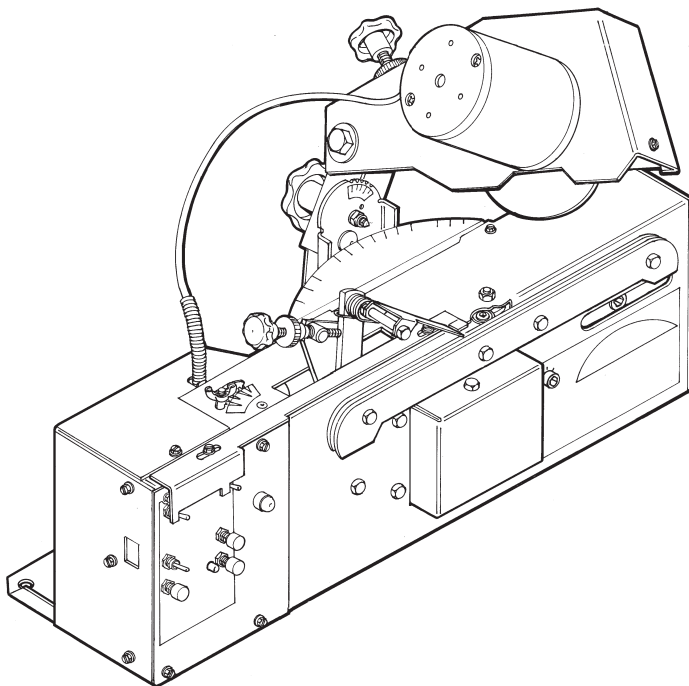


# Grindomatic V12



## User guide

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

**CONTENTS**

**CONTENTS ..... 2**

**GENERAL ..... 3**

**DESCRIPTION OF FIELD OF APPLICATION..... 3**

**SYMBOLS ..... 4**

**WARNING STICKERS ..... 4**

**SAFETY REGULATIONS..... 5**

**MOTOR DATA - Grindomatic V12..... 5**

**POWER SUPPLY ..... 6**

**FUNCTIONS ..... 7**

**INSTALLING THE SHARPENING MACHINE ..... 8**

**POWER SUPPLY ..... 8**

**CUTTING ANGLE ..... 8**

**SHARPENING ANGLE ..... 8**

**CENTRING THE GRINDING WHEEL ..... 9**

**TRIAL SHARPENING ..... 9**

**SHARPENING CUTTING LINKS ..... 10**

**FOR A DOUBLE LINK, PROCEED AS FOLLOWS ..... 11**

**SHARPENING SETTING ..... 12**

**GRINDING THE DEPTH GAUGE LUGS ..... 13**

**MAINTENANCE ..... 14**

**CHANGING THE GRINDING WHEEL ..... 14**

**SETTINGS AND SERVICING ..... 15**

**TROUBLESHOOTING ..... 16**

**EC DECLARATION OF CONFORMITY..... 19**

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, user 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 on this page 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 be used to sharpen cutting chains as used on power saws, forestry machines and harvesters.

The machine can 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

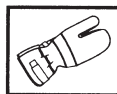
Before using the chain sharpening machine, read this user guide thoroughly and make sure that you have understood it all.



Wear eye protection.



Wear safety gloves.



## WARNING STICKERS



Take care



Risk of cutting injury.



