

# JUNKKARI

## CHIPPER

### HJ 500 C



## OPERATOR'S MANUAL SPARE PARTS CATALOGUE

HJ500\_03EN



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## 2. FOR THE READER

We wish you every success in your profession.

We would ask you to read through the instructions contained in this booklet and acquaint yourself with your machine, its principles of operation and the maintenance schedules all points which will affect operational safety and uninterrupted operation during the busy sowing seasons.

It is imperative that each and every specific point raised in this manual be fully understood and that the instructions regarding the machine's operation be complied with. Should any doubts arise, please contact your Dealer.

We also hope that you will kindly return the Certificate of Warranty after having acquainted



### 2.1 WARNING SIGN

This sign will be used throughout the manual to indicate any operation, which might constitute a threat of injury to the operator or to any person close to the machine.

This sign is also used to indicate any threat of danger to the environment or property while the machine is performing a specific

## 3. TECHNICAL SPECIFICATIONS

Type	HJ500 C
Cutter wheel dia/mm	1380
Cutter wheel weight/kg	650
Rotating speed r/min	540-750
No of cutter knives	2 (two piece knife)
Chip size / mm	5 -20
Stem dia max / mm	450
Chipping efficiency m <sup>3</sup> /h	20-70
Power requirement hv/kW	150-200/110-150
Weight kg	2500
Height, transport position, mm	3100 (spout up 4200)
Width, transport position, mm	2300
Length, mm	3470 -4370 (draw bar adjustment 900mm)
Feed opening size, mm	460x460
Feeder	Hydraulic
Tyres	400x15,5/14
Track mm	1900
Ground clearance, adjustable, mm	320-420
Electrical system	12V

### YOUR MACHINE SPECIFICATIONS:

Type :

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Serial number :

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Year model :

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## 4. SAFETY INSTRUCTIONS



### 4.1 GENERAL SAFETY INSTRUCTIONS

- **CLOTHING:** Always use well-fitting clothing for the sake of safety during operation of the machine.
  - **OPERATION:** Acquaint yourself fully with the attachment, controls and operational principles of the machine before starting to operate it.
  - **WARNING LABELS:** Always comply with all warning labels attached to the machine at various points.
  - **SHIELDS:** The machine must have all its shields and covers in place before you attempt to operate it. Always while chipping, use a helmet, hearing protectors and goggles (a lumberjack type helmet).
  - **ATTACHMENT TO TRACTOR:** Exercise special caution when attaching the implement to or when detaching it from the tractor.
  - **HITCH LOAD:** Always note the maximum load limits on the draw bar or on the tractor hitch.
  - **PARKING:** Ensure that the machine cannot move while parked.
  - **SAFETY DISTANCE:** The machine employs certain components which, due to the nature of the machine's operation, cannot be fully shielded. A safe distance from these working parts must always be maintained. The operator must also take care that no outside person(s) can approach these components during the machine's operation.
  - **OPERATION:** No outsiders must be allowed to be near or on top of the machine while it is running.
1. Never go into the space between the machine and the tractor when the machine is either being lifted up, lowered down or being transported around.
  2. Never bend under or lean over the top of a machine which is being supported above the ground by tractor hydraulics only.
  3. Ensure each time before taking the machine into use that it has been correctly attached to the tractor and that all its protective shields are in place.
  4. Before starting to move the machine, always check that all outside persons are within a safe distance away from it.
  5. Inspect the machine after each operating run, especially its hitching and other connection points.



**ALWAYS USE HEARING PROTECTORS WHILE OPERATING THE CHIPPER, BECAUSE THE NOISE LEVEL AT OPERATING AREA EXCEEDS 85db.**

### 4.2 STOPPING TIMES

The Junkkari Chipper HJ500 cutter blades will stop rotating within the following times after being switched off :

Under load :	20	seconds
Unloaded :	300	seconds (4-5 min.)

### 4.3 TRANSPORTING AND MOVING THE MACHINE

1. Always comply with the highway code while transporting a towed machine on public roads.
2. Check and install all necessary equipment required for transporting on public roads, such as lighting accessories, reflectors and the warning triangle denoting a slow moving vehicle.
3. Check the allowed axle loads, total loads and the overall transport dimensions.
4. All equipment coupling the tractor and implement together for transportation of the latter, e.g. chains, draw bars etc., must be installed in such a manner that no unintentional movements cannot affect their positions or functions either during transport or in operating positions.
5. Towed or mounted implements and extra weight on the tractor can influence its behaviour during transportation, especially its steerability and brakeability. It is therefore important that both steerability and brakeability be retained at all times.
6. No passengers must be allowed to ride on the machine.
7. The machine must be lifted only from lifting points marked by the labels on the machine.
8. Use only approved lifting slings and chains for lifting, and check their condition before attempting a lift.
9. If the machine is transported e.g. on a platform, ensure that it is securely fastened down using, for example, suitable straps, slings or chains.
10. If a forklift truck is used to lift the machine, take every precaution to keep the machine balanced on the lifting forks and ensure that there is no danger of the machine falling down.

## 4.7 POWER TAKE-OFF SHAFT

1. Disengage the drive to the PTO shaft before leaving the tractor cabin.
2. Check that the drive shaft safety guards do not rotate with the shaft. Secure the retaining chains properly.
3. When transporting the machine on public roads the operator should make sure that the PTO drive is disengaged.
4. Before engaging the PTO drive, make sure that there is nobody is staying near the rotating shaft.
5. The universal drive shaft must be fitted only when the tractor PTO is disengaged, the tractor engine switched off and the ignition key is removed from the starter switch.
6. The PTO must remain in neutral when starting the tractor engine.
7. The tractor PTO speed must be the same as the speed required by the machine.
8. The given PTO speed must be needed. Excess speed will cause damage to the machine.
9. The tractor PTO must be disengaged when it is not needed or when the turning angle between the tractor and the implement becomes excessive.
10. Before engaging the drive to the PTO, and as well as during the whole time the PTO is running, make sure that there is nobody within the danger zone around the rotating drive shaft.
11. Do not use any other drive shafts than the types approved by the implement manufacturer and which are certified with the CE-sign. All drive shaft safety guards and the tractor PTO guard must always be kept in place and in good working condition.
12. Never use a damaged drive shaft, as this constitutes a risk of a serious accident. A damaged shaft must be repaired before its subsequent use.
13. Take always into consideration the amount of end-play of the drive shaft's inner and outer gliding tubes in both transport and the working positions of the machine.
14. After the eventual shortening of the drive shaft, the ends of the profile tubes must be cleaned and greased carefully.
15. The universal drive shaft must be installed or removed only when the tractor PTO is disengaged. The PTO drive must not be disengaged by depressing the clutch pedal alone.
16. After having fitted the drive shaft in place, ensure that the locking peg engages the annular groove in the drive shaft. Check that the shaft is properly attached.
17. Attach the drive shaft guard retaining chain securely to stop the guard from rotating.
18. Place a detached drive shaft on a stand reserved for its storage.

## 4.5 HYDRAULICS

1. High pressure is induced into the machine's hydraulic system after it is coupled to the tractor system. A jet of high-pressure hydraulic oil will penetrate skin and cause grave injury. A danger of injury exist even when looking for eventual oil leaks.
2. Handle oil hydraulic components and parts with extreme care. The nature of the equipment will always present a danger of cuts or crushing action.
3. When connecting the machine's hydraulic system to the tractor system, both systems must be unpressurized.

