

2017

BEKAMAK

bandsawing machines

SEMI AUTOMATIC TWIN PILLAR BANDSAWING MACHINES

BMSY 810CGH



RUNNING VOLTAGE

SERIAL NUMBER



Manufacturer / İmalatçı : Beka-Mak Makina Sanayi ve Tic. A.ş.

Address / Adres: İzmir Yolu Caddesi No:698 - 16370 Başköy-Nilüfer -Bursa/Türkiye

Telefon : 02244490361 (4 hat)

Fax : 02244490360 Nilüfer / Bursa

Http : // www.bekamak.com.tr

E-mail : bekamak@bekamak.com

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.

Definitions

(EN ISO 12100:2010)

User: the person, body or company who has bought or rented the machine and intends to employ it for the uses contemplated.

Operator: the physical person authorized by the user to operate the machine after having been suitable trained on the use and specific risks of the machine..

Authorized person: the skilled person, who is authorized by the user to carry out maintenance or setting-up operation of the machine.

Dangerous zone: anywhere inside and/or near a machine, which the presence of an exposed person represents a risk for his safety and health.

Exposed person: any person who finds himself in dangerous zone, either entirely or partially

Purpose of machine

This machine has been designed to be mainly used by light and medium structural steel industries.

This machine has been designed for the cutting of ferrous material and the other light materials with solid, hollow or cross section. Any other material use differing from the above mentioned materials is to be considered inappropriate and prohibited.

The machine operator must be trained and informed of risks and must have the instruction manual at his disposal.

The operator must not work in the vicinity of the danger zone (cutting area) with any other people.

During the cutting process, the operator must never put hands or use tools in the cutting area

RELATED DIRECTIVES AND STANDARDS

DIRECTIVES

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

LOW VOLTAGE DIRECTIVE- **2006/95/EC**

ELECTROMAGNETIC COMPATIBILITY DIRECTIVE- **2004/108/EC**

STANDARDS

EN ISO 13857:2008; SAFETY OF MACHINERY-SAFETY DISTANCES TO PREVENT DANGER ZONES BEING REACHED BY UPPER LOWER LIMBS

EN ISO 4413:20106: HYDRAULIC FLUID POWER – GENERAL RULES AND SAFETY REQUIREMENTS FOR SYSTEMS AND THEIR COMPONENTS

EN ISO 13849-1:2008/AC:2009; SAFETY OF MACHINERY - SAFETY-RELATED PARTS OF CONTROL SYSTEMS - PART 1: GENERAL PRINCIPLES FOR DESIGN


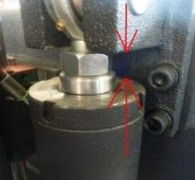

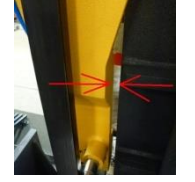

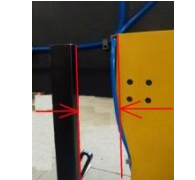
EN 13898:2003+A1:2009/AC:2010: MACHINE TOOLS - SAFETY - SAWING MACHINES FOR COLD METAL

EN ISO 12100:2010; SAFETY OF MACHINERY - GENERAL PRINCIPLES FOR DESIGN – RISK ASSESMENT AND RISK REDUCTION.

EN 60204-1:2006/A1:2009; SAFETY OF MACHINERY - ELECTRICAL EQUIPMENT OF MACHINES - PART 1: GENERAL REQUIREMENTS

Residual Risks

Do Not Touch Below Mentioned Moving Or Movable Parts Of The Machine While It Runs.

	Mechanical Dangers	Residual Risks
	<p>There might be the risk of hand/arm incerceration between wheel cover and control panel.</p>	<p>Necessary warnings are mentioned in the manual.</p> <p>There are warning signs on the machine.</p>
	<p>There might be the risk of hand incerceration between piston hose and piston when the head is down.</p>	<p>There is necessary and enough warnings in the manual.</p> <p>There is warning sign at first part. There is warning sign on the cover.</p>
	<p>There might be the risk of hand/arm incerceration between movable vice profile and arm withdraw point.</p>	<p>There is necessary and enough warnings in the manual.</p> <p>Warning sign has been put at related section.</p>
	<p>There might be the risk of hand/arm incerceration between arm and ear when movable arm is at last point</p>	<p>There is necessary and enough warnings in the manual.</p> <p>Warning sign has been put at related section.</p>
	<p>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 .</p>	<p>There is necessary and enough warnings in the manual.</p> <p>Warning sign has been put at related section.</p>
	<p>There might be snipping risk between movable vice profile and movable arm</p>	<p>There is necessary and enough warnings in the manual.</p> <p>Warning sign has been put at related section.</p>

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(11) 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 .

