

FROM MACHINE: FARMI 180 3520372
HF180 3525158
F180 3528000

43514985 D-EN-130312-ER
TRANSLATION OF THE INSTRUCTION MANUAL

OPERATION, MAINTENANCE AND SPARE PARTS MANUAL

CHIPPER AND FEEDER FARMI 180 + HF180 / F180



**READ THIS OPERATION AND MAINTENANCE MANUAL CAREFULLY
BEFORE USING THE MACHINE**

FARMI[®]
FOREST

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WARNING SYMBOLS IN THIS MANUAL



- imminent danger which could cause serious personal injury or death



- danger which could cause personal injury



- conditions or misuse that could damage equipment or machinery

NOTE!

- reminders, such as for performing checks or carrying out maintenance or repair procedures

INTRODUCTION

This manual includes the information and maintenance instructions required for operating the machine in the optimal manner.

Although you have experience in using this kind of machinery, read the operation and maintenance instructions carefully since they include information enabling efficient and safe operation. Regular maintenance is the best way to guarantee the efficient and economical performance of the machine.



Each and every operator must read, understand, and follow all safety instructions and procedures.

PRODUCT WARRANTY

Farmi provides a 12-months warranty on all Farmi products. Register on our home page (www.farmiforest.fi) under FeedBack ("Product Registration" form) within 30 days after the receipt of the product to get full product warranty and additional information on your product. If it is not possible for you to register via internet, please register as follows: Complete the registration form on the last pages of this manual and return it to us within 30 days after the receipt of the product.

CUSTOMER FEEDBACK

We are happy to receive your opinions and suggestions for improvements by mail, fax or e-mail. All implemented suggestions for improvements will be rewarded.

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PRODUCT WARRANTY

Farmi provides a 12-months warranty on all Farmi products.

Register on our home page (www.farmiforest.fi) under FeedBack ("Product Registration" form) within 30 days after the receipt of the product to get full product warranty and additional information on your product. If it is not possible for you to register via internet, please register as follows: Complete the registration form on the last pages of this manual and return it to us within 30 days after the receipt of the product.

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EC DECLARATION OF CONFORMITY

Manufacturer:

Farmi Forest Corporation
Ahmolantie 6, FIN-74510 IISALMI, Finland

Person authorized to compile the technical documentation:

Name: Heikki Sirviö
Address: Ahmolantie 6, FIN-74510 IISALMI, Finland

Commercial name:

Farmi

Machine denomination:

Farmi wood chipper with attachable Farmi feed hopper

Machine type:

Wood chipper: FARMI 180

Available feed hoppers for manual feed: F180
HF180

Machine series number:

Herewith, we declare that the machine brought into circulation conforms with the pertinent requirements of the Machinery Directive 2006/42/EC and the EMC Directive (directive relating to electromagnetic compatibility) 2004/108/EC. The following harmonized standards have been applied for the conceptional design of the machine:

SFS-EN ISO 12100-1/2, SFS-EN ISO 13857, SFS-EN 13525, SFS-EN ISO 4254-1

The following additional standards and specifications have been applied for the conceptional design of the machine:

SFS ISO 730-1, SFS ISO 2332

Iisalmi
(Place)

13.3.2012
(date)

Juna Hallivuori

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When ordering spare parts, please indicate machines type from the machine plate, spare parts order number, description and quantity required. Example. CH180, knife, 43510220, 2 pc

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GENERAL SAFETY INSTRUCTIONS

These safety instructions are meant for the owners of FARMI equipment, as well as those who operate, service or repair it.

The instructions help with:

- using the machine safely, appropriately and effectively.
- identifying, avoiding and preventing potentially dangerous situations.

The manufacturer supplies an instruction manual, which must always be available at the place of operation of the machine. Each user must read the safety, maintenance and operating instructions before operating the machine, and comply with these instructions at all times.



Ensure that every operator of the machine is familiar with the content of the instruction manual and situation-specific safety instructions, and has been suitably trained before operating the machine.

The machine complies with technical requirements and applicable safety regulations. However, incorrect use, maintenance or repair of the machine may cause risks.

In addition to the instruction manual, remember to comply with regulations of the local occupational health and safety authorities, and with your country's laws and decrees.

The manufacturer is not liable for damages caused by:

- incorrect, negligent or inappropriate use of the product.
- non-original spare parts.
- normal wear and tear.
- misuse caused by an untrained person's improper actions.
- alterations made without the manufacturer's permission.



Written authorization must be requested from the manufacturer for any alterations to the machine.

STARTING

- Familiarize yourself thoroughly with the use, operation and controls of the machine and its equipment before starting.
- Familiarize yourself with the capacities and limitations of the machine and its equipment.
- Do not use the machine unless you are completely familiar with its operation.
- Be aware of the machine's danger zones.
- During operation, prevent bystanders from entering the danger zone.
- Ensure that each operator has the necessary safety equipment, such as a helmet, safety goggles, work safety boots and suitable protective clothing.
- Never wear loose clothing around moving parts. Protect long hair!
- Ensure that work is carried out according to the stipulations of applicable occupational health and safety legislation.
- Before starting up or using the machine, ensure that it cannot cause a risk to other people or property.
- Perform a safety check on the machine before every use. If you observe any faults or deficiencies, repair the machine immediately.
- Before operating the machine, ensure that there are no foreign articles in it.
- Place the machine on a hard, level surface for operation. In the winter avoid working in slippery areas.
- Before mounting and using the machine, check the PTO drive shaft for correct condition and attachment.
- Never use a faulty or deficient machine.

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TRANSPORT

- Before driving with the machine, ensure the safe mounting of the machine. Make sure that the journals are seating correctly and that the pins are tight. Check the tension of the lower link stabilizers.
- Before driving with the machine, make sure that the required lamps and reflectors as well as the slow moving vehicle sign are attached correctly. Moreover, the lamps should be checked for correct functioning.
- Before driving with the attached machine, make sure that the hydraulic unit of the machine is depressurized (unless otherwise instructed in the operating instructions).
- When driving on public roads, always observe the valid traffic regulations. The travel speed must be adapted to the specific conditions.
- When driving, please take into consideration the additional mass resulting from the machine's weight. It may affect the reactions, the steerability and the braking function of the tractor.
- Please note that the machine rear sways when turning.
- Pay attention to the machine's height near bridges or other height restricting objects.
- When backing off, the machine may obstruct the rear view. Exercise extreme caution. If necessary, ask a flagman to help you; he can indicate the required distances.
- It is prohibited for other people to ride on the machine.

- Never insert any body part into the machine with the engine running.
- If any faults arise that may jeopardize occupational safety, turn off the machine.
- During operation, the machine's operator is responsible for safety in the whole work area. Work may not be carried out in the presence of any factors that jeopardize occupational safety.
- Exercise extreme caution when hitching / unhitching the machine from a tractor/trailer.



The machine's operator must have constant, unobstructed visibility of the work area. If this is not possible, the operator must work with an assistant.

OPERATION



Many occupational accidents take place in abnormal circumstances. Therefore it is important to take into account all the possible circumstances that may arise during operation of the machine.

- Depending on the machine's type, it will have diverse safety devices and protectors. These are meant to protect the machine and its operator, and they must never be removed or altered. Never start up or use the machine without all the safety devices and protectors in place. Also check the universal joint's safety equipment and joints.

- Look out for moving parts when the machine is in operation.
- Secure the machine against unauthorized and accidental operation (e.g. moving when parked) whenever it is left unattended.
- Never leave the machine running unattended.
- Avoid causing fast, stroke-like loading.
- Never exceed the given operating values.
- All safety and warning signs on and in the machine must be legible and intact.
- The machine may not be operated by persons who are unwell or under the influence of drugs or alcohol.

MAINTENANCE

- The machine may only be serviced and repaired by professionals.
- Electrical and hydraulic faults may only be repaired by authorized professionals.
- In cases requiring welding, contact the manufacturer.
- Turn off the tractor engine and disconnect the universal joint before beginning service or maintenance actions.
- Before any maintenance work, turn the main power switch of the tractor to OFF.
- Ensure that there is no pressure in the hydraulic system.
- Take out the key from the tractor's ignition for the duration of the servicing or maintenance. Check that the power is off from the machine you are working on.

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- When servicing the machine, place it on a level surface and ensure that it cannot be moved.
- Observe the service intervals and annual safety inspections.
- All spare parts and equipment must fulfill the manufacturer's requirements. This can be guaranteed by using original parts.
- Put all safety devices back into place immediately once servicing or maintenance is complete.



When lifting the machine, check that the lifting/hoisting equipment is in perfect working order. Check the weight of the machine before lifting it. Choose lifting trajectories so that they do not cause any danger.

Many countries have specific legislation on lifting, hoisting cables and hoists. Always comply with local safety regulations.

OILS AND LUBRICATION

- Always use the oil types recommended by the manufacturer. Other types of oil may cause faults or improper operation of the equipment, which could lead to serious damage to people or property.
- Never mix different liquids or oils.
- Always follow the manufacturer's lubrication instructions.
- Use control equipment carefully until the hydraulic oil has had time to reach its operating temperature.

SAFETY INSTRUCTIONS FOR HYDRAULIC CIRCUITS

1. Work on hydraulic equipment may only be carried out by professional hydraulic engineers.
2. Be cautious when using the equipment in cold conditions.
3. Check the machine for leaks. Do not use the machine if there is a leak from any system. Check all hydraulic hoses – particularly those which are bent during use – and replace any that are in poor condition or have leaks. Ensure that all joints are tight and that the lines are not damaged. Check that all protective caps and filler caps are closed properly. Check the hose sheathing for damage.
4. Check that all hose connectors, lengths and qualities comply with applicable requirements.

5. When replacing or repairing hoses, use original parts or hoses and connectors recommended by the manufacturer. Check particularly that the pressure classes of the hoses and connectors are suitable to the operating pressure levels.
6. Check that all safety devices such as pressure relief valves, etc., are in place and work properly. Familiarize yourself with their use. Safety systems may never be bypassed.
7. Check the main hydraulic parts daily, and always after a fault. Replace any damaged parts immediately.
8. If a component is damaged, clean it before repairing it. Do not use solvents when cleaning parts.
9. Do not attempt to carry out repairs that you are not fully familiar with.
10. Never carry out repairs of the hydraulic circuit when the system is pressurized. When pressurized, the oil spray can penetrate the skin and cause mortal danger.
11. Never work below a device or component that is only being held up by hydraulics. Use separate supports when carrying out maintenance or repairs. Do not disconnect cylinders or their valves until the machine is well supported.
12. Most hydraulic oils do not evaporate easily. Risk factors include hot oil, spills and oil mist (pressurized).
13. If oil gets into your eyes, rinse with plenty of water and contact a doctor.
14. Avoid prolonged or repeated contact with your skin.
15. If sprays or contact with the skin cannot be avoided, use protective gloves, goggles and clothing as necessary. Do not use oily clothing.
16. Avoid discharging hydraulic oil into the environment, as it can pollute waterways and the groundwater. If biodegradable oil is to be used, please contact the manufacturer beforehand and have the suitability of your equipment for the operation with biodegradable oil confirmed by him before such oil is used.
17. Store the oil in sealed containers provided by the manufacturer. Try to transfer the oil directly from its container into the tank.
18. If the oil must be passed through other containers, ensure that they are completely clean. Caps, funnels, sieves and filling holes must also be clean.
19. Never store oil outdoors, as water could condense in it.
20. Always dispose of oil in a suitable container, never into the environment!

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GENERAL SAFETY INSTRUCTIONS FOR THE CHIPPER

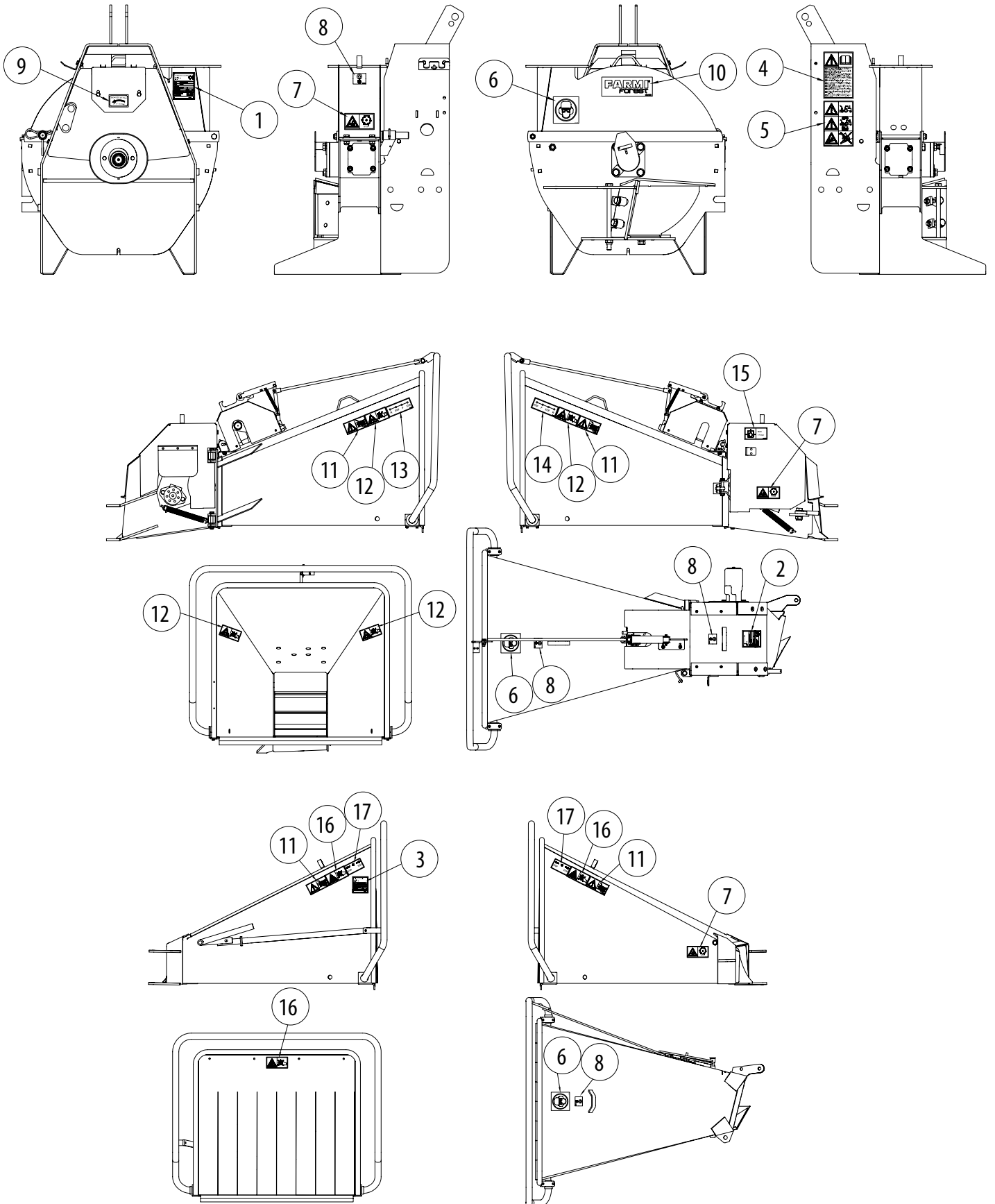


- Please make sure any machine operator has the required personal protective equipment: safety helmet, protective goggles, cut resistant safety boots and required protective clothing.
- The chipper must not be used without being mounted to a tractor. It is prohibited to mount the chipper to another power source.
- It is not permitted to operate the chipper without feed unit or feed hopper.
- Indoor operation of the chipper is prohibited.
- Always keep a safe distance to the discharge position of the chips.
- Detach the chipper from the tractor before performing any maintenance or repair works.
- Do not remove, lock, disable or modify in any other way the stop lever of the feed unit.
- The feed hopper or the feed unit must not be mounted at a higher or lower position as this would impede the stop lever function.


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STICKERS AND PLATES

These plates and stickers must be found on the chipper. Replace missing plates or stickers immediately.



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Farmi Forest Corporation Ahmolan tie 6 FIN-74510 IISALMI FINLAND		 4-1012510
TYPE	FARMI CHIPPER	
MODEL	CH180	230/+59/+66 CHIPPER/BT/HD11
FEEDER	F180 HF180	70 180
SERIAL NO.		
YEAR OF MANUFACTURE 20		
POWER NEEDED 30-70 kW		
MAX. HYDR. PRESSURE 175 bar		
OIL FLOW NEEDED 8,6-16 l/min		


1. Machine plate FARMI 180 (41012510)

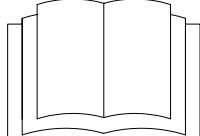
Farmi Forest Corporation Ahmolan tie 6 FIN-74510 IISALMI FINLAND		4-1010080
TYPE	HYDRAULIC FEEDER	
MODEL	HF180	
SERIAL NO.		
YEAR OF MANUFACTURE 20		
WEIGHT 180 kg		
MAX. HYDR. PRESSURE 175 bar		
OIL FLOW NEEDED 8,6-16 l/min		

2. Machine plate HF180 (41010080)

Farmi Forest Corporation Ahmolan tie 6 FIN-74510 IISALMI FINLAND		4-1010070
TYPE	MECHANICAL HOPPER	
MODEL	F180	
SERIAL NO.		
YEAR OF MANUFACTURE 20		
WEIGHT 70 kg		

3. Machine plate F180 (41010070)



40147020


GB Please read the operating Instructions of the machine meticulously before you operate, maintain or repair the machine. During machine operation, please observe the operating and safety Instructions.

DE Lesen Sie vor dem Betrieb, der Wartung oder Reparatur der Maschine die Betriebsanleitung sorgfältig durch. Beachten Sie während des Betriebs die Bedienungs- und Sicherheitsanweisungen.

FR Veuillez lire les Instructions de service de la machine méticuleusement avant d'utiliser, d'entretenir ou de réparer la machine. Lors du fonctionnement de la machine, veuillez observer les Instructions de service et de sécurité.

IT Leggere scrupolosamente le Istruzioni per l'uso della macchina prima di attivare la macchina, prima di eseguire la manutenzione o la riparazione della macchina. Durante il funzionamento della macchina, osservare le istruzioni per l'uso e per la sicurezza.

FI Lue käyttöohjeet huolellisesti ennen kuin käytät, huollat tai korjaat konetta. Noudata käyttöä alkava käyttö- ja turvallisuusohjeita.

SE Var god läs igenom maskinens drifts instruktioner noggrant innan du kör, underhåller eller reparerar maskinen. Följ drifts- och säkerhetsinstruktionerna när maskinen är i drift.

NO Vennligst les driftsinstruksjene for maskinen nøye igjennom før du driver, vedlikeholder eller reparerer maskinen. Under driften av maskinen må drifts- og sikkerhetsinstruksjonene overholdes.

DK Læs betjeningsvejledningen for maskinen omhyggeligt, før du betjener, vedligeholder eller reparerer den. Følg anvisningerne vedrørende betjening og sikkerhed under brug af maskinen.

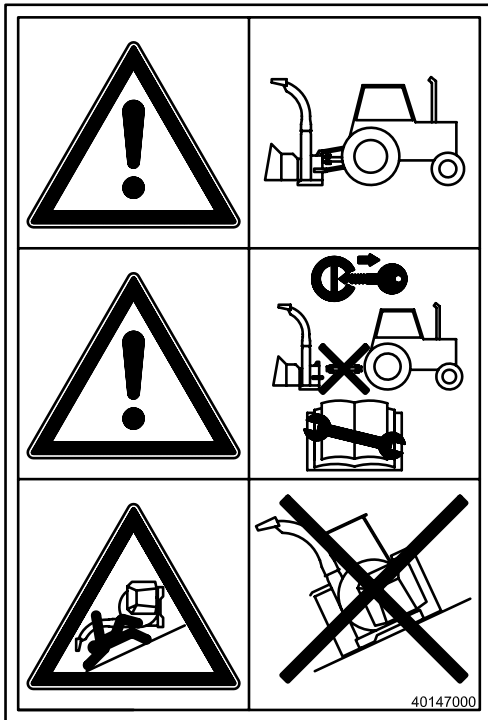
EE Palun lugeda masina kasutusjuhend enne masina käitamist, hooldamist või remondimist hoolikalt läbi. Masina käitamise ajal tuleb järgida kasutus- ja ohutusjuhiseid.

RU Перед использованием, техническим обслуживанием или ремонтом внимательно изучите инструкции по эксплуатации агрегата. В процессе работы агрегата соблюдайте указания по эксплуатации и технике безопасности.

4. CAUTION!

Please read the instruction manuals of the machine meticulously before you operate, maintain or repair the machine. During machine operation, please observe the operating and safety instructions. (40147020)

FARMI 180 + HF180 / F180



5. (40147000)

CAUTION!

Before operation, mount the chipper to the 3-point hitch of the tractor.

CAUTION!

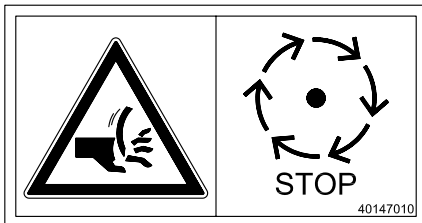
Before maintenance and repair, please turn off the tractor and disconnect the PTO drive shaft.

CAUTION!

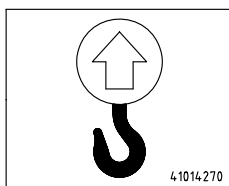
Before detaching the chipper from the tractor, it must be placed on a level surface.



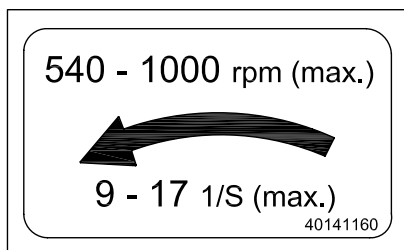
6. Wear personal protective equipment. (40142080).



7. Cutting hazard!! (40147010)



8. Lifting point sticker(41014270).



9. SPEED sticker (40141160)

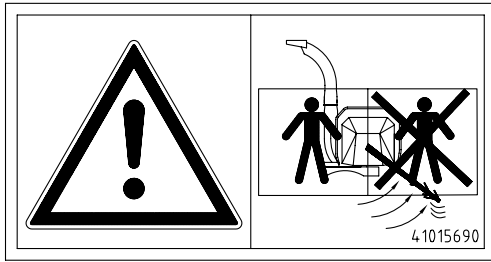
Recommended speed range.