### PROTECTIVE MEASURES AGAINST OILS AND GREASES

1. Always use suitable protective clothing and oil-proof gloves when handling oil or grease.
2. Avoid direct skin contact with oil or grease, as these may cause skin injury.
3. Never use oil or grease to clean off dirt from skin. These substances may contain tiny metal particles which can cause cuts in the skin, further aggravated by the action of the oil.
4. Follow the handling and safety instructions given by the manufacturers of the lubricants.
5. Synthetic oils are, in many cases, corrosive and cause severe irritation of the skin.

### WASTE OIL

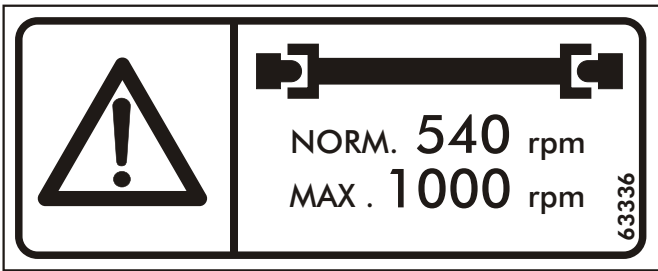
1. Waste oil must be collected into a suitable container and taken to a collection central for proper disposal compliant with national regulations.

### ACCIDENTS

1. If oil is spilled on the ground, it must be prevented from spreading and the oil must be collected by absorption, for example, into peat.
2. Should oil or grease cause a skin injury contact the nearest physician at once.



# 5. WARNING LABELS, SAFETY COMPONENTS AND SERIAL NO. PLATE



MAXIMUM ROTATING SPEED OF THE DRIVE SHAFT



THE OPERATOR'S MANUAL



BEWARE OF THE ROTATING DRIVE SHAFT



LIFTING POINT



READ THE INSTRUCTIONS



BEWARE OF THE  
OUTSPRAYING CHIPS



SAFETY DISTANCE



VAROITUS!  
VARO liikkuvia osia!  
PYSÄYTÄ kone rhylyssäsi huolto- tai korjaustyöhön!  
PIDÄ lapset poissa koneen luota!

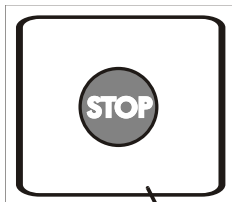
VARNING!  
VARNING för rörliga delar!  
STANNA maskinen vid service- eller reparationsarbeten!  
HÅLL barnen borta från maskinen!

WARNING!  
BE CAREFUL with moving parts!  
STOP the machine when repairing or making service!  
TAKE CARE OF that children are not near the machine!

BEWARE OF THE MOVING PARTS



USE HEARING PROTECTORS



FEEDER EMERGENCY  
STOP



**340 kPa**

24006

max TYRE PRESSURE



BEWARE OF THE  
FEED ROLLERS



ÄLÄ AVAA SUOJIA  
KONEEN KÄYDESSÄ!

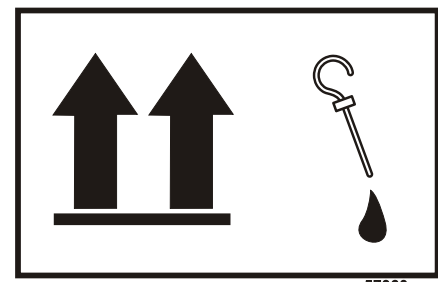
ÖPPNA EJ SKYDD NÄR  
MASKINEN ÄR I GÅNG!

DON'T OPEN THE COVER  
WHEN THE MACHINE IS  
RUNNING!

HUOM. / OBS. / NOTE  
Kirstä pultit 3 tunnin  
ajon jälkeen.  
Spänn bultarna efter  
3 h körning.  
Tighten bolts after first  
3 hours of running.

TIGHTENING TORQUE:  
200 Nm



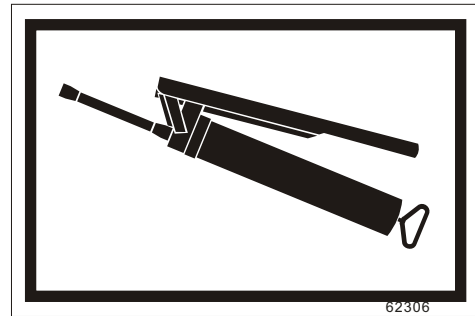


57360

CHECK THE AMOUNT OF OIL  
IN THE HYDRAULIC SYSTEM



BEWARE OF THE  
V-BELT



62306

LUBRICATE



## 5.1 SERIAL NUMBER PLATE



### SERIAL NUMBER PLATE

1. Year of attachment of the CE-plate
2. Machine model
3. Serial number and year model
4. Machine weight w/o accessories
5. Manufacturer





## 6. OPERATING ENVIRONMENT

### 6.1 OBJECTIVE OF DESIGN

The Junkkari HJ500 C Chipper has been designed to produce chips from trees, that can be fed through the chipper feed opening. The used wood must be clean. Dust, sand and other soil substances will wear the knives rapidly. Metal objects, for example nails, will cause damage to the knives.

### 6.2 APPLICATIONS

In case the chipper is intended to be used for chipping down card-board rolls, plastic piping or hard boarding panels, please contact your dealer before commencing this kind of activity.



### 6.3 OPERATIONAL LIMITATIONS AND FORBIDDEN FORMS OF USE



#### OPERATIONAL LIMITATIONS

##### *Limitations regarding the operator*

The operator must not use the machine under the influence of narcotic substances, alcohol or strong medication. In case of difficult illness or serious handicap the physician in charge should be consulted for approval to operate the machine.

Operation of the machine by individuals lacking the necessary knowledge and skills and by individuals under the age of 15 years is forbidden.

##### *Forbidden forms of use*

The machine must not be operated in any areas reserved for nature preservation.

Avoid using the machine where it could cause noise or dust disturbances.

The machine must not be used for transporting persons or other life forms.

## 7. PRINCIPLE OF OPERATION

The Junkkari HJ500 Chipper is designed to operate so, that when the wood is being chipped, the knives in the cutter wheel will simultaneously pull the wood in.

The feeding speed is depended on the knife setting the following way : A short knife setting results small chip size and low intake speed - a wide knife setting results large chip size and high intake speed.

The produced chips are ejected through the knife openings to the blower fan, which will blow the chips through the discharge spout either to a trailer or a silo. The discharge spout blowing direction is controlled with a joystick control panel from the tractor cabin. The feed rollers in the feeder are used to speed up the intake of the wood. The feed rollers are driven by hydraulic motors, which are powered by the hydraulic system via control valve. The feed is controlled by a switch in the tractor cabin. The switch has 3 positions : feed, stop and reverse. The system is equipped with a cutter wheel axle speed sensor which will stop the feeder in case the axle rotating speed is less than 450 r/min. This will prevent the chipper from "choking".

# 8. MACHINE TRANSPORTATION, HANDLING AND STORAGE

(IMPORTER, DISTRIBUTOR, DEALER)

## 8.1 TRANSPORTATION

1. The delivery terms of the product are ex works, unless specified otherwise.
2. The buyer (importer) and the factory agree upon a date of the delivery when the product is ready for shipment.
3. The factory will arrange the loading of the product on a transport vehicle at the factory premises.
4. The transport agency shall be responsible for the product for the period of transportation from the factory to the buyer.
5. Eventual remarks concerning the quality of the product or damages developed during transportation must be noted within 8 days from delivery of the product.

