Chipper HJ-170MOB

HJ170MOB-14EN | OH000XXX

MANUAL

Junkkari Oy
Pohjanmaanväylä 1720
62375 YLIHÄRMÄ FINLAND
TEL. +358-(0)10 480 2200
FAX +358-(0)10 480 2295
e-mail: junkkari@msk.fi
Internet: www.junkkari.fi

ENGLISH

CE

1. CONTENTS

		SIVU NRO:
2	DEAR CUSTOMER	3
	2.1 WARNING	3
3	TECHNICAL SPECIFICATIONS	3
4	SAFETY INSTRUCTIONS	4
	4.1 GENERAL SAFETY INSTRUCTIONS	4
	4.2 DWELL TIMES	4
	4.3 TRANSPORTATION AND TRANSFER	4
	4.4 HYDRAULICS	5
5	SAFETY LABELS AND COMPONENTS AND SERIAL NUMBER PLATE	6-7
	5.1 SERIAL NUMBER PLATE	8
	5.2 LIGHTS AND REFLECTORS	8
	5.3 BRAKES	8
	5.4 HITCH	8
6	OPERATING ENVIRONMENT	9
	6.1 INTENDED USE	9
	6.2 LIMITATIONS OF USE AND PROHIBITED USES	9
7	PRINCIPLE OF OPERATION	9
8	MACHINE TRANSPORTATION, HANDLING AND STORAGE	10
	8.1 TRANSPORTATION	10
	8.2 HANDLING	10
	8.3 STORAGE	10
	8.4 SPECIAL SAFETY INSTRUCTIONS FOR MACHINE TRANSPORTATION	10
9	IMPLEMENTATION	11
	9.1 PREPARATIONS PRIOR TO OPERATING	11
	9.2 PACKAGE DISPOSAL	11
	9.3 CONTROLS, ENGINE, HYDRAULICS, FUEL TANK AND ELECTRIC SYSTEM	11-12
	9.4 STARTING	12
	9.5 WORKING	13
10	ADJUSTMENTS	13
	10.1 BLADE SETTING ADJUSTMENT	13
	10.2 FEEDING DEVICE SPEED ADJUSTMENT	14
	10.3 ROTATION GUARD (NO-STRESS)	14
11	OPERATION	14
	11.1 USING THE MACHINE	14
12	MAINTENANCE	15
	12.1 SHARPENING THE CUTTING BLADES	15
	12.2 LUBRICATION	16
	12.3 ENGINE ROOM	17-18
13	TROUBLESHOOTING	19
	13.1 FAULTS	19
	13.2 CONNECTING DIAGRAM, ELECTRICS	20
	13.3 HYDRAULIC DIAGRAM	21
	13.4 TRAILER CONNECTION DIAGRAM	22
14	WITHDRAWAL FROM SERVICE	23
15	TERMS OF WARRANTY	23
16	LIABILITY	24
17	EC DECLARATION OF CONFORMITY	26-27

2 DEAR CUSTOMER

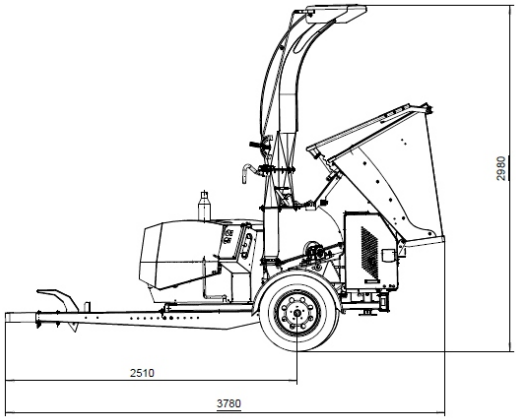
We thank you for the trust you place in us and wish you the best of success in your endeavours. We invite you to read these instructions for use thoroughly, since familiarity with the machine, accurate adjustments and careful maintenance will guarantee the user's safety and the continuous operation of the machine on busy workdays.
It is important to understand each section of this booklet and to adhere to the instructions for use. If you have any questions or doubts, you should contact the vendor.
We hope that you will return the signed warranty to the manufacturing plant once you have read the instructions for use.

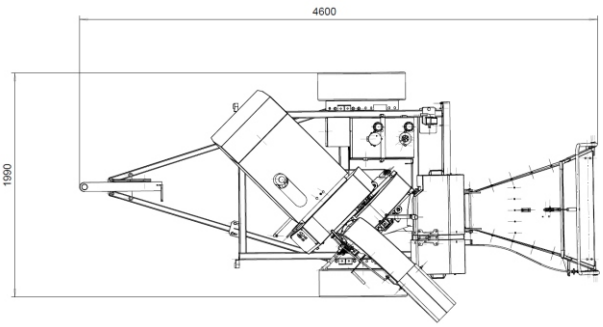
2.1 WARNING

This symbol is always used in the instructions if there is a danger to the user or to others.
In addition, this symbol is used to indicate risks to the environment or to property.

3. TECHNICAL SPECIFICATIONS

Type	**HJ 170 mobile**
Disc diameter, mm	630
Disc weight, kg	97
Rotational speed r/min	max disc 1000
Number of blades	4
Chip size, mm	5 -18
Max. Wood diameter, mm	170
Chipping capasity m^3/h	4-8
Infeed opening mm	200x200
Hydraulics	own system
Engine	Kubota V1505 diesel SAE 33,5 hp / 25 kW
Total weight kg	1350
Wheels	185 R14C
Electric system	12V / 60Ah
Length in working pos. mm	4600
Length in transport pos. cm	3780
Width cm	1990
Height cm	2980
Max speed	80 km/h





Standard equipment No-Stress and brakes.

Machine:

Type : _____

Manufacturing number : _____

Year: _____

4 SAFETY INSTRUCTIONS

4.1 GENERAL SAFETY INSTRUCTIONS

- CLOTHING: For your own safety, wear fitted clothing with no hanging sleeves.
- OPERATION: Before operating the machine, read the instructions on how to connect, adjust and operate it.
- WARNINGS: Follow all machine warnings and instructions.
- SAFEGUARDS: The machine may only be operated with all safeguards in place and intact. Always wear a helmet, ear protectors and eye protectors (forest worker's helmet) when chipping.
- ATTACHMENT TO TRACTOR: Take special care when attaching or removing the machine.
- TOWING DEVICE LOAD: Consider the maximum loads for the drawbar and the tractor drawing device.
- PARKING: Ensure that the parked machine cannot move.
- SAFETY DISTANCE: Due to its principle of operation, the machine contains components that cannot be entirely safeguarded. You should always stay within a safe distance from these components. The driver should also ensure that bystanders cannot get close to these components.
- OPERATING THE MACHINE: No one can stay in the vicinity of the machine when it is in operation.
- Never go between the machine and the tractor if the machine is being lifted, lowered or moved.
- Do not go under or on top of a machine that only stands on its hydraulic components without support.
- Before operating the machine, ensure that it is correctly connected and that the safeguards are in place.
- Before working with the machine, always verify that no one is in the immediate vicinity of the machine.
- After operation, check the condition of the machine, particularly its attachment and connection points.

THE VOLUME OF THE OPERATION SITE IS OVER 85 DB. ALWAYS USE EAR PROTECTORS DURING CHIPPING.

