



**PHOENIX-02 SH**

**AUTOMATIC SINGLE HEAD PVC PROFILE WELDING  
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.  
10752-A Tucker Street – Beltsville, MD 20705 USA  
Phone: +1-301-595-1816 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. MACHINE'S DESCRIPTION AND PURPOSE OF USE**

### **2.1 MACHINE'S DESCRIPTION**

Machine is designed for the joining of vinyl (PVC) profiles through corner welding.

- Capable of adjusting the clamp and welding pressure according to the profile type.
- Equipped with a timer for melting and welding time. Capable of welding at angles between 30° – 180° Profiles are clamped one by one via foot pedal.
- After clamping the profiles, the welding is carried out automatically.
- The thermostat is electronic and can be adjusted in a temperature range between 0°-260° C.













Please mention the below mentioned data in all your correspondence regarding the machine with the manufacturer and/or your ATECH dealer.

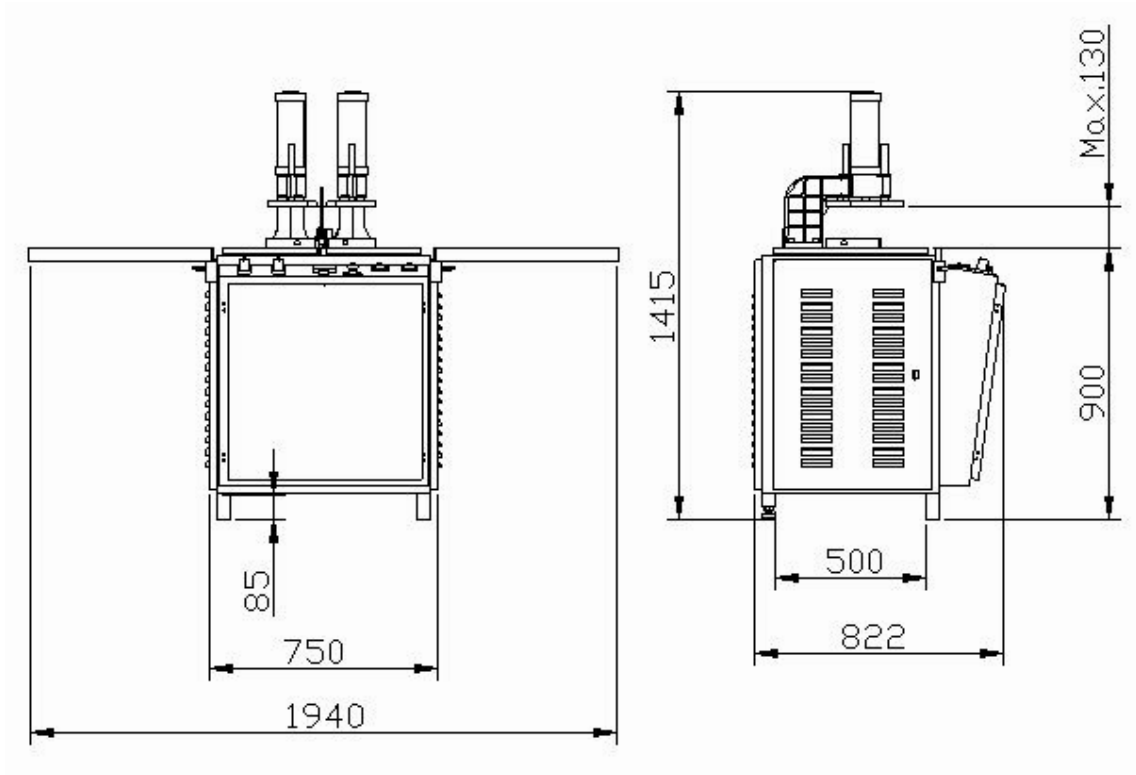
- \*Machine model
- \*Machine's serial number
- \*Voltage and frequency
- \*Name of dealer where machine was purchased
- \*Date of purchase
- \*Description of the machine fault
- \*Average daily operation period