The rated speed must not be exceeded.

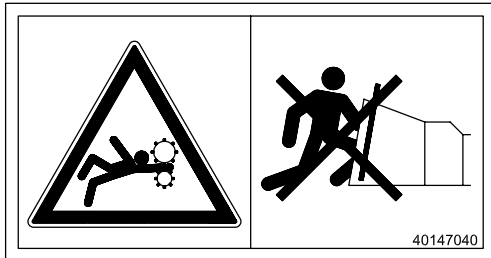


10. FARMI Forest sticker (40147090).

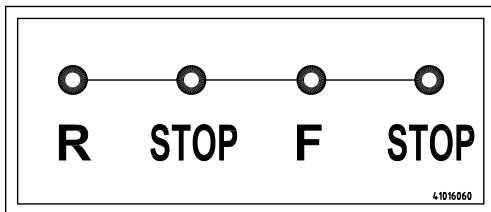
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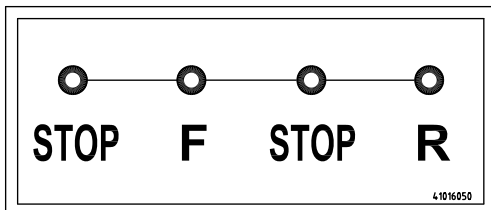
11. Stand on the left side of feeder. (41015690)



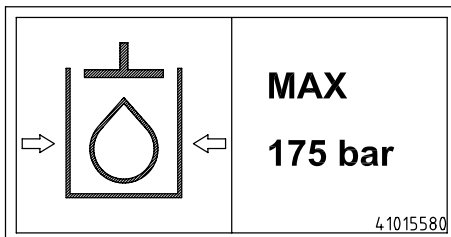
12. Crushing hazard! Cutting hazard!
Do not climb into the feed hopper (HF180).
(40147040)



13. Control handle, left (41016060)
This sticker shows the movements of the control handle.
R = reverse
STOP = stop
F = feed



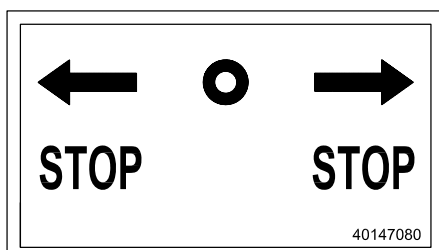
14. Control handle, right (41016050)
This sticker shows the movements of the control handle.
F = feed
STOP = stop
R = reverse



15. Maximum hydraulic pressure (41015580)



16. Do not climb into the feed hopper (F180).
Cutting hazard! (40147070)



17. Stop directions (F180) (40147080)

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FARMI 180 - GENERAL DESCRIPTION AND INTENDED USE

The FarmiCH180 is a double-knife disk cutter for chipping wood up to $\varnothing 180$ mm, for processing wood waste from, e.g., the side of jogging tracks or roads, for other environmental chipping duties and for energy chips (thickness of chip 10,12 and 14 mm). The chipper can be driven by a tractor with a rating of 30-70 kW.

The chipper can also be driven by a separate hydraulic motor.

MAIN COMPONENTS FARMI 180

1. UPPER CHAMBER
2. LOWER CHAMBER
3. DISK
4. KNIFE
5. VERTICAL ANVIL
6. HORIZONTAL ANVIL
7. DISCHARGE PIPE
8. LID
9. HYDRAULIC MOTOR (OPTIONAL)
10. BELT TRANSMISSION 180 T (OPTIONAL)

FARMI 180 accessories:

- Single-motor hydraulic feeder or mechanical hopper
- Independent hydraulic unit HD11
- Separate hydraulic motor drive
- Belt transmission 180T
- No Stress NSH 180
- Long discharge pipe

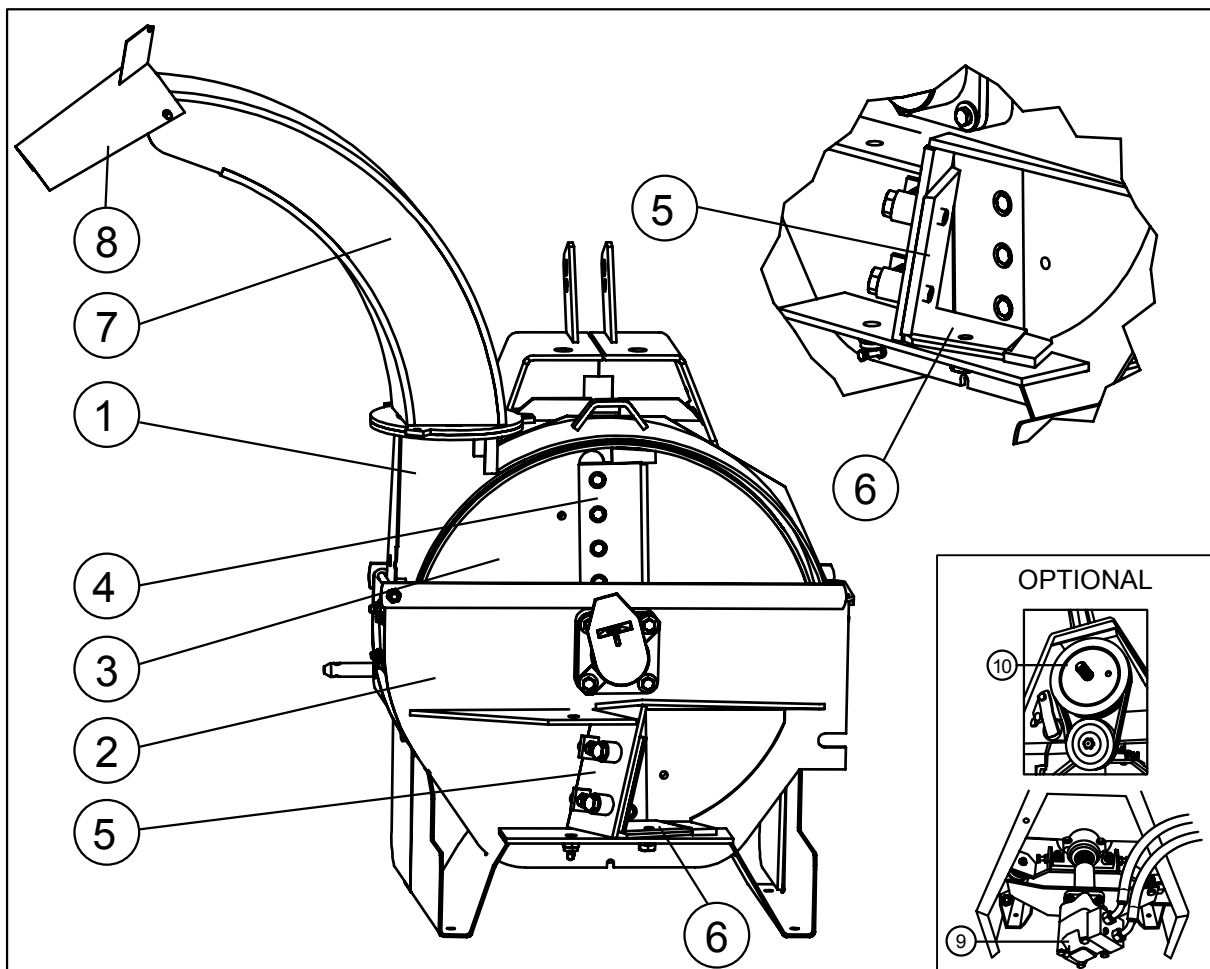
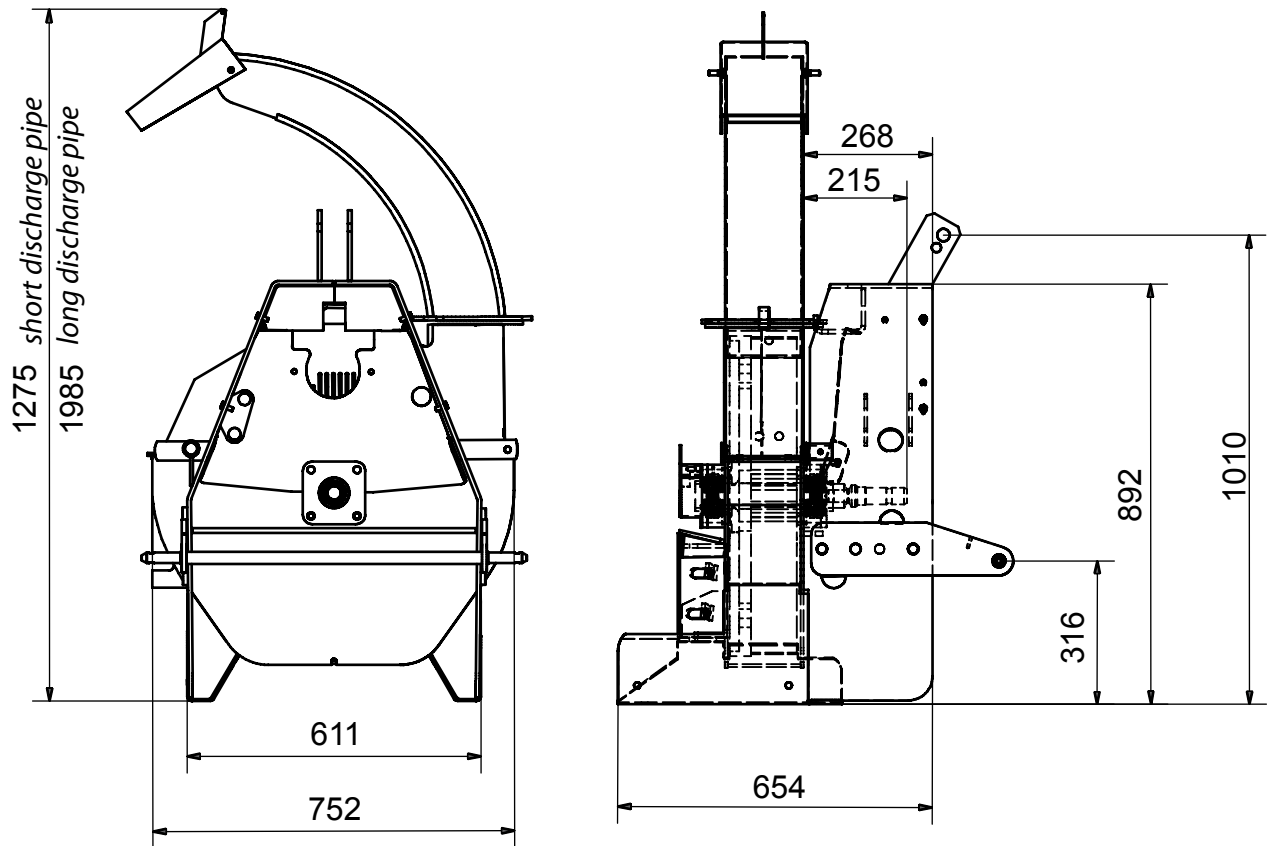


Fig. 1. Main components

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DIMENSIONS FARMI 180



TECHNICAL DATA	FARMI 180
Type	disc chipper
Output	5-20 m ³ /h
Chip length	10, 12 or 14 mm
Max. wood diameter	180 mm
Power demand	30-70 kW
PTO rpm	540 or 1000 rpm
Number of knives	2 pc
Power source	tractor
Mounting	3-point linkage
Chipper weight	230 kg
Disc diameter	670 mm
Disk weight	100 kg
Discharge pipe turning	360°
Opening of upper chamber	to one side
Feeder	hydraulic feeder
Sound pressure level	102 dB (A)
Sound power level CEN/TC144 WG8N16	120 dB (A)

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PRESENTATION HF180

The hydraulic feeder device facilitates the handling of material that would otherwise be fed with difficulty. The quality of the chips improves as the feeding speed remains constant.

The HF 180 feeder can be connected to the hydraulics of a tractor or to its own separate hydraulic unit HD11.

MAIN COMPONENTS HF180

1. CONTROL HANDLE
2. DIRECTION VALVE
3. FLOW CONTROL VALVE
4. HYDRAULIC MOTOR
5. FEEDER ROLL
6. FRAME
7. FEED CHUTE

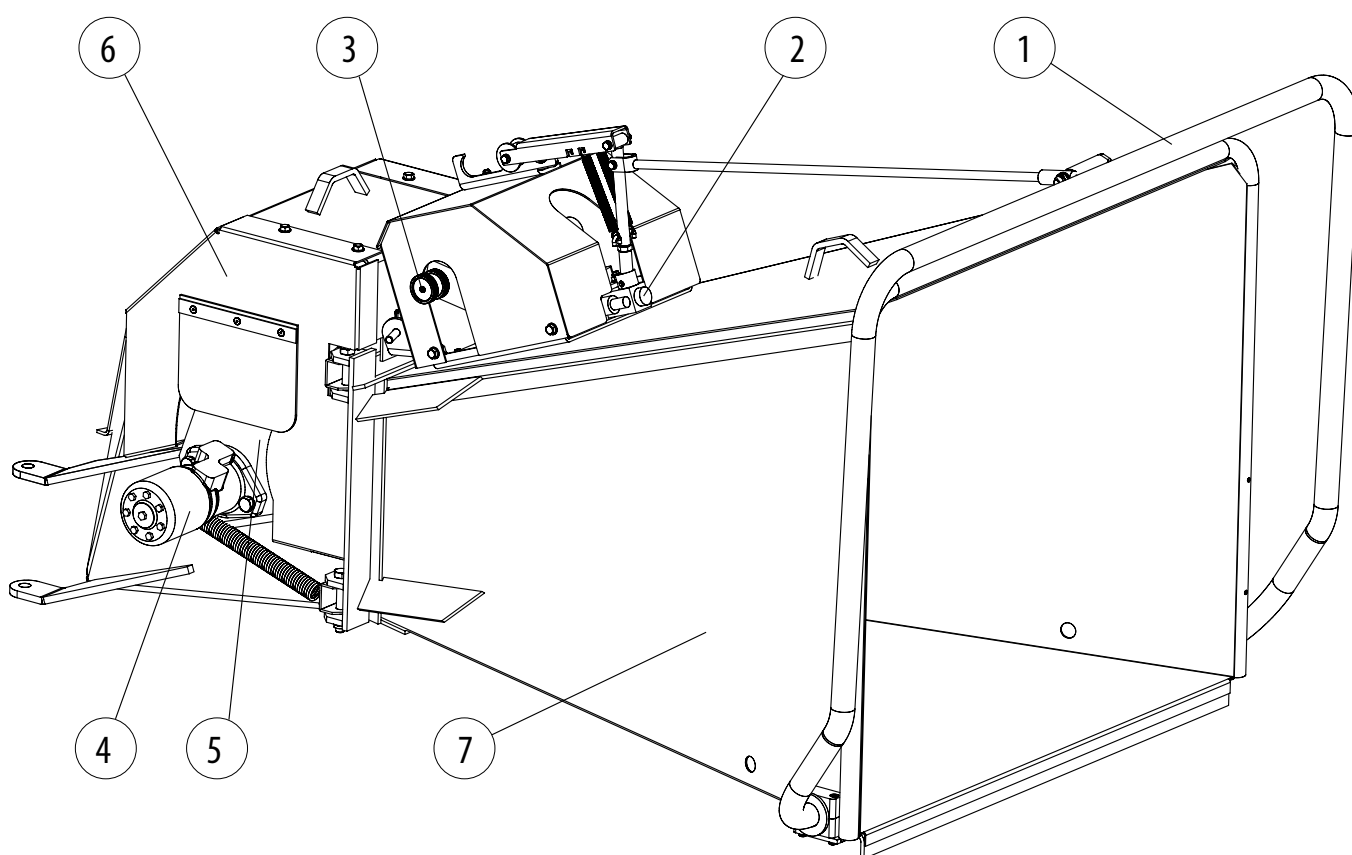


Fig. 2. Main components

TECHNICAL DATA	HF180
Feeder roll	1 pc
Max. wood diameter	180 mm
Hydraulic motor	1 pc, 400 cm ³
Oil demand, 540 rpm	min. 15 l/min
Max. working pressure	175 bar
Size of the feeder opening	850 x 760 mm
Weight	180 kg

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MOUNTING

LIFTING



Lifting points for each machine are marked with hook symbols.

Lift only using the proper type of lifting device and ensure that it has an appropriate lifting capacity.

Check the lifting slings, cables, and chains regularly.

Ensure that you know the weight of the load to be lifted and never exceed the lifting capacity stated by the manufacturer of the lifting device.

Select the transport routes for lifting so that the load is not transported over people or a location where people might be.

ASSEMBLY INSTRUCTIONS

1. Mount the feed unit on the left-hand side of the chipper using a M16x240 locking screw (1) and a M16 locking nut (2). Insert the M6x25 screw (3) into the hole of the locking screw and tighten it. Swing in the feed unit. Insert the locking screw (4) of the feed unit into the groove on the chipper and lock the feed unit by the M20 locking nut (5). Insert the M4x25 screw (6) into the hole of the locking screw and tighten it. See fig 4.
2. Attach the feed chute to the body of the feeder using two M12x80 screws (7) and clasp nuts (8). Lock the feed funnel into the working position (9), see Fig 4a.
3. Attach the operating rod to the valve switch.
4. Connect the hydraulic hoses. Connect the pressure hose (the oil flow direction has been marked on the hose with arrows) for example to the tractor pressure connection. The maximum working pressure is 175 bar.
5. Attach the return hose either to the free return connection or directly to the tank. An oil filter is recommended in the return line. See Fig 4b.
6. Attach the discharge pipe to the chipper with two M10 bolts and one M16 bolt.
7. Mount the chipper on the tractor's 3-point hitch.
8. Install the PTO shaft.
9. Check that the length of the PTO shaft is correct for different hitch positions.

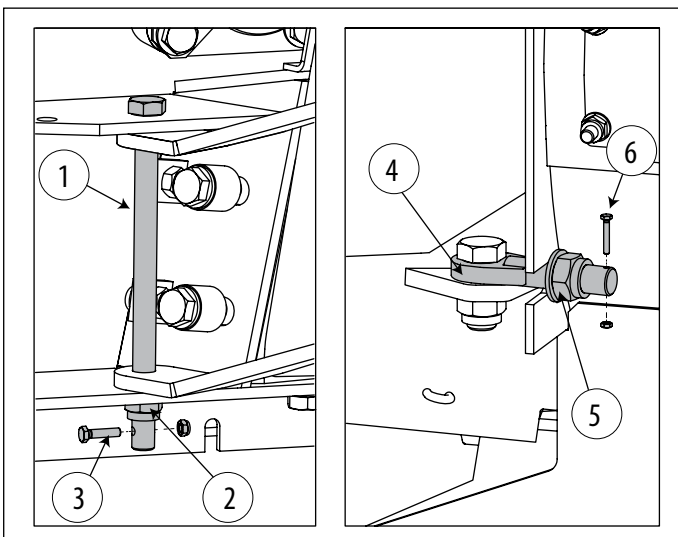


Fig. 4. Mounting the feeder

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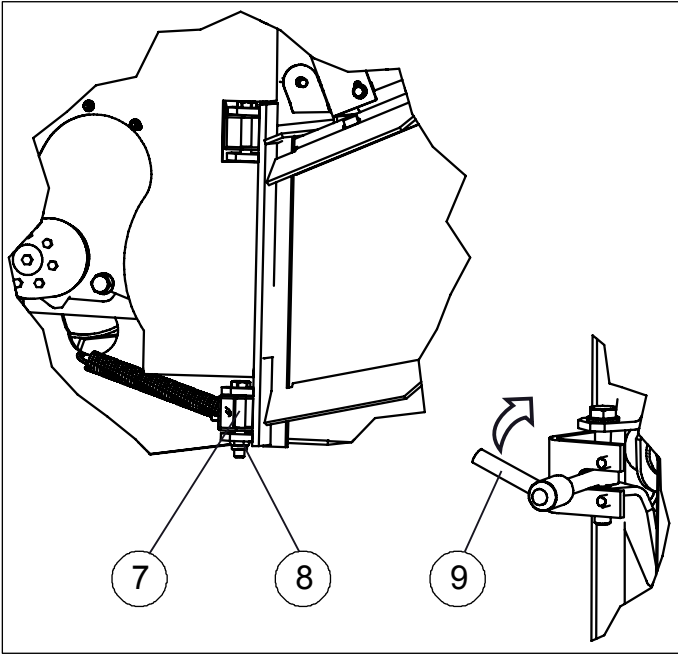


Fig 4a. Installation of the feed chute

SHORTENING THE PTO SHAFT

1. Connect the device to the tractor.
2. Measure the distance between the splined shafts (Distance A)
3. First cut the thicker shaft shield to the correct length (1). Remember to leave at least a 40 mm clearance. Then cut a similar length off the profile tube (2). Shorten the other half of the PTO shaft in the same way. File off the burr.
4. Interconnect the tubes and check that the shaft has been shortened enough by moving the machine gently. Ensure that there is a 40 mm clearance. Also move the machine sideways to check that the shaft moves freely.

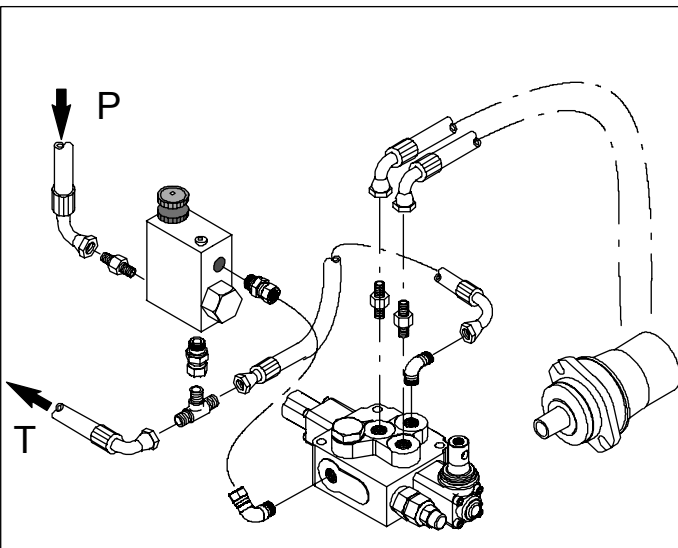


Fig 4b. Hydraulics connection

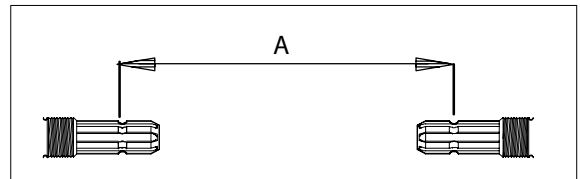


Fig. 5. Measure A, when the distance between the splined shafts is at its shortest.

