

Harvesting maize with perfect technology

Operating Manual

Issue B0509

English

No. 93940

Champion C 1200

MOUNTED UNIVERSAL
FORAGE HARVESTER

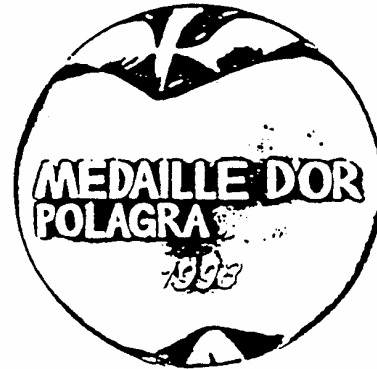


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Claims arising from design

Kempers policy is one of continuous development and improvement and we therefore reserve the right to alter design and specifications without notice.

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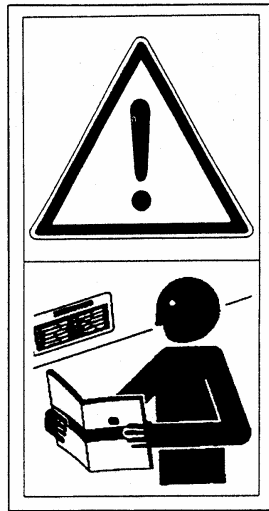
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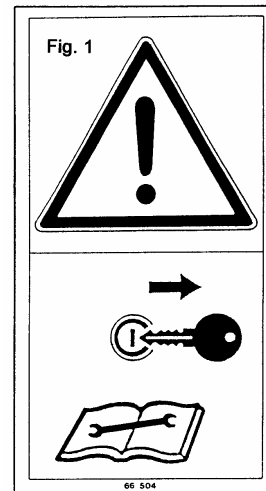
Safety and accident prevention regulations

1. Do not allow anyone to stay in the intake area of the machine.
2. The sharpening device may only be operated with the housing of the flywheel cutting disc closed. When operating the mechanism, stand at the side of the machine. Use protecting spectacles.
3. Never attempt to feed the crop into the machine with your hands or feet.
4. Whenever working on the forage harvester, switch off the PTO and stop the tractor engine.
5. Before traveling on public roads always fold the guard frame over the stalk lifter.
6. Never open the housing of the flywheel cutting disc while the machine is running. **DANGER!** The cutting disc will continue to rotate even if the machine is switched off.
7. Make certain the cutting knives are all tightened firmly.
8. Always connect the PTO shaft coupler with care.
9. Keep the PTO shaft guards in good condition and prevent the guard tubes from rotating by attaching the provided safety chains.
10. Never cut rings from the guard cones of the PTO shaft.
11. Before carrying out any work under the machine, same has to be proposed safely.
12. When traveling on public roads the discharge chute has to be positioned in such a way that it does not project beyond the tractor or the implement, neither to the side nor to the rear.
13. Always comply with the lightening regulations in force of your country.
14. Do not allow anyone to stay in the slewing range of the discharge chute while cutting disc is rotating.
15. Front attachments may only be uncoupled on a level area.
16. Relieve all pressures before disconnecting hydraulic lines. Report immediately to a doctor in case of injury by hydraulic oil forced out under high pressure.
17. The use of an appropriate ear protection is recommended.
18. Before tracing a foreign object, switch off all drive mechanisms, stop the engine and wait for all moving parts to stop.
19. The machine height must not exceed 4.3m to avoid touching power lines.
20. The hitch is not designed for supporting any additional load.
21. All controls of the machine must be positioned on the tractor mudguard within the operator's reach.
22. It may be necessary to install front ballast weights to ensure adequate steering capabilities of the tractor. When installing ballast weights, do not exceed the permissible axle load.
23. Do not allow anyone to stay in the slewing range of the machine. Check that the machine is in a horizontal position when swinging round. Failure to do so may cause the machine to swing round due to its weights when the locking mechanism is released. Special care should be taken when operating on a slope.
24. The hydraulic system is under high pressure. All damages or deteriorated hoses have to be replaced immediately. In any case the hoses and hydraulic lines have to be replaced every six years.
25. Do not exceed the permissible hydraulic pressure of 210 bar.
26. Use only genuine KEMPER spare parts.

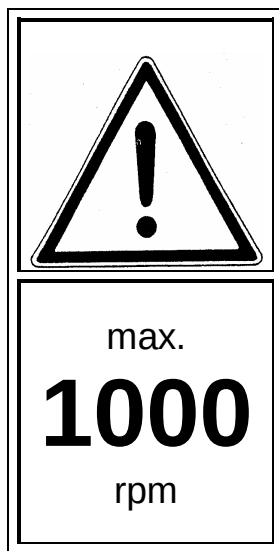


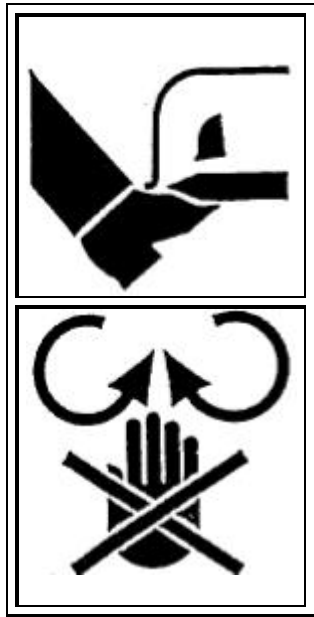


Carefully read the Operator's Manual before handling the machine.

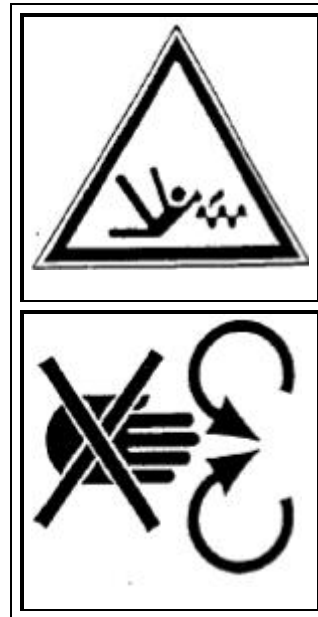


Shut off engine and remove key before performing maintenance or repair work

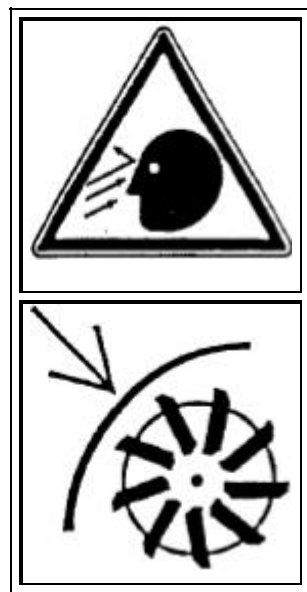




Danger by turning cutting rotor. Keep distance.



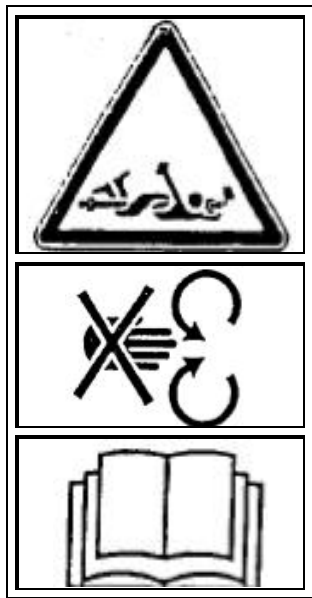
Keep hands away from rotating crop dividers.



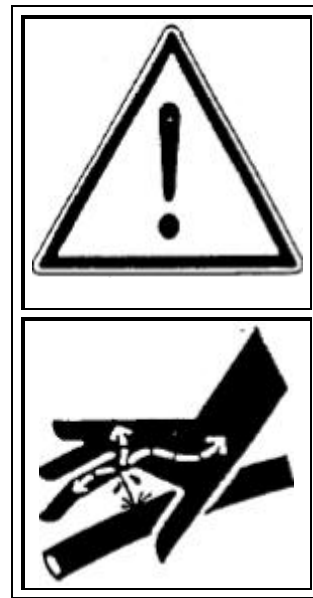
Put safety shields in place when grinding knives. Wear safety glasses.



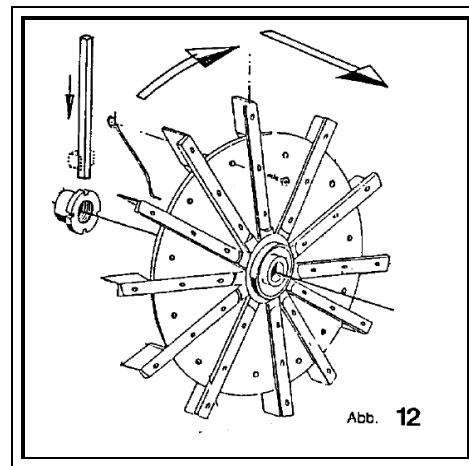
Wait until all machine components have completely stopped before touching them.



Stay clear of rotating drive line to avoid personal injury. Read the users manual.



Avoid fluid escape under pressure. Change hoses immediately.



- A Adjust the flywheel only with safety gloves
- B Grind the knives with safety glasses
- C Close grinder sheet immediately after the flywheel has stopped turning

Dear customer

You have made a good choice. We are pleased to congratulate you on your selection of a KEMPER machine. As your partner we offer quality and performance, together with reliable service.

In order to be able to evaluate the conditions of use of our agricultural machines, and to take these requirements into consideration in the development of new units, we ask you to provide some information.

This also allows us to inform you selectively of new developments.

Product Liability and Customer Information

Product liability instructs manufacturers and dealers to hand over the instruction manual with each machine and to give the customer practical instruction on operation, safety and maintenance.

A multiple form (A,B,C) similar to the one illustrated below is supplied with each Operator's Manual. Confirmation is required that the customer has taken possession of the machine and the Operator's Manual.

For this purpose, send the signed document A to Kemper. Document B is retained by the dealer who supplied the machine. Document C is retained by the customer. At the same time you will be assured that warranty is given.

EC Certificate of Conformity

This product has been submitted to the CE test and has obtained the CE approval mark in conformity with EC Directive 2006/42/EG. (Communauté européenne / European Community). An EC Certificate of Conformity is supplied with this manual. This certificate must be handed over to the final owner of the machine together with the Operator's Manual.

Handing over the Operator's Manual

Attention! Even if the machine is sold at a later date by the customer, the Operator's Manual must be handed over to the new owner.

This symbol will be found wherever safety advice is given in the manual. Anyone operating this machine must be given all necessary safety instructions.

kemper Receipt		C
¹ Type:	⁴ Delivery Date 	
Machine No.: -		
² Customer Address: 	⁵ Address of authorized dealer/importer Company Stamp/Signature	
³ I purchased the machine described under (1) With the delivery of the machine I received the Operator's Manual No. ... Customer signature _____ Date _____ Copy for customer	 Company Stamp/Signature, if not identical with (5) ⁶ The machine was delivered to customer in conformance with specifications. Signature of Customer Service _____ Date _____	
Maschinenfabrik KEMPER GmbH & Co. KG - Postfach 1352 - D-48694 Stadthoehn		

1. Introduction

In addition to a comprehensive technical description, this manual contains general and specific explanations concerning function and correct operation of the CHAMPION and tips how to eliminate malfunctions.

Our policy is one of continuous development and improvement in line with the latest scientific and industrial knowledge and the company therefore reserves the right to alter specifications without prior notice.

Directional indications such as “right” and “left” are to interpreted when facing in direction to travel.

Note the identification numbers of the machine on the last page of this manual. This information will enable your dealer to send you quickly the correct spare parts.

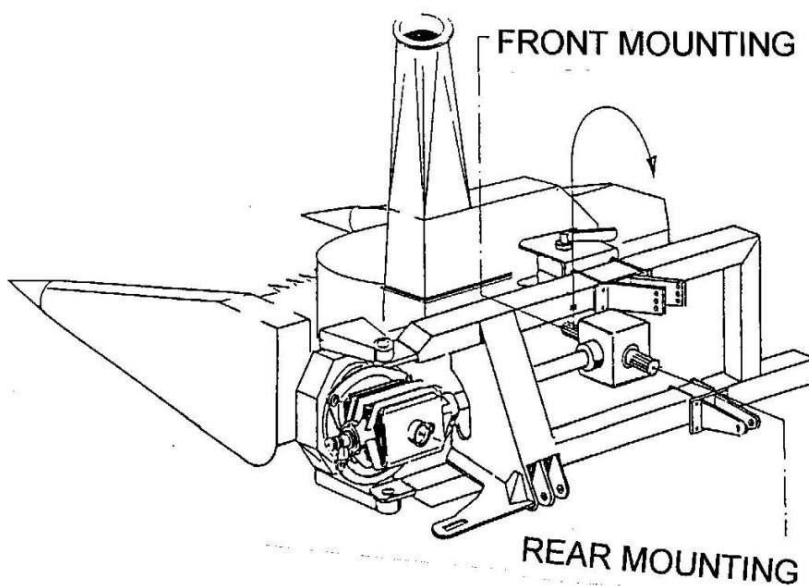
2. Operation in accordance with specifications

The Universal Precision Forage Harvester CHAMPION from KEMPER is built solely for harvesting silage maize or other crops.

In conformity with the relevant regulations the CHAMPION may only be operated in accordance with specifications. Otherwise no warranty will be assumed for resulting damage. Observation of the operation maintenance instructions specified by the manufacturer and exclusive use of genuine KEMPER spare parts shall also be taken to be a part of operation in accordance to specifications.



Fig. 13



Mounting facility

The special drive system allows three mounting options with the same basic machine:

FRONT MOUNTING – REAR MOUNTING – SIDE MOUNTING

The machine can be hitched to any tractor with cat. II 3-pt hydraulics.

Power transmission

Main PTO drive shaft with friction clutch and freewheel mechanism.

Tractors PTO speed: 1000 rpm.

Divided drive system composed of two pivoted elements: one element has two angle gears for FRONT and REAR mounting, the other is composed of a maintenancefree powerband belt drive.

Cutting unit

New row-independent cutting system composed of a fast rotating cutting rotor. The crop is cut over the entire working width (1.25 m) by enclosed rotary cutting blades composed of replaceable segments.

Chopping unit

Centrally adjustable flywheel (1180 rpm) fitted with 12 chopping blades with tungsten carbide coating and special profile for extremely efficient chopping; reversible shear blade with carbide tipped edges; built-in blade sharpener; flywheel housing fitted with replaceable wear and tear plates; rasp concave for more efficient re-chopping, useable instead of the smooth concave.

Feeding unit

It is composed of two feed rollers with toothed bars, one springloaded precompression roller and one smooth roller for efficient crop compression before the flywheel. The feed and precompression rollers are driven by an oil-bath gearbox. The unit is fitted with an overload protection.

Discharge chute

Foldable discharge chute with hydraulic slewing (140 W);

electrically adjustable discharge double flap;

one double acting control valve required on the tractor.

Chop lengths

Adjustable by changing the V-belt pulleys and by changing the number of blades.

