

User guide

Before using the machine, read this user guide thoroughly and make sure that you have understood it.

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There may be discrepancies in the pictures but the information is always correct.

GENERAL

This user guide describes in detail how to use, maintain and inspect the chain sharpening machine. It also describes the steps to be taken to ensure maximum safety, how the safety components are designed and how they work and how to check and inspect them. It also explains how to carry out any repairs that may be needed.

NOTE:

Everyone who will install, use or repair the chain sharpening machine must read and understand this manual.

The user guide covers installation, operation and the various maintenance actions that can be done by the operator. More detailed servicing or troubleshooting must be done by the dealer's servicing team. The user guide describes all the necessary safety-related components. Anyone who intends to use the machine must read and understand it before the chain sharpening machine is installed. Symbols and warning signs shown in this section appear in this manual and on the chain sharpening machine.

If a warning decal on the machine has been damaged or is worn, a new one must be applied as soon as possible to ensure the greatest possible safety when using the chain sharpening machine.

DESCRIPTION OF FIELD OF APPLICATION

The machine is designed to sharpen cutting saw chains, for example, those on chainsaw and chainsaw mills.

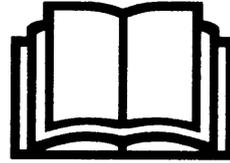
The machine is design to sharpen the cutting teeth of chains and lugs. It works automatically.

The machine must be used indoors.

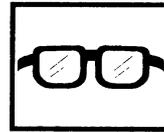
The machine is powered by a 12-volt supply.

SYMBOLS

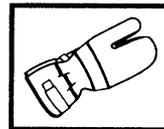
Before using the chain sharpening machine, read this user guide thoroughly and make sure that you have understood it all.



Wear eye protection.



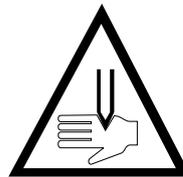
Wear safety gloves.



WARNING STICKERS



Caution



Risk of cutting injury.



Direction of rotation

SAFETY REGULATIONS

Locate the machine where it is not exposed to rain or moisture.

The site must be well lit.

The machine must not be located close to gas, liquids or other materials that might catch fire or explode.

Only a service technician is permitted to carry out work on the machine.

To avoid mistakes when sharpening chainsaw chains, it is extremely important to understand how the sharpening machine works.

Read the instruction manual carefully before doing any sharpening with the machine.

Always wear safety gloves and safety goggles.

Always check the condition of the grinding wheels.

Cracked, vibrating or wobbling grinding wheels must be discarded.

To avoid breakdowns, clean the machine to remove grinding dust.

MOTOR DATA - Sliprobot L1

Grinding motor

Voltage: 12 volts

Rotation speed: 2800 rpm

Peripheral speed: 22 m/s (72ft/s)

Power: 90 watts

Current: 7.5 A

Grinding wheel: 150 x 4 x 16 mm

Overcurrent protection: Miniature circuit-breaker type ptc

Machine: 9 kg (20 lb)

Machine dimensions: L370 x W300 x H350 mm

Working voltage: Min 12 V, max 14 V

POWER SUPPLY

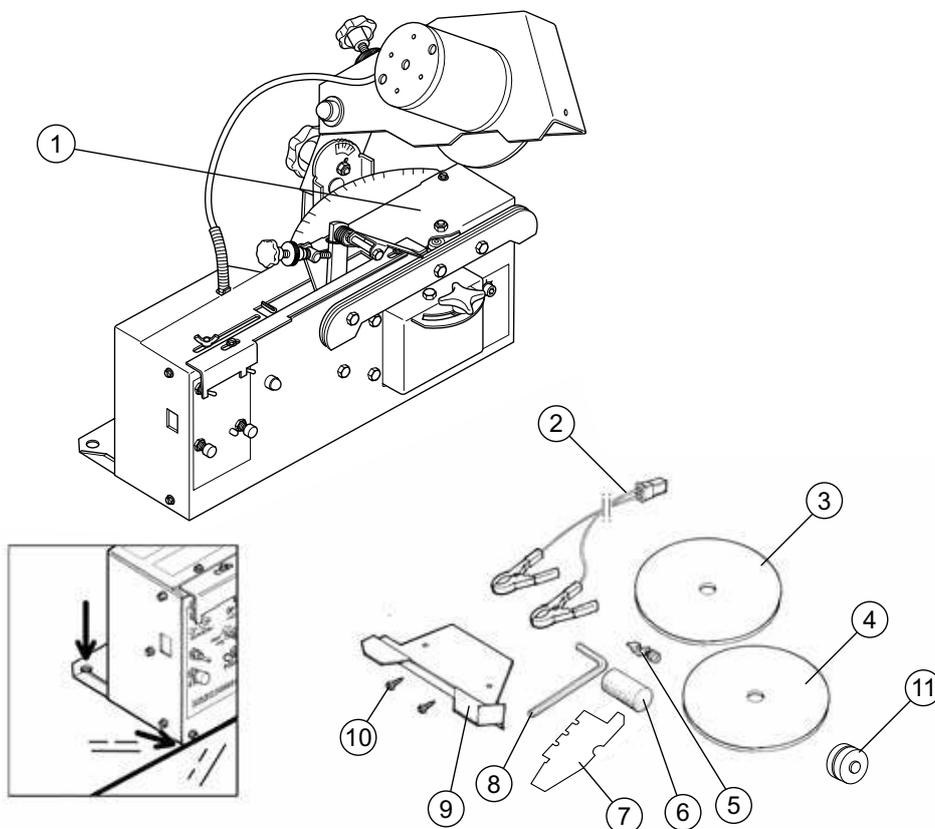
In order to obtain the best result the machine should be connected to a car battery 12 volt (max 12-14 volt, min 9 ampere).

