LEMKEN

Operating Instructions

Semi-Mounted Reversible Ploughs

SMV 160

CE

Safety is our concern!

Art.Nr. 175 1177
K-2/08.96

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1 DEFINED USE

- Read and adhere to these "General Health- and Safety precautions" before putting the plough to work!
- The SMV range of ploughs has been designed purely for cultivation of agricultural soil!
- Any use beyond the one stipulated above is no longer considered as defined use. The manufacturer does not accept any responsibility for damages resulting from this; the operator himself carries the full risk!
- Under "defined use" the manufacturer's prescribed operation-, maintenance- and repair conditions are to be adhered to!
- The SMV may only be operated, maintained and repaired by such persons who have been made acquainted with it and who have been advised about the dangers!
- The applicable accident prevention advice as well as the generally accepted safety technical, working, medical and road traffic rules should be adhered to!
- Any damages resulting from arbitrary changes on the machine rule out the responsibility of the manufacturer!

2 CONTENTS

3 PREPARATION OF TRACTOR

3.1 Tyres

Ensure that all are at the manufacturer's recommended pressures, that left and right hand side tyre pressures are identical and state of wear is approximately the same. For heavy conditions it may be necessary to add wheel weights and/or water ballast. (See Manufacturer's Instructions).

3.2 Lift Rods

Adjust lift rods to equal length. (See manufacturer's instructions.)

3.3 Check Chains or Sway Blocks

Check chains or sway blocks MUST be adjusted so that the lower links are fixed in their middle position.

3.4 Hydraulics

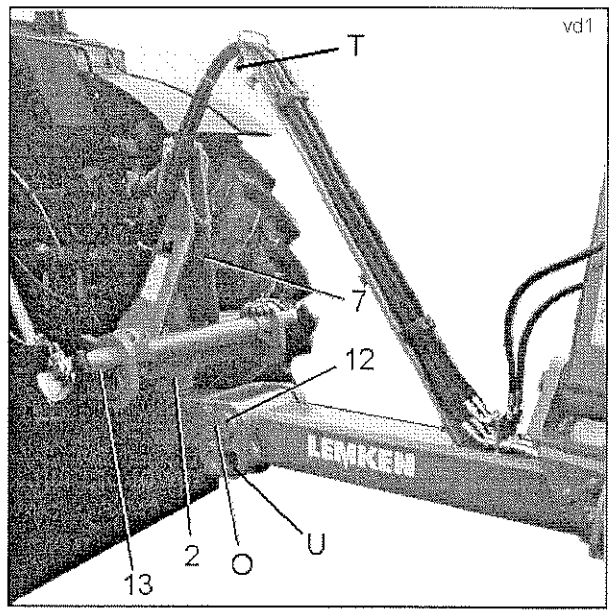
The hydraulics must be set to 'Position control' during work. A double acting spool valve is required for the hydraulic turnover device and a second one is required for the working width adjustment ram. A single acting spool valve is required for the depth adjusting ram of the wheel.

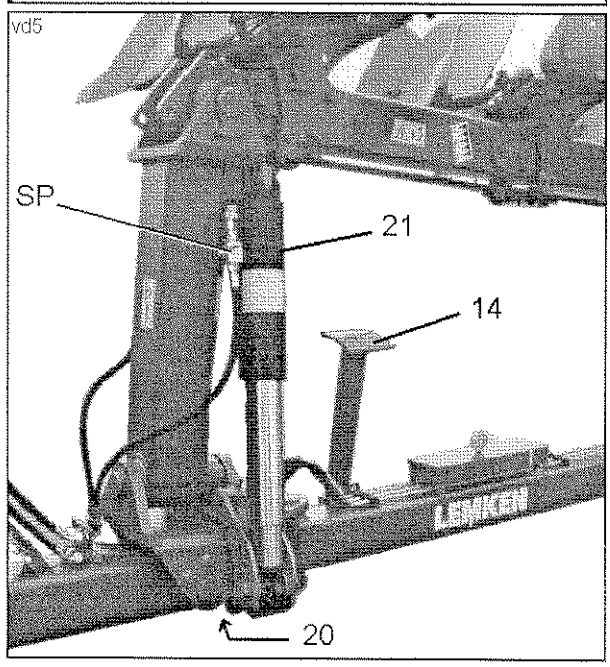
4 ATTACHING AND DETACHING THE PLOUGH

4.1 Attaching to the Tractor

Attach the plough which must be parked in right-handed working position as follows:

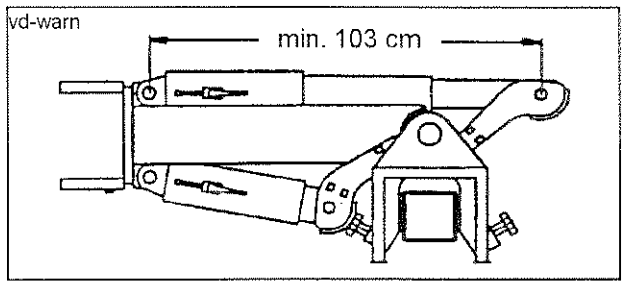
- Set tractor hydraulics to 'Position Control'.
- Attach lower links to the drawbar (13) and secure.
- Fix lower links by means of the check chains or sway blocks.
- Fit top link and adjust its length so that the headstock axle (2) of the headstock (7) is vertically in working position.
- Swing headstock-support (T) upwards and secure.
- Raise lower links slightly, swing up stand (14) and secure.
- Make hydraulic connections, ensuring that they are clean. The hydraulic hoses of the turnover mechanism, the hydraulic working width adjustment and the hydraulic front furrow width adjustment will be fitted to double acting spool valves and the hydraulic hose of the depth adjustment will be fitted to a single acting spool valve.
- Fit warning boards and lighting equipment, if the plough has to be transported on public roads.





For transport the plough frame must be turned in halfturned position! After that the lock valves (SP) of both rams (21) must be locked!

Warning: After attaching it must be checked whether, with fully lifted power lift, sufficient clearance between lower links and headstock will be kept. Furthermore it must be checked, if it is possible to angle the plough to the tractor by 90°. The manoeuvrability is limited, if the tractor is wider that 260 cm.



- Before the first use respectively the first turnover operation the upper hydraulic ram must be completely extended!
- The hydraulic ram is completely extended when the distance between the centre of the mounting pins is approx. 103 cm!

4.2 Detaching from the Tractor

The plough must always be parked in right-handed working position and on level and firm ground.

- Set tractor hydraulics to 'Position Control'.
- Turn plough frame into the right-handed working position and lower the plough a little.
- Stop tractor engine and move the auxiliary spool valve levers to and fro to relieve the oil.
- Remove hydraulic hoses and fit protective caps.
- Swing stand (14) down and secure.
- Lower the plough completely.
- Remove top link from headstock (7) and hold headstock in position by means of the headstock support (T).
- Before removing lower links from drawbar (13), ensure that the parked plough will be stable.
- Remove the lower links from the drawbar (13).

