



— SINCE 1962 —

# FIRMI FOREST

PIONEER IN SMART FORESTRY

**CHIPPER**

**CH18 PTO**

## OPERATION AND MAINTENANCE MANUAL

**PLEASE READ THE OPERATING AND MAINTENANCE  
INSTRUCTIONS BEFORE YOU OPERATE THE MACHINE**

FROM MACHINE: 300000344  
INSTRUCTION MANUAL  
A-EN-300000344-CS



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When ordering spare parts, please indicate the serial number of your machine can be found on the machine plate, spare parts order number, description and quantity required. Example. 300000344, 43620080, knife, 2 pcs.





## EC DECLARATION OF CONFORMITY

Original declaration of conformity

### Manufacturer:

Farmi Forest Corporation  
Kilpivirrantie 7, FIN-74120 IISALMI, Finland

### Person authorized to compile the technical documentation:

Name: Petri Pelkonen  
Address: Kilpivirrantie 7, FIN-74120 IISALMI, Finland

### Commercial name:

Farmi

### Machine denomination:

Farmi wood chipper with attachable Farmi feed hopper

### Machine type:

Wood chipper: CH18  
Hydraulic feeder: HF18

### 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, SFS-EN ISO 13857, 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, SFS-EN 13525

Iisalmi 8.2.2022

Petri Pelkonen

## INTRODUCTION

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

Although you have experience in using this kind of attachment, 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 attachment.



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

**CAUTION**

## WARNING SYMBOLS IN THIS MANUAL



**Imminent danger which could cause serious personal injury or death.**

**DANGER**



**Danger which could cause personal injury.**

**WARNING**



**Conditions or misuse that could damage equipment or machinery.  
Reminders, such as for performing checks or carrying out maintenance or repair procedures.**

**CAUTION**

## PRODUCT WARRANTY

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

## CUSTOMER FEEDBACK

We are happy to receive your opinions and suggestions for improvements <https://shop.farmiforest.fi/contactus>. All implemented suggestions for improvements will be rewarded.

## GENERAL SAFETY INSTRUCTIONS

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

**The instructions help with:**

1. using the attachment safely, appropriately, and effectively.
2. identifying, avoiding, and preventing potentially dangerous situations.

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



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

**WARNING**

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

In addition to the operation 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:**

**CAUTION**

1. Incorrect, negligent or inappropriate use of the product
2. Non-original spare parts
3. Normal wear and tear
4. Misuse caused by an untrained person's improper actions
5. Alterations made without the manufacturer's permission



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

**WARNING**

## STARTING



**Please read the operating instructions carefully before using, maintenance or repairing the attachment. Observe all operating and safety instructions whenever using the attachment.**

**WARNING**

1. Familiarize yourself thoroughly with the use, operation and controls of the attachment and its equipment before starting.
2. Familiarize yourself with the capacities and limitations of the attachment and its equipment.
3. Do not use the attachment unless you are completely familiar with its operation.
4. Be aware of the attachment's danger zones.
5. During operation, prevent bystanders from entering the danger zone. If necessary, work must be stopped.

6. Wear all necessary safety equipment; eye protection goggles, hearing protection or ear plugs, and use only close fitting gloves.
7. Never wear loose clothing around moving parts. Protect long hair!
8. Ensure that work is carried out according to the stipulations of applicable occupational health and safety legislation.
9. Before starting up or using the attachment, ensure that it cannot cause a risk to other people or property.
10. Perform a safety check on the attachment before every use. If you observe any faults or deficiencies, repair the attachment immediately.
11. Before operating the attachment, ensure that there are no foreign articles in it.
12. Place the attachment on a hard, level surface for operation. In the winter avoid working in slippery areas.
13. Before mounting and using the attachment, check the quick coupling, hydraulic couplings, and electric wire couplings for correct condition and attachment.
14. Never use a faulty or deficient attachment.

## TRANSPORT

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

## OPERATION



**DANGER**

**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 attachment.**



**WARNING**

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

1. Depending on the attachment's type, it will have diverse safety devices and protectors. These are meant to protect the attachment and its operator, and they must never be removed or altered. Never start up or use the attachment without all the safety devices and protectors in place.



2. Also check the universal joint's safety equipment and joints.
3. Never insert any body part into the attachment with the engine running.
4. If any faults arise that may jeopardize occupational safety, turn off the attachment.
5. During operation, the attachment'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.
6. Exercise extreme caution when hitching/unhitching the attachment from a tractor/trailer.
7. Look out for moving parts when the attachment is in operation.
8. Secure the attachment against unauthorized and accidental operation (e.g. moving when parked) whenever it is left unattended.
9. Never leave the attachment running unattended.
10. Avoid causing fast, stroke-like loading.
11. Never exceed the given operating values.
12. All safety and warning signs on and in the attachment must be legible and intact.
13. The attachment may not be operated by persons who are unwell or under the influence of drugs or alcohol.

## MAINTENANCE

1. The attachment may only be serviced and repaired by professionals.
2. Electrical and hydraulic faults may only be repaired by authorized professionals.
3. In cases requiring welding, contact the manufacturer.
4. When servicing the attachment, place it on a level surface and ensure that it cannot be moved.
5. Turn off the tractor engine, disconnect the hydraulic hoses and electrics before beginning service or maintenance actions.
6. Before any maintenance work, turn the main power switch of the tractor to OFF.
7. 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 tractor you are working on.
8. Before disconnecting the hydraulic hoses from tractor, ensure that the hydraulic system is depressurized.
9. Observe the service intervals and annual safety inspections.
10. All spare parts and equipment must fulfill the manufacturer's requirements. This can be guaranteed by using original parts.
11. Put all safety devices back into place immediately once servicing or maintenance is complete.



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

### WARNING

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

## OILS AND LUBRICATION

1. 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.
2. Never mix different liquids or oils.
3. Always follow the manufacturer's lubrication instructions.
4. 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 attachment for leaks. Do not use the attachment 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 joins 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. 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.
5. 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.
6. Check the main hydraulic parts daily, and always after a fault. Replace any damaged parts immediately.
7. If a component is damaged, clean it before repairing it. Do not use solvents when cleaning parts.
8. Do not attempt to carry out repairs that you are not fully familiar with.
9. 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.
10. 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 attachment is well supported.
11. Most hydraulic oils do not evaporate easily. Risk factors include hot oil, spills and oil mist (pressurized).
12. If oil gets into your eyes, rinse with plenty of water and contact a doctor.
13. Avoid prolonged or repeated oil contact with your skin.
14. If sprays or contact with the skin cannot be avoided, use protective gloves, goggles and clothing as necessary. Do not use oily clothing.
15. Avoid discharging hydraulic oil into the environment, as it can pollute waterways and the groundwater. If biodegradable oil is to be used, 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.
16. Store the oil in sealed containers provided by the manufacturer. Try to transfer the oil directly from its container into the tank.
17. 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.
18. Never store oil outdoors, as water could condense in it.
19. Always dispose of oil in a suitable container, never into the environment!

## GENERAL SAFETY INSTRUCTIONS FOR THE CHIPPER



### DANGER

1. Please make sure any attachment operator has the required personal protective equipment: safety helmet, protective goggles, cut resistant safety boots and required protective clothing.
2. The chipper must not be used without being mounted to a tractor.
3. For mounting or dismounting the chipper, always turn off the power source and apply the parking brake before entering the area between chipper and power source.
4. The chipper must be on a level, firm surface during operation.
5. Make sure all protective and safety devices of the chipper are installed. Never remove any protective device during operation.

6. As compared to the tractor, the chipper must not be lowered excessively.
7. It is not permitted to operate the chipper without feed unit or feed hopper.
8. The material to be chipped must never be fed into a crane fed chipper manually.
9. Indoor operation of the chipper is prohibited.
10. Always keep a safe distance to the discharge position of the chips.
11. Detach the chipper from the power source before performing any maintenance or repair works. Caution! As a sole exception, adjust the speed of the feed rollers of the hydraulic feed with the attachment running. For further instructions, please see the instruction manual of the feed unit concerned.
12. Do not remove, lock, disable or modify in any other way the stop lever of the feed unit.
13. 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.



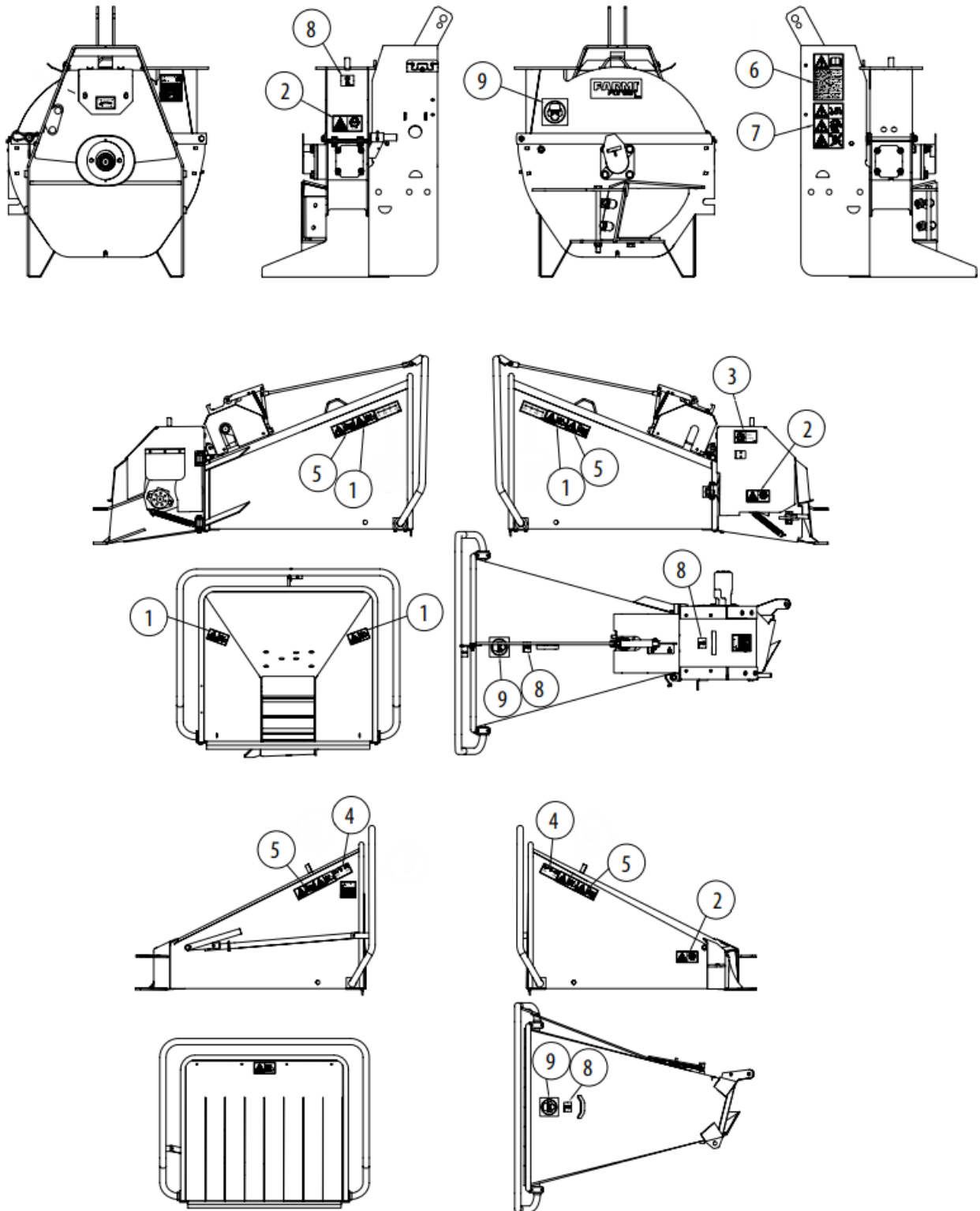
**Noise from the chipper exceeds 70 dBs in operation.  
Wear ear protection!**

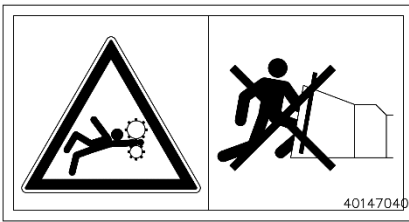
**WARNING**

1. People are not to ride on top of the chipper.
2. The chipper may not be used indoors.
3. The chipper must only be used to chip wood.
4. The chipper may not be used in nature reserves.
5. Avoid chipping in areas where noise and dust will disturb the surrounding environment.
6. The chipping of highly flammable materials is expressly prohibited.

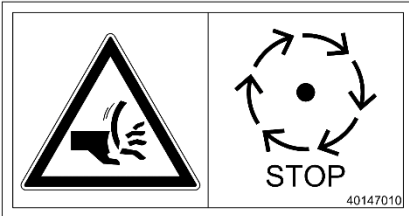
## STICKERS AND PLATES

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

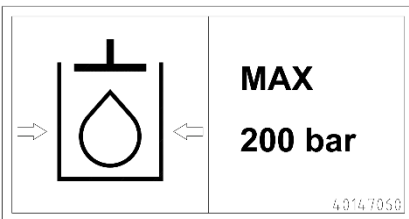




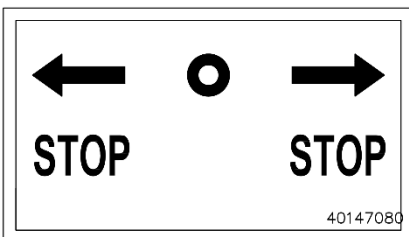
1. [40147040] 4 pcs  
Crushing hazard! Cutting hazard!  
Do not climb into the feed hopper



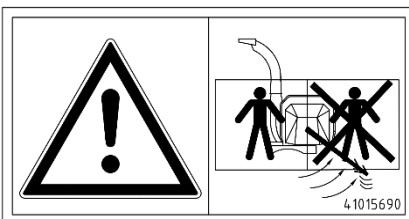
2. [40147010] 1 pc  
Cutting hazard!



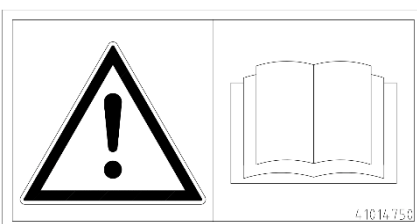
3. [40147060] 1 pc  
MAXIMUM Hydraulic pressure 200 bar



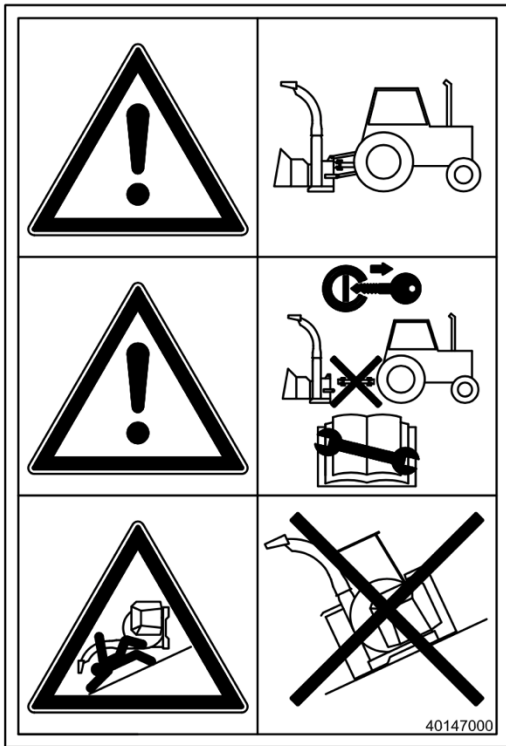
4. [40147080] 2 pcs  
Stop directions



5. [41015690] 2 pcs  
Note! Stand on the left side of feeder.



