

2013

BEKAMAK

bandsawing machines

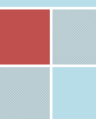
SEMI AUTOMATIC TWIN PILLAR BANDSAWING MACHINES

BMSY 650DG NC



RUNNING VOLTAGE

SERIAL NUMBER



MANUFACTURER / İMALATÇI : BEKA-MAK MAKİNA SANAYİ VE TİC. A.Ş.

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Warranty

- The firm guarantees the machine described hereby, designed in compliance with all regulations in force, in particular safety and health regulations; the machine has undergone successful testing.
- The warranty covers a period of 12 months. It doesn't cover electrical motors and tools.
- The purchaser is entitled 'replacement of faulty parts'. Shipping and packing costs are at his expense.
- The warranty doesn't cover the parts damaged by falls or careless handling of the machine, incorrect operation, non-compliance with the maintenance rules. Any tampering with the machine, especially with the safety devices automatically expires the warranty and the manufacturer will be freed from any responsibility.
- Any kind of alteration on the machine ends the warranty and the manufacturer becomes free from every kind of responsibility.
- No claim for damages shall be accepted in case the machine lays idle for a long period of time.
- Machine is designed to be run indoors. It is not recommended to run the machine outdoors.

The serial number on the machine is a 'main reference for the warranty', instructions manual, after sale service and identify the machine in case of need.

Important

Upon the delivery of the machine, the consumer must make himself sure that all the devices indicated in the paragraph of the safety manual are present and working correctly. Furthermore, he must mount in conformity with the instructions indicated those devices which are not mounted at the time of delivery to facilitate transport.

When ordering spare parts

It is necessary to state:

- Machine model
- Serial number and year of production
- Item reference number

Without serial number no spare parts will be delivered

General Information

- The machines are manufactured in compliance with the accident prevention rules in force.
- Strictly comply with the instructions contained in this manual to obtain the best performance from the machine. Strict compliance with the rules contained herewith will ensure optimum results and avoid any inconvenience caused by the non-compliance of operation and maintenance instructions.
- Closely follow the instructions given below to avoid contacting the manufacturer for the problems which can be easily solved..
- If after having strictly compliance with the given instructions, the purchaser still needs the help of our technical assistance service, he must supply all the technical indications necessary to determine the type of problem and/or the parts which are not functioning correctly. This will enable our technical assistance service to intervene quickly and efficiently on the machine.

Copies of the instruction manual may be requested upon indication of the machine serial number.

General Safety Notes

All installation work including the electrical connection must only be carried out by qualified personnel.

The machine must only be operated by a technically trained and experienced operative who is also instructed in 'safety at work' procedures.

Any adjustments, cleaning, repairs or changing of the saw blade must under no circumstances be performed unless the machine is fully isolated from the electrical power supply. Ensure the emergency stop button on the control binnacle is pressed and the power supplies at the mains are disconnected."

The band saw must be regularly inspected and maintained in good serviceable condition. Eye protection, ear protection, gloves and protective clothing must be worn when any of the above procedures are being carried out, as well as when cutting fluid is prepared, introduced or displaced from the band saw machine (the relevant environmental regulations must be observed in case of the use and disposal of cutting fluid etc.)

The band saw must be installed on ground. Observe the permissible floor load. Than the band saw machine has been properly bolt to ground securely.

Allow sufficient working space around the band saw of at least 1 meter. Installations of stock roller conveyors require additional space and possibly a lifting mechanism for heavy work pieces.

Always ensure that the working area around the band saw is well lit.

Safety Instructions

- Be sure that electrical connection is made carefully. To avoid unwanted situations like electrical shock, protect the main supply cable with a holster.
- Before running the machine, be sure that all of the protections are mounted properly and all the covers are closed.
- Avoid from smoke and moisture.
- Please use the parts and equipments which are recommended. Usage of unsuitable parts and materials which are bigger than the capacity of the machine can cause unwanted situations.
- Check the machine and inform the defects everyday.
- Don't leave any material after chancing the band.
- Do not hold the material while the machine is cutting. Always tighten the material by using essential parts.
- Please pay attention to choose the area of the machine which doesn't include anything that creates difficulties to control the machine
- Please be sure that the teeth of the band are looking to correct direction.
- Don't leave the band on the ground or any place that is dangerous for other people.
- Be careful when using the machine and keep the working area clean (clean the saw dusts and oil traces)
- Pay attention to security instructions when using the machine.
- Don't wear loose cloths when using the machine.
- Regardless use the protective gloves when using the machine.
- Don't get close too much to the machine when running.
- Before carrying out any cleaning or maintenance procedure, disconnect the machine from main supply.
- In some conditions, noise level can be about 85 db. Band choice and cutting speed is important factor for noise level.
- Illumination is an important factor for security.
- Ratio of coolant liquid is important for obtaining optimum lubrication.
- Never use the machine if you notice any fault of the machine or absence of any part of the machine.
- Control the emergency button at least once a week and be sure that it is working properly.

RELATED DIRECTIVES AND STANDARDS / İLGİLİ YÖNETMELİK VE STANDARTLAR

DIRECTIVES/DIREKTİFLER

MACHINERY DIRECTIVE-/MAKİNE DİREKTİFİ **2006/42/EC**

LOW VOLTAGE DIRECTIVE/DÜŞÜK VOLTAJ DİREKTİFİ **2006/95/EC**

ELECTROMAGNETIC COMPATIBILITY DIRECTIVE/ELEKTRO MANYETİK UYUMLULUK DİREKTİFİ- **2004/108/EC**

STANDARDS/STANDARTLAR

EN ISO 13857:2008; SAFETY OF MACHINERY-SAFETY DISTANCES TO PREVENT DANGER ZONES BEING REACHED BY UPPER LOWER LIMBS/ KOL VE BACAĞLARIN ULAŞABİLECEĞİ BÖLGELERDE TEHLİKENİN ÖNLENMESİ İÇİN GÜVENLİK MESAFELERİ

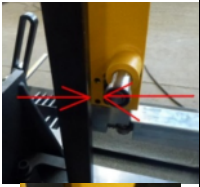
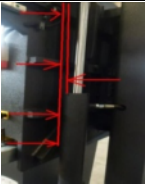
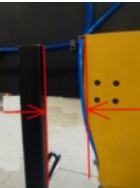
EN ISO 4413:2010; HYDRAULIC FLUID POWER – GENERAL RULES AND SAFETY REQUIREMENTS FOR SYSTEMS AND THEIR COMPONENTS / HİDROLİK AKIŞKAN GÜÇ – SİSTEMLER VE BİLEŞENLERİ İÇİN GÜVENLİK KURALLARI VE GENEL KURALLAR.

EN ISO 13849-1:2008/AC:2009; SAFETY OF MACHINERY - SAFETY-RELATED PARTS OF CONTROL SYSTEMS - PART 1: GENERAL PRINCIPLES FOR DESIGN / MAKİNELERDE GÜVENLİK- KUMANDA SİSTEMLERİNİN GÜVENLİKLE İLGİLİ KISIMLARI- BÖLÜM 1: TASARIM İÇİN GENEL PRENSİPLER

EN 13898:2003+A1:2009/AC:2010; MACHINE TOOLS - SAFETY - SAWING MACHINES FOR COLD METAL /TAKIM TEZGÂHLARI – GÜVENLİK - METALLERİ SOĞUK İŞLEME İÇİN TESTERE TEZGAHLARI

EN ISO 12100:2010; SAFETY OF MACHINERY - GENERAL PRINCIPLES FOR DESIGN – RISK ASSESSMENT AND RISK REDUCTION/ MAKİNALARDA GÜVENLİK – TASARIM İÇİN GENEL PRENSİPLER- RISK DEĞERLENDİRİLMESİ VE RISK AZALTILMASI.

EN 60204-1:2006/A1:2009; SAFETY OF MACHINERY - ELECTRICAL EQUIPMENT OF MACHINES - PART 1: GENERAL REQUIREMENTS / MAKİNELERİN EMNİYETİ – MAKİNELERİN ELEKTRİK DONANIMI – BÖLÜM 1: GENEL GEREKLER

Residual Risks		
Do Not Touch Below Mentioned Moving Or Movable Parts Of The Machine While It Runs.		
	Mechanical Dangers	Residual Risks
	There might be the risk of hand/arm incerceration between wheel cover and control panel.	Necessary warnings are mentioned in the manual. There are warning signs on the machine.
	There might be the risk of hand incerceration between piston hose and piston when the head is down.	There is necessary and enough warnings in the manual. There is warning sign at first part. There is warning sign on the cover.
	There might be the risk of hand/arm incerceration between movable vice profile and arm withdraw point.	There is necessary and enough warnings in the manual. Warning sign has been put at related section.
	There might be the risk of hand/arm incerceration between arm and ear when movable arm is at last point	There is necessary and enough warnings in the manual. Warning sign has been put at related section.
	There might be the risk of hand/arm incerceration between hydraulic lifting piston pipe and lug support profile, movable arm piston pipe and piston upper connection block during the up and down movement of bow .	There is necessary and enough warnings in the manual. Warning sign has been put at related section.
	There might be snipping risk between movable vice profile and movable arm	There is necessary and enough warnings in the manual. Warning sign has been put at related section.

Warning

This chapter outlining the safety devices and norms was drawn up bearing in mind the normal use of the machine as stated in the chapter on the operation of the machine and the adequate preparation of the operators as regards the specific risks linked to the operation of the machine.

If the machine isn't used according to instruction given in the 'purpose of the machine' chapter in this manual, the manufacturer isn't responsible for any damage caused to people and things.

Furthermore, the manufacturer isn't responsible for any damage to people and things and things resulting from the non-compliance with the following warnings.

- A) Adopt all the necessary precautions during loading, calibration, part replacement, cleaning, and repair or maintenance operations to prevent someone else from turning the machine on.
- B) Do not temper with the safety devices and guards on the machine.
- C) Do not remove any of the safety devices and guards on the machine.

Always make sure that safety devices and guards are remounted after their temporary removal for technical reasons ordered by the boss

Connection To The Electrical System

Control panel is mounted on the electric panel. Machine is connected to the main supply in the electrical panel. **R, s and t shows the phases** , **n is** neuter and **pe is grounding**. Connection will be from the 13(l1) klemens which is at right klemens group.

Check the voltage which is mentioned at the first page of the manuel before setting the electrical connection of the machine.

If the cable phase line is correct phase control led lightens in that way it is prevented to motors move on wrong ways. Be sure that the out-put voltage at the power supply is 22 ~ 28 vdc.

The machine is protected against short circuit with interrupters and against high voltage with thermal relays. Grounding and neutralizing have to be done to protect the machine .

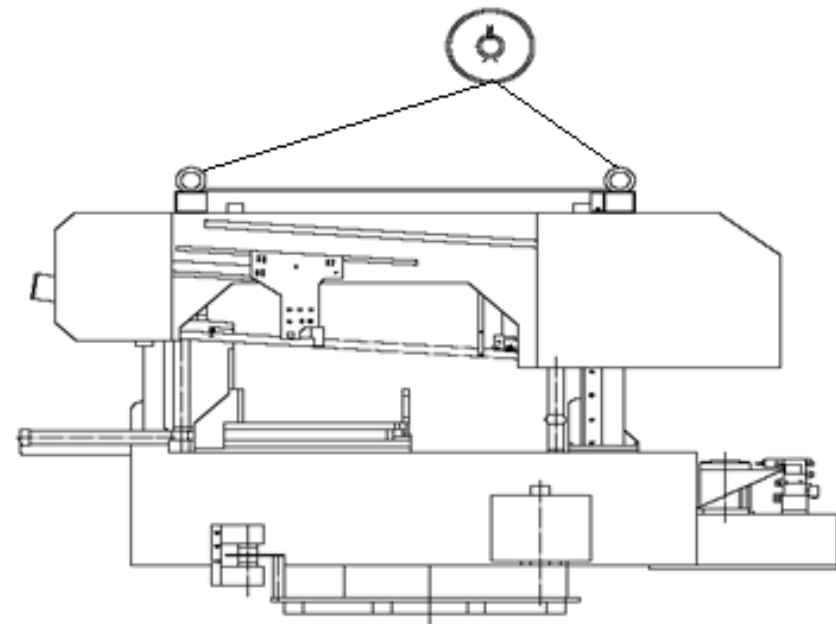
Technical Data

TECNICAL DATA/TECHNISCE DATEN			BMSY 650DG
Cutting Capacity Schnittbereich 0°	Round/Rund	mm	650
	Flat/Flach	mm	1000 x 600
	Square/Vierkant	mm	600
Cutting Capacity Schnittbereich -30°	Round/Rund	mm	650
	Flat/Flach	mm	840 x 600
	Square/Vierkant	mm	600
Cutting Capacity Schnittbereich -45°	Round/Rund	mm	650
	Flat/Flach	mm	660 x 600
	Square/Vierkant	mm	600
Cutting Capacity Schnittbereich -60°	Round/Rund	mm	440
	Flat/Flach	mm	440 x 600
	Square/Vierkant	mm	440
Cutting Capacity Schnittbereich +30°	Round/Rund	mm	650
	Flat/Flach	mm	840 x 600
	Square/Vierkant	mm	600
Cutting Capacity Schnittbereich +45°	Round/Rund	mm	650
	Flat/Flach	mm	660 x 600
	Square/Vierkant	mm	600
Main Drive Motor/Hauptmotor		kW	7,5
Hydraulic Motor/Hydraulikmotor		kW	4
Coolant Motor/Kühlmittelpumpe		kW	0,12
Angel Motor		kW	0,37
Chip Conveyor Motor/Spaneförderer		kW	0,25
Motorized Swarf Brush/Motorized Span Bürste		kW	0,18
Cutting Speeds/Schnittgeschwindigkeit		m/min	20 - 100
Band Dimensions/Sagebandabmessung		mm	8400x54x1.6
Working Height/Arbeitshöhe		mm	880
Weight/Gewicht		Kg	6000
Dimensions/Masse	Length/Länge	mm	4750
	Width/Breite	mm	1970
	Height/Höhe	mm	2630

Transportation And Carrying Of Machine

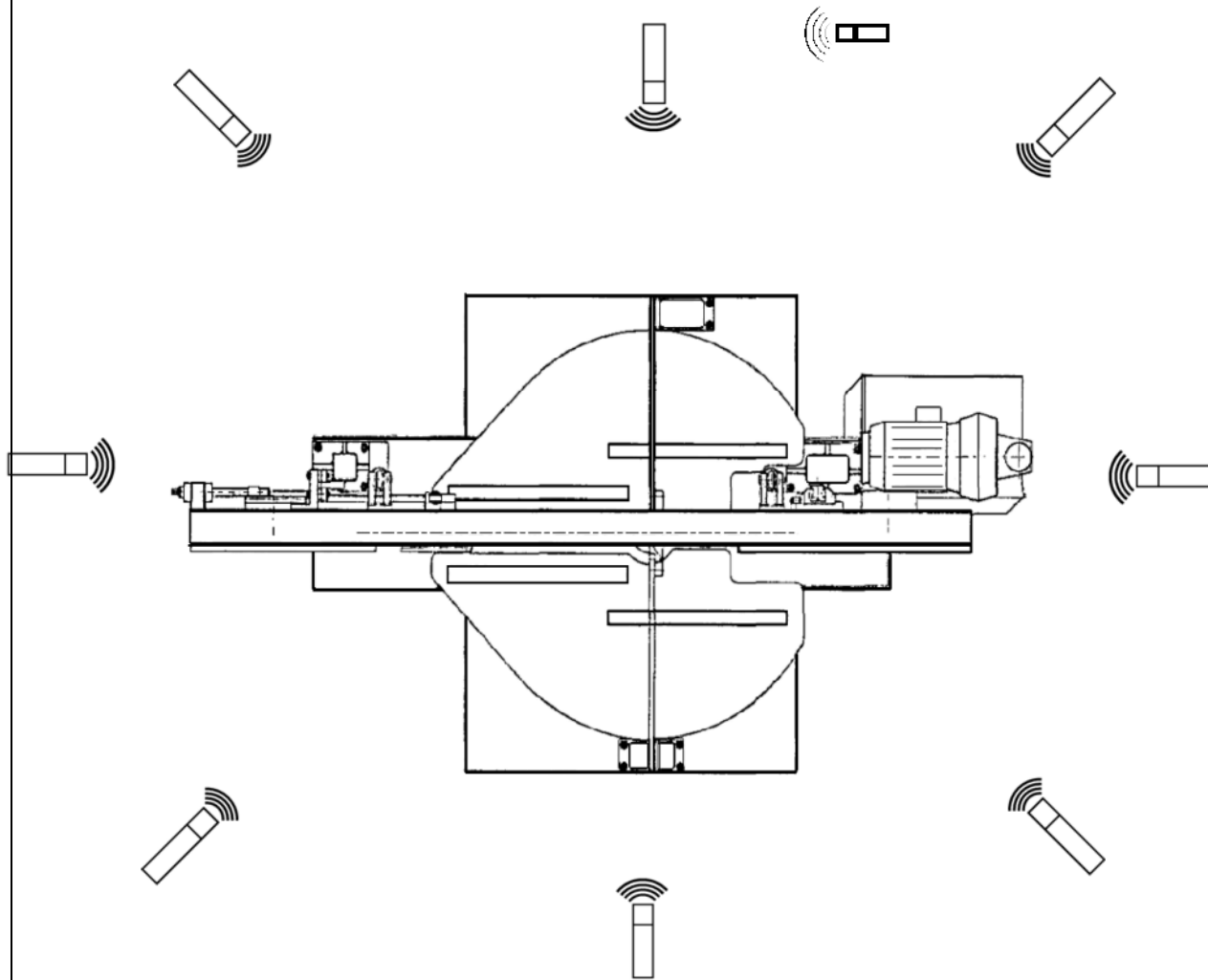
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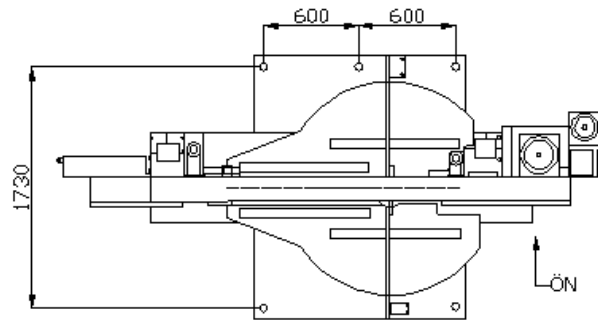
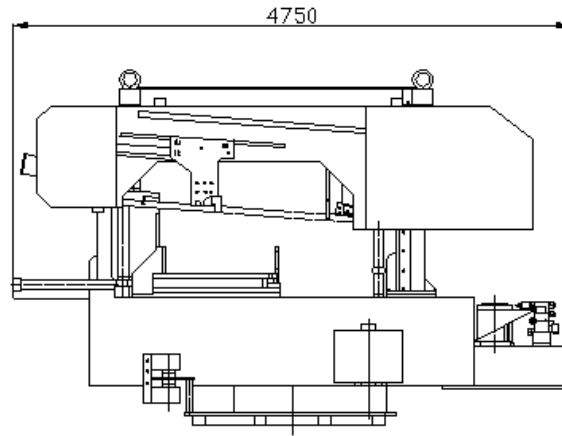
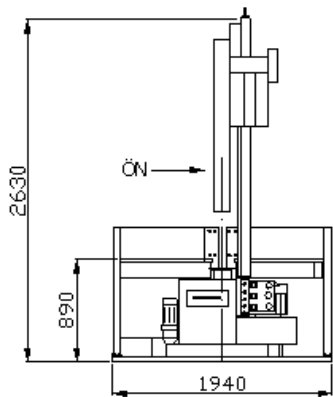
Carry well-balanced with a strong rope which will be hooked to carrying rings



NOISE LEVEL

NOISE LEVEL IS MEASURED BELOW 80 DB AT THE POINTS WHICH ARE 1 M AWAY FROM THE MACHINE WHEN THE MACHINE IS WORKING EMPTY. IT IS RECOMMENDED TO USE AUDITORY PROTECTIONS WHEN CUTTING TUBES AND PROFILES. THE POINTS ARE SHOWN WITH THE FIGURE ()





BMSY 650 DG

Mounting

Mostly there is no need for mounting. If you want to mount the machine to the ground, please keep in mind the dimensions given below, the height adjustable screws will be useful when adjusting the horizontal position of the machine.

Pre – examination

The machine must be well examined to check it is not used before and it is complete. If not please contact to carrier company or distributing agent

Cleaning

Antioxidants, other protections and other parts which are exposed to oxidation must be cleaned properly and carefully to avoid unwanted situations. The machine must be lubricated before using.