## 2.2 TECHNICAL FEATURES

Technical Features (American)						
<b>PHOENIX-02 SH</b>	1.5kW 120V 60Hz	Max.h: 5 1/2" α=30°-180°	90-120 psi	1,25 CFM	31x34x55"	506 lb
Technical Features (Metric)						
<b>PHOENIX-02 SH</b>	1.5kW 230V 50Hz	Max.h: 130 mm. α=30° - 180°	6-8 Bar	35l/min	78x85x140 mm	230 kg

### 2.3 OVERALL DIMENSIONS



## 2.4 PART LISTS AND TECHNICAL DRAWINGS

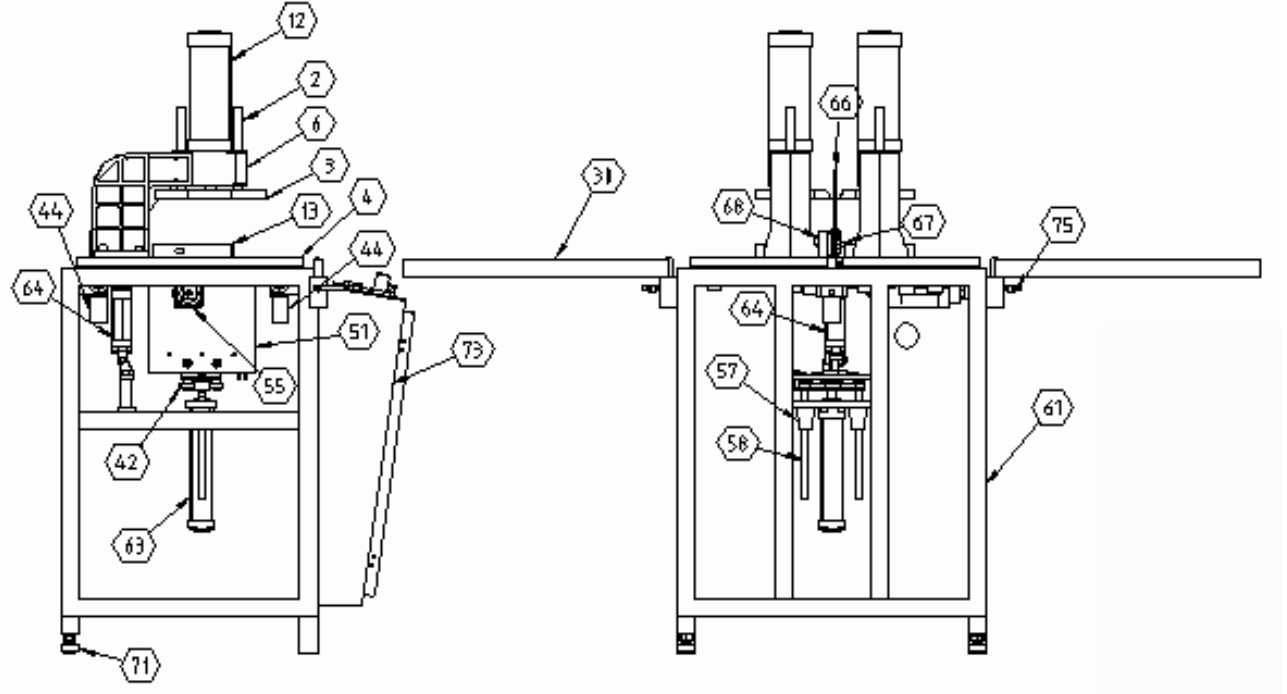


Figure-1

NO	STOCK CODE	PART NAME	QTY
2	143-126	PISTON HOUSING SHAFT	4
3	141-234	CLAMP SHOE	2
4	145-035	LEFT TABLE	1
6	111-156	CLAMP COLUMN	2
12	242-005	PISTON PAG Y 80x90	2
13	112-080	LEFT SET SQUARE	2
30	147-001	SUPPORT PROFILE	2
42	191-003	6201 BEARING	1
44	550-025	PIN CYLINDER	2
51	111-158	RESISTANCE PLATE	1
55	242-022	PISTON PMY 50x25	1
57	111-161	HEATING PLATE HOUSING	1
58	143-027	HEATING PLATE HOUSING SHAFT	2
61	212-002	FRAME	1
63	242-019	PISTON PMY 40x170	1
64	242-018	PISTON PMY 32x50	1
66	145-033	GUIDE PLATE	1
67	141-232	FORK SHAFT	1
68	111-155	GUIDE BEARING HOUSING	1
71	141-050	M16x55 FOOT ADJUSTMENT BOLT	2
73	211-018	PANEL	1
75	550-010	HANDLE	2