V-belt pulley	Number of knives		
W	12	6	4
180 mm	5	10	20
210 mm	7.5	15	30

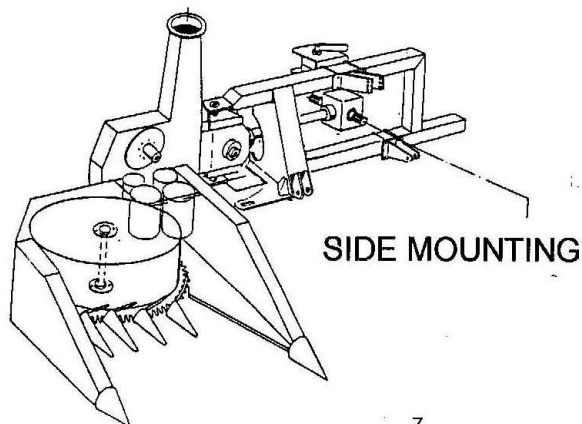
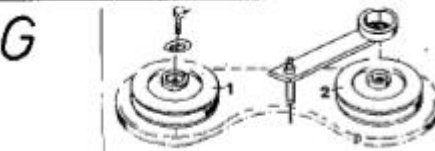
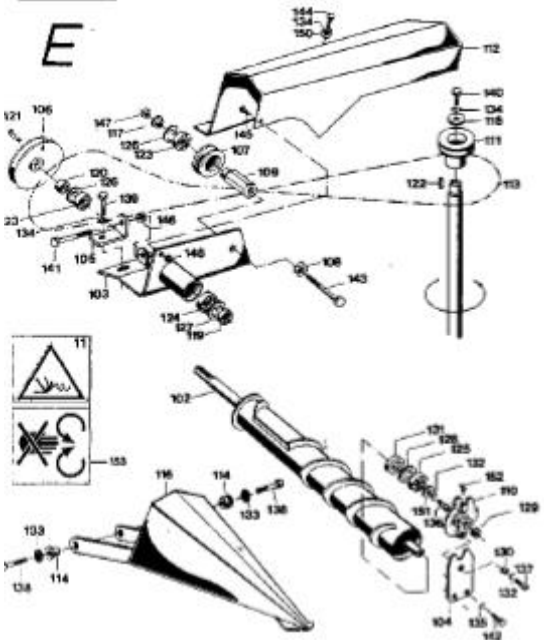
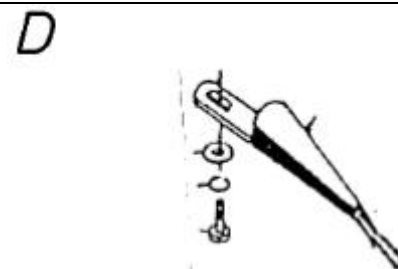
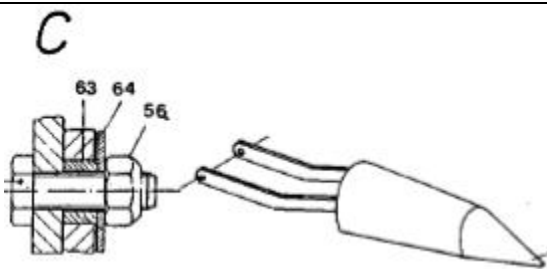
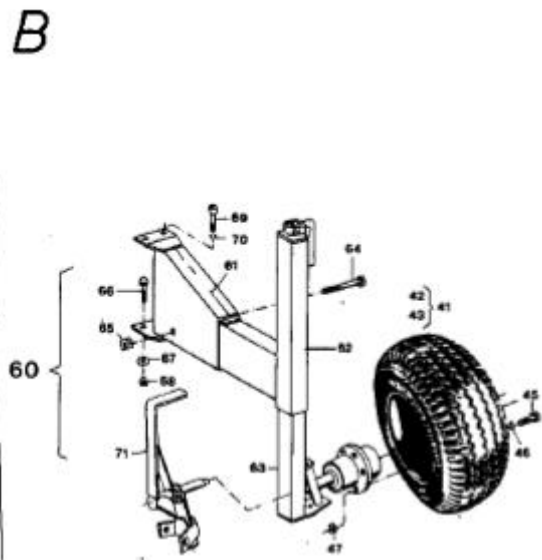
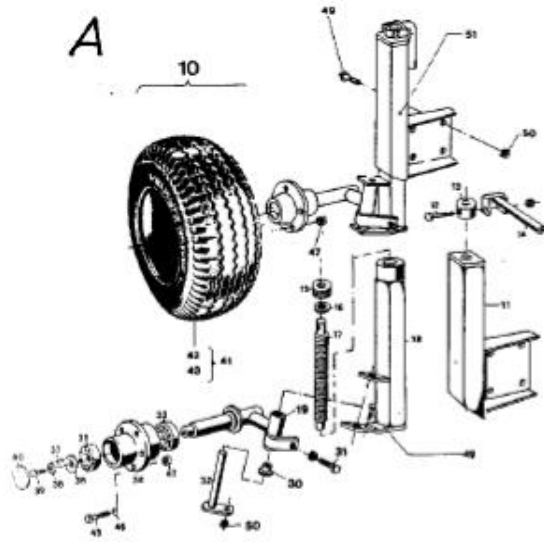


Fig. 14



Cutting lengths		
V-belt pulley W	Cutting knives	
	12	6
1 = 153 mm 65975	4	8
1 = 218 mm 65977	8.5	17

Technical Data

Length	m:	2.80
Width	m:	1.76
Height in working position	m:	3.95
Weight	kg:	1100
Pto speed	rpm:	1000
Power requirement	kW/HP:	min.: 50/70; max.: 110/150
Row interval	cm:	row-independent
Working width	m:	1.25
Chopped lengths	mm:	5 – 7.5 – 10 – 15 – 20 – 30

Mounting facility

The CHAMPION C 1200 can be operated by conventional tractors and by system tractors as well. Hitch options are the combined REAR and SIDE MOUNTING and FRONT MOUNTING. The new drive system allows any of these three options to be used by swinging the divided transmission system into the desired position.

Equipment required on the tractor

1. Max. 110 kW (150 HP). A higher use of power will void guarantee.
2. 12 V connector
3. one double acting steering valve
4. 1000 rpm PTO
5. Standard PTO connection 1 3/8" – 6 No. 40496
- Optional PTO connection 1 3/8" – 21 No. 59025
- Optional PTO connection 1 3/4" – 6 No. 63254
- Optional PTO connection 1 3/4" – 21 No. 63255

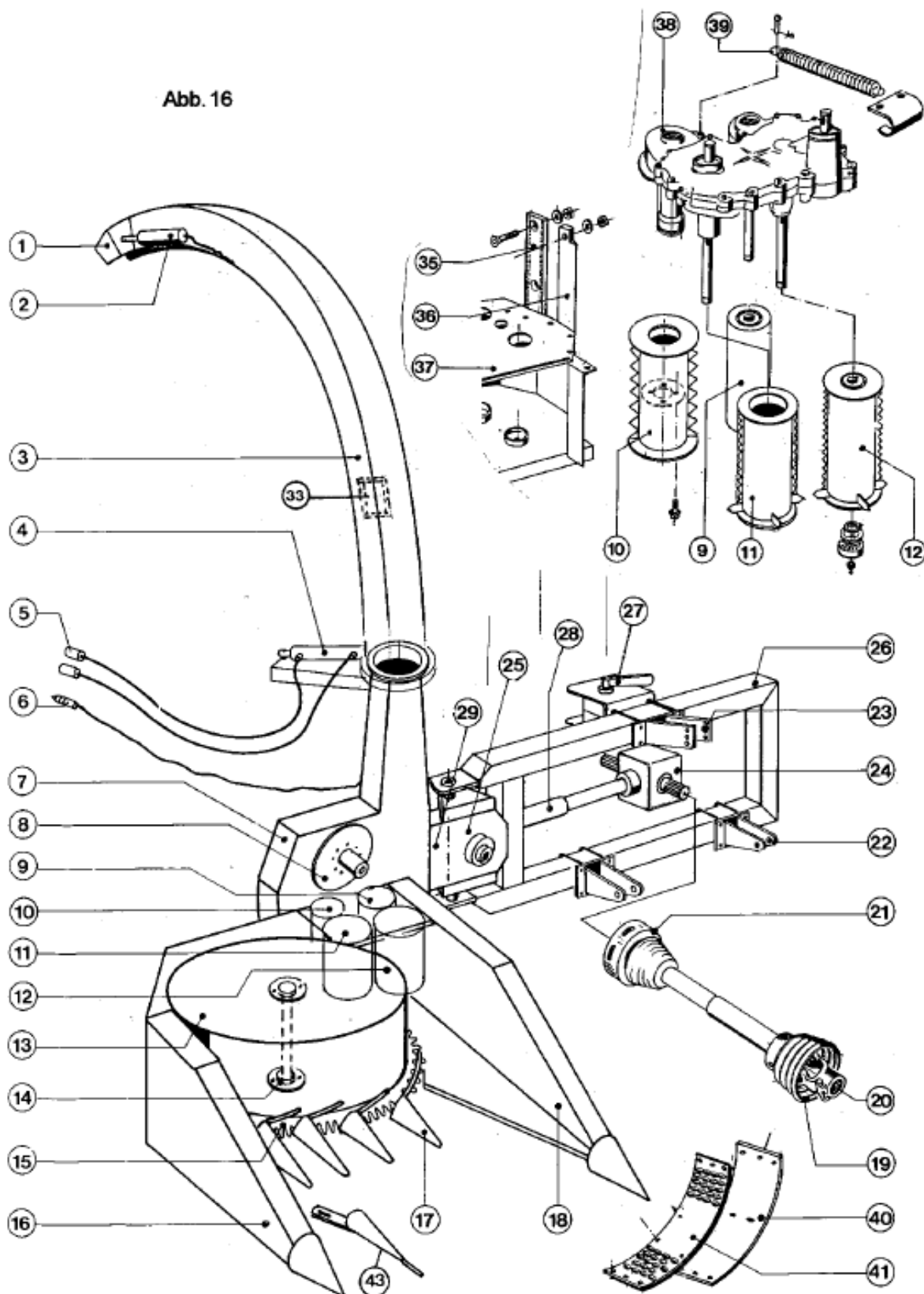
PTO

The main PTO shaft W 2400 is equipped with a slip clutch FK 96/4 (M = 1350 Nm). The REAR and SIDE mounting versions have a clockwise free run and the FRONT version is equipped with an anti clockwise free running clutch.

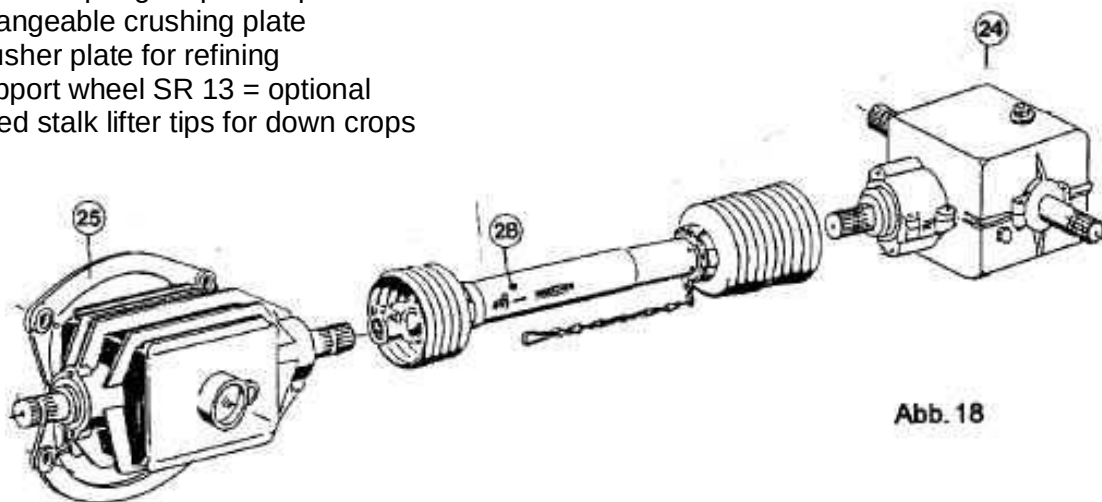
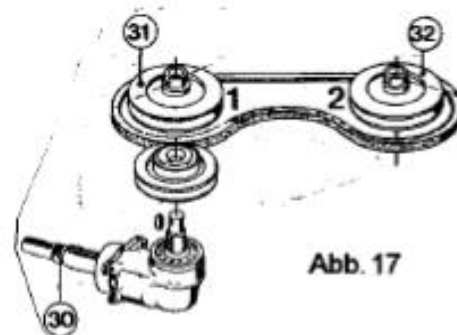
Optional equipment – Chapter 8

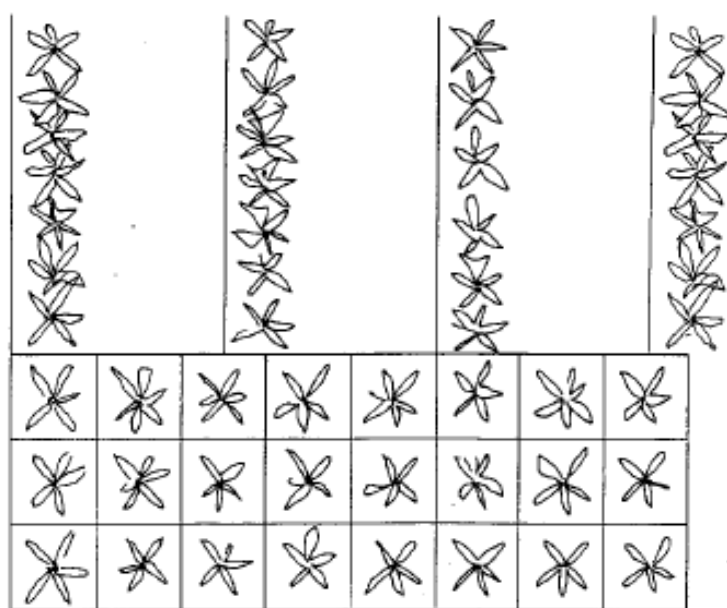
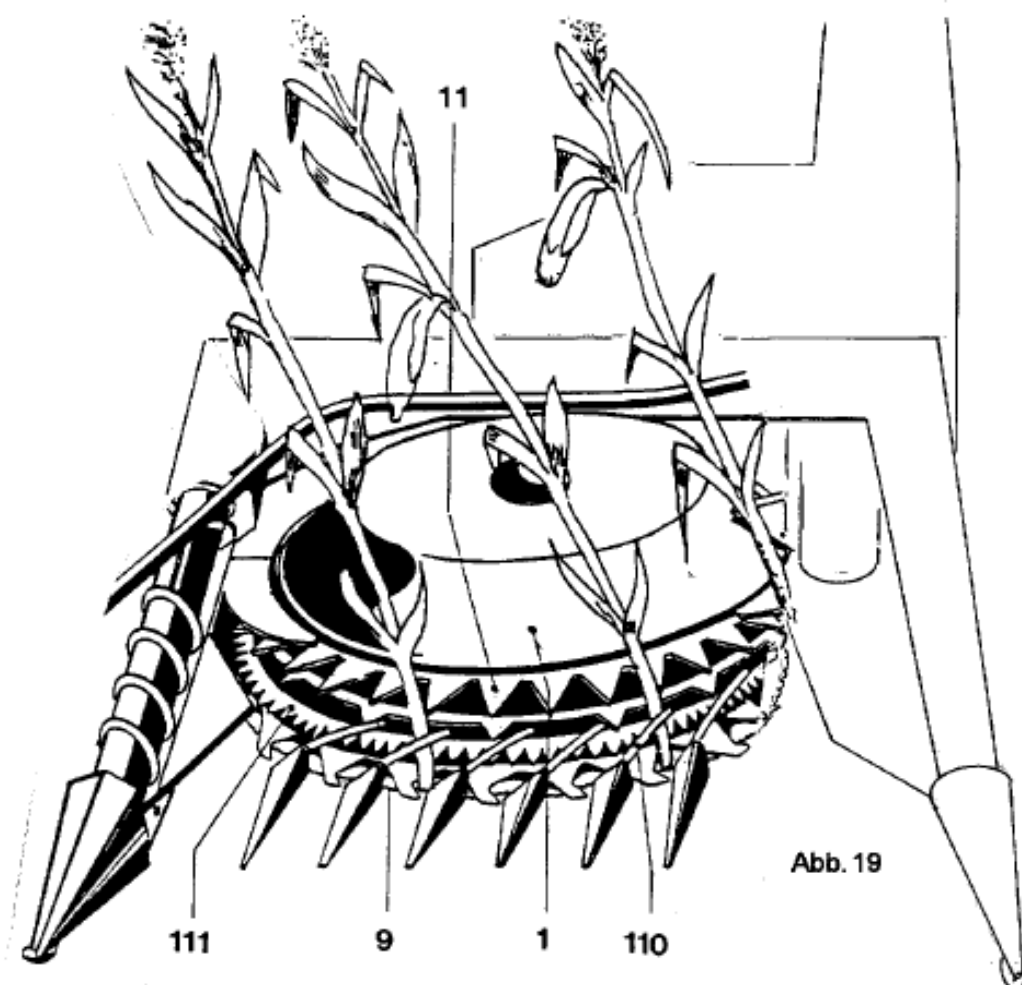
- A. Height adjustable rh support wheel (PN 64305), recommended for light tractors and when SIDE MOUNTING is selected.
- B. Height adjustable lh support wheel (PN 68040), recommended for FRONT MOUNTING in combination with the rh support wheel
- C. Stalk lifter, movable in height (PN 63036), for down crops
- D. Fixed stalk lifter tips for down crops (PN 69195), 2 Pcs. per set
- E. Mechanically driven stalk divider (PN 65960)
- F. Additional discharge chute extension (1 m) (PN 64652)
- G. V-belt pulleys for 4 mm chop length (PN 65975 & 65977)

Abb. 16



1. Two-piece discharge flap
2. 12 V electromotor for two-piece flap
3. Foldable discharge chute
4. Hydr. turntable (140°) chute
5. Hydr. connection for double spool valve
6. 12 Volt plug
7. Readjustable disc wheel 1180 rpm
12 chopping knives with wolfram layer
8. Sharpening mechanism
9. Smooth roller
10. Precompression roller with spring tension
11. Intake roller right
12. Intake roller left
13. Intake drum
14. Intake drum bearing
15. Cutting rotor – 1.25 m
16. Stalk lifter right
17. Middle prongs
18. Stalk lifter left
19. PTO shaft W 2400
20. Connection (serie 1 3/8") for 1000 rpm PTO 150 HP
21. Slip clutch K 92/4 – T 1350 Nm
22. 3 point hitch Cat. II adjustable
23. Top link Cat. II adjustable
24. Angle gear 1 with FRONT and REAR connection
25. Angle gear 2 in swiveldrive
26. 3 point hitch frame
27. Hitch (not for heavy weights)
28. PTO shaft between the gear cases
29. V-belt power with free running clutch
30. Angle drive on flywheel cutting disc
31. Changeable V-belt disc for chop length adjustment
32. Changeable V-belt disc for chop length adjustment
33. Automatic overload clutch
34. Locking pin
35. Double side usable shear bar
36. Stripper for smooth roller
37. Precompression roller housing
38. Gearing 4
39. Tension spring for precompression roller 10
40. Changeable crushing plate
41. Crusher plate for refining
42. Support wheel SR 13 = optional
43. Fixed stalk lifter tips for down crops





Champion chopping technique

Principle functions of the Champion (Fig. 19)

The patented cutting system of the Champion allows the stalks of the crops to be cut in any direction – in a lengthwise, transverse or oblique sense to the rows. None of the stalks can escape the area of the rotary cutter. Once cut by the fast rotating blades (9) which are working without any stationary blade, the stalks are fed by the slow rotating drum (1) along the intake bars (110) and seized by the row of teeth (111). As a result of the rotation of the gathering drum the crop is pushed along the feed teeth (11) and transferred along the guides and scrapers and bushed lengthwise to the prepress rollers of the chopper.

