



*Temelsan*<sup>®</sup>

## KN-40 S-MN BUTT WELDING MACHINE USER MANUAL



Congratulation to your new TEMELSAN Butt Welding Machine KN-40 S-MN

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## BASIC INFORMATIONS

This manual user guide is prepared to be useful in order to get familiar with the machine and the functions of the machine. By the help of this manual guide, the operator becomes a capable to use the machine in an optimal way in order to operationalize safely, ergonomically and properly.

This manual user guide allows the operators not to take risk, minimize the idle and repair time. It also helps to increase lifetime of the machine.

This manual user guide should be kept in a proper place and be accessible easily when needed. The local regulations included safety and environmental requirements must be followed in addition to the statements based on this manual user guide.

In case of an issue, complaint, request, demand on spare parts etc. please note the following information along with the below message

### **Concerning following Object:**

**Machine Model:** TEMELSAN KN-40 S-MN

**Mfg. year:** 2018

**Serial Number:** \_\_\_\_\_

### **APPROPRIATE USE**

The machine is designed to weld the steel and band saw blades min. 6x0.65mm and max. 41x1.10mm.

In the event of using the machine rather than described in which case the machine would be out of warranty situation of Temelsan.

**Upset welding** /resistance butt welding is a welding technique that produces coalescence simultaneously over the entire area of abutting surfaces or progressively along a joint, by the heat obtained from resistance to electric current through the area where those surfaces are in contact. Pressure is applied before heating is started and is maintained throughout the heating period. The equipment used for upset welding is very similar to that used for flash welding.

**Flash welding** is a type of resistance welding that does not use any filler metals. The pieces of metal to be welded are set apart at a predetermined distance based on material thickness, material composition, and desired properties of the finished weld. Current is applied to the metal, and the gap between the two pieces creates resistance and produces the arc required to melt the metal. Once the pieces of metal reach the proper temperature, they are pressed together, effectively forging them together. You will be faced with technical words like Upset Pressure, Weld-Space, Welding-Ready Position. This will be explained later in this Manual.

(Some Text here is copied from Wikipedia, which explains very well the Butt Welding procedure, many thanks to the writer)

## **WARRANTY AND LIABILITY**

In the event of involving a personal injury or physical damages are not covered by the warranty if the following events occur as below.

- Using the machine for a purpose rather than intended
- Technically, improper installation, start-up operation or maintenance of the machine
- In the act of using the machine while any of safety equipment is a broken or protective device inappropriately running.
- Making constructional changes on running parameters.
- Insufficient control of abrasion parts
- Inappropriate repairs
- The catastrophic failures due to the action of foreign objects / Bodies and excessive force applied

## **SAFETY**

Below safety requirements must be applied without skipping anything and priority case to carry out.

## **QUALIFIED PERSONNEL**

Certain tasks must be carried out on the machine by a professional qualified personnel. Not third parties neither the children should be near the machine working area.

## **PLANNING AND SET-UP**

Planning, transportation, installation, programming, start-up, maintenance, repairs and other works must be done by qualified personnel. Authorized technician must check it also.

The following matters must be noted:

- Technical data and details concerning the permissible use of the machine and its accessories.
- General and specific local preparation and safety measures.
- Personal usage and the use of general safety equipment must be related the norms.
- Especially listed on this manual guide but specifically not listed in the operating instructions that has been explicitly forbidden. Such as a handicapped to use the machine is such cases it is necessary to contact the manufacturing company.

## **OPERATIONS**

Dangers hidden in disregards of safety regulations.

## **SAFETY DEVICES**

The machine is equipped with the safety devices corresponding to current state of the art. In the matter of safety equipment, the machine may not be disabled, removed, dismantled, damaged. It applies in particular to:

- Safety switches (Emergency Stop Button)
- Electrical and electronic fuses

## AREAS OF USAGE

The butt-welding machine Temelsan KN40S-MN is used for low-alloyed and high-alloyed steel bands and band saw blades or bi-metal or carbide tipped band saw blades.

The welding capacity for Band Saw Blades is from minimum 6x0.65mm up to a maximum 41 x1.10mm. The machine is capable to weld all kinds of band saw blades which are called carbon, wood, bi-metal, CT Work on the electrical power supply is only to be done by professional electrician.

The machine is a single piece and no need to be assembled.

The machine can be set-up by the customer's own staff if officially approved by Temelsan.

Please read the following sections thoroughly and carefully before the initial start-up and ensure that you clearly understand it.

## MAINTENANCE

In order to insure a safe operation on the machine and prevent accidents, the job listed in the section "Servicing" must be carried out regularly. If the owner of machine is not in a position to do that also must be arranged by an authorized service agent.

## ISSUES

The machine must be switched off at once in case of any problem occurs during the operation and then locked for not being restarted accidentally by an unauthorized person.

The machine must be switched off in this case.

- Unusual sounds, vibrations, smells
- Unusual operations on the monitoring device
- Increased temperatures or power consumption
- Unusual reaction during the manual or automatic operation
- Strange behavior and error messages displayed



### WARNING!

Only suitably qualified personnel must service the machine!



### EMERGENCY

**ATTENTION!**

Note the following at emergent cases (fire, water, explosions, breakage):

- Cut the machine off from the mains power supply at an external main switch or external fuses
- Switch off the compressed air supply
- Use the fire extinguishers of a suitable type to deal with the fire

**SAFETY MEASURED RELATED WITH THE MACHINE****WEAR PROTECTIVE GLASSES!**

Welding beads produced during welding work could damage your eyes.

**WEAR GLOVES!**

The sharp edges of the blades can cause hand injuries.

**DANGER OF FIRE!**

Easily inflammable materials could be set alight if they come in to contact with welding sparks

**SWITCH OFF THE MACHINE!**

Cut off machine from the main supply before carrying out setting-up maintenance and servicing work on the machine. Kind of inflammable materials should keep far away from welding area constantly during the operation!

**DANGEL OF BEING CRUSHED!**

There is a degree of danger if being crushed when in the proximity of the clamping jaws during inserting parts. There is a degree of danger being crushed between the clamping jaws during the setting-up operations.

**ATTENTION!**

It's dangerous when contacting parts of the power supply, control and transformer.

**IN CASE OF EMERGENCY;**

Push the emergency stop button.

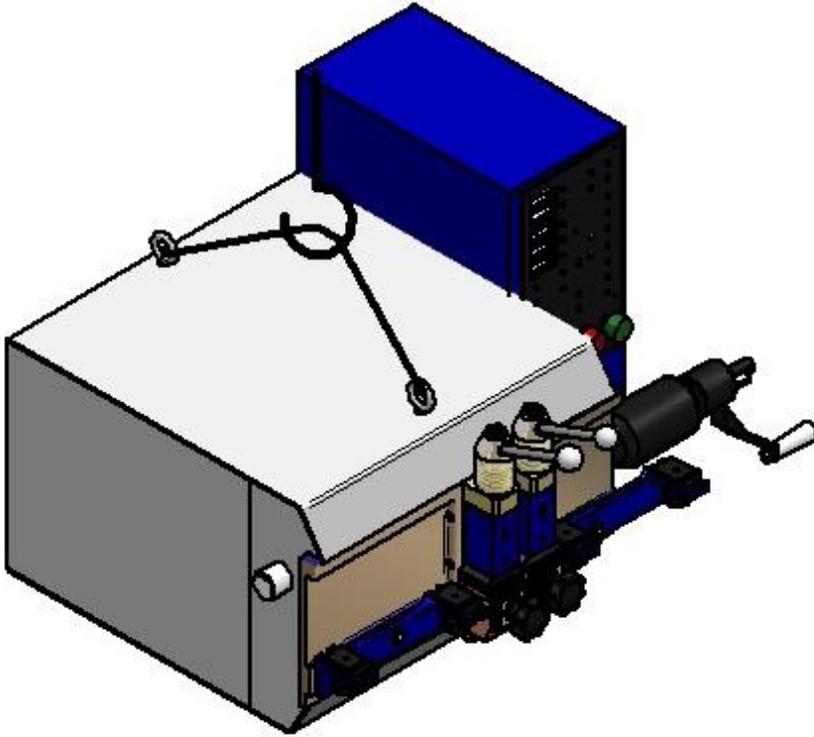
The emergency stop button is to use by emergency issues only!

## TRANSPORTATION - STORAGE - PACKAGING

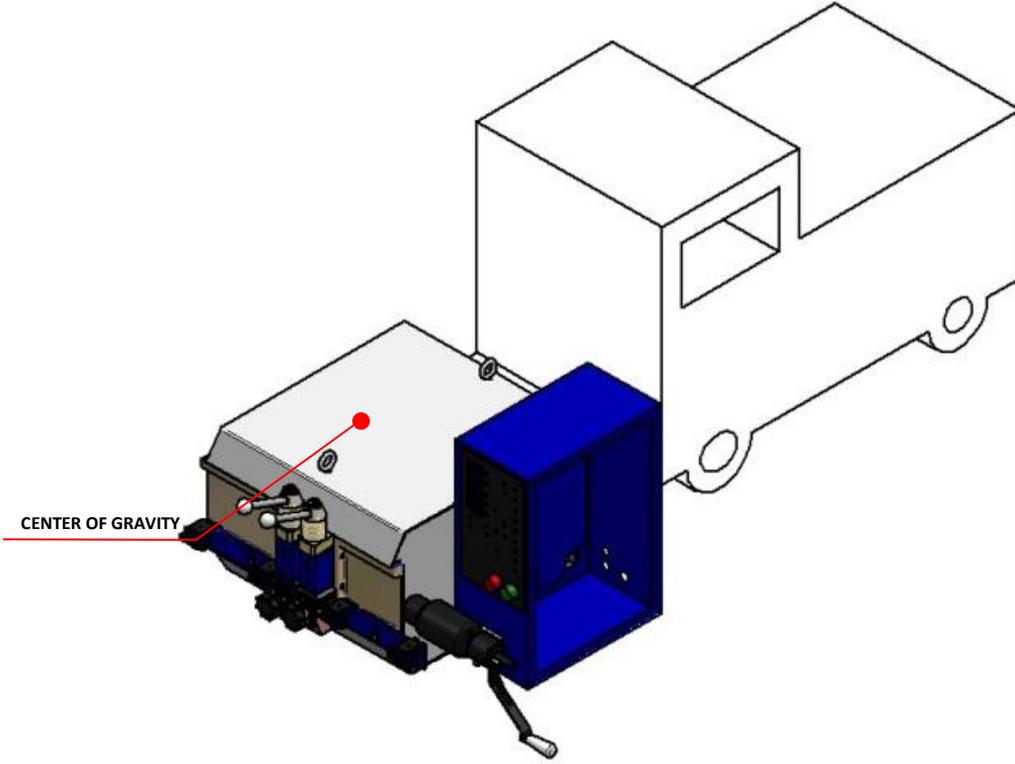
The machine may not be handled with special care in transport so as to prevent damage from impacts to careless loading and unloading. The measures listed below are essential. The following measures that must be taken only cover the transport within the company. Road, rail, airline transport and sea transport require additional measures to be taken.

Transport in assembled state (see figure below)

- Use only the lifting eyelets for transport by crane (Picture below)



- The use by forklift (pictured blow)



**Attention:RISK OF TIPPING OVER**

**The higher center of gravity requires a special view for transportation even the Machine should be fixed by screws to the pallet.**

**STANDART ACCESSORIES**

6-41mm	Width Bi-Metal and CT-Band welding capacity
10-50mm	Width Wood-Band welding capacity
One type jaws	Both side usable and turn able for small widths
Adjustable	Manuel stoppers for cambered band saw blades
3 Program Memories	For 3 fully range of band saw blade dimensions
Air Pistol	For manual cleaning
Support Tools	Pre-Adjustment tools

**OPTIONAL ACCESSORIES**

1 Set Spare	Upper and Lower Jaws (2 pcs of upper + 2 pcs of lower jaws)
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Please check the Packing when arrived before unloading the machine from truck.

Do not accept the delivery if packaging is damaged or broken by transportation.

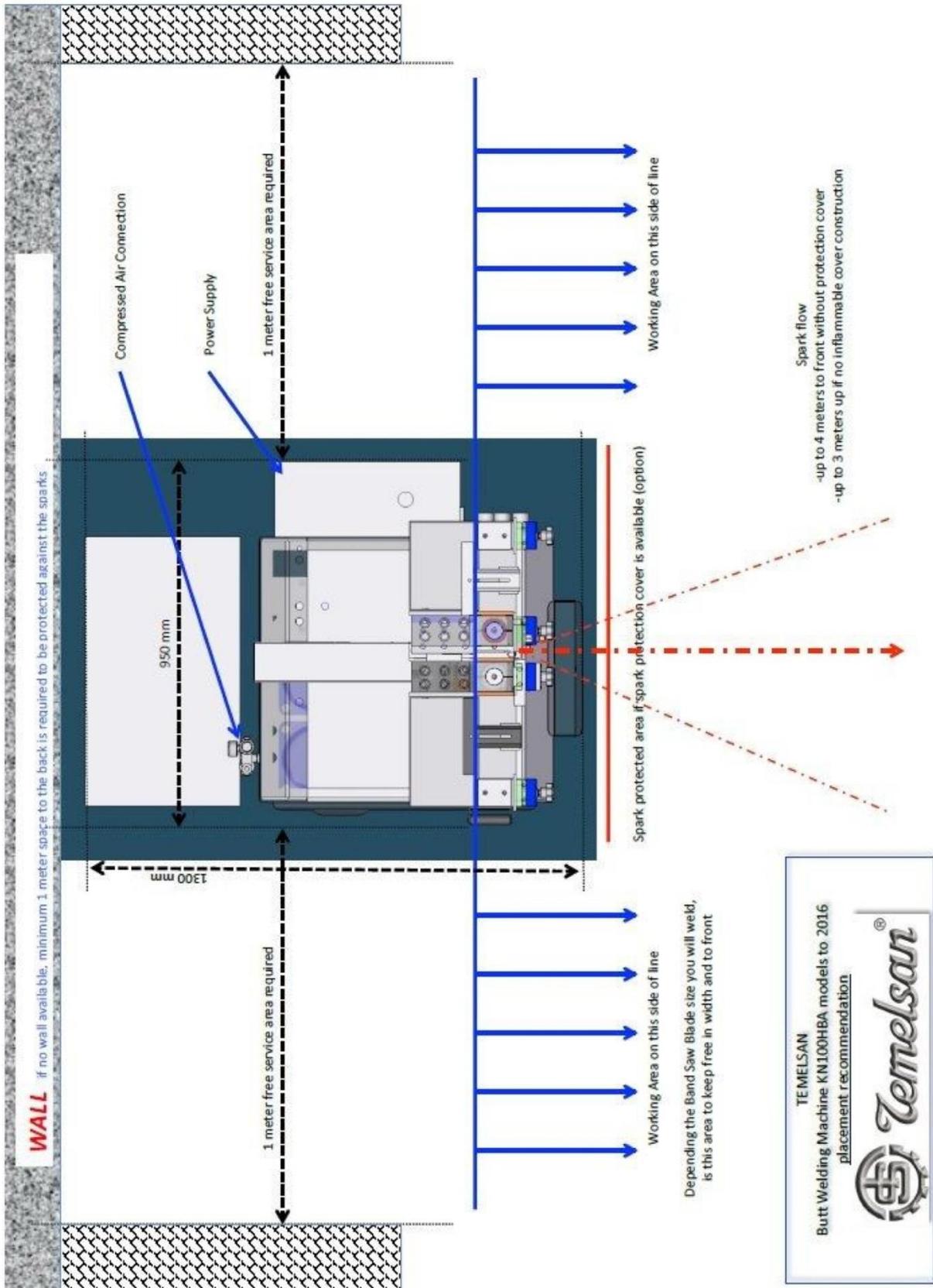
In case of broken or damaged packing of machine, it's possible with agreement of Transportation Company to unpack and check the machine condition before down loading

As soon you unload the machine, you accept the condition of machine, you take any responsibility for damages and eventually repairs.

