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OPERATION MANUAL AND SAFETY INSTRUCTIONS

VARIO-DISC SKYROS



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GLOSSARY



If you come across this symbol and heading, there is a direct hazard to life and health of man and animal!



This heading refers to possible risks of damage to machine(s), crops, buildings, etc. But also to possible financial and/or legal problems (warranty, liability, and the like)!

NOTE

This indicates a tip to make work easier, better and safer.

All figures, dimensions and weights are free of engagement.

References to direction in the text, such as "Left", "right", "front" and "rear", are always meant to be seen from the forward travel direction of the tractor.

The same applies to the directions clockwise and counter clockwise.

INTRODUCTION

Dear user,

This is the operation manual for the 2 gang Vario-Disc Skyros, types V125/51 to V400/51.



ATTENTION

Read the operation manual carefully before starting to work with the machine and observe all instructions!
Pass on all safety instructions to other (fellow) users!

In order to use the Vario-Disc as safely as possible, you should be well aware of all recommendations and instructions in this manual. Damage and accidents caused by non-observance of these recommendations and instructions are for your responsibility.

Make sure to store this operation manual carefully and in a safe place for future use.

Please apply to your dealer in case there should still be questions after reading this manual.

EVERS AGRO B.V.
Almelo, 28 June 2005

1. PURPOSE OF THE VARIO-DISC SKYROS

Field of application

The Vario-Disc Skyros is solely for use in regular arable farming. It is suitable for cutting up crop remains on all fields where (much) haulm is left after harvesting. Examples are grain or silage maize, CCM, gladiolus, peas, potatoes, cereals, etc.

The machine can also be used for chapped straw and for incorporating lime and/or fertilizer. For a number of soil disinfection methods, chemicals can also be incorporated. The same applies to grass green manure and white mustard. On the lighter sandy soils it is possible to retreat the sward in 2 operations before ploughing.



Any deviating use is considered not matching the intended purpose. The user bears the risk of any damage and/or accidents. The above does not apply if in advance written approval has been obtained from the manufacturer!

2. LIABILITY AND WARRANTY

All people who use this machine and/or work on it (adjustment, maintenance) should read this manual and observe the instructions to prevent danger.

That also means:

1. That work may only be carried out within the functional limits (e.g. max. speed), as laid down in the instructions for operation, maintenance and repair.
2. That locally applying regulations for accident prevention, safety, traffic and transport are to be observed.
3. That exclusively original or equivalent parts and lubricants must be used and mounted according to the instructions. A part and/or lubricant is considered equivalent when it has been approved by the manufacturer or when it can be demonstrated that it has the properties required for the function(s) in question.
4. That changes / modifications on the machine that have not been approved in writing by the manufacturer, exclude all liability of the manufacturer for any damage.



Non-observance of the above rules shall be considered negligence. It will rule out any liability of the manufacturer for all possible damage and/or consequences.
The user is fully and solely responsible for any risk!

3. DANGER AND SAFETY DECALS

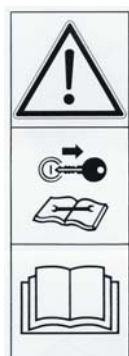


ATTENTION

Working safely also means that you take proper notice of the various decals on the machine. You must know what they warn you for!

There are a number of safety decals on the machine. The ones used and there place on this machine are shown on the next page.

They have the following meaning:



Danger:

Stop the engine and remove the key from the ignition when working on the machine!

Attention:

Carefully read the operating manual before taking the machine into operation!



Danger:

There is a risk of flying objects and / or clods! Keep clear!



Danger:

Keep away from the fold-down parts when the locking pins with inserted retaining clip are not mounted! Keep clear!



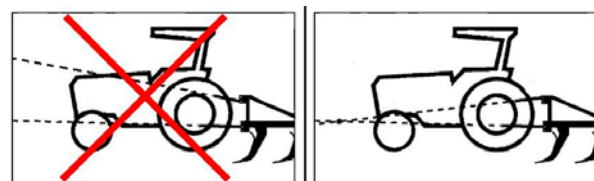
Danger:

There is a risk of parts folding down! Fix the locking pins with inserted retaining clip!



Danger:

Never stand between the tractor and the machine when the power lift is being operated!



Danger:

In operating position the top link must be higher on the machine side than on the tractor side!

4. THE LOCATION OF THE DECALS

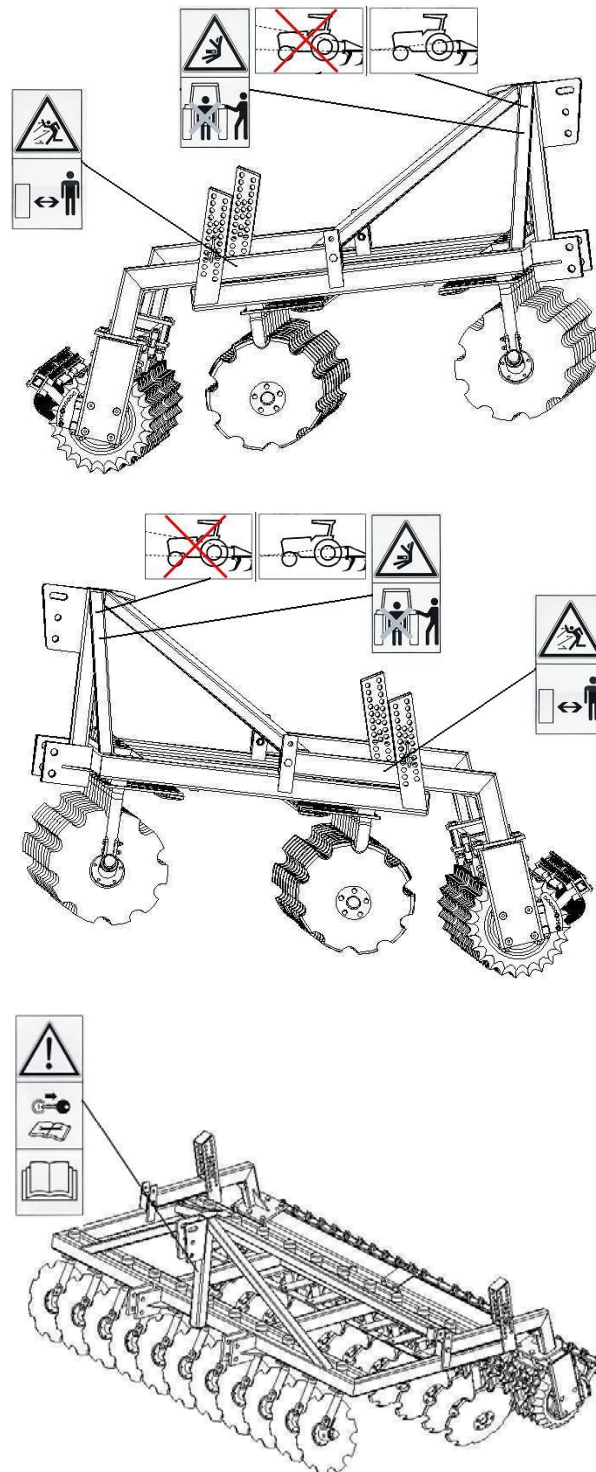


Fig 4.1 The location of the decals.



If decals are loose, have become illegible or are no longer on the machine, these must be replaced as well!

5. SAFETY INSTRUCTIONS

Read and understand these instructions before working with the machine!

If these safety instructions aren't observed, all liability of the manufacturer for any damage is excluded!

5.1 General

- The machine must only be used, operated and maintained by people who are familiar with the machine and who are aware of the risks!
- The operator should familiarise him-/herself with all controls and their functions before starting work. During work could be too late!
- In addition to the specific instructions of this manual, you should also study the general regulations for safety and accidents prevention in your country!

5.2 Road transport and use

- Always observe the road traffic regulations when using public roads!
- Check the safety of the machine and tractor before use as regards work and traffic!
- Observe the maximum permissible axle load, total weight and transport dimensions!
- Prior to road transport, check and mount transport accessories such as lighting, warning signs and any protective parts!
- Put the machine in the position intended for road transport and lock it according to the instructions!
- Always make sure that the machine has sufficient lateral stability in transport position!
- In case of road transport with the machine in lifted position, the control lever of the power lift must be locked to prevent lowering!
- Look around the machine and the tractor before driving off or starting to work. Make sure you have sufficient view. Look out for children!
- It is strictly prohibited to be on the machine during work or transport!
- The driver's seat must at all time be occupied during driving!
- Handling, manoeuvrability and brake performance are influenced by mounted machines and front weights. Therefore, make sure you work with an adequate steering and breaking installation.
- Always adapt the forward speed to the condition of the terrain!
- When taking turns, take into account the length/width (turning circle) and/or swinging out, due to the large mass of the machine!
- Only work with machines with the protective provisions complete, intact and in the functional position!
- There must be nobody within the operating and danger range (including turning and swinging circle) of the machine. At the rear of the machine clods or other objects may be flung away!
- There must be nobody between the tractor and the machine, until the vehicle is prevented from moving by means of the parking brake and/or wheels chocks!
- When leaving the tractor, put the machine on the ground, switch off the tractor engine and remove the ignition key!
- The warning decals on the machine give important instructions for safe use; observing them is for your own safety!
- The user must wear closely fitting clothes. Avoid loose clothing!
- Always mount weights on the tractor according to the instructions on the fixation points intended for that purpose!

