



**CRATER-02 AP (SK 450)
USER'S MANUAL
AUTOMATIC UPCUT SAW (WITH SERVO SYSTEM)**

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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.
309 Ridgmont Ave. – Rockville, MD 20850 - USA
Phone: +1-240-505-1967 Fax: +1-301-560-6627
Website: www.ATechMachinery.com E-mail: 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. MACHINE'S DESCRIPTION and PURPOSE OF USE

SK 450 Cutting Machine; It is a servo-driven cutting machine for cutting of all kinds of aluminum, hard plastic or equivalent materials at 90° cutting with a Ø450 mm diameter saw.

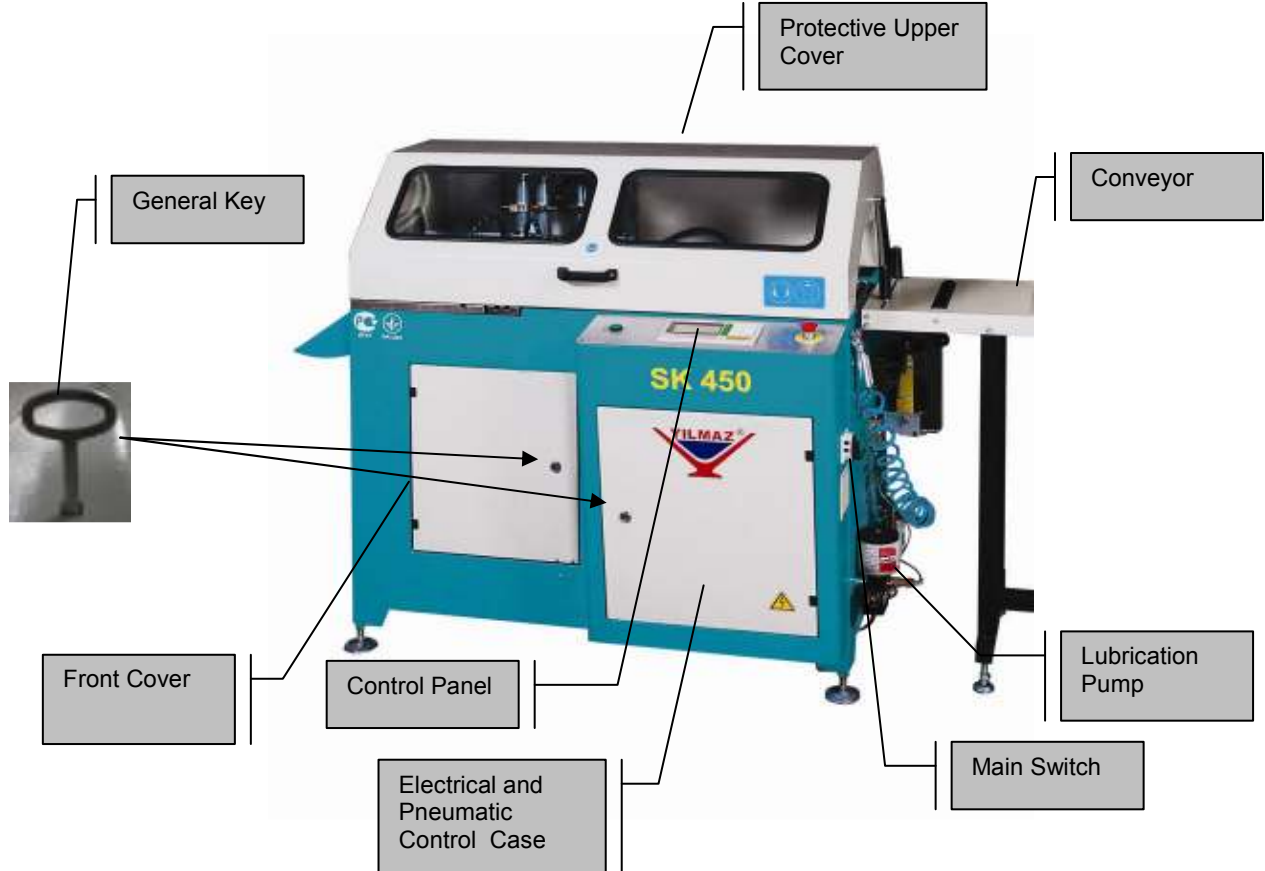
SK 450 Cutting machines are equipped with servo motor systems. Cutting and material feeding sequences are full automatic. It is possible to have the material on the loading conveyor to be cut in desired length and piece automatically thanks to servo system. PLC system is used in this machine; a Program Terminal exists for modifying and viewing dimensions, calibration, pieces to be cut, etc.

The operator adjusts length and saw cutting movement speed, length of feeding (material feeding) through Program Terminal screen according to dimensions of the material to be cut.

For collecting saw dust and chips, saw dust and chips collecting manifold is installed on the machine. Electrical and pneumatic components bear CE Certificate and appropriate standards. The machine is equipped with electrical, pneumatics protection and safety systems for machine operator's safety.

During design of the machine EN ISO 12100-1:2003, EN ISO 12100-2:2003, EN 294, EN 349, EN 60204-1 Machine Safety, harmonized standards for design and 98/37 EC, Safety directives in Machines, 73/23 EEC Low voltage directive standards are used.

- Cutting movement speed is servo-drive system, precision adjustment (in mm/s) is possible from the program terminal according the dimensions of the material to be cut (diameter, height).
- Material feeding (materials movement) is achieved by servo-drive system.
- Cutting length limit in one cutting stroke of 600 mm of machine is between 5-600mm. It is possible to cut maximum 9990mm length part in one time with step by step feeding system
- Cutting precision is ± 0.1 mm.
- It is equipped with electronical reading system for minimum loss.
- Automatic shutting down the system after the material finishes exists (Electronical Reading System)
- During cutting process top protection cover is automatically locked to ensure operators safety. With the top cover open, the machine will not operate. When the cutting process is finished, the saw automatically returns back to its initial position. (Top cover can not be opened with the Main switch in position: 0)
- In case of the pressure of the air inside the clamping pistons decrease below 3 bars (Air Pressure Sensor is used) for any reasons the saw will return back to its initial position for operators safety.
- The machine is designed according to CE directives



2.1. MACHINE'S DESCRIPTION

The machine is designed for series cutting of all kinds of aluminum, hard plastic or equivalent materials at 90° under given limits indicated in technical documents according to safety, usage and maintenance directives designated in users manual.

Cutting process should be done with extreme attention. The operator should have been trained enough about using and maintenance of the machine and should be old enough to local authority's limit age.

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.

Cutting materials other than Aluminum, PVC profiles and hard plastics types are excluded.

In SK 450 Cutting Machine; cutting, and material loading is working with Servo System. After the material to be cut finishes, machine will stop automatically.

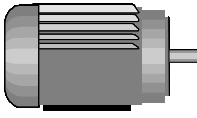
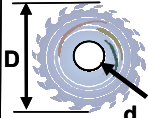
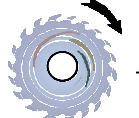



Under normal working conditions no operator near the control panel is necessary except start-up and material loading to the machine.

2.1.1. RESIDUAL RISKS

As the operator will use the program terminal equipment on the control panel during material loading and first operation, he should take care for others not be within or near the risky area.

Please do also keep in mind the risks related with wrong installation of electric system and saw or due to wrong installation of machine/ work piece

2.2. TECHNICAL FEATURES

TEKNİK ÖZELLİKLER TECHNICAL FEATURES								
				BAR	Hava Tük Air Const		Kg	
SK 450	3 kW+(0.75kWx2)50Hz 400 V AC 3 N PE	d= 30 / 32 mm D=450 mm .	3000 dev/dak RPM	6-8 Bar	18 Lt/dak Lt/Min	900x152x142	367	435

STANDARD EQUIPMENT	STOK No		OPTIONAL EQUIPMENT
Ø450 mm. Circular Saw	1SK010000-0025	3UA550030-0023	SK 450 Special Support Conveyor
Spray Mist Lubrication	1PN010000-0012	1SK010000-0025	SK 450 Addition Circular Saw
Oil Unit	1HD030000-0003		
SK 450 Conveyor System	3UA550030-0022		
Air Gun	1PN080000-0009		

