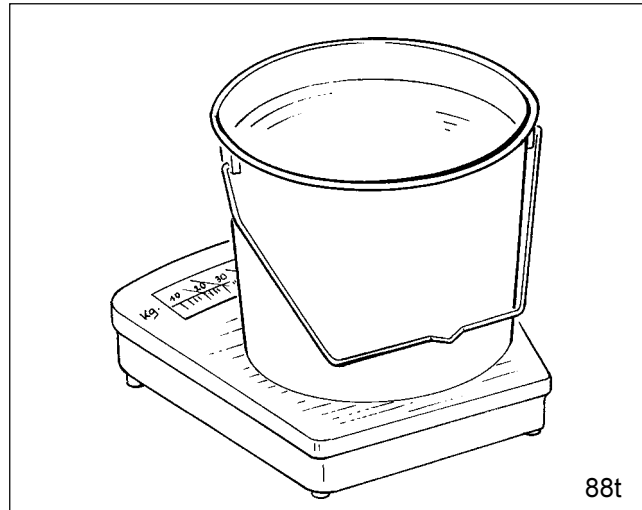


Fig. 12.9



The desired seed rate usually is not obtained after the first calibration test. However, with the aid of the disc rule according to para. 12.2 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 having determined the correct gearbox setting

- place the calibration crank (Fig. 12.5/1) back into the retainer
- fix calibration tray (Fig. 12.3) to the bracket and secure with a clip pin
- shut off injector sluice flap (Fig. 12.2/2) .

12.2 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: One outer white scale (Fig. 12.10/1) for all seed rates above 30 kg/ha and an inner white scale (Fig. 12.10/2) for all seed rates below 30 kg/ha. On the central, coloured scale (Fig. 12.10/3) gearbox settings from 1 to 100 are printed.

Example:

Wanted is a seed rate of 125 kg/ha.

- At the first setting, the gearbox setting lever is brought to the "gearbox setting position 25" (it is possible to choose also 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. 12.10/A) and the "gearbox setting position 25" (Fig. 12.10/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. 12.10/C). In our example that is the "gearbox setting position 17.8" (Fig. 12.10/D).
- Recheck the gearbox setting figure which you have determined by the disc rule as described under para. 12.1.

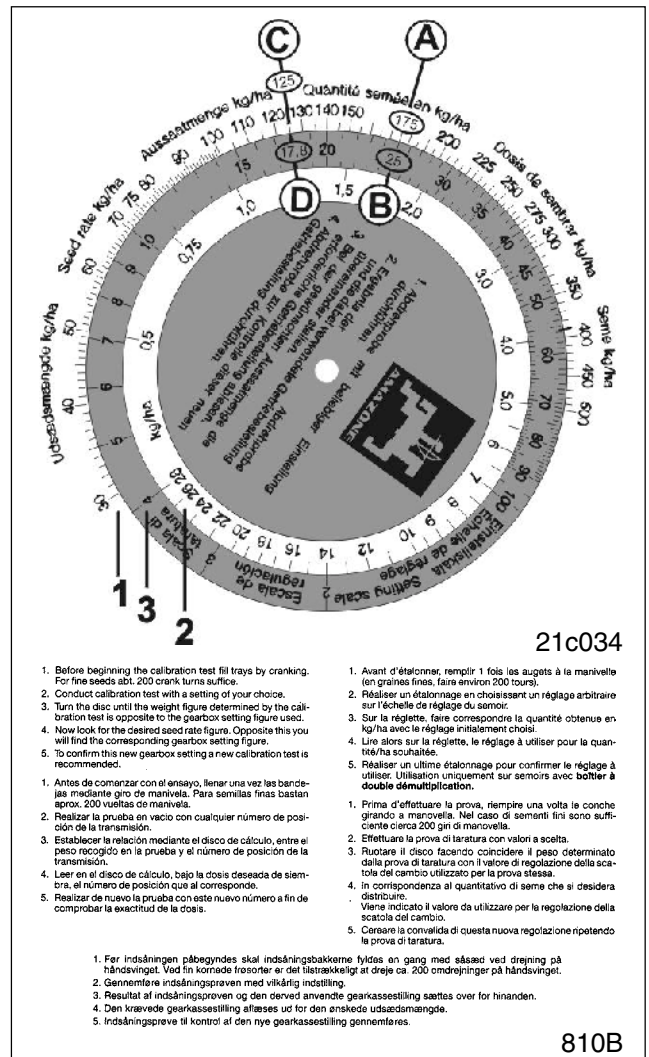


Fig. 12.10



12.3 Seed rate deviations between the setting and sowing

To avoid deviations between the setting of the seed 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 and loose soil less as at a same distance on very firm cloddy soils. In case of high wheel slippage the number of crank turns for determining the gearbox setting should newly be determined.

For this one measures on 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 travelled distance. With this number of crank turns then the gearbox setting should be determined according to para. 12.0.

13.0 Setting the seed rate with the aid of AMADOS

With the aid of the gearbox setting lever (Fig. 13.1/1) the speed of the seed metering wheels and thus the seed rate is set.

For setting the seed rate, the setting motor (Fig. 13.1/2), which actuates the gearbox setting lever is governed by AMADOS. The seed rate set and the scale figure can be read off the AMADOS-display.

Before starting the sowing operation set the seed rate on the stopped machine as follows:

- Select the desired seed rate via the AMADOS-key board (you will find a detailed description in the AMADOS instruction manual).
- Carry out the calibration test (you will find the detailed description in the AMADOS instruction manual).

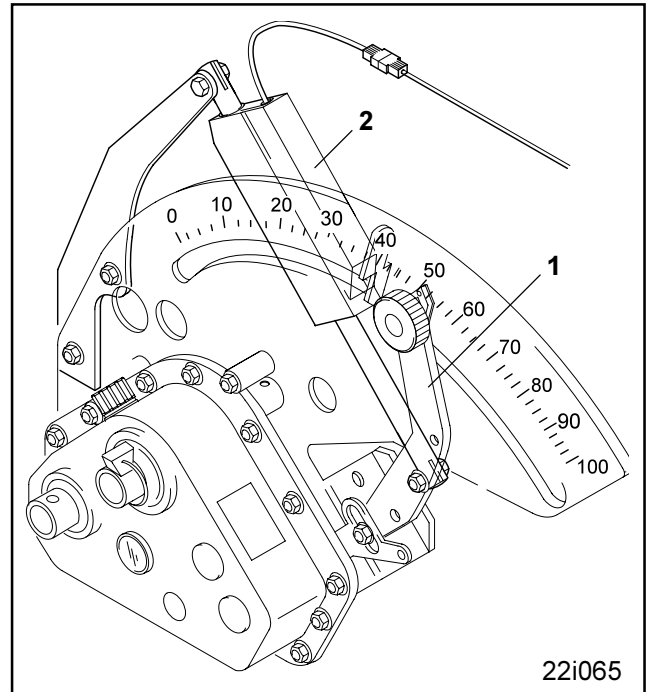


Fig. 13.1

13.1 Preparing the calibration test

Set the metering unit according to para. 11.0.

Fill the seed tank with seed to 1/4 of its capacity.

Place a calibration tray (Fig. 13.2/1) below every metering unit and open the injector sluice flap (Fig. 13.2/2).

The calibration trays (Fig. 13.3) are hold in a retainer and are secured with a clip pin (Fig. 13.3/1).

Take the calibration crank (Fig. 13.4/1). The calibration crank is located in a retainer next to the vario gearbox.

With the calibration crank (Fig. 13.5/1) turn the star wheel anticlockwise until all metering wheel housings of the seed metering wheel(s) have been filled with seed and a uniform flow of seed runs into the calibration tray(s) (Fig. 13.5/2). Empty the contents of the calibration tray into the seed tank and turn the crank anticlockwise in times taken from the table (Fig. 13.6).

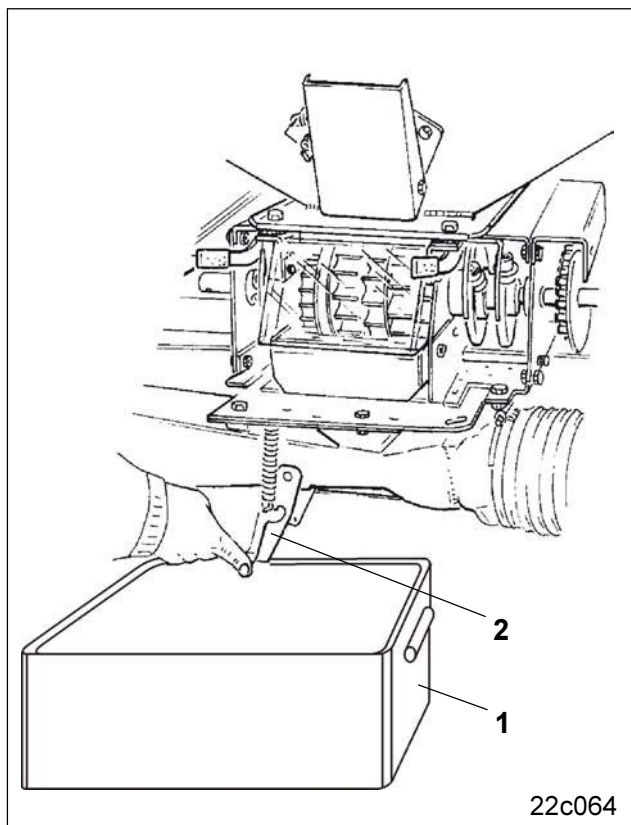


Fig. 13.2



Fig. 13.3

13.2 Calibration test

Please find the detailed description for the calibration test procedure in the AMADOS instruction manual.

Usually for AMADOS the impulse figure in table (Fig. 13.6) applies. **In case of wheel slip the drive wheel for the metering units turns on very light and loose soil less as at a same distance on very firm cloddy soils. In case of high wheel slippage the impulse figure for AMADOS should newly be determined by driving a 100 m test distance and the calibration figure should newly be calculated according to formula (Fig. 13.7).**

Example:

Working width: 6m

actual number of
impulses when driving
a 100m long
test distance: 1550

calculated calibration figure 20.1
according to formula (Fig. 13.8)

Carry out a calibration test with the calculated calibration figure of 20.1 turns.

After having determined the correct gearbox setting

- Replace the calibration crank (Fig. 13.4/1) into its retainer
- Affix the collecting tray (Fig. 13.3) on the bracket and secure with a clip pin
- Shut off injector sluice flap (Fig. 13.2/2).



Fig. 13.4



Fig. 13.5



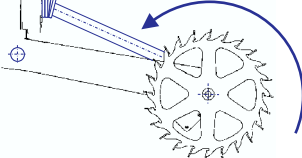
 956268 		
	1/40 ha	1/10 ha
3,0 m	38,5	154,0
4,0 m	29,0	117,0
4,5 m	26,0	104,0
6,0 m	19,5	78,0
Working width	Crank turns on the star wheel	
AMADOS II Imp./100 m	1502	

Fig. 13.6

t182gb02



$$\text{Calibration figure [1/40ha]} = \frac{\text{Impulses [1/100m]}}{1502} \times \text{crank turns (see table)}$$

t182-d03

Fig. 13.7

Example

$$\text{Calibration figure [1/40ha]} = \frac{1550}{1502} \times 19,5$$

$$\text{Calibration figure [1/40ha]} = 20,1$$

t182-d04

Fig. 13.8

13.3 Changing the seed rate during sowing operation

The sowing operation can be changed during the sowing operation (please refer to the detailed description in the AMADOS instruction manual).

13.4 Seed rate deviation between the setting and the sowing

To avoid deviations between the calibration of the seed rate and the drilling seed rate, please note the following hints:

In case of deviations between the determined and the actual area the calibration value should be newly determined by driving a 100 m test distance (please find the detailed description in the AMADOS instruction manual).

When sowing dressed seed regularly check and clean the distributor head.

When sowing moist dressed seed the seed should "age" at least one week (preferably two weeks) between seed dressing and sowing.

16.0 Combining Pack Top seed rail AS with combinations with tyre packer roller RP or wedge ring roller KW580

In this chapter you will find the procedure to attach a Pack Top seed rail on to a tyre packer roller RP or on to a wedge ring roller KW 580. Combinations with 6 m working widths consist each two 3 m rollers and two Pack Top seed rails.

Affix two plastic spacers (Fig. 16.1/1) to the brackets of the Pack Top seed rail AS.

Affix catching arms (Fig. 16.2/1) to the roller.

Back up with the combination of soil tillage implement and roller towards the Pack Top seed rail resting on parking support stands (Fig. 16.3/1).

Carefully guide the catching arms (Fig. 16.3/2) below the square tube (Fig. 16.3/3) of the Pack Top seed rail.

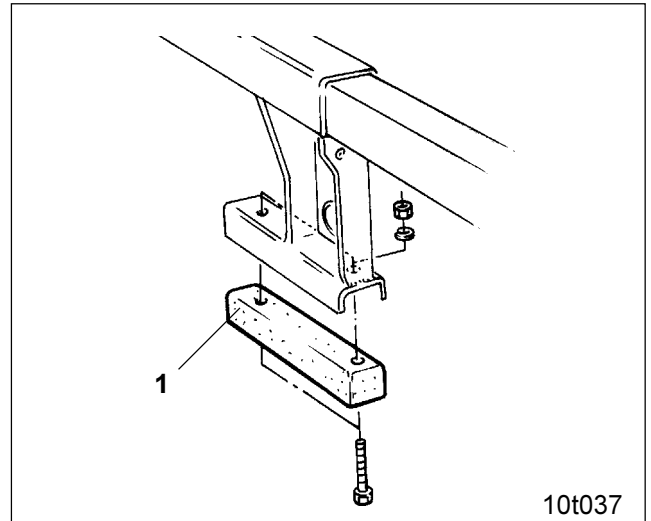


Fig 16.1

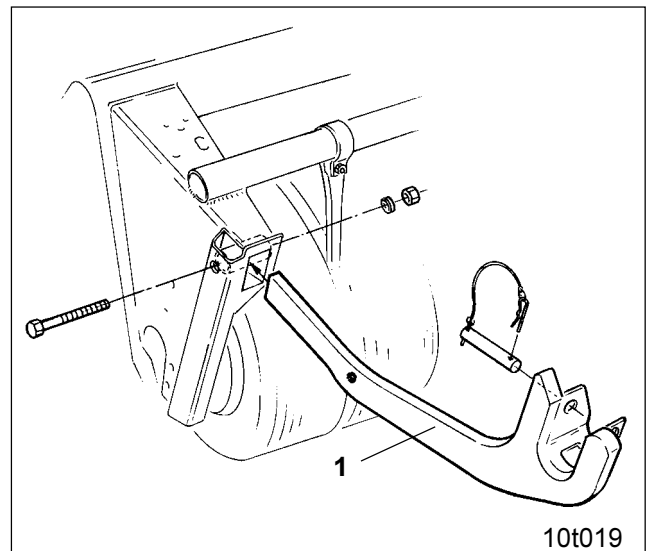


Fig 16.2

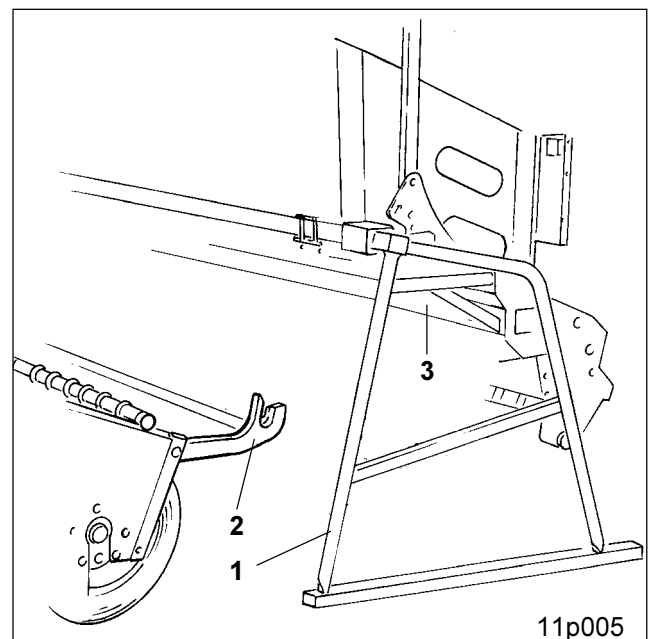


Fig 16.3

The roller is equipped with a centring aid (Fig. 16.4/1) being positioned on the right hand side in front which catches into a slotted hole of the AS when the roller is lifted.

Use the catch hooks (Fig. 16.5/1) of the roller to take up the mounting shafts (Fig. 16.5/2) of the AS, lock them with pins (Fig. 16.5/3) and secure with spring pins.

Affix AS and roller with 2 turnbuckles (Fig. 16.6/1). Secure pins (Fig. 16.6/2) using clip lins.

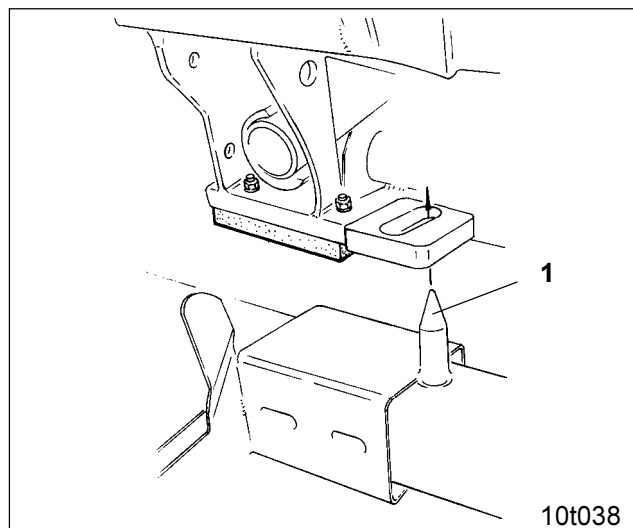


Fig 16.4

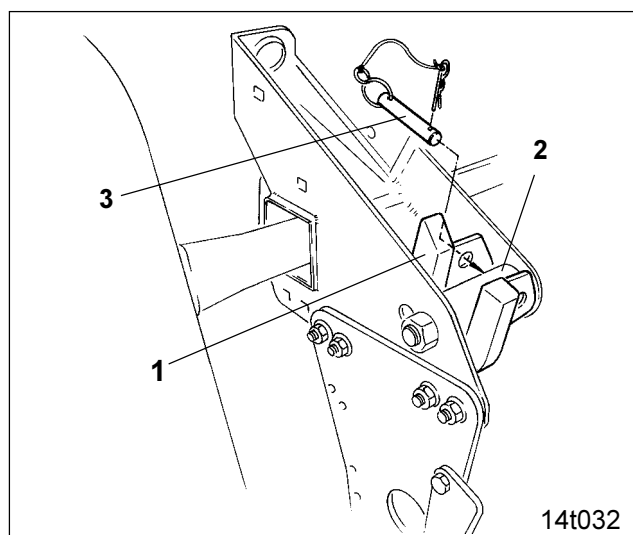


Fig 16.5

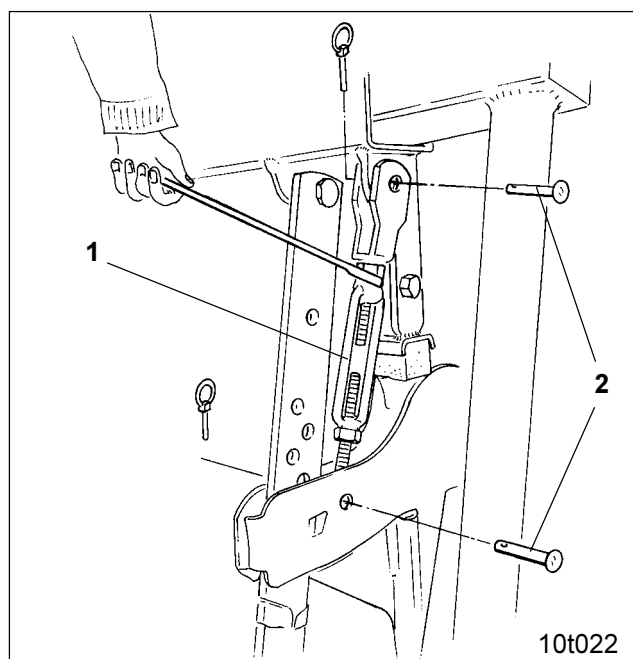


Fig 16.6

Insert Top link (Fig. 16.7/1) on the AS and the soil tillage implement (e.g. AMAZONE-rotary cultivator KG) and secure linking pins with clip pins..



After fixing the seed rail AS on the roller remove the upper carrying arm pins (Fig. 16.8/2) from the holes (Fig. 16.8/3) so that the seed rail AS can move freely within the parallel linkage.

Beforehand adjust top link (Fig. 16.7/1) until the carrying arm pins can be removed without and effort. The pins not needed (Fig. 16.8/2) can be parked in the carrying arms.

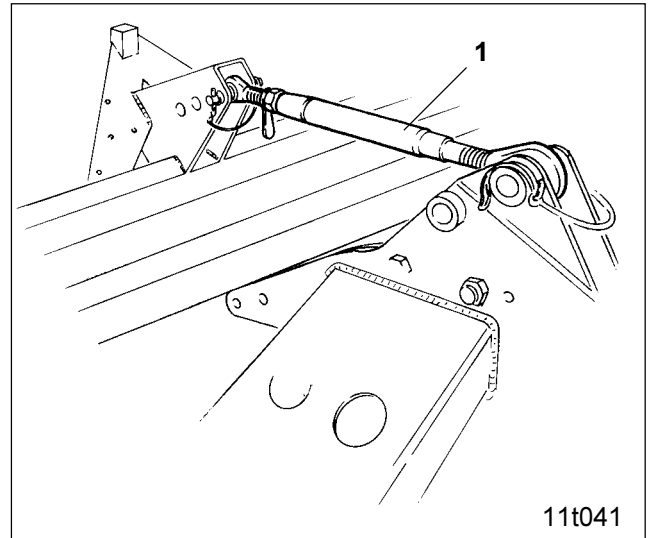


Fig 16.7

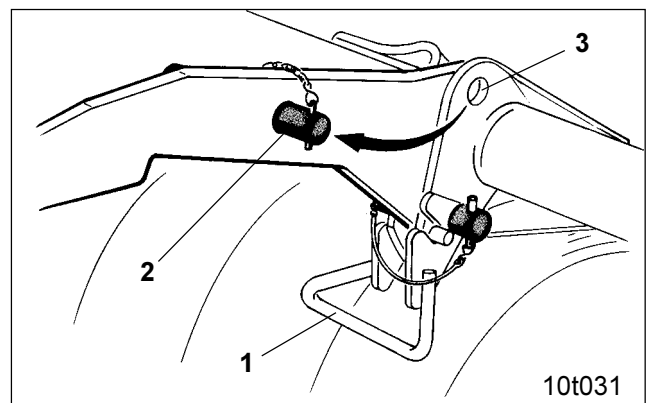


Fig 16.8

Lift the total combination and remove the parking support stands (Fig. 16.9/1).

