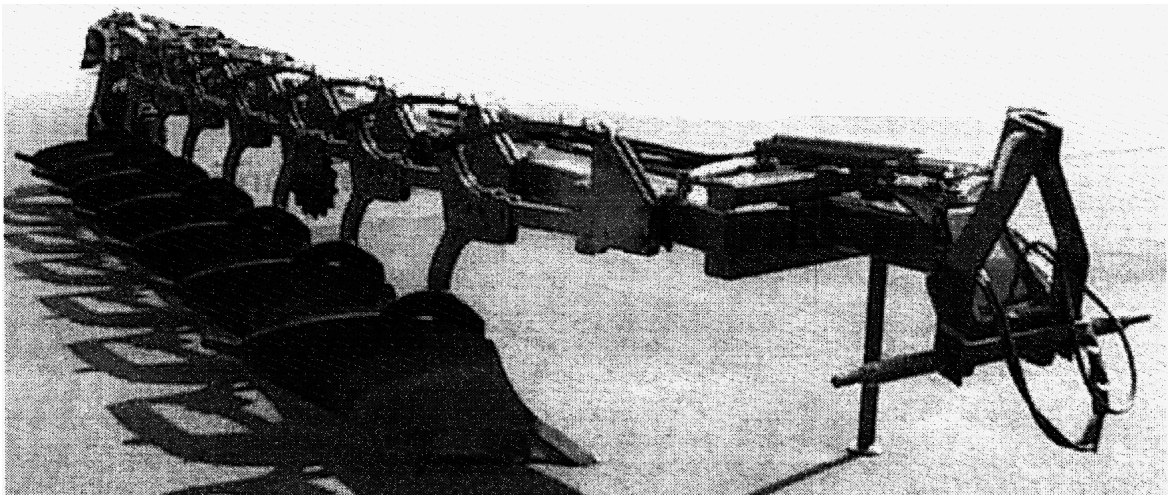


Operating manual

NON REVERSIBLE PLOUGH FARMER-GIGANT 3S



VOGEL  NOOT
THINKING AHEAD

A-8661 Wartberg / Mürtal

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www.vogel-noot.info

Declaration of Conformity

Within the meaning of EC Machinery Directive 2006/42/EC, Annex II 1.A

The manufacturer

Vogel & Noot Mezőgépgyár Kft.

Úttörő u. 43.

H-9200 Mosonmagyaróvár

hereby declares that the following exchangeable equipment

Gigant 1000-3S / non reversible plough

Serial number: _____

Type number: _____

complies with all the relevant provisions of the directive stated above.

The following harmonised standards were applied:

EN ISO 12100, EN ISO 4254-1, EN ISO 4413

Compilation of the technical documentation by:

Joachim Hierzenhofer

Grazerstrasse 1

8661 Wartberg im Mürztal, Austria

The Declaration of Conformity has been issued:

Wartberg im Mürztal, August 2014

Dipl.Ing. (HTL) Ernst Brunner
Technical Director



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Foreword to the Operating Manual

The aim of this Operating Manual is to simplify familiarisation with the machine and its correct use.

The Operating Manual contains important information on the safe, proper and economic operation of the machine/system. Compliance by you helps to

- avoid hazards
- reduce repair costs and downtime
- increase the machine's reliability and extend its service life.

The Operating Manual supplements the existing accident prevention and environmental protection regulations. It must always be available where the machine is in use and must be read by every person asked to work with/on the machine. This covers

- operation, including
 - setup
 - troubleshooting during operation
 - removal of production waste
 - care
 - disposal of fuels, lubricants and other auxiliary materials
- maintenance
 - servicing
 - inspections
 - repair
- transport

In addition to the Operating Manual and the binding accident prevention regulations applicable where the unit is being used, generally recognised good engineering practice must also be observed.

Definitions

A skilled person, within the meaning of this Operating Manual, is anyone who, on the basis of his specialist

- training
- expertise
- experience and
- knowledge of the relevant provisions

is able to evaluate the work with which he is tasked and is able to identify possible hazards.

A trainee is someone who is taught or instructed by an expert with reference to

- the duties with which he is tasked
- possible hazards in the event of incorrect actions

and has been given instruction on the necessary protective equipment and measures.




A layperson is someone who is regarded as neither a skilled person nor a trainee.


The directly responsible person is the person responsible for a task who has to be familiar with the necessary safety measures.

1. Safety

Explanation of the pictograms

We classify the hazards according to various levels. The table gives you an overview of the allocation of symbols, hazard categories and signal words relating to the concrete hazard and the possible consequences.

Symbol	Hazard category		Signal word	Definition	Consequences
	A	Personal injury	Danger	Directly threatening hazard	Death or serious injuries (crippling injuries)
	B		Warning	Possibly hazardous situation	Possible death or serious injuries
	C		Caution	Slightly hazardous situation	Possibly slight or negligible injuries
	D	Damage to property	Attention	Possibly harmful situation	Possible damage to product surroundings
	E		Note Information	Application tips and other useful information	No signal word for a hazardous or harmful situation


	<p>WARNING!</p> <p>Avoid hazards when operating the machine by means of</p> <ul style="list-style-type: none"> • <i>safety-aware behaviour</i> • <i>cautious actions</i> <p>Therefore carefully read and apply the warning information in this manual!</p>
-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Correct use


The **FARMER-GIGANT 3S non-reversible plough** is designed exclusively for normal agricultural use under normal conditions.

This machine may only be used in accordance with the specifications in this Operating Manual. All information relating to safety, operation, servicing and repairs must be rigorously observed.

Only use the machine if it is in perfect technical condition, observing the specifications of the Operating Manual, and be aware of safety requirements and possible hazards.

	<p>ATTENTION!</p> <p>Any purpose other than that specified above is regarded as non-normal usage.</p> <p>Modifying the machine in any way to enable other uses is expressly prohibited.</p>
-----------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

All uses other than those intended shall be deemed improper.

	<p>WARNING!</p> <p>Riding on the plough is dangerous and represents improper use.</p> <p>You are risking serious injury and death.</p>
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------

The manufacturer can accept no responsibility or offer any guarantee if harm or injury occurs as a result of

- improper operation
- non-compliance with the safety instructions contained in this manual
- removal or bypassing of safety systems.

Operator workplace

The operator's workplace is on the tractor driver's seat and, if necessary, on the stationary, secured machine.

Product monitoring - notification form

Dear Customer

We are legally obliged to continue monitoring our products beyond the point of delivery.

We are extremely interested in:

- repeated malfunctions
- lack of clarity, e.g. in operation, servicing, instructions
- usage other than for intended purpose
- bypassing/disabling safety systems
- incorrect, unsafe operation
- accidents which have occurred
- other unusual observations
- suggestions for improvements, requests

in particular as indicators of possible corrections to be made and/or modifications.

We request you to notify us of any such occurrences/suggestions. This is the only opportunity for us to improve our products, if so required, to make them as safe and reliable as possible.

Date	Occurrence	Notes

Our address:

Vogel & Noot

Landmaschinen GmbH & CoKG

Grazerstrasse 1

A-8661 Wartberg

Tel +43 (0)3858 6050, Fax +43 (0)3858 605109

Email: info@vogel-noot.net

Protective equipment and measures

Keep clear of plough beam element! Take care that you put no one at risk!



ATTENTION!

Read and observe the operating instructions in Section 4 and the maintenance and setting instructions in Section 5.

This affects your safety and the safety of your surroundings.



ATTENTION!

Components can break if overloaded and be ejected at high speed.

