



Kellfri[®]

13-WC22H CHIPPER



CAREFULLY READ THE OPERATING INSTRUCTIONS BEFORE USING THE PRODUCT!

OPERATING INSTRUCTIONS TRANSLATED FROM THE ORIGINAL

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1. INTRODUCTION

Thank you for choosing a product from Kellfri AB. Compliance with the general safety instructions, instruction manual and sound common sense will guarantee many years of enjoyment using the product. Kellfri's equipment and products are aimed at self-employed farmers who have stringent performance demands.

PRODUCT INFORMATION

Kellfri's 220 Chipper works using a powerful, heavy duty double cutting discs. The chip size is adjustable which allows you to produce the correct sized chippings ideal for soil amendments, garden, beds,mulching, running tracks surfacing and solid fuel. The machine is fitted with hopper and adjustable infeed system as standard. When necessary, the two infeed rollers can also be rotated backwards. Optimum chipping quality is achieved at a high rpm. The ejector is rotatable through 360°. The chipper is mounted on the tractor's rear three-point hitch (type 2) and supplied with a drive shaft. The diagonal blade requires a double-acting hydraulic outlet on the tractor. The chipper is supplied with two hydraulic ½ inch, quick coupling male hoses.

NOTE! The machine is tested before delivery.

PRODUCT NO.	13-WC22H
L x W x H	2800 x 1600 x 3000 mm
Max.timber Ø	220 mm
Cutting disc	1000 mm (double disc)
Infeed	hydraulic, 2 rollers
RPM	540/1000 rpm
Power drive	Direct driveshaft
Power requirement	80-120 hp
Weight	855 kg
Knife	2 fixed and 2 movable (hardened steel)
Branch breakers	Yes
RPM regulator	Yes

INTENDED USE

The equipment is intended for chipping wood waste, twigs and branches. Ensure that the material to be cut is free from nails, stones, etc.

NOTE! The machine can be dangerous if misused, therefore, it requires that the user of the machine has sufficient knowledge of how the machine is used and works!

BASIC SAFETY INSTRUCTIONS

Before using the equipment or product, and for the safety of yourself and others, you must read the safety instructions and the instruction manual and understand its contents. Always keep the safety instructions and instruction manual handy for users of the equipment or product. For the safety of both yourself and others, it may be a good idea to read through the safety instructions every now and then. If the safety instructions or instruction manual gets damaged or in any other way cannot be used, new copies may be ordered from:

Kellfri AB, Munkatorpsgratan 6, 532 37 SKARA

Sweden. Tel.: +46 (0)511 242 50 (Pls. contact the retailer) <https://www.kellfri.co.uk/>

Do not use the equipment or product if you feel ill, tired or are under the influence of alcohol. Do not use the equipment or product if you are taking prescribed medication or drugs. Always comply with general rules of the road and applicable rules stipulated by the Swedish Protection of Animals Act. People under the age of 15 are not allowed to use the equipment.



PRODUCT SAFETY INSTRUCTIONS

- Read the instruction manual carefully before using this product. The product may only be used in the manner described in this manual.
- Keep the work area free from other people. Moving parts increases the risk of accidents. Respect the product's danger zone! Only you who operate the machine are allowed to stay within the area during operation. Children are never to be within the work area, never let children play with the machine.
- The equipment works best and safest when it is used in the capacity it is intended for, do not try by various means to increase the capacity of the machine. Never overload the machine.
- Never leave the machine unattended when it is running. Turn off the tractor engine and set the parking brake when you leave the equipment, even for a short moment. Never leave the equipment up lifted. The hydraulics can lose pressure making the implement fall down.
- Ensure that all guards are correctly mounted and can not fall off before use.
- The PTO shaft must be protected over its entire length. Make sure to anchor the safety chain well.
- The machine should always be disconnected before maintenance or service.
- The machine may not be used without feeder and hopper.
- Do not operate the chipper if excessive vibration occurs, stop the machine immediately and check the condition of the machine.
- Do not use the machine unless all safety precautions are taken.
- Do not climb on the chipper!
- NEVER try to remove things that are stuck in the chipper while it is running! Ensure that the machine has stopped spinning before any action is taken.
- Never insert any body part into the machine while it is running.
- The machine may only be lifted at the designated lifting points. Use only suitable lifting equipment with sufficient capacity to lift the machine.