NOTE:

Battery placement.

Make sure that the battery terminals are connected to the correct poles of the battery.

Position the battery so that sparks from the sharpening machine cannot reach it.



1. Sharpening machine

2. Battery cables

3. Grinding wheel 150 x 4 x 16:

4. Grinding wheel 150 x 4 x 16:

5. Stop clamp

6. Profile stone

7. Profile template (transport support))

8. Allen key

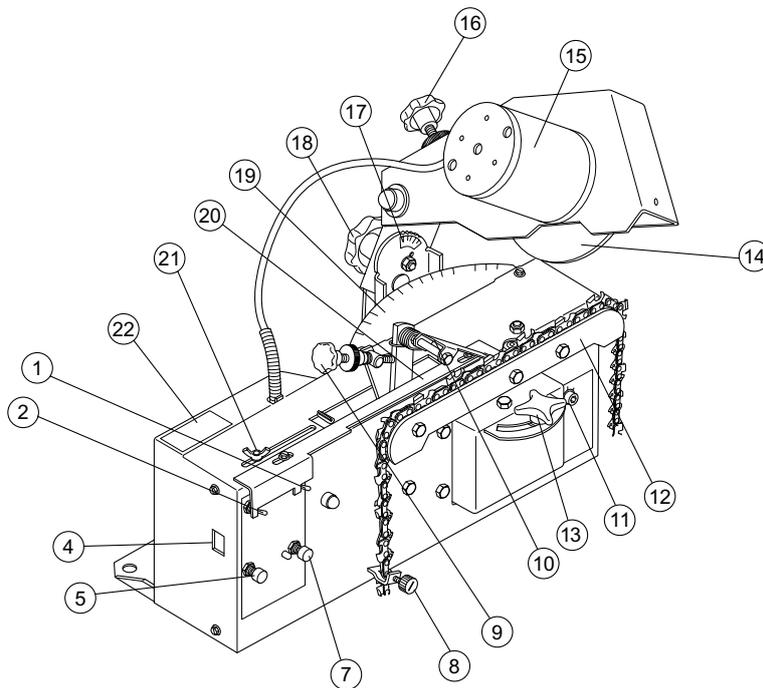
9. Grinding wheel guard:

10. Self-tapping screw x 2

11. Sprocket weight

Machine operating controls

- | | |
|---|--|
| 1. Start the motor of the sharpening machine. | 12. Chain rulers. |
| 2. Start the automatic system. | 13. Adjusting the grinding angle 0°- 35°. |
| 4. Electric power (12-14 V DC) in. | 14. Grinding wheel. |
| 5. Stop button. (zero-voltage cutout. When the power is cut off, the machine must be started manually.) | 15. Grinding motor. |
| 7. Power on. | 16. Depth adjustment of the grinding wheel. |
| 8. Stop clamp | 17. The graduated scale shows grinding angles from 90° to 50°. |
| 9. Cutting tooth length setting adjustment. | 18. Knob for adjusting the grinding angle between 90° and 50°. |
| 10. Chain feeder mechanism. | 19. The graduated scale shows grinding angles from 90° to 35°. |
| 11. Centring of length between right and left cutting tooth. | 20. Stop arm |
| | 21. Stroke adjustment. |
| | 22. Symbols |



INSTALLING THE SHARPENING MACHINE



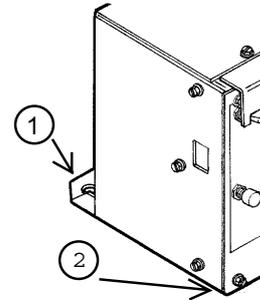
The machine must not be located close to gas, liquids or other materials that might catch fire or explode.

Install the machine on a bench or stand.

NOTE:

The machine must be securely fixed. 1

The machine should be mounted so that the front edge of it reaches 1-5 mm over the edge of the bench or stand. 2



POWER SUPPLY

For optimum performance, the machine should be connected to a 12-volt car battery, but it can also be powered from a battery charger or some another converter with an output of 12 to max 15 volts (at least 10 amps).

