



COULTER SB USER MANUAL



P. de Heus en Zonen Greup B.V.
Stougjesdijk 153
3271 KB Mijnsheerenland
The Netherlands
Tel: +31 (0) 18 66 12 333
E-mail: info@boxeragri.nl



ENG | ENGLISH

TRANSLATION OF THE ORIGINAL MANUAL



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1. SAFETY INSTRUCTIONS

1.1 General safety instructions

The user of the coultter is responsible for his or her own safety and that of bystanders in the area around this machine. It is therefore essential that the user has sufficient knowledge about the use of the machine and how to couple it to the tractor.

The figures and descriptions in this manual must be provided to both users and maintenance staff and the general instructions must be observed with regard to the use and maintenance of the machine. If there is any doubt or lack of clarity, the dealer can always be consulted.

This machine may only be used for the purpose for which it has been designed and tested. Moreover, the machine may only be used with a suitable tractor and be powered by a suitable power take-off drive on the tractor. Any other use is strictly prohibited.

The machine has been built in accordance with the applicable safety regulations, which is why the manufacturer cannot be held liable for damage that arises from:

- The use of the machine if one or more of the covers/guards is missing.
- Incorrect use of the machine.
- The use of the machine by untrained people or by people who have not been give authorized access.
- Incorrect coupling of the machine to the tractor.
- Defective or insufficient maintenance.
- Unauthorized changes or activities performed on the machine.
- Use of non-original spare parts or parts not specific to the machine.
- Non-compliance with all or a part of the instructions in this manual.
- Extraordinary weather conditions.

Workplace

When working with the machine, the operator must sit on the seat of the tractor: any other location is not allowed ever.

Bystanders may not come too close to the machine when it is being used. It is possible for objects to be ejected from the machine. The operator of the machine must always remain approximately 100 m (328 feet) away from bystanders.

Only leave the driver's seat when:

- The power take-off shaft has been switched off.
- The engine has been switched off.
- Rotating parts have come to a standstill.

Noise

The noise level is such that the level to which users are exposed on a daily basis is less than 70 dBA. This measurement was made using a sound level meter at a distance of approximately 1.6 m (5.25 feet) from the machine and at a height of 2 m (6.56 feet). The machine has been adjusted to an unloaded work area and has a rotational speed of 540 rpm of the power take-off shaft on ground on which grass grows.

Vibrations

During normal operation, the machine transmits minimum vibrations to the tractor. These vibrations are lower than 0.5 m/s² to 2.5 m/s² for the operator.

Clothing

- Do not wear jewelry or loose clothing (such as ties, scarves or open clothing) that could touch moving parts of the machine.
- Always use safety shoes, safety goggles and gloves.
- Wear a jacket with high-visibility sections when it is dark (e.g. a high-visibility jacket).
- Never use the machine under the influence of alcohol, illegal drugs or other stimulants that may slow down your reflexes.

1.2 Safety instructions before use

The Boxer Coulter SB can be used for different activities:

- Preparation before sowing.
- Burying mowed material.
- Loosening hard earth.

The coulter is not suitable for working on stony ground. Stony ground may damage the protective covers and guards of the machine. Such use may make the warranty null and void.



WARNING

If there are stones in the soil, they must be carefully removed. The rotor of the machine may become stuck and therefore be damaged.

2. INSTALLING THE POWER TAKE-OFF SHAFT

If the power take-off shaft is too long, it must be shortened as follows:

- Position the machine at a minimum distance from the tractor and switch the tractor off completely.
- Check the position and, if required, adjust the bolts.
- Separate the two halves of the shaft.
- Keep the two halves next to each other so that they are parallel.
- Use a marker to indicate the location where the two halves must be shortened 25 mm from the beginning of each half as shown below in Figure 1.

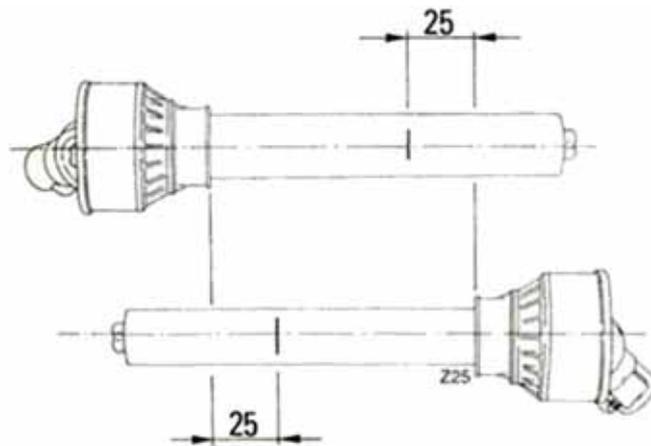


Figure 1

- When sawing part 1 (Figure 2), use the length as shown above.