INSTRUCTIONS FOR EMERGENCY SITUATIONS

In case of emergency, call 112.

Always have a mobile phone or emergency phone available when working alone. A first aid kit and fire extinguisher must be kept in an easily accessible location when carrying out any work, maintenance and service. To perform an emergency stop, turn off the tractor.

PERSONAL PROTECTION

Always use suitable protection equipment. Do not wear loose clothing or jewellery while working with the equipment. Long hair should be tied up when working equipment that has moving parts. Use protective gloves as there is a risk of burns if any hot surfaces are touched such as exhaust pipes, and avoid getting oil and petrol on skin. Ear defenders must be worn whilst the engine is running. Helmets with ear defenders must be used while working to prevent knocks from the cabin sides and suchlike in uneven terrain. Wear protective boots with anti-slip soles.



SURROUNDINGS

Check that the work area is free from bystanders, children and objects before hitching or using the trailer. There is a risk of serious bodily harm. Be extra careful if there are children in the vicinity of the area where the equipment or product is used or stored. Check that there are no low-hanging electrical cables within the work area. Exercise caution when working on slopes and close to ditches. Always work alone with equipment or products that are made for working alone. Remove all rubbish from your work area. Keep work areas clean. Always respect the equipment risk zone.



WARNING DECALS

Make sure warning decals are always visible and clean them when necessary. Do not use a high-pressure washer directly on the warning label. If a decal becomes worn or in any other way unusable, order a new set of decals. An SMV sign must be visible and mounted when travelling on public roads. The trailer is fitted with the following decals:

SYMBOL	EXPLANATION
	<p>Read the operating manual! Before carrying out work Warning! Before maintenance, servicing, connecting and disconnecting the machine, the tractor must be turned off and the ignition key removed.</p>
	<p>WARNING! Rotating PTO shaft.</p>
	<p>Rotating machine parts.</p>
	<p>The machine is designed as single-purpose machine tool</p>
	<p>Warning for flying debris! Danger zone 20 m.</p>
	<p>WARNING! Leaking oil under pressure can penetrate the skin.</p>
	<p>WARNING! No smoking in the vicinity of the machine.</p>
	<p>The product is CE marked.</p>

STEPS BEFORE USE

Carefully read the safety instructions and the operating instructions. Make sure that you understand the safety instructions, operating instructions and warning decals. Use common sense when using the product and suitable personal protective equipment. Always check the performance of the machine combination to be used. It is important that these are in harmony and work satisfactorily. This is done to ensure the equipment or product work as expected, and to guarantee the safety of yourself and others. Carry out a visual inspection of the equipment or product before use. Repair or replace damaged or worn parts to reduce the risk of injury.

Grease moving parts and check that all nuts and bolts are tightened. Correct if necessary. Learn and remember the correct working method. Beginners must work slowly until they have learned how the machine or product works. Users/customers are responsible for ensuring users can handle the situation. If users feel that the machine is dangerous to use, it should not be used.

- Perform a safety check of the machine before each use. If you notice any errors or omissions, the machine should immediately be repaired.
- Make sure there are no foreign objects in the machine before using it.
- During operation, the machine must be on a hard, flat surface. Avoid working on slippery surfaces, especially in winter
- Check the drive shaft of the power take off and the three point brackets before the connection and use of the chipper.
- Check the work area before operation. Make sure there are no people or animals nearby.

CHECK THE OIL LEVEL OF THE HYDRAULIC SYSTEM BEFORE STARTING THE MACHINE !!!



USE

Only those who understand the safety instructions and the operating instructions may use the equipment or product. Exercise caution and care when working with the equipment and only use it in the way described in the operating instructions. There is a risk of crushing when working with equipment that has moving parts. Exercise caution when working with equipment with hydraulic hoses as oil under pressure can penetrate the skin. Immediately seek medical attention if this should occur. Always work alone with equipment that are defined as single purpose equipment. Never overload the equipment and respect the risk zone.



