

# MEGAROLL



EN  
2130 and 2430  
Series no.: 100000-XXXXXX

MADE IN **D**ENMARK



# MEGAROLL

## Type 2130 and 2430 cm

Congratulations on your new MEGAROLL. For **safety reasons** and to achieve the best possible use out of your machine, you should read through these user instructions carefully **before using the machine**.

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### Your MEGAROLL information:

Type no.:	_____	Serial no.:	_____
Month of manufacture:	_____	Tare weight in kg:	_____

When enquiring about spare parts or servicing, we kindly ask that you always provide us with the type number and serial number. At the back of this manual you will find a list of spare parts, which will help give you an overview of the individual parts.

## EU DECLARATION OF CONFORMITY

**DALBO A/S**  
**DK-7183 Randbøl**  
**+4575883500**

Hereby declares that the aforementioned machine is manufactured in accordance with the stipulations of Directive 2006/42/EC, which replaces Directive 98/37/EC and the amending Directives 91/368/EEC, 93/44/EEC and 93/68/EEC on a mutual approach for member state legislation on machinery for health and safety requirements in connection with the construction and manufacture of machinery.



This machine complies with the safety requirements of the European safety guidelines.

DALBO A/S

Date: \_\_\_\_\_

Alessio Riulini, CEO

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## Safety



This symbol is used throughout the instruction manual each time advice is given concerning your safety, the safety of other users or the safe use of the machine. All safety instructions must be observed and made available to all users of the machine.



This symbol is used throughout the instruction manual when there are points that are especially important for the functionality as well as the lifetime of the machine.



These symbols indicate that protective equipment is required during the operation, maintenance and repairs of the machine.

- Different types of gloves may be required to be used, depending on task.
- Approved safety footwear must be worn at all times, when working at and around the machine.

### General

- Before commencing work, the user must be familiar with all parts of the machine.
- Safety markings have been placed on the machine, which contain important instructions about your own and the safety of others and the correct use of the machine.
- There must be no passengers on the machine, when in use or while being transported.
- When operating the MEGAROLL, ensure that there is no one within the machine's operating radius. The machine may only be operated from inside the tractor.
- When the MEGAROLL is folded up, ensure that the side sections are in the transport locks. Likewise, secure the control levers to prevent accidental operation.
- Before leaving the tractor, performing any adjustments, or carrying out any maintenance or repairs to the MEGAROLL, unfold the machine and lower it to the ground, or, secure it in transport mode, activate the tractor's parking break, turn off the engine and remove the ignition key so that the machine is secured against accidental starting.
- Remember to secure the supporting legs with the hydraulic ball valve as well as the bolts with linchpins.
- Never leave the driver's seat while the machine is operating.
- The driving speed must always be adjusted according to the prevailing conditions.
- Only use the machine if all safety devices have been installed. Defective safety devices must be replaced immediately.
- All work with and around the machine must be performed wearing approved safety footwear.
- Any work involving the use of oil and grease must be performed wearing gloves approved for the specific task.

## Hydraulics

- Prior to any repair work on the hydraulics unit, the machine must be lowered to the ground, the pressure must be removed from the unit, the engine must be switched off and the ignition key must be removed.
- Hydraulic connections must be cleaned thoroughly before connecting. When connecting the hydraulic hoses to the tractor's hydraulic system, ensure that the pressure has been removed from the hydraulic system.
- After repairs on the hydraulic system have been completed, all air must be completely removed from the system.
- Check the hydraulic hoses regularly for defects such as tears, cracks, wear or damage. Defective hoses must be replaced immediately.
- Avoid spilling oil on the ground. If this happens, it should be collected and sent for proper disposal.
- During repairs on the hydraulic system, where there is a risk of coming into contact with oil or grease. Suitably-approved gloves should be worn in order to reduce any potential allergic reaction to the hydraulic oil.
- If oil or grease comes into contact with the skin, the affected area should be cleaned thoroughly. Oil-soaked clothing should be changed immediately, as such contact can be harmful to the skin.
- Hydraulic oil that gushes out under high pressure can penetrate through the skin and cause serious injuries. Seek professional medical assistance immediately in the event of any injury, as oil entering the blood stream may lead to a serious case of blood poisoning.

## Installation

- There is a risk of crushing when carrying out installation. Anyone present must not be positioned between the machinery and the tractor or between the parts that are being connected.
- All bolts must be secured with linchpins, or by other means of securing, before further work can be performed.

## Maintenance and repair

- When undertaking any repair or maintenance work, the machine must be properly supported and unfolded, resting on the ground, the tractor and machine must have their brakes properly activated, the engine must be turned off and the ignition key removed.
- Tighten all screw fittings after a few hours of use. All screw fittings must be checked at regular intervals and tightened when necessary. Check cotter pins and bolts to avoid mechanical failure.
- Oil, grease and other material or objects that have been contaminated with oil should be disposed of in accordance with the applicable environmental legislation.

## Driving on roads

- When driving on public roads, all safety arrangements and warnings required by law must be installed and tested. The driver is responsible for the correct use of lights and compliance with traffic signs in accordance with the relevant country's applicable traffic laws.
- With regards to the dimensions of the machinery, the driver must enquire with the relevant traffic authorities to ensure that the MEGAROLL may be transported on public roads.
- When transporting the machine, care must be taken not to exceed the total weight and axle load of the tractor and that the load on the front axle is not less than 20 per cent of the complete road train's total weight. If such is the case, then a ballast weight at the front of the tractor must be used.

## Correct use

- Correct use of the machine also includes compliance with the manufacturer's operating, maintenance and repair instructions, as well as the exclusive use of original spare parts.
- The MEGAROLL may only be used, maintained and repaired by those who are familiar with the machine and who are aware of the dangers that can arise.
- The manufacturer is not liable for damage resulting from changes to the machine carried out without the manufacturer's prior permission. Furthermore, the manufacturer is not liable for any damage resulting from incorrect use. Responsibility for this rests solely with the user.
- No extra weight may be installed on the MEGAROLL.



## Technical Data

### MEGAROLL

Size (cm)	2130	2430
HP (recommended)	Min. 250–350	Min. 300–400
<b>Gross weight in kg:</b>		
Cambridge Snowflake	20750	21690
Sections (pieces)	9	9
<b>Hydraulic requirements:</b>		
3 DV	X	X
<b>Extra equipment</b>		
Air brakes	X	X

It is possible for a smaller tractor to pull the roller, if it is able to make firm contact with the ground and complies with the weight requirements for the steering wheels.

#### Wheels

- All models are equipped with: 600/50 x 22.5 wheels

#### Oil consumption

The table below indicates how much oil flows back to the tractor when the MEGAROLL is unfolded.

Model	Oil in litres
2130 / 2430	51




## How to Read this Instruction Manual

It is possible that the order in which the topics are listed may not appear as logical. Please refer to the table of contents, where the headings for the relevant topics can be found.