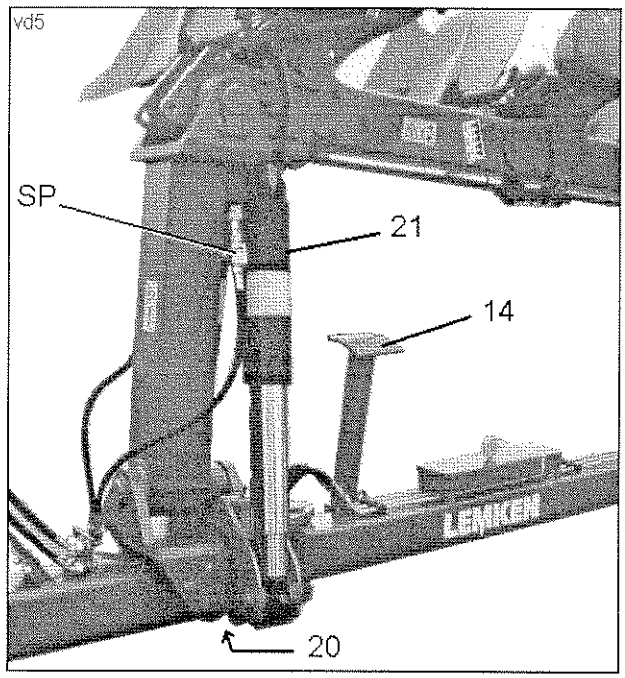
Important: The headstock is in angled position with detached plough. This makes it more difficult to attach the plough to the tractor. Therefore it is recommendable to set the headstock straight by means of the vertical adjuster screws (20). This makes the next attaching easier. Note the amount of the adjustment

- Read and adhere to these „General Health- and Safety precautions“ before putting the plough to work!
- Special care should be taken when the implement is coupled to or uncoupled from the tractor!
- Adhere to the maximum permissible axle loads, total weights and transport measurements!
- The release ropes for quick coupler should hang freely and in the lowered position must not release the quick coupling by themselves!
- Attach the implement as described!
- When fitting the hydraulic hoses to the tractor hydraulic sockets always ensure that the hydraulic system at the tractor's as well as at the implement side is without pressure!
- To avoid wrong hydraulic connection sockets and probes should be marked. This helps to prevent contrary function and reduces the danger of accident!
- Regularly check hydraulic hoses and pipings and exchange if found defective. The replacement hoses and pipings must meet with the implement manufacturer's technical standards!

- When fitting the machine to the three-point linkage of the tractor bring all control levers into such a position that unintended lifting or lowering is impossible!
- When fitting the machine to the three-point linkage the mounting categories at the tractor and the implement must be compatible or must be made compatible!
- There is a danger of being crushed in the area of the three-point linkage. Be careful!
- When actuating the control levers for the three-point linkage from outside the tractor cab never step between tractor and implement!

5 TURNING OF THE PLOUGH FRAME

Turn the plough frame, only, with plough atttached to the tractor. The hydraulic rams (21) of the turnover mechanism must be connected to a separate double acting spool valve via its hydraulic hoses. To turn and to reverse the plough operate as follows:
Set spool valve to pressurise the port of the lower ram.
Set spool valve to 'Neutral position N' after the plough frame has turned 120 ° - 135 °, to interrupt the turnover operation.
Reverse tractor and plough on the headlands in accordance to para 7.
Complete the turnover operation by setting the spool valve lever to the same pressure position as before.



For the next turnover operation into the opposite working position set spool valve to the opposite position.

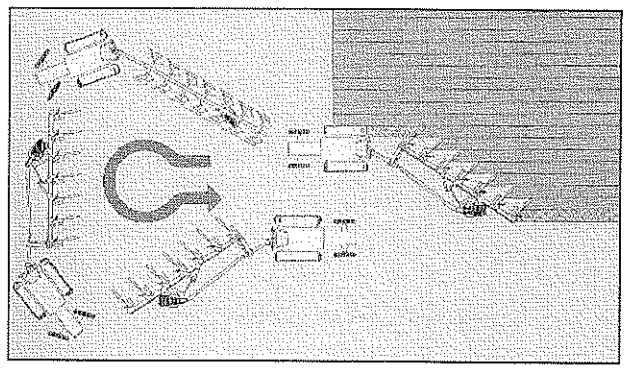
- Before turning the plough ensure that there are no persons in the turning- and swinging area of the plough.
- Operate the turnover mechanism from the tractor seat, only!
- Do not over-angle the hydraulic hoses!
- Keep always the hydraulic couplings clean!
- Replace damaged hydraulic hoses immediately!

6 TRANSPORT

For transport turn the attached plough into the half-turned position and lock the turnover-mechanism by closing the lock-valves (SP).
(Fit marker boards and lighting equipment when using public roads.)
Lift the plough in front (with tractor power lift) until there is sufficient clearance between plough and ground and lower the plough in the rear (with hydraulic ram of the wheel). Do not lift the plough fully in front. The distance between the drawbar and the ground must be in the range of 95 cm to 100 cm. Set the control levers of the spool valves in such a position that unintentional lifting or lowering is impossible.

- With fully lifted tractor hydraulics the manoeuvrability is limited.
- Regularly check hydraulic hoses and pipes and exchange if found defective. The replacement hoses and pipes must meet with the implement manufacturer's technical standards!
- Sitting or standing on the implement is not permissible!
- When driving on public roads with a lifted machine the lifting control levers should be locked against unintentional lowering.

7 REVERSING ON HEADLANDS

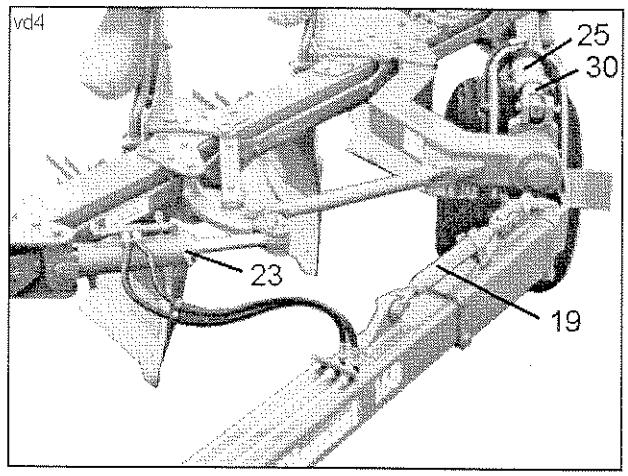


The width of the headlands should be between 16 m and 22 m. It depends from the manoeuvrability of the tractor, the length of the plough and the field conditions. When reaching the headlands, the tractor will be steered to the ploughed side and the turnover operation will be started by setting the spool valve lever of the turnover device into the first pressure position. The plough frame should be turned by about 120° - 135° and must be held then in this position by setting the spool valve to the 'Neutral position'. Then the tractor will be steered to the unploughed land. When entering the next furrow, the turnover operation will be completed.

Important: For the turnover operation, it is not necessary to lift the front or the rear end of the plough. With fully lifted plough, the manoeuvrability of the tractor may be reduced.

- Sitting or standing on the implement during operation or transport isn't permissible.
- Keep well clear of the lifted or turning plough!
- Operate the hydraulic equipment only, when no persons are in the swinging and working area of the plough and the equipment.
- In hilly conditions the stability of the tractor is reduced. Pay therefore attention to a wide wheel distance and sufficient weight or ballast (See manufacturer's instructions)!

8 ADJUSTMENTS



8.1 Front furrow width

The front furrow width will be adjusted by means of the turnbuckle (19) or an hydraulic ram.
Turnbuckle/ram longer = wider front furrow
Turnbuckle/ram shorter = narrower front furrow

8.2 Working depth

The working depth will be adjusted in the rear by means of turning the adjuster sleeve (25) of the ram (30). Open the ram (30) a little to unload

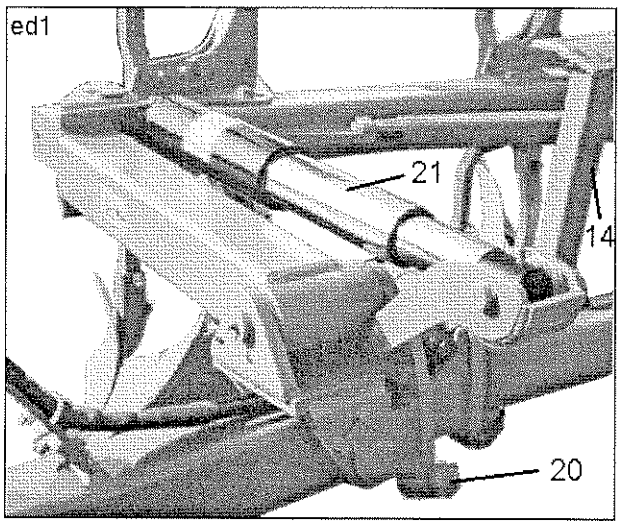
the adjuster sleeve before adjusting. The ram can be used, too, to lift the rear end of the plough whenever it is required. In front, the furrow depth will be adjusted by means of the tractor power lift. The tractor hydraulics should be set to position control during work.