CONNECT

- Connect the machine to the tractors rear three point hitch.
- Connect the PTO shaft. Adjust the length, if necessary. (See the PTO shaft manual).
- Anchor the chain well.
- Connect the hydraulic hoses to the tractor hydraulic system. Be careful when connecting the hydraulic hoses, there is always a risk for injuries.
- Check the hydraulic system for leakage.
- Ready for use.

DISCONNECT

- Reduce the engine speed of the tractor to idle, turn off the engine.
- Make sure the rotor has stopped spinning before disconnecting the PTO shaft.
- Before disconnecting the chipper from the tractor, park it on a flat, hard surface. Make sure it can not tip over.
- Before disconnecting the hydraulic hoses, make sure there is no pressure left in the system.

CHIPPING



DANGER! Make sure fire extinguishers are accessible when the chipper is in use. Always check the surface temperature of the chipper. If it gets hot, turn it off, check and rectify the faults.



NOTE!

The operator must always have a constant view of the work area. If it is not possible, the operator must work with an assistant.

- Get familiar with the chipper without starting it.
- It is important that the chipper stands stable during work. The chipper must not be lowered too much in relation to the tractor. The PTO drive shaft may become loose during operation.
- It is important to always keep a safe distance from the place where the chips are thrown out. Aim the chute so that the ejected chips do not pose a risk to the operator or anyone else.
- Start the chipper carefully with the tractor at low rpm. Then increase the speed slowly to the right chipping speed (540/1000 rpm)
- Never put any part of the body into the hopper or into any other part of the chipper while the machine is running.
- Before putting material to be chipped, ensure that the wood is free of metal, earth, nails, stones, etc. which is fed into the chipper.
- When feeding in manually, NEVER stand in front of the hopper.
- Make sure that no one has hands or arms next to the roller.
- Put the branches / trees against the wood chipper and when chipping begins release branches / trees immediately.
- NOTE! The oil becomes hot when it flows through the hydraulic system. Check the oil temperature at regular intervals eg every 30 minutes to avoid overheating the oil. If the oil gets overheated, stop the machine and allow the oil to cool. Overheating of the oil may occur if the tractor has a small hydraulic tank.
- If a tree / branch needs to be removed from the hopper while chipping, change the input rotation so that the tree is fed out of the machine. CAUTION! The Tree / branch must not be removed from the hopper with the crane!

SETTING THE CHIP LENGTHS

It is the distance between the cutting knife and the fixed knife which determines the chip size. Wood chips size is set by moving the fixed knife inward or outward. The greater the distance is between the blades, the larger chips becomes.



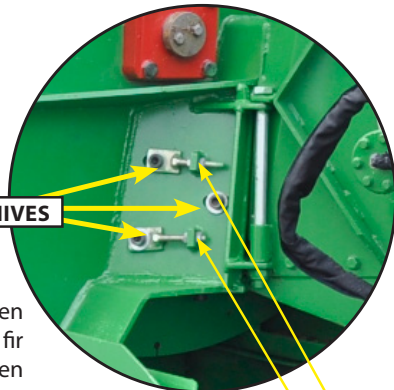
IMPORTANT!

When adjusting the knives, it is important that the cutting knives do not touch the fixed knife and that the cutting distance is the same on all knives.

Always check that the fixing bolts are tightened.



ASSEMBLY POINTS OF FIXED KNIVES



FIXED KNIFE SETTINGS

For better chip quality reduce the chip size when chipping small and tough materials such as fir branches. Chip size should be increased when chipping larger materials such as logs.

KNIVES

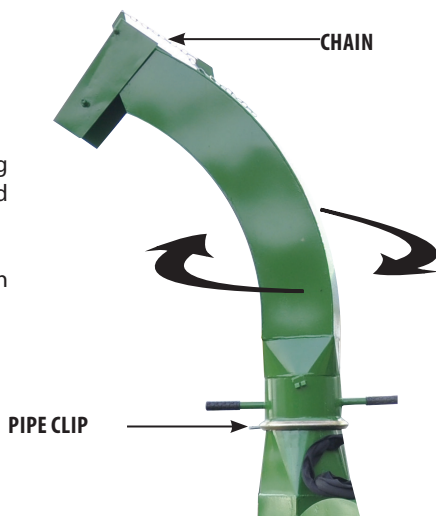
- Always check the condition of the knives, the knives' attachment screws and nuts.
- It is important to always have sharp knives, sharp knives gives better chip quality.

