

## **1.0 GENERAL INFORMATION**

The firm LGF will not be responsible for eventual damages caused by a wrong use of the machine deriving from:

- use for functions which are not described in this hand-book;
- working of material, different from aluminium;
- bad or wrong maintenance;
- repairs which are not described in this hand-book;
- use of the machine in explosive places.

**This machine was designed and built exclusively for working aluminium; those who make a wrong use of it, working other materials, do it at their own risk. Therefore the firm LGF declines all civil and penal responsibility.**

For any necessity or direction, apply to the nearest dealer or to the manufacturer:

Nearest Dealer:

Manufacturer:

**LGF s.n.c.**  
Via Togliatti, 81  
47040-VILLA VERUCCHIO - ITALY  
Tel.0541/677315 - Fax.0541/678752

## **MACHINE'S CONFORMITY**

### **Conformity declaration**

The firm L. G. F. s.n.c.  
Via Togliatti, 81  
47040 - VILLA VERUCCHIO - ITALY  
Tel. 0541/677315 - Fax. 0541/678752

declares on its own responsibility that the ASTRA cutting off machine with matriculation number.....,which this declaration refers to, is in conformity with the security requisites provided in the CEE directives 89/392, 91/368, 93/44, 73/23, 93/68-89/336, 93/68, and it was built respecting the following regulations: EN 292-1, EN 292-2, EN 60204-1, EN 294, EN 349, EN 418.

Date

02.01.1997

**L. G. F. s.n.c**

Signature

Canuti Luciano

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## **1.1 INTRODUCTION**

This operation and maintenance hand-book concerns the following model of machine: ASTRA cutting off machine.

## **1.2 MACHINE'S IDENTIFICATION**

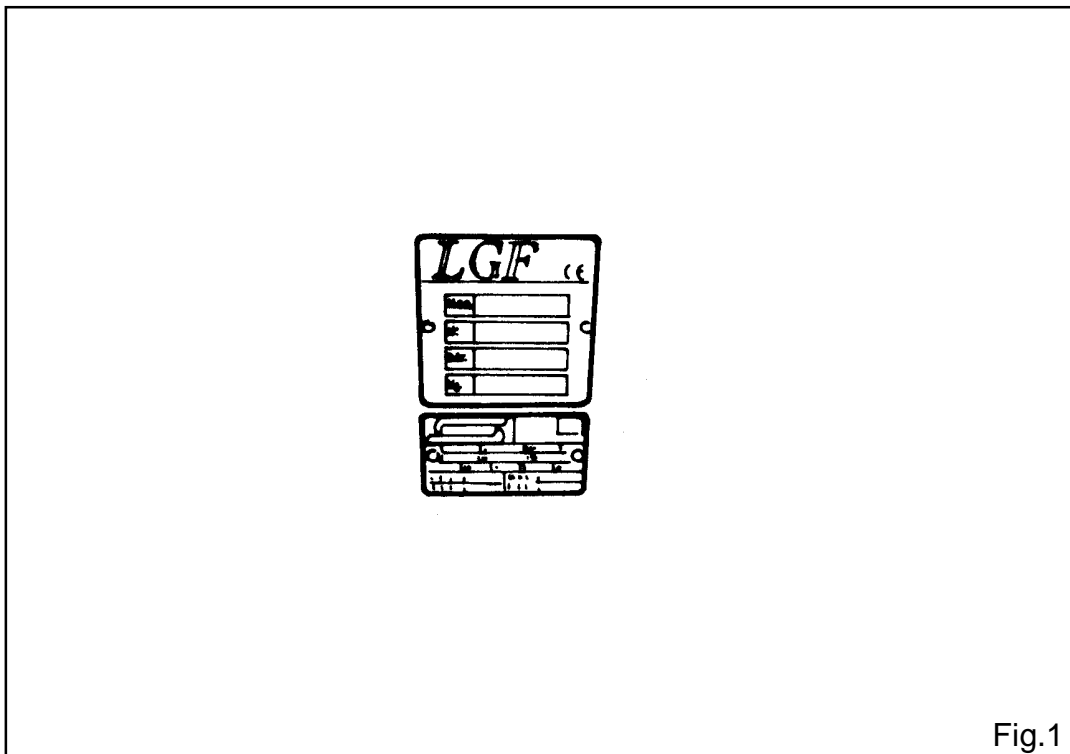
The machine is identified through the wording on the metal plate (Fig.1) set on the base of the machine.

## **1.3 SENDING OF CORRESPONDANCE**

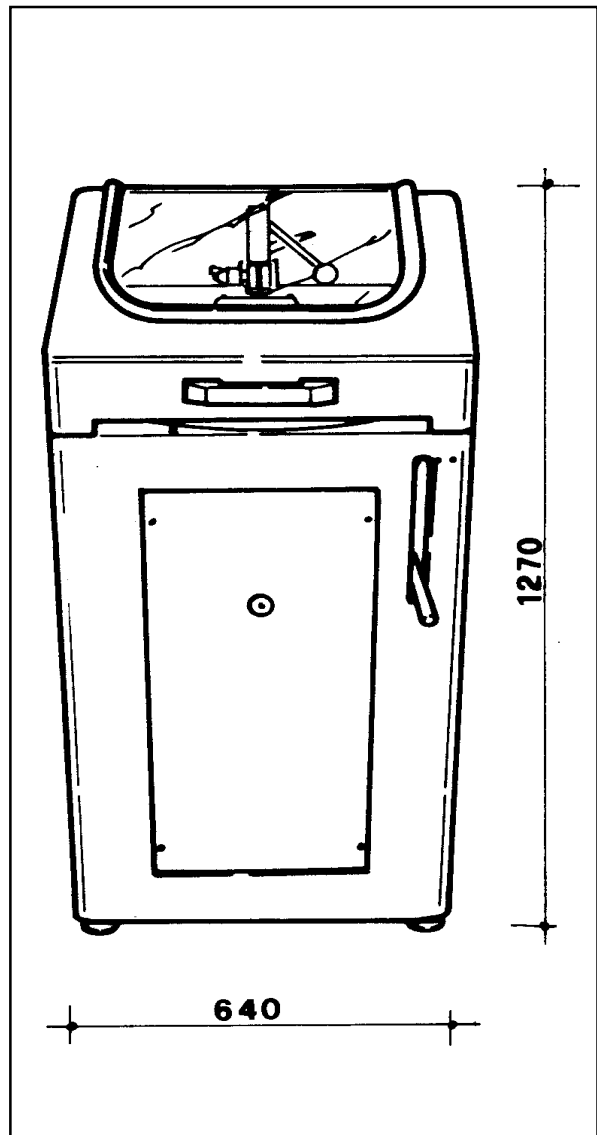
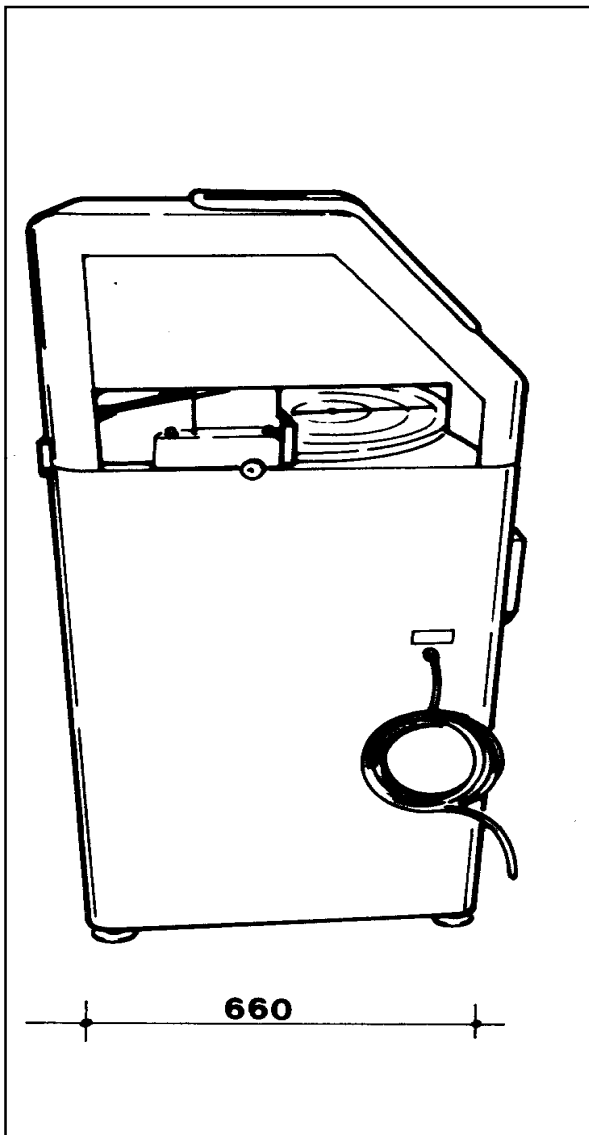
For any advice or explanation concerning the machine, please apply to LGF or to the nearest dealer, supplying with:

- model of the machine;
- matriculation number;
- voltage and frequency,
- purchasing date;
- name of the dealer where the machine has been purchased;
- information about the working to carry out;
- number of employment hours;
- number of duty hours.

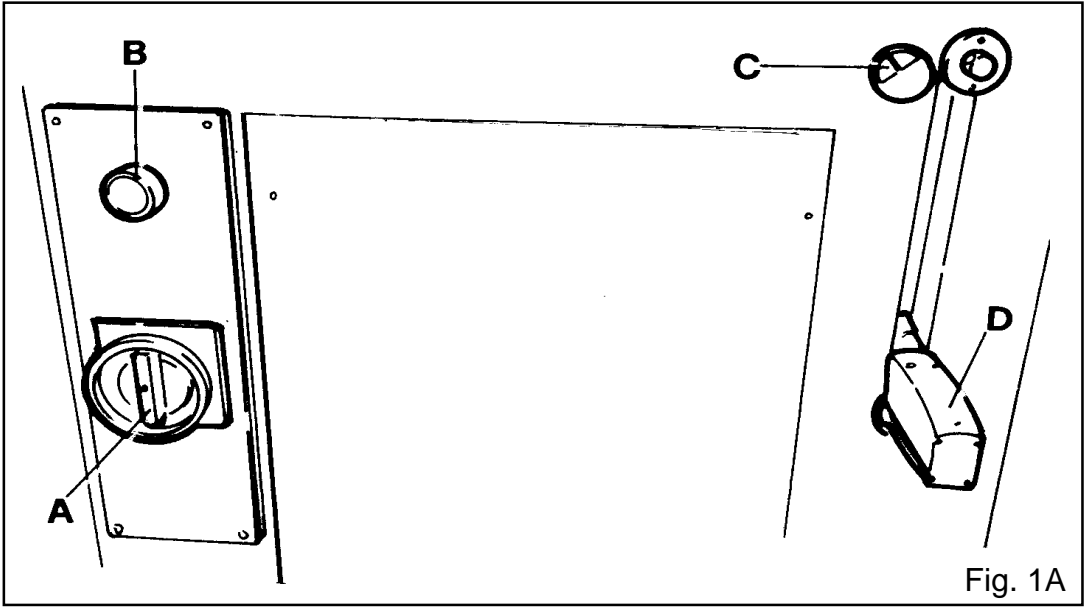
For a correct identification of the information concerning the machine, please supply with the data reported on the plate (Fig.1) which is set on the clamps junction-box and describes the data of the electric installation.