Statement of Noise

Conditions for measurement

Tested Machine: BMSY 650D-3 Blade size: 240 0x54 x 1,6m

Material in use: ø250 Solid Material

A Nominal sound pressure level in warehouse

Lpfa,1m=77db(A) Coefficient of uncertainty k:4 db (testing cap 1202)

A nominal sound power level

Power level Lwa=69,7db(a) (measured value)

Coefficient of uncertainty k:4 db (testing cap 1202)

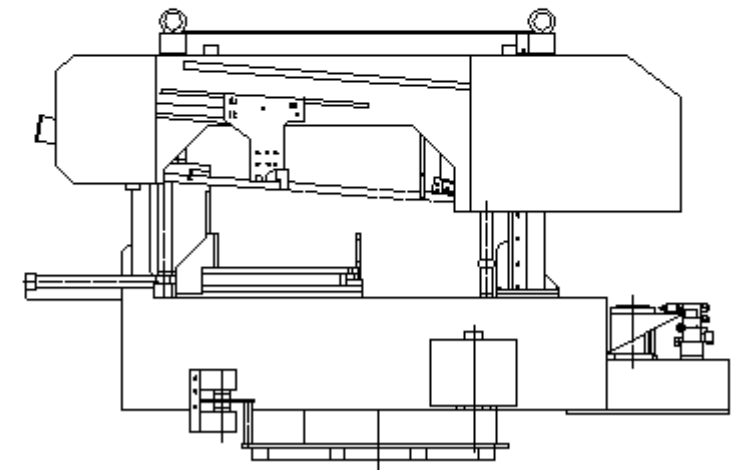
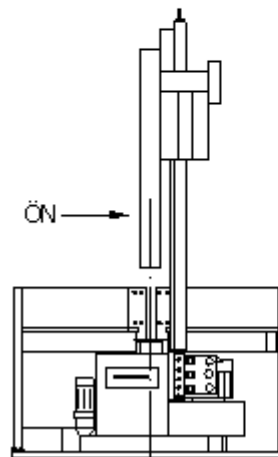
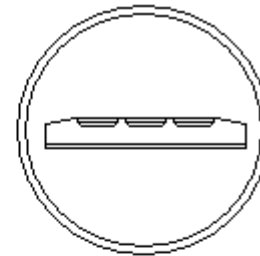
Values for noise are level of issue and it doesn't state it's of a working level. connection between issue and exposure levels, this can not be used safely to precautions are needed. Factors that affect the level of exposure that effects work for depending on features of warehouse, (other sources of noise, other works near machines) including exposure time

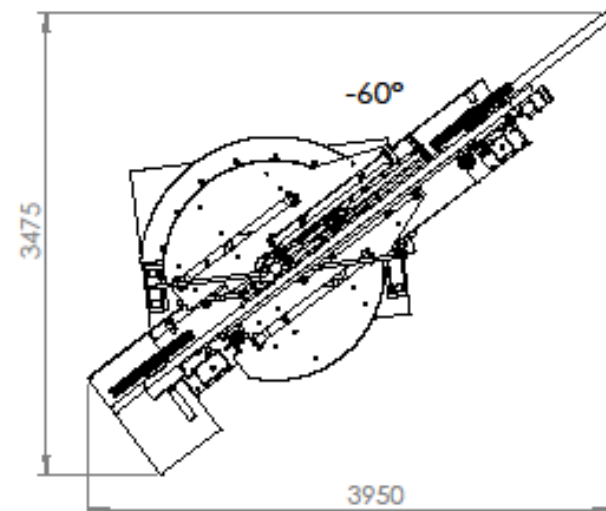
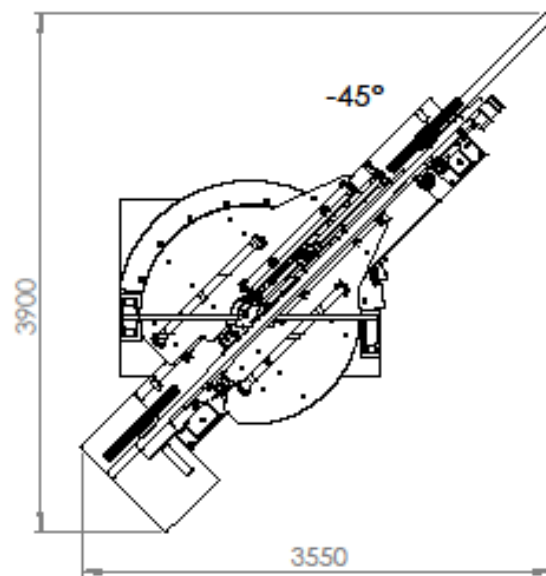
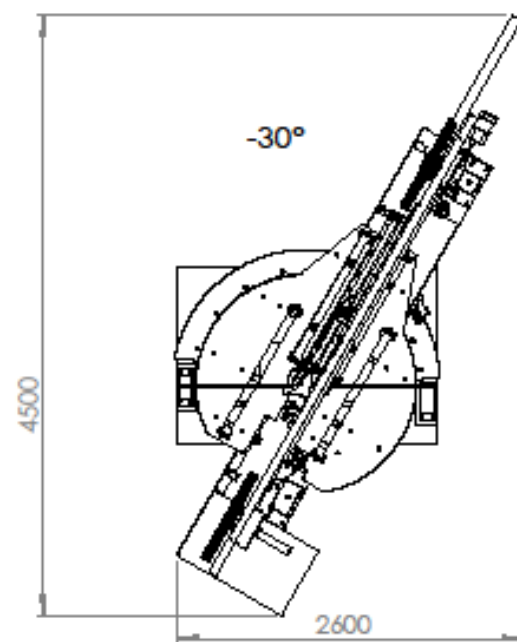
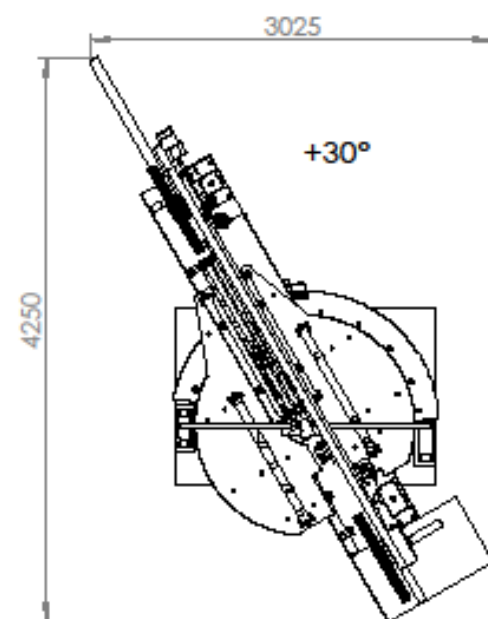
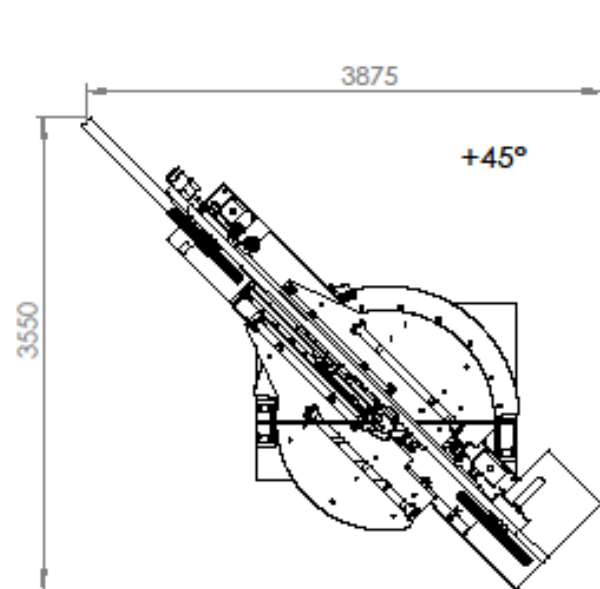
Allowed level of exposure may change from country to country. The information level operator to consider the dangers and risks.

Balancing the machine

Balancing the machine can be achieved by using the height adjustable screws. The machine must be balanced on both directions.

important : Balance of the machine is one of the most important factors for the correct working of the machine.





Safety and occupational hygiene instructions

- A)** before starting the machine, the operator has to know all part of the machine.
- B)** the operating instruction must be read carefully.
- C)** the machine can only be operated by a crew trained for this.
- D)** during work, operator should wear tight overalls and gloves.
- E)** no loose objects should be found in the working area of the personnel.
- F)** before starting the machine, blade guards, motor guards and splash guards should be set up and the machine's covers shut.
- G)** cutting material must be tightened properly.
- H)** when cutting long material, should be used a roller table (or a stand), if necessary, should be used an extra stand.
- I)** no loose object should be left on the working machine.
- J)** the operator should wear protective glasses.
- K)** during the work of the machine, do not lean against any of its part.
- L)** measurement of parts and removal of chips should be carried out after stopping the machine.
- M)** a box for the cut materials should be put the front of the machine.
- N)** any repairs of mechanisms and installations should be carried out while the machine is disconnected from power supply.
- O)** in the case there are any defects in the machine's work, it should be stopped and the defects reported to a superior.

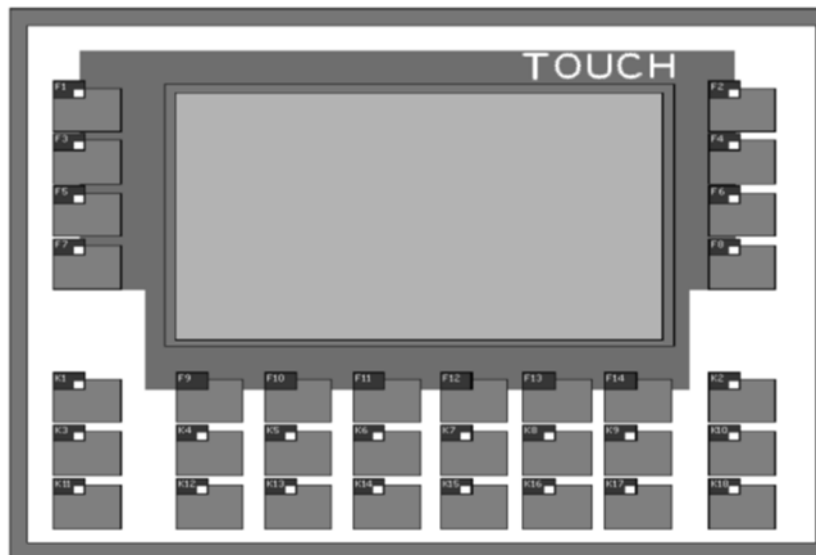
** the machine is protected against circuit by means of fuse and protected against over-current with thermal relays. The machine also protects against electric shock. To ensure, the machine must be earthed and neutralized. The blade guards protect against cutting or injuring the operator*

Manual cutting operation

- ✓ Be sure that the machine is connected to the main supply,
- Switch on the main switch,
- ✓ Wait for the loading of the operating program,
- ✓ When the page with the beka -mak logo appears on the screen , wait 5 seconds and see the main working screen by pressing start or f14 button
- ✓ You will see (f9) – “go to reference” flashing on the left lower corner of the screen. When making a mitre cut, the machine is taking the 0 point as reference to go to the correct angle. The machine will not go to the target angle before taking reference. To take reference, first, be sure that vice is open and then press the button (f9) “go to reference. The machine will automatically go to the reference point (0 point) and flashing will stop.
- ✓ Click to the ‘target angle’ section once, deal the angel by using the keyboard ,approve by pressing to  enter button. Then press the button ‘go to reference’.the machine comes to the target angel automatically and the ‘target angel’ section becomes zero.
- ✓ If you press the button (f7) on the main working screen, you will see main menu;
 - **F1 – selecting language** : only authorized personnel can change
 - ◆ Turkish (f1): changes the panel’s menu to turkish.
 - English (f2): changes the panel’s menu to english.
 - **F3 – parametre adjust:** it can be used by technical service,
 - ◆ Hydraulic motor delay time: the time of the hydraulic motor stay with energy after an hydraulic event which happened on the machine.
 - Blade turning error time: the time of error perception when the blade press, stick into the material or turn slow at cutting.
 - Vice press time(manual): the time of closing(pressing) the vice.
 - Automatic cutting preparing time: the time which is from pressing start button to cutting .
 - Top clamping movement time: the time of top clamping going down at one pressing.
 - Rising time at the end of cutting: its valid when the’ bow is rise s up at the end of cutting’ is choosen from the options menu. Its the minimum time of rising the bow without caring the length of material ,after the down switch is pressed at the end of cutting.
 - Angel turning speeds(%): the values which is written to here will have validity as the time of per cent slices of maximum speeds.
 - Fast : speed of machine’s movement to the angel.
 - Slow :machine’s catching angel speed.
 - Reference :machines speed of going to the reference point while referencing.
 - F11-turn to the factory settings: machine turns to the factory settings when the f11 button is pressed 3 seconds.

- **F2 – i (input) display:** the screen that the inputs (switch, sensor, encoder vs.) Are displayed.
 - **F4 – o (output) gösterimi:** the screen that the outputs (status of all the sensors on the machine) are displayed,
 - **F6 – options:** the menu which is the wanted functions are choosen in,
 - ◆ **Sawdust band:** operates the sawdust band system.
 - **Selecting coolant:** contains the alternative of cutting without coolant and cutting with coolant by boron oil or spray system.(coolant with spray system is an optional function and there is not in standard machines)
 - **Sawdust brush:** proves the working of sawdust brush motor.
 - **Rising bow at the end of cutting:** proves the bow rise up at the finish of the cutting.
 - **Hydraulic tom clamping(optional):** proves the top clamping work.
 - **F8 – counter:** the operator can see all numerical informations. you can reset the cutting number by pressing f14 button.
- Rise the bow up over the height of the material and put the material to cutting area,
 - Adjust the cutting length,
 - Tighten the vice and fix the material,
 - Adjust the cutting pressure and cutting speed according to type of material,
 - Press start button.

Control panel



(k1) **start** : starts the cutting operation.

(k2) **bow up**: provides the bow rise up.

(k3) **stop**: stops the cutting operation.

(k4) **vice-tighten**: provides the hydraulic vice tighten.

(k5) **vice-loose**: provides the hydraulic vice loose.

(k6) **top press up**: provides the hydraulic top press loose.

(k7) **top press down**: provides the hydraulic top press tighten.

(k8) **manual angel adjusting (clockwise)**: provides the bow unit take position clockwise for mitre cutting.

(k9) **manual angel adjusting (anticlockwise)**: provides the bow unit take position anticlockwise for mitre cutting.

(k10) **bow down**: provides the bow go down.

Function buttons(f buttons):

The duties of the function buttons change according to the position of menu at the main time. the duties of the function buttons are shown on the screen.

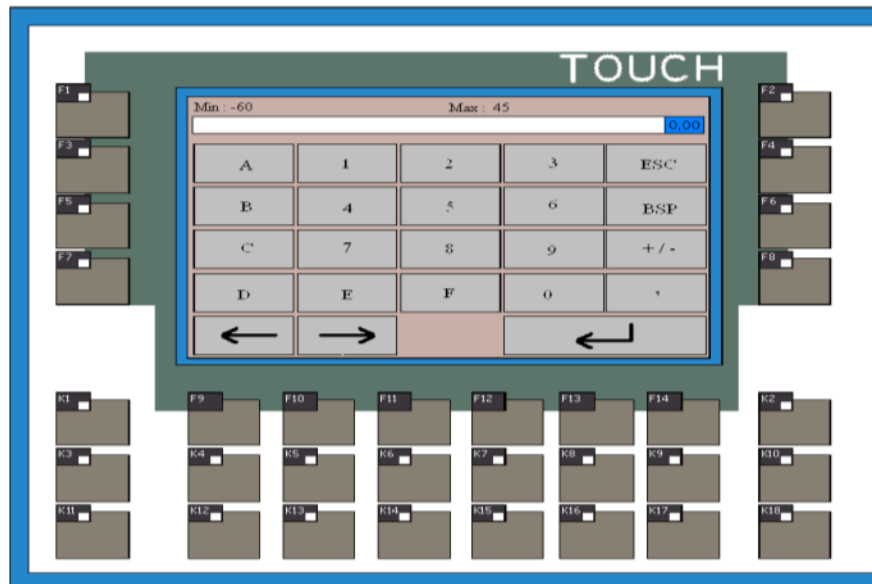


Diagram-a



eraser button: it is used to erase the wrong letters or numbers which is last dealed.



esc button: it is used to escape from a program without doing any operation.



enter button: it is used to approve the datum which is dealed



direction button: it is used to state the turning direction of the machine.

Enter to the menu by clicking to the 'target angle' on the touch -screen to make the cutting with angle. target angle values are written and approved by using the touch-screen.

Just the authorized and service personel must change the parametre settings.(these adjustments directly effect the operating system of tyhe machine)

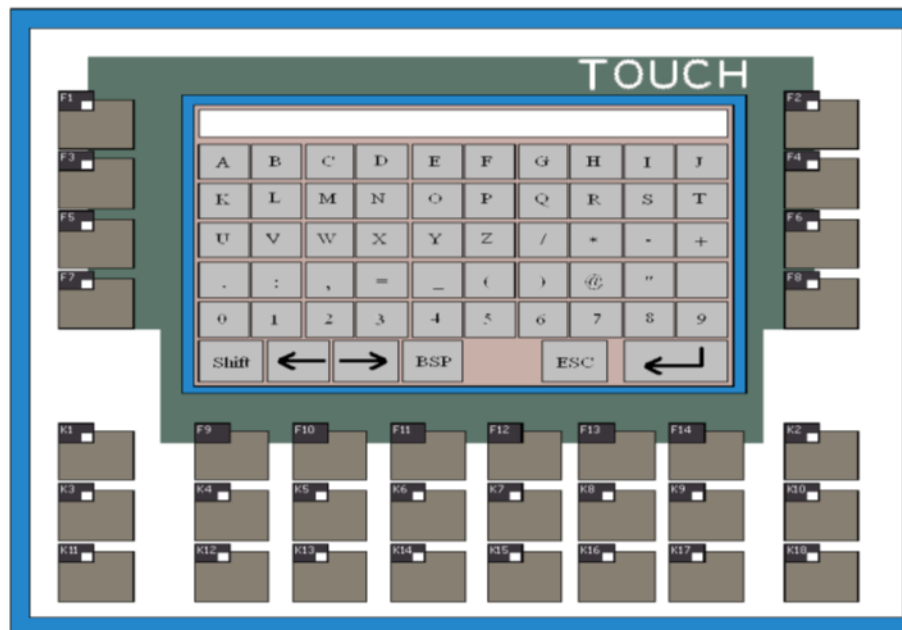


Diagram-b-

- The keyboard which is shown at diagram-b is used while entering the password to adjust the parameter and language selection.

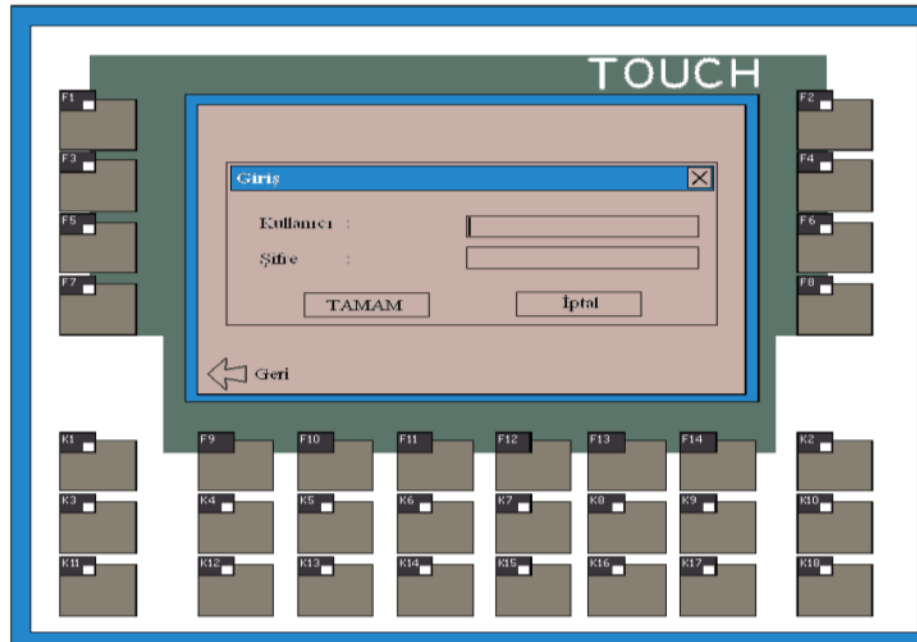


Diagram-c-

- The password is shown at diagram-c. User name is admin, password is 1968.

Sensor parts

Upper limit switch: after cutting, the bow rises up to the point that upper limit switch is adjusted. Upper limit switch can be adjusted on a vertical direction.

Lower limit switch: this limit switch stop the main motor and starts the bow's upwards movement.

Note: *the place of this adjusted by manufacturer, do not change if unnecessary.*

Control switch.: *this switch hinder the bow to go to the last point when there is no material. It controls the bow go down by cutting until the last point.*

Blade broken pressure switch: this switch stops the main motor when the blade is broken and provides protection of the operator and the machine from the damages that a broken blade can cause.

Protection cover switches: this switch stops the machine if any cover is open.

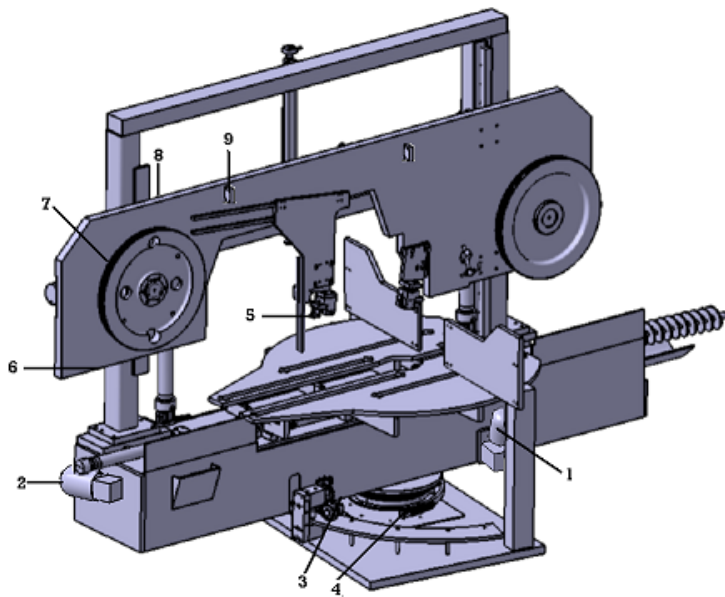
Top press location switch: this switch checks the top press location of the top press and if the top press is not at the top, machine does not turn to target angel.