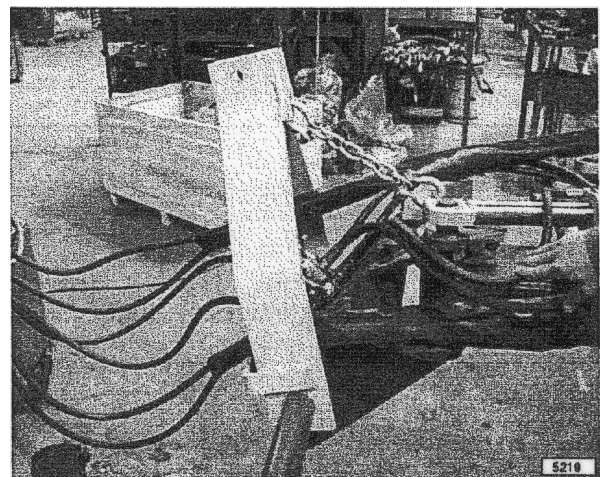
Ensure that there is nobody on the spring side (furrow side).

Overload protection

Stump-jump systems are intended to protect the plough from breakage and damage - see page 31 for details.

Stabilising tower

The stabilising tower stabilises the plough. It prevents the plough from tilting when driving round tight bends.



2. Technical specifications

Machine identification

Manufacturer

Vogel & Noot Landmaschinen GmbH & CoKG

Machine

Semi-mounted non-reversible plough

Model


FARMER GIGANT 3S

Series

VN-Euromat PERMANIT® 3S

The nameplate gives information on the

- Year of construction
- Machine no.
- Model

VOGEL NOOT 			
SOIL SOLUTIONS A-8661 Wartberg			
Baujahr	1	Type Variante	3
Serien-nummer	2	Typen-nummer	5
zul. Achs-last kg	4	zul. Gesamt-gewicht kg	7
zul. Stütz-last kg	6		

Tools:

Body types

NL460, UN350, UN400, UN430, WY400, UST400 (slatted body), WXL430, WL430, WX400, WST430 (slatted body), WXH400

Additional equipment

The machine can be fitted with the following additional equipment:

- Disc coulter
- Manure skimmer
- Trashboard
- Knife coulter
- Skim coulter
- Add-on parts for packer

Stump-jump systems are available as follows:





- mechanical
- hydraulic, central
- hydraulic, compact



Note

Illustrations and application tips for the tools and additional equipment can be found in the appended parts list.

Technical specifications

Stump-jump system design		Shear bolt	Automatic, mechanical	Automatic, hydraulic
Interbody clearance.		100 cm		
Furrow width		36, 40, 44 and 48 cm		
Frame height		72 / 78 cm	72 / 76 / 82 cm	
Clearance between tyres		110 – 170 cm		
Tractor power*	5-furrow 6-furrow 7-furrow 8-furrow	120 – 160 (88 – 117) 145 – 190 (106 – 139) 170 – 220 (124 – 161) 190 – 240 (139 – 175)		
Weights** Gigant 1000	5/6-furrow 7/8-furrow	1975 / 2120 2270 / 2415	2290 / 2500 2719 / 2920	2280 / 2480 2680 / 2880
Weights** Gigant 850	5/6-furrow 7/8-furrow	1925 / 2060 2205 / 2340	2240 / 2440 2645 / 2845	2230 / 2420 2615 / 2805

* maximum permissible tractor power

** kg - without additional equipment, depends on underbeam clearance and plough body

Plough wheel tyre pressure

Manufacturer	Size, ply rating	Profile type	Tyre pressure
Trelleborg	400 / 60 / 15.5 / 8PR	Traction	2.0 bar

3. Transport, fitting, removal

Safety



ATTENTION!

It is essential to read these instructions before operation or transport.

Please familiarise yourself with all systems and operating mechanisms, as well as their function, both on the tractor and on the plough. It is too late to do this during actual operations.

General information

Please check the new machine immediately for any damage and to ensure that it is complete. Notify the dealer or manufacturer immediately if there is any damage or any parts are missing.

First use

Please check the following before first use:

- Adequate front-axle loading of the tractor (loading by front weights, wheel disc weights, front loader)
- Tyre pressures of tractor tyres (rear tyres 0.8 bar)
- Tyre pressure of plough wheel
- Lift link settings
- Lateral stability of bottom links

Peel off the protective layer from plough blades and mouldboards.



ATTENTION!

Be aware of the increased risk of injury from sharp edges and points. Work carefully.

Check that screws, bolts and connections are tight. Tighten any loose screws, bolts or connections.

The pin diameters for the three-point linkage must be compatible for the tractor and plough.

Prior to connecting and disconnecting the implement to or from the three-point linkage, place the controls in such a position as to prevent inadvertent lifting or lowering.

Only use the genuine attachment components to attach the plough.

When the implement is in the transport setting, make sure there is adequate lateral locking of the tractor's three-point stabiliser bars!

Handling, steering and braking are all influenced by the implement and ballast weights. Therefore ensure that the steering and brakes are not impaired.

When cornering, ensure that there is sufficient space between the tractor and the implement.

Observe relevant road traffic legislation relating to permissible transport dimensions. Comply with regulations specifying the permissible axle loads, static vertical loads and gross vehicle weights.

Take into account the large overhang, momentum and high centre of gravity of the implement when cornering.

Do not leave the driver's cab while the tractor is in motion.

NEVER ride on the implement during work or transportation.

The highway code must be observed at all times when using public roads.



ATTENTION!

Before you

- transport or
- use your plough

you must read Section 4 - starting on page 13

Dismantling for scrap



Note

Incorrect disposal of lubricants and hydraulic fluid can cause serious environmental pollution.

These items must be disposed of as special waste. Under no circumstances may they be allowed to reach watercourses or groundwater.

If the machine is scrapped, hydraulic fluid must be disposed of properly in accordance with environmental legislation.

Have tyres disposed of by a dealer.



ATTENTION!


During transport, all hydraulic valves must be closed for safety reasons.

Use of the hydraulic steering during transport is dangerous and therefore prohibited.

4. Operation

Accident prevention

Follow instructions on general safety and accident prevention regulations in this manual as well as generally applicable safety and accident prevention regulations. Wear close-fitting clothing and solid footwear.


	<p>ATTENTION! Special care is to be taken when handling any sharp and pointed tools and equipment parts. There is a high risk of injury.</p>
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Make sure that nobody stands between the tractor and implement unless the vehicle is secured by the parking brake and/or wheel chocks to prevent it from rolling away.


When operating the external control for the three-point linkage, do not step between the tractor and plough.

Before starting the vehicle, always check its roadworthiness and operational safety.

Stickers relating to safety instructions must be kept clean and legible. Please replace them if they are damaged.

	<p>ATTENTION! All hydraulically controlled moving parts have shear and squash zones! Keep out of the danger zone. There is a high risk of injury.</p>
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To avoid the risk of tipping over, only place the implement on a horizontal, level, hard surface!

	<p>DANGER! Children climbing and playing on the implement are at risk of FATAL INJURY. Always keep children away from the equipment. Secure the stop valves so that they cannot be activated accidentally.</p>
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Preparations for use

Front axle loading

The provision of sufficient front ballast (front weights, wheel disc weights, front loader) ensures

- steerability with a mounted plough
- good front-axle traction transmission (4-wheel drive tractors)



ATTENTION!

Take care with tight corners. Ensure an adequate gap between the tractor and implement.

Damage may otherwise occur.

Tyre pressure

Ensure that tyre pressure is always correct, particularly for tractor rear wheels in accordance with manufacturer's specifications. The pressure must be the same on both wheels.

