

2013

BEKAMAK

bandsawing machines

SEMI AUTOMATIC TWIN PILLAR BANDSAWING MACHINES

BMSY 540CGH



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. 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 BACAKLARIN ULAŞABİLECEĞİ BÖLGELERDE TEHLİKENİN ÖNLENMESİ İÇİN GÜVENLİK MESAFELERİ

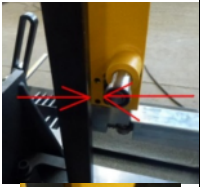
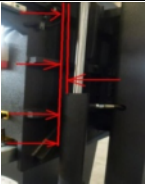
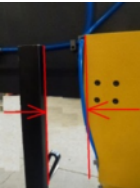
EN ISO 4413:20106: HYDRAULIC FLUID POWER – GENERAL RULES AND SAFETY REQUIREMENTS FOR SYSTEMS AND THEIR COMPONENTS / HİDROLİK AKIŞKAN GÜÇ – SİSTEMLER VE BİLEŞENLERİ İÇİN GÜVENLİK KURALLARI VE GENEL KURALLAR.

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 snagging 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 instructions 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 tamper 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 manual 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.

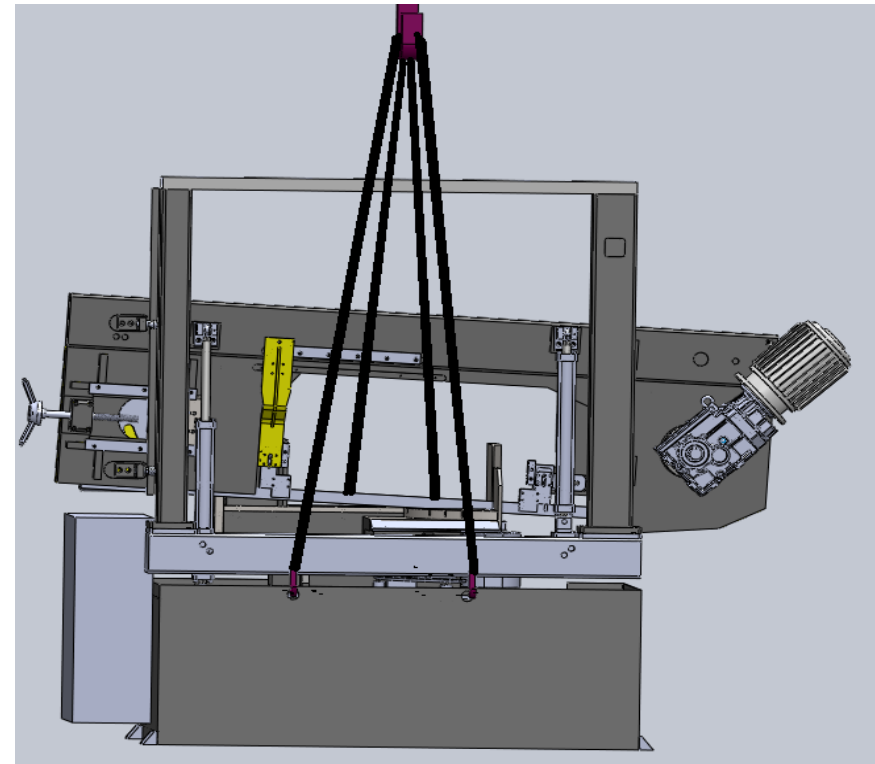
The machine is protected against short circuit with interrupters and against high voltage with thermal relays. Grounding and neutralizing have to be done to protect the machine .

Technical Data

TECNICAL DATA/TECHNISCE DATEN		BMSY 540CGH	
Cutting Capacity Schnittbereich 0°	Round/Rund	mm	540
	Flat/Flach	mm	750 x 540
	Square/Vierkant	mm	540
Cutting Capacity Schnittbereich +30°	Round/Rund	mm	540
	Flat/Flach	mm	600 x 540
	Square/Vierkant	mm	540
Cutting Capacity Schnittbereich +45°	Round/Rund	mm	510
	Flat/Flach	mm	455 x 540
	Square/Vierkant	mm	455
Cutting Capacity Schnittbereich +60°	Round/Rund	mm	270
	Flat/Flach	mm	240 x 540
	Square/Vierkant	mm	240
Main Drive Motor/Hauptmotor		kW	4
Hydraulic Motor/Hydraulikmotor		kW	1,1
Coolant Motor/Kühlmittelpumpe		kW	0,12
Chip Conveyor Motor/Späneförderer		kW	0,25
Cutting Speeds/Schnittgeschwindigkeit		m/min	20 - 100
Band Dimensions/Sägebandabmessung		mm	6000 x 41 x 1,3
Working Height/Arbeitshöhe		mm	695
Weight/Gewicht		Kg	2210
Dimensions/Masse	Length/Länge	mm	2900
	Width/Breite	mm	1100
	Height/Höhe	mm	2130

Transportation And Carrying Of Machine Important

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



Statement of Noise

Conditions for measurement

Tested Machine: BMSY540GH – Blade size: 600 x 41 x 1,6 m

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 12/22)

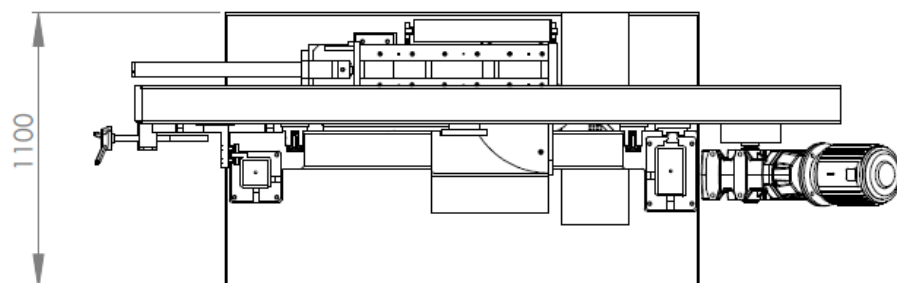
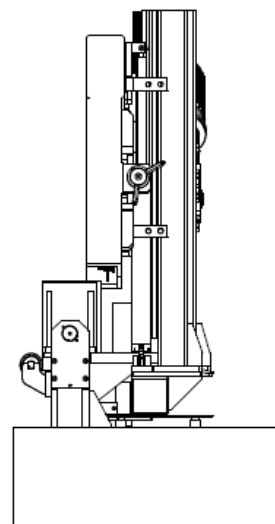
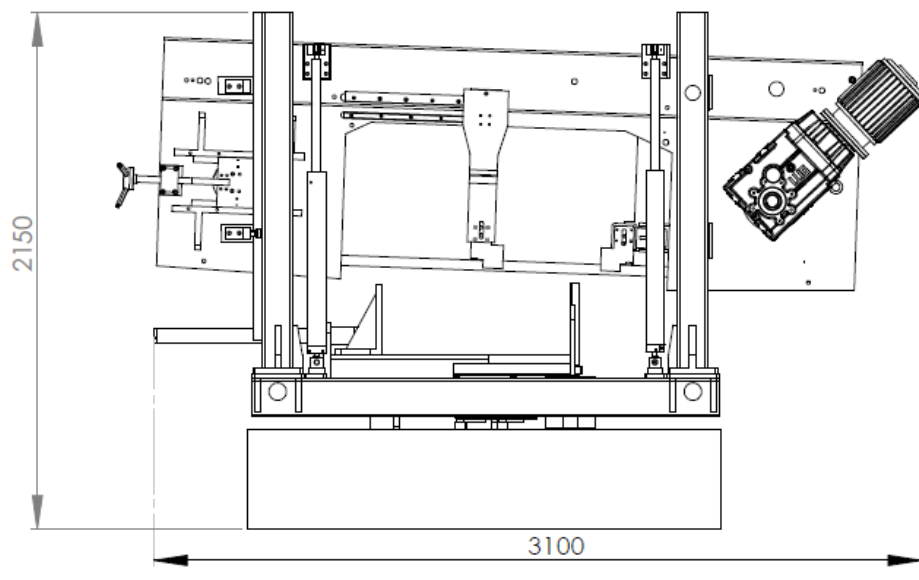
A nominal sound power level

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

Coefficient of uncertainty k:4 db (testing cap 12/26)

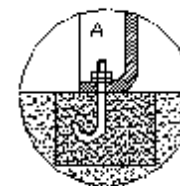
Values for noise are reliable and it doesn't state it's on safe working levels. Even though a connection between issue and exposure levels, this can not be used as a guide to reduce factors that effect the real level of exposure that effect work force depending on features of warehouse, (other sources of noise, other works nearby, and quantity of machines) including exposure time.

Allowed level of exposure may change from country to another. Beside these, this information tells the dangers and risks.



Fixing

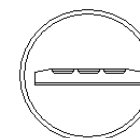
Area that machine will be fixed should be flat and bowless. Machine base should be placed properly , linear and diagonal way . Get the machine to balance with 4pcs m12 screws that are on the legs, you should fix it with $\varnothing 13$ steel pins.

