



**APIS-02 H**  
**HYDRAULIC CORNER CRIMPING MACHINE**  
**User's Manual**



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## **1. GENERAL INFORMATION**

### **1.1. INTRODUCTION**

The user's manual given by the manufacturer contains necessary information about the machine parts. Each machine operator should read these instructions carefully, and the machine should be operated after fully understanding them.

Safe and efficient use of the machine for long term depends on understanding and following the instructions contained in this manual. The technical drawings and details contained in this manual constitute a guide for the operator.

### **1.2. DISTRIBUTOR**

ATech Machine, Inc.  
12108 Conway Road – Beltsville, MD 20705 - USA  
Phone: +1-240-264-1118 Fax: +1-301-560-6627  
Website: [www.atechmachinery.com](http://www.atechmachinery.com) E-mail:  
[info@atechmachinery.com](mailto:info@atechmachinery.com)

In case of any technical problem please contact your nearest ATECH dealer, or ATECH head office through the above mentioned phone, fax or e-mail address.

Technical labels with the model description of the machine are fixed onto the front side of each machine.

The machine's serial number and manufacturing year are stipulated on the technical label.



## **2. 0. DEFINITION AND USAGE OF THE MACHINE**

Inside a metal sheet chassis electric motor and hydraulic system is placed and the chassis is placed over a thick plate thick enough to ensure machine's durability. Two hydraulic pistons, piston safety covers, centering set square, profile leaner pressing knife groups are placed on top of the plate so as to ensure machine's accuracy and movement of double sided pistons. Thanks to the millimeter ruler over the piston cover, knife installation slots and profile leaner movement of pressing knife, height of pressing knife and profile leaning dimensions can easily be controlled by operator. Due to working conditions two sides of the machine is equipped with conveyers. Squeezing the work piece and operation is full automatic. Electrical and pneumatic components have UL, CSA and CE certificate and appropriate standards. The machine is equipped with electric, pneumatic protection and safety systems.

During design period of the machine EN ISO 12100-1:2003, EN ISO 12100-2:2003, EN 294, EN 349, EN 60204-1 Machine Safety; harmonized design principles and 98/37 EC Machine Safety Directives, 73/23 EEC Low Voltage Directives are applied.

APIS-02 H Aluminum Corner Crimper: Designed for 90 degrees corner connection of aluminum profiles with hydraulic system, pneumatic clamp squeezing system with a maximum pressing force of 5000 kgs

- The machine is designed according to UL, CSA, CE directives
- Clamp squeezing is pneumatic; knife movement is hydraulic.
- Height of pressing knives, movement of hydraulic pistons and leaning system of profile is millimeter scaled and adjustable.
- Automatic centering of profile is achieved with pneumatically operated profile centering set square and eccentric leaner.
- Powerful hydraulic system exists.
- For pneumatic clamps and profile pressing double foot pedal exists.
- In order to protect profile's surface friction surface is made of Polyamide plate

### **ACCESSORIES**

#### **STANDARD ACCESSORIES**

Conveyors 2 units KN 150  
Crimping tools 3mm, 5mm, 7mm ( 2 pieces )  
4mm Allen wrench  
5mm Allen wrench

#### **OPTIONEL ACCESSORIES**

Special crimpint tools



## 2.1. USING THE MACHINE

According to safety, usage and maintenance directives mentioned at machines user's guide this horizontal corner connection machine is designed for corner connection of aluminum profiles, those cut with limits given in technical specifications at 45°, by crimping the profiles into the inserted aluminum key.

Use protective and safety equipments indicated in User's Manual. Also use other protective equipments according to the type of working conditions.

Secure dimensions comprise those of using the machine as indicated above, for this reason using the machine inappropriately or modifications without prior permission of manufacturer are forbidden.

Crimping and clamping the profile is full automatic thus necessitates utmost attention when operating. Operator should undergo adequate training period usage and maintenance of machine, and should be of legal age according to the country.

**Except Aluminum profiles corner connections of other materials are excluded.**

Normally only one operator is enough next to the control panel for feeding (loading), operating and stopping.

### 2.1.1. RESIDUAL RISKS

Under normal operation circumstances it necessitates only one operator around the area including control panel. As the processes like starting, stopping, adjusting and feeding with materials accomplished by pressing to the foot pedals and by the buttons on the control panel the operator should take care of another person being in working area during operating the machine.

**Besides take care of the residual risks arising from wrong connecting/fixing of electric and pressing knives or because of wrong installation of machine/work piece.**

## 2.2. TECHNICAL FEATURES

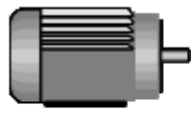





TECHNICAL FEATURES								
			Pneumatic Pressure	Hydraulic Pressure			cm	Kg
APIS-02 H	1.5 kW 50-60 Hz 400 V AC 3 PE	H= 130 mm max.	6-8 Bar	100 Bar Max.	5000 Kg x 2	100x110x140	480	52

