

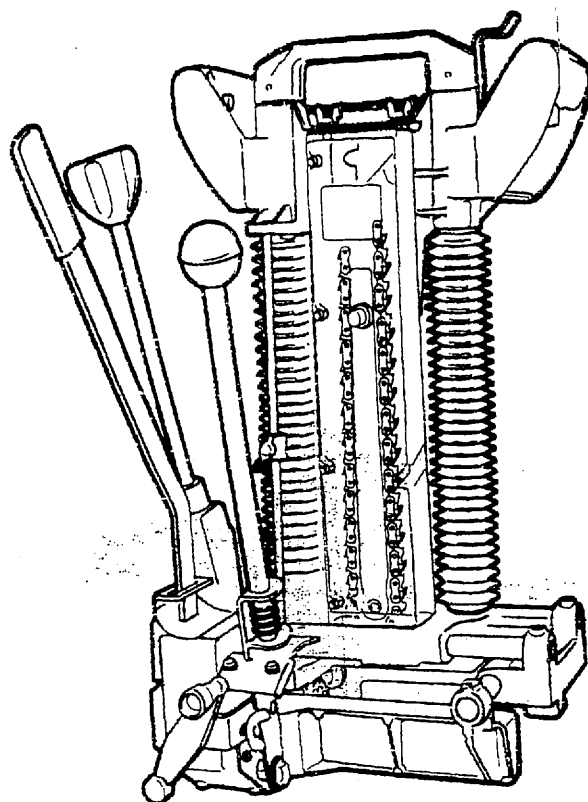
RYOBI®

CM-31

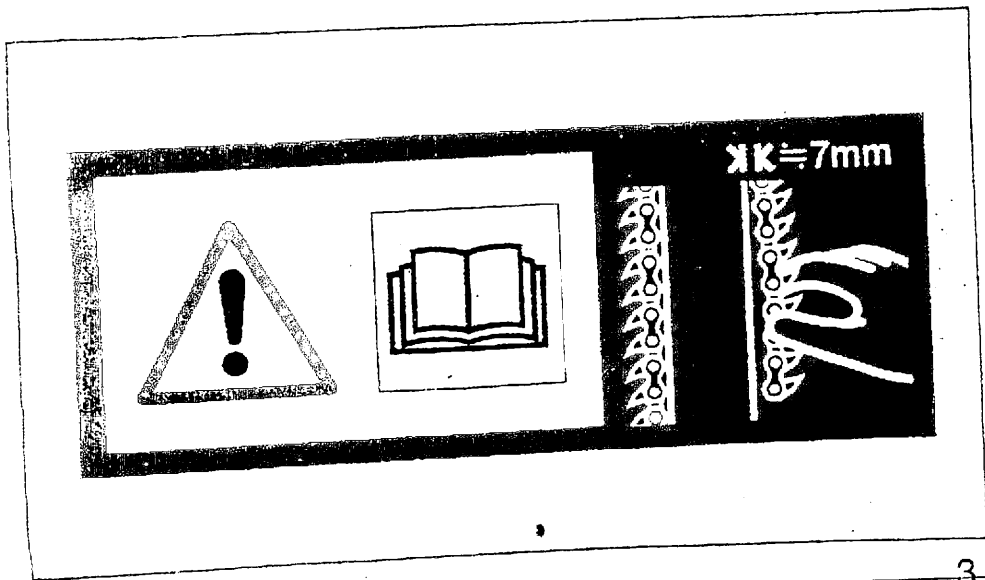
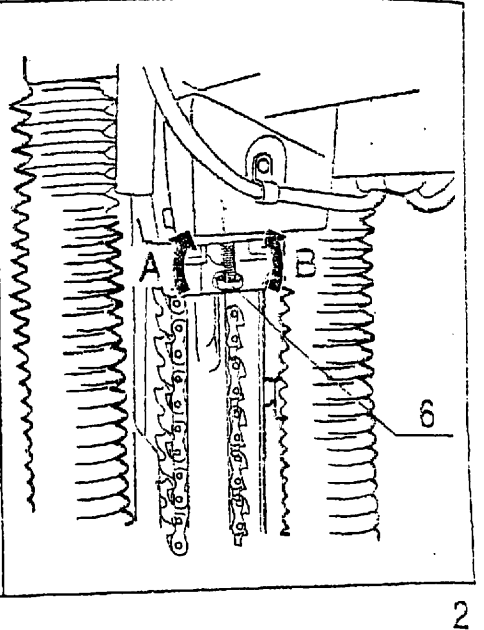
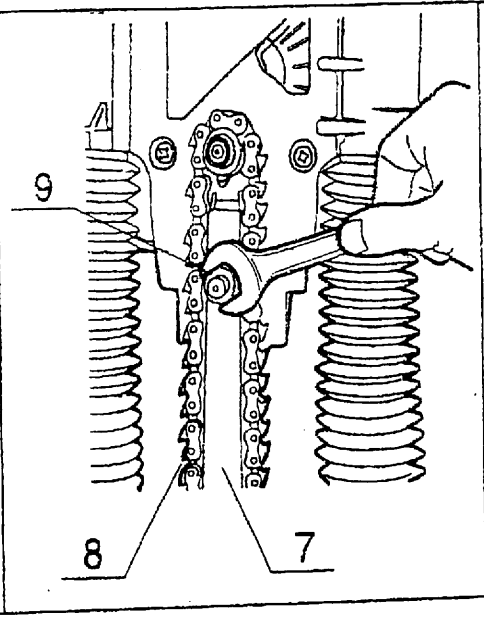
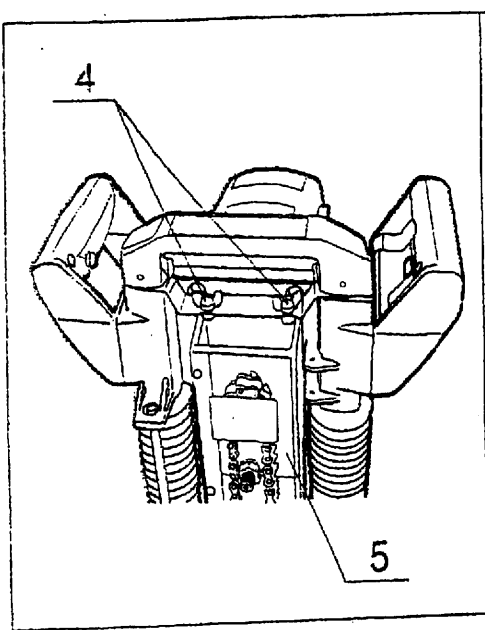
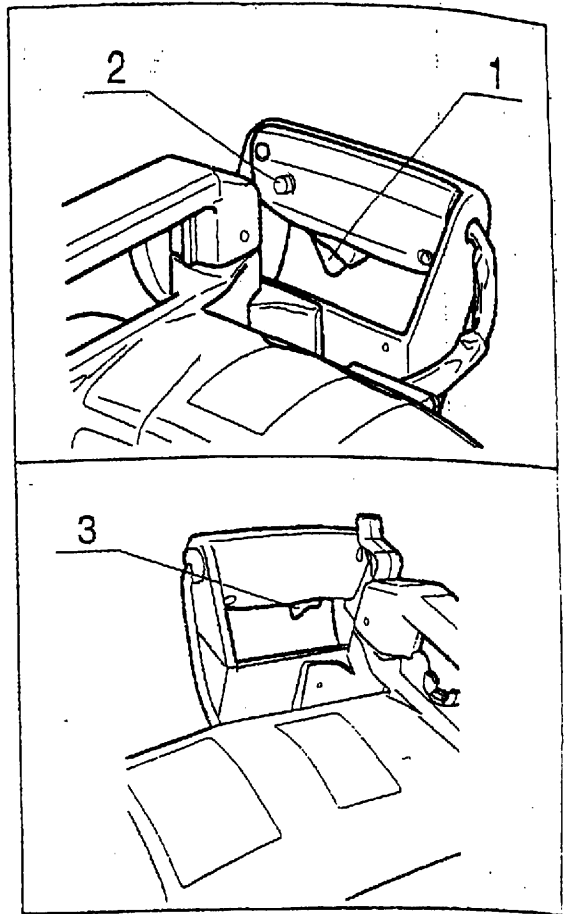