**REQUIREMENTS OF WORKING PLACE**

- Flat and smooth desk
- Required big enough area around the machine
- Environmental conditions
- The running of the machine is not permitted if flammable liquids and objects are near to welding machine
- Enough air circulation is required
- The client is obliged to local electrical distributor notified technical requirements

## RECOMMENDATION HOW TO PLACE THE TEMELSAN KN40 S-MN MACHINE



## FIRST CONNECTIONS

### POWER SUPPLY (Wiring draw see at following page)



**Make sure that the main switch of the machine is on OFF position and prevent to be turned on by an accident.**

A qualified electrician must do the connection.

The input voltage (standard norm) is 400V AC (3 Phase + Neutral + Ground) 50Hz.

The input voltage (US Norm) is 600 V AC (3 phase + Neutral + Ground) 60 Hz. (optional)

The recommended fusing for power supply is **40 Amp fuse, sluggish type**

**The Diameter of each wire for power supply it's very important, please use the chart by selecting the Machine Type**

**Do not switch ON the machine before the all setup instruction is read and work performed**



**ATTENTION!**

Pay special attention to protect yourself from the energized cables moreover the control panel while operating the machine. Keep closed the cover of electrical control panel and do not forget to take out all the foreign objects in the cabinet which might cause short circuit.

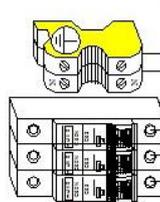


**WARNING!**

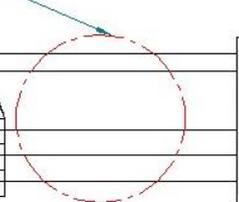
- Working on the electrical power supply has to be only done by professional electrician.
- The electrical equipment of the machine must be checked regularly
- Always keep the switching cabinet locked. Access is only permitted to authorized personnel with the key or special tool.
- Remove at once any loose or worn cables
- If it is essential to work on parts carrying a current there must be a second person present to turn off the main switch in case of an emergency
- The customer is required to comply with the technical conditions and requirements of the relevant electrical power supply company

KABLO / CABLE								
MAKİNE MODELİ MACHINE TYPE	TRAFO KVA	ŞEBEKE GERİLİMİ LINE VOLTAGE	SİGORTA GEÇİKMELİ FUSE SLUGGISH TYPE	KABLO MODELİ CABLE TYPE	KABLO UZUNLUK CABLE LENGTH	NOMİNAL KESİT NOMİNAL CROSS SECTION	DIŞ ÇAP OVERALL DIAMETER	İLETKEN TEL SAYISI VE ÇAP NUMBER OF CONDUCTING WIRE
		VOLT AC	AMPER		METER	mm <sup>2</sup>	mm	mm
KN41 HBS	4.5 KVA	400 VAC	50	TTR	< 5	5x10	21	6
KN67 HBS	12 KVA	400 VAC	63	NYN	< 5	3x16 + 10 + 10	23	7x1,7
KN67 HBA	40 KVA	400 VAC	63	NYN	< 20	3x25 + 16 + 16	25	7x2
KN100 HBA	63 KVA	400 VAC	63	NYN	< 50	3x35 + 16 + 16	32	7x2,4



NYN



TTR



RESTING



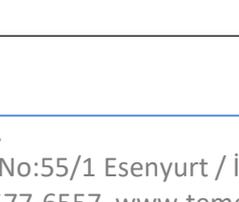
  









MAX 5 METER  
NYN 3X16+10+10  
(KN41 HBS TTR 5X10)

## PRESS-AIR REQUIREMENTS

The machine needs dry and clean air pressure, which needs 6-8 bars.

After some time the air becomes wet and dirty, then please clean the conditioner of air right behind the machine.

Connect air hose supply coming from the compressor through at the rear side of the machine.

## FIRST INSTALLATION AND ADJUSTMENTS

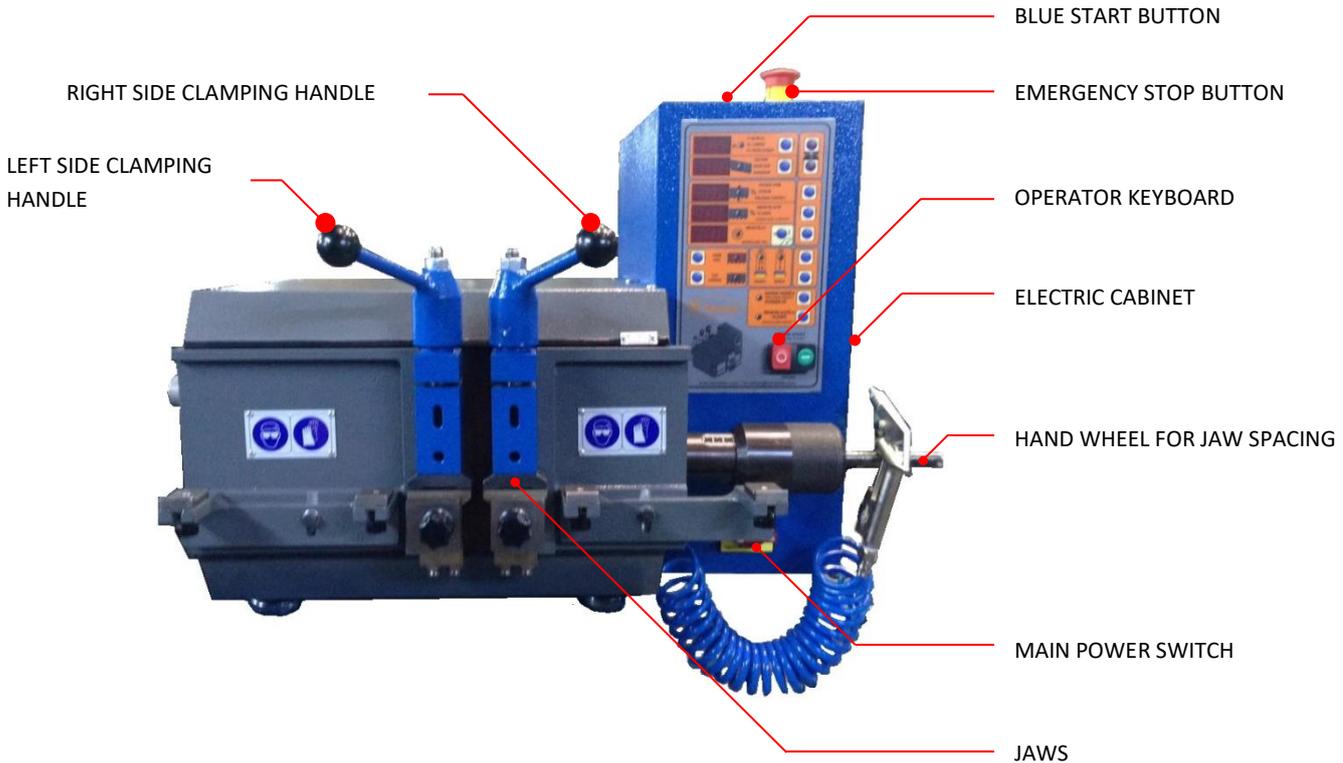
Authorized professionals, who must read this user guide, must do first installation and adjustments. In case of questions, is an immediately contact with manufacturer/supplier required.

## FIRST CLEANING

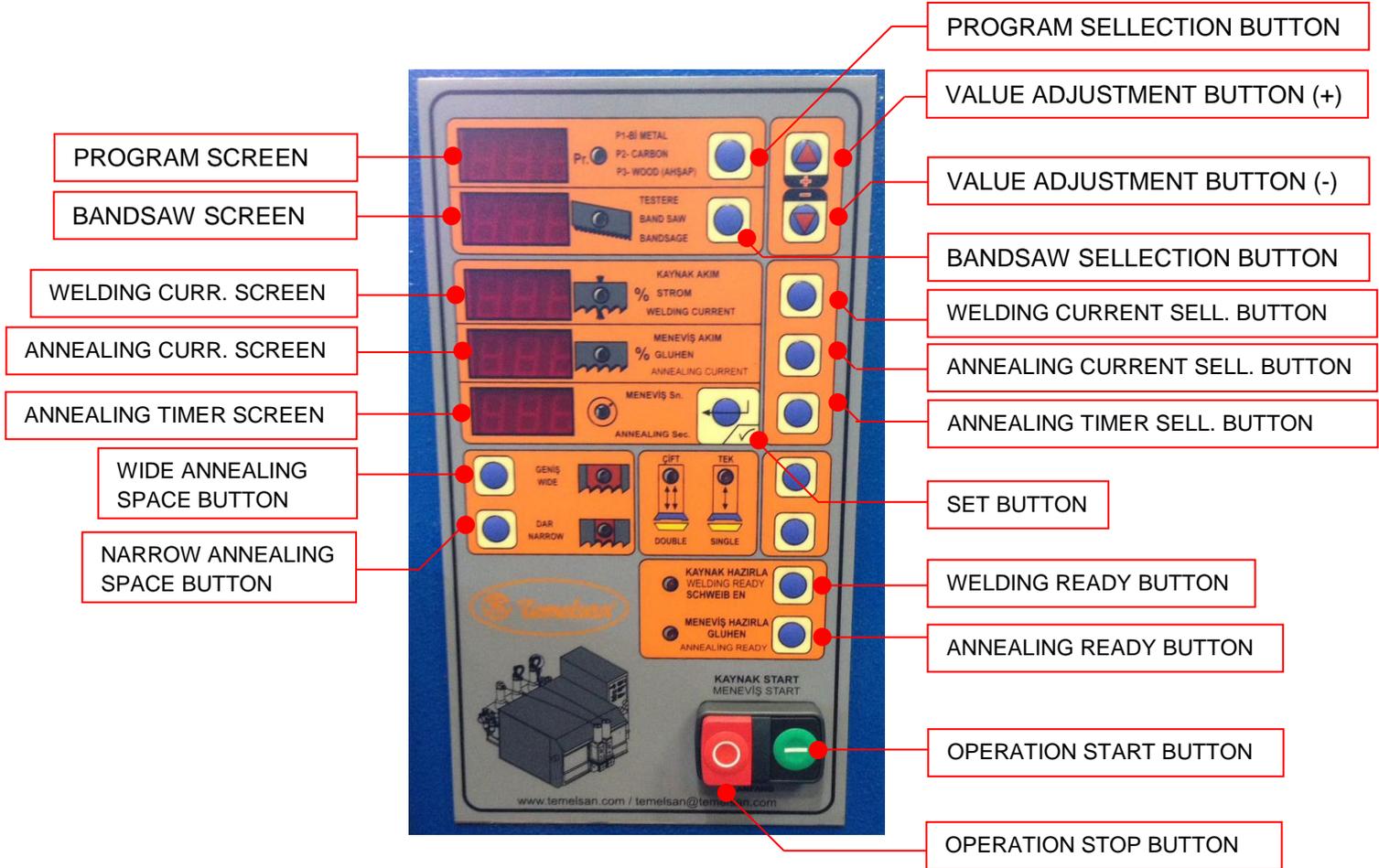
Unpainted parts on the machine are slushed with conservation oil and have to be cleaned before the operation can start. Especially the jaws and around them must be cleaned properly.

### Check Points

1. Power is connected through the instructions above, All fuses are ON also inside the electro cabinet
2. Air is connected and adjusted with 8 Bar



## OPERATOR PANEL AND BUTTONS



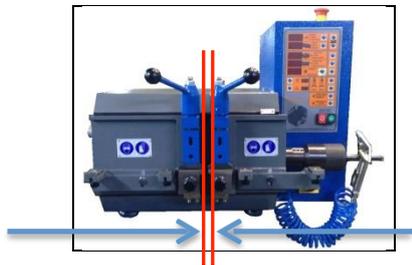
### GENERAL USE OF BUTTONS ON KEYBOARD

Push the button (**Program, Bandsaw, Welding Current, Annealing Current, Annealing Timer**) to make selection on which value you want to change. When you press the selection buttons the screen next to button the light will blink. While screen is blinking you can adjust with “**VALUE ADJUSTMENT BUTTON (+) or (-)**”. When you reach the value, press the “**SET BUTTON**” to save your settings.

## START-UP THE MACHINE

(Very important to follow step by step, do not proceed to next step when check point is not confirmed for proper functionality)

1. Turn the main power switch to **ON**
2. Check and unlock the Emergency Stop Button (to unlock turn on Button to left side)
3. Press the “**BLUE RESET BUTTON**” to start the machine.
4. Press the “**PROGRAM SELECTION BUTTON**” and use “**(+) or (-) VALUE ADJUSTMENT BUTTONS**” to find your program and press the “**SET BUTTON**”
5. Press the “**BANDSAW SELECTION BUTTON**” and use “**(+) or (-) VALUE ADJUSTMENT BUTTONS**” to find your band saw type and press the “**SET BUTTON**”
6. Press the “**WELDING CURRENT SELECTION BUTTON**” and use “**(+) or (-) VALUE ADJUSTMENT BUTTONS**” to find your current value and press the “**SET BUTTON**”
7. Press the “**ANNEALING CURRENT SELECTION BUTTON**” and use “**(+) or (-) VALUE ADJUSTMENT BUTTONS**” to find your current value and press the “**SET BUTTON**”
8. Press the “**ANNEALING TIMER SELECTION BUTTON**” and use “**(+) or (-) VALUE ADJUSTMENT BUTTONS**” to find your timer value and press the “**SET BUTTON**”
9. Choice your annealing space and press the button “**WIDE ANNEALING**” or “**NARROW ANNEALING**” button to set it.
10. Push on Operator Keyboard the Button “**WELDING READY**” The right jaw should move on position
11. Check the space between the Jaws; it should be same as on indicator
12. Push on Operator Keyboard the Button “**Annealing Ready**”



**Congratulation, your Machine is correct connected and is ready to Calibrate several following equipment**

- a. **Stopper Positions**
- b. **Jaw Level and spacing**

## CALIBRATION OF JAW SPACE

1. Adjust the space of jaws by turning the hand wheel to 10mm (use a caliper) Hand Wheel can be only turned when jaws are in Welding Ready Position!
2. Adjust the space indicator also to 10mm by using a screwdriver Check the indicator frequently.



SPACE INDICATOR

SCREW TO ADJUST INDICATOR

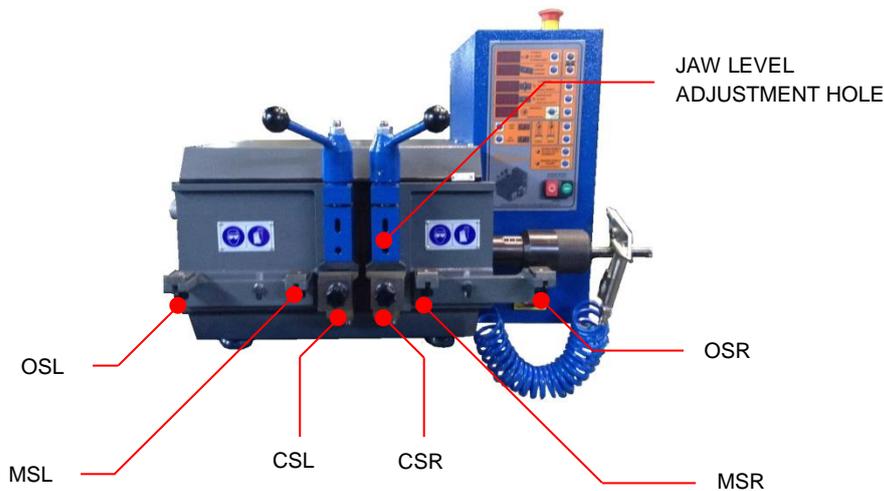
HAND WHEEL FOR JAW SPACING

Adjust the space between the Jaws in Welding Ready Position to a specific slot width and measure it proper.

