

## GB

## **Operator use and maintenance**

"Contains CE conformity declaration"





Mod.: 10,5 – 11 Ton EL/ VS/ HVP/ KOMBI

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his manual provides you with all the necessary information for the use and maintenance of your machine. It will work well and last for a long time if it is maintained well and used carefully.

Before leaving the production plant, this specific model was subjected to rigorous testing so as to warranty maximum reliability. However, it is necessary to check that the machine has not suffered any structural damage during transport that could jeopardize its functioning and safety.

This manual is to be considered an integral part of the machine and must accompany it until it is broken up.

If it is lost or damaged, ask Ricca Andrea & Co. for a replacement copy.

This manual was written in accordance with the European Directive 2006/42/CE, a directive concerning the machines' safety, which substituted the Machines Directive 98/37/CE and entered into force since December 2009. These guidelines prefigure the furnishing of all safety systems already in the planning phase, in order to avoid risky and dangerous situations for the users' health.

The technical information contained in this manual is the property of **Ricca Andrea & Co.** and must be considered confidential.

Reproduction of the graphics, text and diagrams, even in part, is forbidden by law.

Certain details shown in the diagrams in this manual could be different from those on your machine. Certain components might have been removed in order to make the diagrams clearer.

To make this manual easy to consult, it is divided into different sections, each one with a different symbol.

The topics discussed in this manual are those expressly required by the "EU Machine Directive 2006/42/CE" and subsequent modifications and the technical data given is that supplied by the manufacturer at the moment of writing.

This manual must be kept in a place which is accessible to all the staff in charge of operating and maintaining the machine.

In case of any dispute, the Cuneo Law Court in Italy will have jurisdiction.

In case of any problems, our technicians are at your complete disposal.

Tel. 0171.946709 - Fax 0171.946719

If the machine is sold to another party, this manual must be given with it!

#### **CONDITIONS AND LIMITATIONS**

A

Il our machines have been subjected to careful testing and are covered by a 24-month warranty for private and DIY use and a 12-month warranty for industrial use or for hiring from the date of production against manufacturing defects.

The warranty starts from the purchase date indicated on the warranty card enclosed with the manual. When the card has been duly and completely filled in, it must be sent to the manufacturer within 10 days of the first use of the machine.

The warranty is not valid if the machine has been repaired or modified by unauthorized third parties or if equipment or accessories are used which have not been supplied by "Ricca Andrea & Co.", or which have not been recommended or approved by the above, or if the serial number has been removed or altered during the warranty period.

"Ricca Andrea & Co." undertakes to repair or replace free of charge any parts which, within the warranty period, prove to have manufacturing defects.

Repairs are carried out in a Technical Service Centre that we indicate or in our factory and must arrive free port (with transport costs paid by the user unless agreed otherwise).

The warranty does not provide for any cleaning of working parts.

Defects which are not clearly attributable to the material or manufacture will be examined in our factory or in a Technical Service Centre that we indicate.

If the claim should prove to be unjustified, all repair and/or replacement costs of parts will be charged to the purchaser.

The fiscal purchase document must be shown to the technical personnel carrying out the repairs or must accompany the machine if sent for repair.

The following are excluded from the warranty: accidental damage caused by transport, by negligence or inadequate treatment, by improper use not corresponding to the directions given in the instruction book and any phenomenon non dependent on the normal operation or use of the machine.

"Ricca Andrea & Co." declines all responsibility for any damage to persons or things caused by wrong or improper use and maintenance of the machine.

For any dispute, the Cuneo Law Court in Italy will have jurisdiction.

Failure to send the card nullifies the warranty !!



## 1.1 Machine description

This series of models, which could be described as semi-professional, is ideal for those who use wood for heating (fireplaces, stoves, wood-fired boilers).

Thanks to their rear wheels, they are easy to transport and have a simple and functional use.

Our firm has designed these models to guarantee maximum safety.

The Mignon Prof model, 10.5 and 11 Ton, are described in this manual.

The various log-splitter models differ due to their power and feed-type which can be electrical (EL), with a piston motor (VS), with a cardan joint (HVP) or combined (KOMBI).

Every model is supplied strictly following the regulations in force in the various international markets.

## 1.2 Manufacturer's identification data

Ricca Andrea & C. Snc Via Vecchia di Cuneo, 57 12022 BUSCA (CN) - ITALY Tel. 0171.946709 - Fax 0171.946719

## 1.3 Machine identification plates

For any contact with the manufacturer it is always necessary to quote the data given on the machine identification plate.