Connect appropriate cables to the terminals of the sharpening machine.

Connect the red cable to + and the black to -.

If the cables are switched the grinding machine will not work.

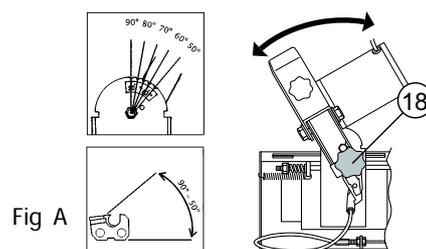
Check that the direction of rotation agrees with the arrow on the grinding wheel guard.



The grinding wheel must not be running when the sharpening machine is being set up. The incoming power must always be switched off when during set up.

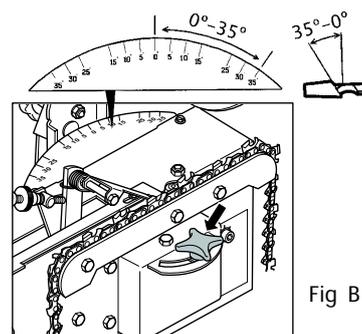
CUTTING ANGLE

The cutting angle can be varied between 90° and 50°. Slacken knob 18. Turn the grinding head to the correct degree marking and tighten the knob. Fig A.



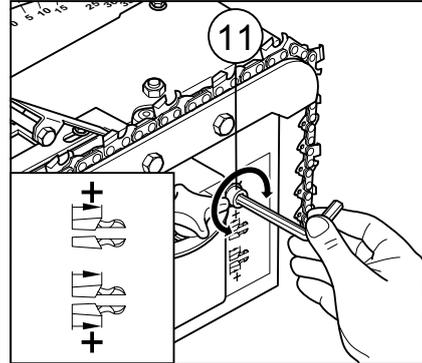
GRINDING ANGLE

The grinding angle can be set from 0°-35°. Loosen the knob to change. Turn the grinding head to the desired angle on the degree scale. Tighten the knob. Fig B.

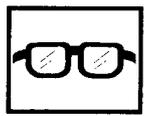


CENTRING THE GRINDING WHEEL

If the lengths of the right and left cutting links turn out different on sharpening, this can be adjusted with adjusting screw 11. When the screw is adjusted, the length of the inner or outer cutting links increases.



Be ready to stop the machine if something goes wrong during trial sharpening.

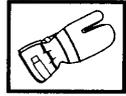


Check that the grinding wheel is not cracked and that it is securely fixed to the spindle. Stop the grinding wheel immediately if abnormal vibrations occur.

TRIAL SHARPENING

Test the various functions of the machine and study its motions. Always stop the machine when the grinding head reaches its uppermost position. The chain rulers are then “unlocked” and the chain is free. When you have done a trial run with the machine and feel familiar with it, you can put in a chain. Now test-sharpen a chain, following the instructions in the section Sharpening cutting links. In the interest of safety, use an old chain.

SHARPENING CUTTING LINKS



**Always wear safety gloves when handling saw chains.
Risk of cutting injury.**

With manual or automatic shutdown. The machine can be stopped manually without a stop clamp when sharpening is complete, or with a stop clamp as described below.

Activate Power on, switch 7

Start grinding motor only with switch 1.

Using profile stone 7, profile the grinding wheel for the type of chain to be sharpened, as shown in Figure H. Check with profile template 6.

Stop the grinding motor with switch 1.

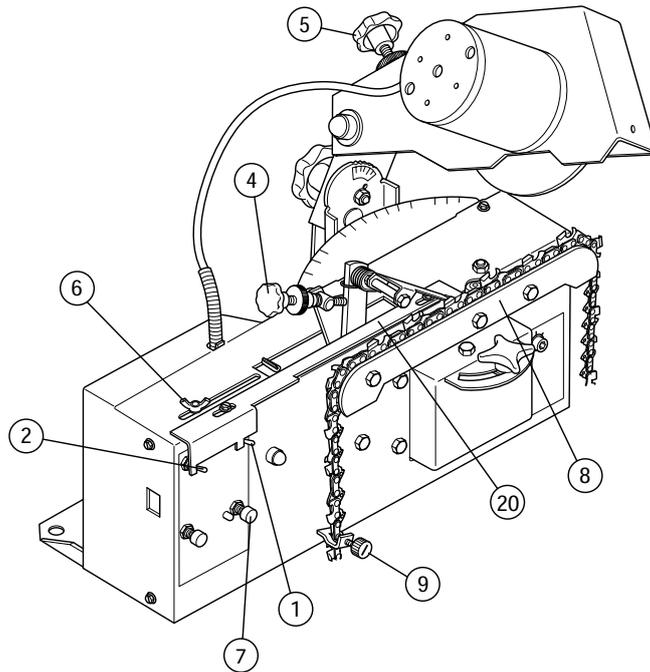
Place the chain to be sharpened between chain rulers 8.