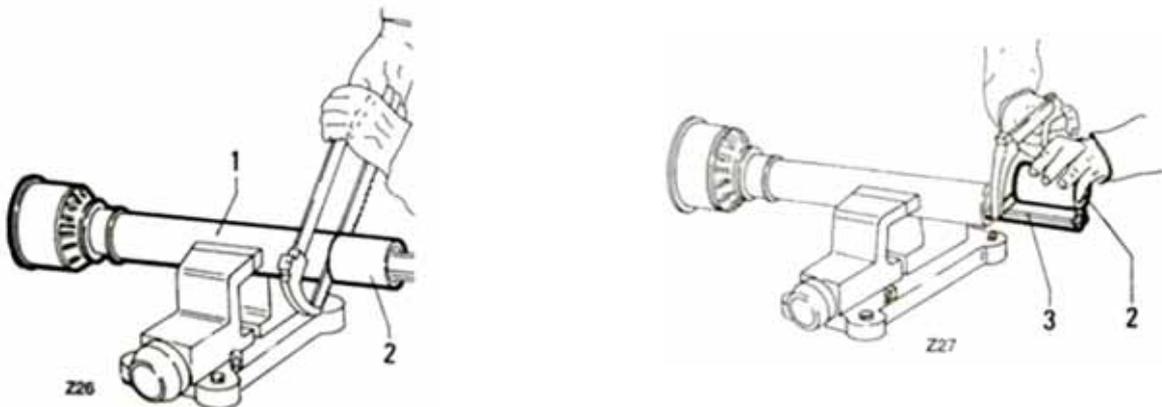


Figure 2

- When cutting part 3, use part 2 to cut off the correct length.
- Saw and smooth the two ends of the power take-off shaft and clean them of any dirt and sawing residue.
- Lubricate the two ends and join the two parts of the power take-off shaft once again.
- Install the power take-off shaft and check that the length is correct.
- Protection systems can be installed: shear bolt coupling/friction clutch.

3. SETTING THE WORKING DEPTH

Skids



CAUTION

The following procedures must be carried out once the machine and tractor have been switched off completely and have been uncoupled from each other.

The working depth can be set by adjusting the skids with regard to height.

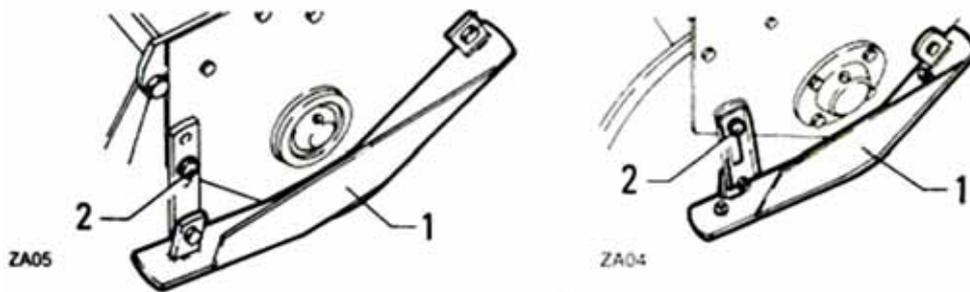


Figure 3

- Use bolts "2" to adjust the skids with regard to height.
- Tighten bolts "2" firmly after setting the working depth (skid fastened low, working depth deep/skid fastened high, working depth shallow).

Roller

Use lever "1" or "2" to determine the working depth of the roller.

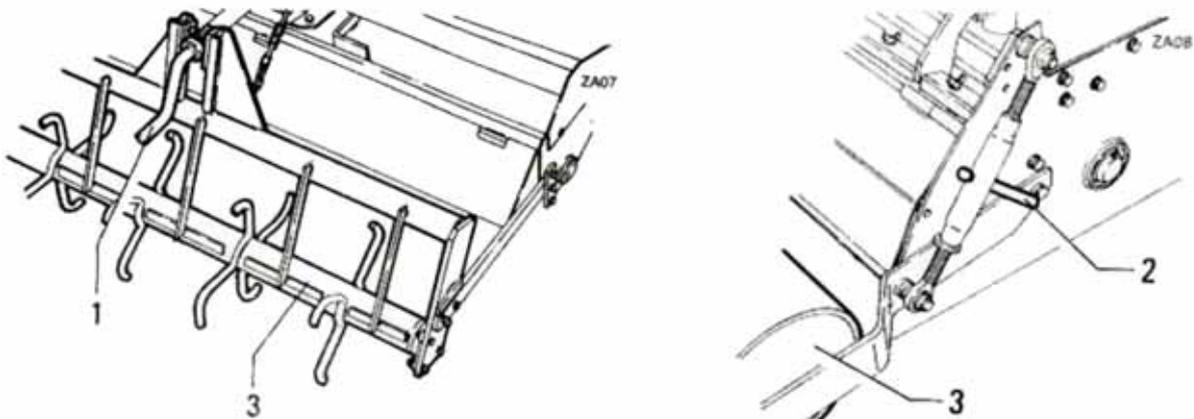


Figure 4



CAUTION

Make sure that the skids are positioned equally after setting the working depth. Also check whether the length of the blades matches the working depth.

Make sure that the ribbed sides of the power take-off shaft is perfectly clean and lubricated so that they can be connected to each other correctly.

4. IMPORTANT PARTS

1. **Three-point hitch:** for coupling the machine to the tractor.
2. **Power take-off shaft protection:** prevents that the user comes into contact with the rotating part of the transmission that is coupled to the power take-off shaft.
3. **Gearbox:** reduces the rotational speed of the tractor's power take-off shaft.
4. **Transmission chain:** the movement of the gearbox is transferred to the rotor through the transmission chain.
5. **Frame:** this is the backbone of the machine.
6. **Roller:** adjusts the depth of the work. As an alternative, the coulter can be equipped with rear wheels. They work in the same way.
7. **Rotor shaft:** the tractor drives the rotor shaft on which the coulter blades are screwed on.
8. **Coulter blades:** the blades are screwed onto the rotor's flanges.
9. **Rear cover:** the cover can be moved (Fig. 5).
10. **Skids:** you can use these to adjust the working depth of the blades. They also act as important side shields.