## 1.4 Designed use

These specific wood-splitter machine models have been designed, built and protected only for cutting fire-wood logs of various sizes depending on the model. (See technical data table). Furthermore the log splitter has been built only for breaking logs longitudinally with respect to the wood fibres.

Use of the machine other than that specified by the purchaser's order and/or by the manufacturer's technical specifications is considered to be IMPROPER.

#### 1.5 Permitted environmental conditions

So as to guarantee correct operation, the machine must be sheltered from atmospheric elements (rain, hail, snow, fog, suspended particles of dust, etc.) with a working environmental temperature between -15° and 45° and relative humidity no greater than 70%.

The working environment must be clean, sufficiently bright and in the absence of an explosive atmosphere.

#### 1.6 Noise level

Noise meter trials carried out on these models show a continuous acoustic pressure of less than: Lpa < 80 dB.

#### WARNING

For the VS models (with piston motor), however, it is advisable to use protective earplugs or headphones.

#### 1.7 Qualitative characteristics

Approval by the most important European certification authorities.

Adjustable hydraulic cylinder stroke.

Double-acting hydraulic cylinder with quick return.

Electric system with safety magnetothermal switch.

Long-lasting epoxy paint.

Interchangeable self-lubricating slide guides.

Front anti-overturn pedestal.

Very high quality materials and components.

Strict component and final quality testing.

## 1.8 Storage

Remove all foreign parts from the machine and clean the surfaces.

Using a brush, coat all the mechanical parts, including the fastening devices, with a protective lubricant to be removed in case of reinstallation with alkaline degreaser.

Lubricate the mechanical parts and coat the surfaces with a protective lubricant.

Follow the machine handling instructions and store the whole machine in a sheltered place between 0° C and 40° C. Protect the parts from the build-up of dust.

## 1.9 Scrapping

If the machine is to be scrapped, it must be disposed of in appropriate dumps, respecting the regulations in force.

Collect any used oil and dispose of it in the special oil collection centre. Do not dispose of the oil in the environment as, according to the laws in force, it is classified as dangerous refuse.

Before scrapping the machine, it is necessary to separate the plastic or rubber parts and the electric material.

Those parts made solely of plastic, aluminium and steel can be recycled if taken to special collection centres.

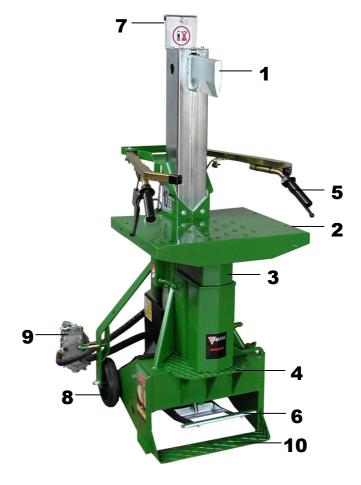
## 1.10 Overall dimensions / Technical data

Refer to the technical table enclosed for the overall dimensions and technical data.

## 1.11 Identification of the main components

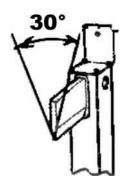
NB: this diagram represents the HVP model

- 1) CUTTER
- 2) LOG SUPPORT BASE (50 cm)
- 3) LOG SUPPORT BASE (60 cm)
- 4) LOWER LOG SUPPORT BASE (100 cm)
- 5) LEVER CONTROLS
- 6) PEDAL CONTROLS
- 7) TRANSPORT HANDLE
- 8) 200 ø WHEELS FOR TRANSPORT
- 9) POWER UNIT
- 10) FRONT ANTI-OVERTURN PEDESTAL



## 8

## **OPTIONAL ACCESSORIES**

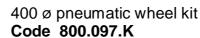




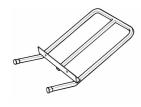
Blade 60° **Code 800.113.K** 



Cross cutter Code 800.114.K







Log support side extensions Code 805.012.K



Self-sticking labels with safety symbols and/or messages are applied to the machine. The nature of the danger and the position of the labels on the machine are indicated in this chapter.

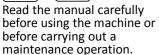


ATTENTION: Ensure that all safety messages are legible. Clean them using a cloth, soap and water. Do not use solvents, naphtha or petrol. Ask Ricca Andrea & C. Snc. for replacement labels if necessary and replace any damaged labels. If there is a label on a part which is to be replaced, ensure that a new label is affixed onto the new part.