Pull the chain around by hand and check that it runs freely in the chain track.

Check also whether the chain has “double links”, that it does not have any burrs on the drive links and that it is not damaged.

NOTE: If there are double links, see the instructions for double links.

- Check that the grinding head is square to the teeth.
- Start the automatic system with switch 2.
- With wingnut 6, set the correct stroke for the chain to be sharpened.
- Set the approximate sharpening depth with wheel 5.
- Set the approximate sharpening depth with wheel 4.
- Start the grinding motor only with switch 1.
- Set the sharpening depth finely with wheel 5.
- Set the sharpening length finely with wheel 4.
- Stop the automatic system with switch 2 and the motor with switch 1.
- Then fix clamp 9, see Fig F, after the first or last sharpened tooth.
- Let the machine run one revolution to clamp 9. Fig F. Stop the machine against stop arm 20.



FOR A DOUBLE LINK, PROCEED AS FOLLOWS

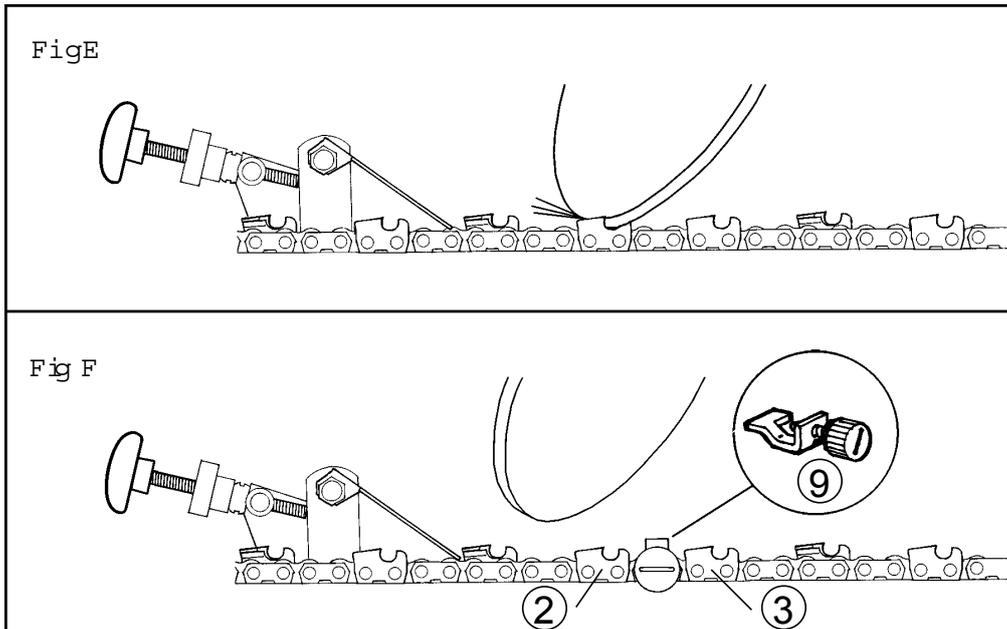
Sharpen the other (2) (Fig E) of the two links on the same side, double links 2.3.

Stop the automatic system with switch 2.

Fix the clamp 1 (Fig F) between the two double links 2.3.

Start the automatic system with switch 2 and the motor with switch 1.

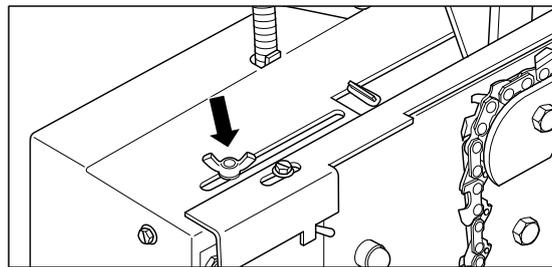
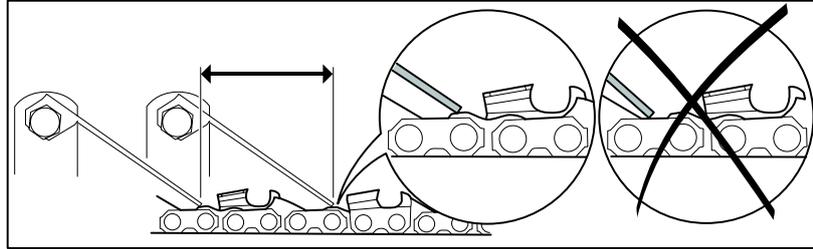
Let the machine run one revolution to clamp 9 (Fig. F). Stop the machine using the stop arm 20.