Higher yields through narrow spacing

Methods of cultivation

Alternative methods of corn cultivation are not only more and more discussed, but also already practiced by institutions and farmers: higher yields are achieved by increasing the number of plants per surface unit. The new technique allows the existing seed drill to be used, but has only become possible with the introduction of the row-independent Champion cutting system,.

Ideal distribution of the plants in the field (Fig. 20)

Principle of the new method: The usual row spacing of 75 cm is reduced to 30 cm. With equal seed density (10 plants per m²), this involves an increased plant spacing in the row.

Higher yields

The new method gives the following advantages:

- The individual plants are more conveniently positioned.
- Faster shading of the soil as a result of the smaller row spacing.
- Prevention of erosion.
- Better utilization of the nitrogen contained in the soil.
- Yields increase by approx. 12 to 17 %.
- Higher quality.

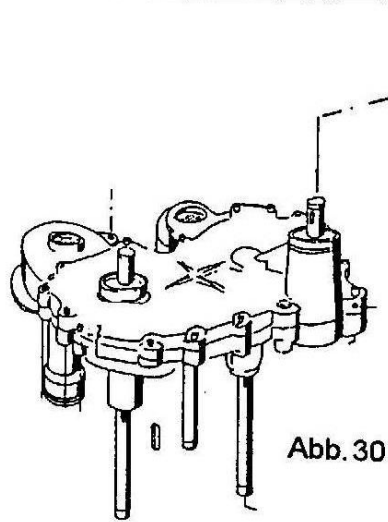
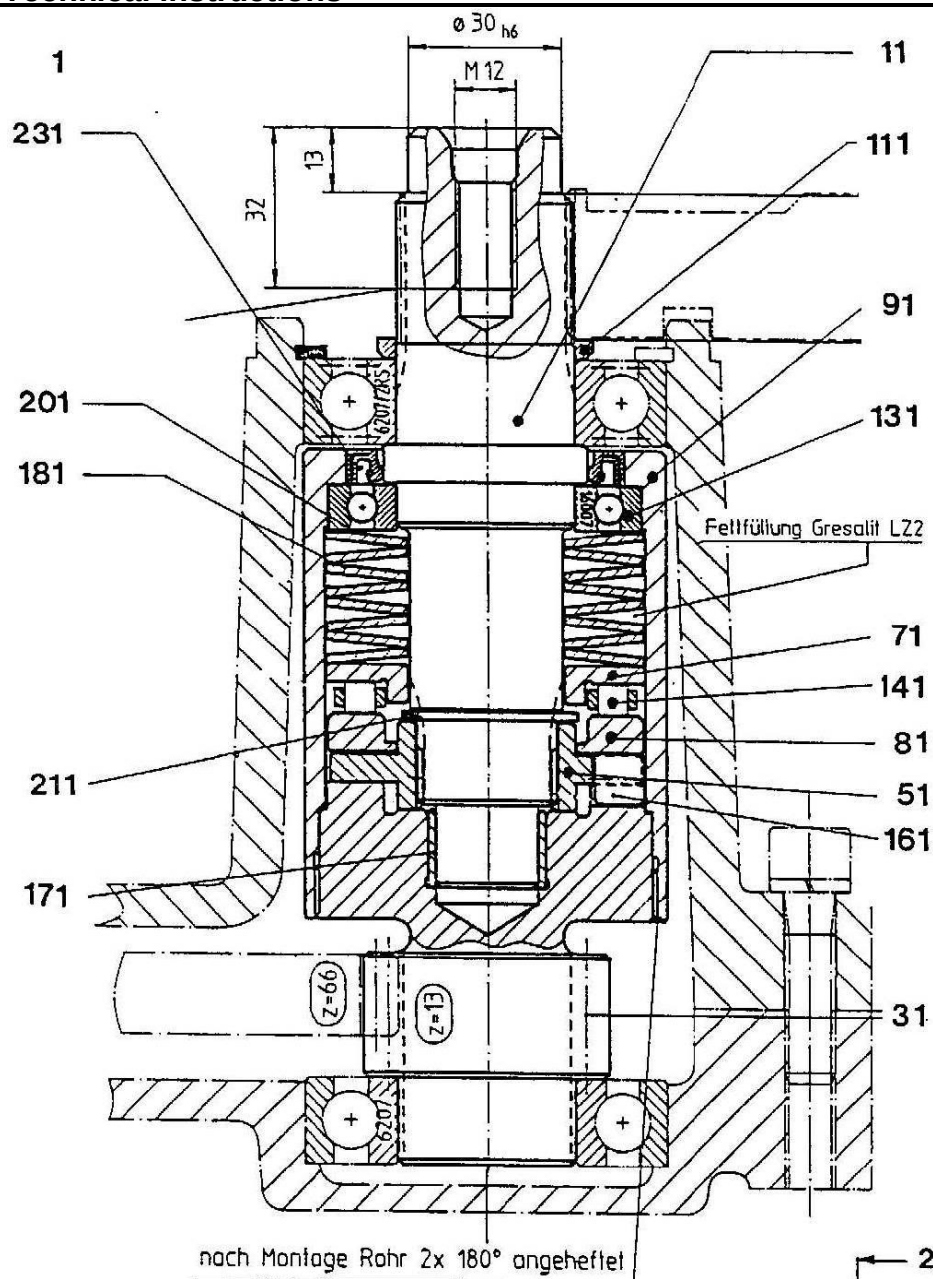


Abb. 30

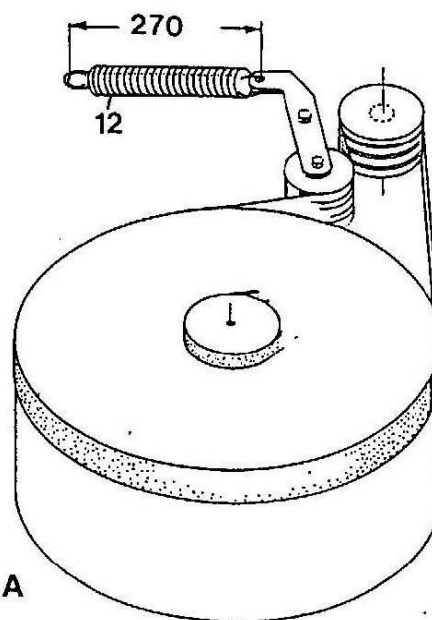


Abb. 30 A

Steering capability

Sufficient steering capability is only ensured if at least 20 % of the total weights are acting onto the tractor front axle.

Hitch

The hitch is not designed for supporting any additional load. Please also observe the corresponding decal placed on the machine.

NOTE:

1. It is not permissible to hitch a two-wheeled trailer to a rear mounted machine.
2. A four-wheel trailer may be attached if the following conditions are fulfilled:
 - a) Maximum forward speed: 25 km/h
 - b) The trailer is fitted with an overrunning brake or with a brake system which can be operated by the tractor driver
 - c) The permissible total weight of the trailer is not superior to the permissible total weight of the tractor x 1.25, but at most 5 tons.

**Overload protection in the spur gear drive of the precompression rollers (Fig. 30)**

The friction clutch of the PTO drive shaft protects the drive system and flywheel against overload. Any overload in the feed mechanism will activate the pin type safety clutch fitted to the spur gear lubricated with rolling bearing grease Gresalit LZ 2.

The torque of the clutch is preset. The housing is welded so that the clutch cannot get loose and the torque settings cannot be modified. Should it nevertheless be necessary to remove the clutch you should note that the cup springs 180 are pre-tensioned and circlip 120 can only be removed if this tension is released.

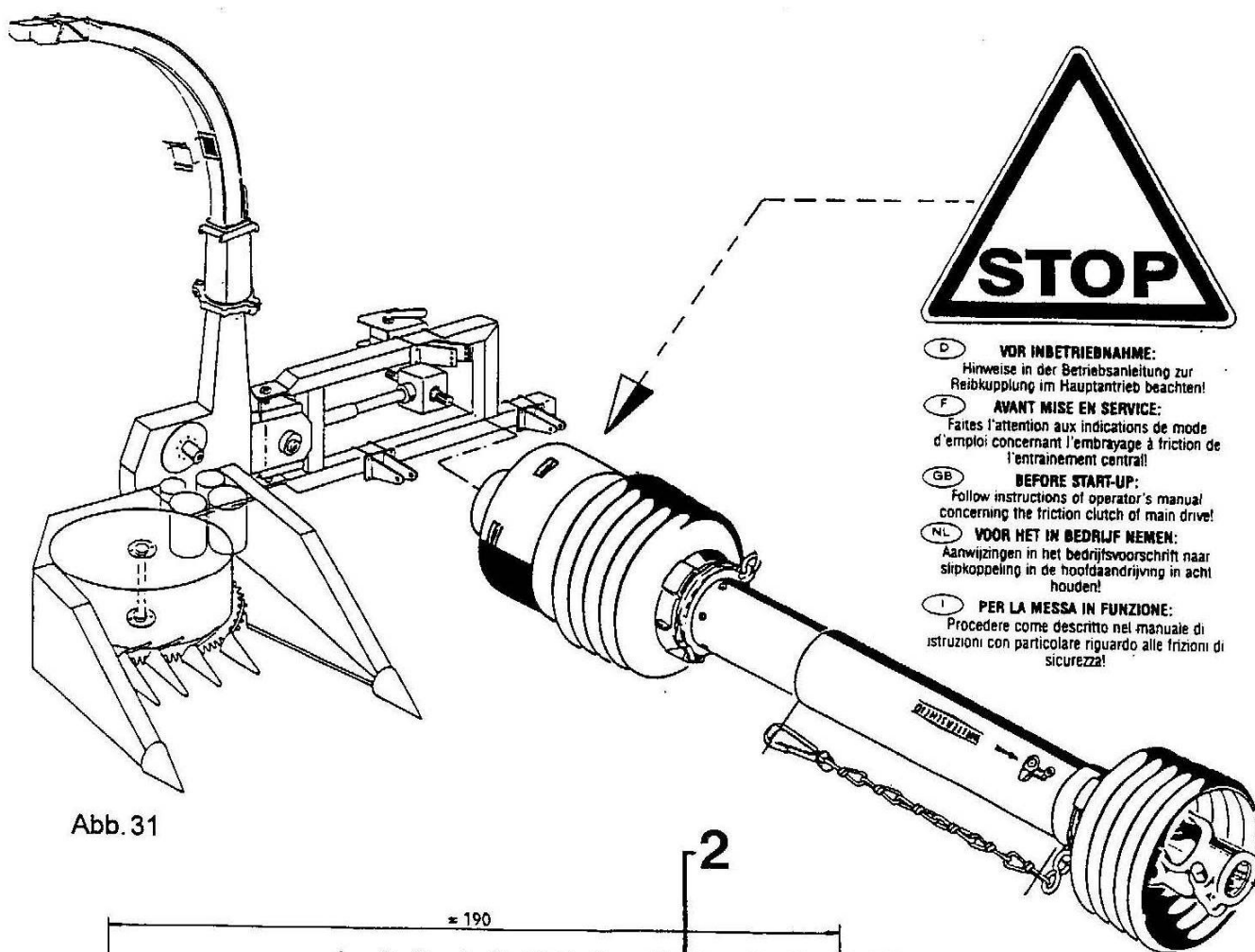


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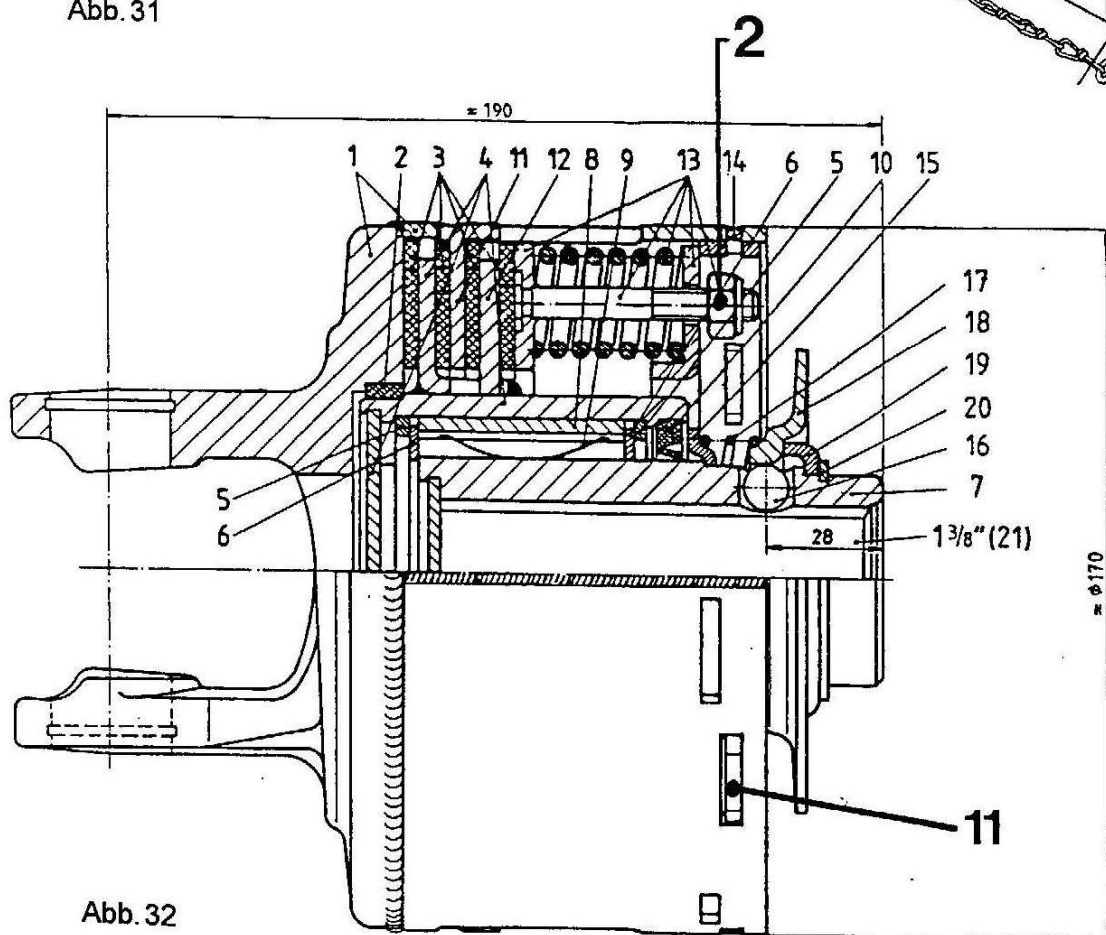


Abb. 32

**Overload clutch of the feed drum
(Fig. 30 A)**

Another overload clutch is fitted to the feed drum. This clutch is only operative with the power band set to the correct tension when spring 12 is so adjusted that the measurement 270 mm is given.

**Main PTO drive shaft
(Fig 31)**

Specifications of the PTO drive shaft: size 2400, tubes S4LH/S5, friction clutch FK 96/4 with freewheel mechanism, independent of the sense of rotation, clutch torque 1350 Nm, clevis 1 3/8, 6 splines, with lock pin (tractor side). Clevis size for another tractor PTO's:

1 3/8 – 21 splines = PN 59025

1 3/4 – 6 splines = PN 63254

1 3/4 – 20 splines = PN 63255

The PTO drive shaft has to be adapted to the tractor to be used.
Minimum overlap of the shaft tubes = 150 mm.

Sense of rotation of the PTO drive shaft

For REAR and SIDE MOUNTING the PTO drive shaft is fitted with a cw free running clutch:

Cpl. PTO drive shaft = PN 68950

½ PTO drive shaft with free running clutch = PN 69254

For FRONT MOUNTING the PTO drive shaft is fitted with a ccw rotating free running clutch:

Cpl. PTO drive shaft = 68951

½ PTO drive shaft with freewheel running mechanism: PN 69255

Friction clutch of the main PTO drive shaft – Fig 32

Overload protection

The friction clutch in the main PTO drive shaft protects the whole machine from overload. It is therefore INDISPENSABLE to check the function of this clutch periodically.

Torque setting

The clutch torque is set to 1350 Nm. To maintain this setting it is essential to perform the maintenance jobs described in the following two sections. Warranty will be voided if this advice is not observed.

Simple check

To be carried out before the first use of the machine and after long periods of storage:

- Tighten the nuts (2) to relieve the friction discs of load. Rotate the clutch.
- Unscrew the nuts (2) up to the end of the threaded position.