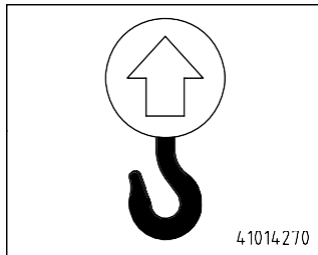
6. [41014750] 1 pc  
DANGER! Please read the instruction manuals of the attachment meticulously before you operate, maintain or repair the attachment. During attachment operation, please observe the operating and safety instructions.



7. [40147000] 1 pc  
**DANGER!**  
 Before operation, mount the chipper to the 3-point hitch of the tractor

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

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



8. [41014270] 1 pc  
 Lifting point sticker



9. [40142080] 1 pc  
**CAUTION!**  
 Wear personal protective equipment; eye protection, hearing protection, use only close-fitting gloves.

10. CH18 sticker

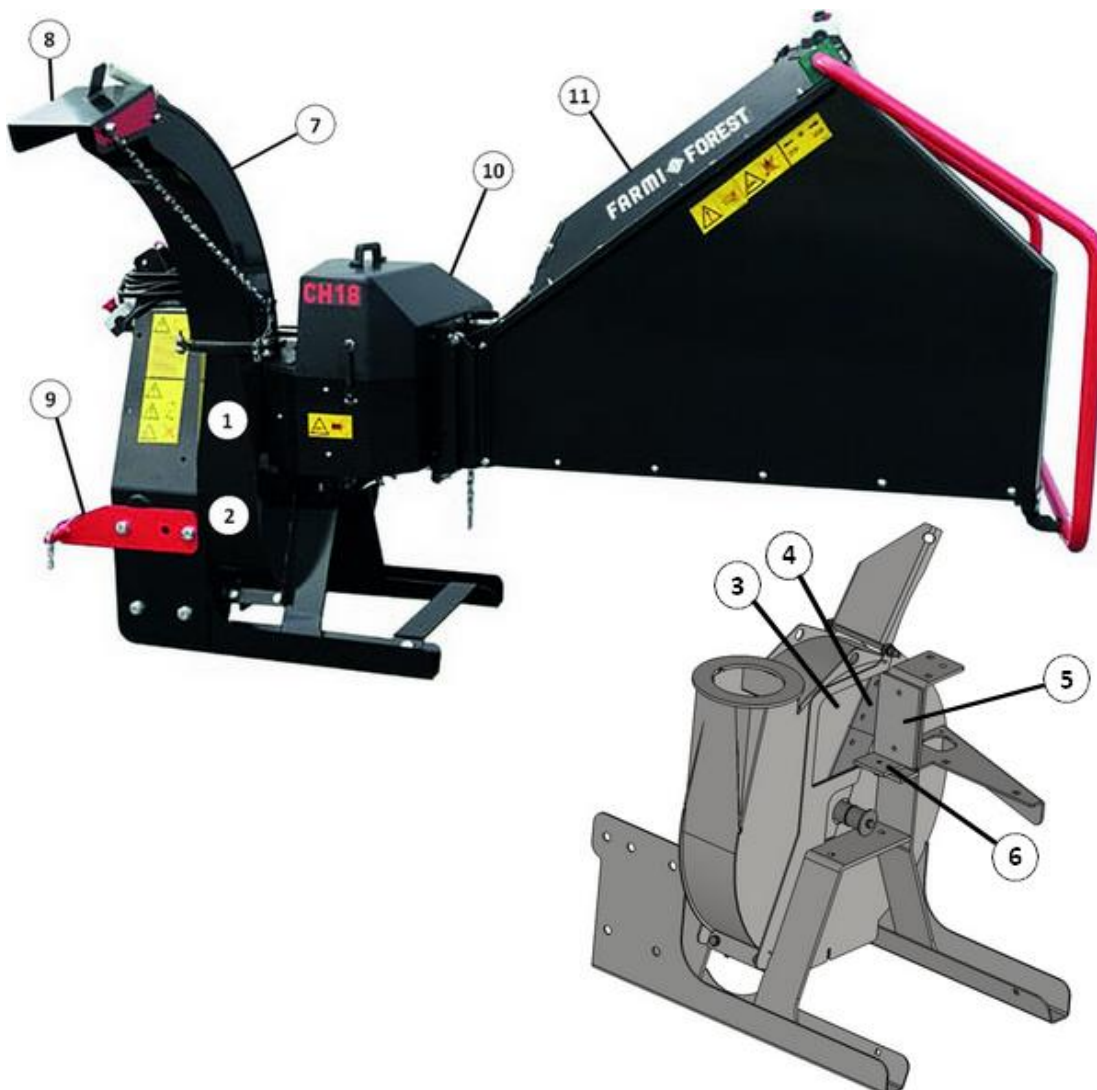
## CH18 – GENERAL DESCRIPTION AND INTENDED USE

FARMI CH18 is a disk chipper for tractor-mounted operation. The chipper can be used e.g. for the production of chips to be used for landscaping or for bio energy. The chipper can be used to chop trunks, twigs and tree tops as well as chipping waste and saw mill waste. The chipper can shred wood with a max. trunk diameter of 180 mm.

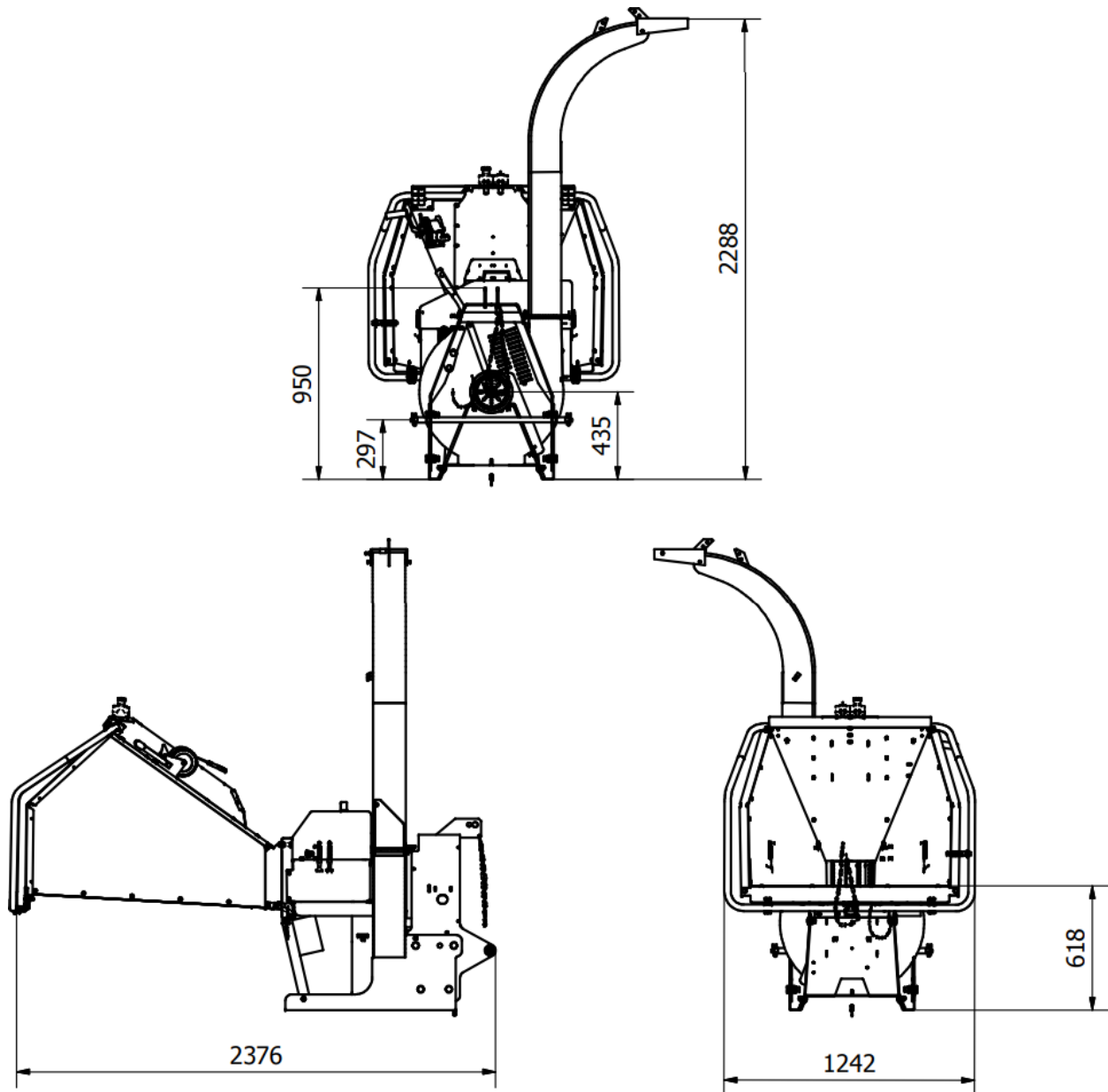
The FARMI CH18 chipper is mounted to the 3-point hitch of a tractor. It is driven by the PTO shaft using power of tractor. There are 4 cutting knives on the knife disc which cut the material. From the knives, the chips are discharged to the desired position using a discharge pipe. The material to be chipped is fed into the chipper manually.

### MAIN COMPONENTS OF THE CH18:

1. UPPER CHAMBER
2. LOWER CHAMBER
3. KNIFE DISK
4. KNIFE
5. VERTICAL ANVIL
6. HORIZONTAL ANVIL
7. DISCHARGE PIPE
8. DISCHARGE PIPE LID
9. 3-POINT MOUNTING FRAME
10. FEEDER DEVICE
11. FEED CHUTE



## DIMENSIONS CH18



TECHNICAL DATA	CH 18
Type	disc chipper
Output	< 6 m <sup>3</sup> /h
Chip length	10 mm
Max. wood diameter	180 mm
Oil demand (175 bar)	60 l/min
Rpm	540 or 1000 rpm
Number of knives	4 pcs
Power source	hydraulics
Chipper weight	405 kg
Disc diameter	670 mm
Disk weight	55 kg
Discharge pipe turning	to two sides
Feeder	hydraulic feeder



## LIFTING



**Lifting points for each attachment are marked with hook symbols.**

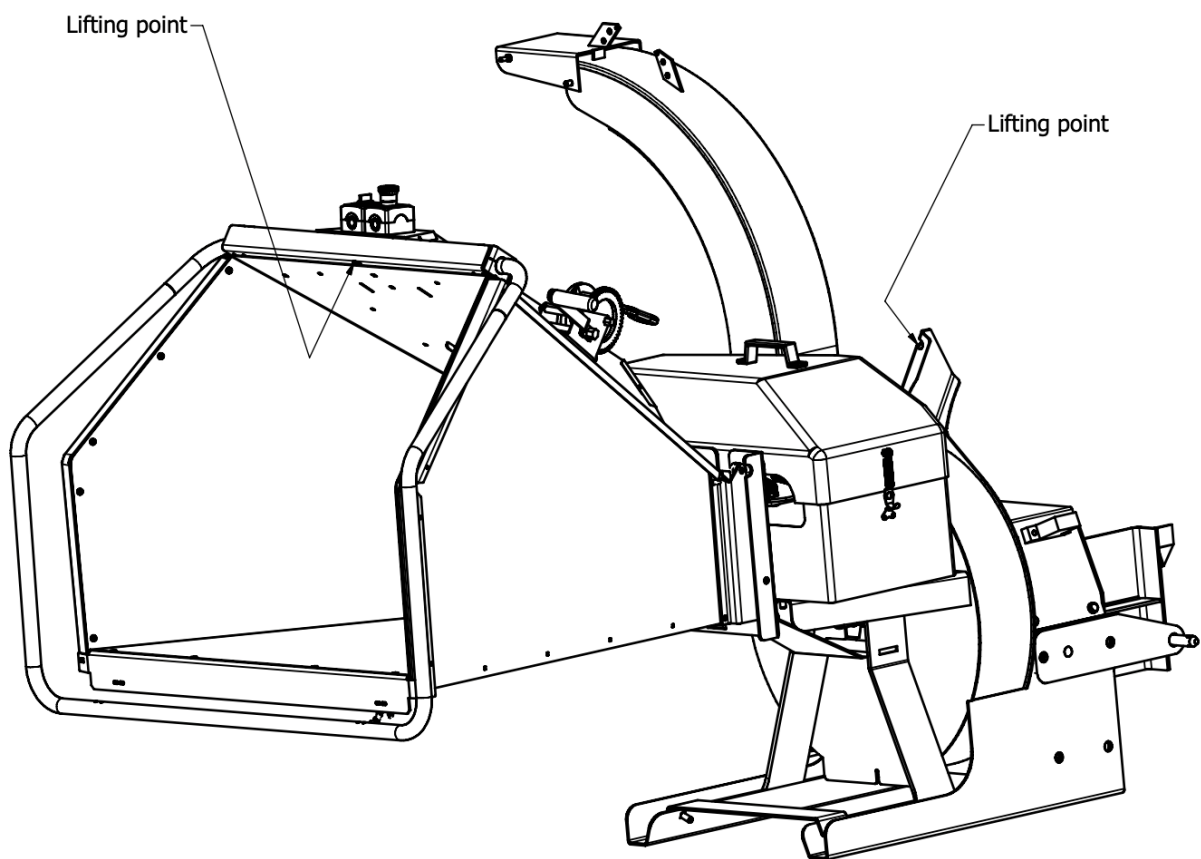
### DANGER

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.



## LOWERING THE FEED CHUTE INTO WORKING POSITION

Check, that winch hook is attached to chipper.



Lower the feed chute down using the winch

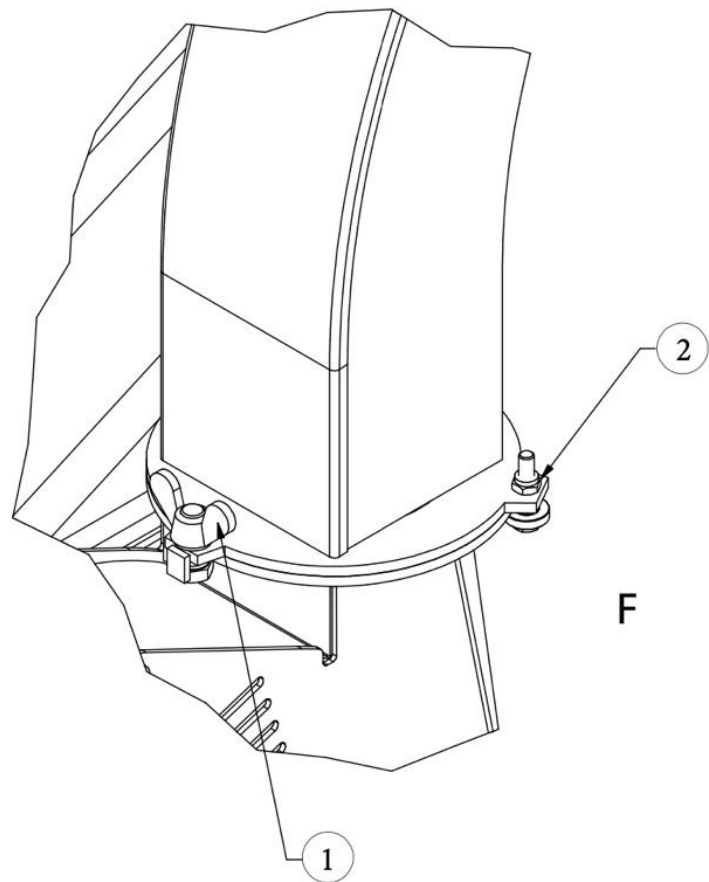
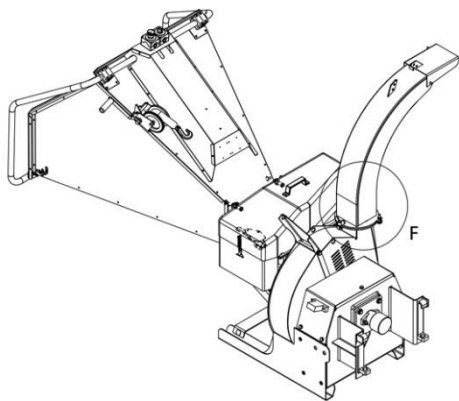


Lock the feed chute into working position with latch.