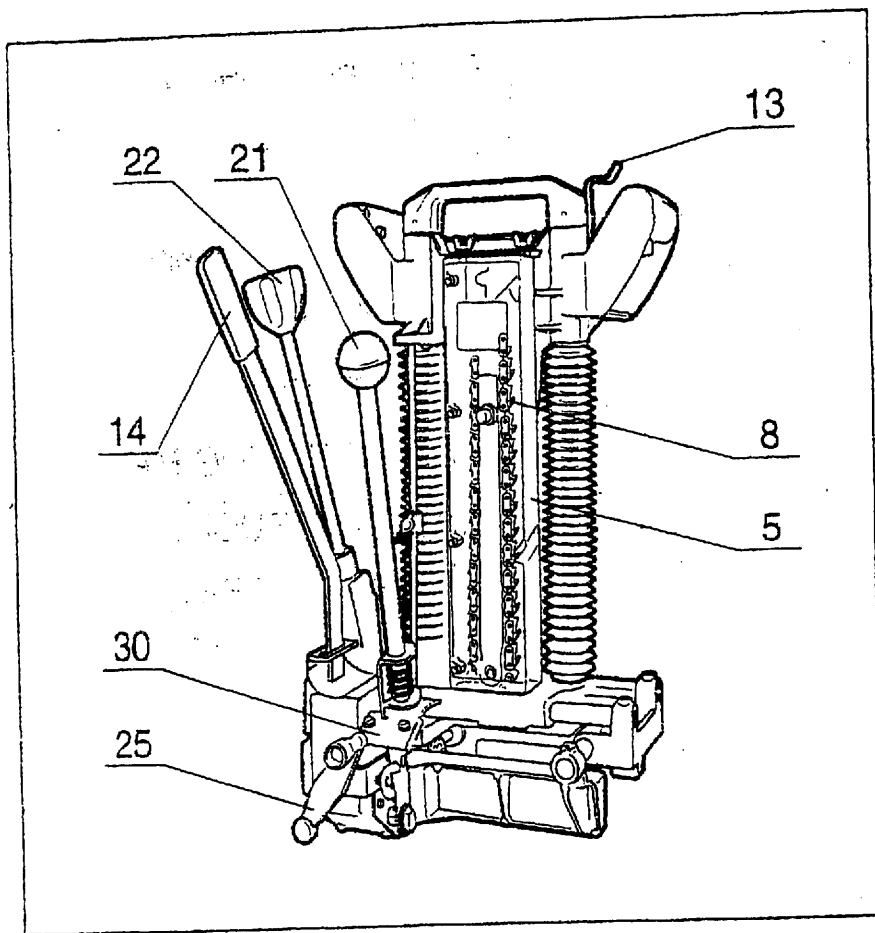
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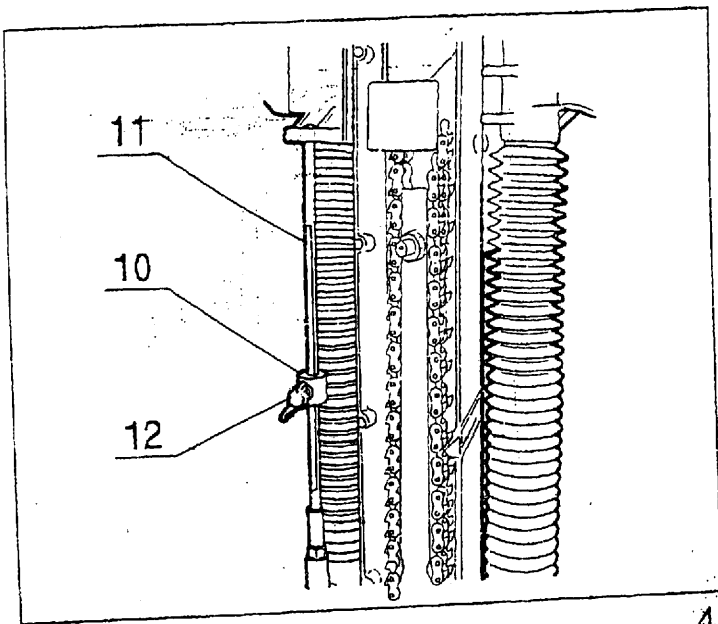
- (F) MORTAISEUSE A CHAIN
- (GB) CHAIN MORTISER
- (D) KETTENFRÄSE
- (E) CAJEADORA DE CADENA
- (P) MALHETADOR ELÉTRICO
- (NL) KETTING-GRCEFMACHINE