Reference sensor (proximity switch): this is the sensor that provides the machine find the reference point (zero point) when taking reference.

Rotation limit switches: this limit switches stops rotation motor when the machine turns to limit points.

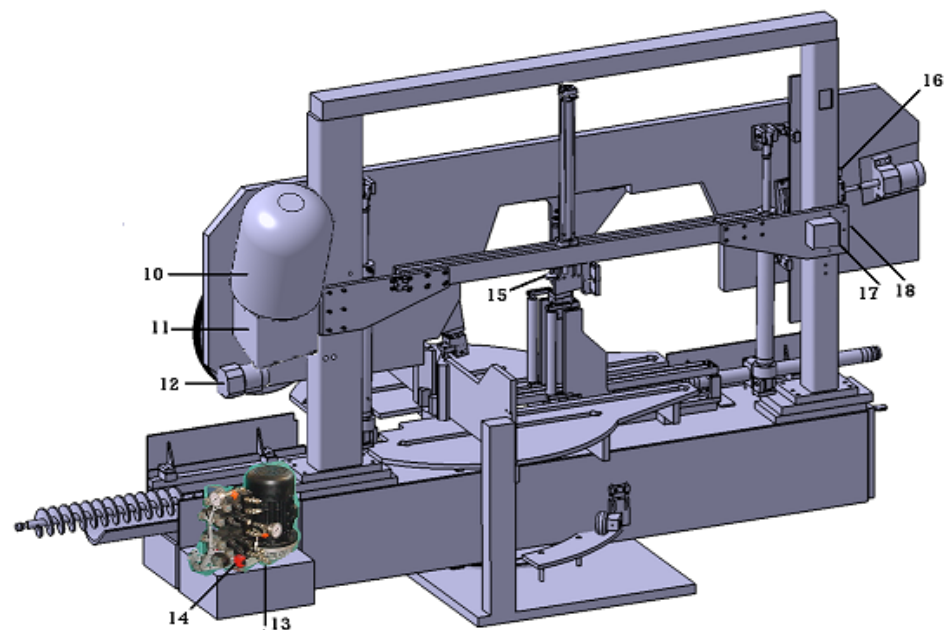
Blade turning error sensor (proximity switch): this switch stops cutting operation when the blade is stuck in the material or slipping on the pulleys.

Fotocell: this switch starts the main motor when the blade approaches to the material about 30 mm after the bow begins going down when start button is pressed. And in manual use, this switch stops the movement before the bow crashes to material when the bow is going down.



- 1-Angle motor
- 2-Chip conveyor motor
- 3-Forward-back limit switch
- 4-Sreset sensor
- 5-Lower switch
- 6-Material feed switch
- 7-Turning head sensor
- 8-Upper switch
- 9-Cover switch(optional)

- 10-Wheel motor
- 11-Wheel reductor
- 12-Brush motor
- 13-Hydraulic motor
- 14-Blade break switch
- 15-Piston position switch
- 16-Turning error sensor
- 17-Micro sprey system
- 18-Material feeding switch



< BMSY 650 DG - ERROR LIST >

2001	EMERGENCY STOP BUTTTON IS PRESSED !
	Release The Emercency Stop Button . . .
2002	BLADE ERROR !
	You will See This Warning, If The Blade Doesn't Turn Properly, The Reason Can Be one Of These; - Blade Is Slipping On The Pulleys - Gear Is Not Working Properly, - Blade Is Stuck In The Material , - Blade Tension Is Not Enough (Check Blade Tensioning System)
2003	PULLEY COVER IS OPEN !
	One Of The Pulley Covers Or More Is Open Or Not Closed Properly.
2004	CUTTING PROCESS FINISHED !
	It was cutting, process finished.
2005	MAIN MOTOR INVERTER ERROR !
	*If You See This Warning When The Bar On The Screen Is On The Top, Cutting Pressure Or Bow Speed Downwards Is More Then Normal; Reduce. - There May Be Jamming In Mechanic System, - Motor May Be Burned, *If You See This Warning When The Bar On The Screen Is In A Normal Pozition, This May Show A Software Problem In The Inverter That Runs Main Motor; Contact To Technic Service, - The Phases Between Invertor And Motor May Be Incomplete.
2006	ROTATION MOTOR INVERTER ERROR !
	- There May Be A Problem On The Inverter Of The Rotation Motor; Contact To Technical Service. - Rotation Motor May Be Jammed Or There May Be Some Object Which Stops Turning Of The Machine. - There May Be A Problem About Rotation Motor Or Gear Section - Chain Of The Rotation Motor May Be Over Gergin Tight.

< BMSY 650 DG - ERROR LIST >

2007	HYDRAULIC MOTOR THERMIC DISCONNECTION !
	- There May Be A Problem With Phases of the Motor, - There May Be A Problem With the connection of the Motor, - The voltage, applied to the machine may be unsuitable with the machine, - There May Be Problem With The Mechanic Equipment Of Motor
2008	COOLANT MOTOR THERMIC DISCONNECTION !
	- There May Be A Problem With Phases of the Motor, - There May Be A Problem With the connection of the Motor, - The voltage, applied to the machine may be unsuitable with the machine, - There May Be Problem With The Mechanic Equipment Of Motor
2009	SAWDUST CLEANING MOTOR THERMIC DISCONNECTION !
	- There May Be A Problem With Phases of the Motor, - There May Be A Problem With the connection of the Motor, - The voltage, applied to the machine may be unsuitable with the machine, - There May Be Problem With The Mechanic Equipment Of Motor
2010	SAWDUST CONVEYOR MOTOR THERMIC DISCONNECTION !
	- There May Be A Problem With Phases of the Motor, - There May Be A Problem With the connection of the Motor, - The voltage, applied to the machine may be unsuitable with the machine, - There May Be Problem With The Mechanic Equipment Of Motor - The Spiral Sawdust Conveyor Can Be Stucked.
2011	VICE IS TIGHTENED ! UNTIGHTEN THE VICE..
	Vice Must be Open For Applying This Command.
2012	GO TO REFERENCE !
	The Machine Must Go To " Zero Point " first.
2013	VICE NOT TIGHTENED !
	Vice Must be Close For Applying This Command.

< BMSY 650 DG - ERROR LIST >

2014	GOING TO ZERO POINT ! CUTTING PROCESS CAN NOT START !
	The Machine Must Go To " Zero Point " Before The Cutting Process.
2015	GOING TO TARGET ANGEL ! CUTTING PROCESS CAN NOT START!
	The Machine Must Go To " Target Angel " Before The Cutting Process.
2016	MATERIAL ON BOARD ! BOW DOESNT GO DOWN !
	The Bow Can Not Go Down Anymore In Manual Position Because Of The Material On Board.
2017	RISE THE BOW UP !
	For Applying This Command, Rise The Bow Up First.
2018	RISE THE TOP PRESS UP !
	For Applying This Command, The Top Press Must Be Rised Up First.
2019	MAIN VOLTAGE FAILURE !
	The Machine Voltage Must Controlled Or Change Phase!
2020	MATERIAL ON BOARD ! BOW DOES NOT ANGLE !
	There Should Not Be Any Material OnBboard To Apply Your Command.
2022	BLADE TEIGHTENING PRESSUARE LOW !
	There Should Not Be Any Material OnBboard To Apply Your Command.

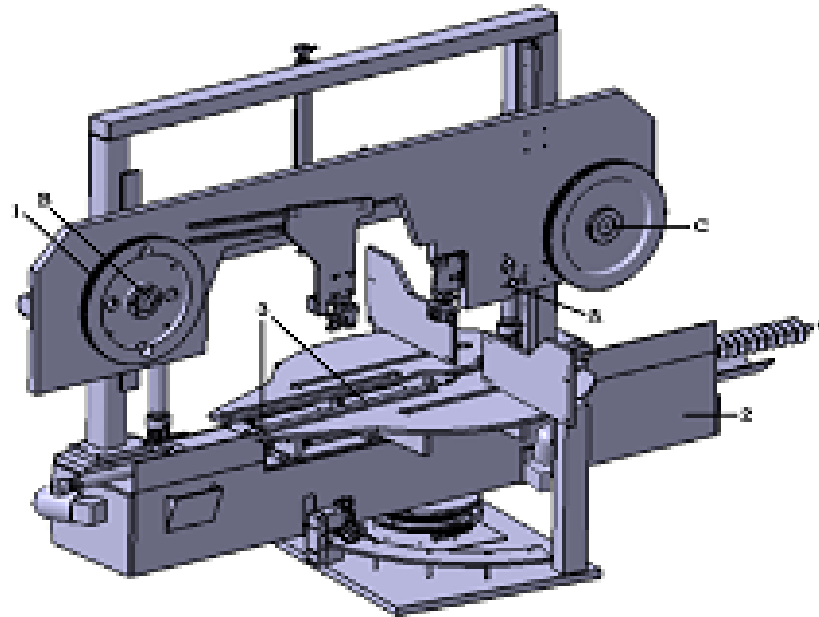
Instructions For Maintenance

Daily Maintenance

- 1-Remove the chips on wheel
- 2-Clean the hydraulic drawer
- 3-Remove the chips at shaft and flat
- 4.Manometer should be betweenbar.
- 5-Clean the tensioning slide flats.
6. Clean the chips in the boron oil tank
pump air to remove the dirt in hoses
- 7-Check the chain tightness and grease oil .

Monthly Maintenance

- A-Check the chip brush.
- B-Fill grease oil from the hole on the tensioning shaft.
- C- Check the tightness of wheel bolts.
- D.Control the oil level in hydraulic tank
- E. Fill grease oil from the hole on the tensioning slide
- F-Check the oil level on reductor from display incase of decreasing add gear oil (number 90)



Changing The Hydraulic Oil

Pouring Out The Hydraulic Oil

- ✓ Lower down until it receives the cutting head.
- ✓ Remove hydraulic hose union at head lifting
- ✓ Put the removed hydraulic end of the hose into a container.
- ✓ Empty the oil by pressing head lifting button at control panel.

After emptying the oil, fix the hydraulic hose union to the same place.

Refilling the hydraulic oil

The hydraulic oil filling

- ✓ Remote the bolts of hydraulic drawer, then pull it out.
- ✓ Open the store cover.
- ✓ Pour 46 numbered iso hydraulic oil into tank. (8lt capacity.)
- ✓ Close the tank cover and move the drawer into the body

Fasten the screws to the body again with the help of hydraulic drawer.

Filling Of Coolant

Consisting of a mixture of liquid and water coolant liquid should be used for steel cutting. Coolant should not be used for cutting casting. Specific periods of time (at least once a month), coolant should be drained and clean chips. If amount of coolant is not enough, add to the tank. (4 liters of tank capacity. Collant mixing ratio 1/10)

Setting New Blade

- First of all both guard flaps and the guards which are on the guide arms have to be open upwards.
- Loosen the blade by the hand level so far that the blade can be easily taken off around the pulleys
- The same way but vice averse, fit and tighten the new blade. There is also possibility to tighten the blade by torque meter.
- Always pay attention to the teeth of the blade's direction is correct. If not correct it.

Cutting Speeds

The machine has two pre-selected cutting speeds of 20 and 100 m/sec. Cutting speeds has to be selected according to the grade and dimensions of the material. If any vibration and/or noise raises from the blade, change the speed.

- All the details about the cutting of various materials and dimensions are given below

CUTTING RECOMENDATIONS

NOTE:THE CUTTING SPEEDS GIVEN BELOW ARE GUIDELINES ONLY

MATERIAL	MATERIAL DESIGNATION DIN	MATERIAL NO	CUTTING SPEED		COOLANT		
			SPECIAL LG-SUPER	BI- METAL	EMULSION	CUTTING OIL	
						YES	NO
STRUCTUAL STEEL	ST 35 – ST 42	1.0308-	40 - 55	60 - 80	1:10	X	
	ST 350 – ST 70	1.0052-	30 - 45	50 - 70	1:20	X	
HARDENING STEEL	C 10 - C 16	1.0301-	45 - 65	60 - 90	1:10	X	
	14 N1CR 14	1.5752	30 - 40	40 - 50	1:10	X	
	21 N1CR MO 2	1.6523	30 - 45	45 - 55	1:10	X	
	16 MRCR 5	1.7131	30 - 45	50 - 65	1:10	X	
NITRICTED STEEL	34 CRAL 6	1.8504	-----	20 - 35	1:20		X
	34 CR AL NI 7	1.8550	-----	20 - 35	1:20		X
FREE CUTTING STEEL	9 S 20	1.0711	45 - 65	70 - 120	1:10	X	
HEAT TREATABLE STEEL	C 35 C 45	1.0501-	35 - 55	55 - 75	1:20		X
	41 CR 4	1.7035	35 - 35	40 - 60	1:20		X
	40 MN 4	1.5038	35 - 45	50 - 65	1:20		X
	42 CRMO 4	1.7225	30 - 40	35 - 50	1:20		X
	36 NI CR 6	1.5710	30 - 40	50 - 60	1:20		X
	24 NI CR 14	1.5754	25 - 35	40 - 60	1:20		X
BALL BEARING STEEL	100 - CR 6	1.3505	25 - 35	50 - 65	1:30		X
	105 - CR 4	1.3503	25 - 35	50 - 65	1:30		X
	100 - CRMO 6	1.3520	20 - 30	40 - 50	1:30		X
SPRING STEEL	65 SI 7	1.0906	30 - 40	40 - 60	1:30		X
	50 CRV 4	1.8159	30 - 40	40 - 60	1:30		X
UNALLOYED TOOL STEEL	C 80 W 1	1.1525	25 - 35	50 - 60	1:30		X
	C 125 W 1	1.1560	20 - 30	20 - 35	1:30		X
	C 105 W 2	1.1645	25 - 35	40 - 50	1:30		X
ALLOYED TOOL STEEL	105 CR 5	1.2060	30 - 40	50 - 60	1:30		X
	X 210 CR 12	1.2080	-----	20 - 35	-----		X
	X 40 CR MO V 51	1.2344	20 - 30	30 - 40	1:30		X
	X 210 CR W 12	1.2436	-----	20 - 30	-----		X
	X 165 CR MP V 12	1.2601	-----	20 - 35	1:30		X
	56 N1CRMV 7	1.2714	25 - 30	20 - 40	1:30		X
	100 CRMO 5	1.2303	20 - 30	35 - 45	1:30		X
	X 32 CRMOV 33	1.2365	20 - 30	30 - 45	1:20	X	
	S 5-6-2	1.3343	-----	25 - 40	1:30		X
HIGH SPEED STEEL	S 5-6-2-5	1.3243	-----	25 - 40	1:30		X
	S 18-0-1	1.3355	-----	25 - 40	1:30		X
	S 18-1-2-10	1.3265	-----	25 - 40	1:30		X
	X 45 CRSL 93	1.4718	-----	30 - 40	1:20	X	
VALVE STEEL	X 45 CRNIW 189	1.4873	-----	30 - 40	1:20	X	
	CRNI 2520	1.4843	-----	25 - 40	1:10	X	
HIGH TEMPERATURE STEEL	X 20 CRMOV 211	1.4922	-----	25 - 40	1:10	X	
	X5 N1CRTI 2615	1.4980	-----	25 - 40	1:10	X	
	X 10 CRAL 7	1.4713	-----	20 - 35	1:10	X	
HEAT RESISTING STEEL	X 15 CRNISI 25 / 20	1.4841	-----	20 - 35	1:10	X	
	X 10 CRSL 6	1.4712	-----	20 - 35	1:10	X	
	X 5 CRNI 189	1.4301	-----	25 - 35	1:10	X	
STAINLESS AND ACID RESISTING STEEL	X 10 CRNIMPT 1810	1.4571	-----	25 - 35	1:10	X	
	X 10 CR 13	1.4006	-----	25 - 35	1:10	X	
	X 5 CRNIMO 1810	1.4401	-----	25 - 35	1:10	X	
STEEL CASTING	GS - 38		30 - 40	50 - 60	1:50		X
	GS - 60		30 - 40	50 - 60	1:50		X
CAST IRON	GG - 16		30 - 40	40 - 50	-----		X
	GG - 30		30 - 40	40 - 50	-----		X
	GTW - 40		30 - 40	40 - 50	-----		X
	GTS - 65		30 - 40	40 - 50	-----		X
HIGH TEMPERATURE NICKEL ALLOYS	NIMONIC	2.4631	-----	15 - 25	1:10	X	
	HASTELLOY	X 2.4972	-----	15 - 25	1:10	X	
	INCONEL	2.4640	-----	15 - 25	1:10	X	
ALUMINIUM ALLOYS	AL 99.5	3.0255	80 - 300	100 - 700	1:10		X
	ALMG 3	3.3535	80 - 300	100 - 700	1:10		X
BRONZE / TIN BRONZE	CUSN 6	2.1020	50 - 70	70 - 100	1:50		X
	G - CUSN 10	2.1050	50 - 70	70 - 100	1:50		X
ALUMINIUM - BRONZE	CUAL 8	2.0920	30 - 45	50 - 70	1:30		X
	CUAL 8 FE 38	2.0920.60	30 - 40	40 - 50	1:20	X	
RED BRASS	G - CUSN 10 ZN	2.1086.01	30 - 45	70 - 100	1:50		X
	G - CUSN 5 ZN PB	2.1096.01	30 - 45	70 - 100	1:50		X
BRASS	CUZN 10	2.0230	80 - 200	100 - 300	1:50		X
	CUZN 31 S	2.0490	80 - 200	100 - 300	1:50		X

Recommendation for Tooth Style and Tooth Pitch Selections for HSS BI-Metal Bandsaws

Standard Tooth		Combi Tooth	
Material Diameter	Tooth Pitch Tooth Shape	Material Diameter	Tooth Pitch Tooth Shape
< 12mm	14 tpi N	< 25 mm	10/14 tpi 0°
12-30 mm	10 tpi N	2-40 mm	8/12 tpi 0°
30-50 mm	8 tpi N	25-70 mm	6/10 tpi 0°
50-80 mm	6 tpi N	35-90 mm	5/8 tpi 0°
80-100	4 tpi KL	50-100 mm	4/6 tpi pos
110-200	3 tpi KL	80-200 mm	¾ tpi pos
200-400	2 tpi KL	> 200 mm	2/3 tpi pos
>400 mm	1,25 tpi KL		

Tooth Style Selection

Economies of cutting can be achieved by choosing the tooth style or shape correct style suited to the being cut. Saving can be made by selecting the best tooth style because of: Faster sawing, more accurate sawing, longer blade life and less breakage of teeth. The following four (4) tooth styles are available.



Standard Tooth (N)

0° rake angle, fully rounded gullet, general purpose



Skip Tooth (L)

0° rake angle, low tooth height, flat gullet to be used for brittle materials of larger diameters, i.e. bronze, brass, zinc, aluminum, gages & risers, plastics.



Hook Tooth (KL)

10° positive rake angle with wide spacing between tips, deep gullet - suitable for NF-metals, low carbon steel, large diameters

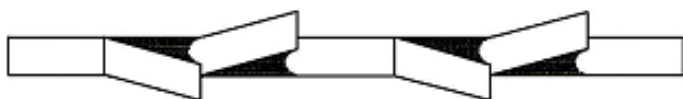


For cutting pipes and shapes

S (mm)	O (mm)	Tooth Pitch					
		<40	80	100	150	200	300
3	5	8/12	8/12	8/12	8/12	6/10	6/10
8	5	8/12	6/10	6/10	5/8	4/6	4/6
12	5	6/10	5/8	5/8	4/6	4/6	4/6
15	5	5/8	4/6	4/6	4/6	3/4	3/4
20	5		4/6	4/6	3/4	3/4	3/4
30	5		3/4	3/4	3/4	2/3	2/3
50	5				3/4	2/3	2/3

Tooth Set Selection

The purpose of 'set' in a bandsaw blade is to provide clearance and to allow the body of the blade to pass freely through the material being cut. The set depends on stock diameter, shape and material to be cut.



Regular or Raker Set

Is the most widely used setting. It consists of a repetitive pattern with one tooth set the right, the next to the left and the third (the raker) without set. This type of set is best where the material being cut is uniform size; also used in contour sawing.

Right-Left Set



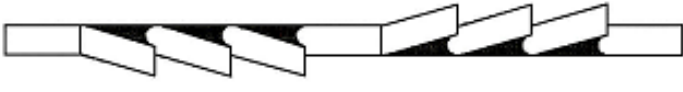
For softer materials, i.e. NF-metals, plastic & wood.



Group Set

For vibration free sawing of smaller diameters such as pipe tubing and shapes - faster cutting speeds and smoother surfaces.