CHANGING CUTTING KNIVES:

- Loosen the knives fixing bolts
- Replace the blades and reassemble all fastening bolts.
- Adjust the knives cutting distance when necessary and then tighten.
- Spin the chopping disc by hand and check that all knives have the same cutting distance and that the cutting knives don't touch anywhere.
- When switching to new cutting knives, the fixed knife might need to be adjusted. Check the clearance between the cutting knives and the fixed knife, adjust if necessary.

CHUTE

1. Adjust the chute by loosening its clamping screw and then turn the chute at the desired angle.
2. Then tighten the clamping screw.
3. Adjust the screen angle by changing the length of the chain.

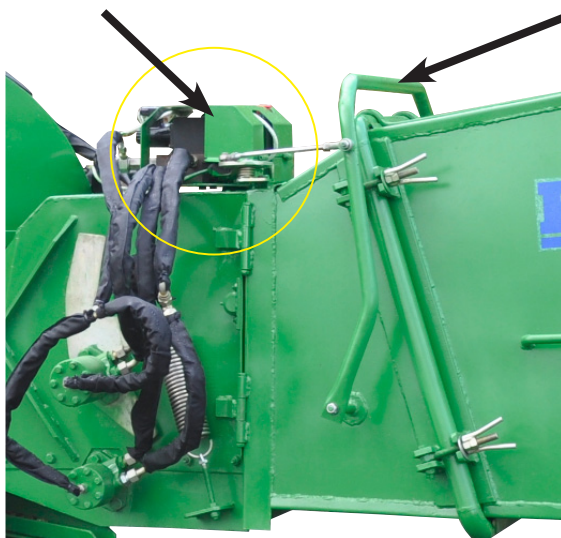


ADJUSTMENT OF FEEDING SPEED

It is important to have the right feeding speed to avoid the trees / branches getting stuck in the feeder. Feeding speed should be synchronized with the cutting speed of the wood chipper. Adjust the feeding speed by turning the flow control valve (clockwise / counter-clockwise) so that the trees / branches are not pushed towards the chipping disc without the feeding teeth slowing down the feeding. Always test drive the machine before use!

FLOW CONTROL VALVE

SECURITY HANDLES
PRESS THE HANDLES TO
CHANGE THE DIRECTION OF
ROTATION.



AFTER USE

Lower the engine rpm of the tractor to idle then ensure that the shaft has stopped spinning before disconnecting the PTO shaft.

TRANSPORTATION AND STORAGE

Make sure that the area is clear of people, children and objects before transportation. Always be extra careful during transport and movement. Ensure that the product is well secured and that existing transport safety devices are mounted. Always place the load as low as possible. Respect the danger zones even during transport and movement. When lifting, don't go under the suspended load. Trailer used for transport should have functioning brakes.

Always store the tool or product in a dry place, preferably underneath a roof when not in use. Make sure that the equipment or product stands stable and not likely to tip over. Never let children play at the storage site. Bear in mind the risk of tipping over!

If the chipper is to be stored for a long time, lubricate the knives e.g. with Vaseline.

MAINTENANCE AND SERVICE

Make sure the tool stands stable and not likely to tip over during maintenance and service. Replace damaged and worn parts immediately to reduce the risk of injury. Perform maintenance, servicing and inspections as recommended. Use only parts with equivalent performance to reduce the risk of damage and failure.

- Disconnect the machine from the tractor when fixing a problem.
- The machine may only be lifted in special lifting points, only use lifting equipment with sufficient lifting capacity.
- Regularly check the condition of the machine to prevent breakdowns. If cracks, twists, bends, gaps or fatigue is discovered, stop the operation and rectify the faults
- Replace worn parts. Tighten all screws and nuts after a few hours of operation, and after that every day when using with the machine.
- Always check all bolts and nuts are tightened after maintenance and service. Always test the machine before work is started.
- Lubricate all lubrication points regularly. Lubrication points are to be lubricated every 20 hours.
- Make sure there is no pressure in the system before the repair is carried out on the hydraulic circuits.



IMPORTANT!

WARNING: Leaking oil under pressure can penetrate the skin and cause serious injury. Do not use your hands when searching for leaks. Use a piece of cardboard to find leaks.