## TURNING THE DISCHARGE PIPE

1. Loosen the M16 wing nut and then turn discharge pipe into wanted position. Tighten the wing nut.
2. If guide screws and nuts are too tight, the discharge pipe does not turn easily. Open M10 nut and adjust M10x50 screw. When the discharge pipe turns easily then tighten the nut.



## ASSEMBLING THE ATTACHMENT

Attaching the attachment to the tractor is quick and easy, but it must be done carefully. The attachment is mounted to the tractor by using the CAT I or CAT II three-point linkage.

If the attachment is not locked to the tractor, it may detach from the tractor and cause a hazardous situation. The tractor must not be driven when the attachment has not been locked. To prevent hazardous situations, always follow the coupling procedure shown by the tractor's user manual. Also remember the safety instructions shown in this manual.



**DANGER**

### Crushing risk!

1. Make sure that an unlocked attachment will not move or fall over
2. Do not stay in the area between the attachment and the tractor
3. Mount the attachment only on level surface
4. Never move or lift an attachment that has not been locked.

## CONNECTING AND DISCONNECTING HYDRAULIC HOSES



**DANGER**

**Risk of movement of the attachment and ejection of hydraulic oil - Never connect or disconnect quick couplings or other hydraulic components while the control lever of the auxiliary hydraulics control lever is locked on or if the system is pressurized.**

Connecting or disconnecting the hydraulic couplings while the system is pressurized may lead to unintended movements of the attachment, or ejection of high-pressure fluid, which can cause serious injuries or burns. Follow safe stopping procedure before disconnecting hydraulics.

**NOTICE!**

Keep all fittings as clean as possible; use the protective caps on both the attachment and the tractor. Dirt, ice, etc. may make using the fittings significantly more difficult. Never leave the hoses hanging on the ground; place the couplings onto the holder on the attachment.

### Disconnecting hydraulic hoses:

Before disconnecting the fittings, lower the attachment to safe position on solid and level surface. Turn the control lever of the auxiliary hydraulics to its neutral position.

**NOTICE!**

When uncoupling the attachment, always disconnect the hydraulic couplings before unlocking the quick coupling plate, to prevent hose damage and any oil spills. Reinstall the protective caps on the fittings to prevent impurities from entering the hydraulic system.

### Releasing residual hydraulic pressure:

In case residual pressure is left in the hydraulic system of the attachment, it is often possible to disconnect the hydraulic couplings, but it may be difficult to connect them the next time. If the fittings will not connect, the residual pressure must be released by turning the auxiliary hydraulics control lever of the tractor, when the engine is turned off. To make sure that there will not be residual pressure in the hydraulic system of the attachment, shut down the tractor engine and move the auxiliary hydraulics control lever of the tractor back and forth before disconnecting the couplings.

## PRE-OPERATION INSPECTIONS

1. Make sure all protective and safety devices of the chipper are installed. Never remove any protective device during operation.
2. Before operation, please make sure there are no foreign objects in the feeder.
3. Before operation, please make sure there are no foreign objects in the chipper.
4. Make sure that the water drainage holes on the lower chamber are open and that the disk is not frozen up.
5. During operation, the chipper must stand on level and hard ground.
6. Direct the discharge pipe so that the thrown-out chips do not pose a risk to the operator of the chipper 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. **CAUTION!** Do not exceed the max. chipper speed of 1000 rpm.
- Now, the chipper is ready for operation.

## CHIPPING



**During chipping, please observe the following safety instructions:**

### DANGER

- 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 chute. Stand on the left side of the feed chute 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 chute or into another part of the chipper with the attachment running.
- Make sure that loose clothing or long hair cannot be caught by rotating attachment 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.



### WARNING

**Oil will heat when travelling through the hydraulic pump, hydraulic motor, and the valves. 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.**

## THE OPERATING SWITCH

Hydraulic feeder is operated by switch, which is located on the top of the feed chute next to emergency stop button.



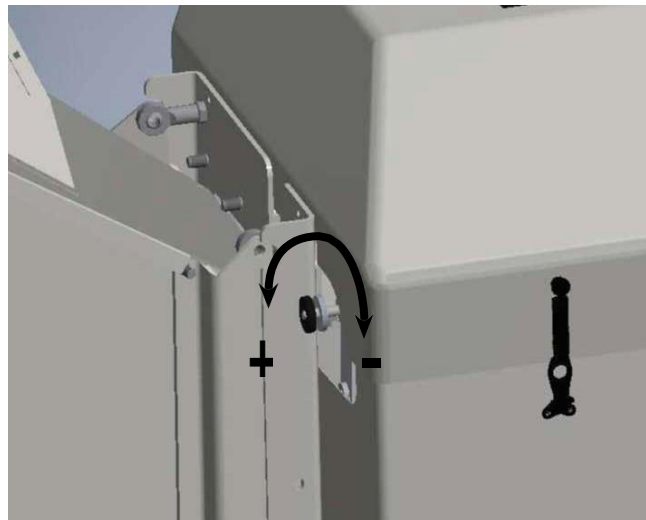
## SETTING THE FEEDER SPEED IF NEEDED



### WARNING

**Do not set the feeder speed when the feed rollers are revolving. This damages the valve. Stop the feed rollers for the duration of the setting and try the speed afterwards**

1. Using the flow control valve, set the revolution speed of the feed roller to correspond with the cutting speed of the blades. By turning the knob clockwise, the feed roller speed decreases but knife disc speed increases. By turning the knob counterclockwise, the feed roller speed increases and knife disc speed decreases.
2. The speed is suitable when the wood does not push against the knife disc or the feed roller does not slow down the feeding of wood.
3. Make sure that you are using clean oil in the hydraulic system. Dirt in the oil will damage valves and hydraulic motors

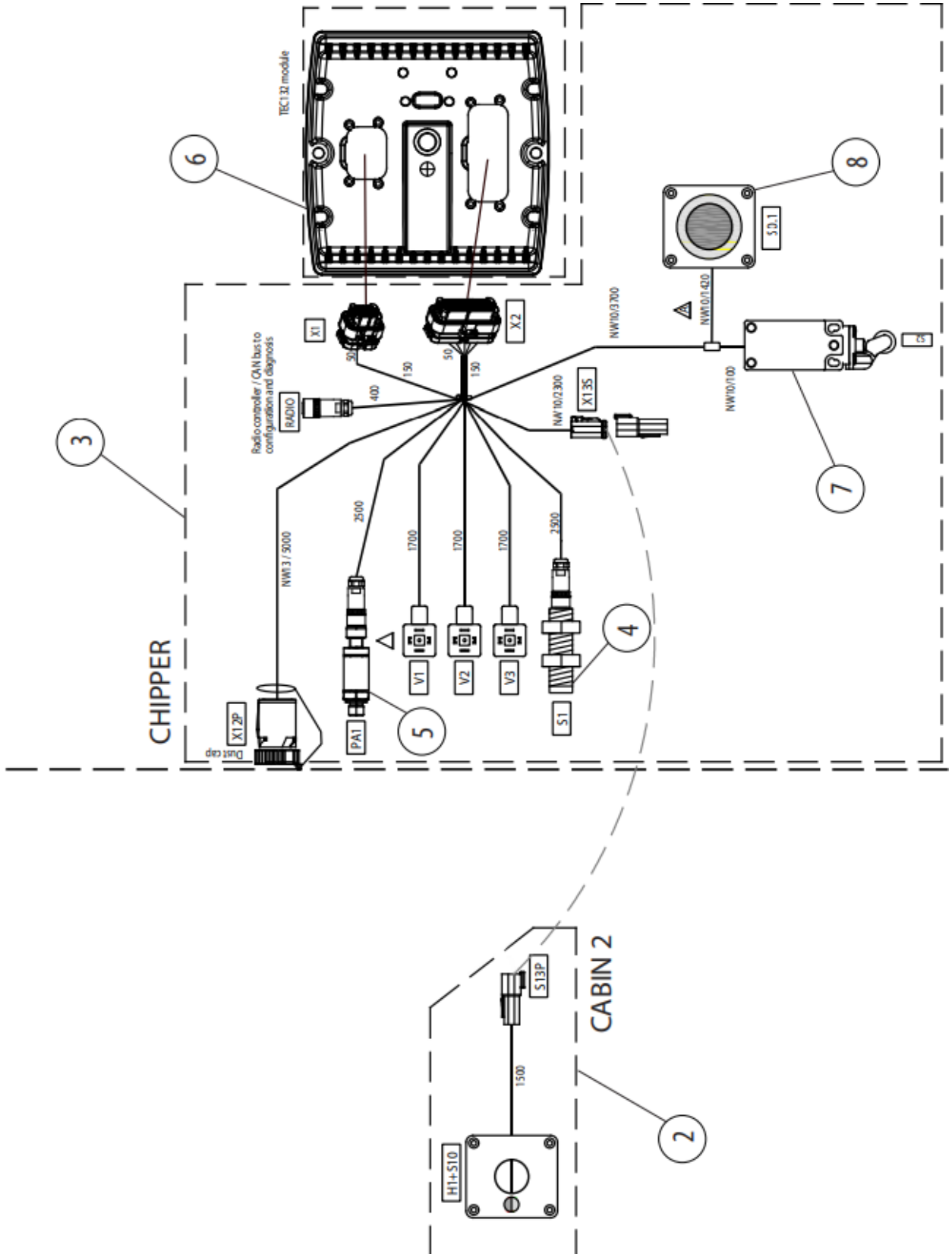


# SMART FEED BASIC OPERATING INSTRUCTIONS

## DESCRIPTION OF SMART FEED SYSTEM

Fami Smart Feed –control controls the rotating speed of chipper’s knife disc. Rotating speed varies during chipping, depending on load. Smart Feed controls feeding and reversing on the basis of rotating speed information. By controlling the feed rollers Smart Feed aims to keep knife disc rotating speed as constant as possible. Reduction of variation on rotating speed reduces fuel consumption of a tractor or a combustion engine. As a result of more constant rotating speed a more stable chip quality and more efficient discharging is achieved. Smart Feed –system works completely automatically, without users need to adjust the control system settings.

## SMART FEED BASIC M



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Part	Order no.	Product	Remarks	Qty
2	200004498	WIRING HARNESS, CABIN 2	With control box and selector switch	1
3	200004499	WIRING HARNESS, CHIPPER SIDE	Without sensors	1
4	200004408	PULSE SENSOR	No stress sensor	1
5	200004409	PRESSURE SENSOR		1
6	200004500	CONTROL MODULE		1
7	200004501	LIMIT SWITCH		1
8	200004415	EMERGENCY STOP PUSH BUTTON		2

## STARTING THE CHIPPER EQUIPPED WITH SMART FEED SYSTEM

1. Connect Smart Feed control's plug (1) to a 12 V socket of the power source (3 pole plug, DIN 9680).
2. Start the power source.
3. Press Emergency Stop push button (2) right to the bottom to make sure, that Smart Feed control is switched off. The signal light in control box (3) is out.
4. Start the chipper. Knife disc starts to rotate.
5. Increase the chipper speed to desirable level (540 – 1000 rpm). Choose the working speed so that you get the best possible torque out of the power source.
6. Switch on the Smart Feed control power by lifting Emergency Stop push button (2) up. The green signal light in control box (3) starts to blink.
7. Wait about 10 seconds. When the green signal light in control box is continuously on, the Smart Feed control is ready to use.

## CONTROLLING THE FEED BY SELECTOR SWITCH

- Control box (3) selector switch has two anti-locking spring loaded positions: when turning clockwise, the switch activates forward feeding and you can feed wood into feeder. When turning counterclockwise, the switch activates reverse feeding and feed rollers reverse the wood away from the feeder. Use reversing function if feeder blocks up because of too large wood or some other feeding disorder.
- Continuous forward feed activates when you turn the selector switch clockwise for one second and the green signal light in control box begins to blink. When continuous forward feed is on you can release the selector switch and start feed the material into the chipper. After you release the selector switch, the signal light is still on.
- When continuous forward feed is on you can use reverse feeding by turning the selector switch counterclockwise briefly. Continuous forward feed will switch off if you turn the selector switch counterclockwise more than two seconds.

## SMART FEED CONTROL FUNCTION DURING CHIPPING

When Smart Feed control detects knife disc rotation speed decreasing, it switches off the forward feed and activates feed reverse, which separates the wood of cutting knives. Forward feed continues automatically after reversing.

Forward feed switching off point depends on power and torque of the power source. The more powerful the power source is, the bigger dropping of the knife disc rotating speed Smart Feed allows. This means less pauses during the chipping. There will be pauses more often if the power source has less power.

Smart Feed control reverses automatically, if feeder blocks up. During chipping, the upper feed roller pressure is monitored by pressure sensor (4). If the feed roller gets stuck, Smart Feed control automatically briefly reverses the feed rollers. After reversing forward feed continues automatically. In most of the cases reversing releases any wood stuck in feeder. Reversing function repeats until stuck wood gets loose, or user switches the forward feeding off. In some cases, wood might get stuck into feeder so tight, that reversing function can't loose the wood automatically. In this case, stop the chipper and remove the blockage.

When the blockage is removed, start the chipper, activate forward feed and continue chipping.

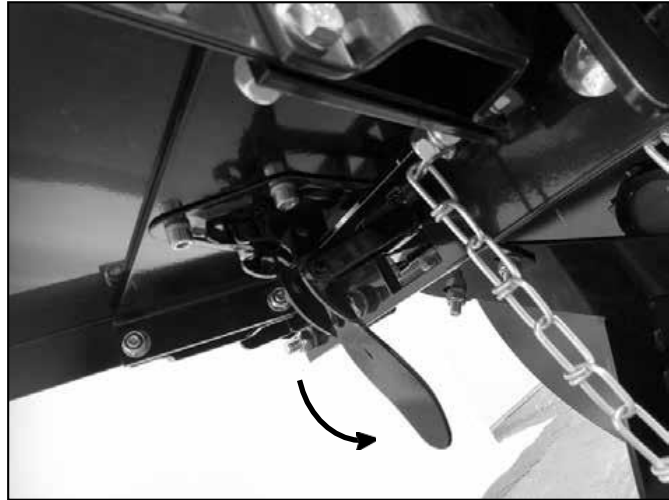


## EMPTYING THE CHIPPER AFTER USE

Let the chipper run empty by operating it for a short time.