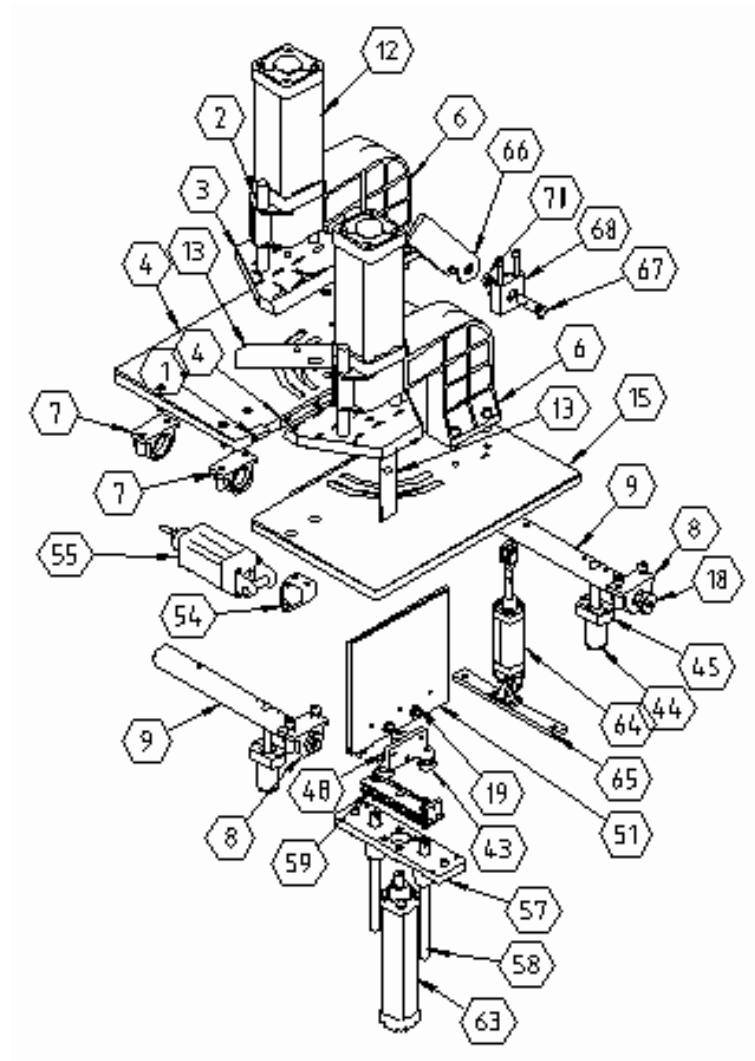


Figure-2





NO.	STOCK CODE	PART NAME	QTY	NO.	STOCK CODE	PART NAME	QTY
1	145-039	TABLE ADJUSTM. DOWEL	2	59	145-037	HEATING PLATE HOUSING CONNECT. PLATE	1
2	143-026	PISTON HOUSING SHAFT	4	63	242-019	PISTON PMY 40x170	1
3	141-234	CLAMP SHOE	2	64	242-018	PISTON PMY 32x50	1
4	145-035	LEFT TABLE	1	65	145-034	GUIDE PISTON PLATE	1
6	111-156	CLAMP COLUMN	2	66	145-033	GUIDE PLATE	1
7	111-162	TABLE SHAFT HOUSING	4	67	141-232	FORK SHAFT	1
8	111-159	TABLE SHAFT HOUSING	2	68	111-155	GUIDE BEARING HOUSING	1
9	143-028	TABLE HOUSING SHAFT	2	70	176-004	M12 BOLT	1
12	242-005	PISTON PAG Y 80x90	2				
13	112-080	LEFT SET SQUARE	2				
15	145-035	RIGHT TABLE	1				
18	141-243	TABLE SHAFT HOUSING WASHER	2				
19	142-034	TEFLON WASHER	4				
43	191-003	6201 BEARING	2				
44	550-025	PIN CYLINDER	2				
45	111-157	PISTON CONNECTION	2				
48	111-154	MOVEMENT HOUSING	1				
51	111-158	RESISTANCE PLATE	1				
54	111-160	TABLE PISTON CONNECT.	1				
55	242-022	PISTON PMY 50x25	1				
57	111-161	HEATING PLATE HOUSING	1				
58	143-027	HEATING PLATE HOUSING SHAFT	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 **DANGER WARNING** above warns you against specific dangers, and definitely requires the text to read. Not observing may result in serious bodily injury.

Please read the user's manual carefully before using the machine or carrying out maintenance.

#### 3.2. PREVENTION OF ACCIDENTS

**3.2.1** Our machines are manufactured in accordance with EN 60204-1 and EN 292-2 CE safety directives, which cover national and international safety directives.

**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** The 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.

### **3.3. GENERAL SAFETY INFORMATION**



**3.3.1.** 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.



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

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



**3.3.4.** Don't place your hands between parts in motion.



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



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