Only AS 602

The AS 602 consisting of two Pack Top seed rails AS 302 rests in the implement's centre on a parking support stand (Fig. 16.10/1) which should also be removed.

All types

Adjust the top link (Fig. 16.7/1) to align the Pack Top seed rails AS.



The uncoupling of the Pack Top seed drill is done in the reverse order.



Before uncoupling the Pack Top seed rail insert the carrying arms with the upper carrying arm pins (Fig. 16.11/1) before you remove the top link (Fig. 16.7/1). Only this will help to avoid accidents.

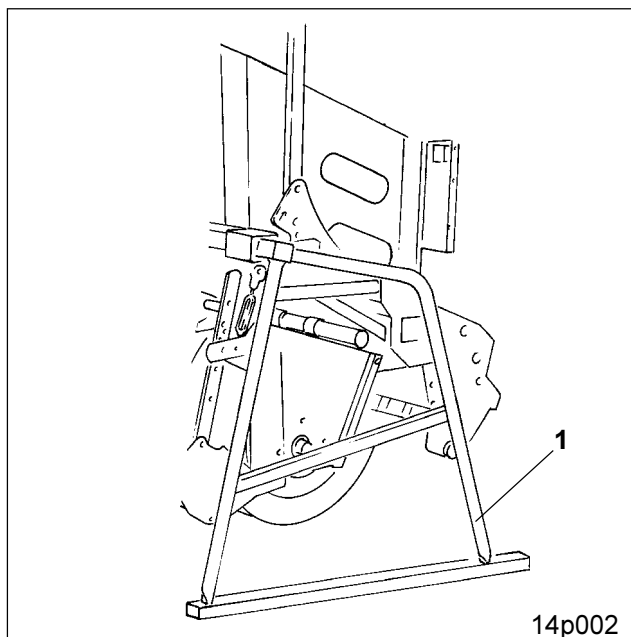


Fig 16.9

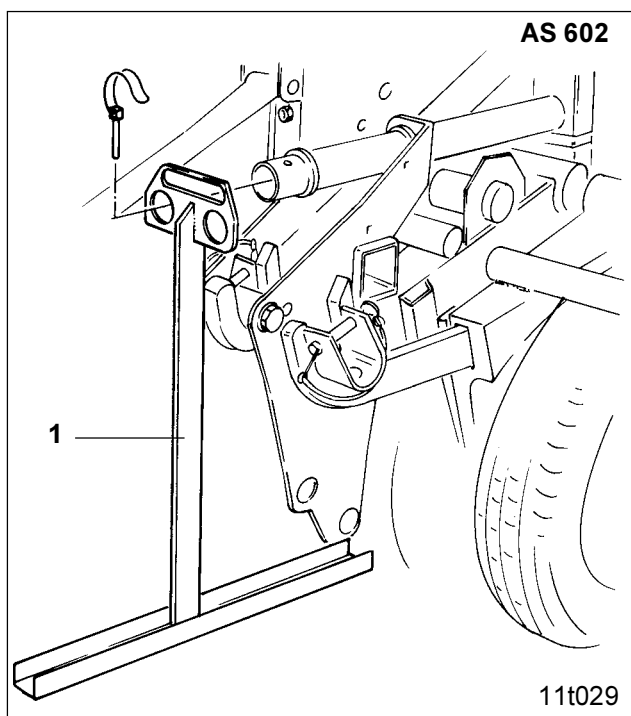


Fig 16.10

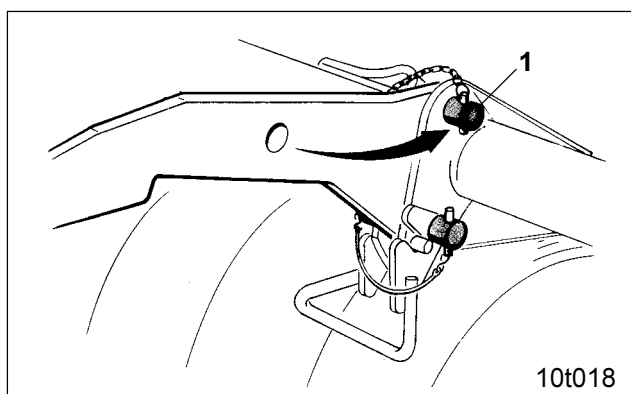


Fig 16.11

17.0 Pack top machine fixing to combinations with tooth packer roller PW or wedge ring roller KW450

Before coupling the pack top machine to an AMAZONE tooth packer roller PW or a wedge ring roller KW 450 equip both machines with the relevant coupling parts.

17.1 Coupling parts pack top machine

The pack top machine should be equipped with the following fixing plates:

Fixing plate (Fig. 17.1/1)
for combinations with
tooth packer roller PW420

Fixing plate (Fig. 17.1/2)
for combinations with
tooth packer roller PW500 or
wedge ring roller KW450.

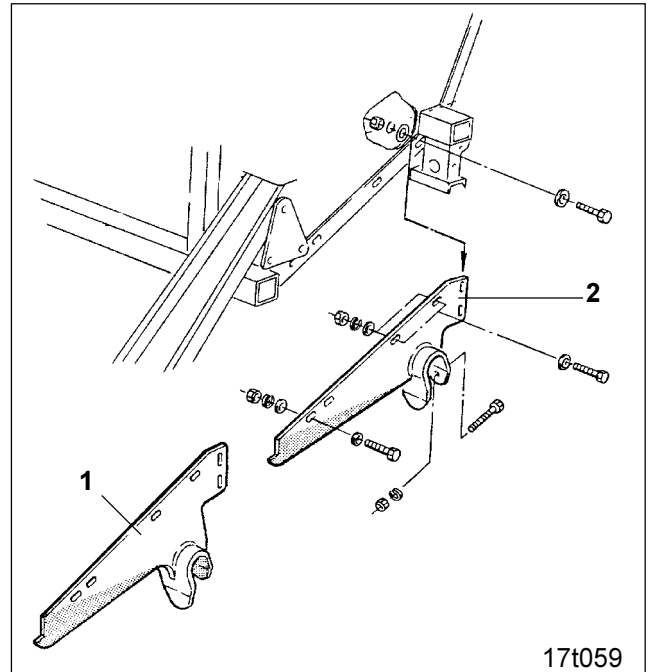


Fig. 17.1

17t059

17.2 Coupling parts for roller

Provide the roller with two bearing brackets (Fig. 17.2/1).

Firmly bolt the bearing brackets (Fig. 17.2/1) on to the frame of the roller using U-bolts (Fig. 17.2/2) with the correct spacing "A" (Fig. 17.3):

AD/AS 302.....Spacing A = 2770 mm

AD/AS 402.....Spacing A = 3770 mm

AD/AS 452.....Spacing A = 4270 mm

The bearing brackets (Fig. 17.2/1) can be attached to packer rollers PW 420 and PW 500 or wedge ring rollers KW450.

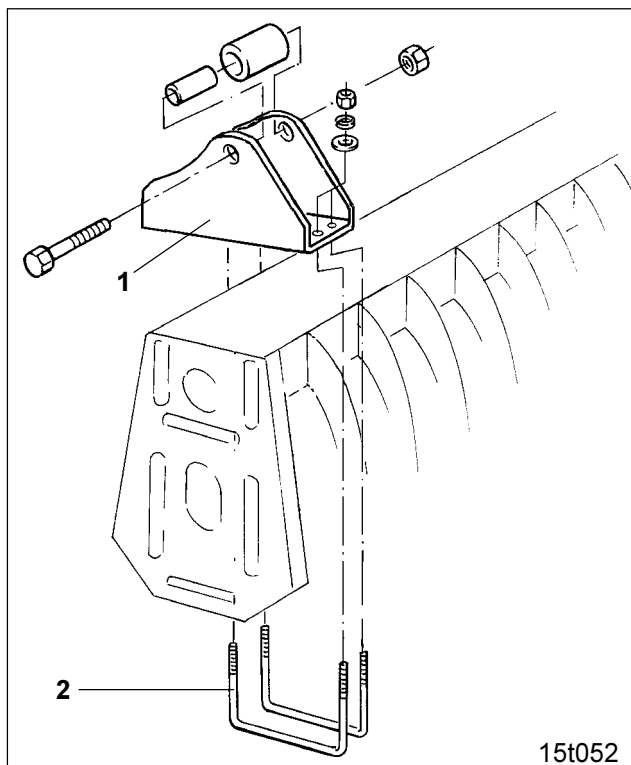


Fig. 17.2

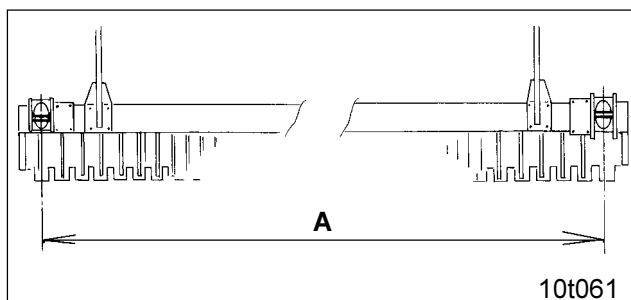


Fig. 17.3

17.3 Coupling the implement

Raise the soil tillage implement and the roller with the tractors' hydraulics.

Start the tractor and back up with the mounted combination towards the pack top machine resting on parking support stands.

Bring together the bearing shafts (Fig. 17.4/1) and catching pockets (Fig. 17.4/2), lock using pins (Fig. 17.4/3) and secure by using clip pins.

Set the top link (Fig. 17.5/1) on the pack top machine and the soil tillage implement and secure the locking pins using clip pins.

Raise the entire combination and remove the supports (Fig. 17.6/1).

Align the pack top machine by adjusting the top link (Fig. 17.5/1).



The uncoupling of the pack top machine is done in vice versa order.

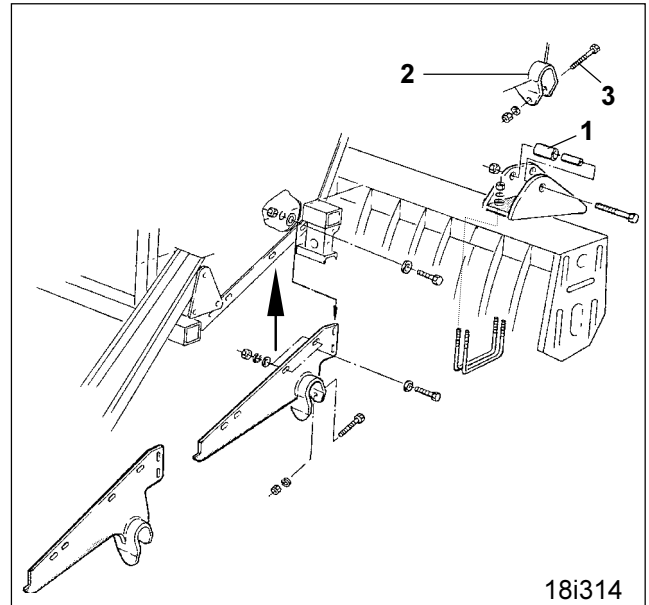


Fig. 17.4

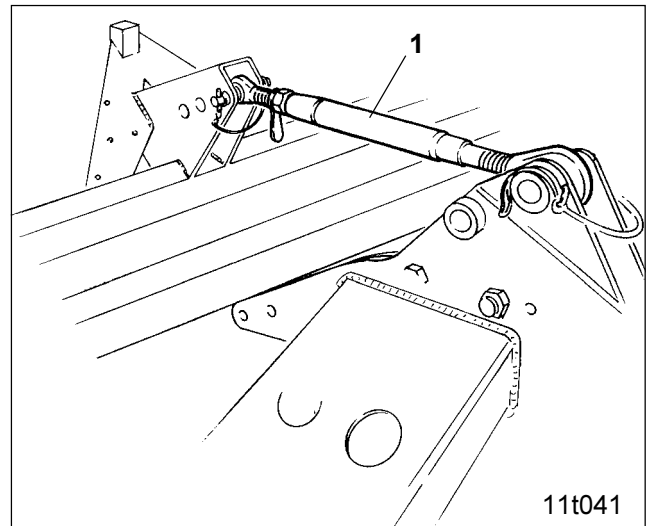


Fig 17.5

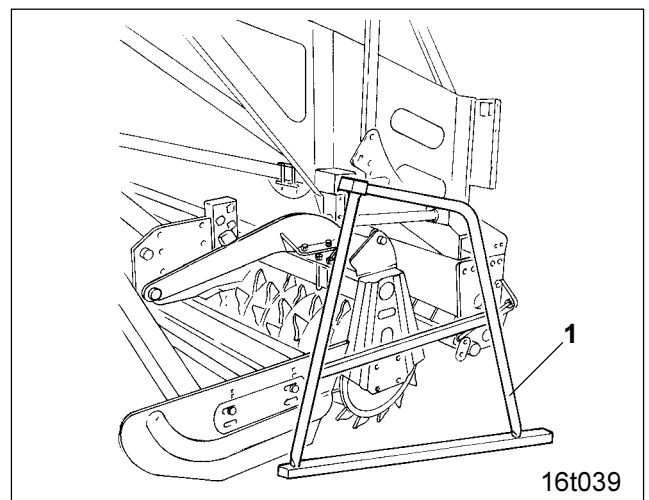


Fig. 17.6

18.0 Mounting AMAZONE Pack top seed drills/seed rails on to soil tillage implements of other manufacturers

With the aid of especially matched coupling parts AMAZONE Pack Top seed drills/seed rails AD/AS can be mounted on to nearly all soil tillage implements available in the market. The soil tillage implement must have been designed for the additional load resulting from mounting the AMAZONE Pack Top seed drill/seed rail AD/AS.



Before fitting the coupling parts and mounting the seed drill/seed rail AD/AS on to the soil tillage implement of other manufacturers, read and adhere to the safety advice given in the instruction manual of your Pack Top seed drill/seed rail.

18.1 Equipment of the Pack Top seed drill/seed rail

Bolt the Pack top seed drill/seed rail onto the side walls below the seed tank with the aid of two brackets (Fig. 18.1/1) and hex. bolts M12 x 30 DIN 933 (Fig. 18.1/2). Fig. 18.2 shows the fitted bracket on the side wall.

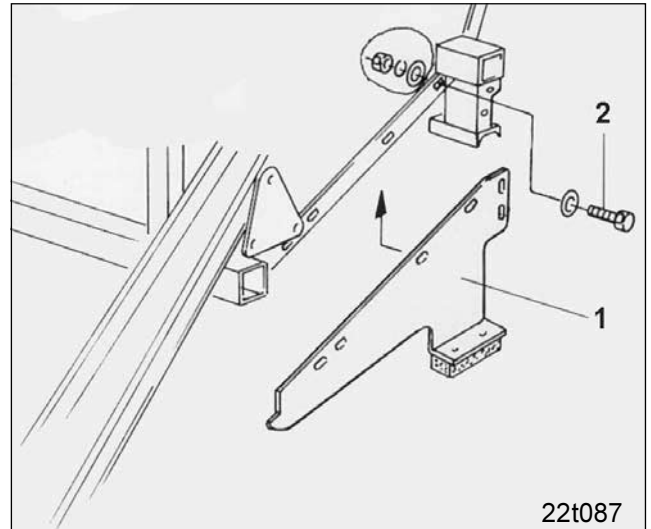


Fig. 18.1



Fig. 18.2

18.2 Equipment of the soil tillage implements of another manufacturer

Equip the soil tillage implement and the packer roller with implement specific coupling parts (Fig. 18.3).

In the main the coupling parts consist of the parts listed in table (Fig. 18.4).

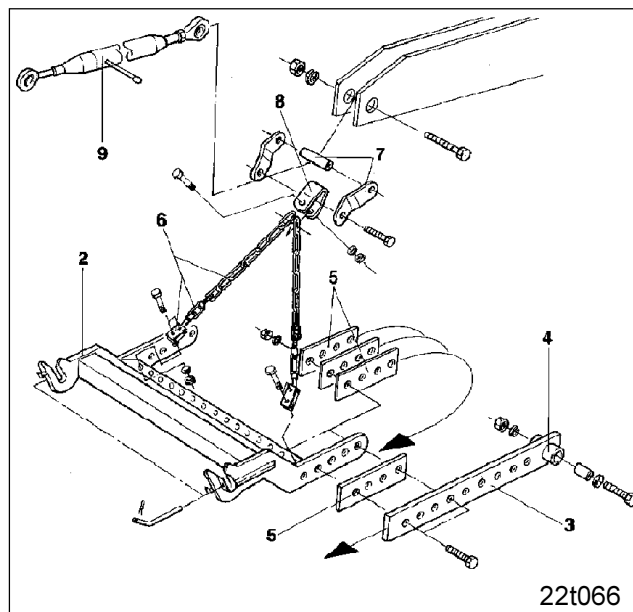


Fig. 18.3

No.	Description	Qty.
	Bearing support (see Fig. 1.1)	2
2	Coupling frame	1
3	Bracing plate	2
4	Bushing* with 2 securing rings	2
5	Balance plate	8
6	Turnbuckle with chain and tensioning tongue	2
7	Extension tongue	2
8	Hinge	1
9	Turnbuckle M27 ** for top link	1
	<p>* match the inner diameter of the bushing with the fixing pin or the fixing bolt.</p> <p>** Ensure the correct length of the turnbuckle (see table Fig. 1.6).</p>	

Fig. 18.4

t183gb01

Mounting the coupling frame

Before mounting the coupling frame (Fig. 18.5/1) the spacings „A“, „B“, and „C“ (see Fig. 18.5 and 18.7) should be determined

Determine spacings „A“ and „B“:

Measure the spacing „A“ (Fig. 18.5) of the rear lower link points of your soil tillage implement.

Spacing „A“ = mm

Spacing „B“ corresponds to the measured spacing „A“

Determine spacing „C“:

Take spacing „C“ from table (Fig. 18.6) (please also see Fig. 18.7).

Spacing „C“ = mm.

If you will not find your soil tillage implement in this table, determine „C“ as described on the following page.

Mounting the coupling frame:

Bolt together the coupling frame (Fig. 18.5/1), the linking plates (Fig. 18.5/2) and equalisation plates (Fig. 18.5/3) on each side of the coupling frame with at least two hex. bolts (Fig. 18.8/6).

Set spacing „B“ by shifting the equalisation plates (Fig. 18.5/1).

Usually the determined spacing „C“ cannot be set absolutely accurately. Due to the hole group in the coupling frame (Fig. 18.5/1) and the linking plates (Fig. 18.5/2) only lengths in steps of approx. 50 mm can be set.

If the determined spacing „C“ cannot be set accurately, choose the next bigger spacing „C“.

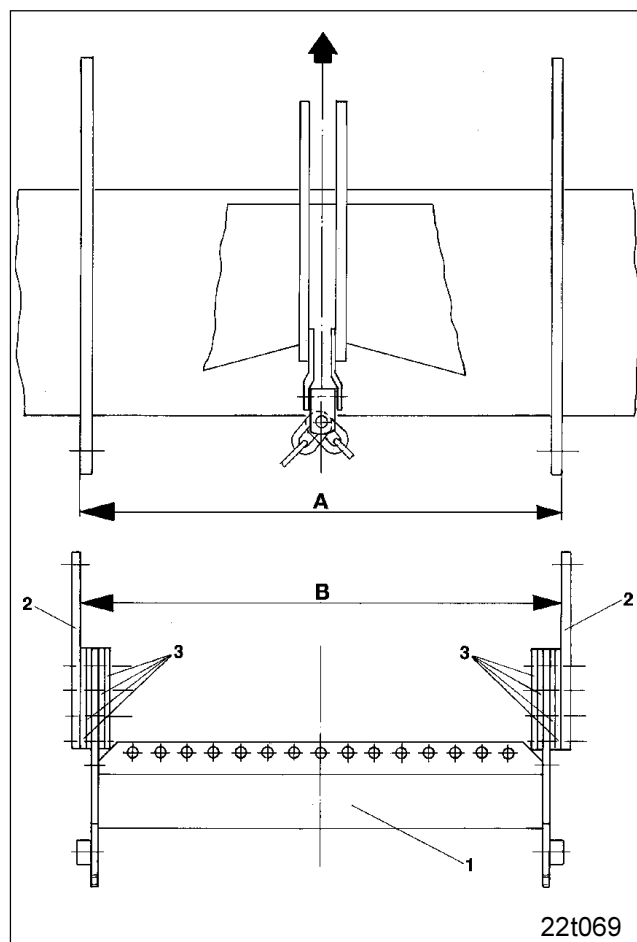


Fig. 18.5

Manufacturer - Type	Spacing "C" of the coupling frame	Top link length
EBERHARDT KE	550 mm	ca. 390 mm
FROST-FERABOLI	600 mm	ca. 590 mm
HOWARD	550 mm	ca. 675 mm
KRONE KES	500 mm	ca. 520 mm
KUHN HR	550 mm	ca. 850 mm
LANDSBERG-SICMA	550 mm	ca. 640 mm
LEMKEN-LELY	750 mm	ca. 580 mm
MASCHIO DS-DC	650 mm	ca. 850 mm
MASCHIO DM	750 mm	ca. 800 mm
NIEMEYER	600 mm	ca. 415 mm
RABE MKE	550 mm	ca. 450 mm
RABE WMKE	550 mm	ca. 520 mm
RABE PKE	500 mm	ca. 420 mm
VIGOLQ	600 mm	ca. 440 mm

Fig. 18.6

t183gb02

If you will not find your soil tillage implement in table (Fig. 18.6), the value can be determined as follows:

Spacing „C“ (Fig. 18.7) is the spacing between the lower link point of the soil tillage implement and the theoretical coupling point „P₁“ of the seed drill/seed rail. Therefore first determine the theoretical coupling point „P₁“ as follows:

Place the soil tillage implement with packer roller on level ground.

The point „P₁“ is 800 mm above the ground and 150 mm in front of the rear outer edge of the roller frame (Fig. 18.7/1).

This is the position of point „P₁“ at the later operation of the field. As an aid to determine the point „P₁“ you may use, e.g. two wooden bars (Fig. 18.7/2) in the indicated lengths and an angle.

The spacing „C“ will then result from the distance between the point „P₁“ and the lower link point. .

With the determined measures „B“ and „C“ (see above) the coupling frame can be completely mounted.