5.3 Mounting and dismounting

- Mount machines and accessories according to the instructions and mount the machine and/or parts/accessories only to the provisions intended for that purpose. Make sure they are locked effectively!
- Special care must be taken when mounting or dismounting the machine on or off the tractor
- When mounting or dismounting the machine on or off the three-point linkage, put the power lift control in a position in which inadvertently lifting or lowering is not possible!
- For a three-point linkage the linkage category of the machine must always match that of the tractor!
- The three-point linkage system constitutes a risk of accidents by getting caught and jack-knifing. The same risk exists with the cylinders (if mounted) and the linkage arms and lifts rods!
- The control for the three-point power lift outside the tractor cab must be operated without getting between the tractor and the machine!
- The release ropes for quick coupler should hang freely and in the lowered position must not release the quick coupler by themselves!

5.4 Hydraulic system

- The hydraulic system carries a high pressure!
- When connecting hydraulic cylinders the instructions for connecting hydraulic hoses must be observed!
- Hoses from the cylinders must be routed in such manner that under all transport and operating conditions they cannot cause undesirable situations and/or cannot hinder any functions!
- Never try to locate or shut off a leak in the hydraulic system with your hands. Fluid under high pressure can easily penetrate skin and clothing and it can cause severe injuries. When injured see a doctor immediately! Danger of infection!
- Ensure that the hydraulic system of the tractor and that of the machine are pressure less when connecting or disconnecting the hose!
- The hydraulically operated parts may only be operated when there is nobody within the danger zone (turning circle) of these parts!
- When hydraulically folding frame sections are in the transport position (folded up) the lock pins with inserted retaining clip must be placed in the holes intended for that purpose!
- For hydraulic connectors between tractor and machine the couplings and plugs must be marked. When connections are interchanged, the function reverses (e.g. lifting/lowering) - Risk of accidents!
- Check the hydraulic hoses, pipes and all connections regularly and replace them in case of deterioration and damage. New hoses must satisfy the technical specifications prescribed by the manufacturer!
- Before carrying out work on the hydraulic system, the machine must be lowered to the ground and the hydraulic system must be made pressure less (move the lever of the control valve a few times back and forth with the engine switched off)!
- In transport position the control valve of the hydraulic functions must be in the neutral position!
- Always lay down a disconnected hydraulic hose in such a manner that the plug stays clean!

5.5 Maintenance

- Repair, maintenance and cleaning activities, as well as repairing malfunctions, must be only carried out with the tractor engine switched off. Remove the ignition key!
- When the machine must be in lifted position for repair, cleaning or maintenance, support legs must be used. Only work on a firm surface!
- Regularly check whether all bolts and nuts are still tight. Tighten if necessary!

- Parts must at least satisfy the technical specifications prescribed by the manufacturer!
- Always check whether replaced and/or dismantled parts are mounted correctly before using the machine again!
- Ensure that any damage is repaired at once before using the machine again!
- When conducting electrical welding operations on the tractor or on the mounted implement remove cable from the generator and the battery!
- Before working on the electric gear disconnect battery cables!
- For replacing any tools with cutting edges, always use the suitable tools and gloves!
- Dispose of old oils and grease as prescribed by law.

5.6 Tyres

- Fitting tyres requires knowledge and special tools!
- When working on the tyres, make sure that the machine has been placed on the ground safely and that it is secured by shocks against unintentional rolling!
- Repair work on tyres may only be conducted by trained staff and with suitable tools!
- Check the tyres regularly and replace them in case of deterioration and damage. New tyres must satisfy the technical specifications prescribed by the manufacturer!
- Check the tension of the tyres regularly and adhere to the advised air pressure. (See table).
- In case of doubt, contact your dealer or see a tyre tension table.

Tyre	Max. speed	Min. pressure in Bar	Best pressure in Bar	Max. Pressure in Bar
195 65/15	30 km/h	2	2,5	3
10.0/75 - 15,3 14pr	40km/h	3.5	5.5	7

6. MOUNTING AND DISMOUNTING



ATTENTION

Always place the supplied pins and retaining clips and check whether they are locked securely!

The standard version is based on a three-point linkage: Category II three-point linkage. (= lift pins Ø 28 mm, top link pin Ø 25 mm and retaining clips Ø 11 mm and Ø 8 mm).

This machine can also be fitted with a Category III three-point linkage (= lift pins Ø 36,5 mm, top link pin Ø 31,5 mm and retaining clips Ø 11 mm).

Do **not** use pins with a smaller diameter!

Make sure that the tree point linkage has enough stabilisation to the side! The machine should not be able to move more than 5 cm side ways.

During mounting, dismounting and transport of the machine, the power lift of the tractor must be in position control, and must be protected against accidental lowering!

6.1 Mounting

There are three mounting options for the top link pin. A slotted hole and 2 round holes. The slotted hole is intended for stony soils. When the machine should struck a rock, it can move upwards. The round holes are intended for soils without stones or rocks. In operating position the top link must be higher on the machine side than on the tractor side! Only in this position it is possible that the machine can move up in case of soil that is not completely flat (fig 6.1)

In stony soil the top link must be places between the special slotted holes. Ensure that the supplied slotted hole washers are placed on both sides of the top link pin. Only in the position the front gang can move up when it hits a large stone.

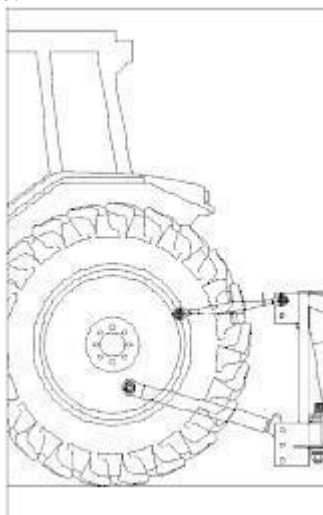


Fig 6.1 The top link must be higher on the machine side than on the tractor side!

- When setting the working depth, the top link pin must be at the back of the slotted hole.
- When the machine is in working position, the tractor's power lift must be in floating position (see the manual of the tractor).
- Adjust the check rods or chains of the tractor correctly to prevent lateral sway.



Ensure that the supplied slotted hole washers are placed on both sides of the top link pin!

6.2 Transport with a length transport provision

The versions with a larger working and transport with can optionally be fitted with a length transport provision. The length transport provision consists of an extra three point linkage on the side of the frame.

During transport the machine can be mounted to the tractor using this extra three point linkage. The mounting and dismounting is done in the usual way (chapter 6.1 mounting).

6.3 Dismounting and storing

- Make sure that the tractor hydraulic is set to position control.
- It is important to thoroughly clean the machine with water.
- The bearings and joints should also be greased as prescribed in chapter 9 Maintenance.
- Dispose of old oils and grease as prescribed by law.
- Let the machine rest on a flat soil.
- Let the roll rest on the ground or on solid wooden blocks with enough stability.
- A roll made of synthetic material **must** be supported on the metal parts by wooden blocks, the synthetic material should not touch the ground, else it will deform.
- Make sure the machine has enough stability.
- Dismount the machine from the tractor.

7. ADJUSTING THE VARIO DISC.

NOTE

The mounting height depends on the tyre size of the tractor. It is recommended to have the lower links as level as possible, while the top link is mounted higher to the machine than to the tractor.

It is recommended to use the crumbler roller to keep the machine steady and to make the soil more flat. On heavier soils it is possible to use the draft control of the tractor instead of a crumbler roller.

7.1 Adjusting the working depth

Adjusting the working depth with the crumbler roller is done as follows:

- Stop the tractor and make sure that the parking brake is set.
- Make sure that the machine is out of the ground.
- Make sure the power lift is in position control.
- Pull the machine into the ground by moving the tractor forward with the power lift of the tractor in the floating position.
- Make sure that the machine is completely horizontal, if this is not the case it can be adjusted with the top link.
- Place the pins above the roller arms of the frame, to adjust the maximum depth.
- If required, other pins can be placed under the roller arms to prevent rattling during lifting the machine out of the ground.
- If the working depth should be adjusted higher during work, the pins under the roller arms should be removed. Then the machine can be brought to the required depth by driving forward.
- Place the pins above the roller arms in the right hole.
- If the working depth should be adjusted lower during work, the pins above the roller arms should be removed after the machine is lifted. In this case there is no tension on the pins.
- Then the machine can be brought to the required depth by driving forward.
- Place the pins above the roller arms in the right hole.
- If required, other pins can be placed under the roller arms to prevent rattling during lifting the machine out of the ground.
- If the penetration of the discs is not sufficient, other pins can also be inserted under the roller arms to take advantage of the roller weight.

7.2 Adjusting the working depth without the roller

This is not recommended!

It is recommended not to use the Vario-Disc without the crumbler roller on bumpy and hilly fields. In that case damage to the disc bearings can easily occur.

When working without the crumbler roller. The control hydraulics of the tractor must be adjusted (consult your tractor manual for this).

7.3 Adjusting the discs

The tilling intensity of the Vario-Disc can be adjusted by increasing the disc inclination. For that purpose the left hand side of the frame is fitted with a screw spindle and a graduated scale for each gang. The screw spindle is operated with a crank that has its storage place at the front-left of the frame.

The graduated scale sticker is placed in such a manner that when the disc are vertical, it indicates "0". The discs can be inclined by turning the spindle clockwise.