TROUBLESHOOTING	REASON	MEASURE
Bad chip quality, uneven chip size.	<ul style="list-style-type: none"> • Blunt knives • Distance between cutting blades are different or too large. 	<ul style="list-style-type: none"> • Check knives. • Adjust and sharpen if needed.
The chipper wont drag in branches / trees.	<ul style="list-style-type: none"> • Knives in wrong direction. • Blunt knives or knives sharpened in wrong angle. • The feeder do not push in the trees / branches. 	<ul style="list-style-type: none"> • Check knives. • Flip, adjust and grind if necessary. • Make sure that the feeder is properly connected and working properly.
Stop in the chute.	<ul style="list-style-type: none"> • Too low rpm. 	<ul style="list-style-type: none"> • Increase rpm to 540/1000 rpm.
Large vibrations occurs.	<ul style="list-style-type: none"> • Cutting speed and feeding speed is unsynchronized 	<ul style="list-style-type: none"> • Adjust the feeder speed.
Infeed rollers do not rotate or rotates too slowly.	<ul style="list-style-type: none"> • No preasure in the hydraulic system. • Low oil level in the hydraulic system. 	<ul style="list-style-type: none"> • Check oil level and check for possible leakage in the hydraulic system. • Fill with hydraulic oil.

SERVICE	INTERVAL	
Knives	Before operation	Replace any defective blades. Sharp blades provide better results. When replacing knives, the bolts are to be tightened properly.
	During work.	Listen for noises.
Infeed rollers	Every 20th operating hour	Lubricate.
Hydraulic	Before operation	Search for leaks, check all connections and hoses.
Safety devices.	Before operation	Inspection of safety devices such as safety valves, covers etc.
Bearings	Regularly 50H	Lubricate the bearings with grease regularly, depending on how much the machine is used. Frequently used machine, all bearings should be lubricated every week. Otherwise, every 50 hours or once a year.

RECYCLING

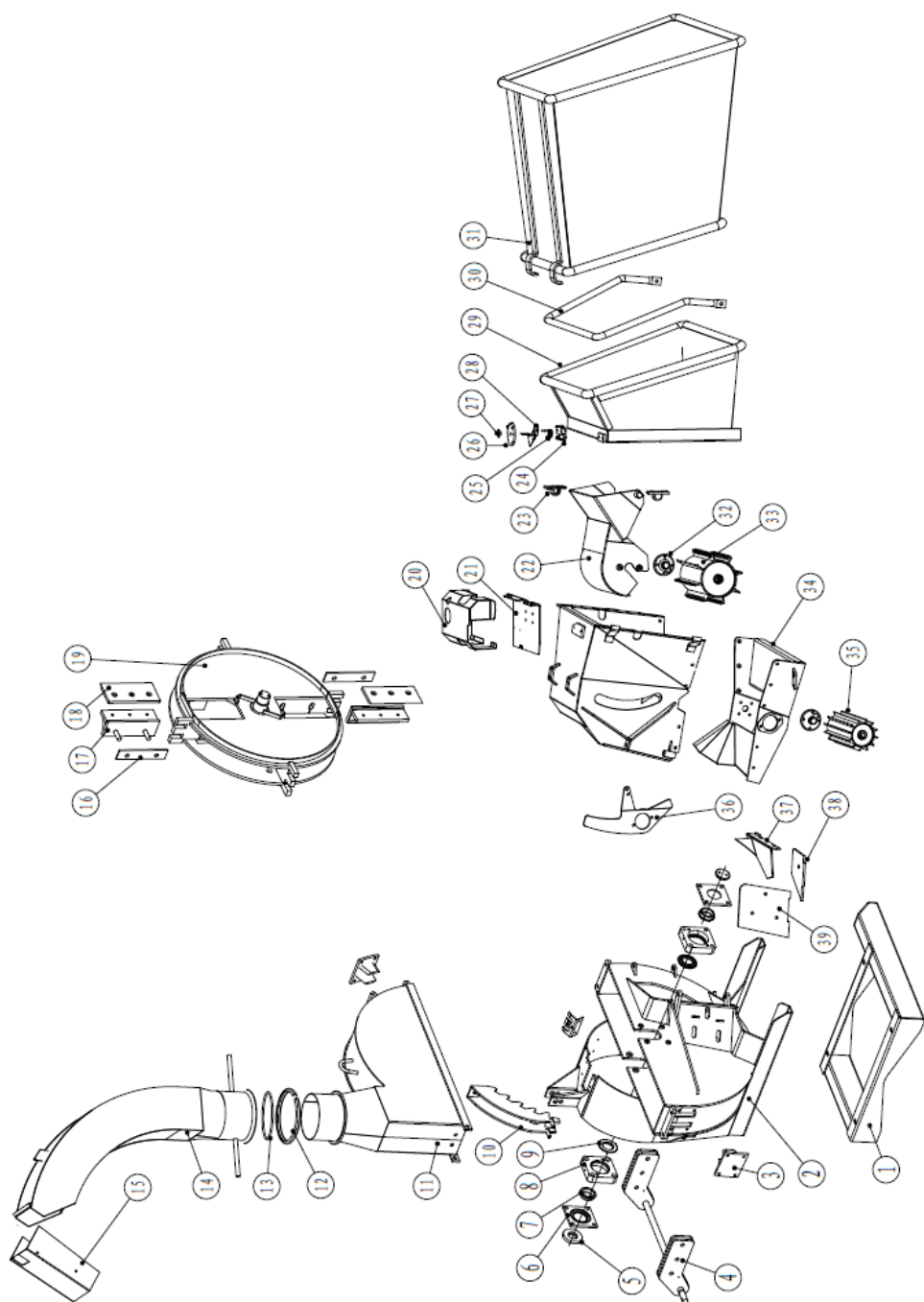
Disposal of the product, the machine should be disassembled and transported to the municipality recycling station. Contact your municipality for further information.