2.2.1 CUTTING DIAGRAM

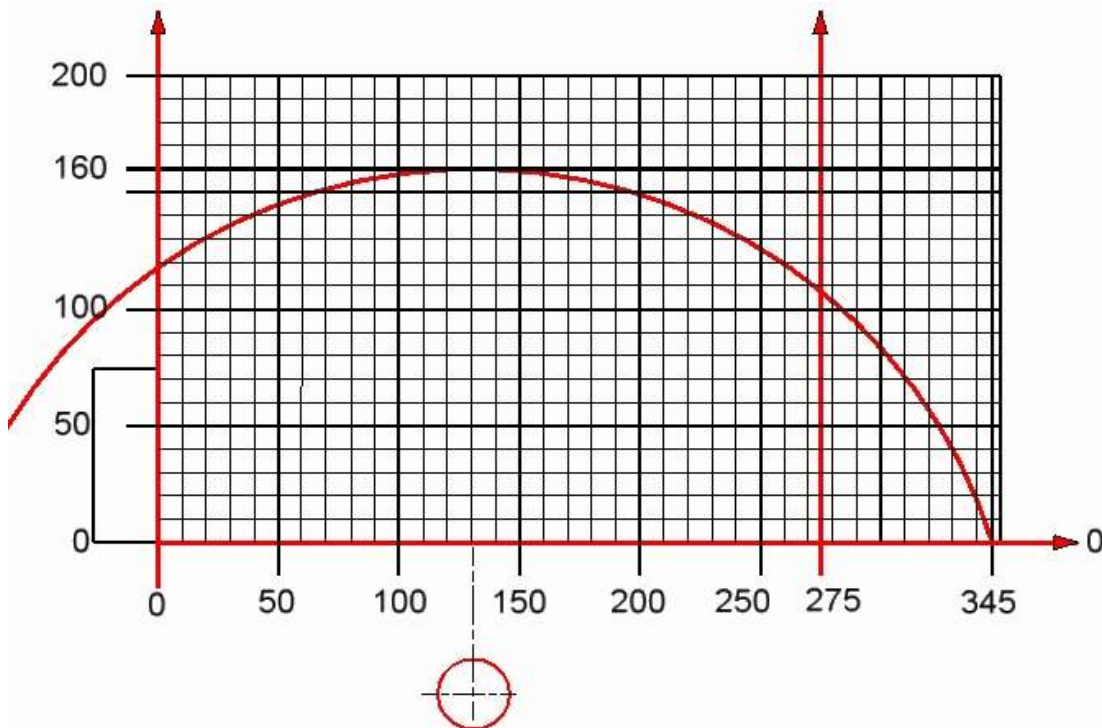


FIGURE - 1

2.2.2. DIMENSIONS

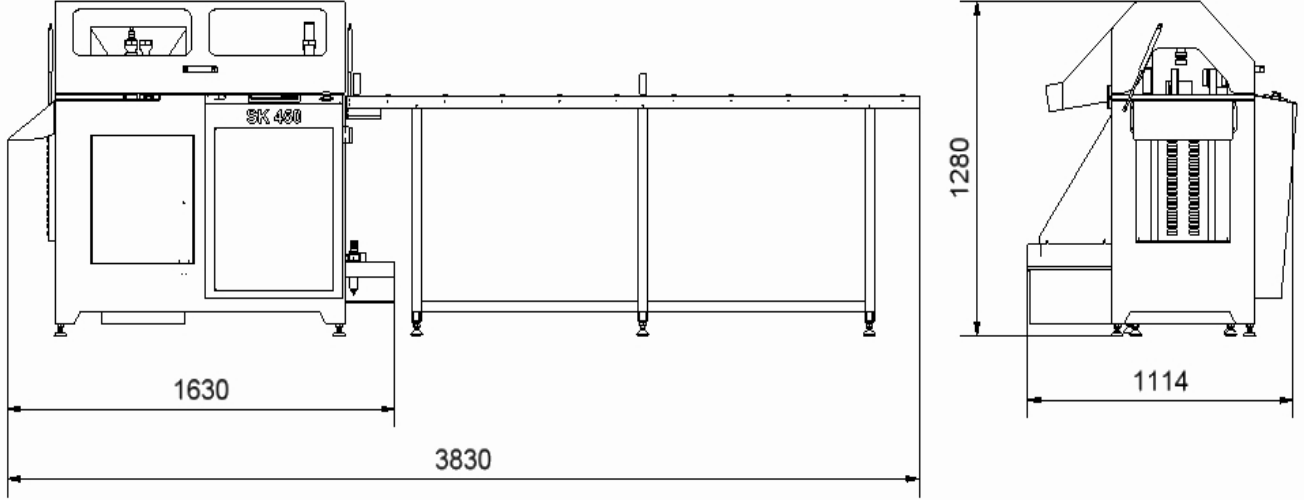


FIGURE - 2

2.2.3. TECHNICAL DRAWINGS

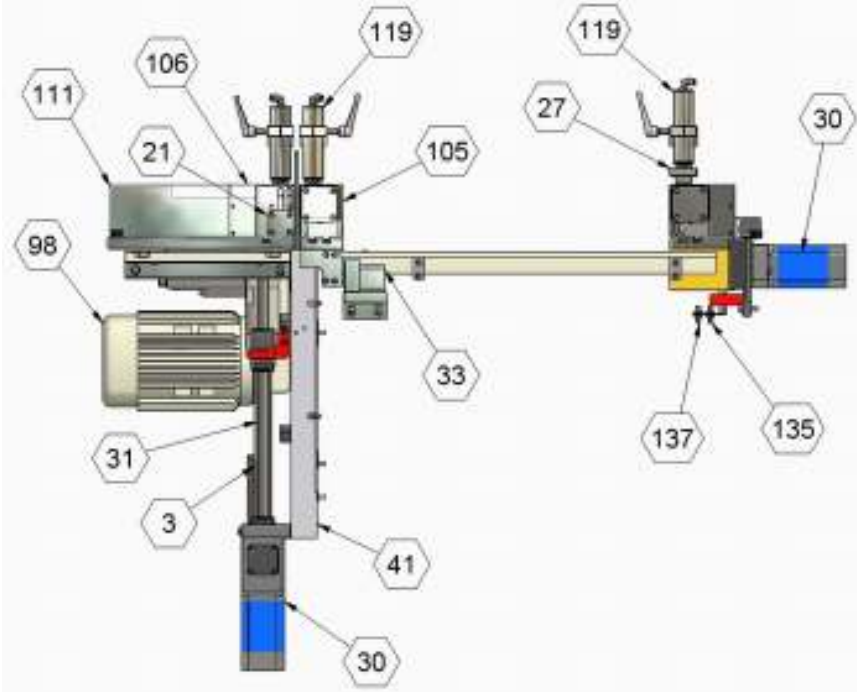
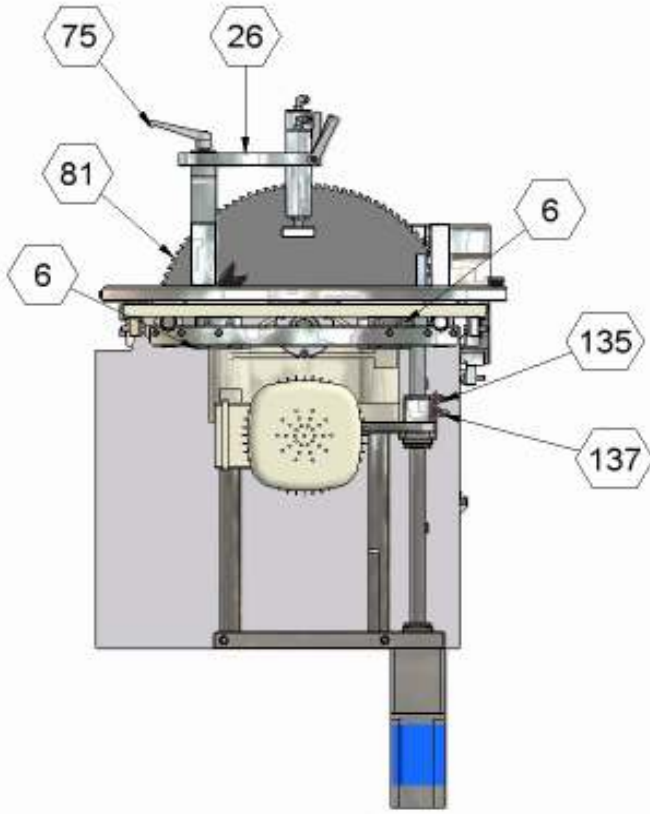