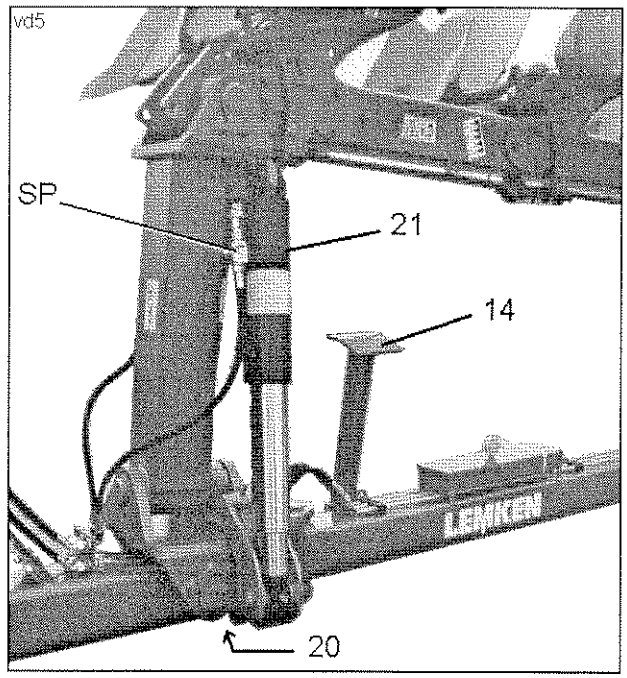
8.3 Angle adjustment

With the plough in work at its required depth, the legs should be approx. vertical when viewed from the rear. This adjustment is achieved by use of the vertical adjuster screws (20). Adjust the angle at follows:
Raise the front of the plough a little and lower it again to unload the adjuster screw (20) concerned. Adjust the angle as required, use a 46 mm spanner.

8.4 Working width

The working width of the SMV plough is variably adjustable by means of the hydraulic ram (23) and that from 30 cm up to 55 cm per body.
Narrower working width per furrow - close the ram (23)
Wider working width per furrow - open the ram (23)



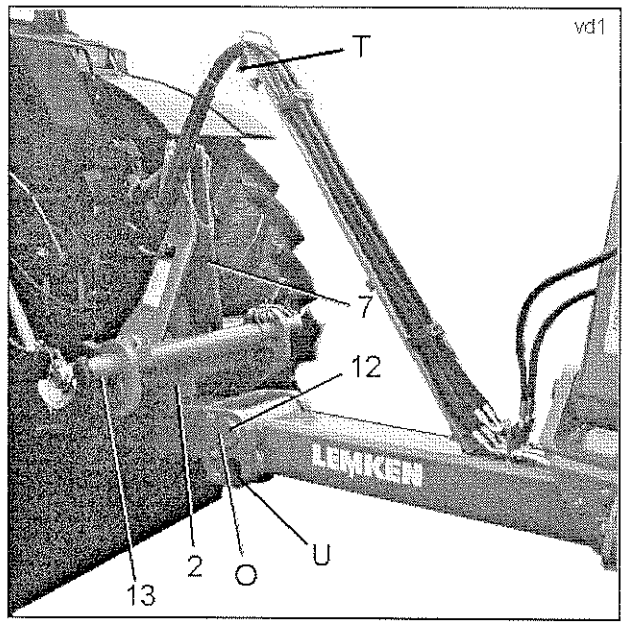


8.5 Side pull / alignment

During work, the three point linkage must be fixed laterally. If the tractor shows too much side pull, this can be eliminated by adjusting the three point linkage laterally. This must be done for both sides and equally. The three point linkage is then free in a limited/adjusted way.
This adjustment influences the front furrow width.

8.6 Slippage

If the tractor shows too much slippage, the pivot pin (12) must be fitted into the upper bore (O). Secure pin (12) carefully afterwards.



8.7 Load on front axle

If the front of the tractor is too much unloaded, the pivot pin (12) must be fitted into the lower bore (U). Secure pin (12) carefully afterwards.

8.8 Three point linkage /drawbar

The drawbar (13) is positioned in the upper position of the headstock (7). Do not fit the drawbar in the lower position.

9 SHEARBOLTS

All SMV and SMVX ploughs are fitted with shearbolts (40) as standard.

IMPORTANT: Only genuine LEMKEN shearbolts should be used. There is a serious risk of damage if other bolts are used and any warranty will be void.

Be very careful of the guillotine effect of a pivoting leg assembly and its support plates.

To replace a broken shearbolt proceed as follows:

Raise plough a little and slacken pivot bolt (42).

Remove broken sections of old shearbolt (40).

Swing body back into position.

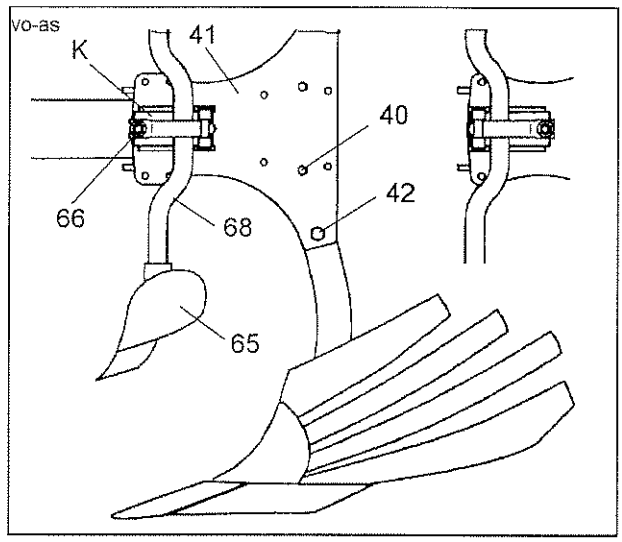
Fit new shearbolt of correct type and tighten securely.

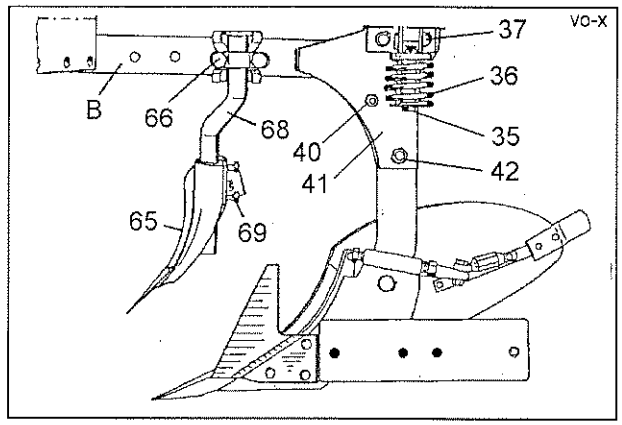
Securely tighten pivot bolt (42).

NOTE: In conditions where frequent failure of the shearbolt is experienced:

Ensure that both shearbolt and pivot bolt are securely tightened.

After a number of shearings, it will be found an advantage to replace the pivot bolt (42).

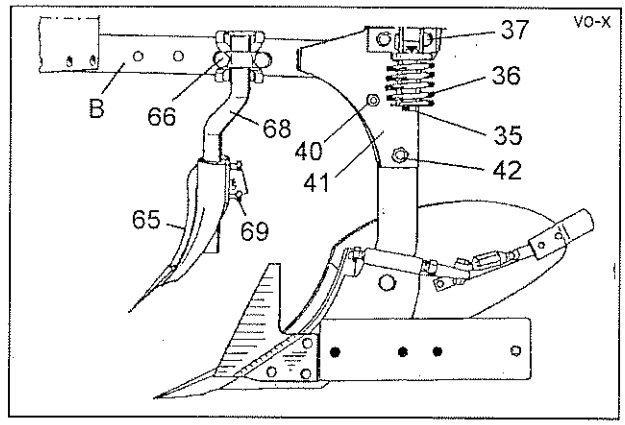




Plough Model	Shearbolt Part No.	Shearbolt Dimension	Pivot bolt Part No.	Pivot bolt Dimension
SMV 160 (80 x 35)	301 3596	M14X75X15/8.8	301 4370	M20X85LS55X25/10.9
SMV 160 (80 x 40)	301 3607	M14X85X20/10.9	301 4607	M20X90LS60X25/12.9
SMVX 160 A	301 3595	M14X70X15/10.9	301 4606	M20X80LS50X25/10.9

- In the shearing area are pinch points. Keep distance!
- Sitting or standing on the implement during operation is not permissible!
- The body trips upwards when a shear bolt shears. Keep distance!

