



Temelsan[®]

**DK 1500 LS
PLC CONTROLLED VERTICAL
BANDSAW MACHINE**



INDEX

1. ABOUT US	4
2. CONDITIONS OF OPERATION	5
3. SAFETY STIPULATIONS	5
4. SAFETY SIGNS ON THE MACHINE AND THEIR MEANINGS	6
5. GENERAL DESCRIPTION OF THE MACHINE	7
5.1. Description of the Machine.....	7
5.2. Expansion of the Model Name.....	7
5.3. List of Machine Models	7
5.4. Machine type and Specifications	8
5.4.1. Machine type: DK-1500-LS.....	8
5.4.2. Machine specifications.....	8
6. Sample of Machine Name Plate	9
7. GENERAL PRINCIPLE OF OPERATION	10
8. PREREQUISITS OF TRANSPORTATION	11
8.1. Transportation style.....	11
8.2. Precautions.....	11
8.3. Conditions for transportation	11

TEMELSAN MAKİNA SAN. VE TİC. LTD. ŞTİ.

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8.4. Storing Conditions	11
9. INSTALLATION AND OPERATIONAL INSTRUCTIONS	12
9.1. UNLOADING	12
9.2. INSTALLATION	13
9.3. OPERATIONAL INSTRUCTIONS	15
9.3.1. Operation of the Machine	15
10. TRAINING	16
11. SPARE PART LIST	16
12. SERVICE	16
13. PLANNED MAINTENANCE CHART	17
13.1. DAILY MAINTENANCE	17
13.2. WEEKLY MAINTENANCE	17
13.3. MONTHLY MAINTENANCE	17
13.4. BI-ANNUAL MAINTENANCE	17
14. TROUBLESHOOTING	17
15. GUARANTEE CERTIFICATE	22
16. DECLARATION OF CONFORMITY	Hata! Yer işareti tanımlanmamış.
CONTROL PANEL	24
USER LOGIN AND LOGOUT	25
PASSWORD CONFIGURATION	33
I-O TRACKING PAGES	38

ALARM & WARNING LIST AND TROUBLESHOOTING.....	47
FUNCTION OF MANUAL HYDRAULIC VALVE	54
Given Tention to the bandsaw blade :	54
Loosen Tension on bandsaw blade and change the blade :	55
BLADE CHANGE INSTRUCTION	55
APPENDICES	55
<i>Appendix 1</i> Exploded Views and Technical Representation of Parts or Main Units	56
FREE WHEEL AND SHAFT	56
MAIN BLADE MOTOR SHAFT.....	57
TENTION WHEEL AND SHAFT	58
RACK (GUIDE POST)	59
BLADE GUIDES	60
HYDRAULIC UNIT	61
TENSION VALVE	62
BALLSCREW AND SERVO MOTOR.....	63
<i>Appendix 2</i> Electrical Diagrams	65

1. ABOUT US

Temelsan, by the in-depth experience in the business, utilizing the latest technology sustains the continuous production of machines.

Temelsan gained a unique status in production of flash butt welding machines beside the manufacture of bandsaw machines all around the world. There are numerous customers who are using Temelsan brand flash butt welding machines; not only the bandsaw blade manufacturers and distributors but also GRP pipe manufacturers utilizing filament winding method.

Temelsan as being family owned company and established in 1976 started the business with the production of vertical bandsaw machines which are used for accurate and mass production cutting in the business fields such as automotive, aerospace, household-related, etc.

Our own products

Block/Plate Cutting Vertical Bandsaw Machine: DK-3500

Vertical Bandsaw Machines: DK-400 series, DK-600 series, DK-900 series, DK-1100, DK-1500, DK-2000, DK-3500

Flash butt Welding Machines, KN 41 HBS , KN 67 HBS, KN 67 HBA, KN 100 HBA and KN 100 PLC

Horizontal Bandsaw Machines: CUT-300 STO

Resistance Welders used on Vertical Bandsaw Machines: MD-02 and MD-03

Grinder (used to grind the flash on the bandsaw blade after being welded): TAS-10001-RT / SL

Shear Cutter (used to cut the tips of bandsaw blades to prepare for welding): MAK-01, MAK-01 HP (manual and hydrau-pneumatic types)

2. CONDITIONS OF OPERATION

In order to run the machine here is the electrical requirements,



Phase-Neutr: 240 V 50 Hz



Phase-Phase: 400 V 50 Hz

Attent that all the doors are closed while the machine is running.

3. SAFETY STIPULATIONS



Never do maintenance and repair work when the machine is energized.

Never step over the cables and the equipments.



Never remove or replace the covers with the non-standardized one of electrical motors, fans, moving parts.



Never come close to the machine and never perform any action till all the moving parts of the machine stop completely.

4. SAFETY SIGNS ON THE MACHINE AND THEIR MEANINGS



ATTENTION! LIVE ELECTRICITY



ATTENTION! DANGER

5. GENERAL DESCRIPTION OF THE MACHINE

5.1. Description of the Machine

VERTICAL BANDSAW MACHINE DK 1500 LS

5.2. Expansion of the Model Name

DK-X00. 0X (S1)

DK : VERTICAL BANDSAW MACHINE

X00 : Throat width (distance between the vertical frame and the bandsaw blade)

0X : Sub-model of the actual model

(S1) : CE certified *(Some models without S1 designation might have CE certification whereas the ones with S1 designation certainly have.)*

5.3. List of Machine Models

The machines are classified according to the throat width and the types of accessories equipped as standard and produced:

DK-400 ÖZEL	DK-400. 01/EXPORT	DK-400. 01	DK-400. 01 S1
DK-400. 02	DK-400. 03	DK-400. 03 S1	DK-400. 04
DK-400. 05	DK-400. 05 S1	DK-400. 08	DK-600 ÖZEL
DK-600. 01	DK-600. 02	DK-600. 03	DK-900 ÖZEL
DK-900. 03	DK-1100	DK-2000	DK-3500

The machines with CE certification are listed below:

DK-400. 01 S1	DK-400. 03 S1	DK-400. 05 S1	DK-400. 08
DK-600. 03	DK-900. 03	DK-1500	DK-3500

5.4. Machine type and Specifications

5.4.1. Machine type: DK-1500-LS

5.4.2. Machine specifications

Main Motor	7,5 kW
Dimension of Table	800 x 1500 mm
Cutting Height Over Table	1200 mm
Throat Width	800 mm
Cutting Speed	2-1000 mm/min
Servo Travel Stroke	1500 mm
Equipment Configuration Providing the Speed Adjustment	Frequency Invertor / PLC
Length of applicable bandsaw blade	6850 mm
Width and wall-thickness of applicable bandsaw blade	54x1,3 / 54x1,6 mm
Height of the table from the ground	910 mm
Weight of the machine	7000

6. Sample of Machine Name Plate

	Temelsan [®]	
MAKİNA SAN. ve TİC. LTD. ŞTİ.		
MODEL :	DK	Maltepe Hastane Yolu
İMAL YILI:		Baltaş San. Sit. No:10/40 34020
SERİ NO :		Bayrampaşa / İSTANBUL / TURKEY
AĞIRLIK :		Tel: +90 212 544 25 18 PBX
	Kg.	Fax: +90 212 577 65 57
MOTOR :	1400 d/dk.	http:// www.temelsan.com
	KW	e-mail:temelsan@temelsan.com

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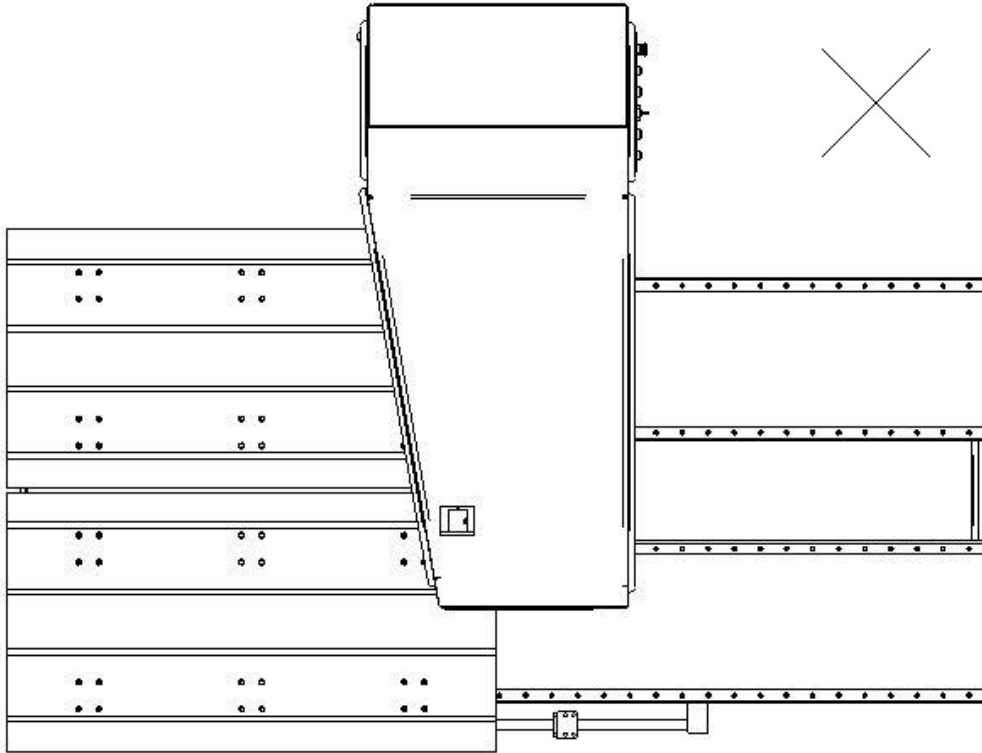
TEL: +90 (212) 544-2518 FAX: +90 (212) 577-6557 www.temelsan.com temelsan@temelsan.com

7. GENERAL PRINCIPLE OF OPERATION

Field of Application _____ : Used for cutting all kinds of metals in straight or curve-form.

Principle of operation _____ : The machine will be operated by one personnel only. The operator places the metal workpiece on the table of the machine and fixes it with the vise(s). Turns the machine ON from the main switch. By pressing the GREEN button, initializes the rotation of bandsaw blade. Adjusts the speed of rotation noticing the type and the hardness of the workpiece. If the machine is equipped with a hydraulic table, then the speed of the hydraulic table must also be adjusted according to the type and the hardness of the part to be cut. The operator can start cutting.

Attention! The operator must stand at the point shown as (X) below when the machine runs.



8. PREREQUISITS OF TRANSPORTATION

8.1. Transportation style

VERTICAL BANDSAW MACHINE is monolithic during the transportation.

8.2. Precautions

- The machine can only be lifted by using proper rope hung on the head of the machine itself.

8.3. Conditions for transportation

The notices of transportations are listed below:

- a) Placing the machine on the transporting vehicle firmly and tightened with ropes to eliminate possible bending and vibration during the journey.
- b) The height of the tunnels and the bridges along the travelling route must be taken into account. It is very important especially for DK-3500 and above.

8.4. Storing Conditions

- a) Roof of the storing area must be closed.
- b) There must not be any contact with moisture/water around, on top or under the machine.
- c) It must be prohibited for unauthorized personnel to come across/intervene with the machine
- d) There must be no risk of fire in the area to be stored.

After connecting the electrical cables, authorized an experienced personnel will make the necessary adjustments and commission the machine.

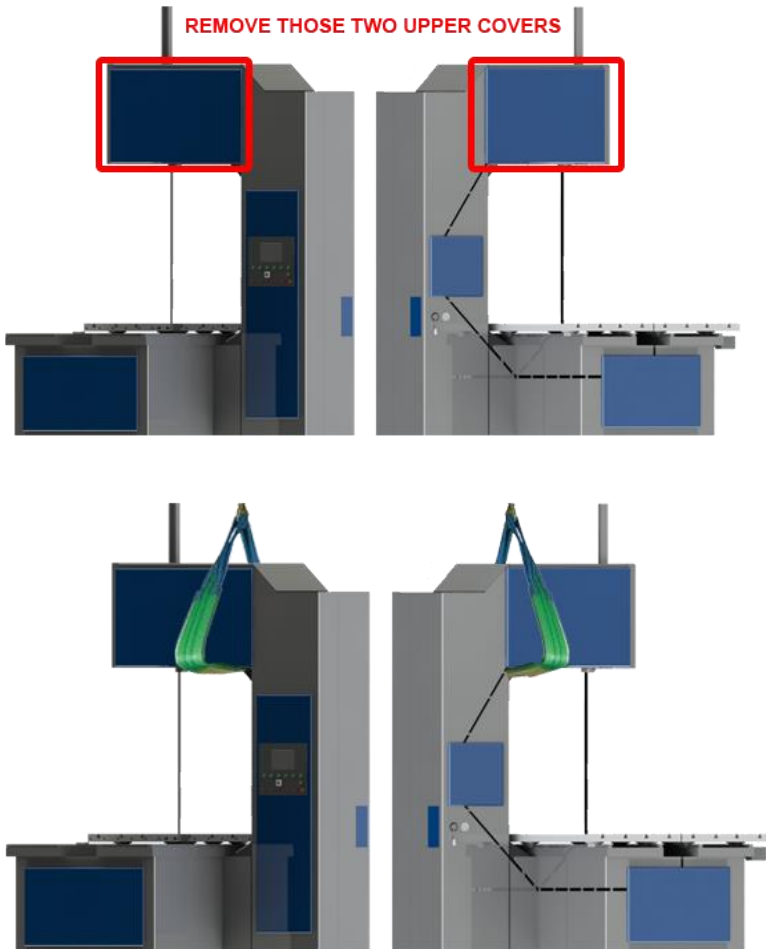
9. INSTALLATION AND OPERATIONAL INSTRUCTIONS

9.1. UNLOADING

Machine should be carried as below drawing. Customer is fully responsible to provide necessary ropes.

Please check the rope hanging at below drawing.

Please remove both upper covers before you carry machine.



9.2. INSTALLATION

Placing the machine to the final installation area will be done by the customer itself.



The customer is fully responsible of the accidents caused by improper lifting, carrying and placing the machine to the installation area.

Installation, Setup, Commissioning and Initial Operation is under the responsibility of the customer except DK-3500. All the machines except DK-3500 are monolithic and need the electrical connection only.

If the electrical connections is done by unauthorized personnel the warranty voids immediately and the manufacturer will not be responsible of any circumstances.

The customer is responsible to provide the cables to be connected to the electrical panel of the machine.

To provide the cables to the electrical cabinet and to provide electricity are under customer's responsibility.

Electrical connections must be done by qualified electricians only.

The manufacturer will not be responsible if unauthorized and unexperienced electrical technician intervenes the machine.

The customer has the right to claim an authorized personnel from the manufacturer to check what has been done. Then the customer has to pay for the costs of international flight tickets, hotel accommodation, food and beverage, etc. for 2 personnel from the manufacturer.

Make sure that there is no obstacle around/on/in the machine.

1. Connect 5x4 TTR type of cables to the power terminals in the electrical panel of the machine.
Attention! The machine must be grounded by a yellow-green colored cable.
2. Turn the main switch on. Press the green button controlling the main motor. Now the speed control is possible. Press plus-minus signed buttons next to the speed control equipment to change the speed of rotation of the bandsaw blade.

NOTE: If the main motor is running in opposite direction then 2 phases of the electrical connections must be interchanged to gain the correct direction of rotation. If any of those doors of the machine is open then the machine will not run. Besides, if the bandsaw blade is not tightened to a certain level, the sensor switch of the bandsaw blade breakage will block the machine as if the bandsaw blade is broken.

3. Now check the direction of rotation of the hydraulic motor. Check if it rotates in the direction of the arrow sign located on the motor itself.
4. Before replacing the bandsaw blade; open the 3 of those covers in front side of the machine and loosen the bandsaw blade tightening shaft. By pulling the loosened bandsaw blade towards yourself, let it free from the wheels and the guides.

To install a new bandsaw blade, follow the procedure in reverse direction and apply tightening pressure.



ATTENTION! Before replacement of the bandsaw blade turn the machine off from the main switch.



While installing the new bandsaw blade notice that the teeth form should be towards yourself.

The bandsaw blade might elongate due to the heat emission during running; check the bandsaw blade, tighten it if necessary.

5. Depending on the diameter and the height of the workpiece adjust the upper bearing of the bandsaw blade (the one next to the rack) to prevent collision with the workpiece during running and fix the handle.



ATTENTION!: The more close the upper bearing mechanism is to the workpiece the more sharp, perpendicular and smooth the cutting will be.

9.3. OPERATIONAL INSTRUCTIONS

9.3.1. Operation of the Machine

It is completely under the responsibility of the customer itself. On the other hand if the customer contacts the manufacturer for some advice, the manufacturer will support the customer.

Check the Appendix 1 to know about the control panel of the machine.

Steps of the operation

- 1) Depending of the height of workpiece adjust the inserts to the closest location to the workpiece.
- 2) Choose the right teeth form for the bandsaw blade which will be used to cut the workpiece.
- 3) Adjust the rotational speed and the speed of the Servo controlled table according to the workpiece to be cut.
- 4) At each bandsaw blade replacement, make sure that the bandsaw blade bearings and the inserts touch parallel to the workpiece. This should be done for the one at the lower wheel.

10. TRAINING

Training at the manufacturer's site will be free of charge. If requested at the buyer's site then the flight tickets, hotel accommodation, food and beverage costs for 2 persons from the manufacturer will be paid by the buyer. If an unauthorized personnel deal with the machine the warranty voids immediately.

11. SPARE PART LIST

MECHANICAL AND ELECTRICAL SPARE PART LIST

	DESIGNATION	TYPE	Q'TY
1	MAIN MOTOR	ELECTRICAL	1
2	HYDRAULIC MOTOR	ELECTRICAL	1
3	BANDSAW INSERTS	STEEL	2
4	FREE WHEEL	CAST IRON	1
5	UPPER WHEEL	CAST IRON	1
6	WHEEL OF GEAR	CAST IRON	1
7	SERVO MOTOR	ELECTRICAL	1
8	SERVO GEARBOX	MECHANIC	1
9	HYDRAULIC TENTION UNIT	MECHANIC	1
10	CONTROL MONITOR	ELECTRONIC	1

12. SERVICE

The necessary parts will be distributed by the manufacturer once the buyer claims during repair work or maintenance.

During warranty period at any circumstances where the unauthorized personnel use the machine the warranty will void immediately.

The warranty is a limited warranty and covers the spare parts only. If the buyer claims service from the manufacturer then the service cost, flight tickets, hotel accommodation, food and beverage costs for 2 persons will be paid by the buyer.

13. PLANNED MAINTENANCE CHART

13.1. DAILY MAINTENANCE

- a) Open all the covers and clean all the parts inside with an air gun.
- b) During down-times, the bandsaw blade should be loose; untighten it.
- c) Clean up the chips on those of 3 wheels every day.

13.2. WEEKLY MAINTENANCE

Inspect the guides of blade. Replace it if necessary.

13.3. MONTHLY MAINTENANCE



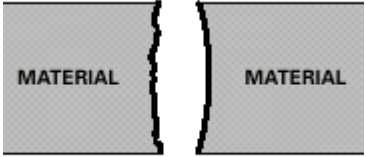
- a) Check the level of lubricant of hydraulic system. If the level is not full then add the lubricant.
- b) Check the valves. If oil is leaking replace them.
- c) Lubricate the bandsaw blade tensioning unit.
- d) Rack-shaft should be lubricated.

13.4. BI-ANNUAL MAINTENANCE

The initial oil of gear should be replaced after 300 hours of operation. Then replace the oil of the gear bi-annually. The oil no. is 140.

14. TROUBLESHOOTING

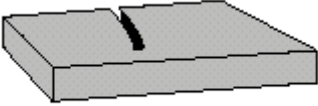




To gain optimal performance is only possible to have an optimal combination of bandsaw blade and bandsaw machine. The main sources of the problems confronted are; wrong feeding force, wrong saw speed, wrong coolant concentration, wrong teeth form and improper repair work done.