Detailed check

To be carried out at every start of season:

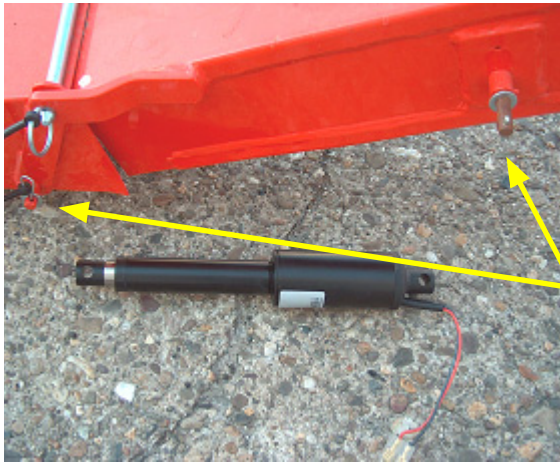
- Tighten the nuts (2) to relieve the friction discs of load.
- To maintain the torque setting (=1350 Nm) proceed as follows:
Mark position of adjusting ring 11 in relation to the clutch housing. Then remove the adjusting ring.
- Remove cup springs, pressure discs, driving discs and hub.
Clean these components or replace them if necessary.

New slip pads

After the installation of new slip pads, the clutch will only reach the full torque after a running-in period.

- Engage the Champion slowly, avoid any unnecessary load of the clutch
- The full capacity of the machine should only be utilized after a running-in period.

Installation of ejection chute after delivery



After delivery of the machine, mount the servomotor of the ejection flap.

Remove the split cutter pin from the securing bolt and mount the motor.



Feed the cable of the servomotor through the cable duct.

Ensure that the cable is sufficiently long so that it is not damaged or twisted when the ejection chute is moved. **Do not tighten** the **cable** but ensure that there is ample play.



The ejection chute can be folded down, e.g. in the event of a blockage. To do this, loosen the two brackets. The clamping force of the brackets can be adjusted by means of the eyebolts. When placing the ejection chute onto the flange surfaces, ensure that they are clean.

The ejection chute can be equipped with a **gas-filled strut** (optional) facilitating opening and closing of the chute.

Three attachment options

Front-mounted



Rear-mounted



Side-mounted



The Champion C1200 can be operated in three different positions to the tractor.

In order to mount the header to the front of the tractor, turn the input bevel gear transmission (see instructions).

If the machine is to be operated to the side of the tractor, ensure that there is sufficient space between the rear wheel of the tractor and the divider tip.

The headstock can be moved on the frame in order to adjust the forage harvester to the tractor in an optimised position.
See also section "Attachment to tractor".

Conversion for front mounting

Swivelling bevel gear transmission



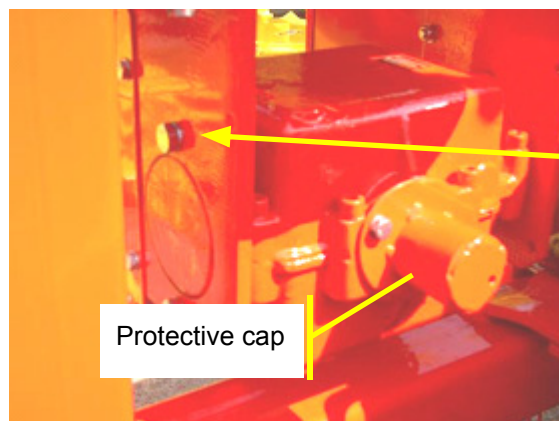
To adjust the machine for front mounting, turn the bevel gear transmission.

To do this, you must dismantle both drive shafts.

Remove the M8 screws from the shaft safety guard.

Remove the guard.

It might be necessary to replace the drive shafts with freewheel transmissions.



Remove the two M8 screws and mount the protective cap on the opposite side. Remove the four M10 screws to the left and right of the transmission.



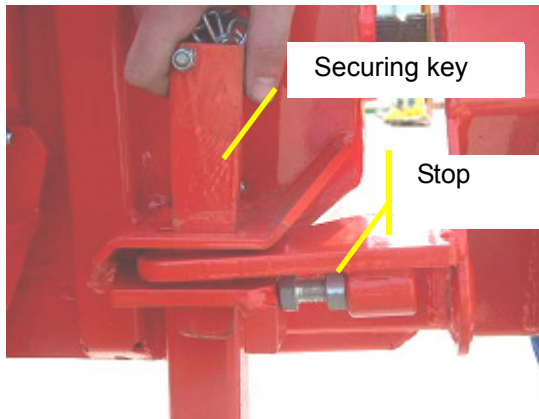
Swivel protective plate

Before the transmission can be turned by 180°, replace the bleeder screw with a seal screw. To do this, proceed as follows:

- Turn the 90° transmission
- The oil remains in the transmission
- Replace the oil filler screw with bleeder screw
- Turn gear further by 90° and secure it

Turn the transmission once to its top position.

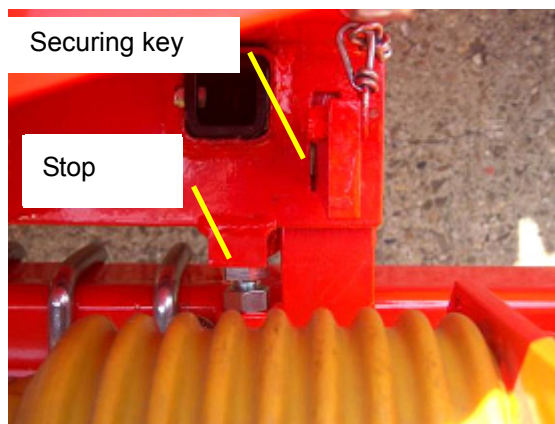
Turning of header



Turning header to change from rear to side attachment

The header is kept in its position by means of a keyed joint. To swivel the header to change its mounting position or for maintenance work, remove the key.

Position of securing key and stop for side mounting.



Position of securing key and stop for front and rear mounting.



Adjust the stops so that

- the drives are aligned and
- the securing key is properly inserted.

Caution



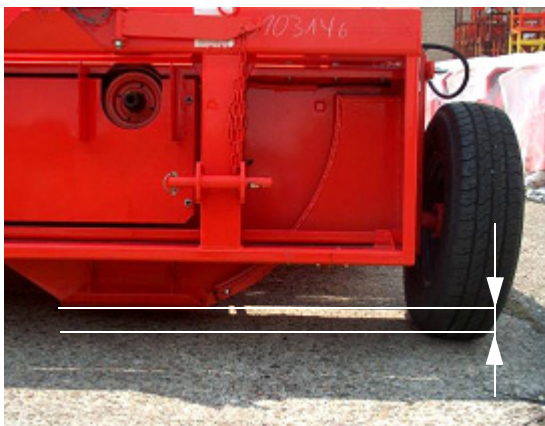
It is forbidden to stand in the swivelling range of the machine. Before swivelling the machine, ensure that the machine is attached in a horizontal position. Otherwise, the machine might swivel due to its own weight when the securing key is removed. Special care is required when swivelling the attachment while the machine is standing on a slope.

Alignment of forage harvester



The mounted forage harvester should be attached in such a way that the drive shaft is straight when the machines are in working position.

To achieve this, align the forage harvester by means of the upper link so that it is perpendicular to the floor.



To protect the forage harvester from hitting the ground when moving over uneven terrain, a gap of 5 cm between the ejection housing and the ground is maintained by means of the hydraulic system and the jockey wheel, if attached. Make the following adjustments when the machines are standing on level and even ground.

Adjust the forage harvester to its working height and secure it in that position by means of the tractor hydraulics.

The chopping unit is now in its basic position and does not need to be readjusted. The header is lifted and lowered with the tractor hydraulics.

Switching of intake devices



Safety plate

Switch on the 1000x PTO shaft. In order to achieve quality chopped material, a constant speed of 1000 rpm must be maintained.

Depending on the design, examine the freewheel mechanism of the drive shaft. Turn it left and then right.

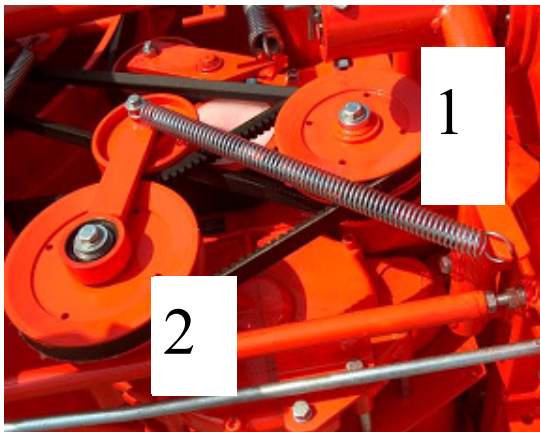


When starting the forage harvester for the first time, start the intake at idle speed of the tractor.

Due to the high speed of the blade rotors and the relatively high inertia mass, do not switch on the intake at full motor speed.

The intake can only be switched on and off (i.e. for reversing to remove blockages) at full speed, even in fast sequence, as long as the blade rotors remain at nearly the same speed, due to the freewheel mechanism.

Cutting lengths



The chopping lengths can be adjusted quickly by exchanging the V-belt pulleys 1 + 2.

The cutting length can also be adjusted more finely by removing chopping blades at regular intervals.

Cutting lengths		
V-belt pulley Ø	Chopping blade	
	12	6
1 = 180 2 = 210	5	10
1 = 210 2 = 180	7,5	15
Fig. 40		

Cutting lengths		
V-belt pulley Ø	Chopping blade	
	12	6
1 = 153 2 = 218	4	8
1 = 218 2 = 153	8,5	17
Fig. 40A		

The shortest standard chopping length is 5 mm. This length can be reduced to 4mm by using two V-belt pulleys.

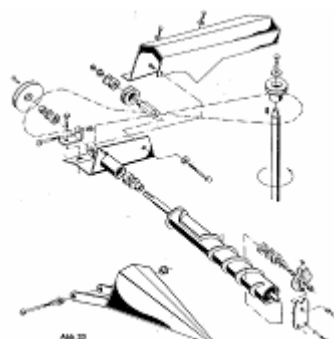
V-belt pulley 1 153 = no.65975

V-belt pulley 2 218 = no.65977

Lodged crop worm



The header can be equipped with a lodged crop worm, driven by the intake drum.

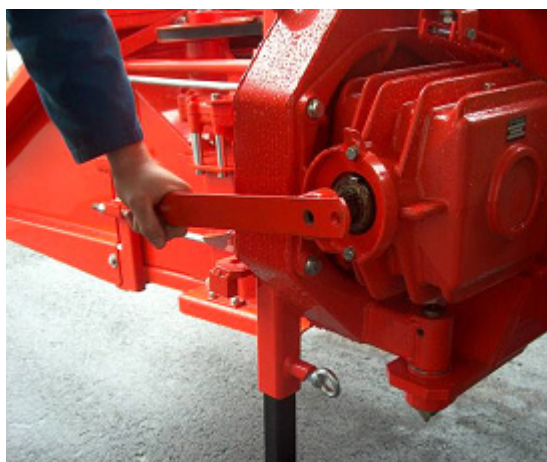


No: 65960 Crop divider, complete

Manual reversing

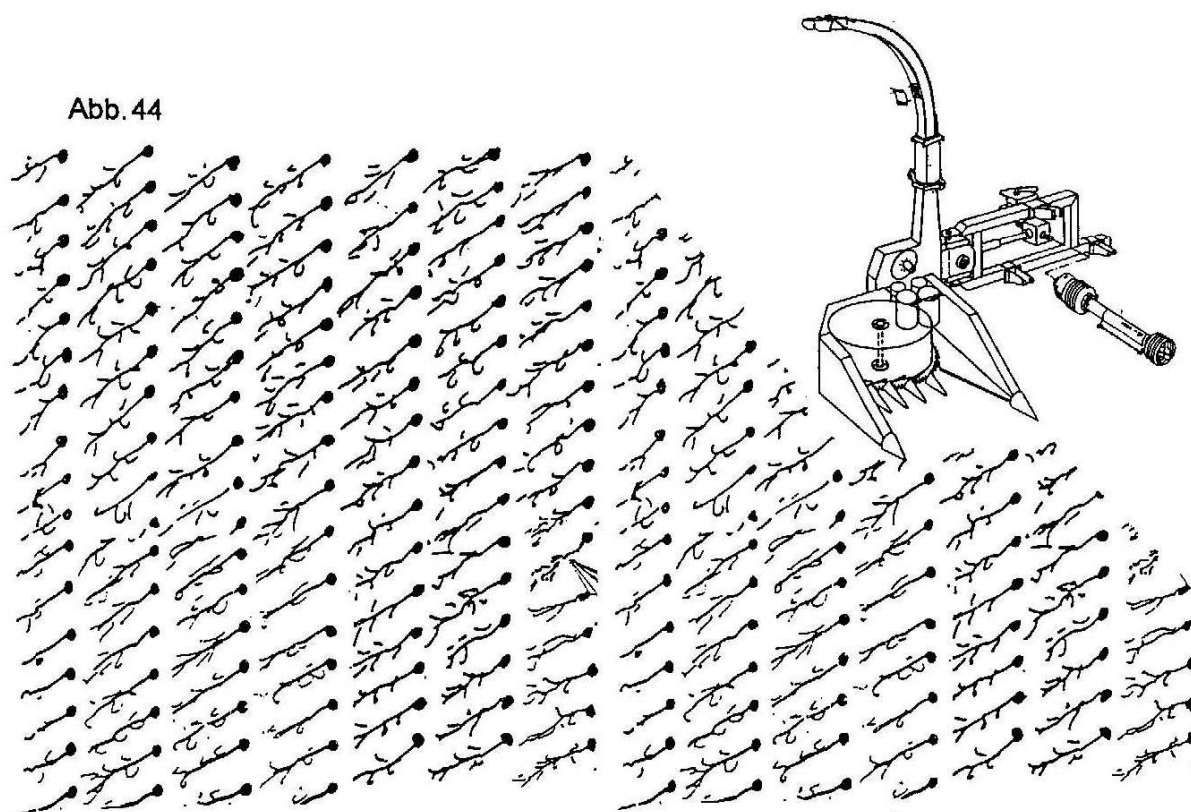
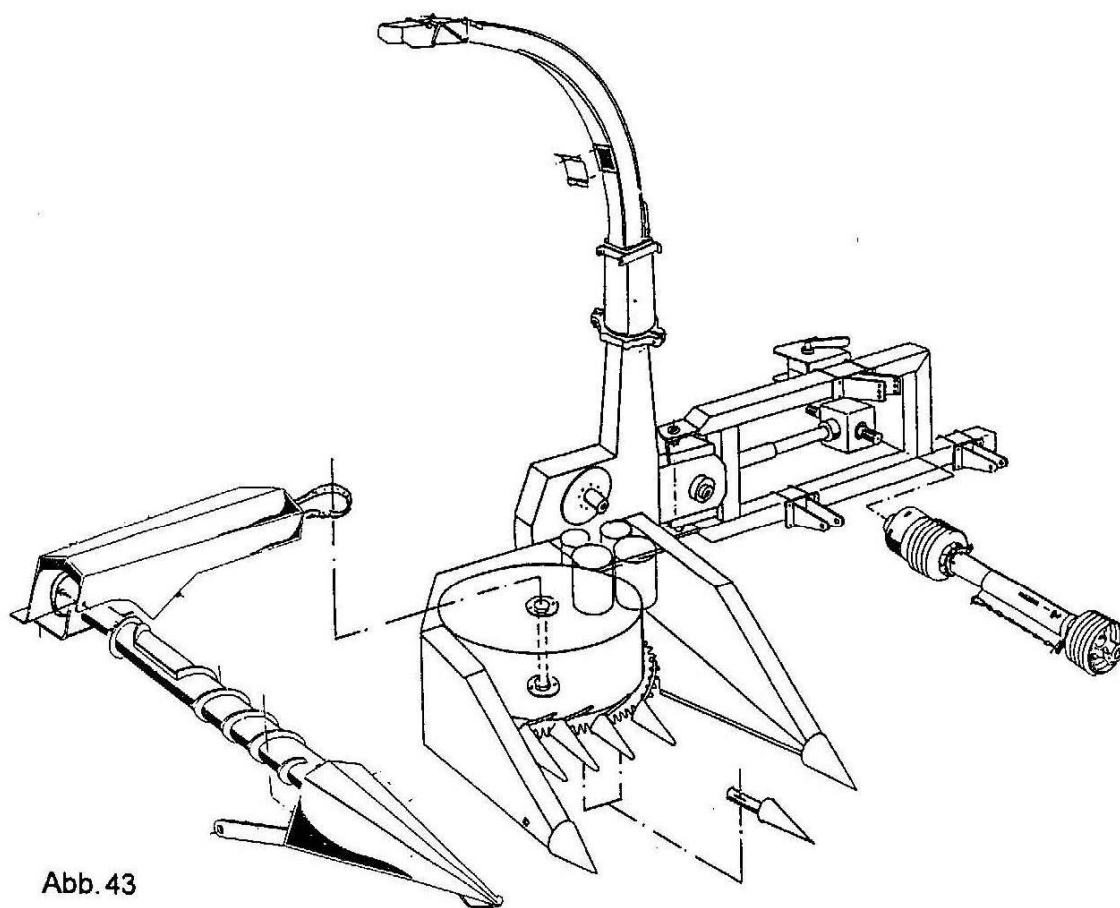


Switch off all drives, shut down the engine and let all parts come to a standstill.