The main points contained in this instruction manual are divided into 13 key sections:

- Safety
- Technical Data
- How to Read this Instruction Manual
- Use
- Connecting and Disconnecting
- Settings
- Driving and Operating
- Troubleshooting
- Maintenance
- Replacements and Repairs
- Disposal
- Hydraulics Diagram
- Spare parts

The following symbols are used throughout this instruction manual for:

	<p>This symbol is used throughout the instruction manual each time advice is given concerning your safety, the safety of other users or the safe use of the machine. All safety instructions must be observed and made available to all users of the machine.</p>
	<p>This symbol is used throughout the instruction manual when there are points that are especially important for the functionality as well as the lifetime of the machine.</p>
	<p>These symbols indicate that protective equipment is required during the operation, maintenance and repairs of the machine.</p>

### Delivery

The MEGAROLL is delivered completely assembled via platform truck.

If the MEGAROLL needs to be lifted, the use of straps on the middle section and the tow bar is recommended, so that the machine is balanced.

## Use

The MEGAROLL is a heavy roller, specifically designed to follow the surface of the ground, in the best possible way, across the entire working width.

Fig. 1

The MEGAROLL is a nine-piece roller, whereby the sections move independently of each other. The machine is equipped with hydraulic weight distribution, which ensures even distribution across all the sections, even over slightly uneven terrain.



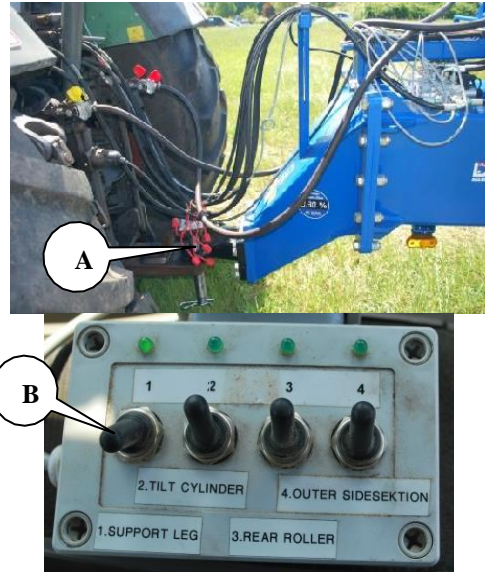
As a roller, the MEGAROLL is used after sowing to improve sprouting and to push down stones. In addition, the MEGAROLL can be used to break up a compacted surface both in fields of grain and grass.

## Connecting and Disconnecting

### Connecting

1. The MEGAROLL is connected to the tractor's fixed drawbar, whereby the towing eye (A) must be between the drawbar's forks.
2. The tow bar pin must be inserted and secured with a linchpin
3. The support leg must be raised by activating button 1 (B) and activating the hydraulic hose marked with white

Fig. 2



Remember to secure the pin with linchpins or similar.

### Hydraulics

By default, the MEGAROLL requires three double-acting hydraulic outlets, an air outlet for the air brakes, and a 3-pole power outlet.

The machine is equipped with electronic controls, making it possible to use the same hydraulic outlet for several things (hydraulic hose marked in white).

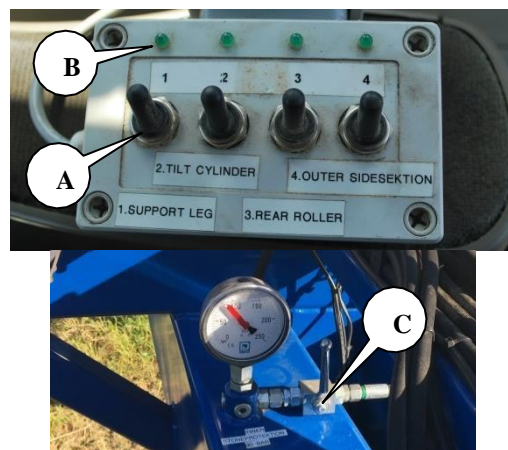
To utilise the electronic control, it must be connected to the power and then the relevant toggle switch (A) for the operation desired should be activated so that the relevant LED (B) is on. Only one switch must be activated at one time. This hydraulic outlet is also used to pressurise the inner stone protectors by opening the ball valve (C) and not activating any switches.

The switches control the following:

None: Stone protector 5 innermost sections.

- (No switches activated).
1. Hydraulic support leg.
  2. Tilt cylinders on the main frame.
  3. The raising and lowering of the middle roller.
  4. Folding the outermost side sections in and out.

Fig. 3



## Hose markings

Cylinder name	Colour	Outlet	Function
El. control box, no switches activated - Hydraulic stone protector 5 innermost sections	White none	Single-acting	Together with the accumulator, they are to dampen the pendle frames in order to prevent impact and breakage to the frames.
El. control box switch 1 - Hydraulic support leg	White 1	Double-acting	Raising/lowering of the tow bar on the roller upon connection.
El. control box switch 2 - Tilt cylinder	White 2	Double-acting	Tilts the middle frame to and from the working position
El. control box switch 3 - Middle roller section	White 3	Double-acting	Raising and lowering of the middle roller section
El. control box switch 4 - Outside sections	White 4	Double-acting	Folding the outside sections in/out
Folding/ weight distribution of the innermost side frames	Red	Double-acting	Folding the innermost side sections in/out to transfer the weight from the mid-section to the innermost side sections.
Weight distribution of outermost side frames	Yellow	Double-acting	Acting as weight distribution from the middle section to the outermost side sections.



Flow position for the outlets is required for the folding/weight distribution, marked with red and yellow.  
Ensure the hydraulic hoses have not been crushed.



It is **EXTREMELY IMPORTANT** that the hydraulic outlets for the hydraulic weight distribution for the innermost and outermost side sections are set to the flow position during work in fields (hoses marked with yellow and red)

## Disconnecting

Lower the support leg, remove the tow bar pin and disconnect the hydraulic hoses.



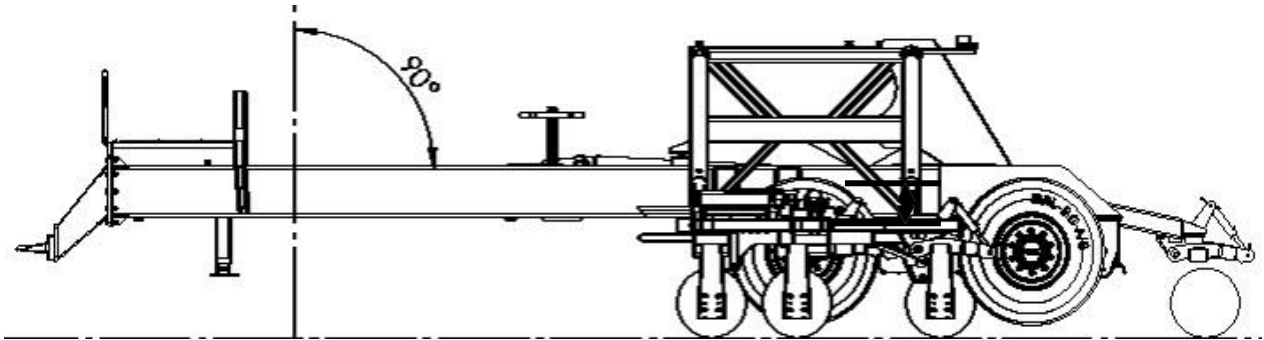
Remember to release the pressure from the connecting hoses to the hydraulic system before disconnecting the hoses.  
The MEGAROLL can either be in transport mode or unfolded in the working position when disconnected.