10 SMVX WITH AUTOMATIC RESET LEGS



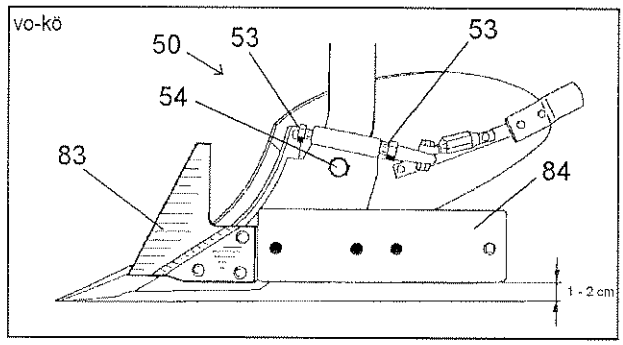
The automatic overload safety device protects the plough from damage when an obstacle is encountered. The mechanism breaks back upon impact and automatically returns the body to the working position once the obstacle has been passed. Additionally, each leg is fitted with a shearbolt (40) for protection when the body 'hooks' an obstacle.
The preload on the breakback springs (36) is set at the factory for average conditions. In heavy conditions, this can be adjusted so that the legs only break back when an obstacle is encountered rather than through normal ploughing loads.

Adjust the mechanism as follows:
Tighten screws (35) 2 - 4 turns. This should prove adequate.
Should the mechanism still trip without meeting an obstacle, tighten screws (35) a further 2 - 3 turns.

IMPORTANT: It is essential that all 4 screws on each leg assembly are adjusted equally to ensure operation.

- Never stay or allow anyone to stay within the operating area!
- Sitting or standing on the implement during operation is not permissible!
- Repair-, maintenance-, cleaning operations and adjustments should be carried out with tractor brakes applied and engine switched off. Remove ignition key!
- The body trips upwards when a shear bolt shears. Keep distance!

11 BODIES

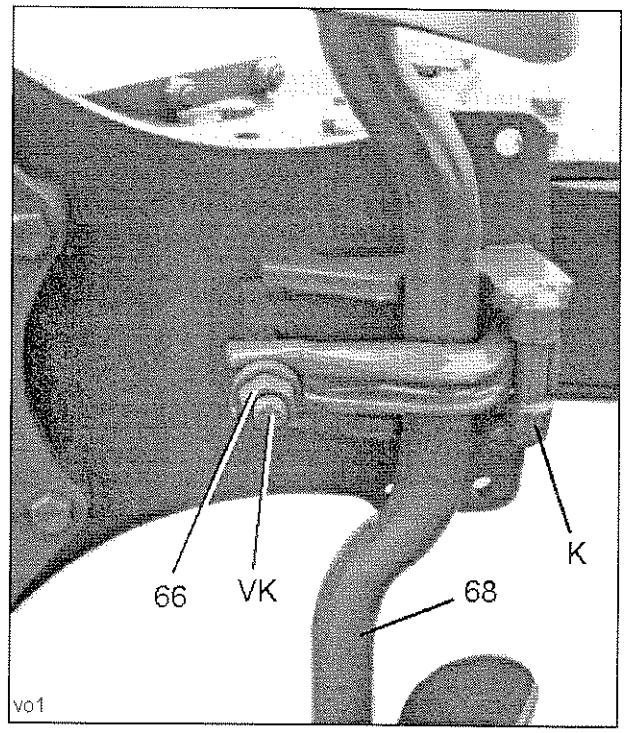


To check correct pitch, measure from plough frame to underside of new point and end of landslide. Frame to point measurement should be 1,5 cm (5/8 in) greater than frame to landslide.
I e: Measurement D should be - 1,5 cm from parallel to frame.
This setting is for average conditions. To improve penetration, increase pitch by a small amount on each body. Slacken bolt (54) and adjust setscrews (53). Tighten bolt (54).
Excessive pitch will increase draft and effect depth control.
Having set one body as required, note measurement from point to beam and adjust remainder to the same measurement.
Finally check alignment of all points and make any minor adjustments necessary.

12 SKIM COULTERS

12.1 General instructions

The skim coulters (65) should be finally set when the plough is operating at the required depth and speed. The skim point should be set to a depth between 5 and 10 cm (2 - 4 in) and the tip of the point set to run 2 - 3 cm (3/4 - 1 1/4 in) to the landslide of the body. Skim angle approximately 45 ° - 50 °. The skimmed slice should be seen to fall cleanly into the furrow bottom before the main furrow slice is turned by the plough body. The skim point should normally be positioned beside or just behind the plough point, but in conditions where large quantities of trash exist, the skim should be set more to the rear and at a more abrupt angle.

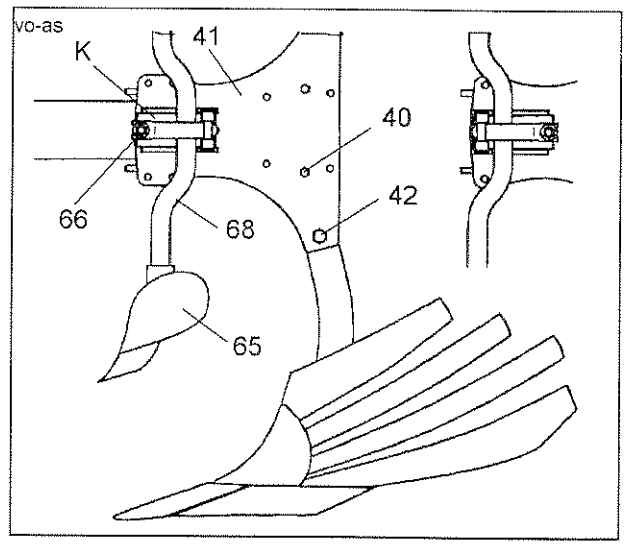


12.2 Depth and Angle Adjustment

Slacken setscrews (69), set to depth 5 - 10 cm (2 - 4 in) and angle to the direction of ploughing of approximately 45 ° - 50 °. Securely tighten setscrews (69).

12.3 Lateral Adjustment

Loosen nut (66) and swivel stalk (68) until the skim point is positioned 2 - 3 cm (3/4 - 1 1/4 in) to landslide of the body. Securely tighten nut (66). (This adjustment will affect angle of skim).

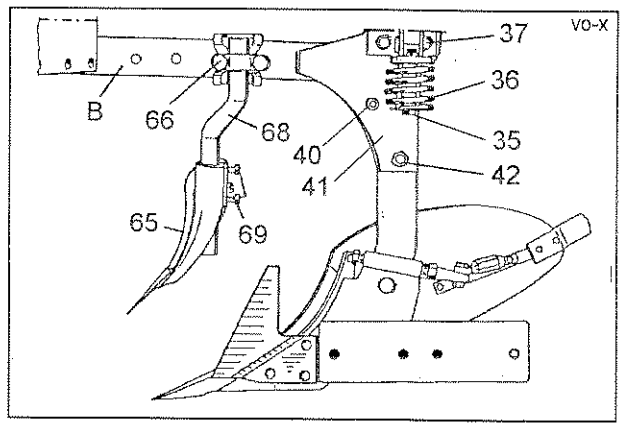


12.4 Fore and Aft Position of Skim Stalk (SMV)

The bracket (K) is reversible to give 2 fore and aft positions. Additionally the stalk (68) can be turned to the front or to the rear to give alternative fore and aft positions. Tighten nut (66) carefully after adjustment.

12.5 Fore and Aft Position of Skim Stalk (SMVX)

With the SMVX-range ploughs, the stalk (68) can be fitted in different fore and aft position to the beam (B). Additionally the stalk (68) can be turned to the front or to the rear to give alternative fore and aft positions.