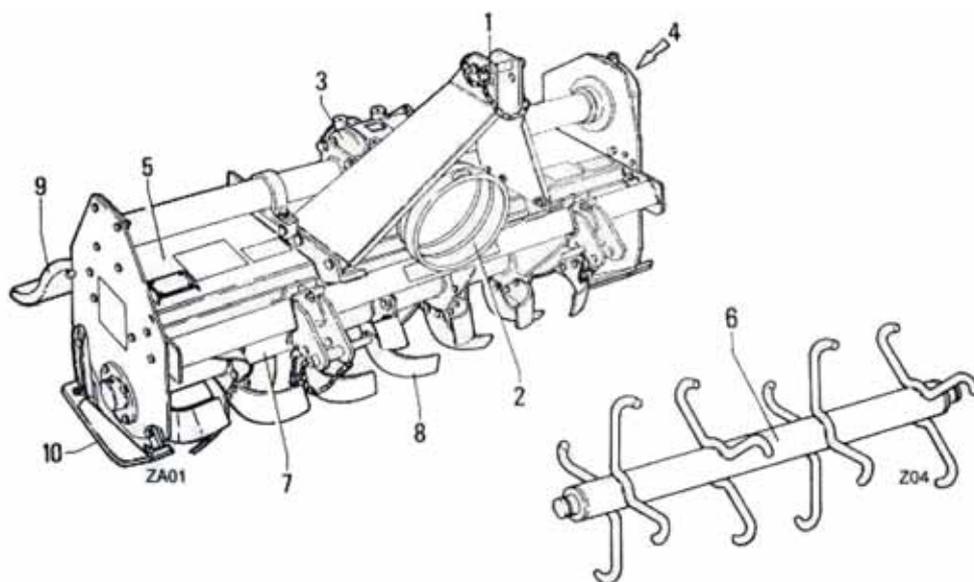


Figure 5



CAUTION

Never mess around with the safety facilities. This may lead to serious injury to the user or others.

Important parts of Figure 5:

1. Protection of the shaft with universal joint. The shaft with universal joint must be equipped with a suitable plastic protective cover and chain attachment.
2. Protection due to the PTO's rotation.
3. The chain guard prevents access to the sprockets and the chain of the transmission.
4. Skids
5. Shaft protection
6. The safety rods ensure that users cannot have access to the moving parts of the machine.

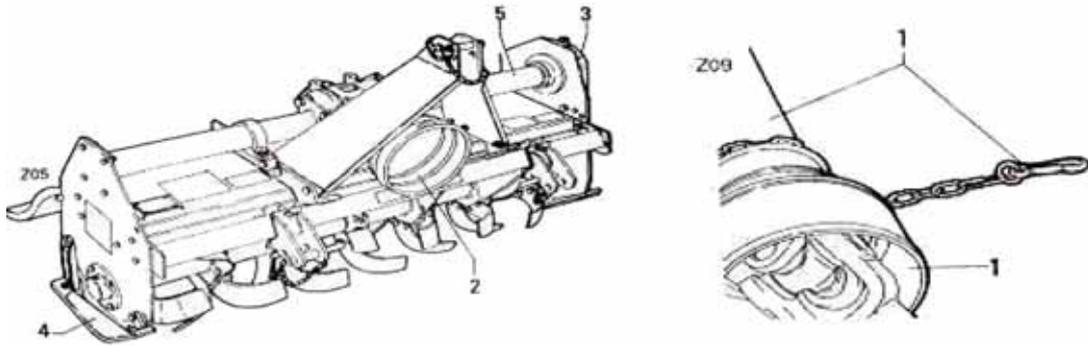


Figure 6

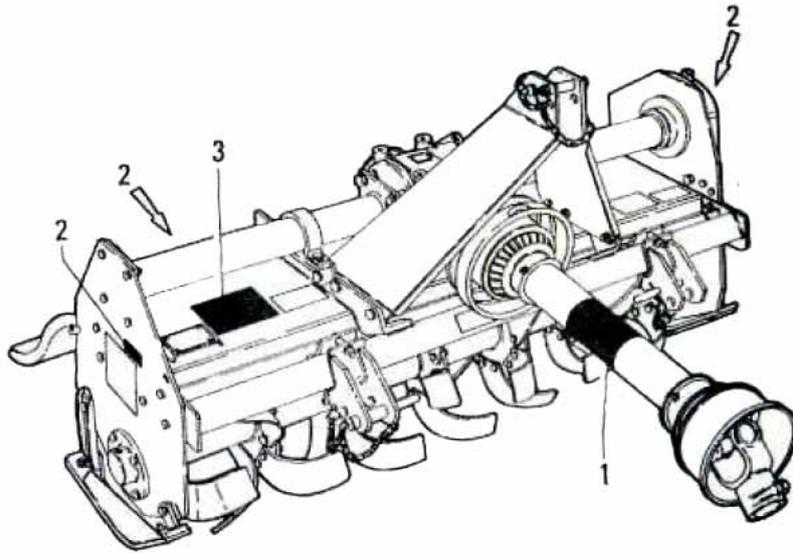


CAUTION

In connection with the transportation, different parts of the machine have been disassembled and supplied separately. The machine is supplied with user instructions for the installation. When the machine is installed, pay particular attention to fastening everything correctly and firmly.

Always check that the machine is coupled properly to the tractor. Check whether the power take-off shaft and chains have been fastened correctly onto the tractor and machine.

In addition to these instructions, also follow the instructions in the tractor's manual.



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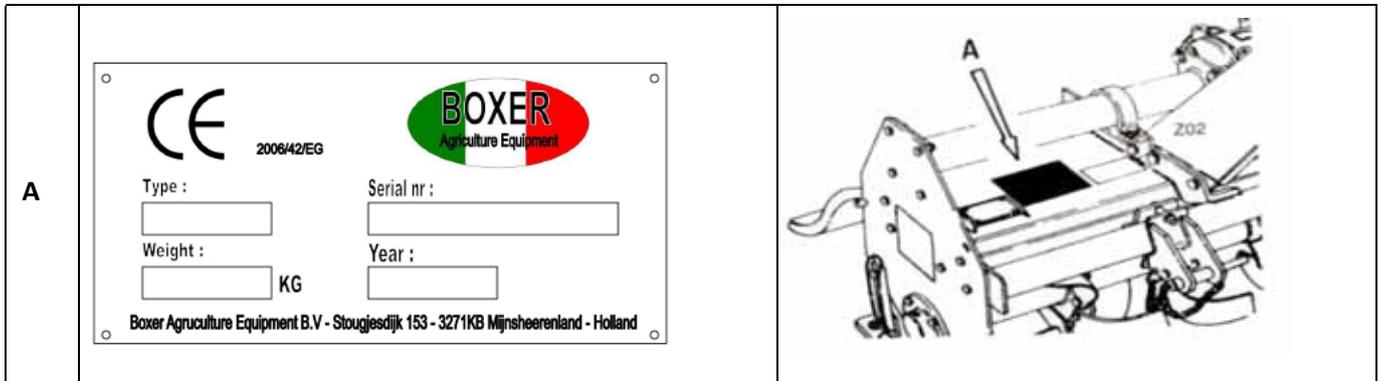