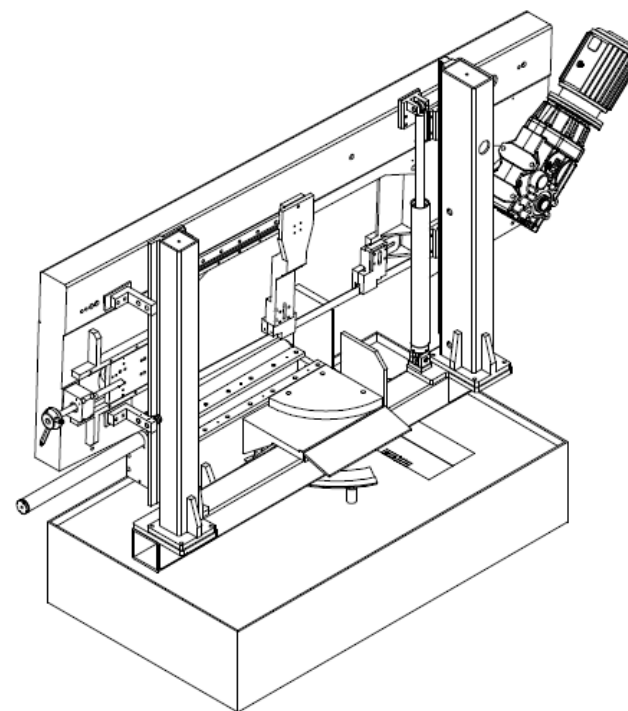
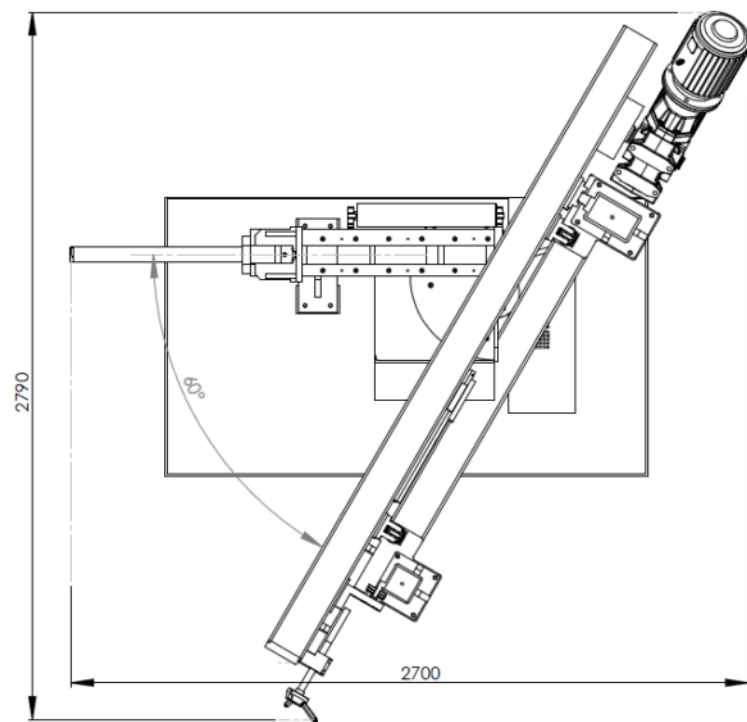
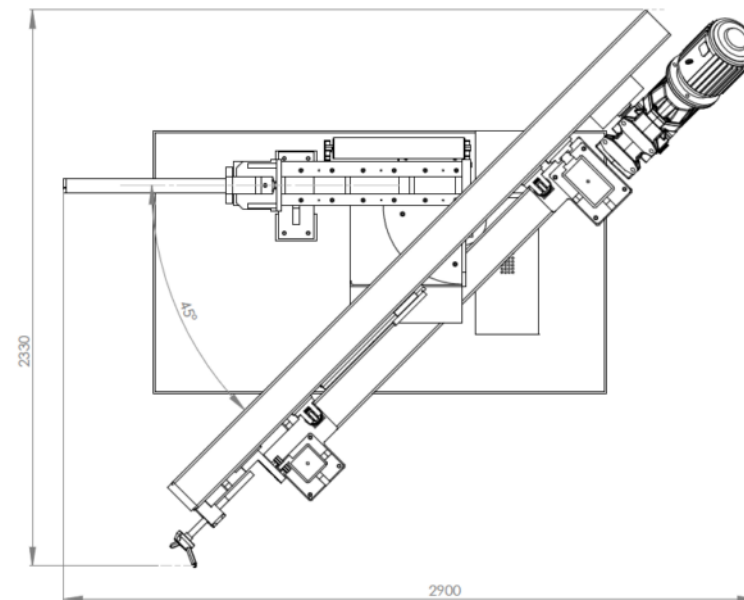
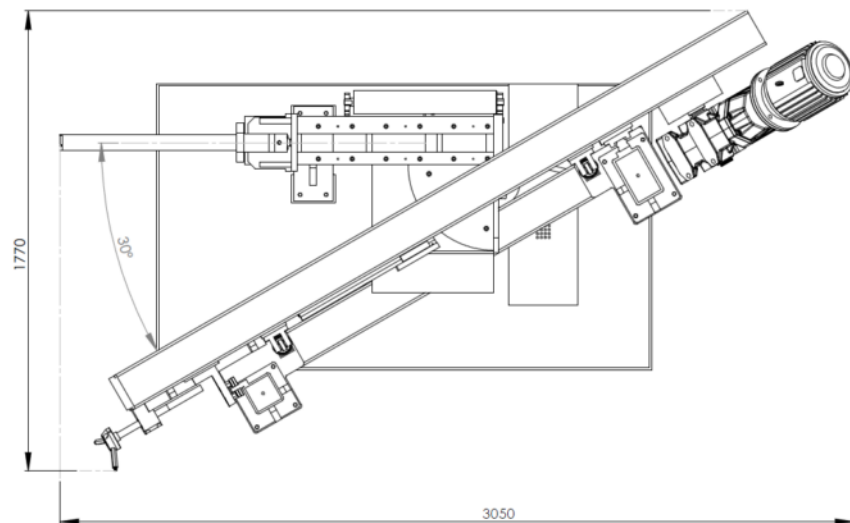


Balancing The Machine

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.





OPERATING INSTRUCTION



SPEED CONTROL POTMETER :CONTROLS THE INVERTER TO ADJUST THE TURNING SPEED OF BLADE



EMERGENCY STOP BUTTON:PREVENTS ACCIDENTS AT UNEXPECTED SITUATIONS.



START BUTTON :START THE CUTTING



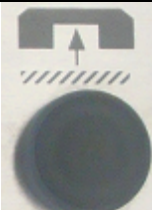
STOP BUTTON :STOPS THE CUTTING



SIGNAL BUTTON :SHOW SIF THERE IS A PROBLEM AT THE MACHINE.



COOLANT BUTTON :IT IS USED TOL ET THE COOLANT LIQUID FLOW.



BOW UP BUTTON:MOVES THE BOW UP MANUALLY AND STOPS CUTTING.



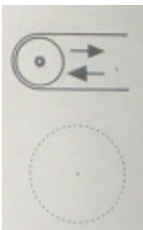
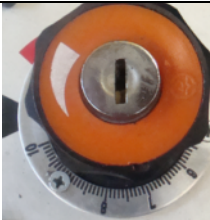
BOW DOWN BUTTON:MOVES DOWN THE BOW MANUALLY.



START (READY) BUTTONREGISES POWER CIRCUIT O MACHINE



VICE PRES BUTON: IT IS USED TO PRESS THE MATHERIAL

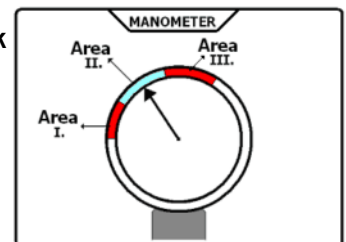
	BLADE TIGHTENING BUTTON: TIGHTEN THE BLADE.		TOP CLAMPING SELECTOR(OPTIONAL): THIS OPTION IS FOR TIGHTENING THE MATERIAL VERTICALLY FOR BUNDLE CUTTING
	DOWN FEED SPEED ADJUSTMENT: ADJUST SPEED ACCORDING TO HARDNESS OF MATERIAL TO BE CUT. WHEN BLADE BECOMES BLUNT CHOOSE A LOWER SPEED TO HAVE A BETTER CUT.		ANGLE DISPLAY: DISPLAYS THE POSITION OF BOW IN DEGREES BETWEEN 0° AND +60°

The indicator of manometer must be in the green area (area ii). If the indicator is in one of the red area, this means that the tension of the blade is not in the acceptable level and it may cause unwanted results.

Area I : this shows that the tension of the blade is less than it must be. Adjust the blade tension.

Area II : this shows that the tension of the blade is normal

area III : this shows that the tension of the blade is more than it must be. This may break the blade. Reduce the tension.



HYDRAULIC VICE: 40 BAR

HYDROMECHANIC BLADE TENSION: 300 BAR

HYDRAULIC BLADE TENSION: 40 BAR

MAIN MOTOR: 40 BAR

Manual Cutting Operation

- 1-Add coolant to the tank
- 2-Check level of hydraulic oil(ISO 46)
- 3-Switch on main switch
- 4-See energy on light on the control panel
- 5-If there is no light change places of input phases
- 6-Press machine ready button



- 7- Push bow up till it's enough for material to be cut
- 8-Open the vice by turning the related button.
- 9-Place the material. Adjust the length to be cut by lead shaft and close vice jaws and fix the material.
- 10-The saw will not start up unless the material is not clamped with appropriate pressure.
- 11-Start the saw by pressing start button.
- 12-Determine the appropriate saw cutting speed and turn on the coolant according to your need.
- 13-Due to the material detection sensors on the machine approached to the material fastly and then passes to the speed which is adjusted by the valve.
- 14-When the machine runs to the cutting speed , the coolant starts as well.
- 15-Cutting speed of the machine should be adjusted according to the material and chip after cutting process. For example; if the chip is burnt after the cutting that means the speed is too fast. That is not proper for the machine and the blade.
- 16-After cutting process the blade will rise up and stop automatically.
- 17-The same should be done for the second cutting.
- 18-During the time there might pile up chip in front of the sensors , this might cause working problem to the machine; to avoid that , the wheel covers should be opened regularly and chip should be cleaned.

Sensor Parts

(1) 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.

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

(3) Laser: It is used as a marker for indicating first touching point of the blade to material.

(4) Maximum switch: this switch sets the top point that bandsaw reaches.

(5) Digital Angle Encoder: It is using for reading the angle of bow.

(8) 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.