4.2 DWELL TIMES

The Junkkari chipper's dwell times are as follows:

Loaded	15	seconds
Unloaded	50	seconds

4.3 TRANSPORTATION AND TRANSFER

- Always observe the Road Traffic Act when driving on public roads.
- Inspect and install all equipment required for transportation on public roads, such as lights, reflectors and the slow vehicle triangle.
- Observe maximum shaft weights, total weights and transportation dimensions allowed.
- All devices moving the machine, such as chains, racks etc., must be placed so that involuntary movement cannot affect them in the machine working or transportation position.
- The machinery or additional weight in tow or on the lifting device may affect the behaviour of the tractor during transportation, i.e. its control and the operation of the brakes. This is why it is important for sufficient control and braking action to always be available.
- Passengers may not be transported on top of the machine.
- The machine may only be lifted at the points indicated with instruction stickers.
- Only use approved lifting straps or chains and check to ensure they are in good condition.
- If the machine is moved e.g. onto a platform, it should be secured with chains or straps.
- When loading e.g. with a forklift, check that the machine is on balance and that there is no danger of it falling.
-

4.4 HYDRAULICS

- After the connection, the hydraulics system is under high pressure. Hydraulic oil released with high pressure will penetrate the skin and may cause serious injuries. There is also a risk of injury when searching for leakages.
- Be careful with all hydraulic components. They involve the risk of getting cut or trapped between components.
- When a hydraulic hose is connected to the tractor, the hydraulic systems of both units must be Non-pressurised.

PROTECTION FROM OIL AND GREASE

- When handling oil or grease, always wear appropriate protective clothing and oil-resistant gloves.
- Avoid skin contact with oil and grease. This may cause skin injuries.
- Never use oil or lubricating grease to clean your skin. These substances may contain small metallic particles that cause wounds which are worsened by the oil.
- Follow the handling and safety instructions issued by the lubricant manufacturers.
- Synthetic oils are often corrosive and can cause severe irritation of the skin.

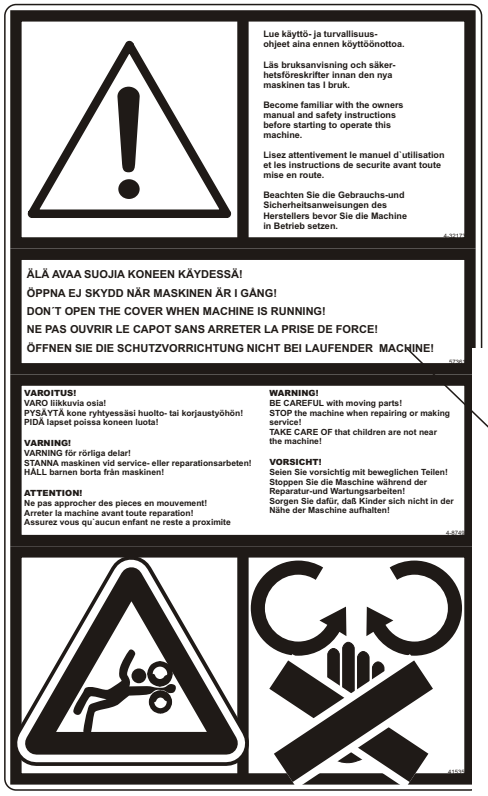
WASTE OIL

- Collect the waste oil and dispose of it in accordance with national regulations.

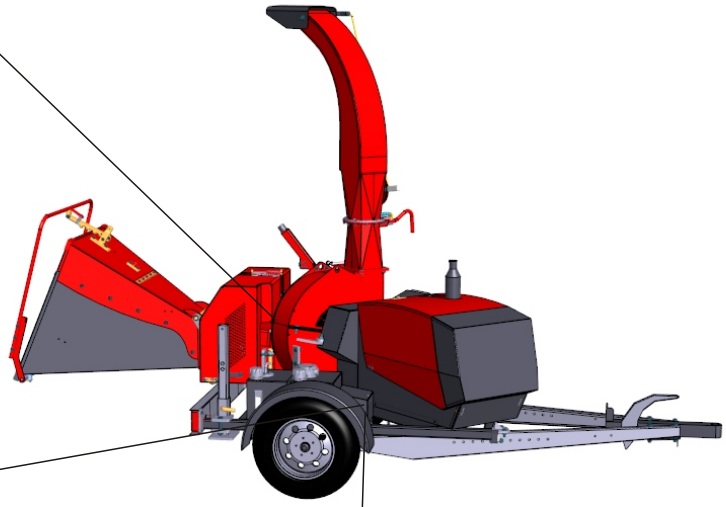
ACCIDENTS

- If oil is dispersed in the soil, prevent it from spreading and collect it, for example, by absorbing it with peat.
- If you have skin injuries caused by oil or a lubricant, consult a doctor immediately.

5 SAFETY LABELS AND COMPONENTS AND SERIAL NUMBER PLATE



BEWARE OF THE FEED ROLLERS



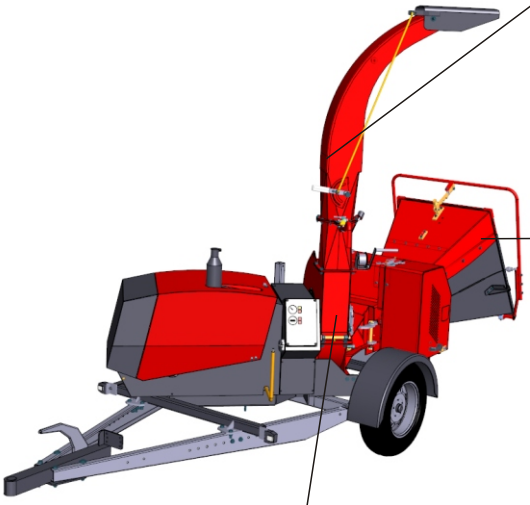
PERSON
TRANSPORT
FORBIDDEN

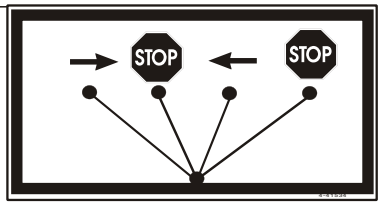
BEWARE OF ROTATING
ITEMS

USE EAR PROTECTORS

BEWARE OF WOODCHIPS

SAFETY DISTANCE





FEEDING DEVICE START-UP AND EMERGENCY STOP,

5.1 SERIAL NUMBER PLATE

Serial number plate

1. **Machine name**
2. **Machine type**
3. **Serial number**
4. **Machine weight without accessories**
5. **CE label installation year**
6. **Contacts**

OPERATING INSTRUCTIONS AND SPARE PARTS BOOK

5.1 SERIAL NUMBER PLATE AND MANUFACTURING NUMBER

Manufacturing number can be found from plate attached to drawbar. It is also stamped on the frame above the plate.

5.2 LIGHTS AND REFLECTORS

Junkkari H170 mobile chipper is equipped with lights and reflectors required by Finnish traffic regulations. Lights should be used always when driving in public roads. Lights get power from 7-pin socket.

5.3 BRAKES

Junkkari HJ170 mobile chipper is equipped with brakes required by Finnish traffic regulations. Machine has also a hand brake.

BRAKES HAVE TO BE USED WHEN LOCAL REGULATIONS IT REQUIRES.

5.4 HITCH

Trailer hitch is equpped with hand brake and adjustable support wheel. The hitch idenfication plate is positioned on top of drawbar.

Pic 1. Hitch

BE CAREFUL WHEN ATTACHING THE TRAILER TO CAR. REMEMBER TO CONNECT THE LIGHT SOCKET. LIFT UP THE SUPPORT WHEEL FOR TOWING.

6 OPERATING ENVIRONMENT

6.1 INTENDED USE

The purpose of a chipper is to produce chips from trees which are suitable to be fed into the chipper's feed orifice based on their diameter and other measurements. The wood material must be clean. Dust, sand or soil quickly wear down the blades. Metal objects, such as nails, will cause denting of the blades. Larger metal objects may damage the chipper.

For other types of use such as chipping down cardboard rolls, plastic piping or hard boarding panels, please contact your dealer.

6.2 LIMITATIONS OF USE AND PROHIBITED USES

Limitations regarding the machine operator

- The machine operator may not be under the influence of intoxicating substances, alcohol o strong medication.
- In cases of illness or permanent disability, the doctor in charge should be consulted for a permission to operate the machine.
- The use of the chipper is prohibited for persons without the sufficient level of knowledge and skill required to operate the machine and for persons under the age of 15.