Pay attention to the warnings on the safety decals. Not observing these instructions can lead to serious injury or death. Check whether the decals are clean and legible. If this is not the case, contact your dealer to order new decals if required.

6. EC IDENTIFICATION DECAL

The frame of this machine has a CE mark and has a decal that lists the dealer, model, weight, serial number and year of manufacture.

Location of the EC identification decal on the machine:

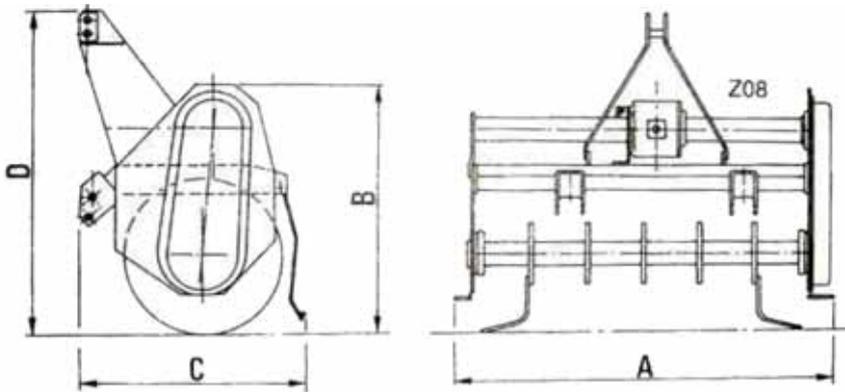
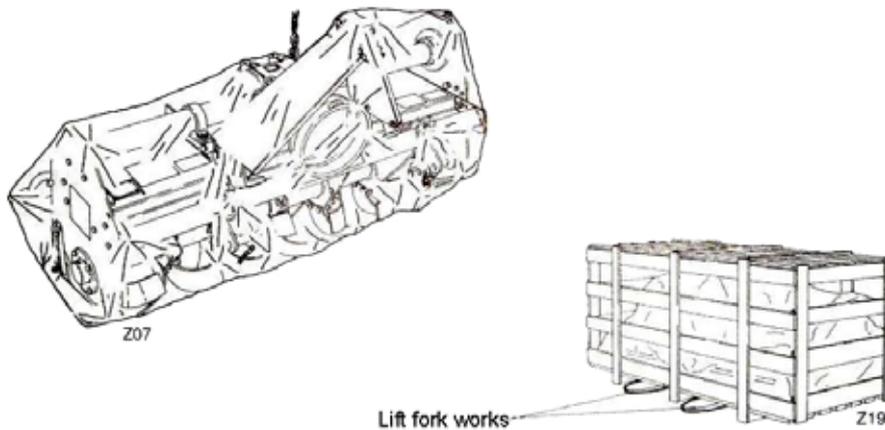


7. TRANSPORTATION

All items are carefully checked before shipment or delivery. When you receive the machine, always check whether any parts have been damaged during transportation. Contact your dealer if you discover damage.

Use a forklift truck, crane or other equipment with a lifting power that is needed to lift the machine. Check its weight in the table.

Check whether the load is stable and correctly positioned on the forks and whether the crane links up.



Model 165	
A	1750 mm
B	590 mm
C	750 mm
D	800 mm
Weight	215 kg

8. START PROCEDURE

- Always ensure that no people or animals can be within the working range.
- Check the work area for obstacles or objects that do not belong in this area. Carefully remove these obstacles and objects.
- Never start a defective machine even if you only suspect that it may be defective. Check the machine and, if in doubt, contact your dealer.
- Always consult the tractor's manual.
- Check whether the tractor is in good condition.
- Check the oil level in the engine and brakes.
- Check the cooling water level and tire pressure.
- Keep hands and feet away from the coulter blades when attaching the machine to the tractor.

Fastening the machine to the three-point hitch of the tractor

- Insert the ends of the lifting arms in connection pins "1".
- Close these using the safety pins on "2" (Fig. 7).

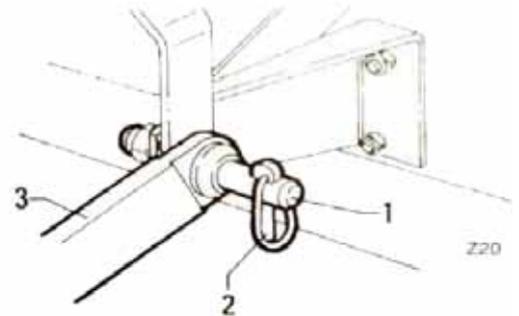


Figure 7

- Attach the top part of the three-point hitch, "11", to the top rod. Make sure that they are both parallel.
- Start the engine of the tractor and lift the machine from the ground and switch off the tractor's engine.