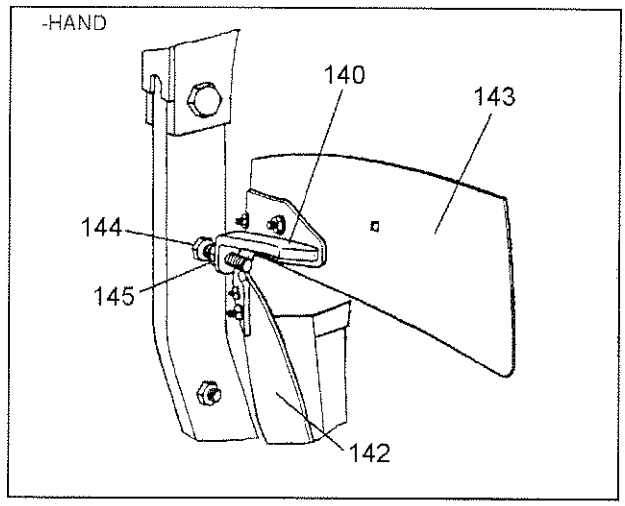


Only the rear bores with the beam (B) may be used as the front bores are reserved for disc coulters. Tighten nut (66) carefully after adjustment.

- The operator should familiarise him-/herself with all controls and their functions before starting work. During work could be too late!
- Sitting or standing on the implement during operation or transport is not permissible!
- Do not allow anyone within the operating area!
- Repair-, maintenance- and cleaning operations as well as adjustments and remedy of function faults should be carried out with tractor brakes applied and engine switched off. Remove ignition key!
- When conducting maintenance work on a raised implement always place suitable supports underneath.

13 TRASHBOARDS

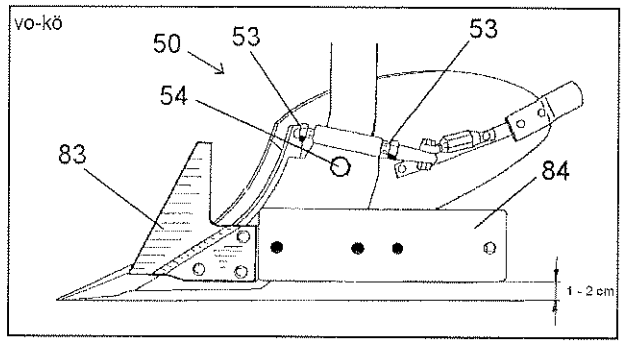
Bolt carrier (140) of the trashboard (143) to the holes provided in the top of the mouldboard (142). Fit trashboard (143) to the carrier and adjust for optimum trash 'mix'.
Adjust support-bolt (144) so that it touches the leg. Secure bolt (144) by means of locknut (145).



14 COULTERS

14.1 Sword Coulters

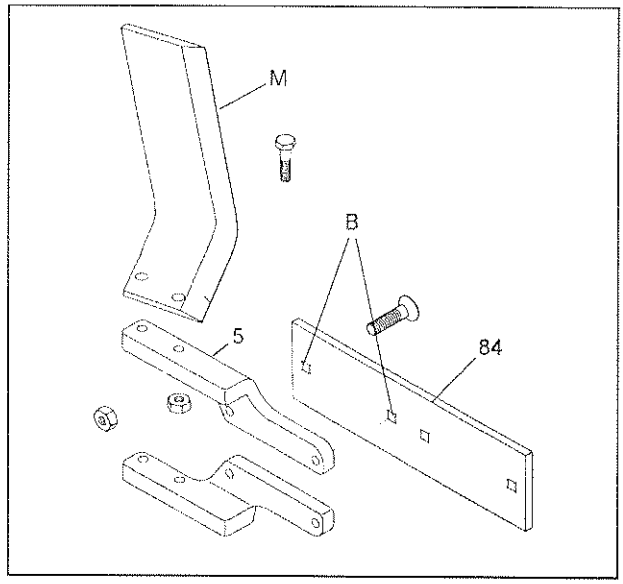
Sword coulters (83) are available. They are recommended for tough and heavy conditions and provide a clean cut of a furrow wall. It is recommendable to provide - at least - the rear bodies with a coulter.



14.2 Wide furrow knife

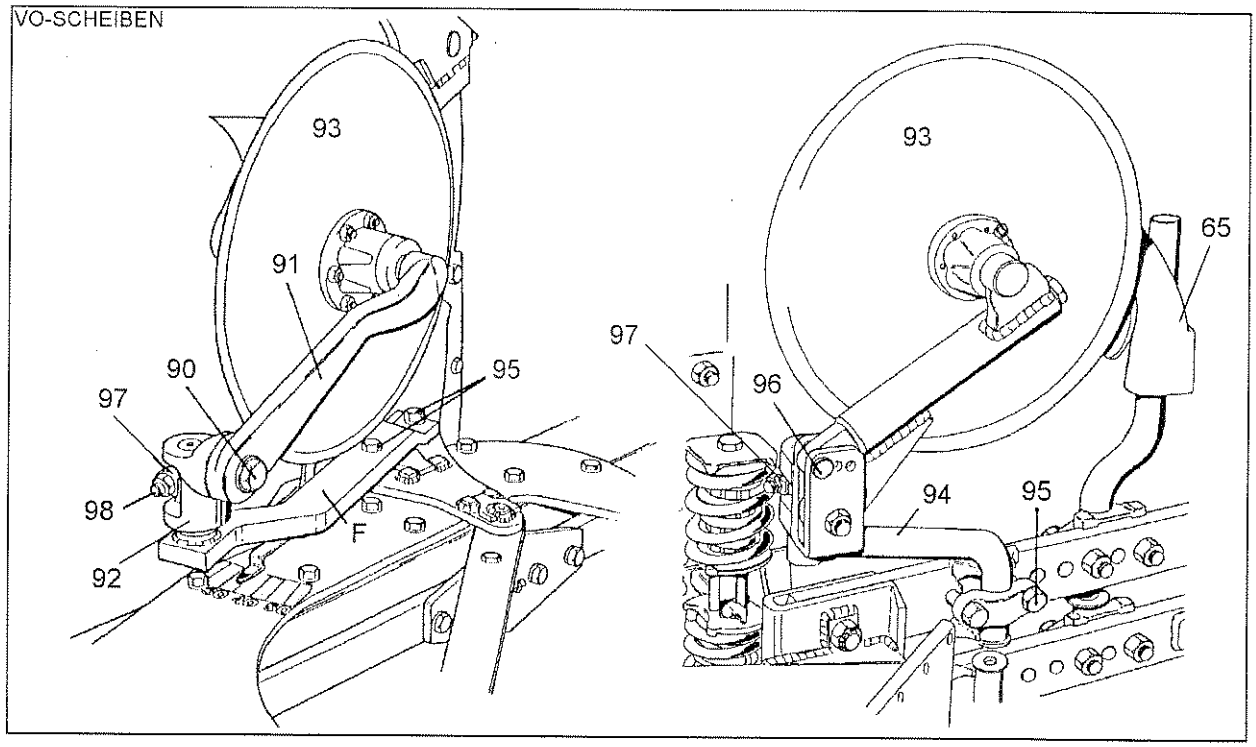
To allow the use of wide tyres a 'wide furrow knife' (M) is required. This 'wide furrow knife' must be fitted to the landslide of a rear body which must show two free bores (B). The 'wide furrow knife' provides a 15 cm wider but less deep furrow.
Two working depth positions are possible. To change the working depth, convert the 'wide furrow knifes' as follows:

- Remove the knifes (M) of the right and left 'wide furrow knife'.
- Remove both brackets (H) and fit the right bracket in reversed position to the left landslide (84) and the left bracket in reversed position to the right landslide (84).
- Fit the knifes to the brackets. Tighten all nuts and bolts carefully.



14.3 Disc coulters

When fitted, disc coulters (93) should be set to a working depth of 7 - 9 cm (2 3/4 - 3 1/2 in) and 2 - 3 cm (3/4 - 1 1/4 in) to the landslide of the body.
Adjust depth by slackening setscrew (90), move arm (91) as required then, after checking that serrations of the carrier (92) and the arm (91) mesh correctly, securely tighten setscrew (92).
Use pin (96) to adjust the depth of the spring loaded disc coulters (SMVX ploughs only).
For lateral adjustment, slacken setscrew (95) and swing arm (94) or (F) to give required setting.
The disc coulter can be pivotted laterally.
The range of pivoting can be adjusted by means of the clamp (97) after slackening the bolt (98).
Securely tighten bolts (95).