To reverse the header, use a lever. Turn the lever so that the intake drum rotates against its intake direction. Disengage the drive shaft from the tractor.

Order no.: 85393



Tips for during the harvest

Sharp knives

Never operate the machine with blunt knives. This will impair efficiency and chopping quality and may cause damage to the machine.

Maize

Select the travel speed to match the crop density. With short stemmed maize forward speed should be increased to ensure a satisfactory flow of chopped crop. Depending on the degree of dryness of the kernels the smooth or friction concave plate should be used.

Forage rye

We recommend a chopped length of 30 mm (V-belt pulley 1 = W 210 mm; 4 cutting knives). The stems should be at least knee high. Only the smooth concave plate should be used. Do not drive too slowly when entering the crop.

Whole crop silage

Originally the Champion C 1200 is constructed for the harvest of thick stemmed crops. With the help of the following tips as well as favorable conditions of the crop like standing and dry crops, good results can be achieved. Concerning the cutting length you should take compromises because of its principle of construction of the cutting system.

- Dry crop
- Standing crop must have a minimum length of knee height
- Drive basically fast in order to get a enough food flow into the chopper
- During extremely difficult conditions like wet laid crops with a lot of weed on a sandy soil the operator should have some practice as regards selection of the right forward speed, steering the machine and use of the stem lifters.

Down crops

Depending on the operation conditions it might be commendable to install "fixed stalk lifter tips for down crops" as shown in chapter 8 (optional equipment, order no. 69195).

A rotating crop divider (order No. 65195) should be also used. Despite the built-in advantages of the Champion, you should observe the following recommendations:

- The practical experience of the driver is the key to a successful harvest of down crops.
- When starting the operation drive once around the field. This will help to find the best travel direction.
- In most cases best results are achieved when operating transversally to the rows (see fig. 44).
- At the start of the process you should observe attentively the way the material enters the header.
- In order to obtain from the beginning of the process a compact stream of fodder, you should drive fast into the crop and reduce as far as possible the rotational speed of the gathering drums.
- NEVER attempt to clear a blockage with your hands or feet.
- If it is unavoidable to clear a blockage by hand, stop the engine and move the PTO control lever to the OFF position.



In order to achieve the best possible chopping quality at a low force, you must regularly sharpen the blades. This should be done several times a day.

Operation of the sharpening device



Start the machine; engage the PTO shaft and let it run at a speed of approx. **580 rpm**;
Release the protective cover.
Lock the cover and secure it against inadvertent release.

Remove the lock nut from the sharpening device.



Turn the manual handle in the direction of the chopping wheel until the blades touch the sharpening device. Complete another 1/2 rotation of the handle, thus pressing the grinding disk against the blades.

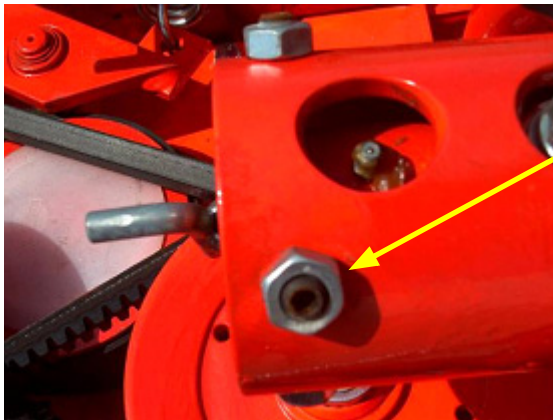
Important!

Ensure that the grinding disk rotates with the blades during grinding!
Adjust the speed! The faster the blades rotate, the higher the abrasive effect of the grinding disk!



After completion of the grinding process:

- Turn the handle to remove the grinding disk from the blades.
- Lock the sharpening device with the lock nut.
- Close the protective cover and secure it.

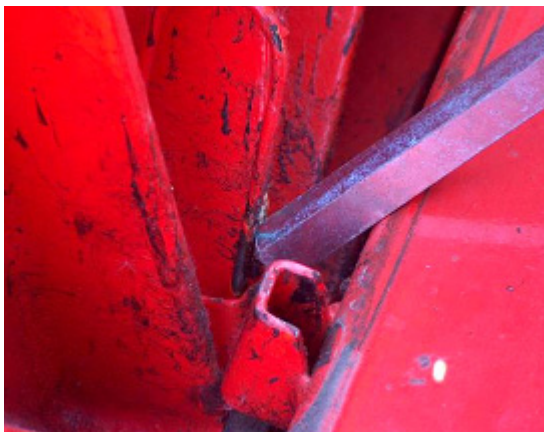


If necessary, the grinding disk can be adjusted by means of 4 hex socket head screws.

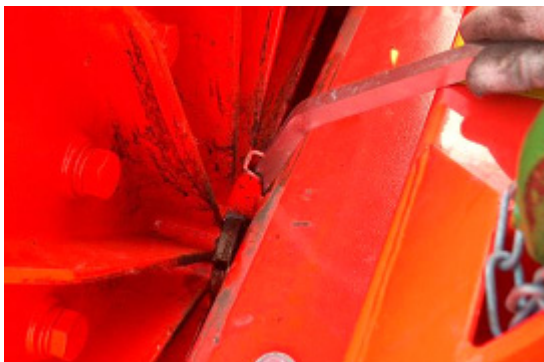
Realign chopping wheel!



After the chopping wheel has been re-sharpened, it must be realigned to the counter-edge.
Open the housing cover of the chopping wheel.



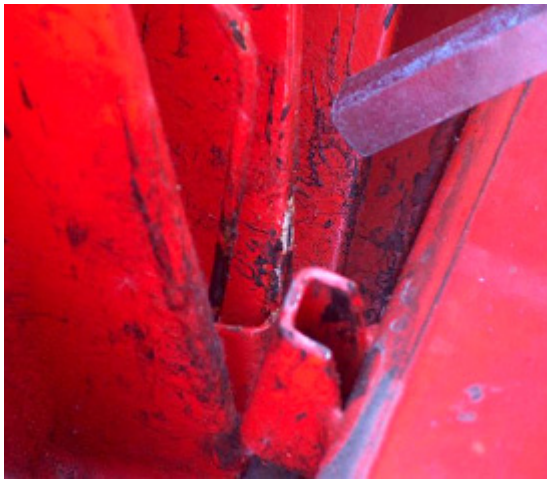
Remove the anti-rotation element (lock spring) from its seat. The nut is now accessible.



Place the included 16 mm mounting bar onto the square head of the nut.



Using your right hand, turn the chopping wheel in a clockwise direction until it touches the opposite edges.



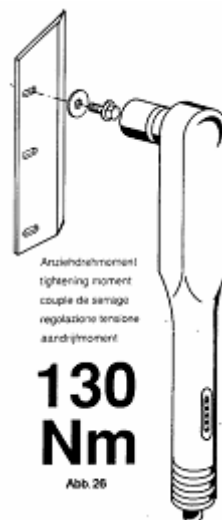
Turn the chopping wheel back to the next position in which the lock spring can be engaged in the groove of the nut.

The blade wheel may not touch the counter-edge.
If necessary, repeat the above adjusting procedure, check the counter-edge and set the blade wheel back by one groove.

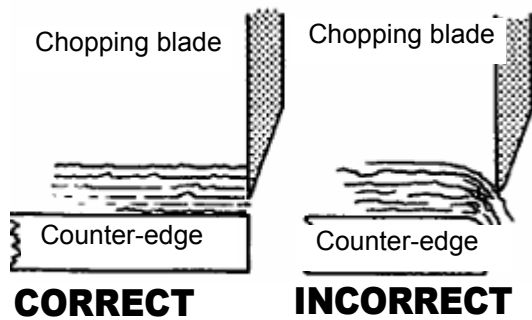


The blades can be adjusted by means of the oblong holes so that a uniform distance to the counter-edge can be achieved.

Caution: observe correct tightening torques!



Rotate or replace counter-edges!



Regularly inspect the counter-edge for damage, etc. See also chapter "Changing of counter-edge".

See chapter "Pre-compression channel".

Load shovels



Optimised chop transport can only be achieved with undamaged and correctly mounted load shovels. They can be turned up to four times.

Working with the sharpening device

Let the blade wheel rotate at a speed of **580 rpm**. Carefully move the grinding disk onto the blades. When the disk touches the blades, turn the handle by another 1/4 rotation. Secure the shaft of the grinding disk against further movement towards the blades by turning the star knob to the side of the device. The grinding disk must rotate during the grinding process. If necessary, adjust the output speed of the tractor until sparks are produced at the grinding disk.

Caution: The faster the blades rotate, the higher the abrasive effect of the grinding disk!

To adjust the grinding effect, simply adjust the blade wheel speed.

too hard: reduce speed

too soft: increase speed

If the speed is too high, the grinding disk surface becomes smooth and shiny. Its coarseness can be restored by reducing the speed. If this is not effective, increase the force with which the disk presses against the blades for a short time. It might also be sufficient to produce a few small ridges produced with an angle grinder.

32.1 Inspection and adjustment of opposite cutting edge

Blade rotor & smooth roller

C1200

Testing of counter-edge



The counter-edge can be visually inspected through the housing of the blade wheel.

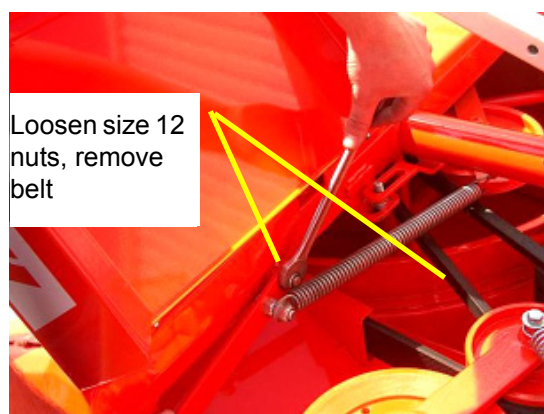
For this purpose, the blade wheel housing can be opened upwards.

Replacement and adjustment of counter-edge



To adjust and replace the counter-edge, open the housing of the pre-compression rollers.

In order to be able to increase the opening angle of the pre-compression channel, remove the jockey wheel.

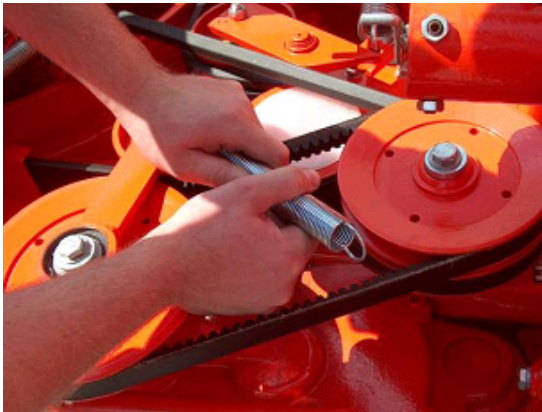


First release the belt and then remove from the cutting rotor. The tension spring can be released by moving the lever. To release the lever, loosen the size 12 hexagon nut.

32.1 Inspection and adjustment of opposite cutting edge

Blade rotor & smooth roller

C1200



Remove the tension spring from the top belt pulley.
Remove the 12x35mm screw.



Remove the top pulley together with the belt.



Remove the lower pulley and belt, or lift the belt from the pulley.

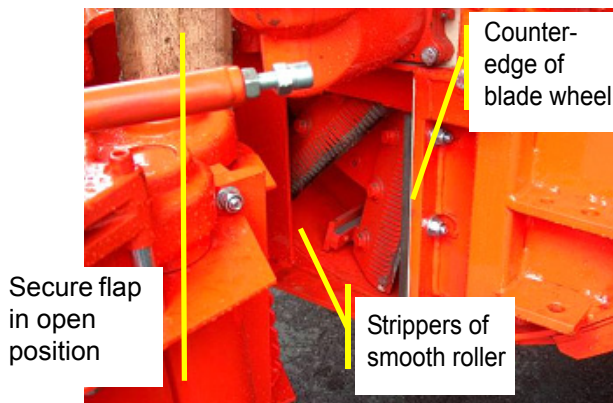


Disconnect the two con-rods.

32.1 Inspection and adjustment of opposite cutting edge

Blade rotor & smooth roller

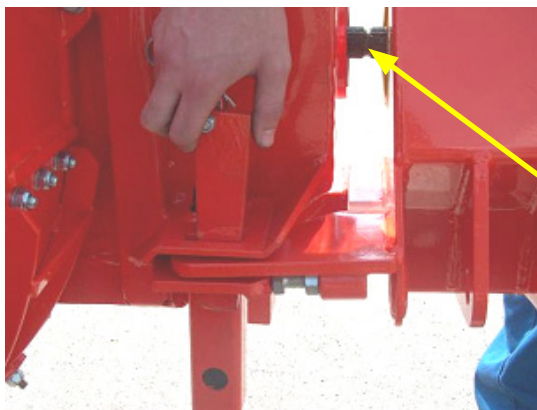
C1200



Proceed with great caution when opening the channel

Ensure that the machine is aligned in a horizontal position when attached in order to prevent the header opening inadvertently.

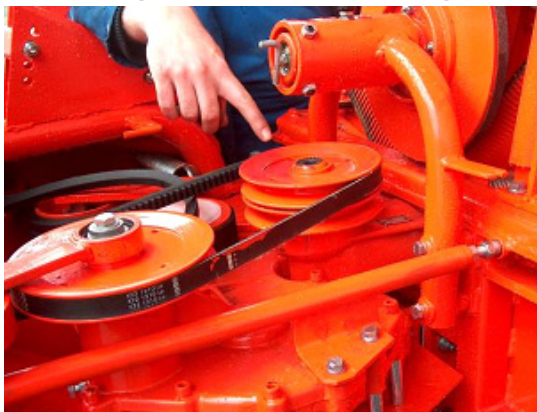
Secure the channel flap in its opened position.



In order to increase the swivelling angle, move the forage harvester from the front or rear position to the side.

First disconnect the drive shaft from the variable-speed transmission.

Opening of drum housing



To open the drum housing by swivelling it from the pre-compression roller housing, first install the top belt and pulley.



Remove the tension spring from the drum drive unit. When removing the tension spring hold it with an assembly rod, and then loosen the nuts. When reinstalling the spring, also use the assembly rod.

32.1 Inspection and adjustment of opposite cutting edge

Blade rotor & smooth roller

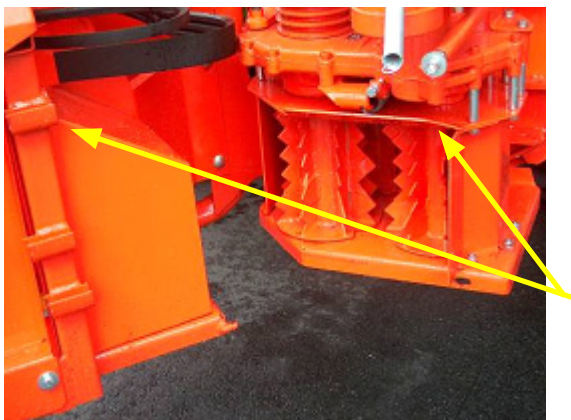
C1200



Remove the pressure roller by removing the circlip and pulling the reversing lever with roller.

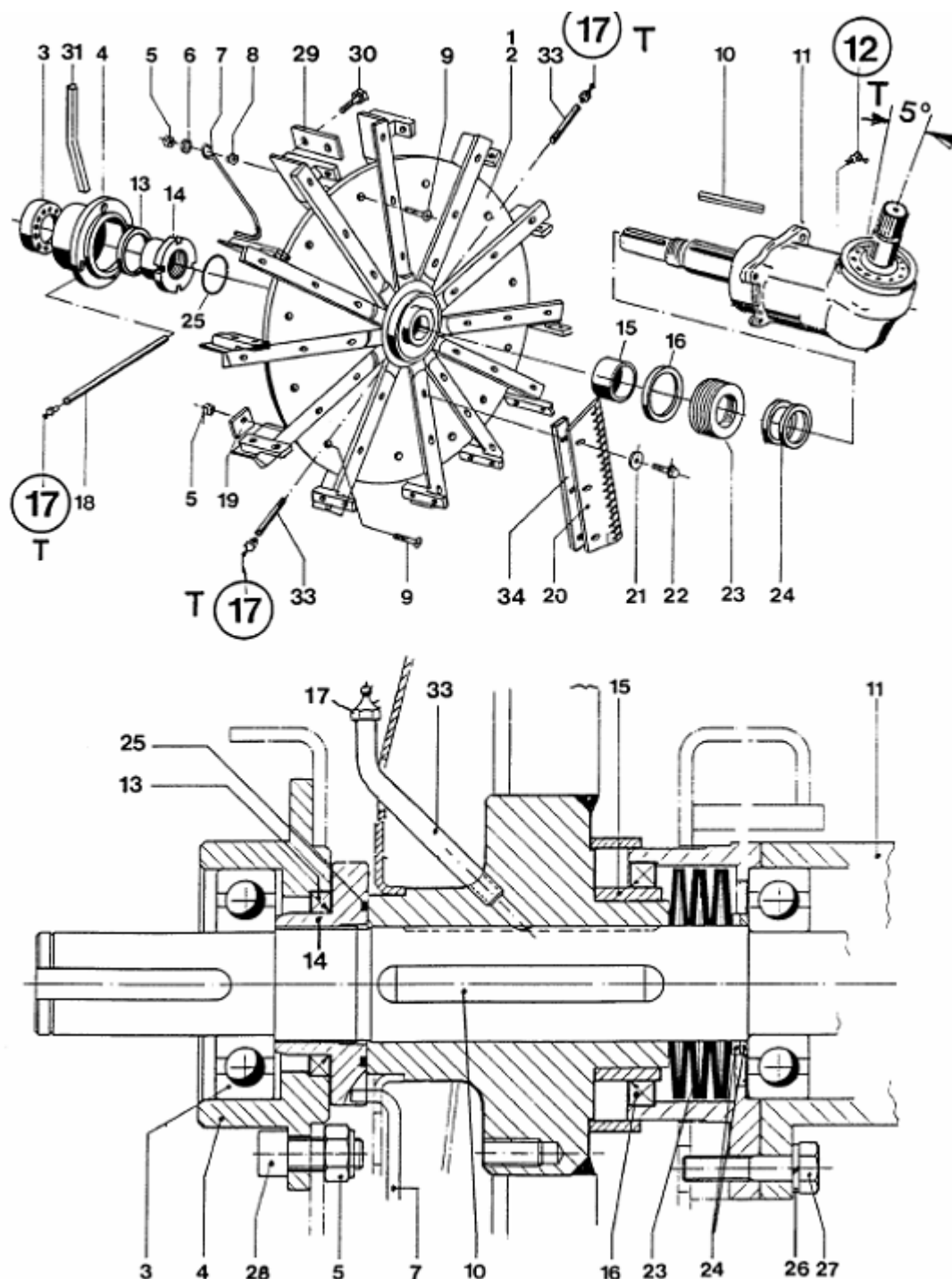


Remove the large drum belt.