Direction of rotation

## **SAFETY REGULATIONS**

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

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 - Grindomatic V12**

Grinding motor

Voltage: 12 volts

Rotation speed: 2800 r/min

Peripheral speed: 22 m/s

Power: 90 watts

Current: 7.5 A

Grinding wheel: 150 x 4 x 16 mm

Overcurrent protection: Miniature circuit-breaker type ptc

Machine 10.6 kg

Machine dimensions: L400 x W350 x H350 mm

Working voltage: Min 12 V, max 15 V

## POWER SUPPLY

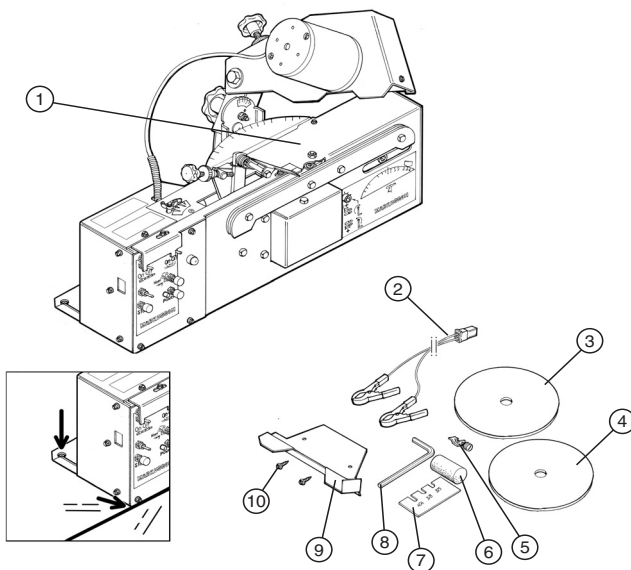
For optimum performance, the machine should be connected to a 12-volt car battery, but it can also be powered from a battery charger or some other converter with an output of 12 to max 15 volts (at least 10 amps).

### NOTE:

**Position the battery, battery charger or power converter where there is as little dust as possible.**

**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

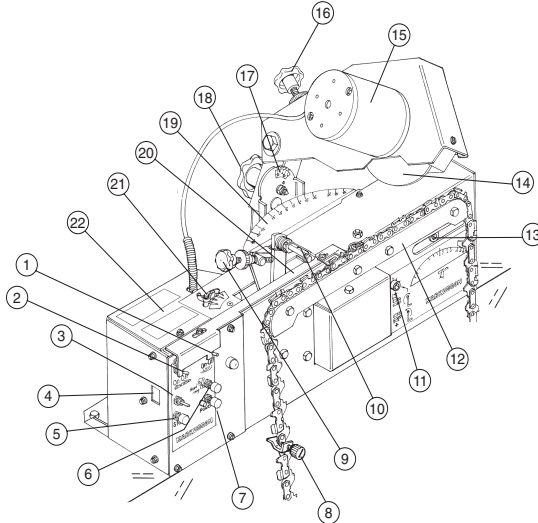
8. Allen key

9. Grinding wheel guard:

10. Self-tapping screw x 2

## FUNCTIONS

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

### POWER SUPPLY

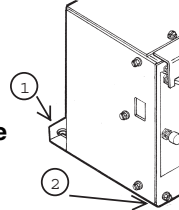
For optimum performance, the machine should be connected to a 12-volt car battery, but it can also be powered from a battery charger or some another converter with an output of 12 to max 15 volts (at least 10 amps).

Connect with the cables supplied, with a connector to the connector of the sharpening machine.

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

If the cables are connected the wrong way round, the grinding wheel and the feed motor will rotate the wrong way.

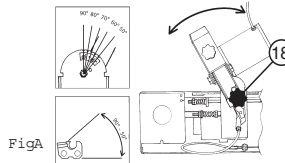
**Check that the direction of rotation agrees with the arrow on the grinding wheel guard.**



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

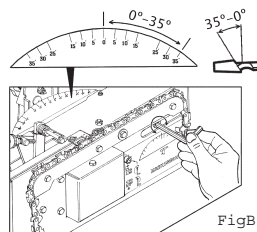
### CUTTING ANGLE

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

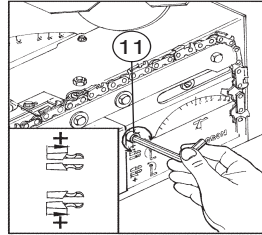
The grinding angle can be set from 0° to 35°. If you want to change the angle, slacken the Allen screw. (NOTE: Max three turns). Turn the grinding head to the desired angle on the degree scale. Tighten the Allen screw. Fig B.





## 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 the 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 under 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.

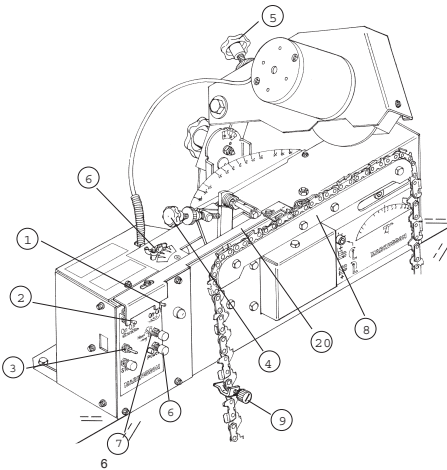
Stop the grinding motor with switch 1.