Hitching and unhitching the plough



Note

For tractors with hydraulic control, ploughing is carried out using draft or mixed control. Hitching and unhitching of the plough is carried out using position control.

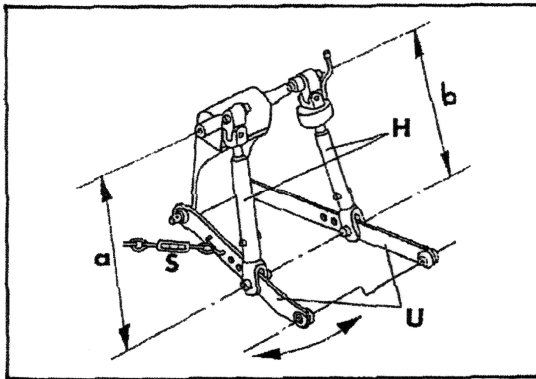
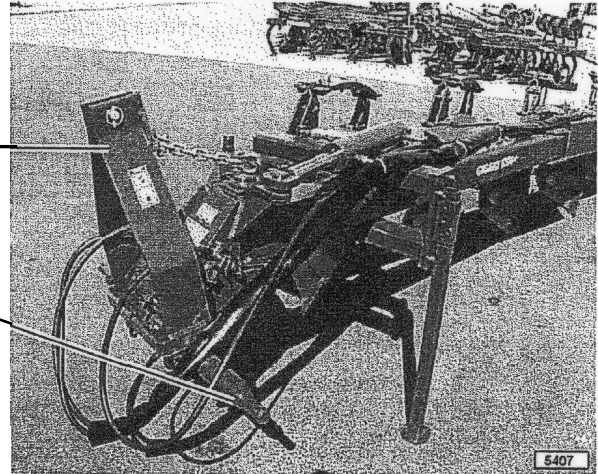
We assume that you are familiar with operating the tractor and the associated hydraulic systems. Consult the tractor's User Manual if you are unsure of any point.

The plough should be supported in its working position and connected to the tractor as follows:

- The quick hitch bar diameter (pin diameter) must be 36 mm.
- Place the tractor hydraulics in position control.
- If a stabilising tower is fitted, connect it to the top link using the top link pins and lynch pins
- Lift the front of the plough slightly.
- Fold the stand support upwards
- Connect the hydraulic hoses to the tractor control unit.
- Remove the wheel chocks.
- To plough, switch the hydraulic system to draft or mixed control.

Stabilising tower

Quick hitch bar



- Secure the bottom links (U) laterally using stabilising bars or tension chains (S) and ensure that they are central to the tractor to prevent lateral movements.

This setting applies to both ploughing and transport.

Transport

Check the implement in advance for the following whenever you are transporting it:

- Damage
- Material fatigue
- Operational reliability of all safety-related transport components
- Roadworthiness and operational safety

Lift valve



Lever position for transport
(all valves closed)



Note

Connect the two hydraulic hoses for plough wheel lifting to a control unit and fully raise the plough. Then lower the plough by approx. 5 cm on the support wheel to activate the chassis suspension (hydro-pneumatic).

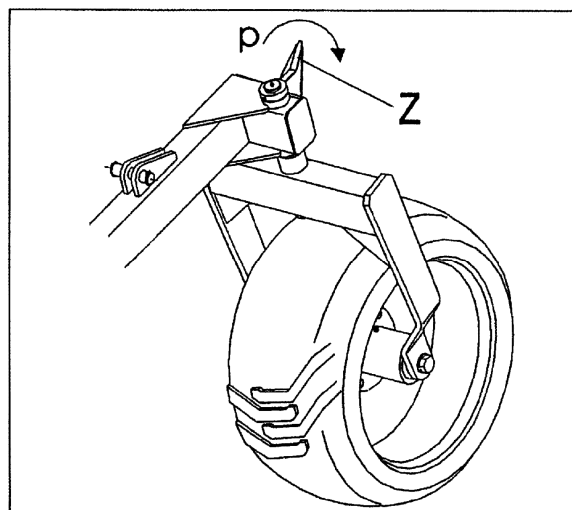


Valve for steering and track width adjustment - furrow width, furrow 1
(lever at zero)

Setting the total plough width

Turn in the direction of the arrow (P) by approx. 10°

Indicated by indicator (Z)



For the transport position, the plough wheel is rotated by approx. 10° in the direction of the arrow (P); you can check this from the indicator position (Z)

Drive slowly for at least 10 m in a straight line. The plough will now be in the transport position.


If the total plough width is too large, proceed as follows:

Connect the hydraulics for steering and track width adjustment to a control unit, open the directional control valve for steering (see illustration above) and turn the plough wheel in the direction required.

If your implement has tension jack steering, adjust the plough wheel by turning the tension jack.

Drive slowly for 10 m in a straight line and check the total width again.

If it is correct, close the valves for safety reasons during transport - see illustration on page 15.

	<p>ATTENTION!</p> <p>When operating the external control for the three-point linkage, do not step between the tractor and plough.</p> <p>There is a high risk of injury.</p>
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Nobody should stand between the tractor and implement unless the tractor and implement are secured by the parking brake and/or wheel chocks to prevent them from rolling away.


When the implement is in the transport setting, make sure there is adequate lateral locking of the tractor's three-point stabiliser bars!

Handling, steering and braking are all influenced by the implement and ballast weight. Therefore ensure that the steering and brakes are not impaired. When cornering, ensure that there is sufficient space between the tractor and the implement.

Take into account the large overhang, momentum and high centre of gravity of the implement when cornering.

Do not leave the driver's cab while the tractor is in motion. NEVER ride on the implement during work or transportation.

Observe relevant road traffic legislation relating to permissible transport dimensions. Comply with regulations specifying the permissible axle loads, static vertical loads and gross vehicle weights.

	<p>DANGER!</p> <p>Check the immediate vicinity before driving off.</p> <p>Children and animals are at extreme risk.</p>
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The highway code must be observed at all times when using public roads.

Before leaving the tractor

- Lower the implement to the ground.
- Switch the engine off.
- Remove the ignition key.

Unhitching the plough from the tractor

- Fold the stand supports down
- Place the plough on a solid, level surface.
- Switch the hydraulic system to position control.
- Lower the plough fully and close the stop cock for the hydraulic lifting system.
- Position chocks to prevent the running gear from rolling.

If the plough has a stabilising tower

- Lower the bottom links until the top link can move freely.
- Remove the top link from the stabilising tower
- Depressurise the tractor hydraulics.
- Switch the engine off and remove the ignition key.
- Disconnect the hydraulic hoses from the tractor and fit the dust caps.
- Separate the bottom links from the cross-shaft.



Note

Ensure that the hydraulic fluid remains clean at all times. Any contamination of the fluid causes damage to the hydraulic system and shortens its service life.

Clean the connections with a clean, lint-free cloth. Always fit dust caps.