Wavy Set



MATERIAL	CUTTING SPEED m/min.		BANDSAW / TPI				COOLANT	
	SPECIAL	BI-METAL	25mm	25-50	50-100	100-250	YES	NO
Structural Steel	30-50	50-85	14 R	8 R	4-6 R	3-4 R/H	X	
Carbon Steel	30-50	50-70	10 R	8 R	4-6 R	3-4 H	X	
Cementation Steel	30-70	50-85	10 R	8 R	4-6 R	3-4 H	X	
Heat Treatable Steel	30-50	50-70	14 R	8 R	4-6 R	3-4 H	X	
Cast Steel	30-50	50-70	14 R	8 R	4-6 R/H	3-4 H	X	
Cast Iron	30-50	50-70	14 R	8 R	4-6 R/H	3-4 H		X
Cr-Ni Alloys	20-30	30-50	10 R	8 R	4-6 R/H	3-4 H	X	
Stainless Steel	20	20-30	10 R	8 R	4-6 R/H	3-4 H	X	
Cr-Vanadium	20-30	30-50	10 R	8 R	4-6 R/H	3-4 H	X	
Speed Steel	20-30	30-50	10 R	8 R	4-6 R/H	3-4 H	X	
Bronze (Hard)	20-50	50-70	14 R	10 R	6-8 R	4-3 S		X
Bronze (Mild)	70-85	85	10 R	8 R	6 R	3-6 H	X	
Cooper	70-85	85	10 R	8 R	6 R	3-6 H	X	
Brass	85	85	10 R	8 R	6 R	3-6 H		X
Aluminium	85	85	8 S	6-8 S	4-6 S	3 S	X	
Bronze Alloys	50-70	85	10 R	6 H	3-4 H/S	2 H/S	X	
Al-Bronze Alloys	20-50	20-85	10 R	8 R	4-6 H	2-3 H/S	X	
Plastic	85	85	8 S	6-8 S	4-6 H	3 S		X

REGULAR

HOOK

SKIP

2013

BEKA-MAK

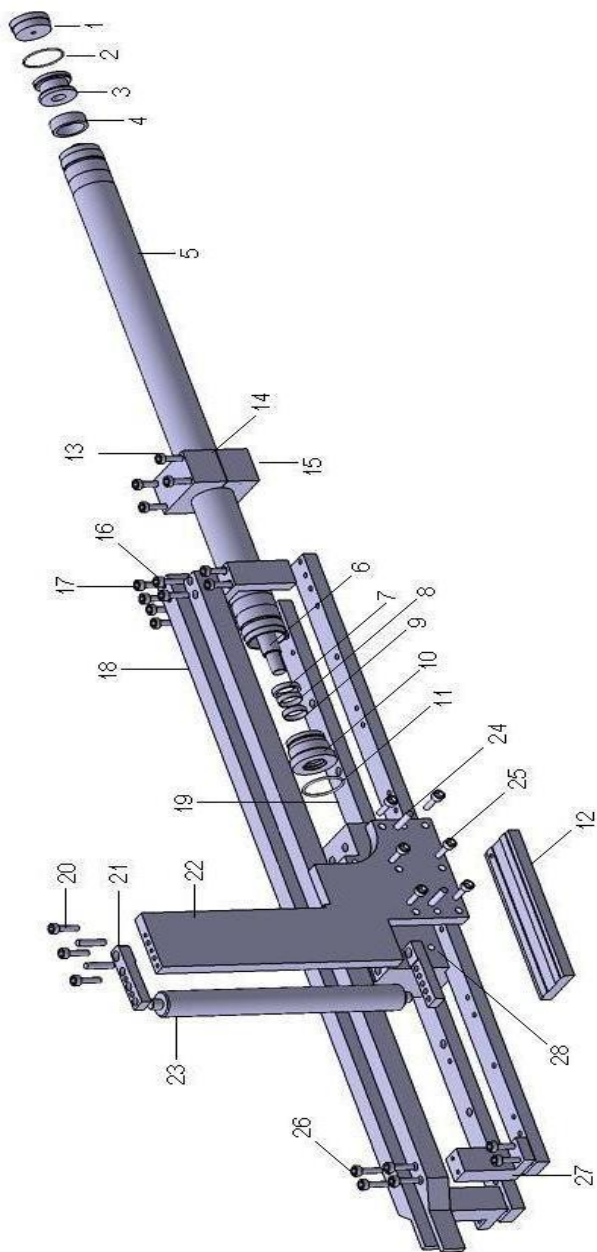
SEMI AUTOMATIC TWIN PILLAR BANDSAWING MACHINES

BMSY 650DG



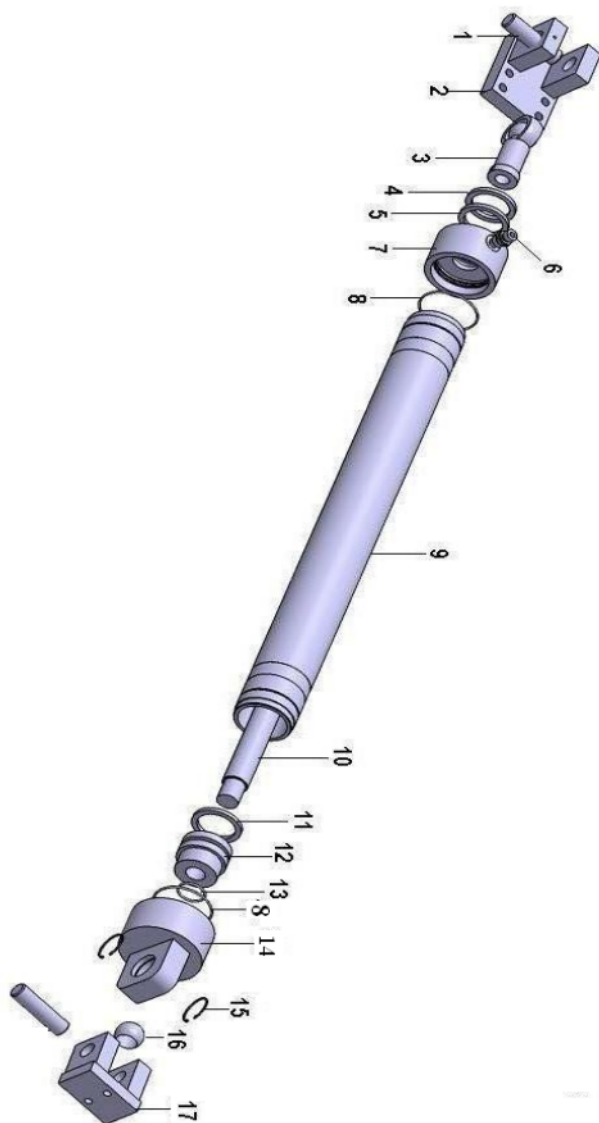
SPARE PART TABLES





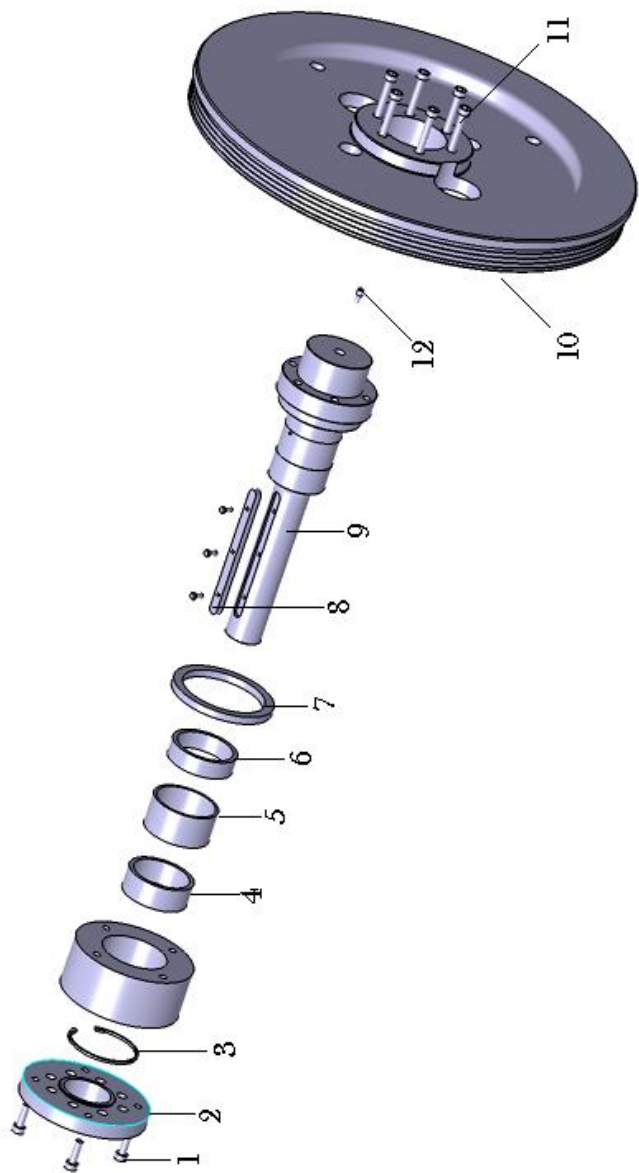
VICE GROUP

PART NMR	PART CODE	PART NAME
001	650DG.001.001	PISTON COVER
002	650DG.001.002	O-RING
003	650DG.001.003	PISTON HEAD
004	650DG.001.004	KOMPACT SET
005	650DG.001.005	PISTON PIPE
006	650DG.001.006	PISTON SHAFT
007	650DG.001.007	BAND 2X10
008	650DG.001.008	OIL SEAL
009	650DG.001.009	DUST SEAL
010	650DG.001.010	BACK PISTON COVER
011	650DG.001.011	O-RING
012	650DG.001.012	VICE LOWER FLAT
013	650DG.001.013	M12 INBUS
014	650DG.001.014	UP CONNECTION BLOCK
015	650DG.001.015	DOWN CONNECTION BLOCK
016	650DG.001.016	M10 INBUS
017	650DG.001.017	M10 INBUS
018	650DG.001.018	VICE UP FLAT
019	650DG.001.019	VIVE DOWN FLAT
020	650DG.001.020	M10 INBUS
021	650DG.001.021	ROLLER BED
022	650DG.001.022	VICE JAW
023	650DG.001.023	ROLLER
024	650DG.001.024	Ø12 PIN
025	650DG.001.025	M12 INBUS
026	650DG.001.026	M10 INBUS
027	650DG.001.027	FIXING BLOCK
028	650DG.001.028	VICE BLOCK



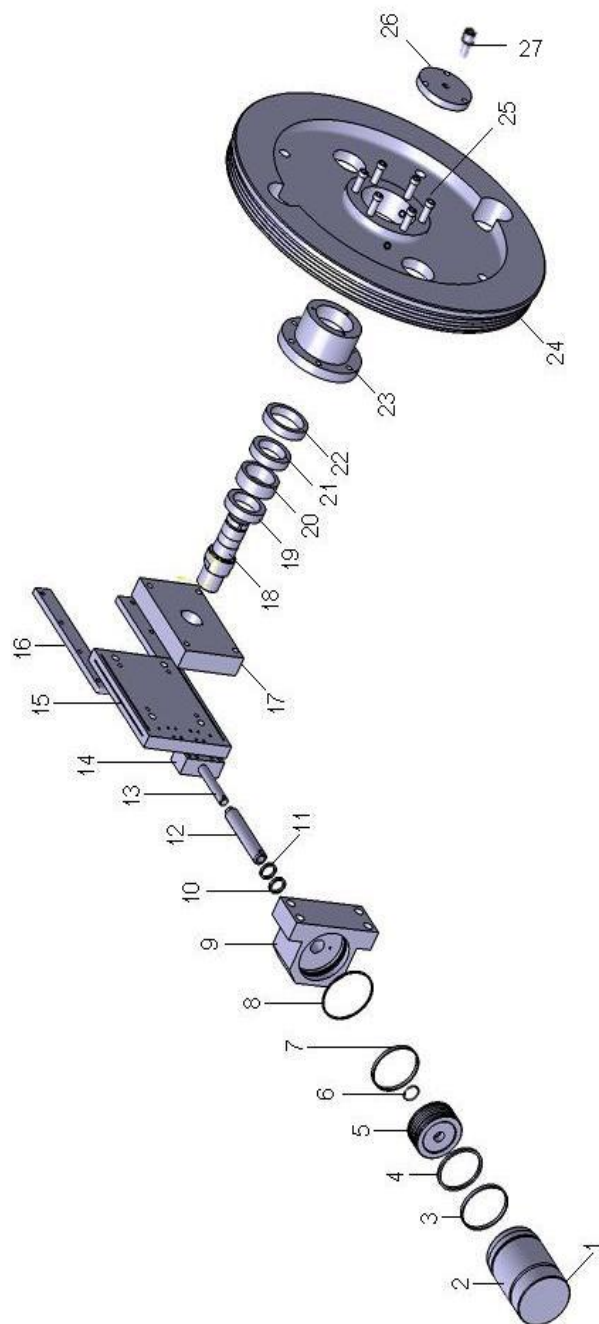
LIFTING PISTON GROUP

PART NMR	PART CODE	PART NAME
001	650DG.002.001	Ø25x95 PIN
002	650DG.002.002	BODY UP CONNECTION BLOCK
003	650DG.002.003	HELGES
004	650DG.002.004	DUST SEAL
005	650DG.002.005	OIL SEAL
006	650DG.002.006	ELBOW 3/8"
007	650DG.002.007	UP COVER
008	650DG.002.008	O-RING
009	650DG.002.009	PISTON PIPE
010	650DG.002.010	PISTON SHAFT
011	650DG.002.011	SEAL
012	650DG.002.012	PISTON HEAD
013	650DG.002.013	O-RING
014	650DG.002.014	LOWER COVER
015	650DG.002.015	SEGMAN
016	650DG.002.016	GE25ES JOINT
017	650DG.002.017	



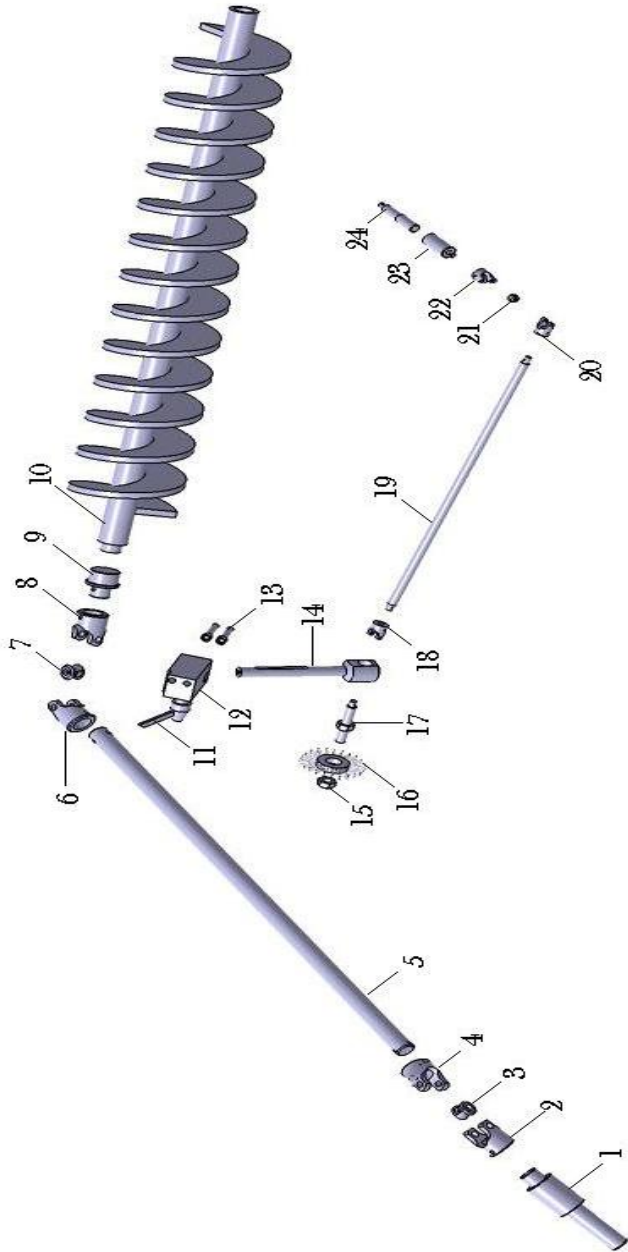
REDUCTOR GROUP

PART NMR	PART CODE	PART NAME
001	650DG.003.001	M12 INBUS
002	650DG.003.002	REDUCTOR FLANGE
003	650DG.003.003	SEGMAN DIN
004	650DG.003.004	BEARING
005	650DG.003.005	METAL RING
006	650DG.003.006	BEARING
007	650DG.003.007	SEAL
008	650DG.003.008	REDUCTOR SHAFT
009	650DG.003.009	WEDGE
010	650DG.003.010	REAR WHEEL
011	650DG.003.011	M16 INBUS
012	650DG.003.012	GREASE UNION



TENSIONING GROUP

PART NMR	PART CODE	PART NAME
001	650DG.004.001	PISTON COVER
002	650DG.004.002	TENSIONING PISTON
003	650DG.004.003	BRONZE BAND Ø110x8x2,5
004	650DG.004.004	PISTON SEAL
005	650DG.004.005	PISTON HEAD
006	650DG.004.006	O-RING K17-095
007	650DG.004.007	TEFLON BANT Ø110x8x2,5
008	650DG.004.008	O-RING
009	650DG.004.009	CONNECTION BLOCK
010	650DG.004.010	OIL SEAL
011	650DG.004.011	DUST SEAL
012	650DG.004.012	TENSIONING SHAFT
013	650DG.004.013	M20x2,5 CONNECTION BOLT
014	650DG.004.014	TENSIONING NUT
015	650DG.004.015	TENSIONING FLAT
016	650DG.004.016	FIXING FLAT
017	650DG.004.017	WHEEL FLAT
018	650DG.004.018	WHEEL SHAFT
019	650DG.004.019	OIL SEAL
020	650DG.004.020	BEARING
021	650DG.004.021	METAL RING
022	650DG.004.022	BEARING
023	650DG.004.023	WHEEL FLANGE
024	650DG.004.024	FRONT WHEEL
025	650DG.004.025	M16 INBUS
026	650DG.004.026	WHEEL COVER
027	650DG.004.027	GREASE UNION

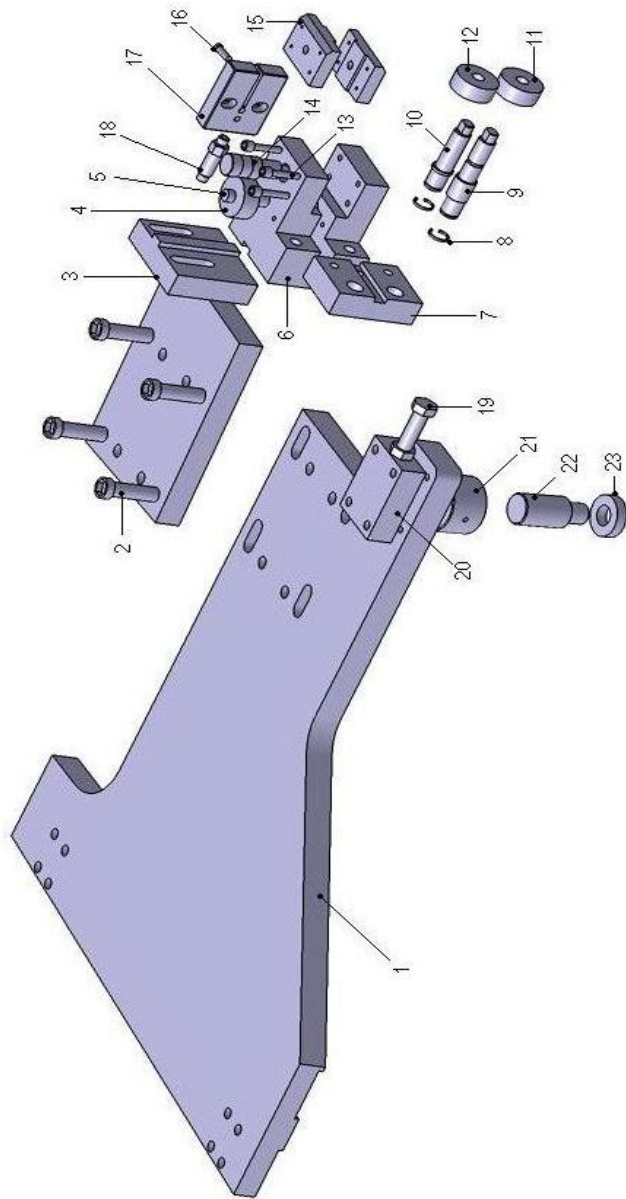


CONVEYOR GROUP

PART NMR	PART CODE	PART NAME
001	650DG.005.001	REDUCTOR SHAFT
002	650DG.005.002	FRONT MOVEMENT SHAFT
003	650DG.005.003	FRONT MOVEMENT PIM
004	650DG.005.004	FRONT SHAFT
005	650DG.005.005	CONNECTION SHAFT
006	650DG.005.006	BACK MOVEMENT SHAFT
007	650DG.005.007	BACK MOVEMENT PIM
008	650DG.005.008	BACK SHAFT
009	650DG.005.009	CONVEYOR CONNECTION PIM
010	650DG.005.010	CONVEYOR SHAFT