NB: for place reasons, the warning and attention pictograms got grouped in one single selfsticking label positioned in the plate (A).









Read the manual carefully before carrying out maintenance operations on the hydraulic system.



Disconnet the power supply before carrying out any maintenance operation.



Electrocution hazard. Operate in dry places.



Shearing hazard. Do not approach the wedge when in motion.



Crushing hazard. Stand at safety distance.



Crushing hazard. Do not approach your hands.



Beware of hot surfaces (oil tank, engine, oil pump).



Objects-throwing hazard. Keep at safe distance.



Power down the tractor before carrying out any maintenance operation.



Do not stand between the tractor and the machine.



Use safety gloves.



Use ear muffs.







Use safety glasses. Use the overalls. Use safety shoes.



Plate (B) CE label.





(for EL or Kombi models) Rotation sense.

> (for HVP or Kombi models) Max. rotation speed of 540 revs./min.





Two persons must not work on this machine together.



Plate (E) Coupler position for lifting.





According to the work-safety Unified Code 81/2008 (which substituted the Law 626/94), the company safety manager is obliged to inform workers about the risks connected with the use of the machine. Nevertheless, he is obliged to provide workers' training so that they are able to guarantee their safety and the safety of others.

Furthermore, he is obliged to provide workers' training so that they are able to guarantee their safety and the safety of others.

Failure to observe the basic safety standards or precautions could lead to accidents during machine operation, maintenance and repair. An accident can often be avoided by recognizing potentially dangerous situations before they occur. The operator must be careful about the potential dangers and must have the training, expertise and instruments necessary to carry out these duties correctly.

**Ricca Andrea & Co.** cannot in any case be held responsible for accidents or damage resulting from machine use by personnel not suitably trained or personnel that used the machine in an inappropriate way. Nor can it be held responsible for the failure, even partially, to observe the safety standards and intervention procedures in this manual.

The safety precautions and warnings are indicated in this manual and on the product itself. If attention is not given to these danger warnings, the operator may incur accidents with serious consequences for himself and other people.

The safety messages are indicated with the following symbols:

## **⚠** ATTENTION

If these messages are not observed, they could be harmful to the operator.

## WARNING

If these messages are not observed, they could cause damage to the machine.

**Ricca Andrea & Co.** cannot foresee every possible circumstance which could involve a potential danger.

The warnings in this manual and on the product, therefore, are not exhaustive.

If equipment, procedures, work methods or working techniques not expressly recommended by **Ricca Andrea & Co.** are used, it is necessary to ascertain that here is no danger for the operator and for others.

## Use original spare parts only

Ricca Andrea & Co. declines every responsibility for the use of non-original spare parts.

## Safety rules

#### **ATTENTION**

The following indications cannot protect the operator from every danger that he can meet operating the machine. They must be supplemented by the operator's common sense and experience, the only indispensable measures for accident prevention. Further safety rules specific to the various operations are listed in every section.

#### WARNING

In using electrical machines it is necessary to observe the safety rules so as to exclude the risks of fire, electric shock and harm to persons.

Read this manual carefully before operating the machine.

If any instruction is not clear, contact the dealer or the manufacturer immediately.

If this manual is damaged or lost, ask the dealer for a replacement copy.

The log-splitter is designed only for normal use in agricultural, domestic or forestry work. Any other use of the machine is to be considered unsuitable.

The manufacturer will not answer for damage resulting from improper use.

Structural damage, modifications, alterations or improper repairs can alter the machine's protection capability thus annulling this certification.

Any modification operations must be carried out exclusively by technicians authorized by Ricca Andrea & Co.

The EL 230-volt models are supplied with a condenser. Any operation on the machine can be carried out by a specialized technician approximately 1 minute after disconnecting the plug from the mains supply.

Never open the electrical panel without first disconnecting the plug from the mains supply.

Check the electrical wires and the flexible pipes of the machine periodically and, if they are damaged, have them replaced by a specialized technician.

Check your extension cables periodically and, if they are damaged, replace them.

Ensure that the switch is off when the plug is inserted into the socket.

Check that the machine is not damaged in any way.

The log-splitter must be used exclusively by expert operators who are aware of any possible dangers.

Strictly prevent under-age persons from using the machine.

Two persons must never carry out cutting operations simultaneously.

Sudden distractions could cause physical harm to the person helping.

Do not allow unauthorized personnel near the machine when it is being used.

Ensure that the operating area is well lit.

Always use the log-splitter in places which are as level as possible and which are provided with appropriate safety footwear, working gloves and protective eye screens.