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

1- Blade Broken Pressure Switch

2- Lower Limit Switch

3- Lazer

4- Maximum Switch

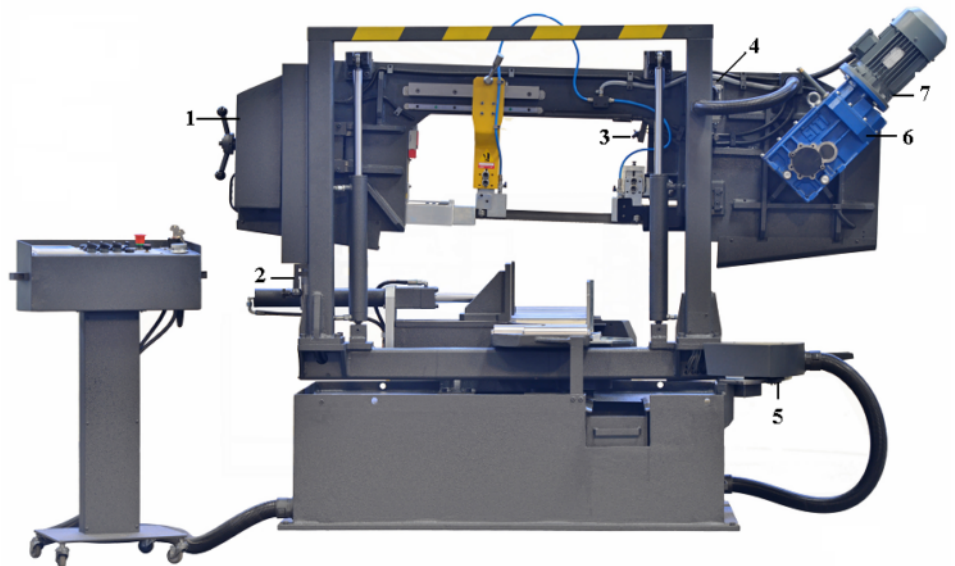
5- Dijital Encoder

6- Wheel Reductor

7- Wheel Motor

8- Protection Cover Switcher

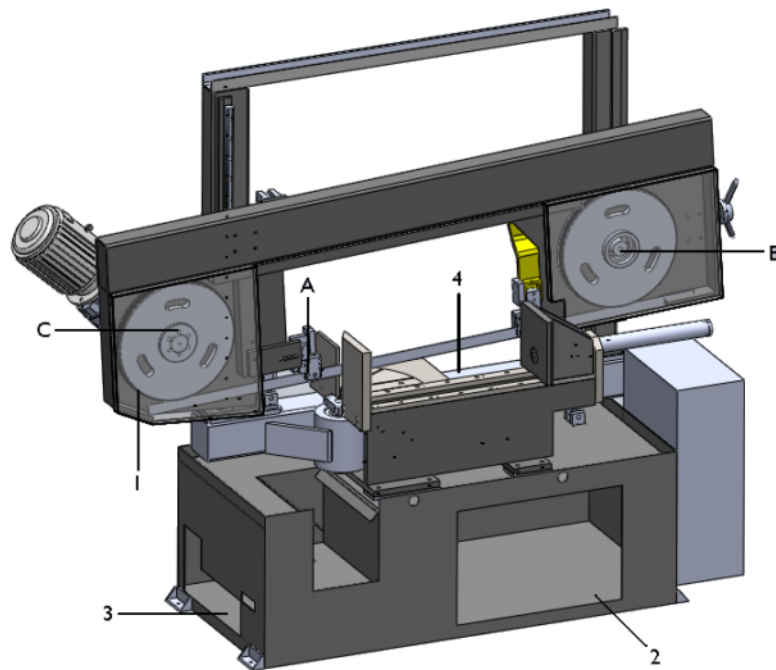
9- Fotocell



Instructions For Maintenance

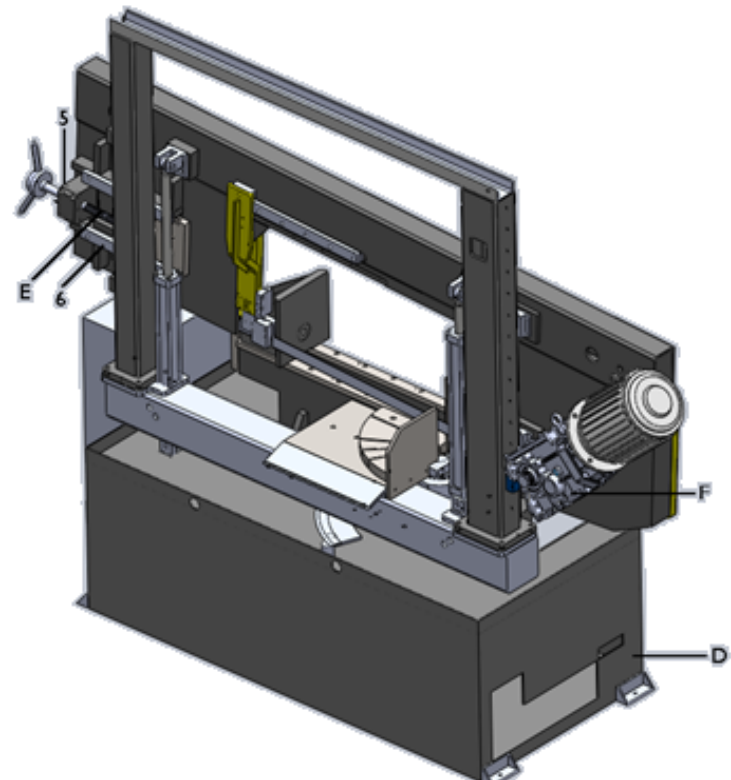
Daily Maintenance

- 1-remove the chips on wheel
- 2-clean the hydraulic drawer
- 3- clean the chips in the boron oil tank
pump air to remove the dirth in hoses
4. Remove the chips at shaft and flat
- 5- manometer should be between bar.
6. Clean the tensioning slide flats.



Monthly Maintenance

- A-check the chip brush.
- B-fill grease oil from the hole on the tentioning 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 versa, 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
	S 5-6-2-5	1.3243	-----	25 - 40	1:30		X
HIGH SPEED STEEL	S 18-0-1	1.3355	-----	25 - 40	1:30		X
	S 18-1-2-10	1.3265	-----	25 - 40	1:30		X
VALVE STEEL	X 45 CRSL 93	1.4718	-----	30 - 40	1:20	X	
	X 45 CRNIW 189	1.4873	-----	30 - 40	1:20	X	
HIGH TEMPERATURE STEEL	CRNI 2520	1.4843	-----	25 - 40	1:10	X	
	X 20 CRMOV 211	1.4922	-----	25 - 40	1:10	X	
	X5 N1CRTI 2615	1.4980	-----	25 - 40	1:10	X	
HEAT RESISTING STEEL	X 10 CRAL 7	1.4713	-----	20 - 35	1:10	X	
	X 15 CRNISI 25 / 20	1.4841	-----	20 - 35	1:10	X	
	X 10 CRSL 6	1.4712	-----	20 - 35	1:10	X	
STAINLESS AND ACID RESISTING STEEL	X 5 CRNI 189	1.4301	-----	25 - 35	1:10	X	
	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

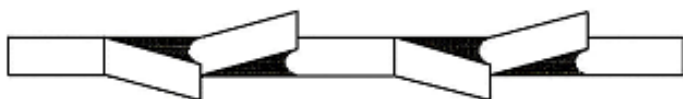


For cutting pipes and shapes

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



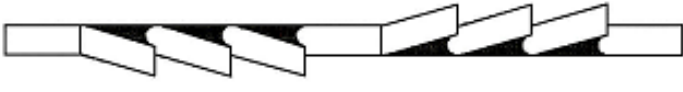
For softer materials, i.e. NF-metals, plastic & wood.



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

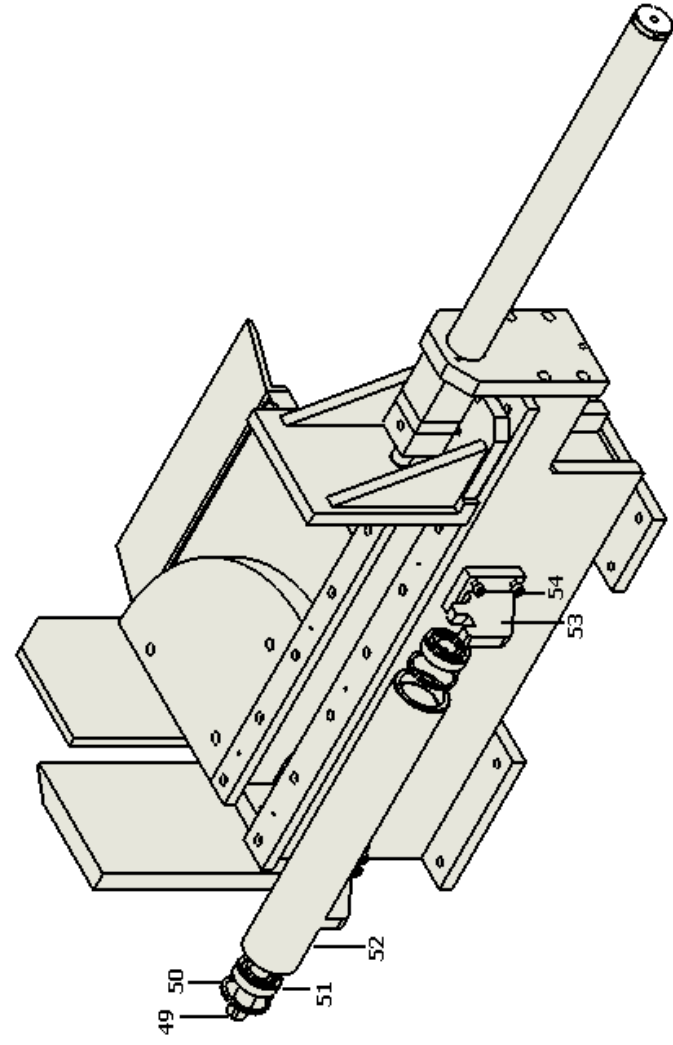
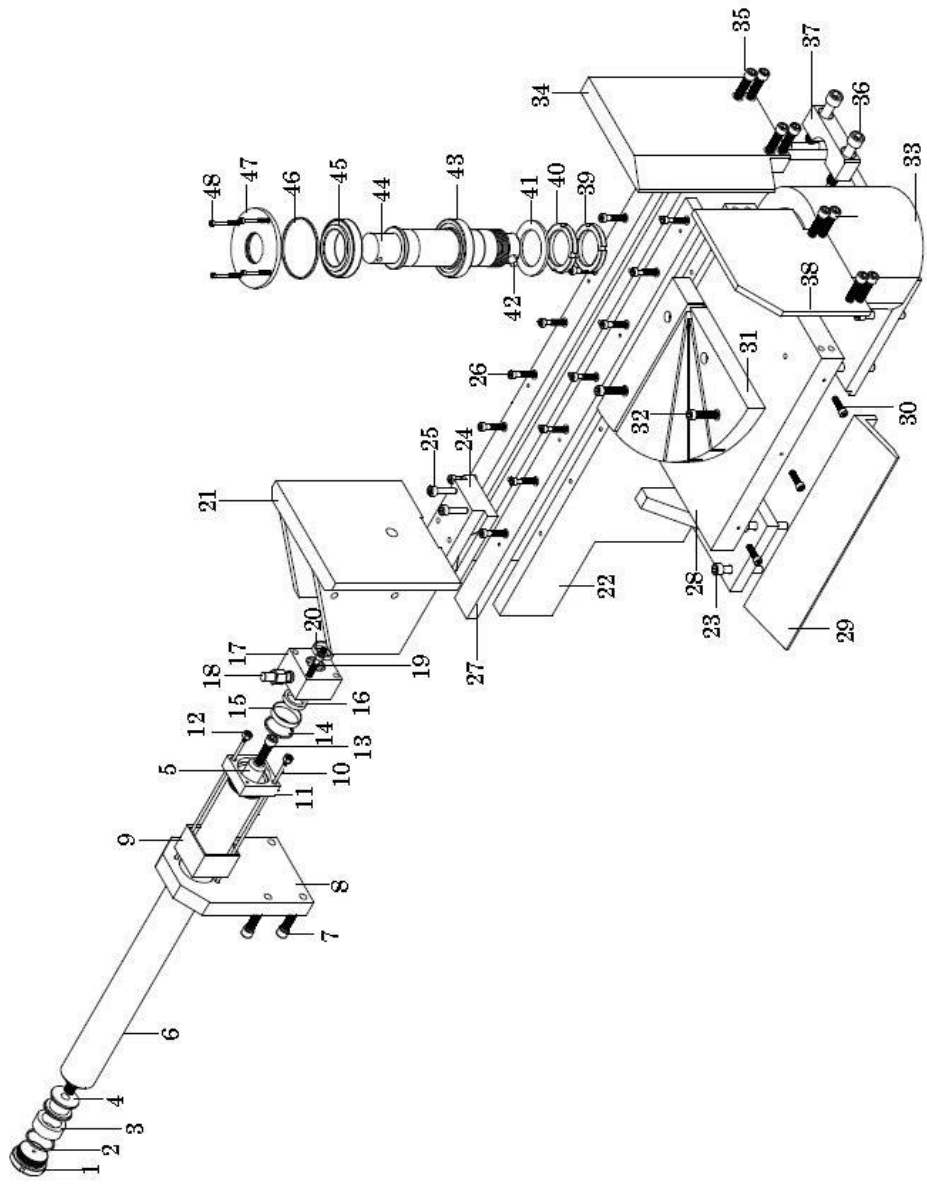
SEMI AUTOMATIC TWIN PILLAR BANDSAWING MACHINES