**OVERALL DIMENSIONS**



**CONTROL BOARD:**



- A (Fig. 1A) = General switch
- B (Fig. 1A) = Motor starting knob
- C (Fig. 1A) = Clamping Off/On selector switch
- D (Fig. 1A) = Motor starting knob-handle

## **1.4 TECHNICAL DATA**

Blade .....	Ø350 mm
Three-phase motor 1,5HP 2800 r.p.m 220/380V	
Blade shaft diameter .....	Ø 30 mm
Air pressure .....	7 bar
Overall dimensions .....	640x660x1270 mm
Weight.....	85 Kg.

### **STANDARD EQUIPMENT**

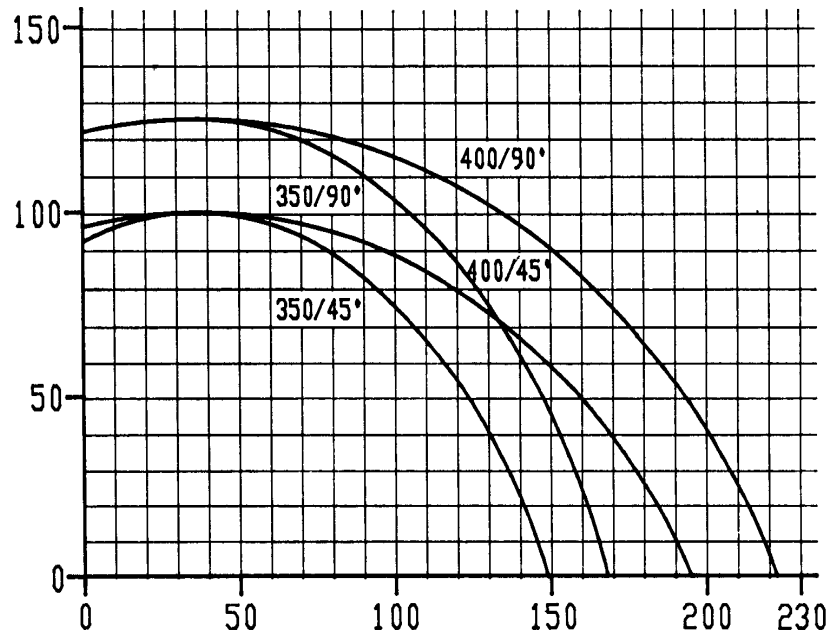
Manual clamp  
Manual lubrication

### **OPTIONALS**

T.C.T. saw blade Ø 350 mm  
T.C.T. saw blade Ø 400 mm  
Pneumatic clamp  
Automatic lubrication  
Squadro sul piano



### 1.5 CUTTING CAPACITY



### 1.6 NOISE LEVEL

#### ACOUSTIC EMISSION OF THE ASTRA CUTTING OFF MACHINE ACCORDING TO NORMS EN27560

(Lp) Level of the machine's medium sonorous pressure	(Ln) Level of the machine's normalized acoustic power	(Lpi) Sonorous level in the operator's normal position	(Lmax) Maximum sonorous working level on the prescribe	WORKING CONDITIONS
dB(A)	dB(A)	dB(A)	dB(A)	
73,7	88,7	****	74,1	IDLING
82,7 §	97,7 §	88,8 §	94,0 §	WORKING
88,7 §	103,7 §§	95,8 §§	97,6 §§	WORKING

L min.: Minimum sonorous working level: 54,6§ dBA 61,1§§

L.o: Noise level range: 34,6 dBA

Lep.D: Daily personal exposure level: 82,0§ dBA 89,0§§

## **SONOROUS EMISSION**

Carrying out many activities together with the use of the machine can sometimes involve physical uneasiness and weariness . For example, being engaged with extra-working activities which require sonorous exposures involves higher risks and a lower health's defence.

Working conditions like, for example, the loudness of the working environment play an important role for the health and personal comfort.

Some factors which influence the real exposure level are:

- the period of exposure.
- the adjacent working machines
- the type and characteristics of the buildings.

Moreover, noise emission can be contained by:

- reducing the number of the machine's revolutions,
- a low advancing,
- a correct fastening of the piece,
- a good condition of the tools.
- and , above all, using the appropriate acoustic protections.

**A protracted exposure over 85 dB (A) could cause health troubles.  
In any case, it is advisable to employ some appropriate protection systems (ex: casings, plugs)**

## **1.7 SAFETY WARNINGS**

While drawing up this hand-book, we considered all the necessary functions for a correct maintenance of the machine, getting the best use of it.

Therefore read carefully through these directions before starting up the machine. This machine was built to offer the highest possible safety together with the best performances.

The greatest security is in your hands. It must be kept in mind that the use of every kind of machine-tool involves some risks.

### **PERSONAL SAFETY**

- 1) The operator must have reached the legal age, according to the law, and must not be lacking knowledge of manufactures of aluminium machines.
- 2) Experience teaches that there are several objects which could cause you accidents. Take off rings, watches and eventual bracelets; fasten the sleeves round your wrists, buttoning them accurately; take off neckties which, hanging down could get entangled in the most disparate places; put up your hair with proper accessories (caps, rubber bands).  
Make use of suitable footwear which antiaccident regulations in all countries of the world prescribe and recommend.
- 3) Always make use of glasses or protective screens for your eyes.
- 4) Always make use of working gloves
- 5) Always make use of anti accident shoes

### **MACHINE'S SAFETY**

- 1) Pay the utmost attention before starting any work.
- 2) Never start the machine without controlling that all the protection coverings of cutters, betts, ecc. are properly set up.
- 3) Work only with all appropriate protections at their place and in perfect efficiency.
- 4) Make sure that the tools are perfectly balanced, sharpened and accurately keyed and tight; never make use of bigger tools than the ones indicated in the technical data.
- 5) Never employ cracked, warped cutters.
- 6) The machine must be overhauled by specialized staff, acquainted with safety regulations.
- 7) The machine must not be left unguarded when working. Shutters and protections must be disassembled strictly when the machine is stalled and it is not working.
- 8) All shutters and protections provided with keys must be closed and the key is to be kept by responsible staff in suitable places.
- 9) Never employ benzine, solvents or other inflammables for the cleaning. Make use of commercial solvents which are not inflammable or toxic.
- 10) The manufacturing firm declines all responsibility for the inobservance of these regulations.

**N.B.** All disassembly and repairing operations must be carried out exclusively by authorized and qualified staff.

Moreover, it is to be recommended not to carry out reparations or others which are not written in this hand-book.

## **1.8 MAINTENANCE SECURITY**

Maintenance must be carried out by qualified staff. The various operations for the ordinary and extra ordinary maintenance are indicated in the last pages of this hand-book.

It is compulsory to switch off the general electrical equipment, when it is necessary to adjust the machine or to disassemble any protection, by pointing out such operation through a clearly visible plaquard.

An important security factor is the cleaning of the machine, of the working tables, of the floor and the surrounding places.

It is very useful to read carefully through this hand-book before starting the machine: in this way you will realize that the machine has been concerned to offer the best performances together with the highest security.

Encumbering and mobile objects, which could come into contact with the moving organs, are very dangerous.

A certain risk factor, which is eliminable with a good technique and with a constant attention by your side, exists in every work.

Before starting the machine, make sure that there are no other people carrying at maintenance operations.

## **1.9 OTHER RISKS**

In spite of the adopted security directions, some other risks could remain.

- Electrical cabinet. The grid-feeding voltage persists, so pay attention every time you enter it.
- Due to high R.P.M of the blade, although precautions (like the polycarbonate guard) are adopted, those could be rejected if wrongly fitted therefore pay attention while fitting the blade.

## **2.0 MACHINE'S INSTALLATION**

Your cutting off machine mod. ASTRA, will be delivered by one of your authorized carriers or directly by the dealer. Verify the conformity of your goods and their good repair.

### **2.1 MACHINE'S UNLOADING**

Before unloading the machine, free it from all those parts which, for transport or packing exigences are put on it.

Therefore the machine's unloading from the transporting vehicle can be effected in the following way:

- 1) The machine is equipped with a special frame, which raises it from the ground. Therefore it can be easily lifted by an elevator by inserting the forks under the pedestal and balancing the weight which is totally of 85 Kg. (Fig.2A)

### **2.2 PLACEMENT**

Choose the most favourable position, according to the length of the pieces to work and to the connections of the electric and compressed air installations, for an easy maintenance.

Verify the solidity of the floor surface (preferably a material that cannot be deformed, like cement) so that the frame can find a solid support.

Insert the 4 antivibration feet (which are included with the machine) in the special holes on the frame of the machine.

For levelling, screw or unscrew the feet (Fig.2).

**N.B.The machine is greased and oiled for transport. Therefore, take the grease off the working tables and the protections accurately.**