MANUEL D'UTILISATION
OWNER'S OPERATING MANUAL
BENUTZERHANDBUCH
MANUAL DEL USUARIO
MANUAL DE UTILIZAÇÃO
GEBRUIKSAANWIJZING

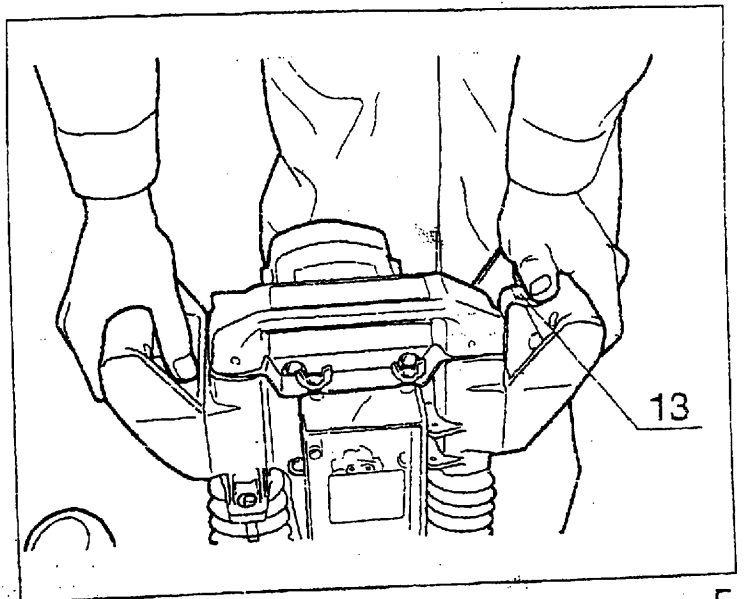


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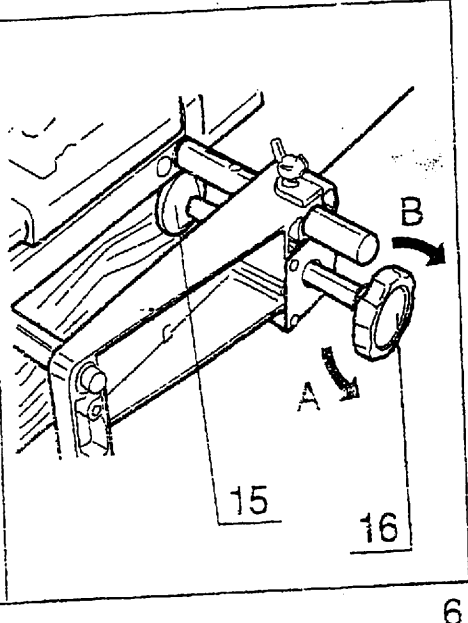
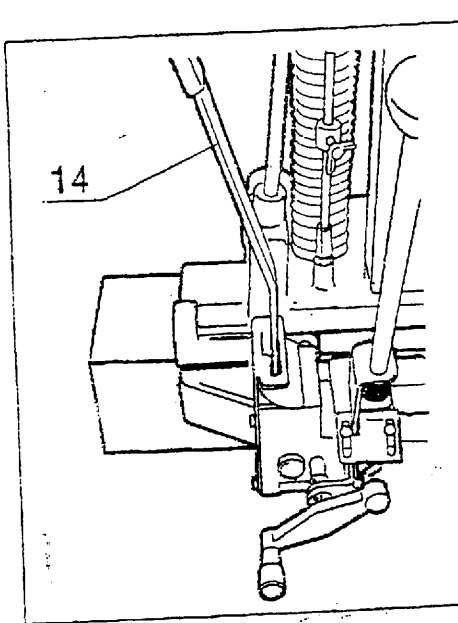