The drum housing can now be opened.
Secure the hosing against inadvertent closing.

When closing the housing, ensure that the stop is properly engaged.



Caution - balanced blade wheel

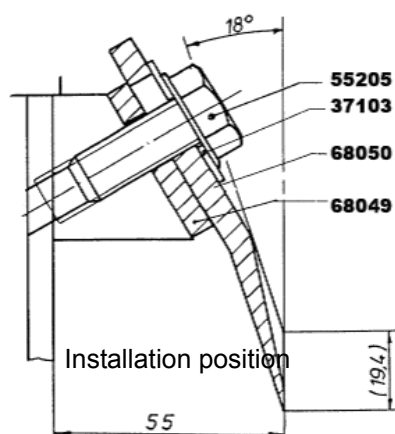
The blade wheel is balanced at the factory. Therefore never mount a set of wheels that are not supplied together.

To ensure balance, the blades, shear bars and transport shovels must be replaced in pairs at positions opposite each other. The maximum permissible weight difference is 20 g.

32.2 Blade rotor

C1200

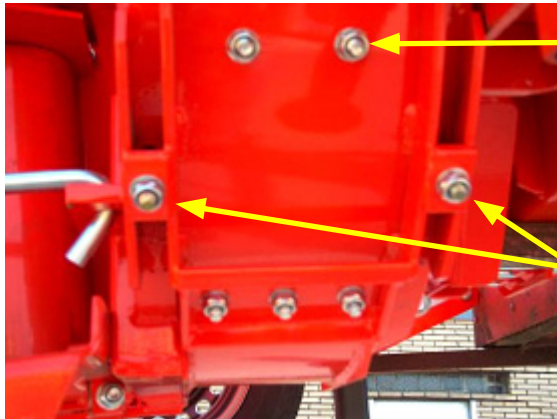
	Fig. no.	Spare part no.	Designation			Quant. per machine	Comments	
	1	69280	Blade rotor	compl. with blades		1	balanced	
	2	61748	Blade rotor			1		
	3	04209	Groove ball bearing	6308-2RS		1		
	4	62195	Housing			1		
	5	52074	Hexagon nut	M12	D980	X		
	6	05497	Washer	13	D125-v	1		
	7	59472	Lock spring			1		
	8	04205	Hexagon nut	M12	D934-v	1		
	9	49779	Counter-sunk screw	12x30	D7991-v	X		
	10	61068	Parallel key	14x9x110 special		1		
	11	64813	Bevel gear transmission	1.223.03.1		1		
	12	28226	Lubrication nipple	H2 M6x1		1		
♦	13	37843	Wheel seal ring	55x72x8	BA	1	special	
♦	14	60727	Nut			1		
♦	15	62294	Inner ring	IR-65x75x28		1		
♦	16	49041	Wheel seal ring	75x95x10 BA		1		
	17	46357	Lubrication nipple	H1 M6x1	D71412	3		
	16	62988	Lubrication nipple pipe			1		
	19	65140	Balancing weights			X		
♦	20	68050	Chopping blades			12		
♦	21	37103	Disk spring			36		
♦	22	55205	Securing screw	V-Ripp 10x25		36		
		Important: Torque for these screws = 130 Nm						Torque=85 Nm
	23	35804	Disk spring	90x46x2.5		6		
	24	35626	Back-up washer	SS-45x56x3	D988	2		
♦	25	56468	O-ring	OR-57x3		1		
	26	04218	Spring lock washer	A10	D127-v	4		
	27	62971	Hexagon screw	10x45	D931-v	4		
	28	49341	Cheese head screw	12x30	D912-8.8 V	4		
♦	29	66318	End plate	112x50x8		12		
♦	30	55040	Securing screw	V-Ripp 10x25		24		
	31	42087	Mounting bar	15x300		1		
	33	68033	Lubrication nipple pipe			2		
	34	68049	Blade pad			12		



Adjust the cracker plate to suit the type of the crop.

- Smooth plate for standard products
- Crushing plate for dry products
- By using the cracker plate, the maize cobs are effectively ground to small particles. This however requires a higher power input from the tractor.

Dismantling of cracker plate

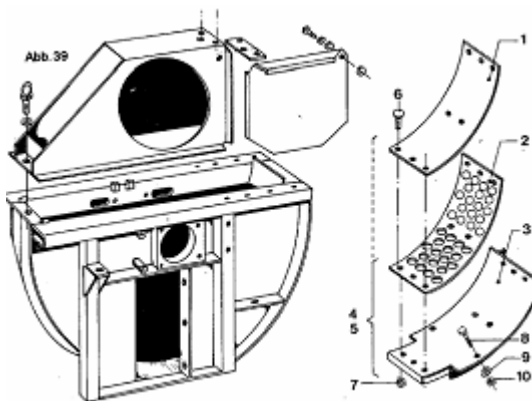


The grinding effect of the cracker plate can be adjusted by placing washers between the cracker plate and the housing. The smaller the gap between the blade wheel and the cracker plate, the smaller the cobs are chopped.

Remove the two M 10 x 70 mounting screws.

Remove the cracker plate.

Re-mount in reverse order.



The outer cracker plate panel (3) can be equipped with a smooth plate (1) or a cracker plate (2).

When changing plates, ensure that the supporting surfaces are clean.

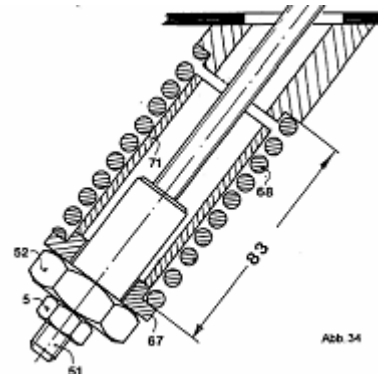
Turning of cracker plate

The service life of the cracker plates can be prolonged by reversing their position (items 1 + 2).

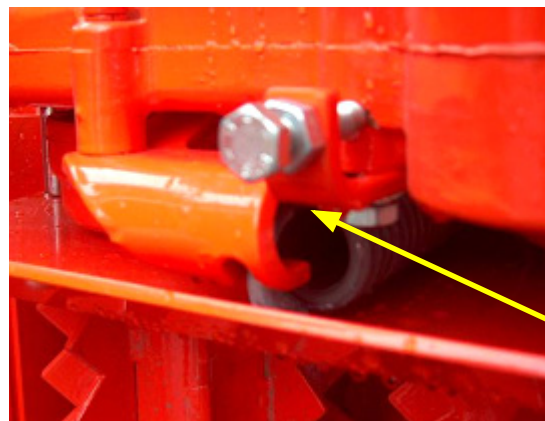
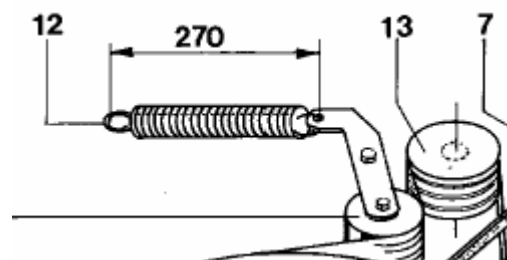
Adjustment of belt tensioner



The main drive belt is tensioned by a pressure roller and spring. Adjust the spring to a length of 83 mm.



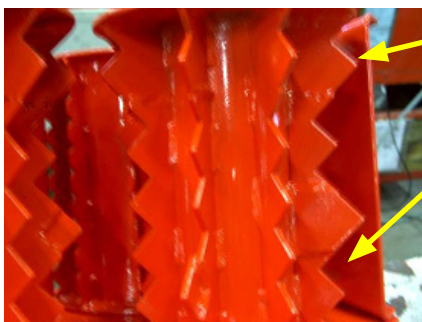
Adjust the tension spring at the intake drum to a length of 270 mm (from eyelet to eyelet).



The preload of the pre-compression rollers can be adjusted by means of the size 10 screw.

The dimensions shown here are recommended values. In certain cases, the setting might deviate from these.

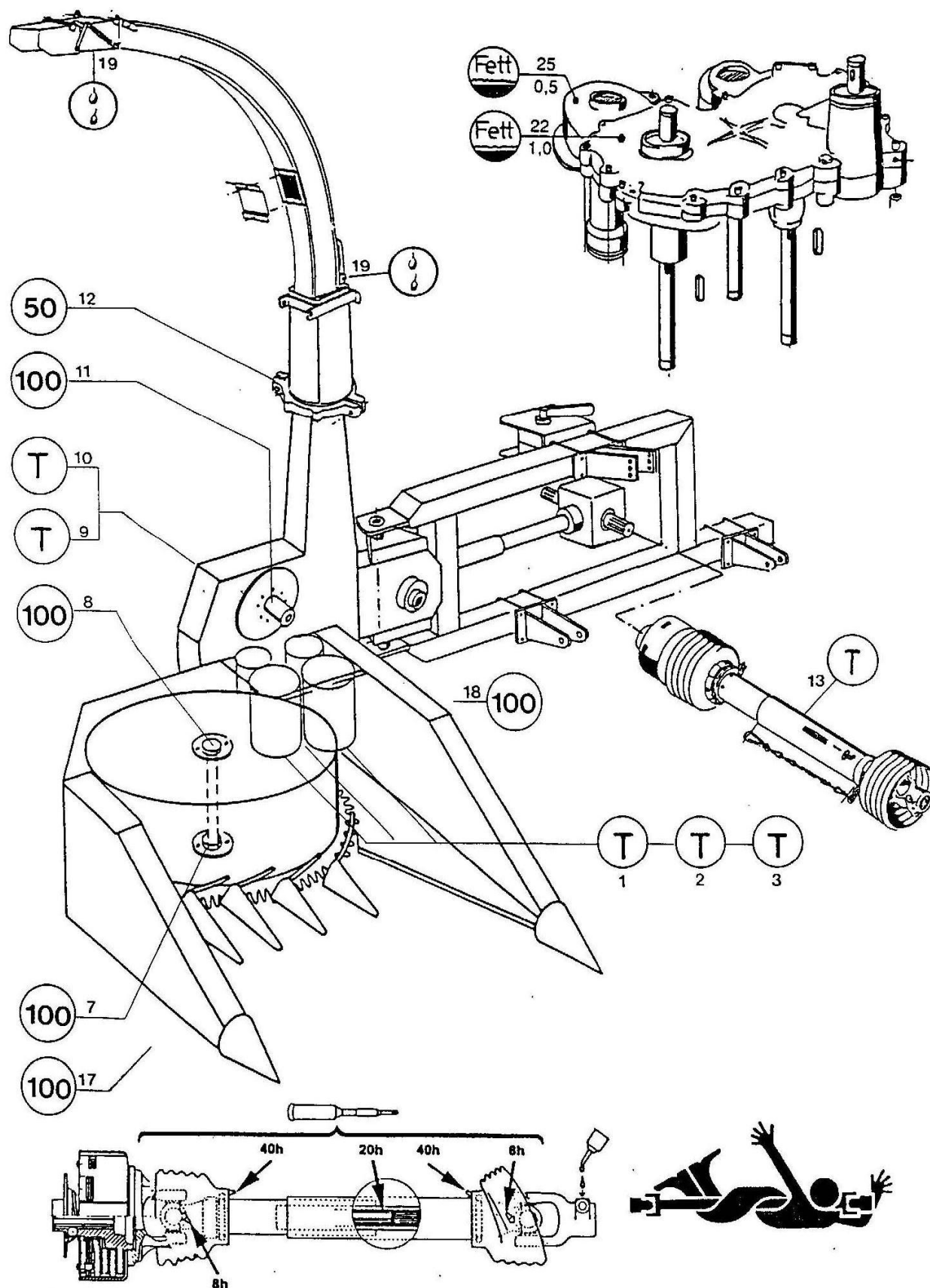
Wear at intake drums



The front intake drums are equipped with drivers. When these are worn, crop flow might be hampered.

The drivers can be welded on, if necessary. Ensure that the drivers are always offset by one row.

Abb. 47



Servicing intervals

The indicated servicing intervals are calculated for normal operating conditions. Before lubricating clean the grease nipples. Damaged grease nipples have to be replaced. If a new grease nipple should not accept grease, remove it and find the cause of blockage.

Caution!

Cleaning, lubricating and adjusting work may only be carried out with the engine stopped. Wait for all machine components to be at a complete stop. All lubricating and maintenance jobs have to be carried out before and after every season.

Symbols

= Grease every 50 working hours

A = Oil drain plug



= Grease every 100 working hours

E = Oil filler plug



= Grease every day

L = Breather



= 1,5 liter transmission oil SAE 90

N = Grease nipple



= Periodically grease all hinge points

P = Oil level check plug



= Grease, semi fluid Aviatikum XRF

Greasing chart

- 1 = Feed roller – lower bearing
- 2 = Feed roller – lower bearing
- 3 = Precompression roller – lower bearing
- 4 = Pivot – top bearing
- 5 = Pivot – lower bearing
- 6 = Free wheel mechanism
- 7 = Intake drum – lower bearing
- 8 = Intake drum – top bearing
- 9 = Flywheel cutting disc – front bearing (grease nipple on gearbox)
- 10 = Flywheel cutting disc – rear bearing
- 11 = Grinding stone bearing
- 12 = Pivot discharge chute
- 13 = Main PTO
- 14 = Flywheel cutter – hub – shaft
- 15 = Flywheel cutter – hub – shaft
- 16 = PTO shaft between the gearboxes
- 17 = Optional equipment – crop divider 2 nipples
- 18 = Optional equipment – support wheel
- 19 = Swivel point chute
- 21 = Angle drive – flywheel cutting disc: 0.3 = Semi fluid grease XRF
- 22 = Spur gear – precompression roller: 1.0 = Semi fluid grease XRF
- 23 = Angle drive – main drive: 1.3 = SAE 90 Oil
- 24 = Angle drive – pivot: 0.5 = SAE 90 Oil
- 25 = Pendulum drive: 0.5 = Semi fluid grease XRF