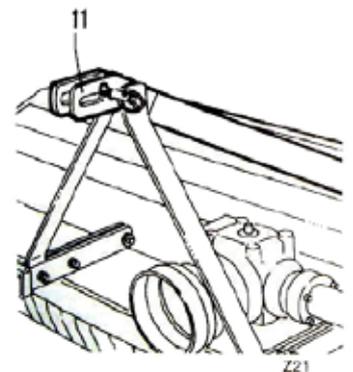


Figure 8

- Fasten the connections on side "13" to prevent swinging.
- We recommend a clearance of at most 50 mm (2") on each side..
- Adjust the machine by adjusting the connections to the sides and the rear side of the tractor.
- Install the power take-off shaft and the safety connections on both ends.

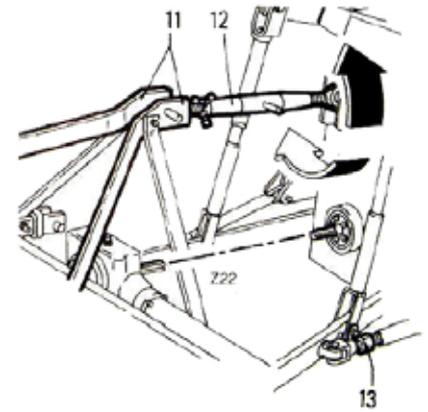


Figure 9

- Check whether the drive shaft is at the correct length (Fig. 10).
- Consult the descriptions in Chapter 2. "INSTALLING THE POWER TAKE-OFF SHAFT" for shortening the power take-off shaft.
- The minimum length of the coupling may not be less than 180 mm (7") in any work position.

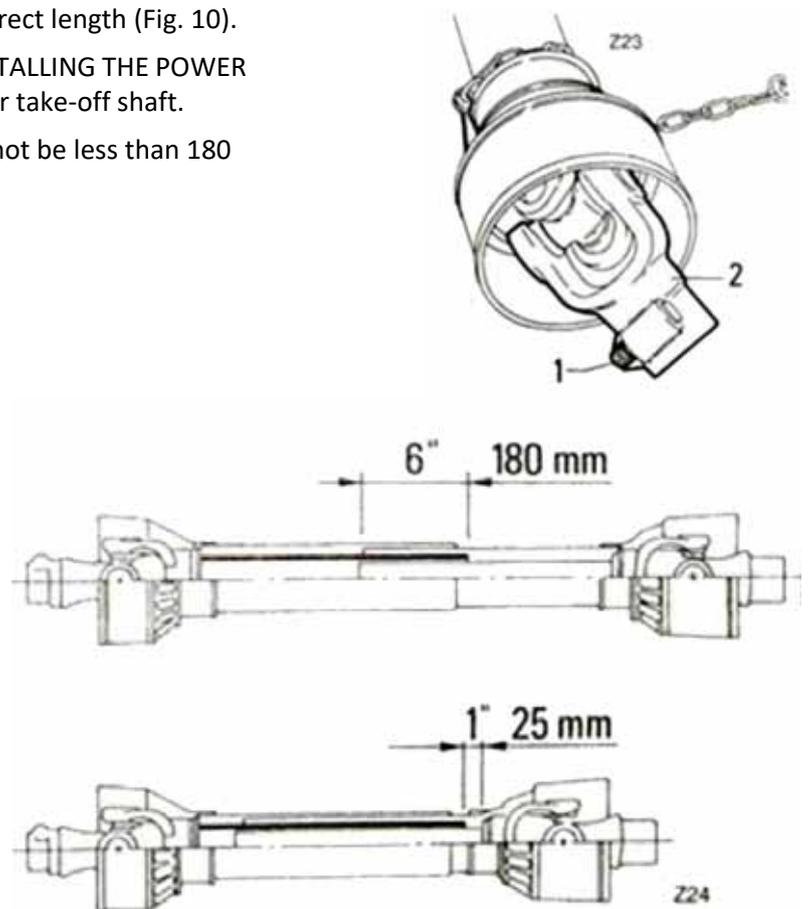


Figure 10

9. WORKING METHOD

- The operator may not become distracted when he/she operates the machine.
- Pay additional attention when working on slopes. By preference, have the tractor and machine drive horizontally to prevent tipping over.
- Also follow the instructions of the manufacturer of the tractor, in particular, with regard to the maximum gradient on which you can work.
- When working on a slope, we recommend restricting the working speed while gradually changing speed and the direction of the vehicle during maneuvers.
- Never work on wet grass, a slippery surface or when the tires do not grip. If this is unavoidable, drive at a low speed to guarantee safety.
- Pay attention to possible obstacles, stones or other objects that may hit the machine.
- Always check local legislation and regulations with regard to using public roads.
- Add reflecting triangles on the rear and check the position of lights and emergency lights when you use public roads.
- Check whether all oil tanks are at the right level and lubricate all required points.

Starting from the stationary position

- Allow the blades to drop up to just above the ground.
- Position the power take-off shaft.
- Lower the lifting height of the tractor.



CAUTION

Lower the lifting height slowly so that the blades gradually cut into the soil. If lowering too fast, the coulter blades may become damaged.

- Press the gas pedal about halfway and, next, set the power take-off shaft at 540 rpm.
- The tractor's speed must be adjusted to the soil type and the degree to which it must be plowed. (The optimum work speed is between 1.5 and 2.5 km/hour (0.93 to 1.55 miles/hour).)
- To find the optimum speed, first select the lowest gear to gradually increase up to the ideal driving speed is reached.
- The slower the tractor moves, the more the soil will be plowed.
- Stop after a few meters (feet) to examine the result of the plowing. If the result is not what is required, again adjust the working depth or the driving speed.
- Every time the machine must be adjusted, you must switch off the tractor completely. Wait until the rotor has stopped rotating.
- Lift the machine from the ground during maneuvers, bends, reversing and when uncoupling the power take-off shaft. Never lift the machine more than 250 mm (10") out of the soil. The power take-off shaft of the transmission can break and this may possibly lead to damage or injury.