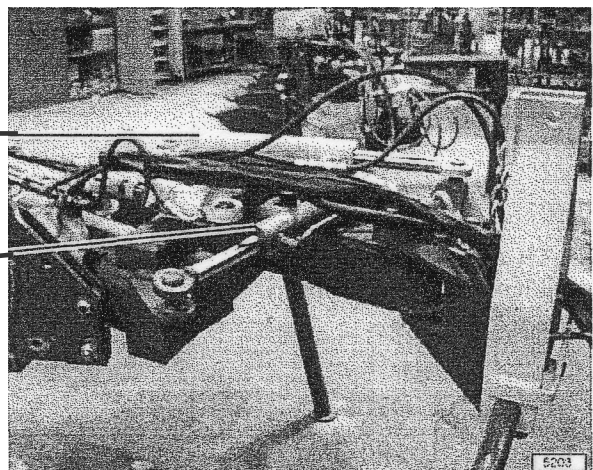
Setting the plough

Furrow-width adjustment

Steering cylinder —————

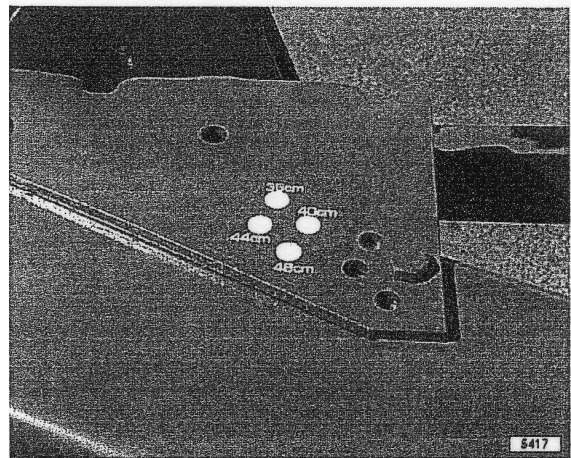
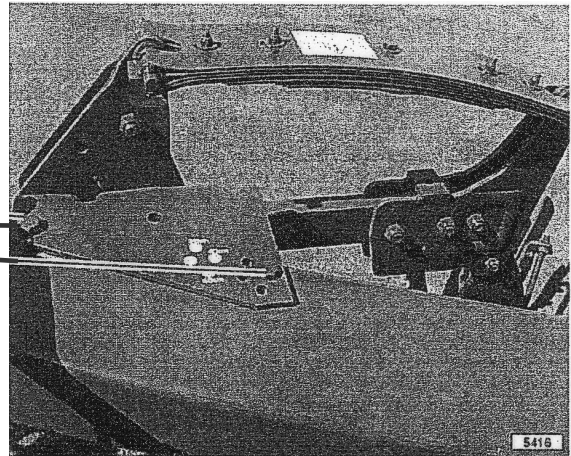
Track width adjustment cylinder —————

ortension jack



Each element must be manually adjusted to the new furrow width.

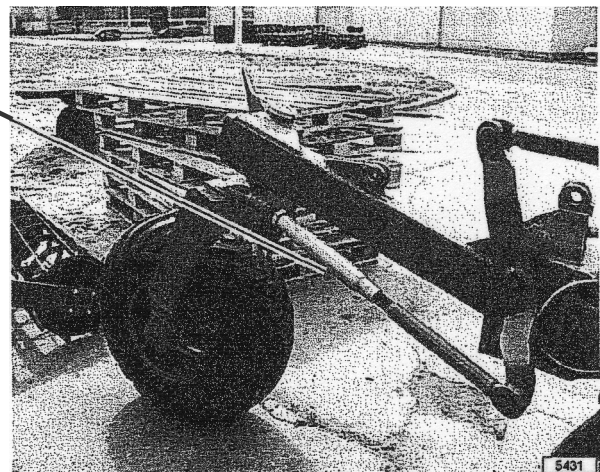
- Move the plough to its working position.
The plough blades should not be on the ground.
 - Loosen the large screw
 - Remove the setting screw and turn the element to the desired position (furrow width).
 - Replace the screw and tighten it.
 - Tighten the large screw (see top photo) again.
- Repeat this process for all the elements



Note

The clearance between the tractor tyres must be the same for both front and rear.

Steering with tension jack

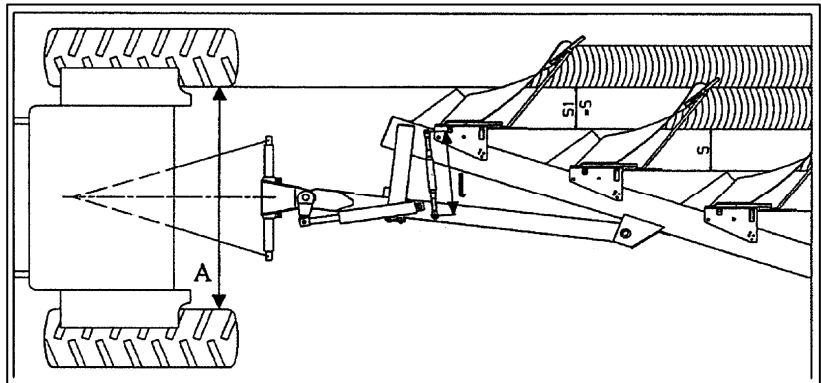


Approximate adjustment of the plough to the tractor

(A) Clearance between tractor rear wheels. This distance (A) must be the same for the front wheels.

(S1) Width of first furrow

(S) Furrow width



Set the furrow width ($S1 = S$) using the hydraulic cylinder or tension jack to correspond to the clearance between the tractor rear wheels (A).

- Set the plough wheel so that the indicator lines up with the mark.

Plough wheel with indicator
in front of mark

Plough working position:
Directional control valve for steering and track
width adjustment must be on "0" (zero) -
lifting valve open.



Setting the working depth

Deeper:

- Lower the hydraulic power lift (follow the tractor manufacturer's instructions).
- Lower the running gear (lower using the hydraulic lifting system)

Shallower:

- Raise the hydraulic power lift.
- Raise the running gear (raise using the hydraulic lifting system)

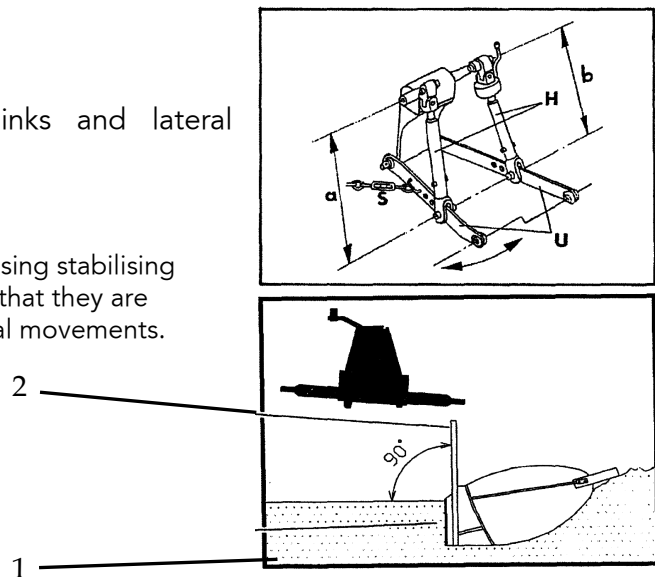
The plough must be horizontal during operation. To ensure this, set the inclination as follows:

Inclination setting

- Set the lift links (H) to different lengths (a, b) so that the landside (1) and plough beam (2) are at right angles to the ground.

Setting the lift links and bottom links and lateral stabilisation of the bottom links

- Secure the bottom links (U) laterally using stabilising bars or tension chains (S) and ensure that they are central to the tractor to prevent lateral movements.



Traction point setting

For transport and ploughing secure the bottom links laterally using stabilising bars or tension chains and ensure that they are central to the tractor to prevent lateral movements.