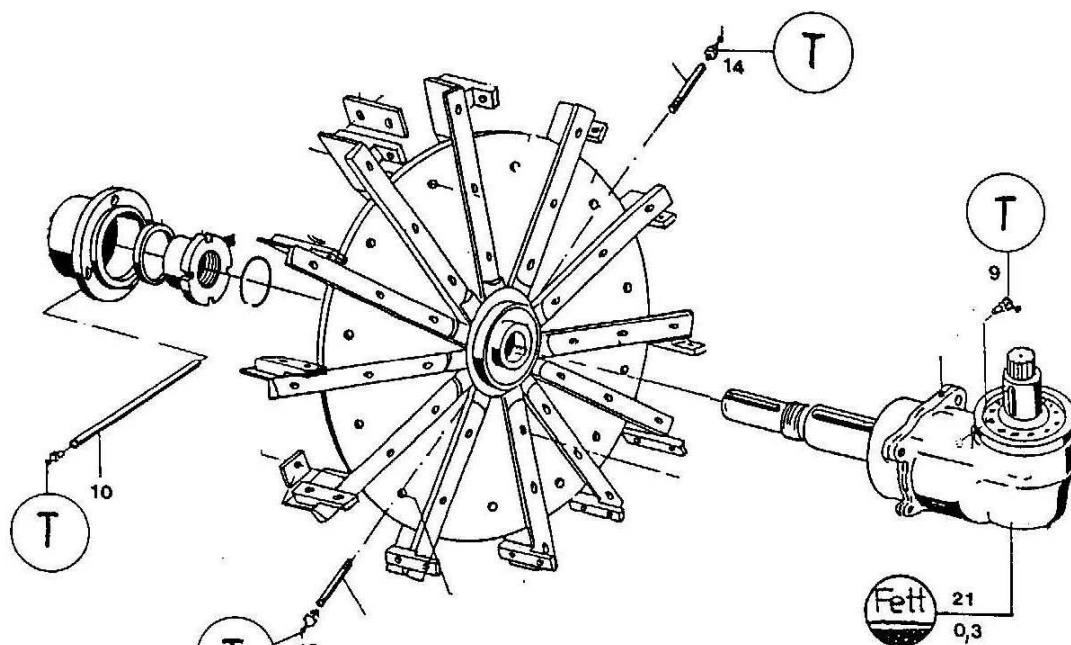


Abb. 49

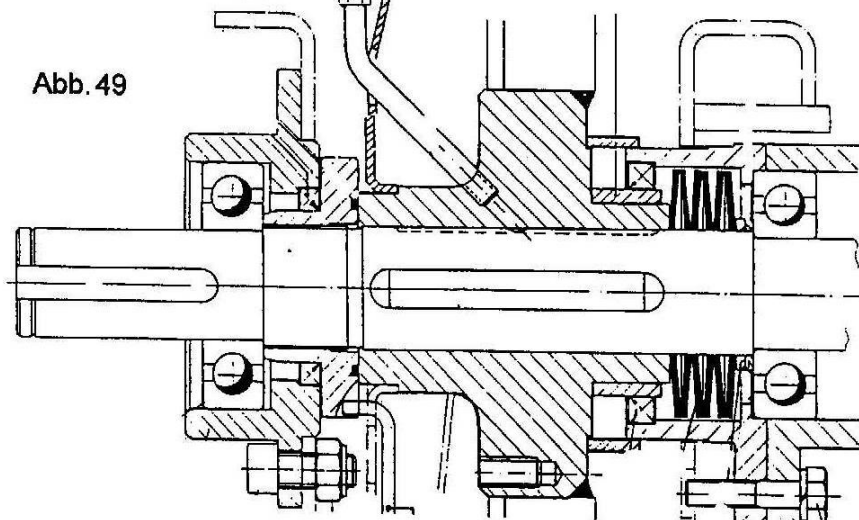
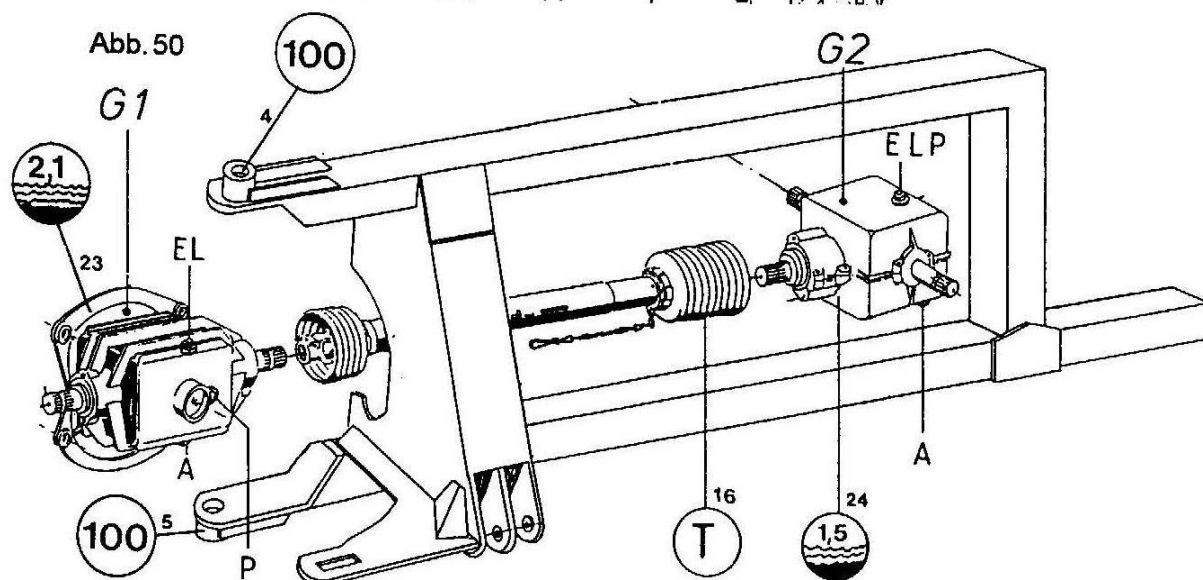


Abb. 50



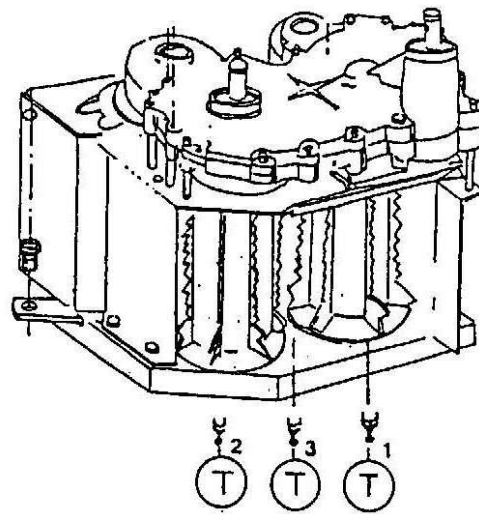


Abb. 51

Fig. 52

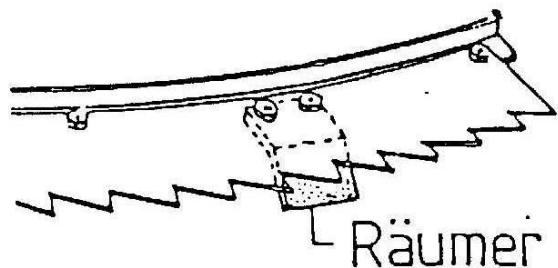
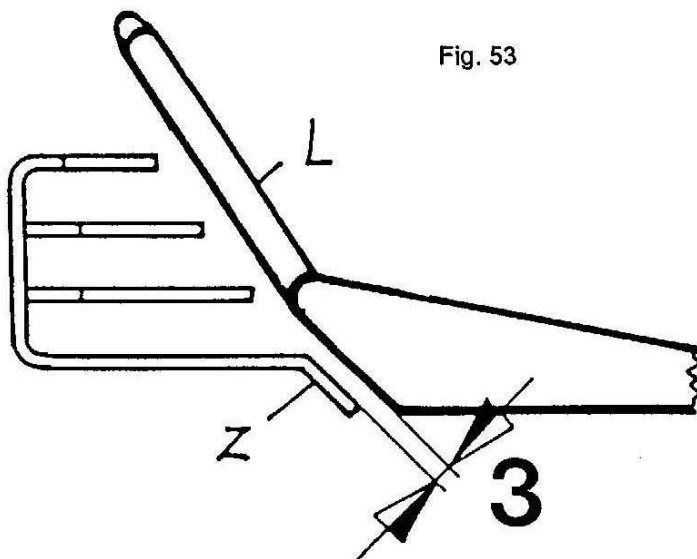


Fig. 53



Torques for metric bolts

Dimension	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	oiled*		dry*		oiled*		dry*		oiled*		dry*		oiled*		dry*	
	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft
M 6	4,8	3,5	6	4,5	9	6,5	11	8,5	13	9,5	17	12	15	11,5	19	14,5
M 8	12	8,5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M 10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M 12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M 14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M 16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M 18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M 20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M 22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M 24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M 27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M 30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M 33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M 36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

The tightening torques are indicated in the table are approximately values and do NOT apply wherever other tightening torques are quoted in this manual. Bolts and nuts have to be checked periodically for tightness. The shear bolts are designed in such a way that they break if exposed to a determined load. When replacing shear bolts use only bolts of the same property class.

When replacing bolts and nuts be sure that the replacement are the same or higher property class. Bolts and nuts of higher property class have to be tightened to the same torque as the original parts. Be sure that the threaded portions are clean and the bolts are correctly installed. This will prevent damage to the bolts to the bolts when same are tightened. Lock nuts (not bolts!) with plastic layer or steel nuts with flange have to be pulled up to app. 50 % of the value indicated in the table for "dry" bolts. Toothed or castellated nuts have to be tightened to full torque.

* "Oiled" means that the bolts are provided with a lubricant such as engine oil or that bolts with phosphate coating or oiled bolts are used. "Dry" means that the unlubricated standard or galvanized bolts are used.

Daily maintenance

- remove husk and stem residues and earth from cutting disc and the working range of the intake drums
- Check the cleaners for the knives under the feed mechanism (see fig. 27). Blunt or incorrectly positioned cleaners will cause blockages and expose the drive mechanism to unnecessary load.
- Grind the knives of the flywheel cutting disc several times a day.
- Check the M12 attaching bolts of the cutting knives using a torque wrench. Correct tightening torque:

130 Nm

Note: The standard tightening torques of 70 Nm will not be sufficient.

- Adjust the cutting disc centrally in relation to the shear bar.
- Even the knives have not been sharpened, the flywheel cutting disc has to be readjusted twice a day.
- Check all knives under the feed mechanism, especially after a foreign object has been encountered.
- Visual control of the parallelism of shear bar and cutting knives.
- Lubricate the implement in accordance with the greasing chart.
- Retighten all screws and bolts.
- Retighten the wheel studs.

Weekly maintenance

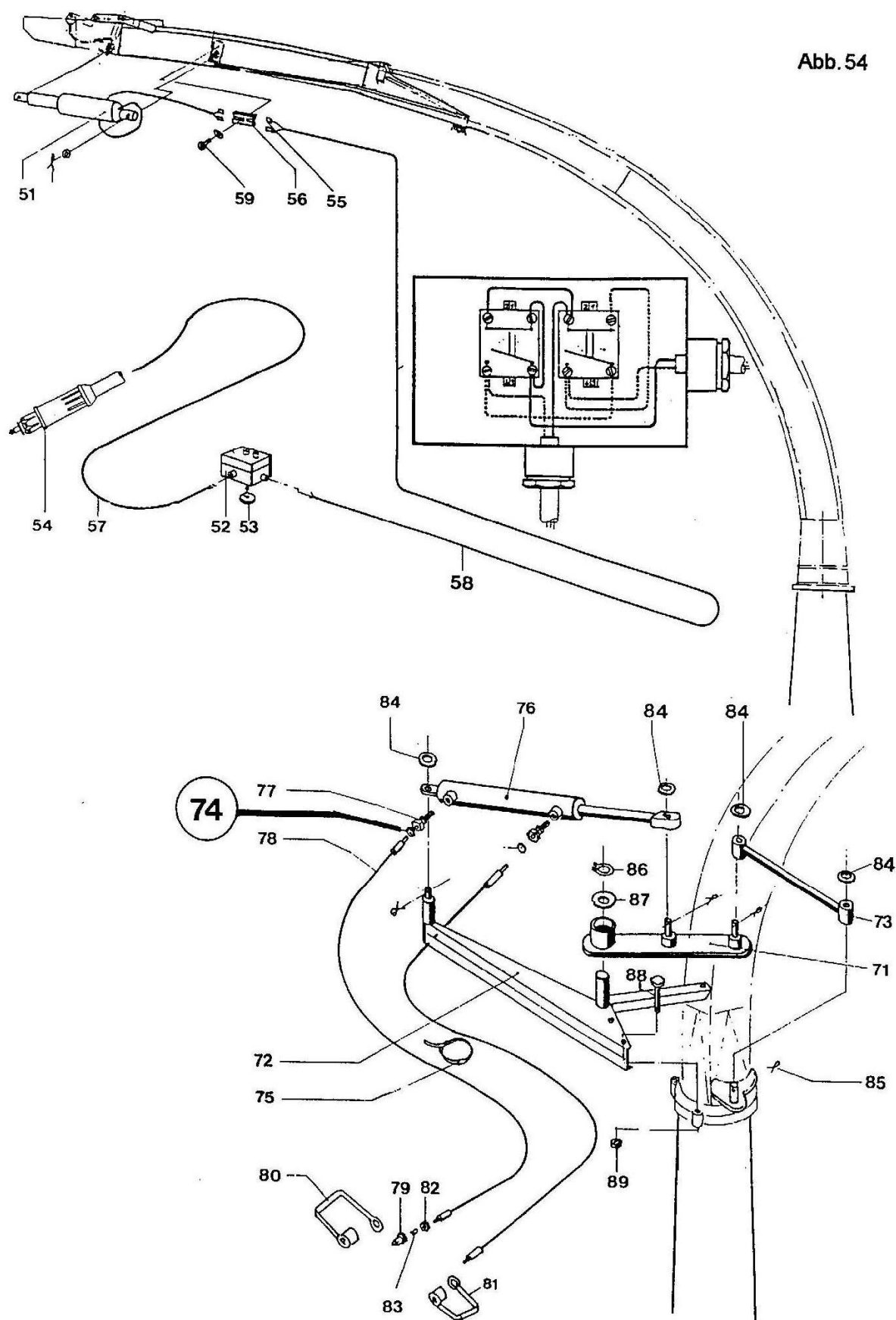
- Retighten all attaching bolts of the cutting disc.
- Check the shear bar of the cutting disc. Reverse the shear bar if necessary.
- Check the pivot and the angle drive.
- Lubricate the implement in accordance with the greasing chart.

Annual maintenance

- Clean the machine and treat it with an anticorrosive agent.
- Change the oil in the gearboxes – observe the oil quantity laid down by the manufacturer.
- Check all components for wear.
- Order genuine spare parts in time.
- Check the V-belt drive and the pivot.
- Check the overload clutches of the PTO shaft.
- Check all hydraulic lines and couplers.
- Check the complete housing with feed- and precompression rollers.

Maintenance and controls before start of season

- Read the operators manual again.
- Grease all parts of the machine with required lubrication.
- Retighten all screws and bolts-
- Check the knives under the feed mechanism, the knives of the flywheel cutting disc and the shear bar.
- **Tightening torques:**
 Special knife attaching bolt with knurled bottom of the bolt head: M12 = 130 Nm
 Standard bolts: M12 = 70 Nm
 M16 = 180 Nm
 M 18 = 250 Nm
 M20 = 360 Nm
- Check feed assisters on the intake drum and the divider points and replace if necessary.
- Foreign objects may cause damage or deformations in the area where the stems are cut. It is therefore essential to check this area periodically. Straighten deformed feed tines Z (see fig. 53).



Check list for the safe operation of the CHAMPION

Remember that the standard tightening torque for M12 screws (70 Nm) does not apply to the special attaching bolts order no. 55205 for the flywheel cutting disc knives. These bolts have to be pulled up to 130 Nm torque. On grounds concerning your safety and your warranty rights we must insist on the use of a torque wrench when these bolts are tightened.

Intake drum	Check the bearings and the attaching bolts of the large intake drum.
Cutting knives	Check state, sharpness and positioning of the knives and the cleaners. To avoid imbalance always replace opposite knives or cleaners by pairs.
Support wheel	Tightened wheel studs periodically.
Feed mechanism	Check the state of pecompression rollers, feed rollers and bearings. NOTE: The stripper bar on the rear smooth roller must always be located close to the roller without impairing its rotation.
Shear bar	Remember that your forage harvester is a maxi-output machine which should be kept in good condition at all times. Because of most of the power is required by the chopping unit, the position of the shear bar should be checked daily.
Flywheel cutting disc	Safe operation of the flywheel cutting disc can be only ensured if the contact surface of the knives is clean and the attaching bolts are pulled up to the correct torque. Operate the forage harvester with sharp and undamaged knives only. This will ensure a good chopping quality and keeps power requirement low. Readjust the flywheel cutting disc centrally!
Smooth friction concave plate	Both plates must be kept in good condition.
Hydraulic system	Make certain that all hoses and couplers are in good condition.
The V-belt drive	The V-belt drive (fig. 30 A) includes a 3 HB power band belt which is held at the correct tension by means of a pressure spring 12. When installing the belt the spring has to be set to the correct tension.
Hydraulically slewable discharge chute	Before operating the machine check the function of the hydraulically slewable chute. Sudden blockades can be caused by a grain of sand which has plugged the restrictor 74, fig. 54 (both sides).