The required inclination degree depends on the soils type, the discs penetrate soft soil easier than hard soil. The type of stubble to till also has an influence.

Roughly it can be indicated on what position of the scale the pointer must be.

Based on a working depth of 7 cm the standard setting is:

	Front disc row	Rear disc row
Sand	10	12
Loam	12	14
clay	17	19

When greater working depth is set, the discs must be inclined less.

Pasture on lighter soils requires two passes. The first pass at a depth of about 4 to 5 cm with the discs in position 9/11 and a forward speed of about 7 km/h, while the sod must not be turned. And a second pass, if possible at right angles with the first one, at a depth of 6 to 7 cm and the discs in position 15/16 while the forward speed may be 10-12 km/h.

NOTE

The indicated positions are estimates of setting that have been found in practice. Every user will find out in practice what the settings are that suit his specific soil conditions and requirements.

It is important to keep the tractor in a straight track despite the transverse force that the inclined position of the discs will always cause. The first gang runs in solid soil, the second in partly loosened soil. So in order to stabilise the transverse forces, the second gang is inclined a little more than the first one.

8. INSTRUCTIONS FOR USE

- Make sure that the discs are not inclined to much. That will not improve the effect and it means a waste of energy.
- The maximum permissible working depth is 10 cm. At a greater depth setting the discs and bearing houses will wear too quickly.
- The machine performs optimally at a forward speed between 8 and 12 km/h. higher speeds will cause an increase of wear and so of costs.
- The maximum tractor power per meter working width is 27 kW or 37 HP.
- We recommend not to use the Vario-Disc on soil that contains many heavy rocks (rocks > 15 cm).
- It is forbidden to make tight straight angles with the machine in working position.
- The machine can only work properly when travelling forward.
- Set the rate of drop of the power lift in such a manner that when lowering into the soil or putting down, the machine does not bump on the ground, so as to prevent damage to tines and shares.

9. MAINTENANCE



See chapter 5 “SAFETY INSTRUCTIONS” sub 5.5 “Maintenance”



When the machine is in lifted position for repair, cleaning and maintenance activities, support legs must be placed under the machine and it must rest on them.
Switch off the engine and remove the ignition key!

9.1 General

- Regularly check whether all bolts and nuts are tight.
- Also check the bearings of the roller regularly.
- After maintenance it should always be checked whether the bearings are remounted correctly.
- Check the hydraulic hoses, pipes and all connections regularly and replace them in case deterioration or damage.
- After every use the machine should be cleaned with water.
- When the machine has been in contact with manure, the bearings of the roller must be filled with grease, that to counteract the aggressive influence of ammonia.



The disc blades are sharp. Avoid wrenches slipping when working near the disc blades. Avoid climbing on machine above the disc gangs where there is possibility of slipping or falling. Serious injury could occur!

9.2 Lubrication

Grease nipples are installed in the following places.

- a) the bearings of the discs.
- b) The spindles and their bushes.
- c) The holders (bushes) of the disc shafts.
- d) The bearings of the roller.

- a) Every 25 working hours

The disc bearings must be topped up with grease every 25 working hours, after cleaning the grease nipples, with a properly working manual grease gun, until pressure is clearly felt. Usually two strokes of the gun will suffice. Directly after greasing, the disc must be turned at least one revolution. Never use a compressor gun. Too high pressure can damage the grease sealing ring, causing fine soil particles to enter the bearing house. When the machine will not be used for an extended period, it is recommended to apply a coat of grease or oil over them, particularly when the machine has been in contact with manure. Dispose of old oils and grease as prescribed by law.

- b) Twice a year

The spindles must only be operated when the machine has been lifted and the discs are clear of the ground. To lubricate the thread sufficiently it is important to screw in the spindle as far as possible (to about 25 on the scale) then apply grease an subsequently screw back the spindle to operation position. That way two strokes of the grease gun twice a year will suffice.

- c) Twice a year

- d) Every 25 working hours

9.3 Standard disc bearing

This bearing house has two tapered roller bearings that must be adjusted. The play must be minimal. After some 25 working hours of operation the play must be checked and, if necessary, compensated.

This is done as follows:

- Screw off the cover cap.
- Remove the locking pin from the castle nut.
- Tighten the castle nut until the bearing begins to drag.
- Reverse the castle nut one locking pin hole.
- Put back the locking pin.
- Place the cover cap back on the assembly.

NOTE

The first 25 working hours (with new bearings) you have to check the play regularly and adjust it directly if necessary.
Regular inspection and adjustment of the bearings is essential to their service life

10. TECHNICAL SPECIFICATIONS

Technical specifications Vario-Disc Skyros:

Type	V125/51	V150/51	V175/51	V200/51	V225/51	V250/51
Working width (cm)	125	150	175	200	225	250
Transport width (cm)	175	200	225	250	275	300
Transport length (cm)	240	240	240	240	240	240
Working depth max (cm)	10	10	10	10	10	10
Diameter disc (cm)	51	51	51	51	51	51
Number of discs	10	12	14	16	18	20
Rows of discs	2	2	2	2	2	2
Tractor power (HP)	20-45	25-55	30-65	40-70	45-75	55-90
Tractor power (kW)	15-33	18-40	22-48	30-51	33-55	40-66
Linkage category	II	II	II	II	II	II

Type	V275/51	V300/51	V325/51	V350/51	V375/51	V400/51
Working width (cm)	275	300	325	350	375	400
Transport width (cm)	325	350	375	400	425	450
Transport length (cm)	240	240	240	240	240	240
Working depth max (cm)	10	10	10	10	10	10
Diameter disc (cm)	51	51	51	51	51	51
Number of discs	22	24	26	28	30	32
Rows of discs	2	2	2	2	2	2
Tractor power (HP)	60-100	70-115	75-120	85-135	90-140	100-150
Tractor power (kW)	44-74	51-85	55-88	63-100	66-103	74-110
Linkage category	II	II	II	II	II	II

Mass (kg) of the Vario-Disc Skyros:

Type	Mass (kg), including crumbler roller, with 1 ¼" tube.	
	Roll 45 cm	Roll 62 cm
V125/51	665	720
V150/51	733	788
V175/51	801	856
V200/51	869	924
V225/51	937	992
V250/51	1007	1068
V275/51	1075	1138
V300/51	1144	1208
V325/51	1212	1278
V350/51	1279	1355
V375/51	1347	1423
V400/51	1415	1491

The noise level of the Vario-Disc Skyros does not exceed 70dB(A) during work.

11. ORDERING PARTS

Contact your local dealer to order spare parts.

Please state the following data when ordering parts.

1. Machine Type (MT) and the production identification number (PIN), these data can be found on the EC certificate of conformity.
2. Name, article number and quantity of the article.

If you are not sure of the correct part number of a part, you can take it to your local dealer or send in the original to prevent incorrect delivery.



ATTENTION

If decals are loose, have become illegible or are no longer on the machine, these must be replaced as well!

12. EC CERTIFICATE OF CONFORMITY

We,

**Evers Agro B.V.
Bedrijvenpark Twente 326
NL-7602 KL ALMELO
The Netherlands**

Declare that the machine

Machine Type (MT):

Vario-Disc Skyros V

Product Identification Number (PIN) :

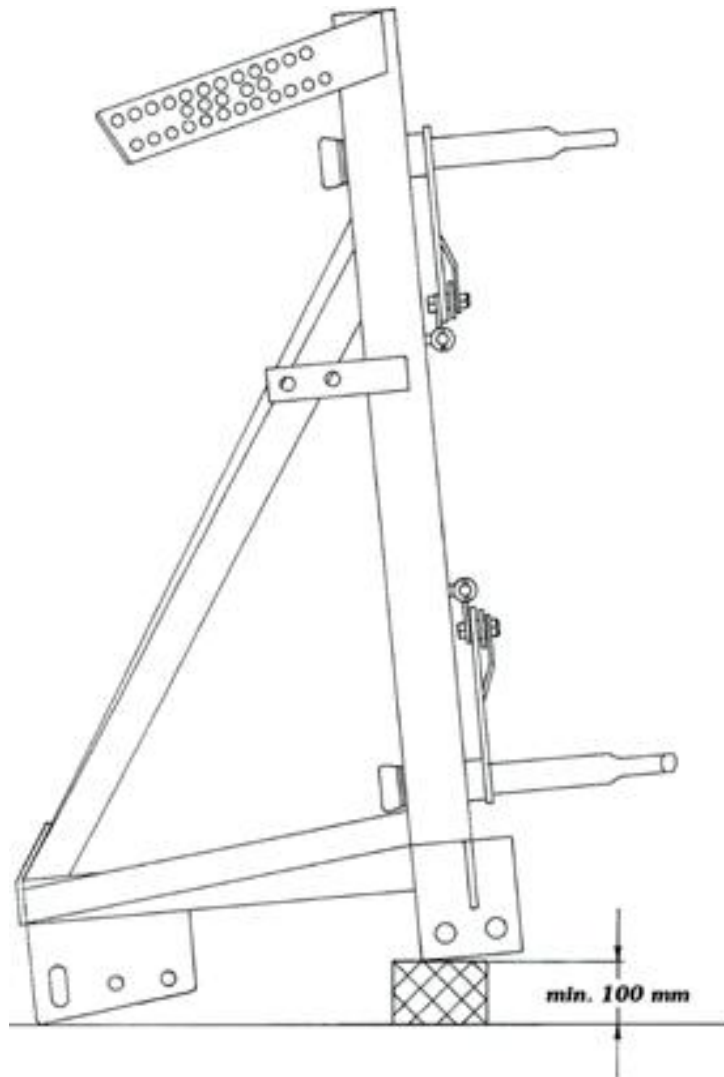
Conforms to the relevant essential health and safety requirements of the
Machine Directive 89/392/EEC and 91/368/EEC.