**3.3.7.** Use correct illumination for the safety of the operator. (ISO 8995-89 The Lighting of Indoor Work Systems)



**3.3.8.** Don't leave anything on the machine.

**3.3.9.** Don't use any materials other than those recommended by the manufacturer for cutting operations on the machine.

**3.3.10.** Ensure that the work piece is clamped appropriately by the machine's clamp or vice.



**3.3.11.** Ensure safe working position, always keep your balance.

**3.3.12.** 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.

**3.3.13.** Unplug first, before conducting and maintenance works.

**3.3.14.** Ensure that any keys or adjustment tools have been removed before operating the machine.

**3.3.15.** If you are required to operate the machine outside, use only appropriate extension cables.

**3.3.16.** Repairs should be carried out by qualified technicians only. Otherwise, accidents may occur.

**3.3.17.** 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).

**3.3.18.** Don't use machines with improper functioning buttons and switches.

**3.3.19.** Don't keep flammable, combustive liquids and materials next to the machine and electric connections.



#### 4. SAFE TRANSPORT OF THE MACHINE

**IMPORTANT**

\* The transport should be done by qualified personnel only.

**4.1.** The machine should be transported by lifting with proper equipment (not touching the ground during the transport).

**4.2.** The Machine is delivered wrapped in nylon as packaging, unless other form of packing is agreed upon with the customer.

**4.3.** For the weight and overall dimensions of the machine see Technical Features.

#### 5. INSTALLATION OF THE MACHINE

The machine should be located at least 50 cm in front of the back wall. The machine is equipped with a burr collection bag connector and power supply socket on the back side.

##### 5.1. PREPARATION

**IMPORTANT**

Remove the bolts and stopper connections first, which are used to fix the moving parts, before making the electric and pneumatic connections, and starting the machine.

##### 5.2. ELECTRIC CONNECTON

**5.2.1** The electric connections have to be carried out by a qualified electrician. Use only cables in accordance with the CE Directives.

**5.2.2.** Check the inlet power before plugging the machine in.

##### 5.3. AIR PRESSURE ADJUSTMENT

The air pressure of the machine has to be between 6-8 Bar for proper functioning of the pneumatic system. Don't operate the machine with an air pressure lower than 6 Bar. To adjust and to check the air pressure, read the manometer on the conditioner (See Figure 3).