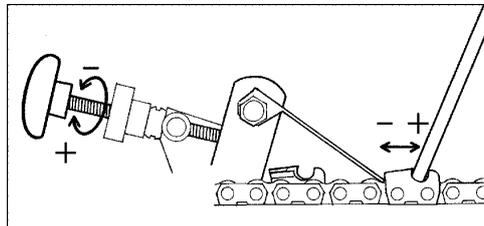
SHARPENING SETTING

Setting the stroke between the cutting links.

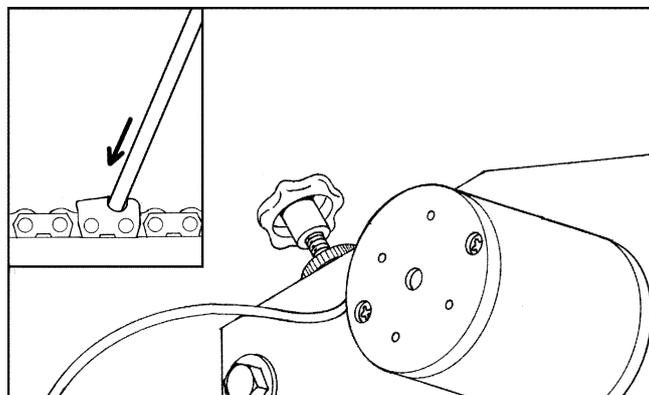
(Slacken the wingnut and push it to the right for a shorter stroke.)



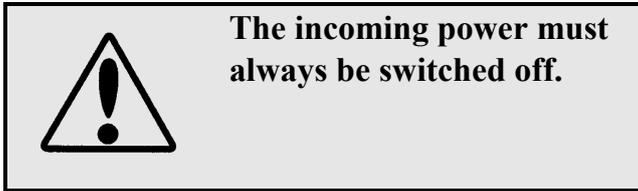
Adjust the cutting tooth length setting. (Clockwise = shorter cutting tooth)



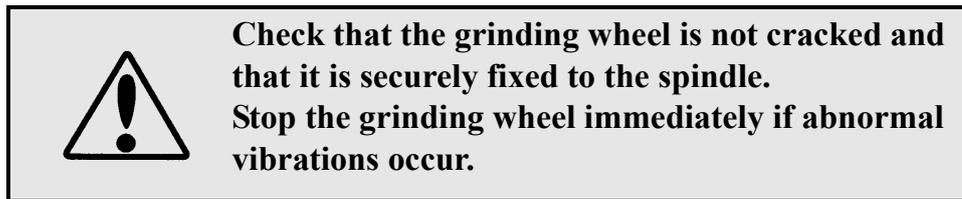
Depth adjustment of the grinding wheel. (Anticlockwise=deeper grinding into the cutting tooth).



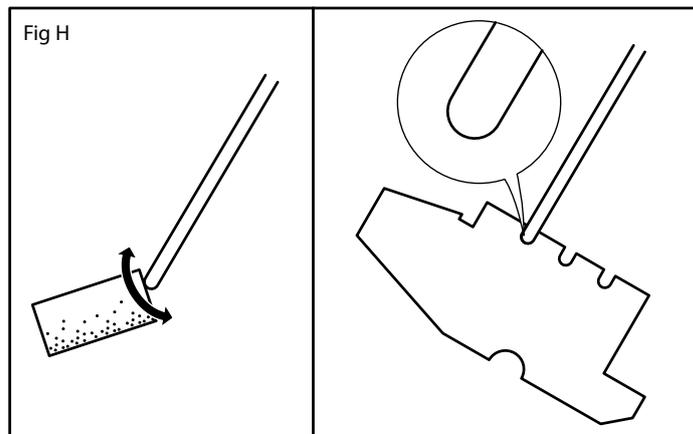
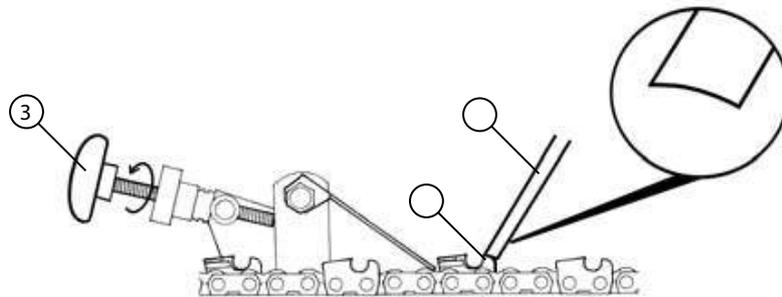
GRINDING THE DEPTH GAUGE LUGS



Set the grinding angle (α° degrees); see under Grinding angle.



Install the correct grinding wheel 1 (Fig G) for grinding the depth gauge lugs (6 mm). Profile the grinding wheel so that it matches the lugs 2. Adjust 3 back so that the grinding wheel 1 is aimed at the lug 2. (Apart from this, perform the adjustment in the same way as when adjusting the grinding of cutting links).