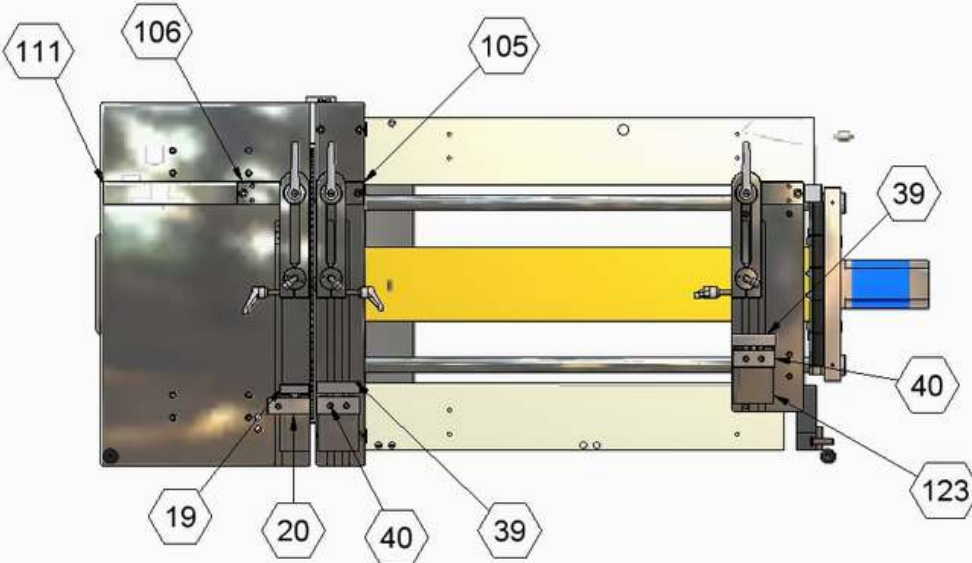
FIGURE - 3

Sıra	Sip No	Parça Adı	Adet
3	2TU011110-0725	Supporting	1
21	1PN020000-0084	PK 32x15 Cylinder	1
27	2TU012210-0306	Clamping Shoe	3
30	1EL090000-0043	Servo motor	2
31	2TU011110-0699	20x5 Ball Screws	1
33	1PN020000-0091	PK 32x2 Cylinder	2
41	1SA050000-0109	Saw Blade Guard	1
98	1EL070000-0008	Electric Motor	1
105	2TU011210-0270	Fence	1
106	2TU011210-0264	Fence	2
111	1SA050000-0125	Addition Fence Sheet-iron	1
119	3UA550030-0008	Pneumatic Clamp	3
135	1EL020000-0075	Reference Sensor	1
137	1EL020000-0074	Limit Sensor	1



Sıra	Sip No	Parça Adı	Adet
6	1PN020000-0085	PK 32x2 Cylinder	2
26	2TU011210-0272	Clamping House	3
75	3UA040030-0002	M 10 Pipo	3
81	1SK010000-0025	450 mm Saw Blade	1
135	1EL020000-0075	Reference Sensor	1
137	1EL020000-0074	Limit Sensor	1

FIGURE - 4



Sıra	Sip No	Parça Adı	Adet
19	2TU012210-0301	Clamping Shoe (Bottom)	1
20	2TU012210-0302	Cylinder House	1
39	2TU012210-0330	Clamping Shoe (Bottom)	2
40	2TU012210-0331	Cylinder House	2
105	2TU011210-0270	Fence	1
106	2TU011210-0264	Fence	2
111	1SA050000-0125	Addition Fence Sheet-iron	1
123	1PN020000-0090	PK 50x15 Cylinder	1

FIGURE-5

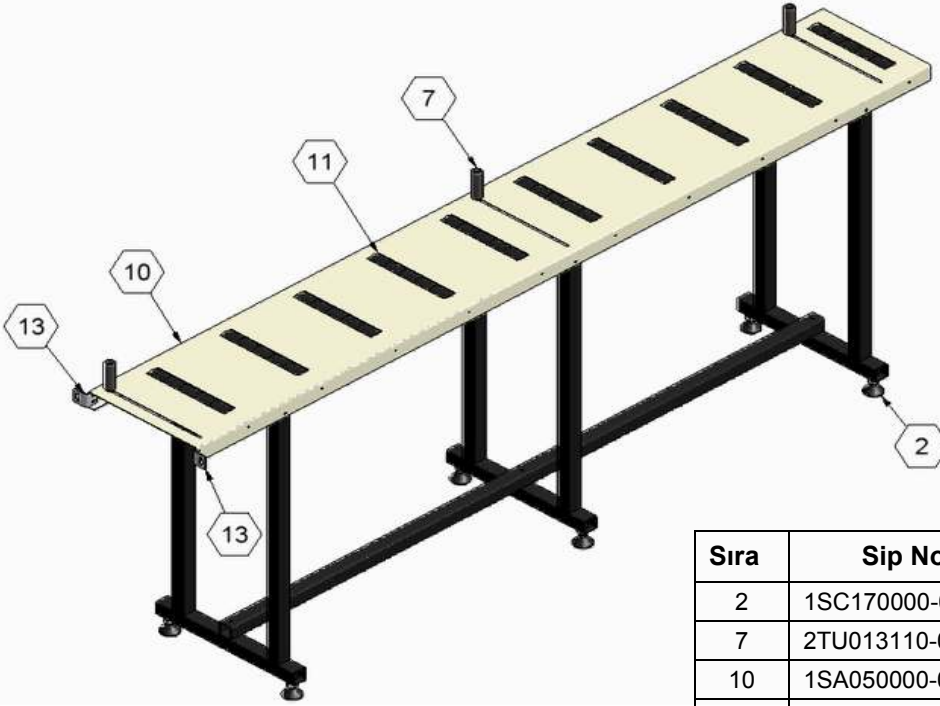


FIGURE -6

Sıra	Sip No	Parça Adı	Adet
2	1SC170000-0001	Conveyor Footing	6
7	2TU013110-0034	Profile Support	3
10	1SA050000-0127	Conveyor Sheet -iron	1
11	2TU013110-0035	Pulley	50
13	2TU011441-0246	Connection Sheet-iron	2

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 SAFETY INFORMATION

Taking into consideration that using of machine and its equipments bears risks any job that will be performed with it should be performed with utmost care. Aluminum and PVC cutting machines are classified as most dangerous machinery because of its high speed of rotation and high speed of forward movement. For these reasons utmost care and focusing is necessary while operating it.

- 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.
- It is totally forbidden to operate the machine removing the top protection cover and other protection equipments.
- For lifting, moving, transporting the machine or performing maintenance to electrical or pneumatical system qualified and authorized personnel is required.
- Modifying any part or place on the machine is not available and is prohibited.
- Adjustments, cleaning, or maintenance with the machine operating is prohibited

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 protective equipments mentioned below are advised:



- Heavy type hand gloves to protect against cutting, puncturing or piercing during transportation of materials,
- Ear protectors / plugs against extreme noise,
- Glasses against particles that might be spread as dust, filings, etc,
- Heavy duty shoes when carrying materials with certain weights and dimensions,
- Use of mask when using cooling liquid.

3.1.4. MACHINE SAFETY

- Always use well sharpened and balanced original saws (**In conformity with DIN EN 847-1**)
- When changing the saw clean perfectly the saw and connection flange, check whether it is damaged or not.
- Sharpening should be performed with regular intervals and appropriate to the angle of the saw.
- Use an appropriate tool not your hand for cleaning of the fillings on the plate.
- Never put any foreign substance, tool, etc. on the working plate.

3.1.5. SAFETY OF WORKING AREA

- 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 ISOLATION OF MACHINE

- Before performing any maintenance, repair, cleaning or such works the electricity of the machine should be cut off from the main schalter. Turn off the pneumatic air supply. Release the pressurized air that remains in the machines pneumatic circuit.
- 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 pneumatic 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.

IMPORTANT

The safety data have been defined above. In order to prevent physical damage or damage to the equipment, please read the safety information carefully and keep the manual always in an easy accessible place.



3.2. ACCIDENT PREVENTION

3.2.1. Producer 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. 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.