Almelo, The Netherlands
28 June 2005

G.J. Kamp, The Director

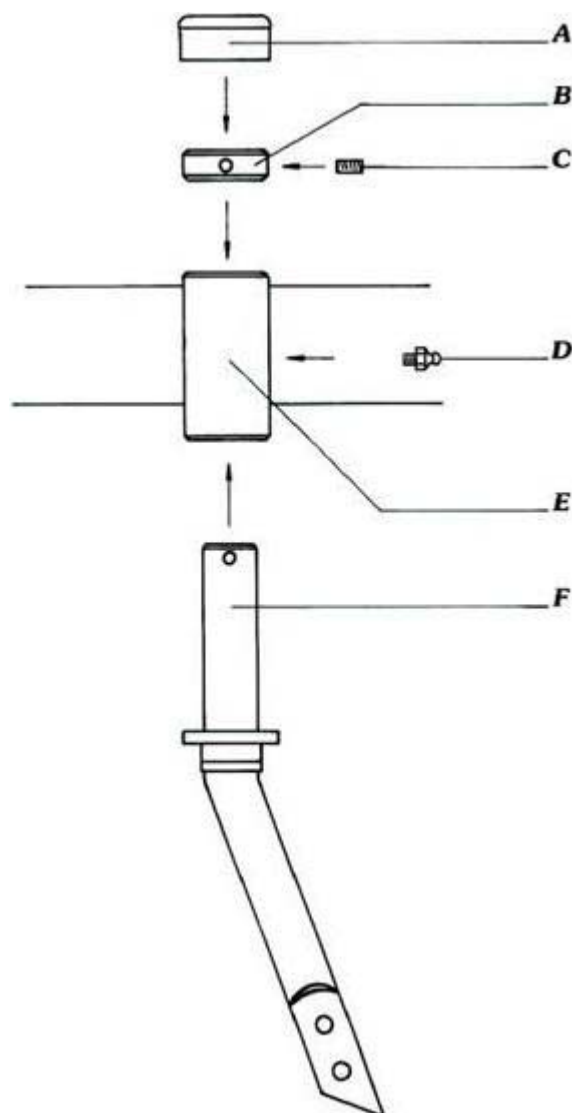
APPENDIX I: MOUNTING INSTRUCTIONS AND PARTSLIST

I.1 Recommended machine placement for mounting the hubs and discs:



If the frame is NOT propped as recommended during installation of the hubs and discs, it is liable to tip over! Therefore it is also recommended that the front row of the discs are mounted first. Furthermore, the back of the frame should be suspended from, for instance, a hoist as an extra safety measure against tipping over.

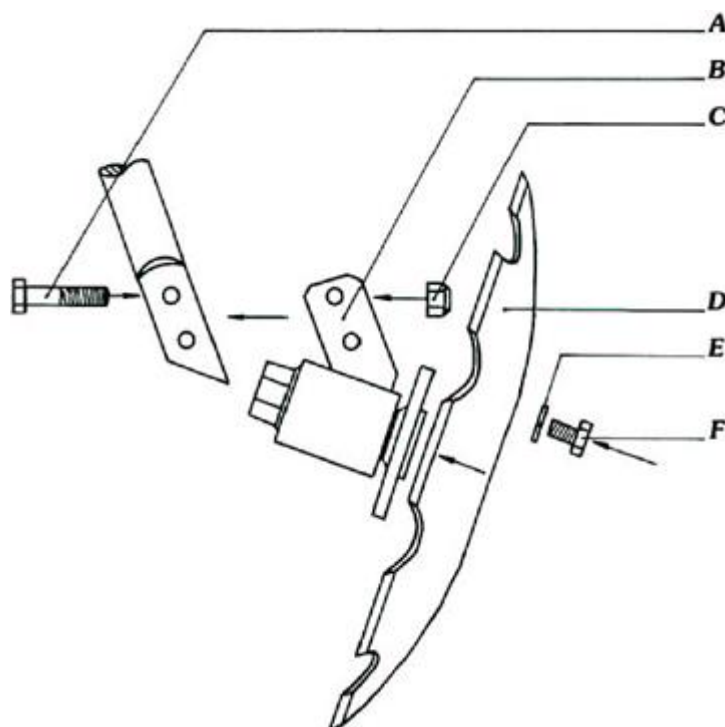
I.2 Assembly disc leg in the frame:



Position	Part no.	Description
Standard version		
A	992023	Synthetic dust cap for adjusting ring (Ø70 mm) for Vario-Disc
B	992021	Adjusting ring Ø70 mm for disc leg Vario-Disc
C	992022	Hexagon socket set screw M10x20 for adjusting ring Ø70 mm
D	992038	Grease nipple 1/8 - 180°
E	992015	Bush Ø70 mm length 140 mm, for disc leg Vario-Disc
F	993020 993021 993031	Disc leg Vario-Disc 42CrMo4, standard, Disc leg Vario-Disc 42CrMo4, double fork (2 holes) Disc leg Vario-Disc 42CrMo4, short fork

Position	Part no.	Description
Reinforced bearings		
F	995022 995040 995041	Disc leg Vario-Disc 42CrMo4, 14,5 mm holes Disc leg Vario-Disc 42CrMo4, double fork (2 holes), 14,5 mm holes Disc leg Vario-Disc 42CrMo4, short fork, 14,5 mm holes

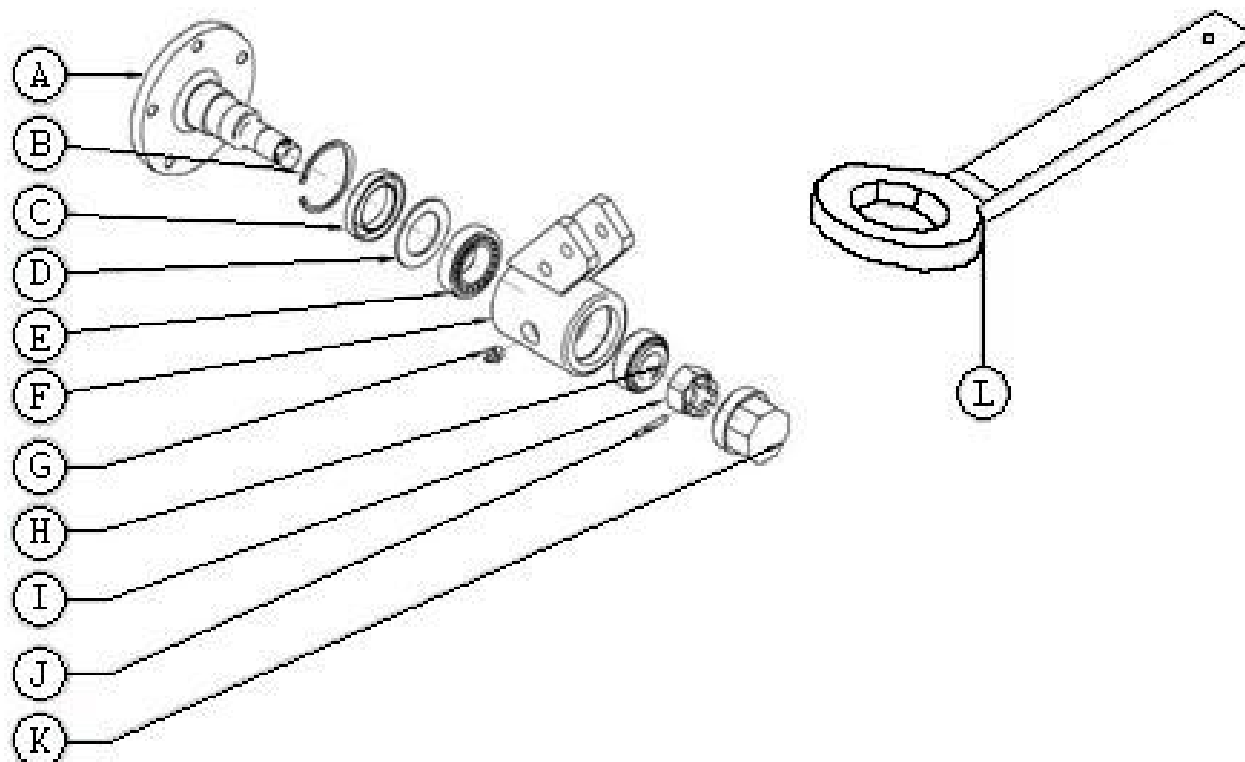
I.3 Assembly hub on disc leg / disc on hub



Position	Part no.	Description
Standard version		
A	992076	2X hexagon head bolt M12x75, threadlength 23mm
B	990408	Hub Vario-Disc 5 holes, shaft mark "R" till 20-03-2001
	990409	Hub Vario-Disc 5 holes, shaft mark "R" with 2 grease nipples for central lubrication system
	990608	Hub Vario-Disc 5 holes, shaft mark "R3" from 20-03-2001
	990609	Hub Vario-Disc 5 holes, shaft mark "R3" with 2 grease nipples for central lubrication system
C	100112	2X Prevailing torque type hexagon nut with plastic insert M12
D	990183	Disc knurled Ø51cm thickness 5,6 mm 5 holes flange
	990184	Disc plain Ø51cm thickness 5,6 mm 5 holes flange
E	100312	5X Spring lock washer M12
F	141202	5X Hexagon head bolt M12X20