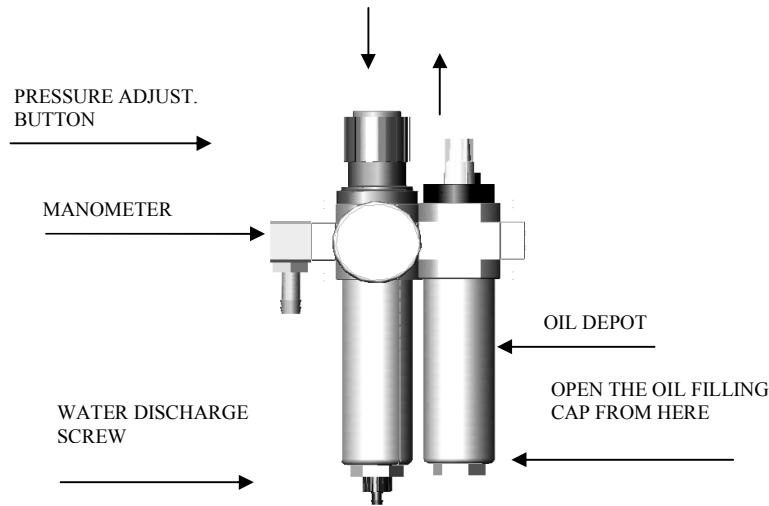
**5.3.1** Pull the adjustment button of the conditioner upwards.

**5.3.2** Turning the adjustment button in clockwise direction increases the pressure ,turning it in counter clockwise direction decreases the pressure.

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

**5.3.4** The conditioner unit collects the water within the air system in a receptacle in order to prevent damage to the pneumatic system components. Discharge this water periodically (at the end of the working day) by pressing or opening the button under the conditioner.

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



**Figure-3**



## **6. MACHINE SAFETY INFORMATION**

**6.1** Your machine operates with 230V 50Hz. Let the electric installation of your machine carry out by a qualified electrician only.

**6.2** Lifting, installation, electric, pneumatic maintenance of the machine should be carried out by qualified personnel only.

**6.3** Routine maintenance and scheduled maintenance should be carried out by qualified personnel after unplugging the machine and disconnecting the air supply first.

**6.4** Ensure that the machine has been cleaned, tested and maintained before starting to operate.

**6.5** Check the safety devices, power cable and moving parts regularly. Don't operate the machine before having replaced defective safety devices or faulty parts.

**6.6** If you wish to terminate the PVC profile welding operation for any reason, press the Emergency Stop button.



**6.7** Keep foreign materials away from the working area of the machine, keep away from the machine's moving parts.

**6.8** As the machine is equipped with foot pedal, you do not need your hands during the welding operation. Keep away from the pistons during the operation.

**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.

## **7. OPERATION**

### **7.1 GENERAL**

The PHOENIX-I Automatic Vinyl (PVC) Single Corner Welding Machine has been designed for the corner joining of PVC profiles. Do not use the machine for any other purposes.