Position on Space indicator should be same.

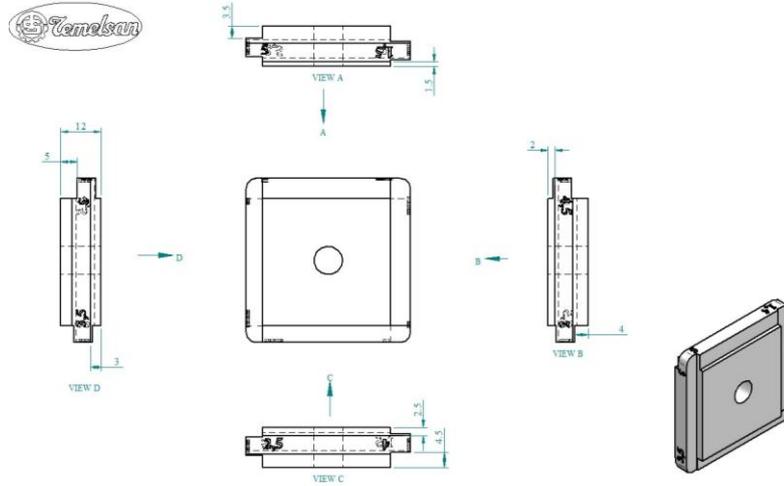
**PLEASE CONTROL THIS FREQUENTLY!**

## BASIC SETTING OF STOPPERS AND SUPPORT PLATE LEVEL


 JAW LEVEL  
ADJUSTMENT HOLE

OSL	Outside Stopper Left
CSL	Center Stopper Left
CSR	Center Stopper Right
OSR	Outside Stopper Right
MSR	Middle Stopper Right
MSL	Middle Stopper Left

Turn the CSL and CSR stoppers to find proper adjustment for band saw teeth size.

**CSL AND CSR STOPPERS DRAWING**


Unscrew the OSL, OSR, MSL and MSR stoppers to be free move.

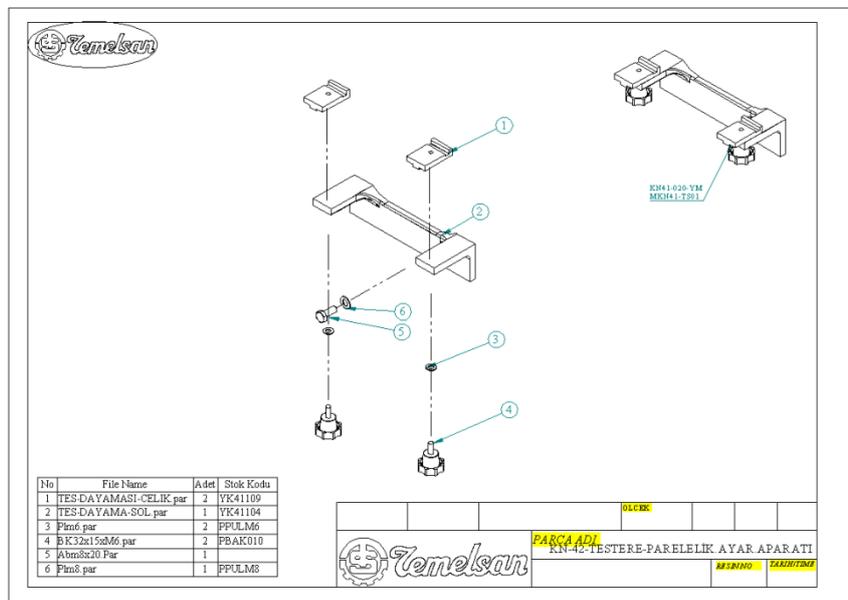
Put the Band saw be sure the teeth of band saw touch the stoppers on proper way.

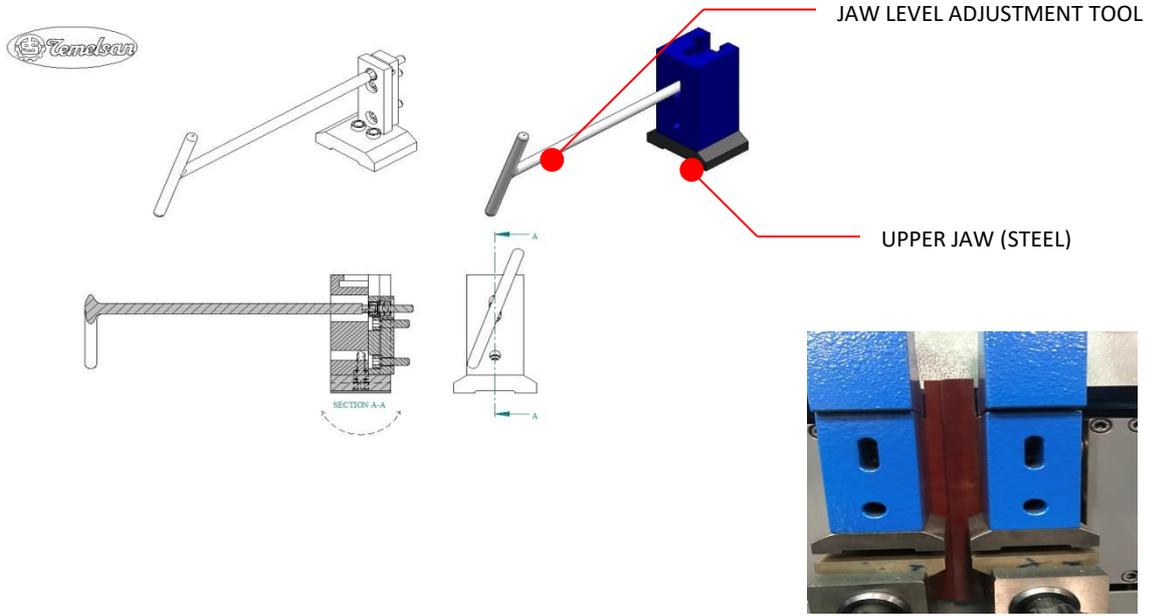
Turn the clamping handles to clamp.

Set the OSL, OSR, MSL and MSR stoppers to touch the band saw.

Screw the OSL, OSR, MSL and MSR stoppers.

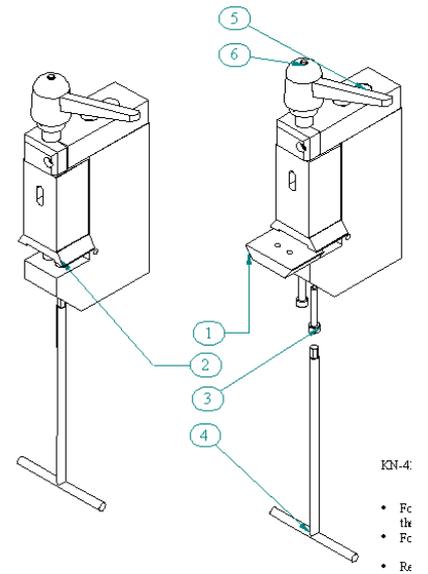
**Please check and service the Stoppers frequently!**



**SERVICING THE JAWS ( PLEASE SERVICE THE JAWS FREQUENTLY )**


3. unscrew the "Lower Jaw retaining screw (3)"
4. move up the Lower Jaw block (1)
5. pull out the "Lower Jaw" to front

6. unscrew the "Upper Jaw retaining screw"
7. move down the Upper Jaw block (2)
8. pull out the "Upper Jaw to front"



## 9. CLAMPING JAW GRINDING INSTRUCTIONS

The lower jaws (Bronze) -just to grind on top surface until any crack on weld edge is out  
-Both lower jaws have to be same thickness; it's recommended to grind it together as a pair

The upper jaws (Steel) -just to grind on bottom surface until any crack on weld edge is out  
-Both upper jaws should have the same thickness

We recommend to grind the surface of jaws frequently, that has the advantage of

- Better power connectivity
- Straight surface
- Higher weld precision

As earlier you take it out to grind, as less material have to be grinded, the life of jaws will increase.

## 10. INSTALLATION OF CLAMPING JAWS

Please make sure that the touch points between Jaws and Jaw-blocks are clean and free from grease.

When you place the Jaw to position it, check if all surface has contact, very clean between. Do not create the contact by tighten the screws.

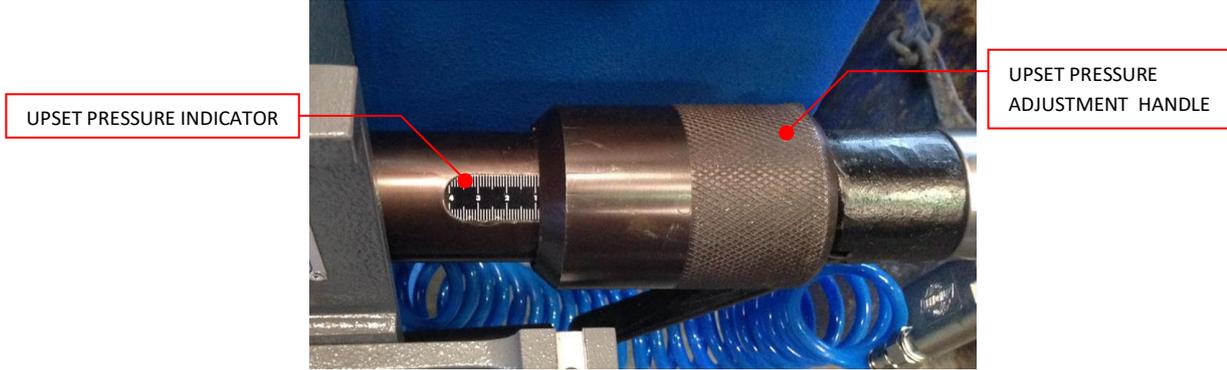
When fixing the screws, not too tight please!

## 11. CLAMPING DEVICE

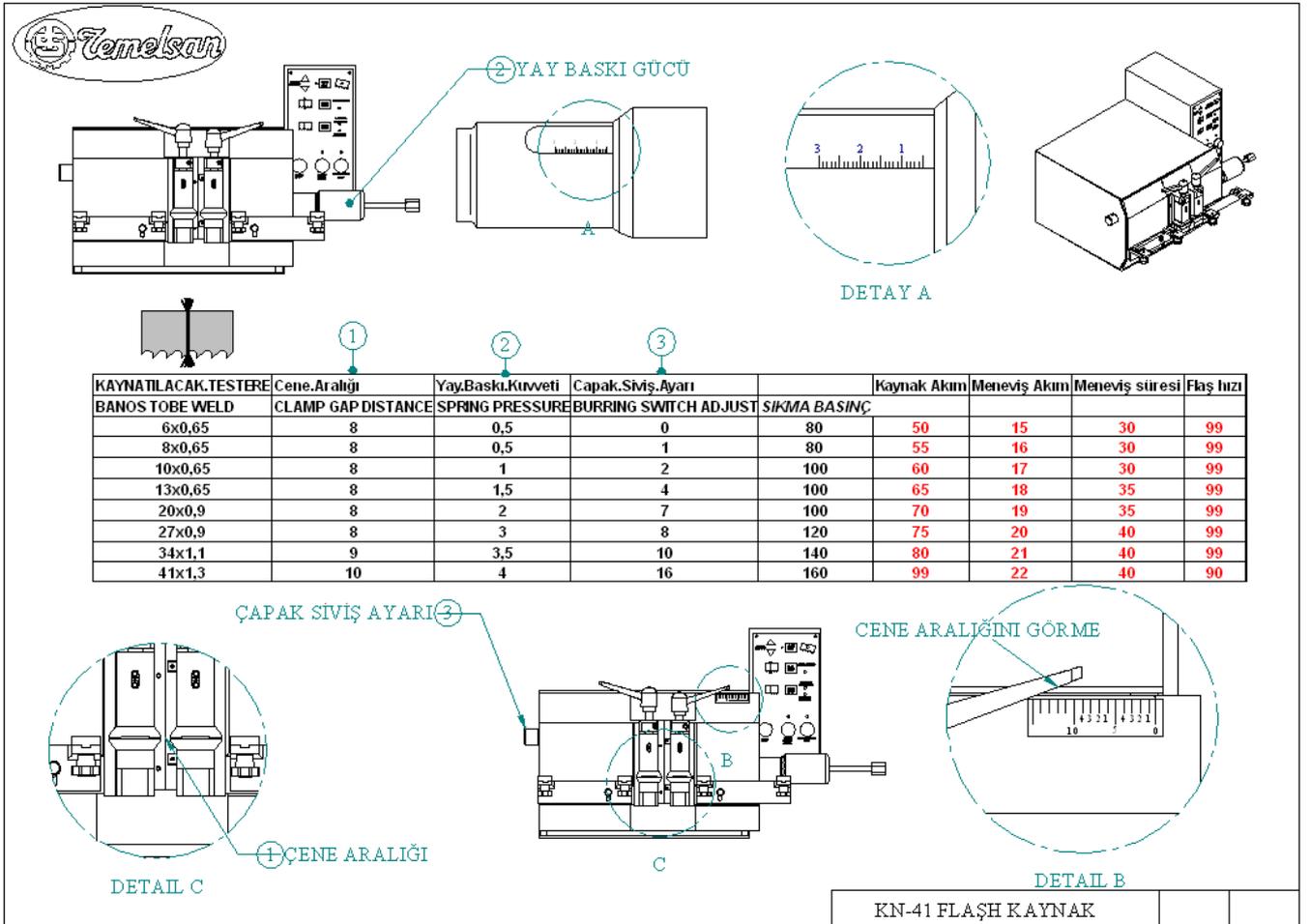
The clamping devices are Manual system to clamp Metal Band or Band Saw Blade for butt-welding procedure.

## 12. UPSET PRESSURE

Temelsan Machines are working with manual pressure procedure of Upset Pressure.



You can turn handle by following the table showed on below for adjust your upside pressure.