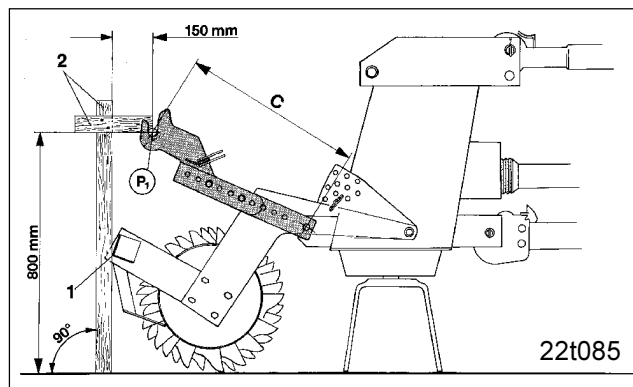


Fig. 18.7

18.3 Fitting the coupling frame to the soil tillage implement

Attach the coupling frame (Fig. Fig. 18.8/1) centrally to the rear lower link points of the soil tillage implement. Depending on the manufacturer the coupling frame should be linked (not rigidly fitted) to the lower links by using bolts (Fig. 18.8/7) or pins (Fig. 18.9/1).

Fix two chains (Fig. 18.8/2) together with the turnbuckle (Fig. 18.8/3) on the top link. The chain ends are provided with shackles. Affix each one turnbuckle (Fig. 18.8/4) on every shackle. Bolt the turnbuckles with the aid of the coupling shackles (Fig. 18.8/8) on to the coupling frame as far as possible on the outer end of the quadrant plate (Fig. 18.8/5). Only install the coupling shackles nearer towards the centre if machine parts being in the way do not allow a fixing at the outer end.

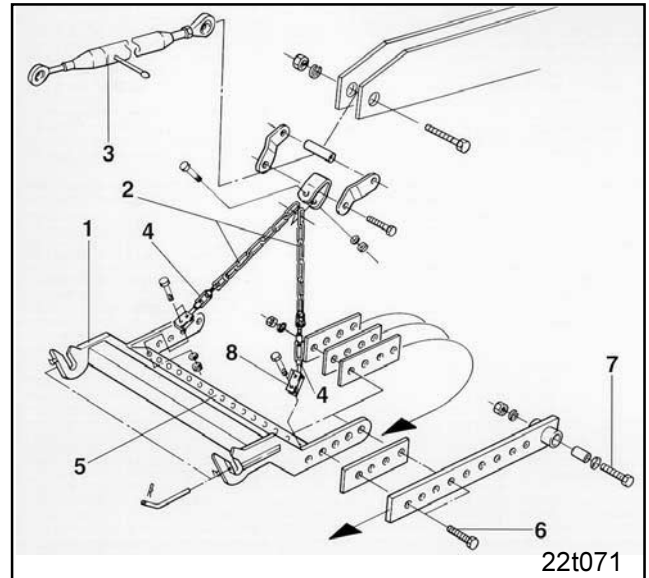


Fig. 18.8

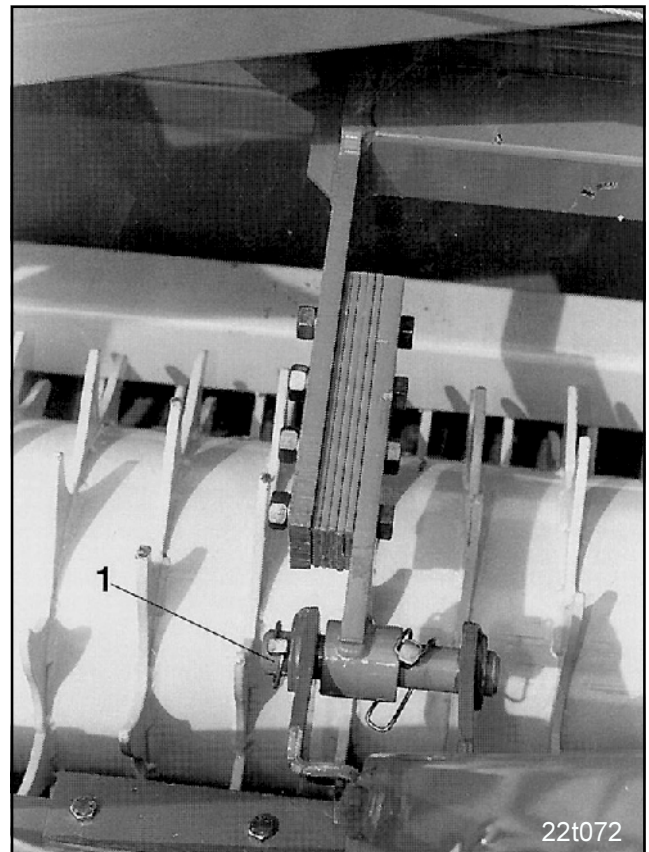


Fig. 18.9

18.4 Fitting support brackets onto the packer roller

Equip the packer roller with support brackets (Fig. 18.11/1). During operation the seed drill/seed rail will rest on them.

Before fitting the support brackets (Fig. 18.10/1) the point of support „P₂“ should be determined. The point of support on the other hand has a specific distance towards the coupling point „P₁“ on the coupling frame. Therefore first accurately set the coupling point „P₁“. For this raise and firmly locate the coupling frame (Fig. 18.10/2) accurately (800 mm above ground) (see Fig. 18.10). In this position affix the coupling frame, e.g. by tensioning the chains (Fig. 18.10/3).

The point of support „P₂“ is 600 mm above ground and 160 mm before the coupling point „P₁“, (see Fig. 18.10).

Bolt on support brackets (Fig. 18.10/1).



Attach the wide support bracket with the double row of holes with at least two hex. bolts (Fig. 18.10/4) to the packer roller.

18.5 Setting the chain length

After having fitted all coupling parts on the soil tillage implement set the chains (Fig. 18.10/3) to their final length. Set the chain length in such a way that the dimension from the ground until point „P₁“, will at the end only be 700 mm, instead of 800 mm at the beginning (see figures in brackets in Fig. 18.10). This way chains will slightly sag during field operation and thus ensure an optimum stone safety for your soil tillage implement. You will find the detailed description of the function in para. 18.7.

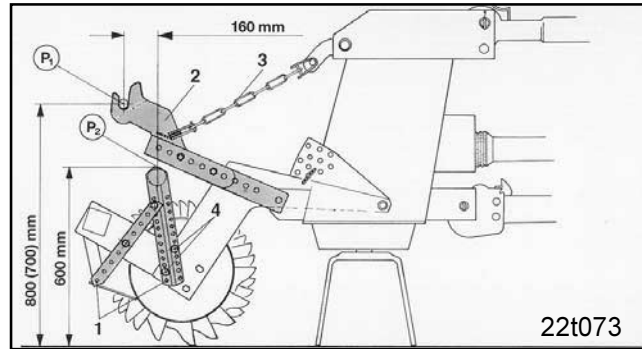


Fig. 18.10

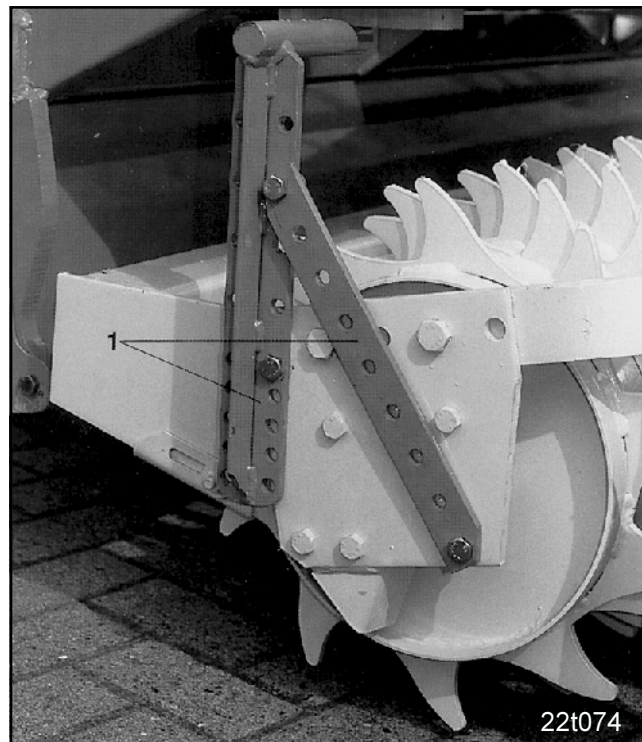


Fig. 18.11



Fig. 18.12

18.6 Coupling the Pack Top seed drill/seed rail to the soil tillage implement

For coupling the Pack Top seed drill/seed rail raise the soil tillage implement and the packer roller with the aid of the tractor hydraulics.

Back up with the combination towards the Pack Top seed drill/seed rail resting in parking support stands (see Fig. 18.12).

With the aid of the coupling frame pick up the coupling shaft (Fig. 18.13/1) of the Pack Top seed drill/seed rail below the seed tank and secure by using two pins (Fig. 18.13/2) and linch pins.

Lock the turnbuckle (Fig. 18.14/1) on the seed drill/seed rail and on the soil tillage implement using pins and secure with clip pins.

Raise the complete combination and remove the parking support stands (Fig. 18.12).

Set length of the top link (Fig. 18.15/1) in such a way that the rear wall within the range „B“ (Fig. 18.15) is in nearly vertical position.

Uncoupling the Pack Top seed drill/seed rail is carried out in reverse order.

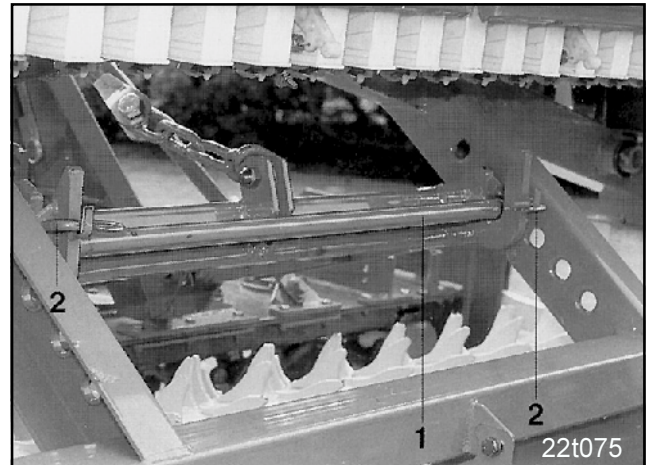


Fig. 18.13

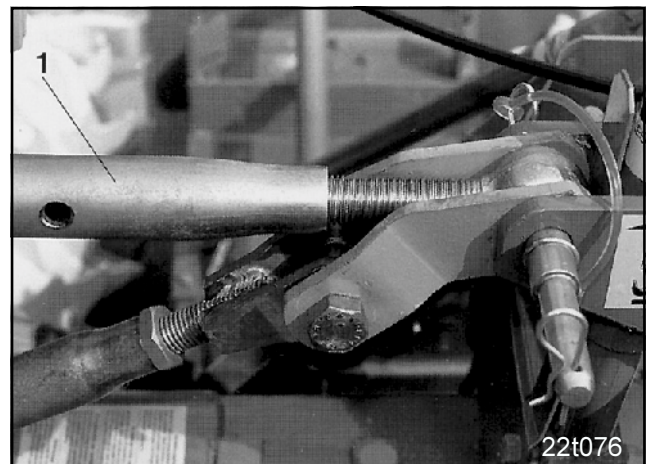


Fig. 18.14

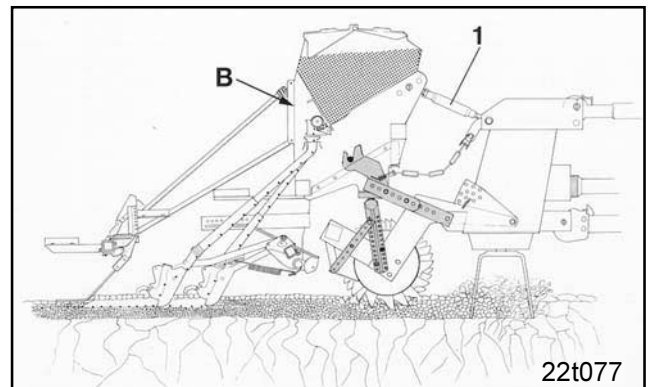


Fig. 18.15

18.7 Way of function of the coupling parts

General description for all types

In combination with AMAZONE soil tillage implements the Pack Top seed drill/seed rail rides on the strong frame of the AMAZONE roller both in operational position (Fig. 18.16) and in transport position.

During operation with rotary harrows of other manufacturers the AMAZONE Pack Top seed drill/seed rail also rides on the packer roller. However, usually the packer roller of other manufacturers is not strong enough to bear the weight of the Pack Top seed drill/seed rail in transport position. Therefore, with soil tillage implements of other manufacturers it is necessary to transfer the forces of the lifted Pack Top seed drill/seed rail into the stronger frame of the soil tillage implement. For this task AMAZONE developed a special coupling system for soil tillage implements of other manufacturers. The function is explained in the following.

18.8 Stone safety

In operational position (Fig. 18.16) the soil tillage implement is supported by the packer roller and thus always maintains an accurate working depth.

If, during operation, the soil tillage implement hits a stone (Fig. 18.17/1) or other firm obstacles in the soil, the soil tillage implement can only give way in upwards direction to negotiate the obstacle. Hereby the full weight of the soil tillage implement is transferred to the tine which has hit the obstacle. Usually the elasticity and the resilient fixing of the tine is just sufficient to bear the weight of the soil tillage implement without breaking the tine. Thus the soil tillage implement must not additionally be burdened with the weight of the Pack Top seed drill/seed rail when passing an obstacle. A tine breakage would be inevitable. Therefore the Pack Top seed drill/seed rail is not firmly connected with the AMAZONE soil tillage implement and neither with machines of other manufacturers.

Therefore, a coupling system had to be designed for machines of other manufacturers which corresponds to the demands of the stone safety and in addition during transport transfers the additional weight of the Pack Top seed drill/seed rail into the stronger frame of the soil tillage implement. The coupling system for machines of other manufacturers mainly consists of a coupling frame (Fig. 18.18/1) which is fitted to the lower link points of the soil tillage implement. In addition the coupling frame is connected via chains (Fig. 18.18/2) with the top link of the soil tillage implement. In operational position (Fig. 18.18) these chains slightly sag. This way the weight of the Pack Top seed drill / seed rail rests on the packer roller. When negotiating obstacles the unburdened soil tillage implement then can give way in upwards direction until the chains are tensioned. .

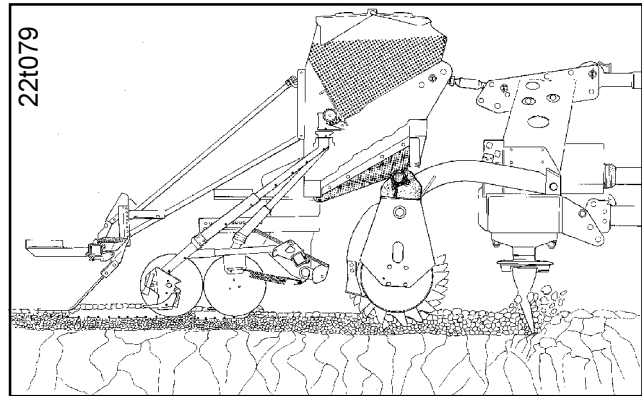


Fig. 18.16

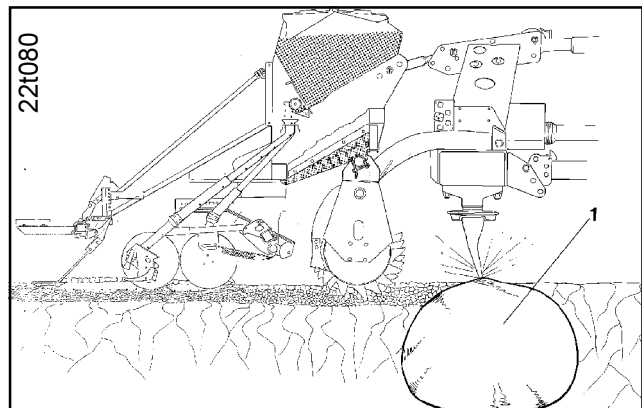


Fig. 18.17

18.9 Transport of the Pack Top seed drill/seed rail in combination with soil tillage implements of other manufacturers

When combined with soil tillage implements of other manufacturers the forces of the raised Pak Top seed drill/seed rail must be transferred into the stronger frame of the soil tillage implement. Usually the packer rollers of other manufacturers are not strong enough to bear the weight of the Pack Top seed drill/seed rail in transport position (Fig. 18.19). Therefore, in transport position, the packer roller must be relieved.

When turning at the headlands or for transport the tractor hydraulics first raises the soil tillage implement. The chains (Fig. 18.19) are tensioned with increasing lifting height. When the chains are entirely tensioned the Pack Top seed drill/seed rail is lifted up by the coupling frame and the packer roller is relieved from the weight of the Pack Top seed drill/seed rail.

After transport or after turning at the headlands the individual implements of the combination are operated again in the reverse order.

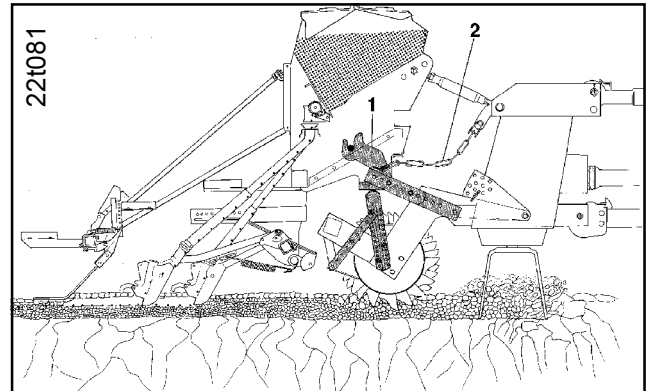


Fig. 18.18

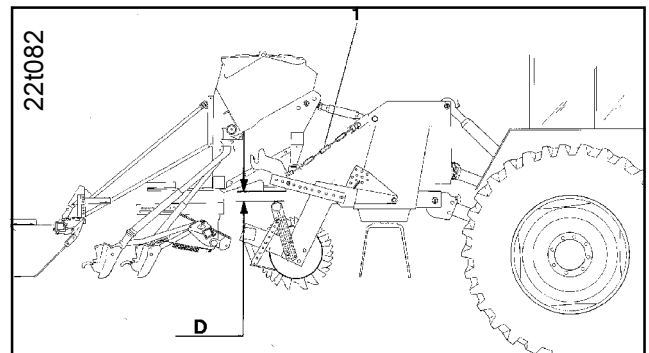


Fig. 18.19

18.10 Soil tillage implements with rigidly fitted packer roller

The principle to avoid damage on tines and gearbox elements on the soil tillage implement as described in para. 18.9 only function when the soil tillage implement and the packer roller are not rigidly connected with one another.

At some manufacturers the packer roller is rigidly fixed to the soil tillage implement. That means that when negotiating an obstacle also the rigidly fixed packer roller and thus the Pack Top seed drill/seed drill must be raised together with the soil tillage implement. The stone safety described in para. 18.8 will not work on such soil tillage implements.

For this reason in transport position the Pack Top seed drill/seed rail cannot be raised by the packer roller. There will be no visible spacing „C“ (Fig. 18.19) between packer roller and Pack Top seed drill/seed rail.

23.0 Setting the placement depth of the seed

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

The placement depth depends on coulter pressure, forward speed and soil condition. Your seed drill 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 drill:
Travel with the seed drill in the field approx. 30 m at operational speed, check the placement depth of the seed and readjust if necessary.

The central coulter pressure adjustment is actuated with hydraulic rams (Fig. 23.1).

If the soil is changing from normal to heavy or vice versa, with the aid of the hydraulic rams the coulter pressure can be adapted to the soil during operation.



Fig. 23.1

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

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 control spool valve (see para. 2.7) and actuate the control spool valve only from the tractor cab.



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



Actuate the control spool valves only from the tractor cab.

When actuating the control spool valves several hydraulic rams may start actuation simultaneously, depending the switching position.

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

Two pins (Fig. 23.3/3 und Fig. 23.3/4) function as stroke limiters for the stroke of the hydraulic ram (Fig. 23.3/1) placed within the setting segment. When the hydraulic ram is without 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 the pin (Fig. 23.3/3) into one of the holes of the quadrant plate and secure by using a clip pin (Fig. 23.3/2).

Each hole of the quadrant plate is marked with a figure. An increasing figure indicates an increase in the coulter pressure.

Increasing the coulter pressure

- Relieve the hydraulic ram (Fig. 23.4/1) from pressure.
- Insert the pin (Fig. 23.4/3) into one of the holes of the quadrant plate and secure by using a clip pin (Fig. 23.4/2).

Each hole of the quadrant plate is marked with a figure. An increasing figure indicates an increase in the coulter pressure.



Fig. 23.2

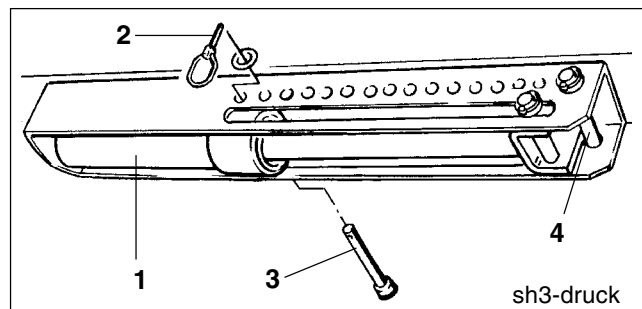


Fig. 23.3

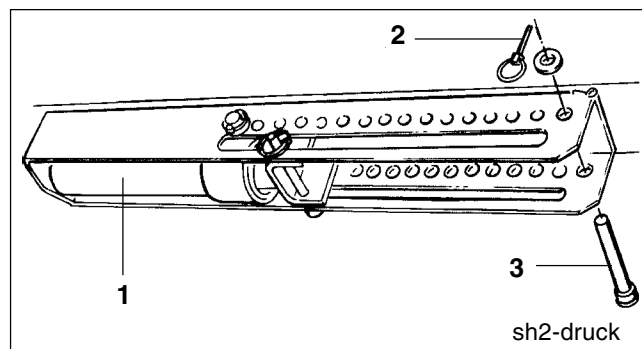


Fig. 23.4

Seed drills with RoTeC-coulters

If your seed drill is equipped with RoTeC-(roll disc) coulter and depth limiters (special option) and the desired placement depth cannot be achieved by replacing the pins, all RoTeC depth limiter discs would have to be re-adjusted evenly according to para. 23.2.1.

The fine tuning then is again conducted by re-inserting the pins.



Check the seed placement depth always before starting the operation:
Travel with the machine in the field approx. 30 m at operational speed, check the placement depth of the seed and readjust if necessary.