Figure-1

### 2.2.1. DIMENSIONS

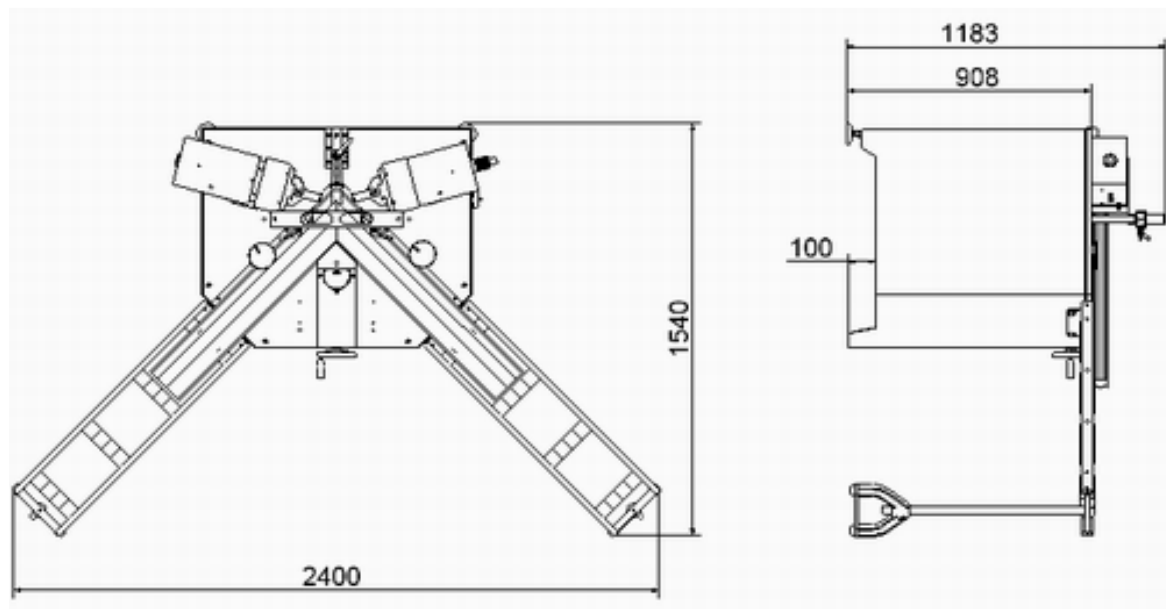


Figure-2

## 2.2.2. TECHNICAL DRAWINGS

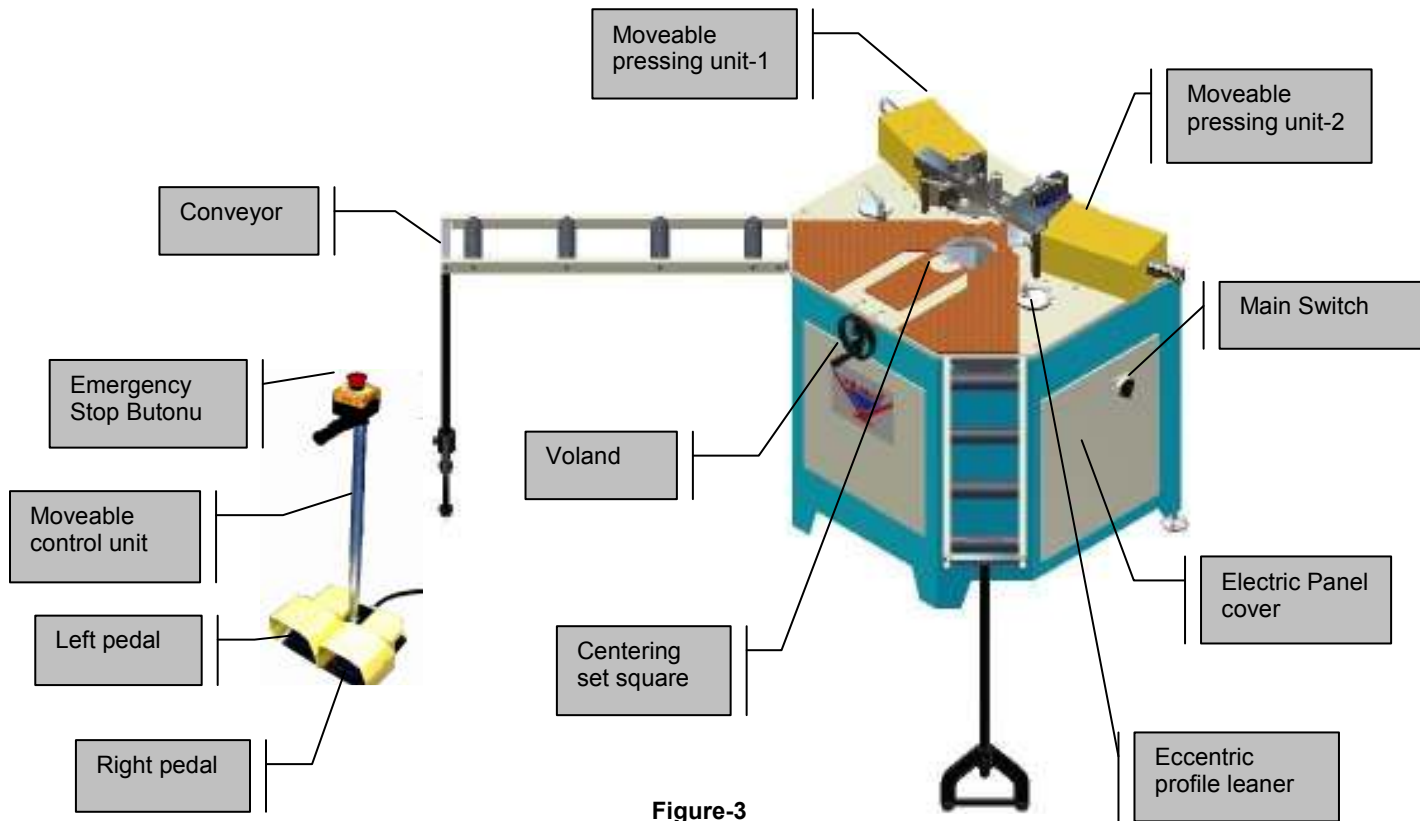


Figure-3

## 3. SAFETY

### 3.1. SAFETY INFORMATION

The symbols shown hereunder are necessary to be read with special attention. Not reading or observing of them may cause damage to the equipment or personal injury.

**IMPORTANT**

The **IMPORTANT** symbol above is one telling to apply special care and to be careful at carrying out the specified operation.

**CAUTION !**



The **CAUTION!** Symbol above warns you against specific dangers, and requires to read the text. Not observing may cause damage to the equipment.



#### **DANGER WARNING**

The above symbol **DANGER WARNING**, warns you against specific dangers, and you have definitely to read them. Negligence may cause damage to the equipment and bodily injury.

**Read the user's manual carefully before using the machine or carrying out maintenance works.**

### **3.1.1. MACHINE SECURITY INFORMATION**

- It is absolutely prohibited to operate the machine without protective covers like the one above the hydraulic pistons enabling movement of pressing knives
- Extreme concentration should be given during operation because of certain risks in using machine and tools. High pressing power is required in Aluminum corner pressing machines. For this reason extreme focusing and care should be used.
- For perfect efficiency all security and protection equipments should be used. Warning signals on the machine and advices on the User's manual should always be conformed
- For lifting, moving, transporting the machine or performing maintenance to electric or pneumatic system qualified and authorized personnel is required.
- By no means is any modification on any of the part/place of the machine is not permitted.
- With the machine running any adjustment, cleaning or maintenance is forbidden.

### **3.1.2. SAFETY OF THE PERSONNEL OPERATING THE MACHINE**

- Operator of the machine should wear appropriate clothing fitting on him / her. Loose fitting clothes or any sort of jewelry that might be pulled by the moving parts of the machine should not be used
- The operator should not use the machine in case of lose of focusing on the work and discomfort of body which will lead to lose of reflex and scattering of attention.