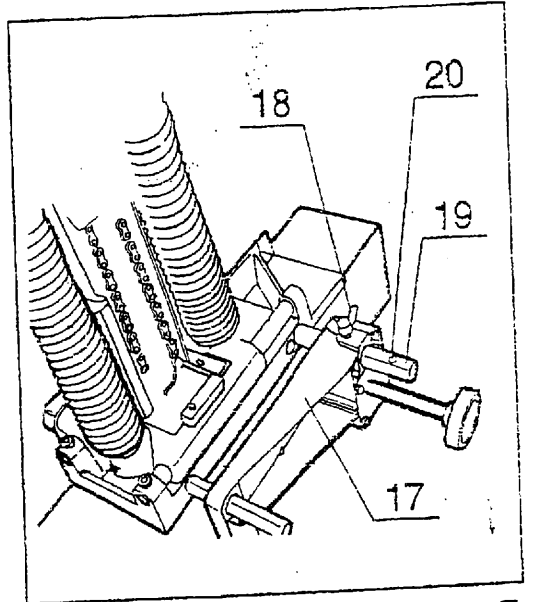
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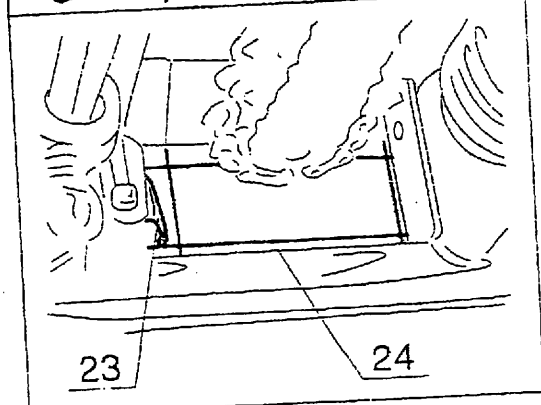
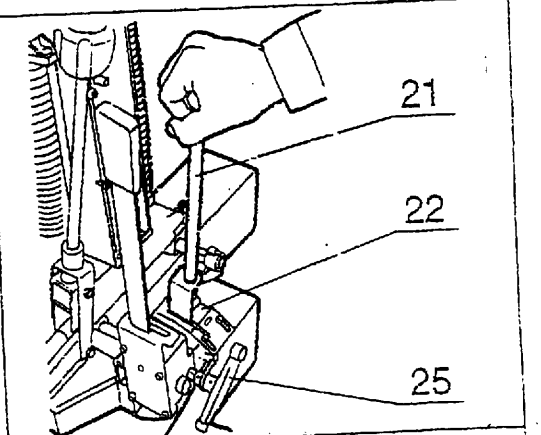
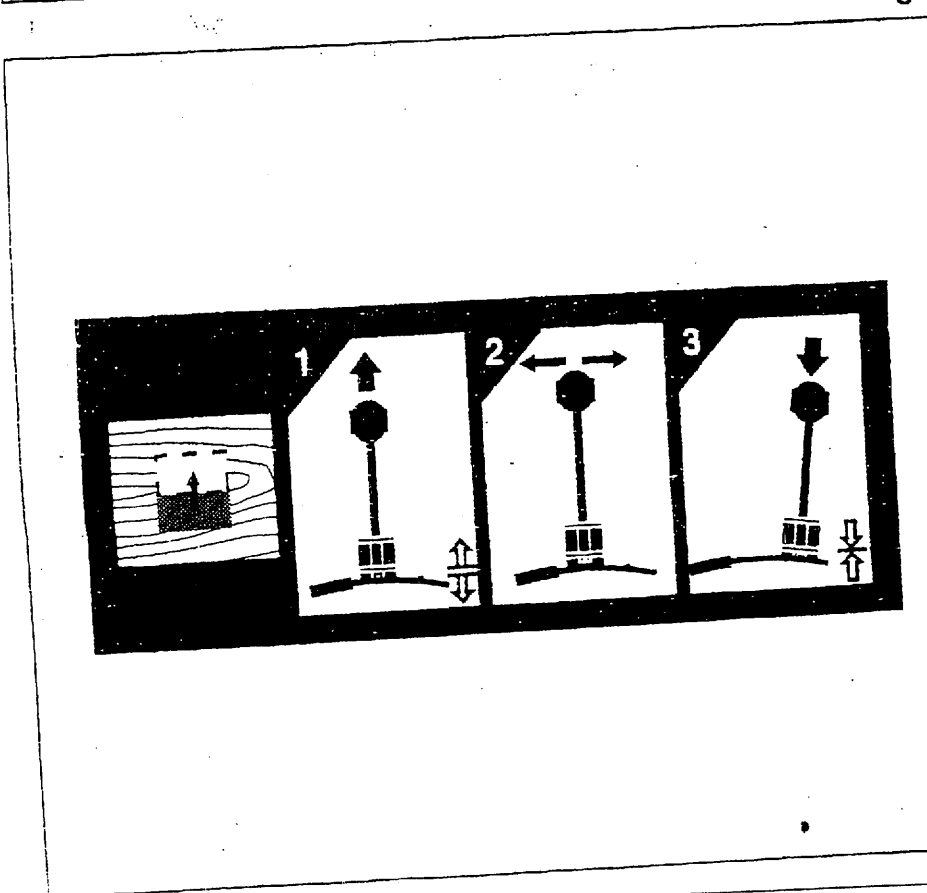
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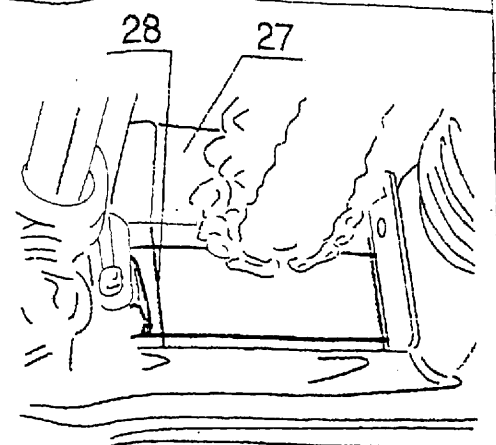
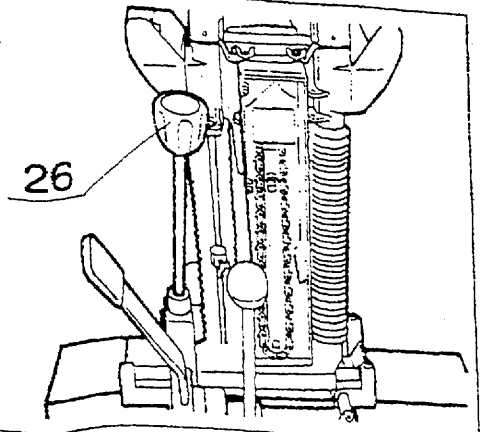
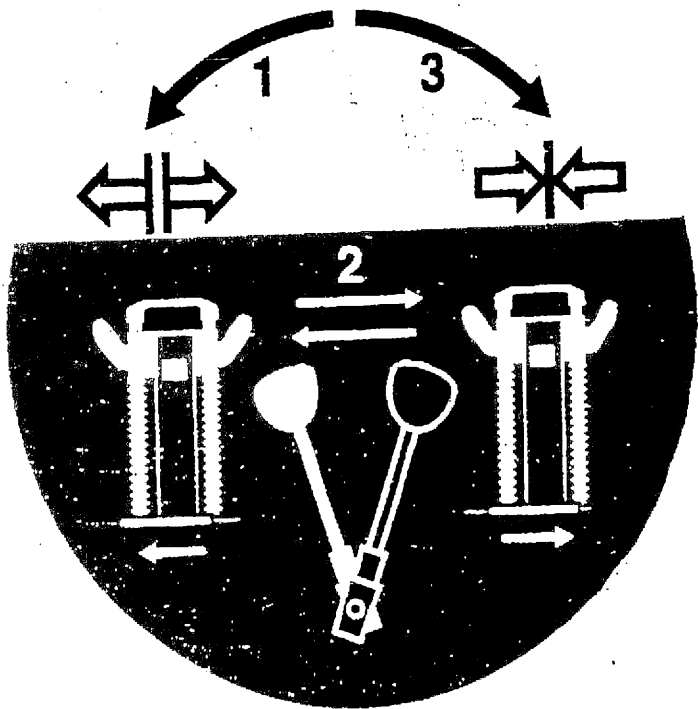
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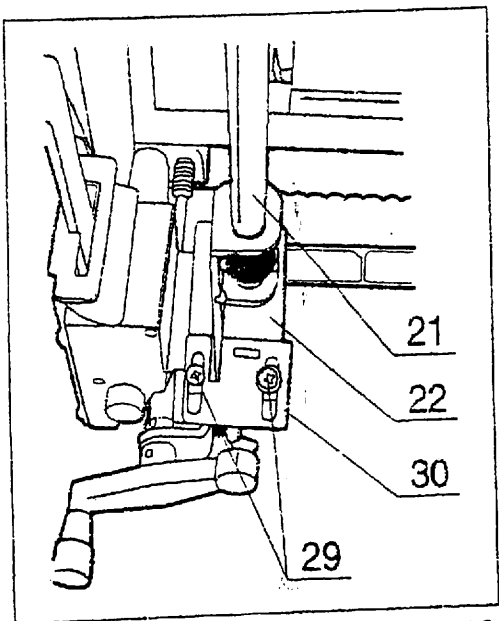
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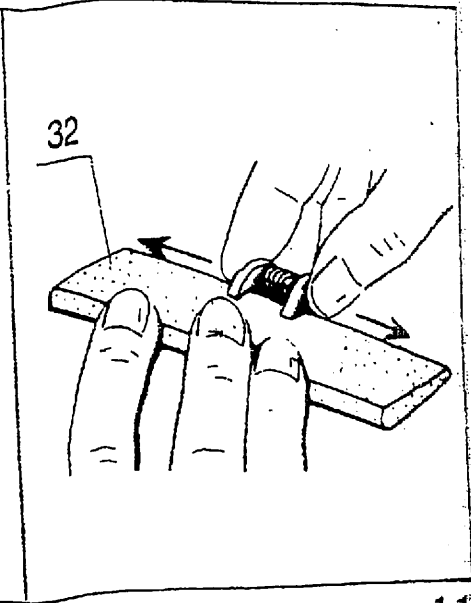
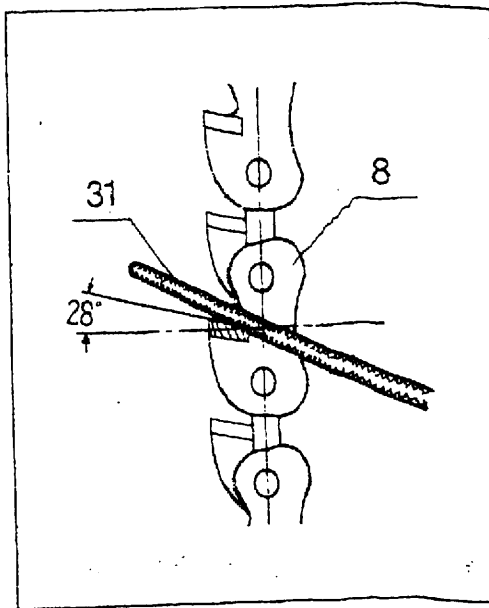
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THANK YOU FOR BUYING A RYOBI PRODUCT.