## 8.2 HANDLING

1. The product must be handled in the careful manner which is customary in handling all agricultural machinery, without causing any damage to the product.
2. No other products must be loaded on top of the machine package.
3. The factory will package the product carefully for shipment.
4. To prevent paintwork from damaging, the machine must always be lifted using adequately strong slings instead of chains when lifted from the rear end. Chains can be used for lifting in case the machine is being lifted from the front end.

## 8.3 STORAGE

1. The machine must be shielded from direct sunlight and rain and stored in its normal working position.
2. In case stored outdoors, check periodically that there is no water left standing on the
3. The machine must always be stored indoors for any long-term storage periods.



## 8.4 SPECIAL SAFETY NOTES ON MACHINE TRANSPORTATION



1. Never attempt to lift the machine from any other point than those clearly marked for Lifting.
2. Ensure that the lifting device is adequately efficient and safe and that no there exists no danger of the machine overturning or falling down.
3. Always use only approved slings or chains for lifting.
4. The machine must never be lifted on forklifts, but solely by flexible slings or chains.
5. Always check the condition of slings and chains before lifting.
6. Keep slings and chains taut whilst turning the machine on its "nose" or wheels to prevent swaying of the machine, which might cause a dangerous situation.
7. Always check the lift/reach capacity of the lifting device.
8. The machine must always be securely tied down to the platform during transportation.



LIFTING POINT



# 9. INTRODUCTION OF USE

## 9.1 PREPARATIONS PRIOR TO OPERATION

Unless otherwise specified, the customer is responsible for other preparations necessary to bring the machine into an operative condition.

When initializing operation of the machine, the customer should ensure that all protective shields are in place and that there are no odd objects in the feed opening and the cutter wheel rotates freely. Before attaching the machine to the tractor the operator should read the instructions concerning the universal drive shaft in the manual. After these preparations the chipper can be attached to the tractor.

## 9.2 DISCARDING THE PACKAGING MATERIALS

The wooden and cardboard packaging materials can be disposed of by burning or deposit in a refuse dump. The plastic bags and strings in the packages shall be destroyed according to national regulations, either by recycling or taking by deposit in refuse dump.

## 9.3 ATTACHMENT TO A TRACTOR

The chipper is attached to the tractor hitch (ISO 6489/1).

### POWER TAKE-OFF

The HJ500 chipper is equipped with a power take-off shaft connection, according to standard SFS-ISO 500 category 3. The HJ500 chipper is also fitted with security equipment for connecting a PTO drive shaft according to EU directive 98/37.

For examples of suitable drive shafts, see : 9.4 UNIVERSAL DRIVE SHAFT.

The power take-off nominal speed is 540 rpm

### INSTALLATION OF THE ELECTRICAL SYSTEM

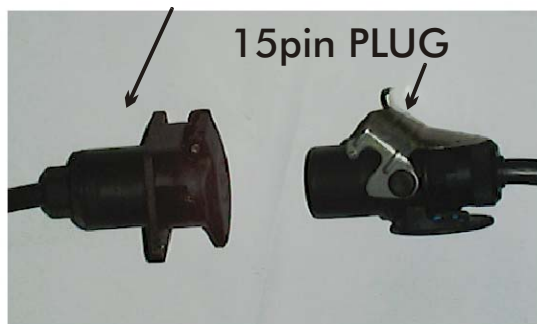
Install the remote control box to a suitable place inside the tractor cabin, and the 15-pin socket to the outside of the cabin rear wall, to a suitable place. Connect the remote control to the tractors electrical system with a 12V plug.

Connect the 15-pin plug from the chipper to the socket. Then the chippers electrical system should be in working order. That can be tested, for example, by adjusting the spout discharge direction flap.