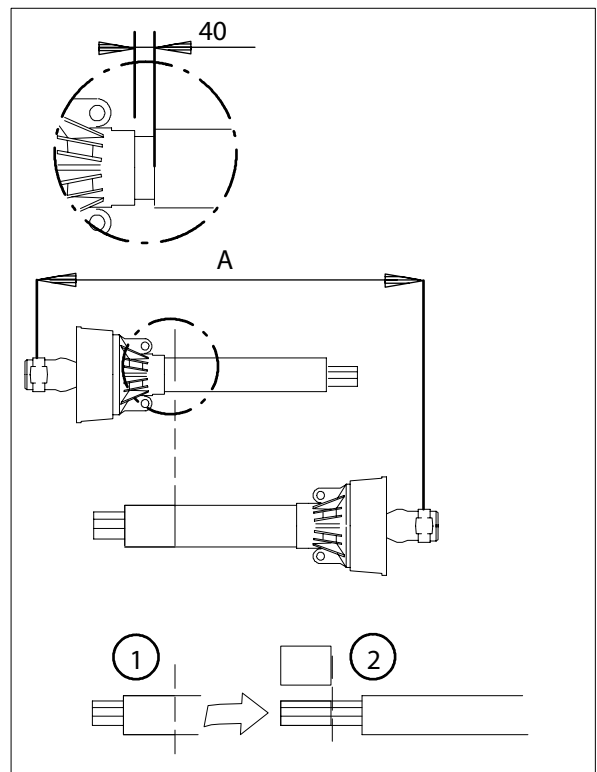


Fig. 6. Shortening the PTO shaft

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OPERATING LEVER FUNCTIONS

The hydraulic feeder HF 180 is operated with a control handle, which has 4 positions:

1. REVERSE R
The feeder reel spins outward and wood comes out of the feeder.
2. STOP
The feeder reel ceases to spin and the feeding stops. The handle locks in this position.
3. FEED FORWARD F
The feeder reel spins inwards and wood can be fed into the chipper. The handle locks in this position.
4. STOP
The feeder reel ceases to spin and the feeding stops. The handle locks in this position.

SETTING THE FEEDER SPEED



Do not set the feeder speed when the feeder reels are revolving. This damage the valve. Stop the feeder reels for the duration of the setting and try the speed afterwards.

- Using the flow control valve, set the revolution speed of the feeder reel to correspond with the cutting speed of the blades. By turning the knob anticlockwise, the revolution speed of the feeder reel grows, correspondingly by turning it clockwise, the revolution speed will diminish. See fig 4d.
- The speed is suitable when the wood does not push against the grinding wheel or the feeder reel spikes do not slow down the feeding of wood.
- Make sure that you are using clean oil in the hydraulic system. Dirt in the oil will damage valves and hydraulic motors.

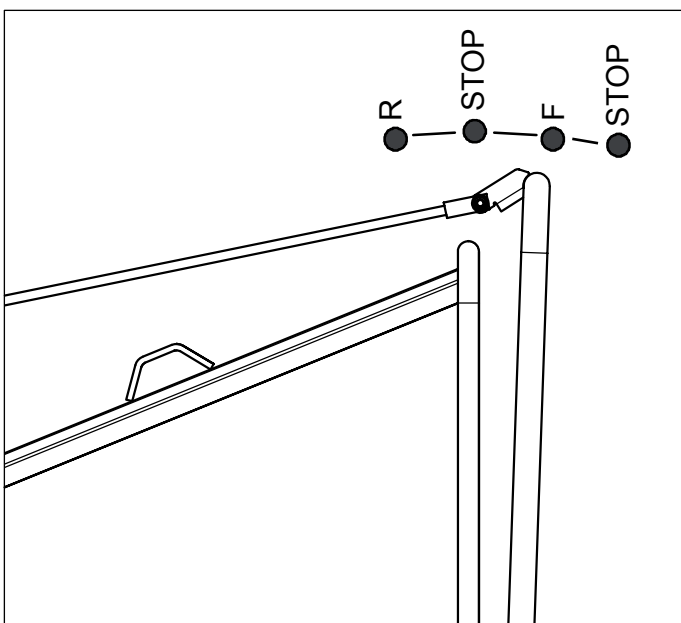


Fig 4c. Control handle

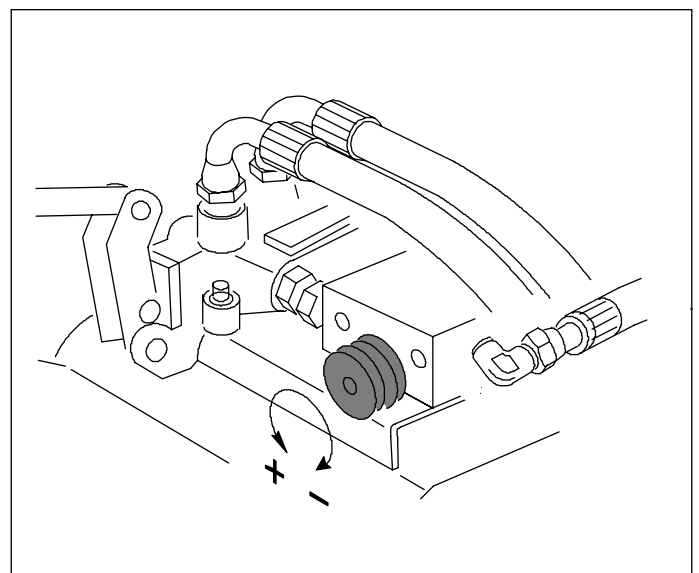


Fig 4d. Feeder reel speed settings

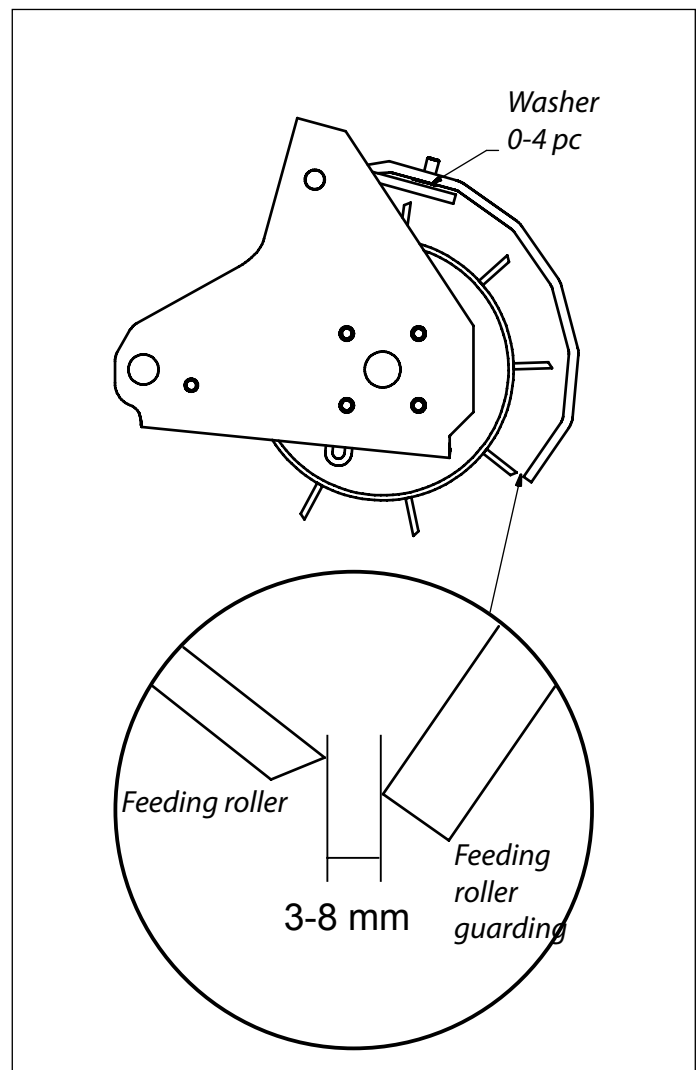
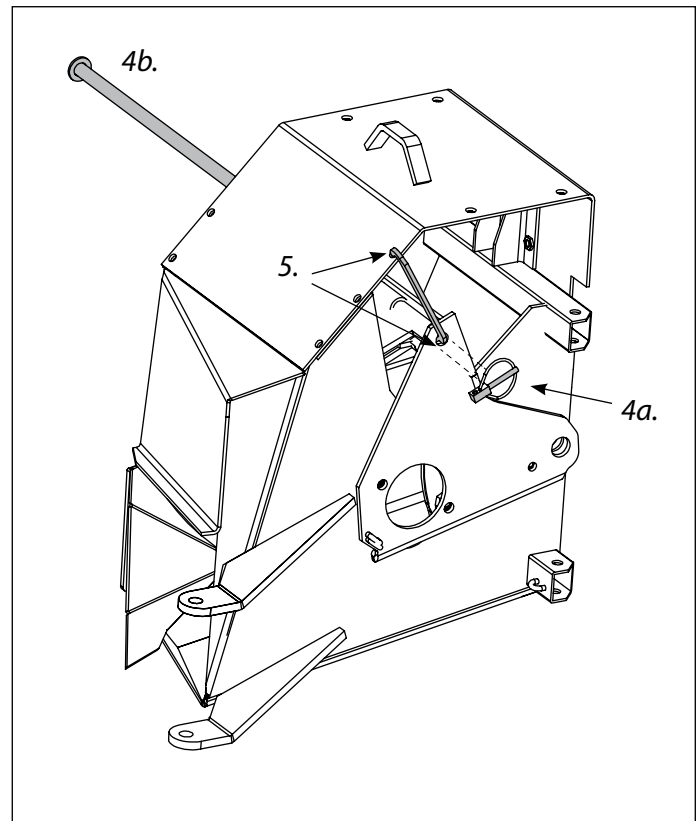
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INSTALLATION AND REMOVAL OF THE FEEDING-ROLLER GUARDING

Remove the feeding-roller guarding (pg. 47, part no. 33), when chipping twigs, willow trees or other similar material, otherwise the twigs tend to roll around the feeding-roller.

When chipping wood of diameters exceeding 70 mm, re-install the feeding-roller guarding to its place.

1. Lift the roller arms as up as possible, for example by feeding a tree butt-part into the feeding machine of diameter 120 - 150 mm.
2. Turn off the tractor. Disconnect the PTO drive shaft and the hydraulic hoses from the tractor.
3. Remove the external guarding from the feeding machine.
4. Remove the cotter-pin and pull out the locking bar (4a, 4b).
5. Insert the hooked bar (5) into the holes, slightly lift the swing part up when doing so.
6. Remove the feeding-roller guarding by opening 3 pcs. of locking nuts. Remove the feed roller cover from below.
7. Always put the removed parts (3 pcs. of locking nuts M10, washer M16, locking bar and cotter-pin) back onto the feeding-roller guarding so that they will not disappear.
8. Install the external guarding back into place.
9. Connect the hydraulic hoses.
10. Remove the wooden butt-part from the feeding machine.
11. The chipper is ready to be used.



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MOUNTING OF THE CHIPPER AND PRE-OPERATION INSPECTIONS

- For mounting or dismounting the chipper, always turn off the tractor and apply the parking brake before entering the area between chipper and tractor.
- Before connecting the hydraulic hoses, make sure the hydraulic ports of the tractor are depressurized. Moreover, ensure the correct connection of the hydraulic supply and return lines on the tractor.
- Before switching on the electric power supply, check the plug, the socket and the visible cables for damage.
- Check the PTO drive shaft for damage and make sure it has the appropriate length.
- Make sure the connection shields of the PTO drive shaft are seating correctly and the holding chain of the connection shields is fastened.
- Make sure all protective and safety devices of the chipper are installed. Never remove any protective device during operation.
- Before operation, please make sure there are no foreign objects in the feed unit.
- Before operation, please make sure there are no foreign objects in the chipper. Rotate the shaft to make sure that the cutting disk can rotate freely.
- Make sure that the water drainage holes on the lower chamber are open and that the disk is not frozen up.
- During operation, the chipper must stand on level and hard ground.
- As compared to the tractor, the chipper must not be lowered excessively. Otherwise, the PTO drive shaft connection may loosen during operation.
- Direct the discharge pipe so that the thrown out chips do not pose a risk to the operator of the chipper or to or anyone else. Always keep a safe distance to the discharge position of the chips.

STARTING THE CHIPPER

- Start the chipper with caution while operating the tractor at low speed. Slowly increase the speed until the required chipping speed has been achieved (540/1000 rpm). CAUTION! Do not exceed the max. chipper speed of 1000 rpm.
- Now, the chipper is ready for operation.

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STOPPING A TRACTOR-DRIVEN CHIPPER

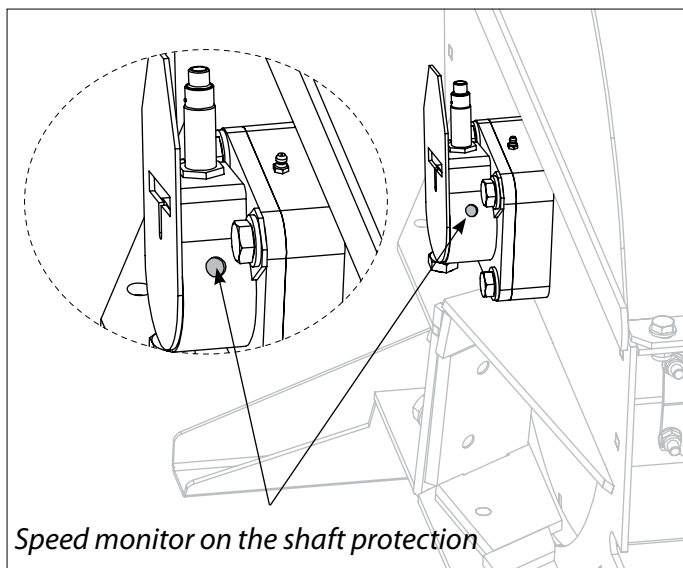
Slow the tractor engine speed to idle before disengaging the PTO. This is especially important with tractors featuring a PTO brake (e.g., Ford). Turn the PTO control lever slowly to the OFF position.



After stopping the chipper, wait for all movement to stop. The disk continues rotating like a flywheel after the PTO is disengaged. Please wait until the disk has stopped completely before performing any further actions.

The chipper requires approx. 1 ½ minutes to slow down from maximum speed to complete stop (1000 rpm -> 0 rpm).

The shaft protection of the chipper is equipped with a speed monitor which indicates coasting down of the cutting disk after the PTO has been switched off (see below figure).



STOPPING A HYDRAULIC MOTOR DRIVEN CHIPPER



IMPORTANT! When the chipper is driven by the HD100, it is extremely important to slow the driving engine speed to idle before disconnecting the hydraulics, to prevent cavitation.

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CHIPPING



During chipping, please observe the following safety instructions:

- The danger zone of the chipper is approx. 20 m.
- During operation, the danger zone must be safeguarded to prevent unauthorized people from entering the danger zone. If necessary, operation must be interrupted.
- The operator of a chipper with manual feed must wear the following personal protective equipment: safety helmet, ear protection, protective goggles, cut resistant safety boots and required protective clothing.
- Never work in front of the feed hopper. Stand on the left side of the feed hopper when feeding, since the feed rollers may push the wood upwards or to the right.
- Never hold any part of the body into the feed hopper or into another part of the chipper with the machine running.
- Make sure that loose clothing or long hair cannot be caught by rotating machine parts or by the material to be fed.
- Before feeding in the material to be chipped, ensure that the wood fed into the chipper is free from metal or soil (such as nails, stones, etc.).
- Never feed ropes or barbed wire to the chipper since these could get caught on the operator's body and draw him into the feed hopper.
- Do not use the chipper at temperatures below -20 °C. This is to avoid damage due to brittleness – especially of the knives – caused by the cold.
- Avoid chipping wood that is frozen solid; otherwise, excessive stress will be exerted on the chipper and self-feeding will be impaired.
- FIRE HAZARD! Always keep adequate fire-fighting equipment on hand when using the chipper. Regularly check the surface temperature of the chipper. If the chipper suddenly heats up abnormally, stop the chipper and determine the cause of overheating. Regularly, check the temperature of the bearings. Pay special attention to careful maintenance, and keep the chipper free from dust. If the chipper starts smoking, pour water into the feed hopper.

OPERATION OF CHIPPER AND FEED UNIT

- Start the chipper. Caution! See section "Starting the chipper".
- Set the operating lever to the FEED FORWARD F position. The feed roller starts rotating after all air trapped in the hydraulic circuit has escaped. Caution! See section "Operating lever functions".
- If required, correct the feed speed. Caution! See section "Adjustment of the feed speed".
- Push the material to be chipped into the feed hopper. Release the material immediately when the feed rollers start to rotate.
- Observe the feed roller rotation. • Set the operating lever to the REVERSE R position if the feed roller stops.
- When chipping large trunks or the like, the rotary speed of a low-power tractor often drops during chipping very long wood pieces. Temporarily stop feeding by setting the operating lever to the STOP position. After the rotary speed has sufficiently increased again, continue feeding by setting the operating lever to the FEED FORWARD F position.
- If you have to temporarily remove the wood from the feed hopper, set the operating lever to the REVERSE R position and wait until the wood is released by the feed roller.



Oil will heat when travelling through the hydraulic pump, hydraulic motor and the valves. The heating can be considerable if the tractor has a small hydraulic tank.

Check the oil temperatures twice an hour to prevent the oil from overheating. If the oil overheats, let it cool down by stopping the chipping.



If the feeder reels are stopped when the control handle is in FEED FORWARD F position, the oil flows through the pressure limit valves and heats very quickly.

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REDUCING THE POWER DEMAND

When using a small tractor to power the FARMI 180 chipper, select a PTO speed of 540 rpm. Run the tractor at full engine speed.

If the tractor's engine speed still decreases during chipping, reduce power demand by altering the chipper to cut with one knife.

The chipper is altered for single-knife operation simply by removing one knife and attaching it to the other side of the disk as a counterbalance, to retain the balance of the disk. Since the chipper is self-feeding, the feed speed of wood is also halved.

1. See Sections "Removing the upper chamber" and "Sharpening the knives".
2. Place a spring washer on the bolt. Turn the lock nut on the bolt and tighten to 45 Nm.
3. Place another spring washer on the bolt and turn the bolt through the knife into the disk. See Fig. 7. Tighten the bolts to 45 Nm. Attach the knife using all four bolts.
4. Interchange the cutting and counterbalance knives regularly to ensure the balance of the disk.

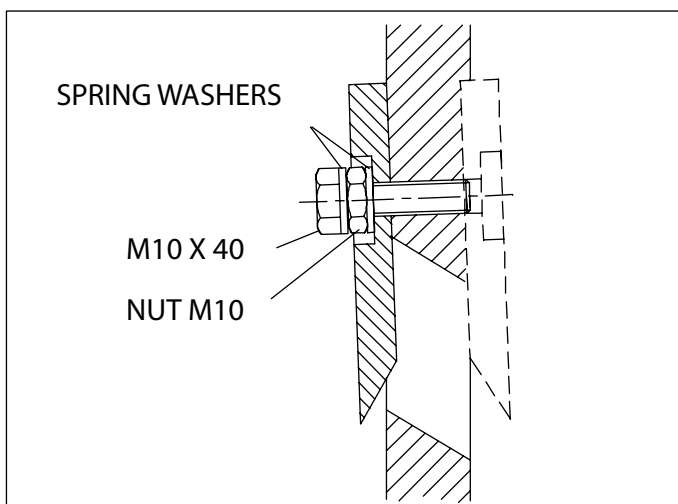


Fig. 7. Remove one knife and attach it to the other side of the disk. The dotted line shows the knife in its normal cutting position.

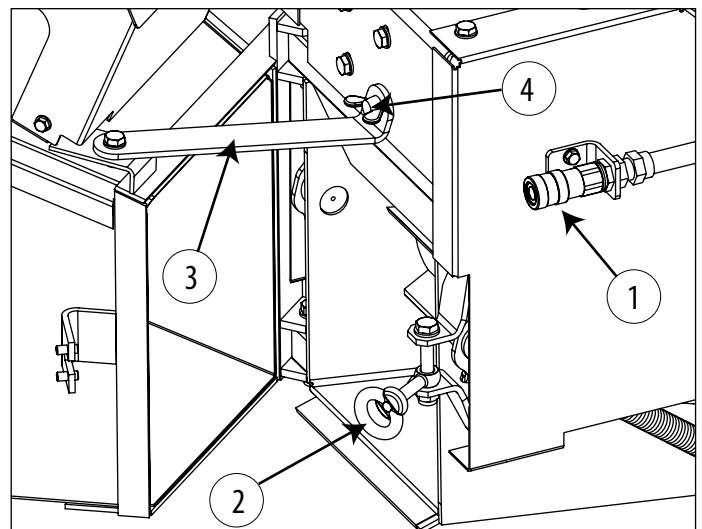
EMPTYING THE CHIPPER AFTER USE

Before stopping the chipper, chip about 80-100 mm wood. Let the blades cut a few centimetres, after which reverse the feed direction to clean the blades. Leave the tree into the feeder to remind you that the chipper has been emptied. This way you will avoid a possible jam when you turn on the chipper next time.

SWIVELING THE FEED HOPPER TO THE TRANSPORT POSITION

The feed hopper can be swiveled to the transport position if it must be transported (see illustration below). The feed hopper must be swiveled to the transport position in the following order:

1. Disconnect the hydraulic pressure hose from the bayonet socket (1).
2. Loosen the ring nut (2) and swivel out the feed hopper.
3. Lock the feed hopper in the transport position by means of the transport bracket (3) and the wing bolt (4).



Swiveling the feed hopper to the transport position

STORAGE OF THE CHIPPER

- Before detaching the chipper from the tractor, park it on level and hard ground. Take appropriate measures to prevent the chipper from moving or falling.
- If the chipper is to be stored for a long period, lubricate the knives e.g. with petroleum jelly.
- Take appropriate measures to keep the water drainage holes on the lower chamber open.