### **3.1.3. PERSONAL PROTECTIVE EQUIPMENTS**

Using the above mentioned protective equipments is advised:

- Wear heavy duty gloves for protecting against cutting, piercing or pricking during moving materials,
- Protective shoes when moving materials above certain weight and dimensions,

### **3.1.4. MACHINE SAFETY**

- Always use original pressing knife sets.
- In case of changing the pressing knives for a different profile suitable pressing knife for the Aluminum profile should be chosen; pressing knives and knife slots should be cleaned properly, control whether pressing knives or knife slots is damaged or not.
- Pressing knives should be used appropriate for profile dimensions; when changing pressing knives fixing to the slots should be made as indicated in user's manual.

### **3.1.5. SAFETY OF WORKING AREA**

- Keep your machine always clean for safe operation. Follow the instructions at maintenance and replacement of accessories. Check the plug and cable regularly. If damaged, let it replace by a qualified electrician
- Provide enough and regular lighting of the working area.
- Arrange the surrounding of working area with materials to be processed and have already processed for easy walking.
- Clean the dust, filling, chips on the ground to get rid of untidiness and accident risks.

### **3.1.6. PROCEDURE FOR MACHINE ISOLATION**

- Any maintenance, repair, cleaning, etc should be performed with the main electric switch in OFF position.
- Cut the air pressure to the machine
- Maintenance, repair, cleaning and such works should be performed by personnel who have taken all the precautions listed above. If it is a simple work it can be the operator to perform it after taking these precautions.



- If the machine is not in use turn off the main schalter and pneumatic air.

### 3.1.7. SAFETY DURING MAINTENANCE

- Regular maintenance of mechanical and electrical components is an important security factor in terms of leading to a long lasting life and preserves better performance values
- It is forbidden to perform any maintenance work on any mechanical part without first performing the isolation procedure of the machine (turning of the electrical and hydraulic circuits).
- During changing of any item appropriateness of the item should be checked and pay attention to not to forget any foreign item or tool inside the machine.
  - Do not step on the machine.
  - Use gloves when changing saw.
- Original parts should be used when changing. Electrical components should be the same or should have the equivalent characteristics with those mentioned in electrical diagram. In case of hesitation contact with the manufacturer. No responsibility will be accepted by the manufacturer if these directives are not fulfilled.

**CAUTION !**

**Hydraulic oil pressure inside the system is only exists when foot pedal is pressed. When MAIN SWITCH is switched off the oil pressure will return back to “0” bar.**



### 3.2. ACCIDENT PREVENTION

3.2.1. The manufacturer has designed and produced taking into consideration the related documents for the national and international standards of which include Safety of Machinery for Electrical Equipments-EN 60204-1, Safety of Machinery-Basic Concepts, General Principles For design-Harmonized Standards EN ISO 12100-1:2003, EN ISO 12100-2:2003, EN 294, EN 349, EN 954-1, low voltage directives-98/37 EC, 73/23 EEC

3.2.2. It is the task of the employer to warn his staff against accident risks, to train them on prevention of accidents, to provide for necessary safety equipment and devices for the operator's safety.

3.2.3. Before starting to work with the machine, the operator should check the features of the machine, learn all details of the machine's operation.

3.2.4 . Machine should be operated only by staff members, who have read and



understood the contents of this manual.

3.2.5. All directives, recommendations and general safety rules contained in this manual have to be observed fully. The machine cannot be operated in any way for purposes other than those described herein. Otherwise, the manufacturer shall not be deemed responsible for any damages or injuries. And such circumstances would lead to the termination of the warranty.

#### 4. PLACEMENT DIRECTIVES

All of our machines are packed in perfect installation conditions after careful inner inspection and control. In overseas or truck transportations machines are delivered inside wooden boxes after coating them with special oils against oxidation. In case of any damages that have occurred during transportation, the transporter should be informed. Additionally, existence of all standard and optional accessories should be confirmed.

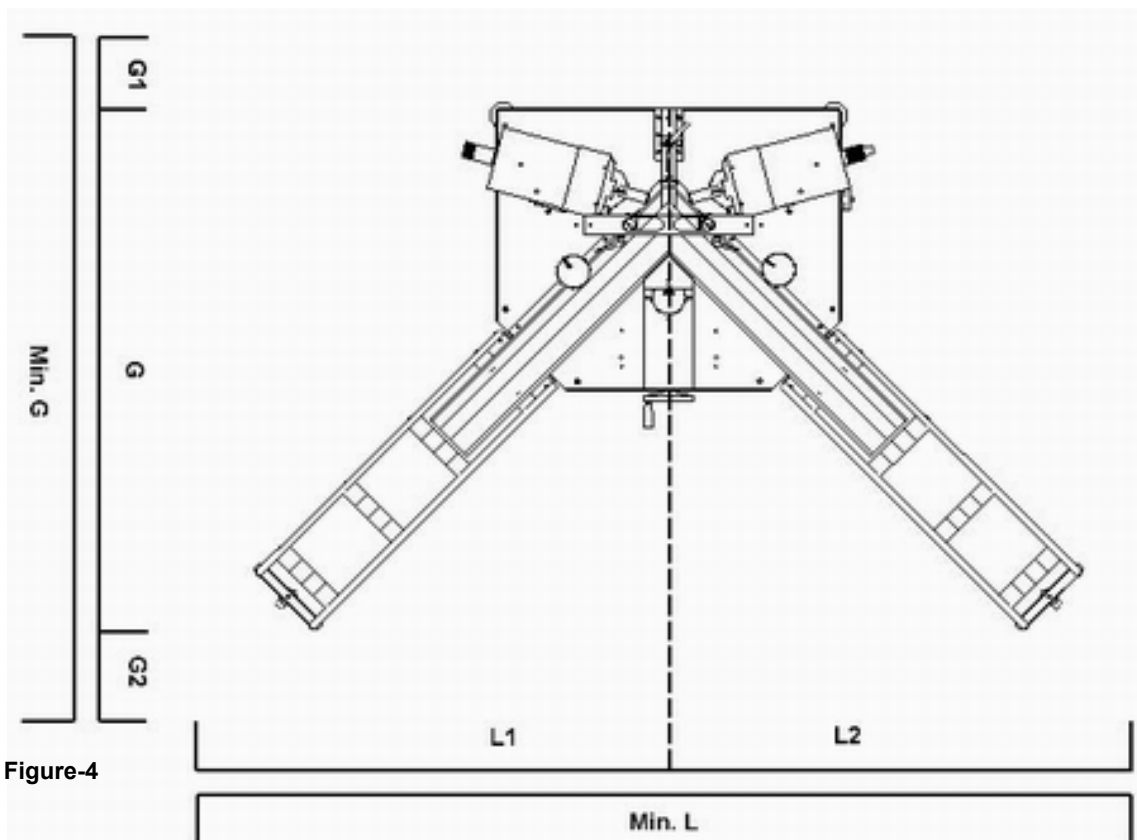
Dimensions of minimum safety area for installation are given in Figure 4. These dimensions are:

**L** : Machine length is 1000 mm (except conveyor)

**L1+L2**: Necessary working area 1200+1200=2400 mm (From the axis of machine including conveyor)

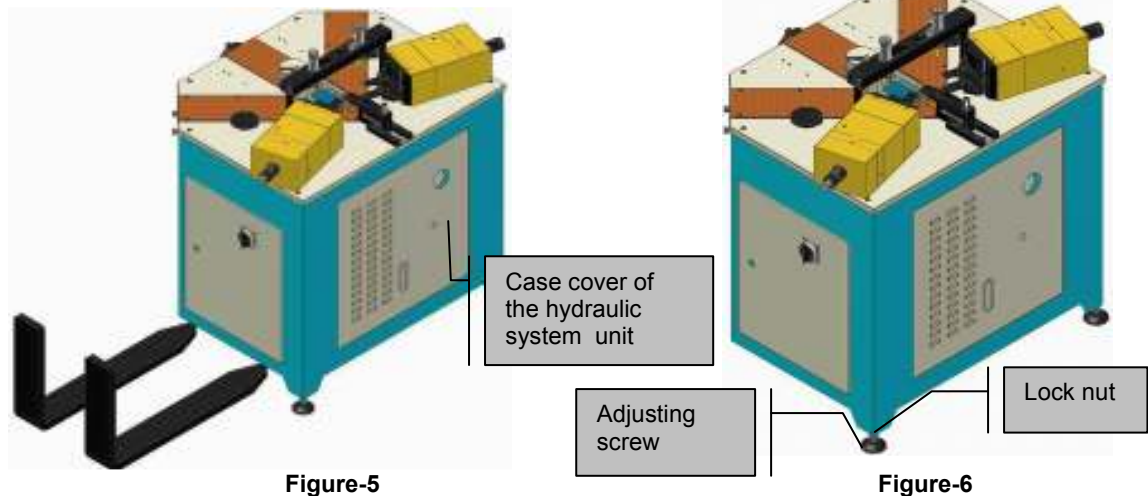
**G** : Machine width 870 mm

**G1+G2**: Necessary working area is minimum 2400 mm (Access to mobile control panel, installation of conveyor, for secure maintenance and cleaning procedures)



#### 4.1 SAFE TRANSPORT OF THE MACHINE

- Machine can be moved with a fork-lift. (see Figure 5). Please keep in mind weight of the machine: 474 kg.
- When using fork-lift for moving do not lift the machine before checking that the transferring apparatus such as fork is full inserted under the machine .
- In order to get more stability when hanging the machine in case of moving, hang it from bottom insofar. Move the machine without shaking it in slow movements. Be sure to take care of persons in dangerous places.



##### 4.1.1. INSTALLATION OF THE MACHINE

- It is advised to make a general control of the items whether any of them is missing during transportation, loading before starting up the machine
  - See Figure 4 for opening the top cover towards back, using filing evacuation manifold, and for doing proper maintenance and cleaning
  - The place where machine will be placed should be hard, smooth and able to withstand the weight of the machine.
- In order to preserve machine's stability be sure that the legs are touching ground When it is necessary adjust it with the adjusting screw at feet. (See figure6)
- For the installation of the machine rear pedestals should be placed on a smooth surface as shown in Figure 6 and the machine should be balanced using appropriate water leveler.
  - For the installation of the machine rear pedestals should be placed on a smooth surface as shown in Figure 6 and the machine should be balanced using appropriate water leveler.

## 4.2. INSTALLATION OF CONVEYOR

After placing and balancing the machine ;

- Fix KN 150 Material Feeding Conveyor, which is supplied as a standard accessory, to the right or left side of the machine with the supplied screws on the machine as can be seen in Figure 3.
- With an accurate and calibrated water balancer check that the planes of the machine and conveyor are parallel to the ground and that the machine plate and conveyor wheels are on the same plane. (After all these adjustments fix the machine's adjustable feet screw's nuts, and conveyor's adjustable feet screw's nuts)

### 4.3.1. ADJUSTING THE AIR PRESSURE

4.3.1. Pull the adjustment button of the conditioner upwards. (See Figure – 7)

- Turning the adjustment button in clockwise direction increases the pressure
- Turning the adjustment button in counter clockwise direction decreases the pressure
- Once you read 6-8 Bar on the manometer, push the adjustment button of the conditioner down and lock it in that position. See Figure – 7
- The manufacturer recommends to use the following oils with the conditioner: TELLUS C 10 / BP ENERGOL HLP 10/ MOBIL DTE LIGHT / PETROL OFISI SPINDURA

Make the adjustment of oil unit level so that for 10 work cycle 1 droplet is sent to the system

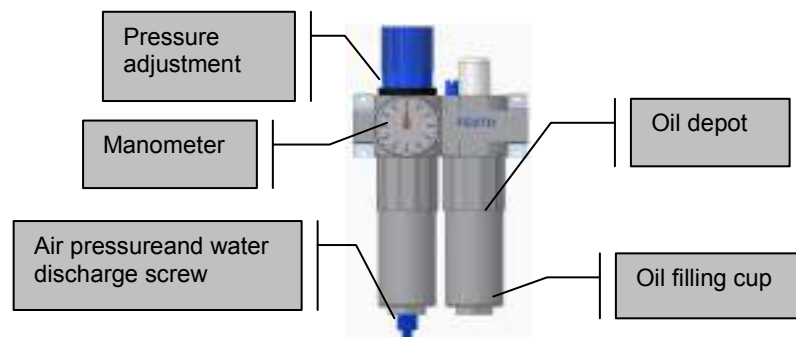


Figure-7

## 4.4. ELECTRICAL CONNECTIONS

- First of all voltage and frequency values of the machines electric system should fit with that of the mains. (for information refer to Technical Features)



- One can access to supply cables by removing the cover of hydraulic unit. (see Figure 5)
- Use respectively a CE, UL, CSA approved electric plug for connections.
- Make electric socket connections with the MAIN SWITCH in 0 position.