### REMOTE CONTROL



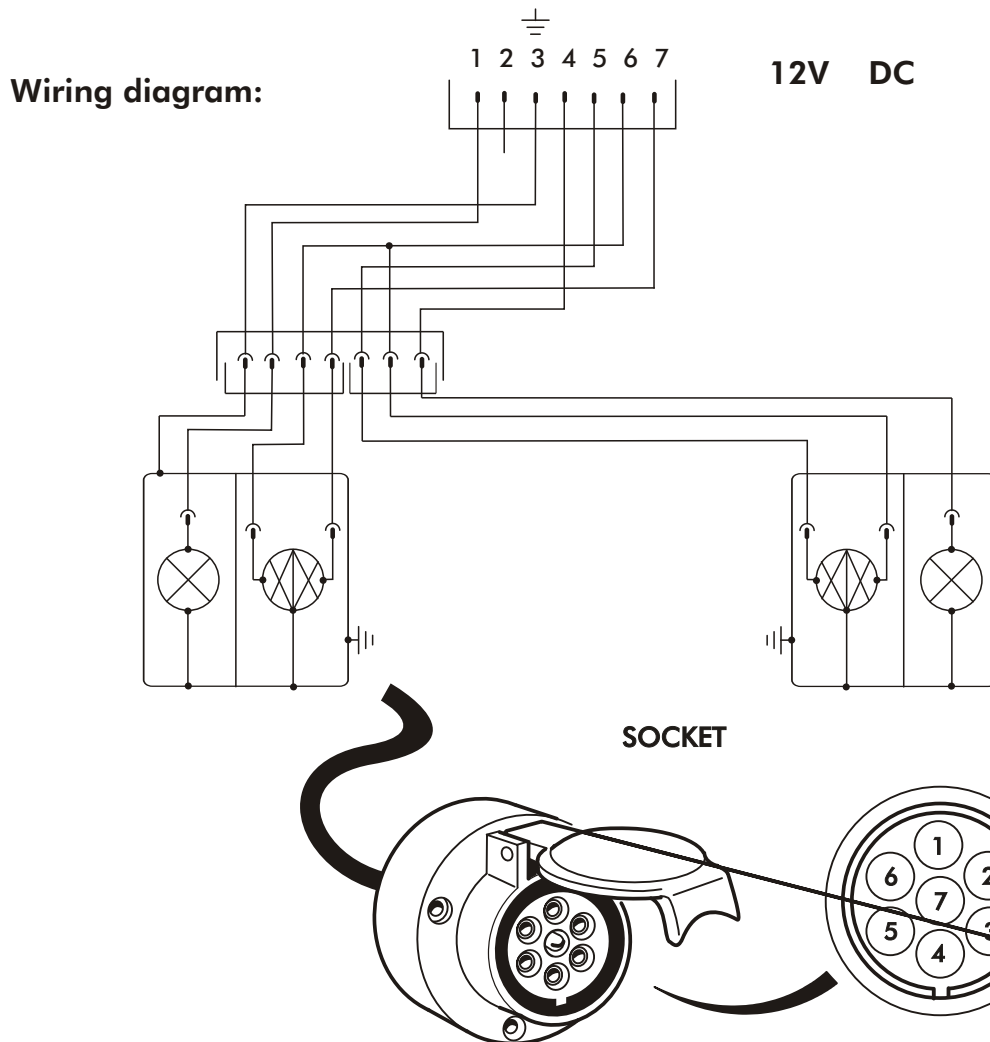
### 15-pin SOCKET



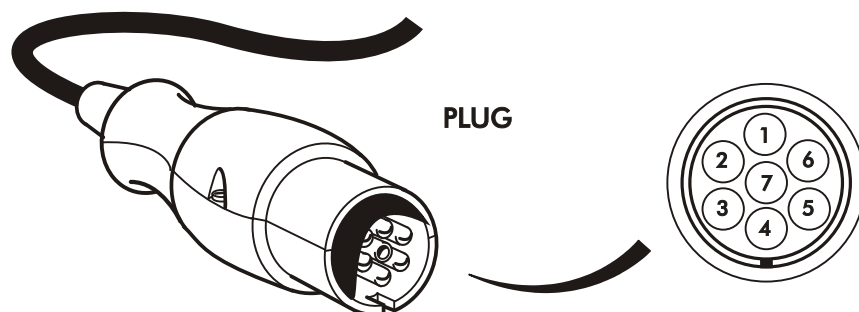
### FEEDER EMERGENCY STOP-BUTTON

## LIGHTING EQUIPMENT

The lighting equipment is connected to the tractor trailer plug. The plug should be a 7-pin socket connector compliant with the SFS 2472 DIN ISO 3732 standard. The lighting equipment operates on a direct current with a nominal voltage of 12V.



1. LHS TURN SIGNAL LIGHT UNIT
2. UNOCCUPIED
3. GROUND
4. RHS TURN SIGNAL LIGHT UNIT
5. RHS REAR LIGHT UNIT AND IDENTIFICATION PLATE LIGHT UNIT
6. BRAKE LIGHT UNIT
7. LHS REAR LIGHT UNIT





## 9.4 UNIVERSAL DRIVE SHAFT



### TYPE OF DRIVE SHAFT

The power transmission at the nominal speed of 540 rpm should be 110 kW and torque should be 2600 Nm. The secondary drive shaft must be fitted with an overrunning clutch and an overload clutch.

A suitable type of primary drive shaft would be, for example : WALTERSCHEID W2600-SD35-1210-S5G/S6, and a suitable type of secondary drive shaft would be: WALTERSCHEID W2600-SD35-1210+F5/2(R)-K66/22

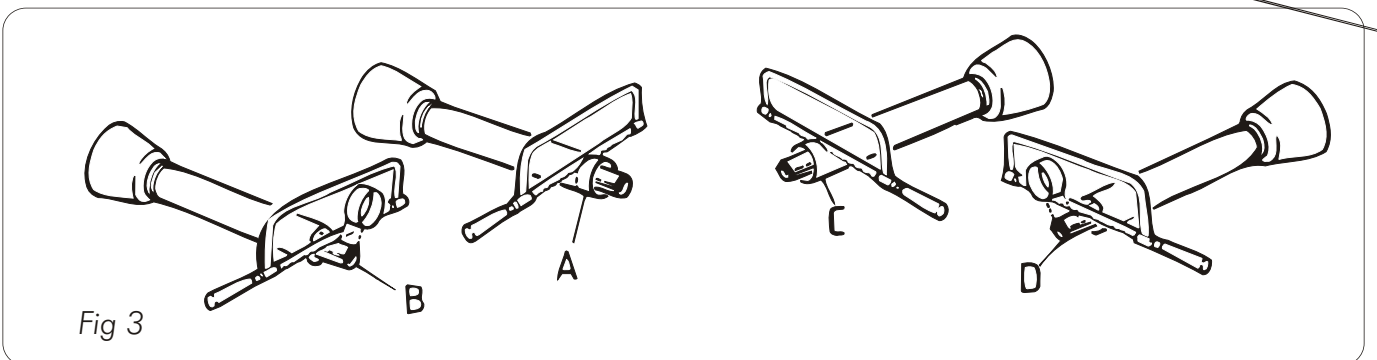
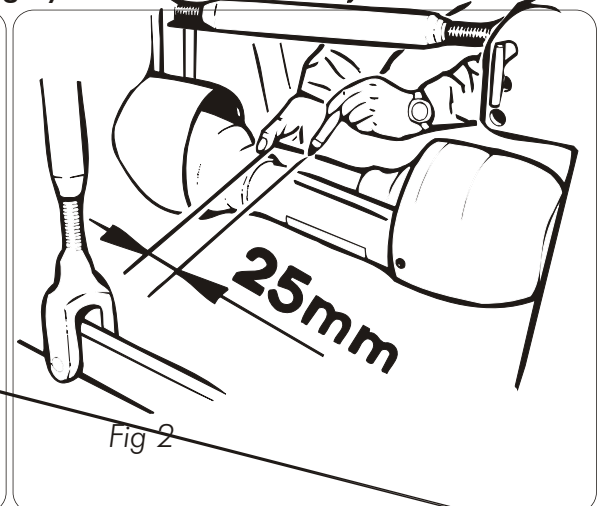
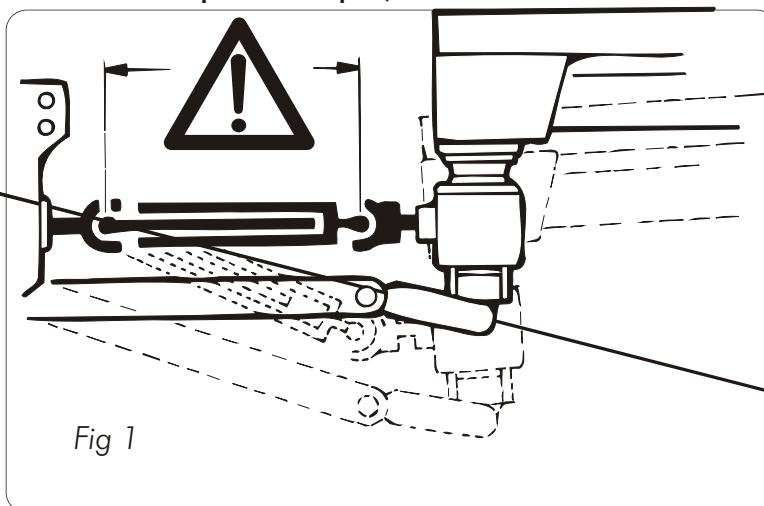
### LENGTH OF DRIVE SHAFT

The universal drive shaft must be of a proper length, both for operator safety and the durability and functioning of the shaft itself. The overlap between the drive shaft tubes must at least half the tube length.

If it is too long, the shaft will bottom causing the shaft to fail. If it is too short, the shaft may fall apart when raising the implement forming a risk of serious damage. With the overlap too short, it is also not possible to achieve sufficient power transmission without damaging the shaft.

### SHORTENING THE DRIVE SHAFT

1. Determine the shortest drive shaft length required by lifting the machine (see Fig. 1).
2. Mark the cutting points, leaving a 25 mm (1") length in reserve (see Fig. 2).
3. Cut off equal lengths from each drive shaft half, both from the inner and outer tubes in both halves, (see Fig. 3).
4. Using a file, file cut the ends to remove any sharp burrs and clean all of the shaft tubes.
5. To complete the job, lubricate the shaft thoroughly.