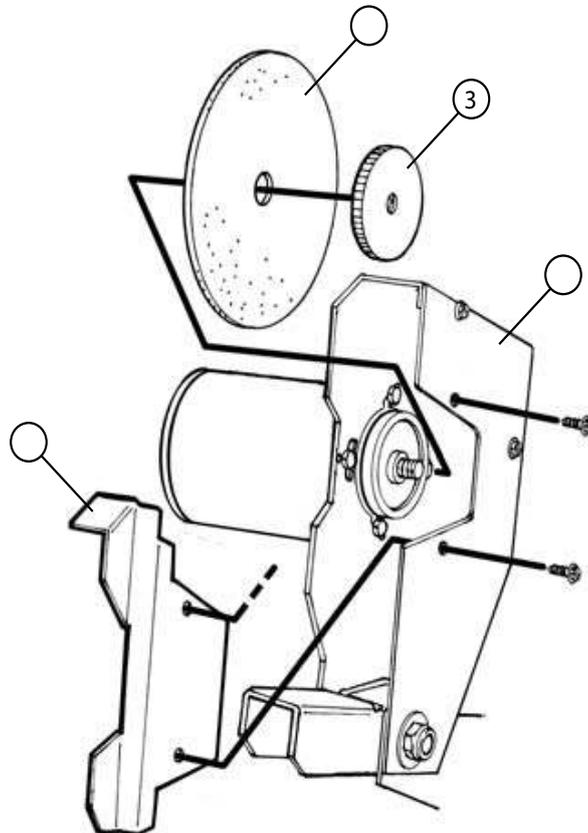
MAINTENANCE

CHANGING THE GRINDING WHEEL

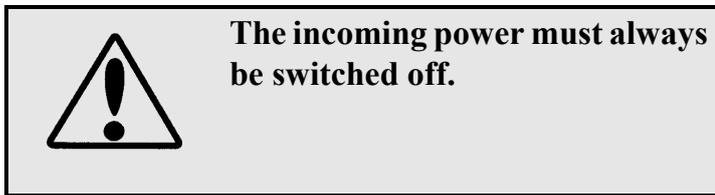


The incoming power must always be switched off.

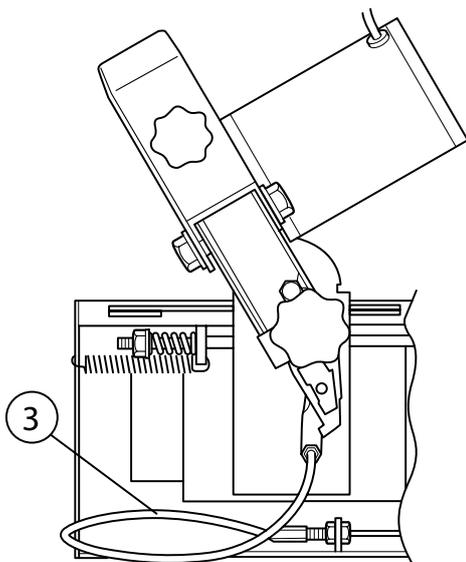
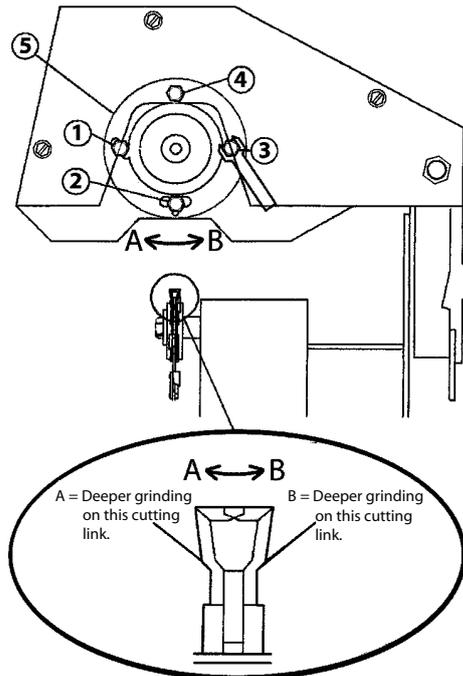
1. Lift up the grinding head (1) and remove the guard (9).
2. Hold the grinding wheel (2) and slacken the nut (3) manually or with pliers.
3. Remove the old grinding wheel and fit the new one. Hand-tighten the nut



SETTINGS AND SERVICING



If one cutting link gets too deep or too shallow, this can be changed by slackening screw 1, 2, 3 or 4 and turning motor 5 as shown. Turn the motor in the relevant direction and tighten the screws. The machine is largely maintenance-free, but it should be kept clean by removing any grinding dust.