Prohibited uses

- The chipper may not be used in nature reserve areas.
- The machine may not be used to spread liquids, inflammable materials, sand or fibrous Material.
- Avoid using the machine in areas where its use could cause inconveniences in surrounding areas due to excessive noise or the spreading of dust.
- Chipping highly inflammable materials is strictly prohibited.

7 PRINCIPLE OF OPERATION

When chipping wood with a chipper not fitted with a feeding device, the blades mounted on the blade disc draw in the wood automatically. The feeding speed depends on the knife setting: a short knife setting results in a small chip size and a slow intake speed, whereas a large knife setting results in a large chip size and consequently, a high intake speed. The chips produced are ejected through the blade orifices to the blower fan and into the storage through the discharge spout. In chippers equipped with a feeding device, the intake is boosted by feed rollers driven by hydraulic motors. The hydraulic motors are pressurised by the tractor hydraulic system or by an independent hydraulic system via a control valve. The feed control lever has 4 positions: Stop, Feed, Stop and Reverse (outward-inward).

8 TRANSPORTATION, HANDLING AND STORAGE

(IMPORTER, CENTRAL FIRM, DEALER)

8.1 TRANSPORTATION

- Terms of delivery are ex works unless otherwise mutually agreed.
- The purchaser (distributor) shall agree with the Manufacturer on the date upon which the product is ready for delivery at the factory.
- The Manufacturer shall ensure that the product is properly loaded onto the delivery vehicle.
- During transportation, all responsibility of the product shall lie with the handling agent.

8.2 HANDLING

- The product must be handled with the same care as most agricultural or forestry machinery in order to avoid damaging the product.
- No other products may be loaded on top of the product.
- The product is delivered well-packed from the factory.

8.3 STORAGE

- The machine should be stored in its normal working position and protected against sunlight and rain.
- When stored outdoors, the machine should be inspected from time to time for any rainwater accumulation on top.
- For longer periods, the machine should always be stored indoors.

8.4 SPECIAL SAFETY INSTRUCTIONS FOR MACHINE TRANSPORTATION

- The machine may only be lifted at the points indicated with instruction stickers.
- Ensure that the lifting device is safe, has sufficient capacity and that there is no risk of overturning or falling down involved.
- Only use approved straps or chains for lifting.
- The chipper must not be lifted with the forks of a fork lift truck; either straps or chains should be used at all times.
- Always check that the straps or chains are in good condition prior to lifting.
- When using a lifting crane, always check the lifting distance.
- The chipper must always be securely tied down to the platform for the duration of Transportation.

9. IMPLEMENTATION

9.1 PREPARATIONS PRIOR TO OPERATING

The customer shall prepare the chipper prior to operating. If the chipper is delivered with its discharge spout removed, the spout shall be mounted onto the machine.
When taking the chipper into use the customer should ensure that all the safety panels are in place, that no foreign materials are left in the feed orifice and that the disc rotates freely. Before starting the engine user should check that there is oil and cooling agent in the engine, battery is functional and properly attached and there is fuel and hydraulic oil in the tanks.

9.2 PACKAGE DISPOSAL

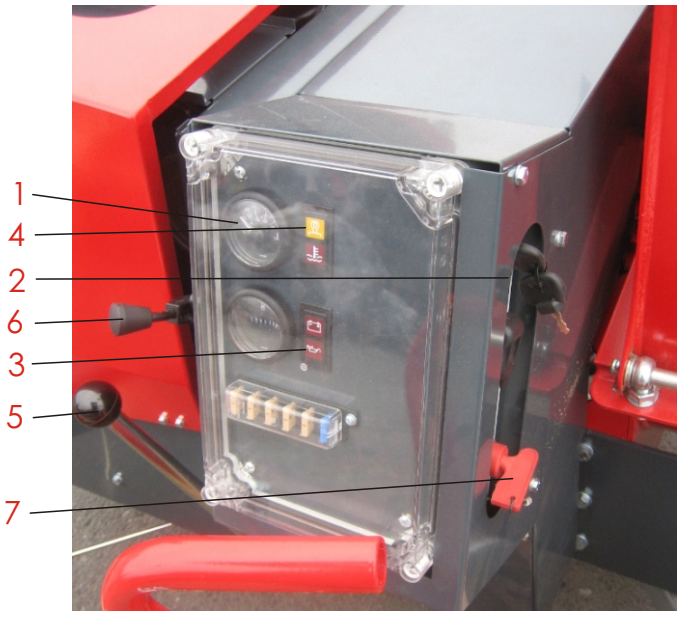
The wooden and cardboard packaging materials may be disposed of by burning or by taking them to a landfill. The plastic bags and cords included in the packaging materials should be disposed of either by recycling them according to national regulations or by taking them to a landfill.

9.3 CONTROL UNITS, ENGINE, HYDRAULICS, FUEL TANK AND ELECTRIC SYSTEM

CONTROL UNITS

HJ170 mobile control units regarding the engine and chipper disc are located on the left hand side of the machine. Control for infeed rollers is located in the rear side of the machine. (Stop-start-reverse-lock)/stop-handle and operating handle)

1. Engine temperature
2. Ignition
3. Signal ligths : Battery and oil pressure
4. Signal light : ignition
5. Chipper clutch
6. Throttle
7. Main switch



Pic. 2 Control units

ENGINE
HJ170 mobile engine is Kubotan 25 kW diesel.
Fuel of the engine is diesel.

FUEL TANK
HJ170 mobile has tank for diesel fuel. Tank capacity is 28 litres.

Pic 3. Hydraulic pump

HYDRAULICS
HJ 170 mobile has own hydraulic system.
Pump is on when engine is running. Pump is located on the right hand side of the engine, picture 3.

ELECTRIC SYSTEM
Battery is placed on the right hand side of the engine. Recommended type is 12V 60 Ah battery.
Fuse box is placed in the control panel. Replace broken fuse with fuse of a same size, not bigger. Bigger fuse may cause damage of electric system. .

9.4 STARTING

Starting should be done carefully because of the large masses in the chipper. If the chipper is engaged too quickly, the engine may stop.
When working, the maximum speed of revolutions of the chipper is in the 1300 r/min region.
Starting is done in the following way:
- Check the liquids and the condition of the battery before starting.
-The covers of the machine must be closed, it should be in the work position and supported against the towing hook of a car, or against the machine support and support wheel, with the hand brake on.
- The chipper must be turned off when starting the engine.
- The throttle should be idling (accelerate a little when needed).
- Switch on the current on the main current switch, start with the ignition key. There is a quick glow on the engine.
- Starting the chipper is done carefully by pulling the lever front. Engaging the lever too quickly may cause the engine to stop.
- Increase the speed of revolutions to work speed. Adjust the speed of revolutions according to the chipped material and chip size
- Engage the infeed by the handle in rear side of the machine

9.5 WORKING

Working with the machine can be done either with the machine connected to the towing hook of the tractor so that the front end of the machine is supported by the towing hook, or with the front end of the machine supported by the drawbar support wheel so that the machine fits into a smaller space and the tractor can be moved to a safe distance. The rear end of the machine should always be supported with the support of the machine.

ALWAYS REMEMBER TO CHECK THE SUPPORTING OF THE MACHINE BEFORE STARTING, A MACHINE THAT IS NOT SUPPORTED PROPERLY TIPS OVER EASILY!
BEWARE OF HOT SURFACES!