Do not wear loose-fitting clothing or protruding articles which might become entangled in the controls or moving parts of the machine.

Do not use the machine in damp places or in adverse weather conditions (snow, rain, etc.).

Keep the machine, and in particular the working board, free from external materials such as deposits.

#### The log-splitter must not be left unattended whilst it is running.

Always stop the machine when cleaning, maintenance and transport operations are to be carried out. For electrical models, disconnect from the mains.

In the case of models powered by a piston motor, read the relative manual enclosed carefully and remember:

Not to leave inflammable materials such as petrol, oils, etc. near the motor when it is running.

To fill the tank in well-ventilated areas and when the motor is off and cold.

If any petrol spills out, clean the area completely and ensure that the fumes have completely dissipated before starting the motor.

Do not smoke or create poisonous carbon monoxide flames.

Avoid breathing in the exhaust gases.

Do not use the motor in closed rooms and in places with a fire risk.



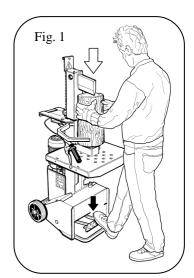
## 2.1 Cutting cycle

The machine is equipped with a patented and unique control device.

Before starting any work operation, check carefully that the control devices work correctly.

This device allows the operator to position the piece of wood to be split under the cutter with his hands in complete safety.

- 1. **operation:** position the log vertically on the board and try to take advantage of the direction of the filaments and the knots of the wood to make it easier to break.
- 2. operation: press the pedal placed below with foot (see fig. 1). It is advisable to make a quick and strong movement. The cutter will now begin its downward and approach phase without any breaking force until it stops when it comes into contact with the wood.





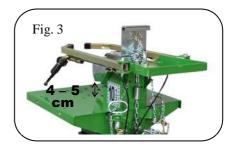
3. **operation:** keep the pedal pressed down, take hands off the wooden log (which now is kept centred by the cutter), place hands on the lever controls (see fig. 2) and operate both of them together.

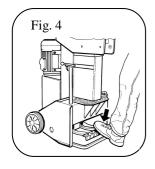
## **VERY IMPORTANT!!**

To carry out the breaking cycle, the manual lever controls must both be held (operated). Releasing either leads to the blocking of the cutter blade in the position in which finds itself. Therefore, keep both controls held until the log breaking operation is finished or the blade reaches the bottom end-of-stroke.

The blade is pre-set to stop at approximately 4 - 5 cm from the log support base (see fig. 3).

The operator does not run any risk of injury.



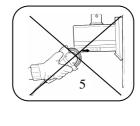


## VERY IMPORTANT!!

Keep the pedal pressed down (see fig. 4) until you have removed the broken pieces of wood or those caught in the cutter from the board. This operation will make your work easier and safer.

## **⚠** ATTENTION

Do NOT modify the edge and the outside spokes of the 30° fixed cutter (see Fig. 6) with any kind of tool (such as a flexible pipe, see Fig. 5).









The same applies for any optional cutters that may be supplied upon request, such as the 60° cutter (see Fig. 7) or the cross cutter (see Fig. 8).

The use of optional cutters (see page 8) must occur exclusively in situations of extreme necessity and they must be used by skilled and expert operators.

The 60° cutter is of use exclusively for easily-opening and medium-sized wood.

The cross cutter is used exclusively for small-sized straight-filament wood.

## **▲ ATTENTION**

In each of the above work situations, the operator must use work gloves.

## 2.2 Return Cycle

Once the breaking phase is finished and the broken pieces have been removed from the board, release all three controls. The cutter will then rise again automatically to the high position ready for a new working cycle.

NB:

If any of the three controls remains held down, the cutter cannot rise again and therefore remains blocked in its present position.

## 2.3 Block situation

NB:

The hydraulic system is equipped with a safety valve which controls all the pressure up to a MAX limit pre-set in the testing stage.

This device was designed for those cases in which the cutter strength is not sufficient to break pieces of wood that are too hard or positioned badly.

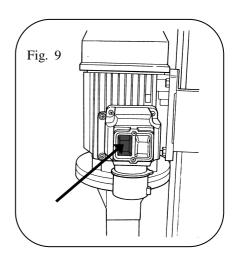
When situations like this occur, there is no reason to worry because nothing can happen (and therefore no breakdown can occur). Release the controls without persevering too much, turn off the motor and unblock the wood caught in the cutter with a hammer or similar, hitting it downwards on both sides.