- Electrical installations should be made by qualified electric technicians, motor's direction of rotation should be checked according to the direction indicated on the label.
- If motor's direction of rotation is wrong electric supply cables should be re-arranged by a qualified electrician. (see direction of rotation label on motor)
- If the direction of rotation of the motor is wrong it might endanger the operator and the equipments..

#### 4.4.1. ELECTRICAL AND PNEUMATIC CONTROL PANEL

Inside the control panel there are fuses, 24V AC transformer, contactors, thermal switches, air pressure regulation unit, and valves Y1 and Y2 exists. (see Figure 8)

**Function of Y1 Valve:** Provides upward – downward movement of centering group. (See Figure 8)

**Function of Y2 Valve:** Provides movement of clamp pistons together with forward – backward movement of centering group. (See Figure 8)

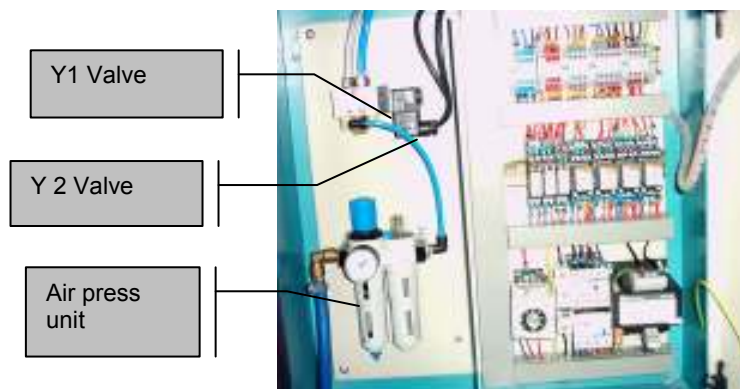


Figure-8



#### 4.5. HYDRAULIC SYSTEM UNIT

- Hydraulic operating pressure is adjusted as 80 bars by the manufacturer. (But it can be increased or decreased according to the specifications of Aluminum profile. Max. pressure is 100 bars. See Technical Specifications)
- Pressure of the hydraulic oil can be increased by turning the screw in Figure ... with an Allen key of 5 mm in clock wise direction; contrary it can be decreased by turning counter-clock wise.

NOTE: IN ORDER TO CONTROL THE OIL PRESSURE PISTON ON THE FOOT PEDAL ON MOVEABLE CONTROL UNIT CONTROLLING THE PISTONS SHOULD BE PRESSED WHILE INSPECTING THE PRESSURE THROUGH MANOMETER.

- There are two valves on top of the hydraulic system. Among these:

**Function of valve Y4/0:** Provides the reverse movement of pistons. (see Fig. 9)

**Function of valve Y4/1:** Provides the forward movement of pistons. (see Fig. 9)

- When the hydraulic system unit's oil tank is completely empty it takes app. 30 liters of oil. The manufacturer of hydraulic system recommends using TELLUS 37 as hydraulic oil.
- When filling hydraulic oil inside the oil tank turn the main switch to OFF position and remove the oil filling tap as shown in Figure 10 by turning; tap the hydraulic oil. Inspect the oil level to control the oil inside the tank (See Figure 10)

**IMPORTANT**

**NOTE: IN ORDER TO CONTROL THE OIL LEVEL INSPECT THE OIL LEVEL AFTER FILLING IN TO THE TANK. THE OIL LEVEL SHOULD BE BETWEEN Min. and Max.**

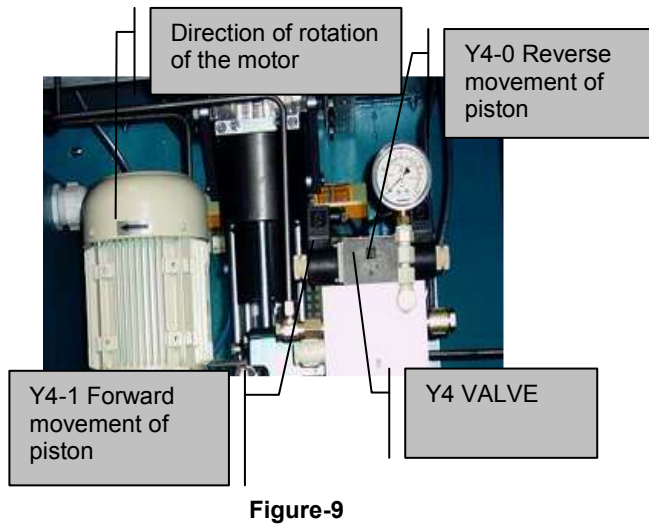


Figure-9

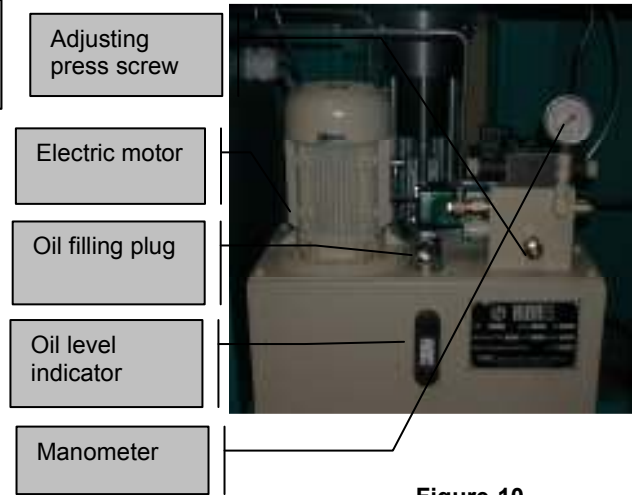


Figure-10

#### 4.6. PRELIMINARY CONTROLS

Before operating the machine performing some preliminary checks are advised:

- Check the voltage and frequency information to fit the values indicated on the machine's label,
- Whether the power cable is chosen at right cross section,
- Whether pressing knives are fixed properly, and are chosen according to aluminum profile?
- Whether direction of rotation of motor is as indicated on the label ?
- Whether adequate amount and appropriate hydraulic oil is used at hydraulic unit ?
- Whether air is supplied to pneumatic system ?
- Whether adequate amount and appropriate oil is used at pneumatic system's air conditioner,
  - Whether conveyor is fixed truly on the machine ?

#### 5.0. OPERATION

##### 5.1. INITIAL ADJUSTMENT INFORMATION FOR PRESSING KNIVES

5.1.1. By choosing proper crimping tools for the aluminum profile (crimping tools supplied by the manufacturer together with the machine having a thickness of 3, 5 and 7 mm) fix them to the crimping tool holder properly, see Figure 11. Crimper slots can be used as single or double knife according to the height and specifications of Aluminum profile.