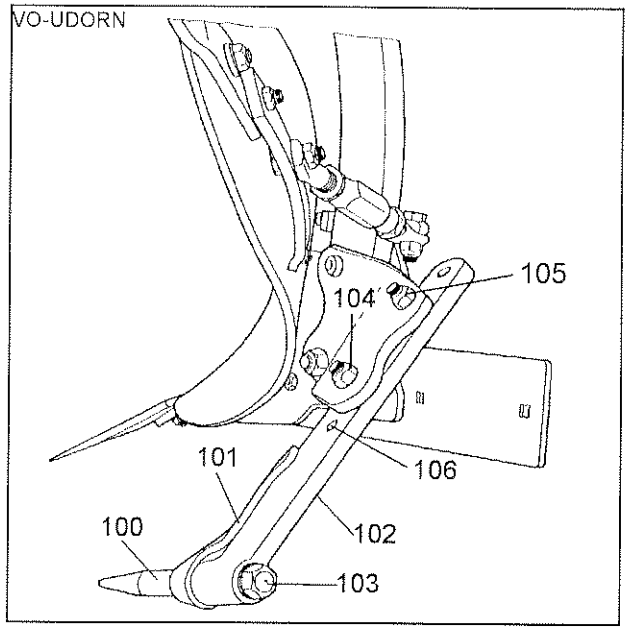


IMPORTANT: All locking setscrews should be **very tight** after adjustment.

- The operator should familiarise him-/herself with all controls and their functions before starting work. During work could be too late!
- Sitting or standing on the implement during operation or transport is not permissible!
- Do not allow anyone within the operating area!
- Repair-, maintenance- and cleaning operations as well as adjustments and remedy of function faults should be carried out with tractor brakes applied and engine switched off. Remove ignition key!
- When conducting maintenance work on a raised implement always place suitable supports underneath.

15 OFFSET SUBSOILERS

The subsoiler bracket is bolted to the plough leg using the leg/body bolts. They can be fitted to any number of bodies on the plough. By using the holes provided, 2 subsoiling depths below the body can chosen. The tine (102) is protected by shin (101). This and the point (100) can be replaced when worn after removal of nut (103). The points are not handed, but the shins are marked L & R.
A shearbolt (104) protects the subsoiler.
Use only the correct shearbolt M16X60/8.8 part No. 301 3838. With bodies having two mouldboard stays, the bolt M16X60/10.9 has to be used, part No. 301 3779.



IMPORTANT: Before detaching the plough from the tractor, remove lower subsoiler tines completely or hinge back after removing bolt (104).
Never use bore (106) as this will cause the loss of the subsoiler if the bolt (104) shears!

16 FURROW PRESS ATTACHMENT ARM

16.1 Size of Furrow Press

The width of press should be approximately 20 cm (8 in) wider than the widest intended ploughing width of the plough. (A too wide furrow press will impose an unnecessarily large load on tractor and plough).
Example: SMV 160 6 furrow plough, maximum intended furrow width 40 cm (16 in) per body. Thus the ploughing width is - 240 cm (96 in) so a furrow press of 240 cm + 20 cm = 260 cm (96 in + 8 in = 104 in) is required. LEMKEN Variopack furrow presses are ideal for this purpose as their width can be increased or decreased by the fitment or removal of rings.

NOTE: When ploughing very narrow it will be found necessary to remove a few rings from a press built for full width work.

16.2 Furrow Press Hook Arm

The pick up arm on the press should project 50 cm (20 in) beyond the outer ring.

16.3 Attaching Press Arm to Plough

- Fit plough to tractor and adjust plough to narrowest working width.
- Bolt bracket (1) to front bracket of the plough by means of bolts (2). Tighten bolts carefully!
- On SMV ploughs fit the 'U' shaped chain carrier (60) to the middle of the front body outer leg plate (5) as shown .
- On SMVX ploughs fit the chain carrier (7) to the eccentric bolts (8) of the front body outer leg bracket as shown.

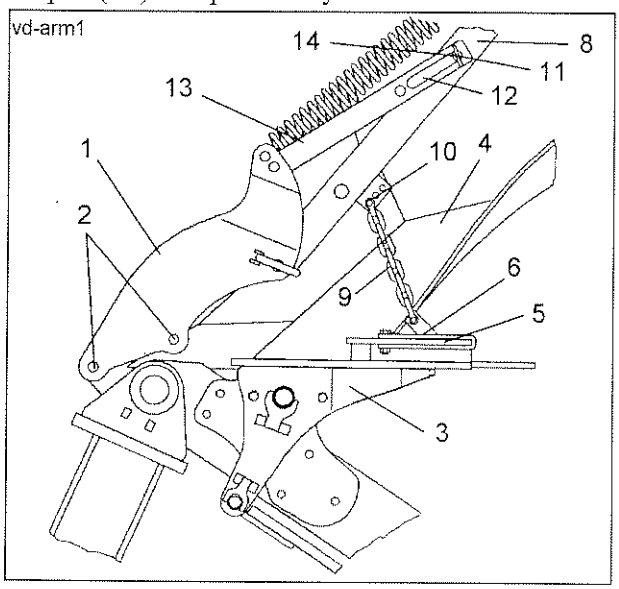
NOTE: The front skim stalks (SMVX) must be located on the opposite side of the beam to the plate.

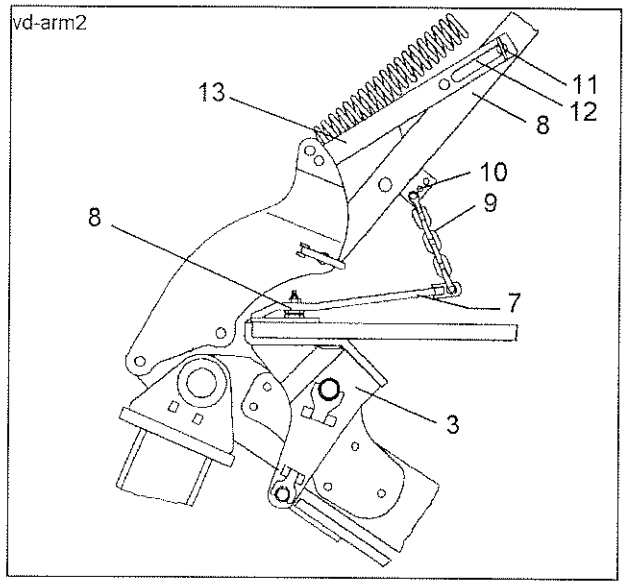
- With plough partially raised and **set to narrowest furrow width**, connect chain (9) to carrier (6) or (7) using one of the holes which places the chain under slight tension.
- When in the working position, pin (11) must be positioned in the slot (12) in arm (8) and the hole in pick up arm (8).

WARNING: The pick-up arm is spring loaded.
Fit chain (9) with plough set to narrowest furrow width, only.