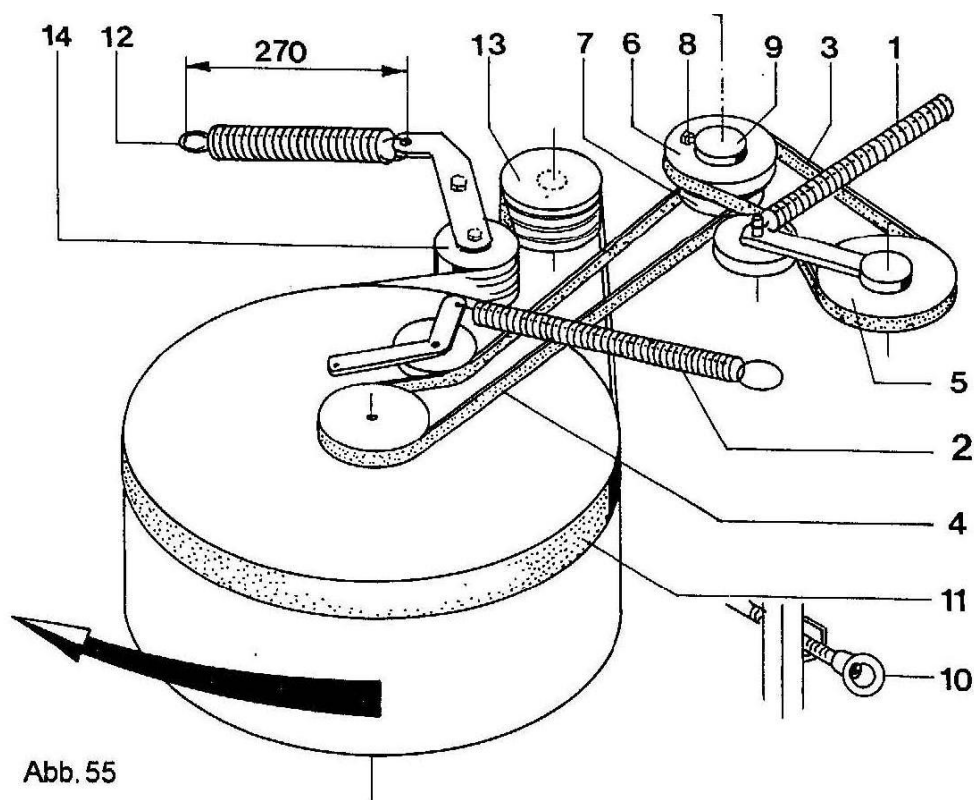


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Abb. 56

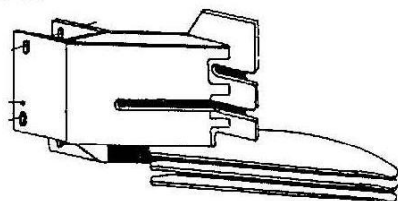


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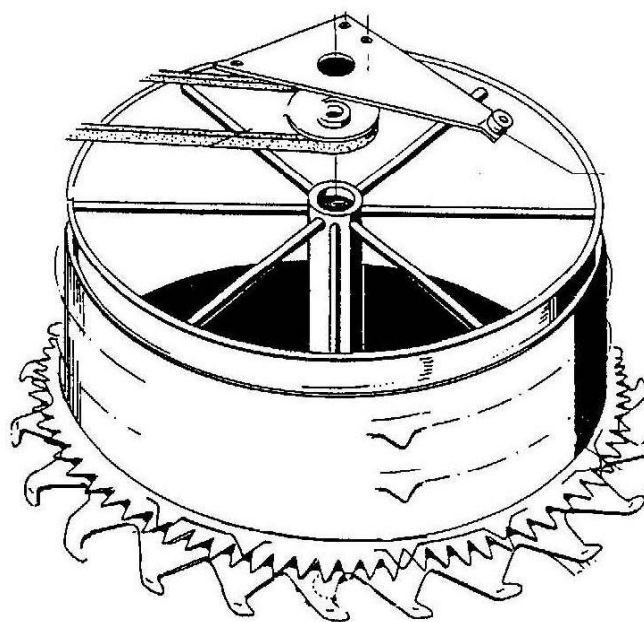
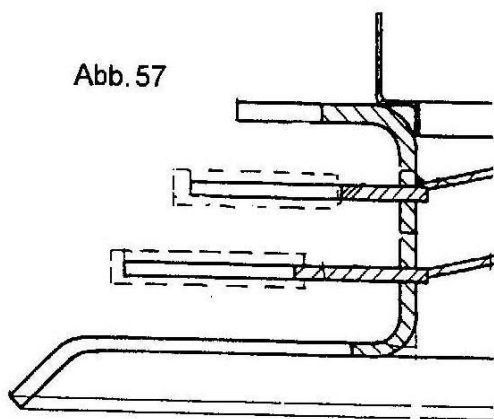


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Pivoted mowing attachment

A common pivot connects the mowing attachment and the housing of the precompression rollers to the chopping unit. Both units can therefore be swung to the side for repair or maintenance work (see fig. 55).

Do not allow anyone to stay in the slewing range of the machine. Check that the machine is in a horizontal position when swinging round. Failure to do so may cause the machine to swing round due to its weight when the locking mechanism is released. Special care should be taken when operating on a slope.

Fold up the guard and unhook the pressure springs 1 & 2 (fig. 55).

Remove V-belts 3 & 4. If necessary the pulleys 6 & 7 can be removed. To this end release screw 8.

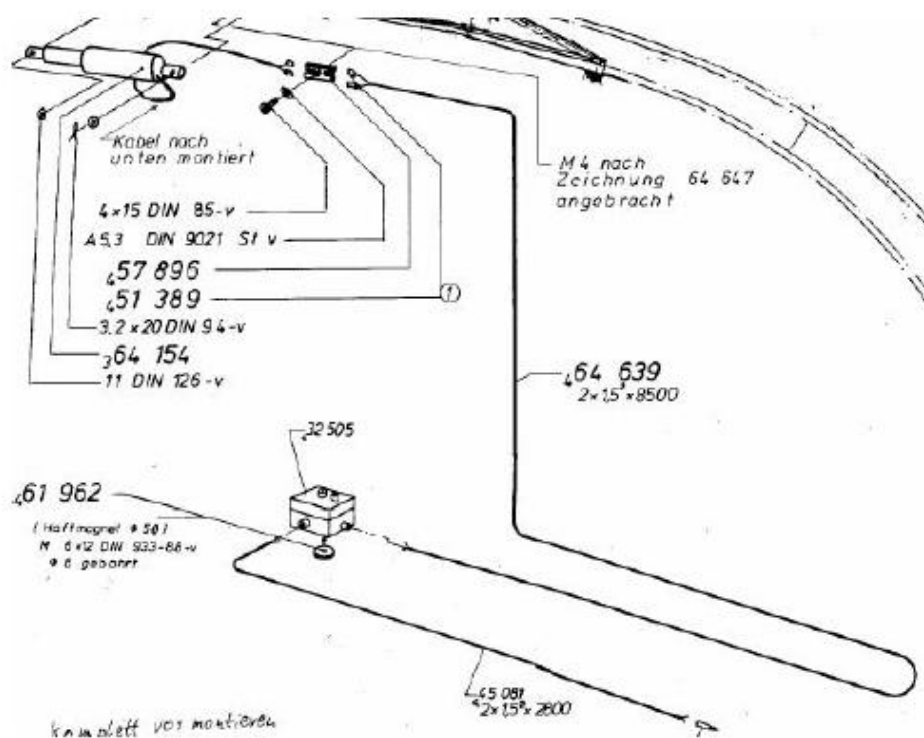
Release tension nut 10 and carefully swing round the machine.

The mowing attachment / intake drum can also be swung round separately. To this end slacken spring 12 and remove power band 11 from roller 13. When reassembling the unit make certain that the power band is at the correct tension. Tension will be correct when spring 12 is compressed to 270 mm (measured between both eyelets).

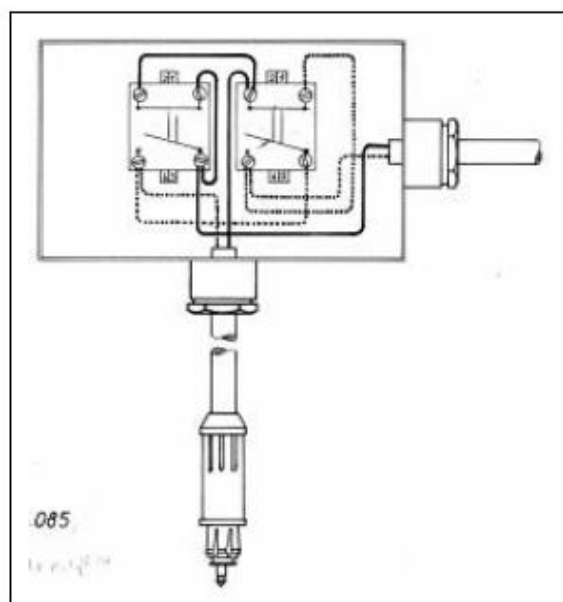
Cleaners (fig. 57)

The cleaners fitted above the teeth of the feed drum have the important task of constantly clearing husk accumulations on the scrapers. There should be a maximum distance of 1 – 2 mm between cleaner and scraper edge. The cleaners are made from highly resistant special steel. Since they are constantly suffering from wear it is essential to check them periodically. Accumulations of husks indicate that the cleaners are poorly adjusted or defective. Worn cleaner tips can be repaired by build-up welding with steel electrodes.

Kabelbaum



Bedienpult



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Zum Stellmotor

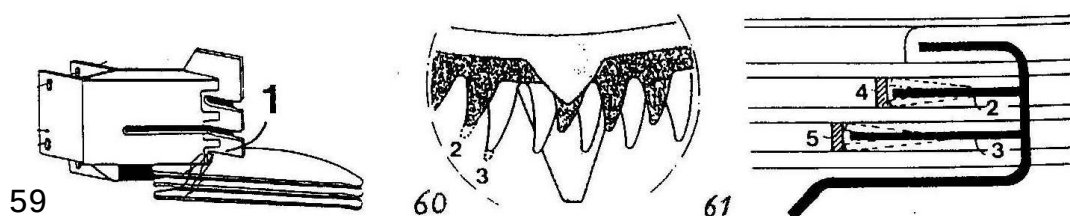
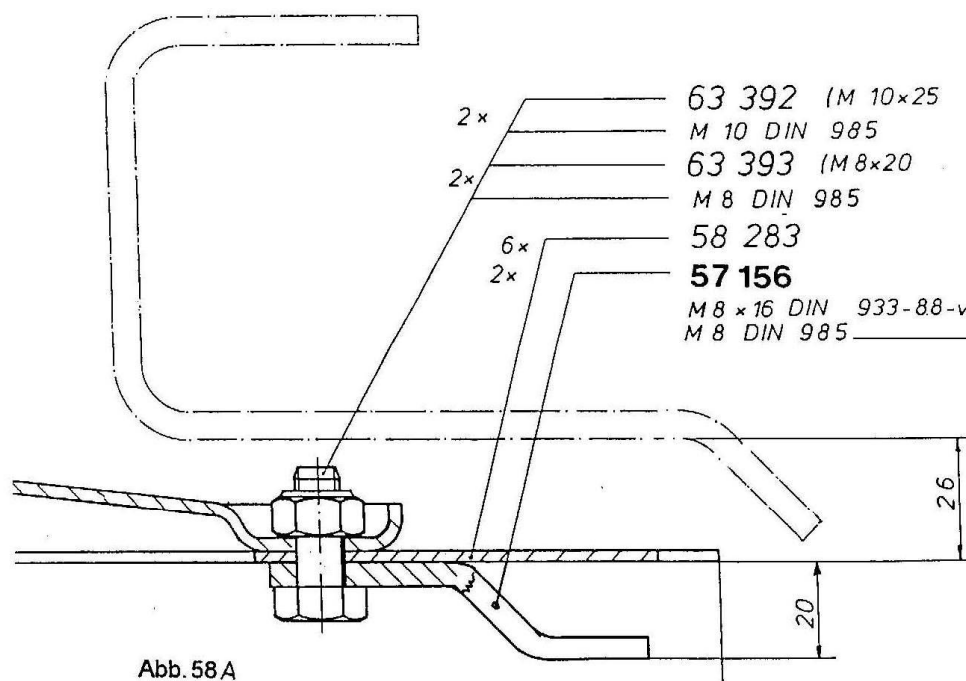
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12V Gleichstrom vom
Trärfahrzeug

Problem	Possible cause	Remedy
Excessive power demand	a) Blunt knives under the feed mechanism b) Defective cleaners c) Blunt shear bar	a) Sharpen knives b) Fit new cleaners c) Replace shear bar
Mowing attachment not operating smoothly or poor crop intake	a) leaves accumulating under the intake drum b) Dirt in the area of the intake drum c) Dirt in the area of the knives d) Defective cleaners	a) Check several times a day b) Clean intake drum daily c) Clean the area of the knives daily d) Renew cleaners (no. 55204) by pair to avoid imbalance.
Vibrations	a) Damaged knives (feed mechanism) b) Cleaners broken away c) Imbalance caused by husks, weeds and dirt	See also item 2
Husks accumulating in the area of scrapers in the rear part of the intake channel (see 1 fig. 51).	Husks are not cleared by tines 2 or 3 (tines not close enough to straps 4 or 5), see fig. 60 & 61	a) Bend one of the lines 2 or 3 slightly to the top and the other to the bottom. b) Tines should pass as close as possible to strap 4 or 5 c) If necessary build up both tine points by welding
Maize stems are folded to the front before being cut (long uneven stubble)	a) Leaves or stems accumulated around the small divider points b) Cleaners under knives broken away	a) Clean divider points b) Renew cleaners
Intake drum stops rotating	a) Overload by foreign objects b) Intake drum belt slipping	a) Remove foreign objects b) Adjust tension spring as shown in fig. 55
Stems are not cut evenly	a) Blunt or worn knives b) Too high forward speed	a) Install new knives b) Reduce forward speed
Maize is not chopped evenly – too long pieces	Excessive cutting gap between chopping knives and shear blade	Sharpen knives, readjust cutting disc centrally
Intake drum and cutting disc stop rotating	a) Defective friction clutch b) Friction clutch was not bled prior to operation	Bleed the friction clutch (failure to do so will void the warranty)
Defective PTO shaft	a) Insufficient maintenance b) Friction clutch not bled	a) Service PTO as per instructions b) Bleed the friction clutch

Problem	Possible cause	Remedy
Not all kernels are opened up – cob parts in the chopped material	a) Excessive cutting gap between chopping knives and shear bar b) Too low speed at the cutting disc	a) Adjust the cutting disc centrally b) Increase the PTO speed, keep the speed constant at 1160 rpm
Intake drum belt slipping (see chapter 34)	Insufficient spring tension	Tension spring as shown in chapter 34
Main drive belt slipping	a) Defective spring b) Too low a belt tension	a) Renew the spring b) Retension the belt. Observe the measurement 83 mm.
Sharpening device vibrating	a) Excessive speed at the cutting disc b) Grinding stone too close to the knives	a) Reduce the speed of the cutting disc b) Move grinding stone away from knives
Discharge chute rotating blocked	1 mm restrictor plugged (2 sides)	Remove restrictor from threaded union on the hydraulic ram and clean.



Original **KEMPER** parts

Fig.	Part No.	Description	pieces
1	68050	Häckselmesser mit Profil Chopping blade Couteau	12
2	37103	Tellerfeder Belleville spring Ressort Belleville	36
3	55205	Sich. Schraube 12x30 - 100 V Special bolt Boulon special	36
4	61100	Schleifscheibe Grinding device Meule d'aiguillage	1
5	61098	2-fach-Gegenschneide Counter blade Contre-couteau	1
6	50076	Senkschraube 12x45 Countersunk screw Vis special pour contre-couteau	3
7	66333	Abstreifer konisch 36/65x20x340 Cleaner of the reaper Decrotter pour rouleau lise	1
8	58283	Sägemesser Cutting blade Segment de scie	6
9	05639	Schraube 8x16 D 933-V Screw Vis	24
10	67156	Räumer 158° innen Cleaner Debourreur	2
11	63393	Abscherschraube 8x20 Sonder. Shearing screw Boulon de securite pour debourreur	2

Abb. 62

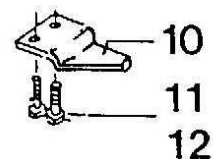
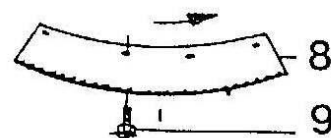
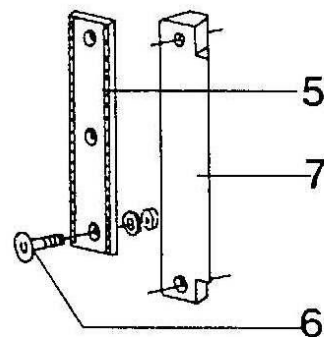
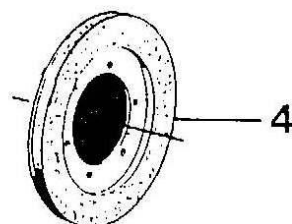
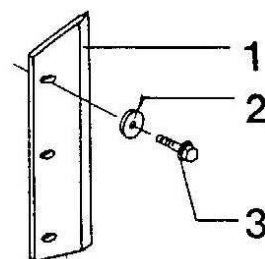


Fig.	Part No.	Description	pieces
12	63392	Schraube 10x25 Sonder Screw Vis	2
15	62953	Glattbodenblech 136x425 Wear plate (chopper housing) Tôle lise d'usage	1
16	62952	Quetschbodenblech 136x425 Crash bottom Tôle d'eclatement	1
17	49779	Senkschraube 12x30 Countersunk screw Vis special pour contr-couteaux	8
18	63331	Verbundkeilriemen 3 HB x 3155 Joined V-belt Triple	1
19	63332	Verbundkeilriemen 3 HB x 1990 Joined V-belt Triple	1
20	63330	Keilriemen 22 x 2340 V-belt Courroie	1
21	63333	Keilriemen 22 x 1200 gezahnt V-belt Courroie	1
22	66318	Wurfplatte Impeller plate Piese de ventilation	12
23	55040	Sich.-Schraube 10x25 Special bolt Boulon special	24

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