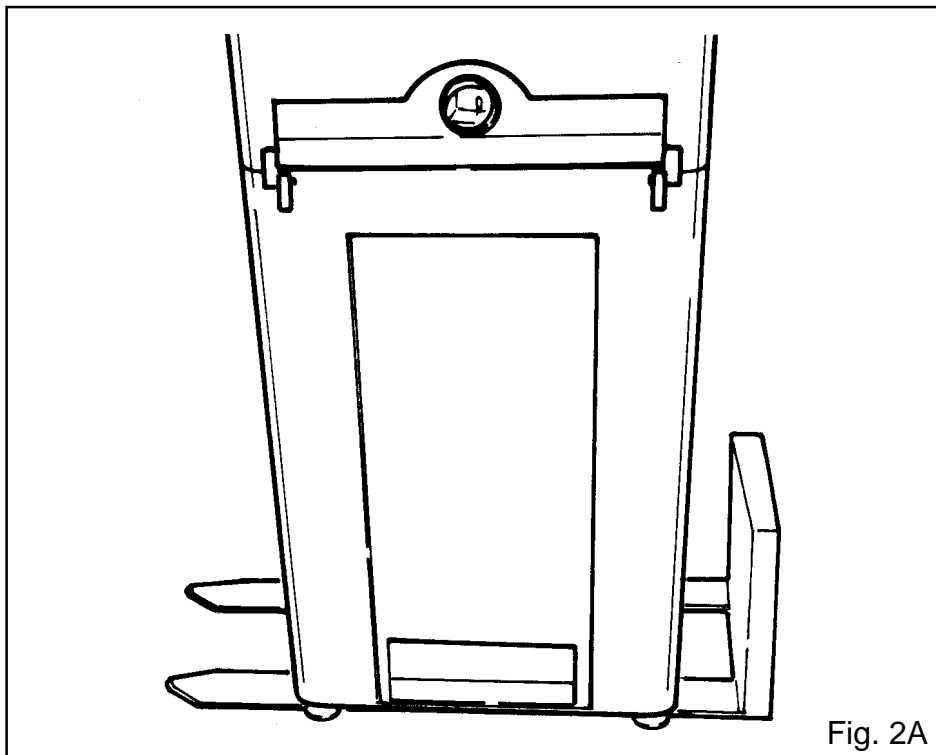
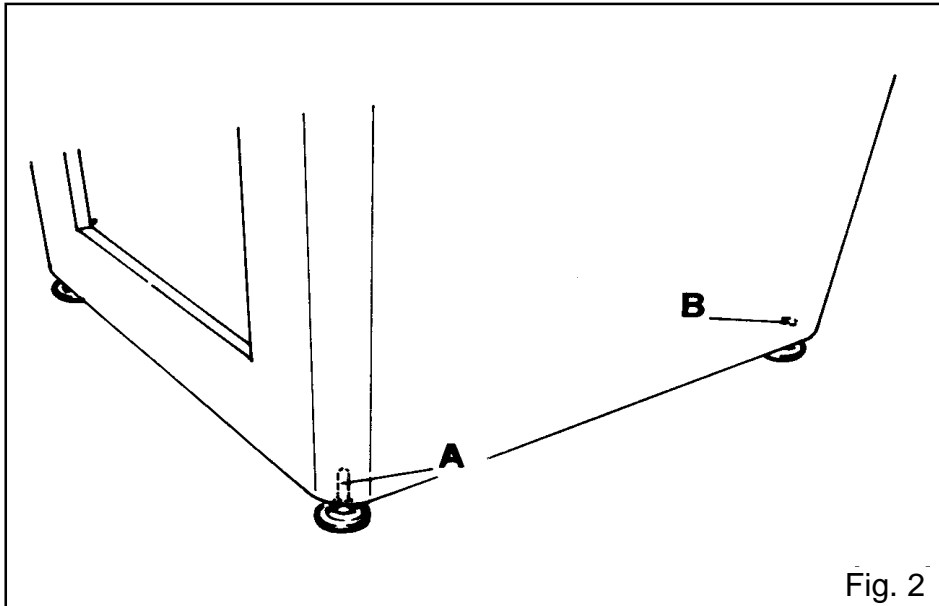
### **2.3 WHAT TO DO IF THE MACHINE IS DAMAGED?**

- 1) Of course, the carrier is covered by an insurance, which will fairly refund you the damages.
- 2) After questioning the damages, you will have to communicate it within two days by registered letter to the carrier and the dealer.
- 3) Make to the manufacturer a request for eventual pieces to substitute as well. Those will be forwarded to you by cash on delivery. The invoice of such pieces, together with eventual assembly expenses, must be reimbursed by the insurance company.

Attention: the goods travel at the customer's exclusive risk.

## 2.4 MACHINE'S LEVELLING

Level the machine, controlling that it has been perfectly placed horizontally and transversally, using a spirit-level placed on the working table. Eventual level adjustments are carried out by operating on the adjusting screws A (Fig.2). Then fasten the machine at the floor by means of two expansion plugs inserted in the convenient (Ref. B)holes which are on the pedestal back shutter.



## **2.5 ELECTRICAL AND GROUNDING CONNECTIONS**

The electrical connection and the necessary inspections must always be carried out by a specialized electrician according to norms EN 60204-1. Make sure that the electrical installation in the factory is able to support the power of the machine and control that the main supply voltage corresponds to that of the machine.

**Note:** the best working condition for the machine is providing with the same voltage reported on the plate in Fig.1.

Yet it can also adopt itself to higher or lower working voltages in a range of endurance of +/- 5% (ex: a machine with working voltage  $V=380$  has a range of endurance which runs from 360 to 400 volts).

Out of this range, provide for the adjustment of the feeding voltage.

Read the value of the total absorbed current (Amp) on the identification plate of the machine.

Consult the following table to use the right wire section and to install on the machine "DELAYED INTERVENTION FUSES".

Absorbed Ampere	Wire Section	Delayed Fuses
from 3 to 6	2,5 mm	10A AM
from 6 to 10	2,5 mm	10A AM
from 10 to 14	4,0 mm	16A AM

Insulate electrically the machine and connect the 3 electric wires (phases) to terminals **L1, L2, L3** in illustration 3. Connect the yellow-green wire (hearth) to terminal PE or marked by the symbol and the neutral wire, if required, to terminal N.

Fasten wire-press P accurately (Fig.3); check that the tools revolve in the right direction, of the blade starting the machine as described forward.

If the blade turns in the wrong direction, it is necessary to:

- take the voltage off the grid,
- Invert two phases,
- Check the revolving direction again.  
(The blade must -turn clock - wise ).

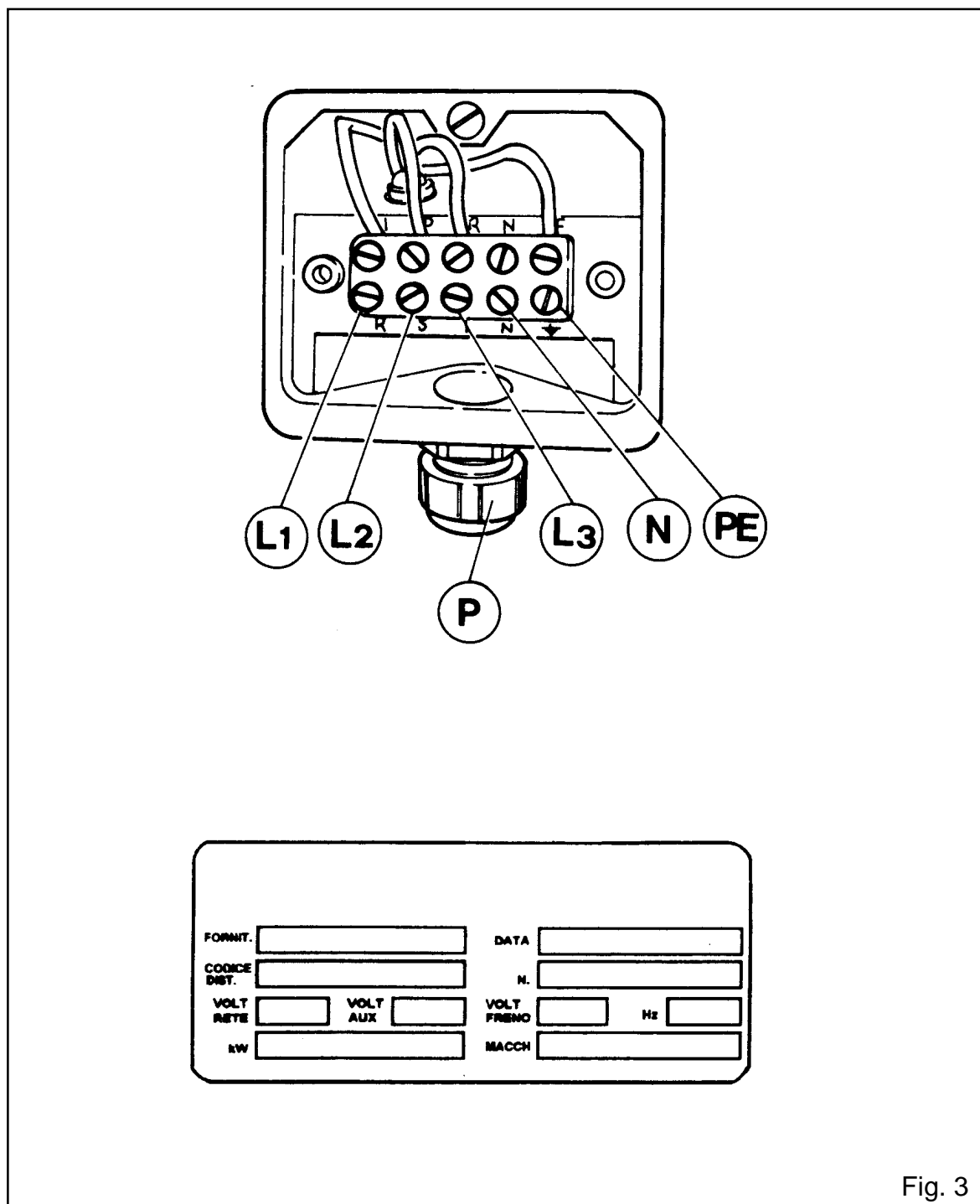


Fig. 3



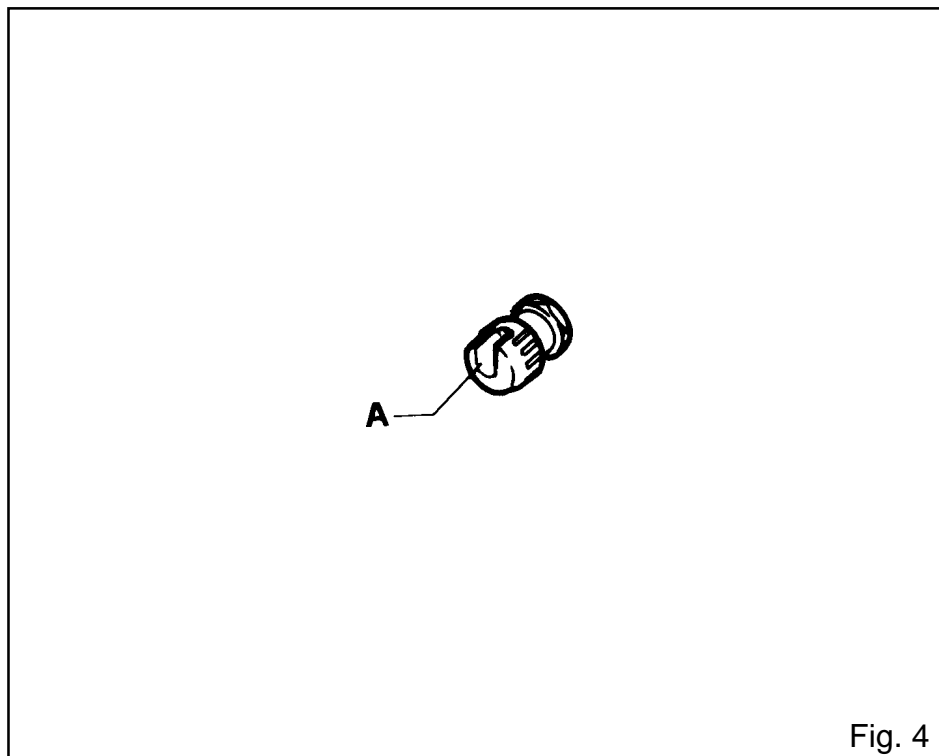
## **2.6 ASSEMBLY OF PARTS DISASSEMBLED FOR TRANSPORT EXIGENCES**

For packing and transport exigences, some parts are disassembled before being despatched.