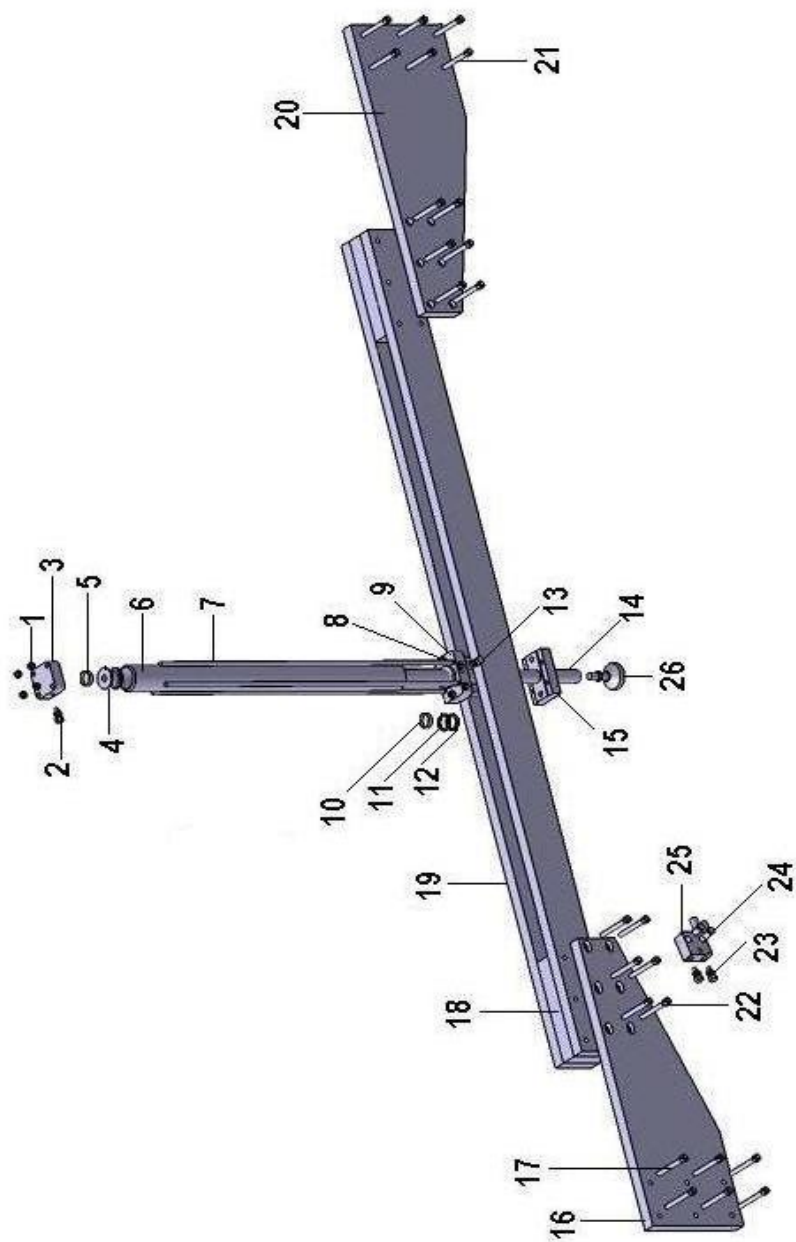
BRUSH GROUP

PART NMR	PART CODE	PART NAME
011	650DG.005.011	FIXING ARM
012	650DG.005.012	BODY CONNECTION BLOCK
013	650DG.005.013	M8 INBUS
014	650DG.005.014	CONNECTION ARM
015	650DG.005.015	M12 NUT
016	650DG.005.016	BRUSH
017	650DG.005.017	CONNECTION SHAFT
018	650DG.005.018	MOVEMENT SHAFT
019	650DG.005.019	MOVEMENT SHAFT
020	650DG.005.020	MOVEMENT SHAFT(REAR)
021	650DG.005.021	MOVEMENT PIM(REAR)
022	650DG.005.022	PIM
023	650DG.005.023	BACK CONNECTION SHAFT
024	650DG.005.024	MOTOR CONNECTION PIM



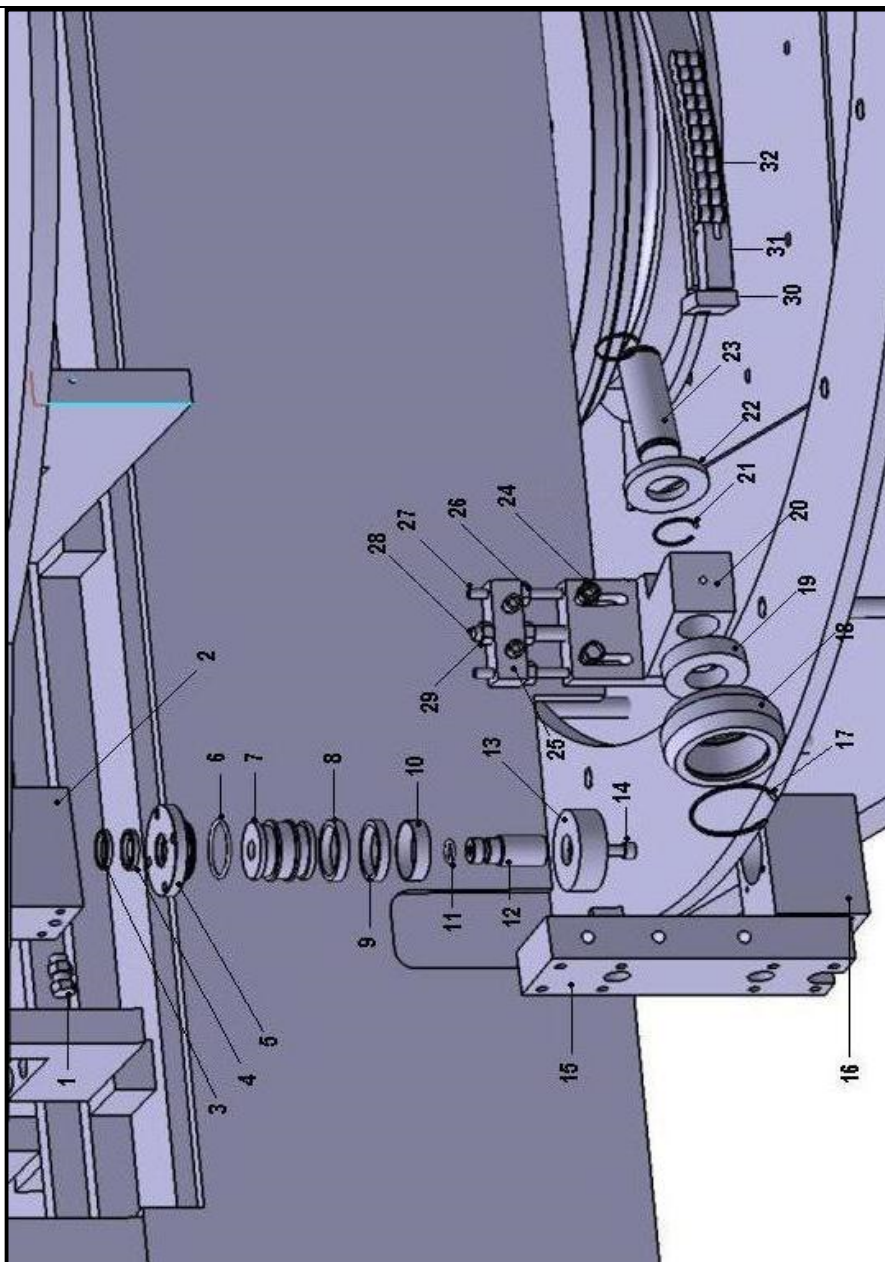
CARBIDE PLATE GROUP

PART NMR	PART CODE	PART NAME
001	650DG.006.001	MOVING ARM
002	650DG.006.002	M10 INBUS
003	650DG.006.003	ARM CONNECTION FLAT
004	650DG.006.004	BEARING
005	650DG.006.005	Ø20 PIN
006	650DG.006.006	CARBIDE PLATE
007	650DG.006.007	BEARING FLAT
008	650DG.006.008	DIN 471/17
009	650DG.006.009	LONG SHAFT
010	650DG.006.010	SHORT SHAFT
011	650DG.006.011	BEARING
012	650DG.006.012	BEARING
013	650DG.006.013	M6 SETSKUR
014	650DG.006.014	M10 INBUS
015	650DG.006.015	CARBIDE PLATE
016	650DG.006.016	M6 INBUS
017	650DG.006.017	TAP COUNTER
018	650DG.006.018	1/8" REKOR
019	650DG.006.019	M16 SWITCH BOLT
020	650DG.006.020	ARM SWITCH FLAT
021	650DG.006.021	ARM BLOCK
022	650DG.006.022	BEARING CONNECTION PIM
023	650DG.006.023	BEARING

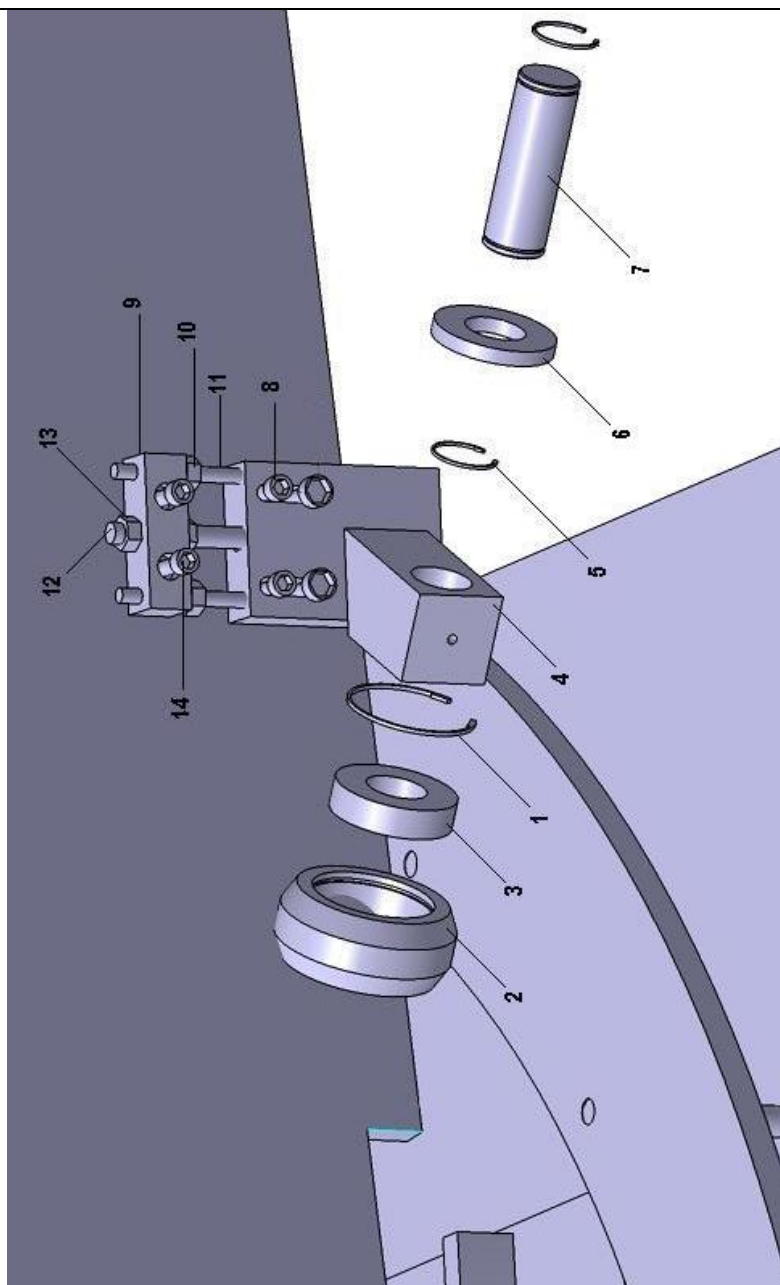


TOP CLAMPING GROUP		
PART NMR	PART CODE	PART NAME
001	650DG.007.001	M10 NUT
002	650DG.007.002	1/4" REKOR
003	650DG.007.003	PISTON UPPER BLOCK
004	650DG.007.004	PISTON HEAD
005	650DG.007.005	SEAL
006	650DG.007.006	PISTON PIPE
007	650DG.007.007	M10 SHAFT
008	650DG.007.008	M12 BOLT
009	650DG.007.009	PISTON LOWER BLOCK
010	650DG.007.010	BAND
011	650DG.007.011	OIL SEAL
012	650DG.007.012	DUST SEAL
013	650DG.007.013	1/4" REKOR
014	650DG.007.014	PISTON SHAFT
015	650DG.007.015	FIXING BLOCK
016	650DG.007.016	REDUCTOR FLAT
017	650DG.007.017	M10 INBUS
018	650DG.007.018	FLAT
019	650DG.007.019	CONNECTION FLAT
020	650DG.007.020	TENSIONING FLAT
021	650DG.007.021	M10 INBUS
022	650DG.007.022	M10 INBUS
023	650DG.007.023	REKOR
024	650DG.007.024	REKOR
025	650DG.007.025	BLOCK
026	650DG.007.026	CLAMPING TOOL

OPTIONAL

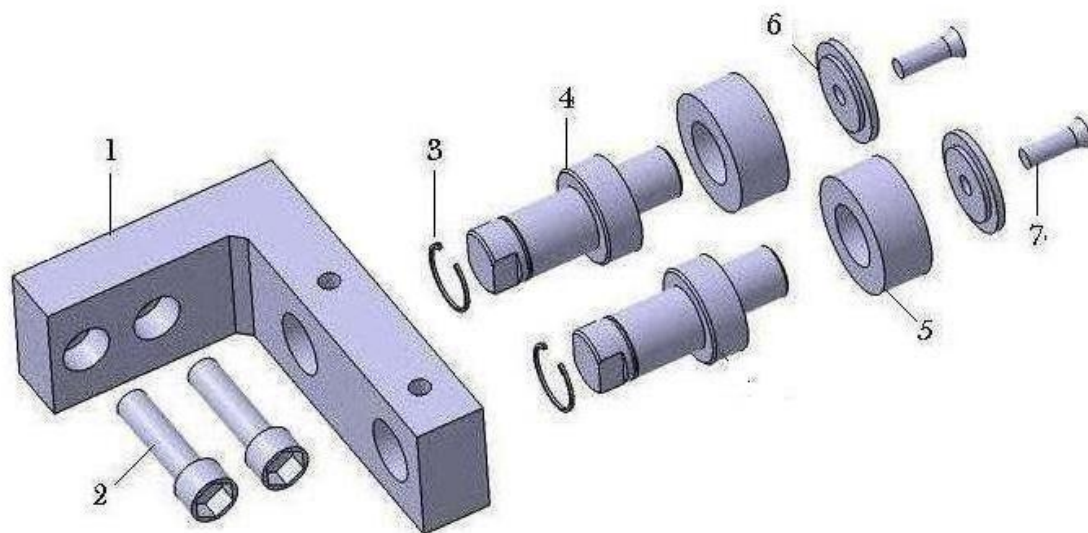
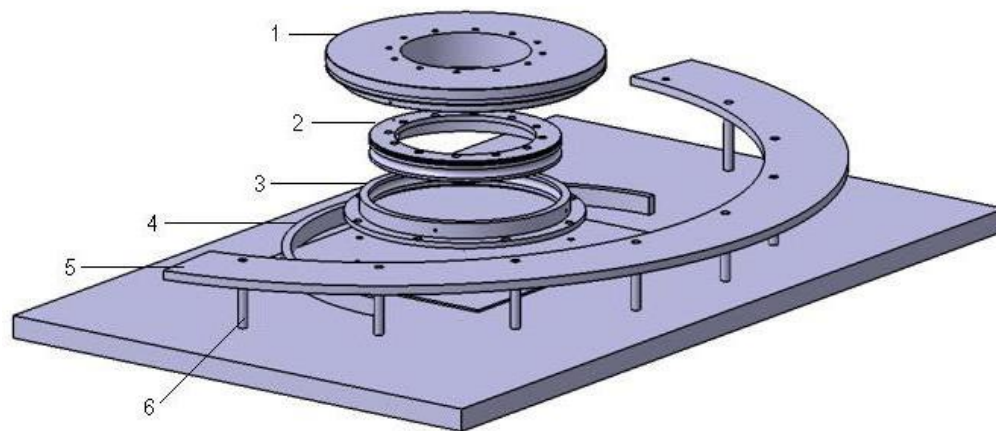


LOCKING GROUP		
PART NMR	PART CODE	PART NAME
001	650DG.008.001	REKOR
002	650DG.008.002	UP LOCKING BED
003	650DG.008.003	DUST SEAL
004	650DG.008.004	OIL SEAL
005	650DG.008.005	PISTON COVER
006	650DG.008.006	O-RING
007	650DG.008.007	INNER PISTON
008	650DG.008.008	OIL SEAL
009	650DG.008.009	BRONZE BAND
010	650DG.008.010	OIL SEAL
011	650DG.008.011	O-RING
012	650DG.008.012	INNER PISTON SHAFT
013	650DG.008.013	BRASS BLOCK
014	650DG.008.014	M8 INBUS
015	650DG.008.015	FLAT
016	650DG.008.016	LOWER LOCK BED
017	650DG.008.017	472/80 SEGMAN
018	650DG.008.018	WHEEL
019	650DG.008.019	BEARING
020	650DG.008.020	TENSIONING BLOCK (FRONT)
021	650DG.008.021	471/40 SEGMAN
022	650DG.008.022	METAL RING
023	650DG.008.023	WHEEL SHAFT
024	650DG.008.024	M10 INBUS
025	650DG.008.025	ADJUST BLOCK
026	650DG.008.026	M10 NUT
027	650DG.008.027	M10 INBUS
028	650DG.008.028	M14 BOLT
029	650DG.008.029	M14 NUT
030	650DG.008.030	CHAIN BLOCK
031	650DG.008.031	CHAIN FLAT
032	650DG.008.032	CHAIN



LOCKING GROUP-2

PART NMR	PART CODE	PART NAME
001	650DG.009.001	472/80 SEGMAN
002	650DG.009.002	WHEEL
003	650DG.009.003	BEARING
004	650DG.009.004	TENSIONING BLOCK(BACK)
005	650DG.009.005	471/40 SEGMAN
006	650DG.009.006	METAL RING
007	650DG.009.007	WHEEL SHAFT
008	650DG.009.008	M10 INBUS
009	650DG.009.009	ADJUSTING BLOCK
010	650DG.009.010	M10 NUT
011	650DG.009.011	M10 INBUS
012	650DG.009.012	M14 BOLT
013	650DG.009.013	M14 NUT
014	650DG.009.014	M10 INBUS



ARM ASSEMBLY

PART NMR	PART CODE	PART NAME
001	650DG.010.001	OUT WHEEL
002	650DG.010.002	INNER WHEEL
003	650DG.010.003	MIDDLE WHEEL
004	650DG.010.004	CHAIN BED
005	650DG.010.005	TURN TABLE
006	650DG.010.006	TURN TABLE SHAFT

BEARING HOLDER GROUP

PART NMR	PART CODE	PART NAME
001	650DG.011.001	
002	650DG.011.002	
003	650DG.011.003	
004	650DG.011.004	
005	650DG.011.005	
006	650DG.011.006	
007	650DG.011.007	

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COMPANY :

MACHINE TYPE : BMSY 650 DG NC

SERIAL NR :

COUNTRY :

OPTIONS : INVERTER + HYD. VICE, BLADE AND TOP CLUMPING
CHIP CONVEYOR + CLEANING BRUSH + FAST DOWN
MICRO SPREY + AUTO VICE PRESS CONTROL
LASER POINTER + LED LIGHT

DATE :



KAPAK

Job no.
BMSY 650 DG BUNDEL 10.08.2012

Draw.no.