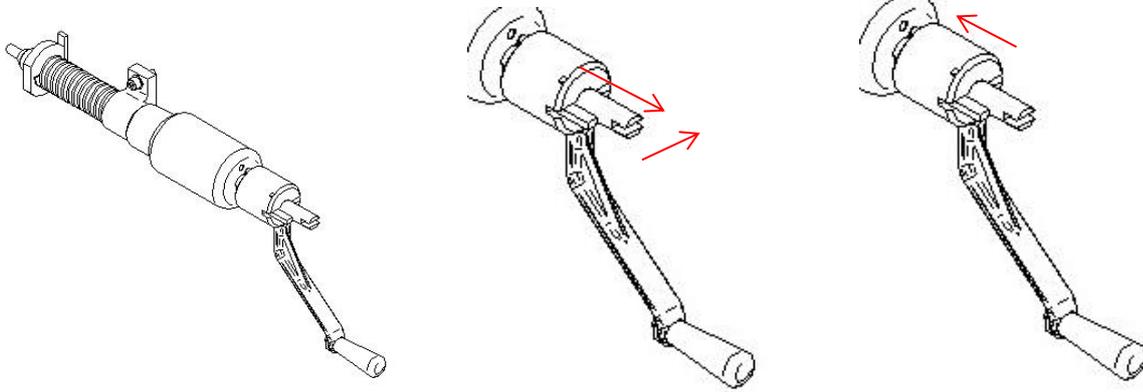
KAYNATILACAK TESTERE	Cene Aralığı	Yay Baskı Gücü	Çapak Siviş Ayarı	SIKMA BASINÇ	Kaynak Akım	Meneviş Akım	Meneviş süresi	Flaş İuzı
BANOS TOBE WELD	CLAMP GAP DISTANCE	SPRING PRESSURE	BURRING SWITCH ADJUST					
6x0,65	8	0,5	0	80	50	15	30	99
8x0,65	8	0,5	1	80	55	16	30	99
10x0,65	8	1	2	100	60	17	30	99
13x0,65	8	1,5	4	100	65	18	35	99
20x0,9	8	2	7	100	70	19	35	99
27x0,9	8	3	8	120	75	20	40	99
34x1,1	9	3,5	10	140	80	21	40	99
41x1,3	10	4	16	160	99	22	40	90

DETAY A

DETAY B

DETAY C

KN-41 FLAŞ KAYNAK

**USING THE ADJUSTMENT HANDLE**

C) HANDLE STAND BY  
POSITON

B) HANDLE JAW SPACE  
ADJUSTMENT POSITON

A) HANDLE UPSET PRES.  
ADJUSTMENT POSITON

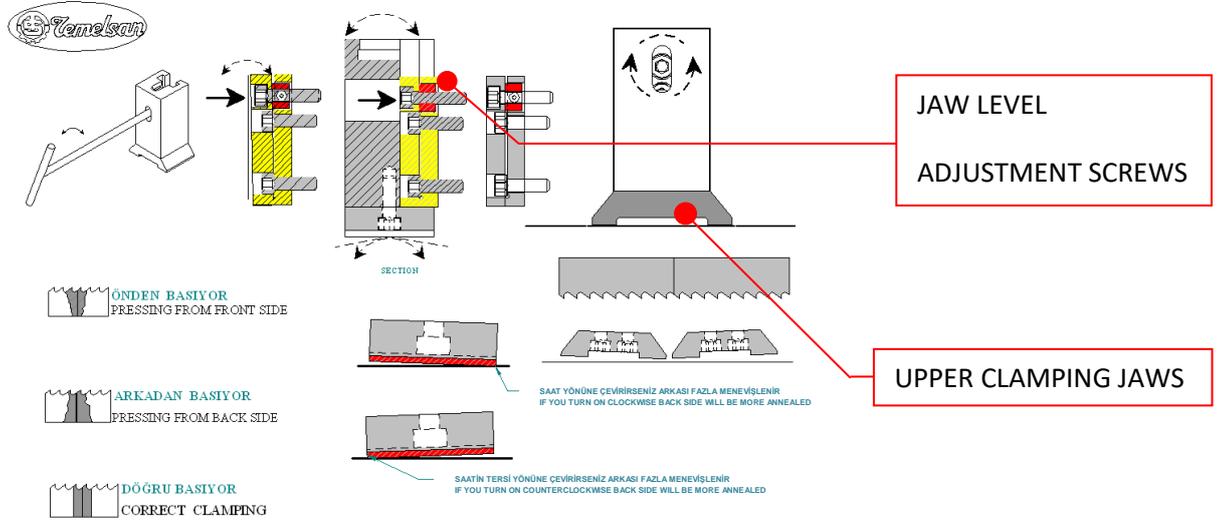
The handle is make you to adjust your jaw space or upset pressure value easier.

If you will like to use handle to adjustment your jaw space (B) pull handle on the right side and turn the pim to slot. When you set handle on this way if you turn the handle will adjust jaw space between two jaws.

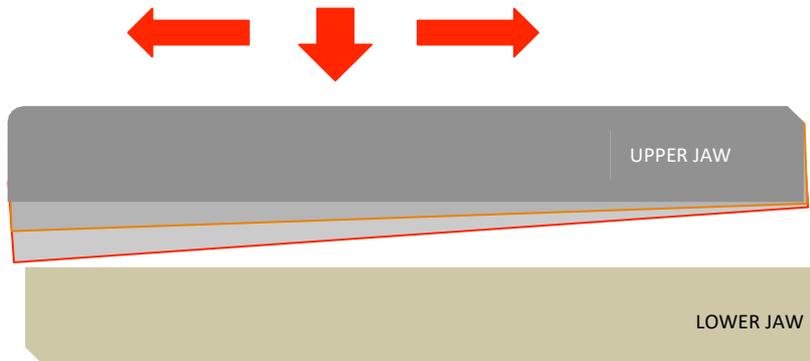
If you will like to use handle to adjust your upset pressure (C) push the handle on left side the pin has to be in to slot. When you set handle on this way if you turn the handle will adjust upset pressure on welding machine.

### 13. JAW LEVEL CALIBRATION (CLAMPING JAW ANNEALING PRESSURE POINT)

There is on both Clamping Jaw Blocks a Jaw Level adjustment Screws they makes the adjustment very easy.



With changing of Annealing Press Point we are able to clamp properly all different width of Metal-Band

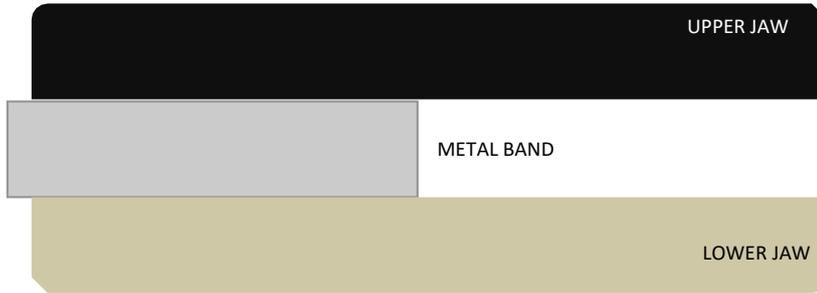


#### Band Clamping Pressure Point

Where the pressure is higher, there is more electric connectivity, so the heat we want to create for proper annealing is there as highest. The goal is to create similar heat on all width of Metal-Band.

The jaw blocks are designed to be able to clamp different widths of Metal-Band or Band Saw Blade

#### Metal-Band Large Width Positioning



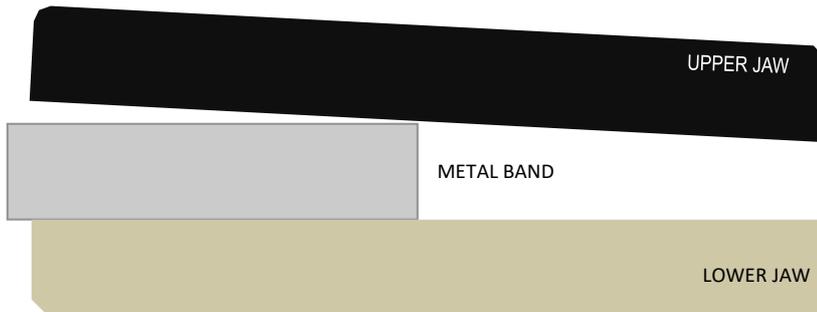
#### Metal-Band Small Width Positioning

### IMPORTANT TO KNOW!

For the Clamping Pressure of the upper jaws has to be screwed correctly in advance, in general is to know, as larger the band width as more clamping pressure can be needed.

What's happen when too high clamping pressure is adjusted.

In this case it's almost not possible to make a Jaw Level Calibration.



**Band Annealing Pressure Point** (Jaw Level Calibration)

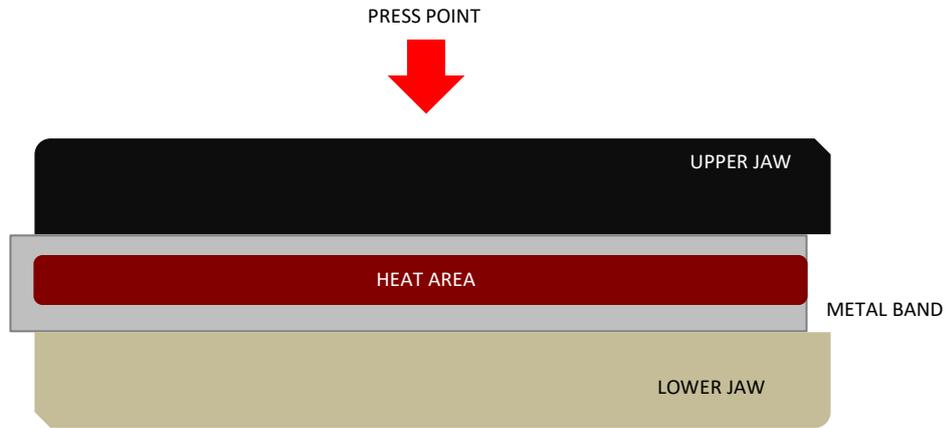
Clamping Pressure should be correct for each selected band-width.

When Clamping Jaws are on annealing position and using the annealing procedure the heat will show where the Annealing Press Point are.

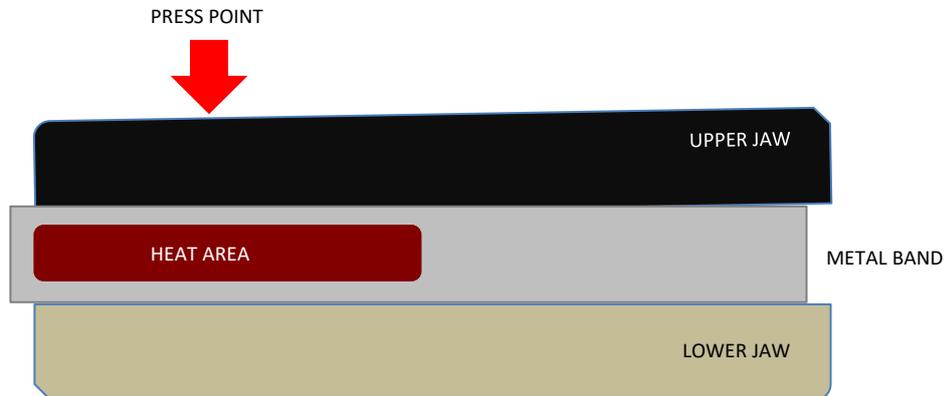
Where the pressure is, there is the electric connectivity higher, so the heat we want to create for proper annealing is there as highest. The goal is to create similar heat on all width of Metal-Band at the same time

like on picture # 1.

Picture # 1

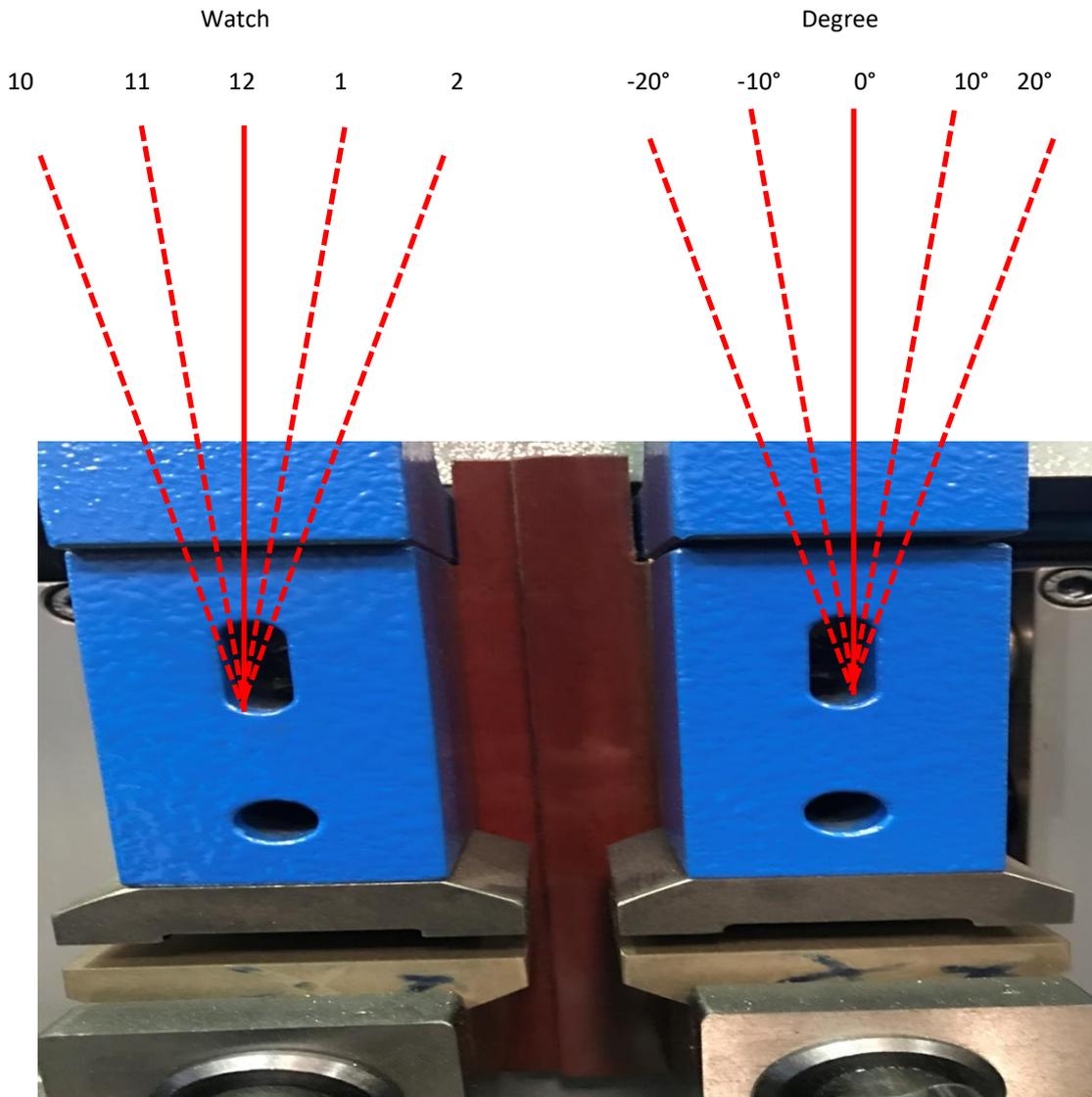


Picture # 2 **Improper Adjustment**

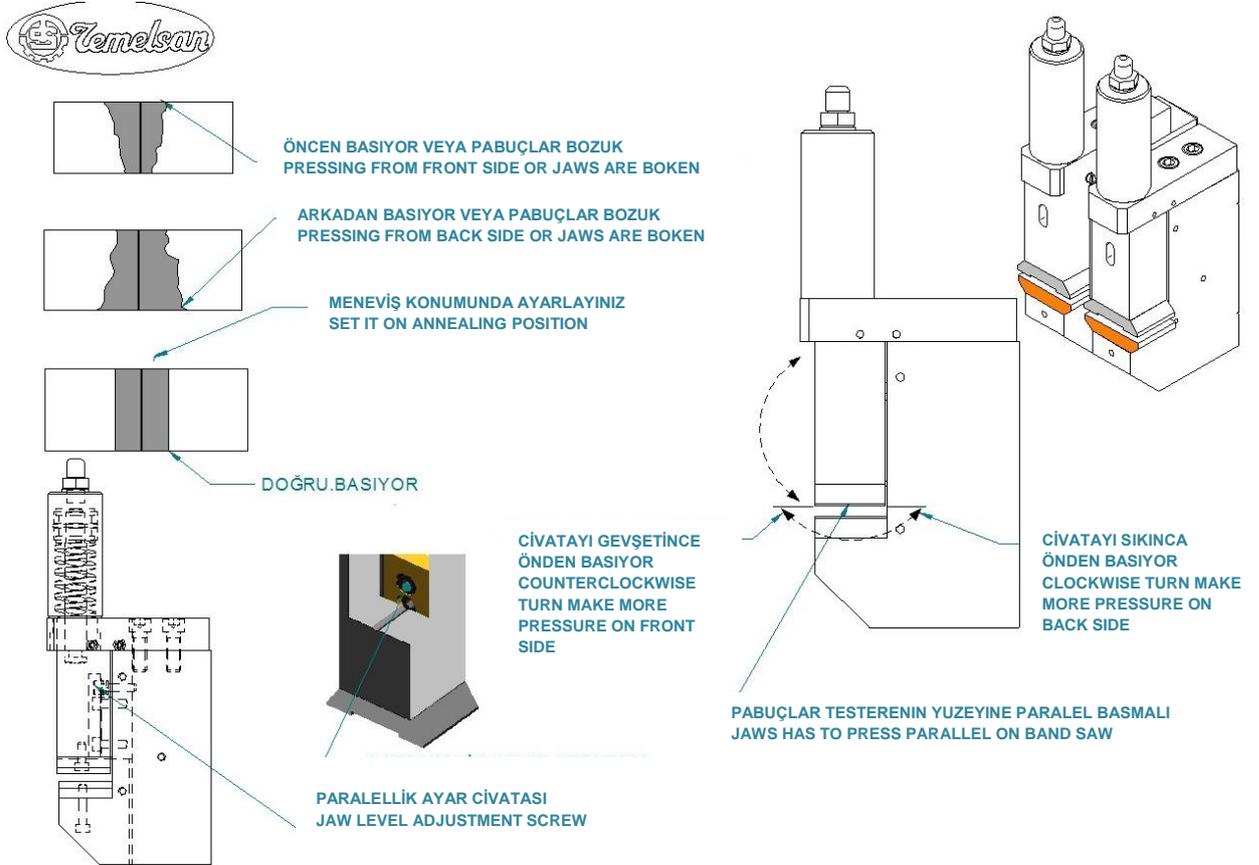


To keep similar Annealing clamping Press Point on both Clamping Jaws it's always recommended independently how tight the screws are turn able to work with an Allen key and using it as an dial like on a watch or dial indicator, in 5 minutes steps or 10 degree.