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 rulers. 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.**

- If the grinding head is at the wrong angle to the tooth, rock the head with button 7.
- Start the automatic system with switch 2.
- With wingnut 6, set the correct stroke for the chain to be sharpened.
- Set the sharpening depth approximately with wheel 5.
- Set the sharpening length approximately 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.
- Adjust the grinding speed with switch 3. Lots of material removed = tortoise.
- 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 with stop arm 20.

FigE

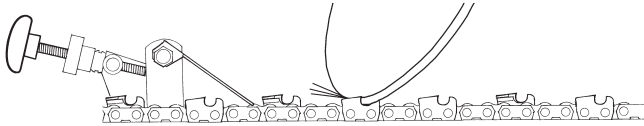
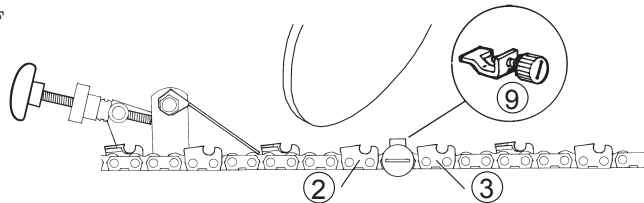


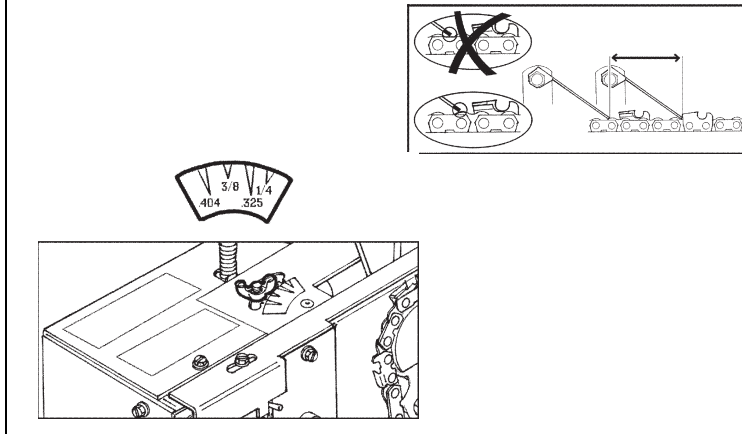
Fig F



## SHARPENING SETTING

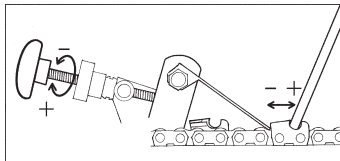
Setting the stroke between the cutting links.

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



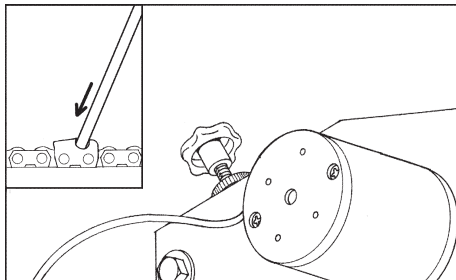
Adjust the cutting tooth length setting. (Clockwise = shorter cutting

tooth)




Depth adjustment of the grinding wheel. (Anticlockwise=deeper

grinding into the cutting tooth).




# GRINDING THE DEPTH GAUGE LUGS



**The incoming power must always be switched off.**

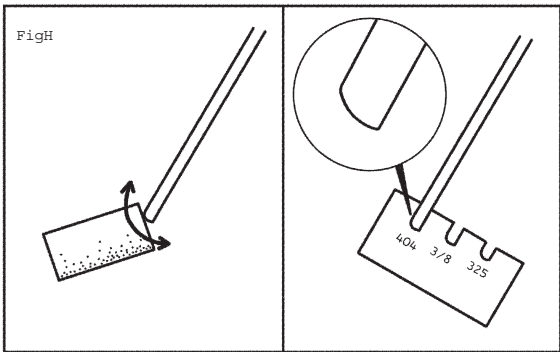
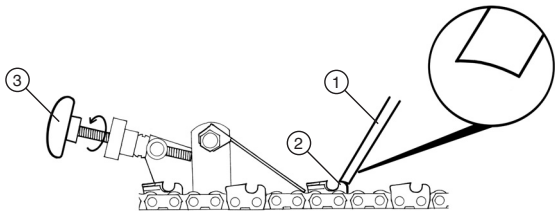
Set the grinding angle ( $0^\circ$  degrees); see under Grinding angle.