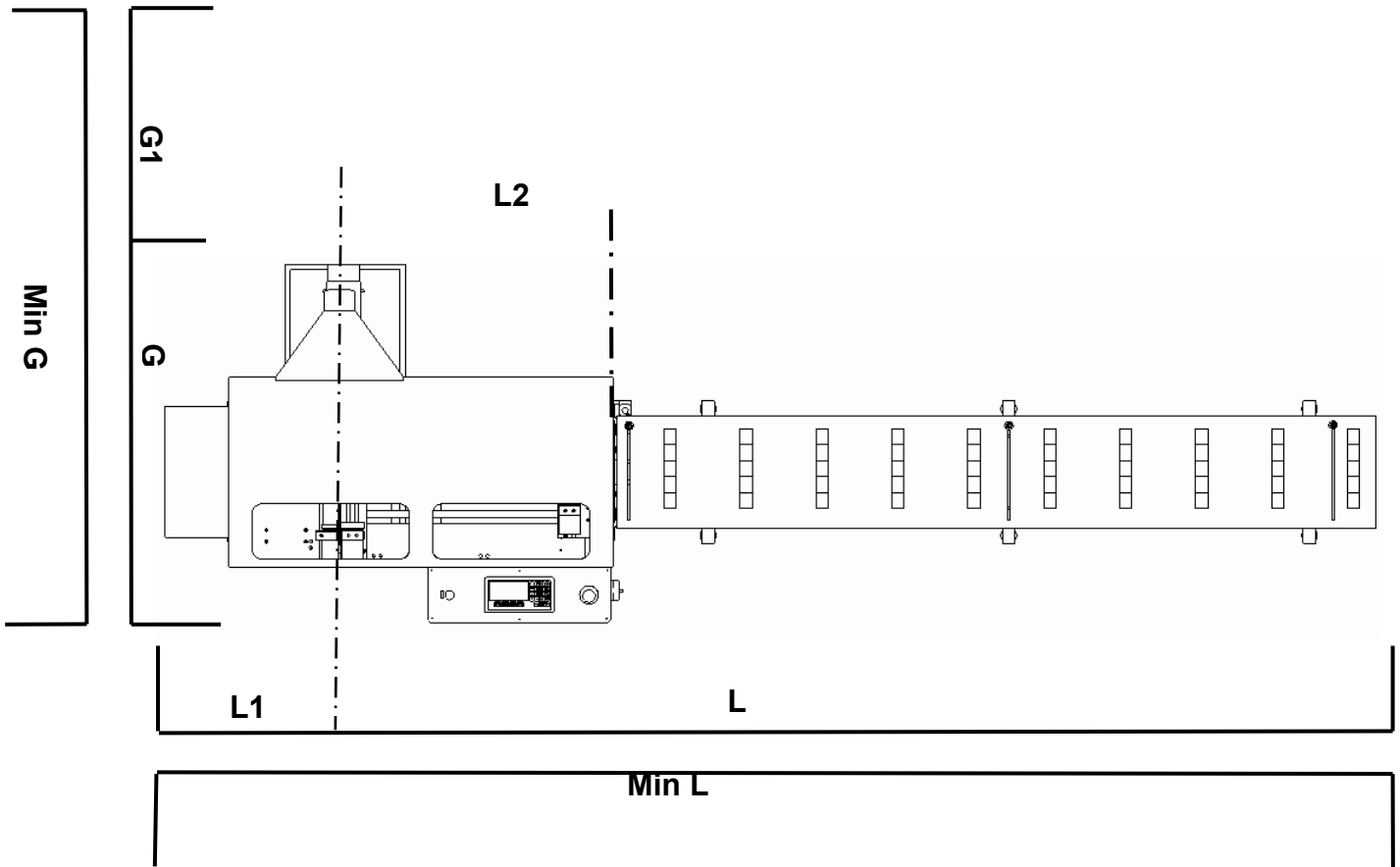


FIGURE - 7

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.

Minimal dimensions for secure working are given in Figure 7 for machine settlement. These dimensions are:

L : Machine length 3275 mm (From the axis of saw including conveyor)

L1 : 550 mm

L2 : 870 mm

Min. L : $L1+L = 3825$ mm

G : Machine width 1140 mm

G1 : 1500 mm

Min G : Required working area is min. $1140+1500$ mm= 2640 mm (Access to the control panel, opening the top protecting cover towards back, easily access to the evacuation manifolds, safely performing maintenance and cleaning works)

IMPORTANT

4.1 SAFE TRANSPORT OF THE MACHINE

Machine can be moved with a fork-lift. Please keep in mind weight of the machine: 422 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 move it, 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 7 for opening the top cover towards back, using filing evacuation manifold, and for doing proper maintenance and cleaning
- In order to improve operation efficiency and precision the place where the machine will be placed should be hard, smooth and durable enough to carry machine's weight. In normal circumstances it is not necessary to have the ground examined but it is advised to install the machine on a reinforced concrete ground.
- 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 figure 8)



FIGURE 8

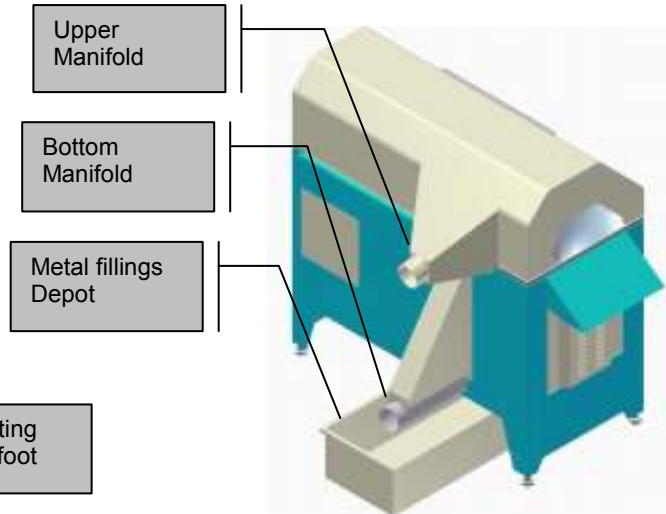
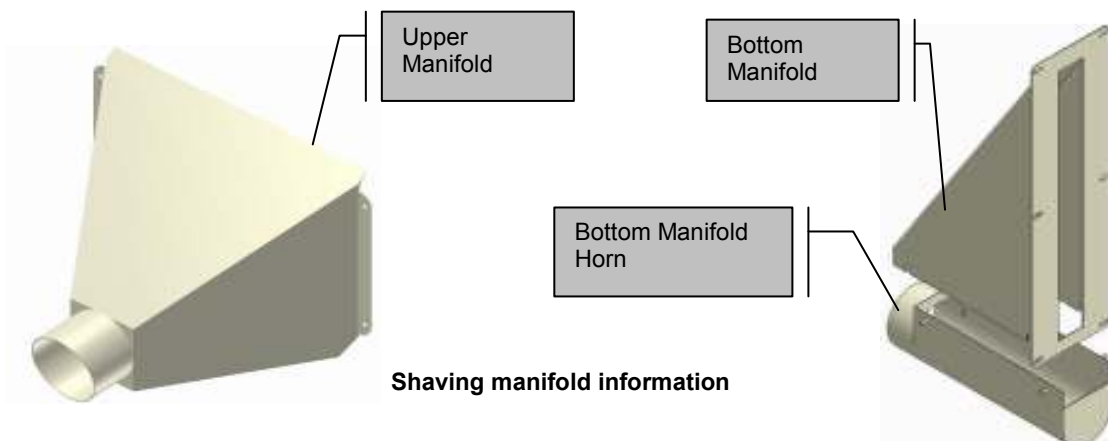
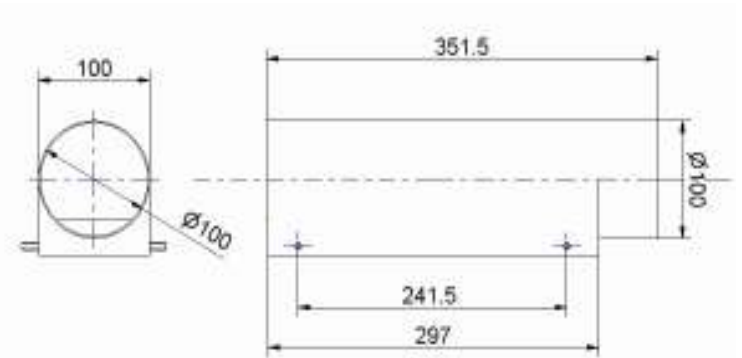
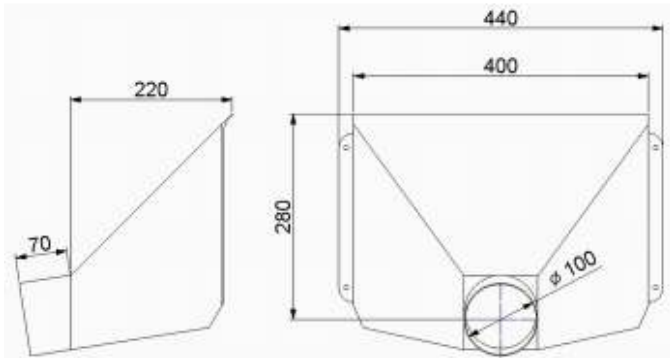


FIGURE 9



Shaving manifold information

FIGURE10

4.1.1.1. SHAVING MANIFOLDE

- Saw dust collecting manifold with 97 mm inner, and 100 mm exterior diameter (bottom and top) is supplied already installed on the machine. If saw dust collection will not be made with the aid of a saw dust collector do not use manifold pipe (Figure 10). Empty saw dust collecting bin (Figure 9) from saw dusts and chips regularly
- When using saw dust collecting manifold, dust collecting speed (flow rate of discharge air) should be assumed 20 m/s for dry saw dust.
- For wet saw dusts (humidity is equal or greater than 18%) flow rate of discharge air should be minimum 28 m/s

4.2. INSTALLATION OF CONVEYOR

After placing and balancing the machine ; (See 4.1.1)

▪ Install the SK 450 material feeding conveyor, supplied as standard accessory, on right hand side of the machine using the bolts existing on the surface of the machine through the fixing plates (Figure 6).