**IMPORTANT ALWAYS BOTH SCREWS ARE TO TURN AND ALWAYS SAME WAY THE SAME QUANTITY!**



## JAW BLOCK LEVEL ADJUSTMENT



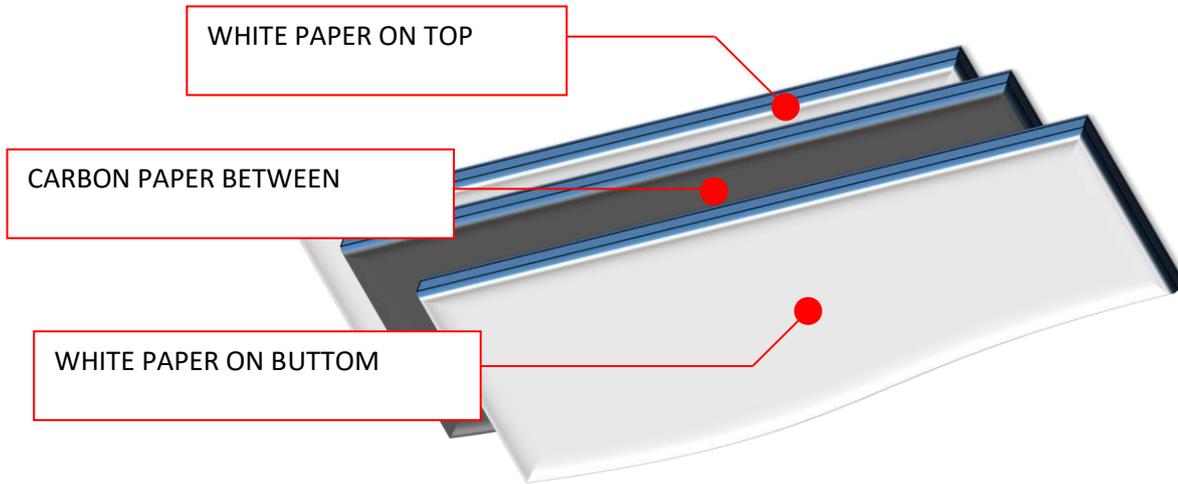
Turn the Jaw Level Adjustment Screw clock wise (to the right side) the Upper Jaw will create more clamping pressure on the front side. Turn the Jaw Level Adjustment Screw opposite direction (to the left side) the back clamping pressure between jaws will increase.

## CLAMPING JAW CALIBRATION BY CARBON PAPER

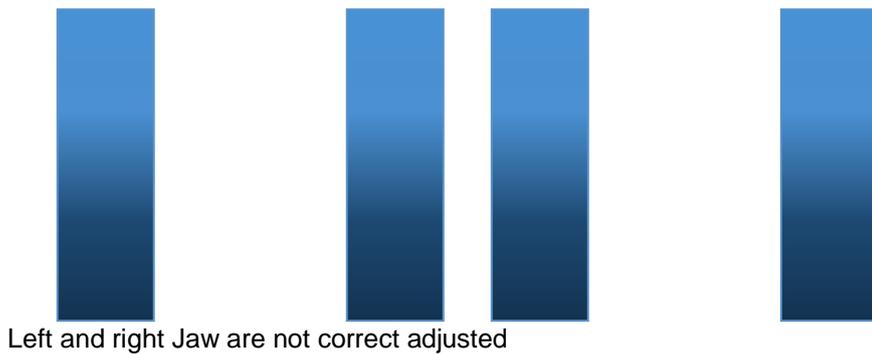
The calibration by Carbon paper brings more precision and is to use frequently after several position changings but for sure after Jaw replacement.

1. Position the Jaw Blocks to Annealing Ready Position
2. Place the carbon paper package between jaws
3. Clamp both Jaws and wait few seconds
4. Take out the carbon paper package and study the picture
5. Adjust the jaws until you gain similar clamping picture over all width of both jaws
6. Place an 27mm Band, run an Annealing and watch where the heat starts, back edge or teeth edge side, depends adjust both Jaws to center the heat start to middle of Band.

### Carbon Paper Sandwich



The Carbon Paper Print is showing similar print picture on both clamping jaws as an perfect similar adjustment.



Left Jaw too much back pressure or the right jaw too much front pressure, depends the band width

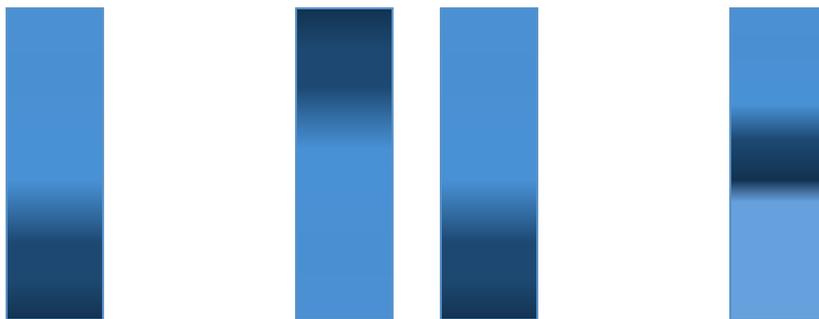


Left or right Jaw is not correct adjusted

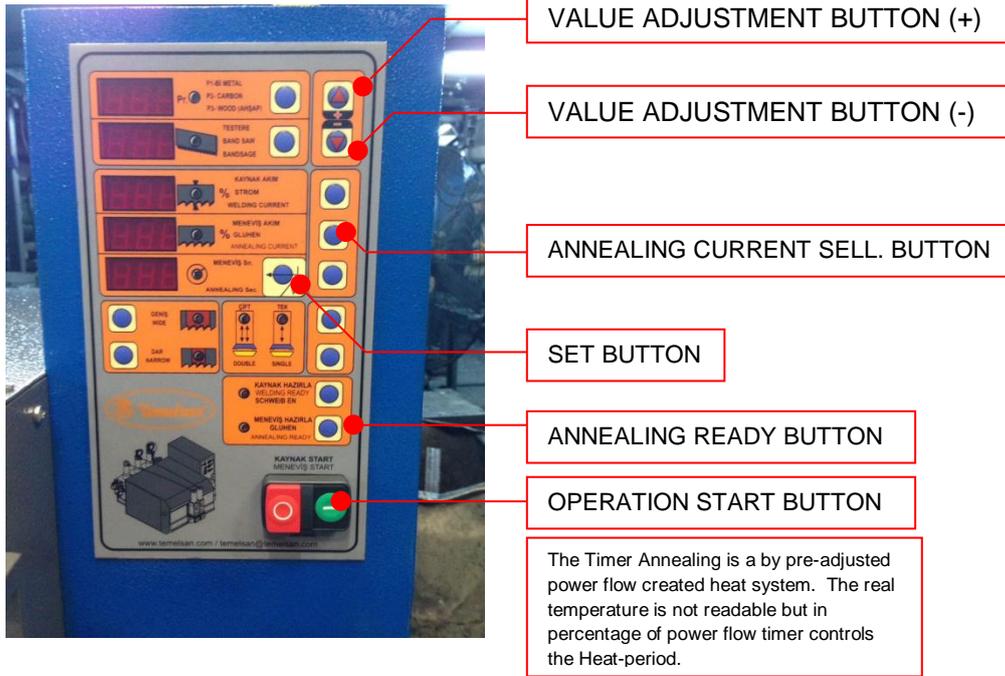
Cross clamping; this type of adjustment can show when annealing an perfect center adjustment but the weld is not precise. Breakage it's possible.



The Jaws have to be re-grinded with a high precision surface grind, have to be checked about deformation and correct fixed



## TIMER ANNEALING



## HOW TO USE THE TIMER ANNEALING

1. Position the Clamping Jaws to Annealing ready position
2. Place the Band to Anneal inside the jaws and clamp it (think about Jaw Leveling)
3. Adjust the ANNEALING SEC. between 030 and 060
4. Select but do not confirm the ANNEALING CURRENT
5. Press START button
6. While machine is start to make annealing you can use “+” and “-“ buttons to adjust annealing current.

## SUMMARY OF FUNCTIONALITY TYPES

### Explanation of used Technical Names

- Welding:** The Welding means only for creating the putt-weld without any Annealing.
- Annealing:** It is the procedure after Weld to soften the Burr and Welding Area for making Metal elastic and Grind able. Without Annealing the weld would broken like glass.

### Manual Operation;

#### Welding

Stop by Self when welding only is done, Jaws keeps clamped.

#### Annealing

The Operator has to unclamp the jaws, for annealing position operator has to press annealing ready button, the operator has to clean by press-air between the jaws, has to place the blade well centered into jaws, has to clamp the jaws and start the Annealing Procedure.

## WELDING STOP POINT

The welding STOP point is that position when the power for weld flash must be switched OFF. This position adjust on a manual wheel on left hand side of the Butt-Welding machines for Band Saw Blades.

The welding STOP point is dependent by Jaw-Weld Spacing (pre-adjustment), by Upset-Pressure level and by Weld Power. If one of those points will be different or has an inconsistent flow, than it could be a need to readjust the Welding STOP point.

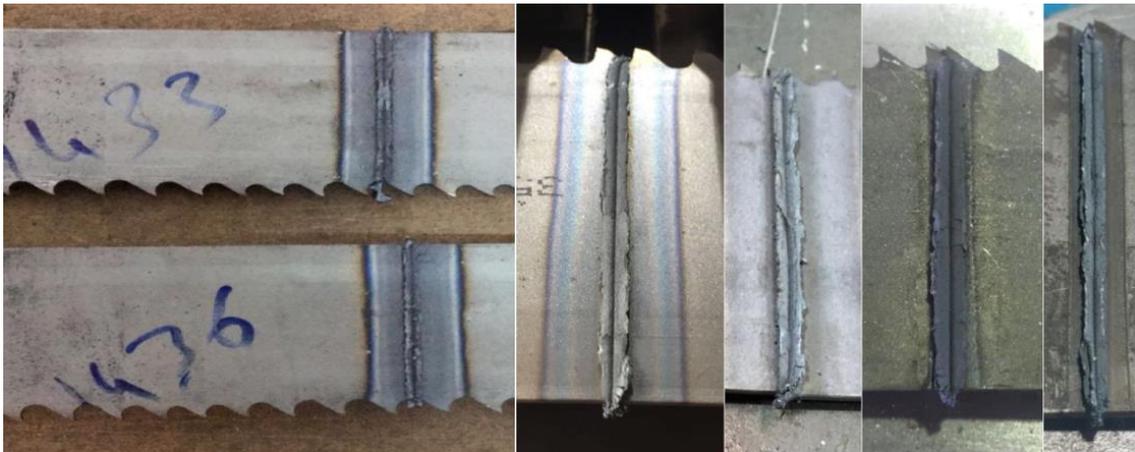
The consistent flow of POWER, the consistent and the manual adjusted Jaw- spacing are very important points and needs special view.

You can use the table on below picture for the stop point adjustment. (BURRING SWITCH)

BANOS TO BE WELD	CLAMP GAP DISTANCE	SPRING PRESSURE	BURRING SWITCH ADJUST
6x0,65	8	0,5	0
8x0,65	8	0,5	1
10x0,65	8	1	2
13x0,65	8	1,5	4
20x0,9	8	2	7
27x0,9	8	3	8
34x1,1	9	3,5	10
41x1,3	10	4	16



Few well welded Burr Pictures (different Band widths)

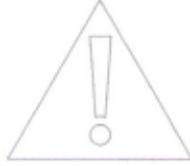
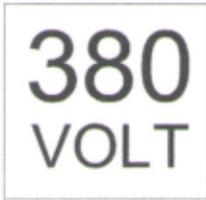


## **QUICK MANUAL CHART**

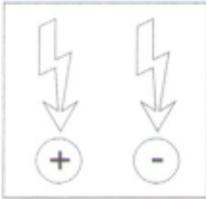
Follow the steps and run a successfully weld!