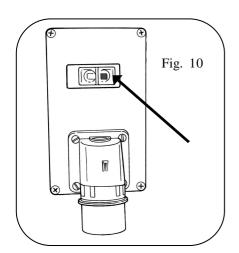
The different electrical models are equipped with a motor-protector temperature relay which operates if the motor overheats or if there is a sudden drop in input tension.

## MB: wait 3 - 5 minutes before resetting the ON button.

If the safety device trips:

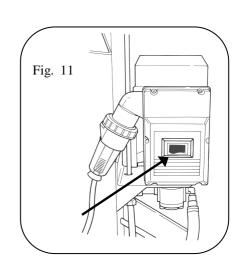
press the green button shown in fig. 9;
 (in this example, a 400 volt /200 volt three-phase motor)

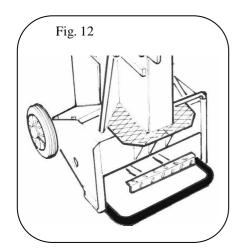




press the black button shown in fig. 10;
 (in this example, a 400 volt /200 volt three-phase motor)

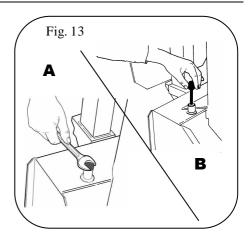
press the white button shown in fig. 11;
 (in this example, a 230 volt single-phase motor)

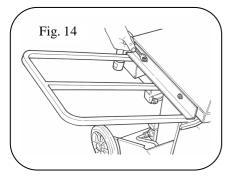




All the log-splitters are equipped with a front anti-overturn pedestal (fig. 12).

The oil tank is pre-filled by the manufacturer with Sae 46 hydraulic oil in the quantities shown in the technical data. Unscrew and remove the cap on the tank (**A**) using a spanner and replace it with the bleed cap (**B**) supplied by the manufacturer, which is equipped with an oil level stick (fig. 13).





## Side panel assembly (optional)

The log-splitter is preset for the assembly of log support side panels.

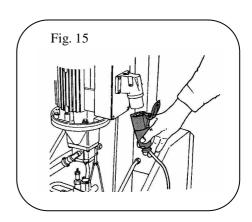
Position the side panels as shown in fig. 14 and fix them using the bolts provided.

#### Electrical connections

Before making any electrical connection check that the main switch is OFF.

First of all, ensure that the mains voltage corresponds to that indicated on the identification plate of the electric motor and the machine. Check that your electric system is fitted with an isolator (safety switch) and that the earth cable is functional.

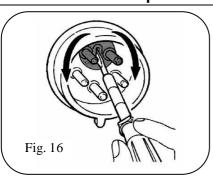
The manufacturer supplies the machines already equipped with male connection plugs. It is necessary to connect an extension cable with a socket and then insert the plug into the socket (fig. 15).



The EL 230-volt models are supplied with a condenser. Any operation on the machine can be carried out by a specialized technician approximately 1 minute after disconnecting the plug from the mains supply.

#### ⚠ ATTENTION

All operations must strictly be carried out by an electrician.



For three-phase power supply (400 v), it is necessary to verify the exact rotation sense of the electric motor (see arrow on the motor) immediately.

If it rotates in the opposite sense to the sense indicated, it is necessary (after disconnecting the power supply) to invert the two power-supply phases using a screwdriver.

Push the housing inwards and rotate the poles (fig. 16).

## WARNING

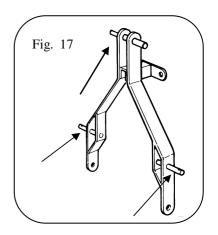
The tests of motor rotation sense must be of short duration.

The oil pump could be damaged.

#### Connections for cardanic model

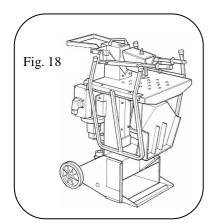
- Attach the log-splitter to the tractor at the hoist connection points (fig. 17) and lock it using the locking split pins provided.
- Assemble the pump on the tractor's PTO shaft and fasten it to side points with the special chains provided.
- Ensure that the rotation sense is correct.
- MAX rotation speed 540 revs / min.