▪ 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. PNEUMATIC CONNECTIONS

- Machine's pneumatic system is numbered on the pneumatic hoses
- During maintenance and long term not working conditions isolate air inside the pneumatic system by unplugging the quick coupling (Figure 11).
- Pneumatic air pressure for working should be 6 - 8 bars.
- For pneumatic air feeding to the machine prepare Ø8 mm pneumatic hose.

4.3.1. ADJUSTING THE AIR PRESSURE

4.3.1. Pull the adjustment button of the conditioner upwards. (See Figure – 12)

- a- Turning the adjustment button in clockwise direction increases the pressure
- b- Turning the adjustment button in counter clockwise direction decreases the pressure

4.3.2. Once you read 6-8 Bar on the manometer, push the adjustment button of the conditioner down and lock it in that position. SeeFigure -12

4.3.3. The manufacturer recommends to use the following oils with the conditioner:
TELLUS C 10 / BP ENERGOL HLP 10 / MOBIL DTE LIGHT / PETROL OFISI SPINDURA

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

Quick Couplin



FIGURE11

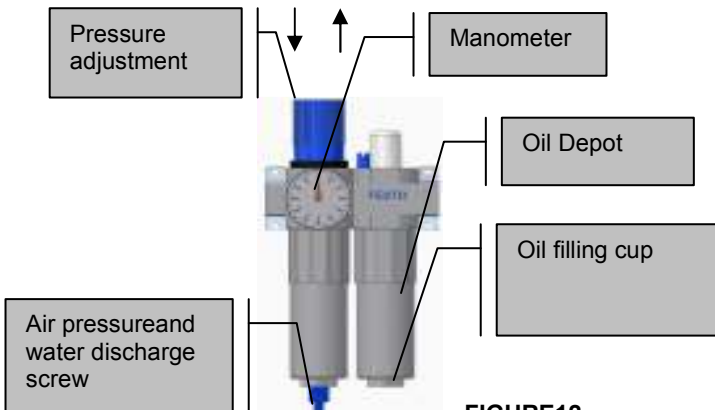


FIGURE12

Düşük Basınç Emniyet Valfi



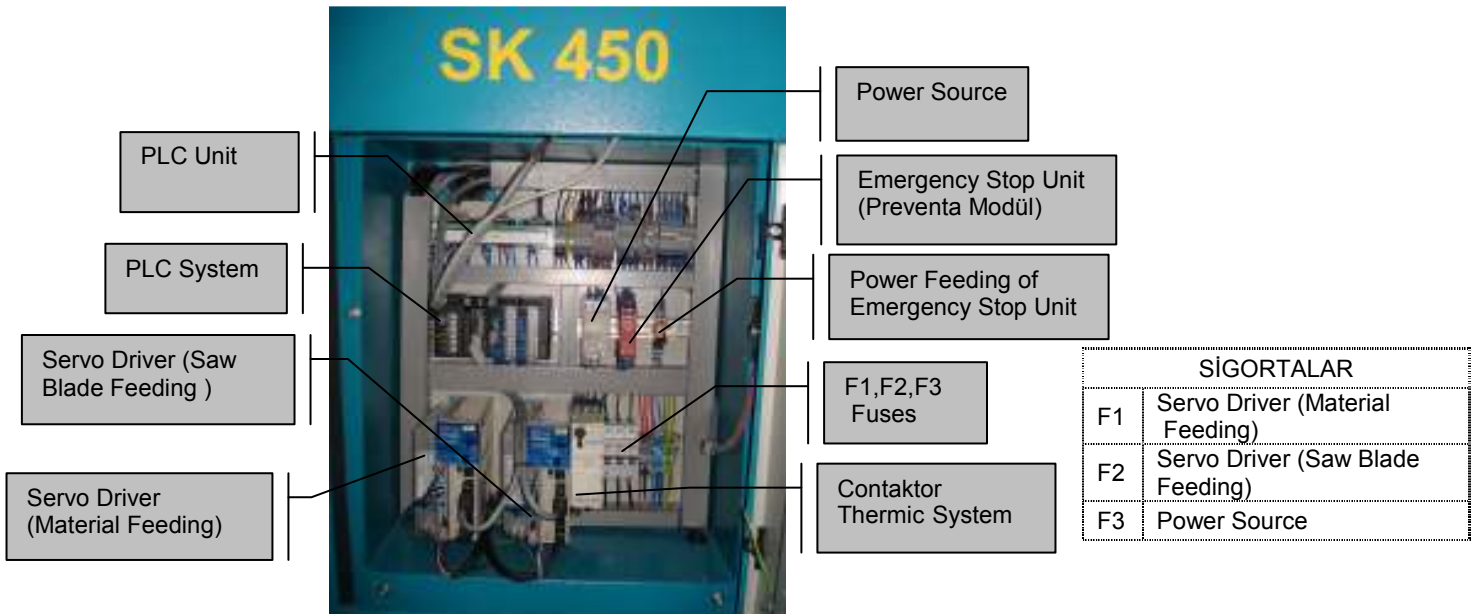
FIGURE13

CAUTION !

4.4. ELECTRIC CONTROL PANEL

There exist inside electric box; emergency stop unit, fuses, 24V AC transformer, contactor, termic magnetic switch and air pressure safety switch
 Air pressure safety switch does not permit saw blade to go out upwards during cutting operation in case of pressure drop of air under 4 bar for safety reasons.

During operation, electric box cover must be closed and locked. During maintenance and control works; shut down the electrical and pneumatic power supplies.



4.4.1. ELECTRIC CONNECTION

- First of all, supplied voltage and frequency from power source has to adapted according to the voltage and frequency values for the electrical system of machine
- Use a connection cable socket in accordance with the CE Safety Directives..
- Make the electric socket connections after switching the MAIN SWITCH on the machine to 0

CAUTION !

The electric connections have to be carried by qualified electricians only. Check the direction of the saw blade rotation. If the saw blade rotates in reverse direction, check the cable connections and re-connect if necessary.



- **A saw blade rotating in reverse direction, causes danger both for the operator and the equipment. The teeth of the saw blade would be damaged and even broken**

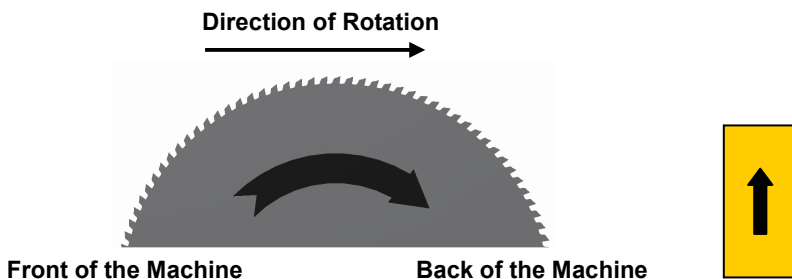


FIGURE - 15

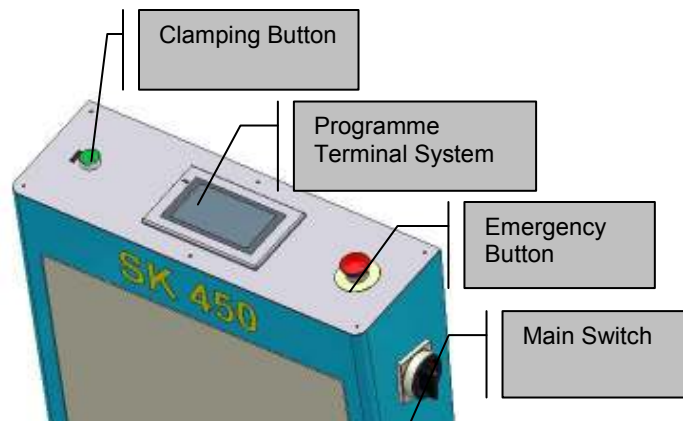


FIGURE - 16

4.5. PRELIMINARY CHECKS

Before going through cutting process, performing a few preparation checks is advised:

- Check the supply voltage and frequency information written on the machine plate to comply with your electrical system,
- Whether the power cord is chosen in the right cross sectional area,
- Whether the saw is fixed properly; turning without rolling/secretion and the direction of rotation is as indicated on the label of machine (see Figure 15).
- Whether the switch on the top protection cover and front cover are functioning,
- Whether pneumatic air is supplied to the pneumatic system,
- Whether sufficient oil exists in the air conditioners oil reservoir,
- Whether conveyor(s) fixed appropriately to the machine chassis

4.6. CUTTING SPEED ADJUSTMENT

- In order to adjust forward movement speed of the saw please refer to page Safe Using of Program Terminal (see Item 5.2)

5. OPERATION

SK 450 Servo System Upward movement Cutting Machines cut Aluminum of non-iron alloys, PVC and hard plastics materials. The operator adjusts saw movement speed; material feeding speed through the program terminal according to the materials type and dimensions (see Item 5.2) Thanks to the inner and exterior sharp cutting edges of the circular saw, a smooth cutting surface in high quality is achieved.