# 10. ADJUSTMENTS

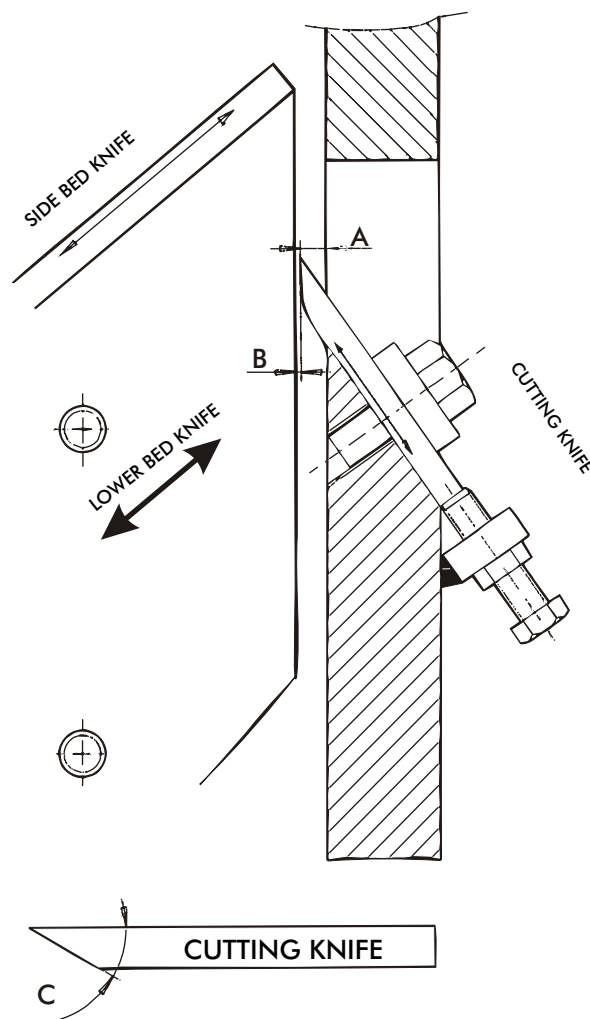
**PLEASE READ THESE INSTRUCTIONS VERY CAREFULLY AS THE MOST IMPORTANT POINT IN THE OPERATION OF THE CHIPPER IS THE CONDITION OF THE KNIVES AND THEIR CORRECT ADJUSTMENT.**

## 10.1 KNIFE SETTING

The knife setting (measurement A) may be adjusted within the range of 5 to 20 mm. The smaller the setting, the smaller the chips the chipper produces. On the other hand, the knife setting affects the intake speed in the manner that a larger knife setting results in a faster and better intake of material.

To adjust, loosen the knife attaching screws (6 pcs/knife) and the locking screws (4 pcs/knife). Open the bed knife attaching screws and pull out both bed knives towards the feed chute and adjust to desired position. Move one of the cutting knives to desired distance from the cutter wheel. Tighten the attachment and lock screws of the knife in question. Move the bed knives to leave a gap of c.a. 1-2mm (measurement B) from the cutter knife. Tighten down the bed knives attaching screws. Proceed to adjust the remaining 4 cutting knives bringing each one in turn to the adjusted bed knife and adjusting each knife to leave the 1-2 mm gap ('B') between each knife and the bed knife. Finally tighten down all knife and bed knife attaching screws to a tightness of 300 Nm. Rotate the disc by hand to ensure that the cutting knives do not make contact with the bed knives and that the gap ('B') between the knives and bed knives equal (1-2 mm) for each cutting knife. Finally, tighten down the cutting knife locking screws against the rear edge of each knife to a 50 Nm tightness.

A=5 - 20mm  
B=1-2 mm  
C= 30.5°



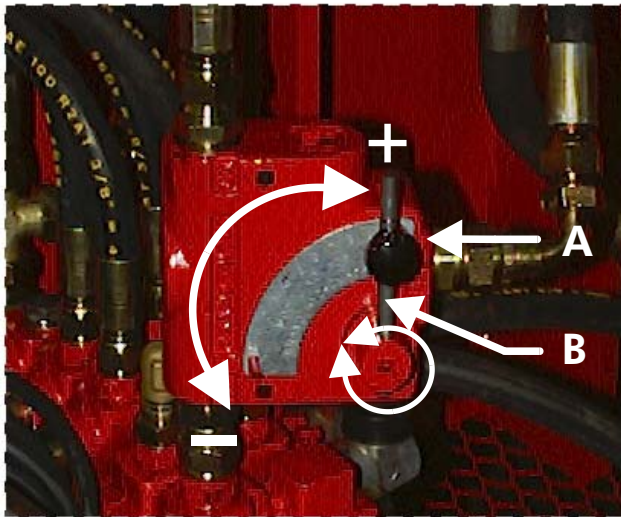
## 10.2 FEED RATE ADJUSTMENT

The rotational speed of the feed rollers in chipper model HJ 500 must be synchronized with the cutting speed of the cutting knives. If the feed roller rpm is too high in relation to the knife cutting speed, the roller tend to dig into the stems being fed in. If the feed roller speed has been set too slow, the feed becomes jerky.

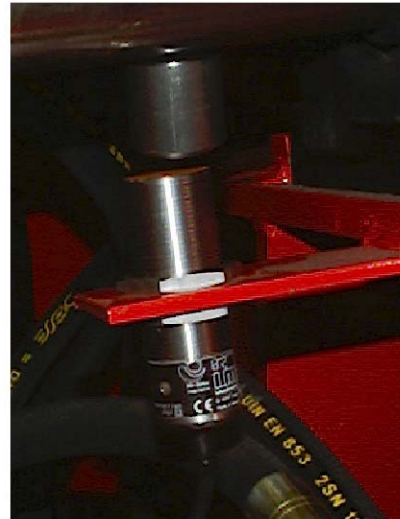
The adjustment is to be started with low feed roller rpm. At this stage, the cutting knives tend to pull out the stem from between the feed rollers. The feed mechanism speed is then slowly increased until it synchronizes with the cutting knife setting in use and the feed remains smooth.

### ADJUSTMENT

The feed speed adjustment is carried out by first loosening the locknut 'A' and moving the adjusting lever 'B' to the beginning of the adjustment range. A stem is the fed into the chipper for chipping down and the potential variation between the speeds of the feed mechanism and the cutting knife action are observed. If the feeding speed is too slow, increase the speed by moving the adjustment lever towards the fast end of the range. Repeat the adjustment as necessary. When the synchronization is correct, screw in the locking nut 'A' tightly.



RESTRICTOR VALVE



ROTATION SPEED  
SENSOR

## 10.3 ADJUSTMENT OF THE ROTATION SPEED SENSOR

From the year model 2002 on, the sensor limit rpm is set as follows, by pushing the enter button on the remote control (the sensor limit value is adjusted at the factory to c.a. 450 r/min.): Set the output speed to the level that the feeder should stop at. Then push the enter button once to set the speed to the sensor memory, then increase output speed to the working speed.

When the tractor output rpm lowers below the set speed limit, the No-Stress system will stop the feeder. When the tractor output rpm rises above the limit, the feeder will be activated again.

## 11. USAGE

The HJ500 chipper is primarily designed to be used for task work. If necessary, the material to be chipped should be first pre-treated so that all heavy tree branches or off-shooting main roots etc. should be removed in order to adapt the stem into the dimensions of the feed opening. It is a recommended practice to arrange the material alongside the chipper in such a way that there is little need to carry any of it over other than the minimum distances. In this way the working efficiency remains as high as possible and additionally a solid flow of material will produce the best quality chips.