#### **TRANSPORT**

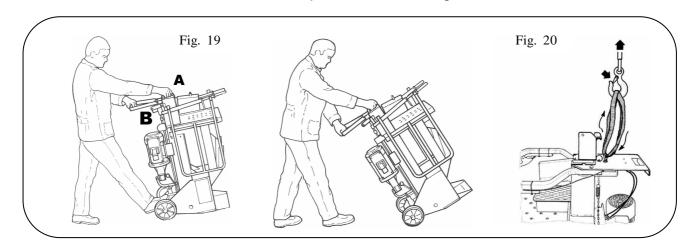
The log-splitter is equipped with wheels to make it easier to transport over short distances. When te machine is moved, do not incline it excessively so as to avoid liquid spillage.



During transport, place the cutter in the lowest position.

If the machine is equipped with side panels, it is necessary to remove them and reassemble them during transport as shown in figure 18 using the same nuts and bolts to fasten them.

Place one foot on the wheel axis and grip the two handles **A** and **B** as indicated in figure 19. Incline the machine slightly and push it to transport it. In order to lift it with a crane, hook it in the point indicated in figure 20.



Before lifting the log-splitter, check that the lifting system and the relative equipment (ropes, cables, hooks, etc.) are suitable for the load. During transport with a trailer, the machine must be firmly tied down with anchor ropes.



# After the winter storage, and therfore before the working cycle and before every subsequent use of the machine, respect the following procedures.

Before starting work, check every time that the flexible hydraulic pipes, the electrical wires and the extension cables are in a good state. If you are not sure about them, have them replaced by a specialized technician.

Before starting the working cycle, check the oil level using the special stick.

For the model powered by a piston motor, check that there is some petrol. Carry out the periodical checks given in the motor manufacturer's manual also.

After carrying out the operations described in the "Installation" section, proceed as follows in order to start the log-splitter:

- For all models place the stroke adjustment bar in the highest position possible.
- In the case of the piston motor, follow the ignition instructions given in the motor manual.
- In the case of the cardan model, lock the tractor with the parking handbrake, place the tractor's power take-off starting lever on 540 revs/minute.
  - Run the engine for approximately one minute at idling speed.
  - Take the engine to a speed appropriate to the power take-off using the hand accelerator, approximately 400 revs/minute.
- For electrical versions it is sufficient to press the ON button on the magnetothermal switch, keeping one control lever pressed down (see working cycle).

Now, by operating the 2 handles + the pedal, the log-splitter will begin working, (release the two levers + the pedal and the cutter will rise again to the pre-set position).

## Æ

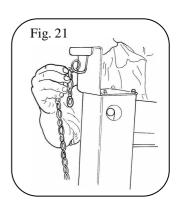
Before carrying out cutting operations, it is necessary to perform a few cycles without any log.

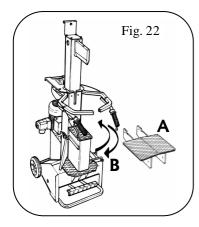
The machine is equipped with a device which stops the cutting blade during the upward phase in the desired position (stroke adjustment).

This operation is carried out when small logs that are all of about the same height are cut.

To make this adjustment:

- Start the machine.
- Place the log on the support base.
- Press the pedal and lower the blade to approximately 2 3 cm from the log.
- Release the pedal halfway so as to stop the cutting blade stroke.
- Adjust the chain for the desired stroke indicated in figure 21.
- Release the pedal completely.
- Position the log and cut it. During the upward movement the cutting blade will stop at the height you have set.
- NB: The machine must never be used without the upper stop!





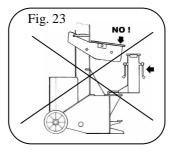
In order to be able to cut logs about <u>60 cm</u> high, in the models with three boards (see fig. 22), it is necessary to lift the upper support base (**A**) slightly and withdraw it by first removing the two safety clamps located on the rear part of the machine.

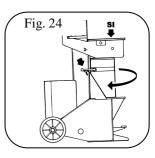
Furthermore, so as to be able to cut logs of about <u>1 metre</u> in height, it is necessary to release the central board (**B**) and rotate it outwards until it is fixed in its special clamp (see fig. 22).

**NB:** this operation can be carried out only on models designed for long cuts.

## VERY IMPORTANT!!

In models with three boards, never work on the upper board without the support of the central board (see figures 23/24).





X

#### **WORKING CYCLE**

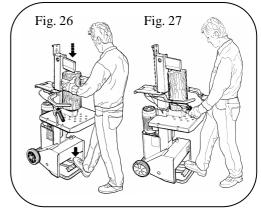


To make it easier to start the electric (EL) and petrol (VS) models, the manufacturer recommends starting the machine by keeping one control lever pressed down or the pedal pressed halfway (fig. 25).