SPARE PARTS FOR 13-WC22H

DESIGNATION	NAME
R13-WC22H.001	Hydraulic motor feeding 400cc
R13-WC22H.002	Hydraulic motor feeding 200cc
R13-WC22H.003	Feeding hopper
R13-WC22H.004	Cutting knife
R13-WC22H.005	Fixed knife bigger
R13-WC22H.006	Fixed knife smaller
R13-WC22H.007	Knife -hardened
R13-WC22H.008	Knife holder
R13-WC22H.009	Housing chipper disc
R13-WC22H.010	Valve feeder complete
R13-WC22H.011	Screw lock hopper
R13-WC22H.012	Capsule for electricity.
R13-WC22H.013	Bolt hopper long
R13-WC22H.014	Bolt hopper short
R13-WC22H.015	Adjustment screw fixed knife



13-WC22H with hopper



NO	NAME
1	Frame bracket
2	Lower frame
3	Twig crusher
4	Draw bar
5	Shaft nut
6	Cap
7	Labyrinth seal
8	Bearing complete
9	Gasket
10	Twig crusher
11	Top cover
12	Pipe clip
13	O-ring
14	Chute
15	Screen
16	Support plate
17	Knife holder
18	Knife
19	Chipper disc
20	Plate cover

NO	NAME
21	Bracket
22	Swivel arm roll
23	Hinge
24	Fixture
25	Spring
26	Nut
27	Bolt
28	Connection plate
29	Feeding hopper
30	Handle
31	Outer feeding hopper
32	Housing
33	Roll
34	Under carriage feeder
35	Roll - big
36	Metal bracket - engine
37	Bracket
38	Lower panel
39	Fitting plate

RPM SENSOR (Optional Equipment)

The chipper can be equipped with an rpm sensor.

The rpm sensor monitors the chipper speed and temporarily stops the feeding if the rpm of the chopping disc would decrease more than 10% compared to preset speed. This protects both the chipper and the tractor when chipping rough and / or harder materials.