## Settings

The MEGAROLL is factory-set upon delivery, but fine tuning will always be necessary before usage. Different adjustment options make your MEGAROLL more versatile and allow for optimal use of the machine.

### Towing height adjustment

Fig. 4



In order to achieve a unified compression of the field, the main frame/tow bar and the middle section must be horizontal to the surface in the working position. Individual setting from tractor to tractor may be necessary.



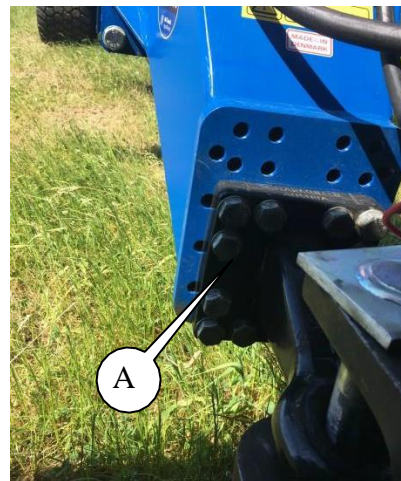
It is important to check the towing height each time a new tractor is hooked up to the roller.

Fig. 5

To achieve an optimal towing height, it is possible to adjust the tow bar up or down, so that the towing eye is placed correctly for your specific tractor.

One must pay attention to the tractor's wheel spring compression when mounting/dismounting the machine or when readjusting the height of the draw bar.

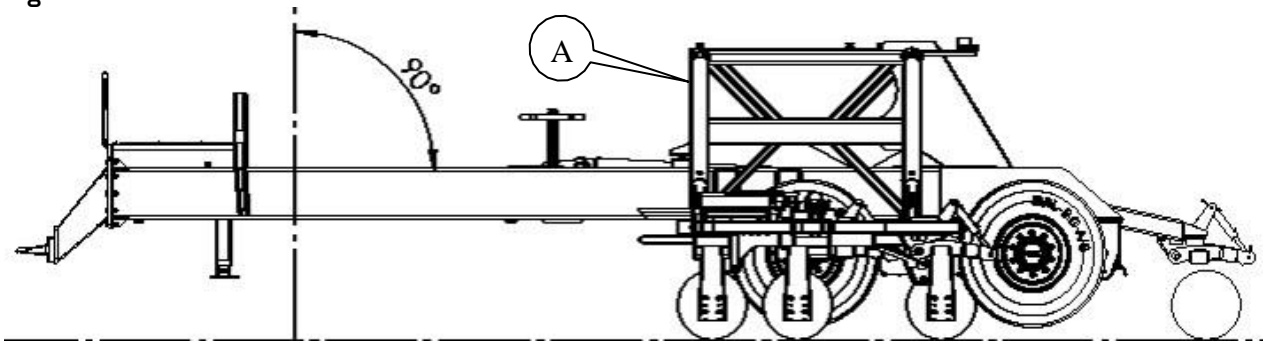
With the MEGAROLL resting on the support leg, the bolts (A) should be loosened and the tow bar should be adjusted to suit your tractor.



An incorrect towing height will result in an uneven compression of the field, as the roller will not put equal pressure on all sections.

## Adjustment of the central section

Fig. 6



With the MEGAROLL unfolded on an even surface (see "Driving and operating"), you must check that the middle frame (A) is horizontally aligned with the tow bar and the surface, in the direction of driving.

This must be performed after the tow bar has been adjusted and with the MEGAROLL connected to the tractor.

## Driving and Operating

Proper operation is important in order to get optimal performance from your MEGAROLL. This applies not only to working in the field but also in terms of safety. It is therefore crucial that you are thoroughly familiar with the safety precautions relating to the machine.

### Unfolding and folding

Unfolding and folding are conducted with the tractor parked.



It is **EXTREMELY IMPORTANT** to ensure that there is no one within or close to the machine's working radius before unfolding or folding is performed, in order to prevent personal injury.



It is important that the roller is unfolded on a horizontal surface, or with little incline, to prevent tilting, unnecessary strain on the machine or damage to the machine during the unfolding and folding process.

### Unfolding

1. Lift the side sections up from the transport locks (A) with the tilt cylinder (hose marked with white → activated by switch 2).

Fig. 7



2. Activate the cylinders for unfolding and folding of the innermost side frames and unfold the side sections (hose marked with red).

Fig. 8





3. Activate the tilt cylinder and lower the roller to the ground (hose marked with white → activated by switch 2).

Fig. 9



4. Activate the cylinders for unfolding and folding of the outermost side frames and unfold the side sections completely (hose marked with white → activated by switch 4).

Fig. 10



5. Activate the cylinder for lowering the rear/middle roller section and lower the section to the ground (hose marked with white → activated by switch 3).

Fig. 11



6. Activate the cylinders for the hydraulic weight distribution and bring the pressure up to the prescribed pressure for the relevant section, after which set the hydraulic handle for the relevant section to the flow position (hoses marked with red and yellow (see "Adjustment of hydraulic weight distribution")). At the same time, you will need to check that the pressure for the hydraulic stone protection, for the five middle sections, is correctly adjusted (see "Adjustment of the hydraulic weight distribution on pendle frames").

Fig. 12



Before rolling begins, the weight distribution must be adjusted correctly (see "Adjustment of the hydraulic weight distribution").

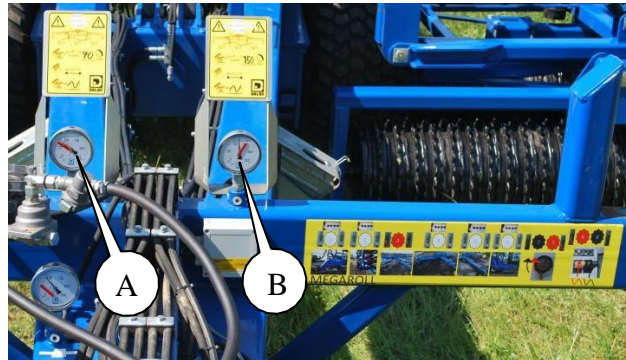
## Folding



It is important to raise the rear/middle section before folding of side frames is started, in order not to overload the section and its cylinder.

1. Activate the cylinders for the hydraulic weight distribution and release the pressure so the manometers (A and B) show 0, or close to it (hoses marked with red and yellow).