There should be no lateral pull on the tractor. To prevent lateral pull, move the bottom links to the correct position:

Tractor pulls towards ploughed work:

- Loosen the screw (S) and move the cross-shaft (A) towards the ploughed land

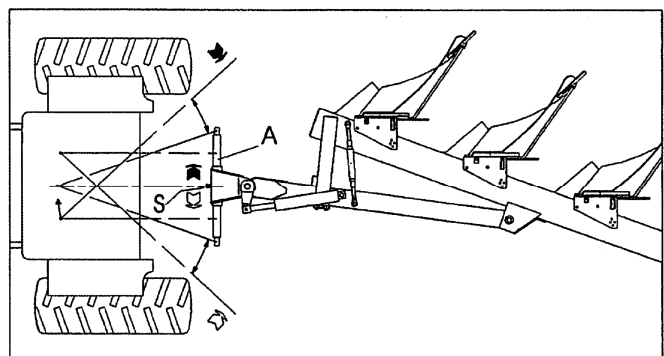
Tractor pulls towards unploughed work:

- Loosen the screw (S) and move the cross-shaft (A) towards the unploughed land

Prevent lateral pull on the tractor

Cross-shaft (A)

Cross-shaft fixing screw (S)



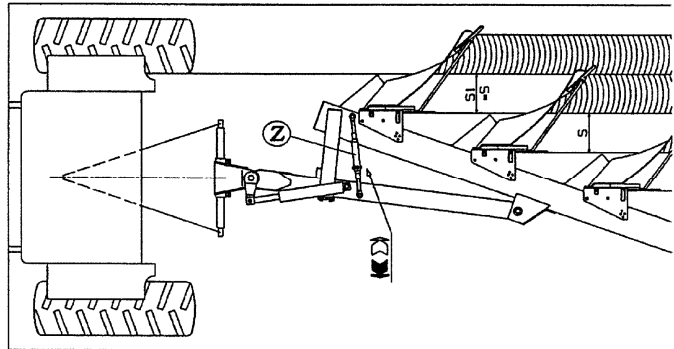
ATTENTION!

During adjustment, the screw (S) must go through the holes on the cross-shaft (A). Otherwise the settings might change during work with detrimental effects.

Exact track width adjustment

Track width adjustment cylinder or tension jack (Z)

- Correct the cutting width of the first body (S1) according to field depth and camber setting using the hydraulic track width adjustment system or the tension jack so that it corresponds to the furrow width of the next body (S).



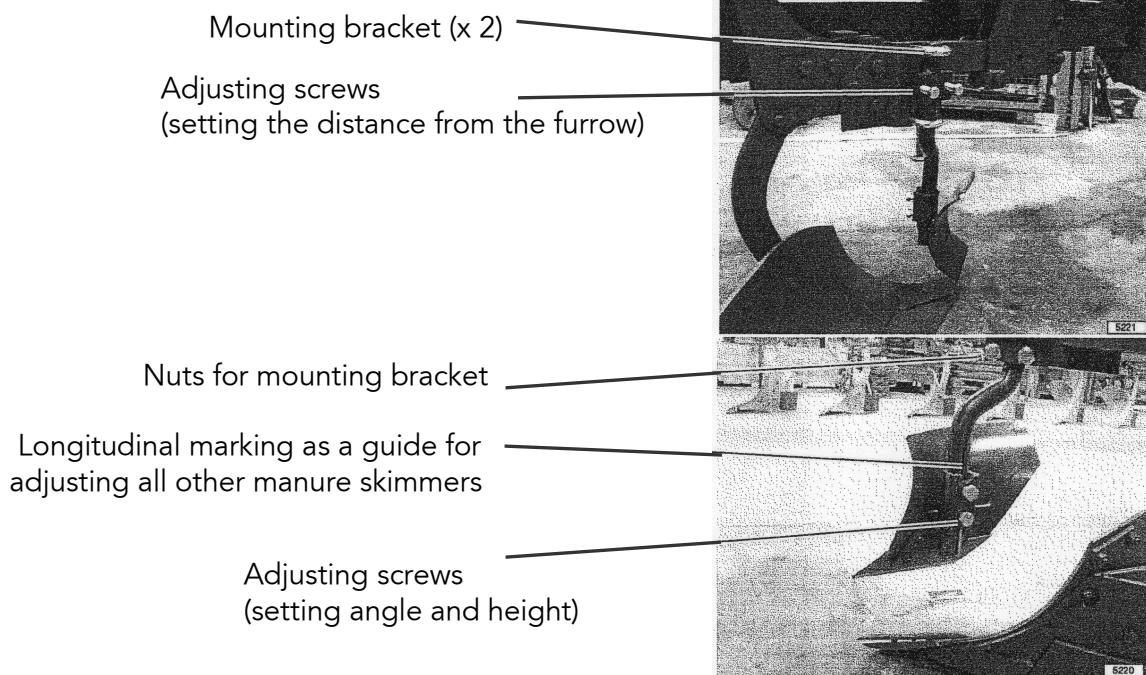
Every adjustment to settings produces changes to other settings, which will have to be corrected accordingly.

Manure skimmer

Set the manure skimmers (optional extra) such that the ploughing depth represents approx. 1/3 of the cultivation depth, or a little more where there is a large amount of harvesting trash.

Should the manure skimmers be obstructed by excessive harvesting trash, they can easily be removed by loosening two screws.

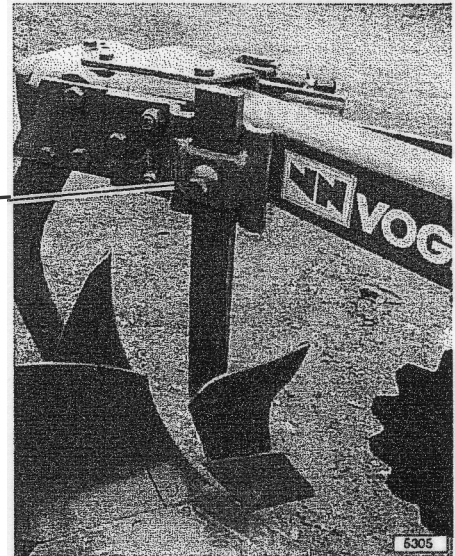
The distance and angle relative to the furrow can also be adjusted.



Adjusting the square cross-section manure skimmer

(height adjustable using adjusting screws)

- The manure skimmers should be set so that the working depth is approximately 1/3 of the field depth.
- Should the manure skimmers be obstructed by excessive harvesting trash, they can easily be removed.



Disc coultter setting

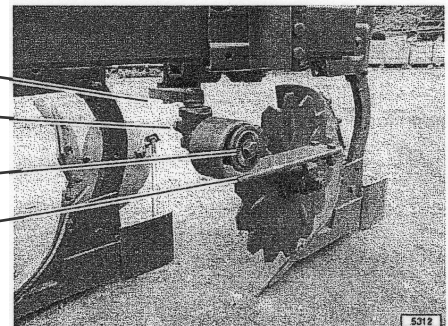
- To set the depth of the disc coultters, loosen the screw (S1) by altering the position of rocker bar (A) according to the desired ploughing depth so that the hub does not touch the ground.
- When adjusting the rocker bar, ensure that the toothing meshes and that the screw is retightened.

Coulter shaft C

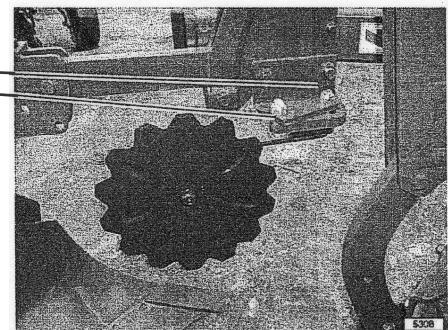
Stop B

Screw S1

Rocker bar A




Screws S2 and S3



- The distance between the side of the disc and the ploughing tackle should be between approx. 1 and 3 cm and at least protrude beyond the manure skimmer. This distance is achieved by rotating the coulter shaft (C).
- Loosen screws (S1) and (S2) to rotate the coulter shaft.
- Use the stop (B) to set the lateral swing of the coulter.