Rev.:

By:

Date:

05.08.2009

Device:

Location:

Sheet

1

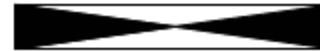
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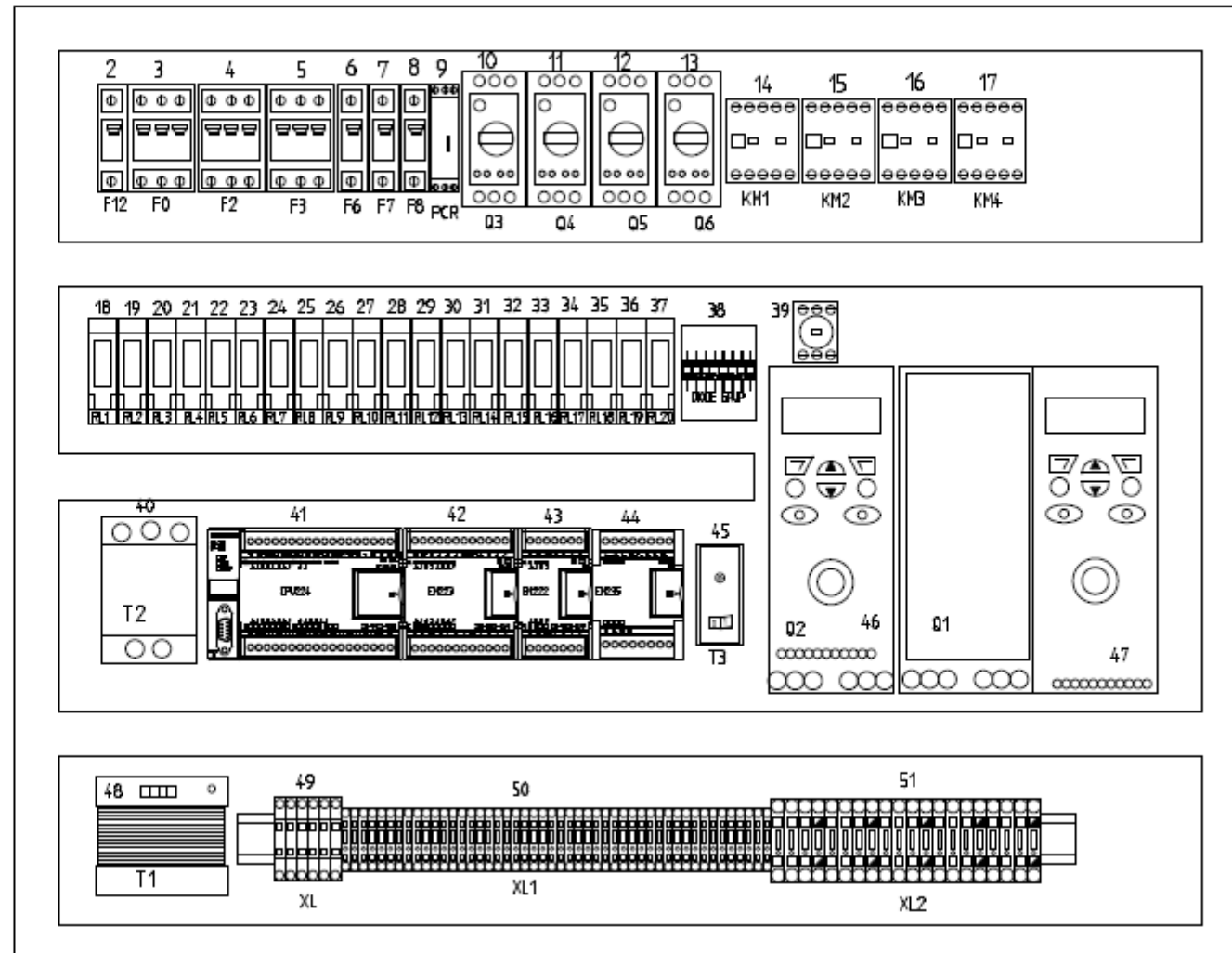
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- 2 _ İÇİNDEKİLER / INDEX
- 3 _ ELEKTRİK PANOSU BLOK YERLEŞİM PLANI
- 4 _ ELEKTRİK PANOSU KAPAK YERLEŞİM PLANI
- 5 _ ELEKTRİK PANOSU MALZEME LİSTESİ
- 6 _ ELEKTRİK PANOSU GÜÇ BAĞLANTI PLANI
- 7 _ 4.5 Amp GÜÇ KAYNAĞI ELEKTRİK BAĞLANTI PLANI
- 8 _ HİDROLİK MOTOR VE ÇAPAK TEMİZLEME MOTORU GÜÇ BAĞLANTI PLANI
- 9 _ ÇAPAK TAŞIMA MOTORU VE BORYAĞ POMPA MOTORU GÜÇ BAĞLANTI PLANI
- 10 _ TESTERE MOTORU INVERTERİ ELEKTRİK BAĞLANTI PLANI
- 11 _ DÖNDÜRME MOTORU INVERTERİ ELEKTRİK BAĞLANTI PLANI
- 12 _ CPU 224 DIGITAL INPUT BYTE 0 ELEKTRİK BAĞLANTI PLANI
- 13 _ CPU 224 DIGITAL INPUT BYTE 1 ELEKTRİK BAĞLANTI PLANI
- 14 _ EM 223 DIGITAL INPUT BYTE 2 ELEKTRİK BAĞLANTI PLANI
- 15 _ CPU 224 DIGITAL OUTPUT BYTE 0-1 ELEKTRİK BAĞLANTI PLANI
- 16 _ EM 223 DIGITAL OUTPUT BYTE 2 ELEKTRİK BAĞLANTI PLANI
- 17 _ EM 222 DIGITAL OUTPUT BYTE 3 ELEKTRİK BAĞLANTI PLANI
- 18 _ PLC VE EK MODÜL BESLEME ELEKTRİK BAĞLANTI PLANI
- 19 _ ELEKTRİK PANOSU KLEMENS (XL1) BAĞLANTI PLANI
- 20 _ ELEKTRİK PANOSU KLEMENS (XL2,XL3) BAĞLANTI PLANI
- 21 _ KLEMENS KUTUSU (TB-1) KLEMENS BAĞLANTI PLANI
- 22 _ KLEMENS KUTUSU (TB-2) KLEMENS BAĞLANTI PLANI

BEKA—MAK		İÇİNDEKİLER	BMSY 650 D6 GÜNCEL 10.08.2012	Job no:	Draw.no.		Reviz	By:
				Date:	05.08.2009	Device:	Location:	Sheet
								2

0	1	2	3	4	5	6	7	8	9
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1



52

BEKA-MAK

PANO İÇİ YERLEŞİM PLANI

Job no. BMSY 650 DİG GÜNCEL 10.08.2012

Draw.no.

Reviz

By:

Date: 05.08.2009

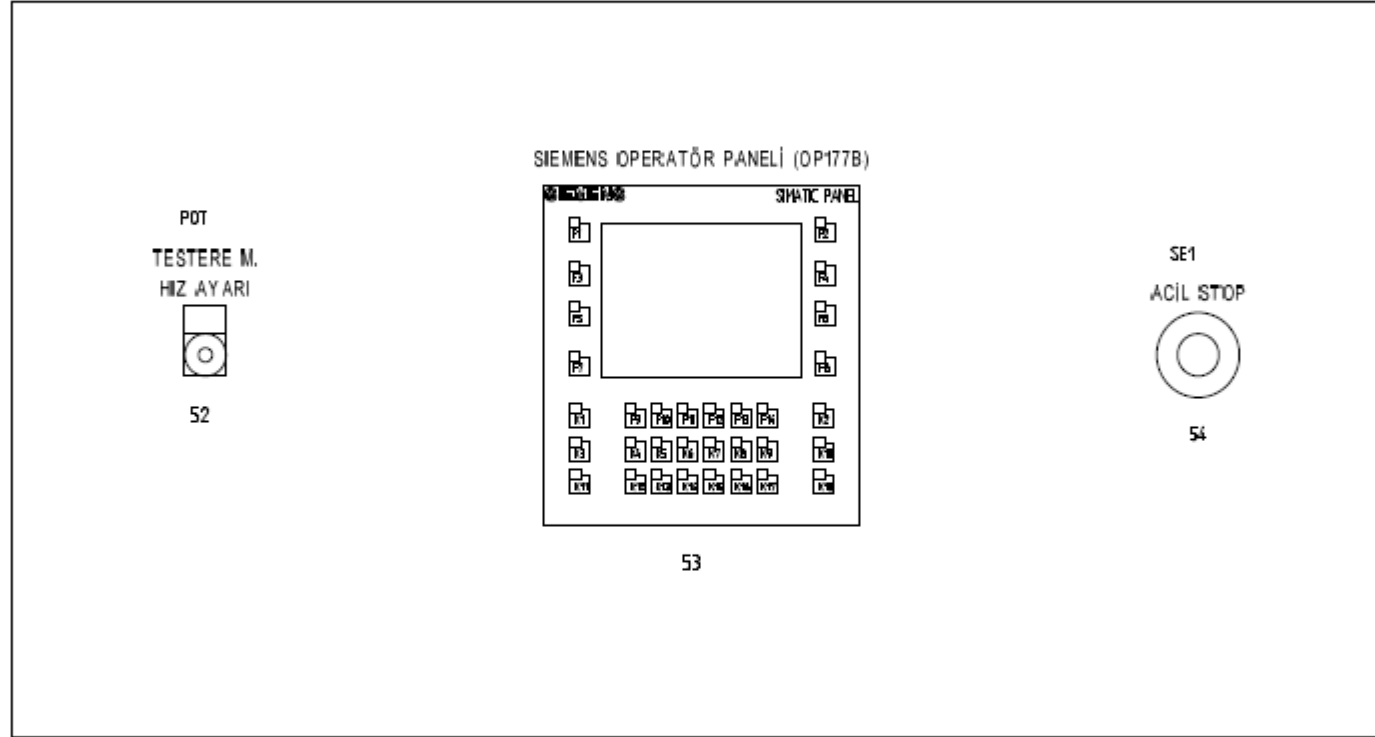
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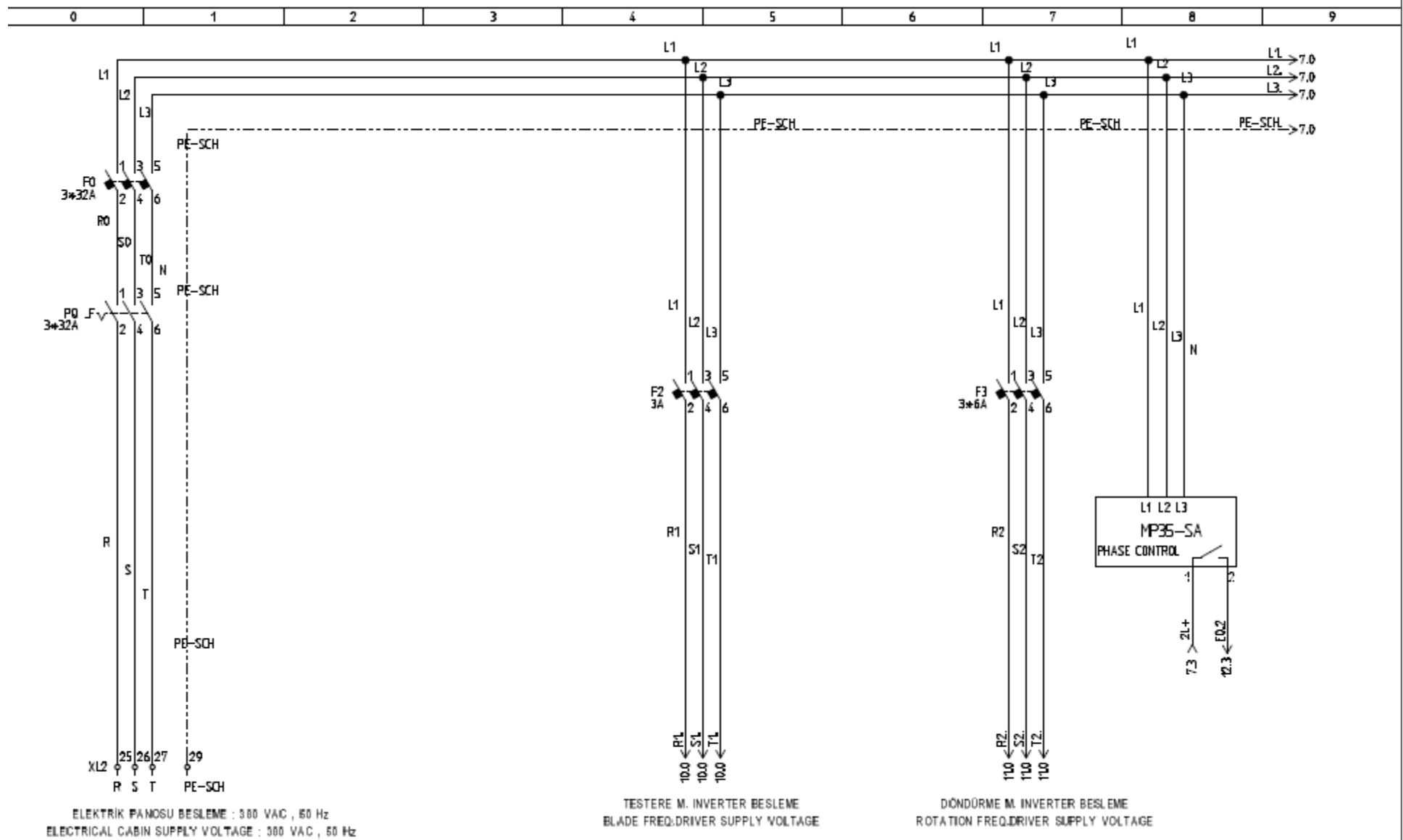
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				Date: 05.08.2009	Device:	Location:	Sheet 4

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1	LAMP	OPTO LED	LED LAMB LED AYDINLATMA	24 VDC	31	RL14	ABB	RELAY MINYATUR ROLE	CR-P024DC1
2	F12	ABB	LED FUSE LED FUSE	SH 201 T C6	32	RL15	ABB	RELAY MINYATUR ROLE	CR-P024DC1
3	F0	ABB	MAIN FUSE ANA SIGORTA	SH 203 T C32	33	RL16	ABB	RELAY MINYATUR ROLE	CR-P024DC1
4	F2	ABB	BLADE INV. FUSE KESİM INV. SIGORTA	SH 203 T C32	34	RL17	ABB	RELAY MINYATUR ROLE	CR-P024DC1
5	F3	ABB	ROTATION INV. FUSE AÇI INV. SIGORTA	SH 203 T C20	35	RL18	ABB	RELAY MINYATUR ROLE	CR-P024DC1
6	F6	ABB	PLC FUSE PLC BESLEME SIGORTASI	SH 201 T C2	36	RL19	ABB	RELAY MINYATUR ROLE	CR-P024DC1
7	F7	ABB	PLC INPUT FUSE PLC GİRİŞLER SIGORTASI	SH 201 T C6	37	RL20	ABB	RELAY MINYATUR ROLE	CR-P024DC1
8	F8	ABB	RELAY FUSE ROLE HATTI SIGORTASI	SH 201 T C3	38	DIYDE	ITT	DIYOT	100V / 6A
9	PCR	KLEMSAN	PHASE CONTROL RELAY FAZ KONTROL RÖLESİ	MP35 SA	39	PQ	ABB	MAIN SWICH ANA SALTER	DT2SF3HYSX6ST1
10	Q3	ABB	HYDROLİK PÜMP ÇIKIŞ BRANŞİ	MS 116 6 – 10A	40	T2	ISOSO	POWER SUPPLY GÜÇ KAYNAĞI	DR 120–24 VDC
11	Q4	ABB	ÇİP CONVEYOR ÇIKIŞ BRANŞİ	MS 116 1 – 16A	41	CPU224	SIEMENS	PLC PROGRAMLANABİLİR KONTROLÖR	6ES7 214-1BD23-0XB0
12	Q5	ABB	ÇİP BRÜŞ ÇIKIŞ BRANŞİ	MS 116 0.63 – 1A	42	EN223	SIEMENS	PLC EXP MODUL (I) GİRİŞ EK MODÜL	6ES7 223-1BH22-0XA0
13	Q6	ABB	SOĞUKT PÜMP ÇIKIŞ BRANŞİ	MS 116 0.63 – 1A	43	EN222	SIEMENS	PLC EXP MODUL (I/O) GİRİŞ / ÇIKIŞ EK MODÜL	6ES7 222-1BF22-0XA0
14	KM1	ABB	HYDROLİK PÜMP KONTAKTORU	BC6–30–10, 4 kW	44	EN235	SIEMENS	PLC EXP MODUL (ANALOG) ANALOG EK MODÜL	6ES7 235-0KD22-0XB0
15	KM2	ABB	ÇİP CONVEYOR KONTAKTORU	BC6–30–10, 4 kW	45	T3	HUANC	LASER POWER SUPPLY LAZER GÜÇ KAYNAĞI	+5 VDC
16	KM3	ABB	ÇİP BRÜŞ KONTAKTORU	BC6–30–10, 4 kW	46	Q2	ABB	ROTATION INVERTER DÖNDÜRME İNVERTERİ	0,75 KW ACS 150
17	KM4	ABB	SOĞUKT PÜMP KONTAKTORU	BC6–30–10, 4 kW	47	Q1	ABB	BLADE INVERTER KESİM İNVERTERİ	7.5 KW ACS 355
18	RL1	ABB	RELAY MINYATUR ROLE	CR-P024DC1	48	T1	GÜNDOZ	TRANSFORMATOR TRAFÖ	
19	RL2	ABB	RELAY MINYATUR ROLE	CR-P024DC1	49	XL	WEDMULLER	TRANSFORMATOR GİRİŞ SIGORTASI	ZSI 2,5
20	RL3	ABB	RELAY MINYATUR ROLE	CR-P024DC1	50	XL1	WEDMULLER	2,5 mm TERMINAL 4 mm KLEMENS	ZDU 2,5 ZPE 4
21	RL4	ABB	RELAY MINYATUR ROLE	CR-P024DC1	51	XL2	WEDMULLER	2,5 mm TERMINAL 4 mm KLEMENS	ZDU 4 ZPE 4
22	RL5	ABB	RELAY MINYATUR ROLE	CR-P024DC1	52	FAN	TIDAR	COOLING FAN HAVALANDIRMA FAN	12*12 CM 24 VDC
23	RL6	ABB	RELAY MINYATUR ROLE	CR-P024DC1	53	POT	MOMENTUM	POTANTIONETER POTANSİYOMETRE	10 KOHM
24	RL7	ABB	RELAY MINYATUR ROLE	CR-P024DC1	54	OPERATOR PANEL	SIEMENS	OPERATOR PANEL OPERATOR PANEL	OP 177 B
25	RL8	ABB	RELAY MINYATUR ROLE	CR-P024DC1	55	SE1	ABB	EMERGENCY STOP AÇIL STOP	MPET4–10R
26	RL9	ABB	RELAY MINYATUR ROLE	CR-P024DC1	56				
27	RL10	ABB	RELAY MINYATUR ROLE	CR-P024DC1	57				
28	RL11	ABB	RELAY MINYATUR ROLE	CR-P024DC1	58				
29	RL12	ABB	RELAY MINYATUR ROLE	CR-P024DC1	59				
30	RL13	ABB	RELAY MINYATUR ROLE	CR-P024DC1	60				

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		BHSY 650 D6 GÜNCEL 10.08.2012			
		Date:	Device:	Location:	Sheet
		05.08.2009			5



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BMSY 650 D6 BUNCEL 10.08.2012

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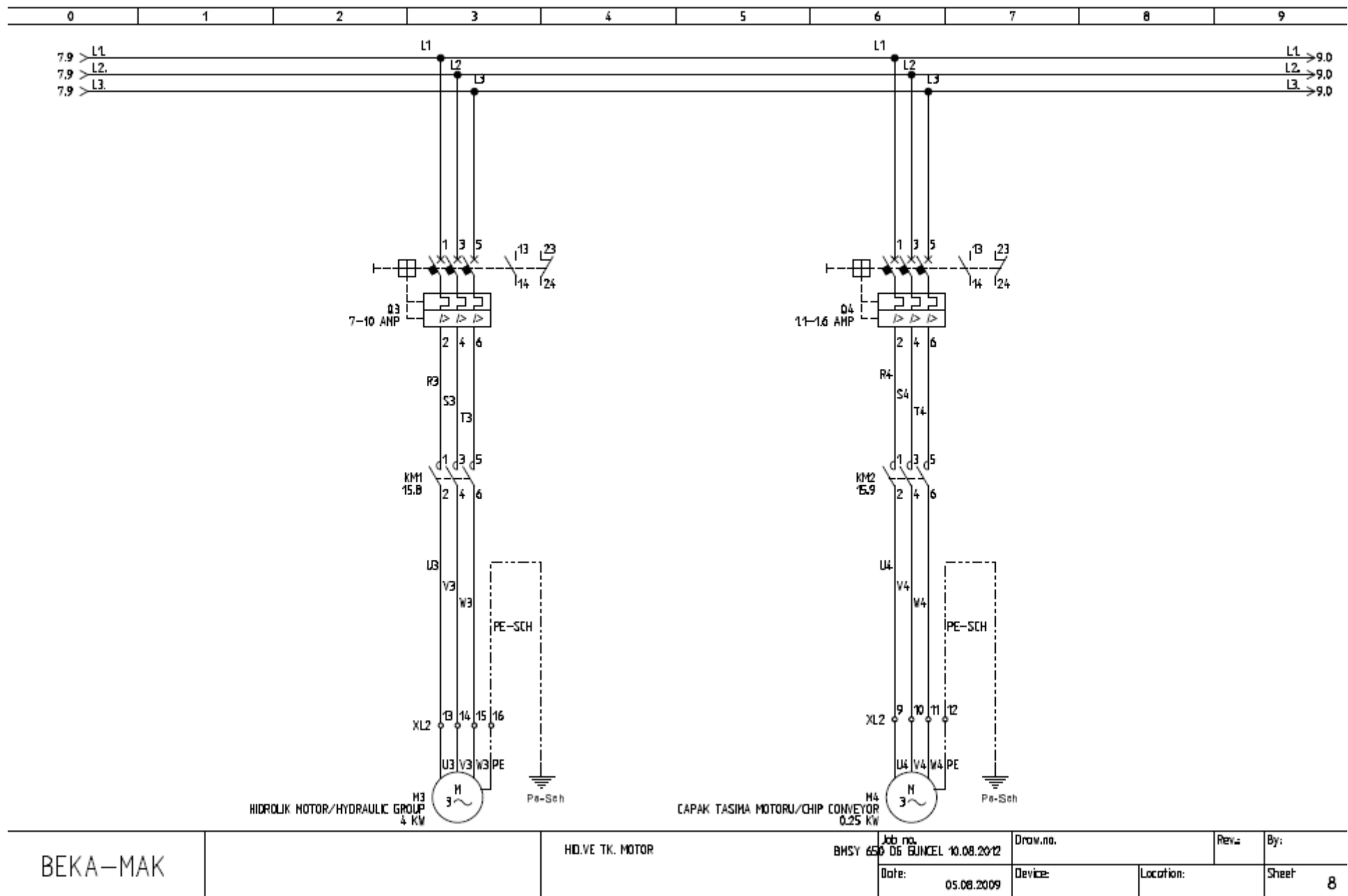
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6