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

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

When having ordered the seed drill with depth limiting discs they have been set by the factory in 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 coulters pressure may be increased with the aid of the coulters pressure adjustment according to para. 23.1. Before every operation check the correct position of the depth limiting discs and the placement depth of the seed.

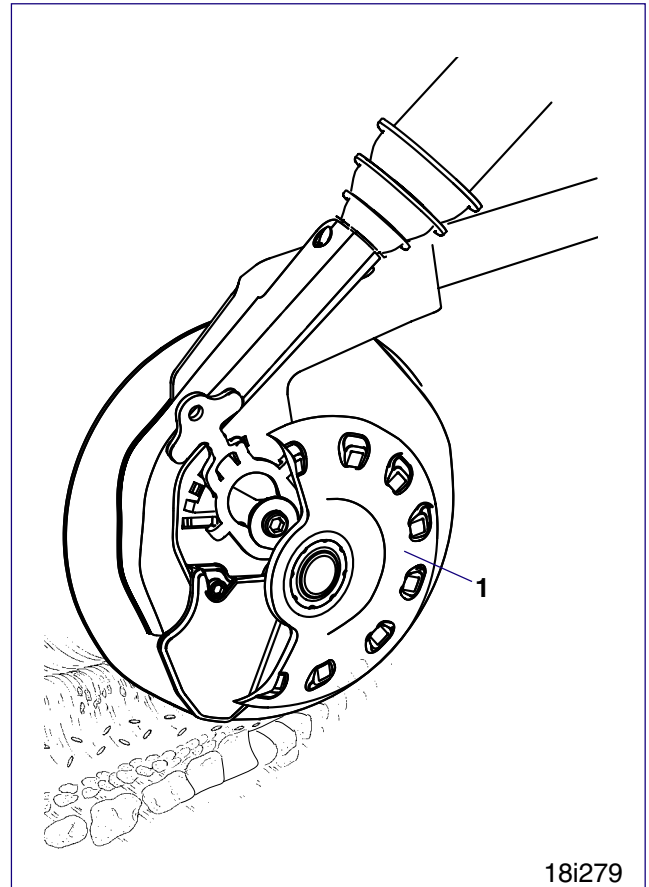


Fig. 23.5

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23.2.1 Fitting and setting the 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. 23.7/4) over the locking pawl (Fig. 23.8).



Fig. 23.6

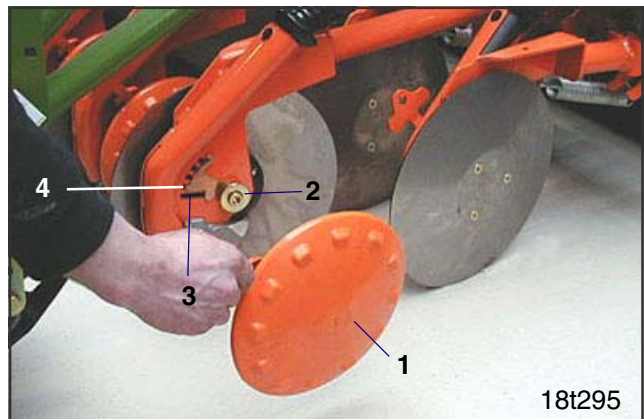


Fig. 23.7



Fig. 23.8

Setting the depth limiters

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

- Positions 1: placement depth approx. 2cm
- Positions 2: placement depth approx. 3cm
- Positions 3: placement depth approx. 4cm

without
depth limiting disc: placement depth > 4cm

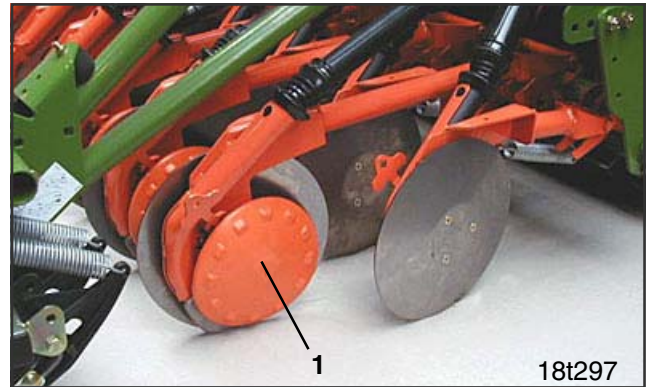


Fig. 23.9



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.

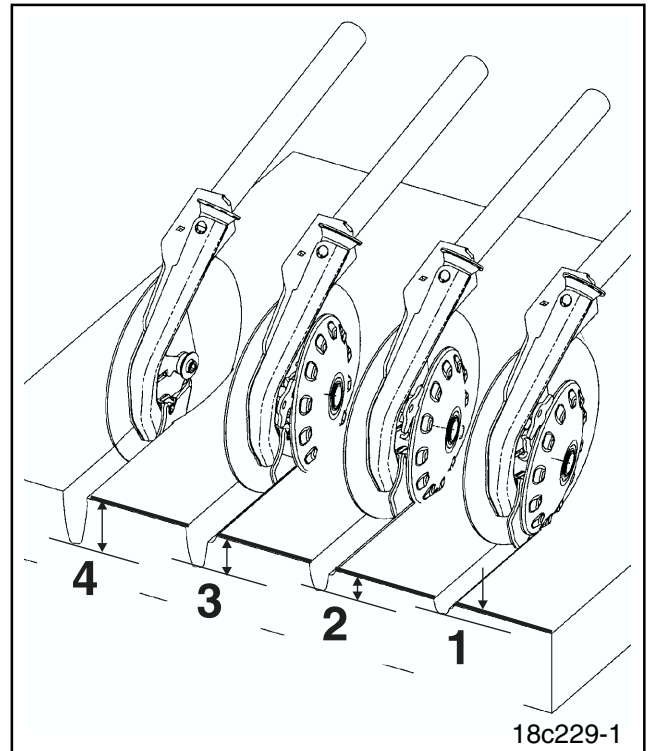


Fig. 23.10

24.0 Track markers

The machine is equipped with track markers (Fig. 24.1) for marking a trace in the soil in line with the tractor's centre.

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

After turning at the headlands the tractor follows the centrally marked trace when travelling the next bout.

During one drive up and down in the field both track markers will operate one after the other. One track marker (Fig. 24.2/1) is always located close to the side part of the seed rail.

The track markers are lifted by two hydraulic rams (Fig. 24.3/1).

The hydraulic rams are connected to the track marker shuttle valve (Fig. 24.4/1) (please also refer to para. 2.7).

Only actuate the track marker shuttle valve from the tractor cab with one single acting tractor control spool valve. When pressurising the track marker shuttle valve the operating marker is lifted, in floating position the second track marker is lowered.

If both track markers are raised and the tractor control spool valve is actuated four times:

1. the first track marker is brought into operating position
2. the first track marker is lifted
3. the second track marker is brought into operating position
4. the second track marker is lifted.

Lift both track markers

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



It is prohibited to stay within the swinging area of the marker arms.

When actuating the control valves simultaneously, several hydraulic rams may start to function simultaneously, depending on the switching position.

Ask people to leave the danger area.

Danger of injury from moving parts.

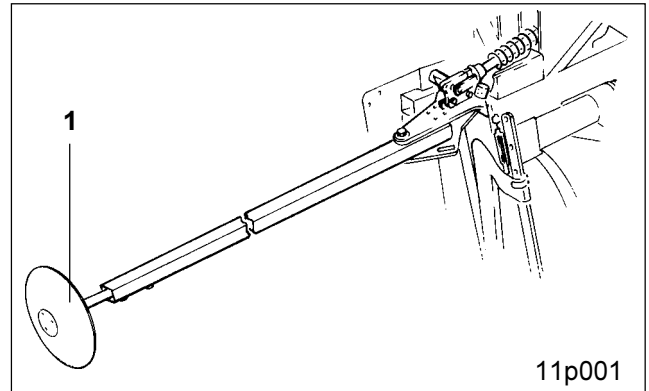


Fig. 24.1

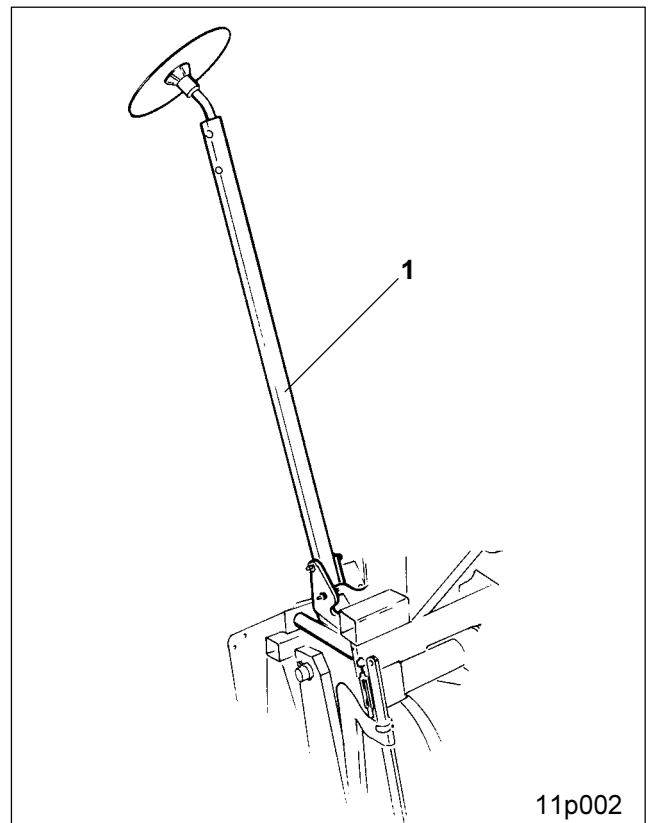


Fig. 24.2

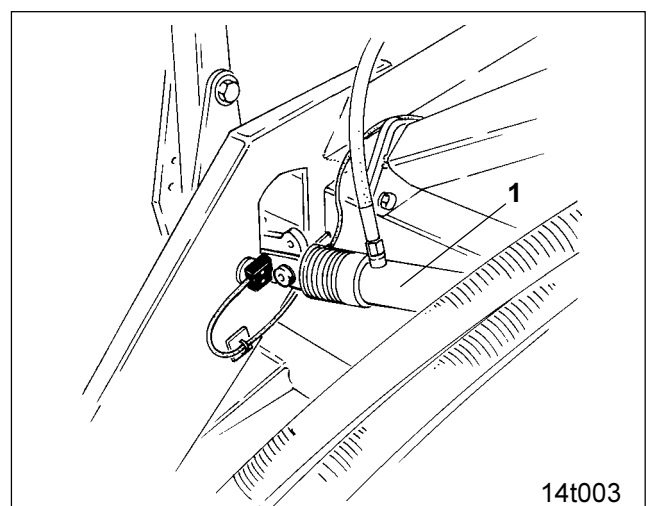


Fig. 24.3

24.1 Fitting marker arms

The markers supplied loosely with the machine have to be fitted as follows:

3 m working width:

The hydraulic ram (Fig. 24.5/1) has to be fitted to the bracket (Fig. 24.5/2) in the longer slotted hole (Fig. 24.5/3). If necessary bolt the link (Fig. 24.5/2) into another hole.

Bolt marker arms (Fig. 24.5/4) to it by:

- one hex. bolt M6 x 90, 8.8 DIN 931 (Fig. 24.5/5),
- two washers 6,4 x 18 x 1,6 DIN 9021 (Fig. 24.5/6) and
- one lock nut M6, 8 DIN 980V (Fig. 24.5/7).
- one hex bolt M14 x 100, 8.8 DIN 931 (Fig. 24.5/8),
- two tensioning washers 14 DIN 6796 (Fig. 24.5/9) and
- one lock nut M14, 8 DIN 980V (Fig. 24.5/10).

4,0 m and 4,5 m working width:

The hydraulic ram (Fig. 24.6/1) has to be fitted to the link (Fig. 24.6/2) in to the short slotted hole (Fig. 24.6/3). If necessary bolt link (Fig. 24.6/2) into another hole.

Bolt on track marker arm (Fig. 24.6/4) (for fixing material please refer to 3 m working width).

Bolt track marker arm (Fig. 24.6/4) by using a hex. bolt M6 x 90, 8.8 DIN 931 (Fig. 24.6/5) in hole "B" (Fig. 24.6).

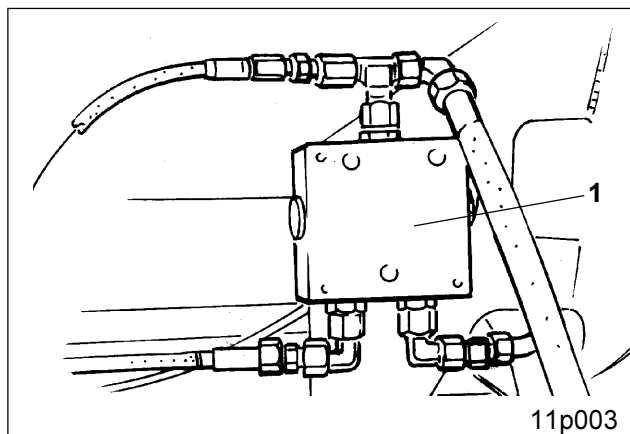


Fig. 24.4

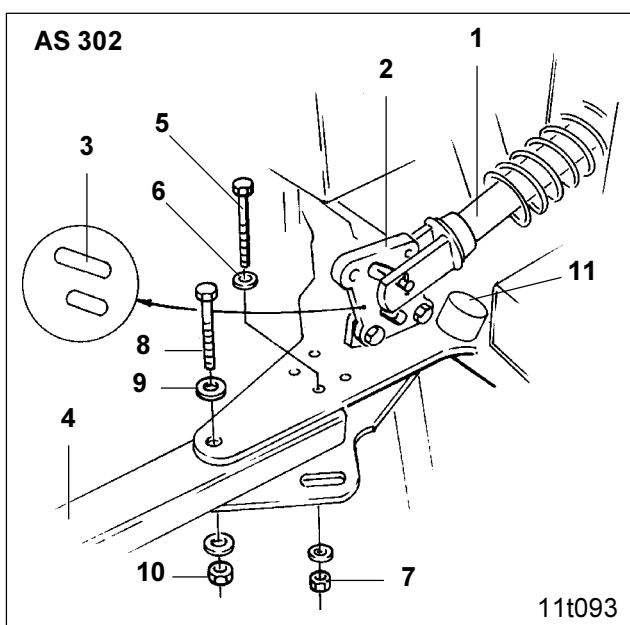


Fig. 24.5

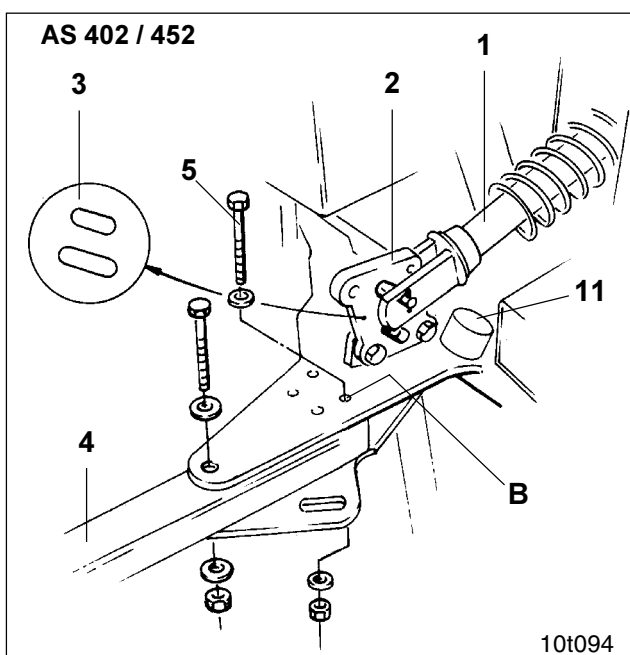


Fig. 24.6

6,0 m working width:

The hydraulic ram (Fig. 24.7/1) has to be fitted to the link (Fig. 24.7/2) into the short slotted hole (Fig. 24.7/3). If necessary bolt link (Fig. 24.7/2) into another hole.

Bolt on track marker arm (Fig. 24.7/4) (for fixing material, please refer to 3 m working width).

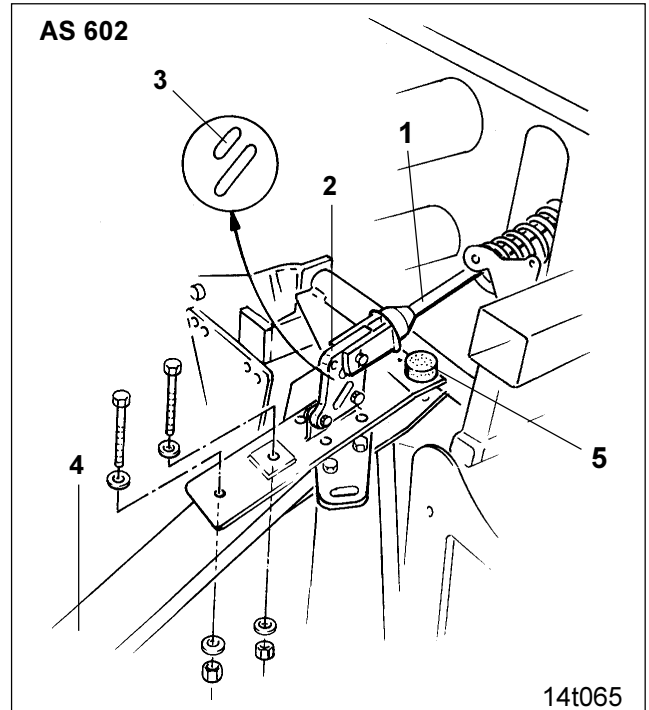


Fig. 24.7

Fit track marker pendulum tube (Fig. 24.8/1) on to the track marker arm and secure by using a washer 36 x 50 x 2 (Fig. 24.8/2) and an expansion pin 10 x 50 DIN 1481 (Fig. 24.8/3).

Affix wire cable (Fig. 24.8/4) with a tensioning spring.

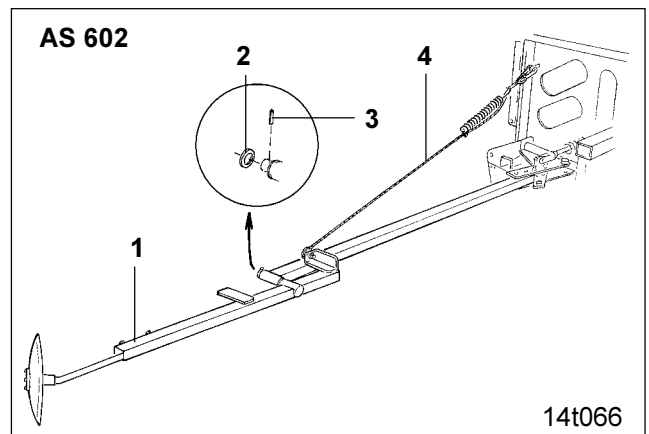


Fig. 24.8

For all working widths:

Clamp track marker discs by using two hex. bolts (Fig. 24.9/1).

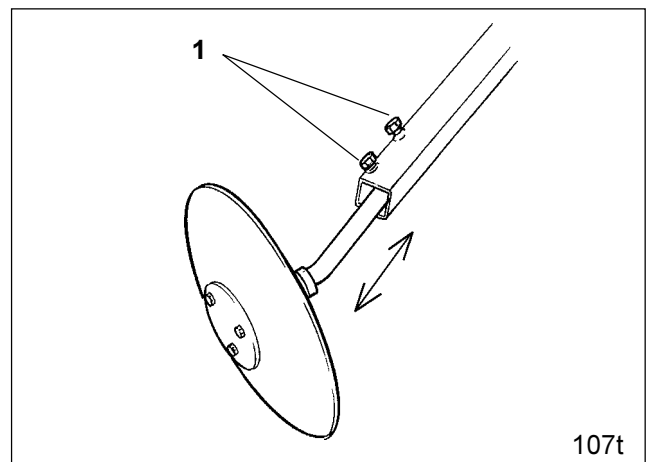


Fig. 24.9

24.2 Bring markers into operational position

3,0 m; 4,0 m and 4,5 m working width:

Immediately before commencing operation in the field

- hold track marker arm (Fig. 24.10/1) and remove the clip pin (Fig. 24.10/2) (necessary for transport)
- when not needed, insert the clip pin (Fig. 24.10/2) into one of the holes of the link (Fig. 24.10/3).

6,0 m working width:

Immediately before commencing operation in the field

- hold track marker arm (Fig. 24.11/1) and remove clip pin (Fig. 24.11/2) (necessary for transport)
- when not needed insert the clip pin (Fig. 24.11/2) into one of the holes of the link (Fig. 24.11/3).



After removal of the clip pin (Fig. 24.10 or Fig. 24.11) the marker arm is tilting slightly to the side.



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

24.3 Bring marker arms into transport

Before transport, both marker arms will have to be fixed to the machine and secured in vice versa order as mentioned in para. 24.2.



Danger of injury.

Before travelling on non public or public roads and ways secure both marker arms with clip pins (Fig. 24.10 or Fig. 24.11) against unintended lowering.

This also applies when changing from one field to the other.



The buffer blocks (Fig. 24.5/11, Fig. 24.6/11 or Fig. 24.7/5) must never be removed and in case of wear must be replaced.

The buffer blocks prevent the transport securing of the markers by the clip pins to be forgotten.