## SWIVELING THE FEEDER TO THE TRANSPORT / STORAGING POSITION

1. Open the latch located under the feed chute.



2. Check, that winch hook is attached to the chipper



3. Lift the feed chute up against the limiter chain using the winch.



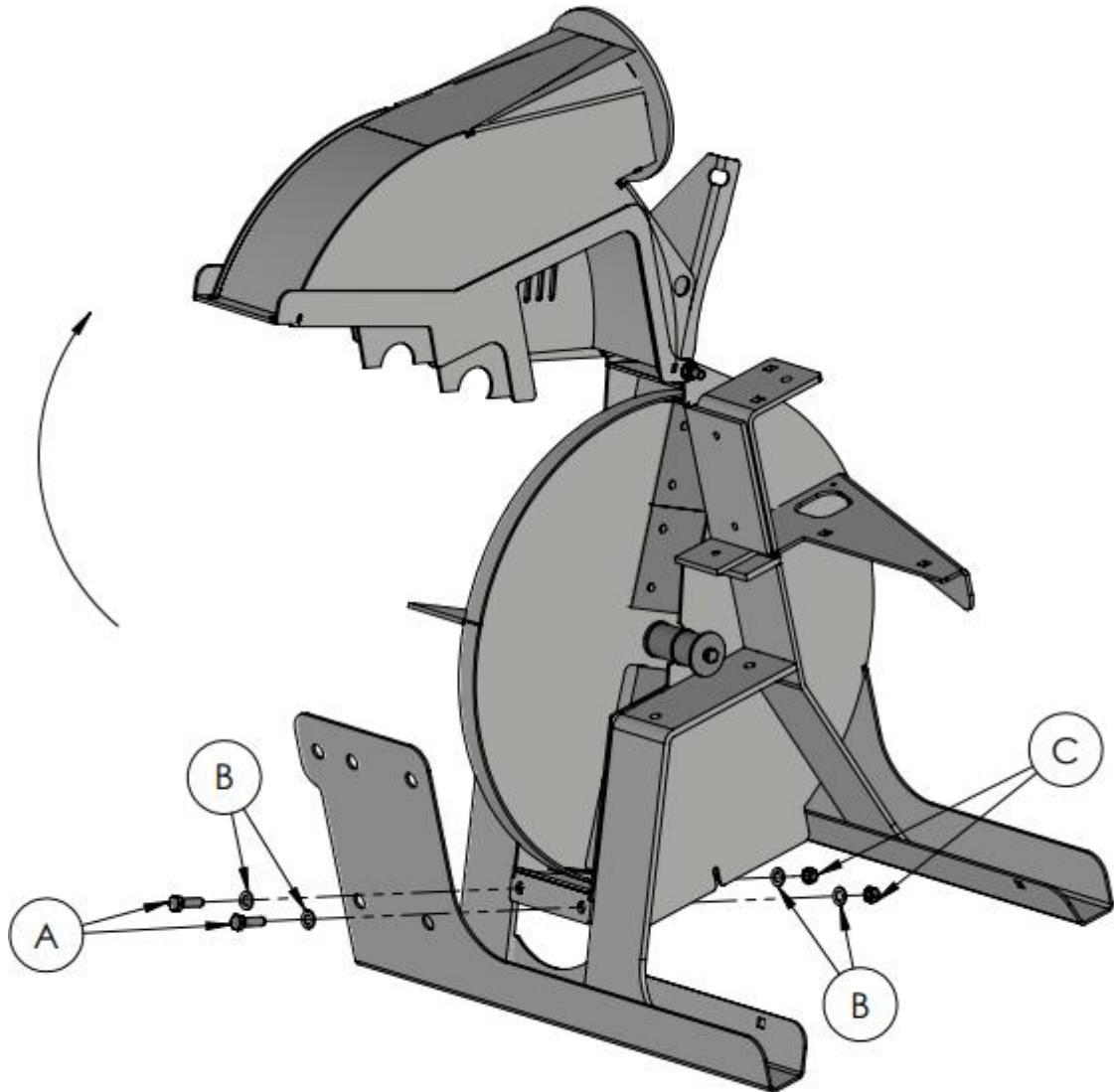
## STORAGE OF THE CHIPPER

Before detaching the chipper from the power source, 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.

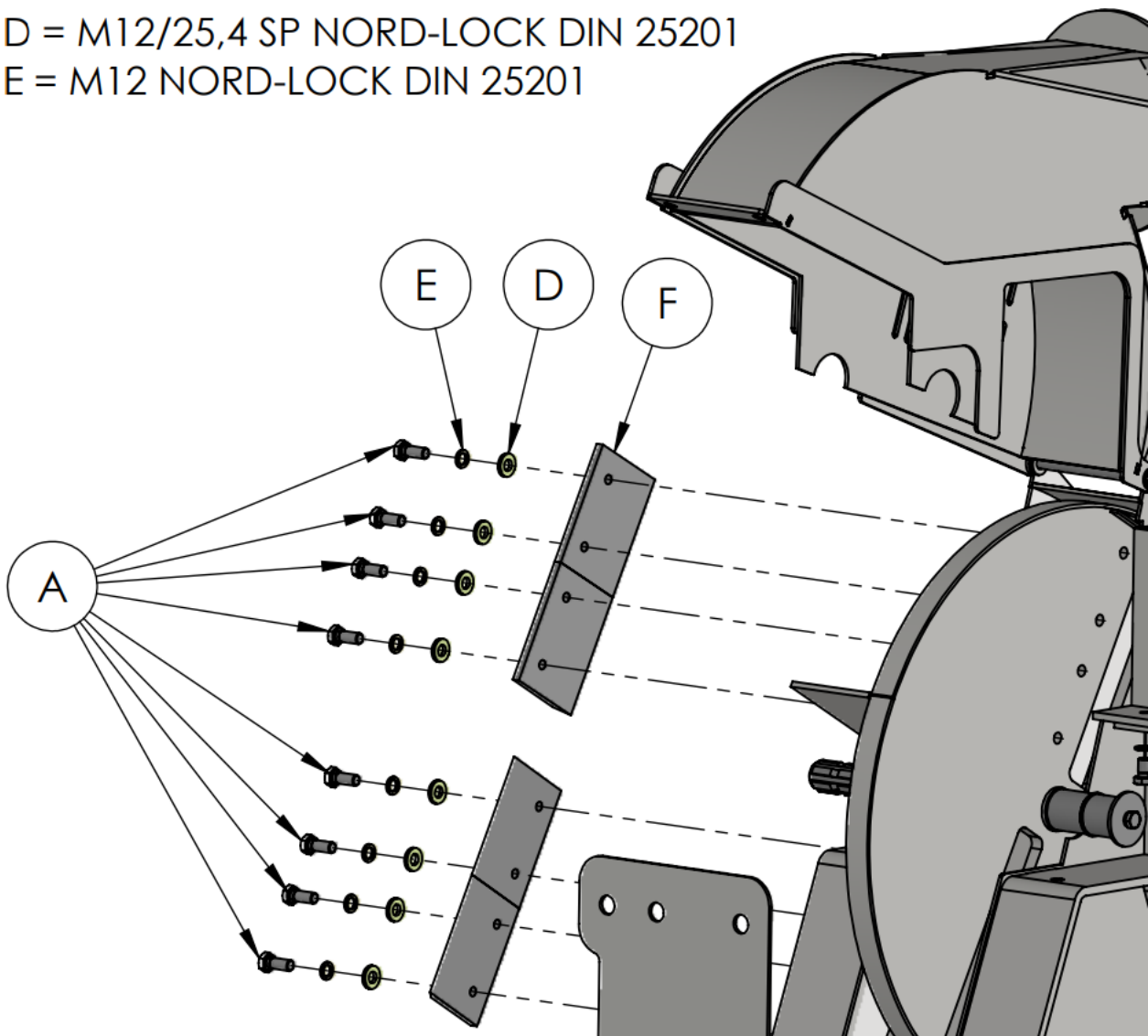
## KNIFE MAINTENANCE



A = M12x40 DIN 933  
B = M12 DIN 125  
C = M12 DIN 985

Remove screws A, washers B and lock nuts C. Open the upper housing toward the discharge pipe.

D = M12/25,4 SP NORD-LOCK DIN 25201  
E = M12 NORD-LOCK DIN 25201



Remove knife screws A (8 pcs) and lock washers E & D (4 pcs each). Remove knife F. Sharpen or replace the knife. Mount the knife with screws and lock washers. Sharpen knives in pairs to keep lengths the same and maintain disk balance.

## SHARPENING CUTTING KNIVES



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

### CAUTION

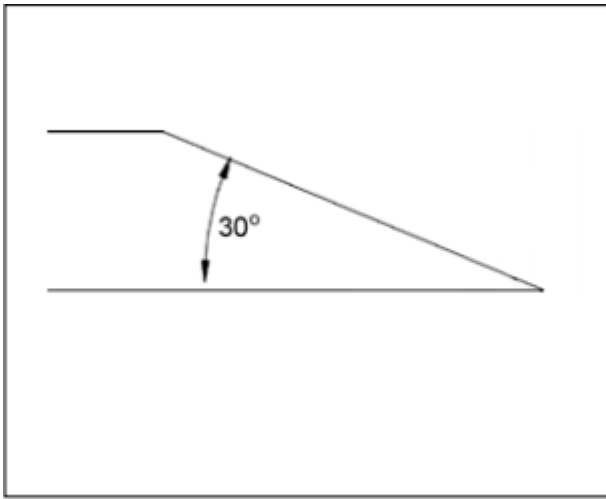
The knives need sharpening when:

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

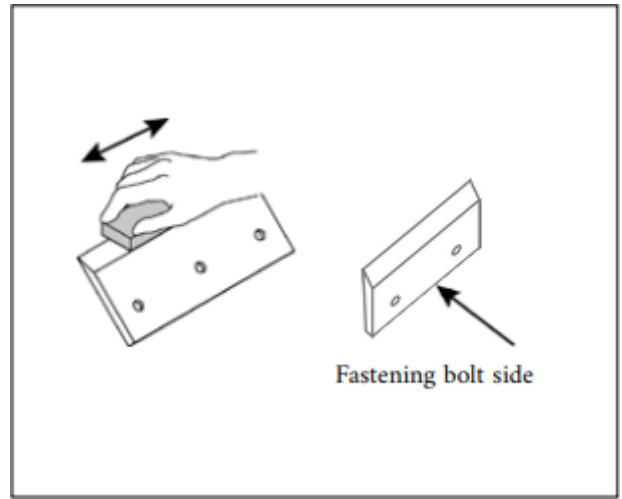
Normally, the knives can be sharpened several times without actually being removed (with, e.g., a sharpening stone or belt grinder).