BMSY 540CGH

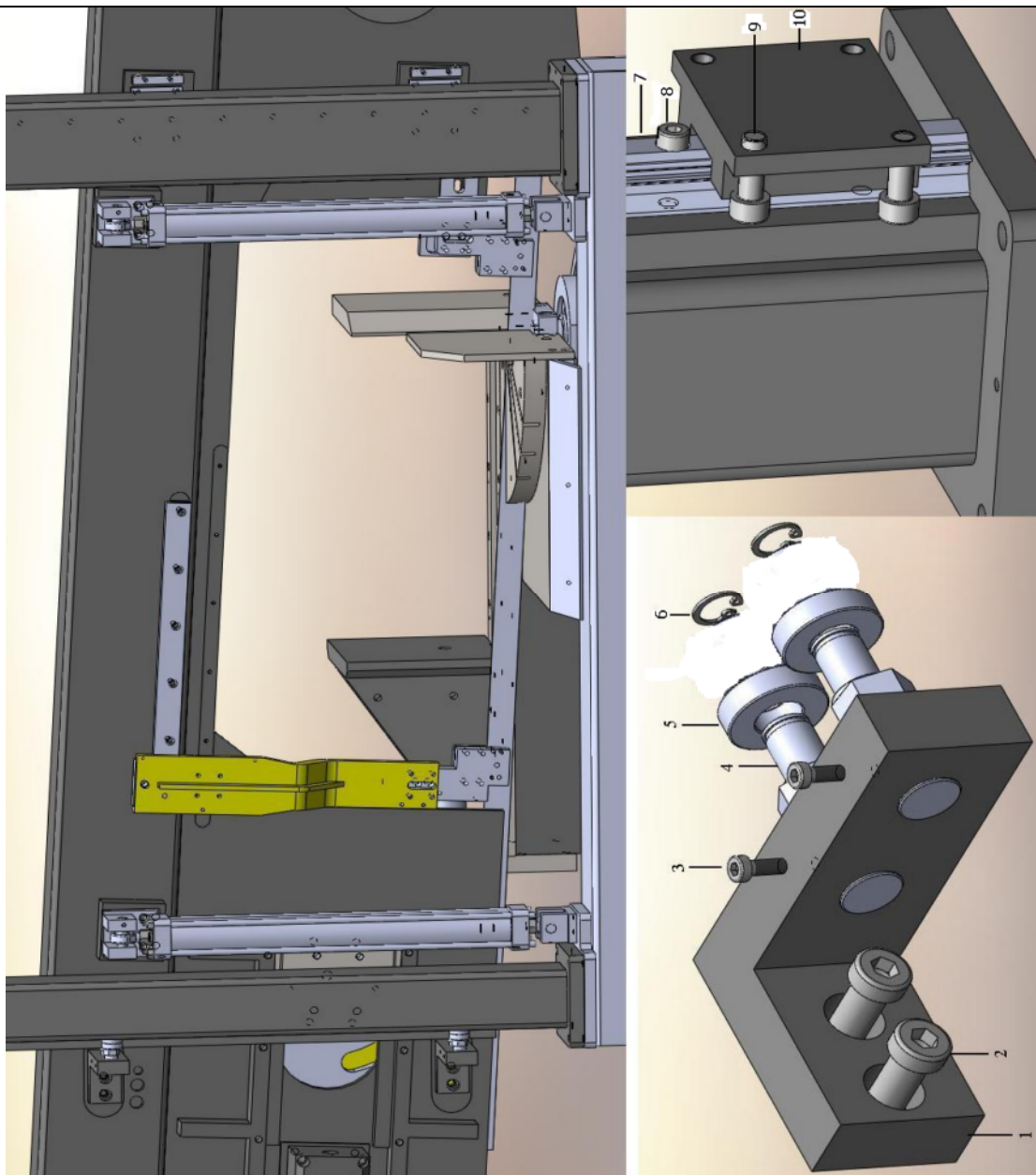


SPARE PART TABLES



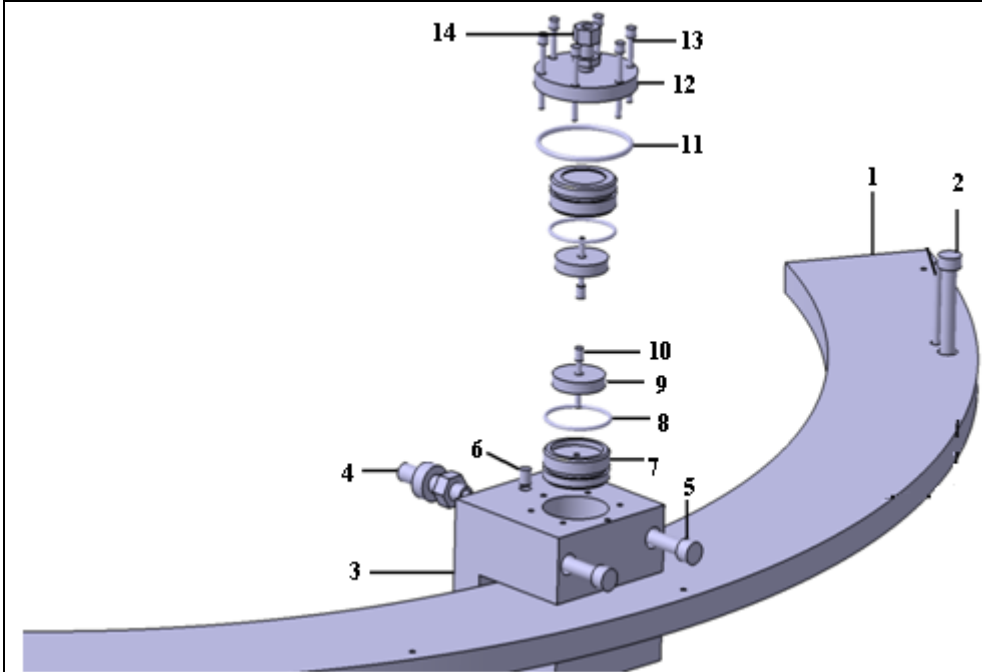


TURN TABLE ASSEMBLY					
P.N	PART CODE	PART NAME	P.N	PART CODE	PART NAME
001	540CGH 001.001	PISTON COVER	028	540CGH 001.028	VICE SUPPORT
002	540CGH 001.002	ORING 49X3	029	540CGH 001.029	CUTTING PLATE (FRONT)
003	540CGH 001.003	50X34X20,5 SELA SET	030	540CGH 001.030	M8X30 INBUS
004	540CGH 001.004	PISTON HEADER	031	540CGH 001.031	VICE PLATINA
005	540CGH 001.005	PISTON SHAFT (Ø30)	032	540CGH 001.032	M10X35 INBUS
006	540CGH 001.006	PISTON PIPE (50X30)	033	540CGH 001.033	QUARTER BEND
007	540CGH 001.007	M12X35 INBUS	034	540CGH 001.034	FIXED JAW
008	540CGH 001.008	PISTON JOINT	035	540CGH 001.035	M12X45 INBUS
009	540CGH 001.009	60X70X50 PROILE	036	540CGH 001.036	M16X50 INBUS
010	540CGH 001.010	M8X180	037	540CGH 001.037	SHAFT CONNECTION BLOCK
011	540CGH 001.011	NUT	038	540CGH 001.038	MOVING JAW
012	540CGH 001.012	M8 NUT	039	540CGH 001.039	KM 12 AY NUT
013	540CGH 001.013	M12X30 INBUS	040	540CGH 001.040	KM 12 AY NUT
014	540CGH 001.014	ORING 49X3	041	540CGH 001.041	WASHER
015	540CGH 001.015	STRIP 2X10	042	540CGH 001.042	12X70 PIM
016	540CGH 001.016	OIL SEAL 30X40X8	043	540CGH 001.043	32012 BEARING
017	540CGH 001.017	PISTON BEARING	044	540CGH 001.044	MOVING SHAFT
018	540CGH 001.018	Ø8 1/4 REKOR	045	540CGH 001.045	32012 BEARING
019	540CGH 001.019	M8X60 INBUS	046	540CGH 001.046	100X3 ORING
020	540CGH 001.020	DUST SEAL 30X36	047	540CGH 001.047	COVER
021	540CGH 001.021	MOVING JAW	048	540CGH 001.048	M615 INBUS
022	540CGH 001.022	VICE BODY	049	540CGH 001.049	M10 SOMUN
023	540CGH 001.023	M14X50 INBUS	050	540CGH 001.050	SEGMENT 471/30
024	540CGH 001.024	VICE MOVEMENT NUT	051	540CGH 001.051	BEARING 6306
025	540CGH 001.025	M10X35 INBUS	052	540CGH 001.052	PISTON PIPE
026	540CGH 001.026	M8X30 INBUS	053	540CGH 001.053	CONNECTION FLAT
027	540CGH 001.027	SLEDGE PLATE	054	540CGH 001.054	M10x40 INBUS

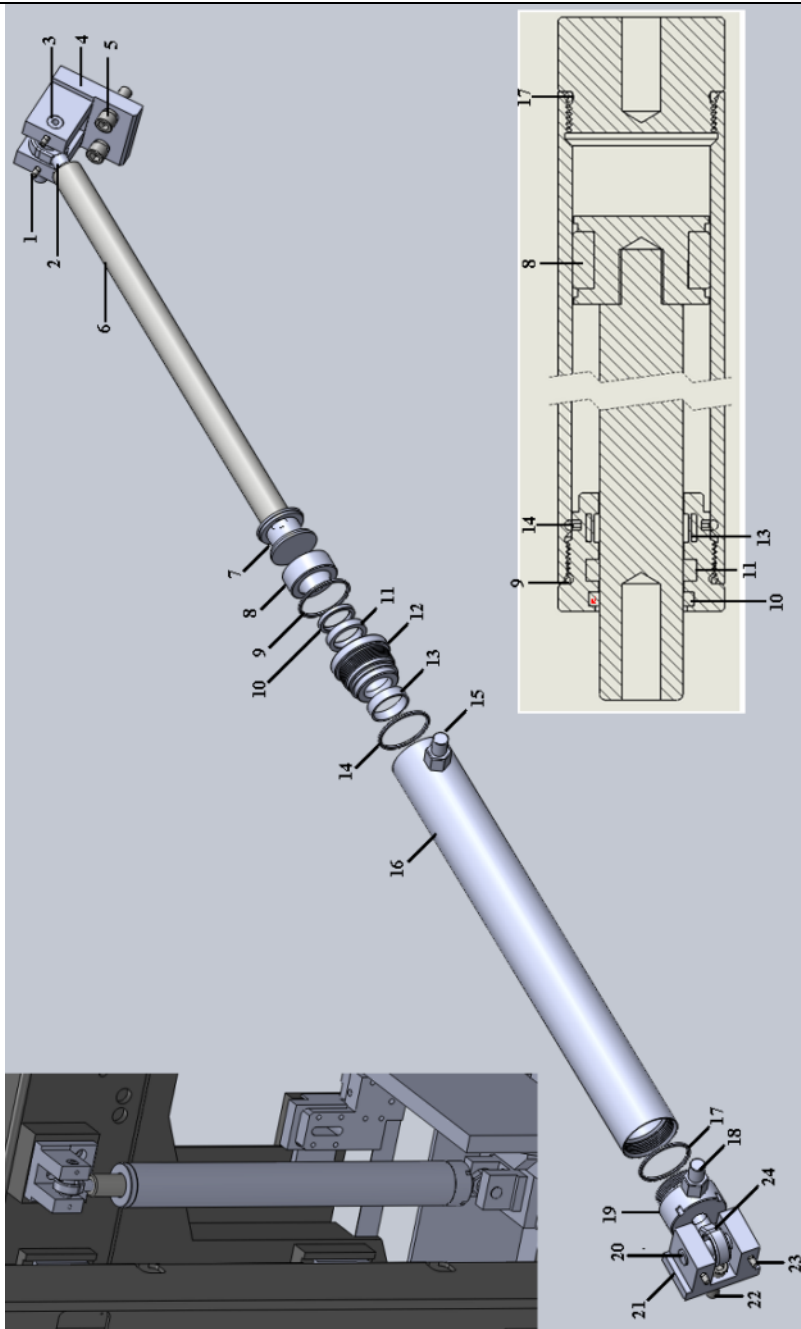


LINEAR SLEDGE GROUP

PART NMR	PART CODE	PART NAME
001	540CGH. 002.001	AXIS PLATE
002	540CGH. 002.002	M14X50 IMBUS
003	540CGH. 002.003	M6X10 SESTKUR
004	540CGH. 002.004	EXCENTRIC SHAFT FOR BEARING
005	540CGH. 002.005	BEARING 62202
006	540CGH. 002.006	SEGMENT 471/15
007	540CGH. 002.007	LINEAR SLEDGE (1370)
008	540CGH. 002.008	M12X40 INBUS
009	540CGH. 002.009	M12X50 INBUS
010	540CGH. 002.010	GUIDEWAY