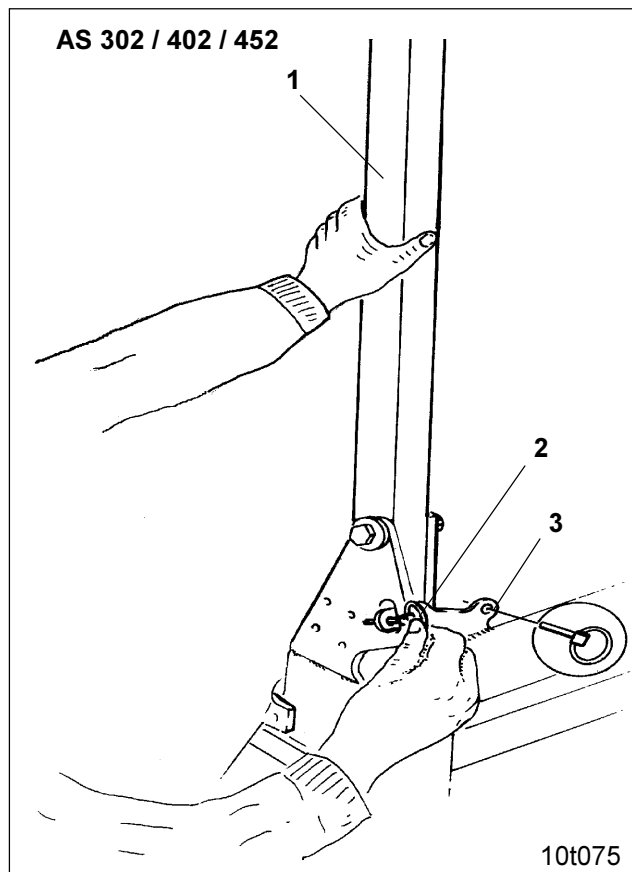


Fig. 24.10

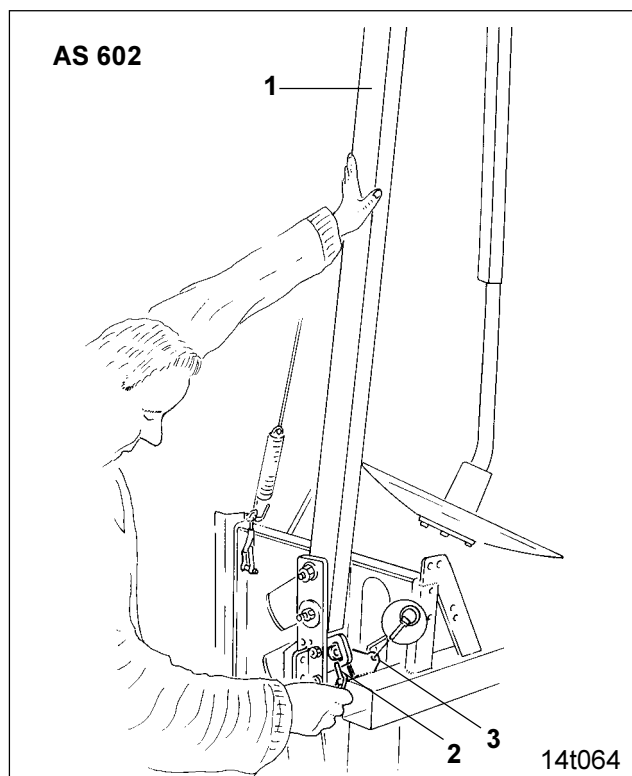


Fig. 24.11

24.4 Setting the markers to the correct length

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

Please find the spacing "A" (Fig. 24.12) track marker disc to machine's centre in table (Fig. 24.13).

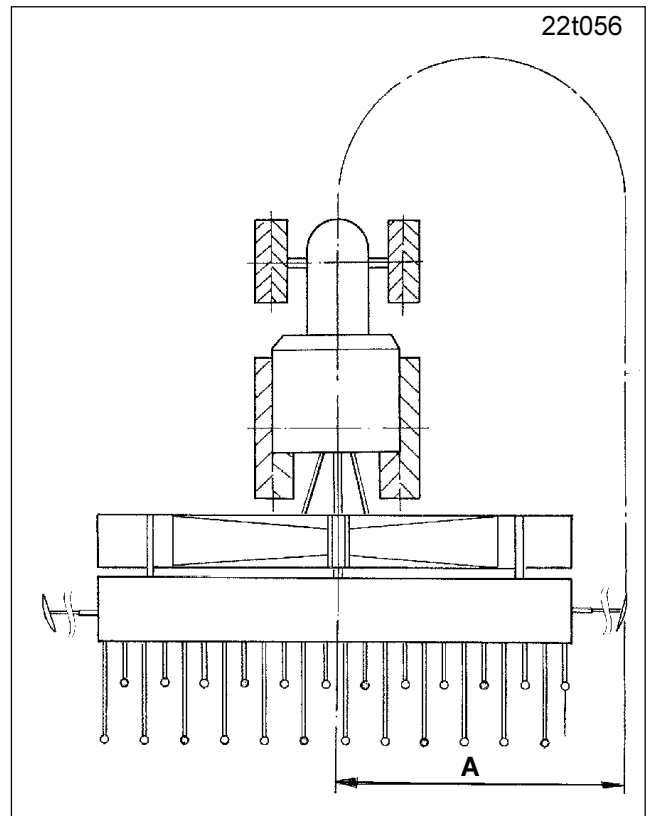


Fig. 24.12

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

t162gb14

Fig. 24.13

The marker discs (Fig. 24.14) can be moved in the track marker arm. Prior to it two hex. bolts (Fig. 24.14/1) should be slackened and retightened firmly.



When setting up the angle of the marker discs (Fig. 24.14) please note that they should be set for light soil about parallel with the direction of operation and more “on grip” on heavier soils.

Only for AS 602:

Fix the wire cable (Fig. 24.15/1) on the track marker arm in such a way that the working depth of the marker disc is limited between 60 and 80 mm.

If, due to the tensioning force of the tensioning spring (Fig. 24.15/2), the marking trace in the soil is too deep, the tensioning spring must be relieved.

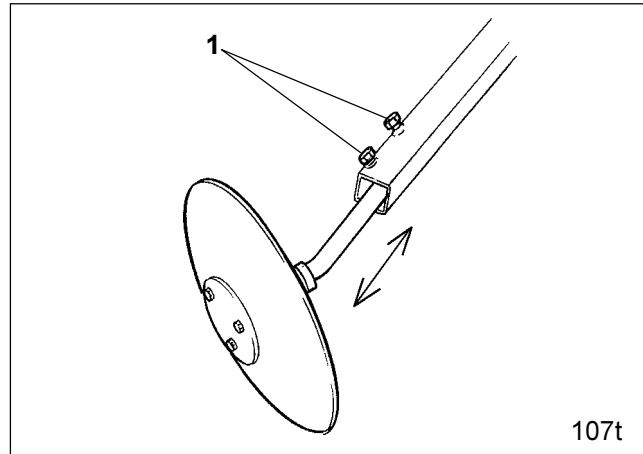


Fig. 24.14

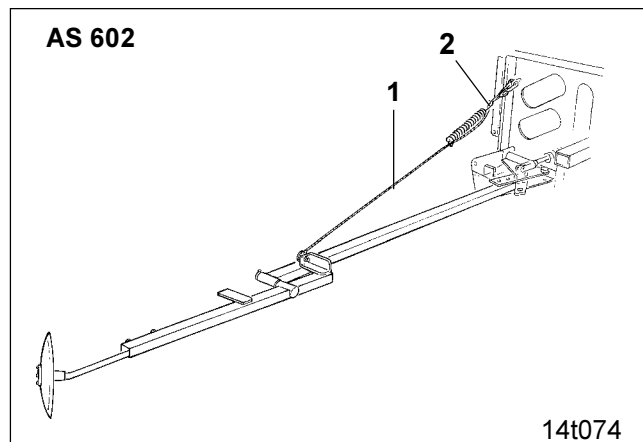


Fig. 24.15

24.5 During operation

With the sensors (Fig. 24.17/1) AMADOS monitors the movement of the track markers. In the display the actually operating track marker is shown via the black triangle (Fig. 24.16).

The information from the sensors (Fig. 24.17/1) are additionally required for shifting on the tramline control (see para.: tramline control).

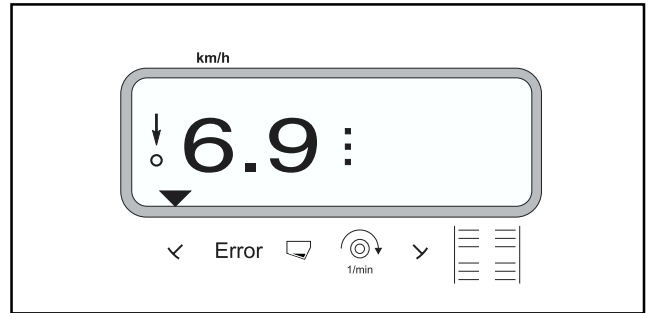


Fig. 24.16

24.5.1 Shear off safety

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

If a marker hits an obstacle during operation the marker arm can give way to the obstacle by moving to the rear. In this case a hex. bolt M6 x 90, 8.8 DIN 931 (Fig. 24.18/1) will shear off.

Affix the track marker arm as shown in figures (Fig. 24.5 and Fig. 24.6).

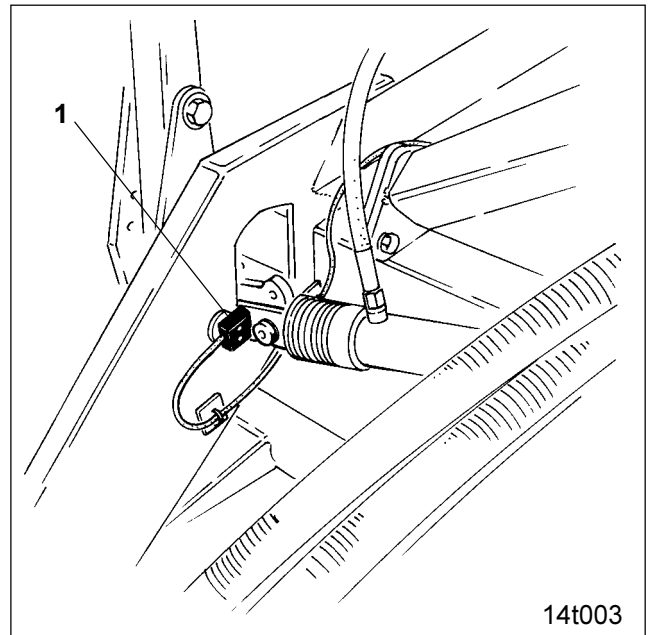


Fig. 24.17

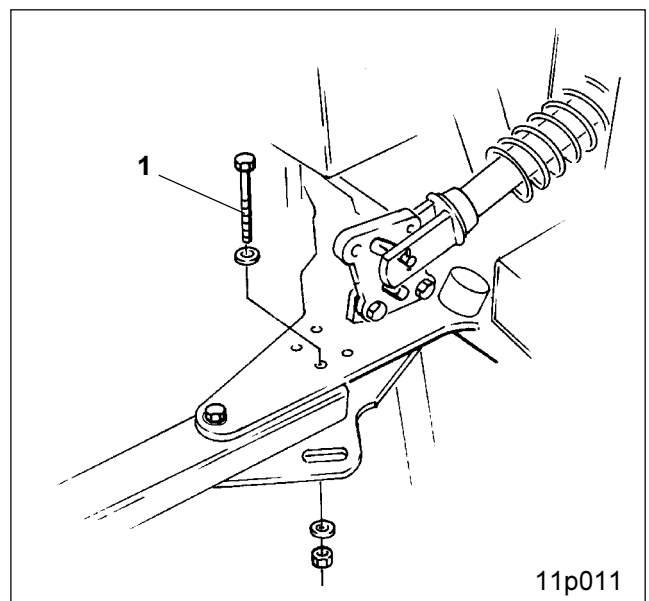


Fig. 24.18

25.0 Extra coverage following harrow

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

25.1 Mounting the extra coverage following harrow to the seed rail

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

- Bolt on swing-metal buffers (Fig. 25.3/7).
- Fit carrying tubes (Fig. 25.3/2) with pins (Fig. 25.3/3) to the retainers (Fig. 25.3/4) of the extra coverage following harrow and secure with clip pins (Fig. 25.3/5).
- Fix carrying tubes (Fig. 25.3/2) with pins (Fig. 25.3/6) on the pockets (Fig. 25.3/1) and secure using clip pins (Fig. 25.3/8).

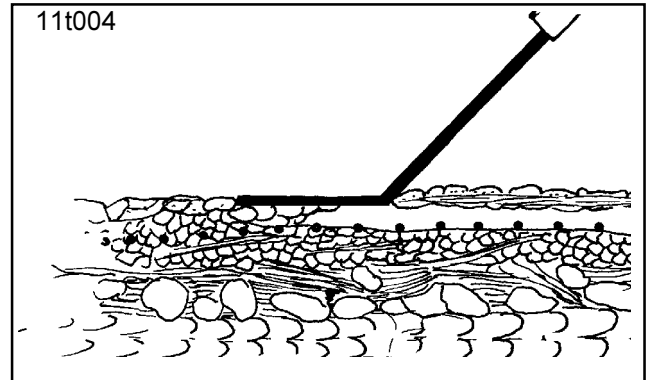


Fig. 25.1

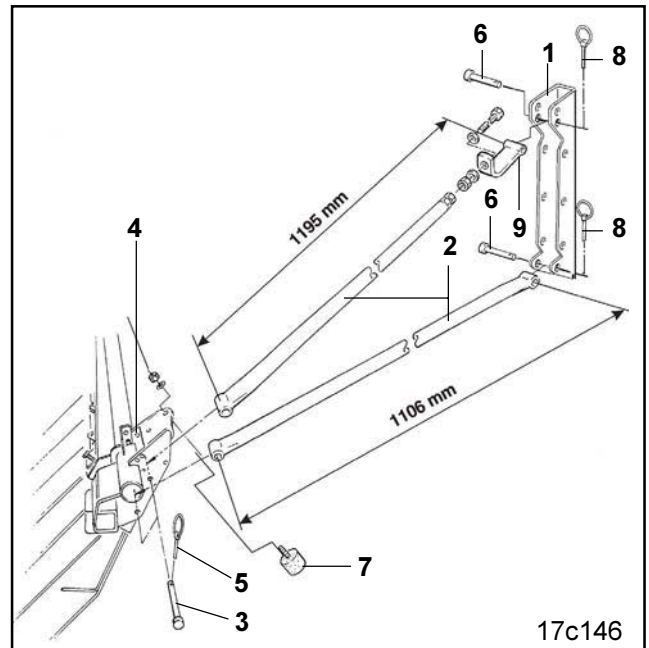


Fig. 25.3

25.1.1 Connecting hydraulic ram (option)

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



Allow the hydraulic hose (Fig. 25.4/2) to have a 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 valve only from 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 of the extra coverage harrow tines is increased.



Actuate the control spool valves only from the tractor cab
When actuating the control spool valves simultaneously other hydraulic rams are pressurised.
Ask people to leave the area of danger.
Danger of injury from moving parts.

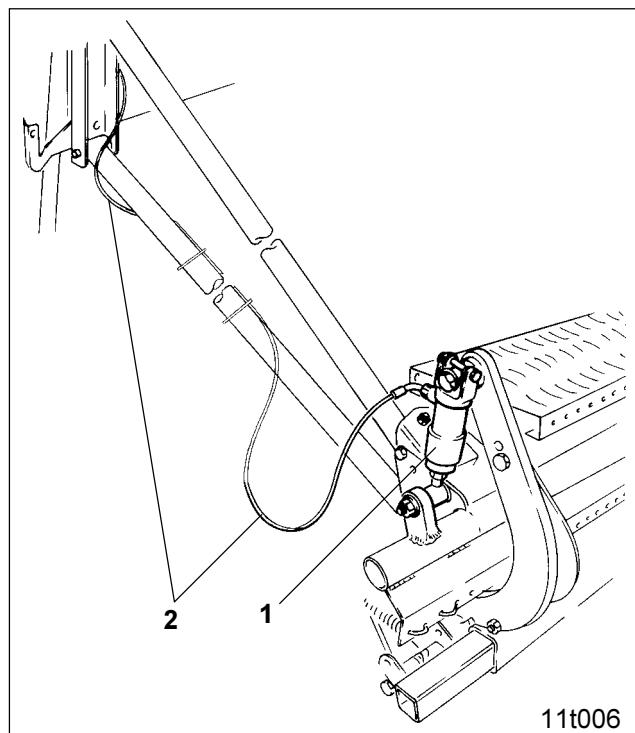


Fig. 25.4

25.2 Bring outer following harrow tines into operating position

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

Set the outer harrow tines (Fig. 25.5/1) 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 attached to it have to be moved outwards.

The square tubes with the outer harrow tines have to be locked into position after every alteration by clamping bolts (Fig. 25.5/3).



Check the settings before commencing work. Travel with your implement at operational speed a distance of approx. 30 m in the field to be sown. Check settings and re-adjust if necessary.

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 type of soil.

This setting is done by lengthening or shortening the top (Fig. 25.7/1), with which the seed rail is fixed.

Should the setting range of the top link (Fig. 25.7/1) be insufficient, readjust the length of the upper carrying tubes on the brackets (Fig. 25.3/9).

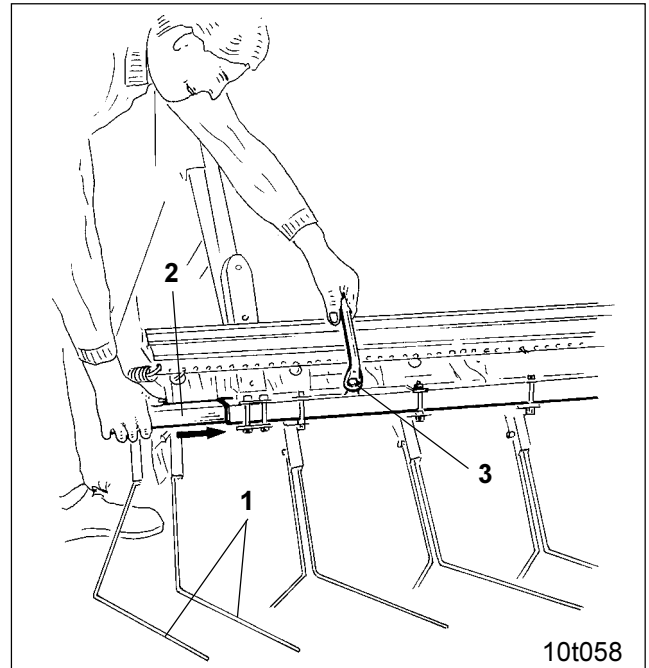


Fig. 25.5

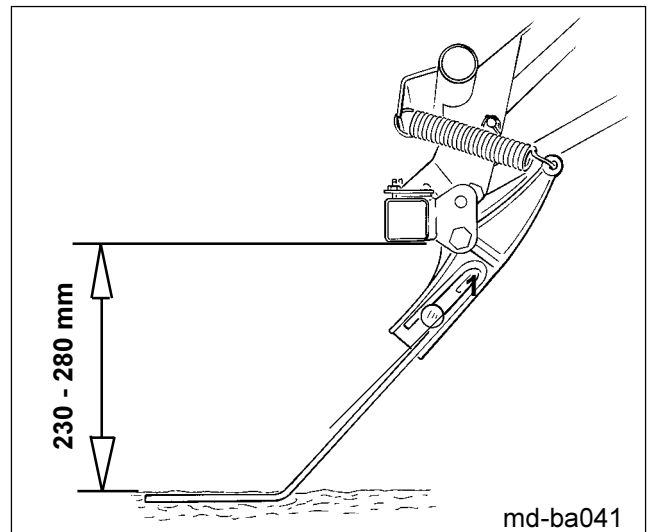


Fig. 25.6

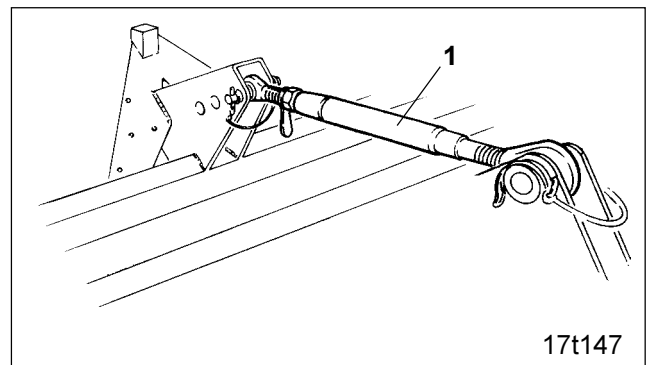


Fig. 25.7

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

The pressure at which the spring tines (Fig. 25.8/1) of the extra coverage following harrow are pressing on to the soil should be set so that after 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 using 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).

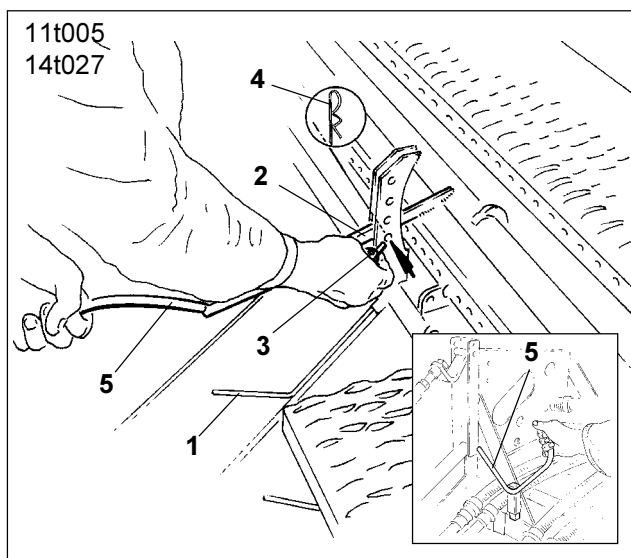


Fig. 25.8



Check the settings before commencing work.

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

25.5 Setting the 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 on to the soil should be set in such a way that after the seed has been covered no ridge 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 optional harrow pressure adjustment.

When changing from normal soil to heavy soil 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 stops on pin II (Fig. 25.10/2) when the hydraulic ram has been pressurised.

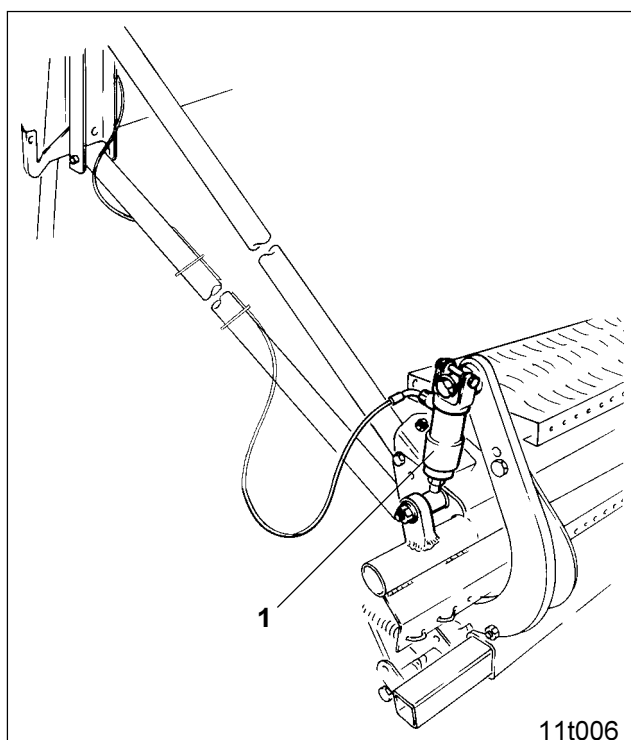


Fig. 25.9

For setting the increased harrow pressure

- Relieve the hydraulic ram (Fig. 25.9/1) from pressure.
- Insert pin II (Fig. 25.10/2) into a hole above the lever (Fig. 25.10/3) in the setting segment and secure by using 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 eine Bohrung im Verstellsegment unterhalb des Hebels (Fig. 25.10/3) einstecken und mit einem Federstecker (Fig. 25.10/4) sichern.