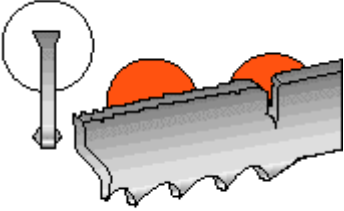
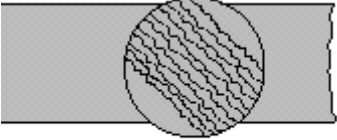
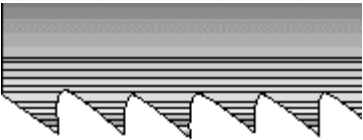
Problem	Probable Cause	Solution
 <p>Blade Breakage Straight Break Indicates Fatigue</p>	<ul style="list-style-type: none"> • Incorrect blade • Band tension too high • Excessive feed • Incorrect cutting fluid • Wheel diameter too small for blade being used • Worn or chipped pressure block (back-up guide) • Blade rubbing on wheel flanges • Teeth in contact with work before starting saw • Side guides too tight 	<ul style="list-style-type: none"> • Teeth too coarse. Check your cutting chart • Reduce band tension. See Machine Operator's Manual • Reduce feed pressure • Check your coolant • Use thinner blade and lower speed • Check pressure block. Replace if worn • Adjust wheel alignment • Allow 1/2" clearance before starting cut • See Machine Operator's Manual
 <p>Premature Dulling of Teeth</p>	<ul style="list-style-type: none"> • Blade teeth inverted (backwards) • Improper break-in period • Hard spots in material (like scale) • Material work hardened (check for hardness and adjust feed) • Improper cutting fluid or mixture • Speed and feed too high 	<ul style="list-style-type: none"> • Install blade correctly • Reduce feeds and speeds during break-in period in accordance with manufacturers' recommendations • Check material for actual hardness - hard spots like scale or flame cut surfaces • Increase feed pressure • Check your coolant • Check your cutting chart
 <p>Inaccurate Cut</p>	<ul style="list-style-type: none"> • Teeth dull • Over or under feed • Improper pitch blade • Cutting fluid not applied evenly • Incorrect blade (too many teeth per inch) • Guides worn or loose 	<ul style="list-style-type: none"> • Use new blade • Check your cutting chart • Check your cutting chart • Adjust coolant nozzles • Check your cutting chart • Tighten or replace guides



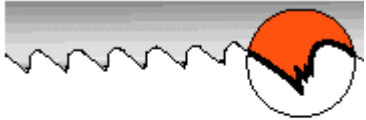
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 <p>Band Leading in Cut</p>	<ul style="list-style-type: none"> • Over feed • Lack of band tension • Tooth set damage • Loose guide arms or set too far from work 	<ul style="list-style-type: none"> • Check your cutting chart * • Check Operator's Manual for correct tension • Check material hardness • Adjust arm as close to work as possible - tighten and align. Check guide
 <p>Chip Welding</p>	<ul style="list-style-type: none"> • Improper or lack of cutting fluid • Wrong coolant • Excessive speed or pressure • Incorrect blade (wrong pitch) 	<ul style="list-style-type: none"> • Check your coolant • Check your coolant • Reduce speed or pressure. Check your cutting chart * • Check your coolant
 <p>Teeth Fracture Back of Tooth (indicates work spinning in vise)</p>	<ul style="list-style-type: none"> • Incorrect feed and/or speed • Incorrect blade (wrong pitch) • Saw guides not adjusted properly 	<ul style="list-style-type: none"> • Check your cutting chart • Check your cutting chart • Adjust or replace saw guides
 <p>Irregular Break (indicates material movement)</p>	<ul style="list-style-type: none"> • Indexing out of sequence • Material loose in vise 	<ul style="list-style-type: none"> • Check for correct indexing sequence (head rise) • Check hydraulic pressure
 <p>Teeth Stripping</p>	<ul style="list-style-type: none"> • Feed pressure too high • Tooth lodged in cut • No cutting fluid or incorrect coolant • Hard spots, scale, inclusions, etc. • Incorrect blade (wrong pitch) • Work spinning in vise; loose "nest" or bundles 	<ul style="list-style-type: none"> • Reduce feed pressure and/or speed. See your cutting chart • Never enter same (old blade), cut with new blade • Check your coolant • Check hardness. Descale and/or anneal if necessary • Check your cutting chart • Check hydraulic pressure; be sure work is firmly held

	<ul style="list-style-type: none"> • Blade teeth running backwards 	<ul style="list-style-type: none"> • Reverse blade teeth, turn inside out
 <p>Wear on Back of Blades</p>	<ul style="list-style-type: none"> • Insufficient blade tension • Incorrect blade (back too soft) • Incorrect feed (excessive) • Back-up guide frozen in position, damaged, or worn off • Guide arms too far apart, cocked, worn or loose • Blade rubbing on wheel flanges 	<ul style="list-style-type: none"> • See Machine Operator's Manual for correct band tension • If using hard back blade, switch to a variable tooth • Reduce feed pressure. See your cutting chart. • Free pressure block and realign; if worn, replace (never regrind) • Move arms close to work as possible • Adjust wheel alignment
 <p>Rough Cut Washboard Surface Vibration and or Chatter</p>	<ul style="list-style-type: none"> • Dull or damaged blade • Incorrect feed and/or speed • Lack of band support • Insufficient band tension • Incorrect pitch blade 	<ul style="list-style-type: none"> • Replace with proper blade • Check your cutting chart Adjust until noise disappears • Set guide arm properly - close to work as possible • Check Operator's Manual for correct tensions • Check your cutting chart
 <p>Wear Lines, Loss of Set</p>	<ul style="list-style-type: none"> • Saw guide inserts or roller are riding on teeth • Insufficient blade tension • Incorrect blade (width of blade incorrect) • Hard spots • Back-up guide worn 	<ul style="list-style-type: none"> • Check table and Operator's manual for correct blade width • Check for correct blade tension • Check your cutting chart • Check material hardness • Replace back-up guide

 <p>Twisted Blade Contour Sawing</p>	<ul style="list-style-type: none"> • Band binding in cut • Side guides adjusted too tight • Work not held firmly • Incorrect (or lack of) cutting fluid 	<ul style="list-style-type: none"> • Check table and Operator's manual for correct blade width • Check for correct blade tension • Check your cutting chart • Check your coolant
 <p>Blade Wear / Teeth Blued</p>	<ul style="list-style-type: none"> • Incorrect blade • Incorrect feed or speed • Improper (or lack of) cutting fluid 	<ul style="list-style-type: none"> • Check your cutting chart • Check your cutting chart • Check your coolant
 <p>Teeth Fracture / Front of Tooth (indicates work spinning in vise)</p>	<ul style="list-style-type: none"> • Material loose in vise • Incorrect blade (wrong pitch) 	<ul style="list-style-type: none"> • Check hydraulic pressure • Check your cutting chart

15. GUARANTEE CERTIFICATE

Description _____ : VERTICAL BANDSAW MACHINE

Machine model _____ : DK-1500-LS

Warranty period _____ : 12 months after delivery

Conditions _____ :

- 1) Spare parts will be distributed as free of charge during the warranty period if the problem originates from the production of the machine itself
- 2) If the machine gets broken or malfunctions due to the mis-shipment, loading/unloading, the warranty voids immediately
- 3) If the machine gets broken or malfunctions due to the natural disaster, the warranty voids immediately
- 4) If the machine gets broken or malfunctions due to operator's own fault, the warranty voids immediately
- 5) If the machine gets broken or malfunctions due to the wrong installation or wrong electrical connection
- 6) Manufacturer undertakes and guarantees the supply of spare parts for 10 years



EG- Konformitätserklärung
DECLARATION OF CONFORMITY

Inhaber of declaration: TEMELSAN MAK. SAN. VE TIC. LTD. ŞTİ.
Owner of Declaration

Hersteller: TEMKES MAK. SAN. VE TIC. LTD. ŞTİ.
Manufacturer

Produktbezeichnung: Bandsägemaschine.
Product description Bandsaw Machine

Art: DK-400.01 S1, DK-400.03 S1, DK-400.05 S1, DK-400.08, DK-1100, DK-900.03,
Type DK-1500-LS, DK-3500

Richtlinie angewendet: (2014/35/EG) Niederspannungsrichtlinie
Directive Applied (2014/35/EC) Low Voltage Directive

Markenname: TEMELSAN
Brand Name

Die hier genannten Baugruppen sind entwickelt, konstruiert und gefertigt in Übereinstimmung mit den EC Richtlinie 2014/35/EG Niederspannungsrichtlinie. Fliegende Normen wurden angewandt.

The components mentioned herein have been developed, designed and manufactured in accordance with the EC Guideline 2014/35/EC. The following standards have been used.

Standart angewendet: EN ISO 12100:2011, EN ISO 13849:2013, EN 60204-1:2018, EN ISO 16093:2017
Standards Applied EN 81346-2:2010, EN 61800, EN 4413:2011,

Verf./den / the 27. 08. 2018

Unterschrift, Signature: _____

Name, name: Recep TEMEL
Funktion function: Managing Director


Akçaburgaz Mah. Muhsin Yazıcıoğlu Cad. No:55-1 Esenyurt ŞTİ.
Esenyurt / İST. / T.C. Zemin Kat No:55
Esenyurt Vefesil Dairesi: 838 005 3614
Makas No: 838 005 3614-0011

Temelsan Makina San. ve Tic.Ltd.Şti. Factory & Showroom Akçaburgaz Mah. Muhsin Yazıcıoğlu Cad. No:55-1 34522 Esenyurt İstanbul Turkey Tel: +90 (212) 544 25 18/19/20 Fax: +90 (212) 577 65 57 info@temelsan.com & www.temelsan.com	Temelsan-Europe Consulted by Rodo AG Zürcherstr. 65 CH - 9500 Willy-Switzerland europa@temelsan.com
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CONTROL PANEL

Temelsan Team is prepared for you the most easy usage User Friendly Control Panel for DK 1500 LS vertical saw machine.

Interface was designed do not be using accept permitted users. By this before you start to work with machine you have to enter your user name and password.

This is important to do other case machine will not be activated.

On beginning you have to select your language to start to work. In two seconds if you not select your language the page automatically will pass to the user login page.



IN TWO SECOND SELECT YOUR LANGUAGE. IF YOU COULD NOT SELECT ANYTHING ITS WILL START WITH LAST SELECTED LANGUAGE.

TEMELSAN MAKİNA SAN. VE TİC. LTD. ŞTİ.

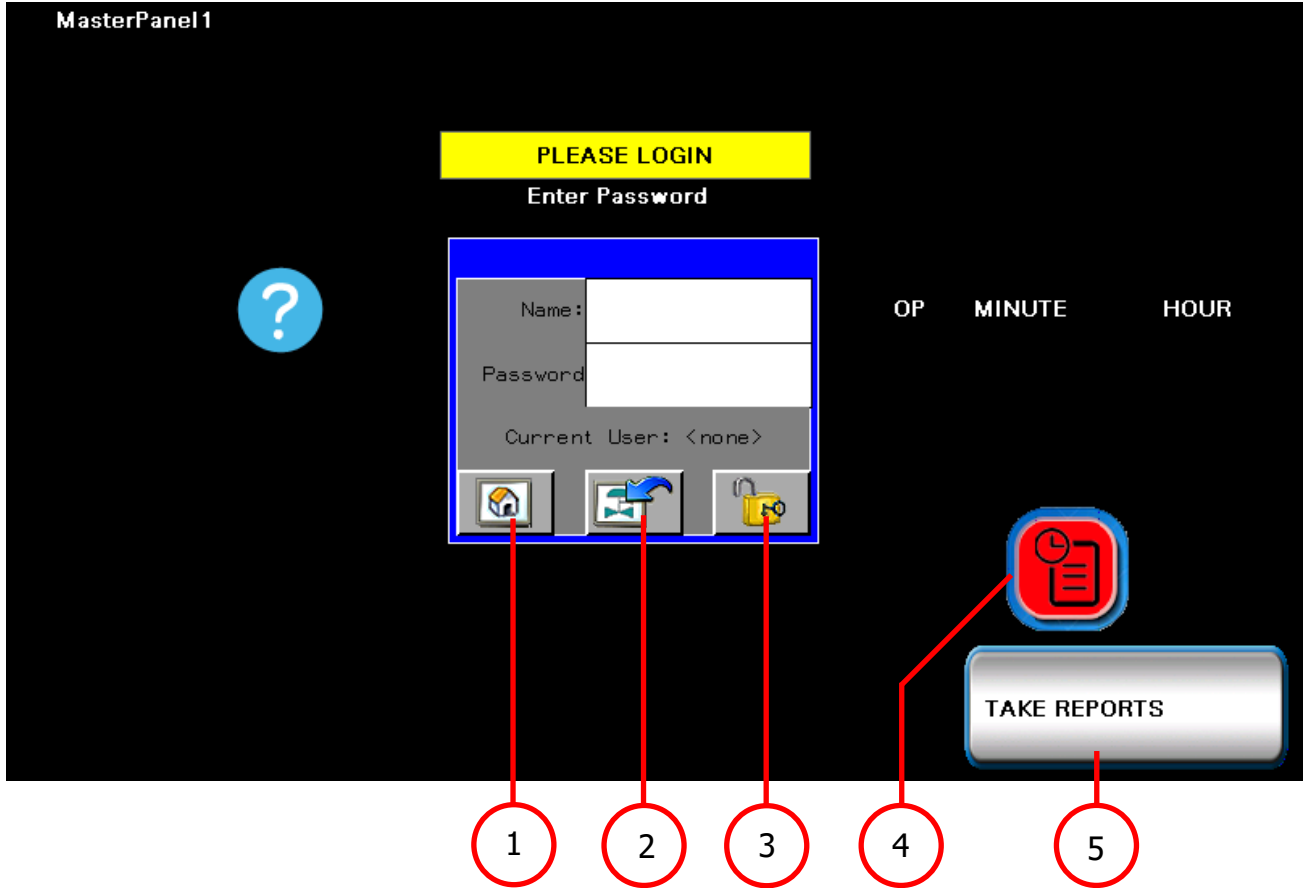
Akçaburgaz Mah. Muhsin Yazıcıoğlu Cad. No:55/1 Esenyurt / İstanbul / TÜRKİYE

TEL: +90 (212) 544-2518 FAX: +90 (212) 577-6557 www.temelsan.com temelsan@temelsan.com

USER LOGIN AND LOGOUT

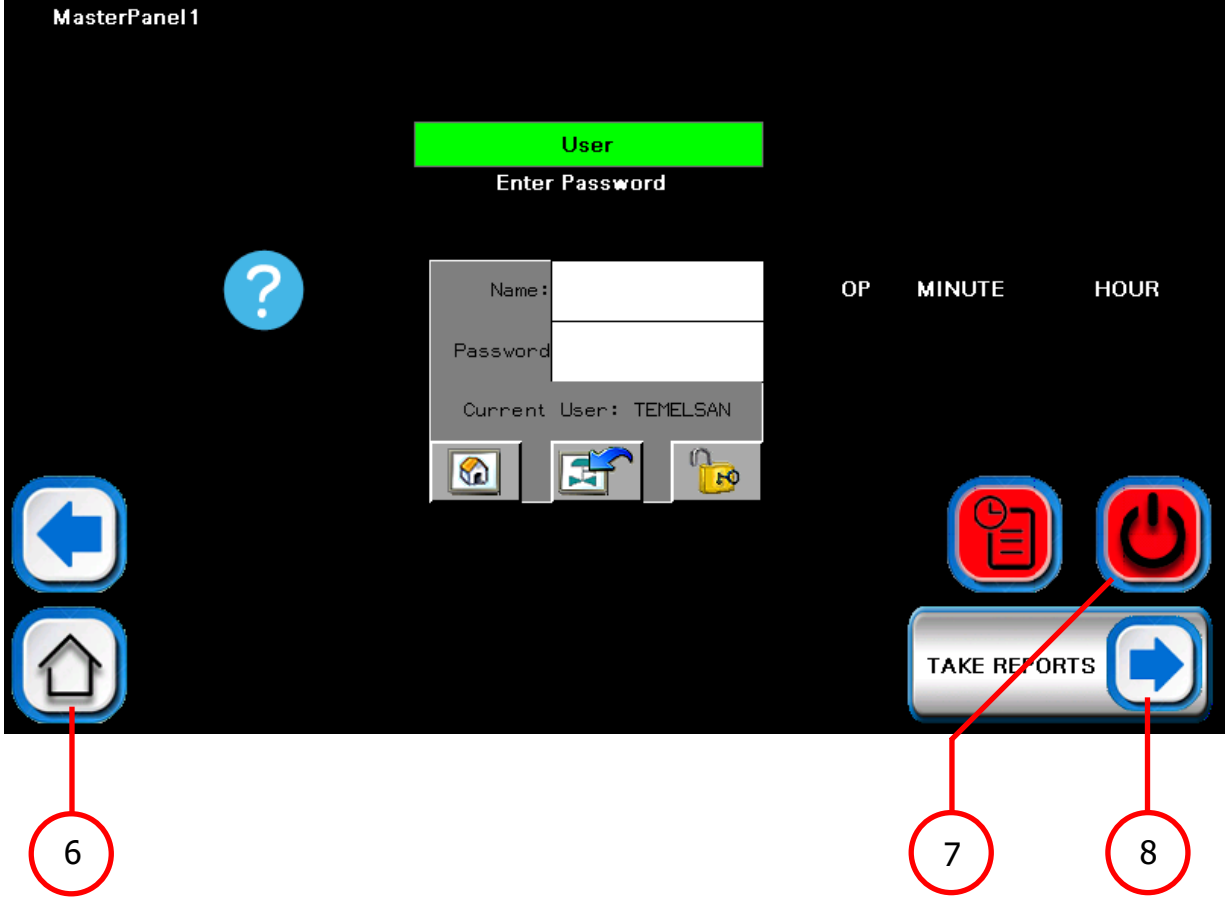
The operators should enter the user name and passwords. Machine is comes with some user name and settings. Please check the passwords and user names below.

	User Name	Password	Description
1	OP1	1	Operator
2	OP2	2	Operator
3	OP3	3	Operator
4	SERVIS	1234	Maintenance



Instruction of User Login,

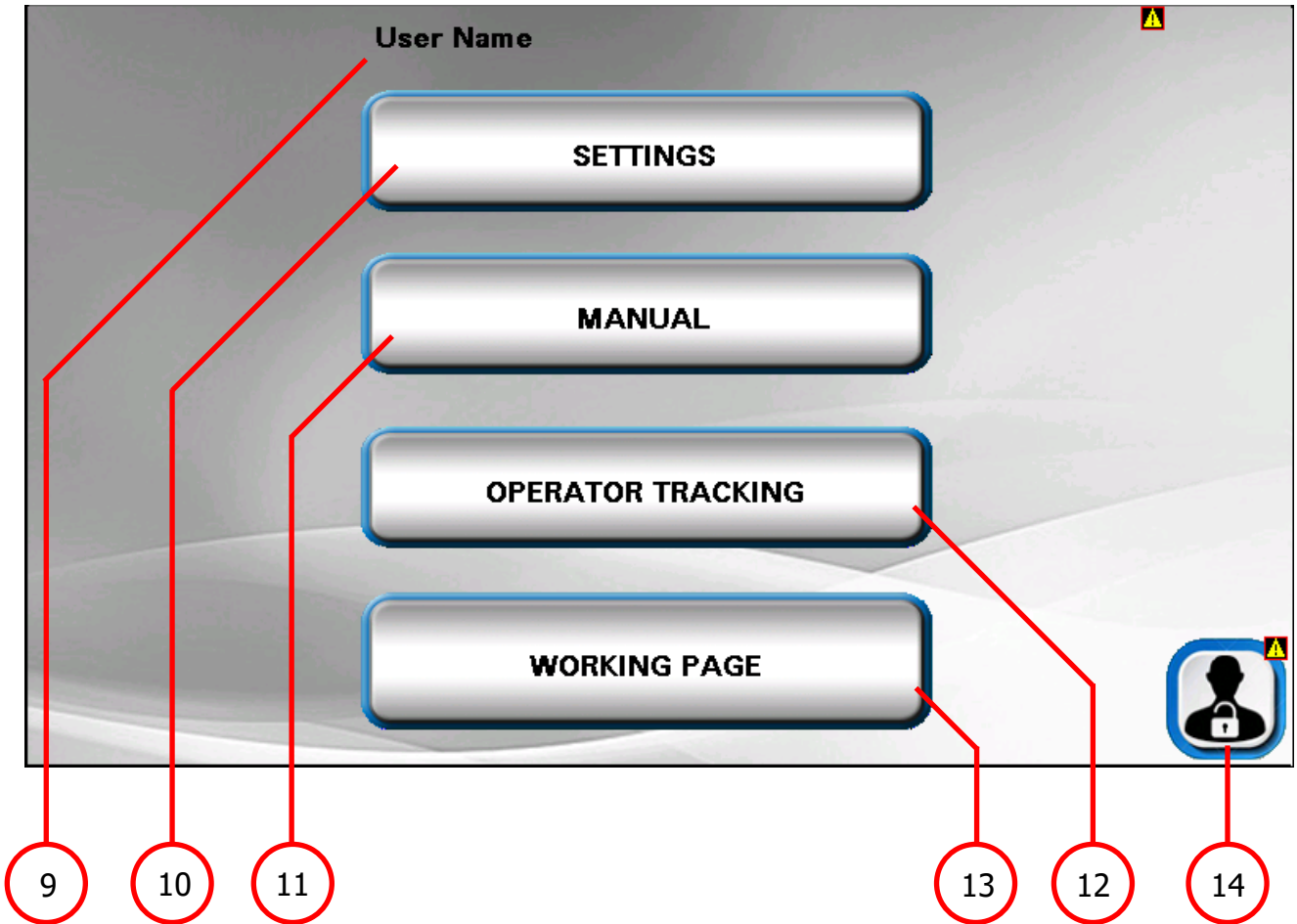
- 1- **Main Page Button** – If you need to change the language you can pass on first page
- 2- **Main Page Button** – If you need to change the language you can pass on first page
- 3- **Login Button** – After you text your user name (OP1, OP2, OP3 or SERVIS) and passwords you have to click on login button to be able using the machine.
- 4- **Wrong Login Tracking Button** – The every users can use this to see who get use the wrong id or password to get in to system
- 5- **Report Button** – Maintenance users after the signed in to system they can click the arrow which will appear to see the users duty hours.