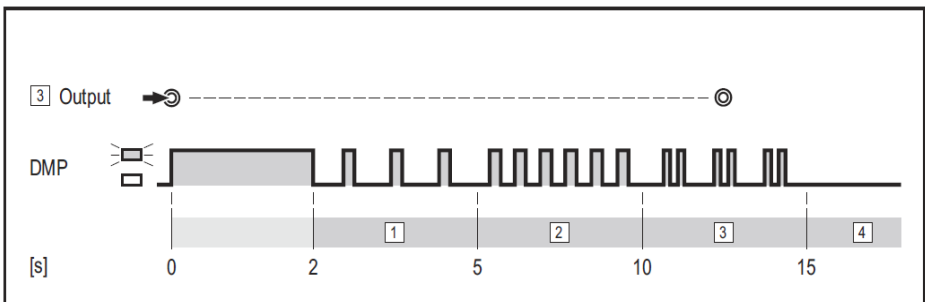
The rpm sensor has a memory that remembers preset rpm. Note that the rpm of the chipper may vary when operating at varying speeds on the tractor, as well as when using different tractors. We therefore recommend that the rpm sensor is set before each run with the machine.

IMPORTANT! The sensor needs to be adjusted if the speed varies from run to run, for example, when using different tractors.


The sensor is maintenance free, but to ensure that the sensor is working properly, it is important to keep the sensor surface clean and that the gap between the sensor and the sensor surface is free from metal deposits or other material that may interfere with the signal.

INSTRUCTION: Setting up the rpm

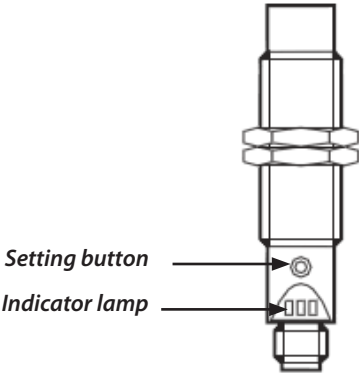
- Start the chipper carefully with the tractor at low rpm. Then increase the speed slowly to the right chipping rpm (540/1000 rpm)
- The rpm is set on the rpm sensor by pressing the button for 10-15 seconds (until the DMP lamp start flashing as shown below). Press the button using a pointed object (eg with a ballpoint pen) Note: The button should not be pressed for more than 15 seconds, which makes the rpm not to be set. The setting is saved when you release the button.
- If the rpm would decrease more than 10% during operation, the rpm sensor will stop the feed rollers. The feeding should start again when the rpm is restored to the preset level.

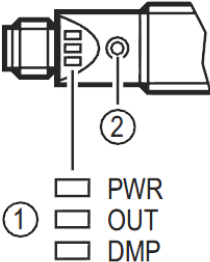


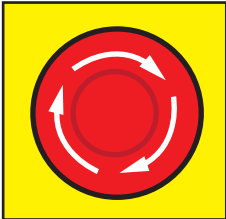
 = Press the button and hold it down.

 = The settings will be saved when the button is released.

The rpm sensor is set manually when the button on the sensor is held in between 10-15 seconds (the light starts flashing) When the button is released, the rpm is set.



Indication	LED		Status	Meaning
	PWR	Green	ON	Power supply ok
	OUT	Yellow	ON	Output connected
	DMP	Green	Pulse	Attenuation pulse
			1 HZ 2Hz Double flash	Time frame for setting procedure
			Flashes alter-nately	Settings locked or change is not possible.