Overload protection

	<p>Note Use only original shear bolts. Bolts from other sources can</p> <ul style="list-style-type: none"> - <i>not guarantee the necessary safety</i> - <i>cause damage</i> - <i>be triggered too soon</i> <p>This applies to all overload protection systems.</p>
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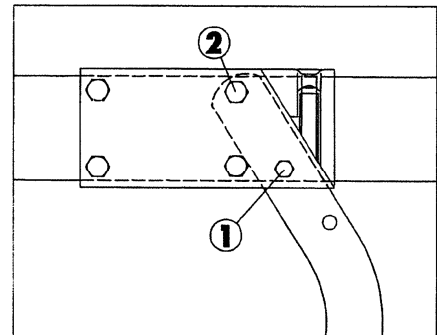
Never use bolts of higher or lower strength or bolts with shorter shafts as they do not guarantee safety or correct functioning.

Shear bolt protection system:

To protect V&N ploughs from damage through overloading, they are fitted with shear bolts (1).

(1) Shear bolt

(2) Pivot bolt



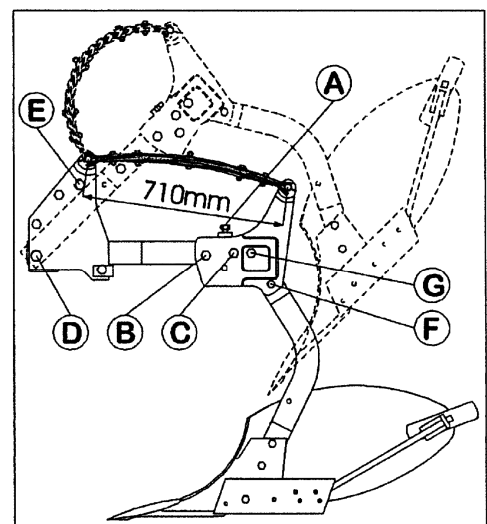
If a shear bolt (1) snaps:

- Lift the plough.
- Loosen the pivot bolt (2) of the sheared plough body.
- Remove the remains of the shear bolts.
- Swing the plough body back into position.
- Fit a new shear bolt.

Retighten the shear bolt (1) and pivot bolt (2).

Fully-automatic stump-jump system (with leaf spring)

- (A) Adjusting screw
- (B) Mounting screw
- (C) Mounting screw
- (D) Pivot bolt
- (E) Spring stop
- (F) Shear bolt
- (G) Pivot bolt for shear bolt protection



If the plough body hits an obstruction, the plough beam element rotates upwards around the pivot point (D). The spring is then compressed.

When the obstruction has been passed, the plough beam element returns to its original position.

The whole procedure occurs without having to stop the tractor (non-stop).

The measurement must not be less than 710 mm!



ATTENTION!

Components can break if overloaded and be ejected at high speed.

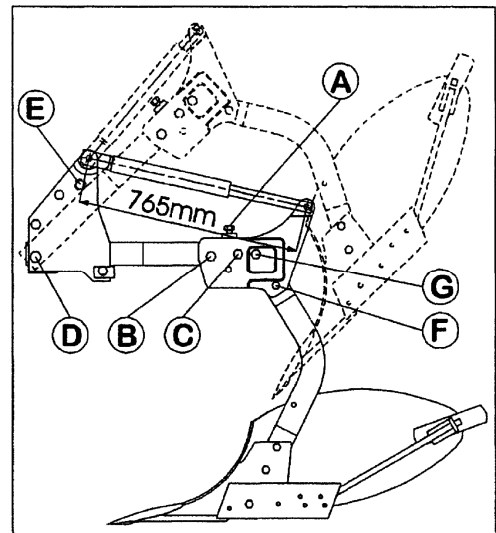
Ensure that there is nobody in the vicinity of the plough beam element.

Keep clear of plough beam element!

Take care that you put no one at risk!

Fully-automatic stump-jump system
(with hydraulic cylinder)

- (A) Adjusting screw
- (B) Mounting screw
- (C) Mounting screw
- (D) Pivot bolt
- (E) Stop
- (F) Shear bolt
- (G) Pivot bolt for shear bolt protection



If the plough body hits an obstruction, the plough beam element rotates upwards around the pivot bolt (D). The pre-stressed piston accumulator is compressed.

When the obstacle has been passed, the plough beam element is reset via the accumulator pressure. The whole procedure occurs without having to stop the tractor (non-stop).

Regulating the stump-jump system oil pressure

The operating pressure should be set at between 90 and 140 bar, depending on soil conditions.



DANGER!

The implement may overturn while hydraulic pressure in the stump-jump system is reduced.

There is a risk of fatal injury.

Always adjust the operating pressure when the implement is mounted on the tractor.

- Connect the long end of the pressure-regulating hose to the hydraulic cylinder or accumulator.
- Connect the short end with the pressure gauge to the tractor hydraulics.
- Read off the pressure at the pressure gauge and set the desired actuation pressure.
- Close the stop cock on the plough.
- Depressurise the hose using the tractor hydraulics.
- Remove the hose.

See pictures on page 29



Note

- *Pre-stress pressure 90 bar*
- *Min. working pressure 90 bar*
- *Max. working pressure 140 bar*



ATTENTION!

Components can break if overloaded and be ejected at high speed. The piston accumulator is highly pressurised.

Ensure that no one is in the vicinity of the accumulator and the stump-jump system hydraulics.

Keep everyone clear of the:

- plough beam element and
- the accumulator and stump-jump system hydraulic cylinder.

Take care that you put no one at risk!

5. Maintenance, repair

General information



ATTENTION!

Read these instructions before starting any work.

Please note:

Only genuine spare parts guarantee the machine's performance and service life.



ATTENTION!

The machine may only be operated with the factory-supplied guards in place.

Hydraulic cylinders may only be opened by authorised persons.

For three-point linkage, the mounting category (pin diameter) of the tractor and plough must be compatible!

Special care must be taken when hitching or unhitching the implement to or from the tractor. Before connecting and disconnecting the implement to the three-point linkage, place the controls in such a position as to prevent inadvertent lifting or lowering.

Check the hydraulic hoses and connections regularly and maintain them in good condition.

Service, maintenance and adjustment work may only be carried out with the implement

- lowered to the ground in its working position
- and safely supported, or hitched to the tractor
- with the hydraulic system depressurised.



Note

Check the tractor manufacturer's Operating Manual for details of how to depressurise the system.



ATTENTION!

The stored energy in the hydraulic accumulator can result in serious injury when working on the hydraulic system.

Depressurising the hydraulic system



ATTENTION!

Before working on the stump-jump system hydraulics, make sure that the implement is safety supported or hitch it to the tractor.

Before working on the hydraulic system for the control circuits and control system: depressurise the system.

Stump-jump systems

Shear bolt protection system:

Please see p. 24 for details

Fully-automatic stump-jump system

(with leaf spring)

Please see p. 24 for details

Fully-automatic stump-jump systems

(with hydraulic cylinder)

Please see p. 25 for details

Keep clear of plough beam element, accumulator and stump-jump system!

Depressurise the system before starting work on the hydraulic stump-jump system (cylinder, accumulator, hoses, pipes, etc.).