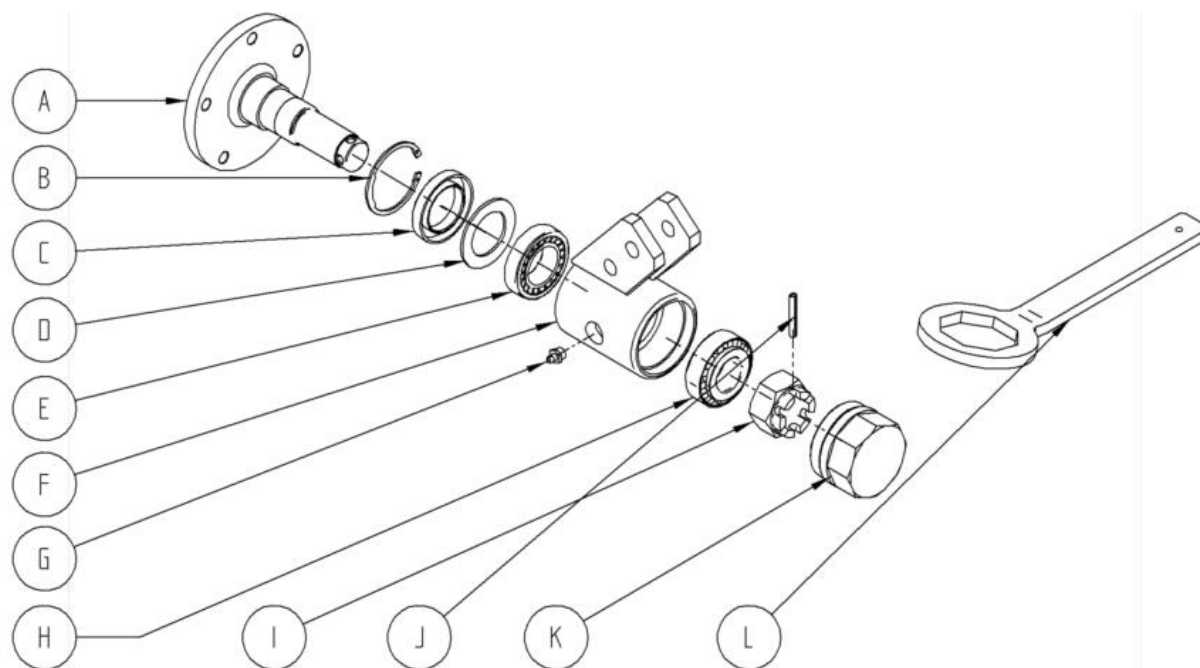
Position	Part no.	Description
Reinforced bearings		
A	994076	2X hexagon head bolt M14x75, 10.9, thread length =23 mm
B	990518	Hub Vario-Disc 5 holes, castle nut M30X1,5
	990520	Hub Vario-Disc 5 holes, castle nut M30X1,5 with 2 grease nipples for central lubrication system
C	100114	2X Prevailing torque type hexagon nut with plastic insert M14

I.4 Assembly hub Vario-disc



Standard version

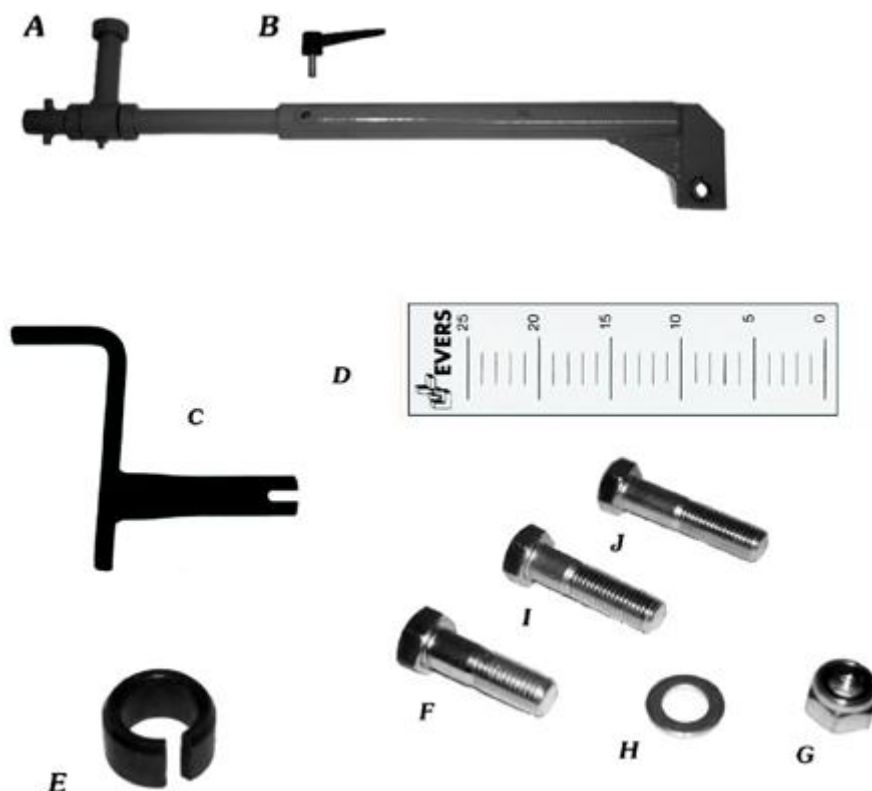
Position	Part no.	Description
Standard version		
A	993013	Bearing flange 5 holes, shaft mark "R" till 20-03-2001
	996002	Bearing flange 5 holes, shaft mark "R3" from 20-03-2001
B	993011	Circlip Ø62x2
C	993003	Sealing ring "Stefa" 40x62x10
D	993010	Cover-ring
	996010	Cover-ring 2,5 mm thick, from 20-03-2001
E	992004	Taper roller bearing 32007
F	993001	Bearing housing 5 holes, shaft mark "R" till 20-03-2001
	993019	Bearing housing 5 holes, shaft mark "R" with 2 grease nipples for central lubrication system
	996001	Bearing housing 5 holes, shaft mark "R3" from 20-03-2001
	996019	Bearing housing 5 holes, shaft mark "R3" with 2 grease nipples for central lubrication system
G	992037	Grease nipple M10x1,00 - 180°
H	993005	Taper roller bearing 32205
I	994007	Castle nut M24x1,5
J	993008	Tension pin Ø5 mm
K	993009	Dust cap "Evers"
L	992053	Spanner for dust cap 993009



Reinforced version

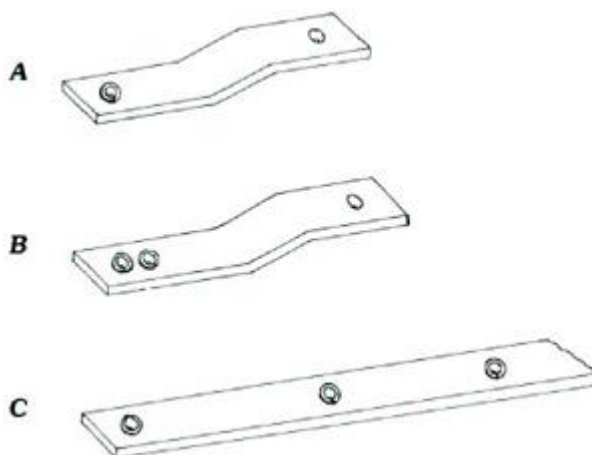
Position	Part no.	Description
Reinforced version		
A	995012	Bearing flange 5 holes with castle nut M30x1,5
B	993011	Circlip Ø62x2
C	993003	Sealing ring "Stefa" 40x62x10
D	996010	Cover-ring 2,5 mm thick
E	992004	Taper roller bearing 32007
F	995011	Bearing housing SE, for dust cap M68x2
G	992037	Grease nipple M10x1,00 - 180°
H	994005	Taper roller bearing 32206
I	994007	Castle nut M30x1,5
J	994008	Tension pin 6 mm
K	994012	Dust cap steel, Thread M68x2
L	992059	Spanner for dust cap 994012

I.5 Spindle adjustment



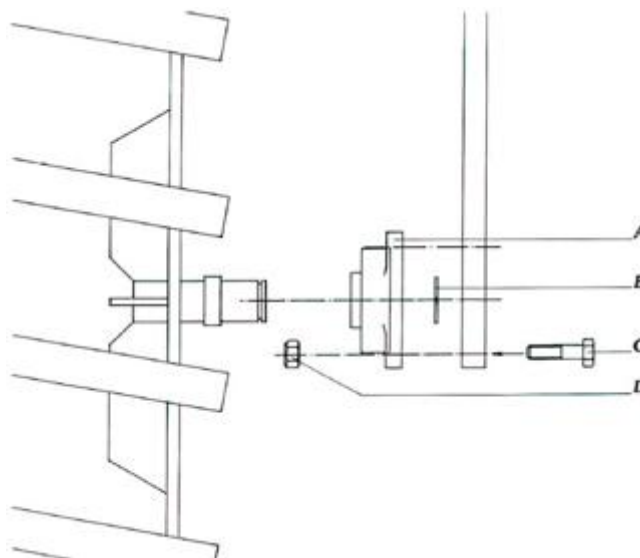
Position	Part no.	Description
A	992050	Adjusting spindle shaft Ø25 mm, complete
B	992052	Clamp lever M10x25
C	992051	Crank shaft Ø25 mm
D	992045	Decal graduated scale
E	990191	Tension bush Ø25,5xØ17x15 mm
F	131605	Hexagon head bolt M16x50, treadlength 25 mm
G	100116	Prevailing torque type hexagon nut with plastic insert M16
H	100216	Plain washer M16
I	101606	Hexagon head bolt M16x60
J	101607	Hexagon head bolt M16x70