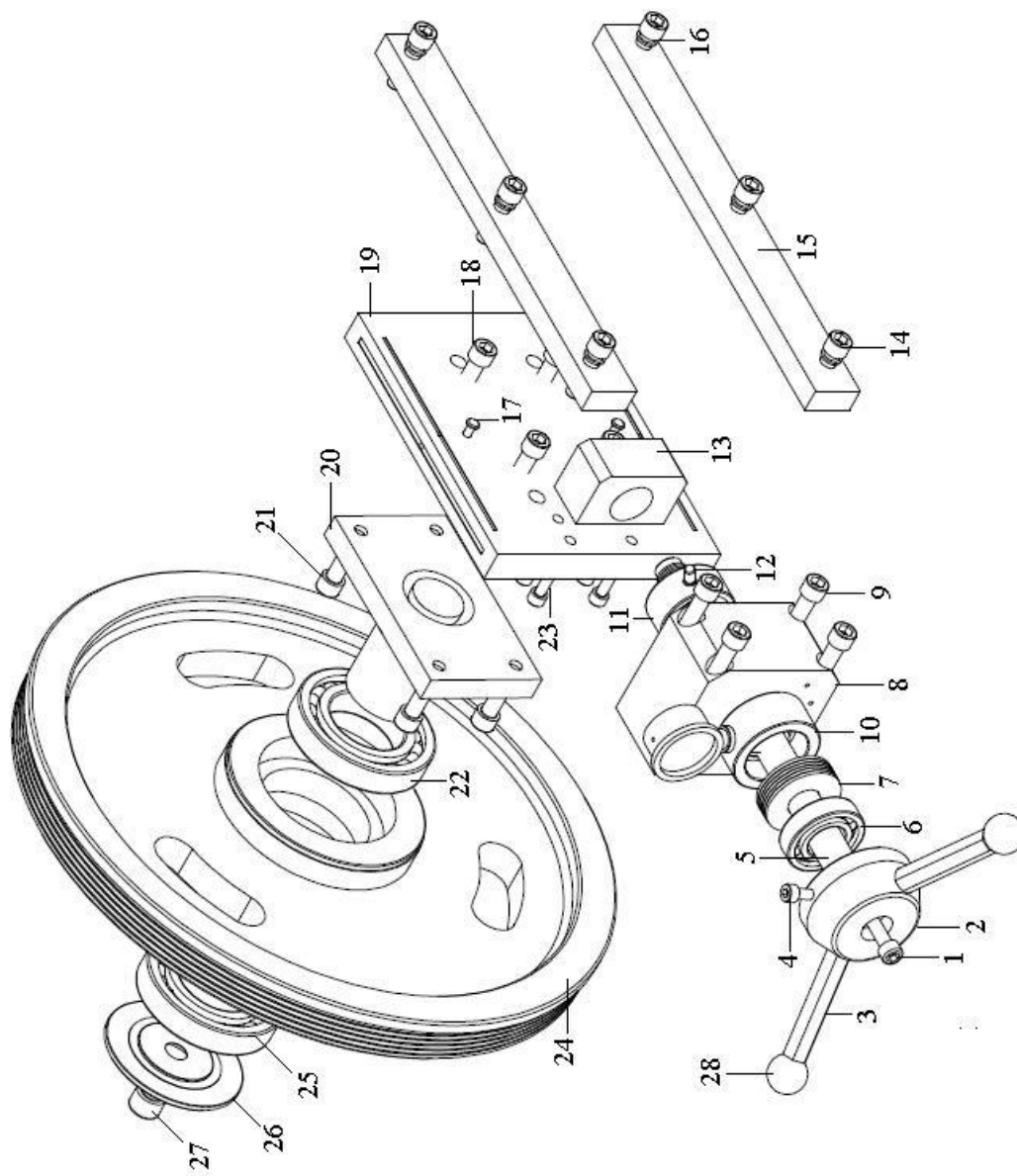


LOCKER ASSEMBLY		
PART NMR	PART CODE	PART NAME
001	540CGH. 003.001	DEGREE ADJUST FLAT
002	540CGH. 003.002	M12X35 INBUS
003	540CGH. 003.003	LOCKING FLAT
004	540CGH. 003.004	1/8" REKOR
005	540CGH. 003.005	M8X110 INBUS
006	540CGH. 003.006	STOPPER
007	540CGH. 003.007	WHEEL
008	540CGH. 003.008	O-RING
009	540CGH. 003.009	BRASS
010	540CGH. 003.010	M5X10 INBUS
011	540CGH. 003.011	O-RING
012	540CGH. 003.012	COVER
013	540CGH. 003.013	M5X20 INBUS
014	540CGH. 003.014	REKOR



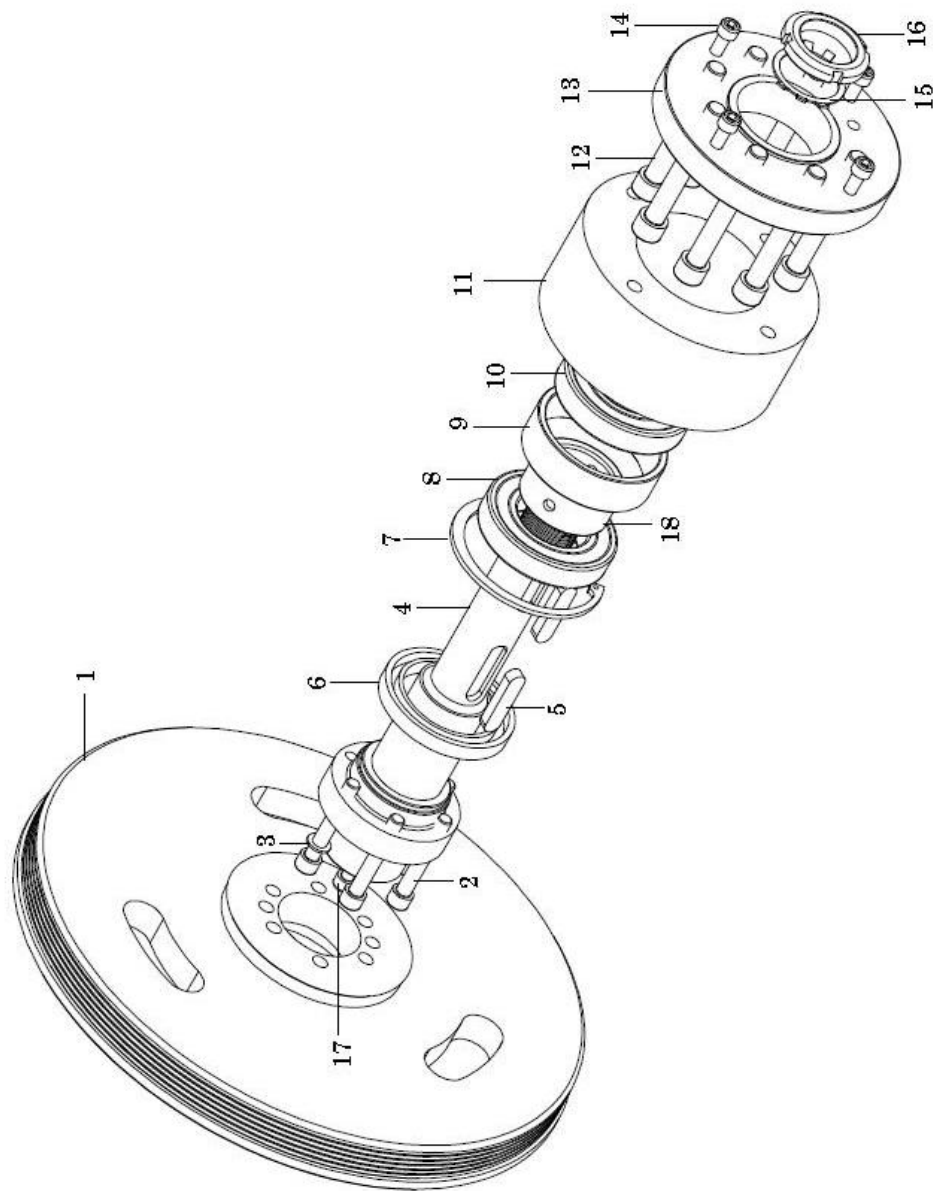
UPPER PISTON ASSEMBLY

PART NMR	PART CODE	PART NAME
001	540CGH. 004.001	M6X10 SESTKUR
002	540CGH. 004.002	HELGES
003	540CGH. 004.003	Ø20X68 PIN
004	540CGH. 004.004	UPPER CONNECTION BLOCK
005	540CGH. 004.005	M12X40 INBUS
006	540CGH. 004.006	PISTON SHAFT (Ø36)
007	540CGH. 004.007	PISTON HEADER
008	540CGH. 004.008	63X47X20,5 KOMPACT SET
009	540CGH. 004.009	ORING 58X3
010	540CGH. 004.010	DUST SEALS 36X44
011	540CGH. 004.011	OIL SEALS 36X46X8
012	540CGH. 004.012	PISTON UPPER COVER
013	540CGH. 004.013	BAND 2X10
014	540CGH. 004.014	ORING 58X3
015	540CGH. 004.015	Ø8 1/4" JOINT
016	540CGH. 004.016	PISTON PIPE 50X60
017	540CGH. 004.017	ORING 58X3
018	540CGH. 004.018	Ø8 1/4" JOINT
019	540CGH. 004.019	LOWER COVER
020	540CGH. 004.020	Ø20X68 PIM
021	540CGH. 004.021	LOWER CONNECTION BLOCK
022	540CGH. 004.022	M10X30 INBUS
023	540CGH. 004.023	M6X10 SESTKUR
024	540CGH. 004.024	HELGES