1. Switch ON the **“Main Power Switch”**
  - Press **“BLUE RESET BUTTON”**
2. Push the **“Welding Ready Button”**
3. Select the **Program #** at Operator Panel
4. Select the **“Band Width”** at Operator Panel
5. Adjust the **“Welding Space”** by hand wheel
6. Adjust the **“Up-Set Pressure”** by hand wheel
7. Push the **“Annealing Ready Button”** the Jaws will move
8. Adjust the **“Stoppers”** for right tooth gullet deepness
9. Adjust the **“Outside Stoppers”** (outside stoppers 2x  $\approx +0,1\text{mm}$ )
10. Run the **“Jaw Level Calibration”** read manual
11. Push the **“Welding Ready Button”**
12. Position a band, Clamp the Jaws
13. Press start button for welding
14. Unclamp the jaws and press **“Annealing Ready Button”**
15. Position a band, Clamp the Jaws
16. Press start button for annealing
17. Unclamp the jaws
18. Let cool down your weld after machine has finisher the procedure
19. Measure the high/low with Temelsan **Camber measurement tool**
20. Grind carefully both side of weld
21. Grind carefully the Gullet
22. Grind carefully the back edge of band
23. Test the Weld by **Bending Tester** from Temelsan
24. If Weld quality has passed the Tests, Start your manufacturing



**SYSTEM DRAWINGS****ATTENTION****SAFETY STIPULATIONS BEFORE INSTALLATION OF INPUT POWER**

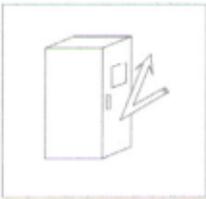
MAKE SURE THAT THE MAINS VOLTAGE IS 380 VOLT



MAKE SURE THAT THE ELECTRICAL UTILITIES IS PROPER TO USE



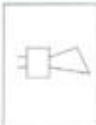
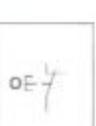
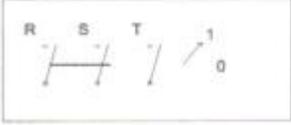
MAKE SURE THAT THE EARTH CONNECTION IS DONE BY A QUALIFIED ELECTRICIAN  
THE MANUFACTURER HAS NO RESPONSIBILITY IF THE MACHINE IS INTENDED TO BE  
USED WITHOUT EARTHING

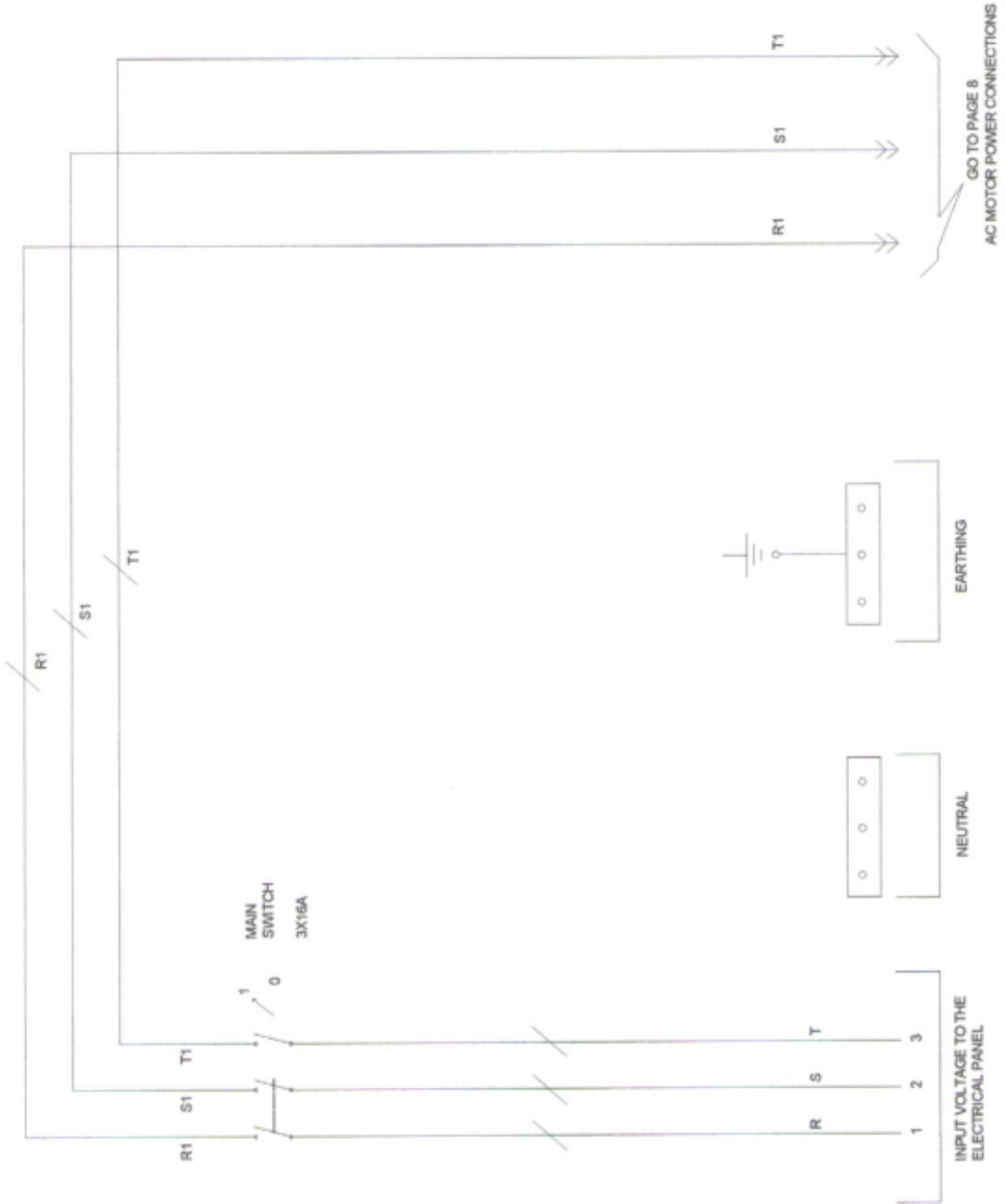


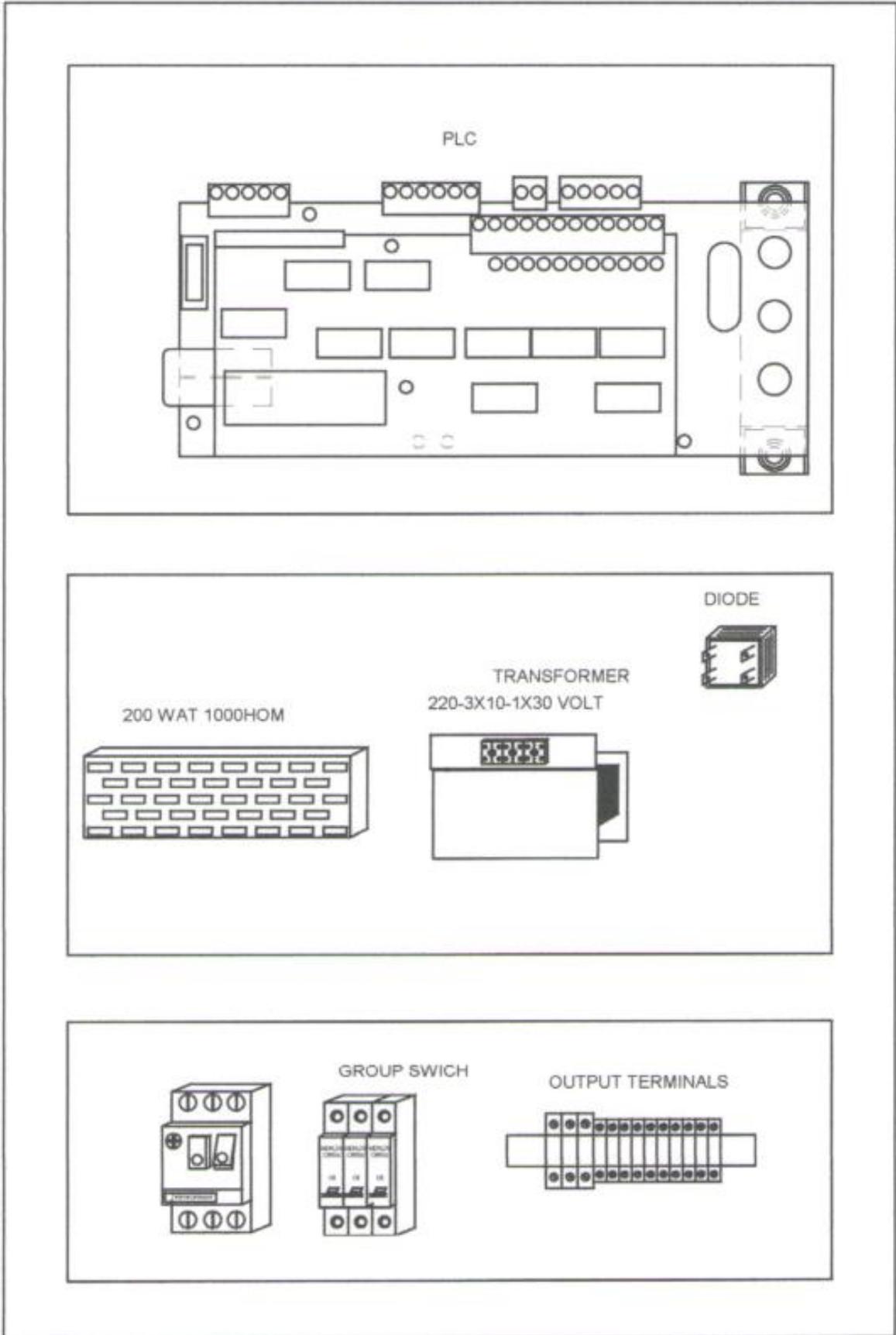
KEEP THE ELECTRICAL CABINET IS ALWAYS CLOSED ALL THE TIME TO PROTECT FROM THE  
FOREIGN OBJECT AND INTERVENTION BY 3RD PARTIES

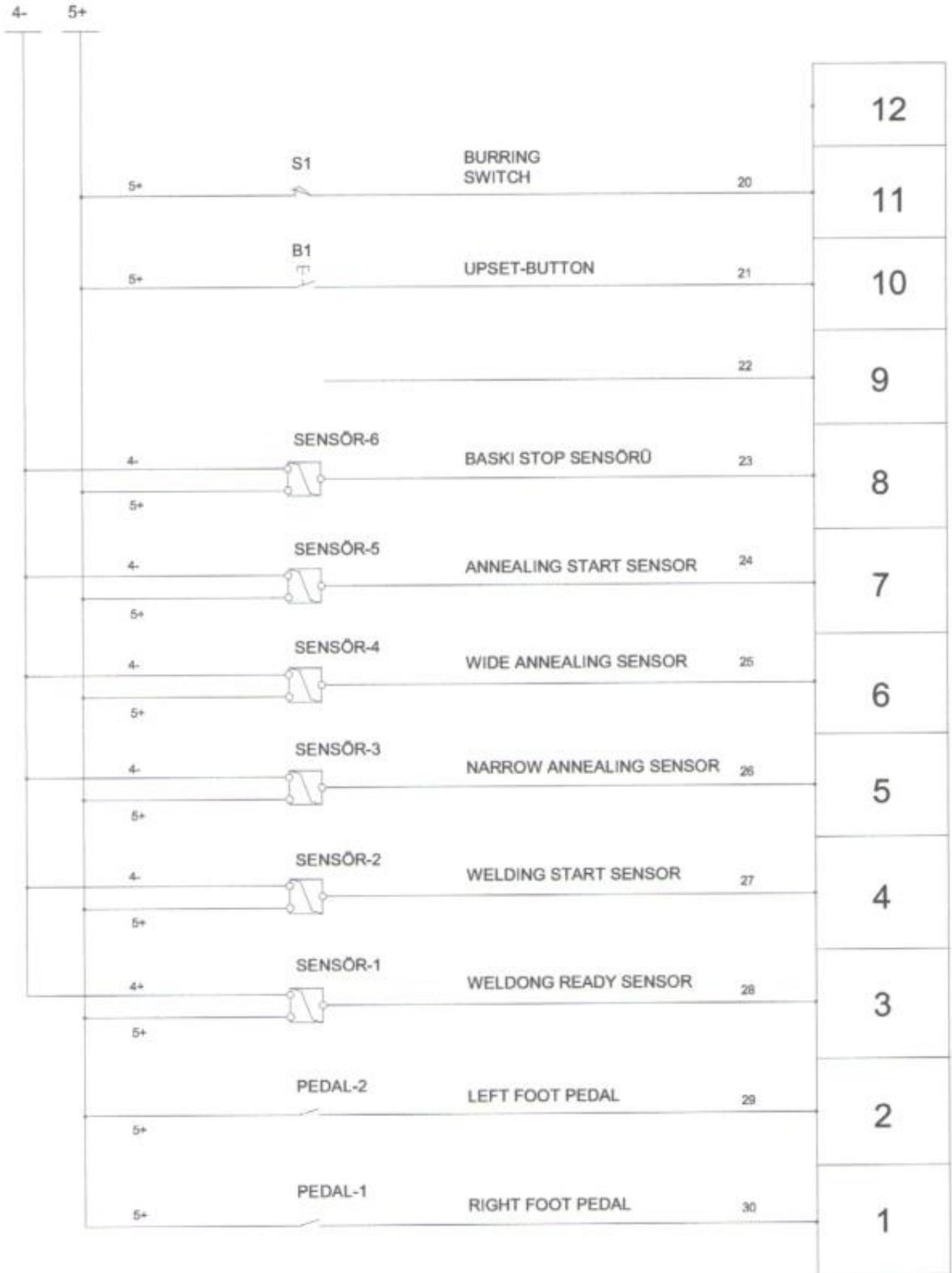


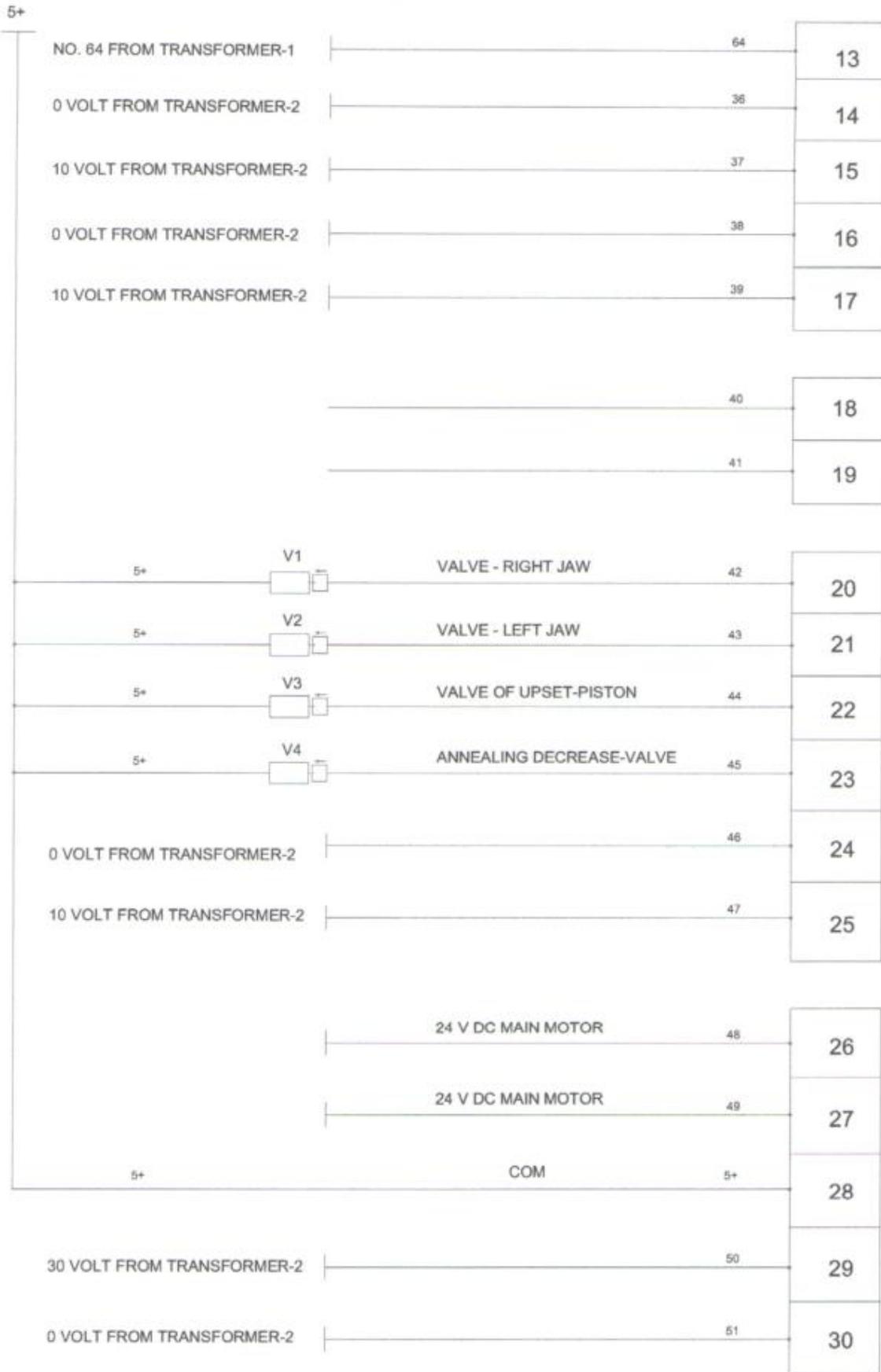
**ATTENTION !**  
IF NOT OBEYED THE SAFETY STIPULATIONS, THERE ALWAYS BE A POSSIBILITY OF DANGER!  
UNDER SUCH CIRCUMSTANCES THE MANUFACTURER DOES NOT ACCEPT ANY RESPONSIBILITY  
BECAUSE OF THE DAMAGE CAUSED