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- The machine can plow on a slope with a gradient of 20° at most. If the gradient is higher, the machine may start to vibrate considerably or the power take-off shaft may break (see Fig. 11).
 - When the operator operates the machine, the plowed soil must always be kept on the right side of the operator.

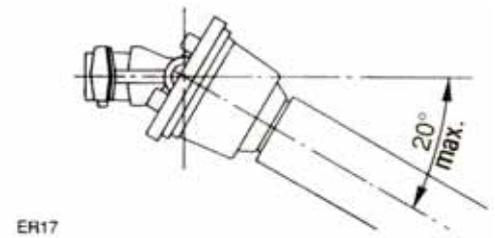


Figure 11



WARNING

It is strictly prohibited to climb on the machine when it is operational or being transported. The machine is a tool and has not been designed for transporting people or goods.

10. STOPPING

If an obstacle is hit, the tractor and machine must be stopped immediately. Switch off the engine and check for possible damage. If the machine is damaged, all repairs must be performed before resuming the work process.

Disassembling the coulter

- Always switch off the power take-off shaft.
- Position the machine on a flat surface.
- Completely switch off the tractor.
- Do not come near the machine until all rotation/movement has stopped.
- Remove the power take-off shaft.

Never touch or tension the drive chain when the machine is operational. Completely switch off the machine and tractor.

Never top up the oil or lubricate the machine when it is operational or when the power take-off shaft is switched on.

11. MAINTENANCE

- Regular maintenance and the correct use of the machine are essential for the safety of the machine.
- Follow the instructions on the safety decals on the machine as shown adjacently.
- Only use original parts to guarantee the stable and reliable operation of the machine.

Prior inspection

- Lubricate the important parts and check the oil level in the transmission and the gearbox.
- Check for oil leaks.
- Check whether all safety facilities are present and undamaged.

The above inspections must be performed regularly in relation to the machine.

Check before putting into operation

- Check whether the blades move freely and are not impeded by foreign materials.
- Check parts on wear and damage (in particular, the covers and rear roller).
- Check whether all bolts and nuts have been tightened properly.
- Make sure that the oil level is at the right level and parts are correctly greased.
- Make sure that all connections that are connected on the machine have been correctly installed.

The above procedures must be performed after the equipment has been uncoupled from the tractor. If the activities must be performed while the machine is still coupled to the tractor, carry them out as follows:

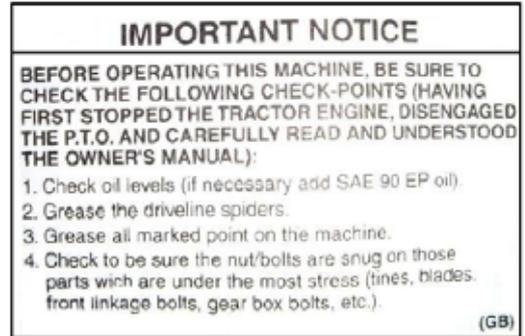
- Switch off the power take-off.
- Engage the brake of the tractor.
- Switch the tractor off.

If activities must be performed under the machine, check whether it is correctly positioned to prevent all risks of injury. To prevent all risks, the operator must not automatically trust the hydraulic system without good reason. Always lock the machine using an extra support when the work must be done from underneath.

The frequencies when maintenance activities must be performed specified here are indicative and are based on use under normal conditions. These frequencies may be adjusted depending on the type of work and the weather conditions. If the machine is used under heavy conditions, maintenance must be performed more often. Make sure that you continue to use the same lubricants and oil as the manufacturer to ensure the condition of the machine is optimal.

Avoid skin contact with lubricants. If your skin does come into contact with lubricants, wash the skin area thoroughly.

Lubricant that is left must be disposed of properly by using a pick-up service.



Regularly lubricate the rotor's support at "1" and "2" (Fig. 12).

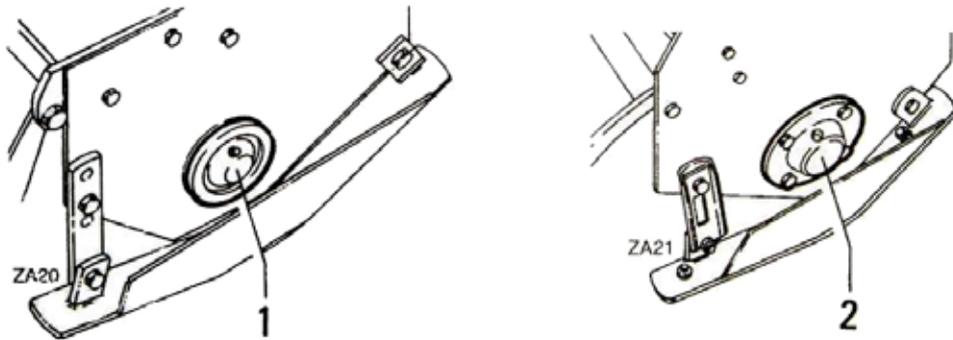


Figure 12

- Make sure that the power take-off shaft remains in good condition and regularly lubricate it (Fig. 13).
- Check whether bolts "1" that keep blades "2" in their positions have been correctly tightened (Fig. 13).
- Check the wear of the blades. Replace them if required in accordance with the instructions in this manual.
- Make sure that all foreign objects have been removed from the moving parts of the power take-off shaft.
- Lubricate the moving parts using grease.
- Check whether all bolts and nuts have been properly tightened and especially the bolts of the gearbox.
- Check the oil level in the gearbox.