5.1.2. Place the aluminum profile in 90° so that it leans on rear leaner. Use height adjustment screw to adjust rear leaner height according to aluminum profile's height Figure 12 (with the help of 5 mm Allen key)



5.1.3. Turn the volant on the chassis (see Figure 13) manually in counter-clockwise so as to take away the profile centering group (see Figure 13) from the center of the machine to back side.

5.1.4. Adjust and fix the upper clamps so that they will press on the aluminum profiles.

5.1.5. Get Main switch to position 1.

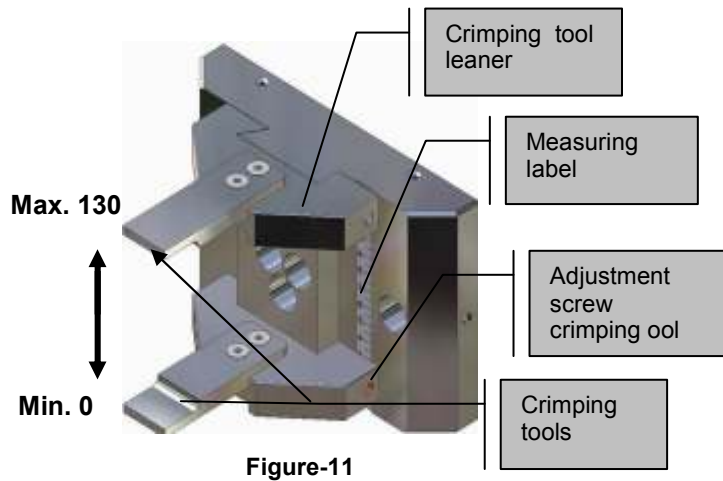


Figure-11

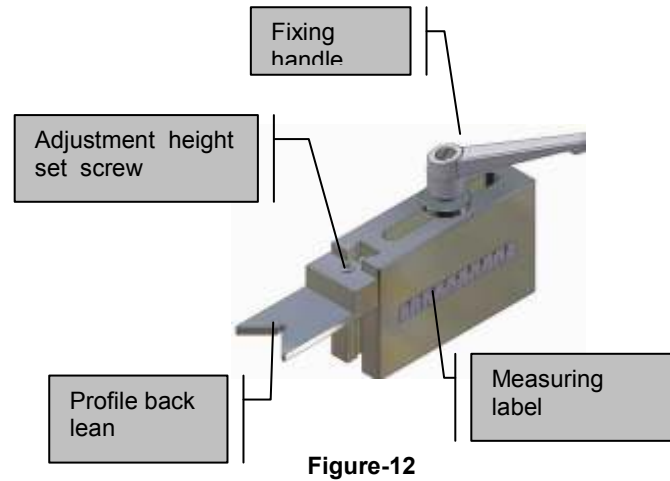


Figure-12

5.1.6. Clamp the aluminum profile pressing left pedal to move moveable control unit (see Figure 18). At the same time profile centering set square (see Figure 13) will come upwards and moves towards the profile's center. After a certain amount of distance transfer of moving stops. After forward movement stops, operator turns the Volant manually towards right (in clock wise) so as to centering set square presses on aluminum profile and provides lateral force coming from knives pressing. Touch the eccentric profile leaner on top of the machine to profiles and fix them with the handle screws on top (see Figure 14)

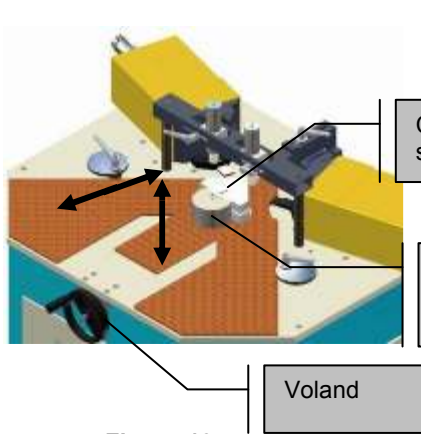


Figure-13

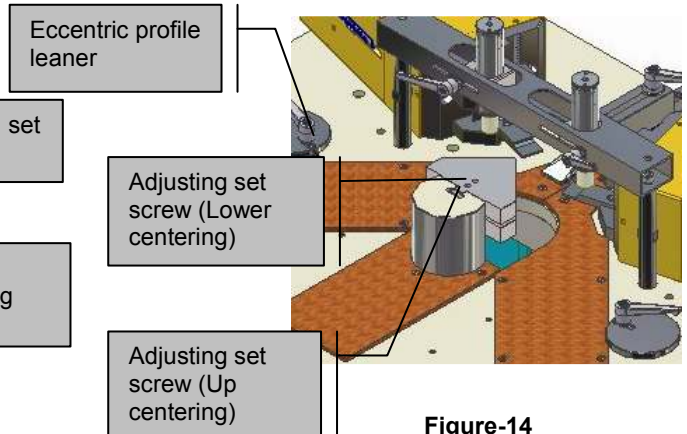


Figure-14

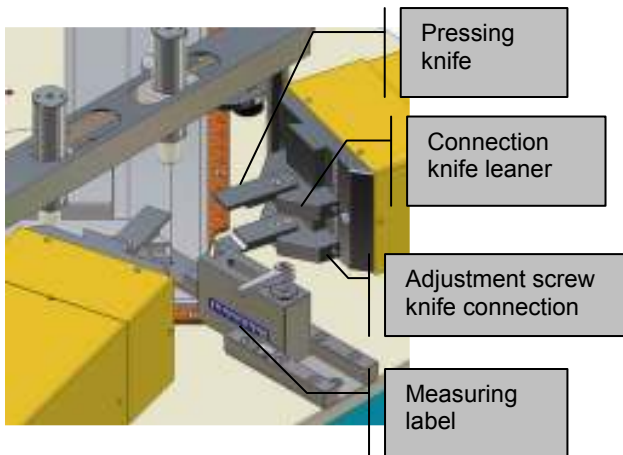
**IMPORTANT**

NOTE: Centering set squares can be used in single or double groups according to the height of the profile (see Figure 14). Height adjustment of the bottom set square is made in a similar way like the top one and fixed with a set screw (see Figure 14)

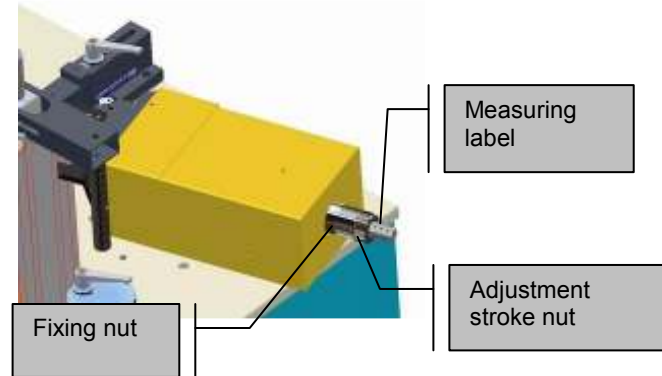
**CAUTION !**

**NOTE: Verify that aluminum profiles leans to the rear leaner and that the clamps squeeze the profile well.**

5.1.7. Move the moveable pressing unit with pressing knives towards the profile pressing the foot pedal located at the right hand side of (When pressed right pedal the motor operates and hydraulic pistons move forward). When the pressure is released on the pedal moveable pressing unit returns back.