Before reducing the system pressure in the hydraulic stump-jump system

- hitch the plough to the tractor
- or provide appropriate support.



ATTENTION!

The piston accumulators are highly pressurised. Only work on the system once depressurised.



Note

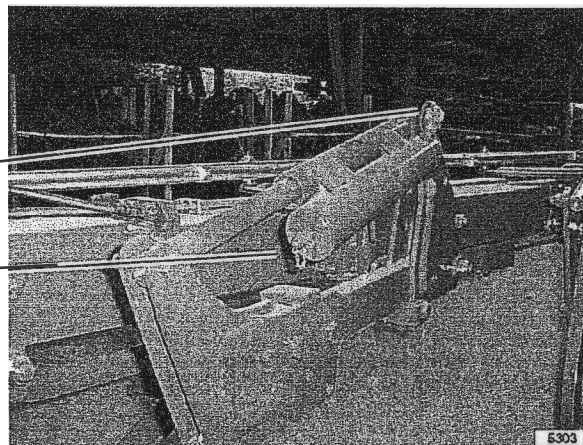
Non-stop stump-jump systems are also secured by means of shear bolts. Please see "Types of overload protection system" on p. 25.

Hydraulic accumulator for stump-jump system

Compact system:

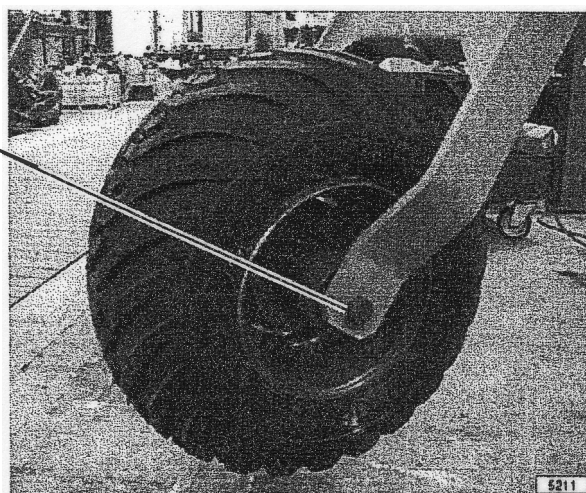
Hydraulic side

Gas side



Changing the depth wheel (tyre)

- Remove all load from the depth wheel so that it can move freely, using the hydraulic lifting cylinder.
- Unscrew the two central axle-mounting screws.
- Remove the wheel from the forks.
- Unscrew the screws connecting the rim to the axle.
- Change the tyre.
- Fit the rim and axle-mounting screws in reverse order.



Maintenance table

Interval	Work required
After first use, then every 20 operating hours	Check all screws and bolts for tightness and tighten if necessary.
Daily after use	Check the shares, mouldboards and other tools for wear. Replace any worn tools promptly to prevent damage to plough bodies or supporting parts.
Daily during use	Check the hydraulic hoses and connectors for leaks. Always keep connections clean. Always use protective caps. Leaking or defective hoses must be replaced immediately.
Daily after use	Clean the plough thoroughly and protect exposed surfaces against corrosion using acid-free grease.
Every 10 operating hours	Lubricate all lubrication points in accordance with the lubrication chart. See the "Lubrication chart" on p.31.
Weekly	Check and, if necessary, correct the depth wheel tyre pressure. Specified pressure: see p. 10.

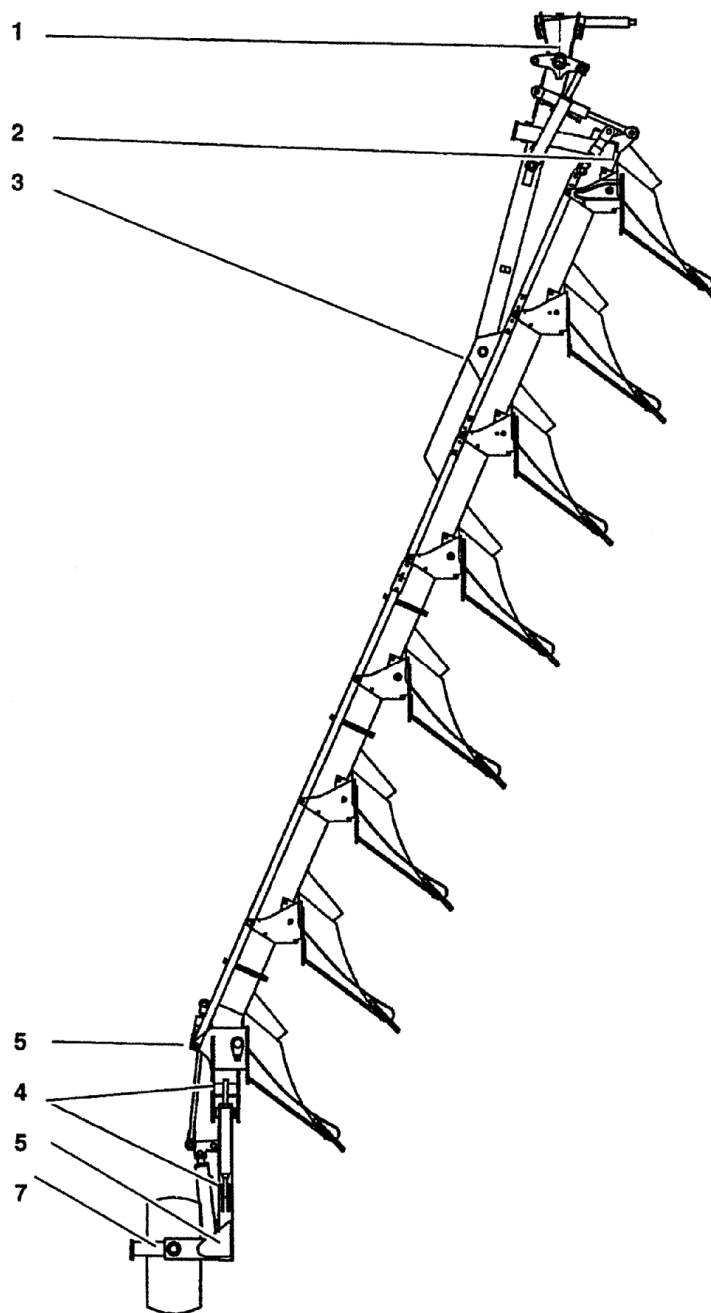
You will see this maintenance reminder on the front of the plough.



See the "Lubrication chart" on p. 31.
See the "Lubrication points" on p. 32.

Lubrication chart

- 1 Drawbar, front
- 2 Stump-jump system support
- 3 Drawbar, rear
- 4 Lifting cylinders x2
- 5 Wheel bracket, front
- 6 Wheel bracket, top
- 7 Wheel bearing

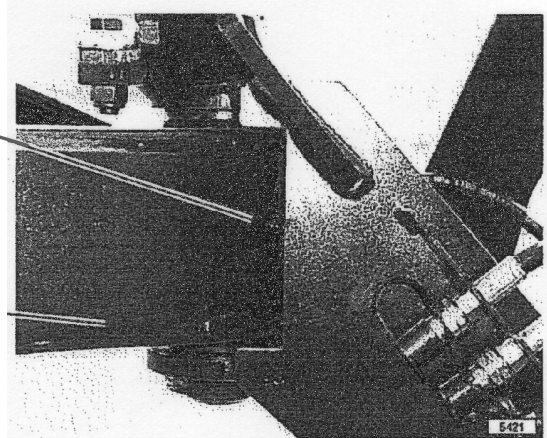


The next few pages contain an illustrated overview of the individual lubrication points.