CAUTION!

5.1. OPERATION INFORMATION

- 1.2 Stroke length of vertical placed clamps on the machine is 15 mm. That of the horizontal clamps is 55 mm. Both clamp groups can be easily adjusted according to the material to be cut.
- 5.1.5. Avoid accidentally touching to the buttons of Program Terminal. In case of feeling any danger during cutting process press Emergency Button immediately to stop cutting process
- 5.1.6. Keep the top protecting cover closed (Because of the operator's safety the machine will not work with the cover open). Top cover is equipped with safety switch see Figure 18. If the main switch is in 0 position the cover can not be opened, turn the switch to position 1.
- 5.1.7. Close the front cover in front of the chassis and keep it locked. See Figure 18 (With the front chassis cover opened the machine will not work due to safety.)

NOTE: Chassis front and side covers can only be opened during machine cleaning or maintenance and saw changes. During these times set MAIN SWITCH to 0 position and apply isolation procedure (Item 3.1.6.). Then open front and side panel covers



FIGURE - 17



FIGURE - 18

5.2. SAFE USING OF PROGRAM TERMINAL

To use program terminal and control screen brightness you are able to adjust contrast from back side of the panel moving adjusting tool to the right or to the left by means of Phillips screw-driver.



Screen brightness settings

5.2.1. Set main switch to position 1 (Emergency stop button is in top position). YILMAZ MACHINE will be displayed on the program terminal's screen, see Figure 19.

5.2.2 If you run the machine for the first time select the language from the language selection section. (Figure 21)

- Opening page. Rreference page is reached by clicking on any place.
- Mail address and company telephone is visible



FIGURE - 19

- Rreference page. Mchine is sent to reference by selecting the reference button when the clamps are in open position.
- It moves to main page automatically after the completion of the reference.

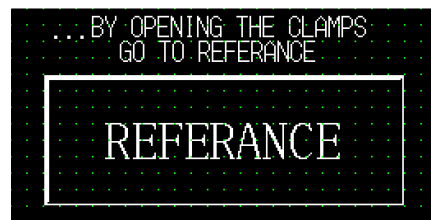


FIGURE - 20

- Main page. The process to be made is selected. It moves to the page upon selection of the related button.

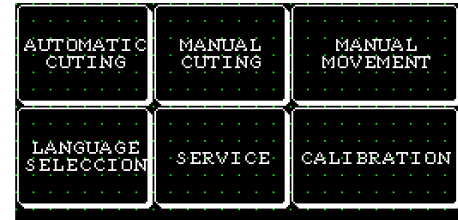


FIGURE - 21

5.2.3 AUTOMATIC CUTTING

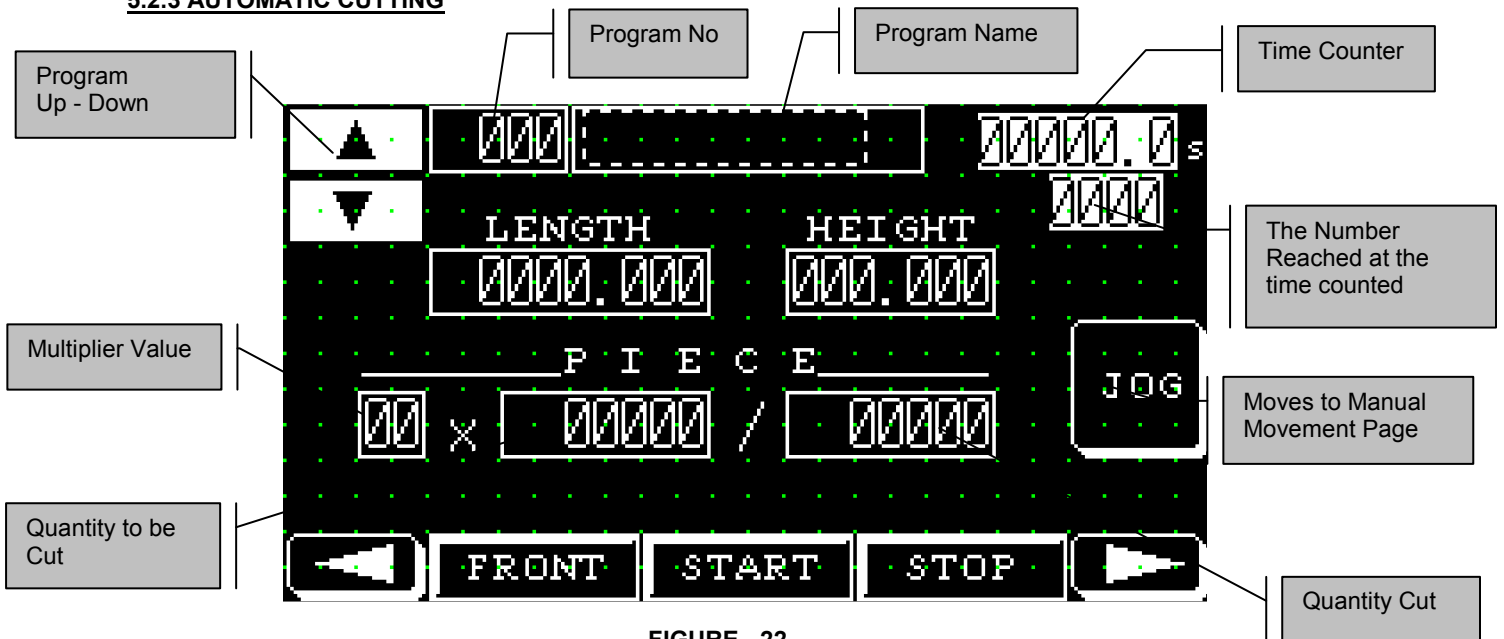


FIGURE - 22

- Selection is made between the prescriptions recorded with program up down buttons.
- Name of program can be recorded as name of part. Maximum 10 characters can be entered.
- Time counter starts to count as of the direction for start and continues until stop direction is given. The counter right under indicates the number of cutting at that period. It should not be confused with normal number counter.
- Manual movement stage is proceeded with jog button.
- **Multiplier Value** : if material as connection or more than one is connected at the same time, that value is entered. example : if cutting will be made as connection and the number of material in the connection is 10, multiplier value is entered as 10 and the quantity is counted by 10s.
- **The Quantity to be Cut**: The number of cuts is entered here.
- **Quantity of Cut Items** : in this section, the number of items cut belonging to that prescription is seen.
- the machine starts with start button.
- stop button stops the machine.
- **Length** : The length of material to be cut is written here. min: 5mm max:9999mm
- **Height** : The height to which the saw will rise is entered to this section. maximum 155 mm can be typed.
- if ok button at the lower left is pressed, the machine goes back to the main page.
- if ok button at the lower right is pressed, the machine moves to the page where jizs are adjusted. **if new program is being recorded, the speed values must be adjusted.**
- When start signal is given, the machine keeps cutting until either the material is finished or the quantity is completed.
- When the product is finished, the product perceives the sensor and gives the alarm sign "the product is finished, please take the outage and the remaining outage in the machine is removed and the new product is connected and start sign is given.



FIGURE - 23

- The page where machine working speed values are entered.
- **Carriage Forward Speed:** The speed of carrying the material forward is entered. it is entered in mm/sec. For example, if entered 50 it means it makes 50 mm way a second.
- **Carriage Backward Speed:** Same rules apply as in the carriage forward speed. it is only a speed for backwards.
- **Cutting Speed:** The value of speed by which the material will be cut is typed. it is mm/sn. The example given above is valid.
- **Saw Thickness :** The thickness of saw which is connected on the machine is written here. if this value is not entered in the new record, the cutting will be wrong as the thickness of saw.
- **Table Movement:** if the value here is entered as 1, at the end of cutting process, the table is opened in two direction and the saw goes down afterwards. it prevents the saw from touching the material. if the value is entered as 0, the saw goes down immediately before the table is opened in two direction at the end of cutting process.
- **Spraying Time:** the value here is given in secnds. for example, if this value is entered as 5, 1 cooling liquid is sprayed at every 5 seconds. if entered as 1, spraying is made at every second. if dry mode will be chosen, 0 must be entered here.

5.2.4 MANUAL CUTTING

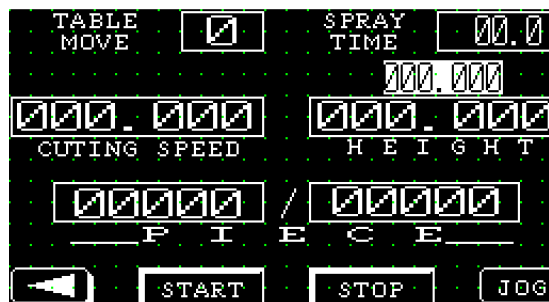


FIGURE - 24

- Manual working page. Length is adjusted manually. as in automatic cutting, values are entered and cuts with the start signal and stops.
- if ok button at the lower right is pressed, the machine moves to the page where jizs are adjusted.
- if jog button is pressed, it moves to manual movement page.
- Table movement and cooling time are similar with the ones in the automatic cutting.