Fig. 13



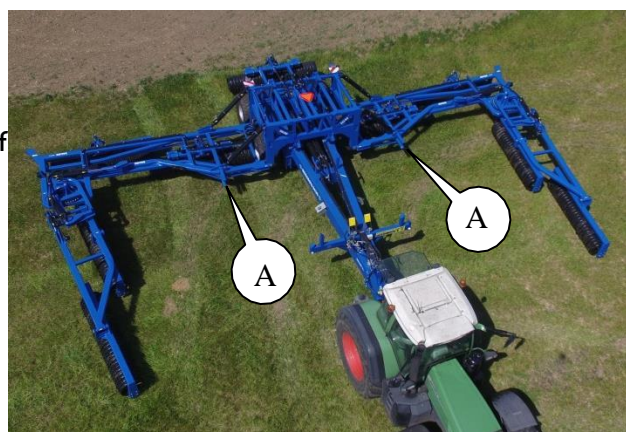
2. Activate the cylinder for the rear/middle roller section and raise the section from the ground (hose marked with white → activated by switch 3).

Fig. 14



Fig. 15

3. Activate the cylinders for unfolding and folding of the outermost side frames and fold the side sections in (hose marked with white → activated by switch 4). Check that the sections are fully inserted into the transport lock (A).



4. Activate the tilt cylinder and raise the roller from the ground (hose marked with white → activated by switch 2).

Fig. 16



5. Activate the cylinders for unfolding and folding of the innermost side frames and fold the side sections in (hose marked with red).

Fig. 17



6. Lower the side sections into the transport lock (A) with the tilt cylinder (hose marked with white → activated by switch 2)  
Check that the side sections are fully inserted into the transport lock.

Fig. 18



## Adjustment of the hydraulic suspension of the pendle frames

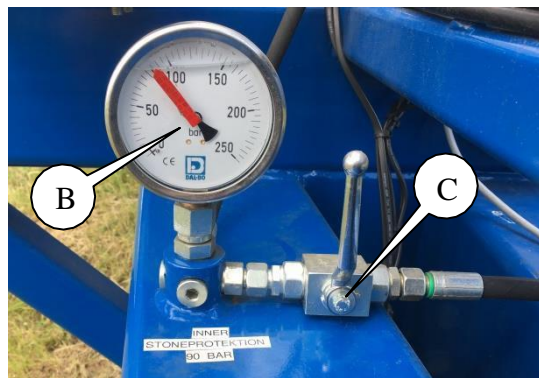
The hydraulic suspension of the five middle pendle frames is designed to relieve rings and frames from hard impacts and loads, which might occur during driving in fields from stones and undulations.

1. Adjustment of the hydraulic suspension must be performed with the roller unfolded and resting on the surface, and before the hydraulic weight distribution is pressurised (this can also be performed with the machine in the transport position).
2. Cylinder (A) is mounted on the five middle pendle frames and acts as a shock absorber to counter impacts from rocks and other heavy impacts during work.
3. Connect the manometer (B) to the hydraulic stone protection and this must be set to a pressure of approx. 90 bar (the pressure may need to be adjusted depending on driving conditions).
4. This is done by opening the ball valve (C) and activating the hose marked with white, without any switch being activated (white hose → no buttons activated).
5. The ball valve must be closed again when the desired pressure is achieved.

Fig. 20



Fig. 21



It may be necessary to readjust the pressure for the hydraulic weight distribution. Likewise, it may be necessary to drive with more or less pressure, depending upon the soil conditions.



It is important to close the ball valve again when the desired pressure is achieved in order not to unintentionally adjust the pressure while using other functions and thereby risk damaging the machine.

### Too much pressure

1. The pressure is too high if the cylinder will not move. The frames may be overloaded.
2. Reduce the pressure until the cylinder starts moving again.

### Too little pressure

1. The pressure is too low if the cylinder is unable to extend to its full stroke.
2. Adjust the pressure until all five cylinders for the suspension are, at least, extended again.



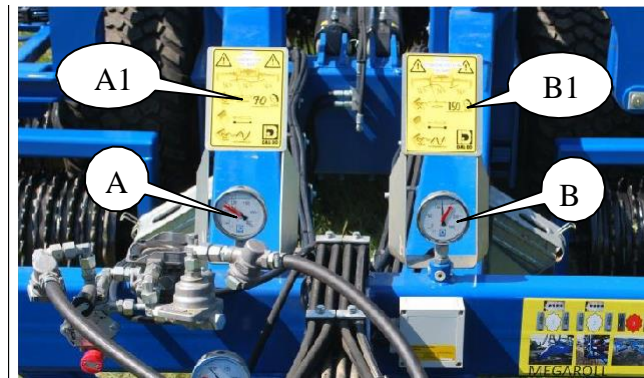
It is recommended to operate with a working pressure of 90 bar!  
But, driving should always be done according to conditions!

## Adjustment of the hydraulic weight transfer

The hydraulic weight transfer distributes the weight evenly across all of the nine sections of the roller. This also applies to the five middle sections, where hydraulic suspension is mounted.

- After the roller is unfolded, and resting on the ground in the working position, release the out of the unfolding and folding cylinders (hose marked with red), after which activate the operating levers for the unfolding and folding cylinders, as well as the cylinder for the outermost weight distribution in the opposite direction (hose marked with yellow).

Fig. 19



- After a brief moment, the pressure will appear on one of the manometers (A and B). Pressure should be increased to the pressure level indicated on the information plates (A1 and B1). The pressure for manometer A should be 90 bar, or what is stated on plate A1, and the pressure for manometer B should be 150 bar, or what is stated on plate B1. This means that some of the mid-section's weight is transferred to the side sections.
3. The operating levers for the hoses marked with red and yellow are thereafter set to flow position. The float position is required to achieve a hydraulic weight transfer in which the sections are individually movable.
  4. It may be necessary to adjust the pressure for the hydraulic weight transfer. Likewise, it may be necessary to drive with less or more pressure, depending upon the soil conditions.

### Too much pressure

1. The pressure on the innermost or the outermost side sections will be too high. The rings will be pressed into the soil too much and will leave clear tracks.
2. The mid-section will pack too little, which will be seen as the soil under the mid-section will be higher and not as compressed as the soil under the side sections. In addition, tractor tracks will be more visible.

### Too little pressure

1. The pressure on the innermost and the outermost side sections will not be high enough to provide a uniform compression.
2. The mid-section will pack too much, which will be seen as the soil under the mid-section is more compressed than the soil under the side sections.



For the durability of the MEGAROLL and the result in the field, it is **EXTREMELY IMPORTANT** that the hydraulic hoses marked with red and yellow are set to the flow position during work in the field.

The pressure does not disappear from the manometer/system, even if the lever is set to the flow position.



Failure to put the MEGAROLL in the flow position is considered improper use and could, in a worst-case scenario, cause a break in the frame.



All accumulators in the machine **must, at least once a year, be checked for leaks, and that the preloading pressure is correctly adjusted.**

Contact an authorised DALBO dealer for further information.

## Driving speed

It is recommended to drive the machine at 6–10 km/h, but driving should always be carried out according to prevailing conditions.

If the speed is increased, wear will also increase, especially under dry conditions. There is also a risk of damaging the rings by driving at excessively high speeds under adverse conditions.