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MAINTENANCE



Before beginning maintenance and repair

- place the chipper onto level and hard ground and make sure it cannot tip;
- turn off the tractor and disconnect the PTO drive shaft;
- disconnect the hydraulic hoses from the tractor;
- familiarize yourself with the machine-specific maintenance and repair instructions.

In case of doubt, please contact the manufacturer.

- Always lock the rotor before adjusting or changing the knives.
- Always wear protective gloves when handling knives.

PERIODIC INSPECTIONS

- With new machines, check the mounting bolts for tightness after the first operating hour, tightening them if necessary. Tightening torques are shown in table.
- Check the mounting bolts for tightness once a week.
- The knife-to-anvil clearance is adjusted to the specified values. For instructions on adjusting the clearance, see Adjusting the knife-to-anvil clearance.

LUBRICATING THE BEARINGS

- The bearings are lubricated at the factory, and a similar lubricant should be used for subsequent lubrication (Shell Alvania Grease R 3. or Kendall L427). An excessive amount of grease causes overheating and impairs lubrication.
 - Lubricate the bearings every 200 working hours or at least once a year.
1. Open the upper bearing housing - see bearing housing assembly drawing, (page 38, part 10). Remove old grease as carefully as possible and replace it with new grease. Do not fill the bearing housing with grease.
 2. Install the upper bearing housing and tighten to 100 Nm.

LUBRICATING THE PTO SHAFT

- Lubricate the PTO shaft prior to operation and regularly, as shown in Fig. 9.
- Lubricate the inner surface of the PTO shaft, accessed via the outer profile tube.
- Lubricate the shield tubes in wintertime to prevent them from freezing and sticking.

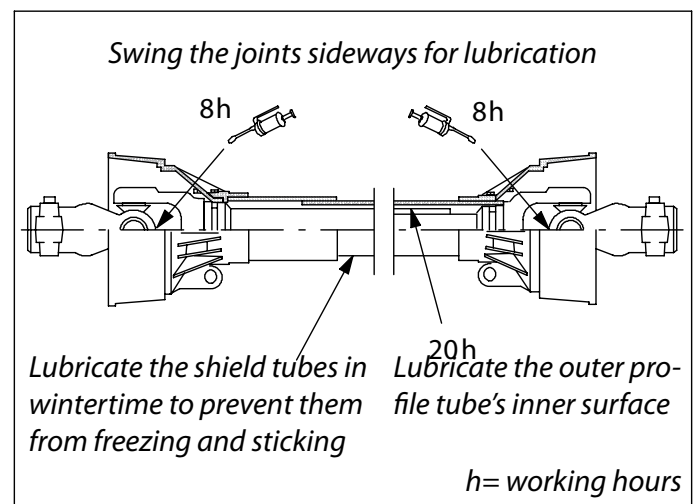


Fig. 9. Lubrication points and intervals for the PTO shaft

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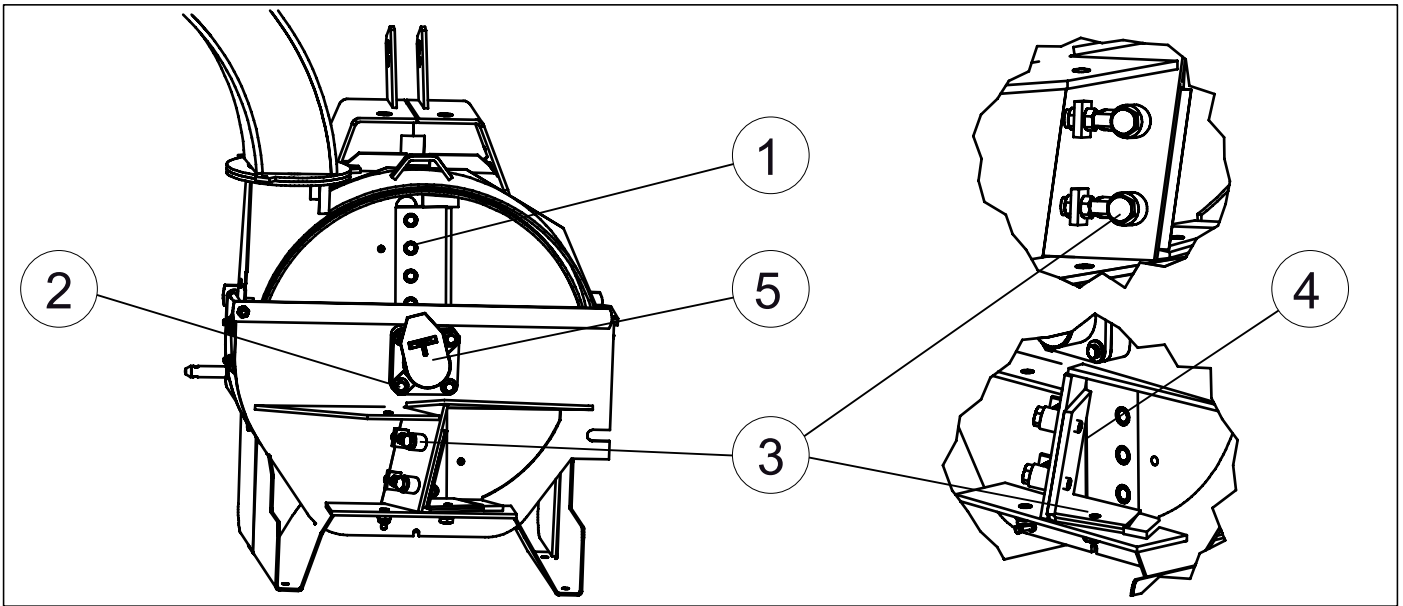


Fig. 15. Checklist for tightening and checking clearances

Item	Width across flats, mm (inches)	Tightening torque, Nm (lbf)
1. Check the knife bolts for tightness.	17 mm (11/16")	60 (44 3/16)
2. Check the bearing housing bolts for tightness on both sides.	22 mm (14/16")	100 (73 11/16)
3. Check the anvil bolts for tightness.	24 mm (15/16")	200 (147 3/8)
4. Check the clearance between knives and vertical anvils.	19 mm (3/4")	1,2 - 1,5 mm (0,02 - 0,06")
5. Check the bearings for radial clearance.		0,02 - 0,03 mm (0,008 - 0,0012")

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MAINTENANCE OF THE FEED UNIT

- The feeder reel bearing has been permanently greased and does not require routine maintenance.
- Grease the bearings of the reel holder axis once a week.
- Check and tighten screws often enough.
- Regularly monitor the condition of the hydraulic hoses and the tightness of the connections.
- Make sure that you use clean oil in the hydraulic system. Dirt in the oil will damage valves and hydraulic motors.

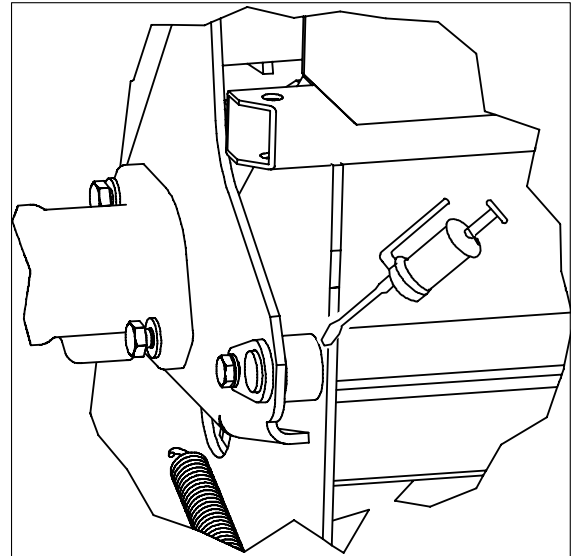


Fig 27. The greasing of the reel holder axis

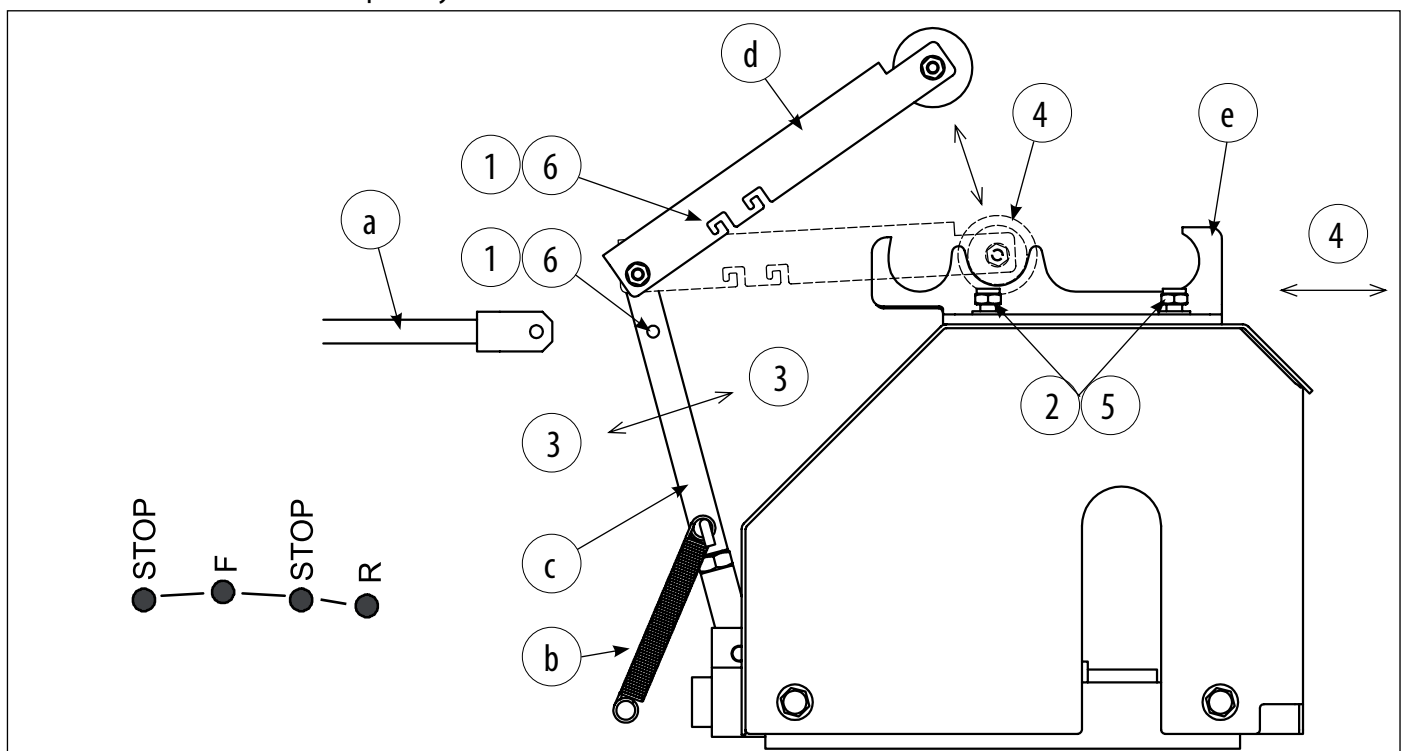
ADJUSTING THE DIRECTIONAL CONTROL VALVE



Any adjustments must be done while the machine is stopped. Turn off the tractor before adjusting and disconnect the PTO drive shaft

1. Remove the control handle (a) and the extension springs (b) from the direction valve lever (c) and from the reel shaft (d).
2. Loosen the mounting nuts of the reel holder (e) so that the reel holder can be freely moved. Do not loosen the nuts completely.

3. Set the direction valve to feeding forward F position by moving the direction valve lever. The direction valve will be locked in this position.
4. Adjust the position of the reel holder so that the reel settles in the middle groove. Make sure that the reel settles to the bottom of the groove as shown in the picture.
5. Tighten the mounting nuts of the reel holder.
6. Re-attach the control handle and extension springs.



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KNIFE AND ANVIL MAINTENANCE



Read the safety instructions. The disk continues rotating like a flywheel after the PTO is disengaged. Please wait until the disk has stopped completely before performing any further actions.



When manually turning the rotor, never touch the edges of the lower chamber or other parts where there is the risk for the hands to get squeezed between the lower chamber and the rotor knives or blades.

OPENING AND REMOVING THE UPPER CHAMBER

- Remove the upper chamber (A) securing bolts (M6) (B) and fastening bolts (M12) (C). Turn the upper chamber to the side.
- To remove the upper chamber, remove the securing bolt (M6) (D) and hinge bolt (M12) (E).
- Lock the disk with the lock bolt Fig. 11.
- Remove the feeder or turn it to the side.



Exercise extreme caution when opening the upper chamber. Take appropriate measures to keep the upper chamber from falling down.

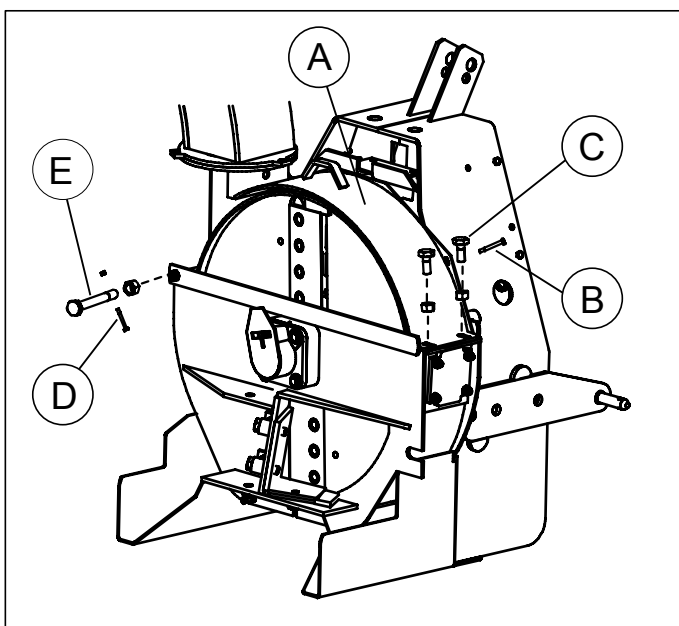


Fig. 10. Removing the upper chamber

REMOVING THE KNIVES

1. Remove the knife lock nuts (M10). Fig. 11.
2. Remove the knife fastening bolts (M10). Turn the wrench in such a way that your hands would not hit the knife if the wrench should slip. Fig. 12.



Wear protective gloves when handling knives or anvils.

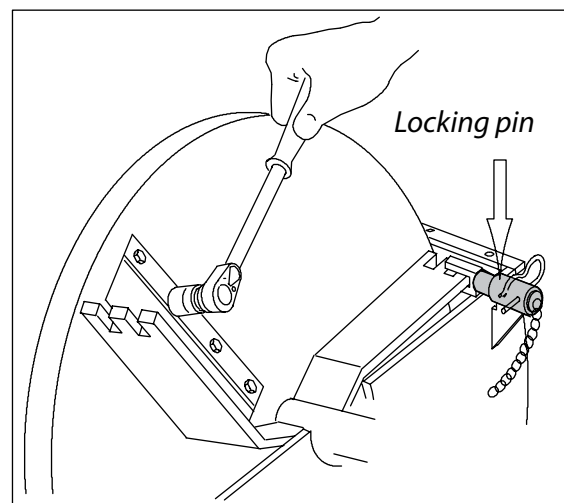


Fig. 11. Locking the disk and removing the lock nuts

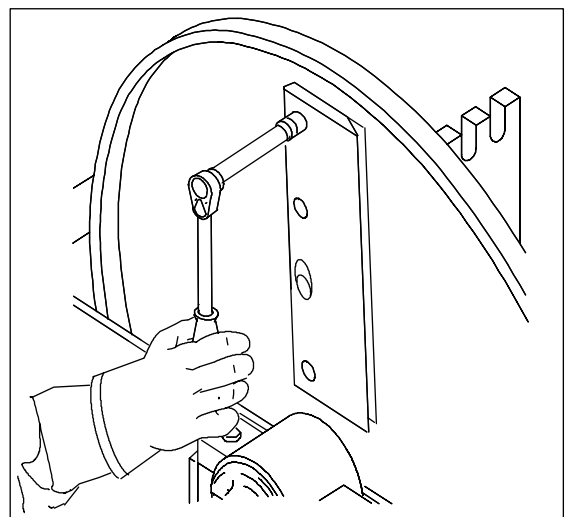


Fig. 12. Removing the knife fastening bolts

SHARPENING THE KNIVES



Sharpen all knives equally. This ensures disk balance.
Avoid heating the knife during sharpening.

The knives need sharpening when

- the self-feeding of wood has decreased;
- the power demand has increased;
- the chip surface is rough.
- The individual chips have become smaller.

Normally, the knives can be sharpened several times without actually being removed (with, e.g., a sharpening stone or belt grinder).

More thorough conditioning is carried out with a surface grinder, with the knives removed.

The new knives are sharpened to a concave shape, $R=200$. The sharpening angle is 30° and hone angle is 45° . The hone angle prevents the edge from breaking. Fig. 13.

It is recommended that the knives be sharpened to a concave shape. If this is not possible, the knife is sharpened to a flat profile. Fig. 14.

The hone angle is ground to a 45° angle with two to three longitudinal strokes, using a level sharpening stone.

Burrs are removed from the knife fastening bolt side, grinding with the surface. Fig. 15.

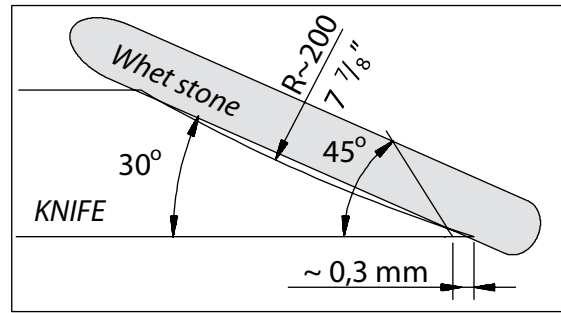


Fig. 13. The profile of a concave knife

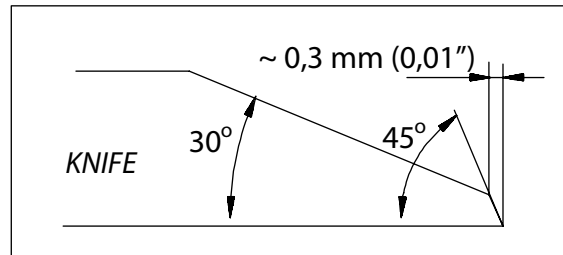


Fig. 14. A knife with a flat profile

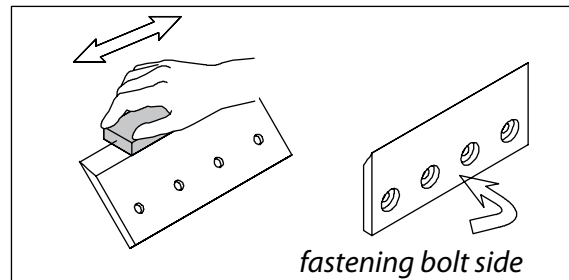


Fig. 15. Final grinding of the knife

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REMOVING THE ANVILS

The chipper features both a vertical and horizontal anvil. To remove the anvils, open the fastening bolts (A) and (B) (M16). The horizontal anvil fastening bolt (B) is located below the feed opening. Fig. 16.

SHARPENING THE ANVILS

If you notice wear or rounding of the inner edge of the anvil, sharpen the anvils so that the original angles are retained. Fig. 17.

INSTALLING THE KNIVES AND ANVILS

- Check the condition of the fastening bolts and nuts.
- Install the knives and anvils and tighten the fastening bolts to the torques specified in table.
- Adjust the knife-to-anvil clearance.

ADJUSTING AND CHECKING THE KNIFE-TO-ANVIL CLEARANCE

The need for adjusting the anvils is determined by the amount the knives are sharpened. Always check and, if necessary, adjust the clearance between knives and anvils

- after a heavy sharpening;
- if the knives were removed - for example, due to sharpening;
- if new knives are replaced,
- if chip length is adjusted.

Check the clearance with a feeler gauge.

1. Loosen the M16 locking screws (A) and (B) of the anvils. See fig 19.
2. Turn the cutting disk in such a way that the front edge of the knife is exactly opposite the vertical anvil. Slide a feeler gauge between the knives. Adjust the play of the vertical anvil by the M12 adjusting nuts (C) to 1.2-1.5 mm (0.05-0.06").
3. Tighten the adjusting nuts (C) and the locking screws of the anvil (A).
4. Adjust the play of the horizontal anvil towards the front edge of the knife to 1.2-1.5 mm.
5. Tighten the locking screw (B).
6. Recheck the knife play.