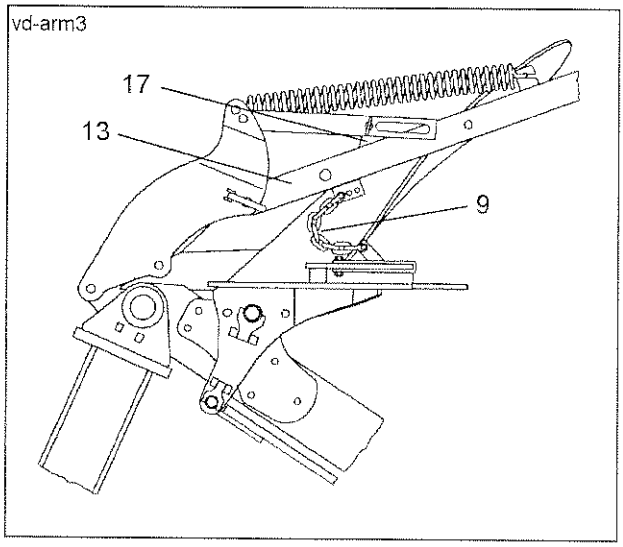
16.4 Conversion from Working to Transport Position

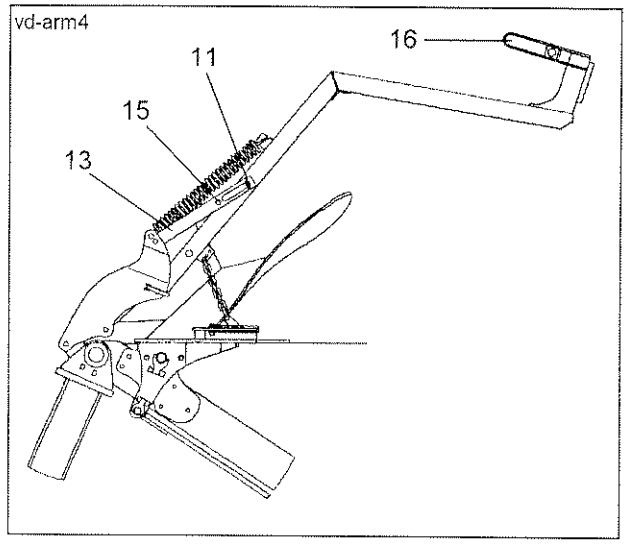
- Plough must be attached to tractor.
- Release and remove pin (11).
- Place pin (11) in hole (15) of arm (8), fit washer and secure.
- Push the entire arm (8) towards the plough until pin audibly 'clicks' into jaw (17). Check that pin (11) has positively locked.





16.5 Conversion from Transport to Working Position





- Plough must be attached to tractor.
- Set plough to narrowest working width.

- Push arm towards the plough against spring pressure and, at the same time, pull arm (13) with pin (11) out of the jaw.
- The arm (8) will then try to swing outwards until restrained by chain (9). The operator must control this movement and keep others well clear.
- Release and remove pin (11).
- Place pin (11) through the slot (12) and hole in pick up arm (8). Fit washer and secure.

- Never stay or allow anyone within the operating area!
- Packer roller attachment arms should be swivelled inwards and secured before driving on roads.
- Attachment arm is spring tensioned!

17 TYRES

The SMV range ploughs are equipped with wheels 38x20.00x16x1 with profile STG and 8PR. The recommended pressure is 2,5 - 2,8 bar. The max. or min. allowed pressures are listed below. The pressure information of previously used wheels or other wheels are also listed below.

Wheel	**profile**	**Ply-rating PR**	**min. pressure (bar)**	**max. pressure (bar)**
500/55-15.5	TT	10	2,0	2,2
500/55-15.5	TT	8	1,8	2,0
38x20.00-16.1	STG	10	2,5	2,8
38x20.00-16.1	STG	8	2,5	2,8
500/60-15.5	ELS	12	1,8	2,8

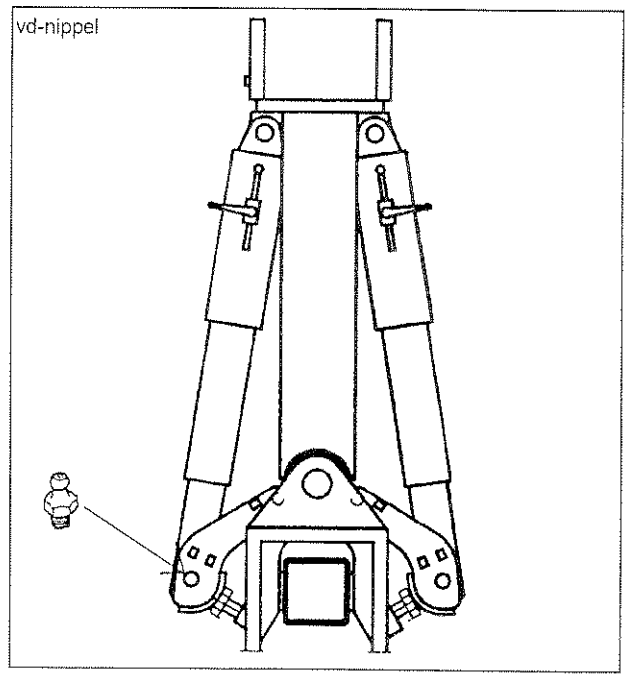
- When working on the tyres make sure that the implement has been placed on the ground safely and that it is secured by chocks against unintentional rolling!
- Fitting tyres requires knowledge and special tools!
- Repairwork on tyres may only be conducted by trained staff and with suitable tools!

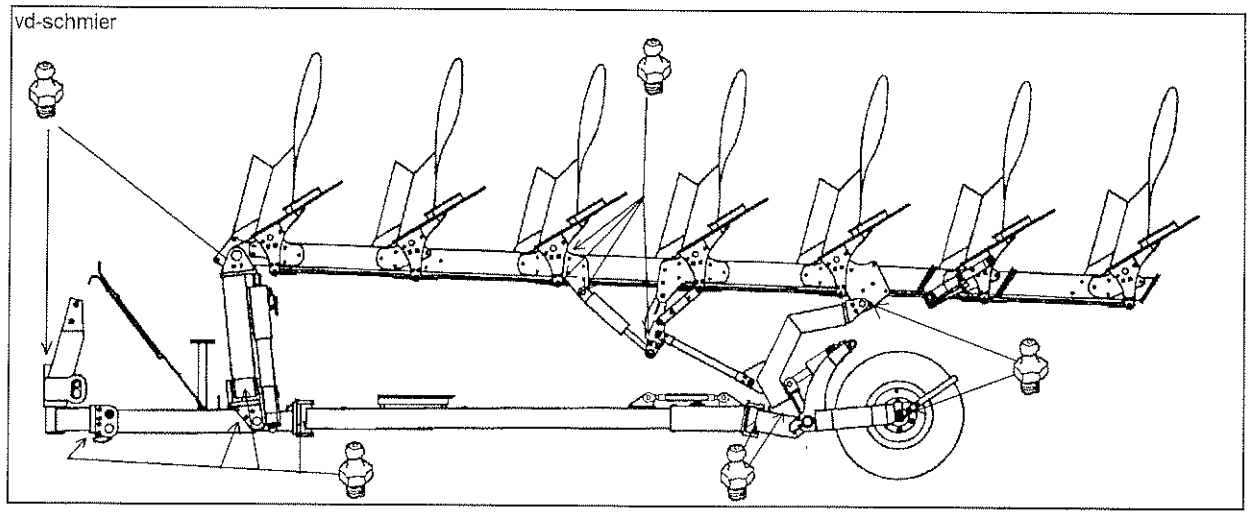
Check air pressure regularly and adhere to the advised air pressure!

18 MAINTENANCE

Check tightness of all bolts, nuts, setscrews and clamps (see Notes below). This should be carried out after:
The first 2 hours work with the new plough.
The first 2 days work with the new plough.
Every week throughout the working life of the plough.

NOTES:
All the bolts securing the furrow unit plates to the box section main frame and the depth wheel bracket bolts are tightened to a specific torque during manufacture and treated with 'Locktite' Torque = 230 Nm.





18.1 Landslides

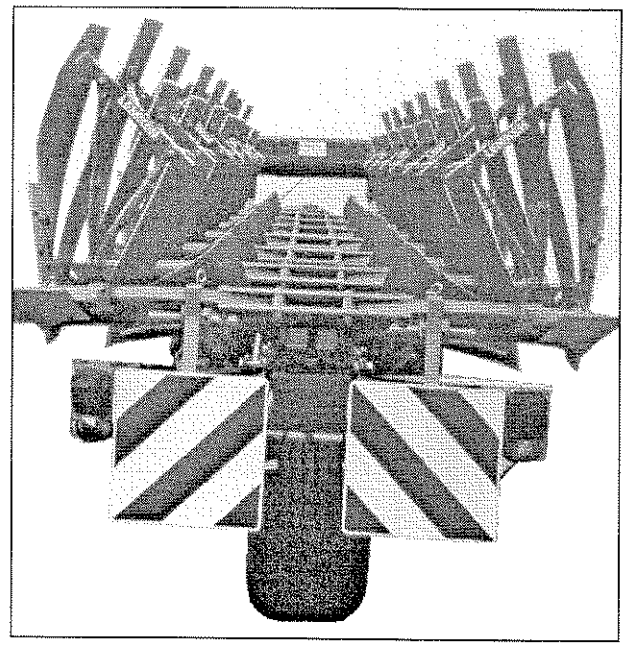
Ensure that these are kept in good condition. Worn landslides will affect the alignment, draft and performance of the plough. All landslides are common and can be reversed 4 ways to virtually quadruple normal life. Reverse end for end on the same frog then exchange between hands of body, then reverse end for end again.