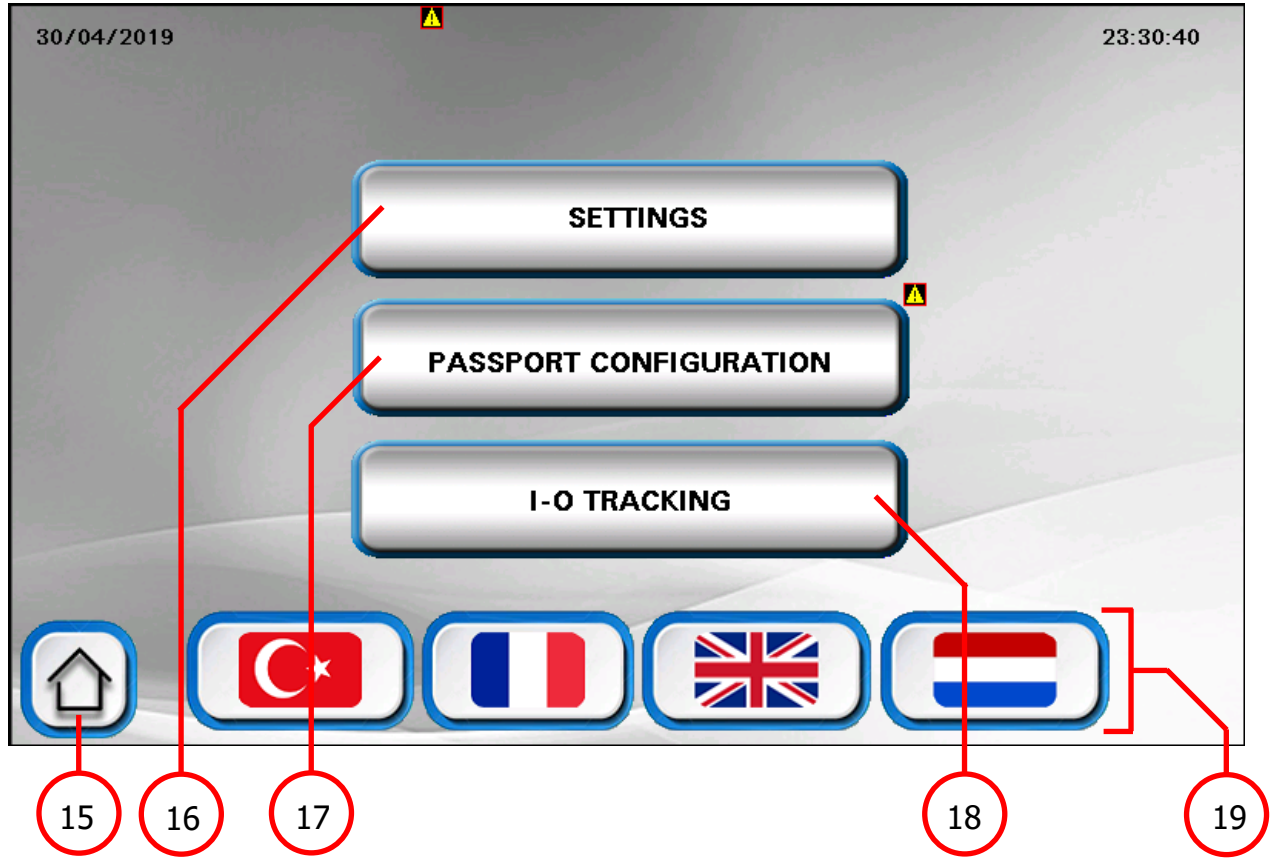
- 6- **Home Button** – After user login this button will appear to start to work with machine. User should click the **home button** to choose the operation.
- 7- **Logout Button** – After user finish the duty to keep machine ready for next user has to click the logout button. Also this is needed to be used always to have a proper working hour tracking.
- 8- **Take Report Button** – This button can be used just in case of maintenance or more authorized user.

IMPORTANT NOTE: When operator is finishing the shift its should be logout from system.

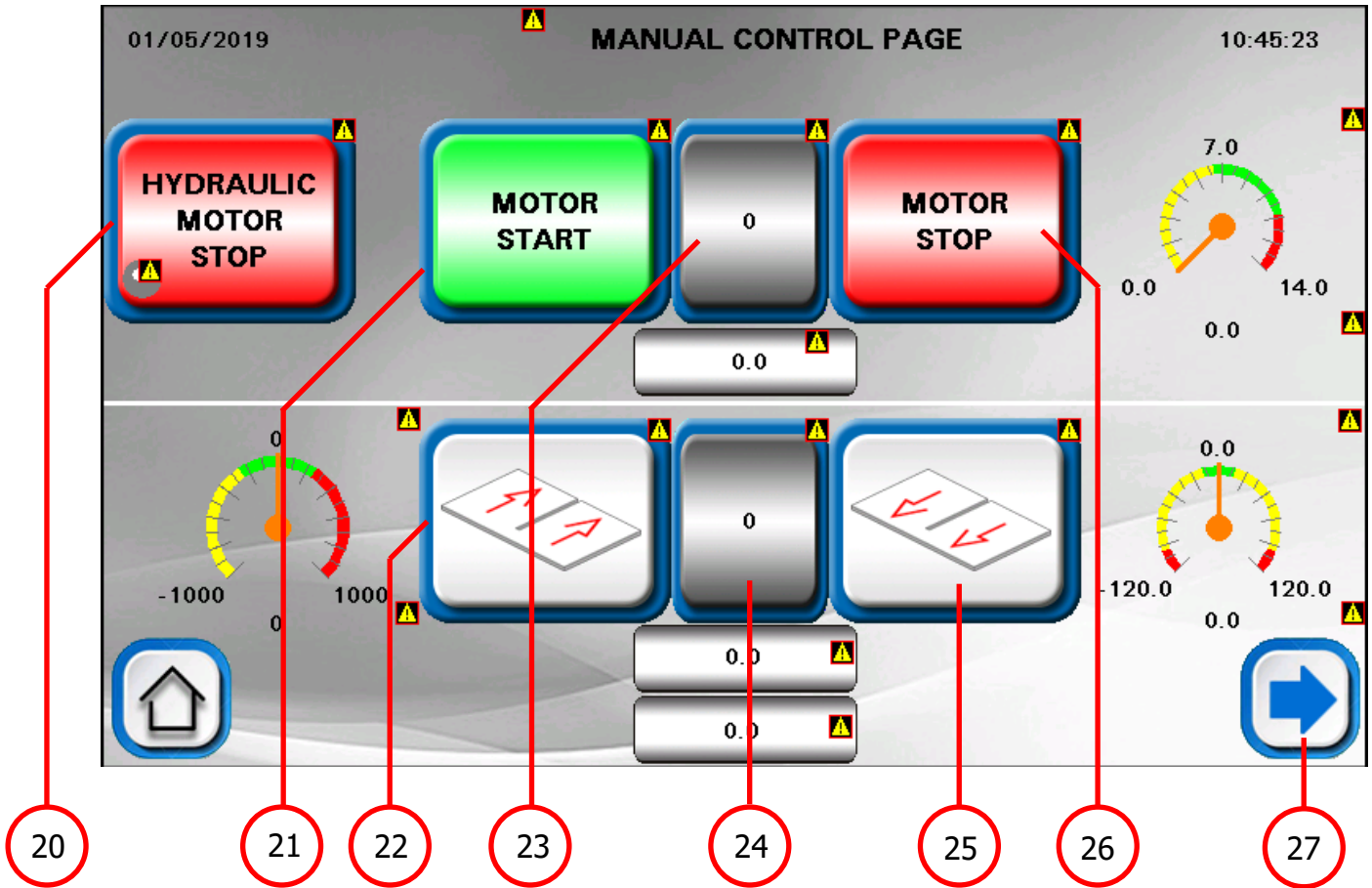
MAIN PAGE



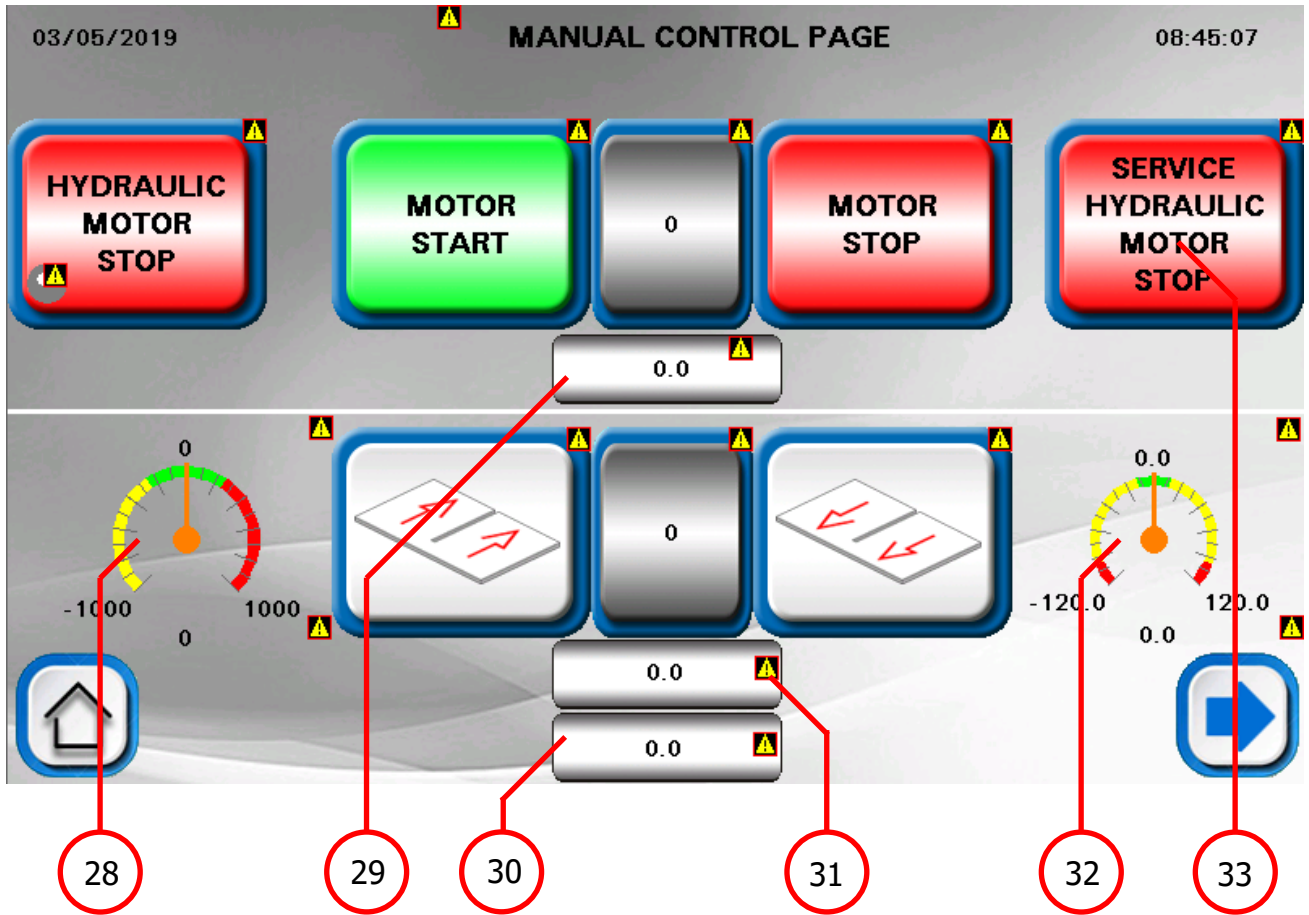
- 9- **User Name Tag** – The Login user name will appear on this place while user is online
- 10- **Setting Button** – The button open page of setting about Password Configuration and I-O Test Tracking
- 11- **Manual Button** – The button open manual usage page of the machine
- 12- **Operator Tracking Button** – The button open the user tracking page. On this page you can feed the operators real name. By the reports operator real names will not appear but on using the machine that will appear on name tag.
Also you can see the working hours (life) of machine on same page.
- 13- **Working Page Button** – This button open the automatic working page of DK 1500 LS machine. Which is common usage page of the machine
- 14- **Signin Page Button** – This button open the signin page. On sign in page user will be able to logout and change the user.



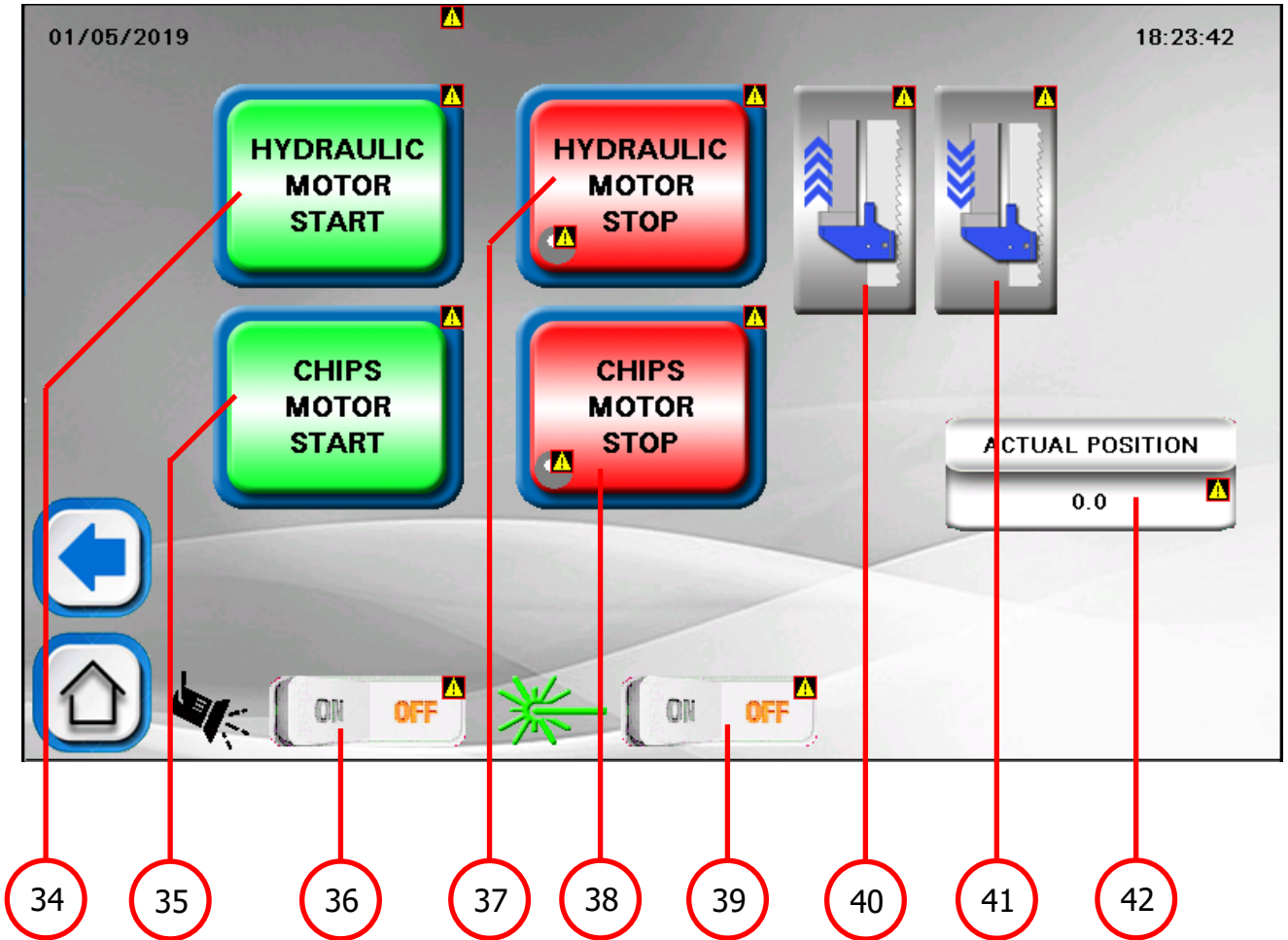
- 15-**Home Button** – This button for turning back to Main Page
- 16-**Setting Button** – This button will appear just on Authorized user. Its generally motor settings of the machine can be changed. In case users change the motor they are able to change spesification of motors.
- 17-**Passport Configuration Button** – This button has different function on different users. The button will appear on each user but the maintenance user will be able to use it only
- 18-**I-O Tracking Button** – This button will open the input and output of PLC communication page.
- 19-**Language Selection Area** – User can choise the language here



- 20-**Hydraulic Button** – This button control the hydraulic pump which is using for tention unit of bandsaw blade.
- 21-**Motor Start Button** – This button turn on the bandsaw blade motor
- 22-**Table Front Move Button** – This button can move manually tablet by your speed adjustment.
- 23-**Blade Motor Speed Set Button** – This button allow you to set the speed of the bandsaw blade motor.
- 24-**Table Speed Set button** – This button allow you the set the speed of table on manual move
- 25-**Table Back Move Button** – This button can move manually tablet by your speed adjustment.
- 26-**Motor Stop Button** – This button turn off the bandsaw blade motor
- 27-**Next Button** – In click this button page will fallow for next page which is connected the existing one



- 28-Table Servo Speed** – This indicator show the Servo motor speed of table
- 29-Blade Motor Current** – This indicator show the Blade motor current usage
- 30-Digital Indicator of Table Servo Speed** – This indicator show the Servo motor speed of table
- 31-Digital Indicator of Table Speed** – This indicator show the table speed
- 32-Table Speed** – This indicator show the table speed
- 33-Service and Blade Change Button** – While machine is on "0" mode at the control panel user should click this button 3 second to turn on the hydraulic pump to move tension Wheel down to change blade or do necessary services.



- 34-Hydraulic Motor Start Button** – This button switch on the hydraulic motor to make a tension on the bandsaw blade
- 35-Chips Motor Start Button** – This button switch on the chips cleaning motor
- 36-Working Area Light Button** – While the light off the button will stay on off position and when user will turn it on by touch its will move to on
- 37-Hydraulic Motor Stop Button** – This button switch off the hydraulic motor to lose tension on the bandsaw blade
- 38-Chips Motor Stop Button** – This button switch of the chips cleaning motor
- 39-Cutting Line Laser Light Button** – While the laser off the button will stay on off position and when user will turn it on by touch its will move to on

- 40-**Rack Up Button** – While user keep touched the button the arrows will show the red color. While arrows are painted on red means the rack is moving up.
- 41-**Rack Down Button** – While user keep touched the button the arrows will show the red color. While arrows are painted on red means the rack is moving down.
- 42-**Actual Position Indicator** – The indicator shows actual position of table

PASSWORD CONFIGURATION

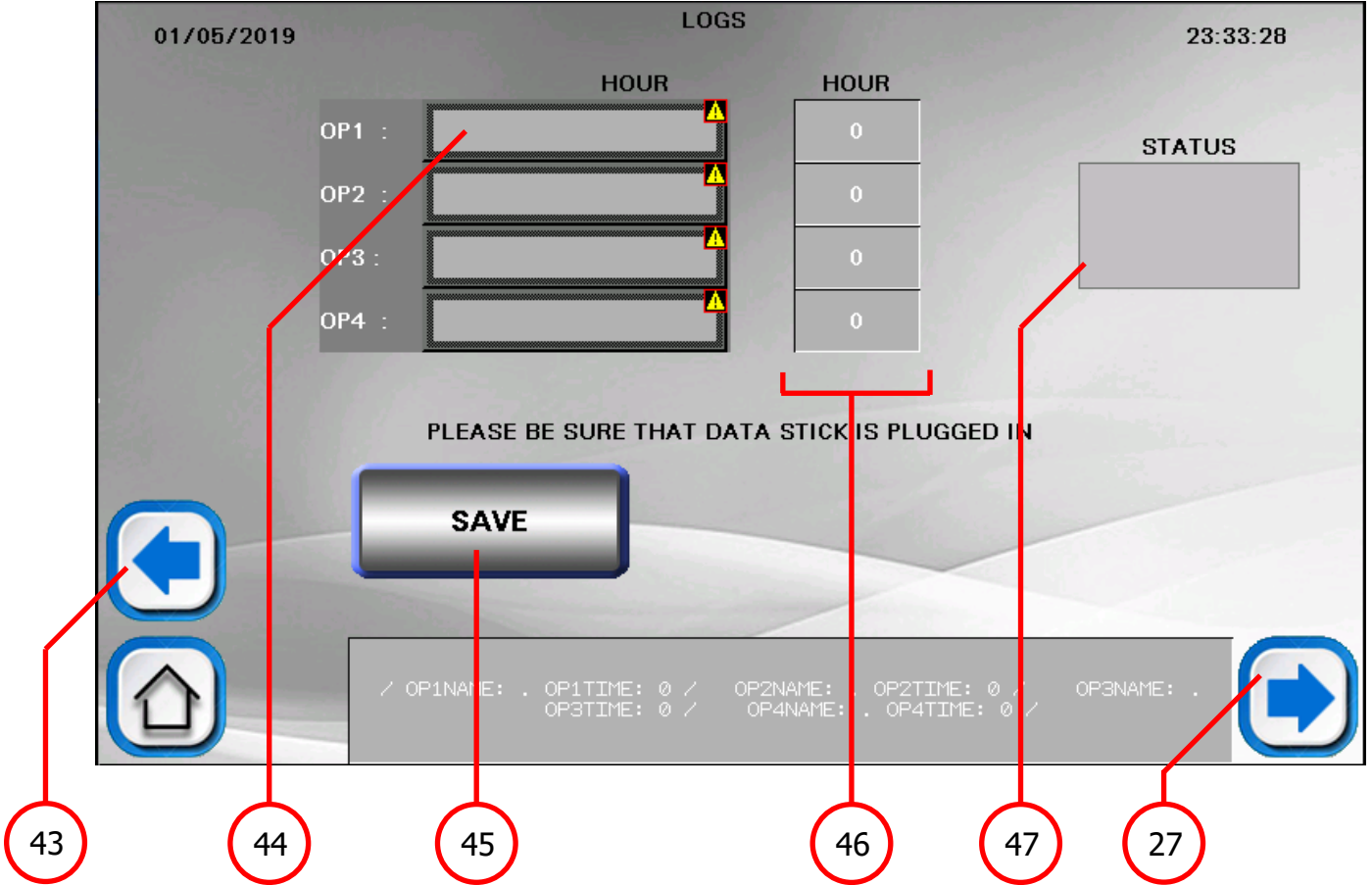
The password configuration page is just allowed for an authorized user. The simple operators cant use the password configuration page. They just can use the button to back on user login page.