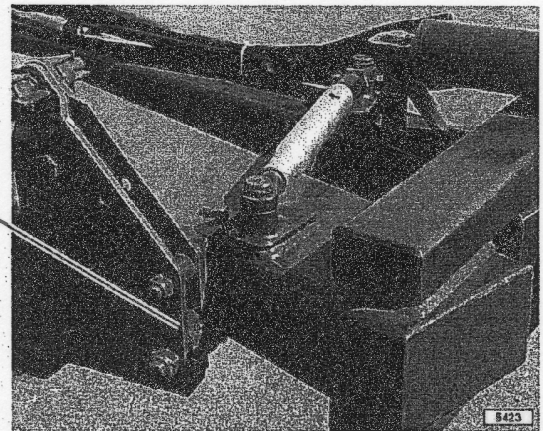
The lubrication points are shown with the item numbers as above and the designation of the point to be lubricated.

Lubrication points

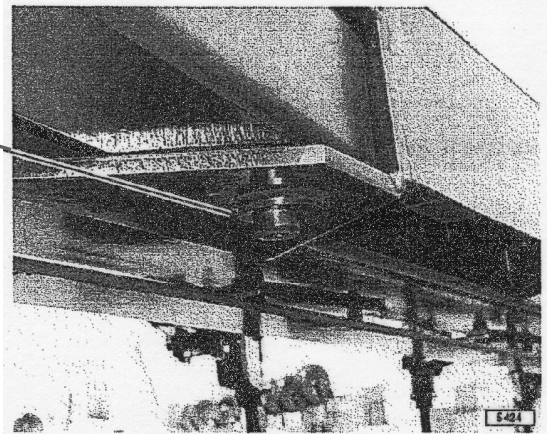
Drawbar, front (1)



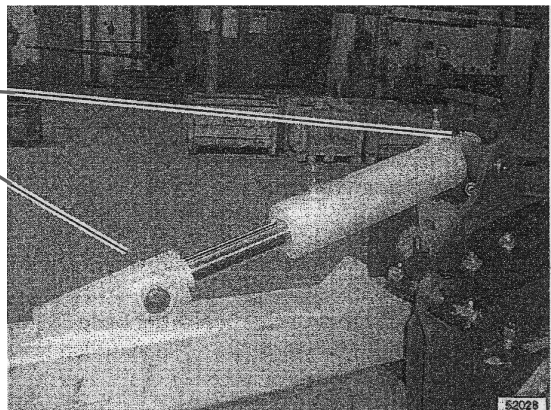
Stump-jump system support (2)
1 lubrication nipple per share



Drawbar, rear (3)



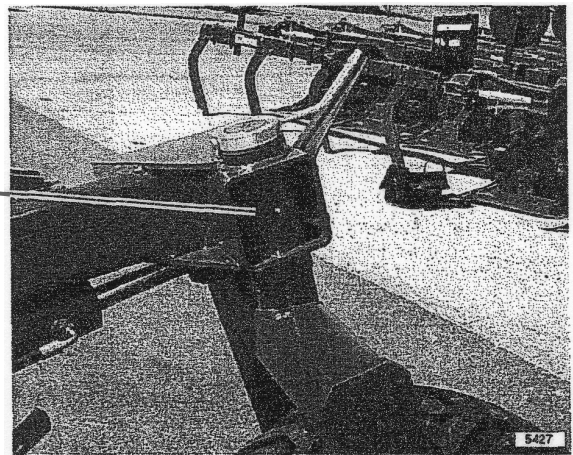
Lifting cylinder x2 (4)



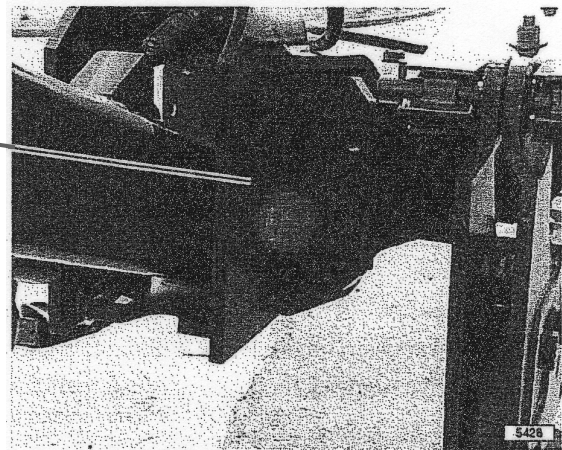
Lifting cylinder x2 (4)



Wheel bracket, top (5)



Wheel bracket, front (6)



Wheel bearing, both sides (7)



Correcting faults and malfunctions

Fault	Correction (cause)
Plough does not go into ground	Draw cross furrows at end of field Replace shares or use chisel shares Set disc coulters and manure skimmers higher Reduce wheel camber slightly
Plough does not reach the desired working depth	Raise the plough wheel Lower hydraulic control Replace shares or use chisel shares
Plough bodies plough at uneven depth	Correct wheel camber
Plough works unevenly	Change the shear bolt on the plough beam affected (shear bolt sheared)
Plough pulls to land side	Increase working depth Reduce wheel camber Additional mounting of side protection
Plough pulls out on furrows	Increase working depth Increase wheel camber Correct plough wheel steering
Chassis suspension (hydro-pneumatic) is not working	Lift plough fully out of the ground then lower it by approx. 5 cm. Have the gas pressure in the gas pressure accumulator for lifting checked or topped up by a skilled person (should be 90 bar).
Hydraulic stump-jump system is not working or shear bolts in hydraulic stump-jump system shear too frequently	Have the gas pressure in the piston accumulator checked or topped up by a skilled person (should be 90 bar).

TERMS OF WARRANTY

We guarantee the product as specified below:

* Extent of warranty:

We guarantee the initial purchaser a delivery item with state-of-the-art technology regarding serviceability and operability.

The warranty moreover covers the removal of defects in the event of damage to delivery items due to defective material, construction defects, or finishing defects.

* Duration of warranty claims:

The period of warranty begins with delivery of the item. It covers:

a) 1 year for structural parts

b) Bought-in parts:

For those parts not manufactured by ourselves, e.g. bearings, we can only provide a warranty to the extent that our warranty is covered by the supplier.

* Removal of defects:

Fulfilment of warranty is as follows: parts that are proven to be defective or have become defunct through material, design or processing defects are repaired at our discretion or can be returned freight-free to our plant in Wartberg to be replaced. Proof of defect is governed by the inspection report of our plant. Removal of defects does not affect duration of warranty.

All further claims to redhibition, diminution or replacement delivery, as well as compensation for direct or indirect consequential damages shall remain ineligible.

* Exclusion from warranty:

The following are excluded from warranty:

a) Wearing parts as a result of normal wear and tear.

b) Damage traceable to negligence, overloading or improper handling

* Expiry of warranty:

a) If claims on warranty in reference to wrong or incomplete delivery or other overt shortcomings are not made in writing and reported to our plant within 8 days of delivery.

b) If specifications pertaining to the treatment of the delivery items (operating manual) are not followed.

c) In cases of incorrect mounting or operation by purchaser or third party.

d) If alterations are made to the delivery item by the purchaser or third party without our prior permission, or when repair work is undertaken without our permission.

e) In cases of resale of the delivery item within the duration of the warranty.

f) If the purchaser is in default of payment or does not fulfil other incumbent obligations.

g) In cases of use or mounting of foreign parts, or accessory tools or trailing implements not recommended by ourselves.

h) If the warranty card is not returned immediately after purchase or is not filled in correctly.