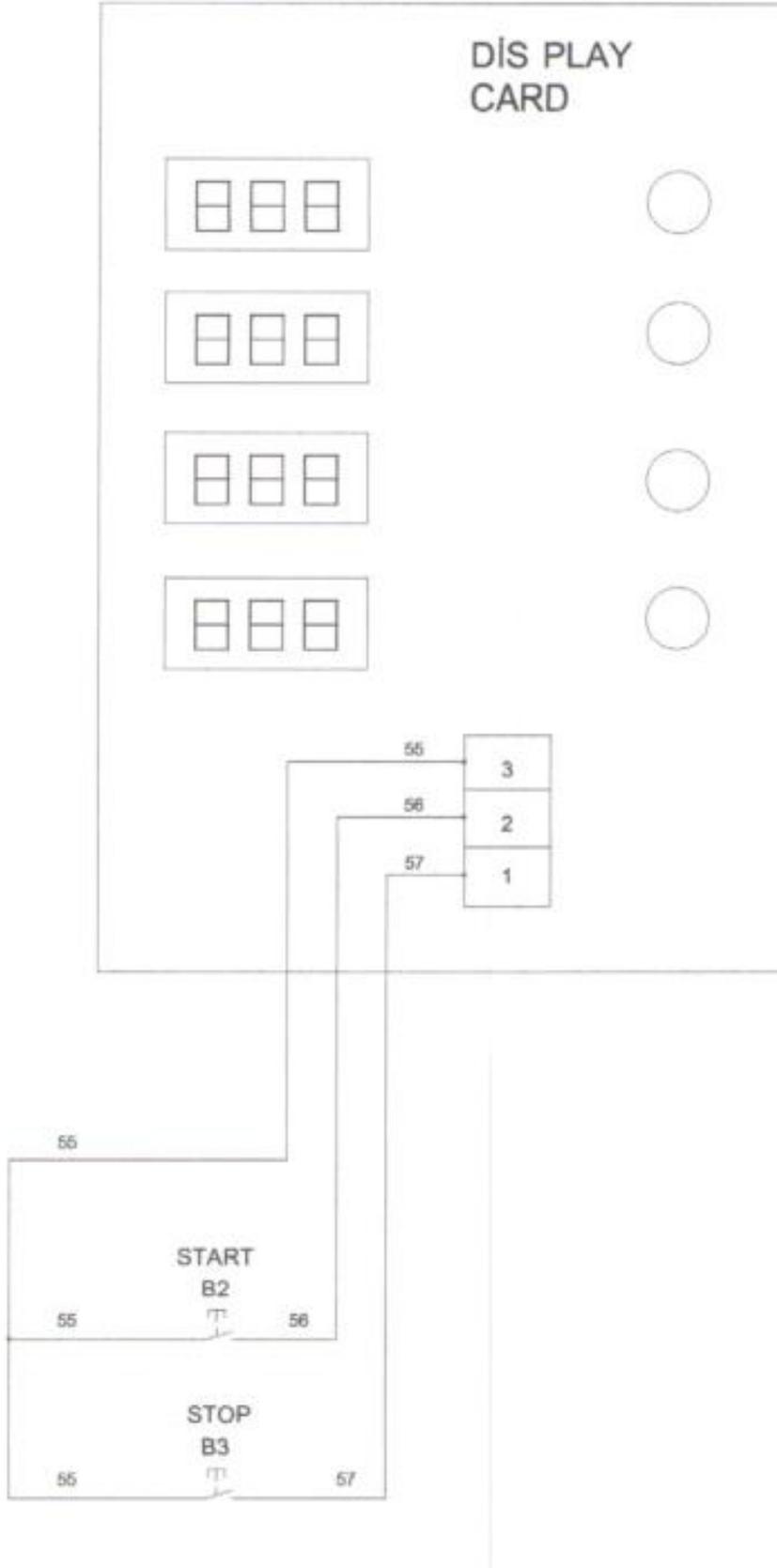
NODES		LOCKED MUSHROOM TYPE OF BUTTON	
TERMINAL CONNECTION		OPEN SWITCH	
EARTH CONNECTION		CLOSED SWITCH	
LAMB		VENTILATION OF THE CABINET FAN	
PLUG CONNECTION		BUZZER SOUND	
HYDRAULIC VALVE WINDING		MOTOR SAFETY THERMIC CONTACTS OPEN	
OPEN CONTACT		MOTOR SAFETY THERMIC CONTACTS CLOSED	
CLOSED CONTACT		FUSE	
CLOSED BUTTON		MAIN SWITCH	
OPEN BUTTON		OPEN BUTTON ILLUMINATED	
SENSOR		VALVE WINDING	