## Troubleshooting

Problem	Cause	Trouble-shooting
The central section is pressing too much	- Too little pressure is being transferred to the side sections	- Activate the hydraulic lever for unfolding/folding in such a way that it creates more pressure on the side sections (see "Driving and operating").
	- The drawbar is too high	- Adjust the drawbar and mid-section (see "Setting of the machine")
	- The mid-section is not horizontal	- Adjust the drawbar and mid-section (see "Setting of the machine")
The outer part of the side sections are pressing too much	- Too little pressure on the mid-section	- Activate the hydraulic lever for unfolding/folding in such a way that it creates more pressure on the central section (see "Driving and operating").
	- The drawbar is too low	- Adjust the drawbar and mid-section (see "Setting of the machine")
	- The mid-section is not horizontal	- Adjust the drawbar and mid-section (see "Setting of the machine")
The pressure drops on the manometer	- The operation lever is not in the flow position	- Adjust the pressure on the weight distribution and put the operation lever into the flow position (see "Adjustment of the hydraulic weight distribution")
	- Pilot controlled non-return valve is defective - Cylinder leaking (gaskets)	- Set the weight distribution to 60–100 bar and put the operation lever into the flow position. Then keep the machine parked for 1/2 hour. If the pressure has fallen, it is possible that the pilot-controlled non-return valve is defective or there may be dirt in the valve (rinse the valve and clean the parts or replace it). - Check the cylinder for leaks following the above-mentioned test if the cylinder is leaking. The gaskets must be replaced.
The side sections are not following the terrain	- The weight transfer hydraulic system is not in the flow position	- Put the hydraulic weight distribution system into the flow position (see "Adjustment of the hydraulic weight distribution")
Hydraulic el. control is not working	- Lack of power to the box or the valve block	- Check that the power plug is connected - Check the cable for damage or breakage. Replace damaged cables. - Check the tractor's fuses.
	- Defective valve	- Defective valve block or dirt in the valve. Clean or replace it.

## Maintenance

Good maintenance ensures a long life for the MEGAROLL and therefore optimal use of the machine. Grease nipples have therefore been installed in places where the wear is greatest.



All screw connections must be tightened after the first day of work. Cotter pins and bolts should be checked to avoid mechanical failure. The hydraulic system should also be checked to ensure it is air-tight.

### Lubrication



During lubrication of the machine, gloves that are approved for pressurised grease must be used.

It is important that the machine is lubricated at the specified intervals to prevent unnecessary wear and tear on moving parts.

In the lubrication table below, where it is written, for example, "3 x 2", this means that there are three grease nipples on each side of the machine. Thus, there are six grease nipples in total at this location.

The lubrication points are specified on the following 2 pages.

Lubrication points	Number of grease nipples	Lubrication interval [hours]	Images
Outermost side section	3 x 2	8	A
Hydraulic outermost side section, hydraulic weight distribution and slewing ring (fifth wheel)	11 x 2	8	B
Pendle arms on the middle side section and hydraulic stone protection for these	8 x 2	8	C
Tilt cylinders	4	8	D
Break hubs and bogie suspension	7 x 2	8	E
Wheel bearings	2	200	F
Rear roller suspension and mid-frame assembly	8	8	G
Unfolding cylinders and suspension of side frames	6 x 2	8	H



All lubrication points should be greased at least once a year.