## 12. MAINTENANCE



### READ SAFETY INSTRUCTIONS



#### MAINTENANCE AND REPAIR

1. Before attempting any cleaning, lubrication, fitting or adjustment of the machine, always make sure first that the tractor PTO is disengaged and the tractor engine switched off. As further precaution, remove the tractor ignition key from the starter switch to prevent any unintentional starting of the tractor or the implement.
2. Always support the implement adequately before starting any servicing on it.

### 12.1 SHARPENING OF THE CUTTING KNIVES

The cutting angle (C) of factory-new cutting knives is 30.5°. This is the optimum angle which should always be used when re-sharpening the knives. A smaller angle will result in chipping in the knife edges, while a wider angle will reduce the knife edge's clearing angle causing a reduction in the ability of the knives to draw in the material.

Note that the cutting knives must not be allowed to heat up during the sharpening process as the knives will otherwise lose the hardness acquired by the tempering treatment. The knives should therefore be sharpened solely by grinding or whetting. When grinding, care should also be taken to sharpen all knives by equal amounts, so that the overall balance of the knife flange is retained.

As a rule, there is normally no need to sharpen the bed knives. Their cutting edges may, however, be rounded off if the intaken material includes substances that are harder than wood (nails, sand etc.). A blunted bed knife can be re-sharpened with e.g. an electric hand-grinding machine. Generally the bed knives should remain maintenance-free.



### 12.2 LUBRICATION

Wheel shaft bearings	2 pcs :	50 h
Drive shaft intermediate bearings	1 pcs :	50 h
Feeder bearings	4 pcs :	50 h
The spout turning mechanism	1 pcs :	50 h
The spout tipping mechanism	2 purchase :	50 h
Universal drive shafts		(Due to manufacturers instructions)

#### Hydraulics :

First oil change	50 h
Subsequent oil changes	200 h
First oil filter change	50 h
Subsequent oil filter changes	200 h

Oil type to be used : Hydraulic oil 46, on summertime (ISO-VG viscosity grade), hydraulic oil 32 or 22, on wintertime, depending on the prevailing weather condition.

System oil capacity 52 L



## 12.3 HYDRAULIC SYSTEM MAINTENANCE

1. Check the amount of oil in the tank before beginning to operate the chipper. The correct amount of oil is c.a. 52 L, and it can be checked by looking inside the tank through the filling opening, the amount is correct if the oil level covers the bottom of the filler strainer.
2. Change the hydraulic oil and the filter after first 50 operating hours. The filter is in the filter housing on top of the tank lid. There is a draining plug at the bottom of the oil tank.



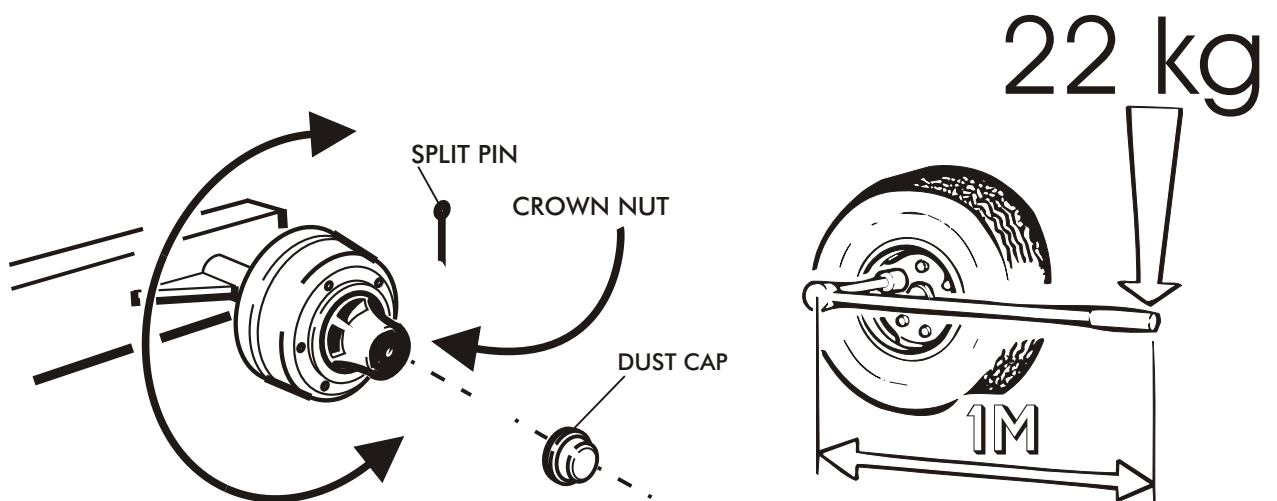
FILLING OPENING CAP

FILTER HOUSING

HYDRAULIC OIL TANK

## 12.4 ADJUSTMENT AND TIGHTENING OF THE WHEEL HUB

The crown nut is tightened until the hub cannot be turned by hand. Then loosen the nut for c.a. 1/5 turn, and fit the split pin to the nearest slot in the crown nut. The free rotating of the wheel is checked by turning the wheel by hand. Suitable bearing clearance on design load is 0,05-0,15mm. The eventual heating of the bearing must be observed tightly during the first driven kilometres, and the clearances must be checked after three hours drive and adjusted if necessary.



TIGHTENING OF THE WHEEL BOLTS

# 13. TROUBLESHOOTING CHART

FAULT	CAUSE	REMEDY
The chipper does not draw in the material.	Dull knives faulty knife cutting angle knife fitted the wrong way	Sharpen knives and refit according to the instructions.
Uneven chip size	The knife clearance (B) is too wide. Single lengths of wood turn sideways after passing the feed rollers	Adjust according to the instructions Feed material continuously into the machine
The discharge spout gets blocked	Too low rotating speed	Raise the rotating speed within the speed range of 540-750 rpm
Excessively high power requirements according to the machine	The power supply is too low-duty The knife setting is too wide (A)	Reset the knives to smaller setting
The feed rollers are inefficient	The oil amount in the tank is low Belts of hydr. Pump. Are looser	Add hydraulic oil Tighten belts.
The feed rollers do not rotate	There is lots of water in the tank (on wintertime) Emergency-stop button is on  Rpm of drive shaft < No-stress Setted rpm No-stress sensor is too far	De-frost, remove water and change new oils Release the emergency-stop button Raise drive shaft rpm or adjust No-stress rpm Adjust distance 2-5mm.
Ingoing material produces excessive vibrations	The feed roller are not properly synchronized	See instructions for synchronizing of the rollers.