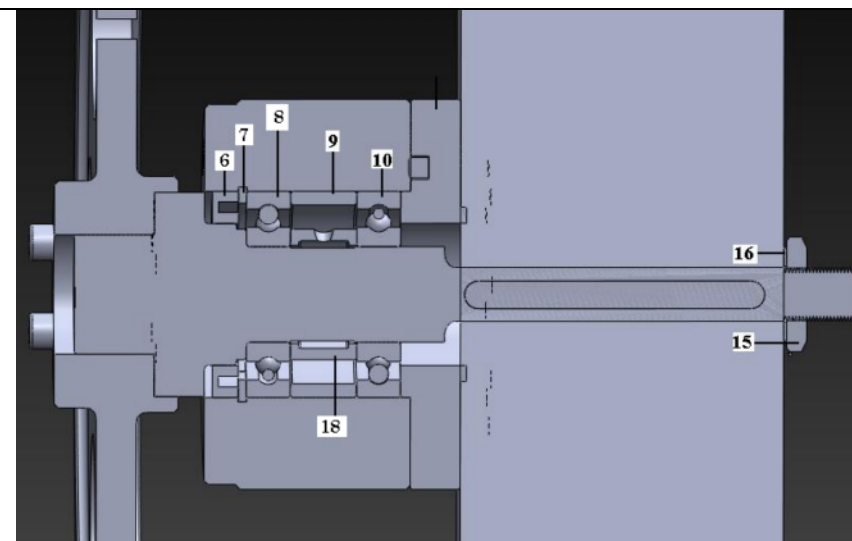
TENSIONING ASSEMBLY

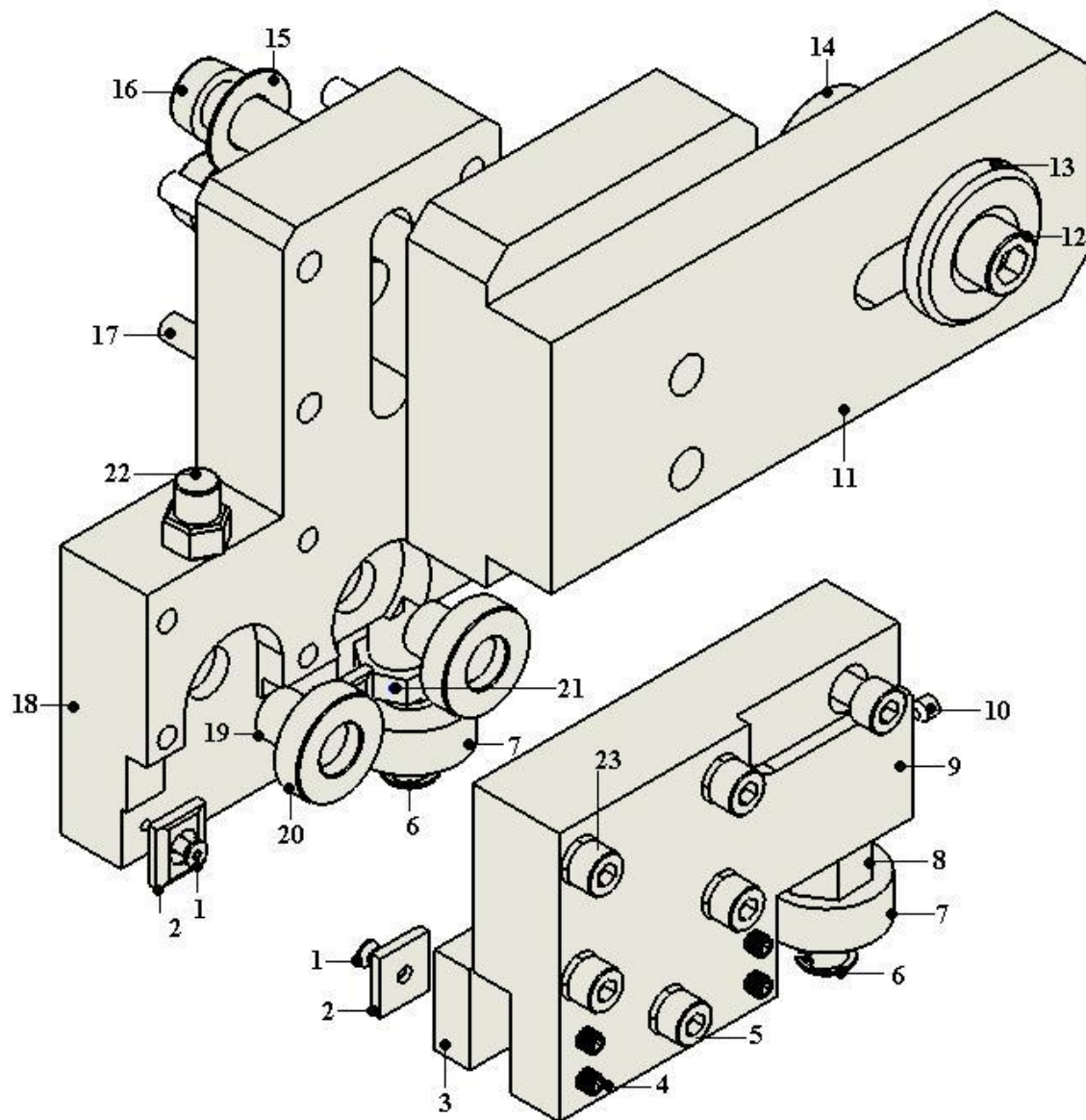
PART NMR	PART CODE	PART NAME
001	540CGH. 005.001	M10X25 INBUS
002	540CGH. 005.002	KNOB
003	540CGH. 005.003	KNOB ARM
004	540CGH. 005.004	M8X30 SETSKUR
005	540CGH. 005.005	TENTIONING SHAFT
006	540CGH. 005.006	51205 BEARING
007	540CGH. 005.007	WASHER(6 PIECES)
008	540CGH. 005.008	TENSIONING BLOCK
009	540CGH. 005.009	M12X110 INBUS
010	540CGH. 005.010	MANOMETER 400 BAR
011	540CGH. 005.011	RING
012	540CGH. 005.012	Ø8X30 PIN
013	540CGH. 005.013	CONNECTION BLOCK
014	540CGH. 005.014	M12X40 INBUS
015	540CGH. 005.015	TENSION BLOCK FLAT
016	540CGH. 005.016	Ø12 RONDEL
017	540CGH. 005.017	M8X1 GREASE UNION
018	540CGH. 005.018	M12X25 SETSKUR
019	540CGH. 005.019	TENSIONING SLEDGE
020	540CGH. 005.020	WHEEL CONNECTION PLATE
021	540CGH. 005.021	M12X45 INBUS
022	540CGH. 005.022	6312 BEARING
023	540CGH. 005.023	M8X30 INBUS
024	540CGH. 005.024	IDLE WHEEL
025	540CGH. 005.025	6312 BEARING
026	540CGH. 005.026	COVER
027	540CGH. 005.027	M16X30 INBUS(COUNTERSUNK)
028	540CGH. 005.028	



REDUCTOR GROUP

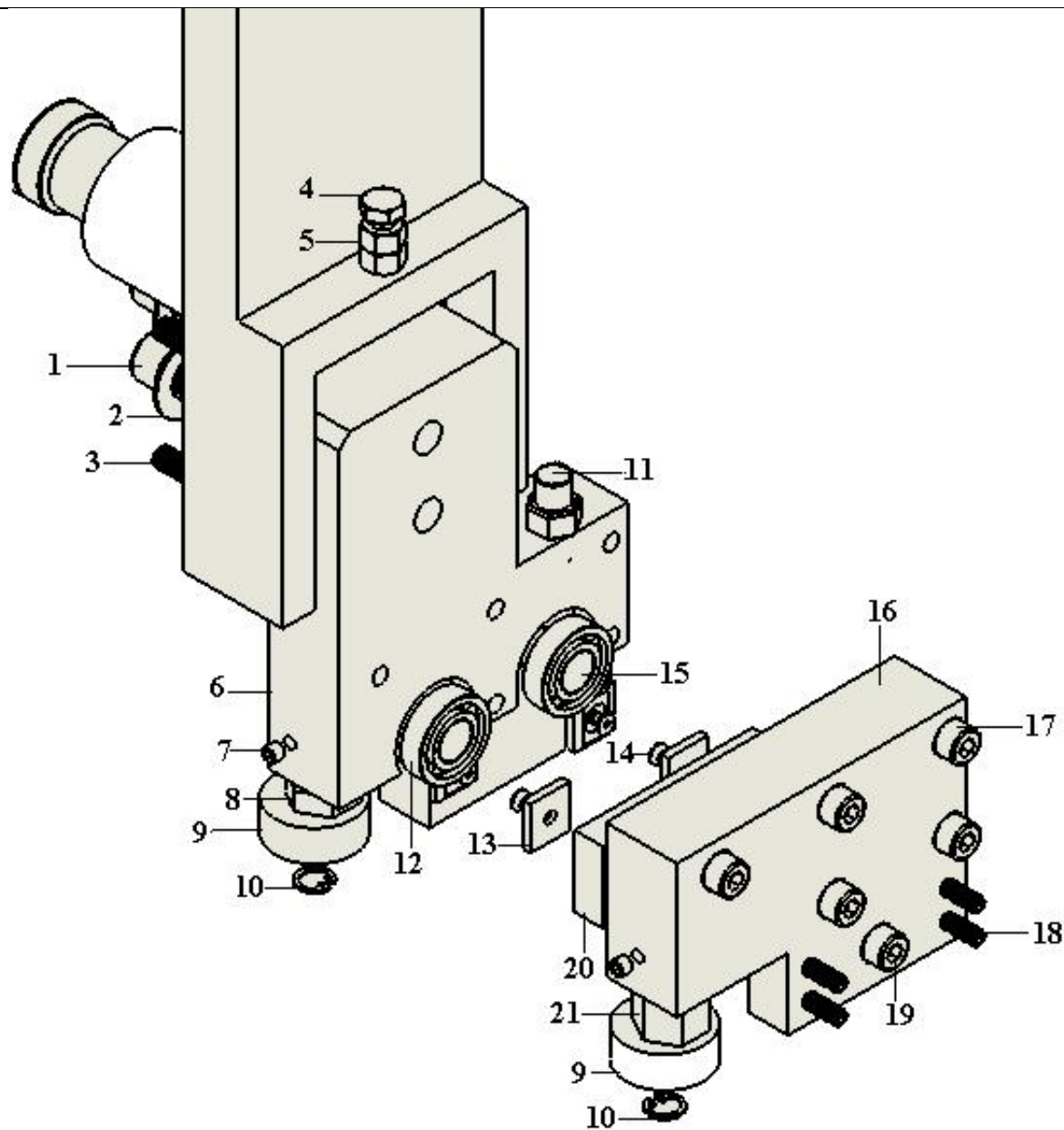
PART NMR	PART CODE	PART NAME
001	540CGH.006.01	DRIVE WHEEL
002	540CGH.006.02	M12X70 INBUS
003	540CGH.006.03	SPRONG WASHER M12
004	540CGH.006.04	REDUCER SHAFT
005	540CGH.006.05	KEY 14X70
006	540CGH.006.06	SEAL 90X125X13
007	540CGH.006.07	RING DIN472/125
008	540CGH.006.08	BEARING NJ 214
009	540CGH.006.09	OUTER RING
010	540CGH.006.10	BEARING RS 6214
011	540CGH.006.11	BODY
012	540CGH.006.12	M16X110 INBUS
013	540CGH.006.13	FLANGE
014	540CGH.006.14	M10X30 INBUS
015	540CGH.006.15	MB 10 WASHER
016	540CGH.006.16	KM 10 NUT
017	540CGH.006.17	M10X1 GREASE UNION
018	540CGH.006.18	INNER RING