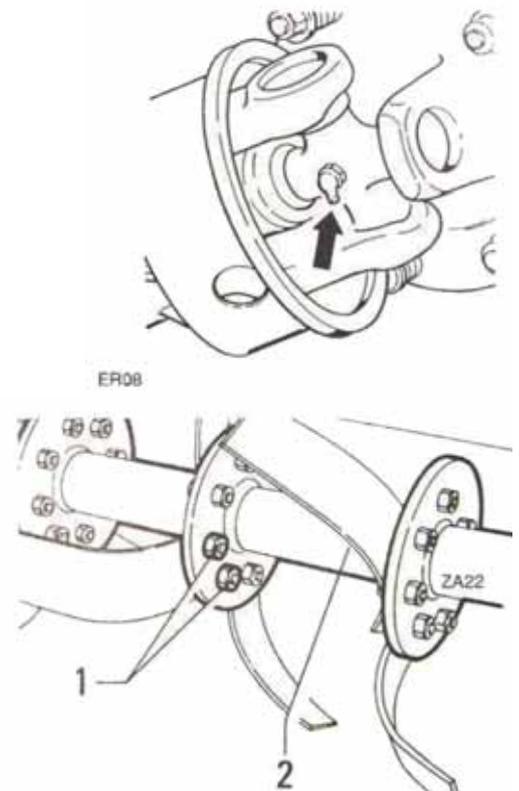


Figure 13

- Remove oil level plug "1" (Fig. 14).
- Check whether the oil has been filled up to the bottom edge of the housing. If required, top it up via cap "2".

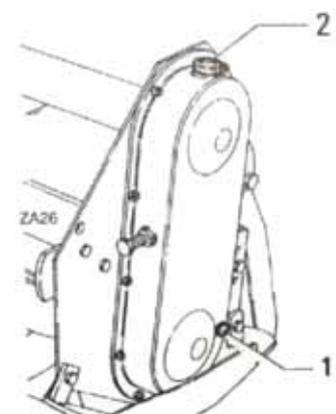


Figure 14

Maintenance: every 150 hours or once a year.

- Remove the drive chain.
- Clean the drive chain and chain wheels using a mild non-toxic and non-flammable agent.
- Again install the chain and make sure that it is not damaged.
- Replace the oil in the gearbox and on the side of the chain guard.
- Using a clean brush, lubricate using a thin layer of grease on the surface of the part of the power take-off shaft.

Changing the oil in the gearbox

Change the oil after the first 50 operating hours. After this initial time, the oil must be replaced after every 250 operating hours or once a year.

Tensioning the transmission's drive chain

The tension of the side drive of the transmission must be regularly adjusted. Do the following:

- Loosen the locknut and screw in the bolt to tension the chain.
- Once the required tension is achieved, retighten the locknut.
- Turn the rotor manually and check whether it does not have too much resistance. Reduce the chain tension when the resistance is too high.

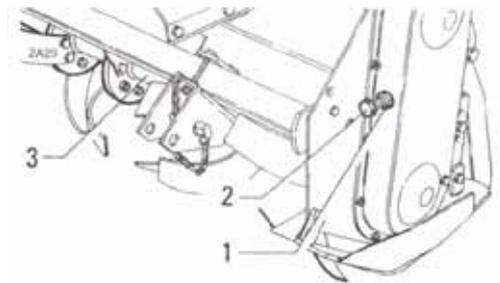


Figure 15

Replacing the coulter blades

- Blades "4" (Fig. 16) must be replaced if they are damaged, bent, worn or blunt.
- Pay attention that the new blades are installed at the same position as the old blades. The cutting part of the blade must rotate in the same direction as the rotor.
- The bolts that fasten the blades to the rotor must be fastened to the head of bolt "1" on the side of blade "2" and nut "3" on the side of the rotor.

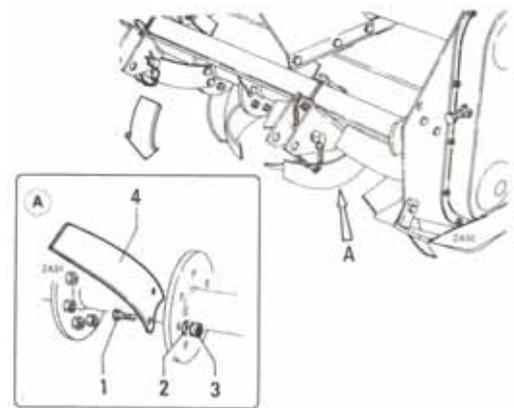


Figure 16

12. LUBRICATION AND LUBRICATING POINTS



CAUTION

CHECK THE OIL LEVEL BEFORE WORK!

OIL TYPE AND MANUFACTURER/IMPORTER: GL5 - 85W 90

Do not mix oils of the same manufacturer or different types of oil. This may have a negative impact on the condition and service life of the machine.