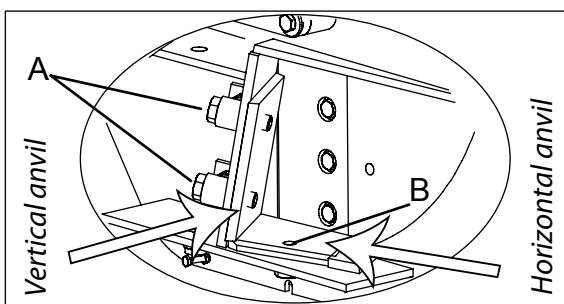


Fig. 16. Anvil fastening bolts

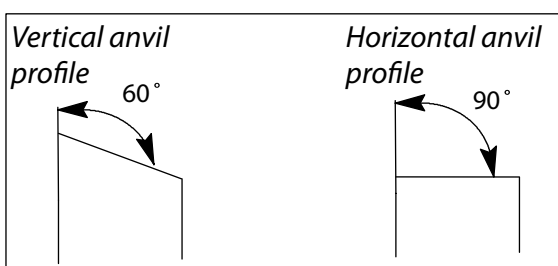


Fig. 17. Anvil profiles

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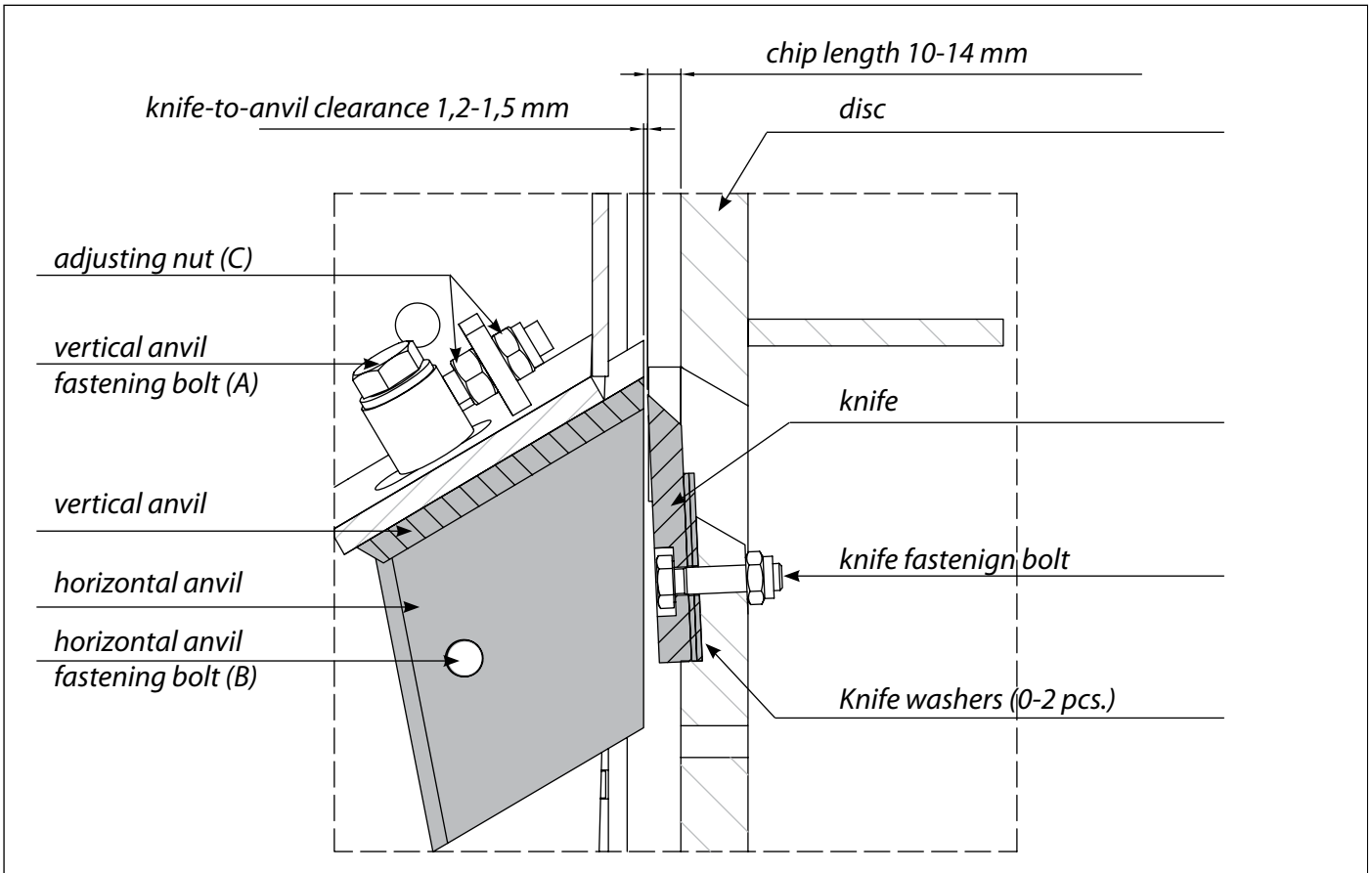


Fig. 19. Cross-section of the disk and knives / anvils

REPLACING THE SPLINED SHAFT

1. Remove the upper chamber.
2. Remove the bearings (see Chapter 13). Welding damages the bearings.
3. Lift the disk up using a hoist.
4. Grind an 11-mm-deep groove about 17 mm from the edge of the shaft. See Fig. 20.
5. Heat the joint area, if necessary.
6. Move the splined shaft so that it comes loose and can be removed.
7. Clean the shaft hole and install the new shaft as shown in Fig. 20.
8. Make a fillet weld up to the surface level with three runs. Use ESAB 68.81, OK 48, OK Femax 38.65, or equivalent filler.

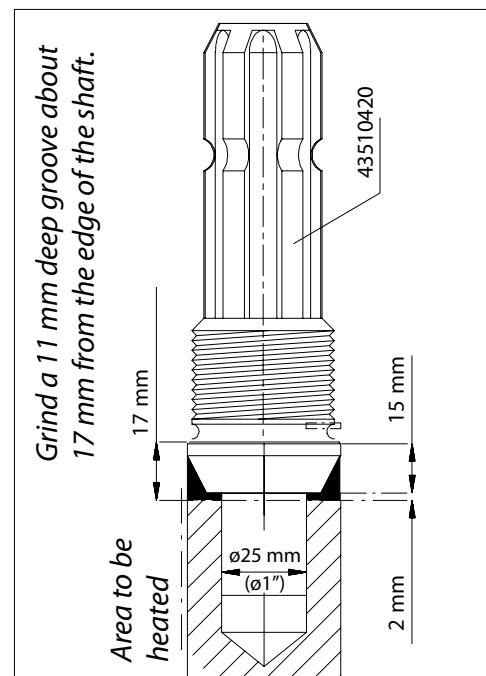


Fig. 20. Replacing the splined shaft

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TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
THE BLADES HEAT UP THE ROTOR SIDES HEATS UP	FEEDER REELS REVOLVE TOO FAST	SET THE REVOLVING SPEED UNTIL CORRECT
THE FEEDER DOES NOT WORK	HOSES ARE UNCONNECTED	CONNECT THE HOSES
	QUICK-COUPPLERS HAVE DIRT IN THEM	CLEAN FOR EXAMPLE WITH COMPRESSED AIR OR CHANGE
	QUICK-COUPPLERS ARE INCORRECT	CHANGE ACCORDING TO SPARE PARTS
	QUICK-COUPLER IS NOT ATTACHED	CHECK THE ATTACHMENT
	RETURN HOSE BACK PRESSURE VALVE IS BLOCKED	CLEAN OR CHANGE
	TRACTOR HAS NO OIL	ADD OIL
	THE PRESSURE OF THE TRACTOR OR FEEDER IS INCORRECT	PUT THE PRESSURES RIGHT
BRANCHES GET TANGLED AROUND THE FEEDER REEL	REEL IS ASKEW	CHECK THE CLEARANCE BETWEEN THE WIPER AND THE REEL

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NO STRESS REVOLUTION CONTROL DEVICE

The No Stress feed rate controller which monitors the chipping machine wheel's speed and stops the feed rolls, if the wheel speed drops below the set limit value, is available as an option.

The feed rolls continue feed timber, when the wheel speed increases up to the set value. Thus the feed rate is adjusted in relation to speed of the wheel, giving homogenous wood chips, and the operator can concentrate on feeding the timber.

INSTALLATION OF THE NO STRESS SENSOR

1. Turn off the tractor and disconnect the PTO drive shaft.
2. Insert the NO STRESS sensor into the hole (20 mm). The black tip of the sensor must be approx. 1-3 mm apart from the pin of the end plate. Turn the cutting disk to make the pin visible in the slot of the shaft guard. The distance between the sensor and the pin can be checked through the slot (see fig. 22). If the sensor distance is correct, tighten its fastening nuts.
3. Connect the electronic system of the chipper to the tractor. The sensor LED lights up when the sensor distance is OK. If the LED doesn't light up, move the sensor closer to the pin.

SETTING OF THE NO STRESS REVOLUTION CONTROL DEVICE

1. Engage the tractor's PTO. Using the hand throttle, set the motor to a speed which is approx 100 rpm below the desired speed range.
2. With the chipper set to idle, press the black push button on the electric box for approx. 3 seconds. After pressing the programming button, the NO STRESS sensor will detect the speed.
3. Increase the tractor speed by approx. 100 rpm to an appropriate operating speed.

If the speed drops by approx. 10 %, the feed rollers of the feed unit will stop and the material feed is interrupted. The feed rollers will restart as soon as the speed has re-increased and reached the preset value. This setting is suitable for all speed ranges; see the example in fig.23.

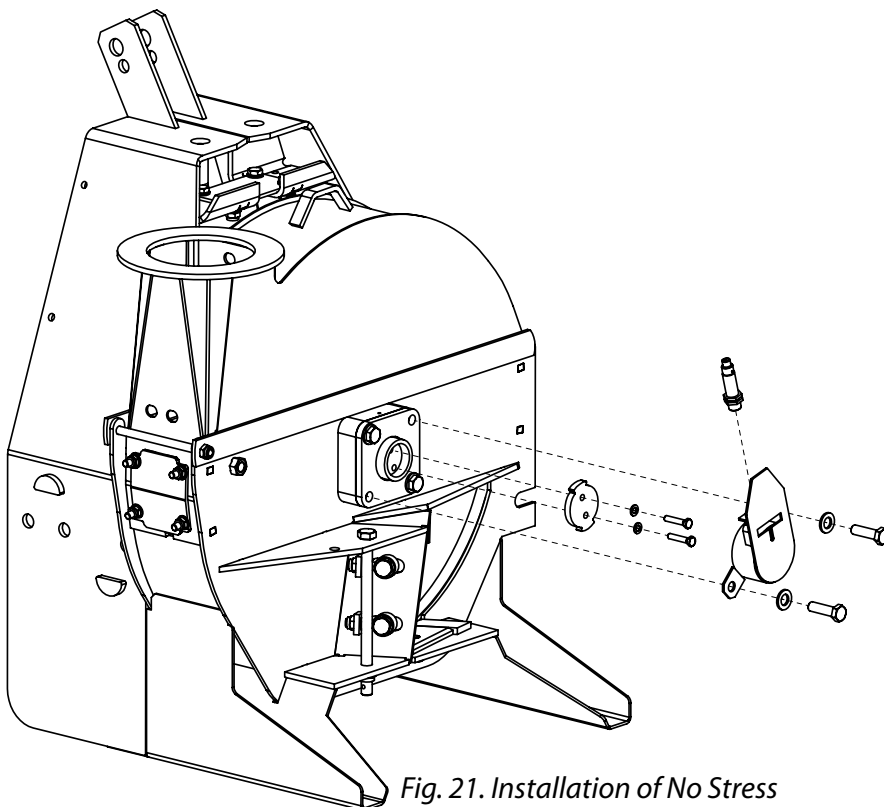


Fig. 21. Installation of No Stress

FARMI 180 + HF180 / F180

LED ON = SPACING CORRECT
 LED NOT ON = MOVE SENSOR CLOSER

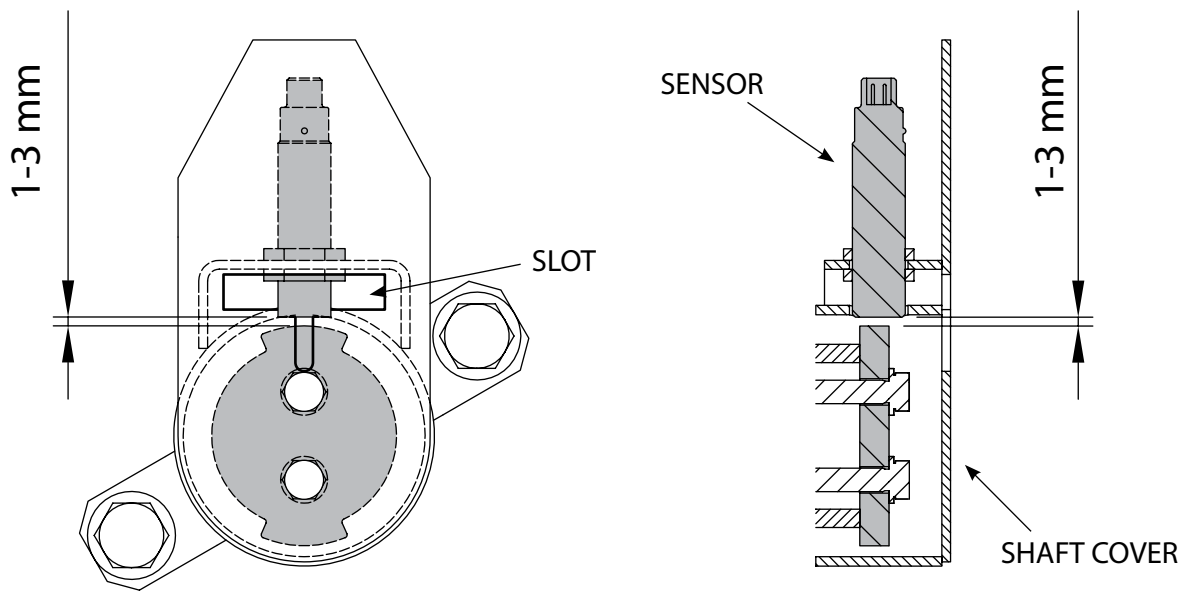


Fig. 22. Adjustment of No Stress

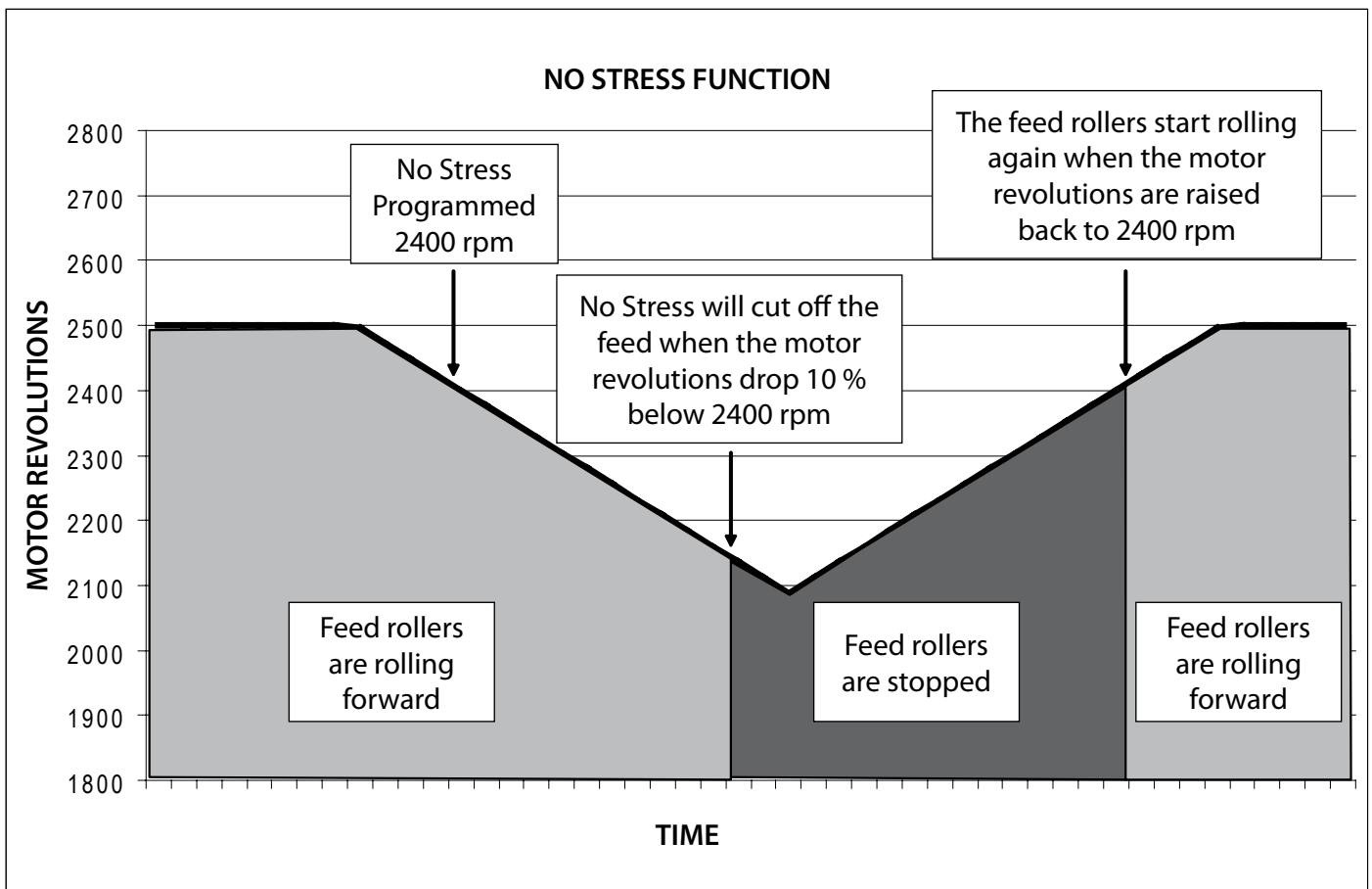
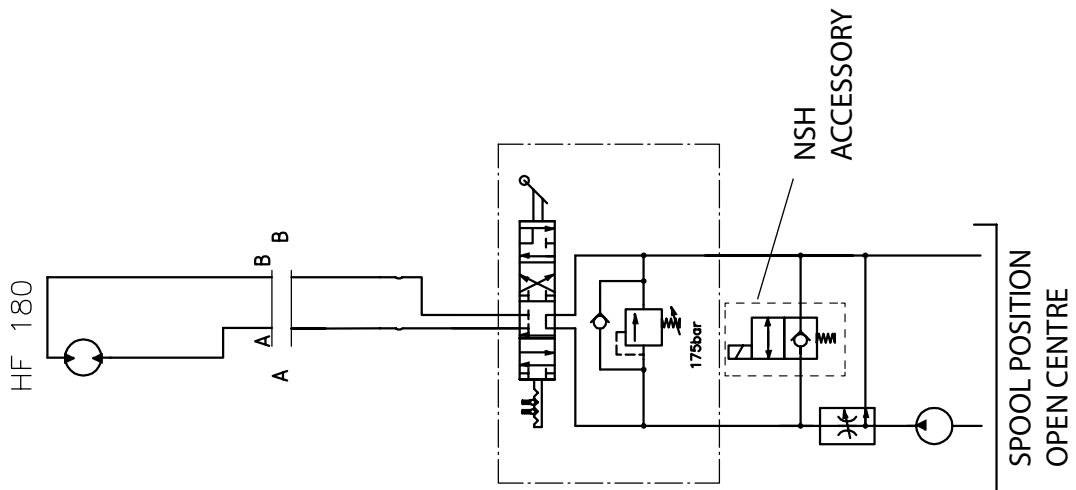
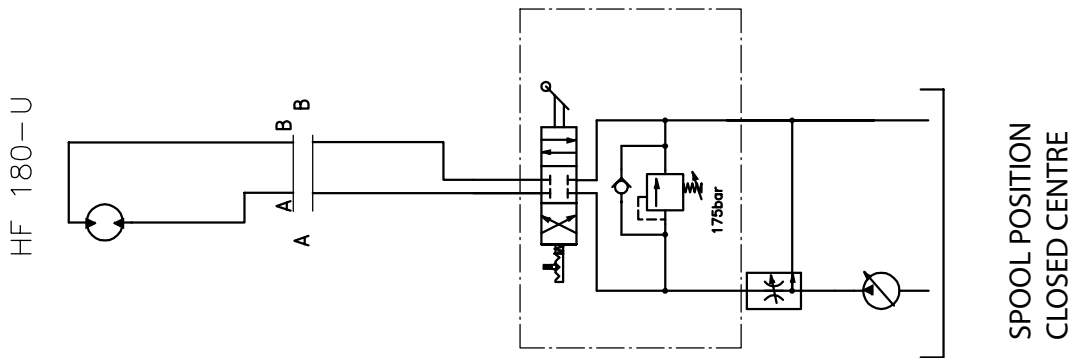
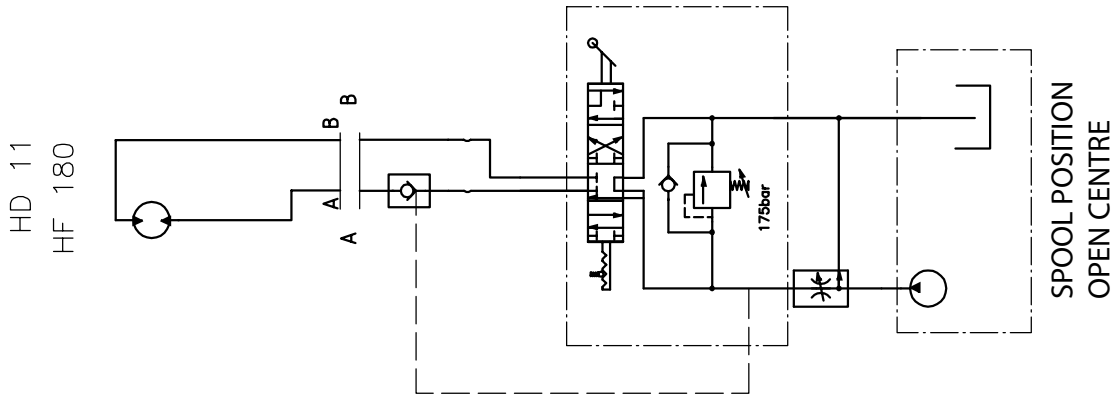