**Figure-15**



**Figure-16**

5.1.8. Loosen the counter nut and increase amount of forward movement step by step until required pressing dimension is realized on the aluminum profile. Adjust the dimensions on the profile accurately using millimeter scale over the moveable unit.

5.1.9. Adjust the second moving unit to the similar dimension you adjusted for the first one.

**NOTE: IN CASE OF USING AN ALUMINUM PROFILE WITH A NARROW DIMENSION APPROACH THE REAR PROFILE LEANER (see Figure 12 ) TOWARDS THE CENTER OF THE MACHINE USING THE SCALE ON IT.**

5.1.10. Hydraulic unit motor starts with the foot pedal placed on right hand side of control panel. When the pressure on pedal is released the motor stops. It remains in stand by position till the foot pedal is pressed again.

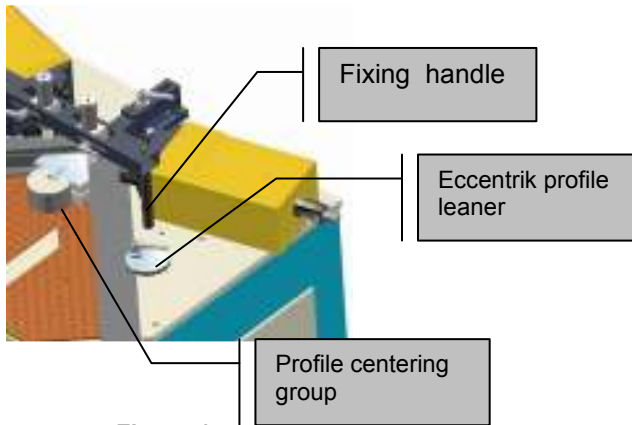


Figure-17

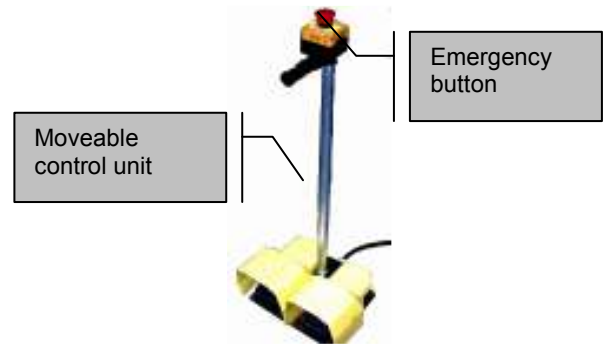


Figure-18

## 5.2. PERFORMING CRIMPING PROCESS

5.2.1. After preparation and adjustment process (for Adjustments see item 5.0) place two pieces of profiles cut in 45° and joined together with the intermediate fixing piece inside over the top table leaning on the rear leaner.

5.2.2. After adjusting eccentric profile side leaner (see Figure 17) by moving it circularly according to the profile in the best position to suit the profile tighten the top handle screw.

5.2.3. After making adjustments according to item 5.0 according to the specifications of Aluminum profile squeeze the aluminum profile pressing the left foot pedal.

5.2.4. When the right foot pedal is pressed moveable control unit moves forward and presses the aluminum profile deforming it towards inside of profile. When the pedal is released moveable pressing unit goes back goes to standby for next operation. Approximately after 15 seconds if the foot pedals are not pressed again the hydraulic system motor goes to stand by position, and remains in that position till foot pedals are pressed again.

APIS-02 H Aluminum Corner Crimper: Designed for 90 degrees corner connection of aluminum profiles wit hydraulic system, pneumatic clamping system with a maximum pressing force of 5000 kg.

5.2.5. In any danger situation or canceling the operation after it has already started, machine can be stopped by pressing, Emergency Stop button



**NOTE: While pressing is in process pressing force on each unit is 5000 kg, and movement of the pressing units is 65mm.**

### **5.3. STOPPING THE PRESS PROCESS**

- Push the EMERGENCY BUTTON on the moveable pressing unit (See Figure 3-18)
- Position the main switch to 0 position.

**IMPORTANT**

### **5.4. TECHNICAL DATA ON APIS-02 H (BACK LEAN LABEL)**

5.4.1. 1mm movement of the profile back lean is reflected on the work as 0.8966 mm. The interval in each line of the adjusting measurement label on back lean (Figure 12) is divided as 0.8966 mm.

5.4.2. If the profile back lean is requested to be made not from the place impressed by the pressing blades (the part shown in Figure 19 and figure 20 as 9.5 mm) but from different part of the aluminum profile (according to the feature of aluminum profile, due to reasons such as central leaning or failure of pressing blade to enter among the profile etc.), serial and accurate adjustments can be made at the first adjustment stages by making the following sample calculations.