**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.**

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, a similar procedure to the grinding of cutting links).



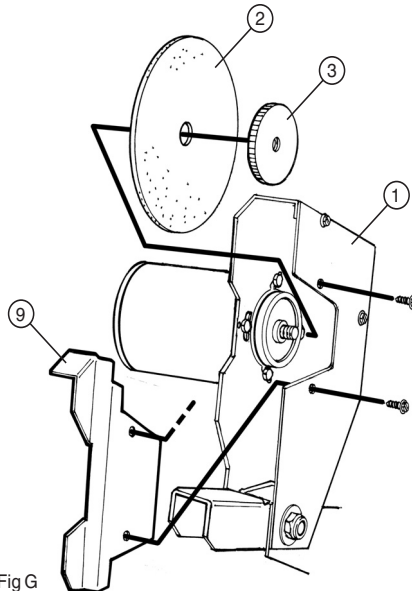
## MAINTENANCE

### 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.

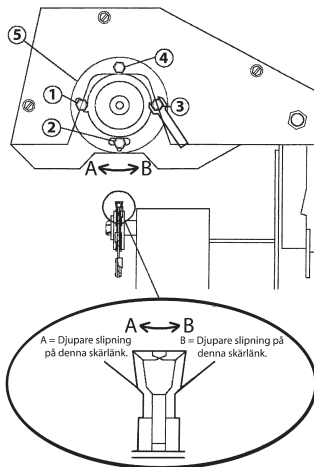
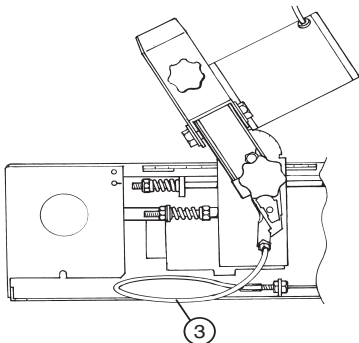


## SETTINGS AND SERVICING



**The incoming power must always be switched off.**

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.



**Replace the wire immediately if it is in a poor condition.**

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.**

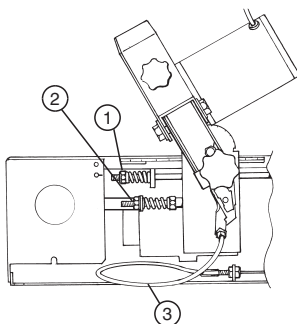
The chain is not fixed during sharpening (Fig. I). Tighten M6 nut (1) clockwise about one turn, or more if necessary.

Example: the degree setting shows  $35^\circ$  in one direction and  $25^\circ$  in the other direction when the head is rocked.