18.2 Points and Wings

Good ploughing can only be achieved if these are kept in good condition. Worn or blunt parts will affect the penetration, alignment, draft and performance of the plough. A spare set of points and wings should always be available.

18.3 Lubrication and Protection

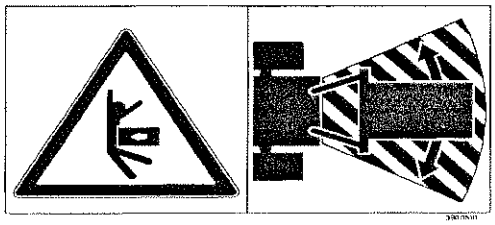
Lubricate all grease points DAILY with good quality grease. Also oil regularly hydraulic ram, pivot points and adjusting screws for example for the vertical adjustment.
On SMVX ploughs, lubricate the pins of the beams daily.
At the end of each day's work, brush oil onto all parts of the plough which are in contact with the soil. Use oil only which is environmentally friendly.
When laying up for longer periods, thoroughly clean the plough and remove all soil. Treat all parts of the plough which are in contact with the soil, also adjuster threads, with a good quality preservative oil. That oil should be environmentally friendly.



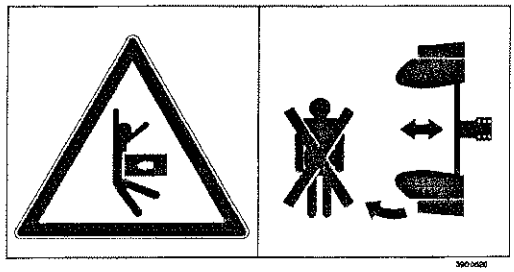
19 TRANSPORT ON PUBLIC ROADS

The general traffic rules have to be adhered, too!
The max. allowed transport speed is 25 miles per hour. On bad roads the speed must be reduced accordingly.

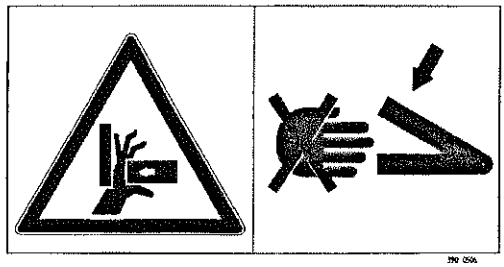
20 WARNING STICKERS



WARNING: KEEP WELL CLEAR OF THE WORKING AND SWINGING AREA OF THE IMPLEMENT!



WARNING: KEEP WELL CLEAR OF THE TURNING AND SWINGING AREA OF THE IMPLEMENT!



WARNING: PINCH POINT!

21 NOTES

It must be stated that these instructions apply only to the current design.

22 NOISE, AIRBORNE SOUND

The noise level of the SMV and SMVX ploughs does not exceed 70 dB (A) during work.

23 WEIGHTS

Type	Max. KW/HP	Working width (cm)	Weight (kg) without equipment
SMV 160 5 N 100	132/180	160-285	2.300
SMV 160 5+1 N 100	155/210	192-342	2.580
SMV 160 5+1+1 N 100	177/240	224-399	2.800
SMV 160 6 N 100	155/210	192-342	2.570
SMV 160 6+1 N 100	177/240	224-399	2.790
SMV 160 6+1+1 N 100	205/280	256-456	3.010
SMVX 160 5 N 100	132/180	160-285	2.600
SMVX 160 5+1 N 100	155/210	192-342	2.910
SMVX 160 6 N 100	155/210	192-342	2.940
SMVX 160 6+1 N 100	177/240	224-399	3.250

SMVX are approx. 50 kg heavier per pair of body than SMV ploughs.

- All ploughs with a Max. KW/HP rating of 96/130 and above must be fitted with Category III cross shafts (either 461 7923 Cat III/II or 461 7925 Cat III/III).

24 SAFETY TECHNICAL ADVICE

- Read and adhere to these „General Health- and Safety precautions" before putting the plough to work!
- The fitted warning- and advising plates give important hints for riskfree operation. Following these helps your own safety!
- When making use of public roads adhere to applicable road traffic regulations!
- The operator should familiarise him-/herself with all controls and their functions before staring work. During work could be too late!
- Ensure good visibility before driving off!
- Sitting or standing on the implement during operation or during transport is not permissible!
- Attach implements as advised!
- Special care should be taken when the implement is coupled to or uncoupled from the tractor!
- Adhere to the maximum permissible axle loads, total weights and transport measurements!
- The release ropes for quick coupler should hang freely and in the lowered position must not release the quick coupler by themselves!
- Never leave the drivers seat whilst in motion!
- Mount the implement as prescribed. Handling characteristics are influenced by mounted implements, trailers and ballast weights. 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!
- Never stay or allow anyone to stay within the operating area!
- Do not operate any hydraulic controls while anybody is in the operating area!
- Before leaving the tractor lower the machine to the ground. Apply the parking brake, stop the engine and remove the ignition key!
- Do not allow anybody between the tractor and implement if the parking brakes are not applied!
- The hydraulic system is under high pressure!
- Always release hydraulic pressure from both tractor and implement before coupling!
- To avoid wrong hydraulic connection sockets and probes should be marked. This helps to prevent contrary function and reduces the danger of accident!
- Regularly check hydraulic hoses and pipes and exchange if found defective. The replacement hoses and pipes must meet with the implement manufacturer's technical standards!
- When searching for leaks appropriate aids should be used because of the danger of injury!
- Liquids leaking under high pressure (Diesel fuel, hydraulic oil) can penetrate the skin and cause severe injury. When injured see a doctor immediately! Danger of infection!
- Before starting any hydraulic repair work, lower the plough to the ground and stop engine and release system pressure!

- Repair-, maintenance-, cleaning- and operations and adjustments should be carried out with tractor brakes applied and engine switched off. Remove ignition key!
- When conducting maintenance work on a lifted implement always place suitable supports underneath!
- Dispose of old oils, grease and filters as prescribed by law.
- Any spare parts fitted must in minimum meet with the implement manufacturer's fixed technical standards. This is ensured by using genuine spareparts!
- 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!
- When fitting the machine to the three-point linkage of the tractor bring all control levers into such a position that unintentional lifting or lowering is impossible!
- When fitting to the three-point linkage the mounting categories at the tractor and the implement must be compatible or must be made compatible!
- There is a danger of being crushed in the area of the three-point linkage. Be careful!
- When actuating the control levers for the three-point linkage from outside the tractor cab never step between tractor and implement!
- Ensure that sideways swing is minimised when the plough is in the transport position!
- When driving on public roads with a lifted machine the lifting control lever should be locked against unintentional lowering!
- In the event of any damage occurring to the plough its remedy should be completed before work continues!

EC Certificate of Conformity

conforming to EEC Directions 89/392

We, Lemken GmbH & Co. KG
Weseler Str. 5
D-46519 Alpen,

declare in sole responsibility, that the product

LEMKEN SMV 160; SMVX 160 _____

(Make, model) (No.)

to which this certificate applies, conforms to the basic safety and health requirements of EEC Directions 89/392.

To effect correct application of the safety and health requirements stated in the EEC Directions, the following standards and/or technical specifications were consulted:

EN 292 - 1 (11.91),
EN 292 - 2 (11.91).

(Title and/or number and date of issue of the other EEC Directions)

Wymondham,
(Place and date of issue)

(Name of authorized person)

G. Giesen
(Entwicklung und Konstruktion)

J. Terboven
(Techn. Dokumentation)