## **2.7 PNEUMATIC CONNECTION**

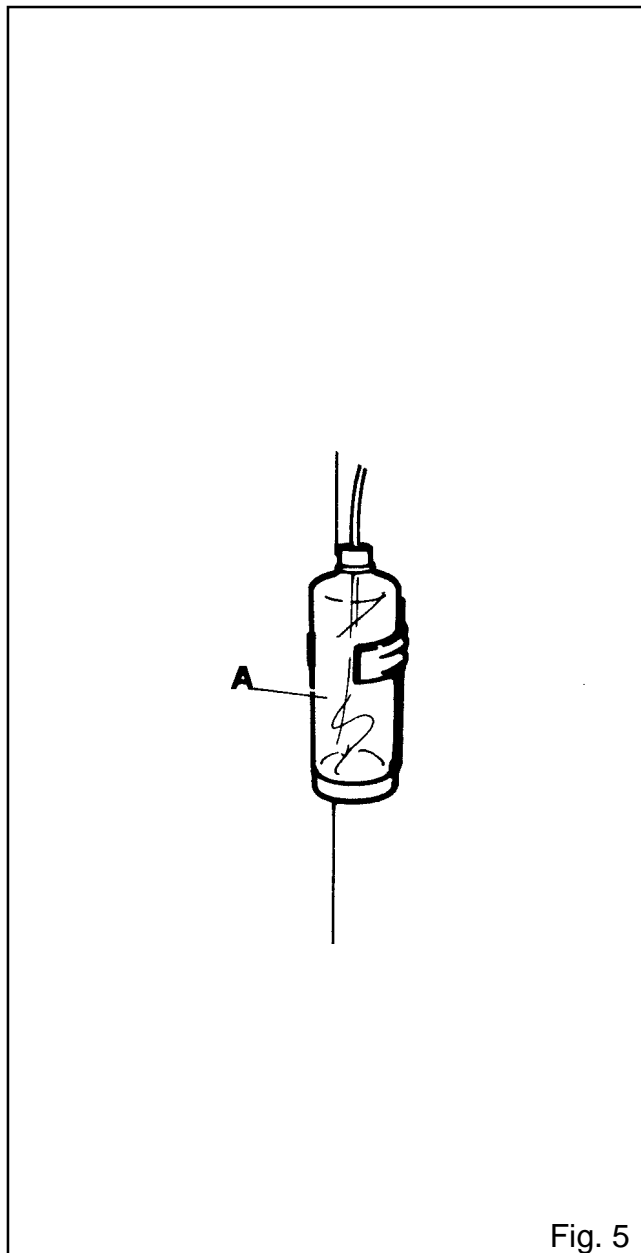
(For machines equipped with pneumatic pressure).

The pneumatic connection is effected by engaging in connection A (Fig.4) a flexible pipe (Ø mm.8)



## 2.8 COOLING SYSTEM

- Insert lubricating oil in the suitable tank A (Fig.5).



## **3.0 USE AND ADJUSTMENTS**

### **3.1 MACHINE'S STARTING**

- Start selector C (Fig. 6) to close the clamps.
- Turn the main switch A (Fig. 6) to give voltage to the machine.
- Grasp lever D (Fig. 6) for the raising of the blade, pressing push button B (Fig. 6) to obtain the starting of the engine.

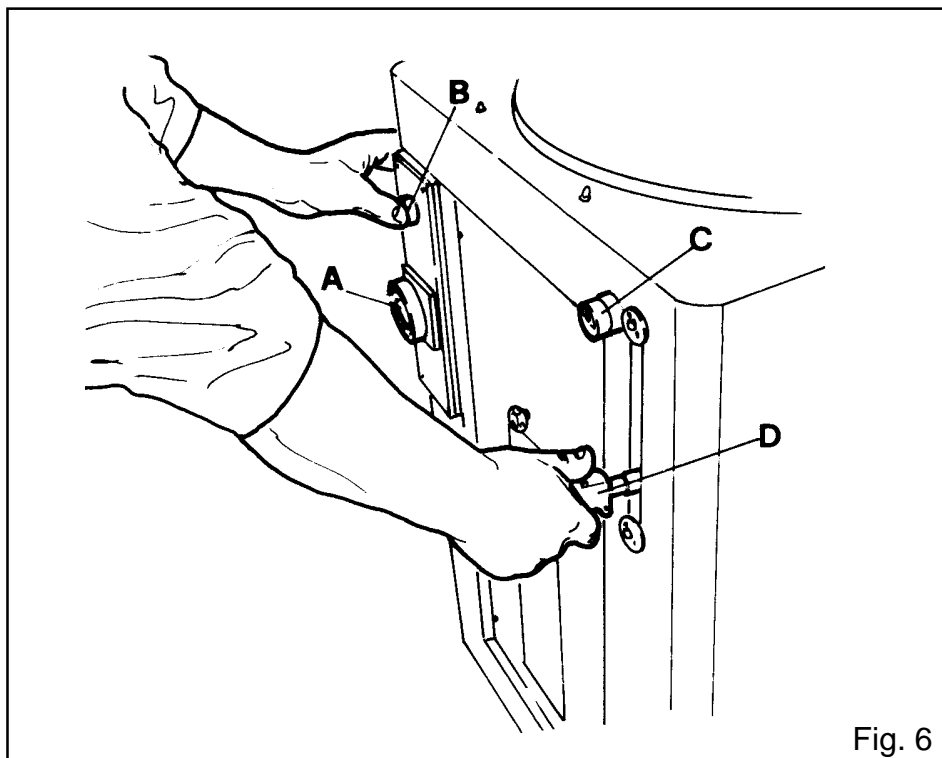


Fig. 6

### **3.2 ADJUSTMENT OF THE MANUAL CLAMP (STANDARD)**

The locking clamp F (Fig. 7) of profile A (Fig. 7) has to be adjusted in connection with the profile to be cutted by operating as follow:

- in case of a reduced section profile, loosen release lever G (Fig. 7) and draw the wooden dowel B (Fig. 7) nearer to the profile.

Then re-lock release lever G (Fig. 7), tighten the aluminium profile by means of eccentric C (Fig. 7).

In case of a profile with a larger section, loosen release lever G (Fig. 7) and lift piston F (Fig.7) until the profile can be locked.

Then re-lock release lever G (Fig. 7).

For the horizontal adjustment, loose release lever E (Fig. 7) blocking support D (Fig.7) of piston F (Fig. 7), then move it longitudinally to the expected position.

Block release lever E (Fig. 7).