## 13.1 DEVELOPING FAULTS

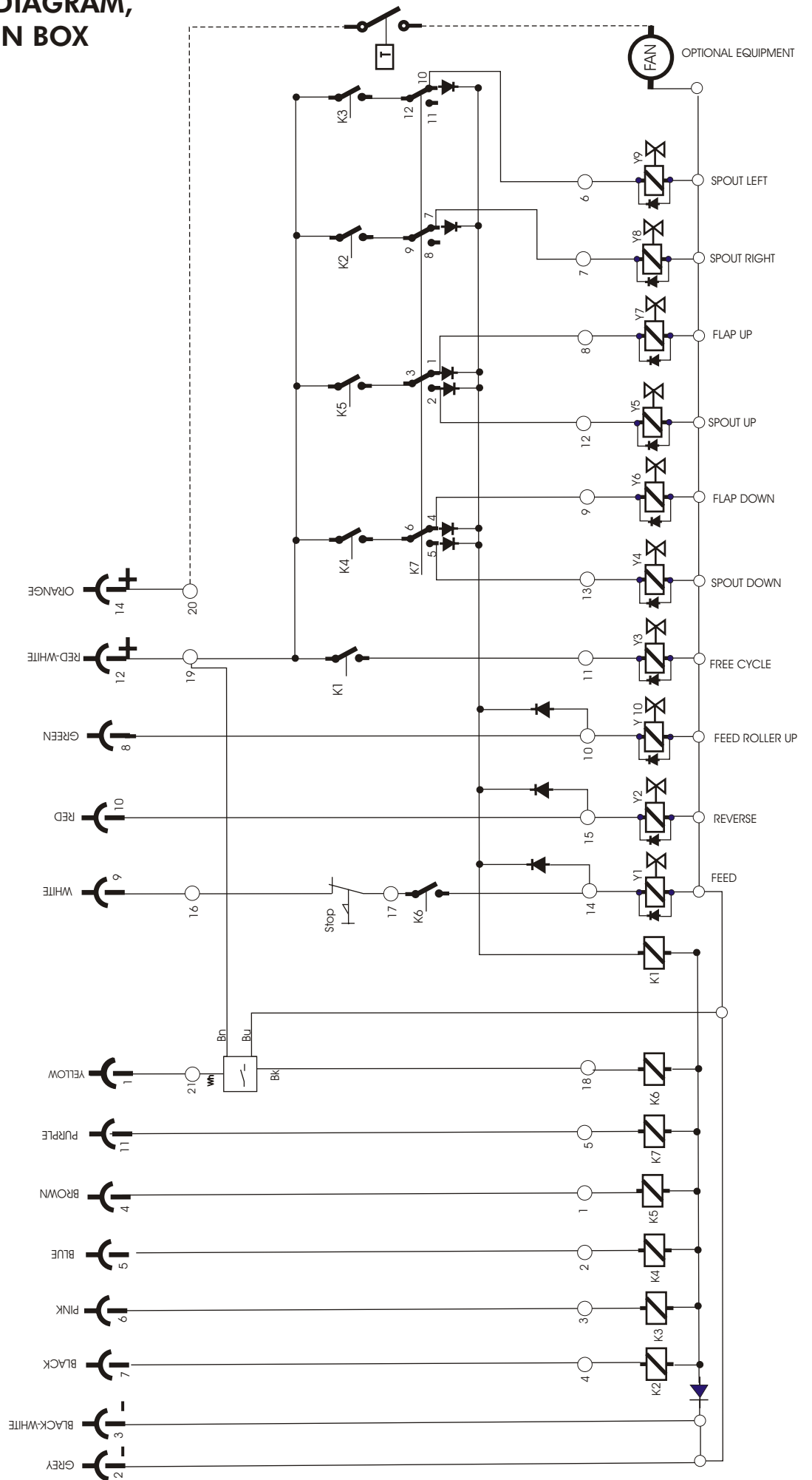
Normal wear and tear of the chipper will transpire safely and will not cause any danger. Practically the only parts which wear out are the cutting knives. In case there appears to be axial gap in the bearings, contact an expert to perform the required adjustments.



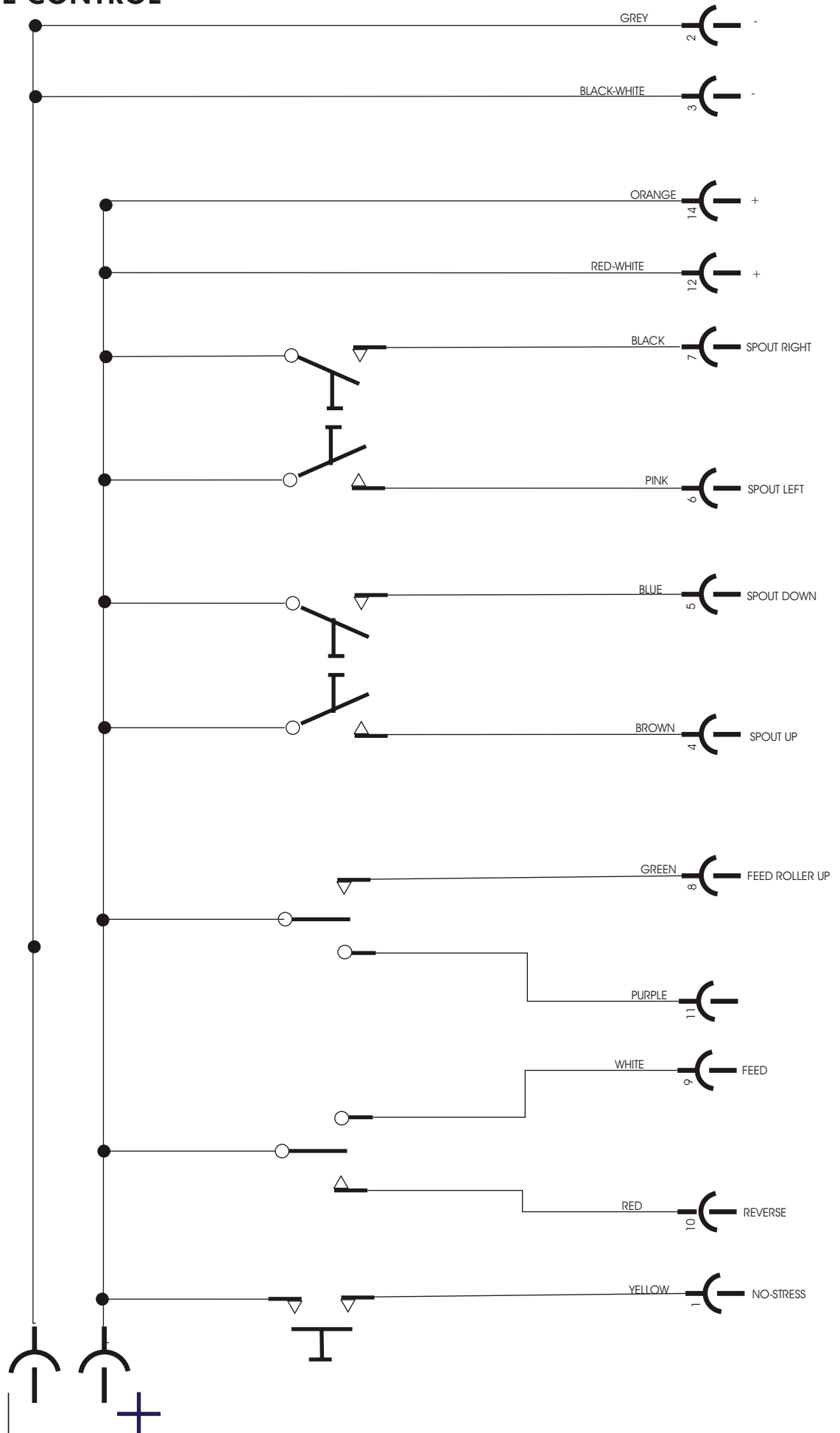
**NOTE: THE MACHINE IS INTENDED TO BE OPERATED BY A SKILLED PERSON, THEREFORE ITS USE REQUIRES ADEQUATE GENERAL KNOWLEDGE AND SKILLS OF PRACTICES.**