## 7.2 BUTTONS AND DISPLAYS ON THE MACHINE

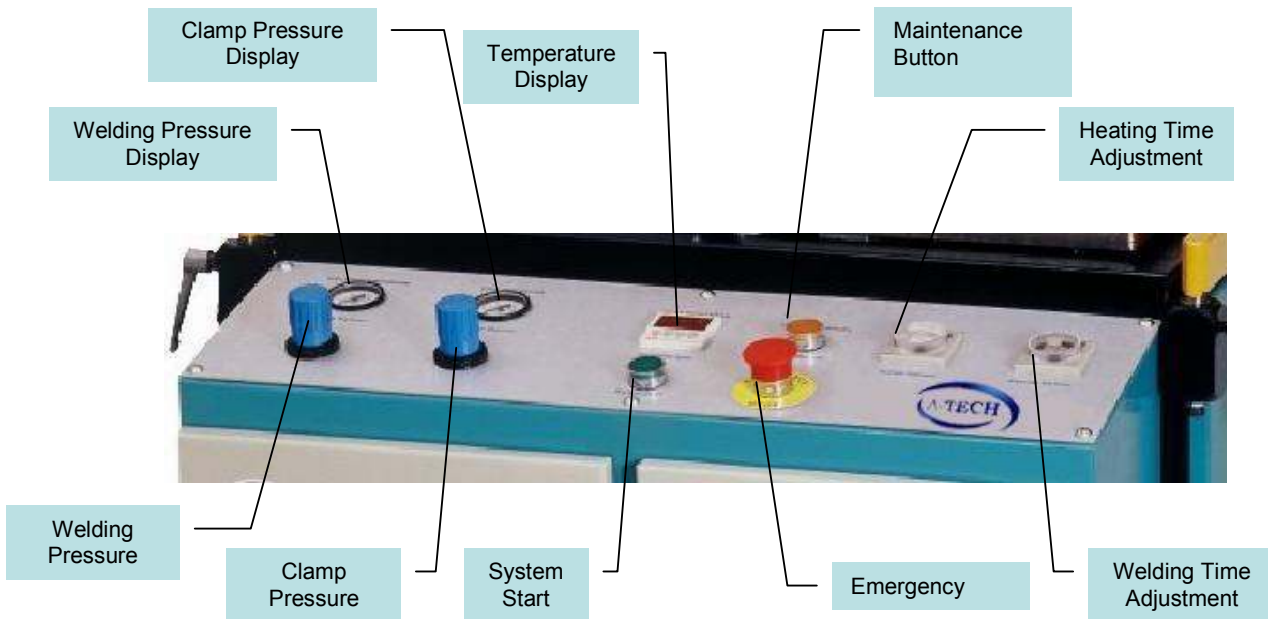


Figure-4

**Temperature Display:** For adjusting the temperature of the resistance, which heats and welds PVC profiles, between 0 - 260 C. The temperature is pre-set to 245 C at the factory. To change this value, press "Set". The pre-set value will blink. Input the new temperature value using the arrows on the display. Press "Set" again to save the input value.

**Caution:** Do not touch the (PRG) button next to the Set button. It has been pre-set in the factory.

**Emergency Stop Button:** When the Emergency Stop button is pressed, all pneumatic electric components of the machine return to their original position.

**System Start Button:** Used to start the welding operation.

**Welding Pressure Adjustment:** For adjusting the welding pressure of profiles to be joined via heating and welding. It is pre-set to 6 Bar in the factory. If you want to change this value, turn the switch to the right or left respectively to increase or decrease it. To lock the set value, press the outer frame of the switch down.

**Welding Pressure Display:** It reads the welding pressure force in Bar.

**Clamp Pressure Adjustment:** It adjusts the pressure force of the clamps, which clamp the PVC profiles to be welded. It is pre-set to 4 Bar. This adjustment is made in the same way like the welding pressure adjustment.

**Clamp Pressure Display:** It reads the pressure force of the PVC profiles clamp in Bar.

**Heating Time Display:** Adjusts the time for application of the set temperature. It can be adjusted between 0-30 sec. It is pre-set to 20 sec.





**Welding Time Display:** To adjust the welding time of PVC profiles. This period can be adjusted between 0 - 30 sec. It is pre-set to 25 sec.

**Maintenance Button:** Used for cleaning and changing the Teflon cover of the heating plate. It moves up the heating plate and keep it in that position to clean or to change the Teflon cover. The Teflon cover is cleaned with a dry cloth.

**Foot Pedal:** When the foot pedal is pressed once, the guide fence moves down. The PVC profile is placed on the right table and pressed against this guide fence. After pressing the foot pedal the second time, the clamp piston over the right table moves down and clamps the profile. After pressing the foot pedal the third time, the clamp piston over the left table moves down and clamps the profile on the left table.