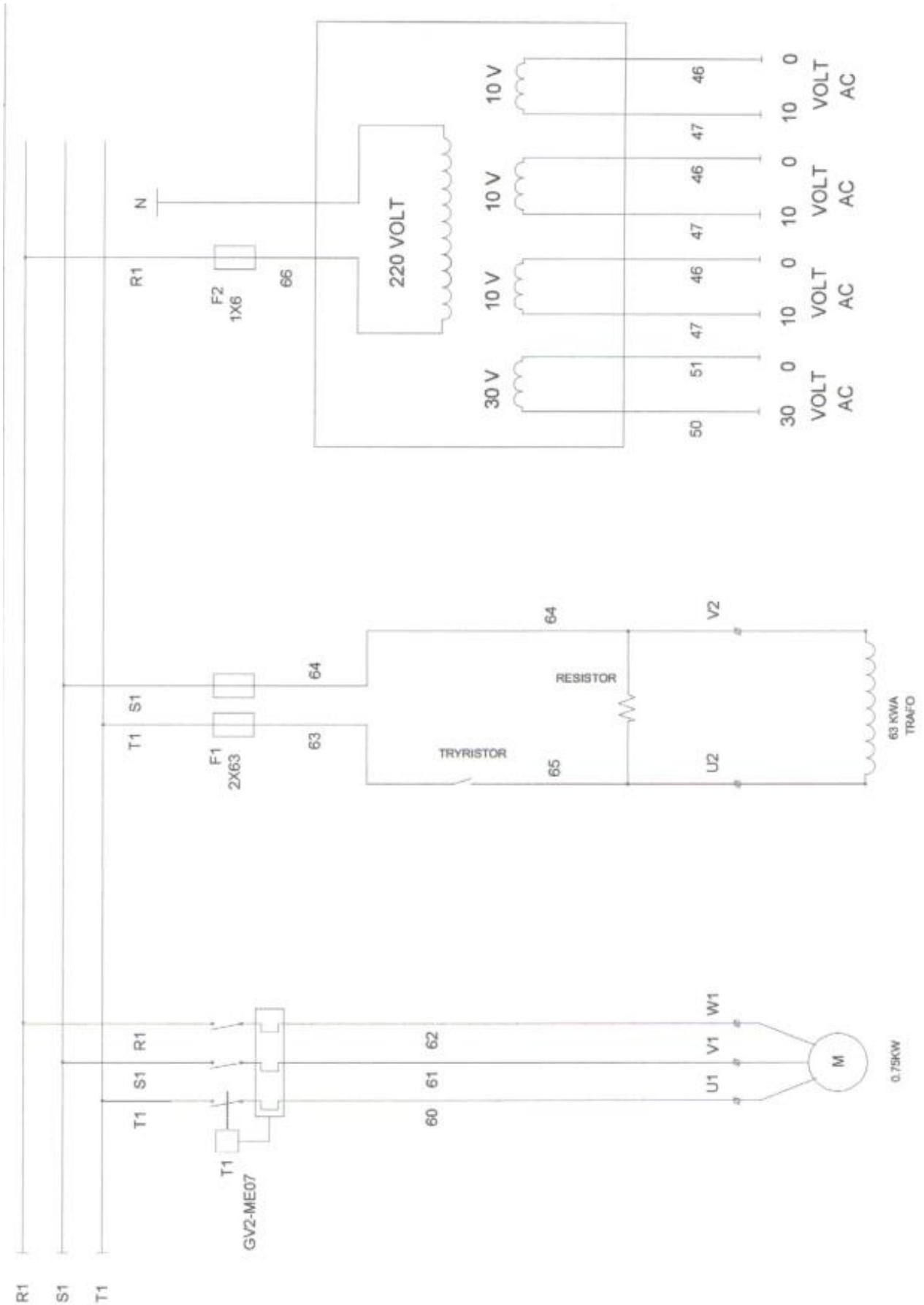


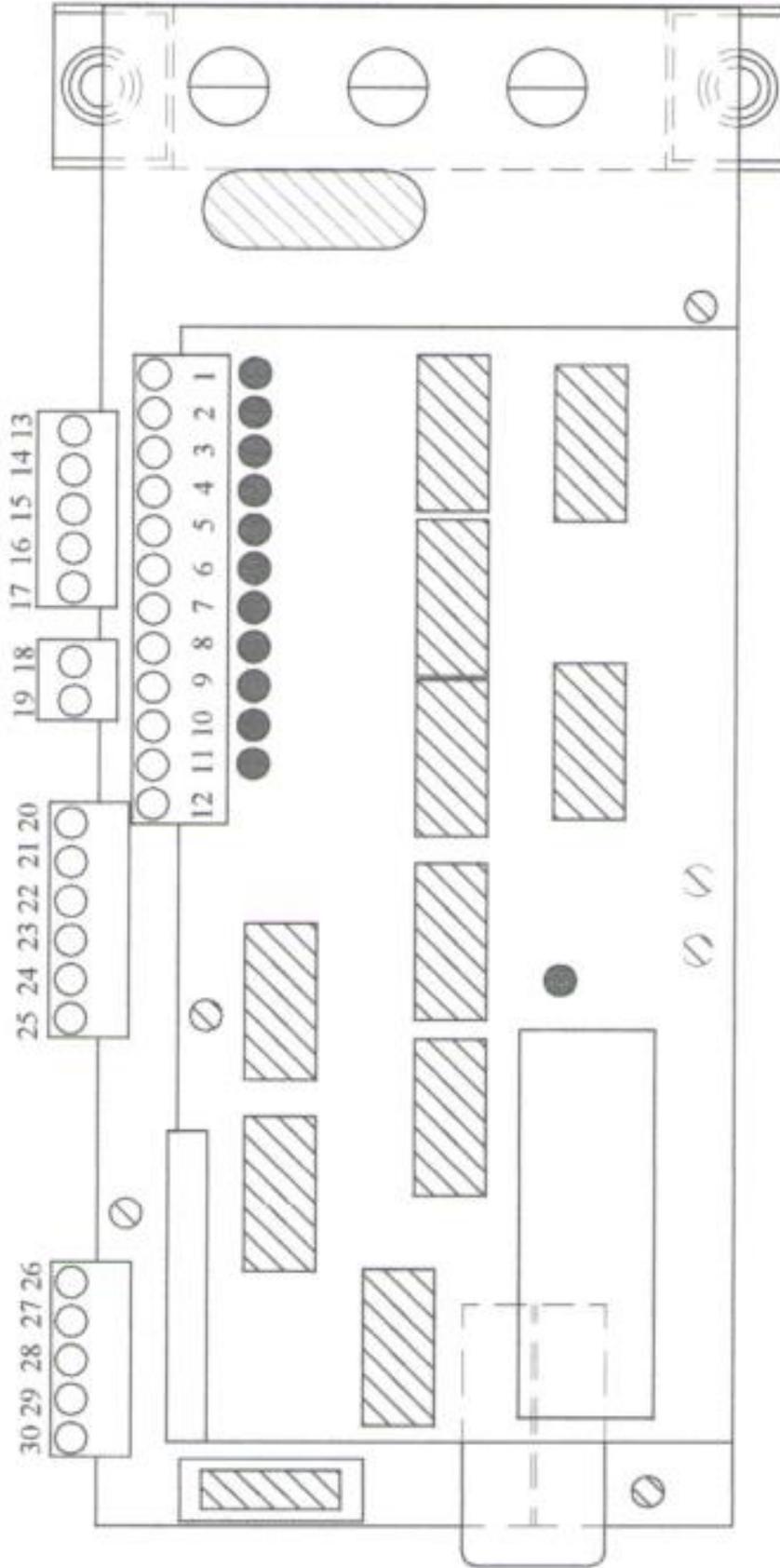




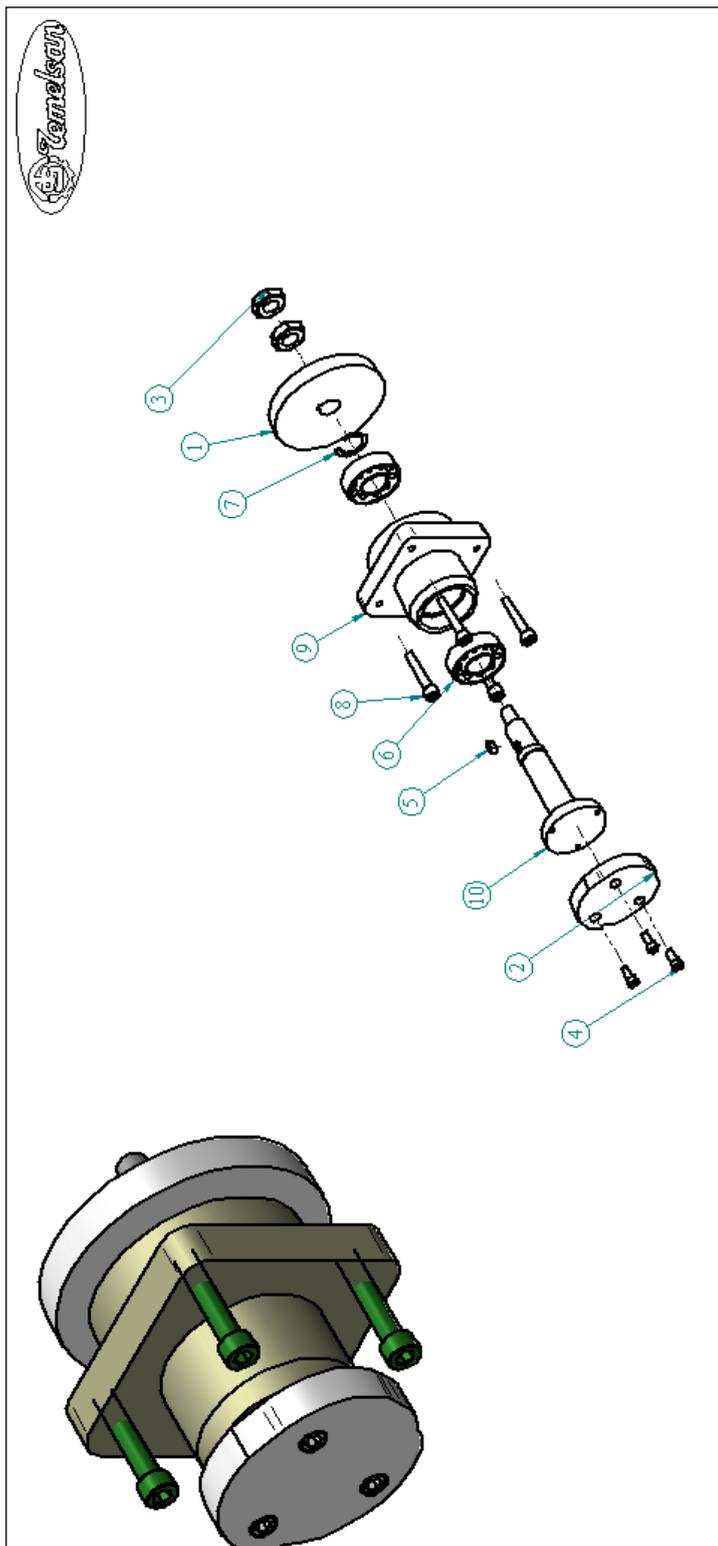








**SPARE PART DRAWINGS**

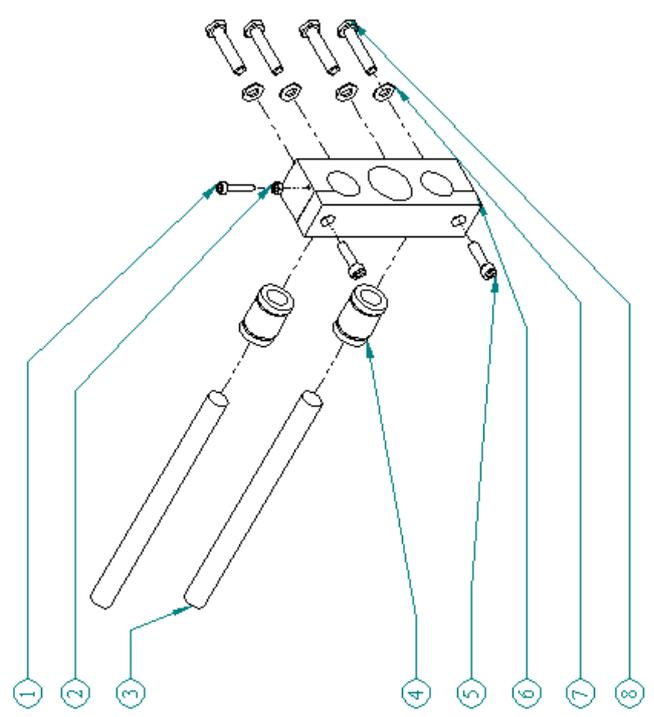




MALZEME	ADET	TARİH	ÜNİVAN	ADI SOYADI	MZA
ÖLÇEK		ÇİZEN	MAK.TEK.	Mehmet TEMEL	
		KONTROL	MAK.MÜH.		
		PARÇA ADI	RESİM NO.		
			MT-YATAK-GRUBU-KN41-DİSLİLLİ.4ft		
			NOT : Sıhhiyeen Parçları ve Paftası 0.5mm Altı.		

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2	KAM-022004-1.par	1	
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4	Im6x15.par	3	PICV-615
5	5x15TTE.par	1	
6	6205.par	2	
7	SML25.PAR	1	
8	IM8X55.par	4	
9	KN41-MT-ANA-YATAVLEDİSLİLLI.par	1	
10	ED-ANA-KAFA-KAM-DİSLİLLI-MIL.par	1	



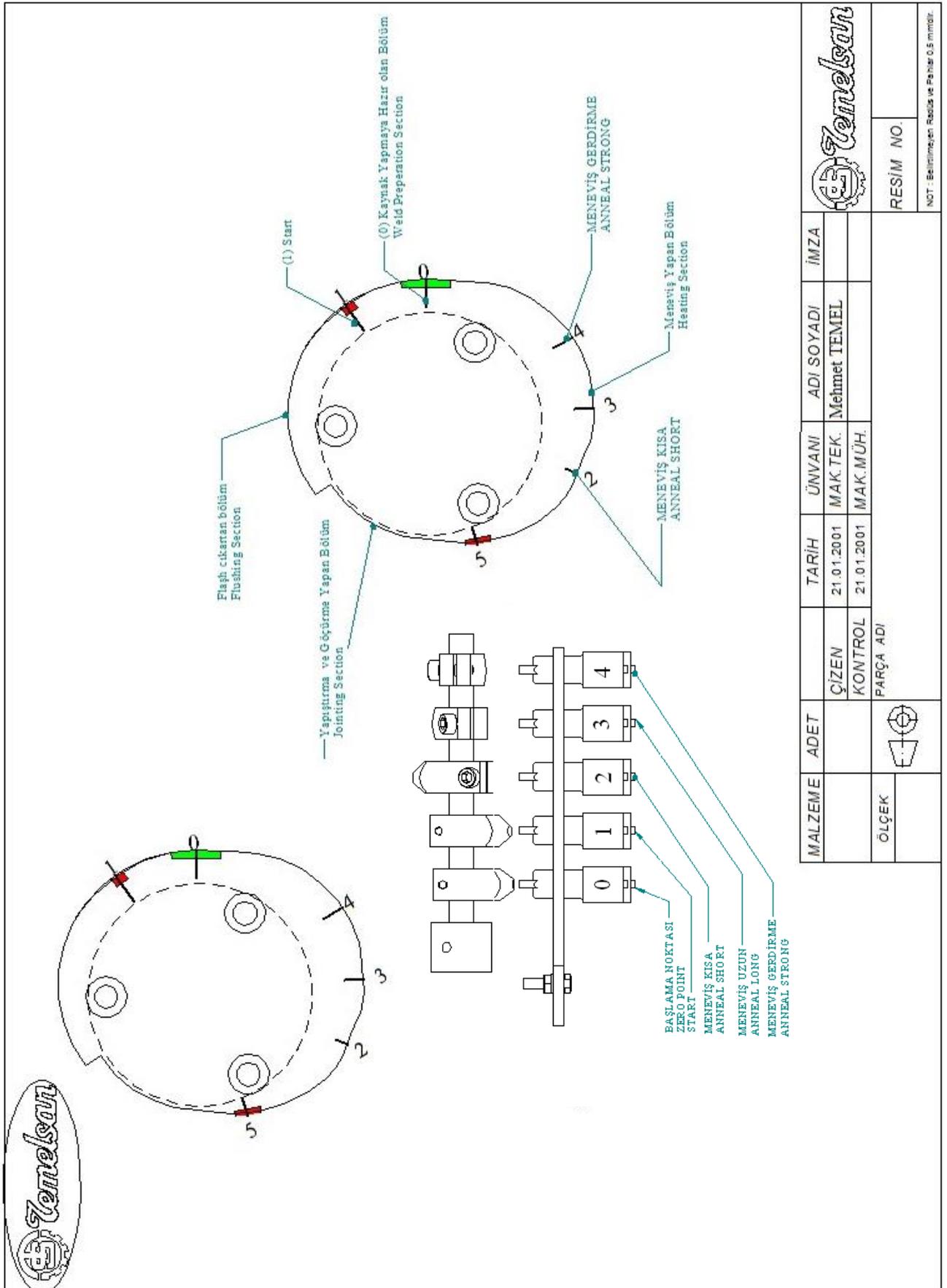


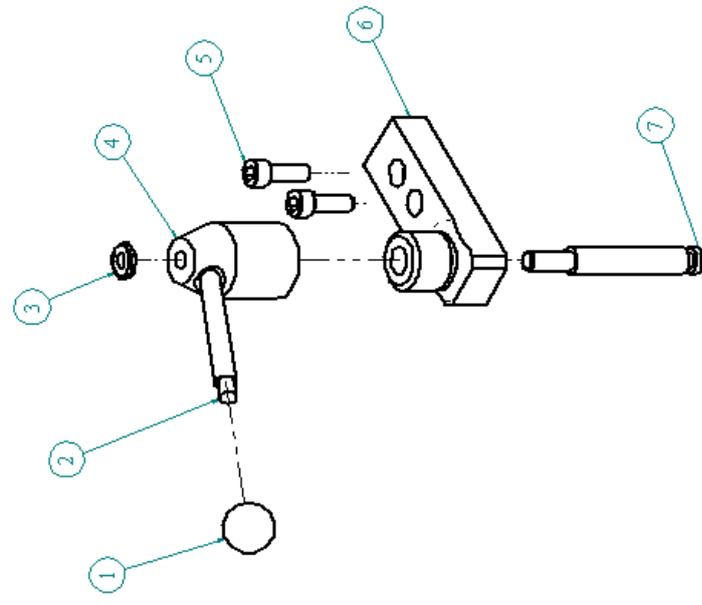
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		PARÇA ADI	21.01.2001	MAK.MÜH.		
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						RESİM NO.

NOT: Belirtilmeyen Parçalar Fakat 0.5mm İli.

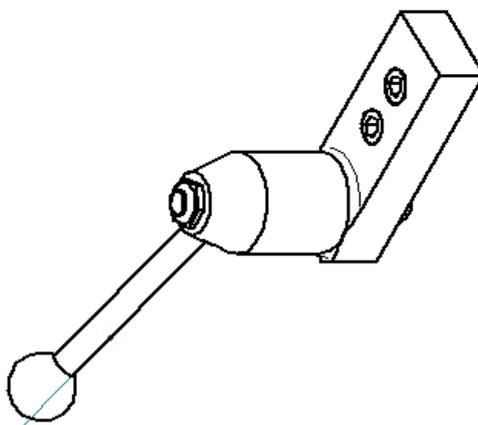
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4	KB S2032.par	2	PRUL4120
5	IM8X30.PAR	2	
6	RUL-YATAVI-SAV-KN41.par	1	YK41101
7	Plm10.par	4	PPUM10
8	ABM10X50.par	4	







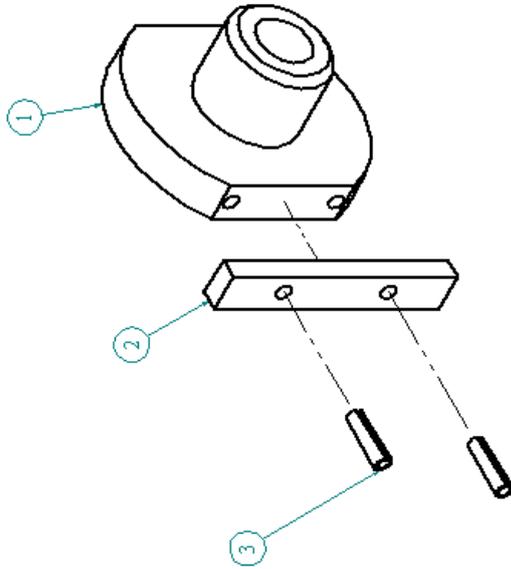
REÇETE ADI TES SIKMA GRUBU MANUEL (YENİ)  
 REÇETE KODU KN41-129-MM  
 STOK KODU MKN41-TS10



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3	SM12.par	1	PSO-M12
4	VIDA-MILI-YATAVI-MN-SOMUNU.par	1	YK41207
5	İM10X30.PAR	2	PICV-1030
6	VIDA-MILI-YATAVI-MN-KN41.par	1	YK41206
7	ÜST-PISTON-MN-VIDA MILI.par	1	YK41209

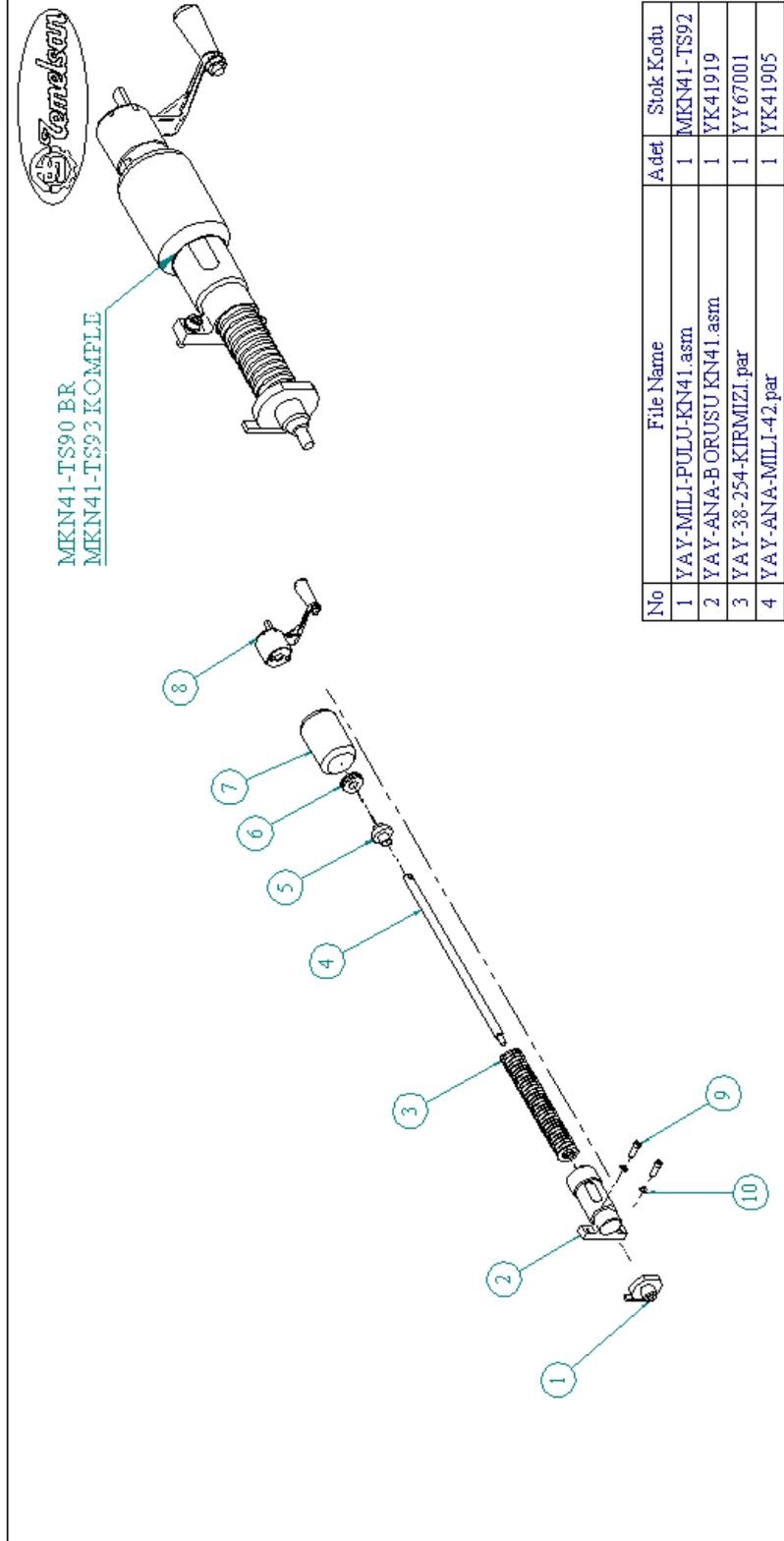
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		PARÇA ADI				

	RESİM NO.
NOT: Belirli olmayan Parçaların Faktür 0.5mm İli.	



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MKN41-TS90 BR  
MKN41-TS93 KOMPLE

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3	YAY-38-254-KIRMIZI.par	1	YY67001
4	YAY-ANA-MİLİ-42.par	1	YK41905
5	YAYRULMANYAT AVI.par	1	YK41910
6	BT51204.par	1	PRU51204
7	YAYANAKOVANI.par	1	YK41901
8	KOL-SIKMA.asm	1	MKN41-TS91
9	İM8X25.par	2	PİCV-825
10	Pİtr8.par	2	PPULM8

MALZEME	ADET	ÇİZEN	TARİH	İMVA	ADİ SOYADI	İMZA
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		PARÇA ADI				

RESİM NO.
YAY-BASKI-GRUBU-KN41.dft



NOT: Belli bir yerden ölçülür ve Patlatma 0.5mm dir.