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

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

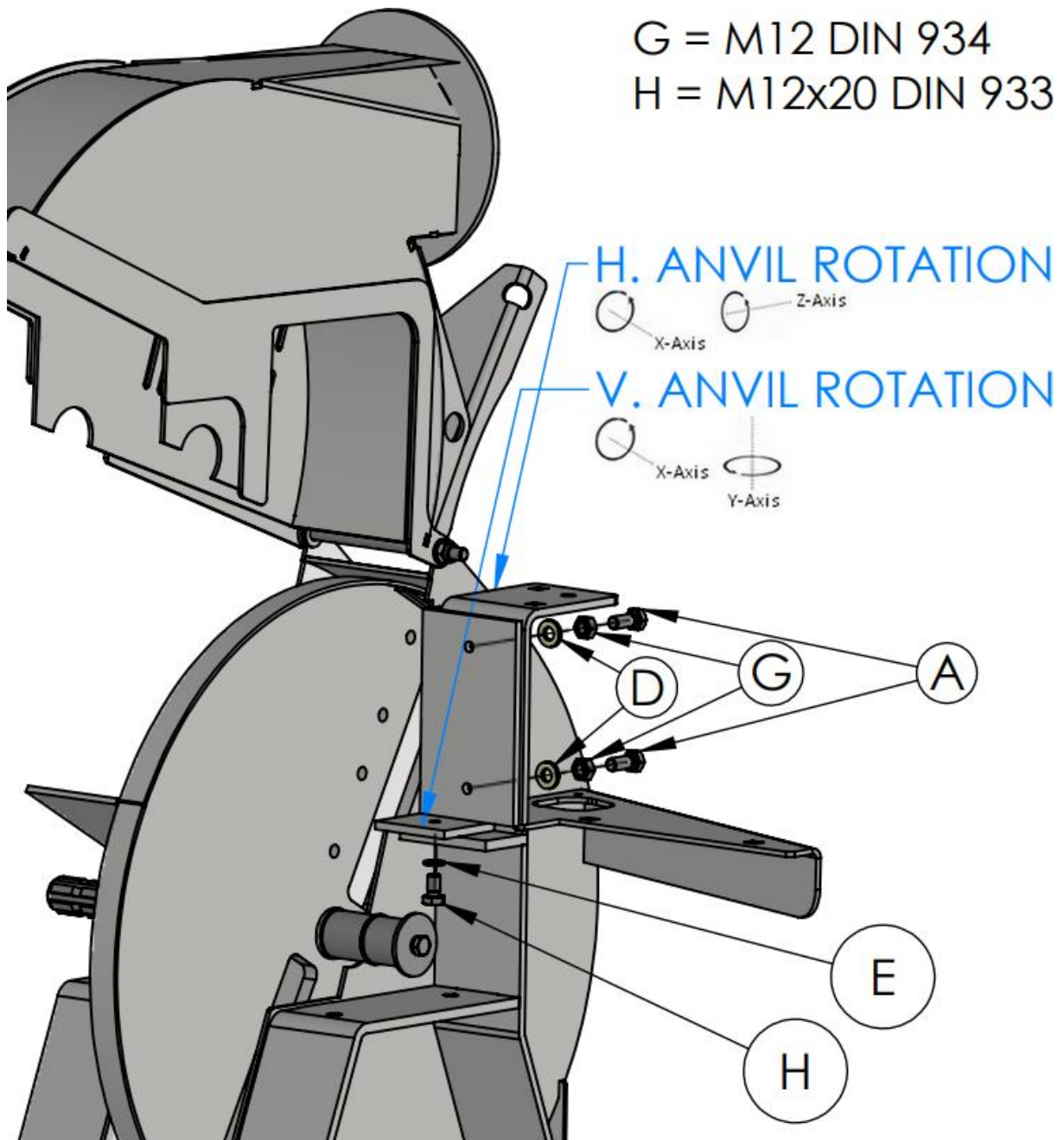


Final grinding of the knife

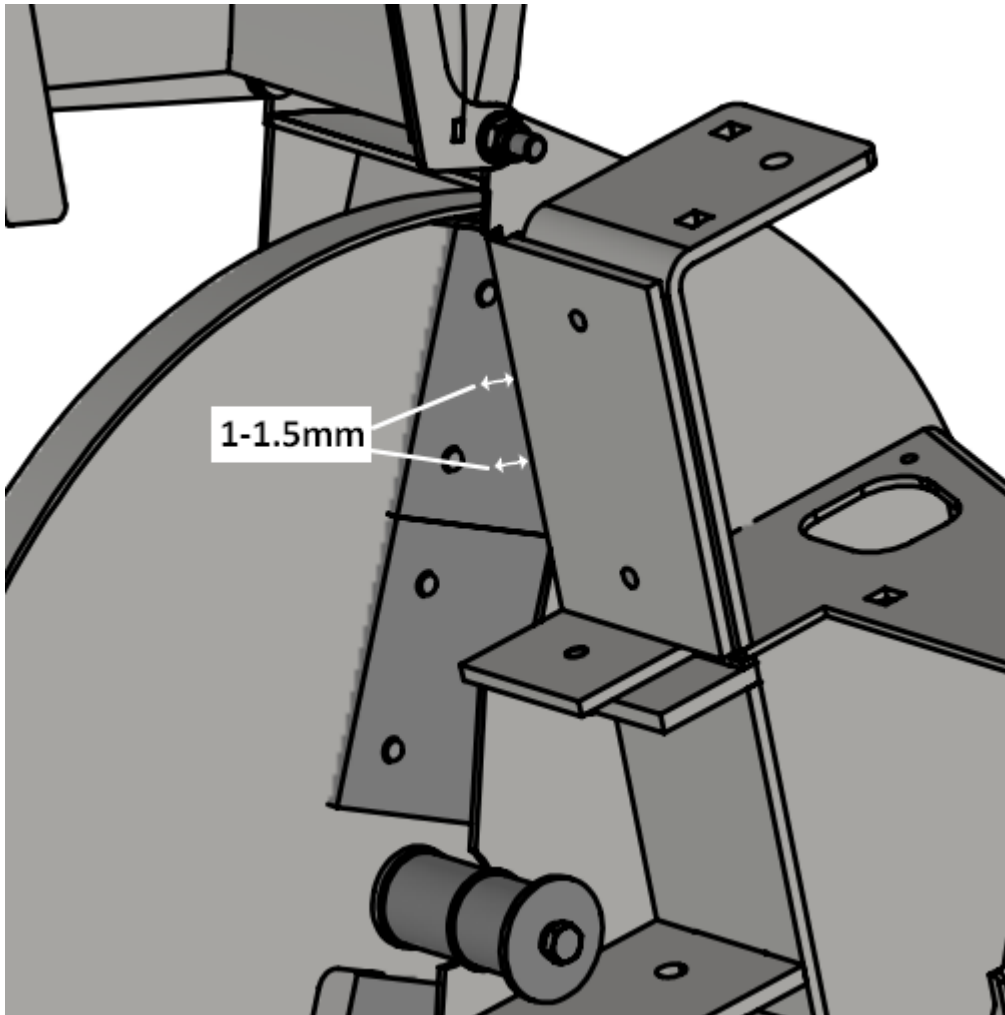


## ANVIL MAINTENANCE

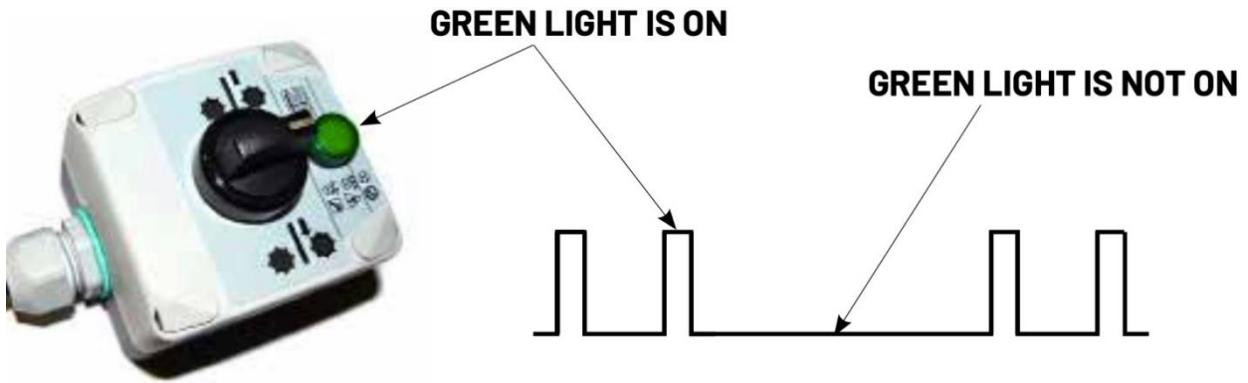
The anvils can be turned before being replaced with new ones.



Always keep sharp edge of the anvils as a counter blade towards cutting blades to ensure low fuel consumption and safety chipping operation.



## TROUBLESHOOTING – GREEN LIGHT



### GREEN INDICATOR LIGHT MEANINGS, SMART FEED CONTROL SYSTEM

#### NUMBER OF BLINKS

#### MEANING

Green indicator light is not on.

Control system is not on or is not receiving electricity.

2 Blinks – Sensor fault

Possible causes of fault:

- The system hasn't had time to learn the rotational speed.
- The rpm of the tractor has fluctuated during start-up.
- The rotor isn't spinning.
- The No Stress sensor does not recognize the tab on the knife disc.
- The No Stress sensor isn't receiving supply voltage.
- The wiring is faulty.



3 Blinks – Input fault

Possible causes of fault:

- Opposite directional buttons have been pressed on the remote controller (if assembled).
- The switch or the remote controller is faulty (if assembled).



4 Blinks – Output fault

Short circuit.

- The feed output of the valve connectors, switches or inductive sensor has short circuited with the ground or with the battery voltage.
- Check for e.g., damaged valve cap or wiring.



5 blinks – Another fault

Possible causes of fault:

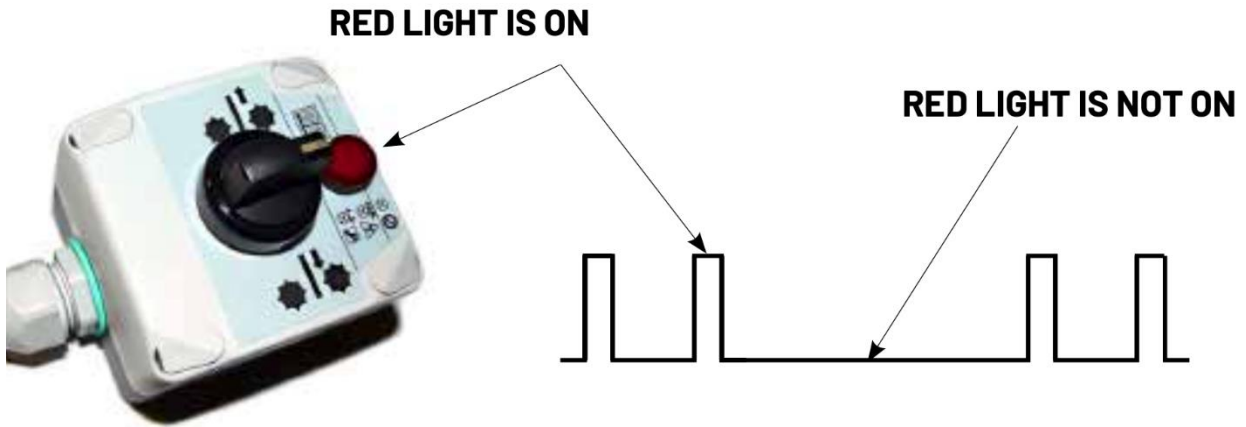
- The wiring has a bad connection to the pressure sensor.
- The pressure sensor is faulty.
- The 5V feed voltage line of the pressure sensor has short circuited.



Check wiring connections and pressure sensor.

- The emergency stop button has been pressed.
- While bypassing the No Stress function, the Feed forward switch was activated when the electricity was turned on, but the switch was released before 5 seconds had passed after turning on the electricity.

## TROUBLESHOOTING – RED LIGHT



### RED INDICATOR LIGHT MEANINGS, SMART FEED CONTROL SYSTEM

#### NUMBER OF BLINKS

#### MEANING

Red indicator light is not on.

No fault

1 Blink – Input fault



Fault in limit switch, wiring or control unit input

2 Blinks – Output fault



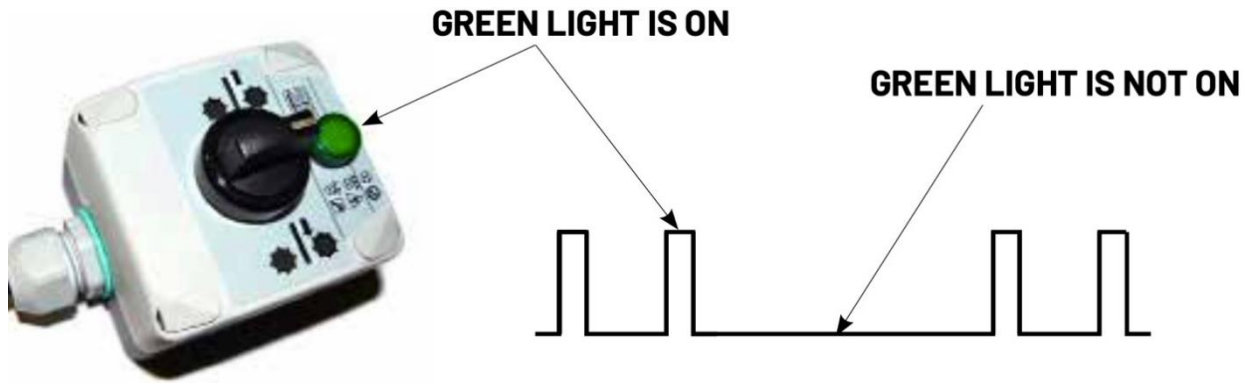
Fault in dump valve or feed valve, wiring or control unit output

3 Blinks – Another fault



Fault in wiring or control unit

## OTHER INDICATOR LIGHTS



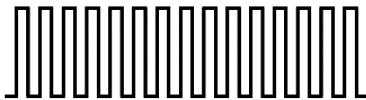
### GREEN INDICATOR LIGHT MEANINGS, SMART FEED CONTROL SYSTEM

#### NUMBER OF BLINKS

#### MEANING

The light is on continuously

Normal status



Continuous feed forward has been activated. Switch can be released.



Setting the normal speed of the knife disc



The light blinks once every second – The “No Stress” function has been bypassed.

LED light blinks rapidly in all following situations:

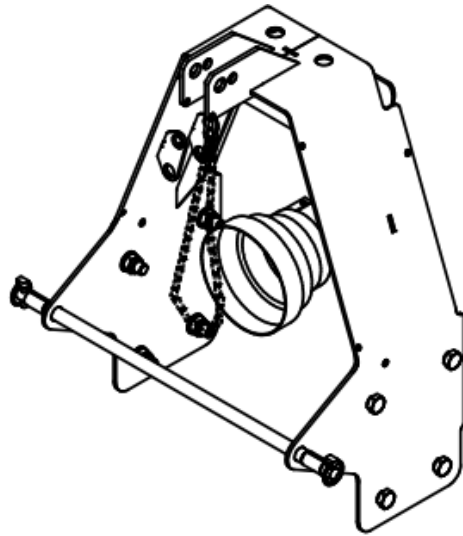
1. Continuous feed forward is activated. Switch can be released.
2. Limit switch is activated (Pressed down.)
3. Limit switch has been shortly activated during feed but feeding request is still active. (Operating switch)  
Feed forward or Feed reverse - position.

None of the situations described above does not require unplugging the electrics to continue.

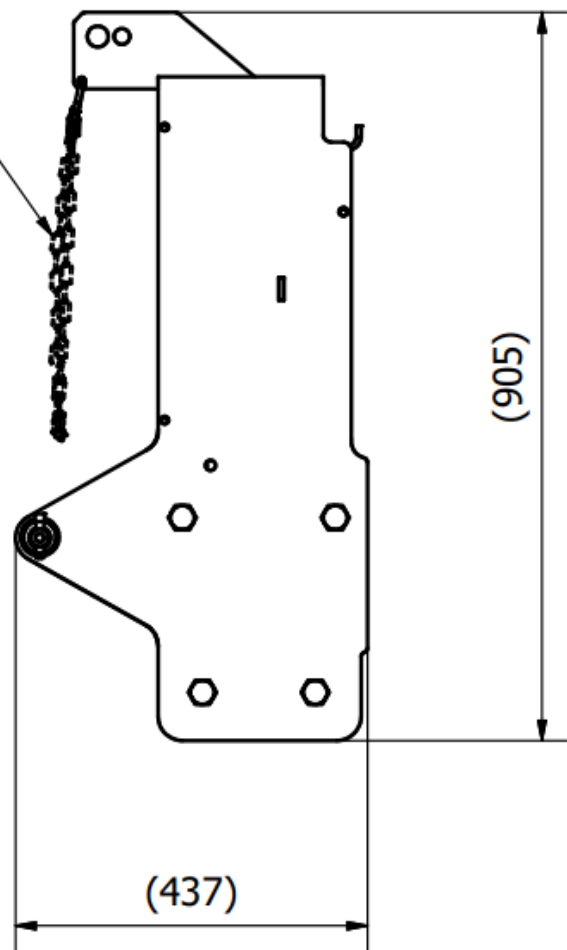


# SPARE PARTS

## MECHANICAL MODULE

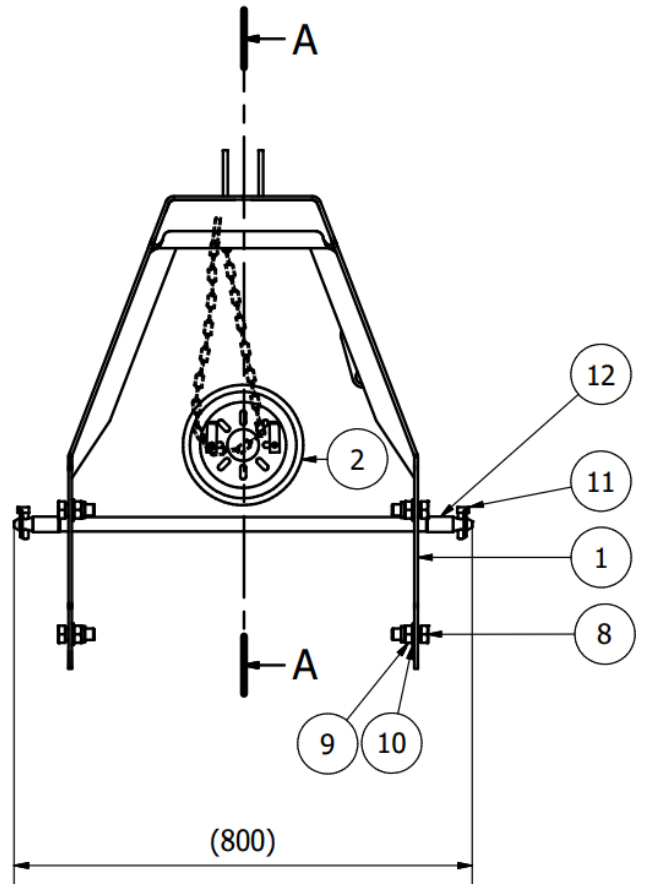
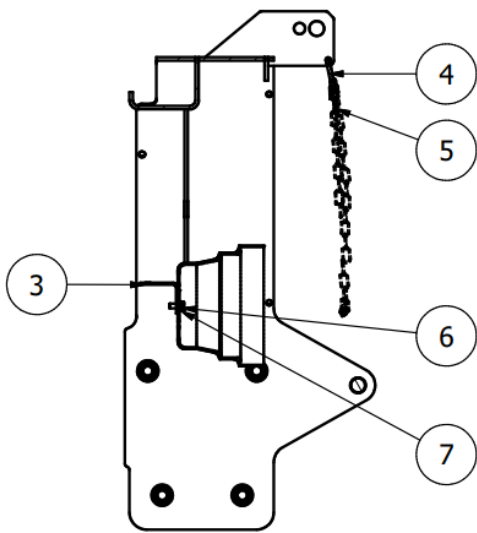