The maintenance user authorizes to add or remove users, to change the users passwords and delete the user, this user is autohized to change the name of operators or to take reports from the machine about users usage. The indication of users usage times for the machine will stay until taken report to USB stick. When maintenance user get the reports all working times of operators will be cleared.

The maintenance user should signed in to system with the user name SERVIS and password 1234. Also the maintenance user will be available to get the necessary reports from the machine.

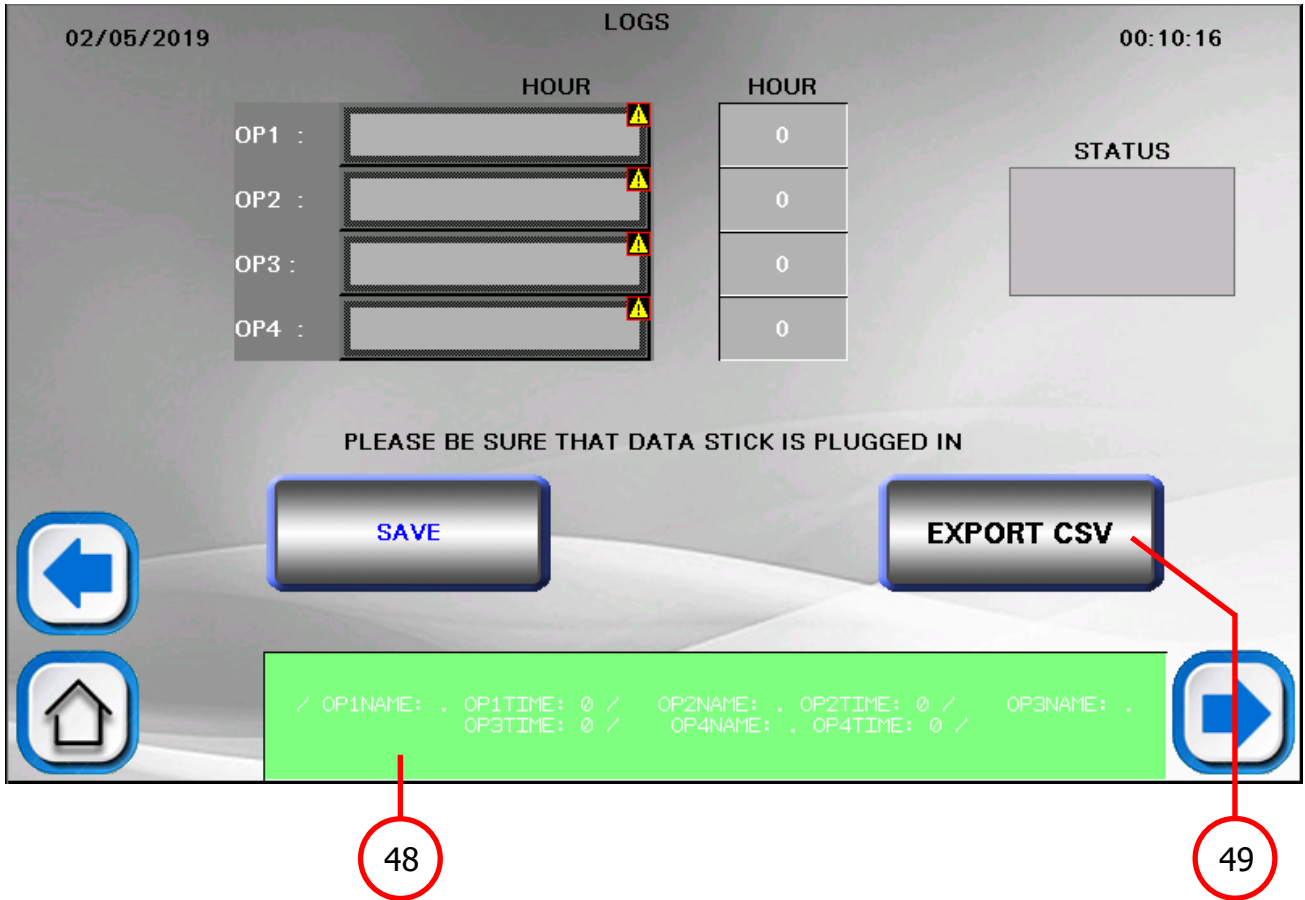
To take the reports from machine, to change the names of operators or to do necessary regulations on users, maintenatnce user should click to Take Report Button (BUTTON NR 8) on user login page.

Following page will appear to change the user names. The changing of user names its will be just for simply appear on screen but generally they will get in connected with user names what is written on the page 24 (**Please do not chage those names other case PLC will be out of order until new program installed on that.)**



- 43-**Back Button** – This button turns back the last page that user been
- 44-**User Name Entry Area** – Maintenance user is authorized to give name to the operators. This name will appear also on reports and on the working page while operator is active
- 45-**Save Button** – Maintenance user is able to use this button. Before click this button be sure that USB stick is plugged on control panel.
- 46-**User Usage Indication Area** – Maintenance user can control the users current usage of the machine by this screen
- 47-**Status Indication** – This place will be turned the orange while reports are passing to USB stick. While its completed will turn on green. In case this area marked with red color means the transfer of CSV file is not completed.

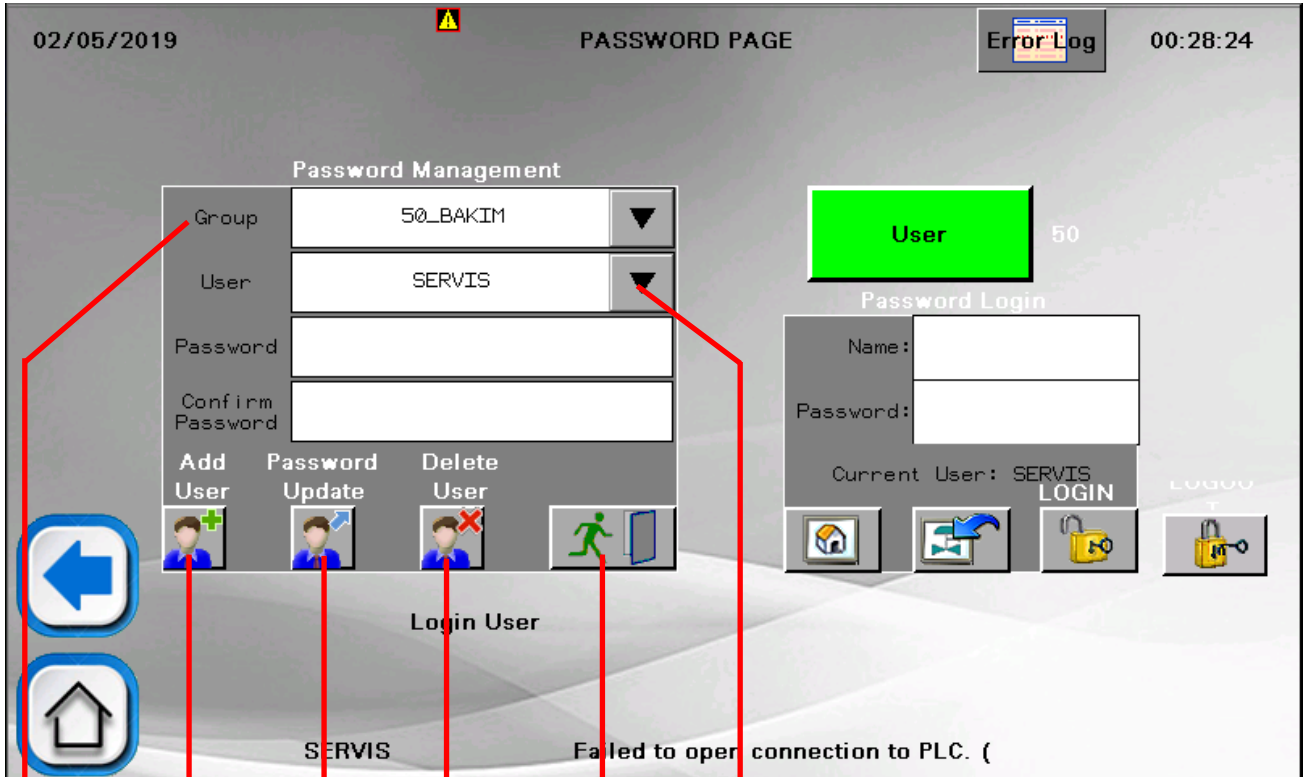
Click the Save Button (BUTTON 45) to start the taken reports from the machine.



48-CSV Indication Area – After Save Button is click this area color will change from gray to red in case of no new datas inside, will change from gray to green that means there is new datas are in memory.

49-Export CSV Button – This button do transaction of memories to the USB stick which is plugged to the control panel USB socket. While transaction is on the Status area (NUMBER 47) will keep on orange color. While the transaction is completed color will change to green. In case there is a red color appear there means USB stick memory fail.

Click the Next Button (BUTTON 27) to move on password configuration page.



02/05/2019 PASSWORD PAGE Error Log 00:28:24

Password Management

Group: 50_BAKIM
 User: SERVIS
 Password:
 Confirm Password:

Add User Password Update Delete User

Password Login

Name:
 Password:

Current User: SERVIS LOGIN

Failed to open connection to PLC. (

50 51 52 53 54 55

50-Group Selection – Before doing any changes user should select the group on user which will be updated. Maintenance user is just available to do changes on users which has Access level less than 50.

51-Add User Button – Maintenance user can add the user with this button. We as a producer company we not advise to remove some user from the list. In needs to add a new user please following instruction

- Select Group
- Click the user name tag to feed new name
- Write password for this user
- Write the password once again
- Click the add user button

52-Password Update Button – In case operators need to change the password or lose the password maintenance user can do change password with new one with following instruction.

- Select the Group
- Select the User name that you need to update password
- Write the password
- Write the password once again
- Click the Password update button

53-Delete User Button – The maintenance user is able to delete the users from the list which is exist. We as a producer company we not advise to remove some user from the list. In case needed to be deleted please follow the instruction to delete the user.

- Select Group
- Select User
- Write the existing password for the user will be deleted
- Write the password once again
- Click the Delete user button

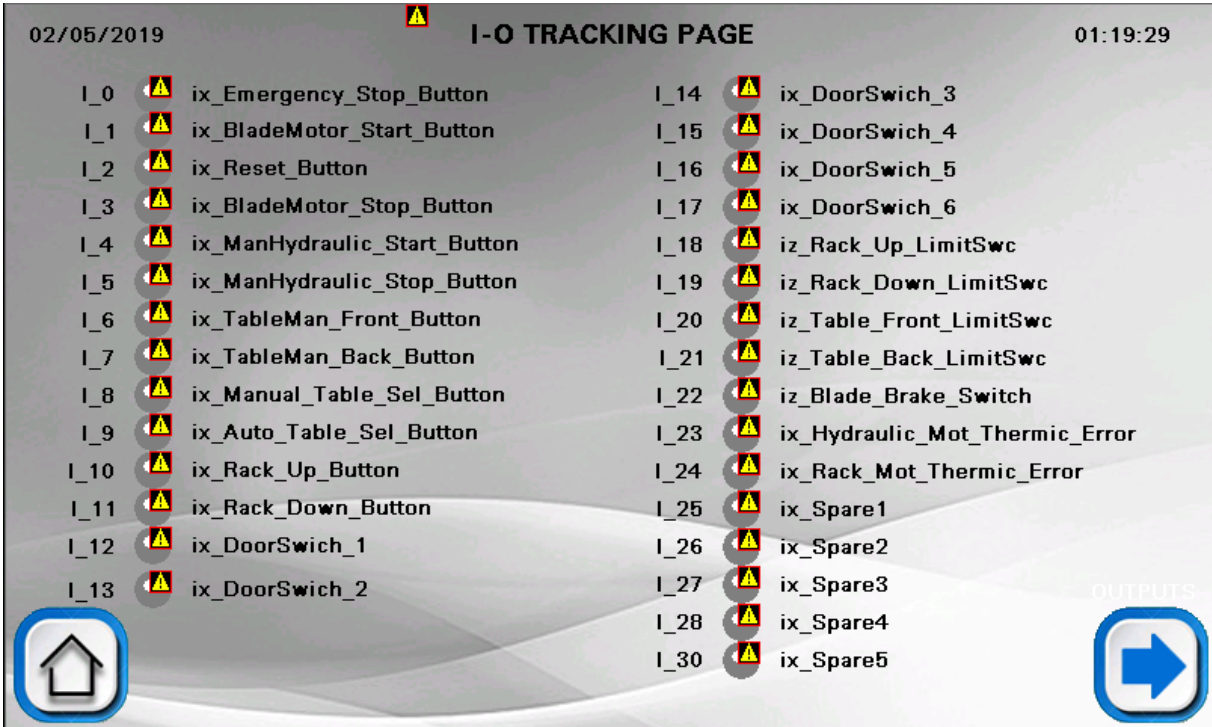
54-Exit Button – This button will move user on last page. User will not be logout

55-User Selection – While group of user is selected to continue work on updates user name should be selected here or its can be texted too.

I-O TRACKING PAGES

I-O tracking in DK 1500 LS machine has two pages,

Page 1 – Input Controls



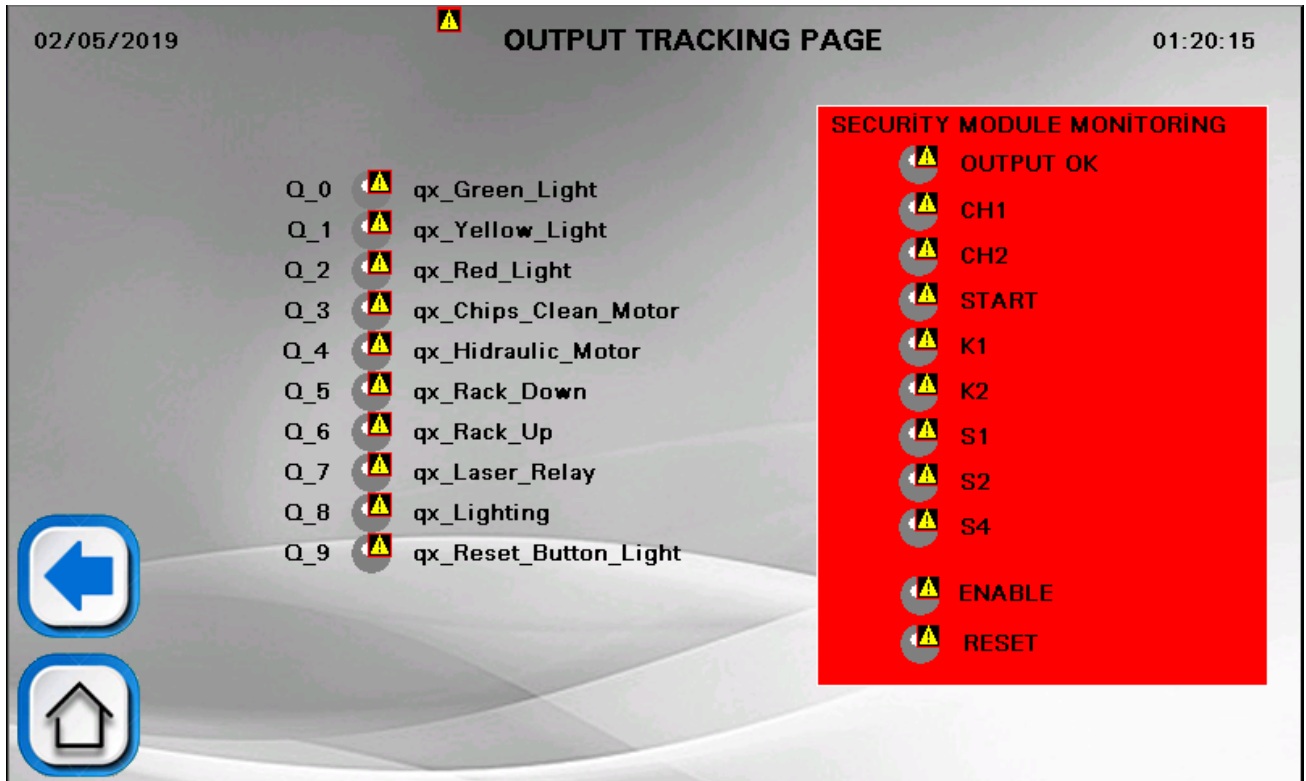
Input ID	Input Name	Input ID	Input Name
I_0	ix_Emergency_Stop_Button	I_14	ix_DoorSwich_3
I_1	ix_BladeMotor_Start_Button	I_15	ix_DoorSwich_4
I_2	ix_Reset_Button	I_16	ix_DoorSwich_5
I_3	ix_BladeMotor_Stop_Button	I_17	ix_DoorSwich_6
I_4	ix_ManHydraulic_Start_Button	I_18	iz_Rack_Up_LimitSwc
I_5	ix_ManHydraulic_Stop_Button	I_19	iz_Rack_Down_LimitSwc
I_6	ix_TableMan_Front_Button	I_20	iz_Table_Front_LimitSwc
I_7	ix_TableMan_Back_Button	I_21	iz_Table_Back_LimitSwc
I_8	ix_Manual_Table_Sel_Button	I_22	iz_Blade_Brake_Switch
I_9	ix_Auto_Table_Sel_Button	I_23	ix_Hydraulic_Mot_Thermic_Error
I_10	ix_Rack_Up_Button	I_24	ix_Rack_Mot_Thermic_Error
I_11	ix_Rack_Down_Button	I_25	ix_Spare1
I_12	ix_DoorSwich_1	I_26	ix_Spare2
I_13	ix_DoorSwich_2	I_27	ix_Spare3
		I_28	ix_Spare4
		I_30	ix_Spare5

I-O input tracking system has function control of following inputs,

- Emergency stop button
- Blade motor start button
- Blue reset button
- Blade motor stop button
- Manual Hydraulic pump start button
- Manual hydraulic pump stop button
- Table manual front move button
- Table manual back move button
- Manual table selection button
- Auto table selection button

- Rack up button
- Rack down button
- Door switch 1
- Door switch 2
- Door switch 3
- Door switch 4
- Door switch 5
- Door switch 6
- Rack up limit switch
- Rack down limit switch
- Table front limit switch
- Table back limit switch
- Blade breake switch
- Hydraulic motor thermic error
- Rack motor termic error