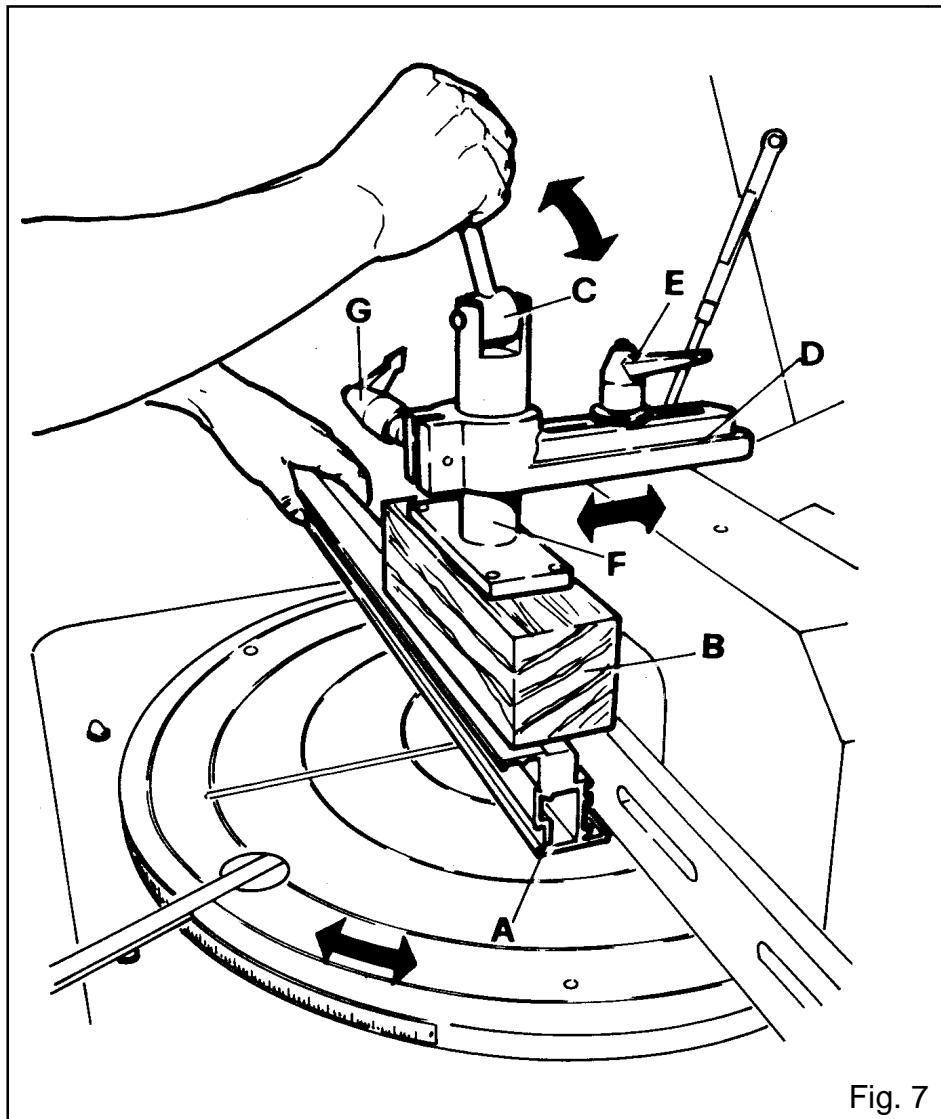


Fig. 7

### **3.3 ADJUSTMENT OF PNEUMATIC CLAMPS (OPTIONAL)**

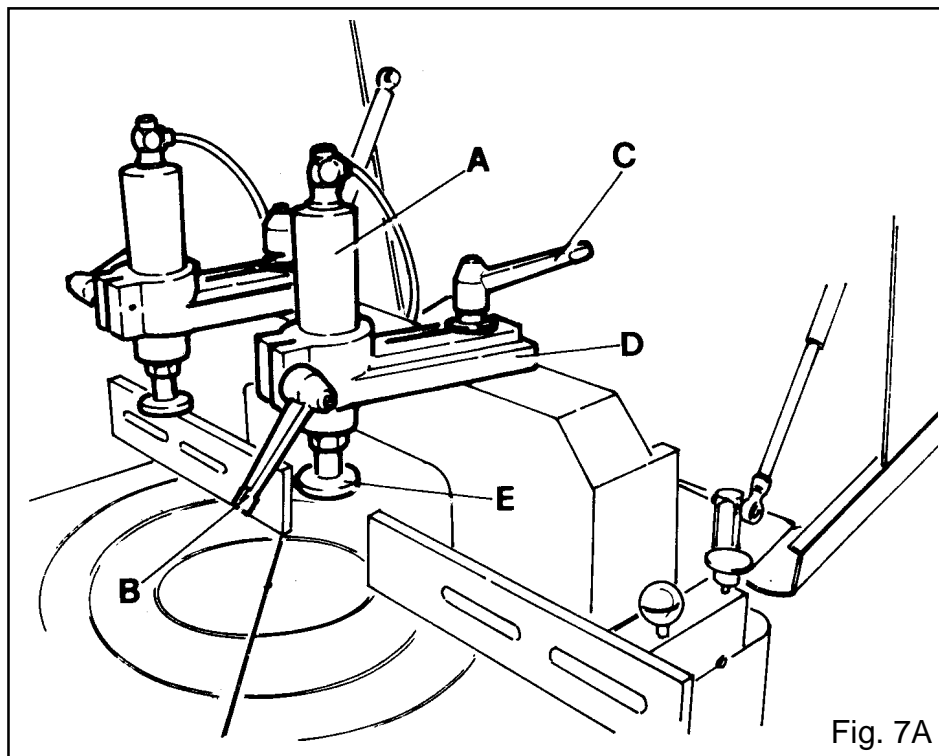
The clamps have to be adjusted in connection with the profile to be cutted by operating as follows:

- In case of a reduced section profile, loosen release lever B (Fig. 7/A) and draw piston A (Fig. 7/A) nearer to the profile. Then re lock release lever B (Fig. 7/A).
- In case of a profile with a larger section, loosen release lever B (Fig.7/A) and lift piston A (Fig. 7/A) until the profile can be blocked.

Then re lock release lever B (Fig. 7/A).

For the horizontal adjustment, loosen release lever C (Fig. 7/A) blocking support D (Fig. 7/A) of piston A (Fig. 7/A), then move it longitudinally till the expected position. Block release lever C (Fig. 7/A).

N.B. The machine is equipped with double pressure pneumatic clamps, as provided by the regulations, to avoid crushing; therefore make sure that, during the placement of the clamps, the plugs E (Fig. 7/A) skim the profile when they are in rest position.

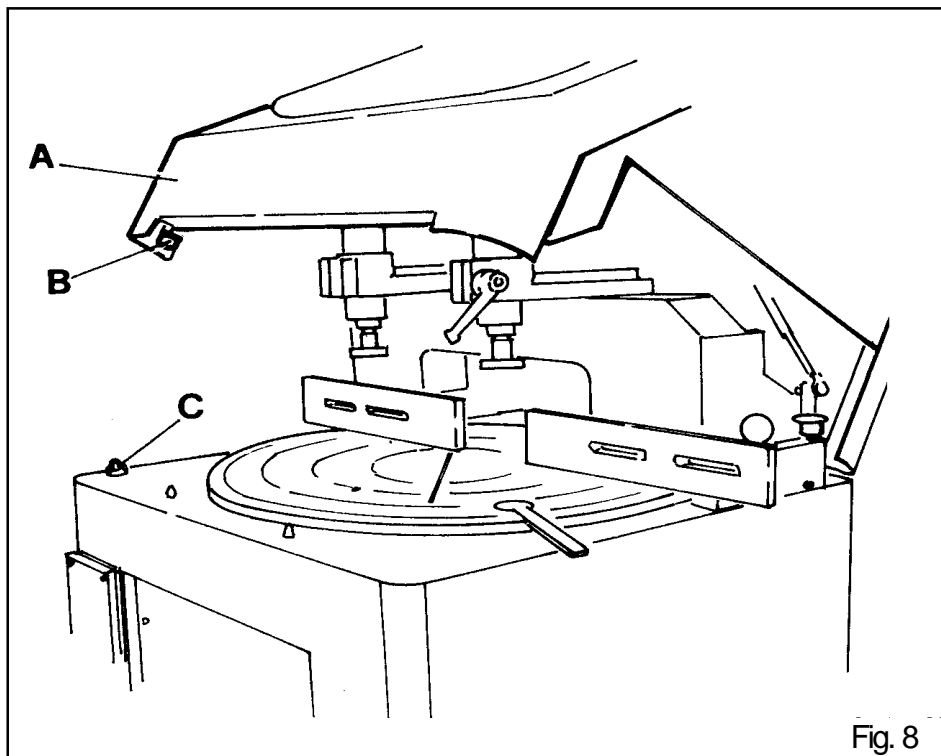


### **3.4 ADJUSTMENT OF THE BLADE PROTECTION**

The machine is equipped with a carter A (Fig.8) for the protection of the blade, which prevents the operator's hands from touching the blade.

Should carter A (Fig.8) be opened during the motor rotation, the magnetic sensor B (Fig.8), that will no longer be in contact with magnet C (Fig.8), will immediately block the motor.

The machine can work only when carter A (Fig.8) is completely lowered on the workingtable.



### **3.5 ADJUSTMENT OF FIXED STOPS (RIGHT 45°- 90°-LEFT 45°)**

It may happen that the machine will lose the perfect alignment of the fixed cuts because of pushes and vibrations and wear. Therefore operate as follows:

#### **RIGHT 45° CUTS RUNNER C (Fig. 9)**

- Loosen nut F (Fig.9/A) blocking runner G (Fig. 9/A) by the special spanner H (Fig.9/A).
- Turn runner G (Fig.9A) by the special spanner I (Fig. 9/A) to the left to increase the cutting angle or to the right to diminish it.
- Block nut F (Fig.9/A) by spanner H (Fig.9/A).
- Try to cut a profile and control the perfection of the cutting by means of a precision mitre square 45°.

#### **LEFT 45° CUTS RUNNER A (Fig.9)**

- Loosen nut F (Fig.9/A) blocking runner G (Fig.9/A) by means of spanner H (Fig. 9/A).
- Turn runner G by the special spanner I (Fig.9/A) to the left to diminish the cutting angle or to the right to enlarge it.
- Block nut F (Fig.9/A) by spanner H (Fig. 9/A).
- Try to cut a profile and control the perfection of the cutting by means of a precision mitre square 45°.

#### **90° CUTS RUNNER B (Fig. 9)**

- Turn the runner to the left if the defect of the cutting angle is on the right side or to the right if the defect of the cutting angle is on the left side.
- Try and cut a profile and control the perfection of the cutting by means of a precision square 90°.

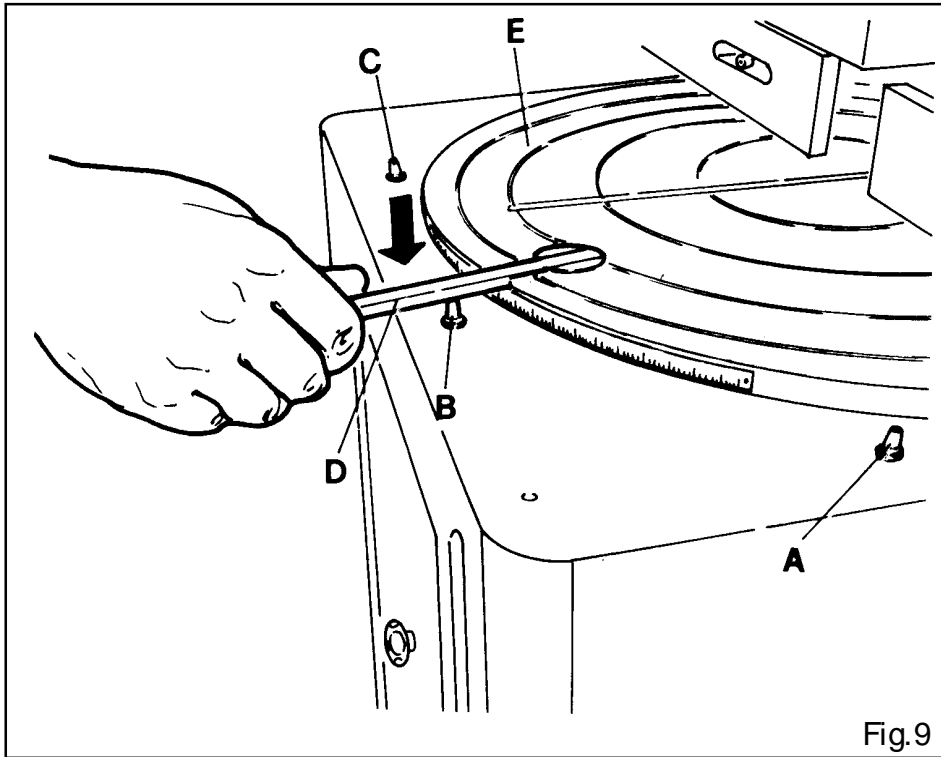


Fig.9

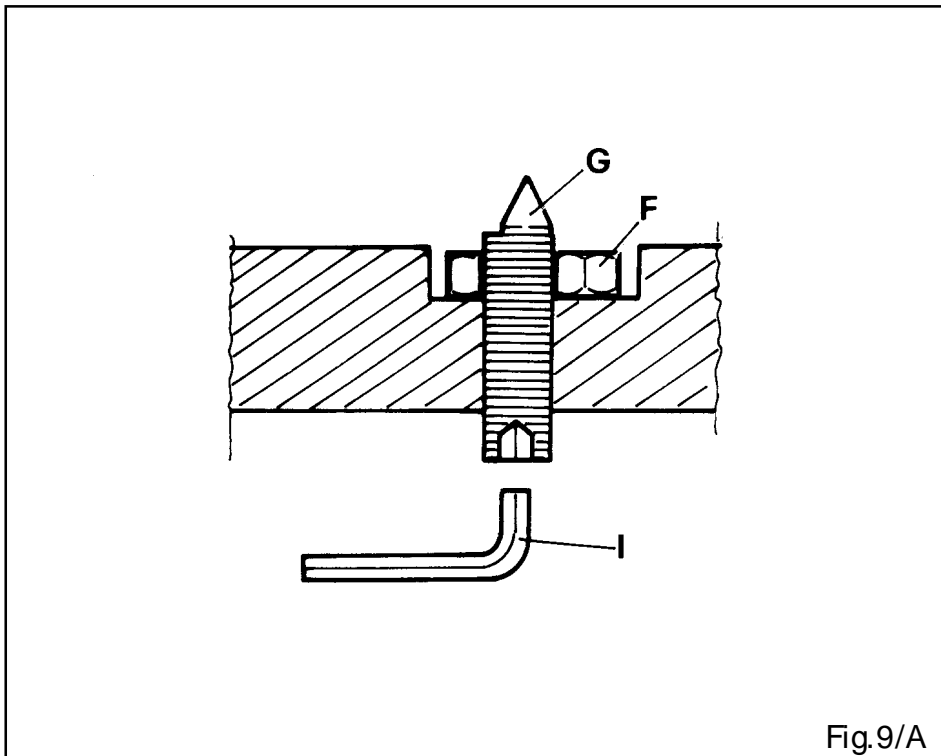


Fig.9/A



### **3.6 ADJUSTMENT OF INTERMEDIATE CUTS**

The machine is equipped with a graduated sector A (Fig.10), placed on the rotating table B (Fig. 10), on which all cutting gradations from left 90° to right 90° are reported.