10 ADJUSTMENTS

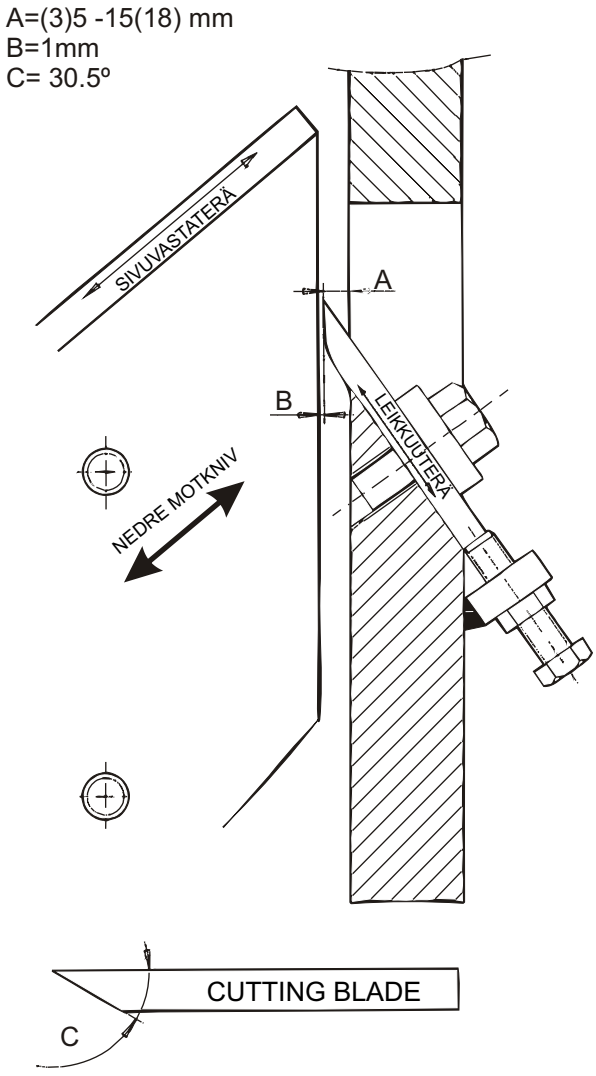
PLEASE READ THESE INSTRUCTIONS CAREFULLY AS THE CONDITION OF THE BLADES AND THEIR CORRECT ADJUSTMENT ARE CRITICAL TO THE OPERATION OF THE CHIPPER.

10.1 BLADE SETTING ADJUSTMENT

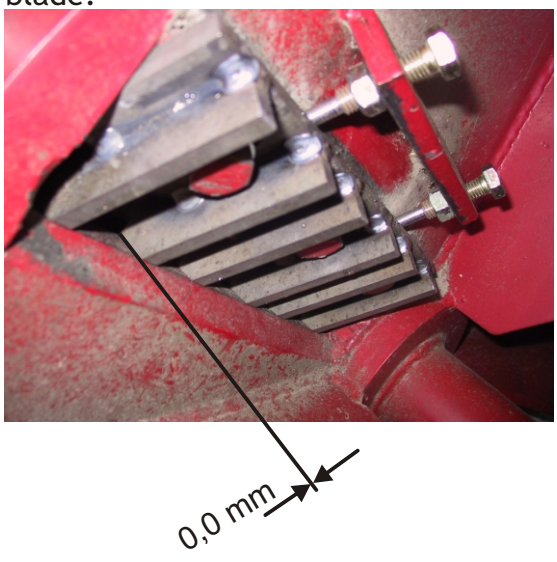
The blade setting (A) may be adjusted within the range of 3 to 15 mm. The smaller the blade setting, the smaller the chips the chipper produces. On the other hand, the blade setting affects the wood intake speed: a larger knife setting results in a faster and better wood intake.

Adjustment:

1. Loosen the blade retaining screws (3 pcs/blade) and the blade locking screws (2 pcs/blade).
2. Open the counter blade retaining screws and pull the counter blade out towards the feed chute.
3. Move one cutting blade to a desired distance from the blade disc. Tighten both the retaining and locking screws of the blade in question.
4. Move the counter blades to a distance of 1 mm from the cutting blade. Then secure the counter blades.
5. Proceed to adjust the remaining three cutting blades with the aid of the counter blade, leaving a 1 mm clearance in each cutting blade.
6. Finally, tighten all blade and counter blade retaining screws (200 Nm). Rotate the disc by hand to ensure that the cutting blades do not touch the counter blades and that the blade clearance (B) Is correct (1 mm) and identical for each cutting blade.
7. Tighten the cutting blade locking screws to 30 Nm against the rear edge of the blades.



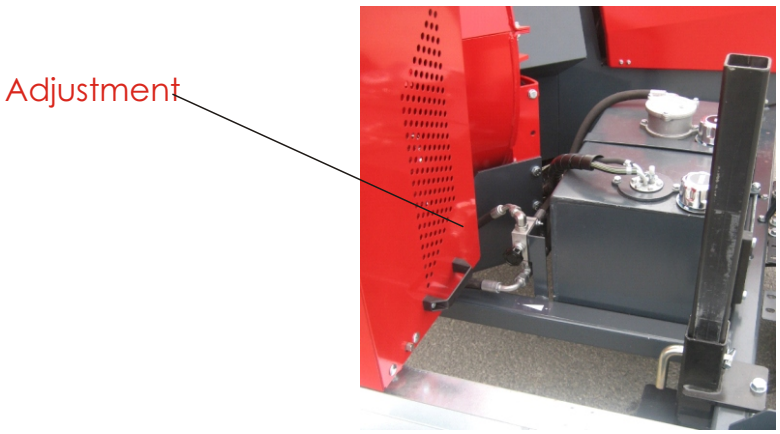
STICK BLADE (accessory) mounted on a standard blade.



10.2 FEEDING DEVICE SPEED ADJUSTMENT

In the HJ 200 model chipper, the feed roller rotary speed must be synchronized with the knife cutting speed. If the feed roller rotary speed is too great compared to the knife cutting speed, the feed rollers slide on the wood.
If the roller rotary speed is too small compared to the knife cutting speed, feeding is jerky. The adjustment is done with a low rotary speed when the knives try to drag the wood from between the feeding device rollers. The feeding device rotary speed is increased until its speed is synchronous with the cutter wheel knife setting.

ADJUSTMENT
To adjust the feeding device speed, turn the adjusting wheel against the bottom. When wood is fed into the chipper, any variation between the speed of the feeding device and the blade disc can be observed. Then adjust by turning the adjusting wheel towards the fast end of the range. Repeat the adjustment where necessary.



10.3 ROTATION GUARD (NO-STRESS)

The limit value of the No-stress rotation guard which monitors the feeding rollers is adjusted by the SET button in the display. The limit value is set at the factory to approx. 800rpm. Setting: Chipper must be running during the setting. Set the engine speed/disc speed with hand throttle to the level where rollers should stop. Then press SET button until you see text “done” and now selection is in memory until it will be changed next time. Then you can raise RPM to working level. When RPM decreases below setted level during the chipping work, feeding stops and reverses. The feeding continues automatically after RPM returns to operating level.

11. OPERATION

The material to be chipped should be pre-treated where necessary. Large tree branches, roots and boughs should be removed to fit the wood into the feeding orifice. It is recommended that the wood be placed near the chipper to avoid carrying it long distances. In this case, the work can be done as efficiently as possible, and the continuous flow of material will produce chips of the best quality.

11.1 USING THE MACHINE.

Eyes and ears must be protected during the work with the machine. Due to the exhaust gases working indoors is not allowed.
After operation machine parts can be hot. Please let the machine cool down before maintenance. Beware hot parts also during the work.

12. MAINTENANCE

READ THE SAFETY INSTRUCTIONS

MAINTENANCE AND REPAIRS

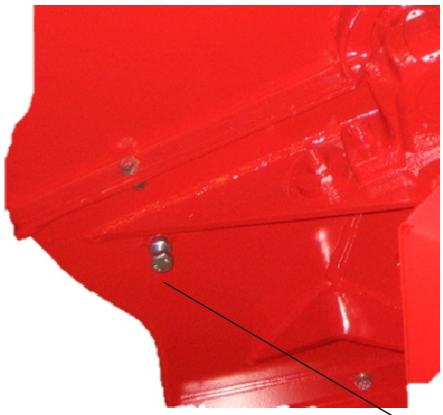
1. Always ensure that the PTO is disengaged and that the engine is stopped before carrying out cleaning, lubrication, assembly or adjustment work. Remove the ignition key to prevent the tractor or the machinery from starting up accidentally.
2. Secure the machine appropriately before carrying out maintenance work.