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



Checking settings prior to operation
Travel with your machine a distance in the field of approx. 30 m at 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 visible in the field.

25.6 Road transport

For transport on public roads, the outer tubes (Fig. 25.11/1) carrying the outer harrow tines (Fig. 25.11/2) should be slid back into the centre carrier tube. Before you can do this, slacken clamping bolt (Fig. 25.11/3) and retighten afterwards.

In the field bring the outer harrow tines (Fig. 25.11/2) into operating position according to para. 25.2.



Before transport on public roads slide in the outer square tubes (Fig. 25.11/1) carrying the outer harrows all the way to the stop and secure with clamping bolts.

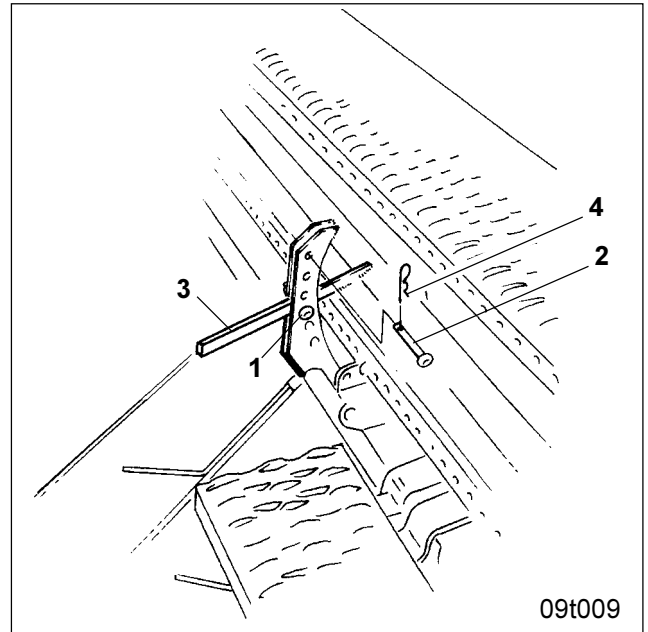


Fig. 25.10

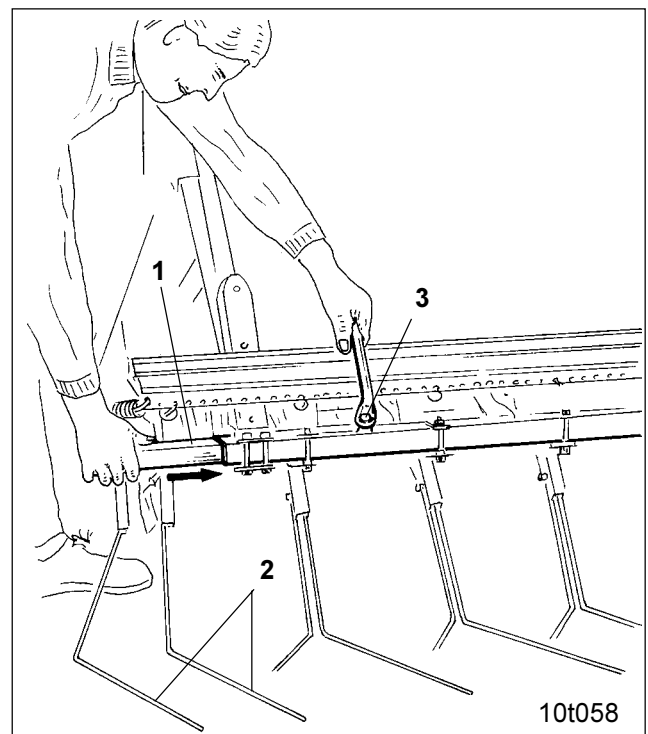


Fig. 25.11

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.

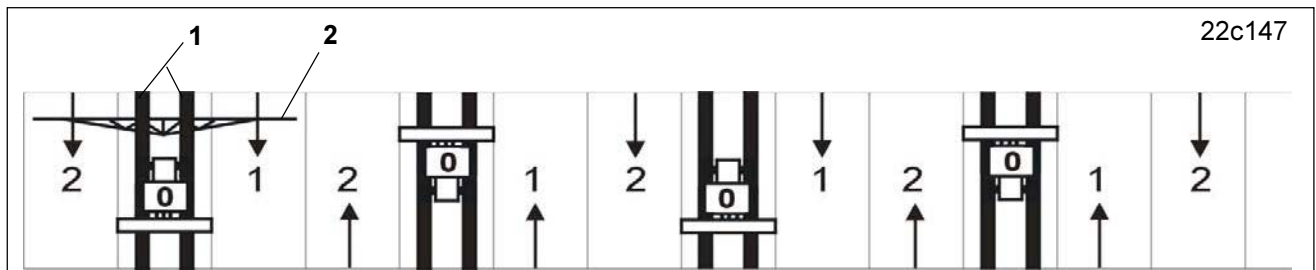


Fig. 26.1

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.

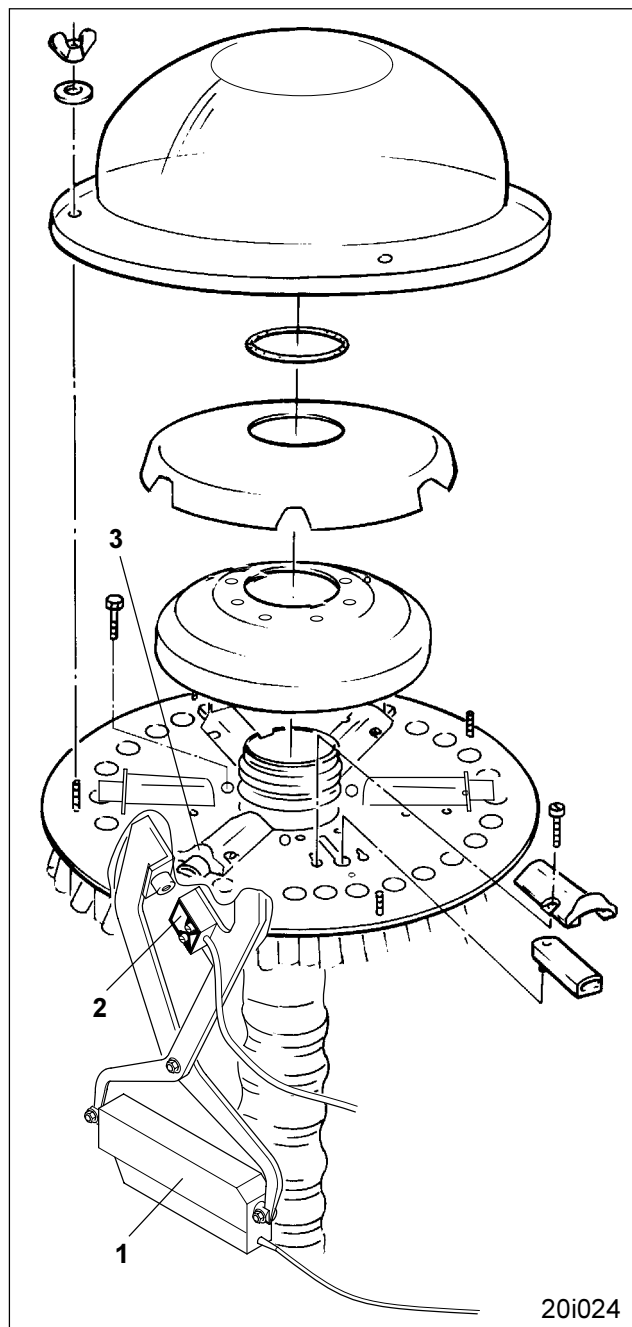


Fig. 26.3

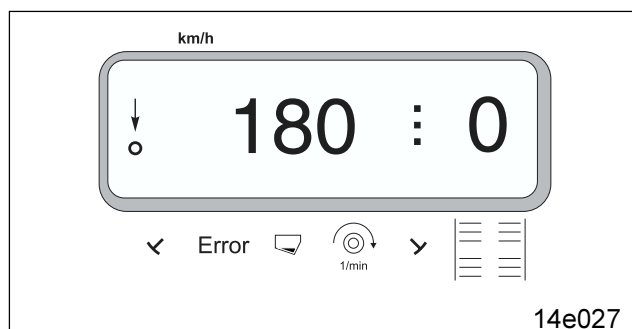


Fig. 26.4

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.**

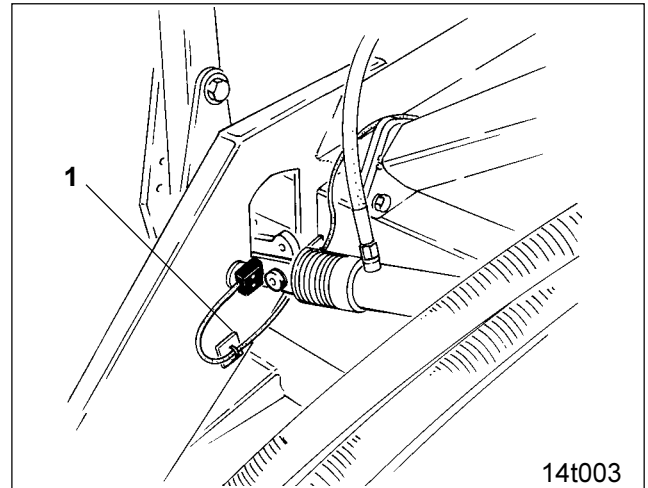


Fig. 26.5

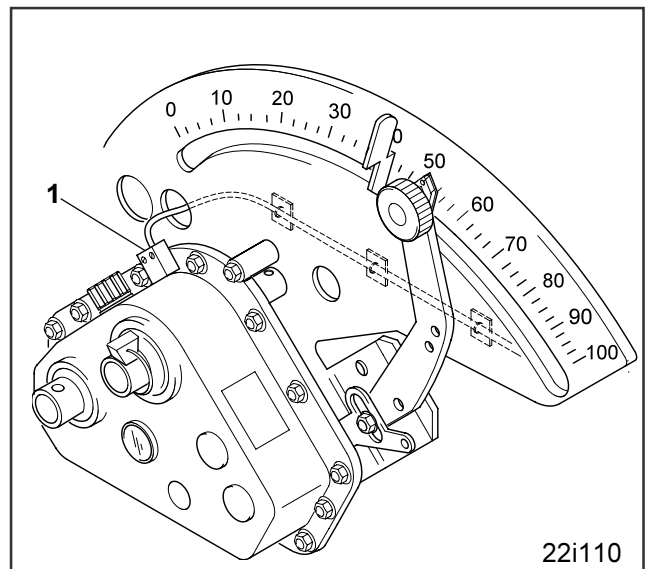


Fig. 26.6



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

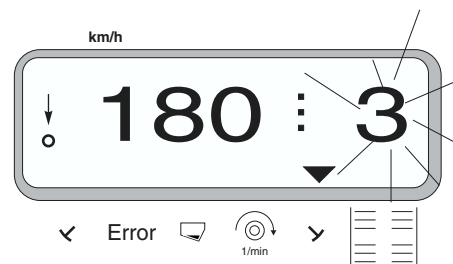
beforehand press

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.

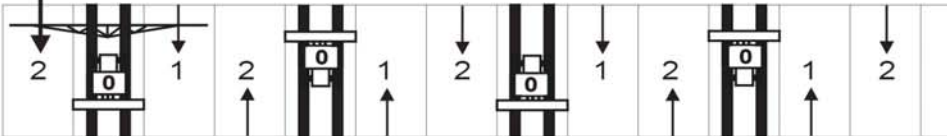
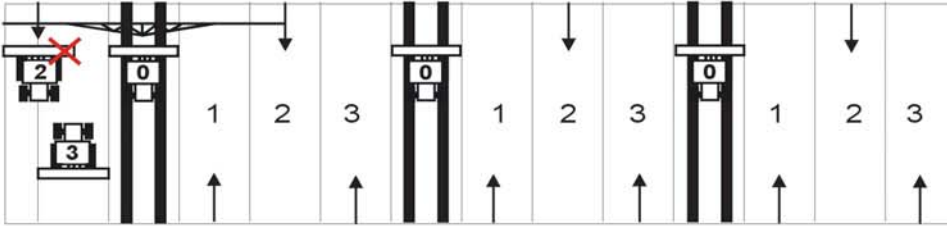
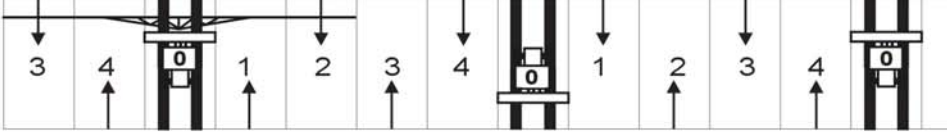
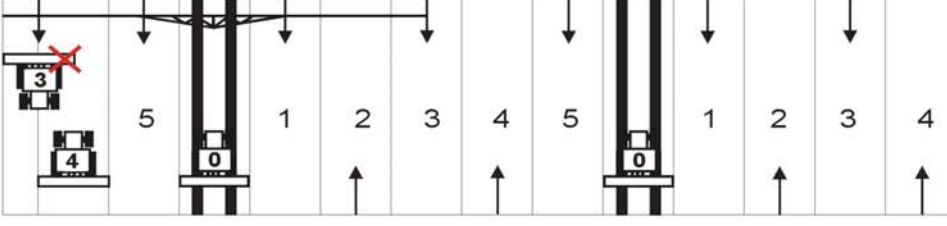
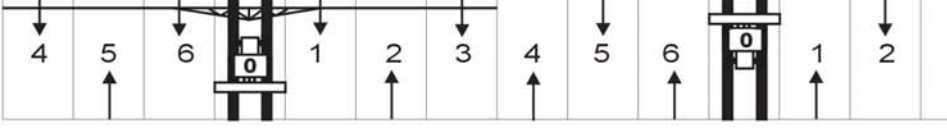
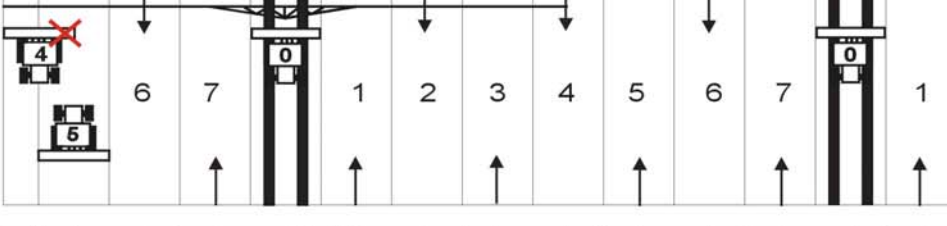
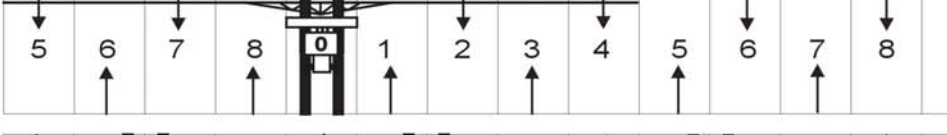
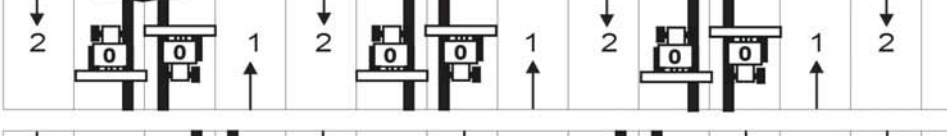

A	B	C	D
			START DÉPART
3,0 m 4,0 m 6,0 m	9 m 12 m 18 m	3	
2,5 m 3,0 m 4,0 m 4,5 m 6,0 m	10 m 12 m 16 m 18 m 24 m	4	
3,0 m 4,0 m 6,0 m	15 m 20 m 30 m	5	
2,5 m 3,0 m 4,0 m 4,5 m	15 m 18 m 24 m 27 m	6	
3,0 m 4,0 m	21 m 28 m	7	
2,5 m 3,0 m 4,0 m	20 m 24 m 32 m	8	
3,0 m	27 m	9	
2,5 m 3,0 m 4,0 m 4,5 m	10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

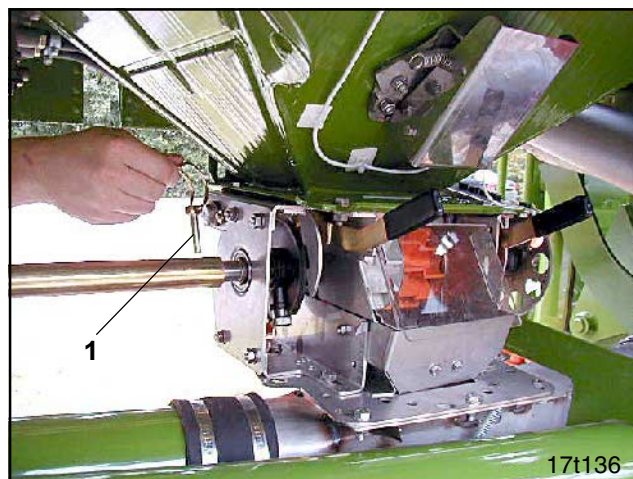


Fig. 26.8



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.

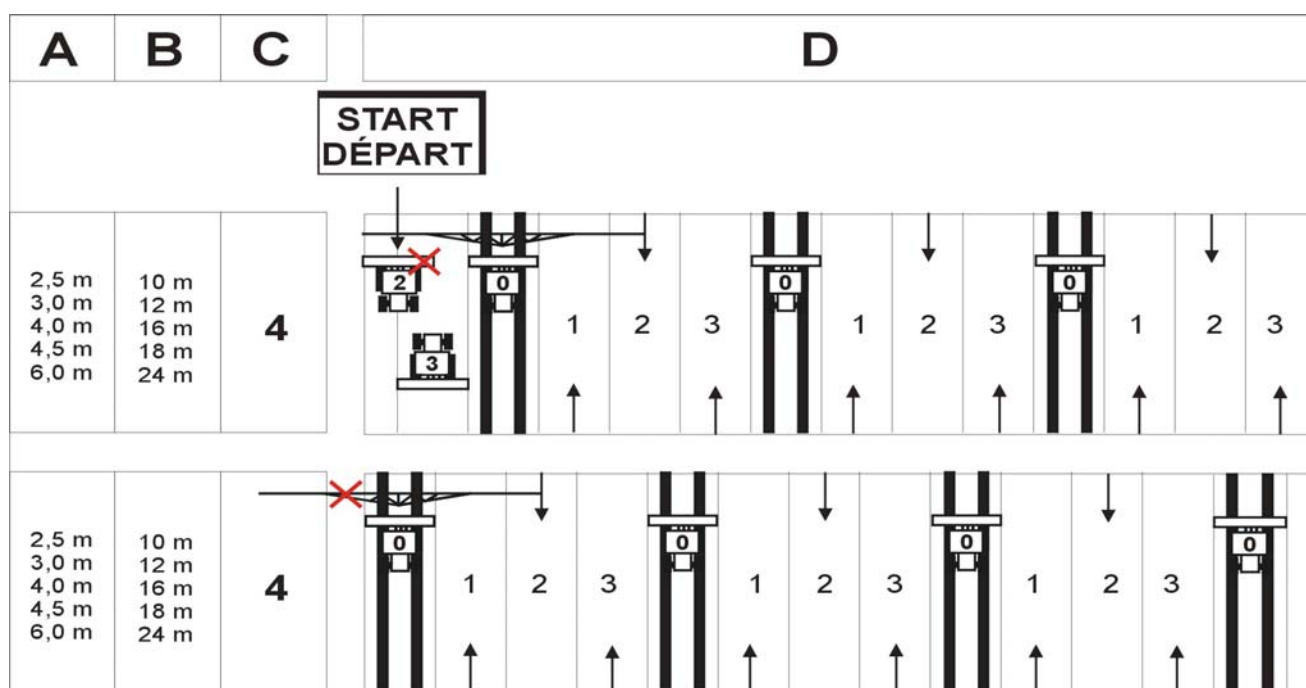


Fig. 26.9

Only for machines from 6 m working width:

On 6 m combinations the metering drive of the left hand 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 off 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.

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 lateron.
 - 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.

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

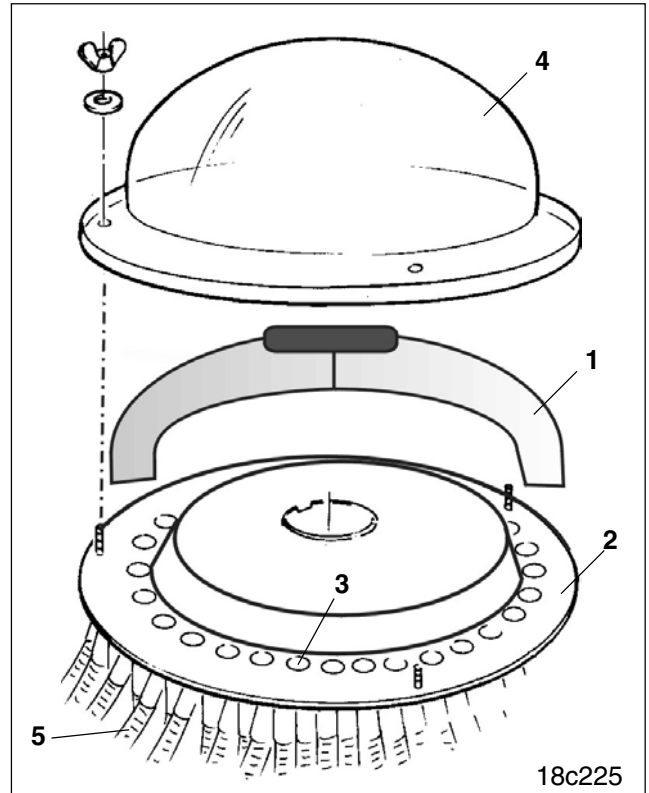


Fig. 26.10

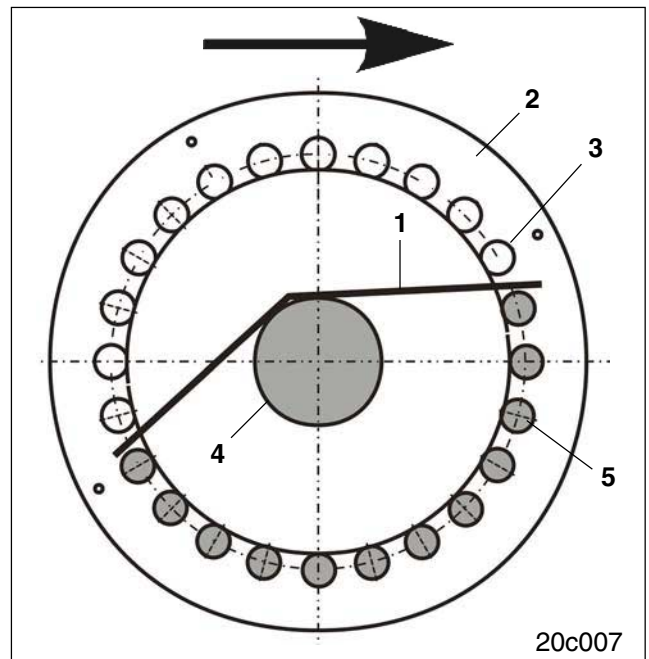


Fig. 26.11



Removing the insert is done in the adverse order.