# 13.2 WIRING DIAGRAM, JUNCTION BOX

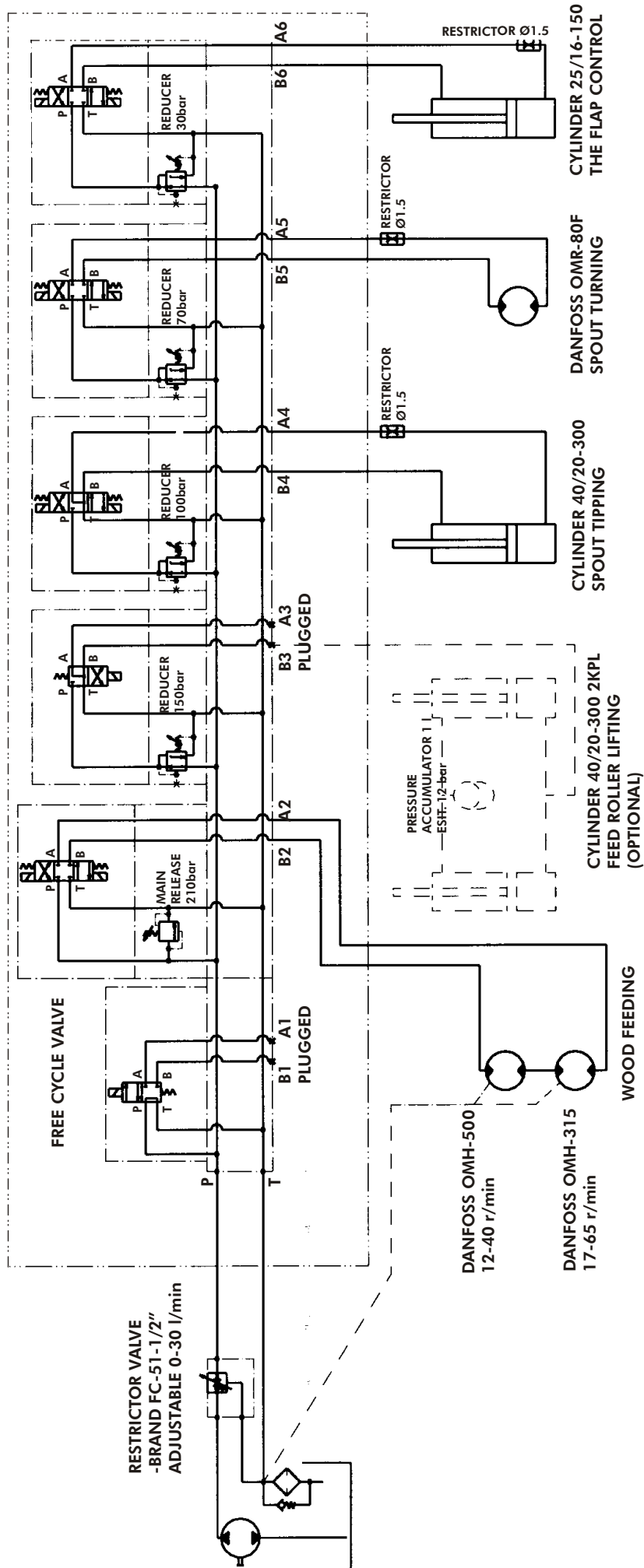


### 13.3 WIRING DIAGRAM, REMOTE CONTROL



# 13.4 HYDRAULIC CHART MODELS 2001 ->

NOTE !  
THE FREE CYCLE CONTROL VALVE IS  
CLOSED, IN CASE ANY OF THE 5 VALVES ARE USED



GEAR PUMP CASAPPA PLP 20.20  
WHEN THE CHIPPER RUNNING SPEED IS 750 r/min  
-PUMP ROTATING SPEED n.1050 r/min (i=1.4)  
-MAX. PRESSURE, LIMITED 200bar



## 14. WITHDRAWAL FROM ACTIVE USE



### READ SAFETY INSTRUCTIONS

Discarding the product from active use is the responsibility of the product's end-user or the person or company in whose ownership the product is at the time of discarding.

The disposal of the machine and the various resulting waste materials are governed by national laws, instructions and regulations, which are to be complied with. This applies to all countries, where the product is marketed.

Most of the parts comprising a feed mixer are made of materials, which are not bio-degradable in nature. This makes it necessary to disassemble the machine and to dispose of the various materials according to national regulations.

- Steel and other metallic parts are recycled through scrap yards or stripping yards for re-use.
- Waste oil, plastic parts and rubber components, other than tyres, are disposed of as hazardous waste by recycling, taking them to a refuse dump or disposed of by other means compliant with national regulations.
- Tyres must be disposed of in accordance with the directives 83/189 ETY, 182/88/ETY, 94/10/EY by taking the used tyres to recycling centrals or to a recycling operator, who will forward the tyres for re-processing.

Environmental authorities will supply further information on handling the scrap and resulting waste materials.

## 15. TERMS OF WARRANTY

1. The warranty period is 12 (twelve) months provided that the machine is used for contract/task work purposes within the scope of operation for which the machine was intended for.
2. The warranty period starts from the date an authorized dealer delivers the product to a buyer.
3. The warranty is limited to manufacturing and material defects in the product. The failed part(s) will be repaired or exchanged for a part(s) in full working order, either by the factory or an authorized repair workshop. The subcontracted machine components are covered by the respective warranty policies of their manufacturers.
4. A repair carried out and covered by the warranty does not constitute any elongation of the warranty period.
5. The warranty does not cover faults or damages caused by operating practices which are incorrect or contrary to the practices laid out in this manual, incorrect maintenance, excessive loading or normal wear. The warranty shall not extend to cover any subsequent damages, down-time, travel expenses, freight charges, daily allowance, overtime expenses arising in cases in which the original machine design has been altered.

In matters related to the warranty, please contact your local Dealer, who will prepare a warranty claim on the subject matter. Before any repair work is carried out on the machine within the terms of warranty, the manufacturer must be consulted about the repair work on the machine and about the costs arising therefrom.

The warranty shall be valid only when the Warranty Registration Card is returned properly filled out to the Manufacturer within 14 (fourteen) days from the date of the delivery of the product to the end-user.

## 16. SCOPE OF LIABILITY

The manufacturer shall not be responsible for any consequences arising from the use of the machine in any manner contrary to law, safety regulations or instructions laid out in this manual. As situations may occur during the use of the machine not foreseen in the instructions or regulations, the operators are advised to act according to general safety regulations and directives on farm machinery.

The manufacturer shall not be liable for any damages arising from the use of components produced by other manufacturers.

The manufacturer shall bear no responsibility for any damages caused to other machinery equipment by the operation of the chipper.

The manufacturer reserves the right to further develop or alter the construction of the product.

The owner of the machine shall be solely responsible for operating, maintaining and servicing the machine, unless otherwise specified.

The owner of the feed mixer shall be responsible for overseeing that each and every person operating the machine has acquainted themselves with the operating and safety instructions laid out in this manual, and that they have fully understood all such instructions.