5.4.2.1. Sample: If the difference between the profile lean surface in Figure 20 and the lowest part impressed by the pressing blade is 15 mm, then  $15 \times 1.577$  (fixed value) = 23.65 mm is found. Let's add this value to the profile junction distance shown in figure 21.  $23.65 + 53 = 76.65$  value is found. Please fasten the back lean by observing 76.65 value on the label. (Figure 22)

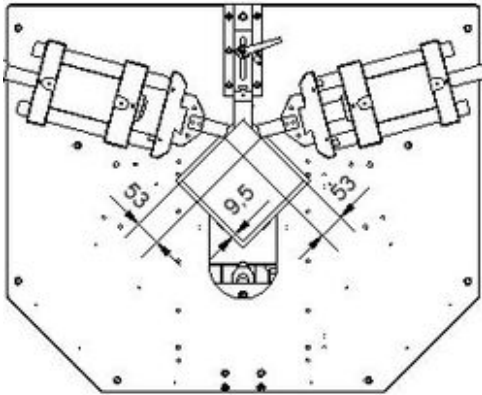


Figure-19

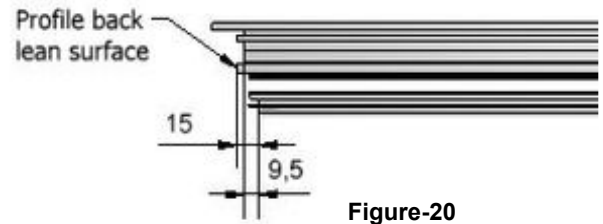


Figure-20

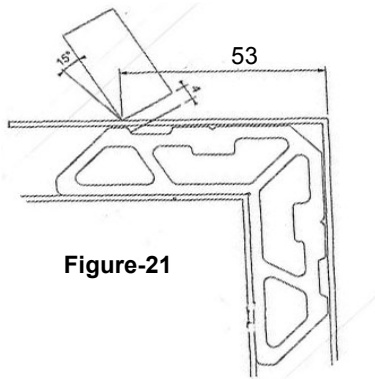


Figure-21

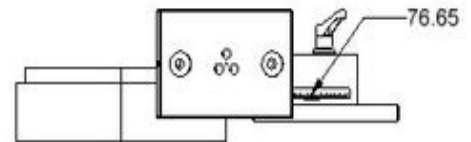


Figure-22

**CAUTION !**

## 6.0. MAINTENANCE

### 6.1. ROUTIN CONTROLS AND MAINTENANCE

**6.1.1.** Before performing any maintenance or cleaning work, be sure to turn the **MAIN SWITCH** to 0 position. Together with this, close pneumatic system's inlet valve.

**If the machine is not active because of maintenance or service, put a warning message that can be easily seen, indicating the situation**

**6.1.2.** Ensure that the table and all kind of parts are clean and dry. Degrease and dry the table. Especially ensure that the holding grips are clean and dry

**6.1.3.** Remove all burr, chip and foreign materials from all surfaces of the machine. Use protective eye glasses.



**6.1.4.** Check the pressing knives before each use. Turn the pressing knives carefully (after removing the blade guard) to see the teeth of the saw blade. Replace the pressing knives if it is damaged

**6.1.5.** Check the pressure of the air pressure system. If necessary, adjust the air pressure between 7-8 Bar. (See Item 4.3.1)

**6.1.6.** Check the air pressure filters and the oil level of the conditioner. Fill up if the oil level is low. (See Item 4.3.1)



**6.1.7. Check the oil level and oil pressure of the hydraulic system through the rear cover and if necessary tap with oil; adjust the oil pressure to 80 bars (Max. 100 bars)**

**Unplug and disconnect the air pressure connections first, before carrying out these works**

## **6.2. MAINTENANCE AT THE END OF THE WORKING**

**6.2.1.** Keep all working parts as clean as possible and periodically inspect the pipes and connections coming through the hydraulic unit, in case of oil leakages take necessary precautions

**6.2.2.** Don't use materials for cleaning the machine, which could damage its paint.

## **6.3. GENERAL LUBRICATION**

**6.3.1.** Periodically control the level of oil inside oil-conditioner's oil reservoir and hydraulic system unit . For the oil to be used refer to Item See figure 4.3.1- 4.5)

## **6.4. SPECIAL PRECAUTIONS**

**6.4.1.** If the machine will not be working for a couple of days, prevent form of oxidation on non-painted surfaces by lubricating. When it will be used again, clean this oil.

**6.4.2.** If the machine will not be used for a long time:



- Set the Main Switch to "0" position
- Apply 7.3.1 and 7.4.1 Items

## 7. TROUBLESHOOTING GUIDE

Here are some recommendations for solving urgent problems. If the trouble cannot be solved, or if you have a problem other than those described hereunder, please contact our technical service or your nearest dealer.

PROBLEMS	CAUSES	SOLUTION SUGGETIONS
Motor does not operate although the pedal is pressed	Machine power supply is not connected Main Switch is at 0 position. Emergency push button remains pressed Air connection is not made.	Check electrical cable connections. Turn Main Switch position to I. Check air connections.
Motor operates but pressing units do not	Motor electrical connection failure Hydraulic oil pressure is very low.	Check the motor's electrical connections with a qualified electrician. Adjust hydraulic oil pressure to 80bars

## 8.0. INFORMATION ABOUT FAULTY USE

**8.1.** Check whether power supply exists.

**8.2.** Verify direction of rotation of the motor on hydraulic system unit (Direction of rotation is mentioned on the motor)

**8.3.** Never operate the machine with the protection covers open.

## 9.0. GENERAL SAFETY INFORMATION

- The power cable should be led in such a way that nobody can step on it or nothing can be placed on it.
- Special care has to be taken regarding the inlet and outlet sockets.



- If the power cable should be damaged during operation, don't touch and unplug it. Never use damaged power cables.





- Don't overload machines for drilling and cutting. Your machine will operate more safely with power supply
- in accordance with the stipulated values.

- Don't place your hands between parts in motion



- Use protective eye glasses and ear plugs. Don't wear oversize clothes and jewelry. These can be caught by moving parts.



- Keep your working place always clean, dry and tidy for accident prevention and safe operation.



- Use correct illumination for the safety of the operator. ( ISO 8995-89 Standard The lighting of indoor work system )
- Don't leave anything on the machine.
- Don't use any materials other than those recommended by the manufacturer for cutting operations on the machine.
- Ensure that the work piece is clamped appropriately by the machine's clamp or vice.
- Ensure safe working position, always keep your balance.
- Keep your machine always clean for safe operation. Follow the instructions at maintenance and replacement of accessories. Check the plug and cable regularly. If damaged, let it replace by a qualified electrician. Keep handles and grips free of any oil and grease.
- Unplug first, before conducting and maintenance works.
- Ensure that any keys or adjustment tools have been removed before operating the machine.





- If you are required to operate the machine outside, use only appropriate extension cables.
- Repairs should be carried out by qualified technicians only. Otherwise, accidents may occur.
- Before starting a new operation, check the appropriate function of protective devices and tools, ensure that they work properly. All conditions have to be fulfilled in order to ensure proper operation of your machine. Damaged protective parts and equipment have to be replaced or repaired properly (by the manufacturer or dealer).
- Don't use machines with improper functioning buttons and switches.
- Don't keep flammable, combustive liquids and materials next to the machine and electric connections.