Fig. 23. No Stressin function

FARMI 180 + HF180 / F180

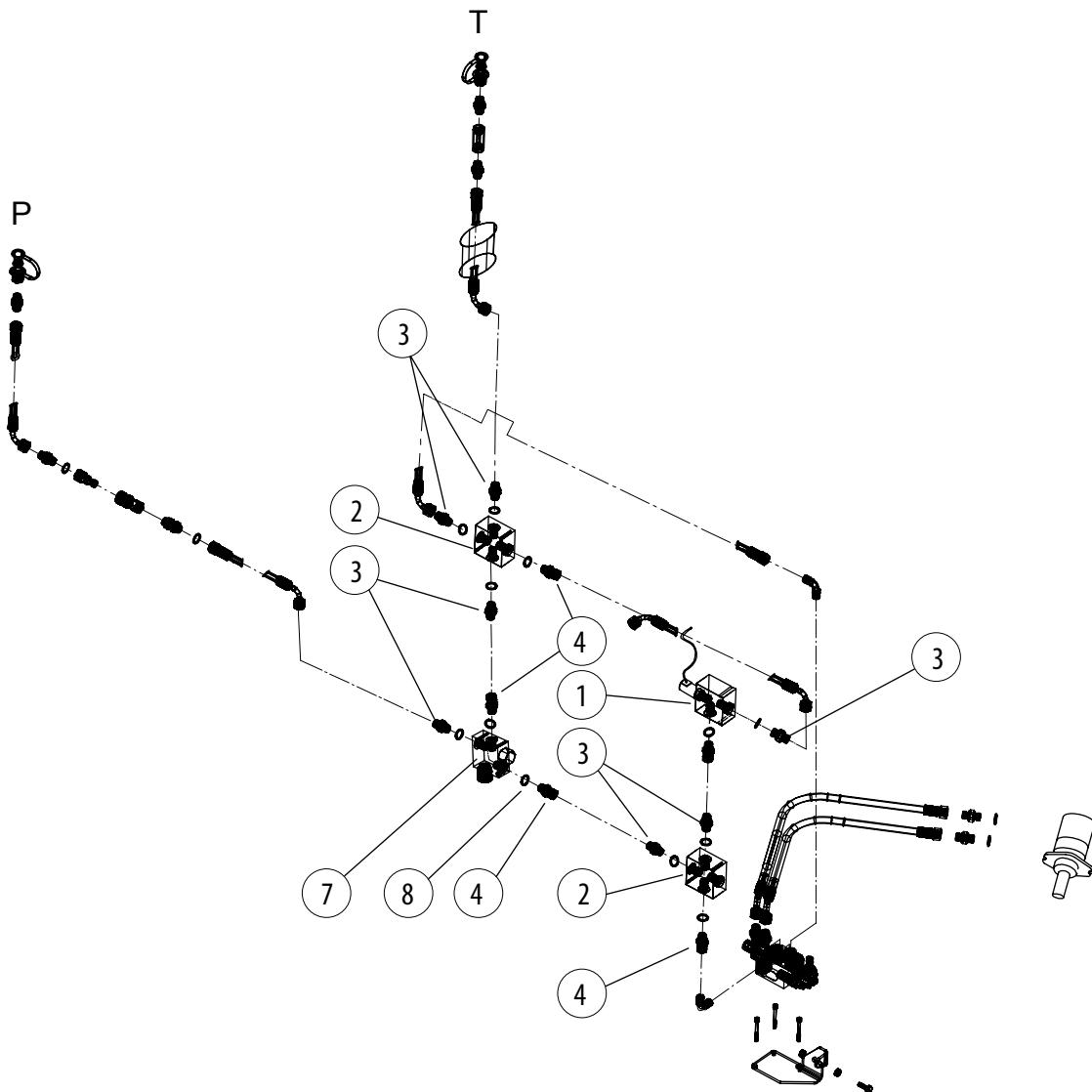
HYDRAULICS CIRCUIT DIAGRAM FARMI 180 / HF180



FARMI 180 + HF180 / F180

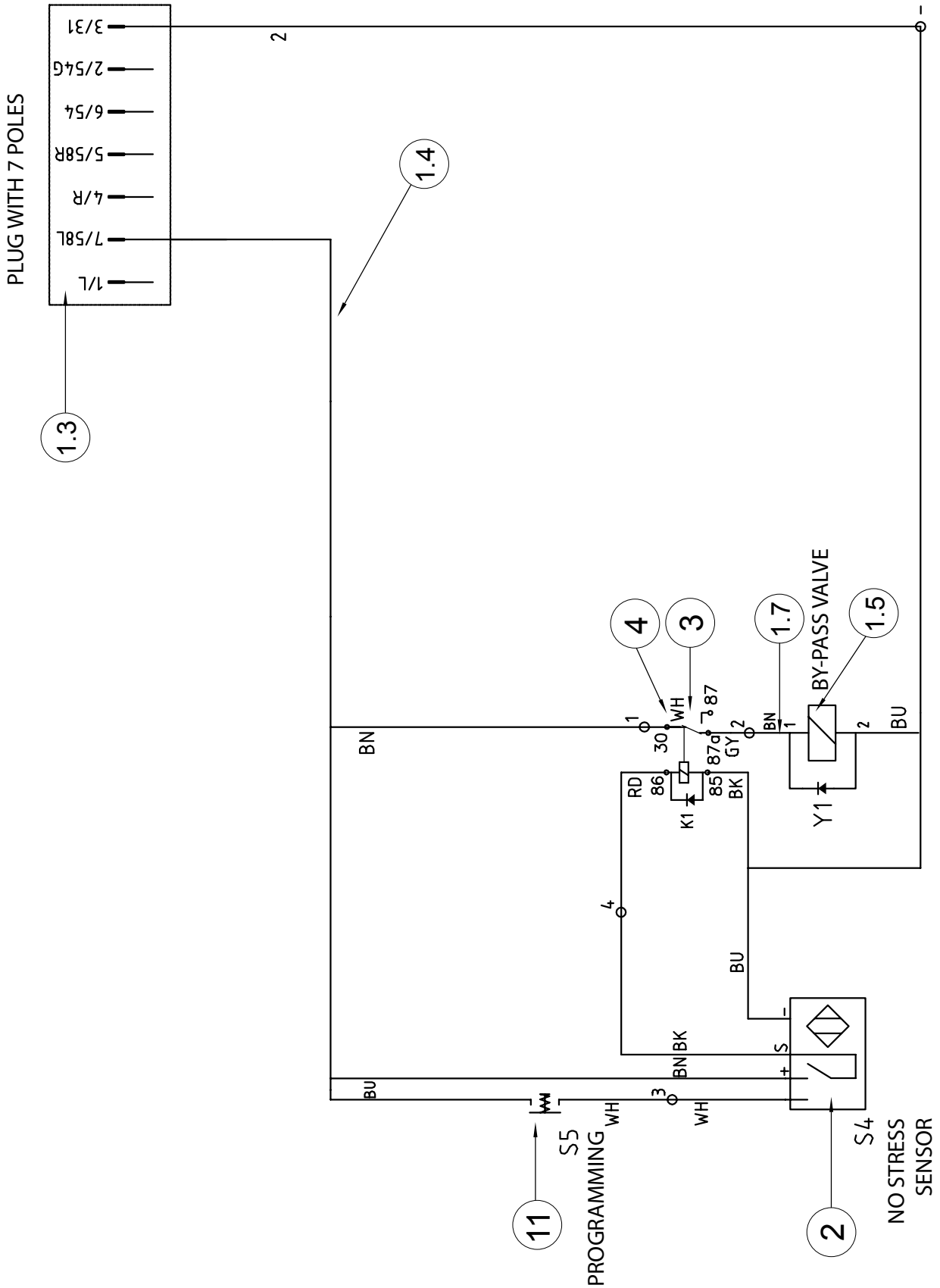
NO STRESS NSH

Part	Order no	Description	Remarks	Qty
1	56049750	Cartridge valve	complet	1
1.1	56049720	Cartridge valve		1
1.2	56049730	Valve cage		1
1.3	56049740	Solenoid spool		1
2	56620693	Coupling	1/2" L45	2
3	52432051	Double fitting	R1/2"	7
4	52435773	Swivel fitting	R1/2"	3
5	56526023	Hose assy	K1/2"S L=0,35M	1
6	43489600	NSH electrics		1
7	56070832	Flow regulator valve		1
8	52390200	Usit-ring		6



FARMI 180 + HF180 / F180

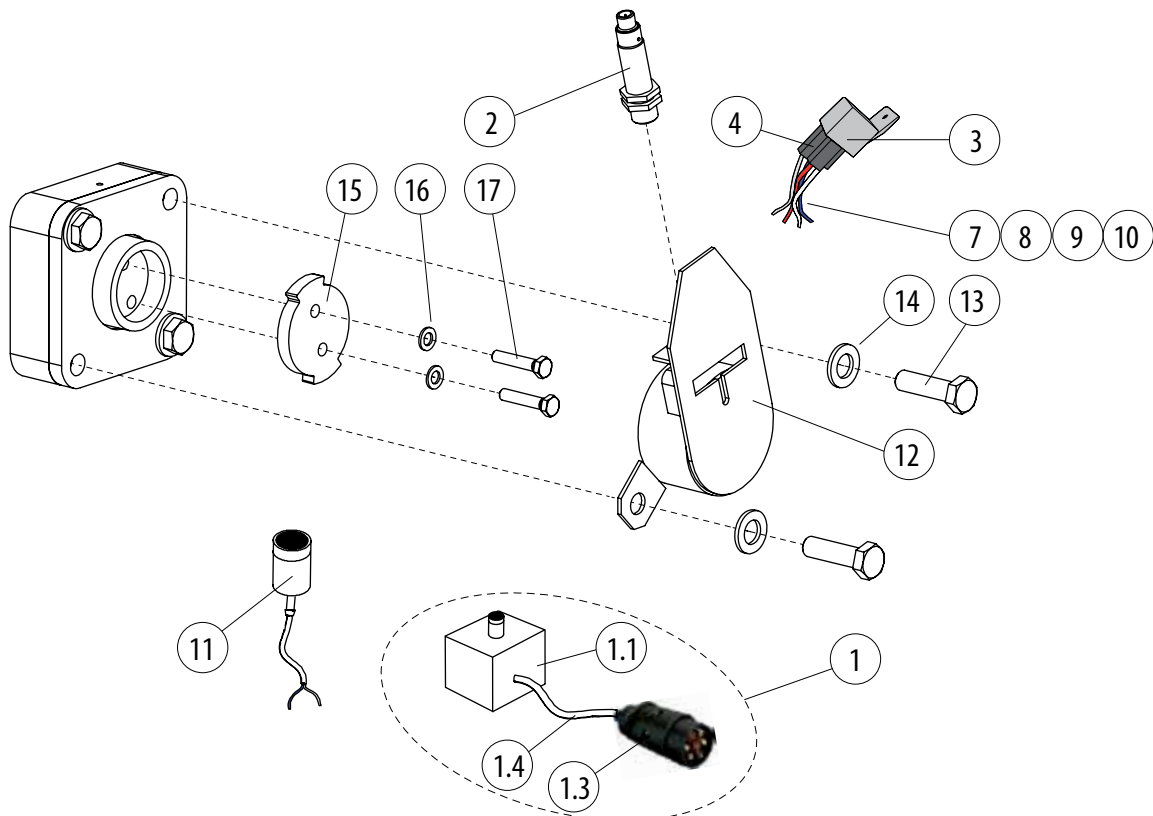
NSH ELECTRICS



FARMI 180 + HF180 / F180

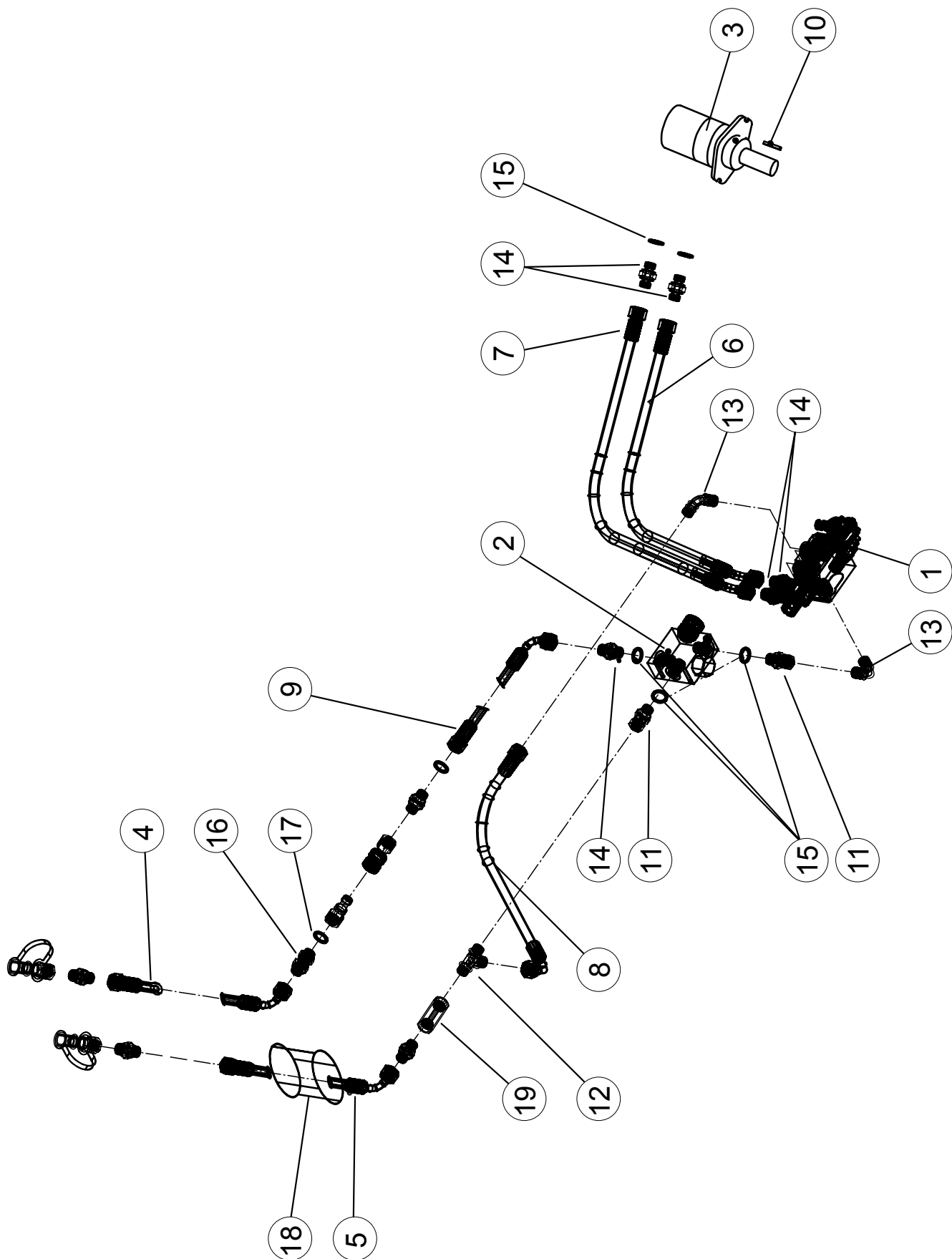
NSH ELECTRICS

Part	Order no	Description	Remarks	Qty
1	03489360	Control box		1
1.1	55129019	Box		1
1.2	43483180	Plate		1
1.3	55128011	Plug	with 7 poles	1
1.4	54946380	Cabel	6,0 m, 2x2,5	1
1.5	55119070	Hirschmann angle adapter with diode		1
1.6	55144780	Seal		2
1.7	54946397	Cabel	1,0 m, 3x1,5	1
2	55121420	Inductive detector	10%	1
3	55119572	Relay		1
4	55119275	Relay socket		1
5	55140602	Connector		4
6	55119804	Terminal block		1
7	55126429	Cabel	blue, 0,5 m	1
8	55126387	Cabel	grey, 0,5 m	1
9	55126403	Cabel	white, 0,5 m	1
10	55126346	Cabel	red, 0,5 m	1
11	55128630	Press switch	black	1
12	43524300	No Stress fastening		1
13	52063690	Screw	M14X60 DIN931 88ZN	2
14	52200060	Washer	M14 DIN126 58ZN	2
15	43524060	Flange		1
16	52200037	Washer	M8 DIN126 58ZN	2
17	52060134	Screw	M8X40 DIN933 88ZN	2



FARMI 180 + HF180 / F180

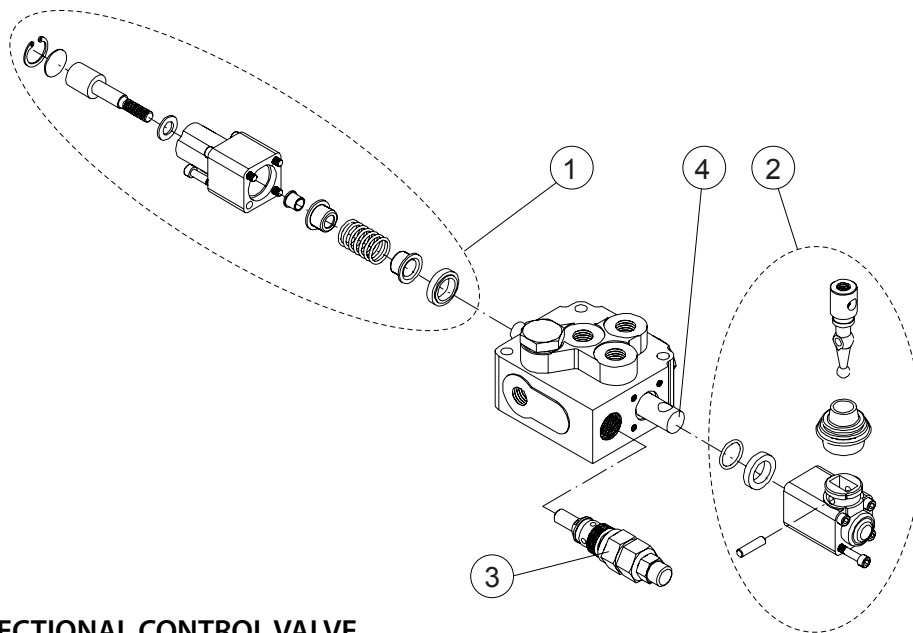
03517200 HYDRAULICS HF180



FARMI 180 + HF180 / F180

03517200 HYDRAULICS HF180

Part	Order no	Description	Remarks	Qty
1	56075330	Directional control valve		1
2	56070832	Flow regulator valve		1
3	56001951	Hydraulic motor	MP400	1
	58217746	Seal kit		1
4	03484330	Hose assy	2,2 m	1
5	03512560	Hose assy	2,7 m	1
6	56526163	Hose assy	K1/2"S L=1,1 m	1
7	56526155	Hose assy	K1/2"S L=1,0 m	1
8	56526015	Hose assy	K1/2"S L=0,3 m	1
9	03520490	Hose assy	0,5 m	1
10	57609125	Key		1
11	52435773	Swivel fitting	R1/2"	2
12	52443132	T-nipple	RK1/2"-R1/2"	1
13	52444057	Angle nipple	R1/2"	3
14	52432051	Double fitting	R1/2"	5
15	52390200	Usit-ring		5
16	52435336	Bulkhead fitting	R1/2"	1
17	52435344	Lock nut	R1/2"	1
18	54921473	Water drainage pipe		1
19	56013246	Back pressure valve		1

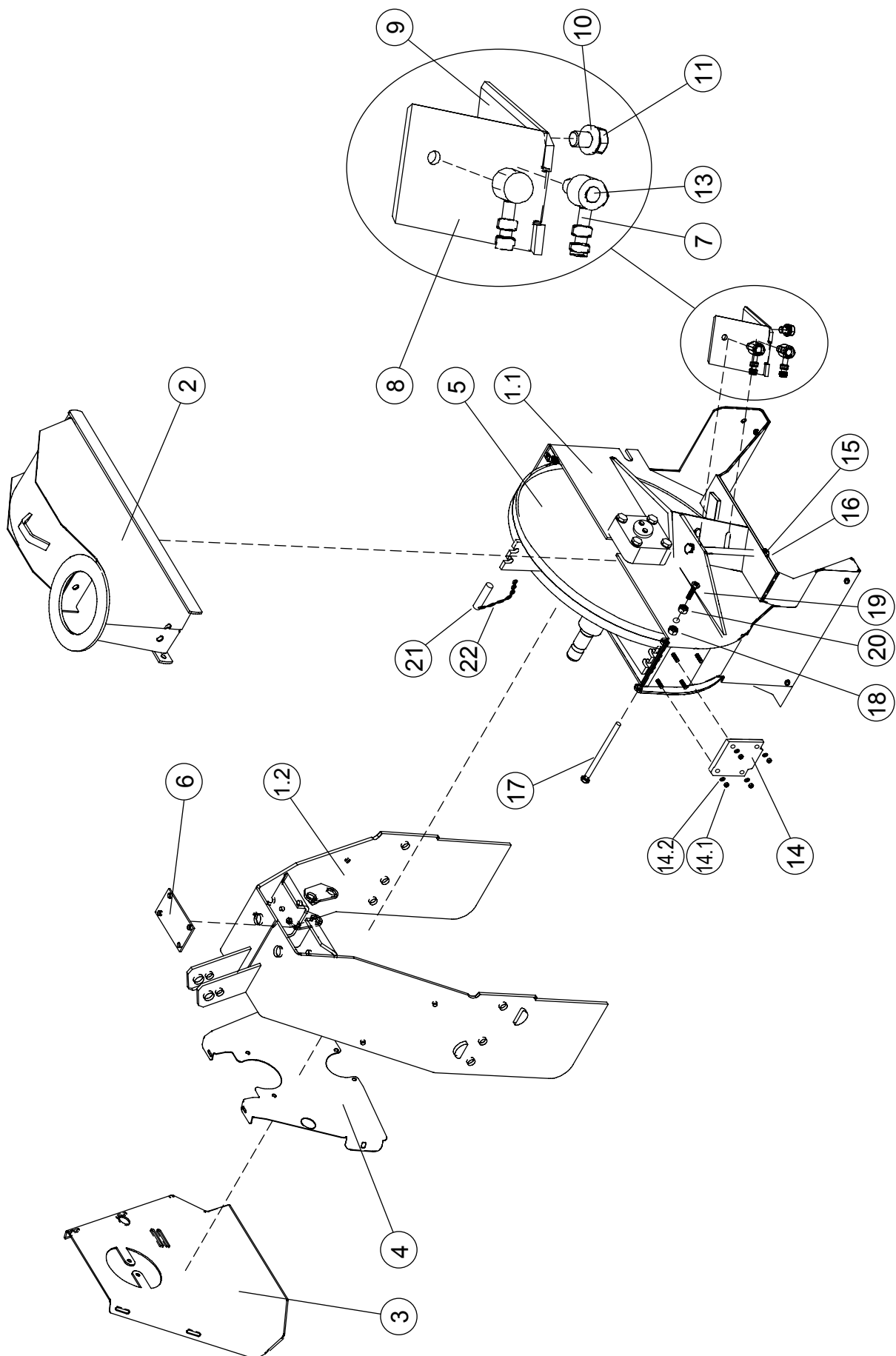


56075330 DIRECTIONAL CONTROL VALVE

Part	Order no	Description	Remarks	Qty
1	58219010	Rear case		1
2	58218975	Lever case		1
3	57819864	Pressure relief valve	175 bar	1
4	58219030	Spindle		1