Page 2 – Output and safety controls

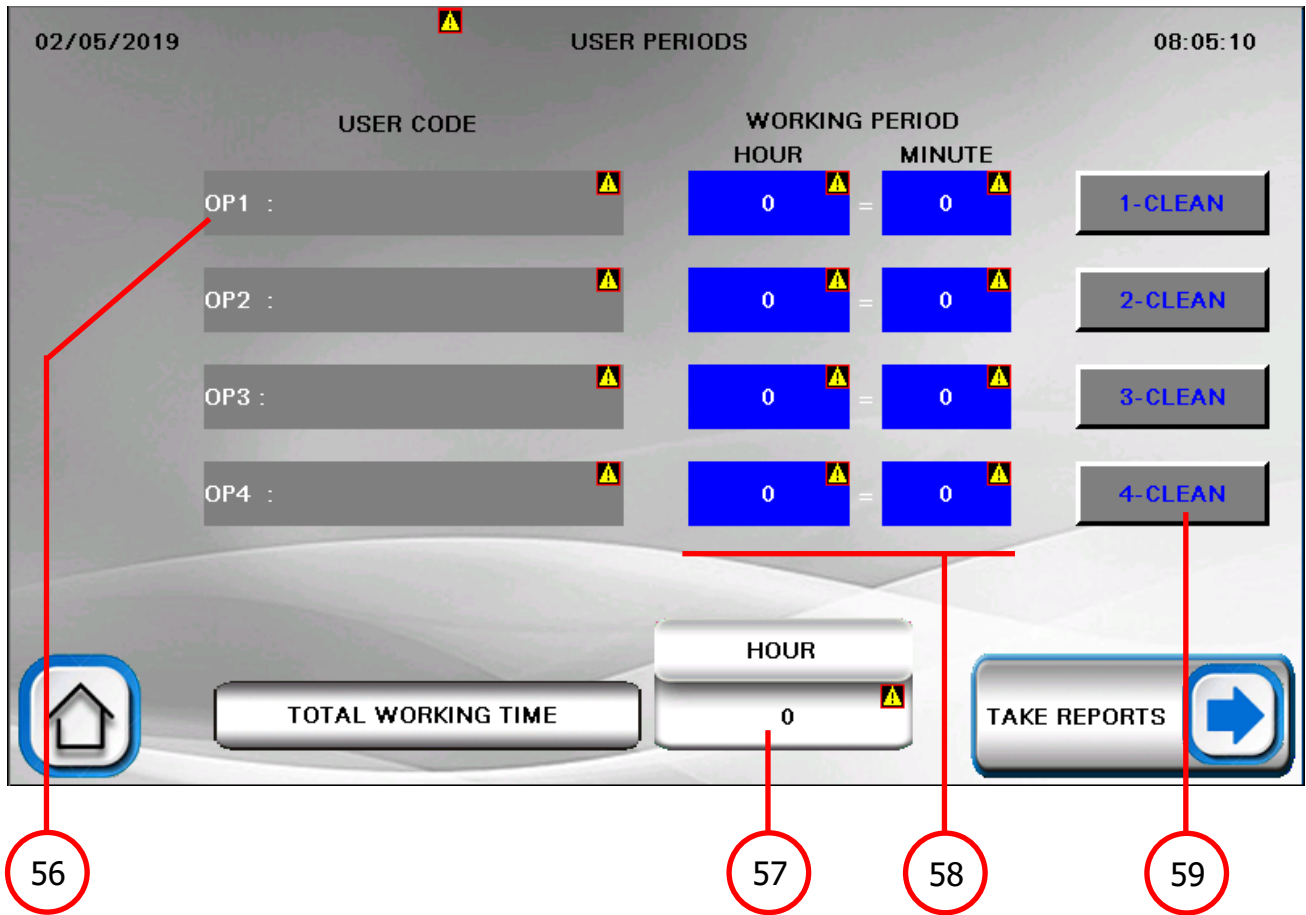


I-O output tracking system has function control of following outputs,

- Green light on traffic lights
- Yellow light on traffic lights
- Red light on traffic lights
- Chips cleaning motor has started
- Hydraulic motor has started
- Rack moving down
- Rack moving up
- Laser light is active
- Lighting is active
- Blue reset button is not pressed

Also tracking system is given some more safety controls as its below.

- Output OK
- Channel 1
- Channel 2
- Start
- K1
- K2
- S1
- S2
- S4
- ENABLE
- RESET



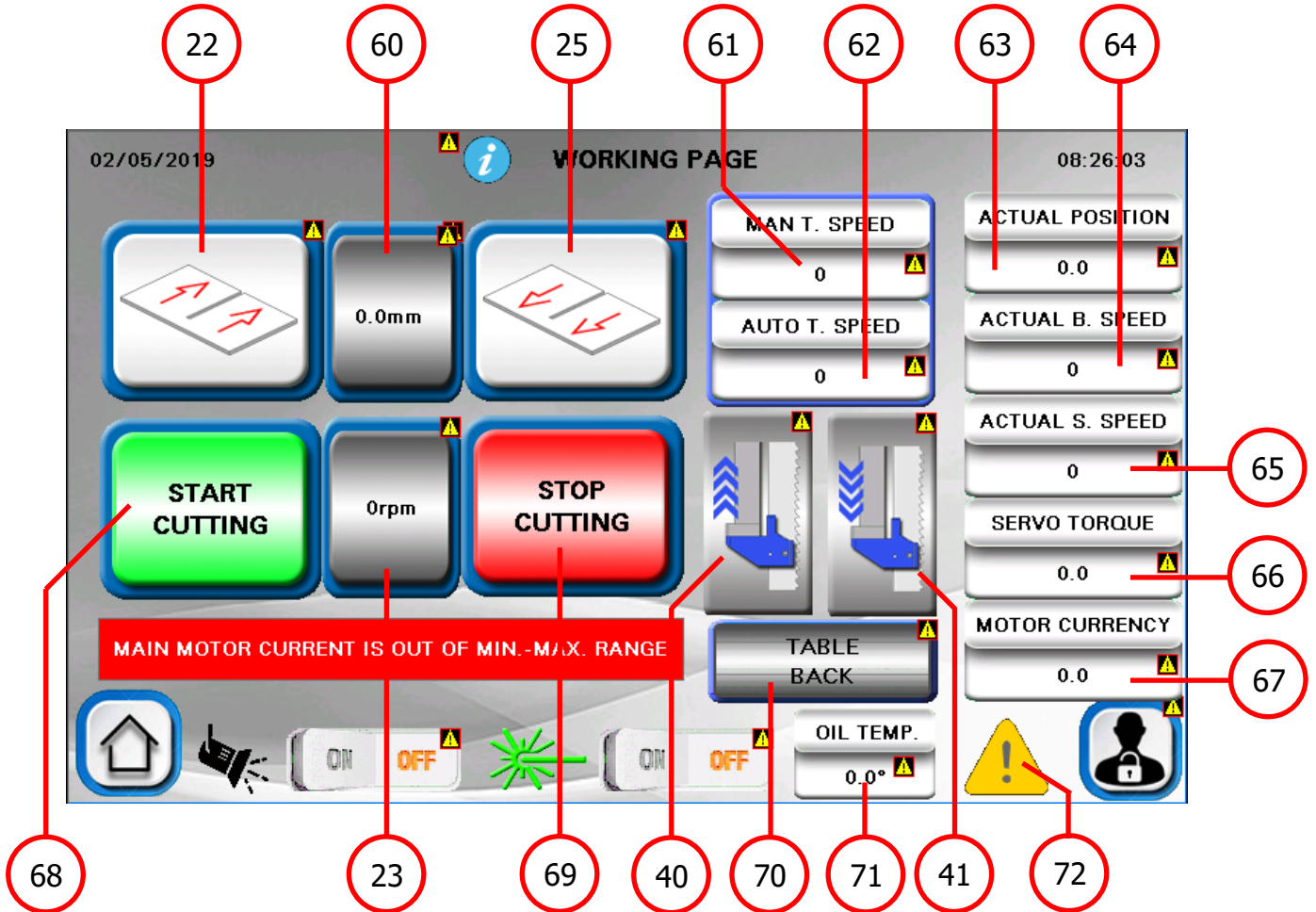
56-User Code Tag – Here users can change their name by theirselves

57-Working Time Indicator – This indicator shows total working time of the machine

58-Users Usage Times – This indicator shows users how long they use the machine

59-Cleaning Buttons – Cleaning buttons are getting visible just on maintenance user login

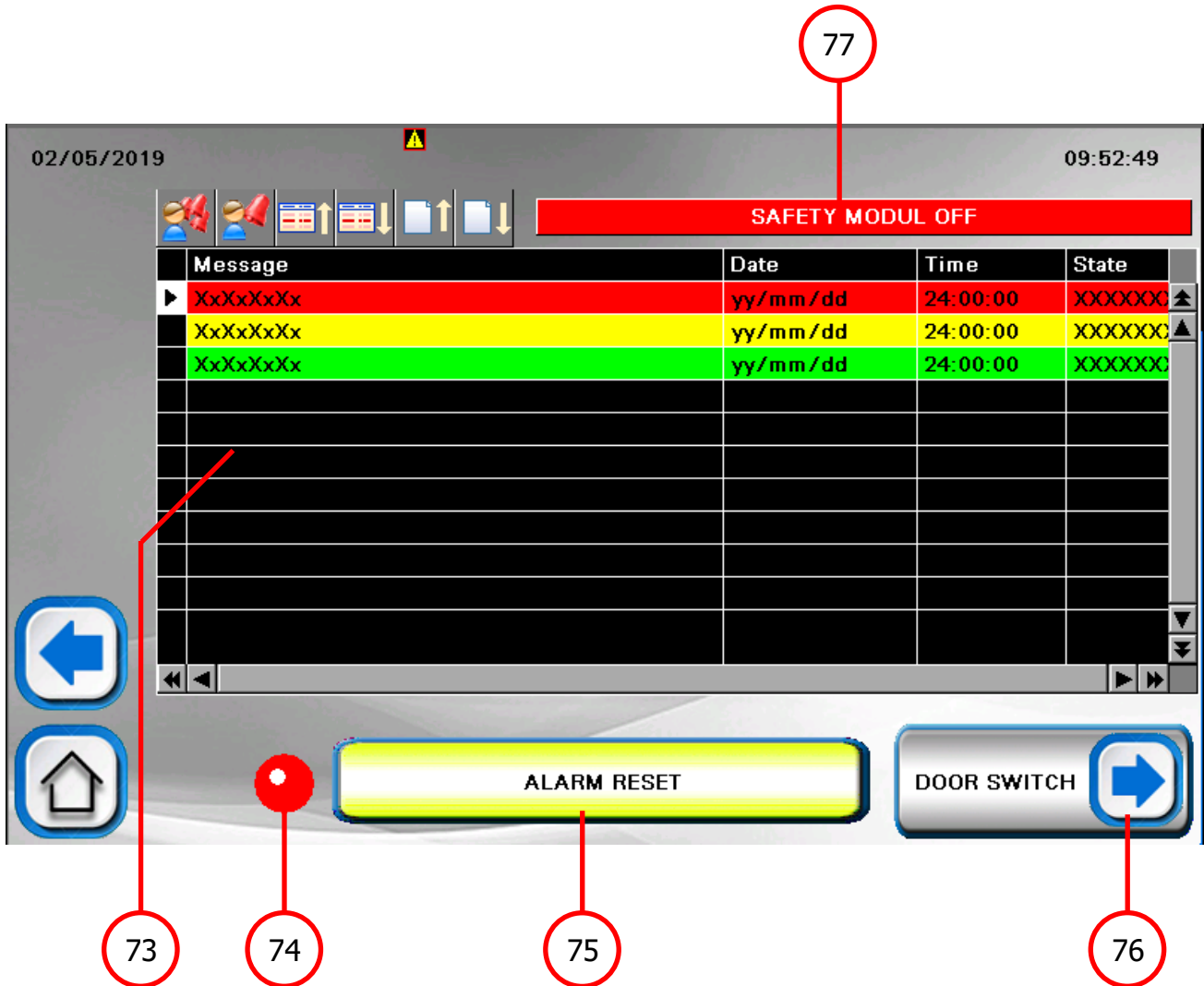
Also maintenance user is able to use button 8 (Take Report Button) to download or clean the histories on this page as well.



- 60-**Table Strok Button** – By clicking button user can entry the cutting length of operation
- 61-**Manual Table Speed** – Manual table speed can be adjusted to move the table with manual (rapid speed) speed using buttons 22 and 25
- 62-**Automatic Table speed** – Automatic table speed also can be adjusted and this value is also named as a cutting speed too
- 63-**Actual Position Indicator** – This indicator shows the actual position of table
- 64-**Actual Blade Speed Indicator** – This indicator shows the actual speed of main motor. The speed can be higher or lower then setted

value. The machine has selfcontrol for adjust this speed to keep cutting quality high and blade life long

- 65-**Actual Servo Speed Indicator** – The servo motor speed is different then the table speed because pitch of ballscrew and reducer. This indicator shows the actual servo speed.
- 66-**Servo Torque Indicator** – This indicator shows the actual torque on servo motor. This torque is under control of plc and adjusted automaticly to keep cutting quality high and blade life long
- 67-**Motor Currency Indicator** – This indicator shows the actual currency of the bandsaw blade motor. Also this currency is under control of plc and adjusted automaticly to keep cutting quality high and blade life long
- 68-**Start Cutting Button** – By clicking this button user can start the operation automaticly. The button has few functions to get on while its clicked. By clicking button machine first start the hydraulic pump to make a tention on blade before starting to cut, starting the chips cleaning motor then the bandsaw blade motor is starting to turn. By this cutting is starting by users adjustment of cutting length on the button 60
- 69-**Stop Cutting Button** – By clicking this button can pause or stop the cutting. In case need to continue the operation user should click the start cutting button again. In case of starting the cut from begining the movement of the table should be on manual mode to back.
- 70-**Table Back Button** – This button is visiable in case the machine is setted do not move back on automaticly after cuting. After cutting is finish table is moving on home positon by automaticly.
- 71-**Oil Temperature Indicator** – This indicator shows the current oil temperature in case the oil temperature is higher then 100 degree (this is spesifield from the oil producer company)
- 72-**Alarm Indicator** – In case machine has any fail or alarm this button will be visiable. Please look at the page 46,47,48,49,50 for alarm list and following pages will explain the troubleshotting of alarms



73-Alarm & Warning Log Sheet – Users can check this page in case of alarm. The alarm list also will be reported to the authorized user such a maintenance and Temelsan users

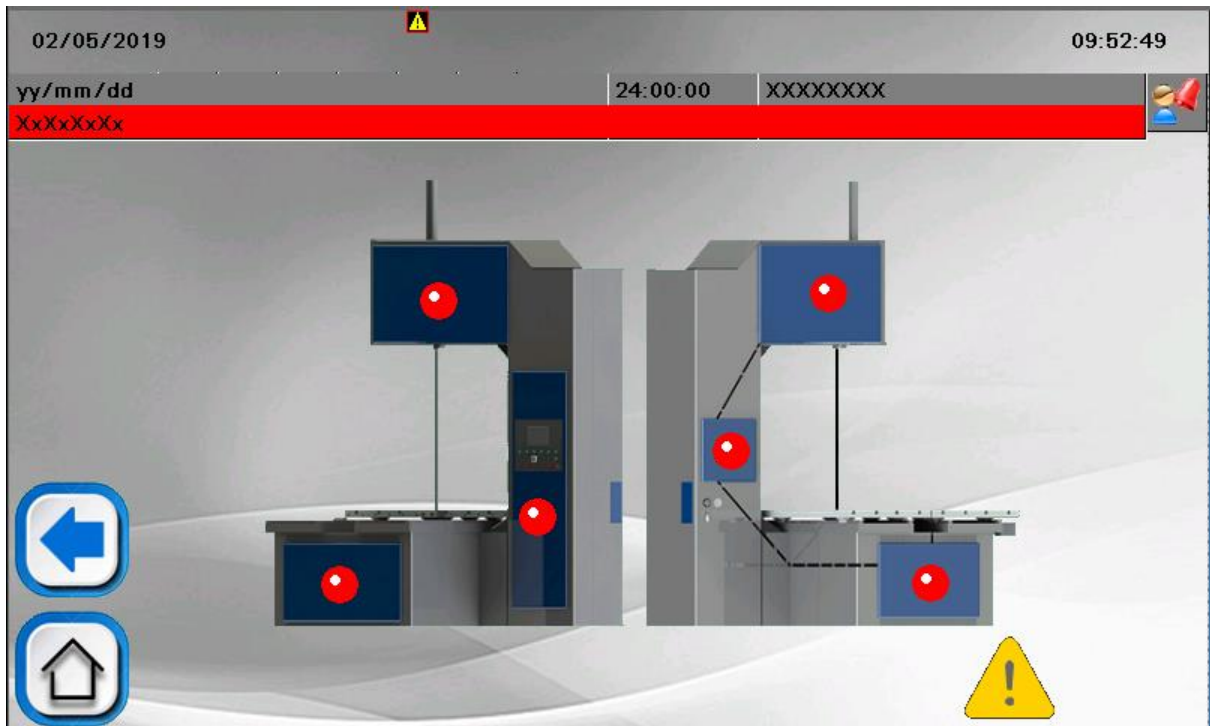
74-Reset Button Error Indicator – In case the red light is blink means the reset button should be pressed.

75-Alarm Reset Button – The button allow the user to reset the alarm.

Button usage instruction is below;

- Read the alarm
- Look at the page To see how to solve the problem
- Solve the problem
- Click Alarm Reset button
- Click the Home button to back on operation

76-Door Switch Indicator Button – While user see any of door switch alarm on log can click this button to see exactly which door is opened. As its shows on below Picture the opened door red light will be blink in case of staying opened.



ALARM & WARNING LIST AND TROUBLESHOOTING

- ***EMERGENCY STOP IS PRESSED !***

Please unpress the Emergency Stop on control panel

- ***PHASE CONTROL ! 380V***

Please check the phase ranking is not correct. On this case hydraulic pump can not work. This means there is no tension on blade. If no tension on blade machine can not start.

- ***SECURITY MODULE IS WAITING FOR RESTART !***

Machine need to be restarted. Switch off the main switch then wait 10 second to open it again.

- ***HYDRAULIC MOTOR THERMIC ERROR !***

Hydraulic pump motor has too high temperature on, please check the wiring and be sure that the motor wires connected and tithed well.

- ***HYDRAULIC LOW PRESSURE ! PRESSURE SW***

Look at the I-O tracking if hydraulic pump motor is working.If not work please contact the producer company to replace the motor. In case motor work well please check the pump which is connected to the motor. If pump has mallfunction contact the producer company to replace the pump.

- ***DOOR SWITCH 1 OPENED***

Click on door switch indicator button to see which door is opened. Close the door. In case door is closed please check the switch on the door is it in function or no. If yes then contact the producer company to solve your problem online. If no then replace the switch with the new one.

- **DOOR SWITCH 2 OPENED**

Click on door switch indicator button to see which door is opened. Close the door. In case door is closed please check the switch on the door is it in function or no. If yes then contact the producer company to solve your problem online. If no then replace the switch with the new one.

- **DOOR SWITCH 3 OPENED**

Click on door switch indicator button to see which door is opened. Close the door. In case door is closed please check the switch on the door is it in function or no. If yes then contact the producer company to solve your problem online. If no then replace the switch with the new one.

- **DOOR SWITCH 4 OPENED**

Click on door switch indicator button to see which door is opened. Close the door. In case door is closed please check the switch on the door is it in function or no. If yes then contact the producer company to solve your problem online. If no then replace the switch with the new one.

- **DOOR SWITCH 5 OPENED**

Click on door switch indicator button to see which door is opened. Close the door. In case door is closed please check the switch on the door is it in function or no. If yes then contact the producer company to solve your problem online. If no then replace the switch with the new one.

- **DOOR SWITCH 6 OPENED**

Click on door switch indicator button to see which door is opened. Close the door. In case door is closed please check the switch on the door is it in function or no. If yes then contact the

producer company to solve your problem online. If no then replace the switch with the new one.

- ***RACK LOWER LIMIT REACHED !***

Minimum Guide heigh which is connected to the rack is 400m from table. In case the guide reach this point user should turn the switch on control panel to manual usage of machine then to move the rack up from control panel or from manual usage page on screen.

- ***RACK MOTOR THERMIC ERROR !***

Rack motor has too high temperature on, please check the wiring and be sure that the motor wires connected and tithed well.

- ***RACK UPPER LIMIT REACHED !***

Maximum Guide heigh which is connected to the rack is 1230m from table. In case the guide reach this point user should turn the switch on control panel to manual usage of machine then to move the rack down from control panel or from manual usage page on screen.

- ***TABLE BACK LIMIT REACHED ! DRIVE FRONT MANUAL***

Maximum table move is 1600mm. In case the table reach the max point on back move user should turn the switch on control panel to manual usage of machine then to move the table front from control panel or from manual usage page on screen.

- ***TABLE FRONT LIMIT REACHED ! DRIVE BACK MANUAL***

Maximum table move is 1600mm. In case the table reach the max point on back move user should turn the switch on control panel to manual usage of machine then to move the table front from control panel or from manual usage page on screen.