Place the log to be cut on the support base. Press the pedal with a rapid movement (fig. 26).

Press the two levers + the pedal at the same time. The blade will start to cut the log (fig. 27).

Once the cutting phase is finished, release both levers, remove any blocked or broken pieces from the board keeping the pedal pressed down. Then release the pedal too and the cutter will automatically rise to the highest point.



## **⚠** ATTENTION

- In case of any emergency, release any one of the controls immediately and the blade will be blocked in the position it is in.
- Before positioning a new log to be cut, ensure the support base is clean.
- Never stop the motors when they are under maximum force.
   With the "Kombi" model, do not use the electric motor and the cardan joint at the same time.
- Always use the appropriate safety footwear, work gloves and protective glasses.
   With the VS models with piston motor, use protective earplugs or earphones.











#### **↑** ATTENTION

All maintenance operations must be carried out when the machine is off. With the electrical model, disconnect from the mains supply also. Furthermore, for the 230-volt model wait approximately 1 minute for the residual current in the condenser to be discharged.

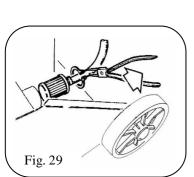
## **WARNING**

For models with a piston motor, follow the instructions given in the manufacturer's manual also (supplied with the machine).

Due to its simplicity, the machine does not require special maintenance operations.

It is necessary periodically to:

- Check that the electrical power supply extensions are in a good state.
- Check the flexible pipes of the hydraulic system periodically and replace them every 5 years.
- Lubricate the square tubular sliding surfaces indicated in fig. 28.



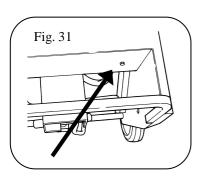
- Check the hydraulic oil level periodically using the special stick.

[NB:] this operation must always be carried out when the blade (cutter) is at the lowest position.

It is advisable to change the oil and the filter after the first 150 working hours.

Subsequently, change the oil and filter every 500 working hours. Also change the o-ring on the filter-holder block (fig. 29).

**NB:** In order to drain the oil, place a suitable container (approx. 10 litres) under the machine (fig. 30). Dispose of used oil in special oil collection centres.



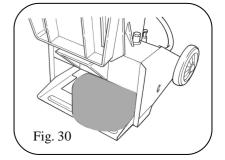
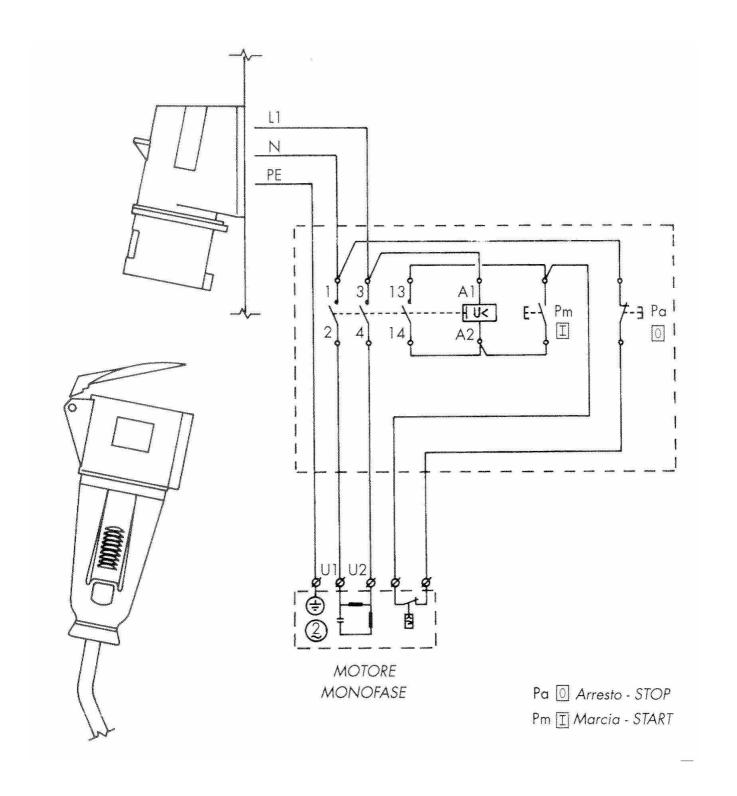


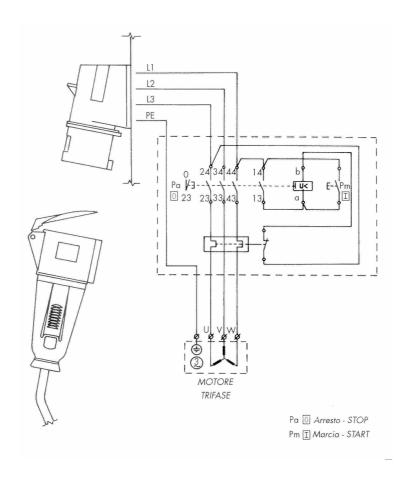
Fig. 28

Some models are fitted with a plug placed under the tank (as indicated in fig. 31) for draining used oil.