To ensure your safety and satisfaction, carefully read through this OWNER'S MANUAL and SAFETY PRECAUTIONS before using the product.

WARNING:

Do not connect this tool to power supply until you have assembled and adjusted the tool as described in this manual and have read and understood all precautions and operating instructions in the manual and printed on the tool.

DESCRIPTION

- | | |
|------------------------|-------------------------------|
| 1. Safety switch | 17. Vise |
| 2. Safety lock | 18. Wing bolt |
| 3. Without-lock switch | 19. Slide bar |
| 4. Wing bolt | 20. Outer hole |
| 5. Protection cover | 21. Sizing lever |
| 6. Adjustment bolt | 22. Sizing base plate |
| 7. Chain guide bar | 23. Indication plate A |
| 8. Chain blade | 24. Inked line |
| 9. Hex. nut | 25. Shifting handle |
| 10. Stopper | 26. Shifting lever |
| 11. Stopper bar | 27. Indication plate B |
| 12. Wing bolt | 28. Inked line |
| 13. Lockout lever | 29. Screw |
| 14. Clamping lever | 30. Sizing plate |
| 15. Clamping plate | 31. File |
| 16. Clamping grip | 32. Comb-shape grinding stone |
- A. Loosen
B. Tighten

INSTRUCTIONS FOR SAFE HANDLING

- Make sure that the tool is only connected to the voltage marked on the name plate.
- Never use the tool if its cover or any bolts are missing. If the cover or bolts have been removed, replace them prior to use. Maintain all parts in good working order.
- Always secure tools when working in elevated positions.
- Never touch the blade, drill bit, grinding wheel or other moving parts during operation.
- Never start a tool when its rotating component is in contact with the workpiece.
- Never lay a tool down before its moving parts have come to a complete stop.
- ACCESSORIES:** The use of accessories or attachments other than those recommended in these instructions might present a hazard.
- REPLACEMENT PARTS:** When servicing use only identical replacement parts.

CHAIN MORTISER SAFETY PRECAUTIONS

- Make sure the chain blade is properly attached as described in the operating instructions before connecting power supply.
- Make sure the workpiece is free from nails and other foreign substances, which could break the blade.
- Press the switch and allow the chain mortiser to reach full speed before mortising the workpiece.
- Always remove the chain mortiser from the workpiece after use, otherwise it might drop and become damaged.
- Whenever installing, removing and adjusting the chain blade, wear gloves to avoid injury.
- Hold the tool handle securely with both hands with enough pressure to prevent kick back during use.
- Before and after cutting, lubricate the chain blade by rotating. Also, when storing the chain blade, wrap it up in oil paper or immerse it in oil. This prevents rust and prolongs its service life.