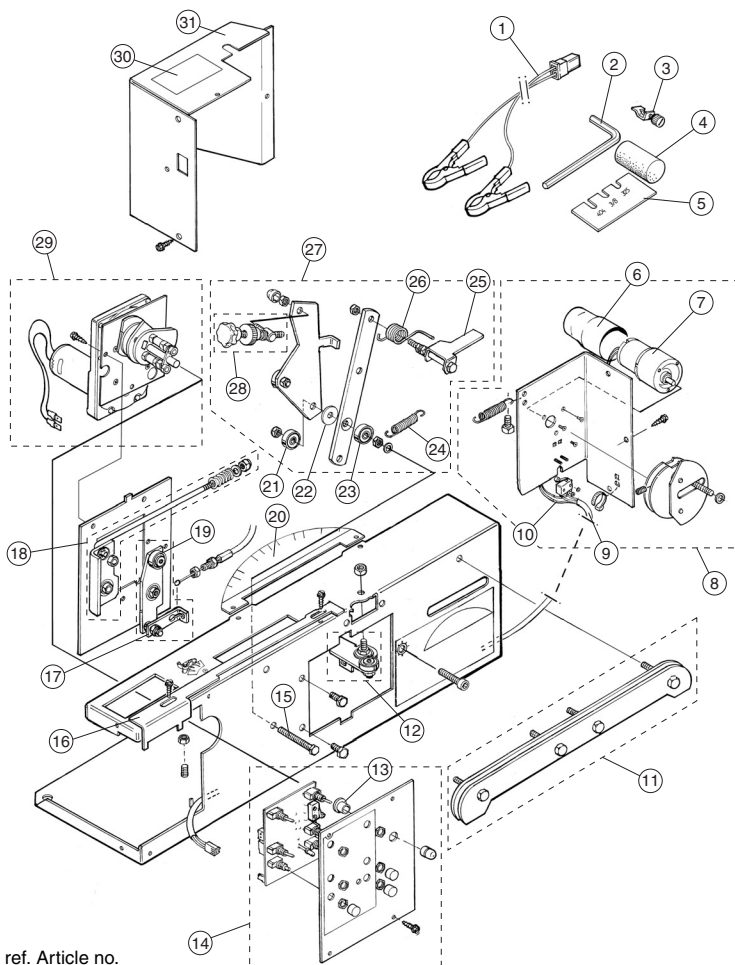
Adjust with M6 nut (2) by about half a turn at a time in the direction that is out, rocking the head to check that the setting is better.



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

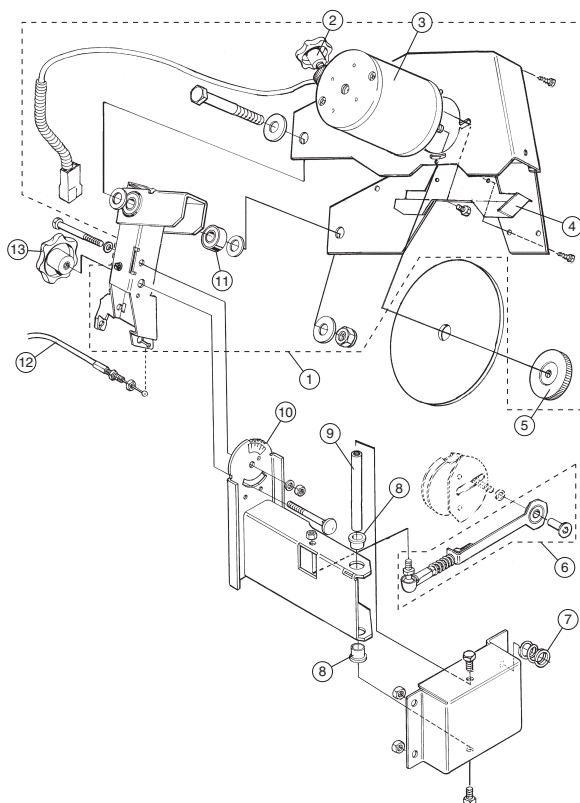






ref. Article no.

1. 12-020	10. 12-029	19. 12-038	28. 12-047
2. 12-021	11. 12-030	20. 12-039	29. 12-048
3. 12-022	12. 12-031	21. 12-038	30. 12-049
4. 12-023	13. 12-032	22. 12-041	31. 12-050
5. 12-024	14. 12-033	23. 12-038	
6. 12-025	15. 12-034	24. 12-043	
7. 12-026	16. 12-035	25. 12-044	
8. 12-027	17. 12-036	26. 12-045	
9. 12-028	18. 12-037	27. 12-046	



Ref. Article no.

- 1. 12-055
- 2. 12-056
- 3. 12-057
- 4. 12-058
- 5. 12-059
- 6. 12-060
- 7. 12-061
- 8. 12-062
- 9. 12-063
- 10. 12-064
- 11. 12-065
- 12. 12-066
- 13. 12-067

## EC DECLARATION OF CONFORMITY

Manufacturer:  
Markusson Development Systems AB  
Tegelbruksvägen  
762 31 Rimbo, Sweden

hereby declares that:  
Grindomatic V12  
Model: V12-S

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: 2005-11-08  
Place: Rimbo Sweden

Sign: Pär Olofsson