12.1 SHARPENING THE CUTTING BLADES

The cutting angle (C) of cutting blades delivered from the factory is 30.5 degrees. Blades should always be sharpened to this angle. A smaller sharpening angle will result in chipped blades, whereas a larger angle will reduce the blade clearance angle, reducing in turn the blades' ability to draw in the wood.

Please note that the cutting blades must not heat up during the sharpening process as the heat will cause the blades to lose their hardness. This is why the blades should be sharpened by grinding. Care should also be taken to sharpen all blades equally to ensure the balance of the blade disc.

Counter blades generally require no sharpening. Counter blades may, however, be rounded off if substances harder than wood (nails, sand etc.) enter the chipper. In this case, counter blades may be straightened by grinding e.g. with a bobbing machine. However, counter blades generally require no maintenance.



DISC SAFETY LOCK
The chippers are fitted with a standard safety lock for locking the disc while carrying out maintenance work on the blades.

12.2 LUBRICATION

ITEM (NUMBER OF NIPPLES AND LOCATION)	RECOMMENDATION / LUBRICANT
Technodrive engine power take-off clutch, 3 nipples, on the clutch shaft NOTE! Use only a little bit of grease, because overflowing grease reduces the clutch function (superfluous grease flows inside the clutch)!	Once in a period of use, Vaseline
Drawbar, on top of drawbar 2 pcs, red covers on top.	2 times in a period of use, Vaseline
Support wheel, no nipple	When needed / once in a period of use, oil or other general lubricant carefully
Chipper disc axle bearings, 2 pcs	50 hours of use
Feeding device bearings and pins	50 hours of use

HYDRAULICS

Hydraulics HJ170 mobile

First oil change	10 h
Subsequent changes	200 h
First filter change	10 h
Subsequent changes	200 h

Oil type: MOBIL DTE 13 or similar
Capacity: 28 L

MAINTENANCE:
1.Check the oil level in the tank before taking the chipper into use. The amount of oil is approx. 28 l and it can be checked from the filling hole, the amount is right when the oil level covers the bottom of the screen in the filling hole.
2. Change the hydraulic oil and filter after the first 10 hours of use. The filter is in the filter housing on the tank cover. On the bottom of the tank, there is a drain plug for draining the oil.

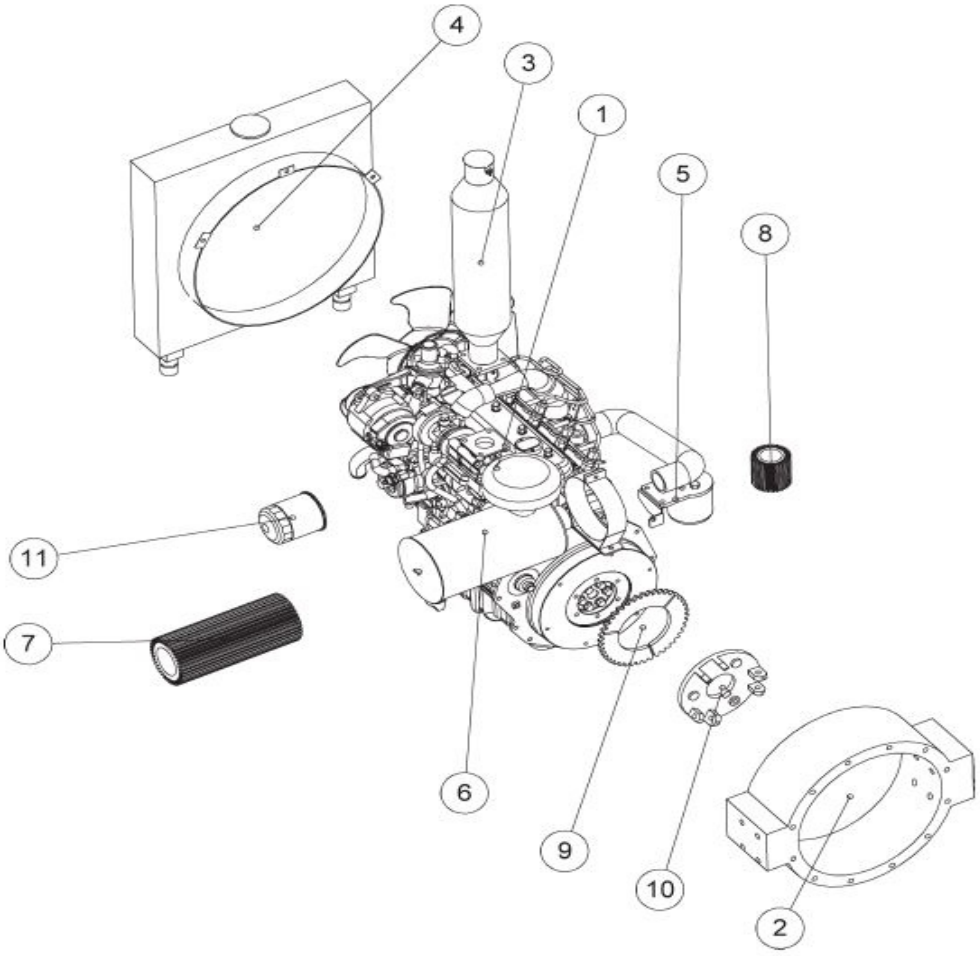
Pic 5. Hydraulic oil tank And filter

12.3 ENGINE ROOM

- Open the lock of the hood for example by screw driver.

RISK OF BURNS!

ENGINE, COOLING SYSTEM, AND THE MAINTENANCE AND ADJUSTMENTS OF THE HYDRAULIC PUMP:



REF	PART NO	DESCRIPTION	PCS
1	2190755	Engine	1
2	1625904611	Clutch housing	1
3	1661612002	Exhaust silencer	1
4	1G90472001	Radiator	1
5	1661643001	Fuel filter holder	1
6	1661511001	Air filter casing	1
7	15741-11083	Air filter	1
8	15221_43170	Fuel filter	1
9	2022033	Friction -plate	1
10	2025009	Pressure plate	1
11	16271_32092	Oil filter	1

	Service intervals			
Intervarl (hours)	Item	Ref.Page		
50	Check of fuel pipes and clamp bands	13		@
See NOTE	Change of engine oil	15	0	
100	Cleaning of air cleaner element	20	*1	@
-	Cleaning of fuel filter	13		
-	Check of fan belt tightness	23		
200	Check of radiator hoses and clamp bands	18		
-	Replacement of oil filter cartridge	16	0	
-	Check of intake air line	-		@
400	Replacement of fuel filter cartridge	14		@
500	Removal of sediment in fuel tank	-		
-	Cleaning of water jacket (radiator interior)	17-18		
-	Replacement of fan belt	23		
Every year	Replacement of air cleaner element	20	*2	@
-	Check of damage in electric wiring and loose connections	-		
800	Check of valve clearance	25		
1500	Check of fuel injection nozzle injection pressure	-	*3	@
3000	Check of the turbo charger	-	*3	@
-	Check of injection pump	-	*3	@
-	Check of fuel injection timer	-	*3	@
Every two year	Change of radiator coolant (L.L.C.)	18		
-	Replacemt of radiator hoses and clamp bands	18		
-	Replacement of fuel pipes and clamps bands	13	*3	@
-	Replacement of intake air line	-	*4	@

IMPORTANT:

The jobs indicated by 0 must be done after the first 50 hours of operation.

*1 Air cleaner should be cleaned more often in dusty conditions than in normal conditions.

*2 After 6 times of cleaning.

*3 Consult your local KUBOTA Dealer for this service.