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HID.VE TK. MOTOR

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Reviz

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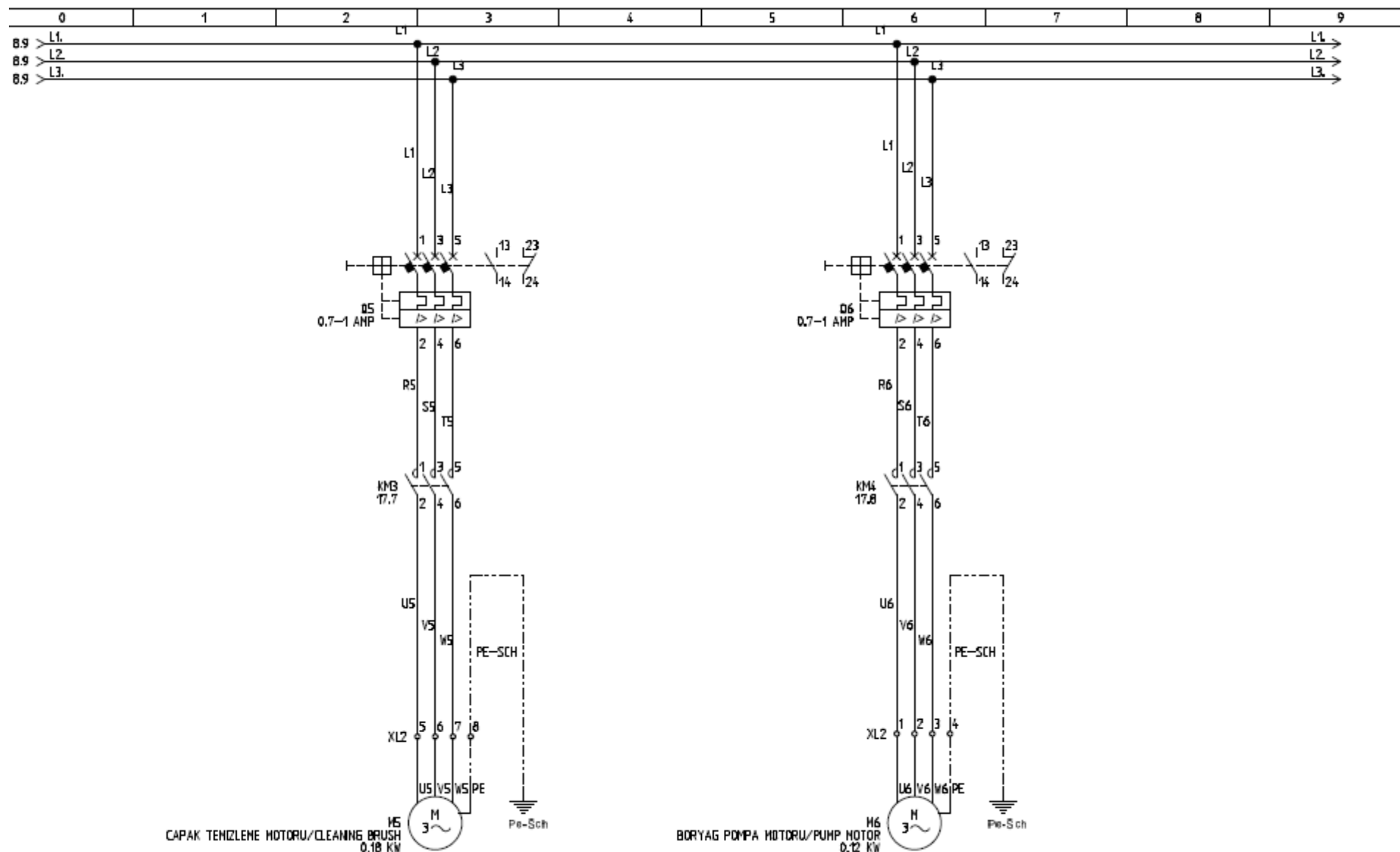
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8



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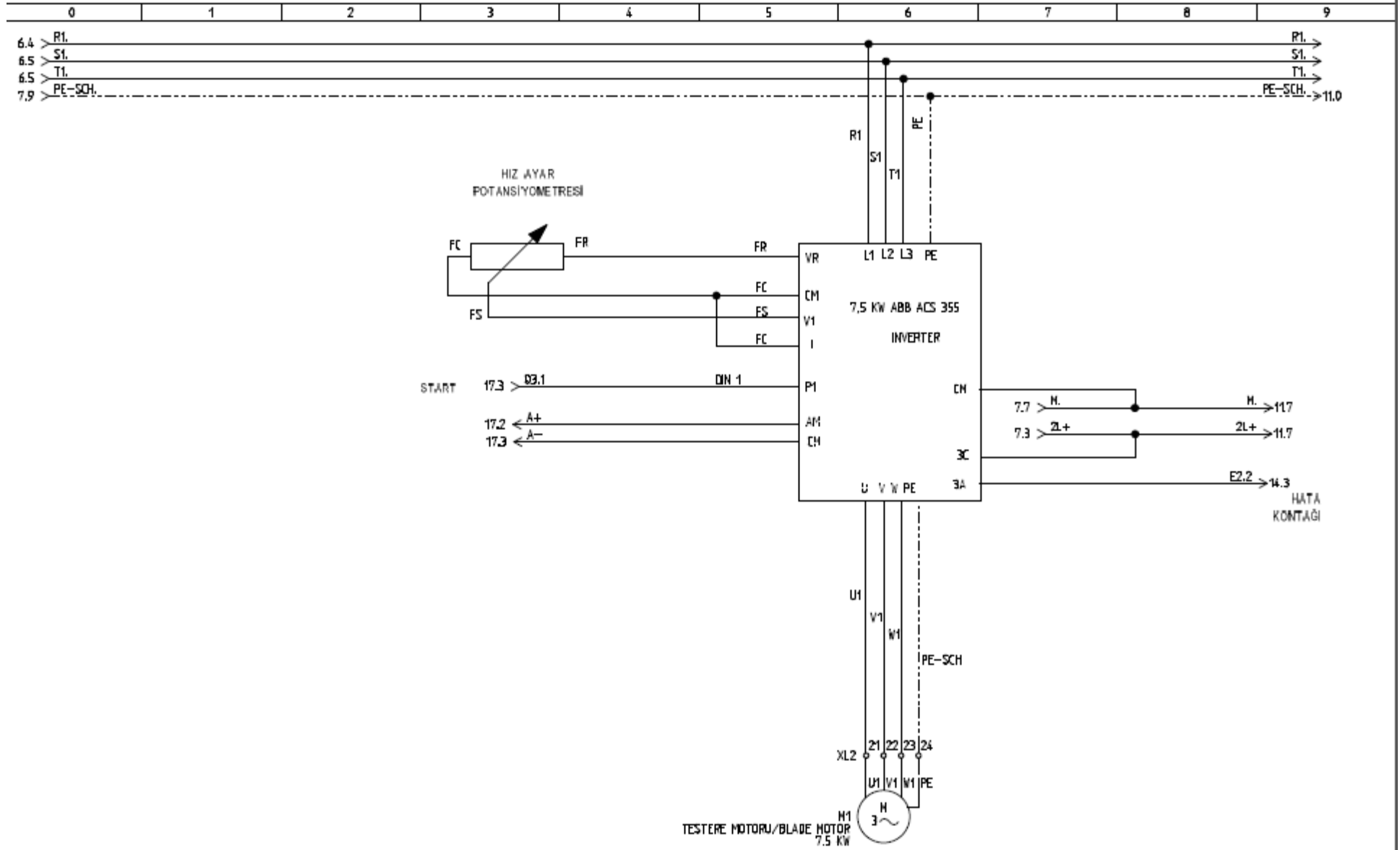
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Reviz

By:

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BEKA-MAK

ANA MOTOR

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Date: 05.08.2009

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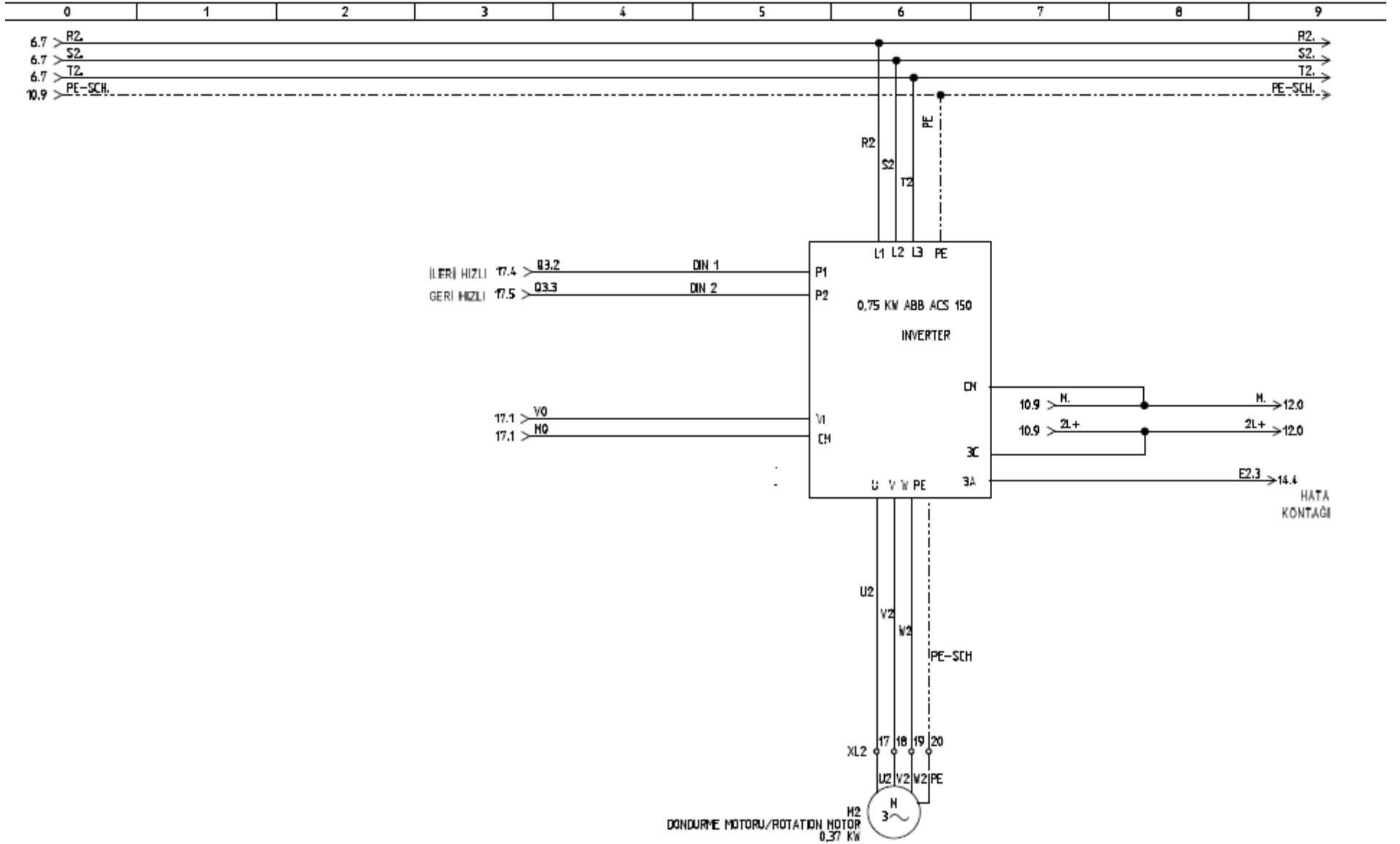
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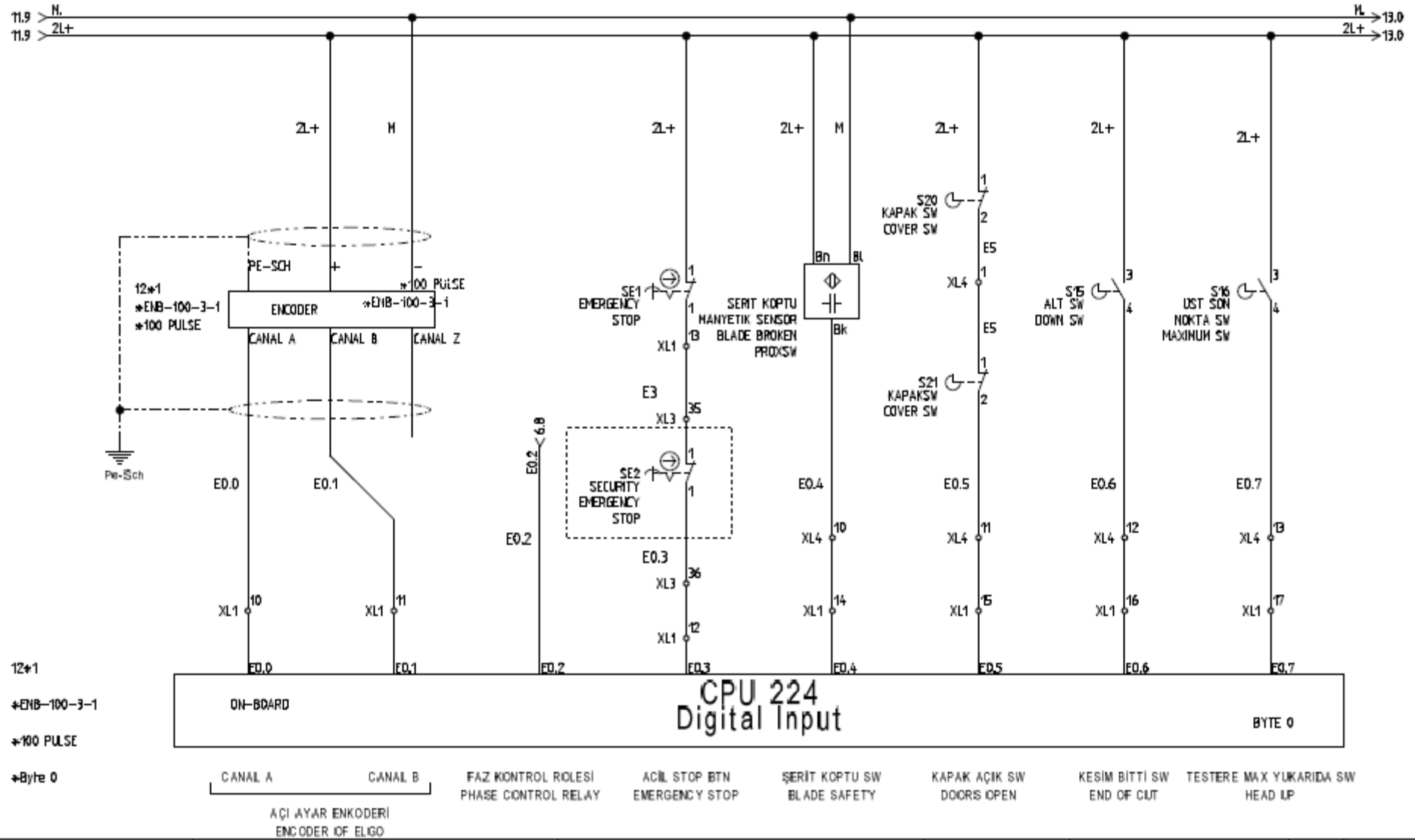
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				Date: 05.08.2009			
				Device:	Location:		Sheet 11

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CPU 224 GRISLER 1

Job no.
BMSY 650 D6 BUNCEL 10.08.2012

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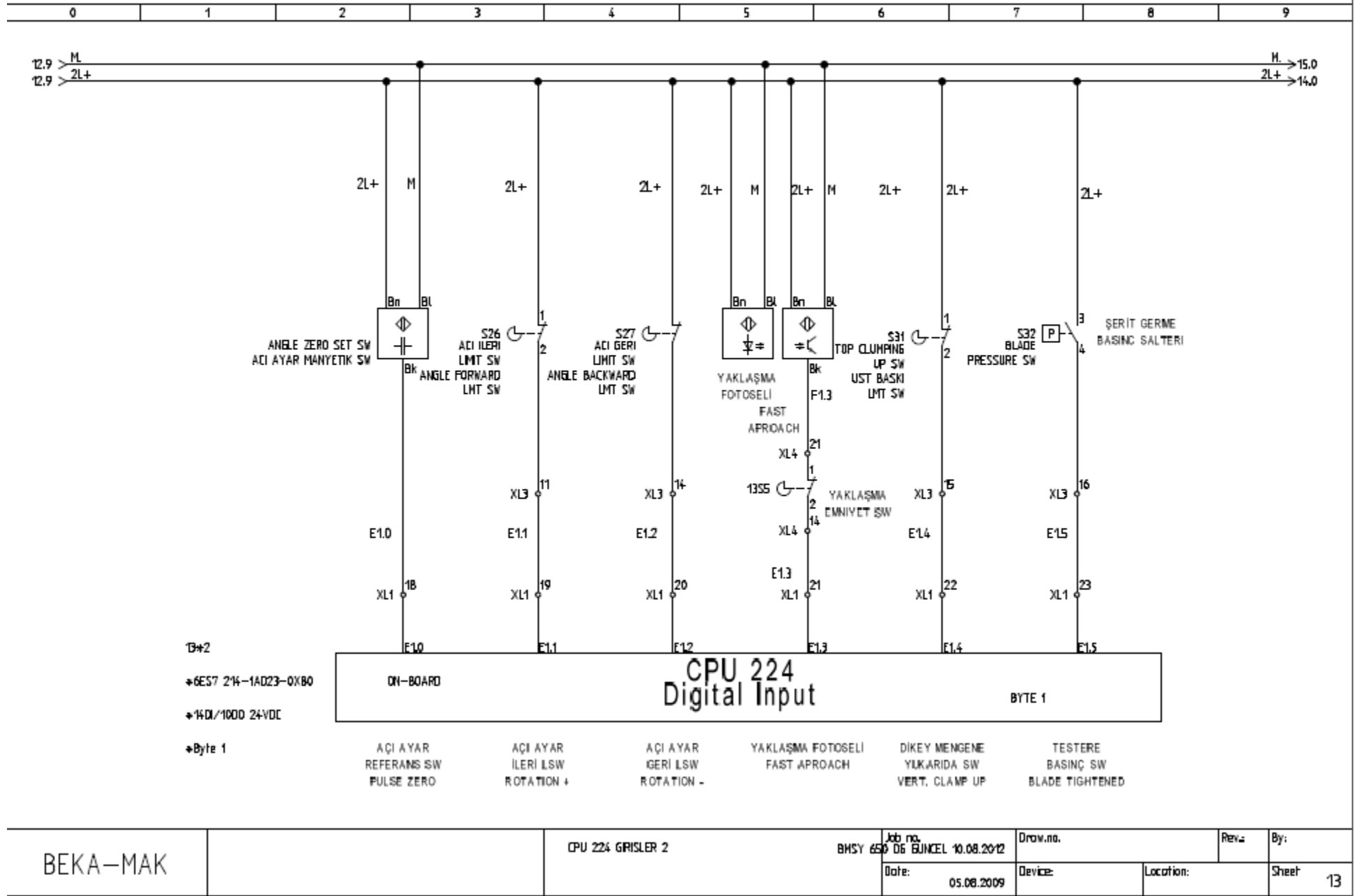
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12



BEKA-MAK

CPU 224 GRISLER 2

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Date:
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Draw.no.