Chain: 19 knots/ 0,8m  
Ketju: 19 solmua/ 0,8m



MECHANICAL MODULE

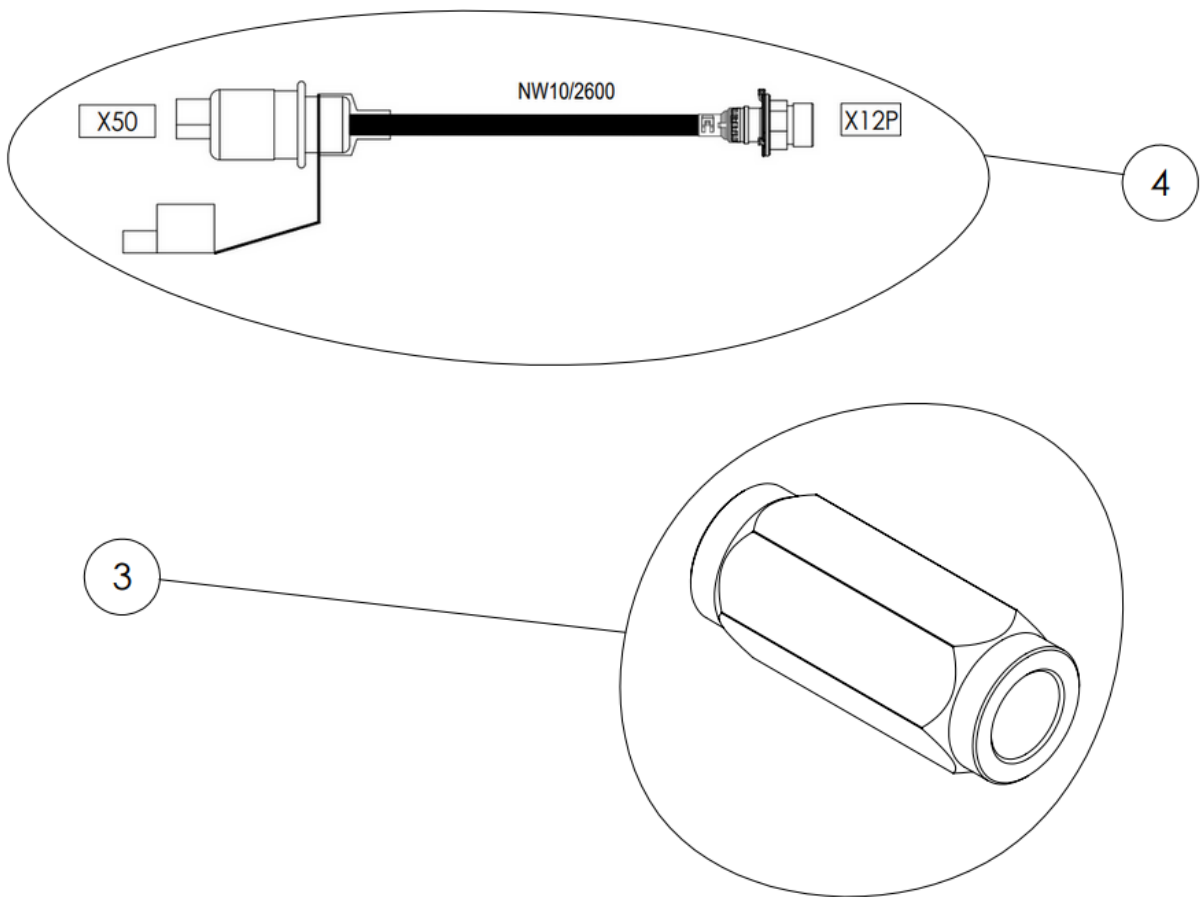
A-A ( 1 : 10 )



**MECHANICAL MODULE**

<b>Part</b>	<b>Order no.</b>	<b>Product</b>	<b>Qty</b>
1	200006185	DRAW BEAM, 437x800x905mm, CH18 PTO	1
2	43511780	SHELTER, 150x210x210mm	1
3	43620980	FASTENING FLAT BAR, 17X53X65MM, S=3MM	2
4	53804135	CARABINER, 6X60, DIN 5299C	1
5	54826227	KNOT CHAIN, D3, DIN 5686, ZINC, 0.8M	1
6		HEX SCREW, M8x20, 8.8ZN, DIN 933	2
7		WASHER, M8, 5.8ZN, DIN 126	2
8		HEX SCREW, M20x50, 8.8ZN, DIN 933	8
9		LOCK NUT, M20, 8.8ZN, DIN 985	8
10		WASHER, M20, 5.8ZN, DIN 126	8
11		LYNCH PIN, 10x45, ZN, DIN 11023	2
12	40293797	SLEEVE, D27/22-45mm	2

## HYDRAULIC/ELECTRICAL MODULE



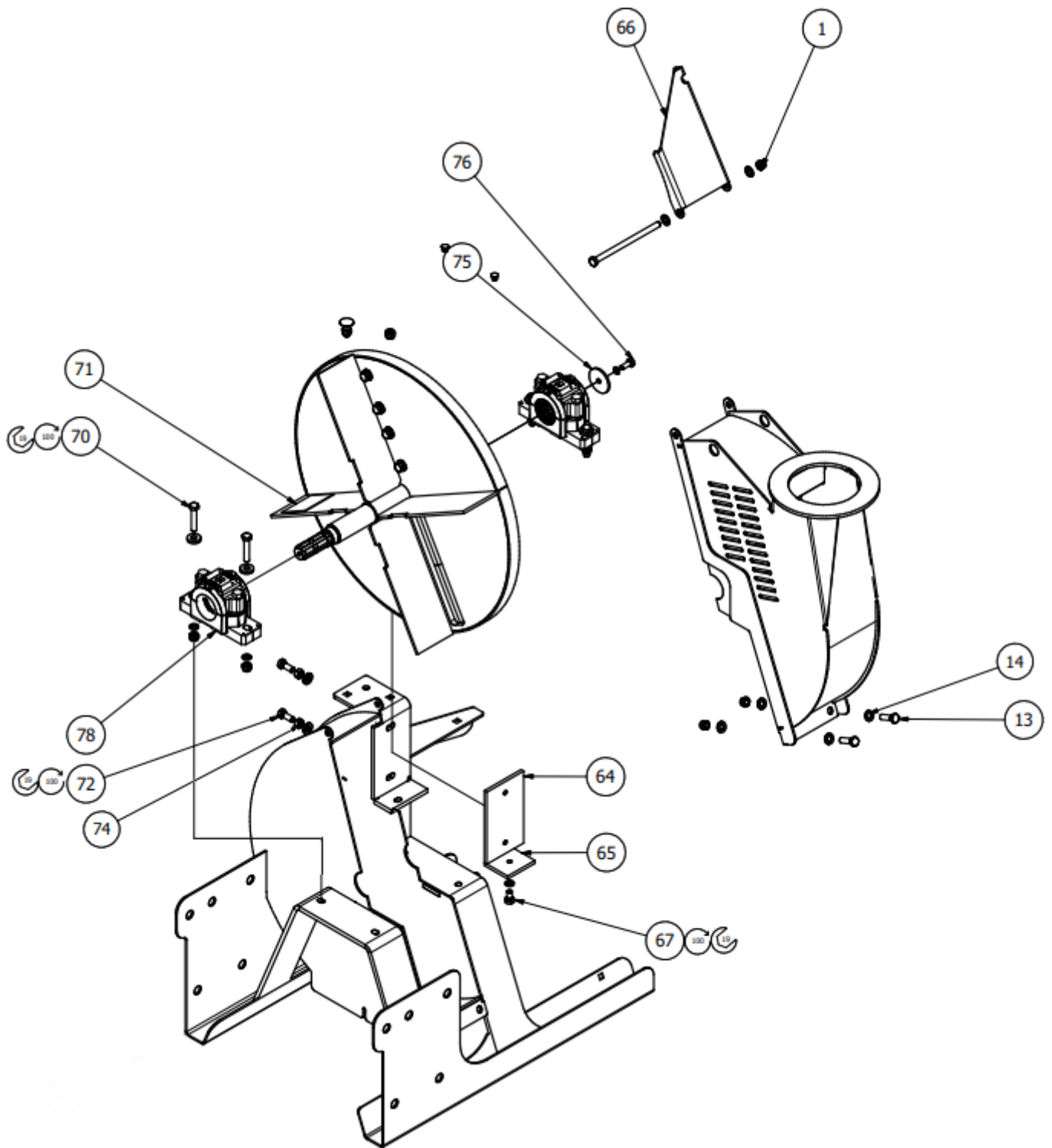
1 HOSE ASSEMBLY, QUICK COUPLING MALE, CH18 PTO

2 HOSE ASSEMBLY, ID3/8"(EN857 2SC), 3/8"BSP(internal, 90deg)- 3/8"BSP(internal, straight), L=0,65m

**HYDRAULIC/ELECTRICAL MODULE**

<b>Part</b>	<b>Order no.</b>	<b>Product</b>	<b>Qty</b>
1	200006127	HOSE ASSEMBLY, QUICK COUPLING MALE, CH18 PTO	2
2	200006026	HOSE ASSEMBLY, ID3/8"(EN857 2SC), 3/8"BSP(internal, 90deg)- 3/8"BSP(internal, straight), L=0,65m	2
3	56013246	NON-RETURN VALVE, HSB 13-CV08	1
4	200006121	WIRING HARNESS, SMART FEED BASIC M, CABIN WIRING	1

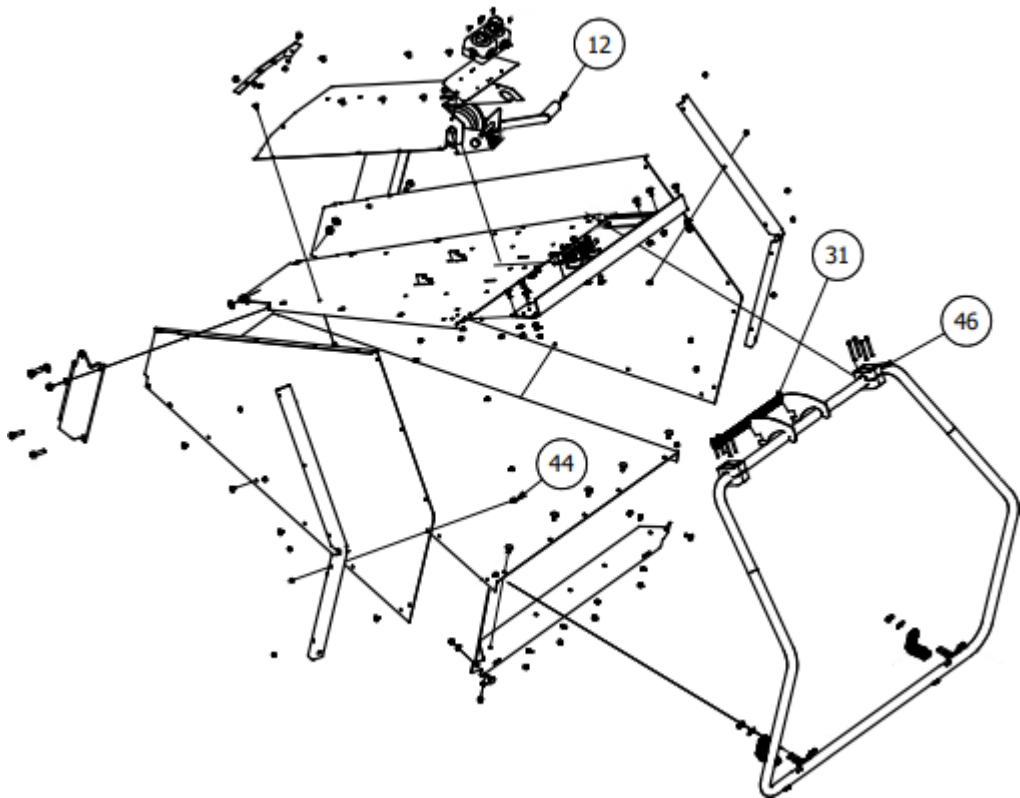
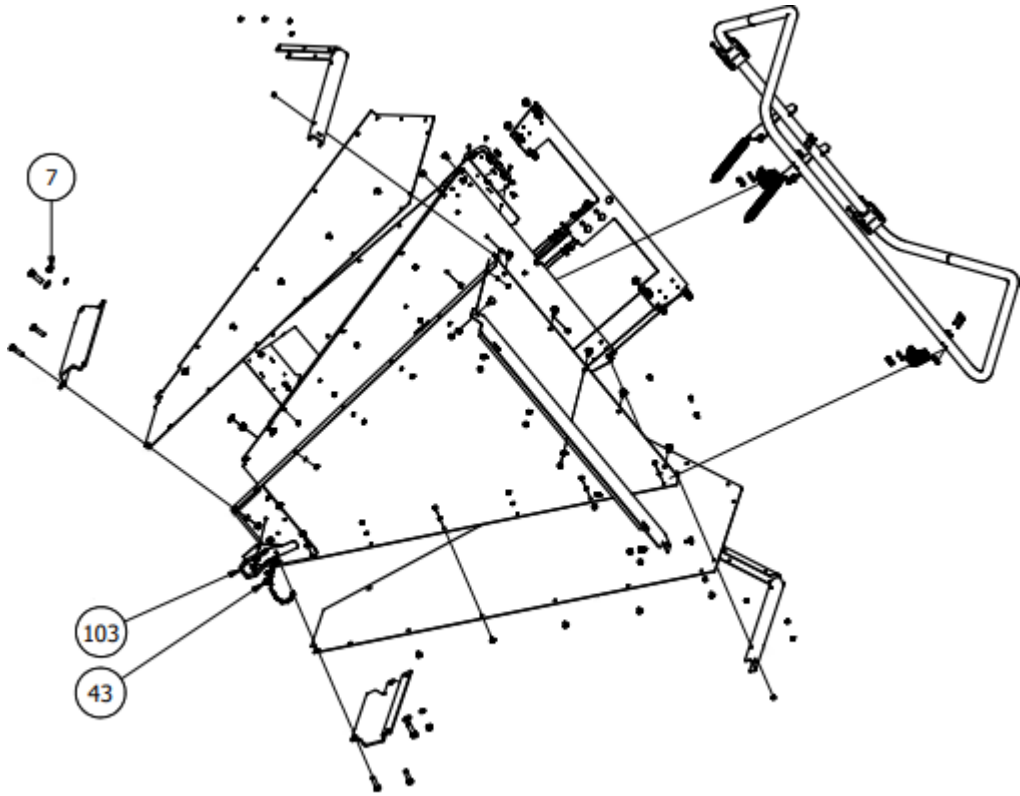
CHIPPER