After having removed the insert, reset the gearbox to the full seed rate n.

The tramlines with 2-bout and 6-plus bout rhythm (see Fig. 26.12) are created during one run in the field up and down.

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

- 2-bout switching rhythm on the right hand implement side
- 6-plus bout switching rhythm on the left hand implement side.

Always start to operate on the right hand field side.

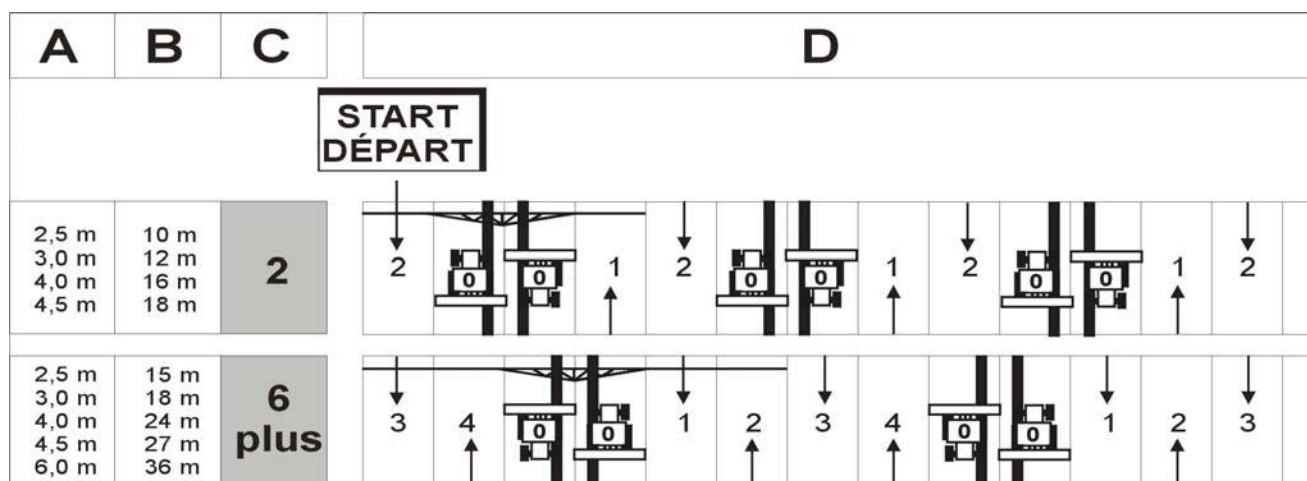


Fig. 26.12

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 is 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.

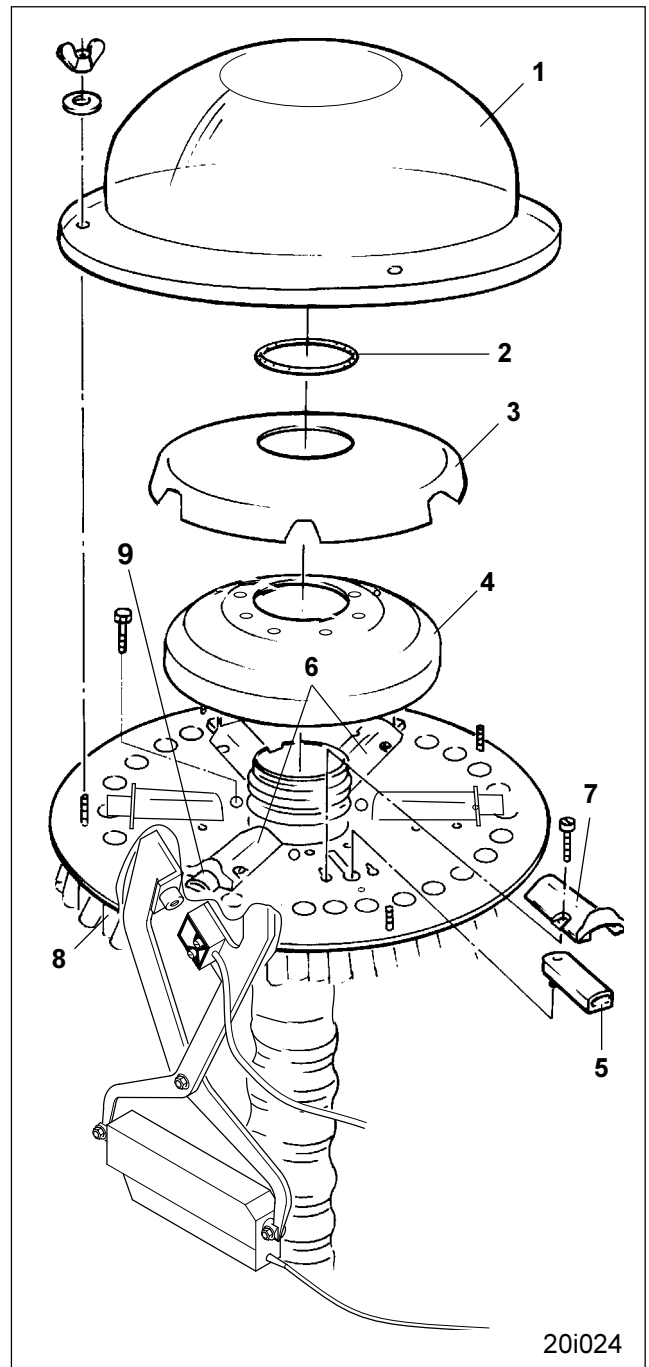


Fig. 26.13

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.

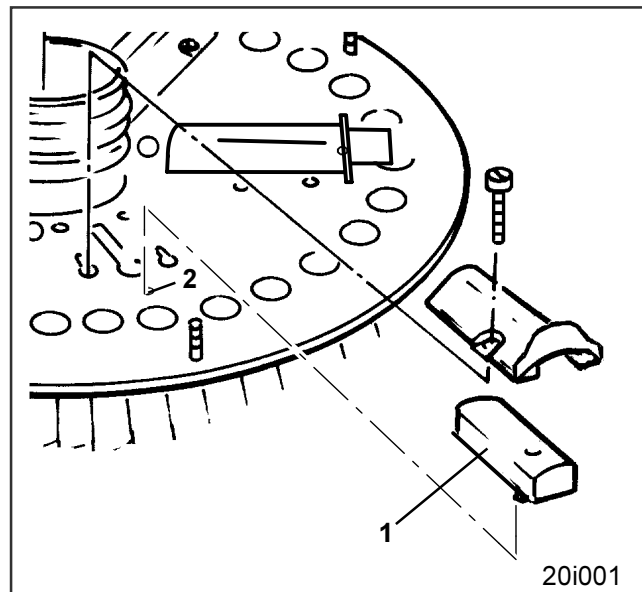


Fig. 26.15

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 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.



**Actuate the control spool valves only from the tractor cab.
When actuating the control spool valves several hydraulic rams may start functioning simultaneously, depending on their switching position.
Advise people to leave the danger area.
Danger of injury from moving parts.**

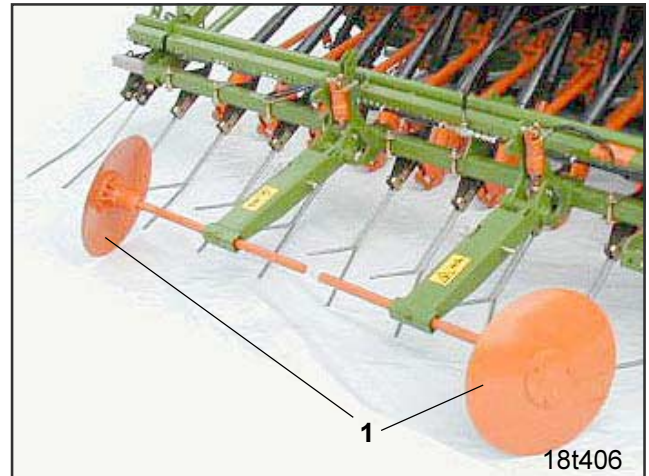


Fig. 28.1

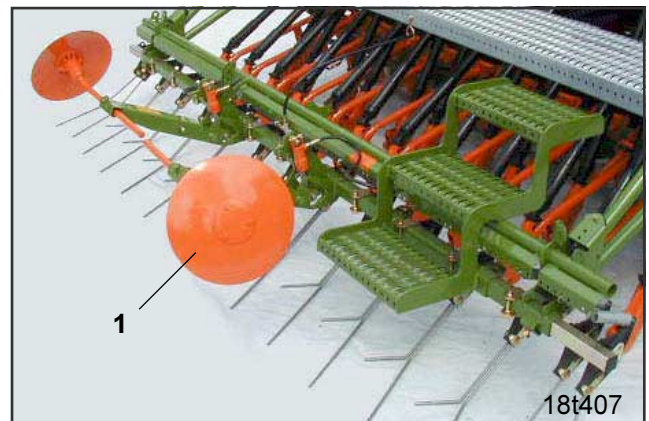


Fig. 28.2

28.1 Fitting

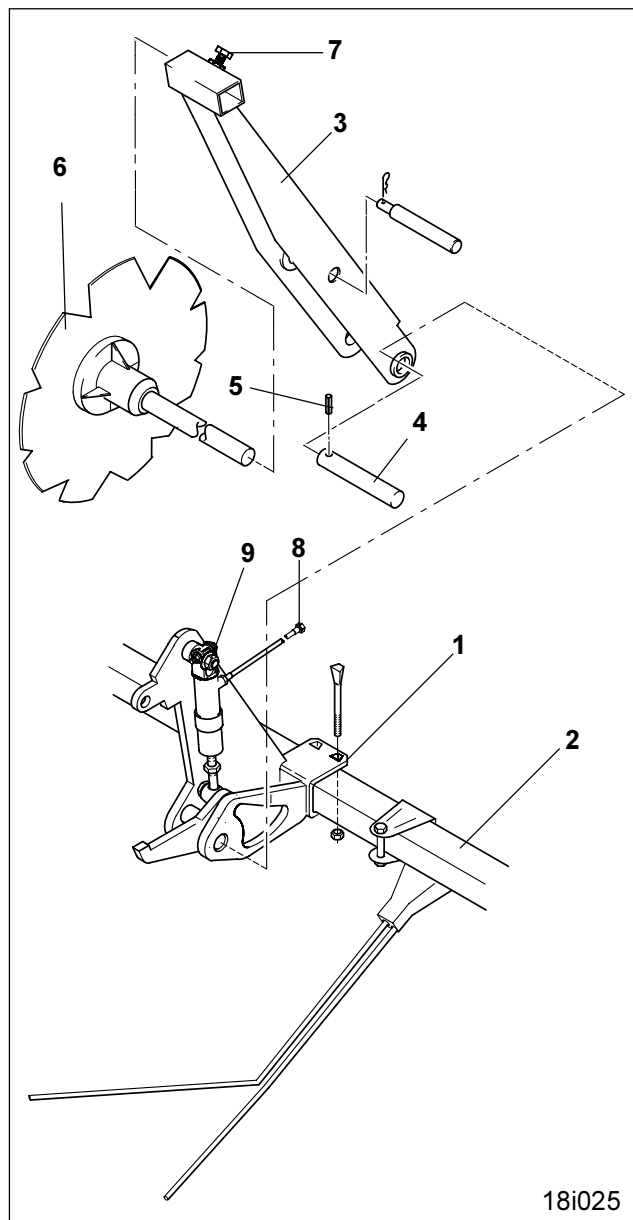
The pre-emergence marker unit is delivered pre-assembled by the factory

- 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).
- Attach hydraulic hoses to the seed drill by using cable binders.



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.



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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.

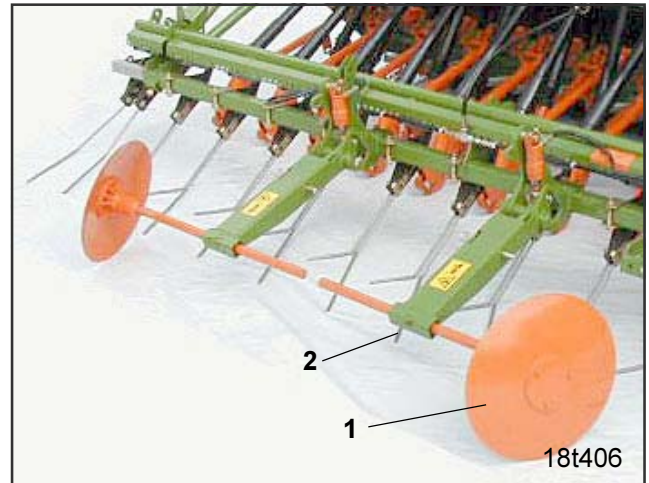


Fig. 28.4



31.0 Electric additional drive

The electric additional drive on FPS 103 (Fig. 31.1/1) or on FPS 203 (Fig. 31.2/1) meters the seed independently from the implement metering drive.

Before the tractor operator starts to drive with the seed drill, the seed is pre-metered by the electric additional drive. When starting to drive the coulters place the seed into the soil. "Drilling windows" at the headlands, in field's corners or at obstacles are avoided even in case of long seed delivery distances.

When the tractor operator positions the implement, e.g. at the headlands, and actuates the start button on the controlling device, the seed will get visible in the translucent distributor head after a few seconds. As soon as the seed can be seen the operator can start to drive. When starting up the seed is placed into the soil.

The speed with which the electric motor of the electric additional drive drives the metering wheels corresponds to a travelling speed of approx. 5 km/h.

After a period of time between 0 and 30 seconds which has been pre-set on the controlling device the electric motor is automatically switched off.

When the seed drill is accelerated and within the pre-set period of time the implement metering drive is getting faster than the metering drive of the electric additional drive the electric motor switches off.



Fig. 31.1



Fig. 31.2



40.0 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. The vehicle owner and operator are responsible for adhering to the legal traffic rules.

Applicable for all types:

Do not exceed the transport width of 3 m.

The transport on public roads is only permissible with an empty seed tank.

Standing on the implement or the transport of goods on the implement is prohibited.

If the total length of the mounted combination including tractor is more than 6 m, please follow your national legal traffic rules regarding proper traffic lights, e.g. yellow rear lights and yellow flash light.



When travelling on public roads with a yellow flash light, please follow your national traffic regulations.

The permissible tractor axle loads, the permissible total weight of the tractor and the permissible load capacity of the tractor tyres must not be exceeded. Please determine the permissible tractor axle loads, the permissible total weight of the tractor and the permissible load capacity of the tractor tyres according to para. 3.6.7. Only use towing vehicles which correspond to your national traffic regulations.

For transport the front axle weight of the tractor must at least be 20 % of the tractor net weight. Otherwise the tractor's stability and steering will be affected. If the rear mount combination is transported without seed tank, the front axle load reduction varies according to the tractor size. If necessary, use front axle weights.

Moving behaviour, steering and braking are influenced by mounted implements, trailers and ballast weights. Therefore check sufficient steerability and braking.

When driving round bends note the width of the machine and/or the changing centre of gravity of the implement.

When travelling on public roads with a lifted machine lock the control lever of the three point hydraulic against unintended lowering.

In the transport position of the implement ensure that



Fig. 40.1



Fig. 40.2

the tractor three-point linkage is locked against movement to the sides.

Before travelling on public roads check traffic lights for proper function.

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



Fig. 40.3



Fig. 40.4

Front seed tank

The spacing between steering wheel centre and the front edge of the front seed tank exceeds 3.50 m. Therefore, in case of poor visibility ask an escorting person for help.

The front tank is equipped with limiting lights (Fig. 40.5/1). If the tractor front lights are hidden by the seed tank, they must be repeated. For the second pair of head lamps (Fig. 40.5/3) a special permission might be necessary.



Apply for a special permission for the second pair of head lamps if required by the traffic regulations in force in your country.

The warning plates (red/white striped) which are supplied as standard, may not be removed. They should be fixed with a max. distance towards the outer edge of the machine of 10 cm in a max. height of 150 above ground.

During road transport the star wheel (Fig. 40.6/1) must be lifted and fixed to the frame with a chain (Fig. 40.6/2). The step (Fig. 40.7) must be folded upwards.

Rotary cultivator with Pack Top seed rail AS

Bring the track markers into transport position and secure with clip pins as prescribed (see chapter: Track markers).

Rotary cultivator (rigid) of more than 3 m transport width

with Pack Top seed rail AS

The transport width of 3 m must not be exceeded. Rigid rear mount combination of more than 3 m transport width may only be transported in longitudinal direction on the AMAZONE transport wagon TV. Please find the detailed description in the transport wagon instruction manual.



Fig. 40.5



Fig. 40.6



Fig. 40.7

**Rotary cultivator (rigid)
with Pack Top seed rail AS
up to 3 m transport width**

Rotary cultivators up to 3 m transport width should be equipped with front warning plates (red/white striped) (Fig. 40.8/1). They should be fixed with a max. distance towards the outer edge of the machine of 10 cm in a max. height of 150 cm above ground.

Fix warning plates (red/white striped) (Fig. 40.9/1) on the Pack Top seed rail up to 3 m working widths with a max. distance towards the outer edge of the machine of 10 cm in a max. height of 150 cm above ground.

Pack Top seed rails AS up to 3 m working width should be equipped with legally permissible lights which should be checked for function before going on the road. The seed rail can be equipped with firmly mounted lights (option) which would also remain on the machine during field operation.

For road transport of the Pack Top seed rail AS up to 3 m working width push the tube ends with the outer following harrow elements of the extra coverage following harrow carrying tube until the stop (see para. extra coverage following harrow). All tines of the extra coverage following harrow protruding to the rear should be guarded with the traffic safety guard (Fig. 40.10/1). A second set of lights (Fig. 40.10/2) should be fixed to the square tube of the extra coverage following harrow.

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

Distance between rear traffic light upper edge towards the road max. 155 cm, distance of the rear reflectors towards the road max. 90 cm.

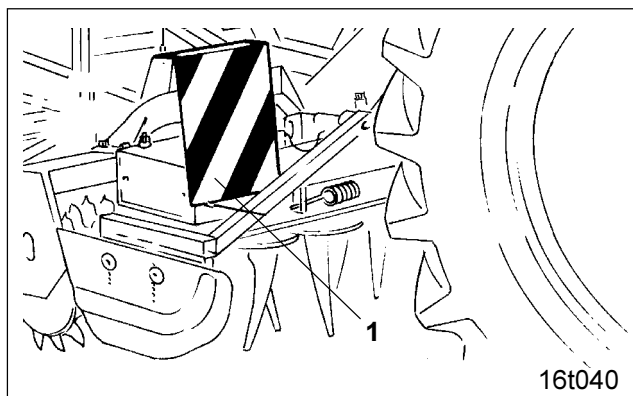


Fig. 40.8

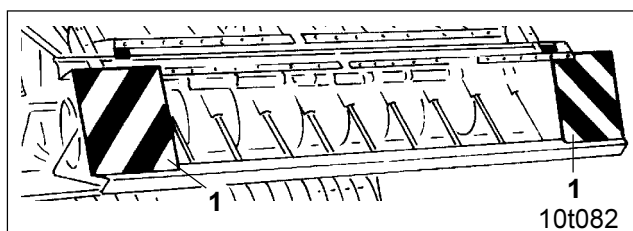


Fig. 40.9

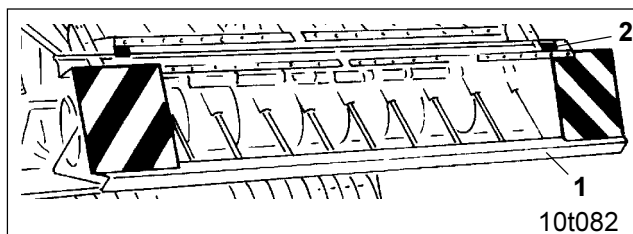


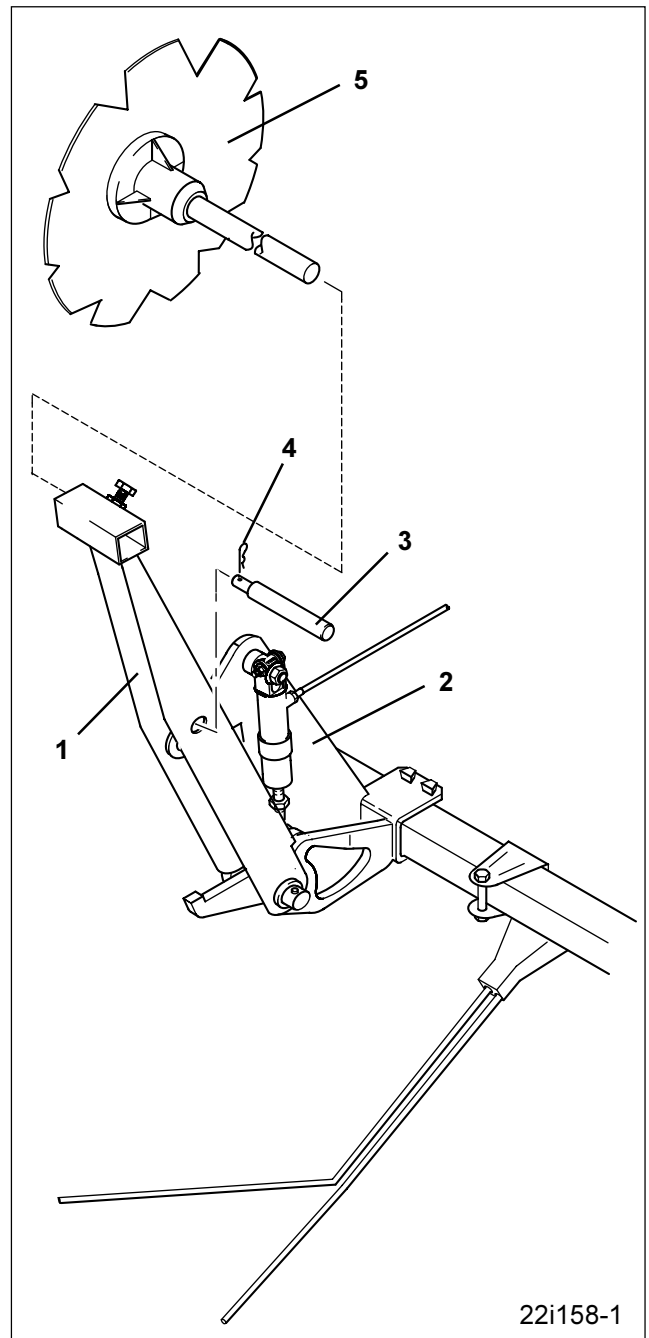
Fig. 40.10

Transport on public roads of implements up to 3 m working

For travelling on public roads with machines up to 3 m transport width lock the marker disc carriers (Fig. 40.11/1) on the mounting brackets (Fig. 40.11/2) by using pins (Fig. 40.11/3) and secure using clip pins (Fig. 40.11/4). Then the marker disc arm (Fig. 40.11/1) is folded all the way up and is located with the marker discs lengthways above the extra coverage following harrow. Remove the marker discs (Fig. 40.11/5) before travelling on public roads.