*4 Replace only if necessary.

The items listed above (0 marked)are registered as emission related critical parts by KUBOTA in the U.S. EPA nonroad emission regulation. As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction. Please see the Warranty Statement in detail.

See Kubota diesel engine manual, as an appendix.

THE MAINTENANCE AND ADJUSTMENTS OF THE ENGINE POWER TAKE-OFF CLUTCH:
Lubricating oil: SAE 90 with EP additives.
Oil must be replaced after the first 100 working hours. Subsequent oil changes should be made every 1000 hours or every 12 months, wichever is the sooner.
Check regularly the oil level.
The maximum oil temperature during continous operation must not exceed 95 degrees celsius. It is wise to check this temperature during the first working hours.

See Technodrive clutch maintenance instructions, as an appendix.

POWER TRANSMISSION / BELTS:

Always check the condition of the belts before starting the machine. If the belts need to be replaced, do the following:
1. Open the belt tensioner by loosening the spring nuts
2. Replace the belt(s)
3. Tighten the belts carefully
4. Do a test run and check the tension on the belts
5. Recheck the tension on the belts every 100 working hours.

TAKE SPECIAL CARE WHEN STARTING THE MACHINE AGAIN AFTER REPLACING BELTS!

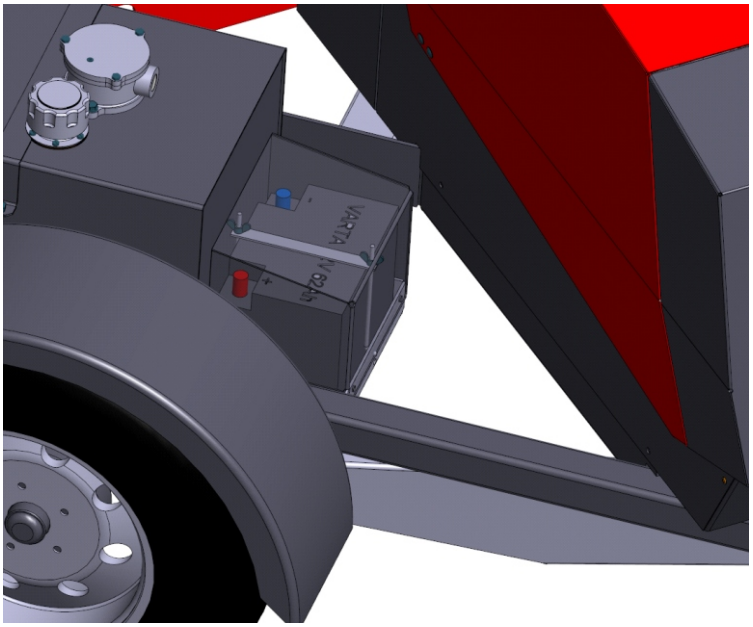
ELECTRICAL SYSTEM AND FUSES

Use the main current switch to switch off the current for the duration of maintenance work. It is recommended to disconnect the battery terminals, especially when repairing electrical devices.

Always check the function of the lights before starting towing. Replace broken bulbs. Also the condition of the indicator light bulbs on the controls should be checked periodically.

Check battery terminals, clean the battery by wiping and, if needed, clean oxides from the poles using, for example, a battery pole brush.
Check the battery charge level with, for example, an areometer. Fan belt tension: see Kubota engine manual.
During longer interruptions in use, it is recommended to move the battery to a warm storage. Recharge the battery according to manufacturer instructions if it has run down.

Fuse box is located in control panel.



Pic 6. Location of the battery

BE CAREFUL WITH THE BATTERY FLUID, RISK OF CORROSION!
Battery acid may be on the outside surface of the battery as well, because the battery sweats when the temperature changes.

13. TROUBLESHOOTING CHART

FAULT	CAUSE	REMEDY
The chipper does not draw in wood	Dull blades Incorrect sharpening angle Blade fitted the wrong way	Sharpen and refit blades as per manual instructions.
Uneven chip size	Blade clearance (B) is too large Single strips of woods turn Sideways after passing the feed rollers	Adjust blade clearance as per manual instructions. Feed wood continuously.
The discharge spout is blocked	Rotational speed too low.	Increase the rotational Speed to 540 - 1000 rpm.
Power requirement is Excessive in relation to the Power device.	Power device is too small. Blade setting is too large (A)	Reduce the blade setting or remove the opposite Blades.
The feed rollers are weak (Model G).	Not enough oil.	Increase the amout of Hydraulic oil.
The feed rollers are not rotating (In winter) (Model G)	The oil tank contains too much water.	Defrost, drain water.
Ingoing wood produces vibrations.	The feed rollers are not Properly synchronised.	See the synchronisation Instructions.

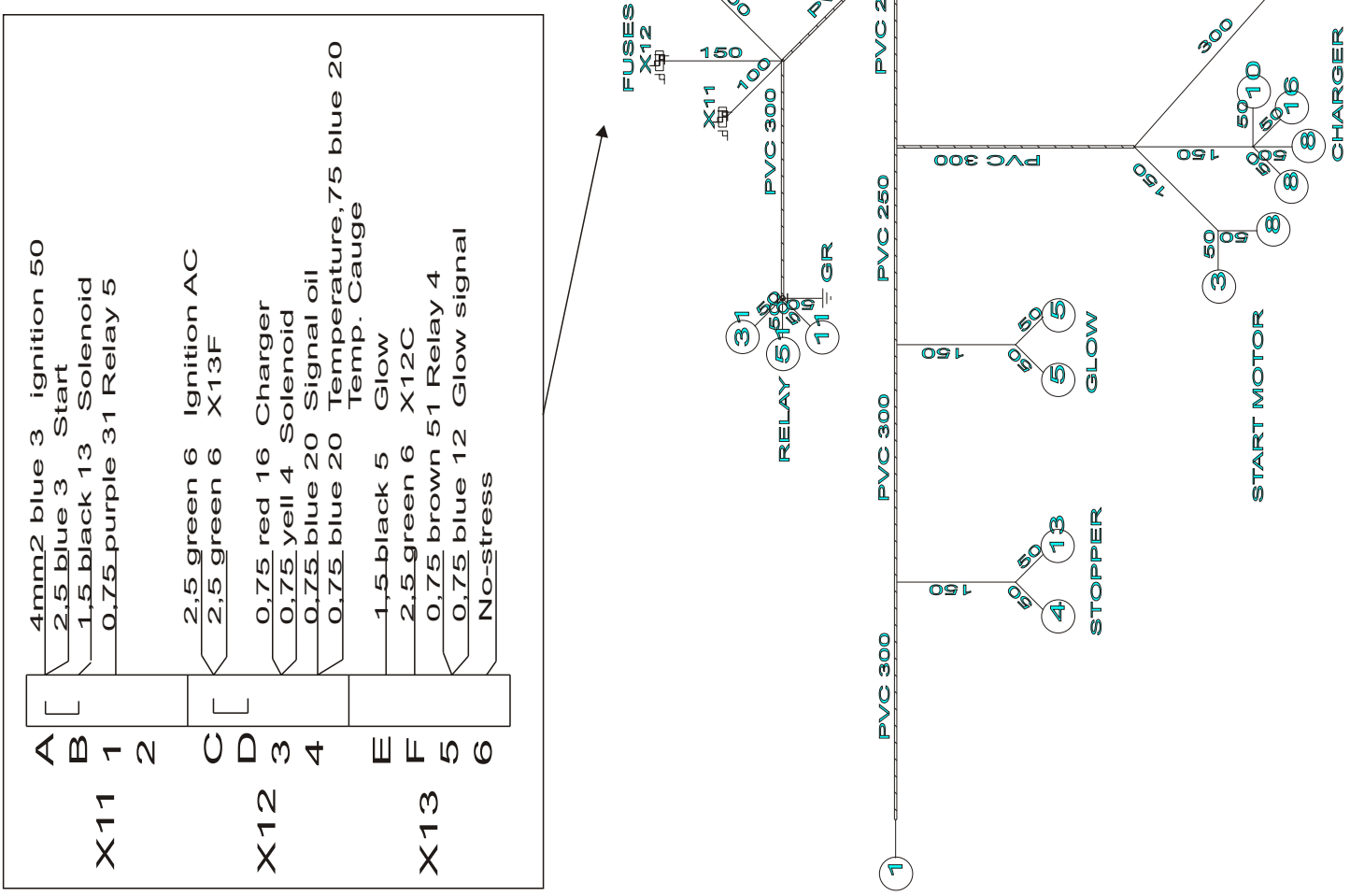
13.1 FAULTS

The normal wear on the chipper is safe and does not cause hazardous situations. Practically the only wearing parts are the knives. If there is end clearance in the bearings, their adjustment should be made by an expert.