**CHIPPER**

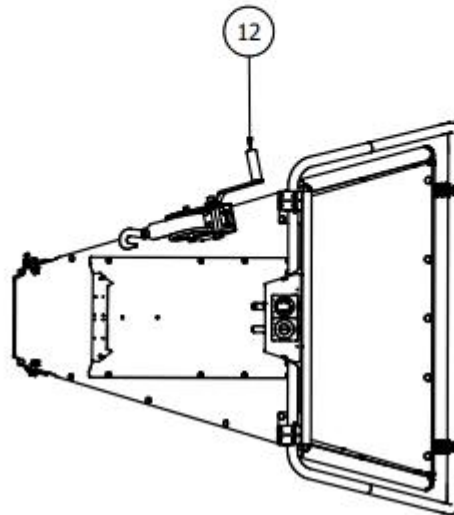
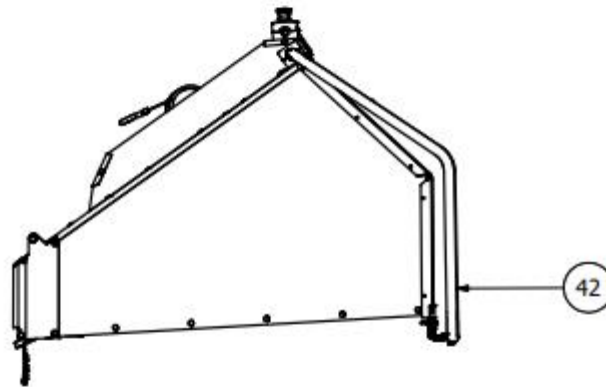
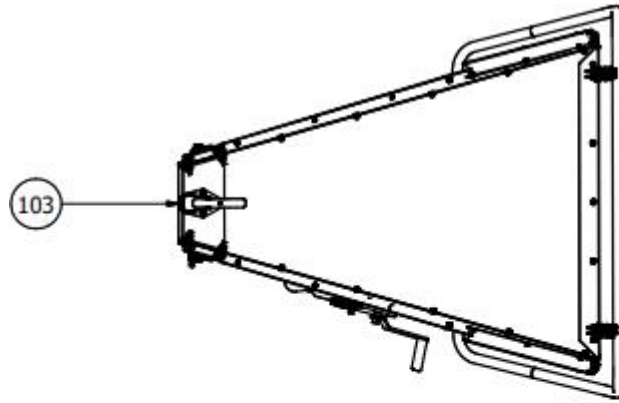
<b>Part</b>	<b>Order no.</b>	<b>Product</b>	<b>Qty</b>
1		LOCK NUT, M12, 8.8ZN, DIN 985	16 (TOTAL)
13		HEX SCREW, M12x40, 8.8ZN, DIN 933	4
14		WASHER, M12, 5.8ZN, DIN 125	11
64	200006107	VERTICAL ANVIL, 8x115x195MM, CH18	1
65	200006106	HORIZONTAL ANVIL, 8x73x85MM, CH18	1
66	200006111	BRACKET PLATE, 34x148x300MM, S=3MM, CH18	1
67		HEX SCREW, M12x20, 8.8ZN, DIN 933	1
70		HEX SCREW, M12x60, 8.8ZN, DIN 931	2
71	200006045	KNIFE DISC, D678MM, l=438MM, ASSEMBLY, CH18	1
72		HEX SCREW, M12x30, 10.9ZN, DIN 933	2
74		HEX NUT, M12, 8.8ZN, DIN 934	1
75		FLANGE, D60-4MM, AKSELI, PÄÄTY	1
76		HEX SCREW, M10x25, 8.8ZN, DIN 933	1
78	43620660	BEARING UNIT, PAIR, CH10, CH18, CH100, CH160, Farmi Forest	1
		LOCK WASHER, M12/25,4 SP, ZN, NORD-LOCK, DIN25201	2
		LOCK WASHER, M10, ZN, NORD-LOCK, DIN 25201	1
		HEX SCREW, M12x200, ST8.8ZN, DIN 931	1
		HEX SCREW, M12x70, 8.8ZN, DIN 931	2

FEED CHUTE





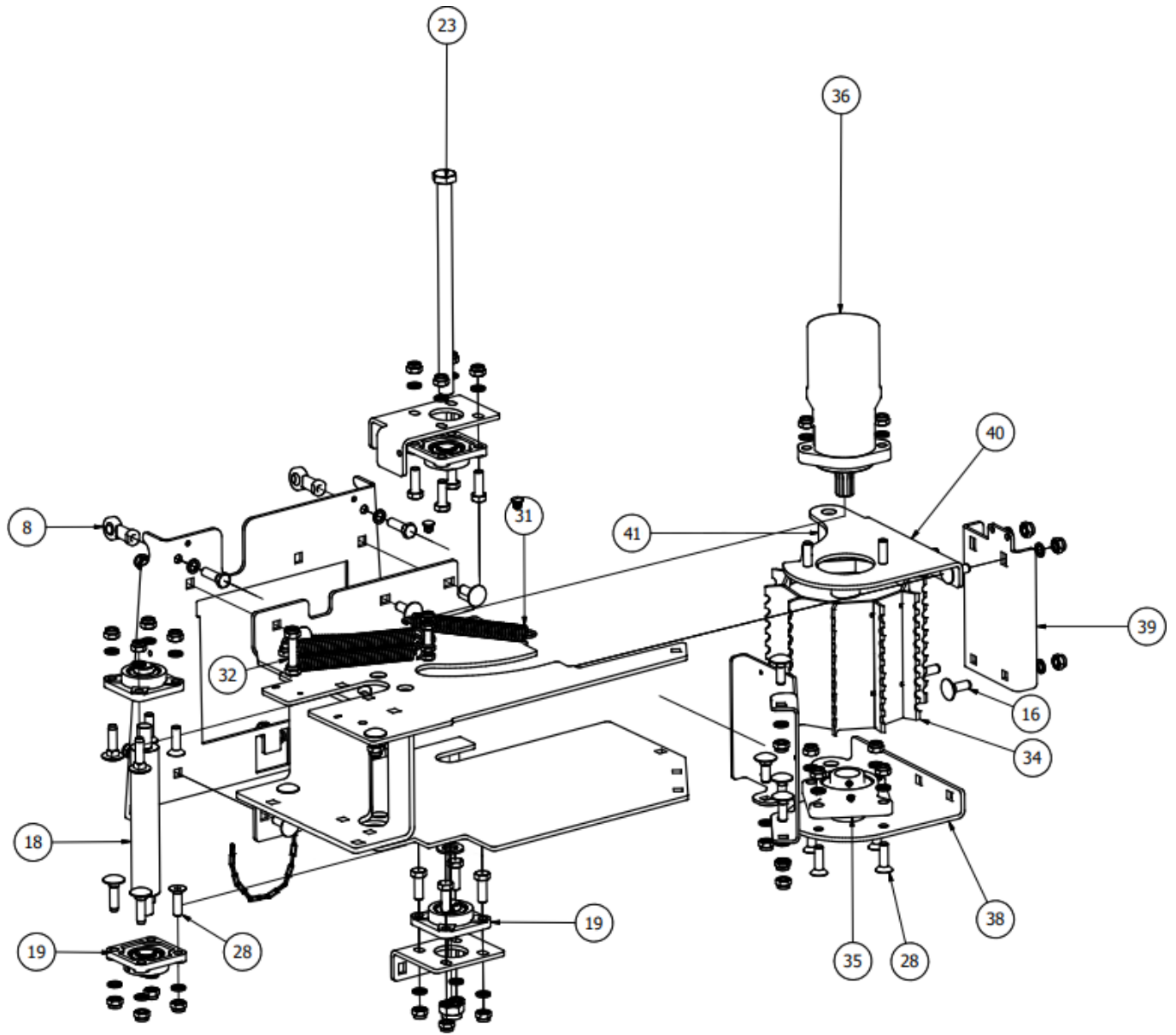
FEED CHUTE



**FEED CHUTE**

<b>Part</b>	<b>Order no.</b>	<b>Product</b>	<b>Qty</b>
7		LOCK NUT, M10, 8.8ZN, DIN 985	4
12	200001818	WINCH, 550kg, WITH 7,5MX50MM BELT, STRONGLINE X009142C	1
31	94613098	EXTENSION SPRING, DU23 DL3,5 L200	6 (TOTAL)
42	200006105	SAFETY BAR, 521x940x1242mm, D=32MM, CH18	1
43		HEX SOCKET CAP SCREW, M8x10, DIN912, ZN	3
44		PHILLIPS HEAD SCREW, M6x10, DIN7985, 5.8ZN	10 (TOTAL)
46	200003698	PIPE HOLDER, 533,7, STAUFF PP. BLACK	4
103	54712088	OVERCENTRE LATCH, 120S, 21121	1
		HEX SCREW, M10x50, 8.8ZN, DIN 933	2

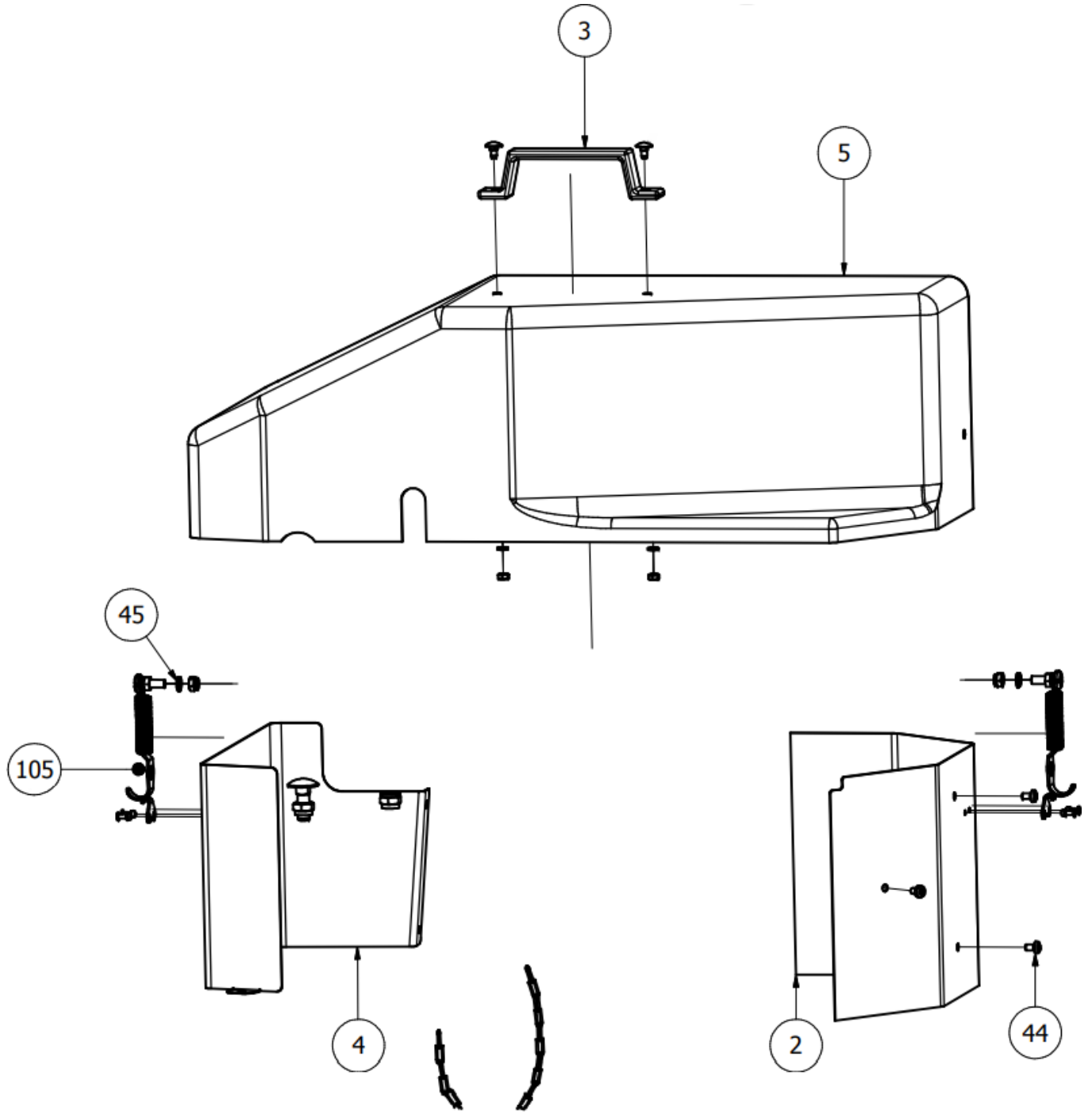
# FEEDER



**FEEDER**

<b>Part</b>	<b>Order no.</b>	<b>Product</b>	<b>Qty</b>
8	200001727	JOINT END, TSF12 ISB	2
16		LOCK SCREW, M12x35, 8.8ZN, DIN 603	19 (TOTAL)
18	200006063	AXLE, D20/40-282MM, CH18	1
19	200003437	FLANGED BEARING, UCF 204	4
23		HEX SCREW, M20x320, 8,8ZN, DIN931	1
28		HEX SOCKET CAP SCREW, M12x40, DIN7991	8
31	94613098	EXTENSION SPRING, DU23 DL3,5 L200	6 (TOTAL)
32		HEX SCREW, M12x80, 8.8ZN, DIN 933	1
34	200006047	FEED ROLLER, D230, L=190MM, CH18	1
35	200000209	BEARING UNIT, UCF207	1
36	56002033	HYDRAULIC MOTOR, MR 400 SH D,TS 58217640, SPLINES	1
38	200006065	ROLLER ARM, 40x227x300MM, S=6MM, CH18	1
39	200006066	U-PLATE, 35x135x235MM, S=5MM, CH18	1
40	200006064	ROLLER ARM, 40x227x300MM, S=6MM, CH18	1
41	200006067	PIPE, D30/24-213MM, CH18	1
		HEX SCREW, M12x40, 10.9 BLACK, DIN 933	2
		LOCK SCREW, M12x45, 8.8ZN, DIN 603	5
		HEX SCREW, M12x35, 8.8ZN, DIN 933	8