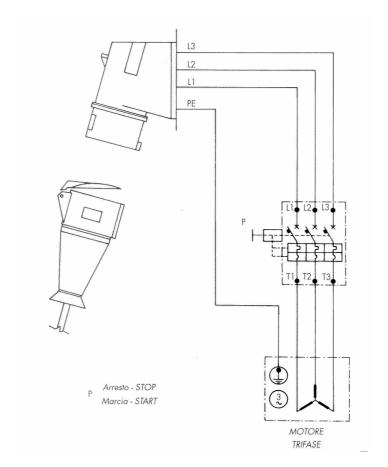
## **SINGLE-PHASE MOTOR CONNECTION DIAGRAM**



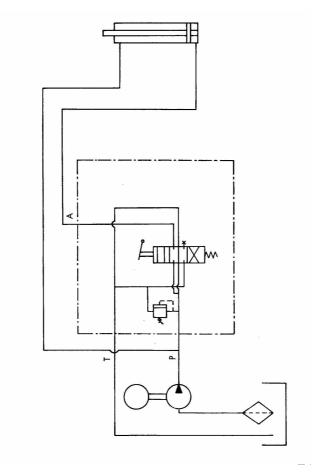
## Schema 1



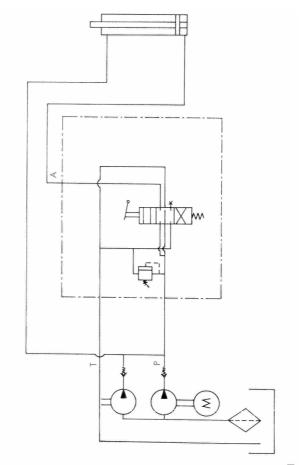
## Schema 2



Mod. EL, VS, PTO



Mod. EL + PTO (Kombi)



MIGNON PROF	Ruote Wheels	Alimentazione Engine		<b>*</b>	<b>*</b>	A MAX				B	_	(T)	(6)	<b>O</b> []
Codice / Code:			Ps (HP)	kW	TON	cm.	cm.	cm. MAX	cm/ sec.	I.	cm.	cm.	сш Н	KG.
23.223.TF	ø 300	EL 230 PS	က	2,2	6	54	1	09	4,2	6	09	78	112/ 162	140
23.223.PD.TF	00E ø	EL 230 PD	3	2,2	11	54	-	09	6′2	6	80	78	112/162	143
23.HVP.TF	ø 200	HVP	17	12,5	11	54	1	09	10	6	75	78	112/162	143
23.223.PD	ø 400	EL 230 PD	3	2,2	11	54/67/105	1	09	6'2	6	09	78	112/162	166
23.386	ø 400	EL 400 PS	5,5	4	11	54/67/105	l	09	7,2	6	09	78	112/162	166
23.VS.10	ø 400	VS PS	6	2′9	11	54/67/105		09	4,5	6	09	86	112/162	195
23.HVP	ø 200	HVP	17	12,5	11	54/67/105	l	09	10	6	75	78	112/162	168
23.223.PD.K	ø 200	KOMBI 230 PD	3/17	2,2/12,5	11	54/67/105		09	7,9/10	6	75	78	112/162	195
23.386.K	ø 200	KOMBI 400 PS	5,5/17	4/ 12,5	11	54/67/105	(222)	09	7,2/10	6	75	78	112/162	198

EL = motore elettrico/ electric motor

VS = motore a benzina/ petrol engine

KOMBI = con PTO staccata + motore EL/ with pump PTO not fixed + EL motor

PD = con pompa doppia / with double pump

con pompa PTO staccata / with pump PTO not fixed

PS = con pompa singola / with single pump

Dimensioni max in lunghezza / max length dimensions Dimensioni max diametro / max diameter dimensions

Dimensioni lavorabili / working dimensions