SPECIFICATIONS

Max. cutting depth	
Blade size	Cutting depth
9.5 mm (3/8")	120 mm (4-3/4")
12.7 mm (1/2")	
15 mm (19/32")	155 mm (6-1/8")
16.5 mm (21/32")	
18 mm (23/32")	
21 mm (13/16")	
24 mm (15/16")	
30 mm (1-1/8")	
Max. cutting width	30 mm (1-1/8")
Clamping width	50 - 185 mm (2" - 7-5/16")
Vise adjustment	
right and left	75 mm (3")
backward and forward	110 mm (5")
input	1,350 W
No load speed	3,400 min. ⁻¹
Overall dimensions	540 x 360 x 390 mm (21-1/4" x 14" x 15-11/32")
Net weight	16 kg (35.2 lbs.)

STANDARD ACCESSORIES

Chain blade (16.5 mm), Wrench

APPLICATIONS

(Use only for the purposes listed below.)

- Mortising.

NOISE BUILD-UP

Noise (sound pressure level) in the workplace can extended 85 dB (A); in this case, sound insulation and hearing protection measures must be taken by the operator.

UNPACKING

- Carefully remove all parts from the carton.
- Do not discard the packing material until you have identified all the parts using the parts list.
- If all parts have been included, proceed to assembly.
- If you are missing a part, contact your dealer to obtain it before attempting to assemble the tool.
- Examine all the parts to make sure no breakage has occurred during shipping. Any damaged part should be replaced before attempting to use the tool.

ASSEMBLY

This tool comes fully assembled.

SWITCH (Fig.1)

The tool has two different switches.

One is the safety switch (1). To prevent the motor being started accidentally, the trigger can only be squeezed if the safety lock (2) is depressed first, and it is not necessary to maintain pressure on the safety lock once the trigger has been squeezed.

And the other switch is the without-lock switch (3), the trigger of this switch is free.

This tool will only operate when both trigger switches are squeezed. If either of the triggers is released, the tool will stop.

MOUNTING AND REMOVING THE CHAIN BLADE (Fig.2)

WARNING!

Be sure to disconnect the tool from the power supply before attaching and removing chain blade.

- Remove the wing bolts (4) and then the protection cover (5).
- Loosen the hex. nut (9) holding the chain blade and the adjustment bolt (6) located on the back of the chain guide bar (7). Then, remove the chain blade (8) from the chain guide bar.

3. The chain blade rotates counterclockwise when viewed from the tool's front, so install the chain blade so that the teeth point downward on the left side of the chain guide bar.
4. The chain blade is removed by reversing the above procedures.

NOTE!

Make sure that the chain blade rotation is in correct.

CHAIN BLADE TENSION (Figs. 2, 3)

The optimum gap between the guide bar (7) and the chain blade (8) is approximately 7 mm. (Fig. 3)

1. Loosen the hex. nut (9) holding the chain blade with the wrench provided. (Fig. 2)
2. The chain blade tension can be adjusted by loosening or tightening the adjustment bolt (5) located on the back of chain guide bar with the wrench provided. (Fig. 2)

NOTE!

Too much tension causes an overload on the chain blade and motor. On the other hand, too little tension causes an inaccurate mortise.

ADJUSTMENT OF MORTISER DEPTH (Fig. 4)

Adjust the stopper (10) to the desired mortise depth. The scale on the stopper bar (11) indicates the mortise depth. Loosen the wing bolt (12), and set the upper-end of the stopper at the desired mortise depth according to the scale. Then, retighten the wing bolt.

CAUTION!

The tip of blade is actually 25 mm deeper than the scale indicated on the stopper bar.

LOCKOUT LEVER (Fig. 5)

The lockout lever(13) is a safety device. The chain blade cannot be lowered unless the lever is pressed. To start mortising, press the lockout lever and release the lock.

CLAMPING SYSTEM (Fig. 6)

1. Confirm the clamping lever (14) is not locked. If the clamping lever is locked, shift it right and draw it away from its lock position.
2. Bring the clamping plate (15) close to a workpiece by rotating the round clamping grip (16). At this time, allow a clearance (about 5mm) between the clamping plate and the workpiece.
3. Push the clamping lever and shift it left, and it will be locked. If the workpiece is clamped too tightly or too loosely, adjust it by rotating the round clamping grip.
4. To remove the tool, loosen the clamping lever and lift the handles.

CLAMPING WORKPIECE FROM 130 mm TO 185 mm WIDTH (Fig. 7)

A maximum clamping width of the vise unit can be adjusted in two stages. The vise (17) is set at the position for a maximum 130 mm clamping width in factory. To clamp a workpiece over 130 mm, remove the wing bolt (18) which fix the vise to the slide bar (19), then reset the vise at the position of outer hole (20) on the slide bar. It is possible to clamp maximum 185mm workpieces.

ADJUSTING FOR MORTISING POSITION

WARNING!

Do not make adjustments while the mortar is in motion.

LONGITUDINAL SHIFTING (Fig. 8)

After clamping the workpiece, move the sizing lever (21) to the front lock position on the sizing base plate(22). The sizing lever can be moved back and forth while pulling it upward to allow a double cut. Align the indication plate A (23) with the front inked line (24) on the workpiece by turning the shifting handle (25).

CROSSWISE SHIFTING (Fig. 9)

Rotate the grip of shifting lever (26) counterclockwise, and adjust the position of machine by moving the shifting lever so that the indication plate B (27) is aligned with the inked line (28).

Then, fix the position of the machine adjusted by rotating the grip of shifting lever clockwise. This will lock the machine in the adjusted position.

SIZING (Fig. 10)

In case of 30 mm width mortising, use the sizing lever (21). Loosen the two screws (29) and adjust both ends of the sizing plate (30) to the scale on the sizing base plate (22) equal in width to the chain blade to be used. Then, retighten the two screws.