- **TABLE SERVO DRIVE ERROR !**

Please try to drive servo on manual mode by taken machine on manual usage from control panel. In case servo motor is turning please check the wiring of servo drive on electric panel. If servo motor is not turning please contact the producer company to feed a file to use Schneider on customer country under warrant to replace the necessary parts directly.

- **BLADE IS BROKEN... PLEASE CHANGE THE BLADE...**

In case this alarm is active there can be two issues on.
-First issue is blade is broken so the free Wheel cant turn.
-Second issue is hydraulic pump is not in function

- **INVERTER ERROR !**

Please switch off the machine from main switch keep waiting 5 minute then turn it on again. In case problem is exist please contact the producer company. In case problem is solved please informe the producer company and follow the current and usage of blade motor for a while.

- **INVERTER CONNECTION ERROR !**

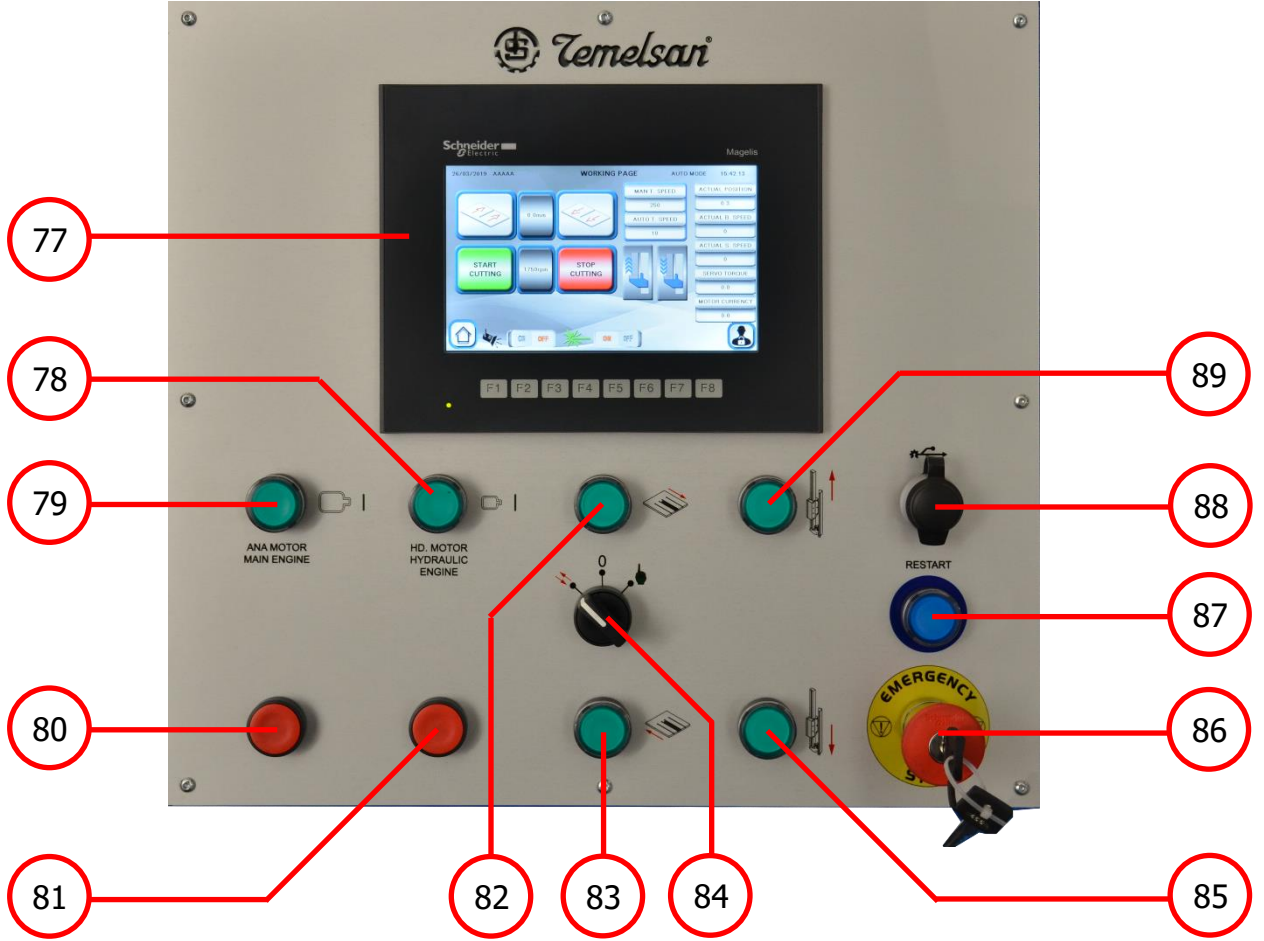
In case inverter is replaced and wires are not correct this alarm will be appear. Connect the wires as its shows on diagrams and restart the machine.

- **HYDRAULIC OIL TEMPERATURE LOW ALARM**

Hydraulic oil temperature can give this alarm in case oil level is too less. Please feed the Nr 46 hydraulic oil on tank then continue to work.

- **HYDRAULIC OIL TEMPERATURE HIGH ALARM**

Hydraulic oil temperature switch can give this alarm in case of oil temperature is reach the maximum setting as its setted on DK 1500 LS at 100 degree.



77-Schneider HMI 7" Touch Screen

78-Hydraulic Motor Manual Start Button – This button has same function as button 34 on screen

79-Bandsaw Blade Motor Manual Start Button – This button has same function as button 21 on screen

80-Bandsaw Blade Motor Manual Stop Button – This button has same function as button 26 on screen

81-Hydraulic Motor Manual Stop Button – This button has same function as button 37 on screen

82-Table Manual Front Move Button – This button has same function as button 22 on screen

83-Table Manual Back Move Button – This button has same function as button 25 on screen

84-Mode Selection Switch – In case switch is on left (arrow icon) means machine ready to work on automatic mode. If switch is on right (hand icon) means machine ready to work on manual mode. In case switch is on "0"Zero (service mode)icon means machine is ready to change the blade or do necessary cleanings in to machine body.

While operator is using the machine on automatic mode just to turn this switch on service mode the machine will stop work. In case machine is on cutting cycle this kind of moves can damage blade on the machine. Also its possible to take the PLC on protection positon.

85-Rack Manual Down Button – This button has same function as button 41 on screen

86-Emergency Stop Button

87-Blue Restart Button – While user switch on the machine from main switch its already needed to click the blue button to get on the interface and HMI system.

88-USB Plug – Maintenance can use the usb stick to upload the new program on HMI also using the usb stick can download the reports from the machine

89-Rack Manual Up Button – This button has same function as button 40 on screen

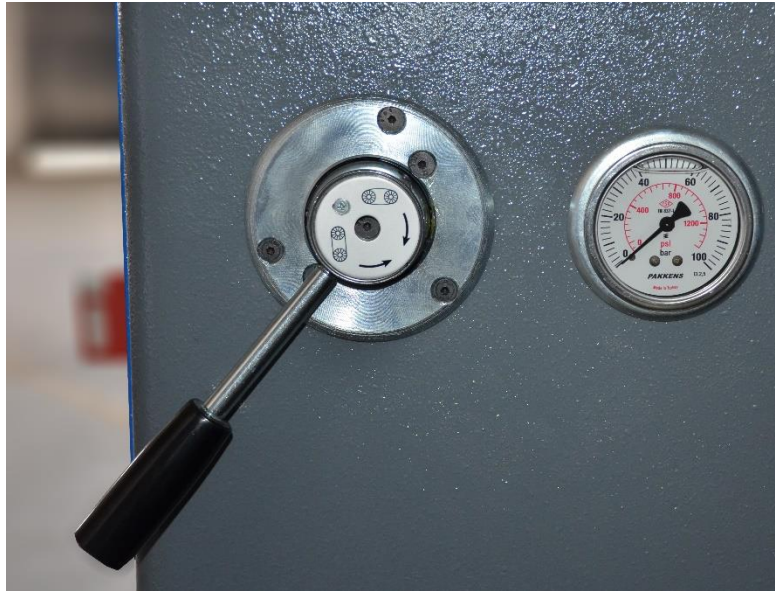
FUNCTION OF MANUAL HYDRAULIC VALVE

The hydraulic valve is based on machine body under the door of free wheel. The valve can be used for two operation;

Given Tention to the bandsaw blade :

Before machine is start to work the valve should be on most lover position to open the pressure line for tention piston. Other case screen will show the alarms about it.

Before running the machine be sure that the tention valve is on right position as its shows below picture.



When hydraulic pump start to work the pressure can be indicated on manometer near the tention valve.

Loosen Tension on bandsaw blade and change the blade :

In case of breake or sawdust the valve should be max upper position (turn clockwise the handle of valve till end) to turn pressure on opposite side to make the tention whell to fall down.

BLADE CHANGE INSTRUCTION

In needs to change the blade please follow the intruction below

- Move the table by manual buttons until end of back limit swich (in case there is a material on the table do not move the material from table keep moving the table material on)
- Turn Mode switch to "0" Zero from control panel
- Open the necessaty doors of the machine
- Press hydraulic motor start button 3 second keep pressed on manual usage page
- Move the tention valve on clockwise till end and left it there
- Remove the blade
- Replace the new blade
- Keep pressed 3 second hydraulic start button to start the pump
- Turn the tention valve counter clockwise until end and left it there
- Turn machine on automatic mode from control panel
- Continue the operation

APPENDICES**Appendix 1**

Exploded Views and Technical Representations of Parts or Main Units

Appendix 2

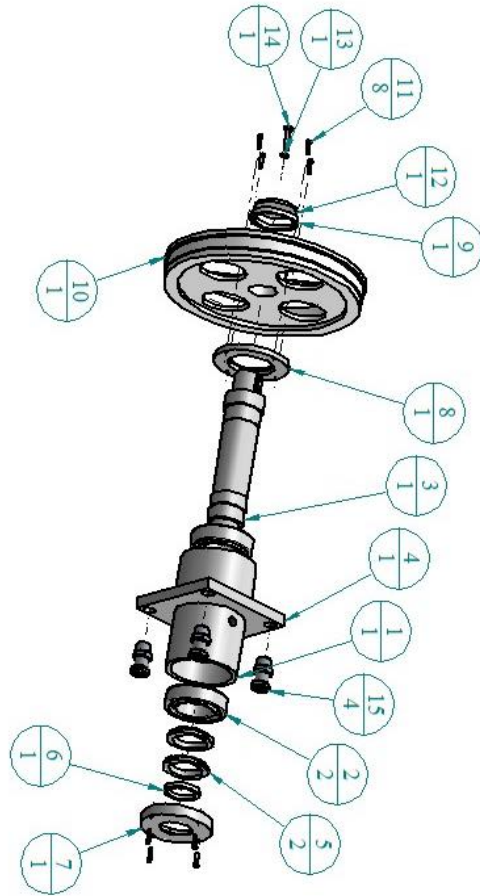
Electrical Diagrams

Appendix 1

Exploded Views and Technical Representation of Parts or Main Units

FREE WHEEL AND SHAFT

Item Number	File Name (no extension)	Quantity
1	DK2000 ALT YATAK BORU	1
2	22215w33 130x75x31 01	2
3	ALT YATAK ANA MİL DK2000	1
4	DK2000 BORU YATAK PLAKA	1
5	SOMTUN 75	2
6	60x75x10 YA	1
7	YATAK ARKA RUL-KAPAVI	1
8	YATAK ON RUL-KAPAVI	1
9	85x100x10 YA	1
10	1500 LS KASNAK RD54 LUK	1
11	IM6X25	8
12	KASNAK ANA MİLİ SABİTLEME PULU	1
13	Pln10	1
14	ABM10X45	1
15	GÖVDE AYAR CIVATASI	4



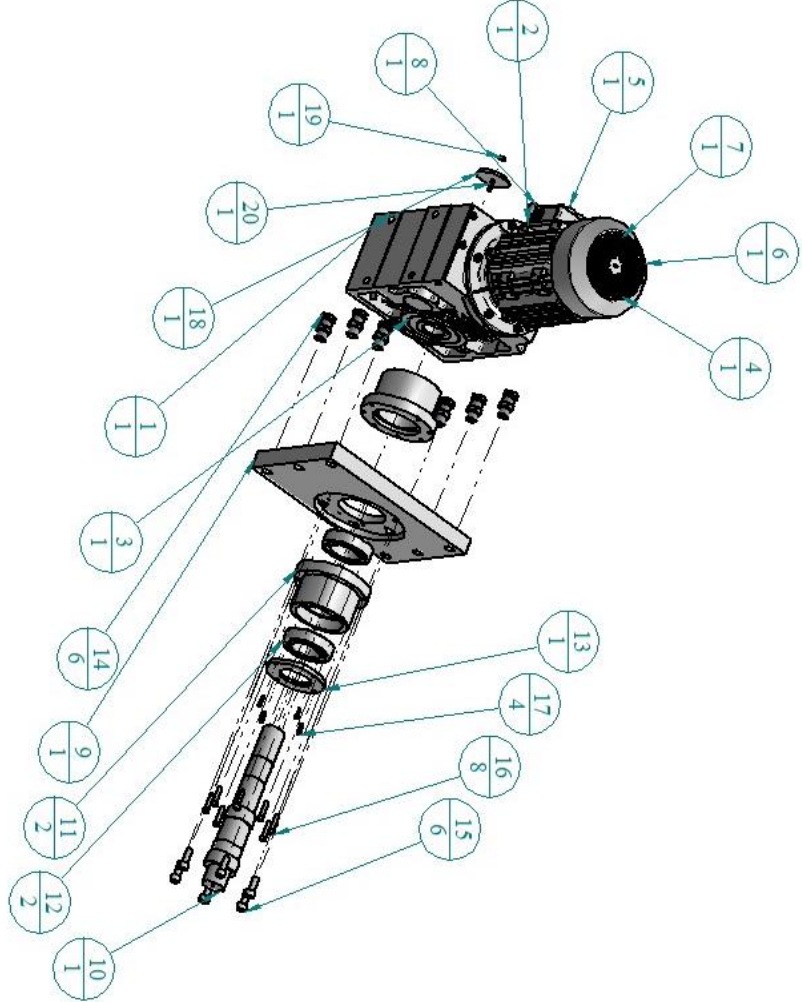
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MAIN BLADE MOTOR SHAFT

Item Number	File Name (no extension)	Quantity
1	K573_Varsayilan	1
2	532E132_Varsayilan	1
3	ML59A_Varsayilan	1
4	2E132M_DA_Varsayilan	1
5	KL_2E132_Varsayilan	1
6	T_2E132_1_Varsayilan	1
7	EF2132A_Varsayilan	1
8	RK_2E132_Varsayilan	1
9	ANA PLAKA YR 7 5	1
10	REDIKTOR ANA	1
11	REDIKTOR YATAK	2
12	22215w33 130x75x31	2
13	YATAK ON RUL-	1
14	GÖVDE AYAR	6
15	M16X40	6
16	IM10X45	8
17	IM6X25	4
18	KASNAK ANA MILI	1
19	Plm10	1
20	ABM8X45	1



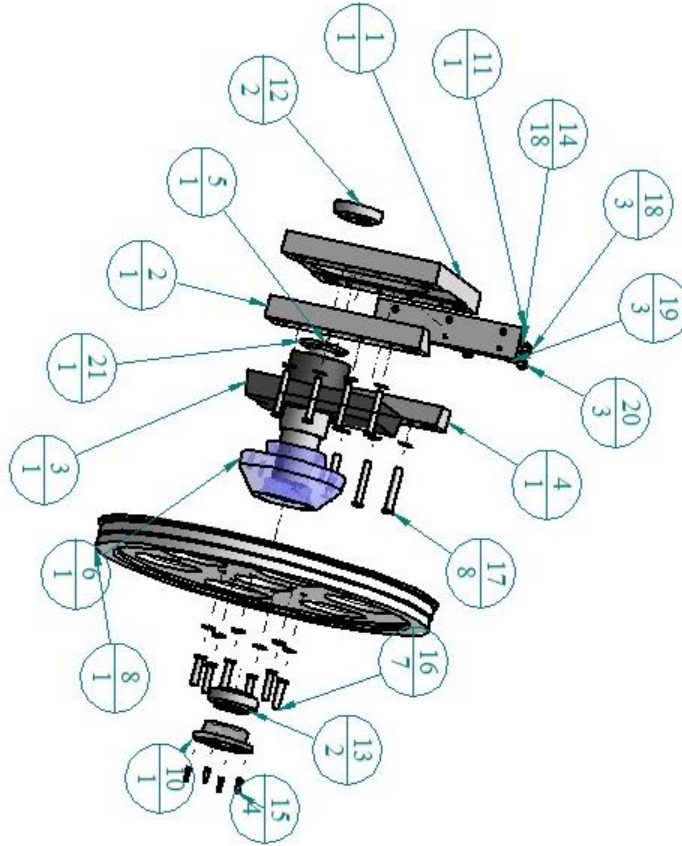
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TENTION WHEEL AND SHAFT

Item Number	File Name (no extension)	Quantity
1	ALT PLAKA	1
2	YAN KULAK	1
3	KAYIT KAYNAKLI	1
4	YAN KULAK SAV	1
5	UST YATAK MILLI 01	1
6	UST KASNAK GOBEVI	1
7*	22210	2
8	1500 LS	1
9*	85x100x10 YA	1
10	KASNAK RUL KAPAVI	1
11	BOSLUK ALMA	1
12	32210 50X90X24 75	2
13	RM SOMTUN	2
14	PLM12	18
15	Im6x20	4
16	ABM12X50	7
17	ABM12x80	8
18	ABM12X30	3
19	SM10	3
20	ABM10X45	3
21	KASNAK ANA MILLI	1



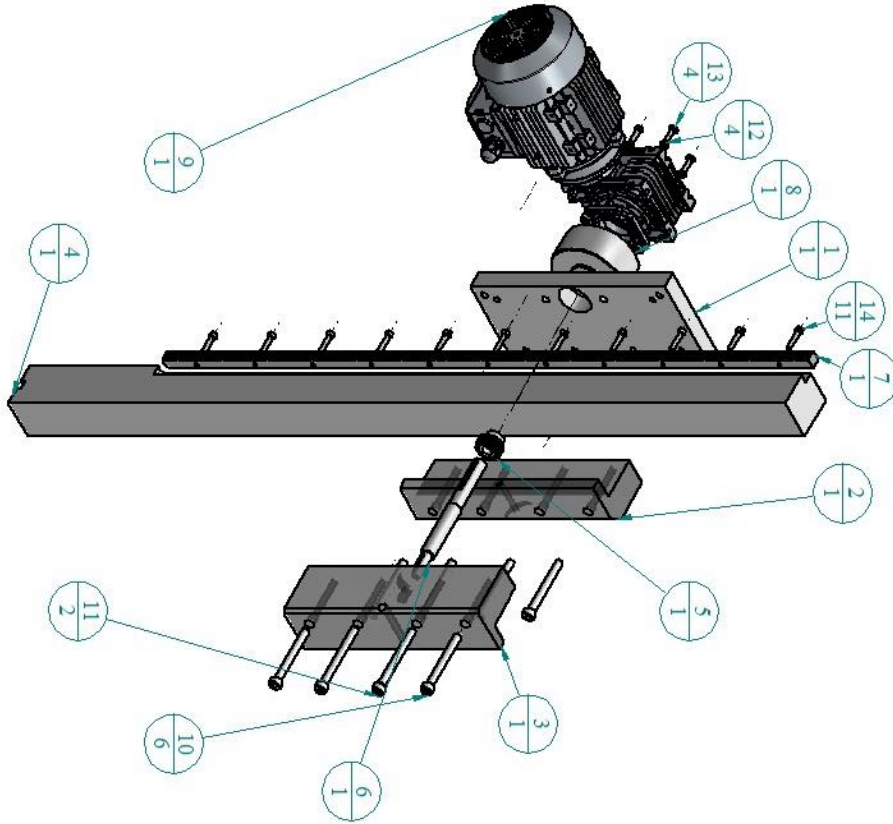
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RACK (GUIDE POST)

Item Number	File Name (no extension)	Quantity
1	ALT ANA PLAKA LS	1
2	PLAKA YAN SAV PARÇASI LS	1
3	PLAKA YAN SOL PARÇASI LS	1
4	KRM ANA MİL LS	1
5	PİNYON DISİ	1
6	MOTOR ARA MİL LS	1
7	KRM DISİ 1500 LS	1
8	MOTOR ARA ARKA FLANS LS	1
9	EV_040_0_L_3E71M_B 14_ML42A_FL3A_0_0_1_0_0_P1_A_0_0_0_M1	1
10	IM10X90	6
11	IM10X100	2
12	Plm6	4
13	Abm6x20	4
14	Im6x30	11