Before transporting implements up to 3 m working width on public roads remove the marker discs (Fig. 40.11/5) from the marker disc arms (Fig. 40.11/1).



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Fig. 40.11

Rotary cultivator (foldable) with Pack Top seed rail AS

Bring foldable rotary cultivator with seed rail into transport position according the instruction manual for the rotary cultivator.



To prevent the rotary cultivator from damage when folding, please adhere to the advice given in the rotary cultivator instruction manual.

Repeat the possibly hidden registration number of the tractor on the rear mount combination.

Before going on the road cover the coulters with a covering canvass (Fig. 20.12/1) (option).

Bring warning plates and traffic light kit of the Pack Top seed rail AS into transport position

As standard the Pack Top seed rail AS is equipped with the in Germany legally prescribed rear warning plates and traffic light kit (Fig. 40.12/2).

As soon as the combination is folded for transport, bring the arms (Fig. 40.13/1) with the traffic light kits and the warning plates into road transport position.

Remove the pin (Fig. 40.14/1) secured by a clip pin and

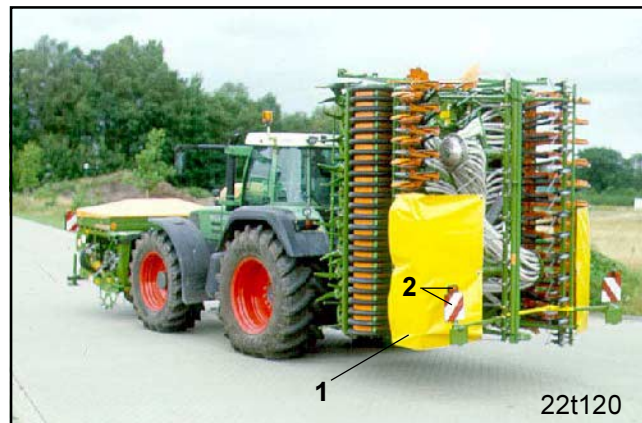


Fig. 40.12

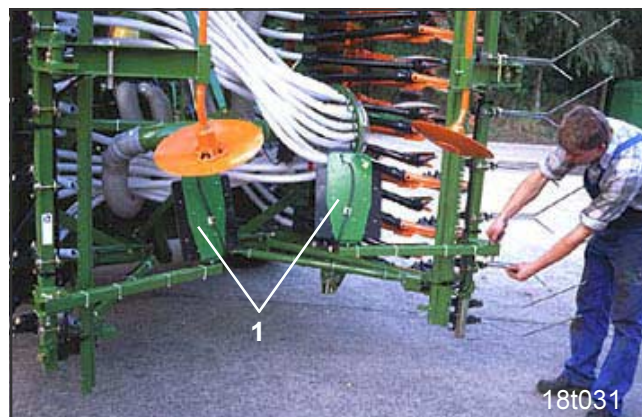


Fig. 40.13



Fig. 40.14

swivel the arm (Fig. 40.15) with the warning plates and the traffic light kit into road transport position. Lock the arm with the prior slackened pin (Fig. 40.16) and secure using a clip pin.

Swivel in the extra coverage following harrow (Fig. 40.17) and secure with the supplied tensioning belt (Fig. 40.18).

Plug the light cable into the tractor's socket and check traffic lights for function. Route the cables in such a way that they will not be damaged.



Before bringing the combination into operational position again, mount the traffic equipment in vice versa order.



Fig. 40.15



Fig. 40.16



Fig. 40.17



Fig. 40.18

Transport of foldable implements on public roads

If your machine is equipped with a pre emergence marker (Fig. 40.20) cover the track marker discs (Fig. 40.20/1) with the canvass (Fig. 40.19/1) (option). For this, slacken the pins (Fig. 40.20/2) and carefully swivel the arms (Fig. 40.20/3) with the marker discs downwards behind the canvass.



For road transport of folding implements cover the marker discs (Fig. 40.20/1) of the pre emergence marker with canvass (Fig. 40.19/1).

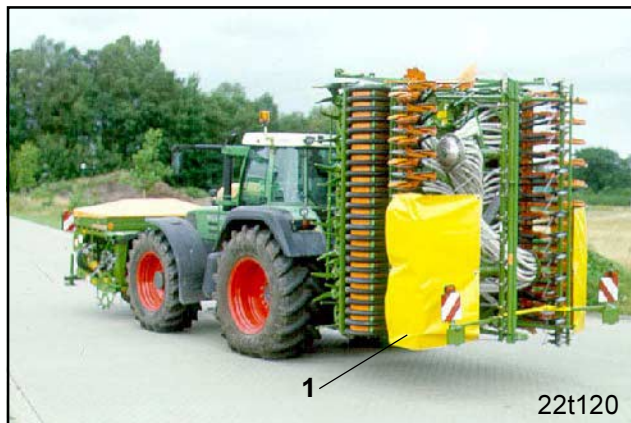


Fig. 40.19

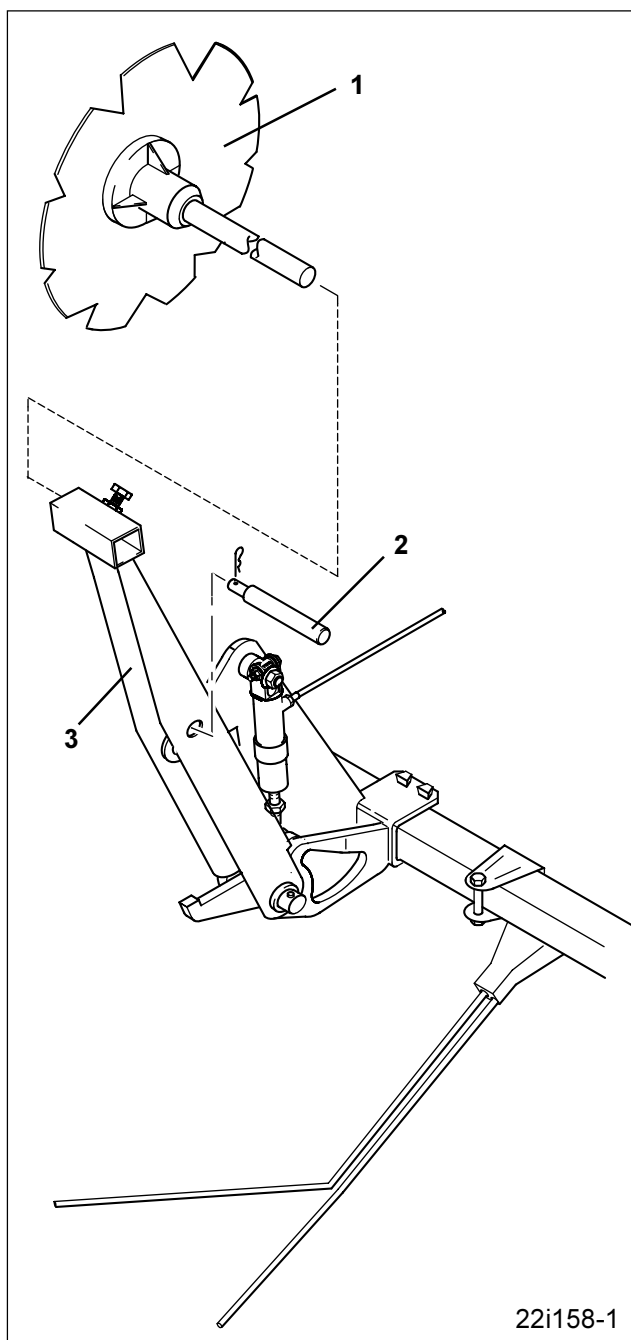


Fig. 40.20

50.0 Maintenance and care



Observe the general safety and accident prevention advice according to para. 3.6.5 when carrying out maintenance and care

50.1 Maintenance work after the first 10 hours of operation

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

50.2 Checking the oil level in the vario gearbox

Check the oil level inside the vario gearbox at the oil gauge window (Fig. 50.1/1) on the seed drill horizontally. It is not necessary to change the gearbox oil.

For refilling oil unbolt the seal cap (Fig. 50.1/2):

Filling quantity: 0,9 litres

Only use the following grades of oil:

Hydraulic oil WTL 16,5 CST/50^o C
or
engine oil SAE 10 W.

50.3 Checking the air pressure

Please find the correct air pressure for the front packer tyres in table Fig. 50.2.

Maintaining the indicated tyre air pressure ensures the best cleaning work of the tyre with the relevant weight load by the front packer.

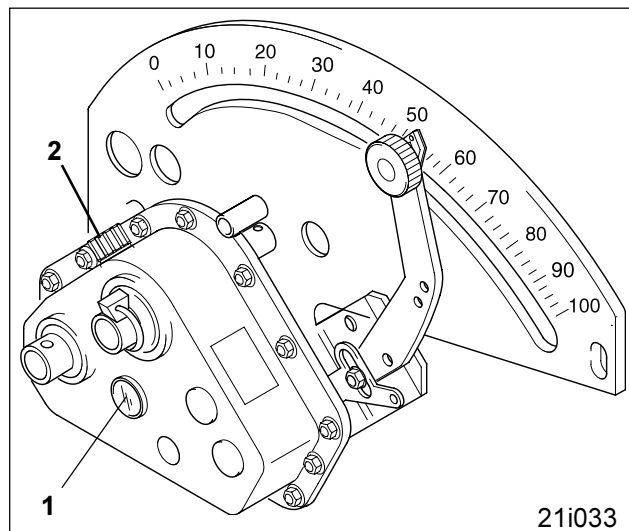


Fig. 50.1

Weight Front tank with seed	Air pressure at 10 km/h
1500 kg	1,0 bar
2200 kg	1,5 bar
2700 kg	2,1 bar

Fig. 50.2

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50.4 Cleaning the implement

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



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



Regularly remove seed residue from the metering unit(s). Beforehand empty the seed tank. Swollen or germinated seed residues inside the metering unit may affect the seed rate or block the movement of the seed wheels and lead to their breakage.

For cleaning the metering unit open

- the translucent plastic flap (Fig. 50.3/1)
- the injector sluice flap (Fig. 50.4/1) and
- the emptying flap.

For opening the emptying flap behind the metering unit, press lever (Fig. 50.4/2) downwards and arrest.

Empty metering wheels by some turn on the calibration crank.

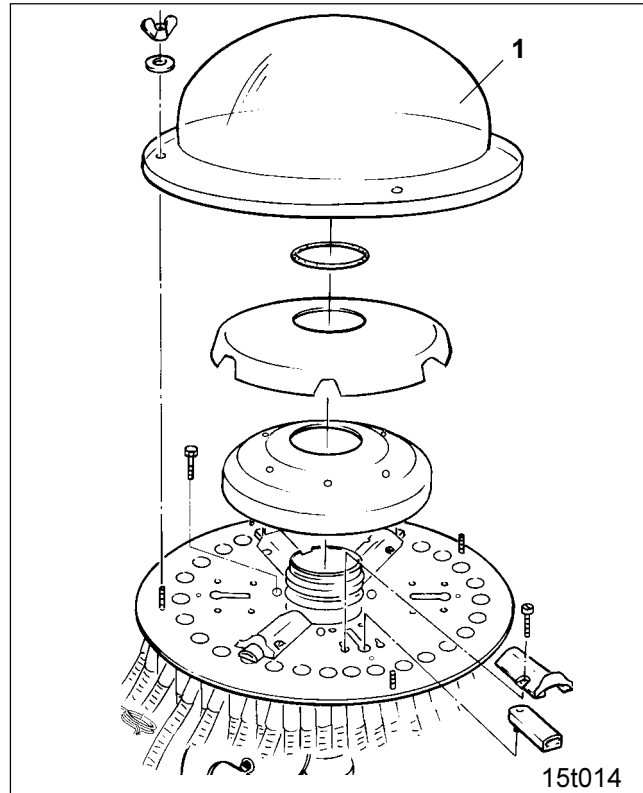


Fig. 50.3

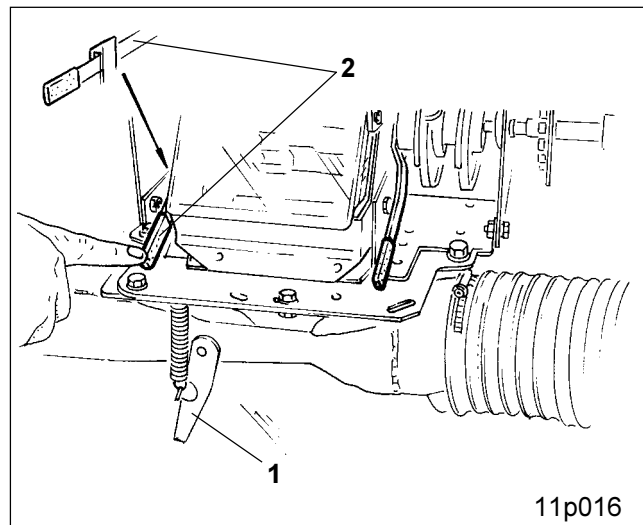


Fig. 50.4

50.5 Checking roller chain

If your two-tip front seed tank is equipped with an electric additional drive (Fig. 50.5/1) the sowing units of the implement are driven by the roller chains. After the end of the season or a prolonged pause of operation oil the roller chain (Fig. 50.5/2). Remove chain guard (Fig. 50.5/3) before and put on back onto place afterwards..

50.6 Exchanging a defective tyre

Carefully clean the roller before exchanging any tyre.

- Couple front packer seed tank onto the tractor
- Secure roller by chocks against unintended rolling away and remove the roller (Fig. 50.6/1)) For this remove the fixing bolt (Fig. 50.6/2) on both sides.
- Raise the seed tank with the aid of the tractor's hydraulics from the roller
- Remove hex. nuts (Fig. 50.6/3) and pull the tyre (Fig. 50.6/4) off the roller.

Assembling the roller is done in the reverse order

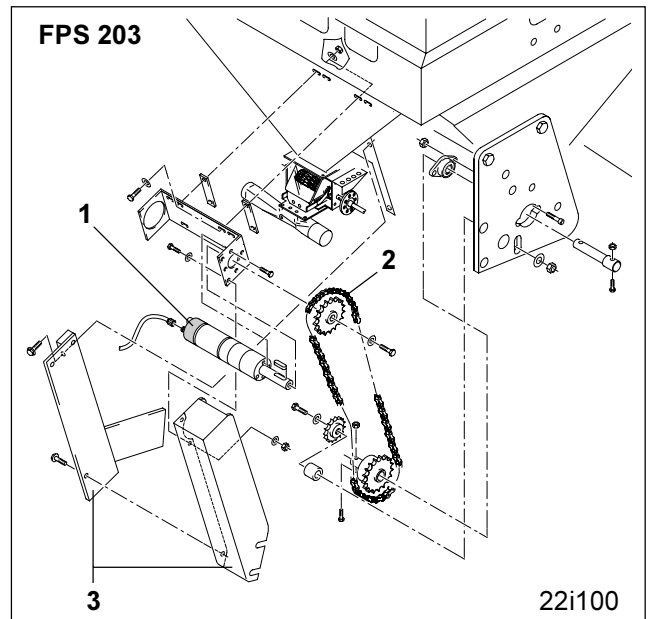


Fig. 50.5

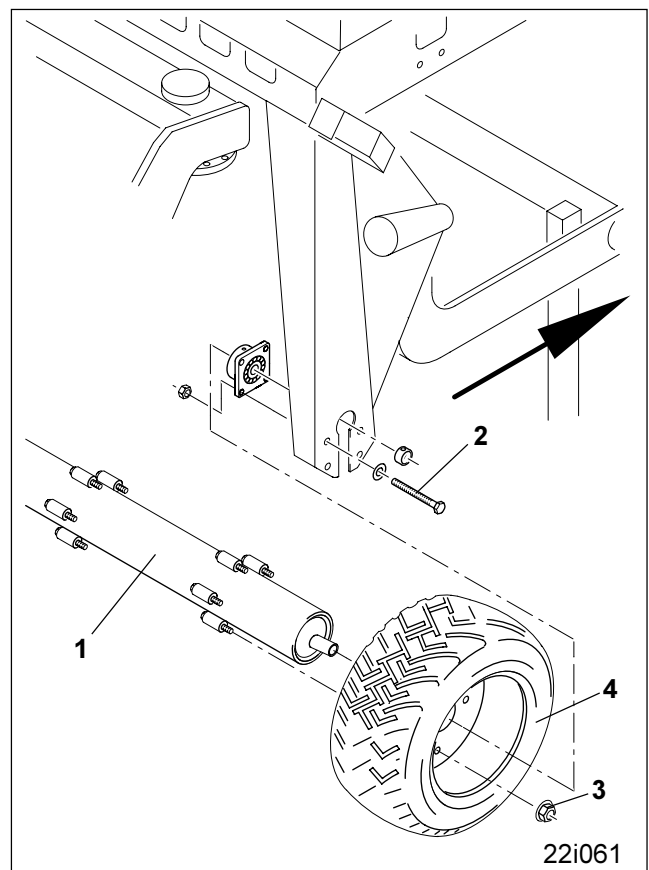


Fig. 50.6

50.7 Setting the spring loaded steering

After a repair reset the spring loaded steering of the front packer.

Two strong springs (Fig. 50.7/1) prevent the seed tank from swinging when being raised.

After a repair hook both springs in the turnbuckle (Fig. 50.7/2) and tension the spring with 10 turns of the turnbuckle. Secure the turnbuckle by using a counter nut (Fig. 50.7/3).



When the steering is pulled to the side the springs are tensioned by two ropes (Fig. 50.7/4). The U-bolts (Fig. 50.7/5) with which the ropes are tensioned must not be adjusted.

50.8 Checking the Verteilerkopf distributor head for cleanliness

Check the distributor head in regular intervals during operation from the tractor cab by looking through the translucent distributor hood and after operation from outside for cleanliness. Remove pollution and seed residue immediately. Swollen or germinated seed residue may cause blockage.

For cleaning the distributor head:

- De-pressurise the hydraulic system
- Remove outer hood (Fig. 50.8/1) of the distributor head.

50.9 Hydraulic hose circuit

50.9.1 Checking when starting and during operation

When starting and during operation the ordinary condition of the hoses should be checked by a skilled person.

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,

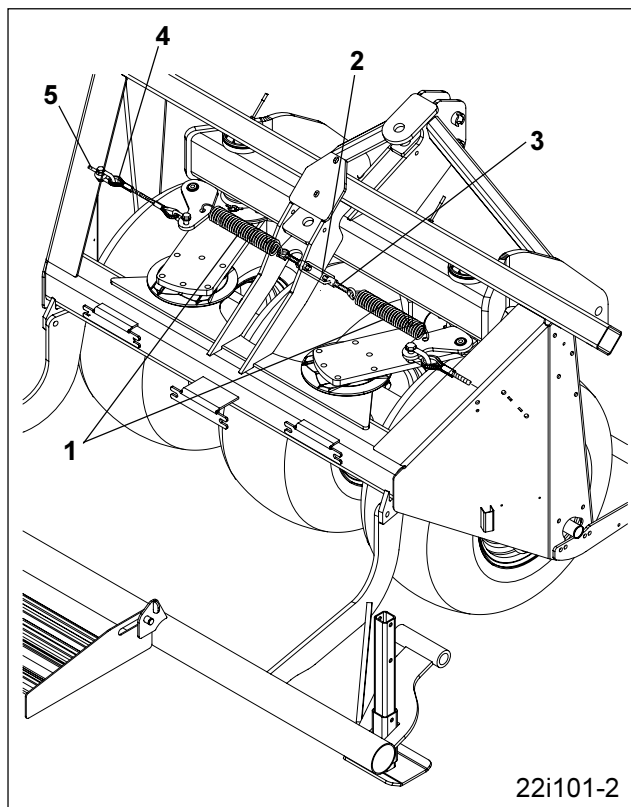


Fig. 50.7

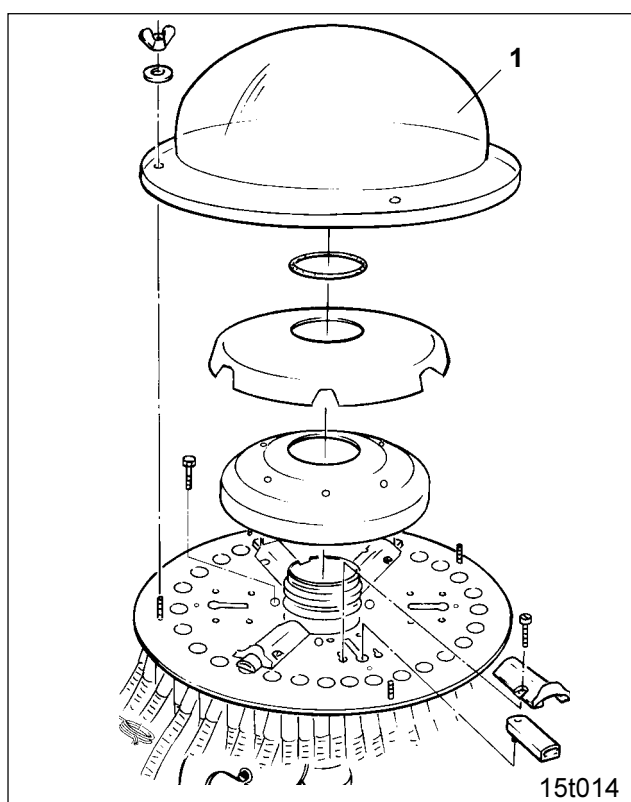


Fig. 50.8

- 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
- Do not exceed the permissible period of use.

50.9.2 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).

50.9.3 Marking

Hydraulic hoses are marked as follows:

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

50.9.4 When working on the hydraulic



Before working in the hydraulic, read and adhere to para. 3.6.4.

Affix the hydraulic hoses on the fixing points given by the manufacturer .

- Always ensure that hydraulic parts and connections are clean.
- Fit the hoses 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.



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