Device:

Location:

Reviz

By:

Sheet

13

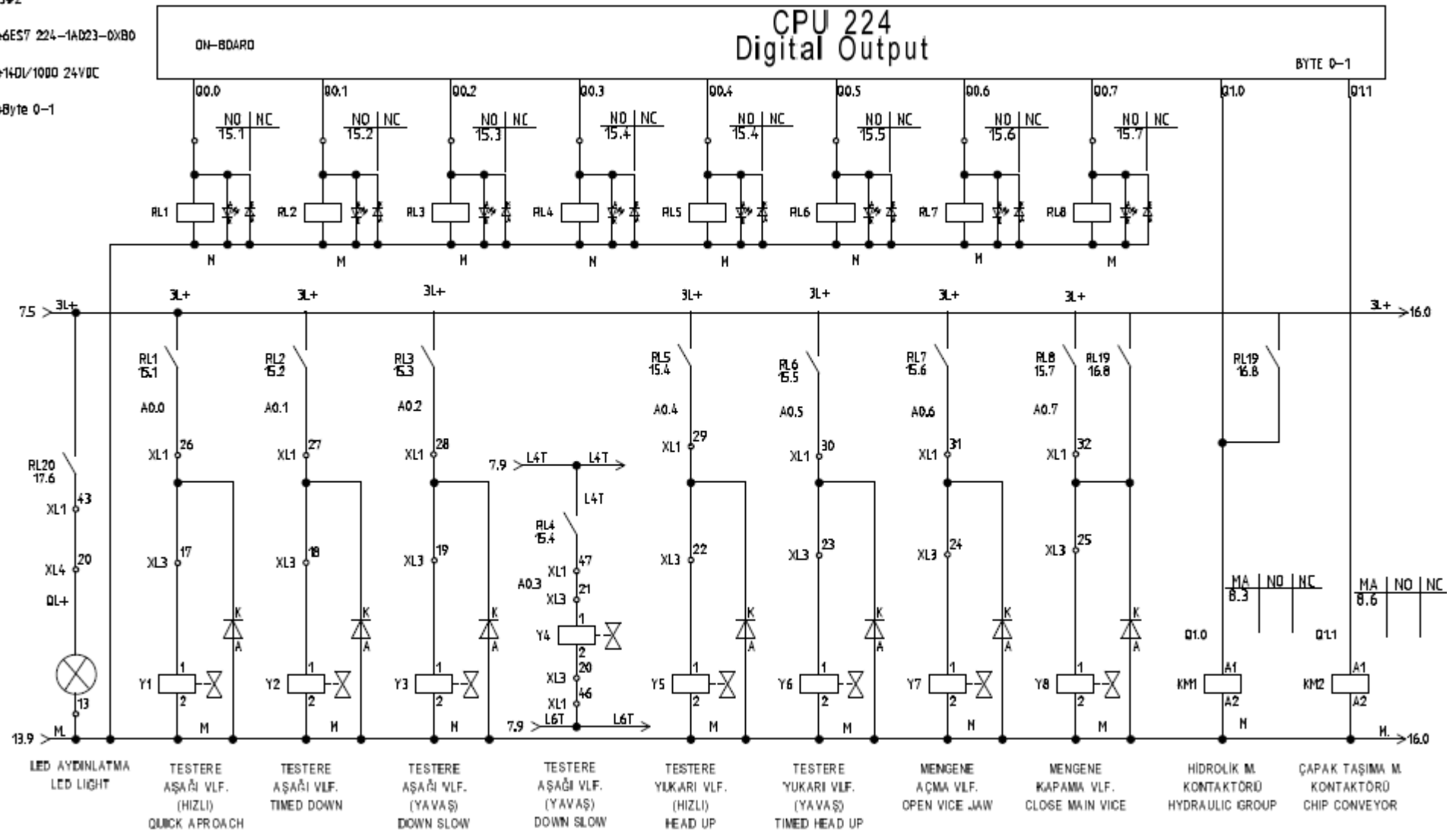
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15*2

*6ES7 224-1AD23-0XB0

*140U/1000 24VDC

*Byte 0-1



BEKA-MAK

CPU 224 OKSLAR

Job no. BMSY 650 D6 GÜNCEL 10.08.2012

Date: 05.08.2009

Draw.no.

Device:

Location:

Reviz

By:

Sheet

15

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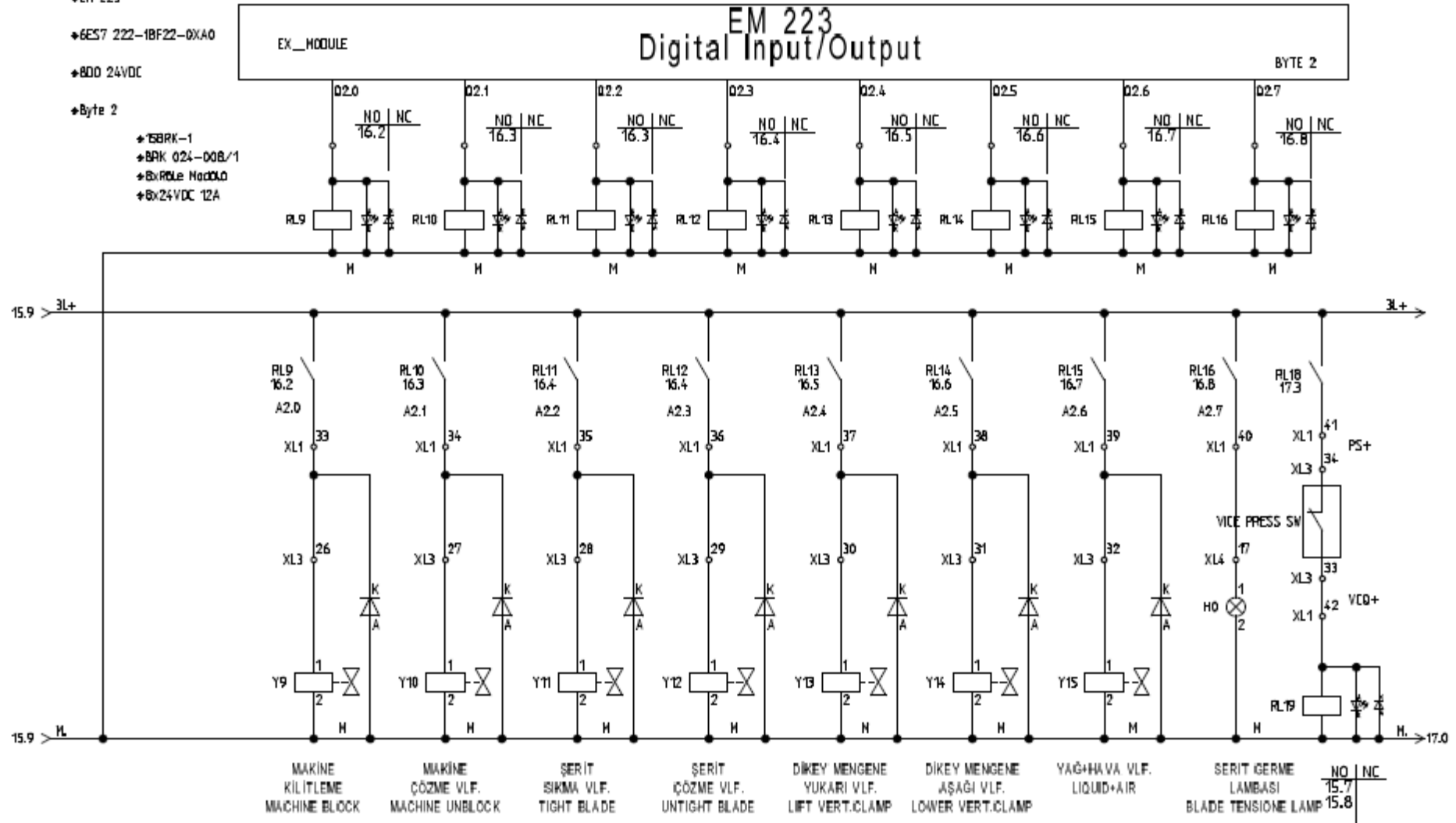
•EN 223

•6ES7 222-1BF22-0XA0

•800 24VDC

•Byte 2

- TSBRK-1
- BAK 024-008/1
- 8xR0Le Modulo
- 6x24VDC 12A



BEKA-MAK

EN 223 ÇIKIŞLAR

Job no.
BHSY 650 D6 GÜNCEL 10.08.2012

Date:
05.08.2009

Draw.no.

Device:

Location:

Reviz

By:

Sheet

16

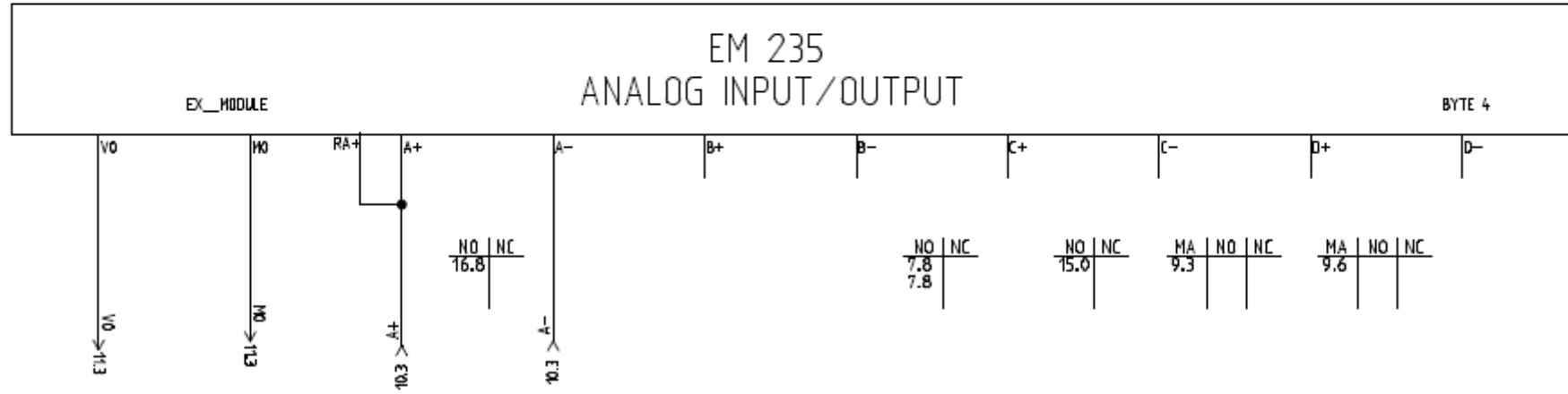
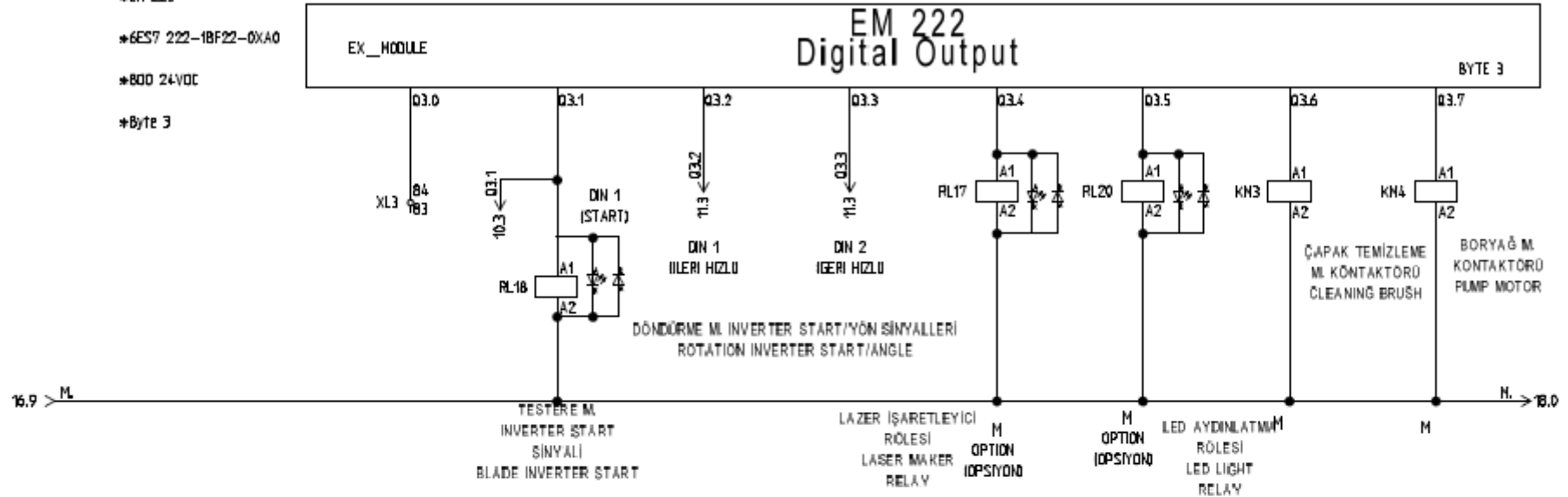
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*EM 223

*6ES7 222-1BF22-0XA0

*800 24VDC

*Byte 3



BEKA-MAK

EM 222 ÇIKIŞLAR VE EM 235

Job no. BMSY 650 D6 BUNCEL 10.08.2012

Draw.no.

Reviz

By:

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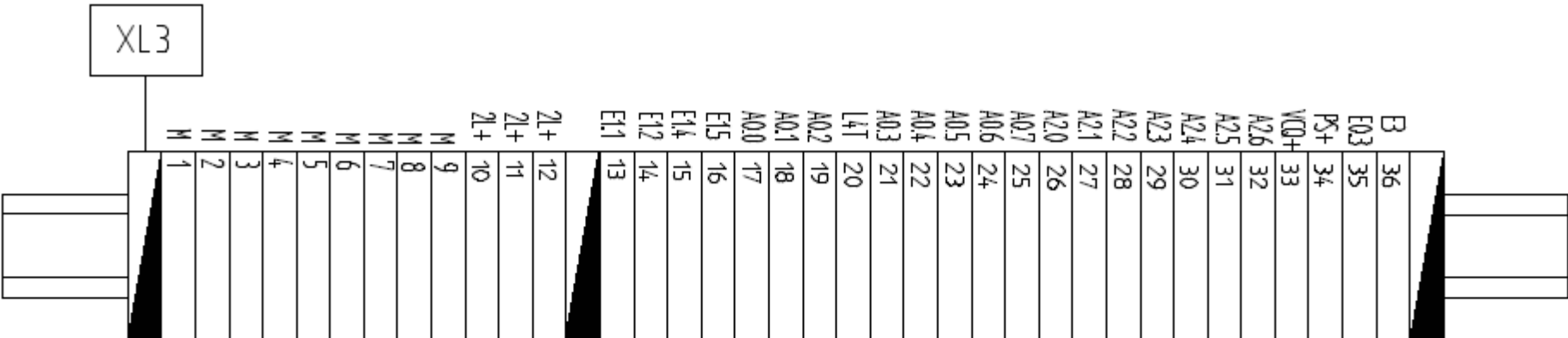
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17

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991	992	993	994	995	996	997	998	999	1000

0	1	2	3	4	5	6	7	8	9
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PE-SCH

CEVRE KORUMA SW - EMERGENCY STOP

CEVRE KORUMA SW - EMERGENCY STOP

BASINÇ SALTERİ ; PRESSURE SW

BASINÇ SALTERİ ; PRESSURE SW

YAĞ+HAVA VLF./LIQUID+AIR

DIKEY MENGENE AŞAĞI VLF / TOP CLUMPING DOWN VALVE

DIKEY MENGENE YUKARI VLF / TOP CLUMPING UP VALVE

ŞERİT ÇÖZME VLF./UNTIGHT BLADE

ŞERİT SIKMA VLF./TIGHT BLADE

MAKİNE ÇÖZME VLF./MACHINE UNBLOCK

MAKİNE KİLİTLEM/MACHINE BLOCK

MENGENE KAPAMA VLF./CLOSE MAIN VICE

MENGENE AÇMA VLF./OPEN VICE JAW

TESTERE YUKARI VLF. (YAĞAŞ) TIMED HEAD UP

TESTERE YUKARI VLF. (HIZLI) HEAD UP

TESTERE AŞAĞI VLF. (YAĞAŞ) DOWN SLOW

TESTERE AŞAĞI VLF. (YAĞAŞ) DOWN SLOW

TESTERE AŞAĞI VLF. (YAĞAŞ) DOWN SLOW

TESTERE AŞAĞI VLF. TIMED DOWN

TESTERE AŞAĞI VLF. (HIZLI)/QUICK APPROACH

TESTERE BASINÇ SW/BLADE TIGHTENED

UST BASKI YUKARIDA SW - TOP CLUMPING UP SW

AÇI AYAR GERİ LSW ROTATION -

AÇI AYAR ILERİ LSW/ROTATION +

PE-SCH

DIGITAL INPUT BESLEME (24 VDC)

DIGITAL INPUT SUPPLY (24 VDC)

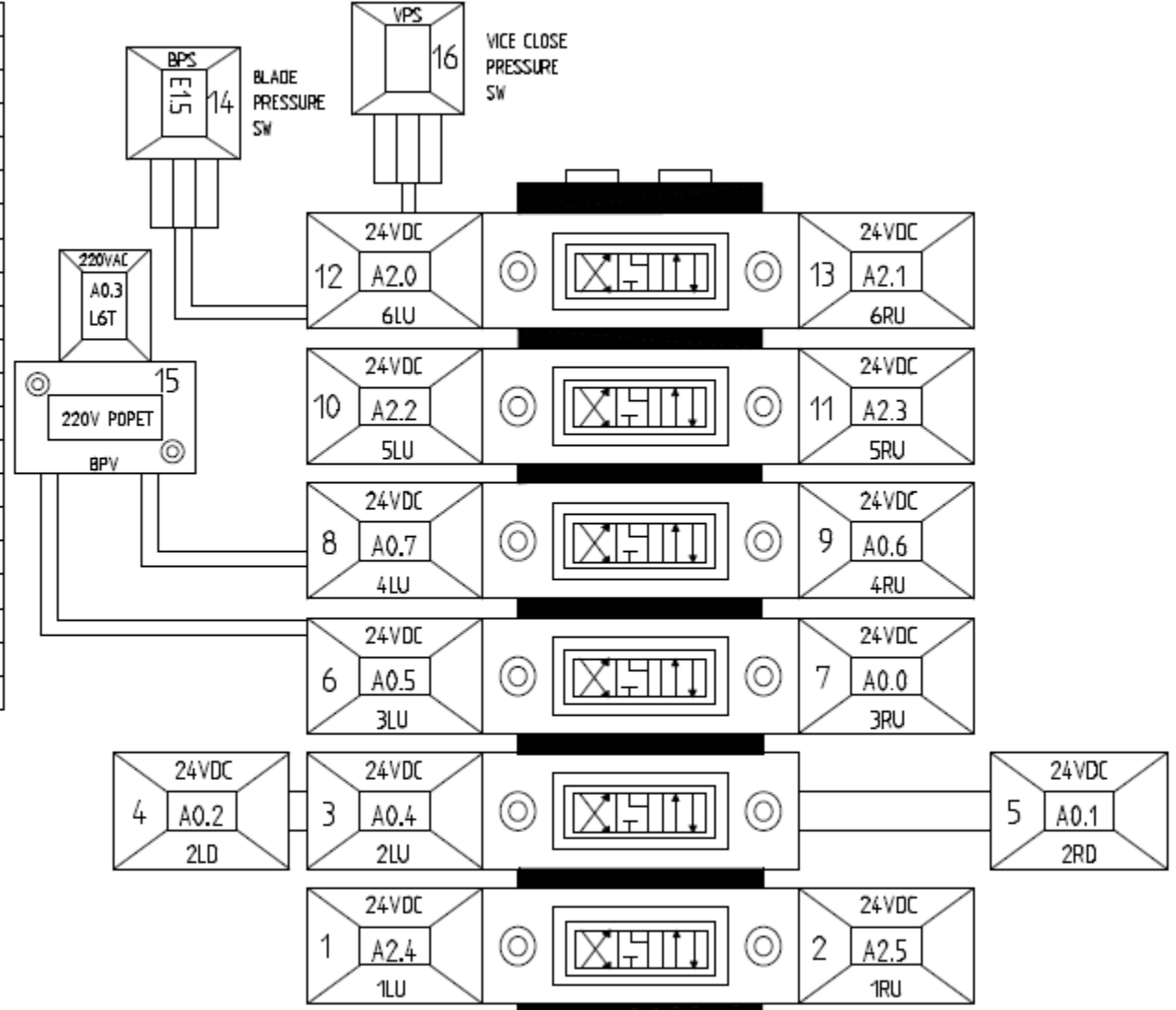
DIGITAL INPUT BESLEME (0 VDC)
DIGITAL INPUT SUPPLY (0 VDC)

PE-SCH

BEKA-MAK		HİDROLİK KLEMENSLER	Job no.	Draw.no.	Reviz	By:
			BHSY 650 D6 BUNCEL 10.08.2012			
			Date:	Device:	Location:	Sheet
			05.08.2009			21

0	1	2	3	4	5	6	7	8	9
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1	1LU	A2.4	UST BASKI YUKARI VALFI – TOP CLUMPING UP
2	1RU	A2.5	UST BASKI ASAGI VALFI – TOP CLUMPING DOWN
3	2LU	A0.4	TESTERE YUKARI VALFI (HIZLI) – HEAD UP
4	2LD	A0.2	TESTERE ASAGI VALFI (YAVAS) – DOWN SLOW
5	2RD	A0.1	TESTERE ASAGI VALFI – TIMED DOWN
6	3LU	A0.5	TESTERE YUKARI VALFI (YAVAS) – TIMED HEAD UP
7	3RU	A0.0	TESTERE ASAGI VALFI (HIZLI) – QUICK APPROACH
8	4LU	A0.7	MENGENE KAPAMA VALFI – CLOSE VICE
9	4RU	A0.6	MENGENE ADMA VALFI – OPEN VICE
10	5LU	A2.2	SERIT SIKMA VALFI – TIGHT BLADE
11	5RU	A2.3	SERIT COZME VALFI – UNTIGHT BLADE
12	6LU	A2.0	MAK.NE KILITLEME VALFI – MACHINE BLOCK
13	6RU	A2.1	MAK.NE COZME VALFI – MACHINE UNBLOCK
14	BPS	E15	SERIT BASINC SALTERI – BLADE PRESSURE SW
15	BPV	A0.3 L6T	TESTERE ASAGI VALFI (YAVAS) – DOWN SLOW
16	VPS	VCQ+ PS+	MENGENE BASINC SALTERI – VICE PRESSURE SW



		HYDROLİK BAĞLANTILARI	Job no: BMSY 650 D6 GUNCEL 10.08.2012	Draw.no:	Reviz:	By:
			Date: 14.12.2009	Device:	Location:	Sheet 23