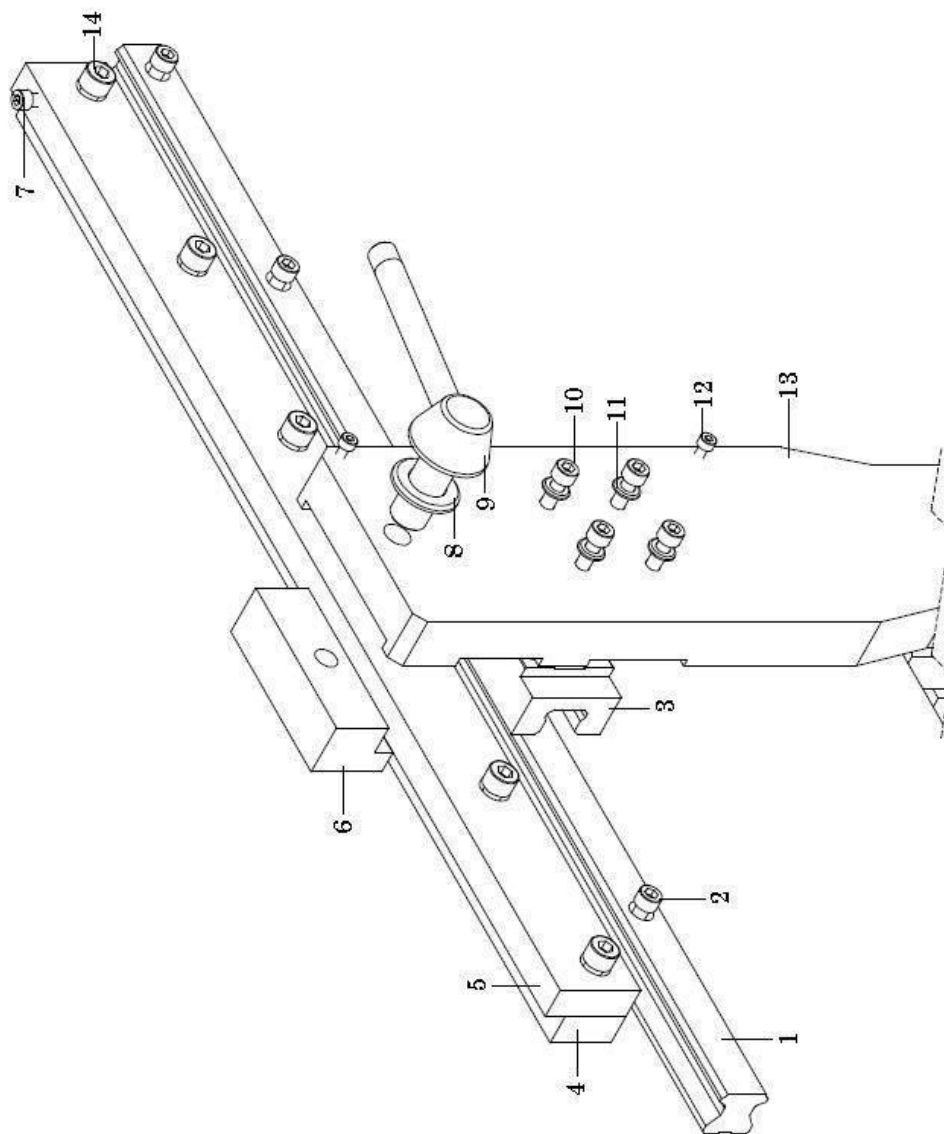
FIXED CARBIDE GUIDE ASSEMBLY

PART NMR	PART CODE	PART NAME
001	540CGH. 007.001	M4X8 BOLT
002	540CGH. 007.002	CARBIDE BSM-8785
003	540CGH. 007.003	CARBIDE PLATE
004	540CGH. 007.004	M6X10 SESTKUR
005	540CGH. 007.005	M8X35 INBUS
006	540CGH. 007.006	RING
007	540CGH. 007.007	62202 BEARING
008	540CGH. 007.008	ECCENTRIC SHORT PIN
009	540CGH. 007.009	FIXED CARBIDE BLOCK UPPER
010	540CGH. 007.010	M6 X6 SESTKUR
011	540CGH. 007.011	FIXED CARBIDE BLOCK BASE
012	540CGH. 007.012	M12X50 INBUS
013	540CGH. 007.013	WASHER
014	540CGH. 007.014	FIXING NUT
015	540CGH. 007.015	WASHER
016	540CGH. 007.016	M14X50 INBUS
017	540CGH. 007.017	M10X30 SESTKUR
018	540CGH. 007.018	CARBIDE PLATE
019	540CGH. 007.019	BEARING INNER SHAFT
020	540CGH. 007.020	6002 BEARING
021	540CGH. 007.021	ECCENTRIC LONG PIN
022	540CGH. 007.022	JOINT
023	540CGH. 007.023	M8X30 INBUS



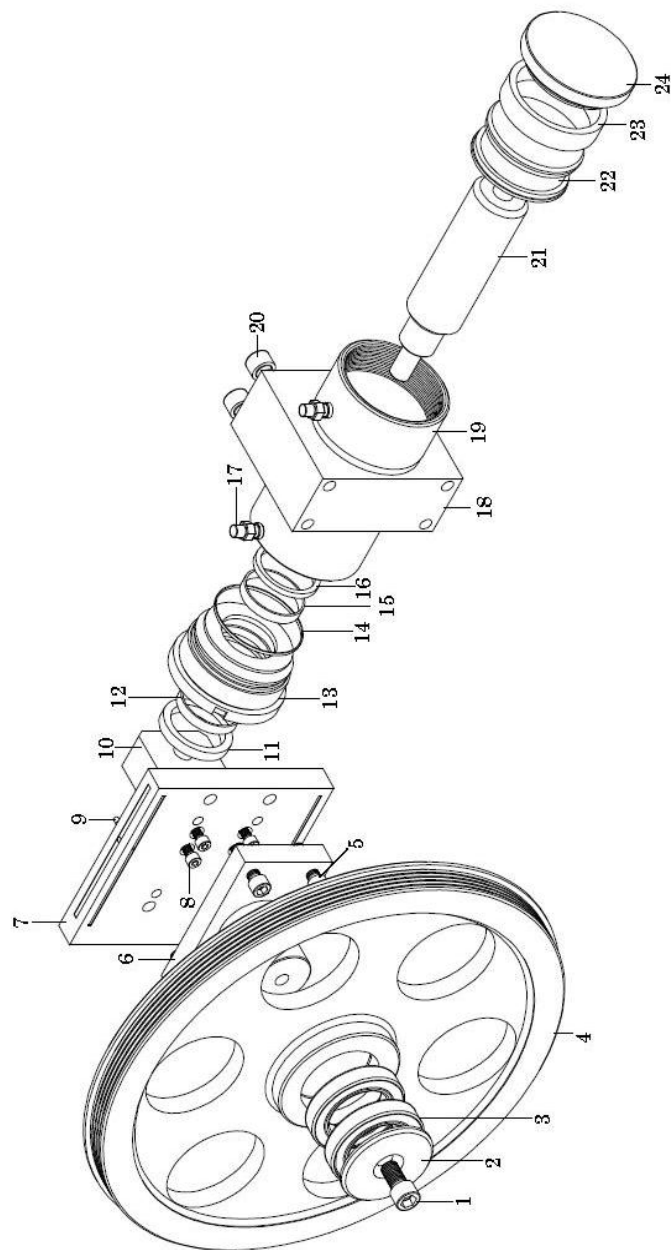
ARM CARBIDE BLOCK ASSEMBLY

PART NMR	PART CODE	PART NAME
001	540CGH. 008.001	M14X50 INBUS
002	540CGH. 008.002	WASHER
003	540CGH. 008.003	M8X20 SESTKUR
004	540CGH. 008.004	M8X35 BOLT
005	540CGH. 008.005	M8 NUT
006	540CGH. 008.006	MOVING CARBIDE BLOCK LOWER
007	540CGH. 008.007	M6X6 SESTKUR
008	540CGH. 008.008	ECCENTRIC LONG PIN
009	540CGH. 008.009	62202 BEARING
010	540CGH. 008.010	RING 471/12
011	540CGH. 008.011	JOINT
012	540CGH. 008.012	6002 BEARING
013	540CGH. 008.013	CARBIDE BSM-8785
014	540CGH. 008.014	M4X8 BOLT
015	540CGH. 008.015	BEARING INNER SHAFT
016	540CGH. 008.016	MOVING CARBIDE BLOCK UPPER
017	540CGH. 008.017	M8X25 INBUS
018	540CGH. 008.018	M6X40 SESTKUR
019	540CGH. 008.019	M8X15 INBUS
020	540CGH. 008.020	CARBIDE PLATE
021	540CGH. 008.021	ECCENTRIC SHORT PIN



ARM ASSEMBLY

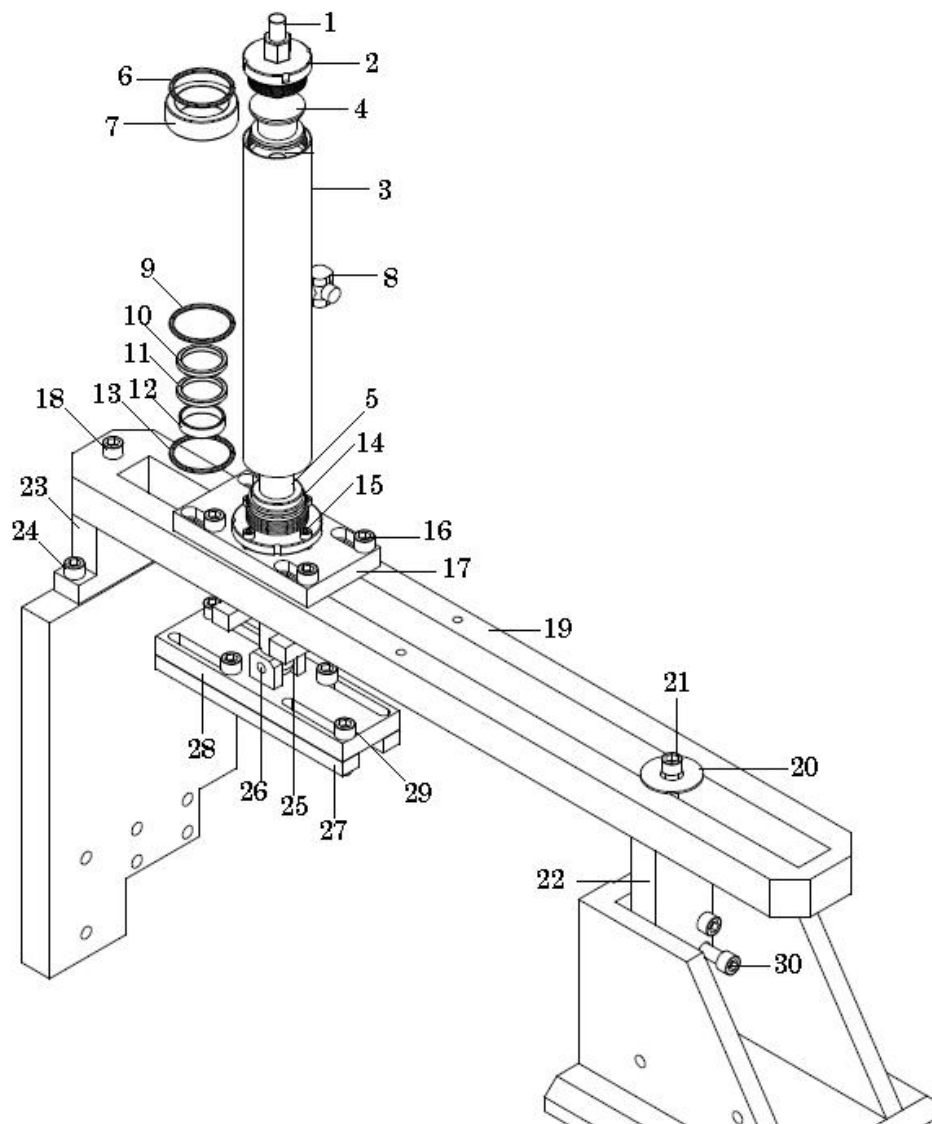
PART NMR	PART CODE	PART NAME
001	540CGH. 009.01	LINEAR SLEDGE
002	540CGH. 009.02	M6X25 INBUS
003	540CGH. 009.03	LINEER SLEDGE
004	540CGH. 009.04	LOWER FLAT
005	540CGH. 009.05	UPPER FLAT
006	540CGH. 009.06	FXING BLOCK
007	540CGH. 009.07	M5X10 FIXING BOLT
008	540CGH. 009.08	WASHER
009	540CGH. 009.09	HANDLE
010	540CGH. 009.10	M6X20 INBUS
011	540CGH. 009.11	WASHER
012	540CGH. 009.12	M4X10 INBUS
013	540CGH. 009.13	MOVING ARM
014	540CGH. 009.14	M8X35 INBUS