I.6 Adjusting strips Vario-disc Skyros



Position	Part no.	Description
A	992220	Adjusting strip 2 holes 2nd row left back Skyros
B	992221	Adjusting strip 3 holes left back / right front for Skyros Frontmounting.
C	992222	Adjusting strip Skyros V200 1 st row
C	992223	Adjusting strip Skyros V200 2 nd row
C	992225	Adjusting strip Skyros V225 1 st row
C	992226	Adjusting strip Skyros V225 2 nd row
C	992250	Adjusting strip Skyros V250 1 st row
C	992251	Adjusting strip Skyros V250 2 nd row
C	992275	Adjusting strip Skyros V275 1 st row
C	992276	Adjusting strip Skyros V275 2 nd row
C	992300	Adjusting strip Skyros V300 1 st row
C	992301	Adjusting strip Skyros V300 2 nd row
C	992325	Adjusting strip Skyros V325 1 st row
C	992326	Adjusting strip Skyros V325 2 nd row
C	992350	Adjusting strip Skyros V350 1 st row
C	992351	Adjusting strip Skyros V350 2 nd row

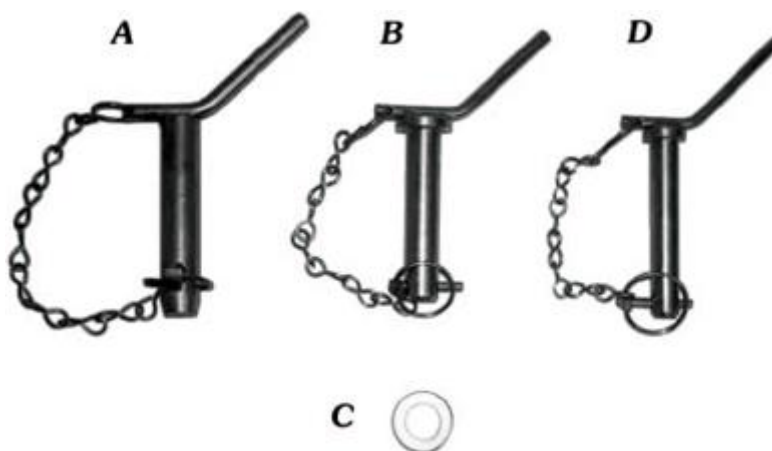
I.7 Assembly bearing on depth control roller



Position	Part no.	Description
Roller axel 35mm (standard)		
A	990200	2x Bearing SBF 207, shaft Ø35 mm
B	990212	2x Circlip for shaft Ø35 mm
C	101205	8x Hexagon head bolt M12x50
D	100112	8x Prevailing torque type hexagon nut with plastic insert M12
	992044	1X Grease nipple M6

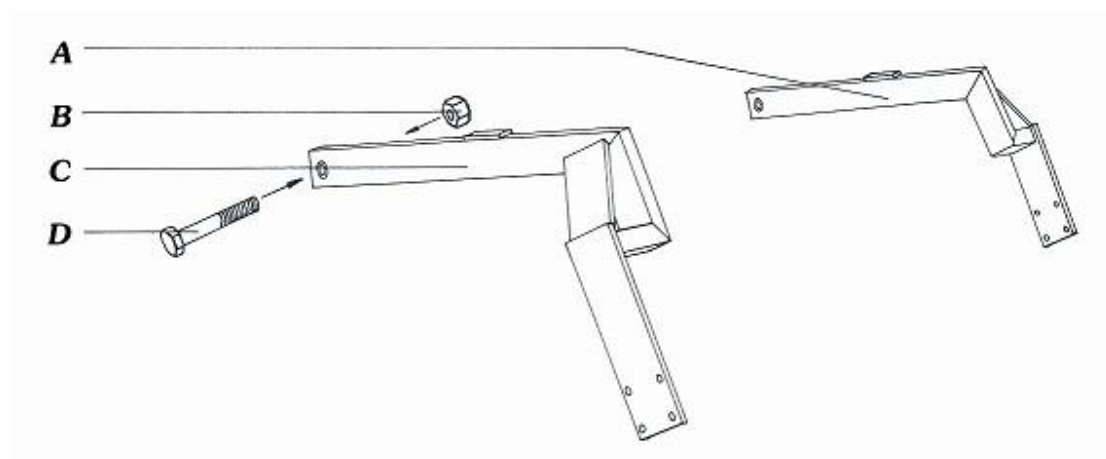
Position	Part no.	Description
Roller axel 50mm		
A	990227	2x Bearing UCF 210, shaft Ø50 mm
B	990229	2x Circlip for shaft Ø50 mm
C	101606	8x Hexagon head bolt M16x60
D	100116	8x Prevailing torque type hexagon nut with plastic insert M16
	992044	1X Grease nipple M6

I.8 Lower hitch pin / top link pin / depth control pin

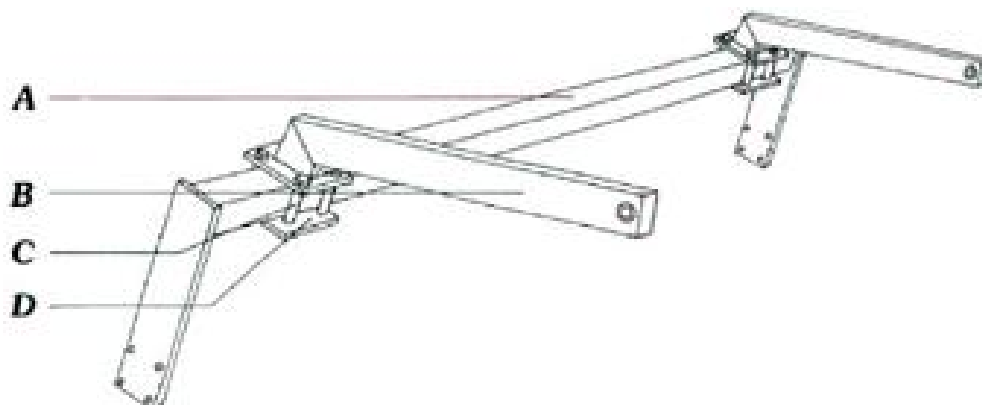


Position	Part no.	Description
A	992209	Lower hitch pin Ø28 mm, Ø36,5 mm Cat. 2 & 3
B	992205	Top link pin Ø25 mm
C	992211	Washer ring
D	992206	Depth control pin Ø 20mm

I.9 Parts for mouting depth control roller



Positie	Artikelnummer	Omschrijving
A	990213	1X Roller arm for roller R45/62, right
B	100120	2X Prevailing torque type hexagon nut with plastic insert M20
C	990210	1X Roller arm for roller R45/62, left
D	102012	2X Hexagon head bolt M20X120



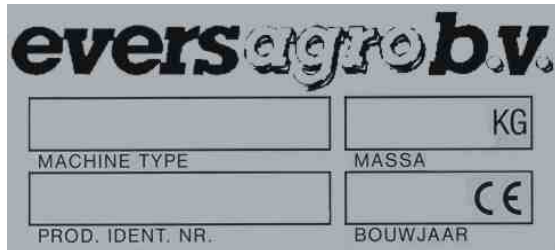
Positie	artikelnummer	Omschrijving
A	980240	1X Cros beam for Skyros V200, length box section 2460 mm
	980265	1X Cros beam for Skyros V225, length box section 2710 mm
	980290	1X Cros beam for Skyros V250, length box section 2960 mm
	980315	1X Cros beam for Skyros V275, length box section 3210 mm
	980340	1X Cros beam for Skyros V300, length box section 3460 mm
	980365	1X Cros beam for Skyros V325, length box section 3710 mm
	980390	1X Cros beam for Skyros V350, length box section 3960 mm
B	990214	2X supporting arm for cross beam Skyros V200-350
C	102016	8X Hexagon head bolt M20X160
	100120	8X Prevailing torque type hexagon nut with plastic insert M20
D	936040	2X Fixing plate for supporting arm 990214