(Example)

In case of making a 30mm width mortise by using the 24mm chain blade, loosen the both screws (29) on the sizing plate (30) and slide it to the 24 indication line marked on the sizing base plate (22), then tighten the two screws.

Shift the sizing lever (21) to the front lock position on the sizing base plate and mortise the workpiece, then put it back to another lock position on the sizing plate and mortise again. A 30mm mortise will be finished.

MAINTENANCE

After use, check the tool to make sure that it is in top condition. It is recommended that you take this tool to a Ryobi Authorized Service Center for a through cleaning and lubrication at least once a year. DO NOT MAKE ANY ADJUSTMENTS WHILE THE MOTOR IS IN MOTION.

ALWAYS DISCONNECT THE POWER CORD FROM THE SUPPLY BEFORE CHANGING REMOVABLE OR EXPENDABLE PARTS (BLADE, CHAIN BAR, SPROCKET ETC...), LUBRICATING OR WORKING ON THE UNIT.

HAND GRINDING FOR CHAIN BLADE (Fig. 11)

Grind the chain blade (8) by a file (31) roughly, then finish it by the comb-shaped grinding (32) stone of optional accessory. Place the grinding stone on a plane and hold the chain blade as shown in Fig.10. Then slide the chain blade about 10 to 15 times longitudinally on the grinding stone. Before grinding, coat the grinding stone with a amount of oil.

WARNING!

To ensure safety and reliability, all repairs should be performed by an AUTHORIZED SERVICE CENTER or other QUALIFIED SERVICE ORGANIZATION.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

GB Safety instructions

WARNING!

When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the following.

Read all these instructions before attempting to operate this product and save these instructions.

For safe operation:

1. **Keep work area clean**
Cluttered areas and benches invite injuries.
2. **Consider work area environment**
Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit. Don't use power tools in presence of flammable liquids or gasses.
3. **Guard against electric shock**
Avoid body contact with grounded surfaces (e.g. pipes, radiators, refrigerators).
4. **Keep children and visitors away**
Do not let children contact tool or extension cable. All visitors should be kept away from work area.
5. **Store idle tools**
When not in use, tools should be stored in dry, high, or locked-up place, out of the reach of children.
6. **Don't force tool**
It will do the job better and safer at the rate for which it was designed.
7. **Use right tool**
Don't force small tools or attachments to do the job of a heavy duty tool. Don't use tools for purposes not intended; for example, don't use circular saw for cutting tree limbs or logs.
8. **Dress properly**
Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
9. **Use safety glasses**
Also use face or dust mask if cutting operation is dusty.
10. **Connect dust extraction equipment**
If devices are provided for the connection of dust extraction and collection facilities ensure these are connected and properly used.
11. **Don't abuse cable**
Never carry tool by cable or yank it to disconnect it from socket. Keep cable from heat, oil and sharp edges.
12. **Secure work**
Use clamps or a vice to hold work. It's safer than using your hand and it frees both hands to operate tool.
13. **Don't overreach**
Keep proper footing and balance at all times.
14. **Maintain tools with care**
Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cable periodically and, if damaged, have repaired by authorized service facility. Inspect extension cables periodically and replace if damaged. Keep handles dry, clean and free from oil and grease.
15. **Disconnect tools**
When not in use, before servicing, and when changing accessories such as blades, bits and cutters.
16. **Remove adjusting keys and wrenches**
Form the habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
17. **Avoid unintentional starting**
Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
18. **Outdoor use extension cords**
When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
19. **Stay alert**
Watch what you are doing. Use common sense. Do not operate tool when you are tired.
20. **Check damaged parts**
Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by an authorized service center. Do not use tool if it cannot be turned on and off by the switch.
21. **Warning!**
The use of any other accessory or attachment other than recommended in this operating instruction or the catalogue may present a risk of personal injury, and could invalidate any guarantee.
22. **Tool repairing by expert only**
This electric tool is in accordance with the relevant safety rules. Repairing of electric tools may be carried out only by experts, otherwise it may cause considerable danger for the user.

SAFETY INSTRUCTION FOR WIRES

IMPORTANT!

The wires in this mains lead are colored in accordance with the following code:

Blue : Neutral

Brown : Live

As the colors of the wires in the mains lead of this appliance may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

The wire which is colored blue must be connected to the terminal which is marked with the letter N or colored black.

The wire which is colored brown must be connected to the terminal which is marked with the letter L or colored red.

Do not connect either wire to the earth terminal marked E or (Earth mark).

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(DF15)

F DÉCLARATION DE CONFORMITÉ
 nous déclarons sous notre propre responsabilité que ce produit est en conformité avec les normes ou documents normalisés suivants.

EN50144, EN55014

conforme aux réglementations 89/392/EEC et 91/368/EEC, 73/23/EEC et 89/336/EEC

Niveau de pression du son 93 dB(A)
 Niveau de puissance du son 103 dB(A)

La valeur d'accélération de la moyenne quadratique pondérée 2.73 m/s²

D KONFORMITÄTSEKLRÄRUNG
 Wir erklären in alleiniger Verantwortung, daß dieses Produkt mit den folgenden Normen oder normativen Dokumenten übereinstimmt.

EN50144, EN55014

gemäß den Bestimmungen der Richtlinien 89/392/EEC und 91/368/EEC, 73/23/EEC und 89/336/EEC

Schall druckpegel gemäß DIN 45635 Teil 21 93 dB(A)

Schall leistungspegel gemäß DIN 45635 Teil 21 103 dB(A)

Gewichteter quadratischer Beschleunigungsmittelwert 2.73 m/s²

P DECLARAÇÃO DE CONFORMIDADE
 Declaramos, sob nossa exclusiva responsabilidade, que este produto cumpre as seguintes normas ou documentos normativos.

EN50144, EN55014

conforme as disposições das directivas 89/392/EEC e 91/368/EEC, 73/23/EEC e 89/336/EEC

Nível de pressão do som 93 dB(A)

Nível de potência do som 103 dB(A)

Valor de aceleração médio quadrático ponderado 2.73 m/s²

GB DECLARATION OF CONFORMITY
 We declare under our sole responsibility that this product is in conformity with the following standards or standardized documents.