FIGURE - 25

- The value in the total number of pieces section displays the number of pieces cut by the machine. there is no intervention.
- The saw change value may be reset during changes if desired in order to assess the performance of the saw. it is possible to see the number of cuts made by the saw with the value here in the next saw change.

5.2.5 MANUAL MOVEMENT: Manuel movement is valid only in case of maintenance and service operations. Cutting operation is not performed. (FIGURE 21)

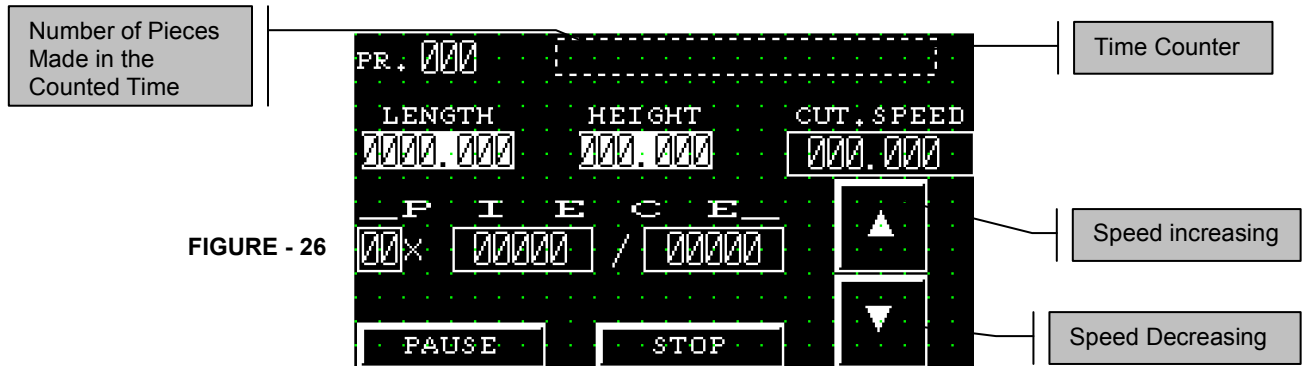


FIGURE - 26

- This screen is displayed when the machine is turned on, The values entered can control the number of pieces, time and cutting speeds
- The cutting speed can be changed while the machine is working.
- The machine will stop completely, if stop is pressed when the machine is working. if pause is pressed then the machine stops in that position and when re-started, it resumes from the same position.

5.2.6 LANGUAGE SELECTION :

- Language selection is performed in that page.



5.2.7 CALIBRATION :

- it is the affirmation page for entering the calibration page. a password is prompted. the required password is 12345678.
- The arrow button in the bottom left corner returns to the home page.

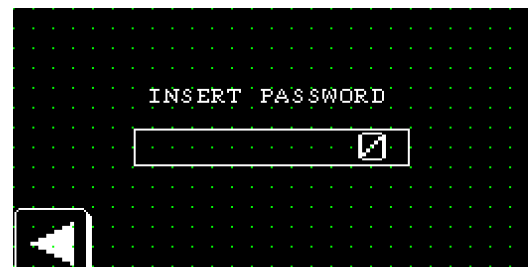


FIGURE - 28

- The calibration page is displayed when the password is entered. the values here are used by the service.
- When the arrow button in the bottom right corner is pressed it goes to the continuation of the page. it returns to the home page when the arrow button in the bottom left corner is pressed.

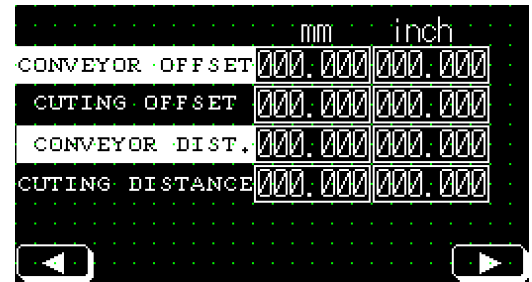


FIGURE - 29

- Sensor offset: when the product sensor senses that the material is finished it will catch on from a point behind by an amount equal to the value entered here.
- Saw backward speed: it is the returning speed of the saw after the cutting is finished.
- Conveyance speed limit: it is the maximum conveyance speed.
- it is the maximum cutting speed of the saw.
- The arrow button in the bottom left corner returns to the previous page.

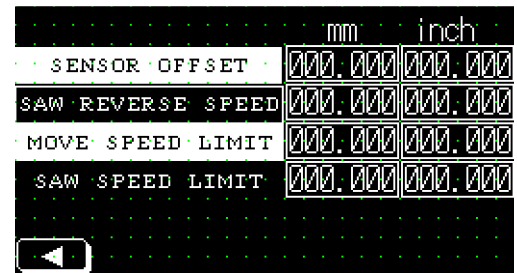


FIGURE - 30

The values on the left are in mm the values on the right are in inches.

5.3. STOPPING THE CUT

5.3.1. See Item 5.2.6.5.1, screenshot Figure 26

5.3.2. When the emergency button is pressed during cutting process, cutting will be stopped and the saw goes back to its initial position

6. SAFE INSTALLATION OF THE SAW BLADE

CAUTION !

- To remove the circular saw blade from the blade shaft, follow the instructions below.
- Apply the isolation procedure. (Item 3.1.6.)
- Remove the four bolts on the saw blade guard with an appropriate key by turning clockwise. (See Figure 31)
- Remove the front cover of the saw blade guard by holding its handle.
- Remove the M10 screw by turning it counter clockwise with a 8 mm hexagonal key. Hold the saw blade shaft at the opposite end with a 17 mm wrench key and prevent so that the shaft turns.
- Remove the 30x8x7 mm washer, outer nut washer and the saw blade bracket I in an order. (See Figure – 32)
- Remove the saw blade carefully.
- Insert the new saw blade on the saw blade shaft, ensuring correct rotation direction.
- Insert the other parts (washer, outer nut washer and saw blade bracket I) in reverse order as removal.

- Tighten the M10 screw with a 8 mm hexagonal key by turning in clockwise direction. (Prevent the saw blade shaft from turning by holding it with a 17 mm wrench key.)

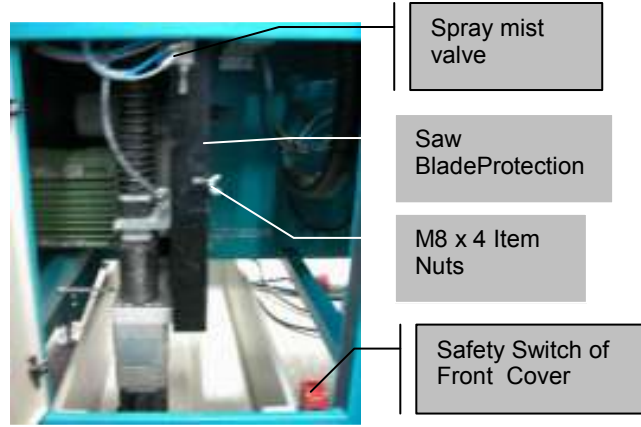


FIGURE - 31

SIRA No	STOK No	Parça Adı	Adet
1	1SK010000-0025	Ø 450mm Blade	1
2	2TU011110-0728	Saw Flange I	1
3	2TU011110-0727	Blade Flange II	1
4	2TU011110-0122	Blade Washer	1
5	2TU011441-0016	Outer Couplin	1
6	2TU011110-0488	Ø 30x Ø 10x9 Washer	1
7	1SC021000-0002	M10x 25 Hex. Screw	1