EMERGENCY STOP

RPM SENSOR

Auto

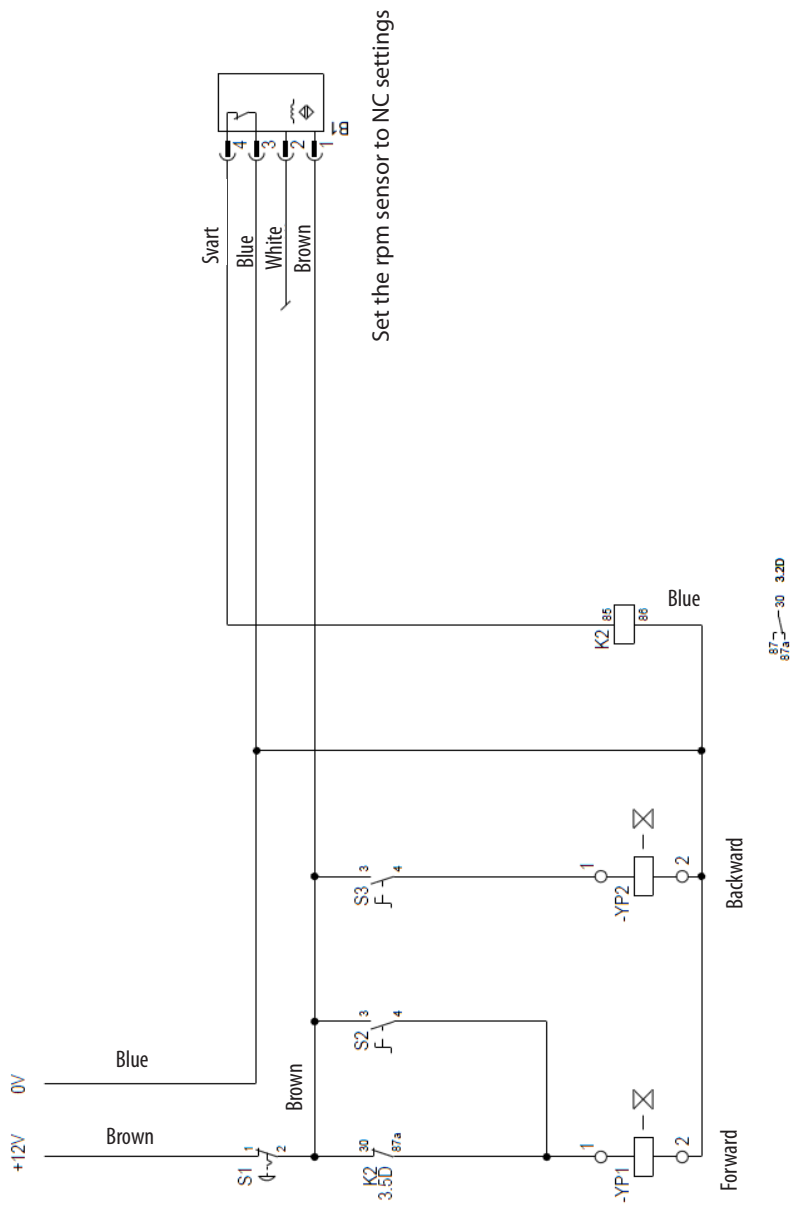
F **R**

FORWARD BACKWARD



AUTO mode for rpm monitor
The infeed can also be run manually forward and backward, the position F (forward) and R (return)

WIRING DIAGRAM



We are grateful for your help pointing out any inaccuracies in the Kellfri product delivered to you. Before making a complaint read Kellfris general warranty and sales conditions in our catalog as well as the enclosed User's manual that comes with the machine.

Please fill in the details below and attach photo and other information in order to process your request.

Buyer:	Customer number:	
Adress:	Invoice number:	
E-mail:	Phone nr:	

When was the product delivered?	When was the product taken into operation?	Did the product functioned as it should upon the first operation?
--	---	--

Defect product / part:

Problem description:

Describe the sequence of events:

Other:

Submit Complaint form and photo to:

Kellfri AB

Division of Services : Contact Kellfri retailer

Or e-mail service.

info@kellfri.se

Signature:	Date:
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WARRANTY TERMS AND CONDITIONS

- Validity of the warranty - Kelffri's Warranty is valid 12 months from the date of purchase.
- This warranty replaces - Compensation for spare parts after acknowledgment that the fault lies on the material or manufacturing defects.
- This guarantee do not cover
- Labour costs
 - Travel expenses
 - Any modification that the buyer himself has/had made.
 - Any consequential damages that occurred out of damage to the machine.
 - Damage due to normal deterioration of the machine, inadequate: service, user inexperience or use of spare parts which are not original.
 - Wear parts such as hoses, seals, oils, and mechanical belts

EG-FÖRSÄKRAN OM MASKINENS ÖVERENSTÄMMELSE, ORIGINAL

EC-DECLARATION OF CONFORMITY

According to 2006/42/EC, Annex 2A

Kelffri AB

Munkatorpsgratan 6

532 37 Skara, Sweden

Declares that the machine

Name: 13-WC22H

Type: Chipper

Complies with all applicable provisions of the Machinery Directive 2006/42/EC.

Other equipment must meet the hardware requirements of the Directive.



Tina Baudtler, VD

Skara 2013-07-23

Kelffri AB is constantly working on further developing their products and therefore reserves the right to modify, among other things the design and appearance without notice.

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