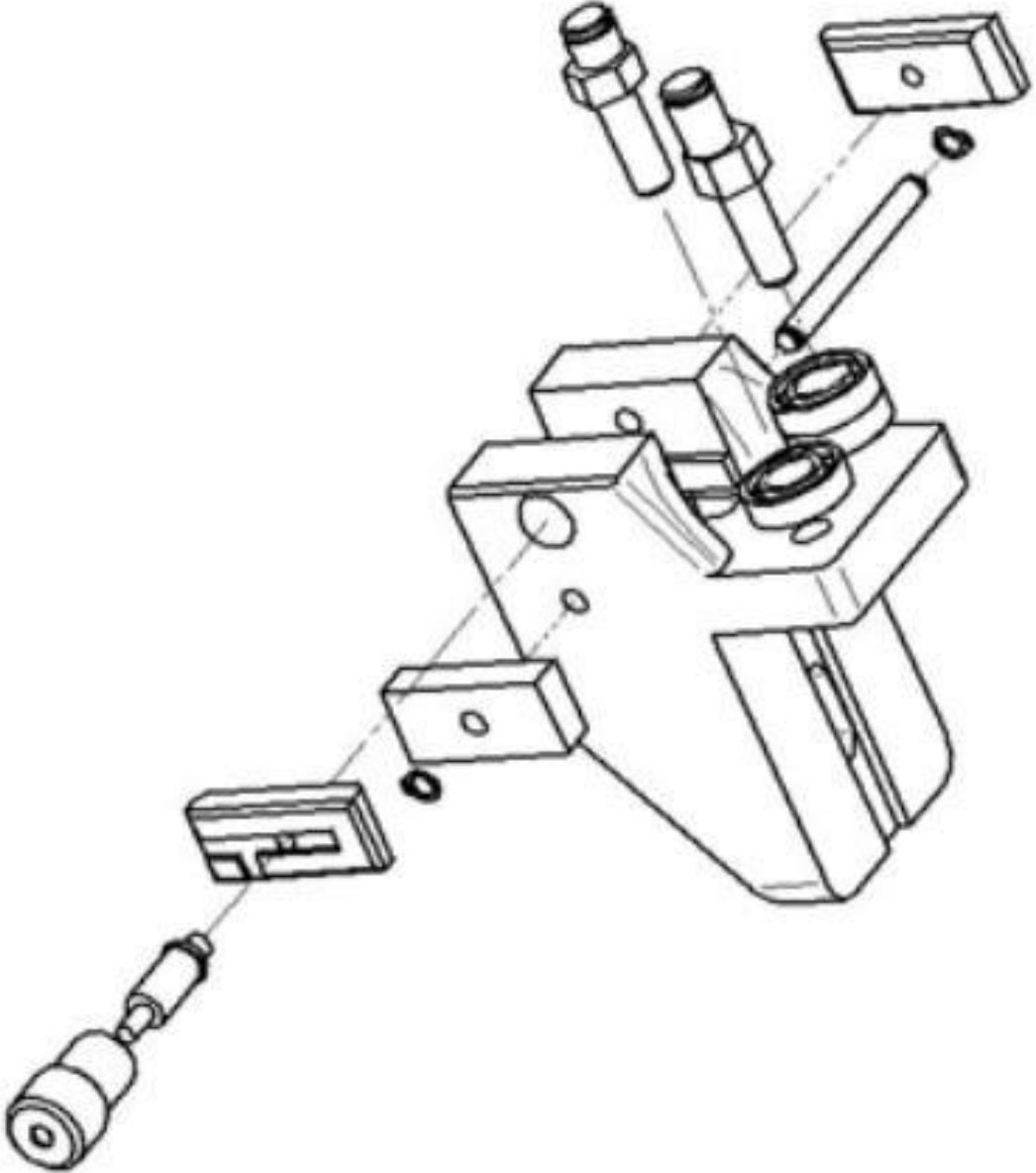


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BLADE GUIDES

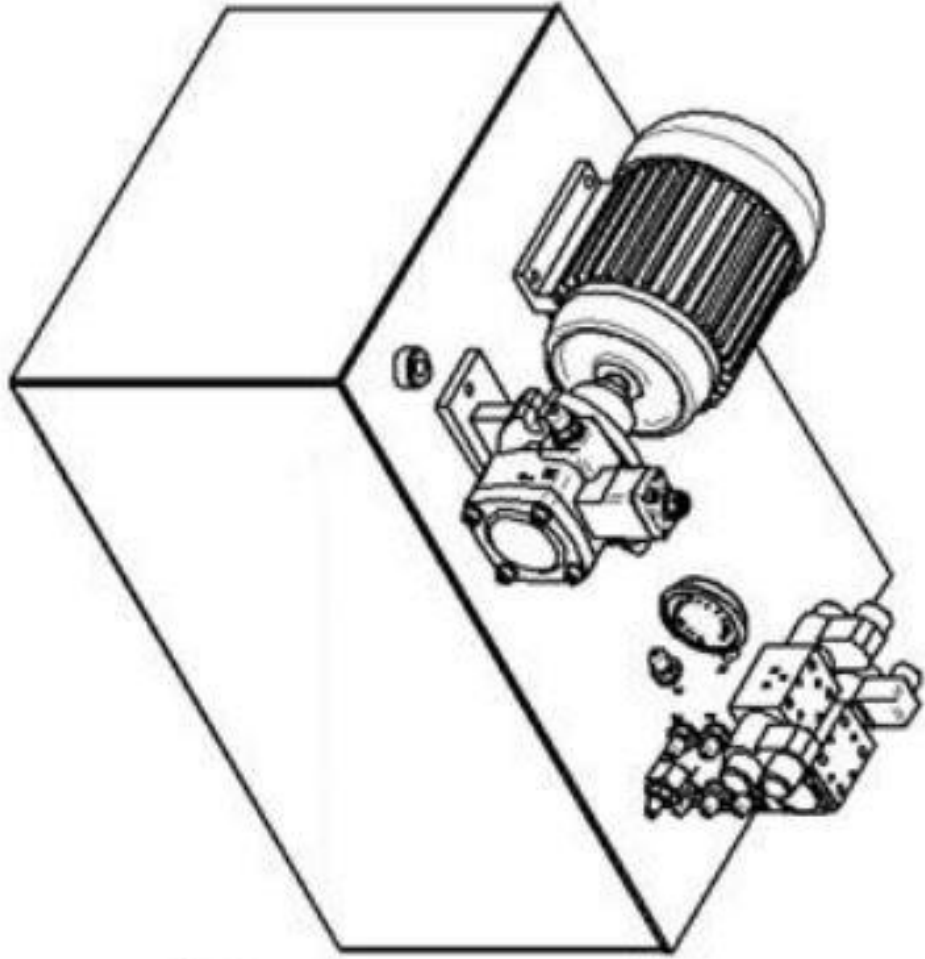


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HYDRAULIC UNIT

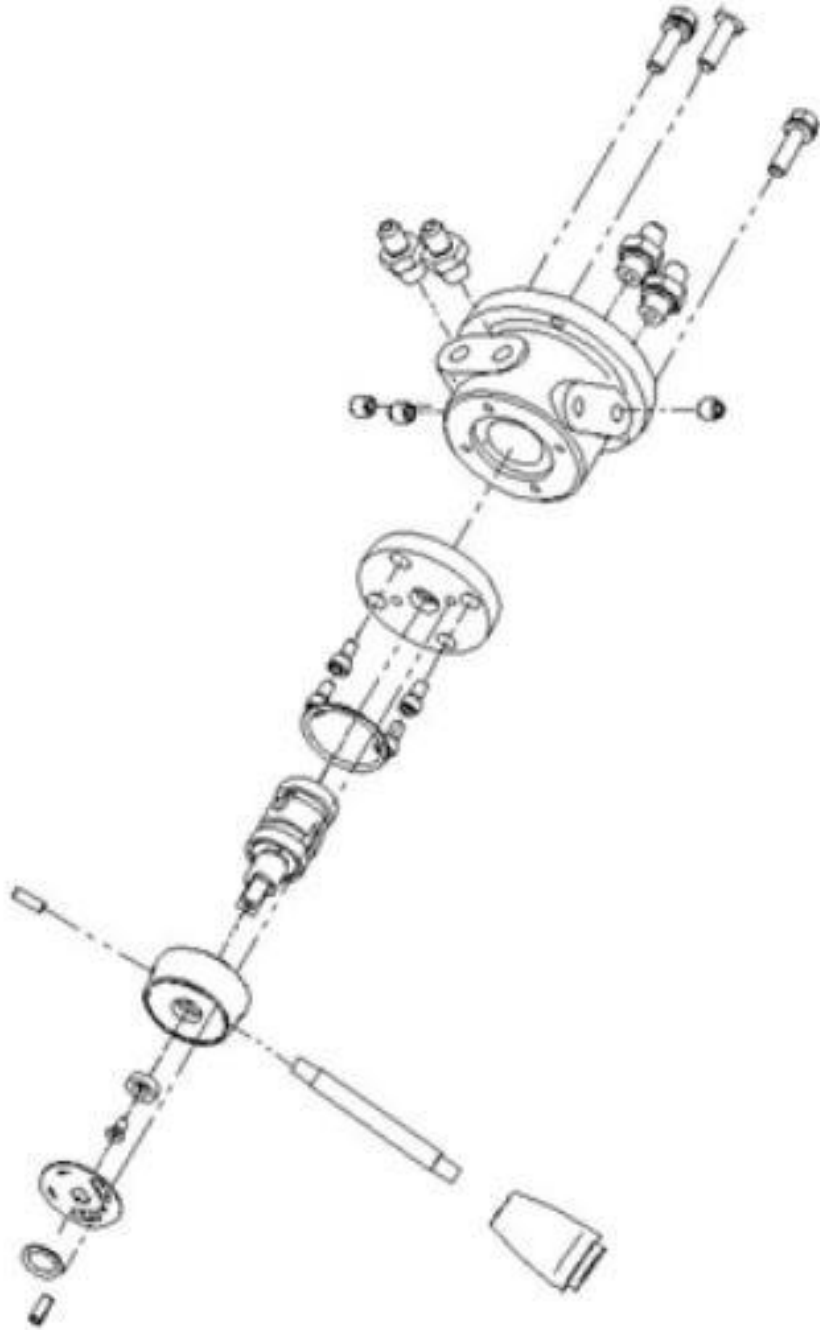


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TENSION VALVE



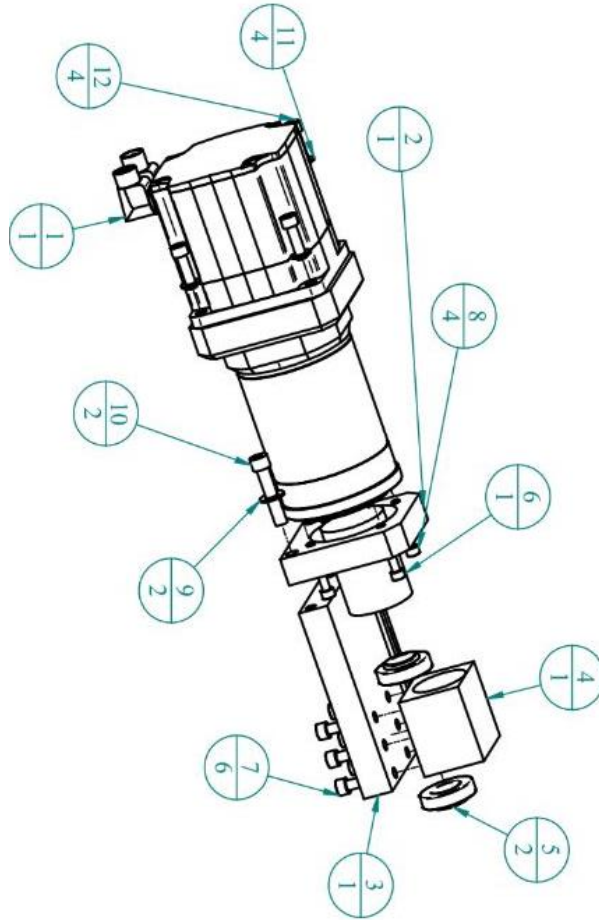
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BALLSCREW AND SERVO MOTOR

Item Number	File Name (no extension)	Quantity
1	FE120-2-130M10 (1)	1
2	SERVO BALANTI LEMASI	1
3	SERVO BALANTI ALT PLAKA	1
4	VIDA MIL RM YATAK	1
5	32006X KONIK RULMAN	2
6	GS28 KAPLIN	1
7	IM10X45	6
8	IM8X50	4
9	PLM12	2
10	IM12X60	2
11	Plm10	4
12	IM10X35	4

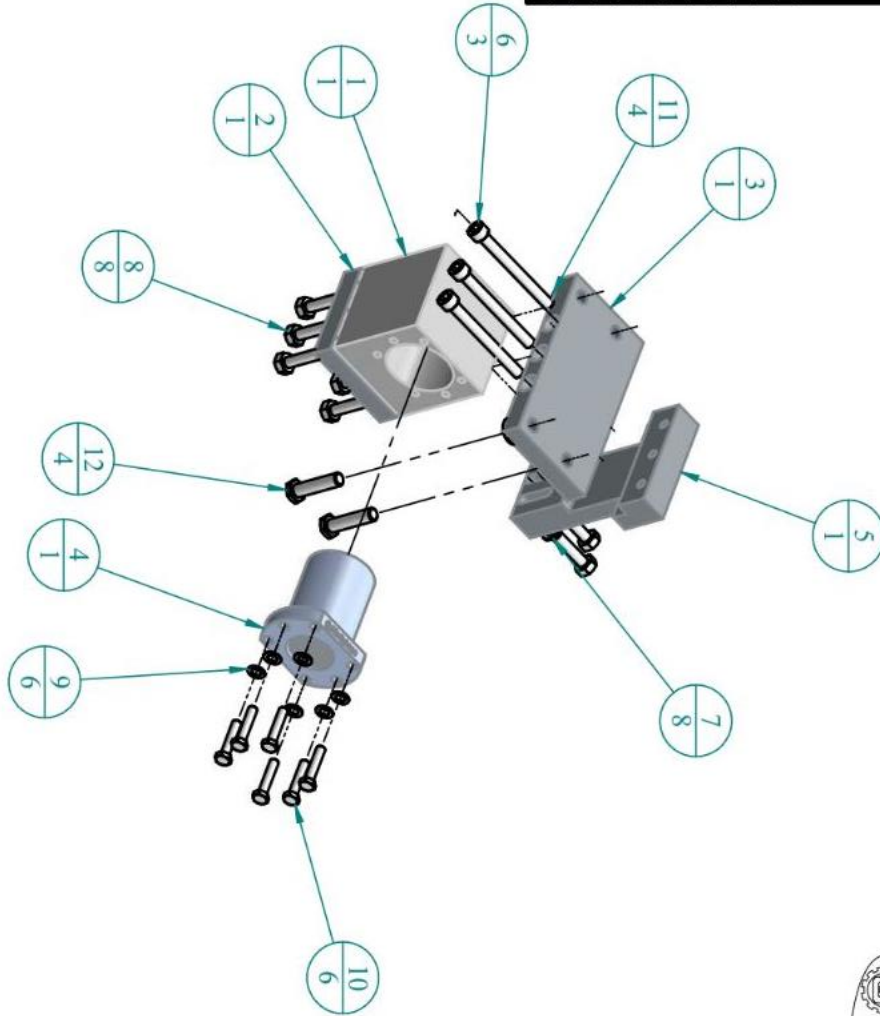


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Item Number	File Name (no extension)	Quantity
1	VIDA SOMUN YATAK	1
2	VIDA SOMUN LEMASI	1
3	SOMUN YATAK	1
4	SUR-4010	1
5	VIDA SOMUN LEMASI	1
6	IM10X100	3
7	Plm10	8
8	ABM10X40	8
9	Plm8	6
10	ABM8X40	6
11	PLM12	4
12	ABM12X50	4

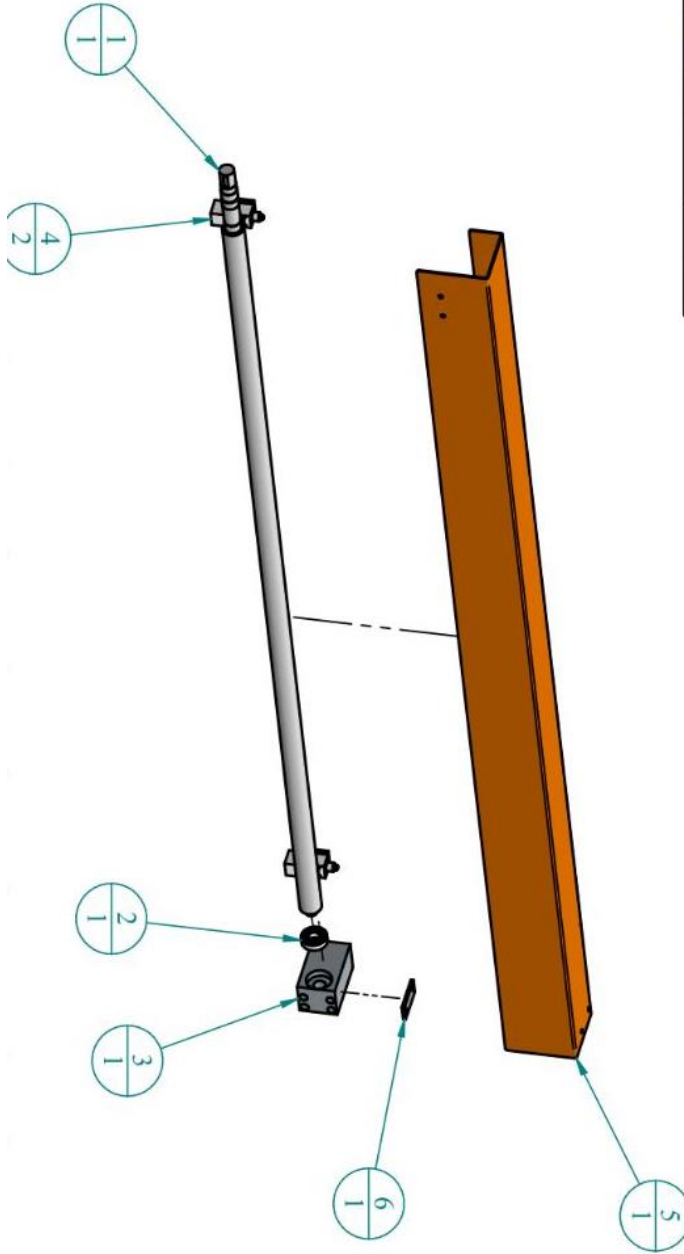


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Item Number	File Name (no extension)	Quantity
1	VIDA MILLİ 40	1
2	6204	1
3	VIDA MIL RM YATAK	1
4	PLAKA LİMİT SİVİCİ	2
5	SERVO MUHAFAZA İÇİ	1
6	MUHAFAZA ALTI	1