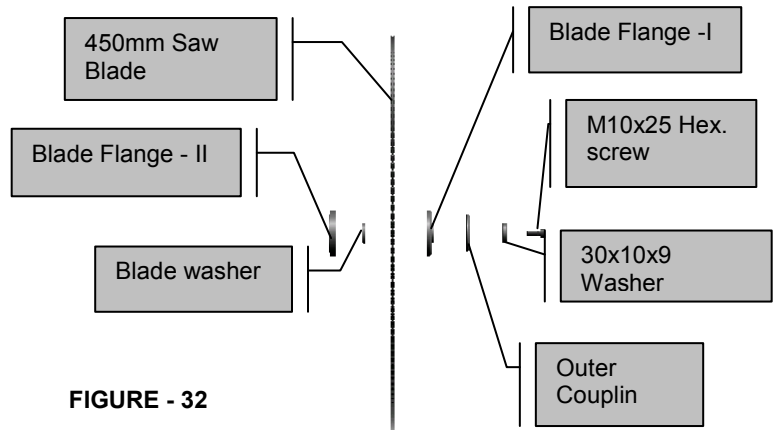


FIGURE - 32

- It is necessary to sharpen / replace the saw blade in certain intervals depending on the cutting material. If the cut material leaves burr after the cutting operation or if the saw blade is strained, it needs to be sharpened / replaced.
- In case of existence of chip pieces at the workpiece or over forced cutting occurs during cutting sharpening or replacing of saw blade with an other has to performed.
- Please control the saw blade before the use. The saw blade has to be assembled and fixed perfectly to the saw blade shaft. (Without run out and from the suitable place) Please do not use deformed and functionality loosen saw blades. Try the machine operating freely for 20 sec
- When replacing the saw blade, use the part of the blade washer Figure 32, which is appropriate for the blade shaft diameter. The outer diameter of the blade washer is 30 and 32 mm
- During saw blade change operations, use protective gloves.
- **Saw must be selected according to standart DIN EN 847-1**





WHEN CHANGING THE SAW BE SURE THAT THE DIRECTION OF INSTALLATION ACCORDING TO DIRECTION OF CUTTING IS APPROPRIATE. (DIRECTION OF ROTATION OF THE SAW IS INDICATED ON THE TOP COVER)

6.1. MAINTENANCE AND CLEANING OF SAW

6.1.1. Advises for maintenance and cleaning of saw are:



- Use an appropriate cleaner for cleaning of saw against the filings that stuck on them.
- If the tooth of saw is worn immediately change with a new sharpened / brand new saw.
- Considering angular values of the saw, use appropriate sharpening machines.
- Store the saw in good conditions without touching each other.

7.0. MAINTENANCE

7.1. ROUTIN CONTROLS AND MAINTENANCE

7.1.1. Before performing any maintenance or cleaning work, be sure to turn the **MAIN SCHALTER** 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

7.1.2. 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

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



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



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

7.1.6. 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)



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

7.2. MAINTENANCE AT THE END OF THE WORKING DAY

7.2.1. Keep working table as clean as possible and periodically take out the chip removals at motor and saw blade sides. Check periodically the extraction mouth not to have excess amount of chips.

7.2.2. Remove all burr, chip and foreign materials from the machine surfaces. If it is necessary to clean the inside of the blade guard, remove the front cover, use gloves to protect your hands from the sharp edges of the blade.

7.2.3. If water or water based liquids were used during cutting, dry the machine with a dry cloth after the operation is finished.

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

7.2.5. Lubricate both surfaces of the saw blade with machine oil in order to protect it against corrosion

CAUTION !

7.3. GENERAL LUBRICATION

7.3.1. Perfect lubrication of the threaded rods is important not only for achieving calculated service life of the rods but for silent working of the machine, and its effect on heat rise during working and unloaded torque as well. Threaded rods should be lubricated within the periods designated by the manufacturer. Lubrication value designated by manufacturer is 5000 cuts and is recorded in program terminal. After 5000 cuts threaded rods should be lubricated from the LUBRICATION UNIT manually (see FIGURE 33).

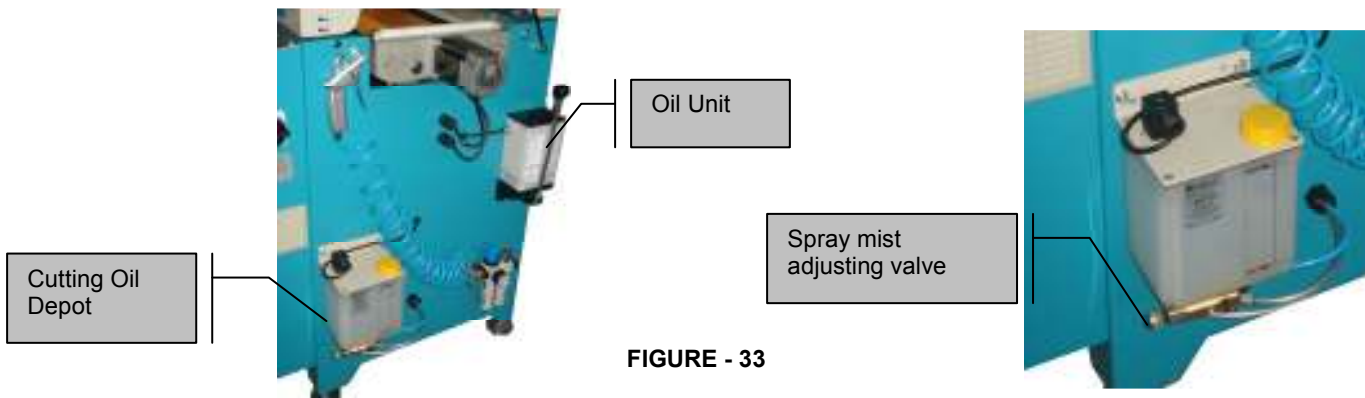


FIGURE - 33

When the number of cut on the right reaches the number for lubrication (5000 cuts) a warning for lubrication will appear on the screen. By using the LUBRICATION UNIT lubricate the threaded rods. For lubricant please refer to Table 1.

7.3.2. Usage of the coolant fluid during cutting is very easy it is sprayed to the saw surface during all cutting phase. Coolant application to saw surface ensures surface smoothness of the cut material, prevents length distortions due to heating, extends the service life of saw. For this reason special attention should be paid on coolant application.

PLEASE CHECK THAT LUBRICATION IS MADE THROUGH ALL THE CYCLE BEFORE EACH STARTING A NEW MATERIAL

	MOBIL	BP	CASTROL	PETROL OFİSİ	SHELL	ELF
PNEUMATIC SYSTEM OIL	MOBİL DTE LIGHT	BP ENERGOL HLP 10	—	SPINDURA	TELLUS C 10	—
BALL SCREW LUBRICATE OIL	VACTRA OIL HEAVY MOBILGEAR 627	ENERGOL RC 100 ENERGOL GR-XP 100	HYSPIN AWS 100 HYSPIN SP 100	—	—	POLYTELIS 100 MOGLIA 100

7.4. SPECIAL PRECAUTIONS

7.4.1. 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.

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

- Set the Main Switch to “0” position
- Turn off the pneumatic system



- Apply 7.2.1 and 7.4.1 Items.

8. NOISE EMISSION VALUES

8.1. CHARACTERISTIC INFORMATIONS OF MACHINE:

- Rotation Speed of Saw: 3000 rpm
- Motor Power: 3 Kw
- Nominal Voltage: 400 V

8.2. SPECIFICATIONS OF SHAVING EVACUATION MANIFOLD:

- Top Manifold's Outside Diameter: 100 mm
- Under Manifold's Outside Diameter : 100 mm

8.3. CHARACTERISTIC VALUES OF SAW :

- Saw Diameter : 450 mm
- Thickness of Saw : 4 mm
- Shaft Thickness of Saw : 3.2 mm
- Cutting speed: 70 m / sec

8.4. NOISE VALUES:

8.4.1. NOISE VALUES TEST MATERIALS SPECIFICATIONS:

- Material : Aluminium
- Length : 1220 mm
- Width : 70mm
- Height : 60

LWA: 92 dB (Measured Value)

K: 2 dB (Indefiniteness in Measurements) EN ISO 3744

Values given above indicate emission level and do not indicate safe working level. There is no direct relation between emission and level of exposing, and this can not be used reliably to make a decision for further measures. Factors affecting real level of exposing to emission that affects work power are characteristics of working area, time of exposure in other words all noise sources and number of machines around. Also, permitted level of expose changes from country to country. Nevertheless this information is for healthy evaluation of the operator about dangers and risks

9. 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.

TROUBLE	CAUSES	REMEDY
Low surface quality (at aluminium and similar materials) : Rough surface, Large chip, Not homogenous surface, Saw blade traces visible	Not cooling the saw blade surfaces	Lubricating the saw blade cutting surfaces, Using of cooling liquid
	Using of damaged or blunt saw blade	Check the saw blade teeth. Replace if necessary.
	Saw blade moves to quick	The cutting speed is too high for the material. Decrease the cutting speed.

Motor does not work (Start button is pressed, not working)	No power supply to the machine. Main Switch is in "0" position. The upper protective cover or the front cover is open. Emergency button is pressed.	Check the electric cable connections. Check the electric power sockets. Switch the Main Switch to "I". Close the upper cover and the front cover. Switch emergency button on position
Motor is working but the pneumatic clamp pistons do not work.	The air supply connections are missing, or the air pressure is below 4 Bar.	Check the air compressor connections. Adjust the air pressure between 6-8 Bar on the conditioner.
The saw blade rotates in reverse direction.	The electric connection, the power cable or the connection at the panel is wrong.	Let the electric connections carry out by a qualified electrician.

10. 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 jewellery. 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.