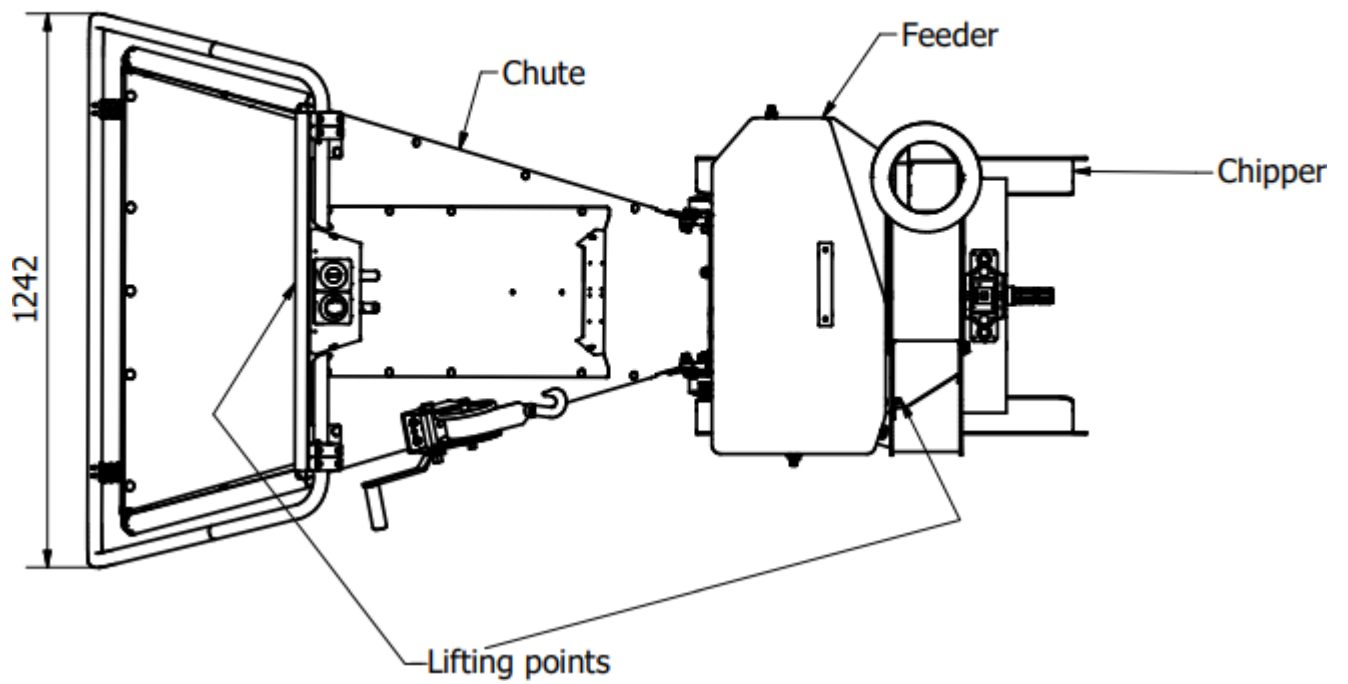
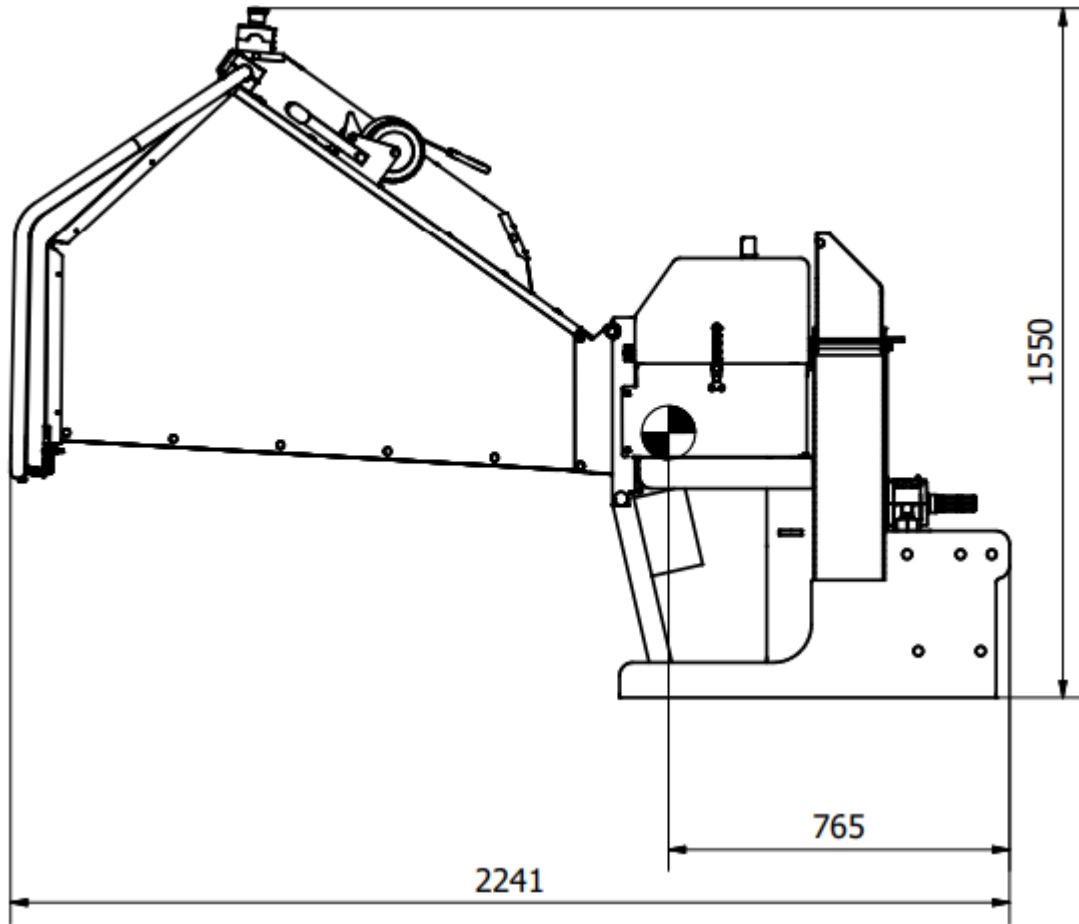
CHIPPER

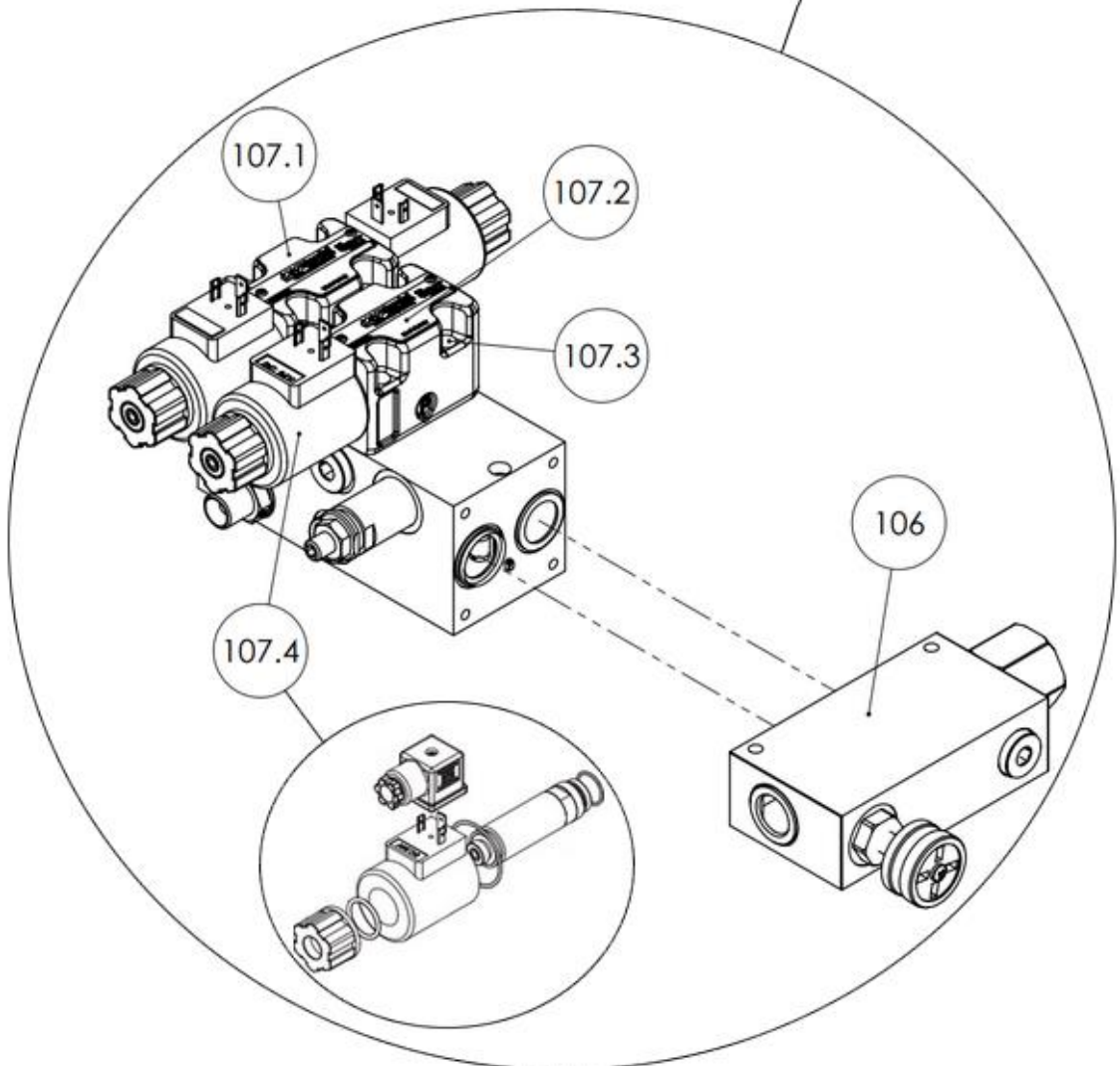
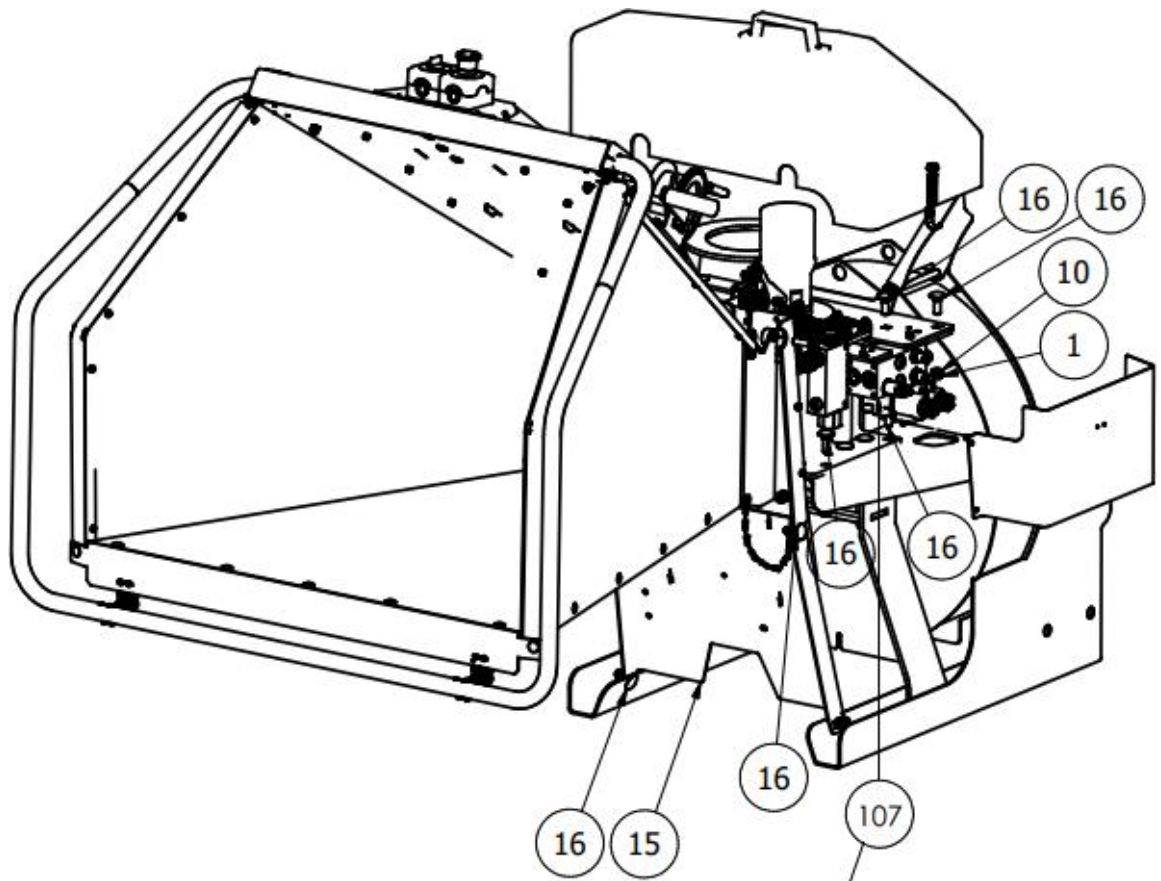


**CHIPPER**

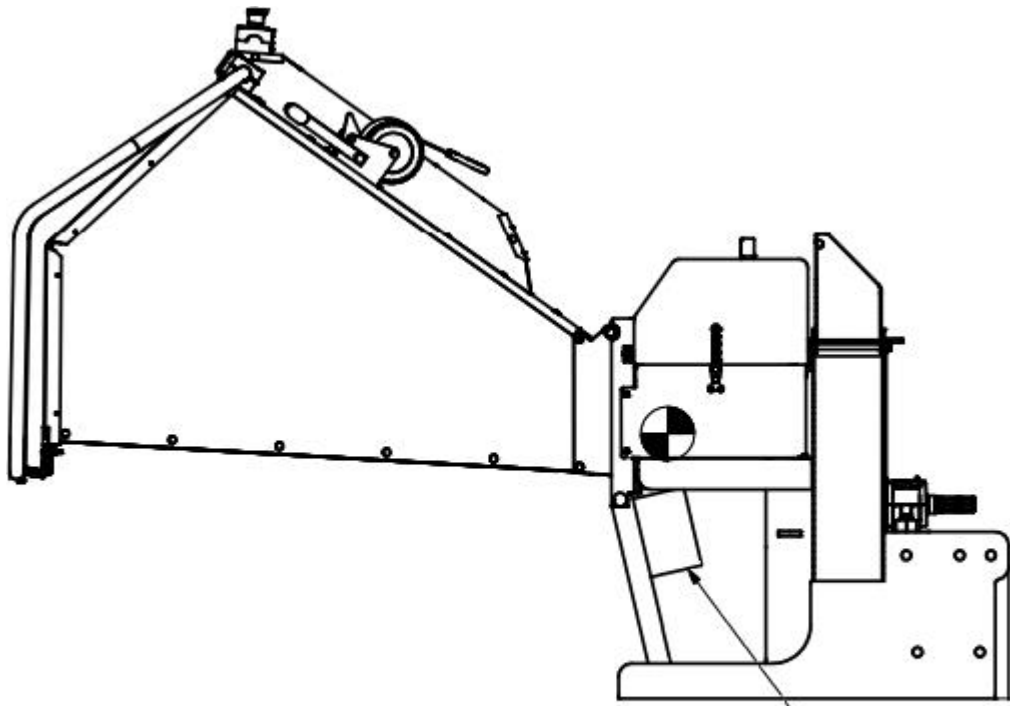
<b>Part</b>	<b>Order no.</b>	<b>Product</b>	<b>Qty</b>
2	200006113	COVER PLATE, 246x284x310MM, S=1MM, CH18	1
3	200002154	HANDLE, 300000KR	1
4	200006112	COVER PLATE, 156x228x415MM, S=1MM, CH18	1
5	200006004	PROTECTION COVER, CH18	1
44		PHILLIPS HEAD SCREW, M6x10, DIN7985, 5.8ZN	10 (TOTAL)
45		LOCK WASHER, M8, ZN, NORD-LOCK, DIN 25201	1
105	200004875	FASTENER, GRAYSTON GE53B, TWO PAIRS IN LOOSE POLY BAG	1

CHIPPER









17

● WIRING HARNESS

80

**CHIPPER**

<b>Part</b>	<b>Order no.</b>	<b>Product</b>	<b>Qty</b>
1		LOCK NUT, M12, 8.8ZN, DIN 985	16 (TOTAL)
10		LOCK WASHER, M12, ZN, NORD-LOCK, DIN 25201	21
15	200006114	COVER PLATE, 55x448x492MM, S=3MM, CH18	1
16		LOCK SCREW, M12x35, 8.8ZN, DIN 603	19 (TOTAL)
17	200006120	WIRING HARNESS, SMART FEED BASIC M, CHIPPER WIRING	1
80	200006141	COVER PLATE, 125x180x252MM, S=1MM	1
106	200004906	FLOW CONTROL VALVE, DANA, RFP03	1
107	200006139	VALVE ASSEMBLY, BREVINI CH18, CETOPS AND BASE, WITHOUT THE FLOW CONTROL	1
107.1	200004915	DIRECTIONAL VALVE, DANA, ADB3E04CLS12	1
107.2	200004904	DIRECTIONAL VALVE, FLOW DIVERTING VALVE, DANA, ADB3E04ELS12	1
107.3		HEX SOCKET CAP SCREW, M5x30, DIN 912, 12.9 BLACK	4
107.4	200006270	MAGNETIC COIL, +12VDC, CETOP 3, CH18	3

## **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. The reseller of the product helps on that. Repairs will be conducted by Farmi Forest Oy or an authorized expert.

By registering the product you are ensuring the warranty, and you confirm that you have read and understood the instruction manual that came with the product.

# **FARMI FOREST**

Farmi Forest  
Kilpivirrantie 7  
74120 IISALMI  
FINLAND



Farmi Forest  
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