The wire (3) must be inspected after 40 hours' running to check that it is not in poor condition and that its tension is correct.

TROUBLESHOOTING

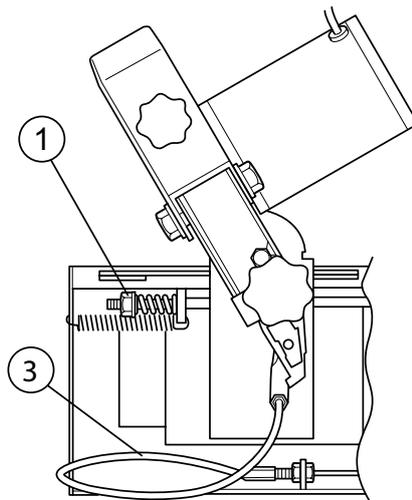


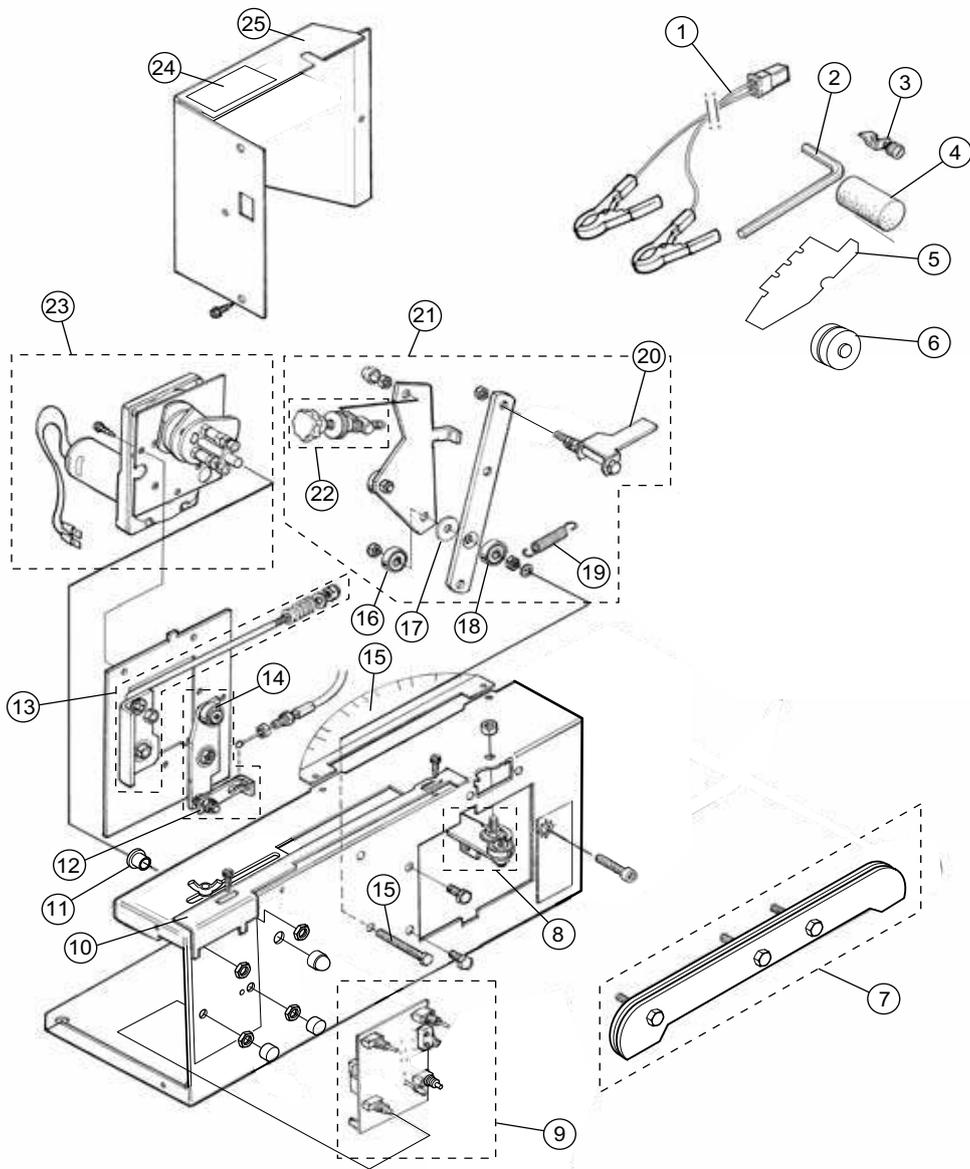
The incoming power must always be switched off.