TENSIONING ASSEMBLY (OPTIONAL)

PART NMR	PART CODE	PART NAME
001	540CGH. 010.01	M16X30 INBUS
002	540CGH. 010.02	COVER
003	540CGH. 010.03	6012 BEARING
004	540CGH. 010.04	IDLE WHEEL
005	540CGH. 010.05	M12X45 INBUS
006	540CGH. 010.06	WHEEL CONNECTION FLAT
007	540CGH. 010.07	SLEDGE
008	540CGH. 010.08	M8X30 IBUS
009	540CGH. 010.09	GREASE UNION
010	540CGH. 010.10	SLEDGE BLOCK
011	540CGH. 010.11	BANT 2X10
012	540CGH. 010.12	OIL SEAL 25X35X7
013	540CGH. 010.13	PISTON HOLDER
014	540CGH. 010.14	O-RING 90X4
015	540CGH. 010.15	BANT 2X10
016	540CGH. 010.16	DUST SEAL 25X33X7,5
017	540CGH. 010.17	Ø8 1/4" REKOR
018	540CGH. 010.18	LEAN PART (INNER)
019	540CGH. 010.19	SHAFT PIPE
020	540CGH. 010.20	M12 INBUS
021	540CGH. 010.21	PISTON SHAFT
022	540CGH. 010.22	PISTON HEAD
023	540CGH. 010.23	SEAL SET 100X86X22,4
024	540CGH. 010.24	PISTON COVER (BACK)

OPTIONAL



HYDRAULIC TOP CLAMP ASSEMBLY (OPTIONAL)

PART NMR	PART CODE	PART NAME
001	540CGH. 011.01	REKOR 1/4"
002	540CGH. 011.02	PISTON COVER (BACK)
003	540CGH. 011.03	PISTON PIPE
004	540CGH. 011.04	PISTON HEAD
005	540CGH. 011.05	PISTON SHAFT
006	540CGH. 011.06	ORING 42,86X3,53
007	540CGH. 011.07	KOMPACT SET 50X34X20,5
008	540CGH. 011.08	REKOR 1/8 "
009	540CGH. 011.09	ORING 42,86X3,53
010	540CGH. 011.10	DUST SEAL 30X38
011	540CGH. 011.11	OIL SEAL 30X40X8
012	540CGH. 011.12	BAND 2X10
013	540CGH. 011.13	ORING 42,86X3,53
014	540CGH. 011.14	LOWER COVER
015	540CGH. 011.15	INBUS M6X25
016	540CGH.011.16	INBUS M10X25
017	540CGH.011.17	LOWER FIXING PLATE
018	540CGH.011.18	INBUS M16X60
019	540CGH.011.19	TOP CLAMP PLATE
020	540CGH.011.20	WASHER
021	540CGH.011.21	INBUS M10X30
022	540CGH.011.22	CONNECTION BLOCK
023	540CGH.011.23	FIXED VICE CONNECTION BLOCK
024	540CGH.011.24	INBUS M10X30
025	540CGH.011.25	MOUNTING PLATE
026	540CGH.011.26	PIN Ø10
027	540CGH.011.27	VICE PLATE (LOWER)
028	540CGH.011.28	VICE PLATE
029	540CGH.011.29	INBUS M10X30
030	540CGH.011.30	INBUS M8X30

OPTIONAL

BEKA-mak



Makina Sanayi
ve Ticaret A.Ş.

COMPANY :

MACHINE TYPE : BMSY 540 CGH

SERIAL NR :

COUNTRY :

OPTIONS : STANDART

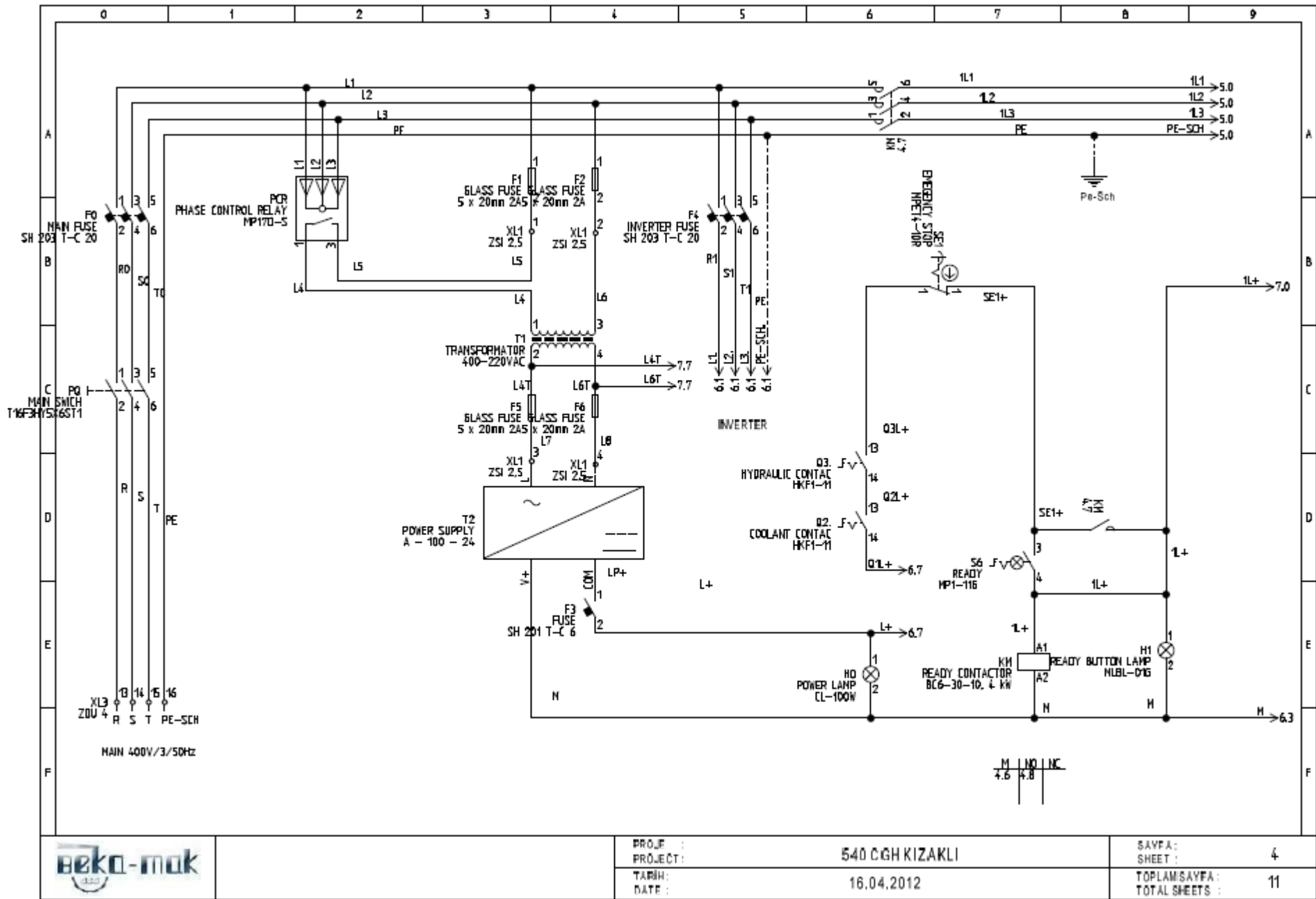
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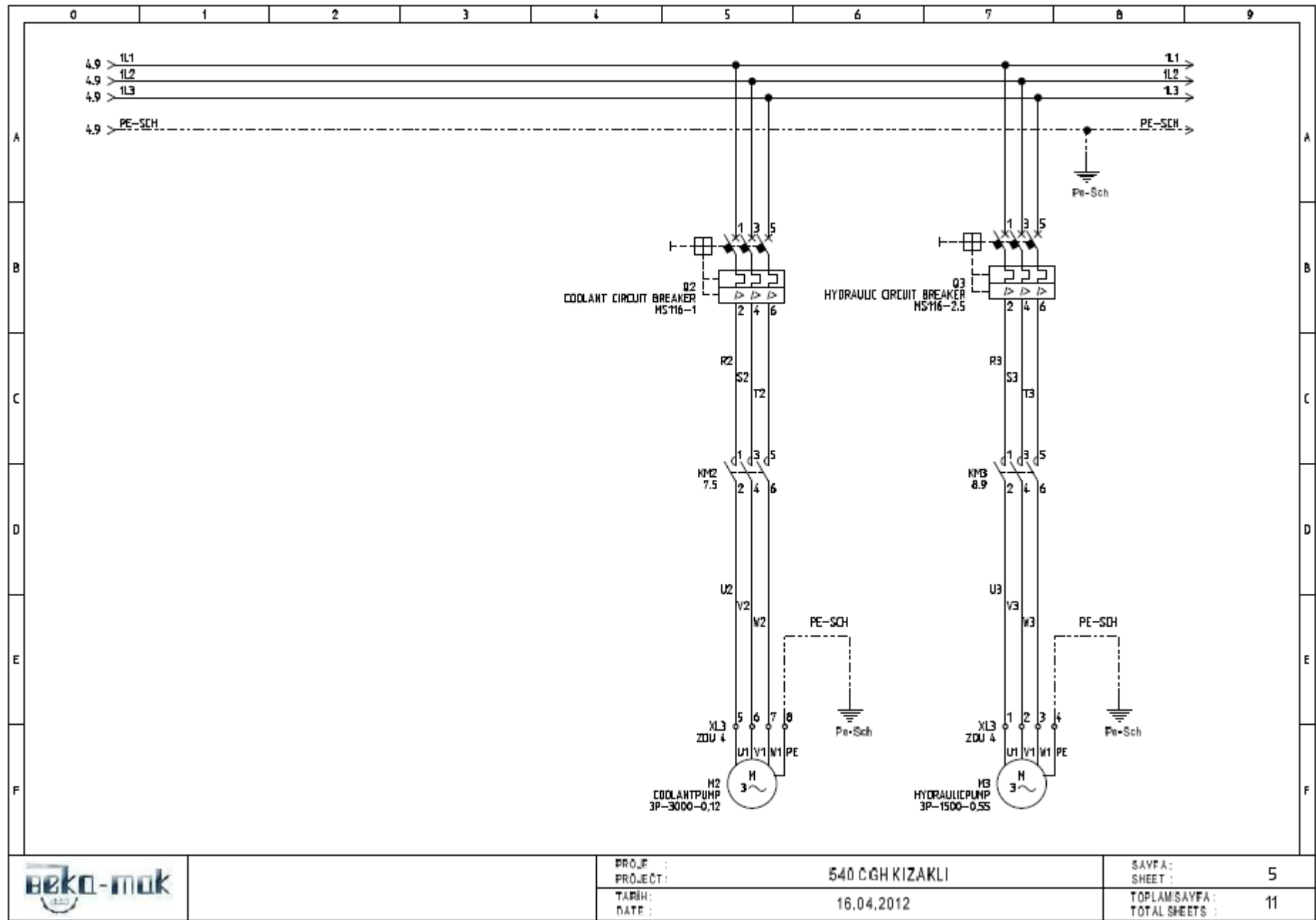


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SAYFA :	7
SHEET :	
TOPLAM SAYFA :	11
TOTAL SHEETS :	