The adjustment is effected by means of the special arrow C (Fig.10), while the blocking is effected by handle D (Fig.10).

To carry out intermediate cuts, operate as follows:

- Lift lever H (Fig. 10) moving it until arrow C (Fig. 10) indicates the expected grades for the cutting.
- Block the rotating table B (Fig. 10) by means of the special handle D (Fig.10).
- Carry out the cutting.

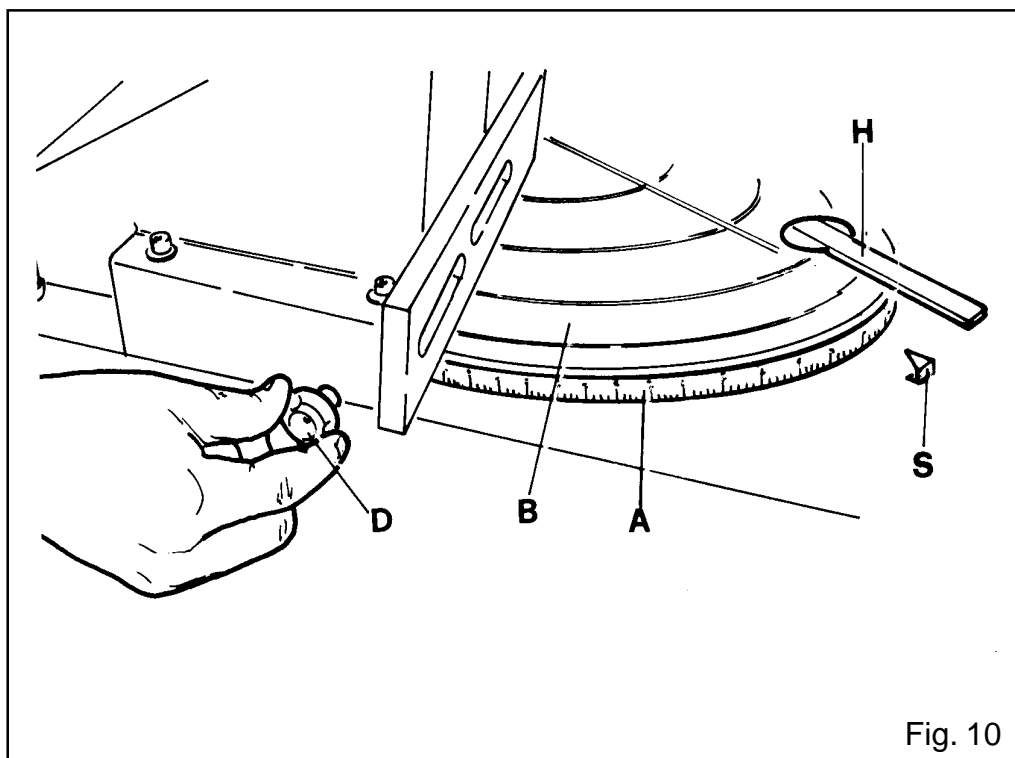


Fig. 10

### 3.7 EXECUTION OF THE CUTTING

After placing the expected cutting angle, operate as follows:

- Block profile A (Fig. 11) on the workingtable by means of the special pneumatic clamps B (Fig.11) operating on the selector C (Fig.11).
- Close the protection carter.
- Turn the general switch D(Fig. 11).
- Grasp lever F (Fig.11) for the raising of the blade, pressing push button E (Fig.11) to obtain the starting of the engine.
- Draw lever F(Fig.11) for the raising of the blade to cut the piece.
- Lift the protection carter.
- Release clamps B (Fig.11) operating on the selector C (Fig.11).
- Clean the workingtable for the following cut.

**N.B.** THE PROFILE TO BE CUTTED HAS TO BE BLOCKED BY BOTH PNEUMATIC CLAMPS.

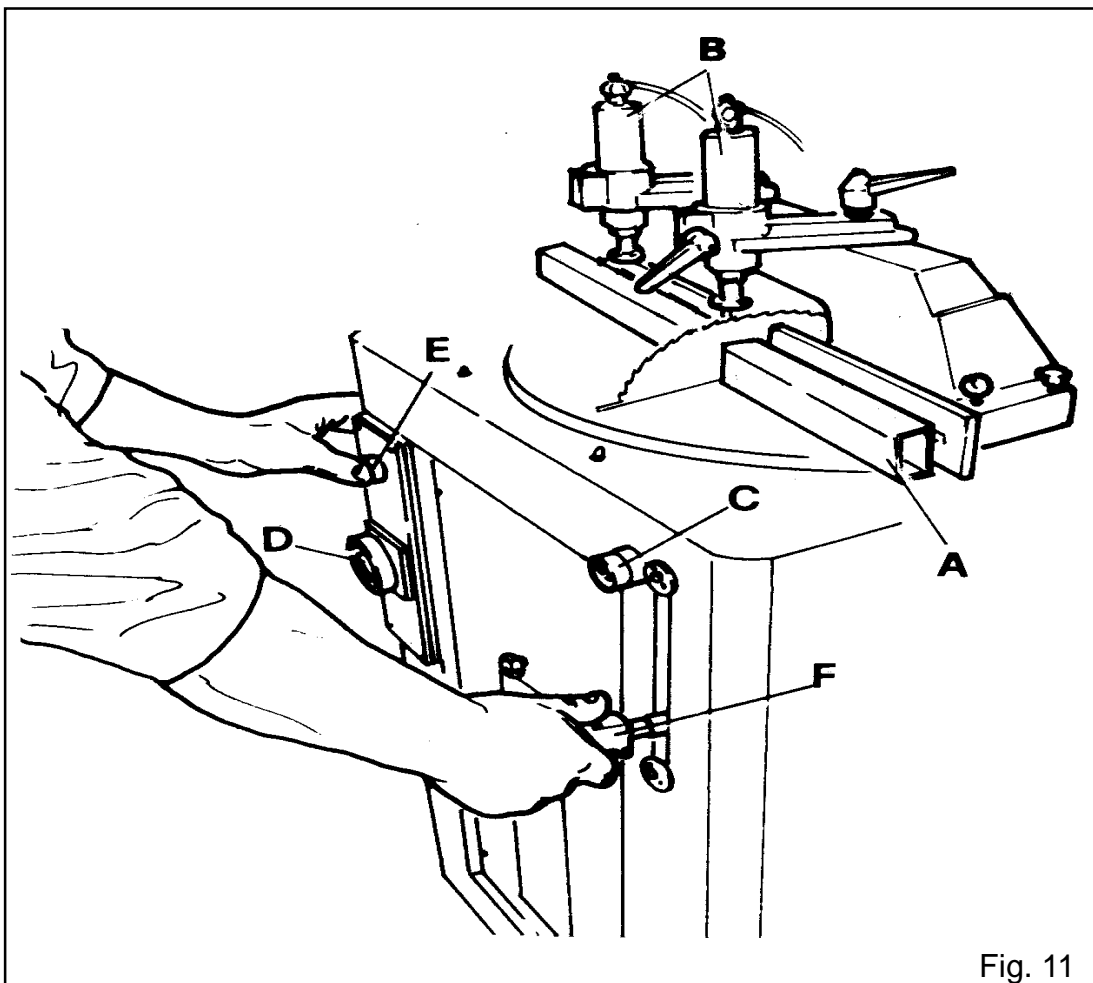
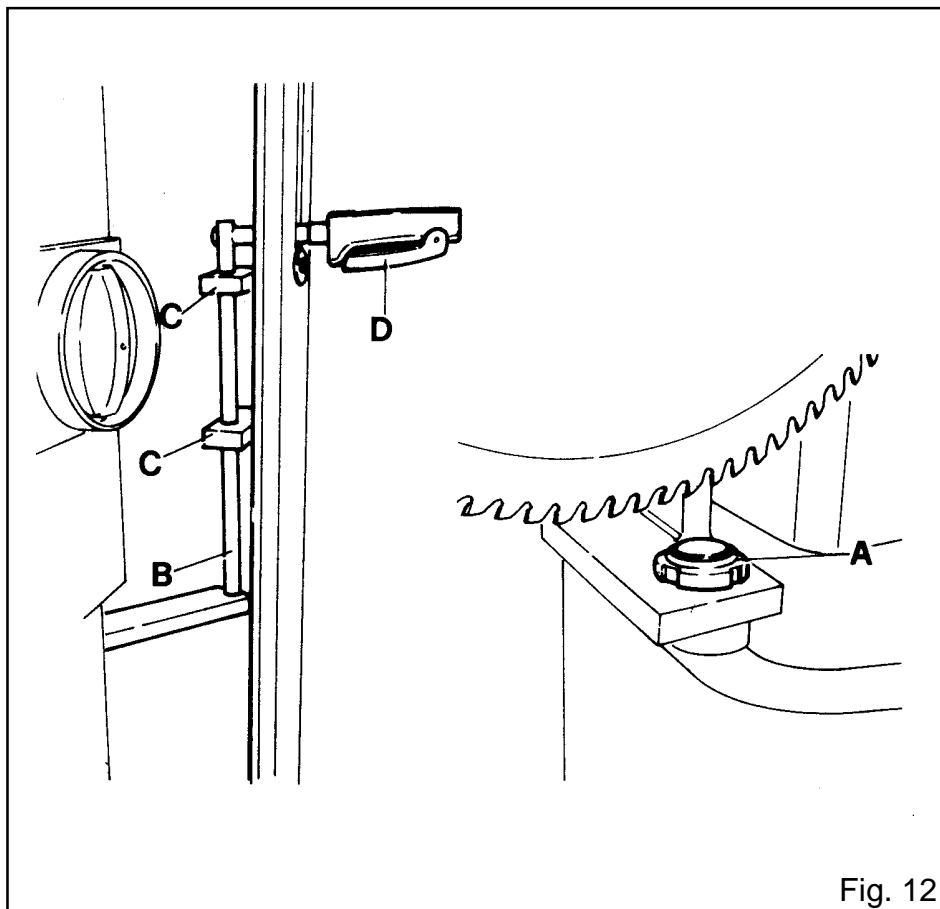


Fig. 11

### **3.8 LUBRICATION OF MACHINE PARTS PARTICULARLY SUBJECTED TO WEAR**

Weekly lubricate the following parts of the machine which are subjected to wear and for a better working:

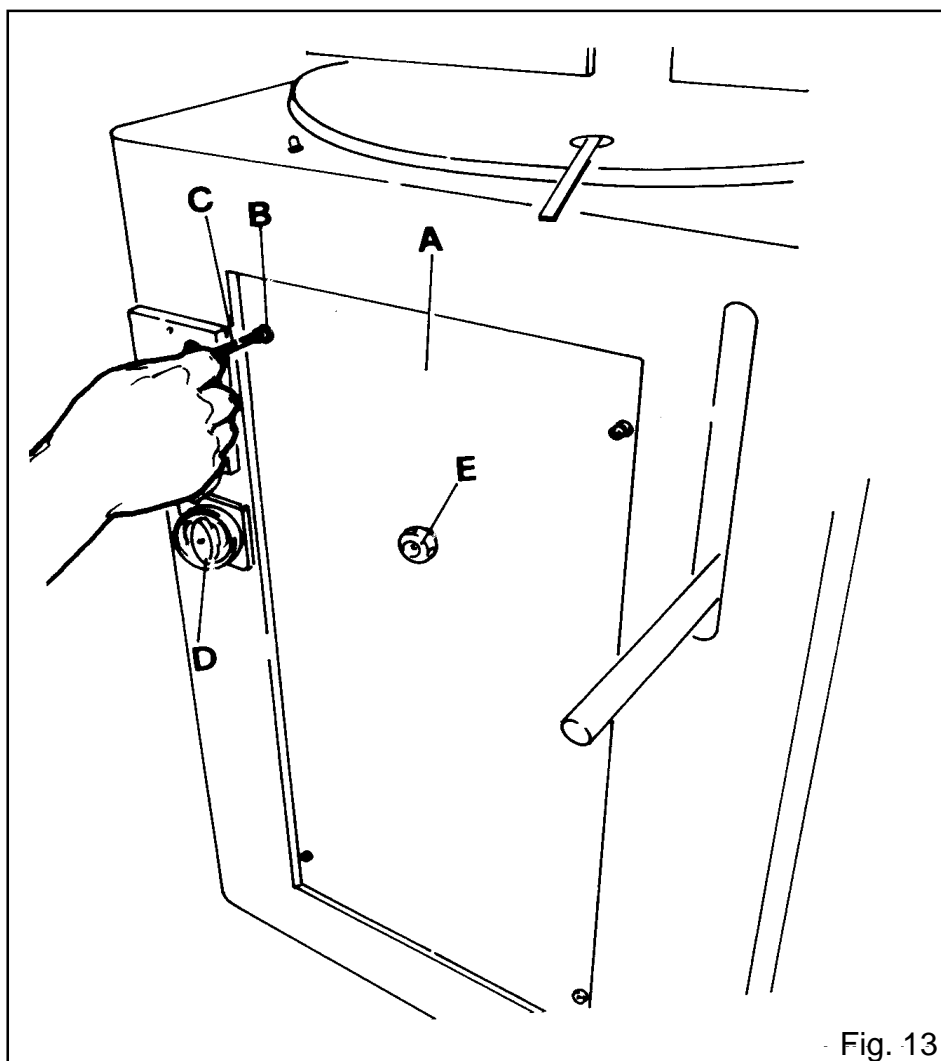
- Pivot A (Fig. 12) of lever connection D (Fig. 12) for the raising of the motor.
- Bushes C (Fig. 12) on which fence B (Fig. 12) of lever D (Fig. 12) for the raising of the motor slides.



### **3.9 BLADE'S ACCESS PROTECTION**

To reach the blade, operate as follows:

- Operate on the main switch, putting it on position "ON"
- Unscrew the four screws B (Fig. 13) blocking carter A (Fig. 13) by means of the special spanner C (Fig. 13).
- Take off carter A (Fig. 13) taking it by the special handle E (Fig. 13).



### **3.10 ASSEMBLY OF THE BLADE**

For the assembly of blade A (Fig.14), operate by means of service spanners B and C (Fig.14).

Insert spanner C (Fig.14) in the special hole placed on top of the motor spindle.

Put spanner B (Fig.14) in the proper convenable key set of nut D (Fig.14)

keep spanner B (Fig.14) steady, loosen nut D (Fig.14) turning it in anticlockwise direction by spanner C (Fig.14).

Then take off nut D (Fig.14) and flange E (Fig.14).

Insert blade A (Fig.14) making sure that the parts in contact are perfectly clean to avoid harmful vibrations.

Assemble flange E (Fig.14) and nut D (Fig.14) blocking it by the special spanners. Make sure that the blades are sharpened and in order.

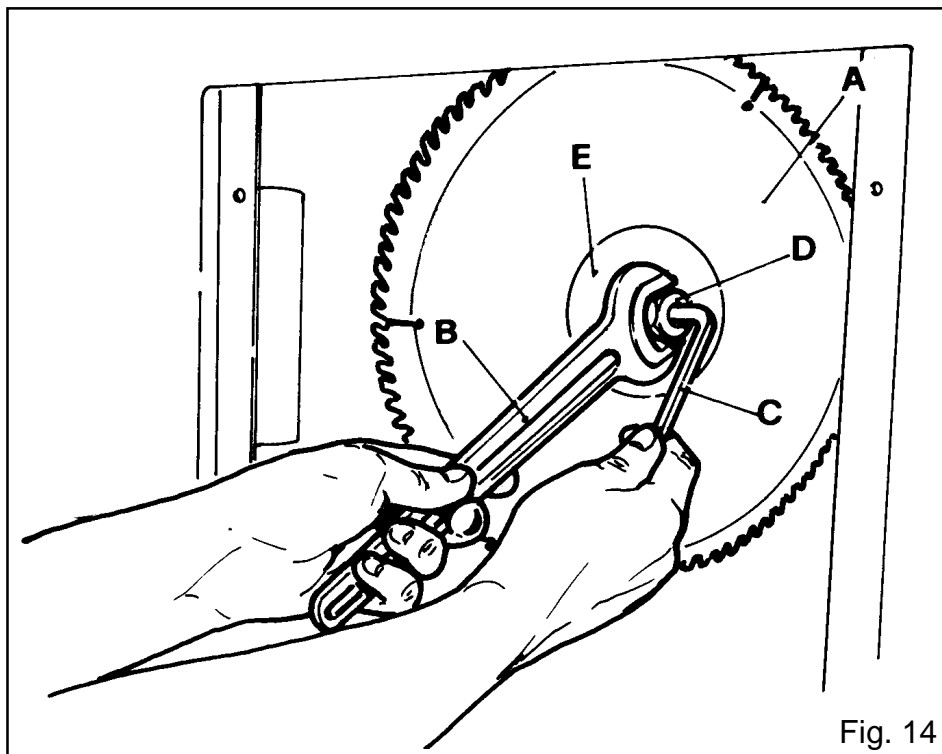


Fig. 14

### **3.11 ADJUSTMENT OF THE VERTICAL FENCE**

The machine is equipped with two vertical fences (right and left).

For the adjustment operate as follows:

- Insert spanner C (Fig. 15) in to the special screw B (Fig. 15) blocking the fence A (Fig. 15) by loosening them.
- Move the fence transversally until the expected position.
- Block screw B (Fig.15) by means of the special spanner C (Fig. 15).

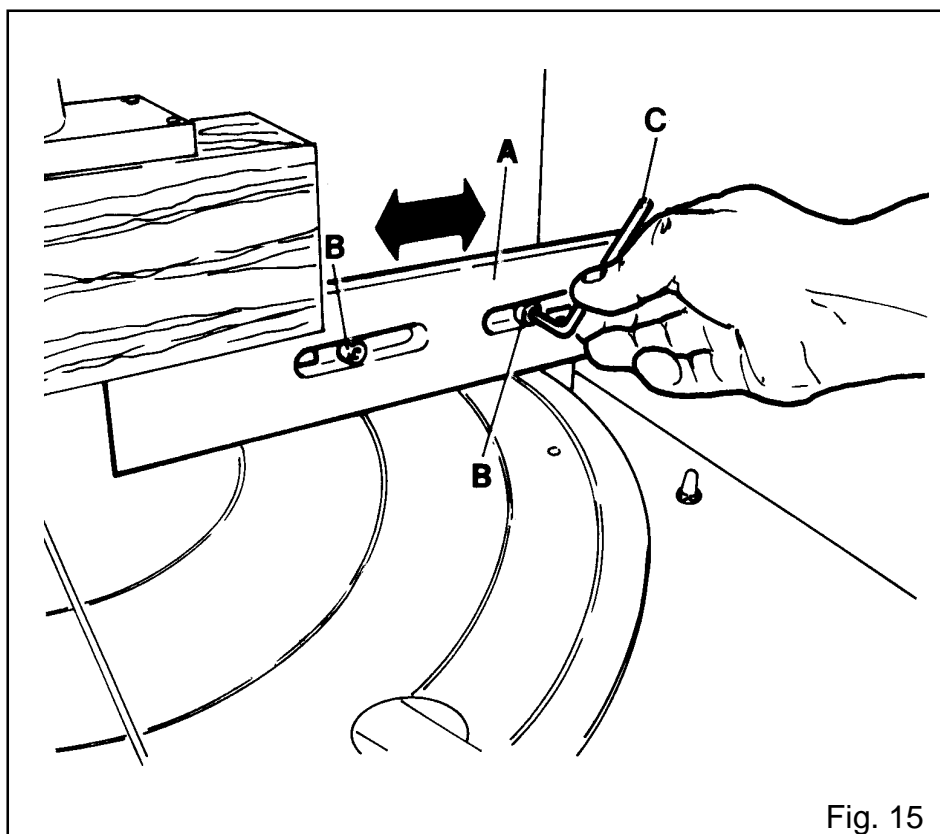


Fig. 15

### **3.12 ADJUSTMENT OF THE BELT**

After about 100 working hours, it is necessary to tighten the driving belt E (Fig. 16) which is carried out in the following way:

- Loosen the four nuts B (Fig. 16) blocking the engine F (Fig. 16) by means of the special spanner C (Fig. 16)
- Insert the screw driver D (Fig. 16) in the special hole, by pulling up the handle as a lever.
- Tighten the four nuts B (Fig. 16) by means of the special spanner C (Fig. 16).
- The belt E (Fig. 16) placed in the special pulley A (Fig. 16) will be tighten.