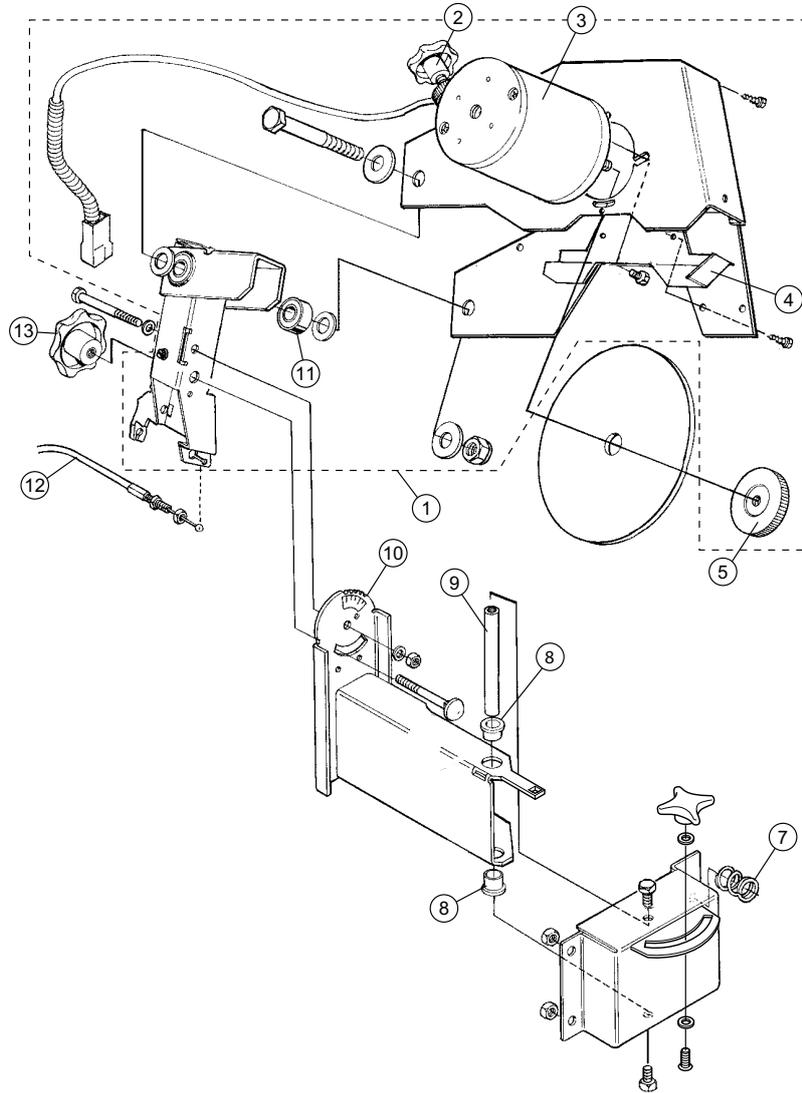
The chain is not fixed during sharpening (Fig. I). Tighten M6 nut (1) clockwise about one turn, or more if necessary.



More thorough servicing or troubleshooting must be done by the dealer's servicing team.







EC DECLARATION OF CONFORMITY

Manufacturer:

Markusson Development Systems AB

Tegelbruksvägen

762 31 Rimbo, Sweden

hereby declares that:

Sematic 2

has been manufactured in compliance with the following EC directives:

98/37 EC, The Machine Directive

73/23 EEC as amended, The Low-Voltage Directive

89-336/EEC as amended, The EMC Directive

The following standards were used as a basis for this declaration.

EN ISO 12100-1, -2

EN 61000-6-3, EN 55014-1, -2

Signed:

CEO: Pär Markusson

Company:

Markusson Development Systems AB

Tegelbruksvägen

762 31 Rimbo, Sweden

Date: 2013-01-01

Place: Rimbo Sweden

Sign:



Basic tips:

Cutting angle, see page 8 in the operator's manual. In most cases we recommend to grind at 60 degrees or from 50 to max 75 degrees. This also applies if the chain manufacturers recommend other settings.

Sharpening settings, see page 12 in the operator's manual.

The stroke length setting is changed by loosening the wing nut. Now slide the plate that controls the stroke length so that the front feeder arm falls down approximately 2 mm behind the cutting tooth to be fed forward. Tighten the wing nut.

Dressing the grinding wheel, see page 13 in the operator's manual. Before sharpening the cutting links, dress the periphery of the grinding wheel so it has an even radius. The grinding wheel must be round before sharpening and correspond to the round file intended to sharpen the equivalent chain. Check against the supplied dressing gauge (which also acts as a transport support).

The supplied **sprocket weight** can ideally be used as a weight on the chain to stretch it when sharpening. It is beneficial if the chain is slightly “tight”.

This grinder can sharpen most available saw chains, but not 404 chains designed for logging machines.

Equally long cutting links, see page 9 in the operator's manual (CENTRING THE GRINDING WHEEL). If the right and left-hand cutting links are of different lengths after they have been sharpened, this is adjusted using the adjuster screw, 11. When adjusting the adjuster screw the length of the inner and outer cutting links decreases respective increases.