I.10 Depth control rollers



Positie	Artikelnummer	Omschrijving
A	982255	Roller Ø 45 cm, 8 tubes 1 ¼ “, axle length 240 cm Skyros V200
A	982555	Roller Ø 45 cm, 8 tubes 1 ¼ “, axle length 265 cm Skyros V225
A	982755	Roller Ø 45 cm, 8 tubes 1 ¼ “, axle length 290 cm Skyros V250
A	983055	Roller Ø 45 cm, 8 tubes 1 ¼ “, axle length 315 cm Skyros V275
A	983255	Roller Ø 45 cm, 8 tubes 1 ¼ “, axle length 340 cm Skyros V300
A	983555	Roller Ø 45 cm, 8 tubes 1 ¼ “, axle length 365 cm Skyros V325
A	983755	Roller Ø 45 cm, 8 tubes 1 ¼ “, axle length 390 cm Skyros V350
B	982256	Roller Ø 62 cm, 12 buizen 1 ¼ “, axle length 240 cm Skyros V200
B	982556	Roller Ø 62 cm, 12 buizen 1 ¼ “, axle length 265 cm Skyros V225
B	982756	Roller Ø 62 cm, 12 buizen 1 ¼ “, axle length 290 cm Skyros V250
B	983056	Roller Ø 62 cm, 12 buizen 1 ¼ “, axle length 315 cm Skyros V275
B	983256	Roller Ø 62 cm, 12 buizen 1 ¼ “, axle length 340 cm Skyros V300
B	983556	Roller Ø 62 cm, 12 buizen 1 ¼ “, axle length 365 cm Skyros V325
B	983756	Roller Ø 62 cm, 12 buizen 1 ¼ “, axle length 390 cm Skyros V350

I.11 Identification plate, patent plate and safety decals



A



B



C



D



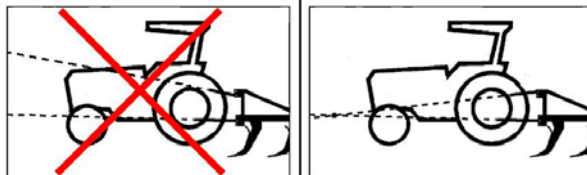
E



F



G



H

Position	Part no.	Description
A	992061	Identification plate
B	992062	Patent plate, Evers disc harrow Vario-Disc
C	992054	Safety decal "Read operation and safety instructions / remove ignition key when working on machine"
D	992055	Safety decal "Do not stay between tractor and machine"
E	992056	Safety decal "Keep clear"
F	992057	Safety decal "Keep away from folding parts"
G	992058	Safety decal "Fix locking pins with inserted retaining clip"
H	992066	Attention decal "Correct mounting topline between tractor and machine"

APPENDIX II: CENTRAL LUBRICATION SYSTEM

The different types of the Vario-Disc may be equipped with a central lubrication system for the disc bearings. The central lubrication system comes as standard with a manual grease pump, but an electric grease pump is available as an option.



ATTENTION

The central lubrication system simplifies periodic lubrication of the bearings. It does not replace the other bearing maintenance, the checks for play due to wear and the adjustment of the taper roller bearings!

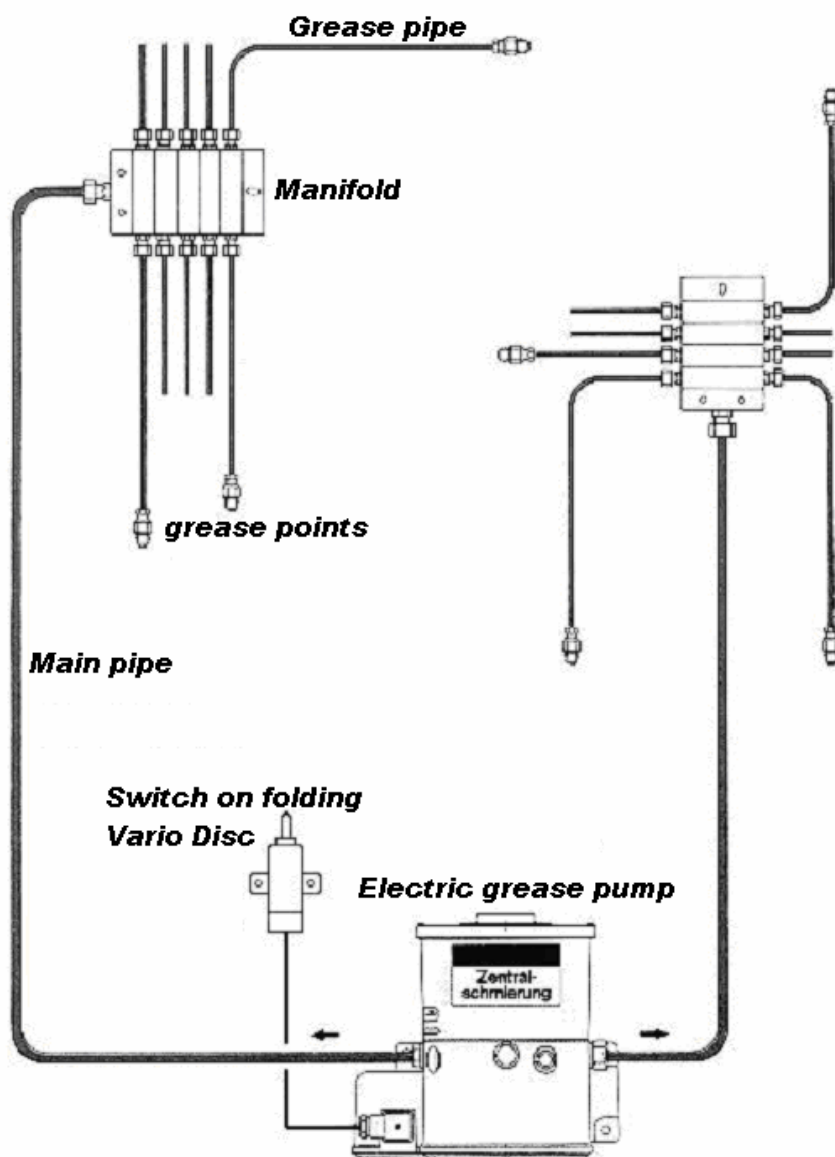


Diagram of central lubrication system with electric grease pump

II.1 Design of the central lubrication system:

The central lubrication system is a "progressive" system, which means that the distribution and metering is controlled by a hydraulic servo system. The plungers in the manifold are controlled in such a way that the greasing points are provided one by one with a predetermined quantity of grease. The quantity of grease depends on the plunger diameter.

If a fault occurs, for instance, clogging of a pipe or greasing point, then the manifold will block. This will cause the pressure to rise to about 300 bar on the manometer on the electric grease pump. This pump has a pressure relief valve through which the grease is expelled in that case. If a manual pump is used, the pressure is clearly felt to become too high. In both cases the blockage has to be removed first.

The central lubrication system with an electric grease pump operates fully automatically when the machine is in the unfolded working position (hydraulically folding Vario-Disc), at permissible grease pressures between 40 bar minimum and 300 bar maximum. The needle of the manometer should not be in the red zone.

In the folded (transport) position of the Vario-Disc the power supply to the electric grease pump is automatically interrupted by a switch.

On fixed frames with an electric grease pump the power should be interrupted manually. Make sure that the lubrication system is only active during operation of the Vario-Disc.



The cover on the electric grease pump must NOT be removed. The filling of the grease reservoir must be done according to the following instructions. When the cover of the electric grease pump is removed, every liability expires!

II.2 Filling of the system:

The electric grease pump can be filled with a normal manual grease pump on a conical grease nipple or with a filling pump on a hydraulic connection. Make sure that dirt particles cannot enter the system. The filling pump can be purchased from your dealer.

II.3 Lubricating grease:

The central lubrication system is suitable for standard commercial grease NLGI EP-2. Grease types containing solids such as graphite are not permitted.

II.4 Venting of the central lubrication system:

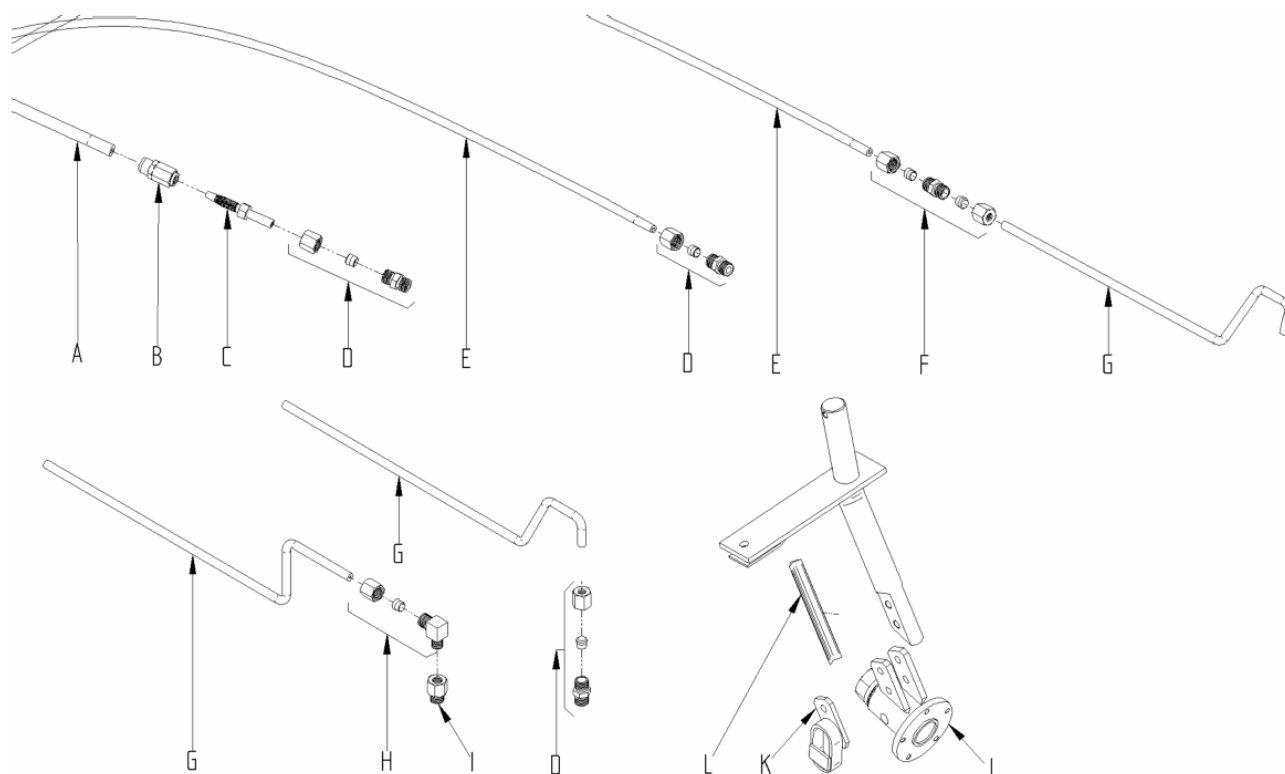
The grease reservoir should not be allowed to be emptied completely; if this occurs anyway, it may be necessary to vent the system. This is done as follows:

1. Unscrew the main pipe from the pump connection.
2. Operate the grease pump until the grease comes out without air bubbles.
3. Reconnect the main pipe.

II.5 Trouble-Shooting Checklist:

Fault	Cause	Remedy
Electric pump is not operating.	The fuse of electric motor blown.	Replace the fuse.
	Wire of electric power supply is broken.	Replace wire.
	Pump defective.	Replace pump.
The electric pump operates, but no output / manometer below 40 bar.	Air bubbles in piston pump.	Vent pump.
	Grease reservoir below minimum level.	Fill grease reservoir.
	Pump element defective.	Replace pump element.
No grease at several grease points.	Grease pipes to manifold constricted or leaking.	Replace pipes.
	Connecting nipples leaking.	Retighten connecting nipples.
No grease at 1 grease point.	Associated grease pipe constricted or leaking.	Replace pipe.
	Connecting nipple leaking.	Retighten connecting nipple.
Pump rpm decreases.	High system pressure.	Check installation / grease points.
	Low ambient temperature.	Not harmful.
Grease comes out at pressure relief valve, manometer at 300 bar.	System pressure too high.	Check installation.
	Manifold blocked.	Replace manifold.
	Installation blocked.	Eliminate clogging of relevant grease point.

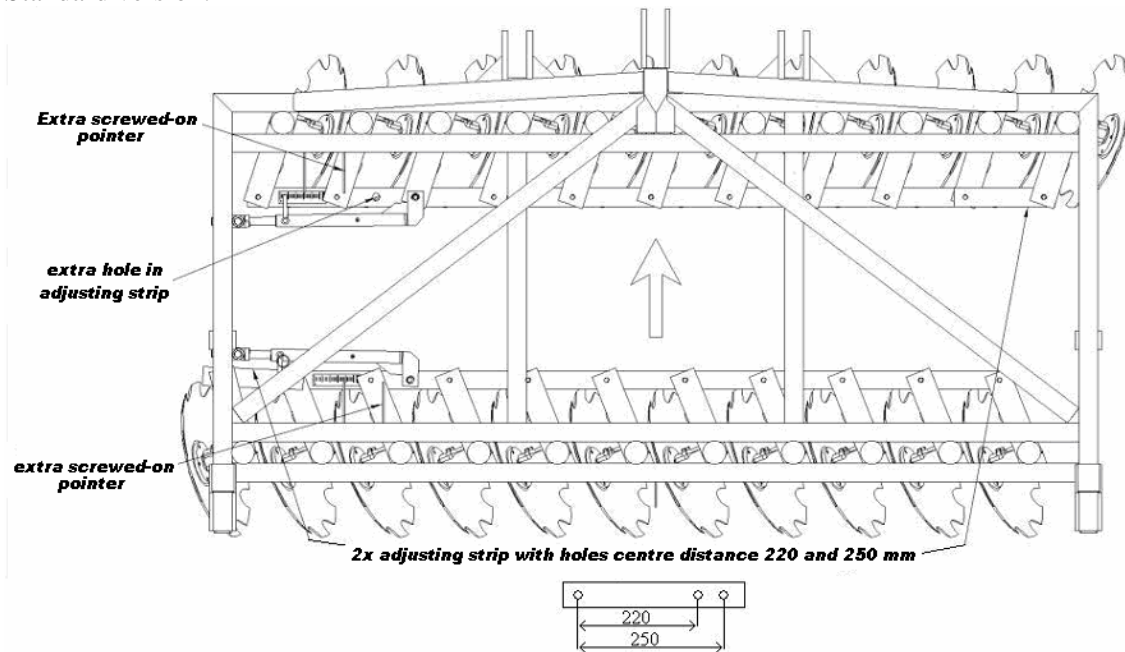
II.6 Parts list central lubrication system



Position	Part no.	Description
A	993022	High pressure pipe 8,4X2,1 (per metre)
B	993023	Screw sleeve for high pressure pipe 8,4X2,1
C	993024	Pipe support for screw sleeve
D	993025	Straight screw-in nipple with swivel GE6LLM6X1k
E	993026	Plastic pipe 6X1,5PA 12 H (per metre)
F	993018	Straight screw-in nipple with swivel GE6LLM6X1k
G	993027	Steel grease pipe for 5-hole hub
	993028	Steel grease pipe for 6-hole hub
H	993036	Square connector nipple WE6LLM8x1k
I	993037	Straight connector nipple M8x1k, 15 mm long
J	990609	Hub Vario-disc 5 holes, with 2 grease nipples for central lubrication system
	990628	Hub Vario-disc 6 holes, with 2 grease nipples for central lubrication system
K	993032	Protective cap for connection of grease pipe to 5-hole hub, 1 st and 3 rd row (M12)
	993033	Protective cap for connection of grease pipe to 5-hole hub, 2 nd and 4 th row (M12)
	993042	Protective cap for connection of grease pipe to 5-hole hub, 1 st and 3 rd row (M14)
	993043	Protective cap for connection of grease pipe to 5-hole hub, 2 nd and 4 th row (M14)
	993034	Protective cap for connection of grease pipe to 6-hole hub, 1 st and 3 rd row
	993035	Protective cap for connection of grease pipe to 6-hole hub, 2 nd and 4 th row
L	993038	Protective angle iron for grease pipe on Vario-disc leg
	993039.	Protective angle iron for grease pipe on Vario-disc leg (new)
M	991056	Hose clamp 45-60

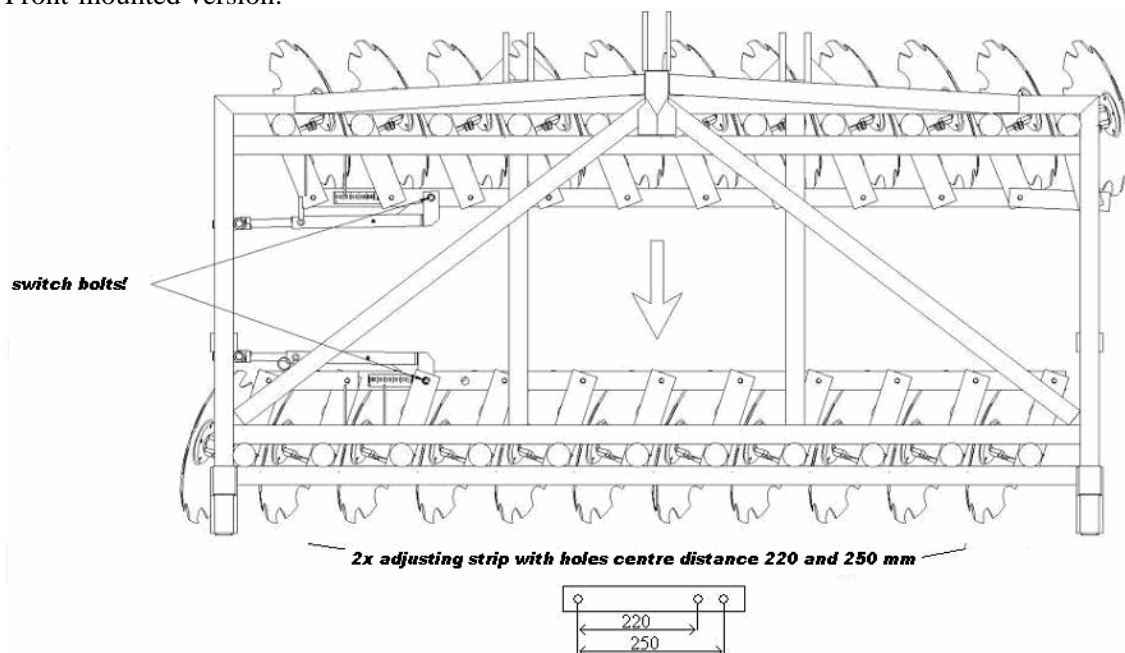
APPENDIX III: CONVERSION FROM VARIO-DISC TO FRONT-MOUNTED VERSION

Standard version:



when converting the other holes with centre distance 220 and 250 mm in the adjusting strips should be used.

Front-mounted version:



Standard the front mounted version is delivered with a cross beam.