FARMI 180 + HF180 / F180

03516050 FARMI 180 FRAME



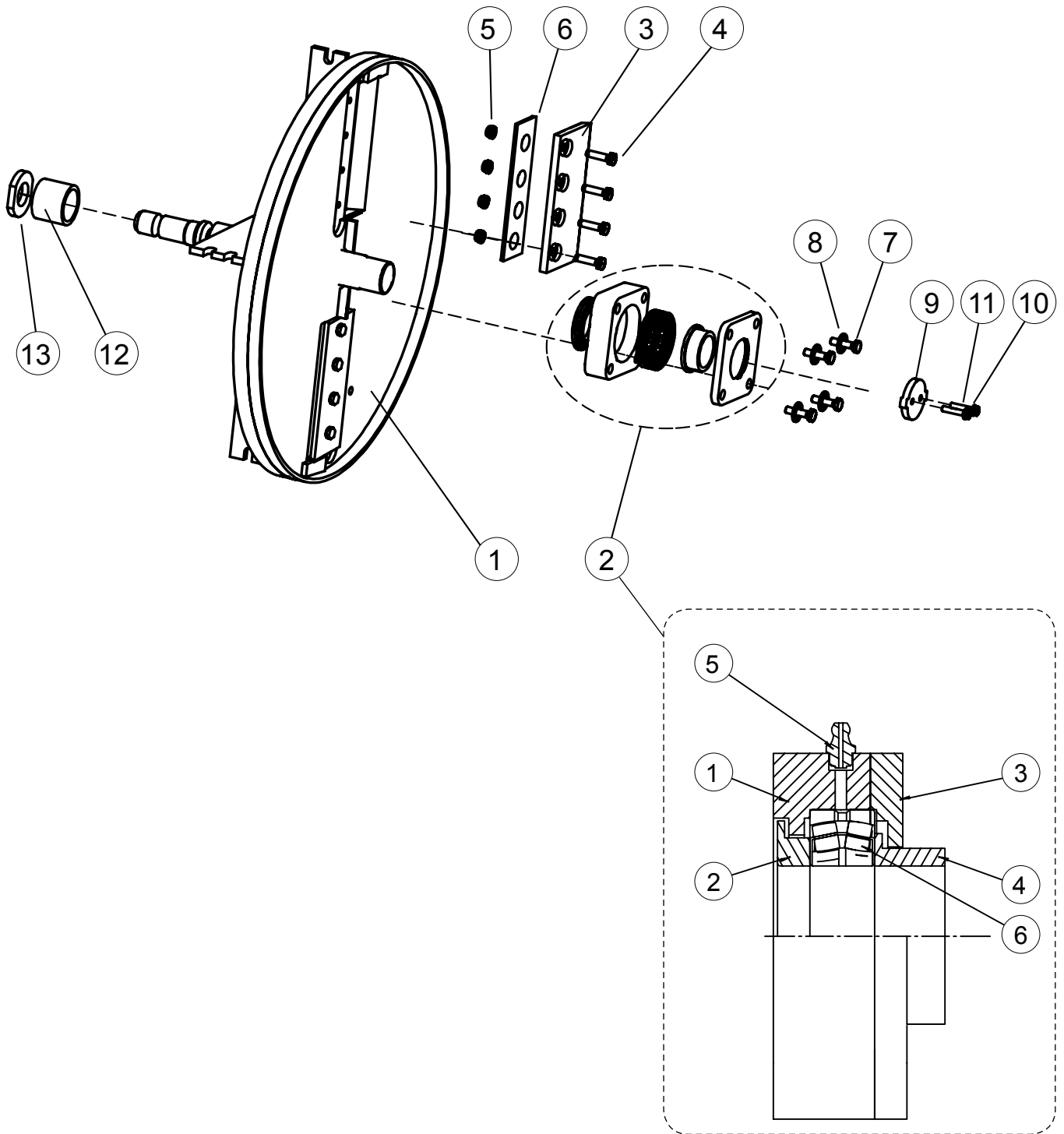
FARMI 180 + HF180 / F180

03516000 FARMI 180 FRAME

Part	Order no	Description	Remarks	Qty
1	33525200	Lower frame		1
1.1	43516190	Lower housing		1
1.2	43516250	Mounting frame		1
2	33525130	Upper frame		1
3	43511970	Protective plate		1
4	43514210	Protective plate		1
5	43517200	Single disc	see pages 36-37	1
6	43518170	Protective plate		1
7	43522110	Anvil adjuster		2
8	33518270	Vertical anvil		1
9	33518260	Horizontal anvil		1
10	52200491	Washer	M16 DIN 7349 ZN	1
11	52062098	Screw	M16X25 DIN933 88ZN	1
12	-	-	-	-
13	52091352	Screw	M16X45 DIN933 8.8 ZN	2
14	43525440	Cover plate		2
14.1	52117108	Lock nut	M10 DIN985 8ZN	8
14.2	52200045	Washer	M10 DIN126 58ZN	8
15	43511660	Safety screw	M16X240	1
16	52117165	Lock nut	M16 DIN985 8ZN	1
17	43340546	Screw	L202	1
18	52117124	Lock nut	M12 DIN985 8ZN	1
19	43525480	Wiper screw		1
20	58219684	Lock nut	M16X2 DIN985 8.8ZN	1
21	43341429	Locking pin		1
22	03487760	Chain		1

FARMI 180 + HF180 / F180

FARMI 180 DISC



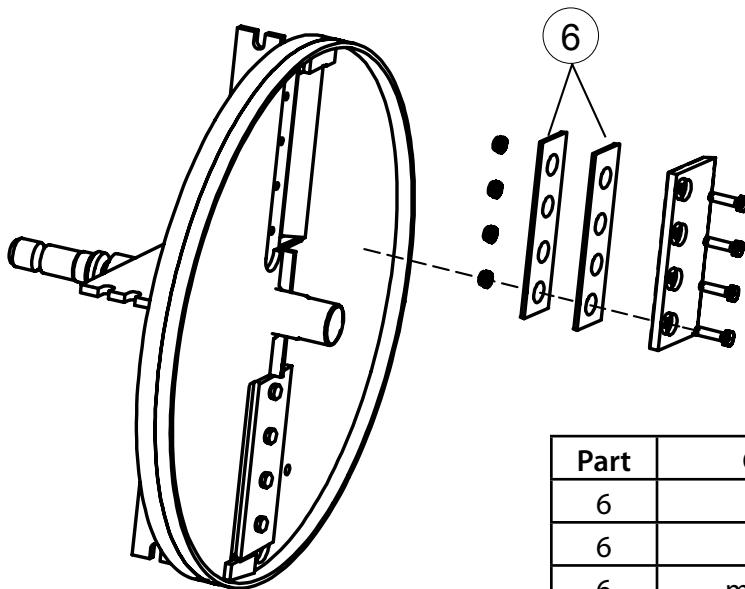
Part	Order no	Description	Remarks	Qty
	43525250	Bearing unit		
1	43525270	Bearing housing		1
2	43525240	Labyrinth ring		1
3	43525260	Bearing housing cover		1
4	43525230	Labyrinth sleeve		1
5	52401015	Grease nipple	1/8"	1
6	54512345	Spherical roller bearing		1

FARMI 180 + HF180 / F180

FARMI 180 DISC

Part	Order no	Description	Remarks	Qty
1	43517200	Disc, single		1
2	43517300	Bearing unit	complete	2
2	43525250	Bearing unit	from machine: 3520050	2
3	43510220	Knife		2
4	52060258	Screw	M10X40 DIN933 88ZN	8
5	52117108	Lock nut	M10 DIN985 8ZN	8
6	43517190	Knife washer		0 - 4
7	52063690	Screw	M14X60 DIN931 88ZN	4
8	52200060	Washer	M14 DIN126 58ZN	4
9	43524060	Flange		1
10	52200037	Washer	M8 DIN126 58ZN	2
11	52060134	Screw	M8X40 DIN933 88ZN	2
12	43517280	Bushing		1
13	43296360	Axle nut		1

ADJUSTING THE CHIP LENGTH



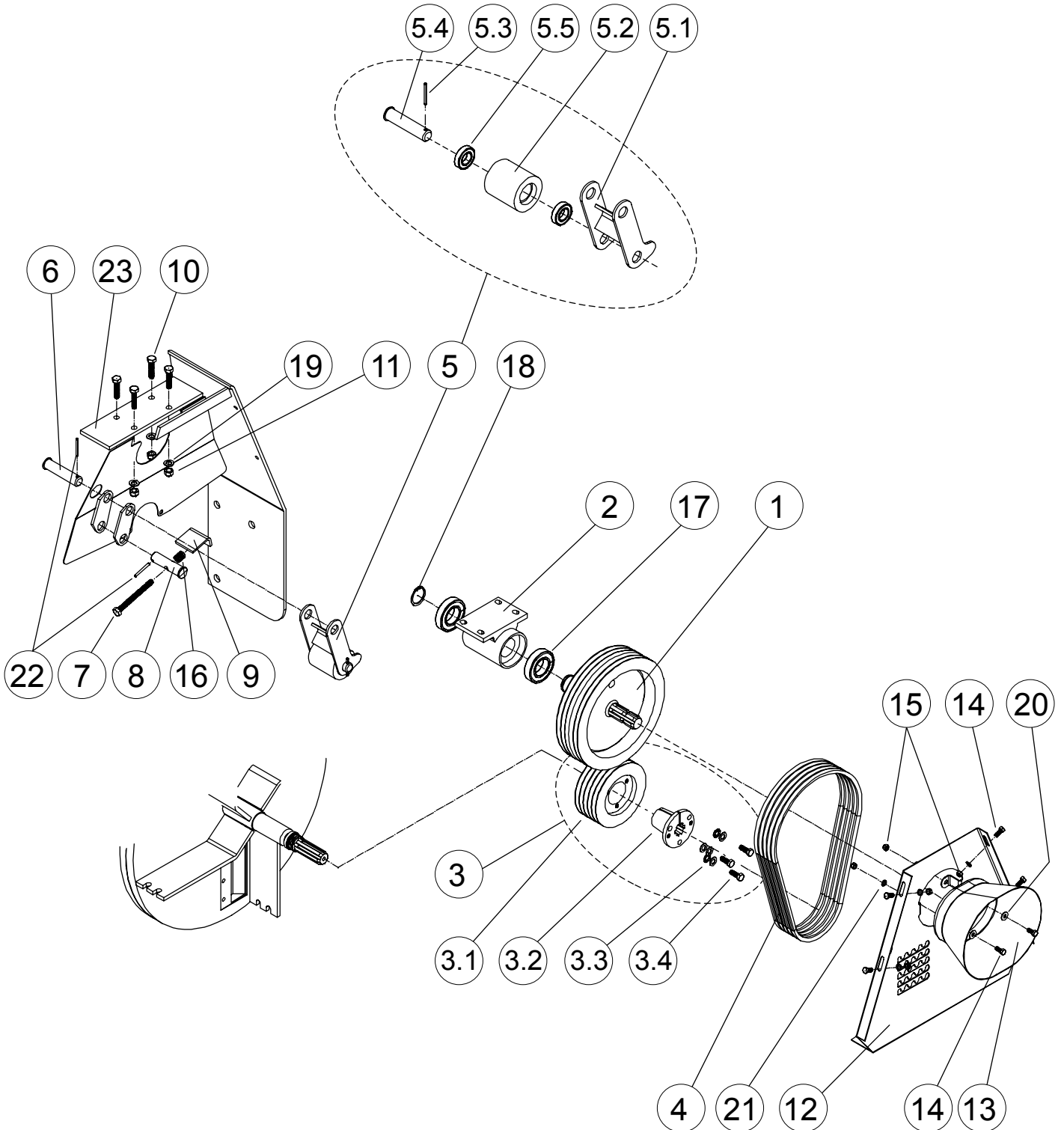
Part	Qty	Chip length, mm
6	0	10
6	1	12
6	max. 2	14

CHIP LENGTH / FEED ROLLER RPM

	Disc rpm 540	Disc rpm 1000
Feed roller rpm (chip 10 mm)	12	22
Feed roller rpm (chip 12 mm)	14	26
Feed roller rpm (chip 14 mm)	16	30

FARMI 180 + HF180 / F180

BELT TRANSMISSION FARMI 180T i=2,1



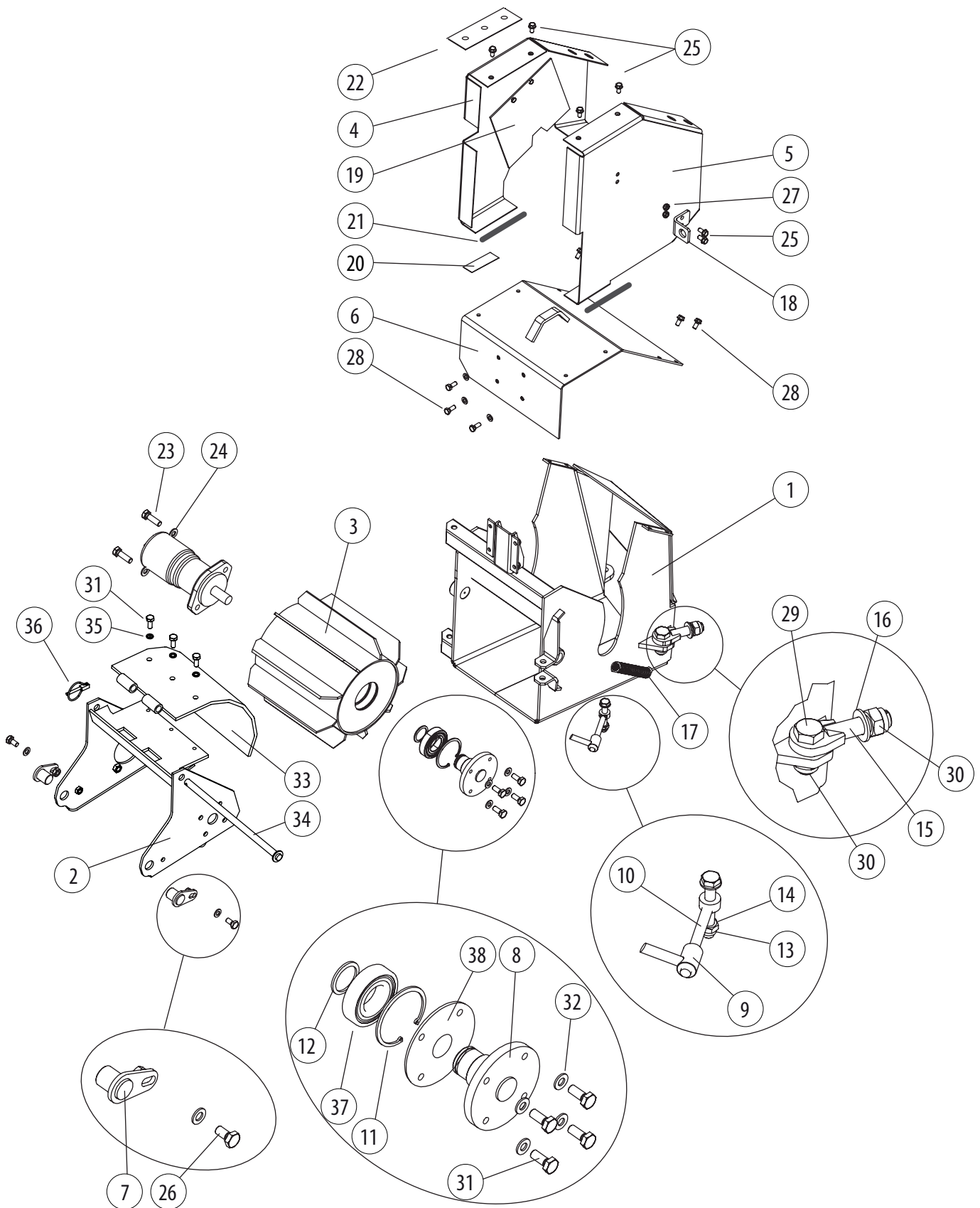
FARMI 180 + HF180 / F180

BELT TRANSMISSION FARMI 180T i=2,1

Part	Order no	Description	Remarks	Qty
1	43514300	Belt pulley	D315	1
2	43514450	Bearing housing		1
3	43514330	Belt pulley	complete	1
3.1	43514350	Belt pulley	D150	1
3.2	43514340	Tapered adapter sleeve		1
3.3	52214269	Lock washer	M12 NORD-LOCK	3
3.4	52062023	Screw	M12X30 DIN933 88ZN	3
4	54822382	Belt		5
5	43512020	Belt tightener	complete	1
5.1	43512030	Belt tightener		1
5.2	43341106	Reel		1
5.3	52840055	Cotter pin	5X50 DIN1481	1
5.4	43341114	Pin		1
5.5	54511134	Slotted sealed ball bearing		2
6	43341114	Pin		1
7	52063658	Screw	M12x120 DIN933 88ZN	1
8	43511950	Pin		1
9	43512050	Adjusting plate		1
10	52090560	Screw	M12x50 DIN933 10.9	4
11	52117124	Lock nut	M12 DIN985 8ZN	4
12	43511970	Cover plate		1
13	43511780	Cover of the universal shaft		1
14	52060126	Screw	M8X20 DIN933 88ZN	6
15	52117082	Lock nut	M8 DIN985 8ZN	6
16	43402150	Spring		1
17	54512140	Ball bearing		2
18	52230257	Circlip	45x2,5 DIN471	1
19	52200466	Washer	M12 DIN440 ZN	4
20	52200334	Washer	M8 DIN440 ZN	2
21	52200037	Washer	M8 DIN126 58ZN	6
22	52840055	Cotter pin	5X50 DIN1481	2
23	43518170	Cover plate		1

FARMI 180 + HF180 / F180

03516600 FEEDER HF180



FARMI 180 + HF180 / F180

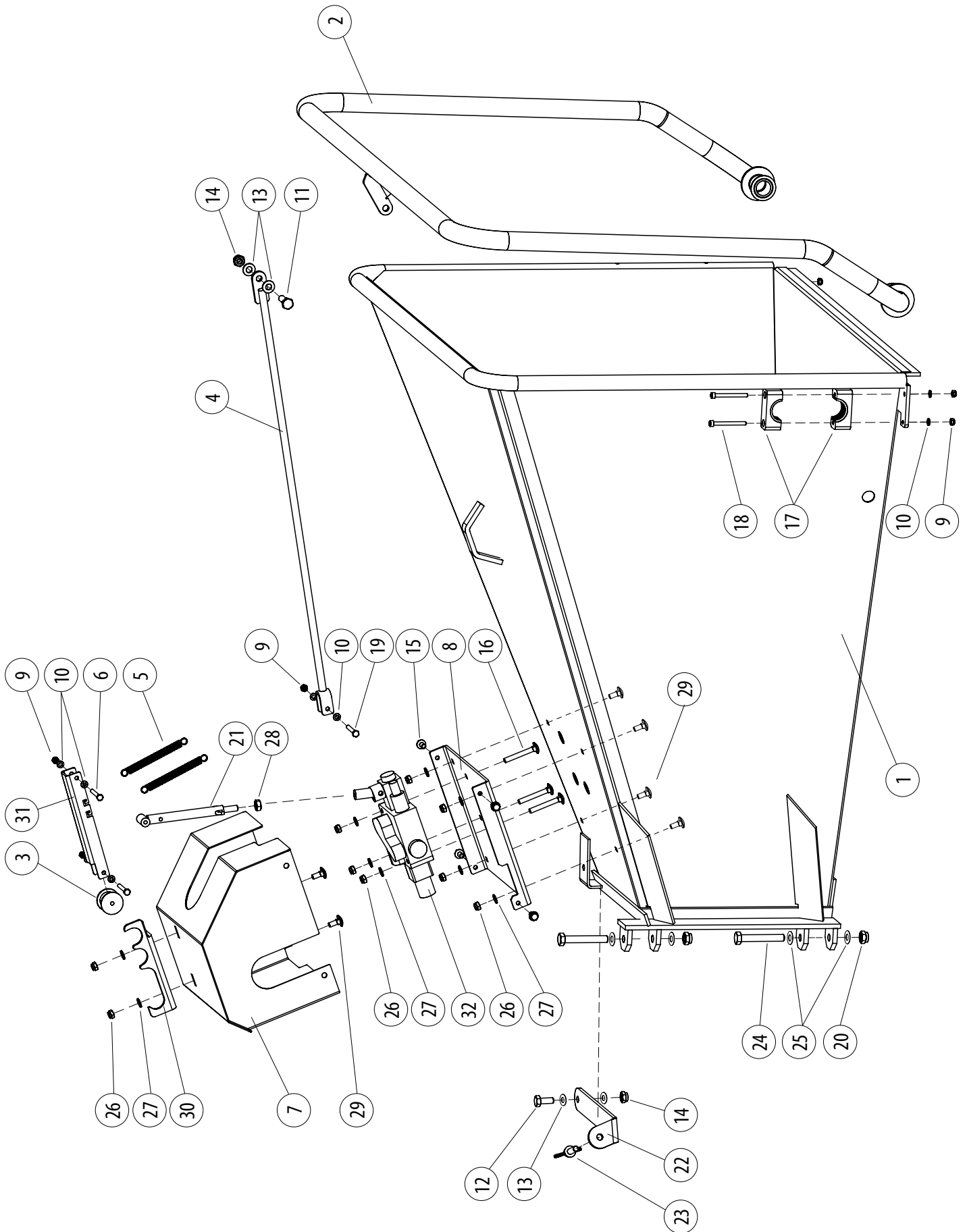
03516600 FEEDER HF180

Part	Order no	Description	Remarks	Qty
1	43516650	Frame		1
2	33525700	Swing		1
3	33518200	Feeder roll		1
4	43519050	Side plate	Motor side	1
5	43519060	Side plate		1
6	43519070	Protective plate		1
7	43516680	Locking pin		2
8	43516870	Fastening flange		1
9	52110420	Hand lever	M12	1
10	52062840	Eyebolt	M12X120 88ZN	1
11	52231172	Circlip	72x2,5 DIN472	1
12	52230067	Circlip	35X2,5 DIN471	1
13	52117124	Lock nut	M12 DIN985 8ZN	1
14	52200052	Washer	M12 DIN125 58ZN	2
15	43802460	Locking bolt		1
16	52200086	Washer	M20 DIN126 58ZN	1
17	94613098	Tension spring		2
18	43519030	Hose guide		1
19	43525010	Protective rubber		1
20	43510610	Damper		2
21	52352119	Welting cord	0,25 m	1
22	43511130	Support plate		1
23	52063617	Screw	M12X40 DIN933 10.9MU	2
24	52214269	Lock washer	M12 Nord-Lock	2
25	52070620	Screw	M8X16 DIN 7500 TAPTITE	6
26	52060514	Screw	M10X20 DIN933 88ZN	2
27	52117108	Lock nut	M10 DIN985 8ZN	2
28	52060175	Screw	M8X25 DIN933 88ZN	7
29	52062221	Screw	M20X50 DIN933 88ZN	1
30	52117207	Lock nut	M20 DIN985 8ZN	1
31	52060225	Screw	M10X25 DIN933 88ZN	7
32	52200045	Washer	M10 DIN126 58ZN	4
33	33525750	Protective plate		1
34	43522600	Locking pin		1
35	52214251	Lock washer	M10 NORD-LOCK	3
36	52842168	Ring cotter		1
37	54511340	Slotted sealed ball bearing		1
38	43525650	Adjustment plate	if necessary	0-3