EN50144, EN55014

in accordance with the regulations 89/392/EEC and 91/368/EEC, 73/23/EEC and 89/336/EEC

Sound pressure level 93 dB(A)
 Sound power level 103 dB(A)

The weighted root mean square acceleration value 2.73 m/s²

E DECLARACION DE CONFORMIDAD
 Declaramos bajo nuestra sola responsabilidad que este producto está en conformidad con las normas o documentos normalizados siguientes.

EN50144, EN55014

de acuerdo con las regulaciones 89/392/EEC y 91/368/EEC, 73/23/EEC y 89/336/EEC

Nivel de presión acústica 93 dB(A)
 Nivel de potencia acústica 103 dB(A)

Valor de aceleración medio cuadrático ponderado 2.73 m/s²

NL KONFORMITEITSVERKLARING
 Wij verklaren dat dit produkt voldoet aan de volgende normen of normatieve documenten.

EN50144, EN55014

overeenkomstig de bepalingen van de richtlijnen 89/392/EEC en 91/368/EEC, 73/23/EEC en 89/336/EEC

Geluids druk niveau 93 dB(A)

Geluids vermogens niveau 103 dB(A)

De effectieve versnellingswaarde verkregen door het gemiddelde van de kwadraten met de vierkantswortel te delen 2.73 m/s²

CE 96

Machine : CHAIN MORTISER Type : CM-31
 Representative :
 Name of company : RYOBI LIMITED
 Address : HEAD OFFICE
 762 MESAKI-CHO, FUCHU-SHI
 HIROSHIMA 726-8628, JAPAN
 Telephone number : (0847)41-1273

Name/Title : Yukimasa Takenaka
 General Manager
 Power Equipment Division

Signature :



CM-31

(F) FRANÇAIS

Les opérations de mise sous tension d'un appareil électrique provoquent des fluctuations de tension dans des réseaux de distribution publics basse tension de l'ordre de 220 à 250 V. Dans des conditions d'alimentation électrique défavorables, d'autres équipements peuvent être affectés.

Si l'impédance système du bloc d'alimentation électrique est égale ou inférieure à 0,424 Ohm, les risques de perturbation sont faibles.

Si cette impédance ne peut pas être garantie, il est nécessaire de demander conseil à la compagnie de fourniture d'électricité.

En règle générale, l'impédance maximale admissible du secteur ne sera pas dépassée si la ligne vers la prise de courant est alimentée à partir d'un boîtier de raccordement acceptant un courant nominal de 20 A.

(GB) ENGLISH

Switching operations of electric apparatus cause voltage fluctuations in public low-voltage distribution system between 220V and 250V.

Under unfavorable power supply conditions, other equipment may be affected.

If the system impedance of the power supply is equal or lower than 0.424 Ohm, disturbances are unlikely to occur.

If this impedance cannot be guaranteed, consultations with the power supply company is necessary.

Usually, the maximum permissible mains impedance will not be exceeded when the branch to the power outlet is fed from a junction box with a rated current of 20 A.

(D) DEUTSCH

Die Einschaltverfahren von elektrischen Geräten führen zu Spannungsschwankungen im öffentlichen Verteilernetz für Niederspannung zwischen 220 und 250 V.

Unter schlechten elektrischen Versorgungsbedingungen können andere Ausrüstungen davon betroffen werden.

Liegt die Systemimpedanz des elektrischen Versorgungsblocks bei 0,424 Ohm oder darunter, sind die Störungsrisiken gering.

Kann diese Impedanz nicht gewährleistet werden, ist es notwendig sich an das entsprechende Elektrizitätswerk zu wenden.

Im Allgemeinen wird die genehmigte Höchstimpedanz des Stromnetzes nicht überschritten, wenn die Leitung zur Steckdose durch einen Anschlußkasten versorgt wird, der einen Nennstrom von 20 A aufnimmt.

(E) ESPAÑOL

El encendido de un aparato eléctrico provoca fluctuaciones de tensión en las redes públicas de distribución eléctrica de baja tensión de entre 220 y 250 V.

En condiciones de alimentación eléctrica desfavorables, también pueden resultar afectados otros equipos.

Si la impedancia del sistema de la alimentación eléctrica es igual o inferior a 0,424 Ohm, los riesgos de perturbación son reducidos.

Si no se puede garantizar esta impedancia, es preciso consultar a la compañía de electricidad.

En regla general, no se superará la impedancia máxima admisible de la red eléctrica si la línea que va hacia la toma de corriente se alimenta a partir de una caja de conexión que acepta una corriente nominal de 20 A.

(I) ITALIANO

Le operazioni di avvio di un apparecchio elettrico provocano degli sbalzi di tensione nelle reti di distribuzione pubblica a bassa tensione, da 220 a 250 V.

Delle condizioni di alimentazione elettrica non buone possono compromettere il funzionamento di altri apparecchi elettrici.

Se l'impedenza del sistema del blocco d'alimentazione è uguale o inferiore a 0,424 Ohm, i rischi di perturbazione sono scarsi.

Nel caso in cui non sia possibile garantire questa impedenza, è necessario rivolgersi alla società che fornisce l'energia elettrica.

In genere, l'impedenza massima ammessa del settore non viene superata se la linea verso la presa di corrente è alimentata da una scatola di raccordo che accetta una corrente nominale di 20 A.

(P) PORTUGUES

As operações de ligação de um aparelho eléctrico provocam flutuações de tensão nas redes públicas de distribuição de baixa tensão de cerca de 220 a 250 V.

Em condições desfavoráveis de alimentação eléctrica, outros equipamentos podem ser afectados.

Se a impedância sistema do bloco de alimentação eléctrica for igual ou inferior a 0,424 Ohm, os riscos de perturbação são baixos.

Se esta impedância não puder ser garantida, é necessário consultar a companhia de fornecimento de electricidade.

Normalmente, a impedância máxima da rede não será ultrapassada se a linha para a tomada de corrente for alimentada a partir de uma caixa de ligação que aceite uma corrente nominal de 20 A.