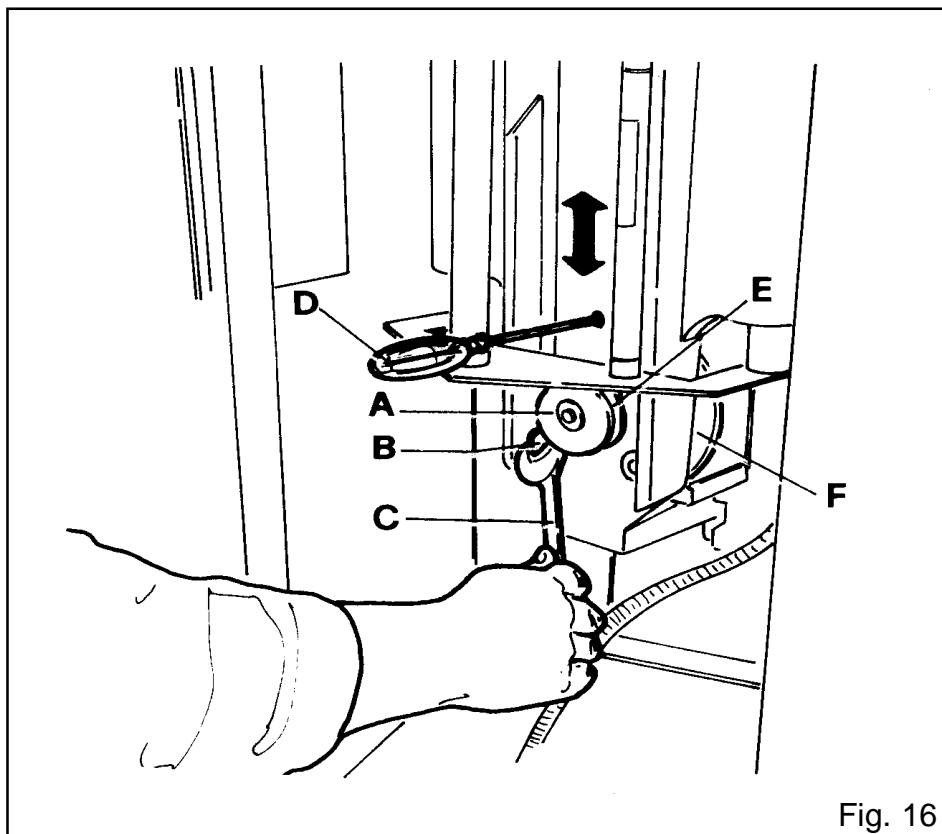


Fig. 16

### **3.13 SUCTION SYSTEM**

The machine is equipped with a carter A (Fig. 17) for the application of a suction system for chips.

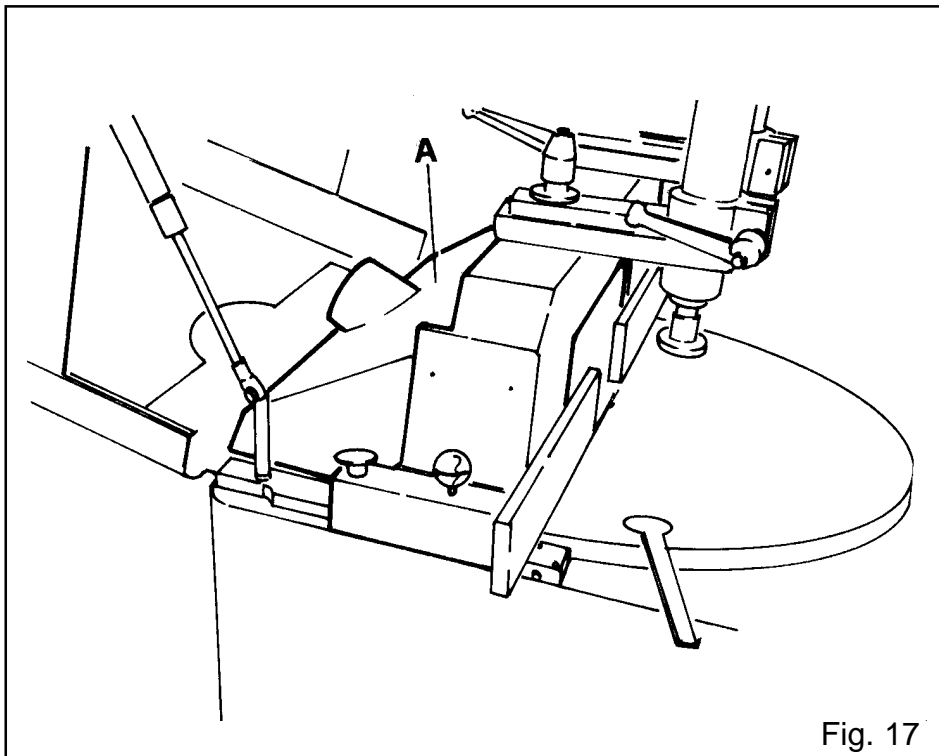


Fig. 17



### **3.14 ADJUSTMENT OF THE PARALLEL CUTTING FENCE (OPTIONAL)**

To use the parallel cutting fence, operate as follows:

- Turn knob B (Fig. 18) to release the cutting fence.
- Lift the scraping cutter A (Fig. 18) taking it off its seat on the machine table.
- Take with both hands the cutting fence C (Fig. 18) pushing it to the external part of the machine until the expected position.
- Block knob B (Fig. 18) and carry out the cuts.

To restore the normal position, carry out the inverse operations.

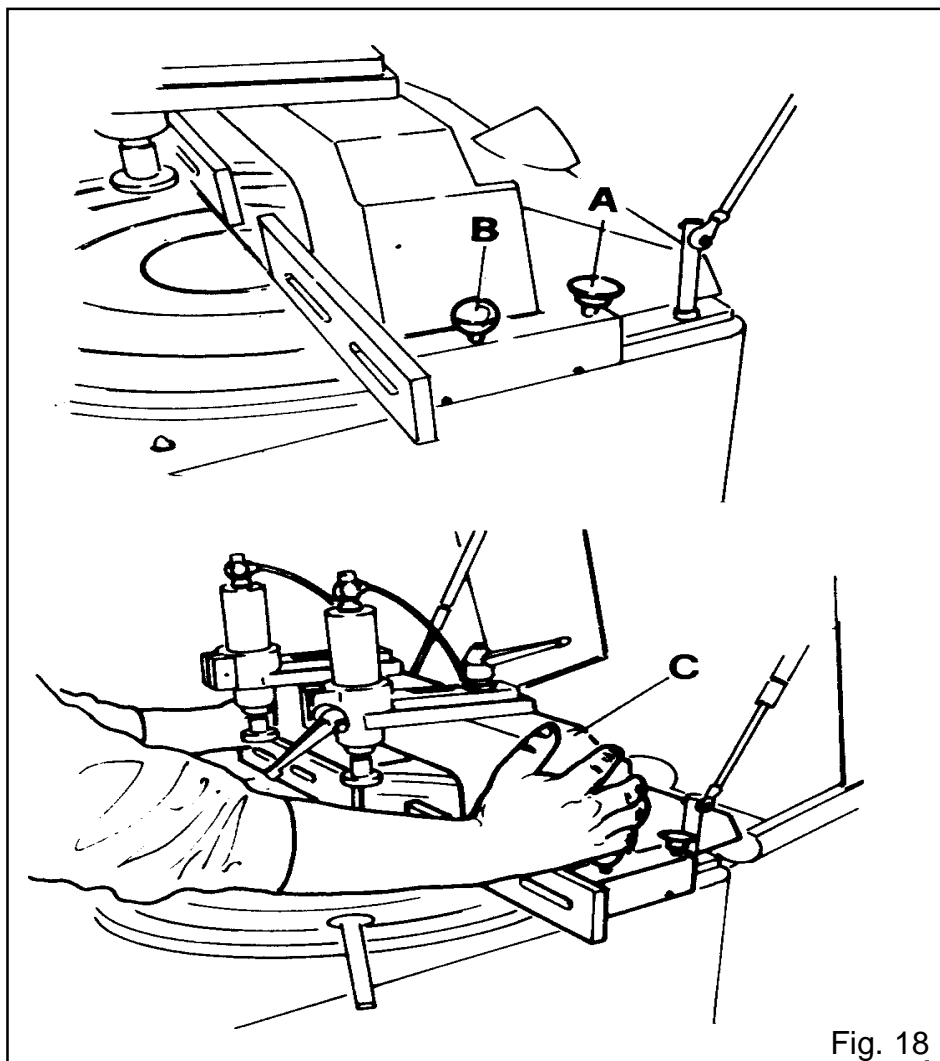


Fig. 18

## **4.0 MAINTENANCE CARD**

Check every morning the tank in case of condensate deposit (Fig.5) (to let the condensate come out, press the push button placed under the tank). Control periodically the oil level in tank E (Fig.5).

Clean periodically (every 15/20 days) the sliding guides and keep them lubricated with grease or oil, to avoid that the guide scraping for the protection of the slide sleeve bearing runs out on some zones of the guides without lubrication or, worse, on some part of the sliding guide with dried lubricant.

This would spoil the guide scraping and would allow the dirt to enter the sleeve bearing, compromising the sliding of them.

Should the machine not start, control the fuses inside electric case A.

Verify if the calibration of the magneto thermic is correct (by disassembling the plastic protection of the magneto thermic, you enter the adjustment ring nut, placed sideways the two push buttons Off-On. Turn it until it reaches the expected value, which is set on the motor plate Ex: HP 1,5 - Kw 1,1 - Volt 380 A = 2,9).

Therefore turn the ring nut till 2,9.

The starting of the motor is given by a pressure gauge, situated inside the electric board; if it doesn't get a sufficient quantity of pressure, the machine doesn't work; therefore provide for the pressure to be 6/7 ATM.

### **4.1 ELECTRICAL AND PNEUMATIC SCHEMES**

#### **PNEUMATIC INSTALLATION:**

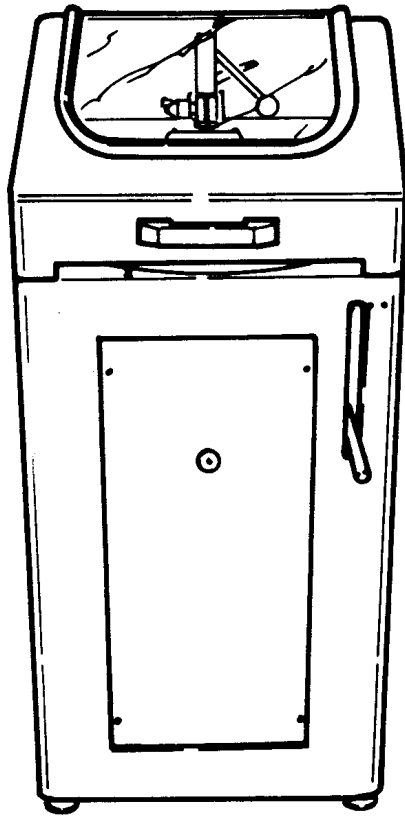
Control the oil level and, if necessary, supply with the following oils:

AGIP, OSO15

ROL OIL, LR10

ESSO, NUTO H15

MOBIL, ALMO 525



# ASTRA

**INSTRUCTIONS FOR MAINTENANCE  
AND USE**

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