### **7.3 WELDING OPERATION**

**7.3.1.** Ensure that the machine's electric and pneumatic connections have been made correctly.

**7.3.2.** Press the System Start button (Figure 4).

**7.3.3.** Place the first PVC profile onto the right table (Figure 2, No. 15). Press the foot pedal once, whereupon the guide plate (fence) moves down (Figure 1, No. 66).

**7.3.4.** Press the profile end against the guide plate. Press the foot pedal again, whereupon the profile will be clamped.

**7.3.5.** Place the second profile on the left table (Figure 2, No. 4) and press it against the other side of the guide plate. Press the foot pedal again to clamp the profile via clamp piston. The remaining operation will be carried out automatically within the adjusted temperature and time period.

**NOTE: Never place your hands under the pistons during the welding operation.**

## **8. MAINTENANCE**

### **8.1. PERIODIC CHECKS**

**8.1.1** Ensure that the table and all parts are clean and dry. Degrease the table and dry it.

**8.1.2** Clean the machine surface.

**8.1.3** Check the pressure of the air pressure system.

**8.1.4** Check the air pressure filter and the oil level of the conditioner. Fill up oil, if necessary (Figure 3).

## 8.2. CLEANING AND REPLACING THE HEATING PLATE TEFLON COVER

**8.2.1** To clean the Teflon cover, press the Maintenance button (Figure 4). The heating plate (Figure 1, No. 51) will move upwards.

**8.2.2** Clean the Teflon with a dry cloth.

**8.2.3** To replace the Teflon cover, remove the thin plates on both sides of the heating plate with a proper key.

**8.2.4** Replace the old Teflon with a new one and fix it by tightening the thin plates.

## 8.3. MAINTENANCE AT THE END OF WORKING DAY

**8.3.1** Disconnect the electric and air supply to the machine.

**8.3.2** Clean the machine surface and remove all foreign materials.

**8.3.3** After cleaning the table, dry it with a cloth (don't use aggressive substances for cleaning, which could damage the paint).



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

## 9. TROUBLESHOOTING GUIDE

TROUBLES	CAUSES	REMEDY
The resistance does not heat The thermocouple does not work	No power supply to the machine The thermocouple connection wire is displaced.  The temperature display needs to be set.	Check the fuse, plug and socket.  Connect the thermocouple wire.  Check the temperature display adjustment (245°)
The heating plate does not move.	The air pressure is too low.	Check the air hose connections of the machine. Adjust the air pressure at the conditioner.
Machine does not weld or the welding is not clean.	The profiles were cut in different angles.  The Teflon is dirty or torn.	Check the angles of the profile ends. The saw blade might need to be sharpened.  The Teflon should be cleaned or replaced.
If these recommendations do not solve the trouble, please ask for technical service.		



## 10. ELECTRIC AND PNEUMATIC COMPONENTS

### 10.1 ELECTRIC COMPONENTS

161-011	RESISTANCE	1
164-010	3*1 TTR CABLE	3
164-015	PRINTED PLUG 3*1	1
164-017	SILICON CABLE 2.5mm RED	1.7
164-018	SILICON CABLE 2.5mm YELLOW-GREEN	3.4
165-005	UY3010 (1 mm) CABLE THUMB	3
165-038	PORCELAIN CONNECTOR	1
165-045	NO:2 PANEL SPIRAL (THICK)	1
165-049	GROUNDING SHOE	1
165-058	SINGLE-PHASE PLUG	1
165-100	STEEL SPIRAL (11mm)	0.5

### 10.2 PNEUMATIC COMPONENTS

242-005	PISTON PAG AY 80*90	2
242-008	PISTON FORK 32*50	1
242-010	PISTON EB 50	1
242-011	PISTON EYB 32*50	1
242-018	PISTON PMY 32*50	1
242-019	PISTON PMY 40*170	1
242-022	PISTON PMY 50*25	1
242-031	SHAFT END BOLT 50 mm	1
244-011	O-RING 28*2	4