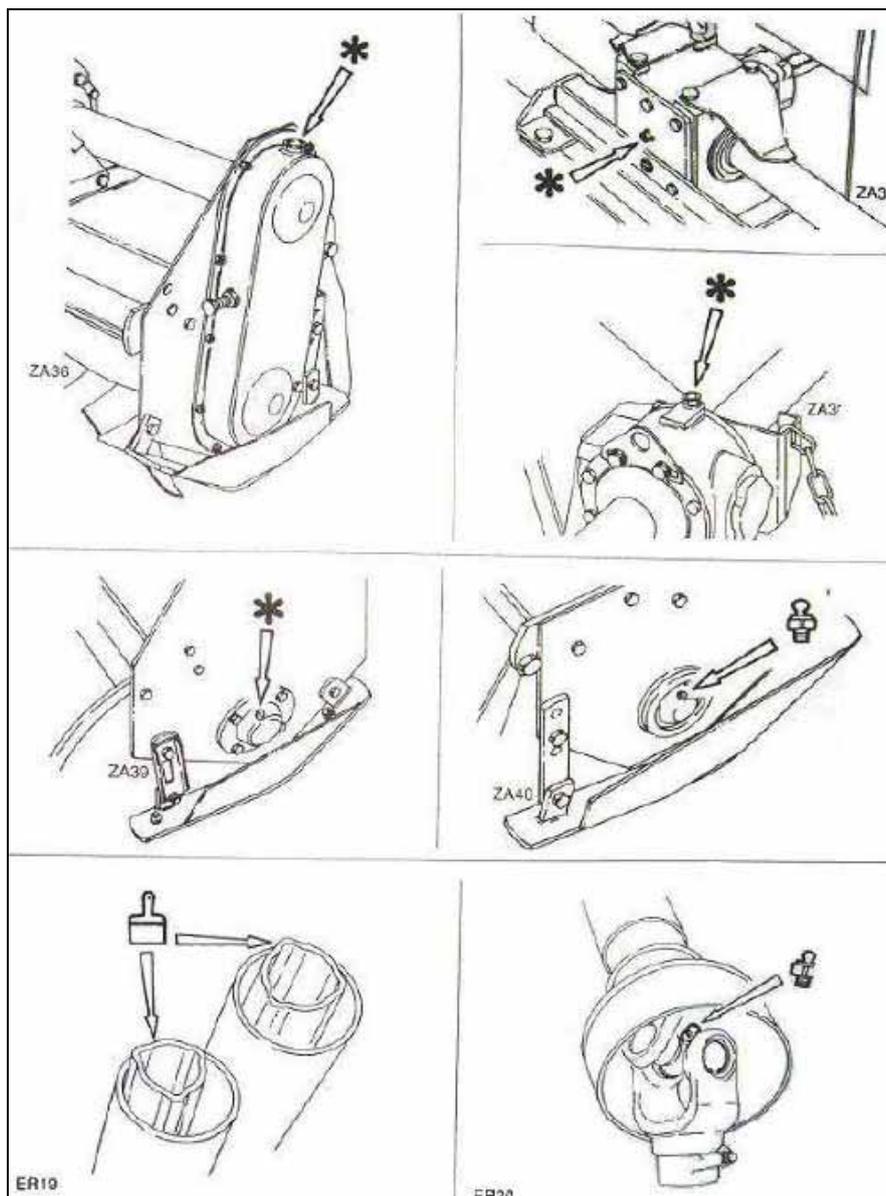
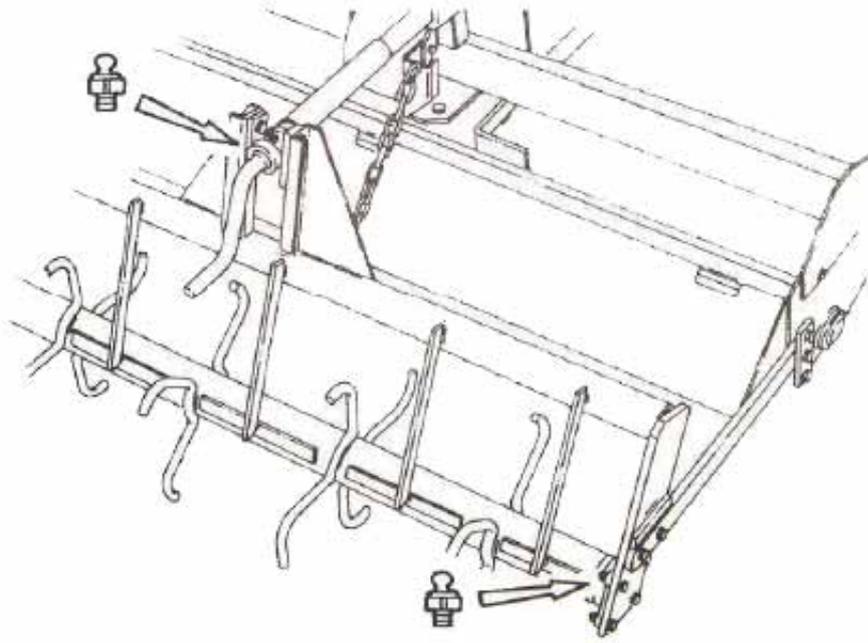


Figure 17



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Figure 18

13. FAULTS

Problem	Cause	Solution
The machine makes more noise than normal.	Loose parts.	Check whether all bolts and nuts have been properly tightened.
	Too little oil in the gearbox and transmission.	Check the oil level and, if required, top it up.
	Incorrect power take-off shaft rpm.	Set the power take-off shaft correctly for the correct number of rpm.
	No lubricant in the sideway support of the chain guard.	Top up with lubricant on the supports of the rotors.
	Clearance on the transmission chain.	Adjust the chain correctly.
Excessive vibrating of the machine.	Incorrect power take-off shaft rpm.	Set the power take-off shaft to the correct speed.
	Foreign objects are stuck in-between the blades or the rotor.	Remove foreign objects.
	Broken or worn blades.	Replace the broken or worn blades.
	Blades incorrectly installed.	Contact a recognized dealer for repair work.
The blades get stuck.	The soil is too wet.	Stop working and wait until the soil is sufficiently dry.
	Too high a driving speed.	Reduce the tractor speed.
	The grass is too high to be processed.	Mow the grass before starting.
	Grass or earth is becoming stuck on the ends of the rotor.	Clean the rotor and remove foreign objects from the machine.
Insufficient working depth.	Driving speed is too high.	Reduce the tractor speed.
	Insufficient engine capacity.	Reduce the feed rate.
	The ground is too hard.	
The working depths on the sides of the skids are different.	The two skids on both sides have been set differently.	Set the skids on both sides equally.
The ground/soil is not being correctly plowed.	The speed is too high.	Reduce the driving speed.
	Soil too wet.	Wait until the soil is dry.
The roller is blocked and the rotor does not turn.	Transmission chain adjusted too tightly.	Correctly adjust the transmission chain.
	There are foreign objects in-between the rotor.	Remove foreign objects. If blades are damaged, replace them. Before you again start, make sure that the rotor is not damaged. If the rotor is damaged, contact your dealer to have it repaired.