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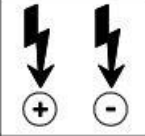
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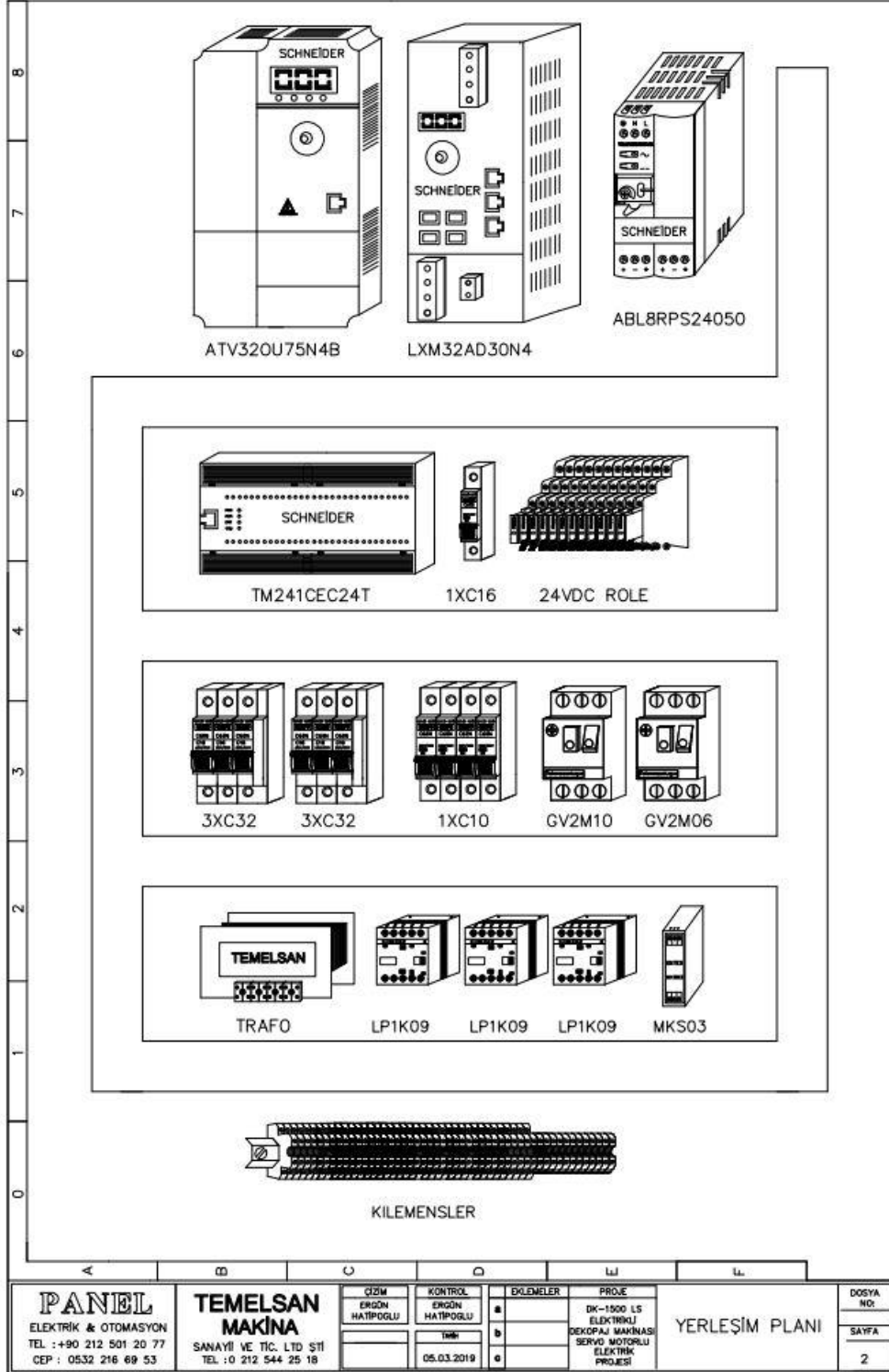
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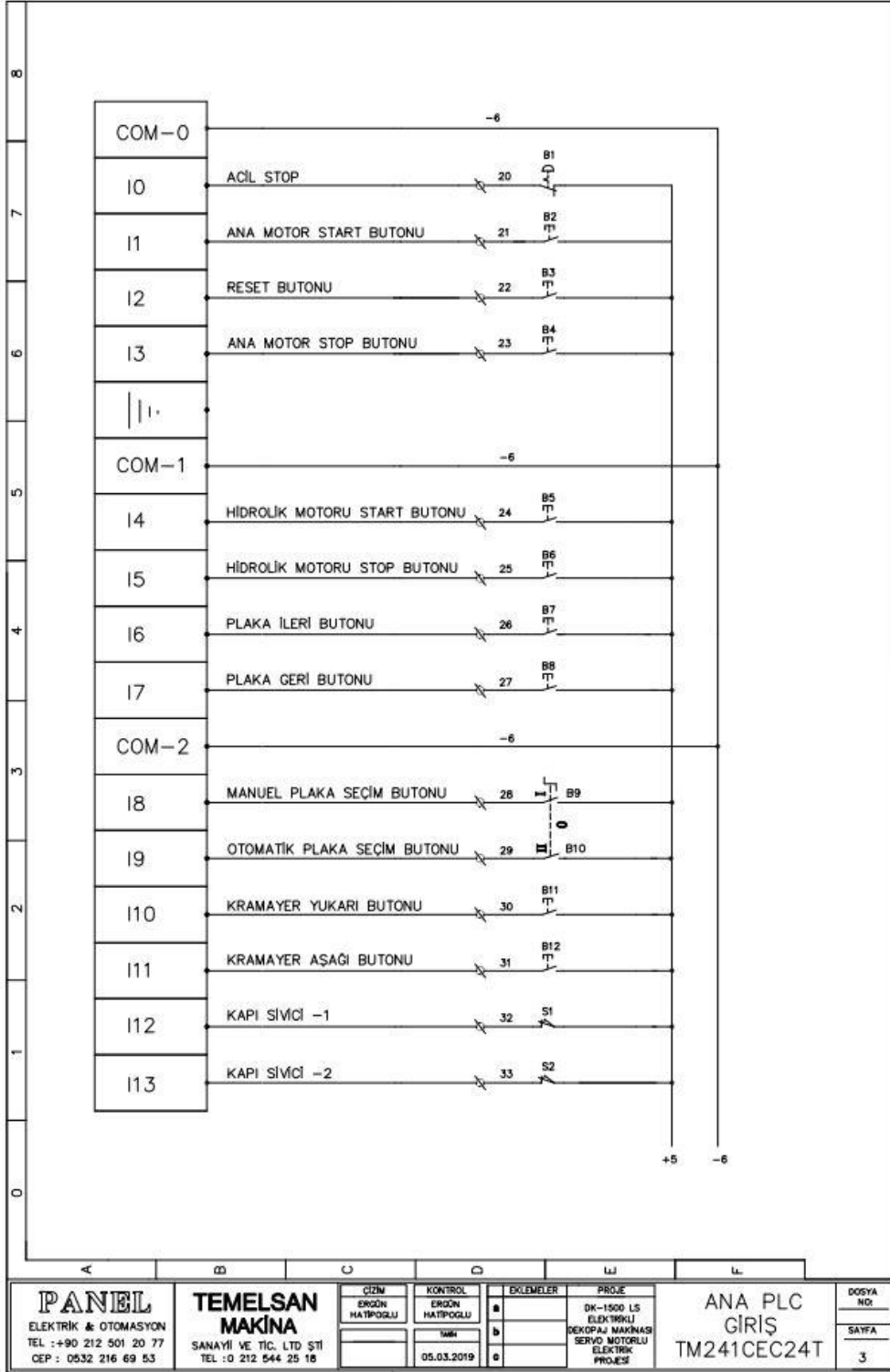
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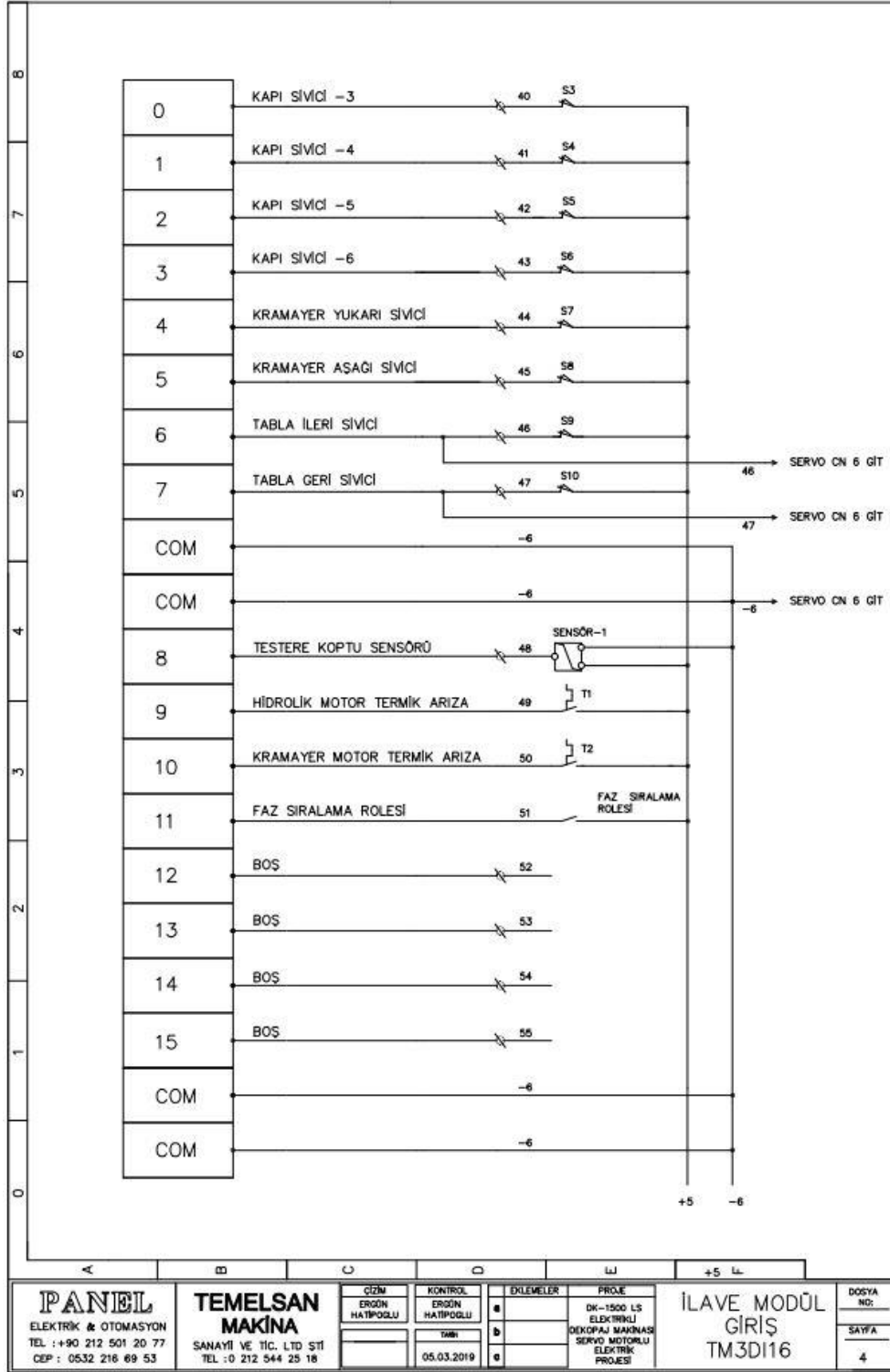
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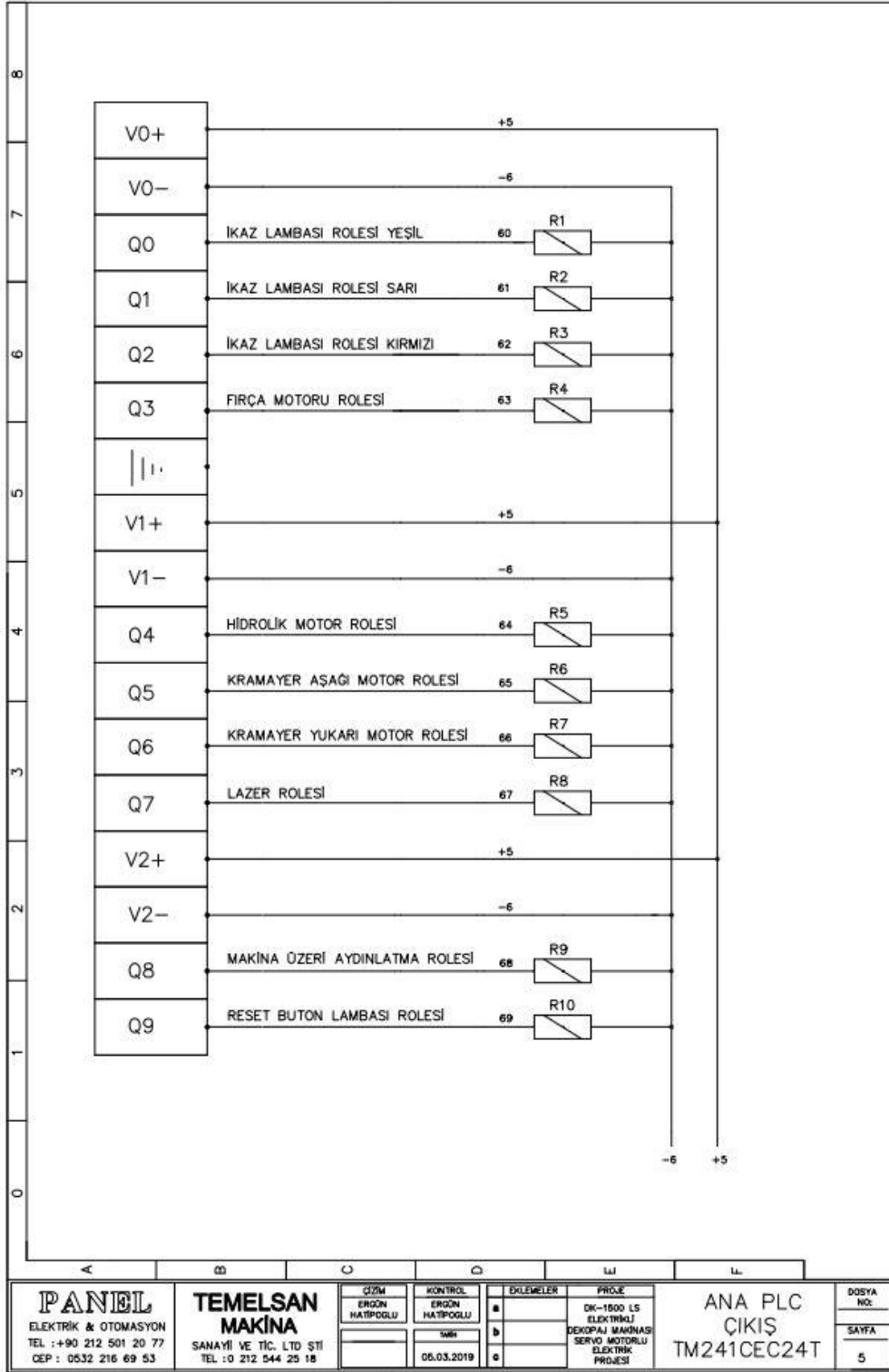
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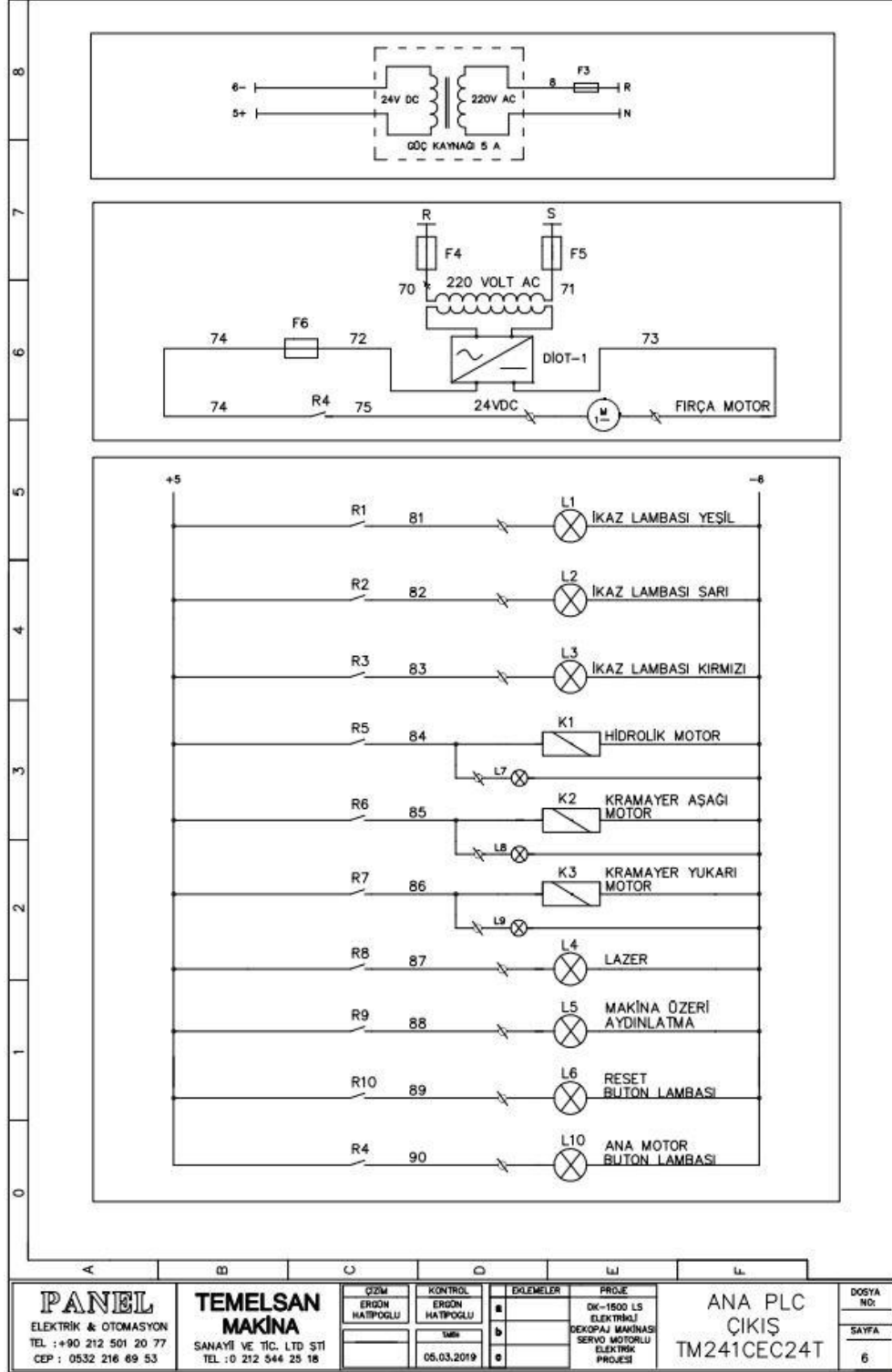
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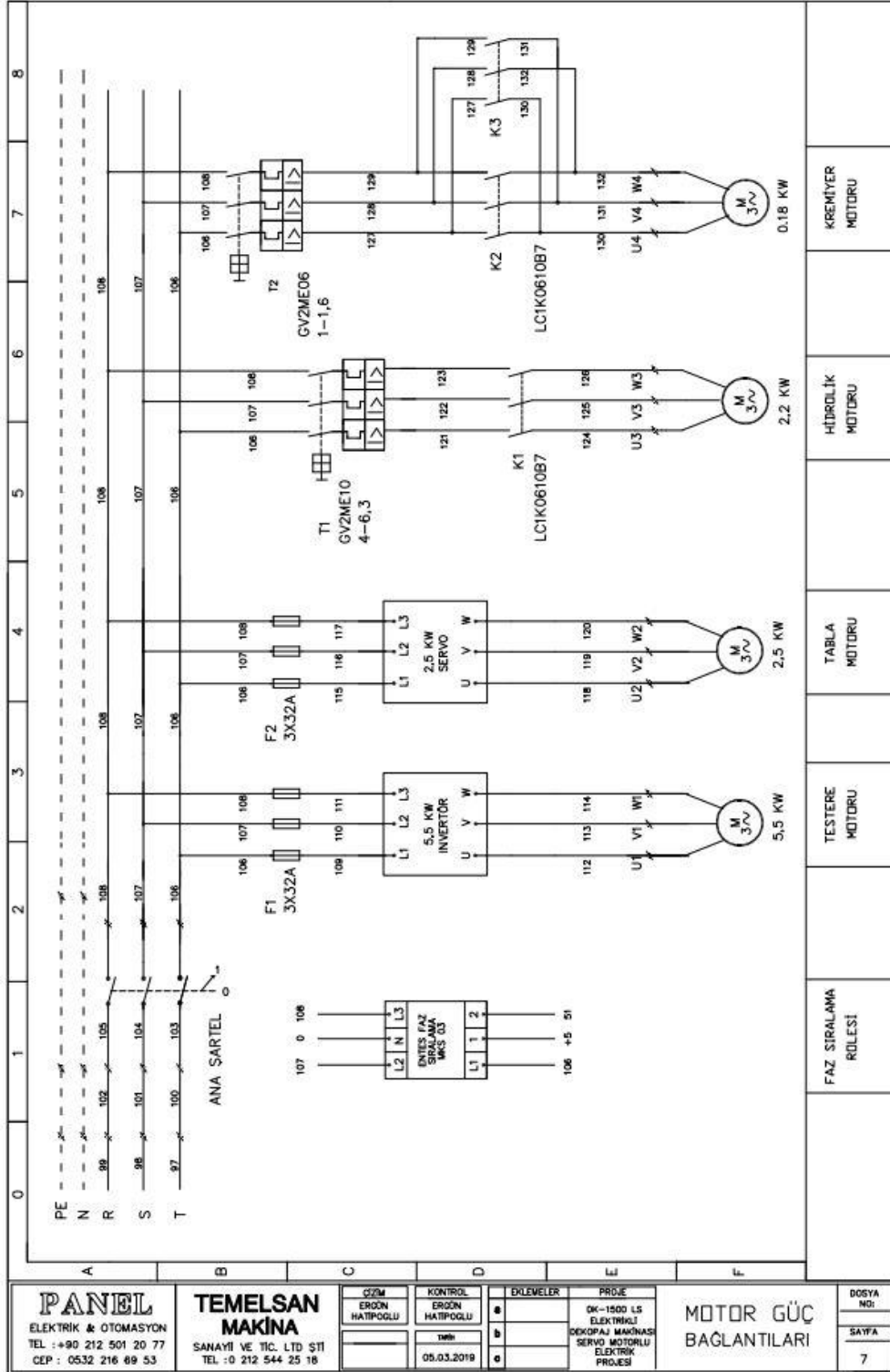
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