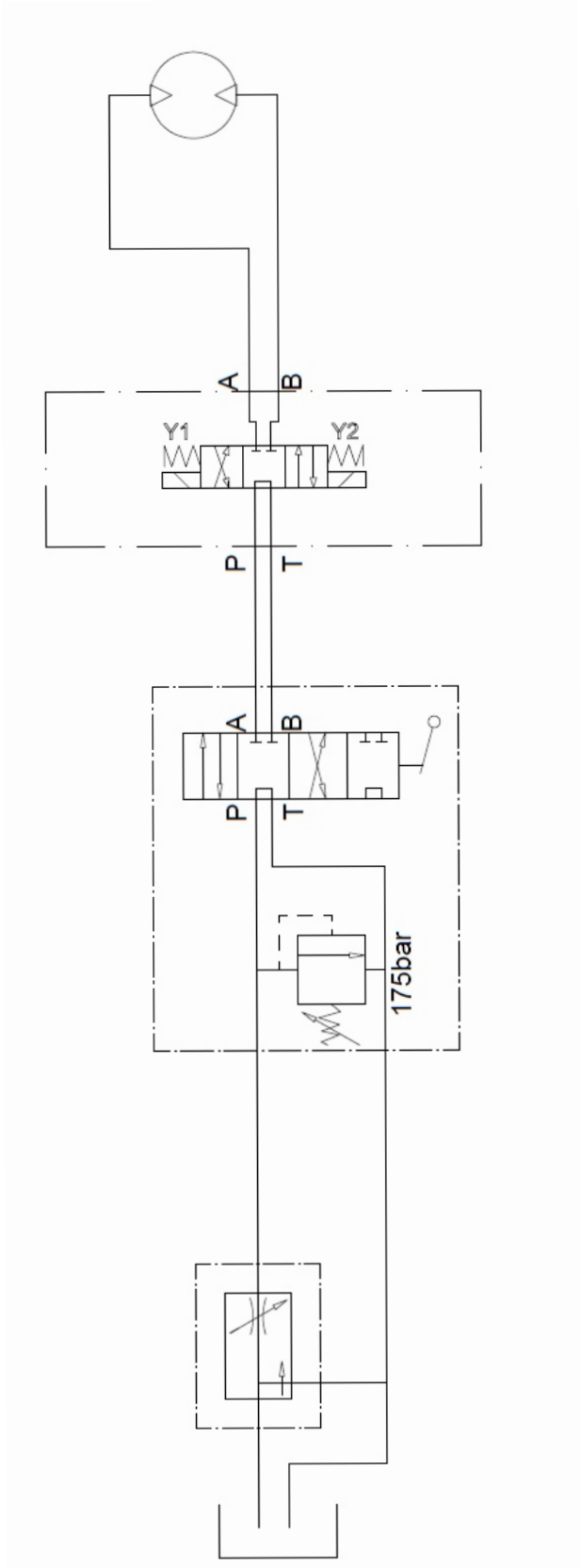
NOTE THAT THE MACHINE IS INTENDED FOR A PROFESSIONAL OPERATOR. THEREFORE OPERATING THE MACHINE REQUIRES SUFFICIENT GENERAL KNOWLEDGE AND SKILLS.

13.2 CONNECTION DIAGRAM, ELECTRICS HJ170 MOBILE

1. PUNAINEN	RED
2. LILA	PURPLE
3. SININEN	BLUE
4. KELTAINEN	YELLOW
5. MUSTA	BLACK
6. VIHREÄ	GREEN
8. PUNAINEN	RED
10. RUSKEA	BROWN
11. PUNAINEN	RED
12. SININEN	BLUE
13. MUSTA	BLACK
16. PUNAINEN	RED
20. SININEN	BLUE
30. MUSTA	BLACK
31. LILA	PURPLE
51. RUSKEA	BROWN

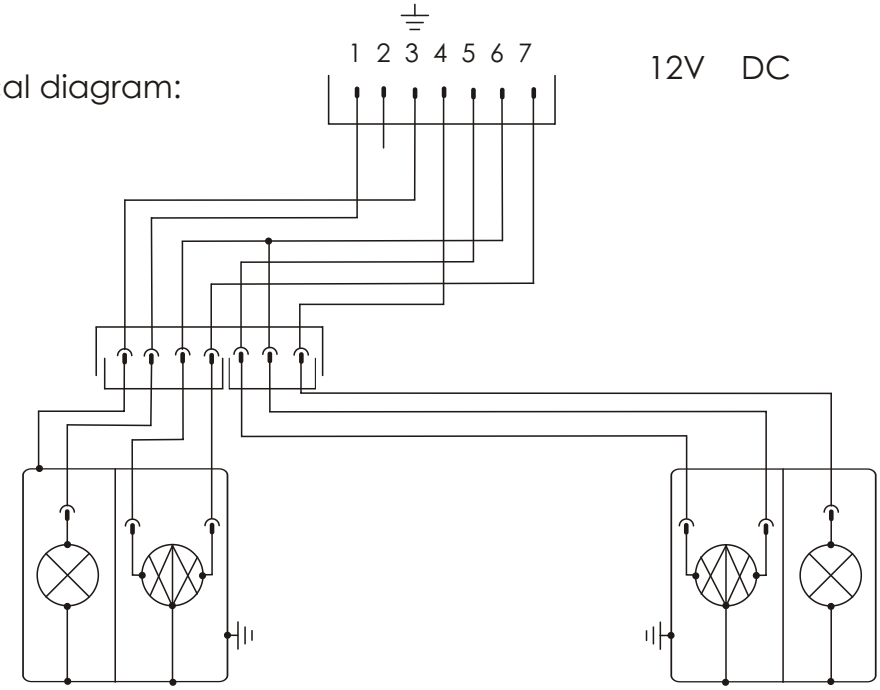


13.3 HYDRAULIC DIAGRAM, HJ170 MOBILE

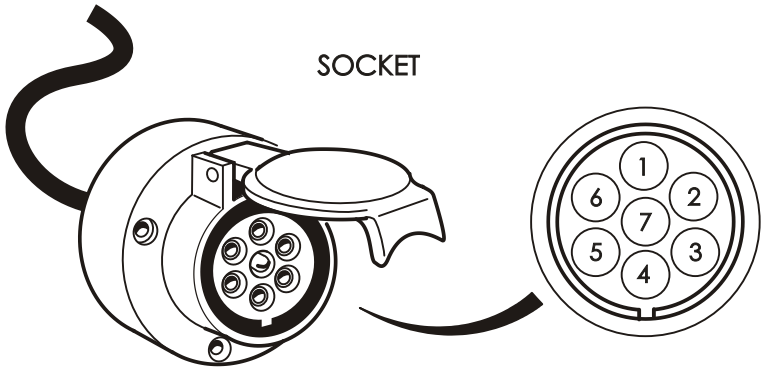


13.4 TRAILER CONNECTION DIAGRAM

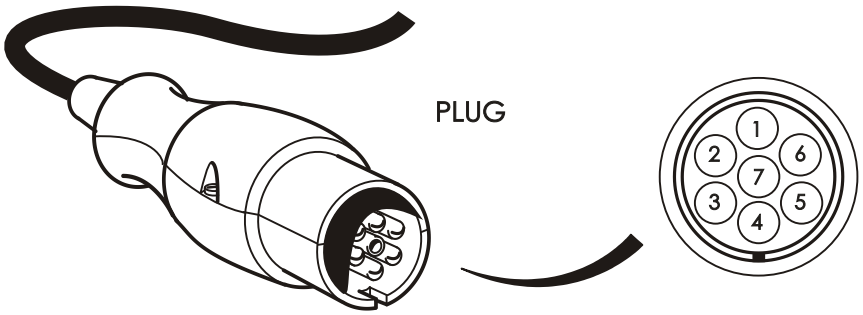
Electrical diagram:



12V DC



1.	LEFT INDICATOR LIGHT	YELLOW
2.	FREE / FOG REAR LIGHT	BLUE
3.	FRAME	WHITE
4.	RIGHT INDICATOR LIGHT	GREEN
5.	RIGHT REAR LIGHT AND SYMBOL LIGHT AND LIMIT LIGHTS	BROWN
6.	BRAKE LIGHTS	RED
7.	LEFT REAR LIGHT AND SYMBOL LIGHT AND LIMIT LIGHTS	BLACK



14 WITHDRAWAL FROM SERVICE

READ THE SAFETY INSTRUCTIONS

Withdrawing the product from service is the responsibility of the product's end user or the person or company who owns the product at the time the decision has to be made. The disposal of the machine and the management of the various resulting waste materials are governed in all countries by national laws, instructions and regulations which are to be complied with. Most chipper components are made of non-biodegradable materials. This is why the chipper should be disassembled and the materials should be disposed of according to national regulations.

- Steel and other metallic parts will be recycled via scrap yards or stripping yards.
- Waste oil, plastic and rubber components (other than tyres) will be disposed of as hazardous waste by recycling, taking them to a landfill or by other means compliant with national regulations.

Where necessary, environmental authorities will provide further information on the disassembly process and on waste management.

15 TERMS OF WARRANTY

1. The warranty period is twelve months provided that the machine is used for its intended agricultural purposes.
2. In municipal, industrial or professional contract work or similar uses, the warranty period is six months.
3. The warranty period starts from the date of delivery by an authorized dealer.
4. The warranty will cover manufacturing and material defects. Damaged parts will be repaired or exchanged for parts in full working order at the factory or at an authorised repair workshop. Subcontracted components are covered by the warranty policies of their manufacturers.
5. Repairs carried out within the warranty period will not extend the warranty period.
6. The warranty will not cover damage caused by incorrect use contrary to the practices laid out in this manual, incorrect maintenance, excessive loading or normal wear. Furthermore, the warranty will not cover subsequent damage, down-time, travel expenses, freight charges, daily allowances, overtime expenses or cases in which the original machine design has been modified.

In warranty matters, please contact your local dealer who will prepare a warranty claim.
Repair work and the potential costs must be agreed on with the manufacturer before any repair work is carried out.

The warranty shall be valid only if a warranty registration card is filled in and returned to the Manufacturer within fourteen days of the product's delivery date.

16. LIABILITY

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

The manufacturer shall not be liable for damages arising from the use of components produced by other manufacturers. The manufacturer shall bear no responsibility for damages caused by the chipper to other machines or devices. The manufacturer reserves the right to make changes to the product. The owner of the machine shall be responsible for operating, maintaining and servicing the machine, unless otherwise agreed.

The owner of the machine shall be responsible for ensuring that all persons operating the machine receive sufficient information on the handling and use of the machine.

NOTES:

EY -VAATIMUSTENMUKAISUUSVAKUUTUS KONEESTA **(FI)**

Valmistaja Junkkari Oy
Osoite Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Vakuutamme yksinomaan omalla vastuullamme, että markkinoille saatettu kone

JUNKKARI HJ-170 MOB
Valmistenumerosta HJ170MB0001 alkaen on soveltuvilta osin rakennettu normatiivisien asiakirjojen ohjeiden mukaan ja noudattaa direktiivien 2006/42/EY määräyksiä

EG- FÖRSÄKRAN OM ÖVERENSSTÄMMELSE FÖR MASKINELL UTRUSTNING **(SE)**

Tilverkare Junkkari Oy
Adress Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Försäkrar härmed enbart på vårt eget ansvar, att för marknader tillverkad maskin

JUNKKARI HJ-170 MOB
f.o.m tillverkningsnummer HJ170MB0001 är tillverkad i tillämpig mängd i överensstämmelse med instruktioner av det normativa dokumentet följer bestämmelser av följande direktiver: 2006/42/EY

EC DECLARATION OF CONFORMITY FOR MACHINERY **(EN)**

Manufacture Junkkari Oy
Address Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Herewith declare on our sole responsibility that for the market produced machine

JUNKKARI HJ-170 MOB
from the manufacturing number HJ170MB0001 is manufactured, where applicable, in conformity with provisions of the instructions of the normative document according to the following directive: 2006/42/EY

DECLARATION CE DE CONFORMITE POUR LES MACHINES **(FR)**

Fabricant Junkkari Oy
Adresse Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Certifions á nos propres risques, que la machine suivante commercialisée

JUNKKARI HJ-170 MOB
et ce depuis le numéro de série HJ170MB0001 est en confirmité avec les normes applicables et les dispositions de la directive 2006/42/EY

EG-KONFORMITÄTSERKLÄRUNG FÜR MASCHINEN **(DE)**

Hersteller Junkkari Oy
Adresse Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Erklären hiermit ausschlieâlich auf eigene Verantwortung, daâ die Machine

JUNKKARI HJ-170 MOB
von der Herstellungsnummer HJ170MB0001 konform mit den einschlägigen Bestimmungen von dem normativen Document hergestellt ist und Bestimmungen von Direktiven: 2006/42/EY

EC SAMSVAERSERKLÆRING OM MASKINER **(NO)**

Produsent Junkkari Oy
Adresse Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Erkærer at produktet beskrevet heretter

JUNKKARI HJ-170 MOB
f.o.m Tillverkningsnummer HJ170MB0001 Som omfattes av denne erklæringen, er i samsvar med instruksjonene i dokument samt bestemmelsene i følgende direktiv: 2006/42/EY.

TOEND MASINA NOUTELEVASTAVUSE KOHTA **(EE)**

Valmistaja Junkkari Oy
Aadress: Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Kinnitamme ainuüksi omaenda vastutus el, et turule lastud masin

JUNKKARI HJ-170 MOB
Valmistusnumbrid HJ170MB0001 on ehitatud normatiivsete dokumentide juhiste kohaselt ja vastab direktiivi 2006/42/EY nõustele

ZAPEWNIENIE ZGODNOSCI URZADZENIA Z WYMAGANIAMI **(PO)**

Producent Junkkari Oy
Adres Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Zapewniamy wylaczinie na wlasna odpowiedzialnosc, ze wprowadzona do sprzedazy

JUNKKARI HJ170 MOB
poczawszy od nr fabrycznego HJ170MB0001 jest skonstruowana w zakresie stosowalnosci zgodnie z normatywna dokumentacja i przepisami dyrektywy: 2006/42/EY

CEE DECLARACIÓN DE CONFORMIDAD PARA MAQUINARIA **(ES)**

Fabricante: Junkkari Oy
Dirección: Pohjanmaanväylä 1720, FIN-62375 YLIHÄRMÄ

Declara en su misma responsabilidad que la máquina construida modelo:

JUNKKARI HJ-170 MOB
con el numero de fabricación HJ170MB0001 está fabricada con conformidad a las prescripciones de la normativa referente a la siguiente directiva: 2006/42/EY

Ylihärmässä 1.10.2014

Harri Hytönen
Toimitusjohtaja
Managing Director