Fig 22

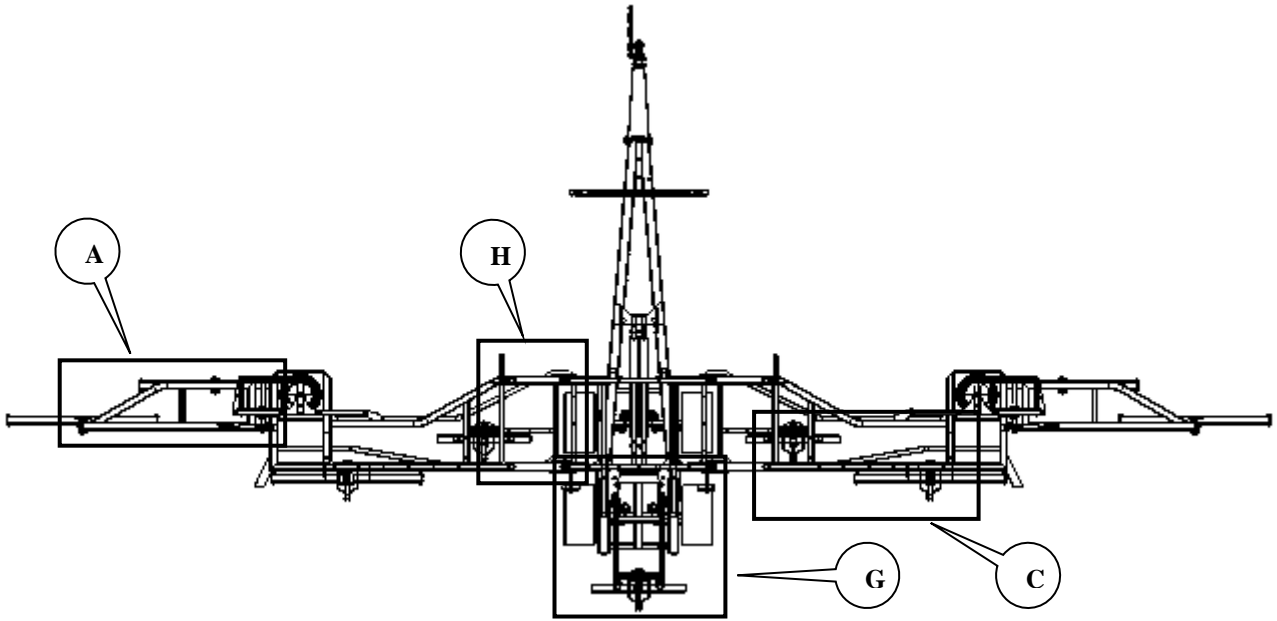


Fig 23

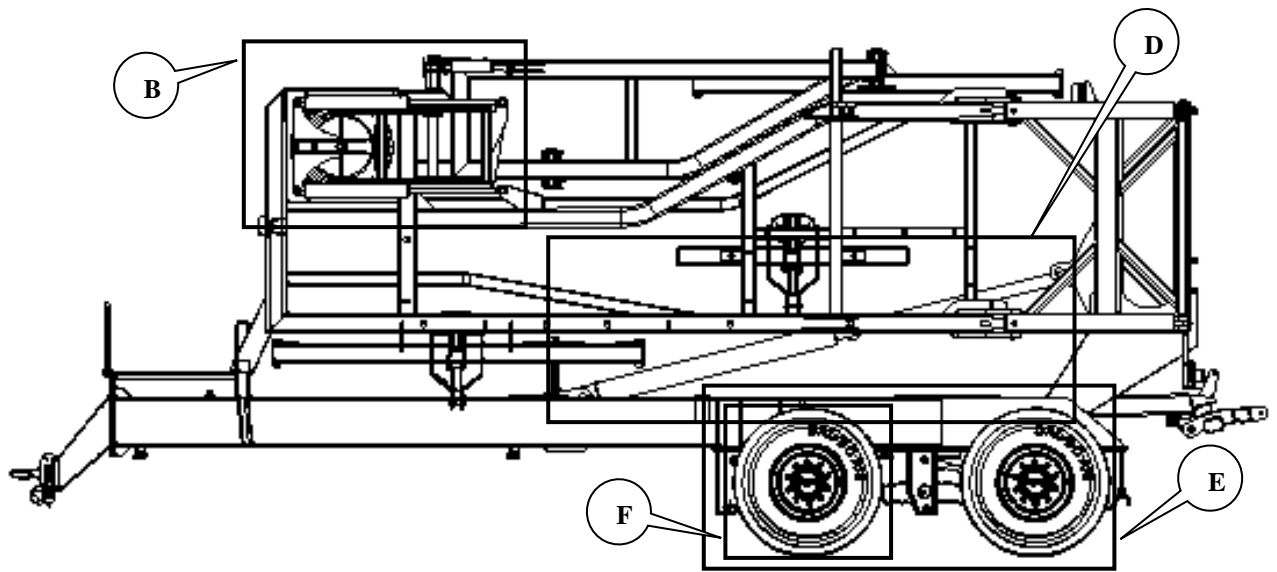
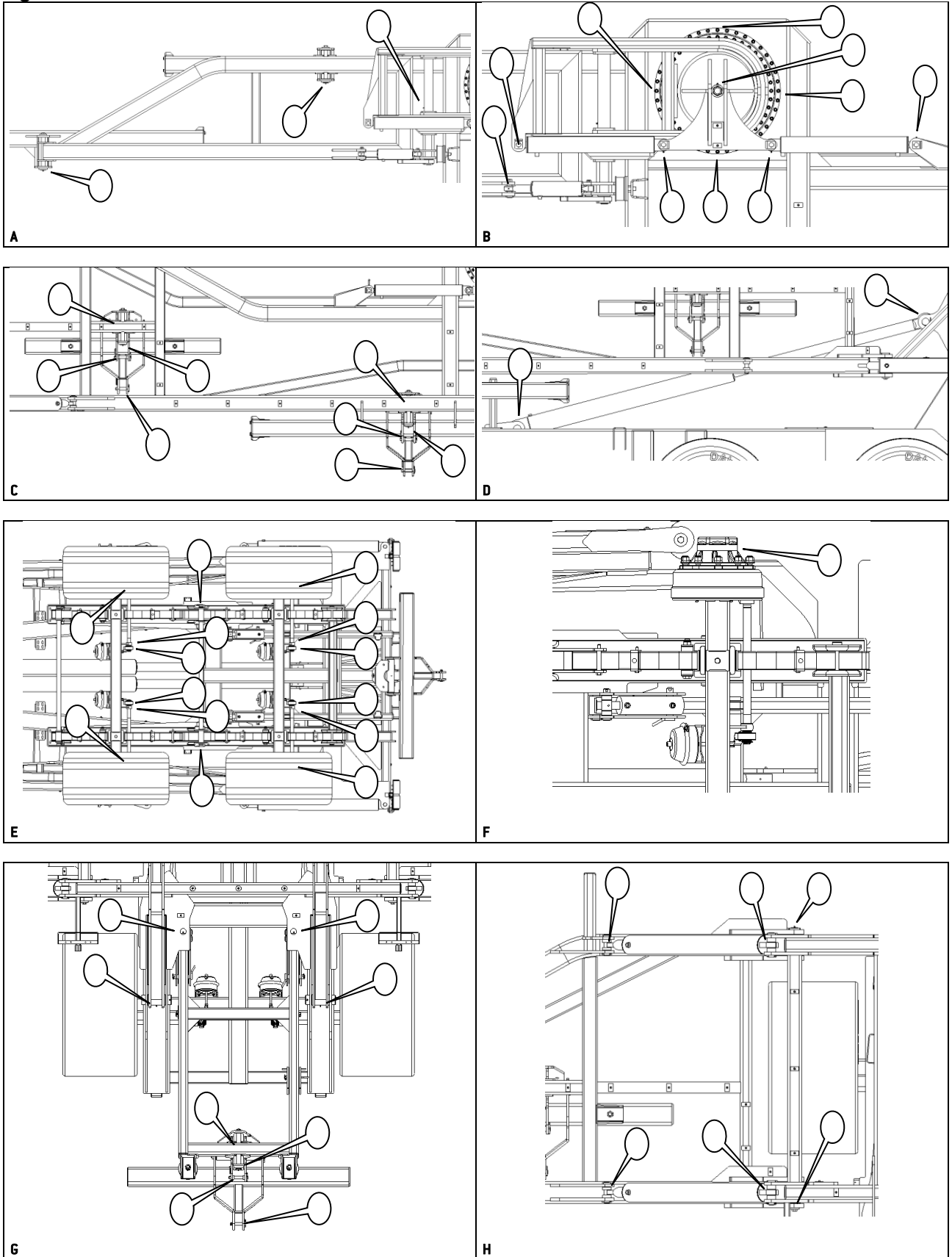
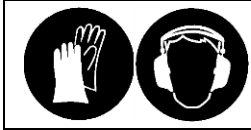


Fig. 24



## Adjustments

### Adjustment of the rings



During adjustment of the rings, gloves and hearing protection must be used

After the first season, the rings will have worked themselves slightly loose on the shaft. By moving the stop rings on the shaft, the rings can be clamped together to remove any slack in the rings. Adjustment of the three middle sections is performed differently than the remaining roller sections, as these are suspended differently.

Adjustment of the rings is best completed with the MEGAROLL folded.

#### *Adjustment of rings on the three outermost sections.*

Fig. 25

1. Loosen the bolts (A) and push the rings together.
2. Tighten and loosen the bolts in the stop rings in the same place on the axle a few times, so that the bolts are better attached to the axle.

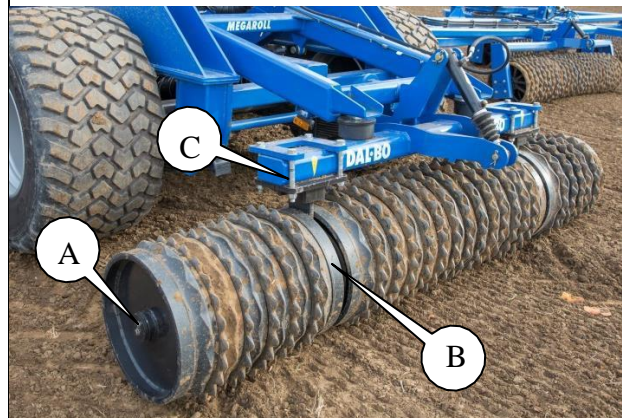


#### *Adjustment of rings on the three middle sections*

There are two different ways to shim the rings on the three innermost sections.

1. Loosen the bolts (A) and remove the end disc.
2. Shim up the middle rings in one of the 2 following ways
  - a. Loosen the set screw in the bearing (B), so that the bearing is loose on the axle, and loosen the bolts (C) for the suspension. Press all the rings together and retighten the bearing and bolts.
  - b. It is possible to purchase two small split washers to shim the rings up between the bearings, without removing the bearing. Press these directly around the axle after the rings have been pressed together.
3. At the end disc, the necessary washers must be added after the rings have been pressed together and refit the end disc again. Secure the screws with Loctite.