Parts 33-37 from serial number 3520070

FARMI 180 + HF180 / F180

03517100 FEED CHUTE HF180



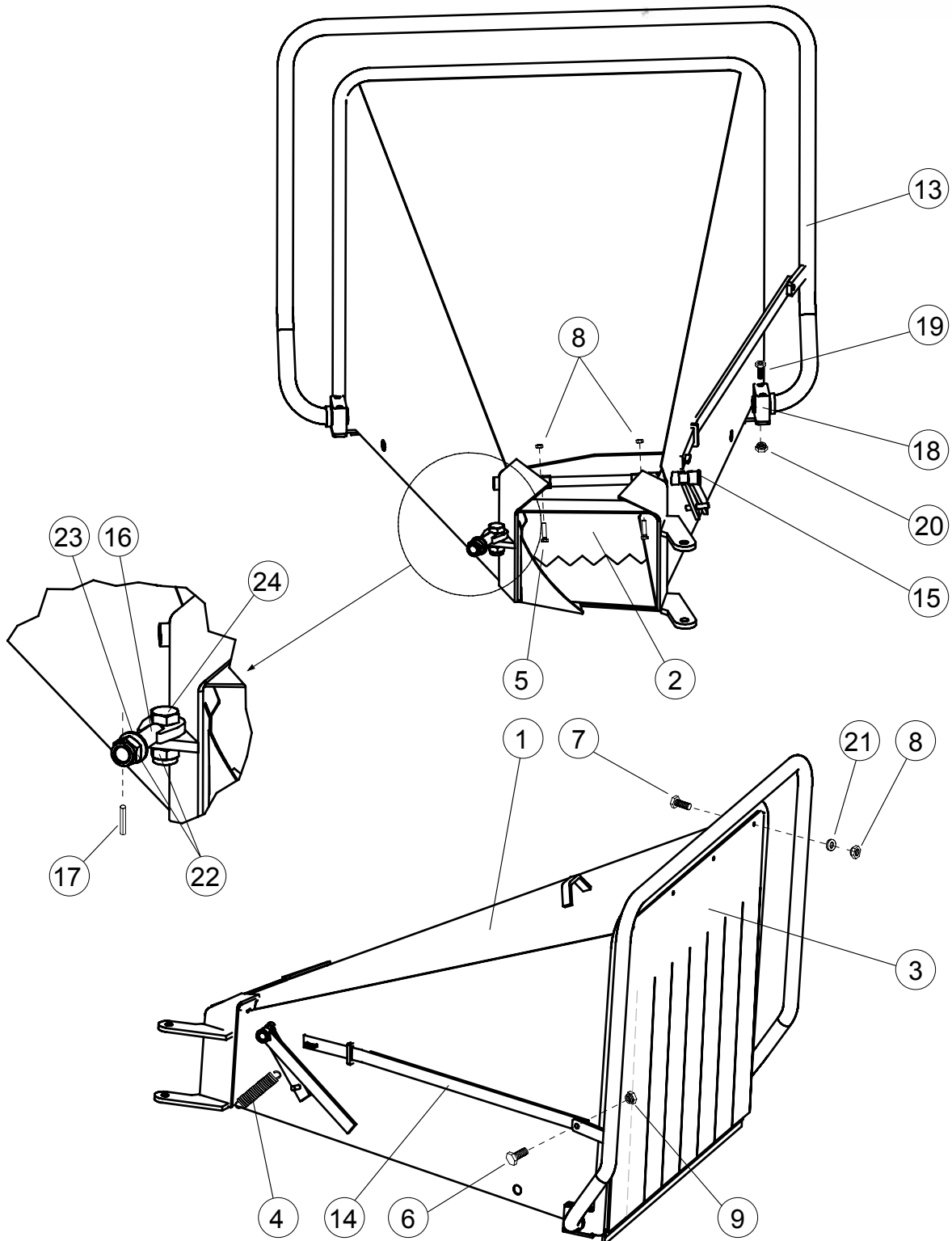
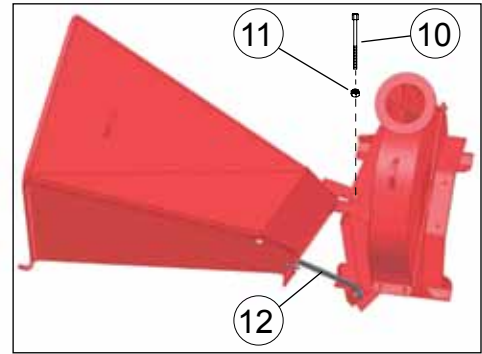
FARMI 180 + HF180 / F180

03517100 FEED CHUTE HF180

Part	Order no	Description	Remarks	Qty
1	43517000	Feed chute		1
2	43520790	Safety handle		1
3	43524400	Roll		1
4	43525910	Control rod		1
5	94612030	Tension spring		2
6	58220170	Screw	M6X50 DIN931 88ZN	2
7	43511990	Control valve cover		1
8	43512010	Attachement plate for valve		1
9	52117066	Lock nut	M6 DIN985 8ZN	7
10	52200029	Washer	M6 DIN126 58ZN	10
11	52060233	Screw	M10X30 DIN933 88ZN	1
12	52060225	Screw	M10X25 DIN933 88ZN	1
13	52200045	Washer	M10 DIN125 58ZN	4
14	52117108	Lock nut	M10 DIN985 8ZN	2
15	52070620	Screw	M8x16 DIN 7500 TAPTITE	4
16	52021220	Locking bolt	M8X70 DIN603 88ZN	3
17	54916095	Tube clamp	STAUFF 535 PP	4
18	52001609	Hexagonal socket head screw	M6x70 DIN912 88ZN	4
19	52060431	Screw	M6X40 DIN931 88ZN	1
20	52117124	Lock nut	M12 DIN985 8ZN	2
21	43525800	Valve lever		1
22	43524410	Transport support		1
23	52117940	Wing screw	M10X40 DIN316	1
24	52063340	Screw	M12X80 DIN933 88ZN	2
25	52200052	Washer	M12 DIN125 58ZN	4
26	52117082	Lock nut	M8 DIN985 8ZN	9
27	52200037	Washer	M8 DIN126 58ZN	9
28	52110046	Nut	M10 DIN934 8ZN	1
29	52021230	Locking bolt	M8X20 DIN603 88ZN	6
30	43525770	Reel holder		1
31	43525780	Reel holder shaft		1
32	56075330	Direction control valve	see hydraulics	1

FARMI 180 + HF180 / F180

03520010 FEED CHUTE F180



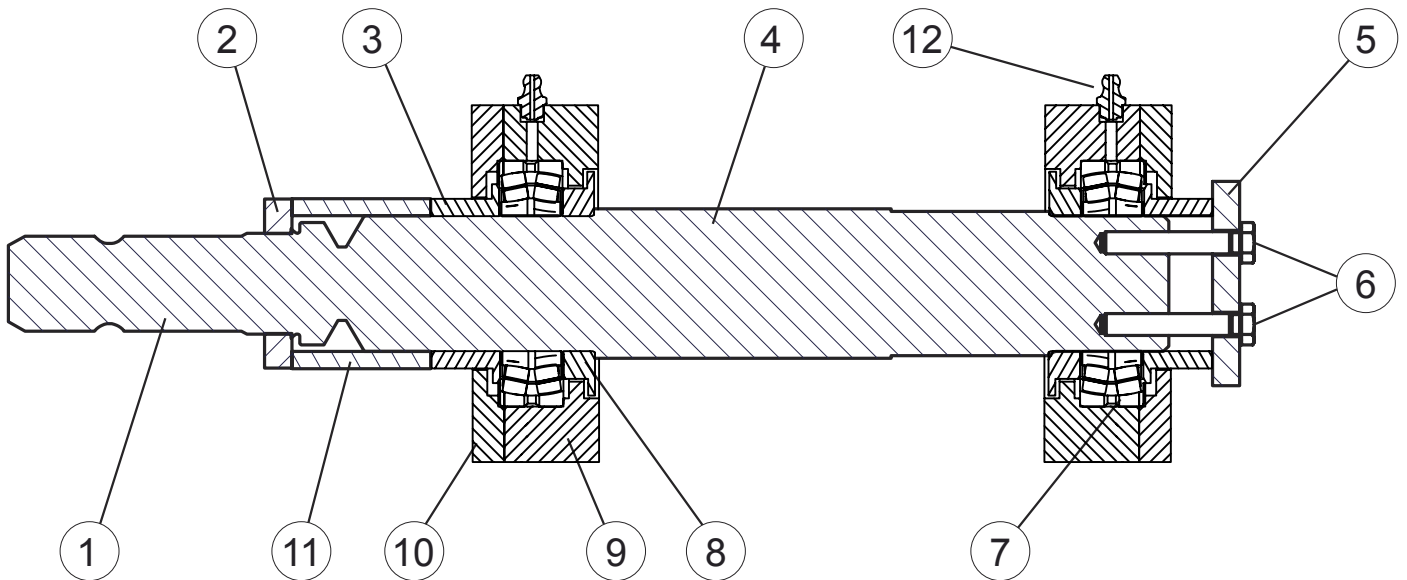
FARMI 180 + HF180 / F180

03520010 FEED CHUTE F180

Part	Order no	Description	Remarks	Qty
1	43520950	Feed chute		1
2	43521060	Safety clapper		1
3	43521090	Cover	PVC	1
4	94613098	Tension spring		1
5	52070406	Screw	M8x35 DIN931 88ZN	2
6	52060233	Screw	M10X30 DIN933 88ZN	1
7	52060191	Screw	M8X22 DIN933 88ZN	4
8	52117082	Lock nut	M8 DIN985 8ZN	6
9	52117108	Lock nut	M10 DIN985 8ZN	1
10	52063013	Screw	M16X240 DIN931 88ZN	1
11	52117165	Lock nut	M16 DIN985 8ZN	1
12	43517730	Support for transportation		1
13	43517630	Safety handle		1
14	43517650	Spring release lever		1
15	43517590	Axle		1
16	43802460	Locking bolt		1
17	52840071	Cotter pin	4X22 DIN1481	1
18	54916100	Tube clamp		2
19	52001609	Hexagonal socket head screw	M6x70 DIN912 88ZN	4
20	52117066	Lock nut	M6 DIN985 8ZN	4
21	52200235	Washer	M8 DIN9021 58ZN	4
22	52117207	Lock nut	M20 DIN985 8ZN	2
23	52200086	Washer	M20 DIN126 58ZN	1
24	52062221	Screw	M20X50 DIN933 88ZN	1

FARMI 180 + HF180 / F180

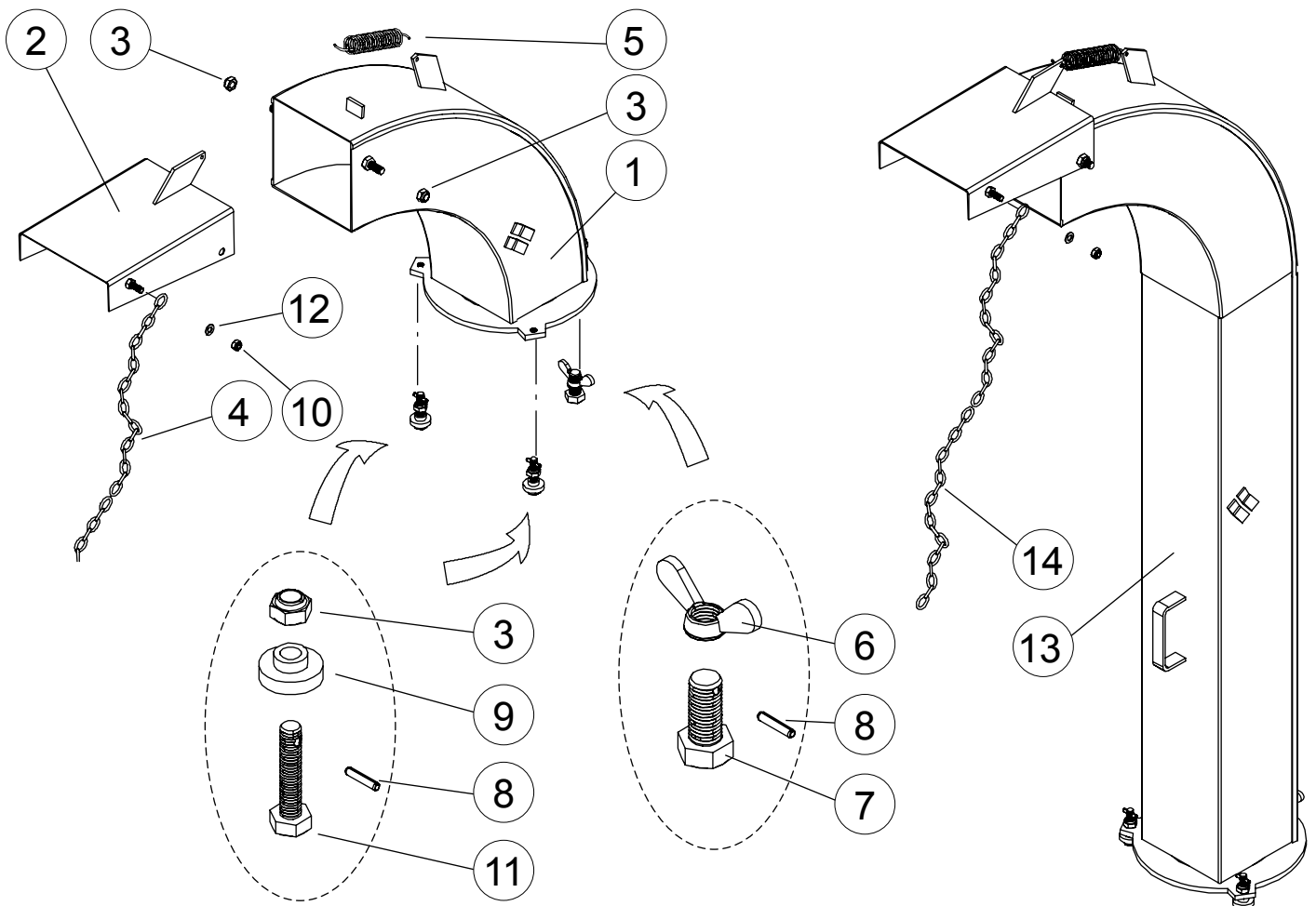
BEARING SYSTEM



Part	Order no	Description	Remarks	Qty
1	43510420	Splined shaft		1
2	43296360	Axle nut		1
3	43517270	Labyrinth sleeve		2
	43525230	Labyrinth sleeve	from serial number 3520050	2
4	43517220	Axle		1
5	43524060	Flange		1
6	52060563	Screw	M8X50 DIN931 88MU	2
7	54512345	Spherical roller bearing		2
8	43517250	Labyrinth ring	D82	2
	43525240	Labyrinth ring	from serial number 3520050	2
9	43517240	Bearing housing		2
	43525270	Bearing housing	from serial number 3520050	2
10	43517260	Cover of the bearing housing		1
	43525260	Cover of the bearing housing	from serial number 3520050	1
11	43517280	Bushing	D62X51	1
12	52401015	Grease nipple		2

FARMI 180 + HF180 / F180

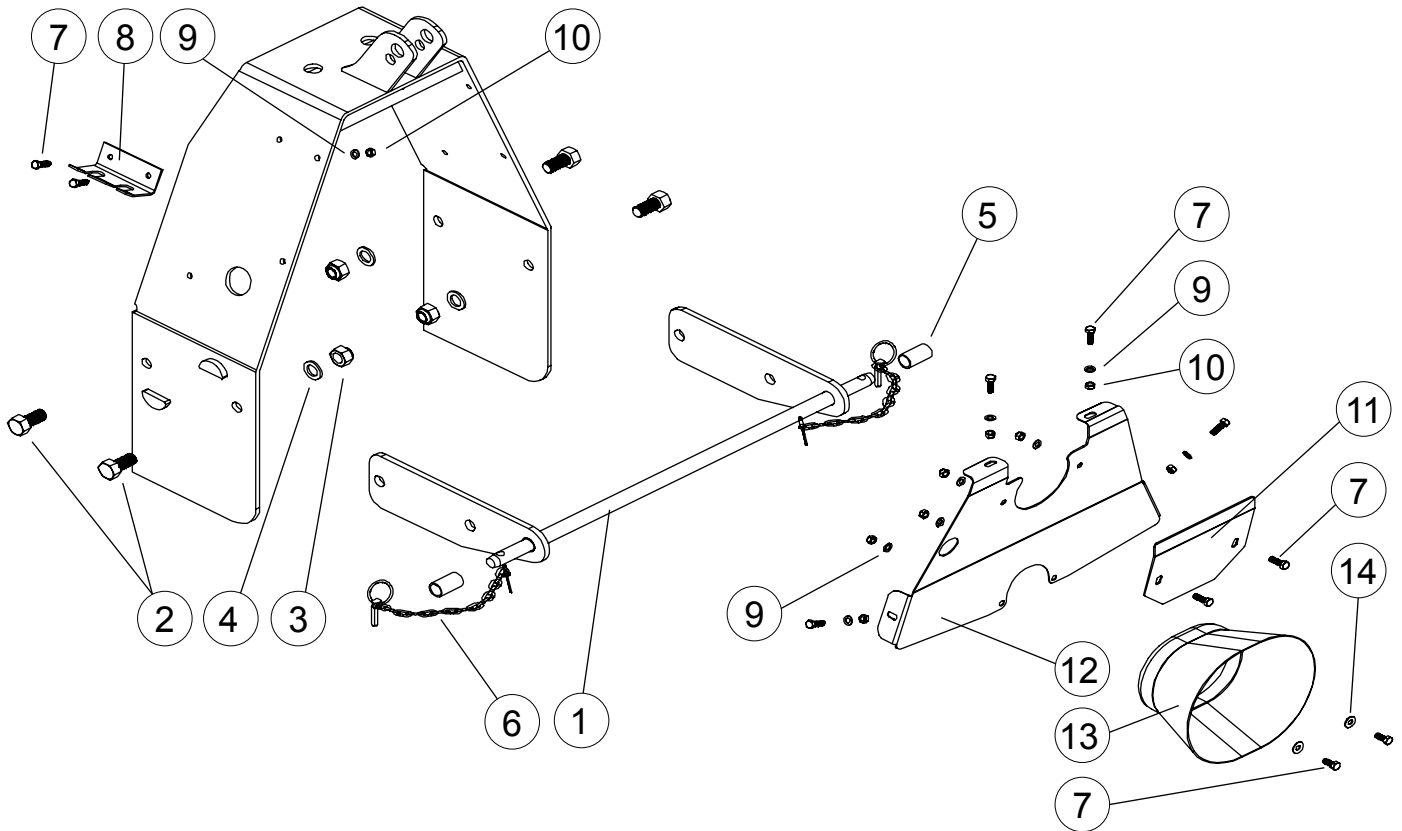
DISCHARGE PIPE



Part	Order no	Description	Remarks	Qty
	03515310	Short discharge pipe	complete	
	03515320	Long discharge pipe	complete	
1	43515120	Short discharge pipe		1
2	43510240	Lid		1
3	52117108	Lock nut	M10 DIN985 88ZN	4
4	03510300	Chain	600	1
5	94612082	Tension spring	DU26 DL2,6 L106	1
6	52119360	Butterfly nut		1
7	43511670	Safety screw	M16X40	1
8	52840295	Cotter pin	5X24 DIN1481	3
9	43340751	Reel		2
10	52117082	Lock nut	M8 DIN985 88ZN	1
11	43511650	Safety screw	M10X50	2
12	52200334	Washer	M8 DIN440 ZN	1
13	43515130	Long discharge pipe		1
14	03514590	Chain	1100	1

FARMI 180 + HF180 / F180

MOUNTING FRAME



Part	Order no	Description	Remarks	Qty
1	43343790	Draw bar		1
2	52062221	Screw	M20X50 DIN933 88ZN	4
3	52117207	Lock nut	M20 DIN985 8ZN	4
4	52211083	Spring washer	M20 DIN127 ZN	4
5	40293797	Bushing		2
6	03515010	Chain		2
7	52060175	Screw	M8X25 DIN933 88ZN	10
8	43482290	Hose fastener		1
9	52200037	Washer	M8 DIN126 58ZN	10
10	52117082	Lock nut	M8 DIN985 88ZN	10
11	43514240	Cover plate		1
12	43514210	Cover plate		1
13	43511780	Cover of the universal shaft		1
14	52200334	Washer	M8 DIN440 ZN	2

WARRANTY

Farmi Forest Oy grants a 12-month warranty on all of its products, covering material and manufacturing faults. The warranty comes into effect on the product's delivery date.

The manufacturer is not liable for damages caused by:

- misuse of the product
- alterations or repairs made without the manufacturer's permission
- insufficient maintenance
- non-original parts

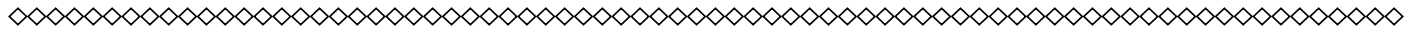
The warranty does not cover wearing parts.

Send faulty parts, carriage paid, to the manufacturer for inspection. Repairs will be conducted by Farmi Forest Oy or an authorized expert. The warranty is valid only if the bottom part of this page is filled in and returned to the manufacturer within 14 days of receipt of the product.

By returning the warranty certificate, you confirm that you have read and understood the instruction manual that came with the product.



Farmi Forest Corporation
Ahmolantie 6
FIN-74510 IISALMI
FINLAND



PRODUCT REGISTRATION FORM

Date of delivery: ____/____ 20____

Dealer:

Dealer's address:

Dealer's tel:

Product and type:

Serial number:



Return to the manufacturer

Date of delivery: ____/____ 20____

Dealer:

Dealer's address:

Dealer's tel:

Customer:

Customer's address:

Customer's tel:

E-mail:

Product and type:

Serial number:





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