Fig. 26



## Wheels



When changing the wheels, gloves that are approved for pressurised grease must be used, if exposure to such is likely.

The wheel bearing must be lubricated and adjusted once a year. Also, ensure that tyres are inflated to the correct pressure (see tyres). Adjustment and lubrication of wheel bearings

1. Remove the hub cap.
2. Remove the cotter pin.
3. Tighten the castellated nut with a 1/6 turn, so that the hole is aligned with the shaft. Spin the wheel around; there should be no resistance. Only a little bit of slack should be felt in the hub housing when the wheel is moved from side to side. If there is too much slack, repeat the process.
4. Install the cotter pin.
5. Fill the hub cap <sup>3</sup>/<sub>4</sub> with grease and refit

## Hydraulics



All hydraulic hoses must be checked for wear and tear or damage. Ensure the hoses are not subjected to any crushing.



If left parked for longer periods of time, the protruding plunger rods should be greased with oil or pressure grease, in order to prevent the build-up of rust on the plunger rods. Remember to remove the oil or grease again before use.

## Replacements and Repairs



Safety is crucial with regard to all repair work on the MEGAROLL. The following points must therefore be observed at all times, as well as the safety points previously mentioned at the beginning of this instruction manual.



All maintenance and repair work on the MEGAROLL must be conducted only when the machine is lowered to the ground or, is set in transport mode, the tractor's break is engaged, the engine is switched off and the ignition key is removed, so that the machine cannot move or start accidentally



For all repair work on the hydraulics, always pay close attention to safety. Before any work is initiated, release the pressure in the hydraulic system and, if necessary, support the part.



Once repair work on the hydraulic system is complete, the system must always be vented, before use to prevent mechanical failure and personal injury.

### Hydraulics



When replacing or repairing a cylinder, protective eyewear and gloves, which are approved for handling oil, must be used

### Replacement of cylinders

Replacement of cylinders on the MEGAROLL must be performed with the machine resting in the transport locks or unfolded and lowered to the ground. Which way is preferable may vary, depending on the cylinder to be replaced.

When replacing cylinders on the MEGAROLL, the following procedures must be observed:

1. The pressure is to be released from the cylinders.
  - For cylinders with a manometer in the circuit, you must ensure that no pressure is displayed on the manometer
2. Support/retain the cylinder
  - It is important to ensure that support/straps do not slip off, should they come into contact with oil.
3. Remove the hoses.
  - One must always have a container ready to collect any spilt oil, where the disconnection of hoses is taking place.
4. Remove cotter pins and pins to free the cylinder.
5. Install the new or repaired cylinder.
  - Remember to secure the pins in the pin stop and secure the pins with cotter pins.

6. Refit the hoses.
  - After fitting, ensure that there is no risk of tearing or clamping of the the hoses.
7. Before using the machine again, the replaced cylinder(s) must be vented by moving them from outer position to outer position.



**For cylinders with a manometer in the circuit, you must ensure that no pressure is displayed on the manometer before the replacement is carried out.**



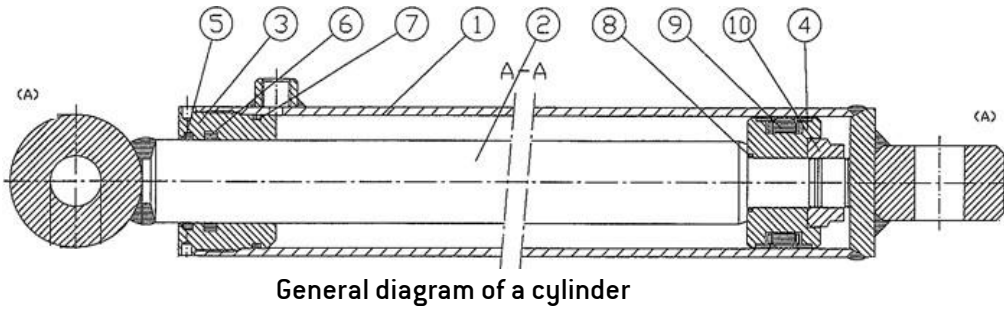
**After mounting, activate the replaced cylinder(s) until a small amount of movement can be felt in the cylinder(s). Activate the cylinder(s) in the opposite way until the cylinders are back in the starting position. Move the cylinders a few times in this way. Then move the cylinders until they reach the outer positions, in order to vent the system.**



**There must never be anyone present within the machines operating radius.**

## Replacement of the gaskets

Fig. 27



1. To dismount a cylinder, see "Replacement of cylinders".
2. Empty the cylinder of oil by moving the piston back and forth carefully.
3. Move the piston into the middle position, then unscrew the end cap (pos. 3) from the cylinder tube (pos. 1). A special tool must be used to remove the cap. If the cap is stuck, it may help to warm up the front of the cap a little. When the cap is unscrewed from the cylinder tube, pull the piston towards the cap. The piston rod can then be removed from the cylinder tube.
4. Disassemble the lock nut (pos. 10) holding the sleeve (pos. 4).
  - For some cylinder types, the piston rod (pos.2) is bolted directly in the sleeve (pos. 4), so there is no lock nut.
5. Remove the sleeve (pos. 4) from the piston rod (pos. 2).
6. Remove the cap (pos. 3) from the piston rod (pos. 2).
7. Disassemble the seals and sleeves in the cap (pos. 5+6+7+8+9).
8. All parts are to be checked for chips, burrs etc. Check for rust around the scrapper ring (pos. 5) in the cap. If this is the case, then remove it.

### Installation

1. Fit new seals (pos. 5 + 6 + 7 + 8 + 9) in the cap and the sleeve. Ensure that you turn the sleeves correctly.
2. The thread on the cap (pos. 3) and the cylinder casing must be lubricated with oil.
3. Install the cap (pos. 3) on the piston rod.
4. Install the sleeve (pos. 4), screw the lock nut and **secure it with Loctite**. Ensure the thread is totally clean and free from oil and other impurities before using Loctite. Do not refill the cylinder with oil within 12 hours after using Loctite.
5. Lubricate the outermost seal on the part of the sleeve in contact with the cylinder tube and the cylinder tube internally with oil and push the piston into the central position.
6. Install the cap on the cylinder tube and tighten.
7. Mount the cylinder (see "Replacement of cylinders")



**Do not refill the cylinder with oil within 12 hours after using Loctite.**

## Uninstalling/installing of wheels

1. Dismounting and mounting of wheels must be carried out with the MEGAROLL folded.
2. Lift and support the wheel to be replaced from the ground, so there is no risk of the bogie falling down when the wheel is removed
3. Remove the wheel nuts to replace the wheel.
4. After installing the new wheel, screw on the nuts and tighten with a "firm hand". Next, lower the wheels so that they are touching the ground and tighten the nuts to 300 Nm.



Wheel replacement must only be conducted when the machine is secured in the transport position, the tractor's break is engaged, the engine is switched off and the ignition key is removed, so that the machine cannot move or start accidentally.

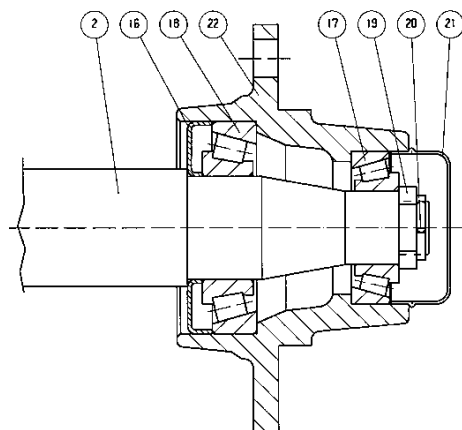


It is important that the wheel nuts and wheel surfaces are clean otherwise the wheel nuts may loosen.

## Replacing the bearings

Fig. 28

FL55-6



1. Remove the hub cap (pos. 21).
2. Disassemble the cotter (pos. 20).
3. Remove the castellated nuts (pos. 19).
4. The hub shell can now be removed from the axle.
5. Remove the bearing (pos. 17+18).
6. Remove the sealant ring (pos.19).

## Installation

1. Install the outer rings of the bearings (pos. 17 + 18) in the hub casing (pos. 22).
2. Install the sealant ring (pos. 16).
3. Install the inner bearing ring (pos. 18) on the shaft (pos. 2) and install the shaft in the hub casing.
4. Install the inner bearing ring (pos. 17) on the shaft (pos. 2).
5. Screw the castellated nut onto the shaft (pos. 2), while rotating the hub casing (pos. 22). Tighten the castellated nut to the slowly rotating hub casing until it has difficulty in rotating. Then loosen the castellated nut a quarter turn or until the hub casing rotates easily.
6. Install the splitter (pos. 20).
7. Fill the hub cap (pos. 21) halfway with ball bearing grease and install the hub cap.



## Dismantling the roller shafts

Carry out the repair on a flat surface with the MEGAROLL connected to a tractor and unfolded with the rings resting on the ground. It would be a great help to have a crane or something similar available for both the disassembly and installation.



If a crane is not available, the same shaft on both side sections should be removed to prevent the roller from overturning.

### Replacement of the shafts on the three outermost side sections on either side

1. Fold the machine out into the working position.
2. Loosen the bolts (A).
3. Attach the square pipe to the side section and tighten the strap lightly until the bolts (A) are loose and can be removed.
4. Activate the tilt cylinder and the tilt machine up and into the transport locks.
5. The shaft with roller rings can now be rolled away from the roller.
6. Assembly is carried out in reverse order.

Fig. 29

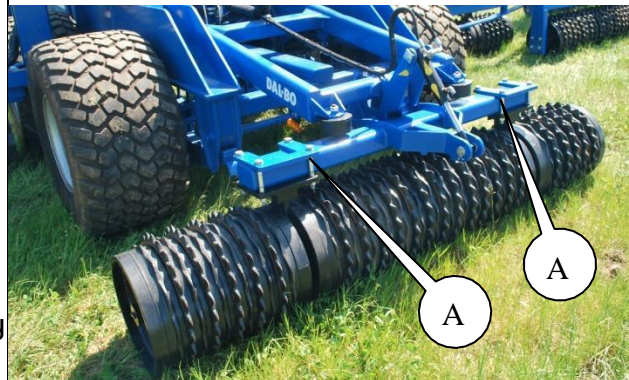


If a crane is not available, the MEGAROLL's weight distribution can be gently activated and put into a position so that the bolts are loose and can be removed.

### Replacement of shafts on the three middle sections

1. Loosen the bolts (A).
2. Activate the lift cylinder for the middle/rear section and tilt until the bolts are loose. Do the same for the innermost side section (the tilt cylinder), if these are the ones to be replaced.
3. Remove the bolts.
4. Lift the rear section so the shaft is free. Activate the tilt cylinder for the innermost sections and tilt the machine up and into the transport locks.
5. The shaft with roller rings can now be rolled away from the roller.
6. Mounting is carried out in reverse order.

Fig. 30



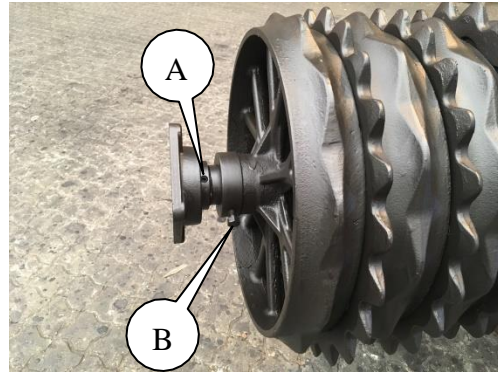
The hydraulic system must not be activated while there is anyone within the machine's operating radius.

## Replacement of shaft, bearing or roller rings

### Three outermost side sections on either side

1. Loosen the set screws in the bearings and pull off the bearings (A) from the shaft.
2. Loosen the bolts in the stop rings and pull off the stop rings (B).
3. The roller rings can now be pulled off the shaft.
4. Mounting is carried out in reverse order.
5. Apply Loctite to the set screws in the bearings.

Fig. 31



Tighten and loosen the bolts in the stop rings a few times, to ensure that they attached to the shaft securely

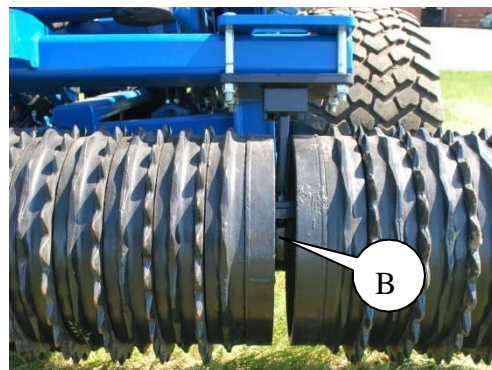


Be aware that the roller rings are to be mounted next to each other.

### Three middle sections

1. Loosen the bolts at the ends (A) and remove the washer.
2. The outer rings can now be replaced or removed if you wish to get to the bearing.
3. Loosen the set screws in the bearings (B) and pull the bearings off the shaft.
4. The roller rings can now be pulled off the shaft.
5. Mounting is carried out in reverse order.
6. Apply Loctite to the set screws in the bearings and to the bolts (A) at the end of the shaft.

Fig. 32



## Disposal



The MEGAROLL must be unfolded. It is crucial to release the pressure from **all** the cylinders.



With disassembly/dismounting, attention should be directed towards the weight of the part concerned. It is therefore **important** that this part is supported or lifted up, so there is no risk of collapse.

Hydraulic hoses and cylinders must be disconnected, and any residual oil emptied out. The oil must be collected to avoid pollution. Oil and hoses must be sent for disposal.

All iron in the machinery can be sent for recycling.



During work on disposal of the machine, protective footwear, gloves, hearing protection and protective eyewear must be used.

# Hydraulics Diagram

## Spare Parts