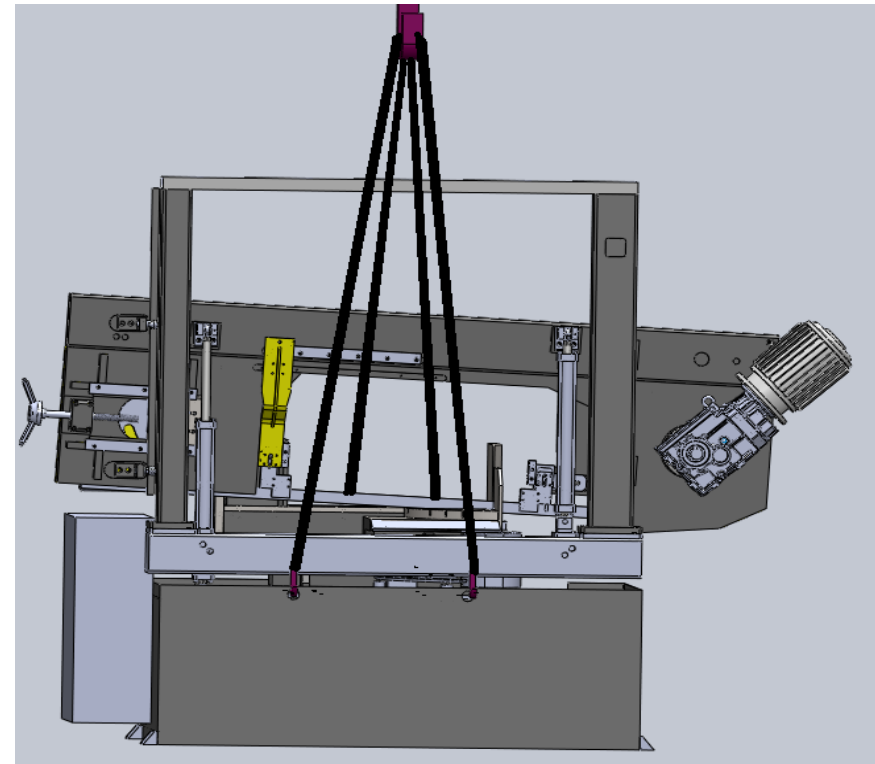
Technical Data

TECNICAL DATA/TECHNISCE DATEN		BMSY 810CGH	
Cutting Capacity Schnittbereich 0°	Round/Rund	mm	810
	Flat/Flach	mm	810 x 770
	Square/Vierkant	mm	770
Cutting Capacity Schnittbereich +30°	Round/Rund	mm	670
	Flat/Flach	mm	650 x 770
	Square/Vierkant	mm	650
Cutting Capacity Schnittbereich +45°	Round/Rund	mm	530
	Flat/Flach	mm	500 x 750
	Square/Vierkant	mm	520
Cutting Capacity Schnittbereich +60°	Round/Rund	mm	320
	Flat/Flach	mm	310 x 750
	Square/Vierkant	mm	320
Main Drive Motor/Hauptmotor		kW	4
Hydraulic Motor/Hydraulikmotor		kW	1,5
Coolant Motor/Kühlmittelpumpe		kW	0,12
Chip Conveyor Motor/Späneförderer		kW	0,25
Cutting Speeds/Schnittgeschwindigkeit		m/min	20 - 100
Band Dimensions/Sagebandabmessung		mm	8400 x 41 x 1,3
Working Height/Arbeitshöhe		mm	725
Weight/Gewicht		Kg	3100
Dimensions/Masse	Length/Länge	mm	3940
	Width/Breite	mm	1300
	Height/Höhe	mm	2500

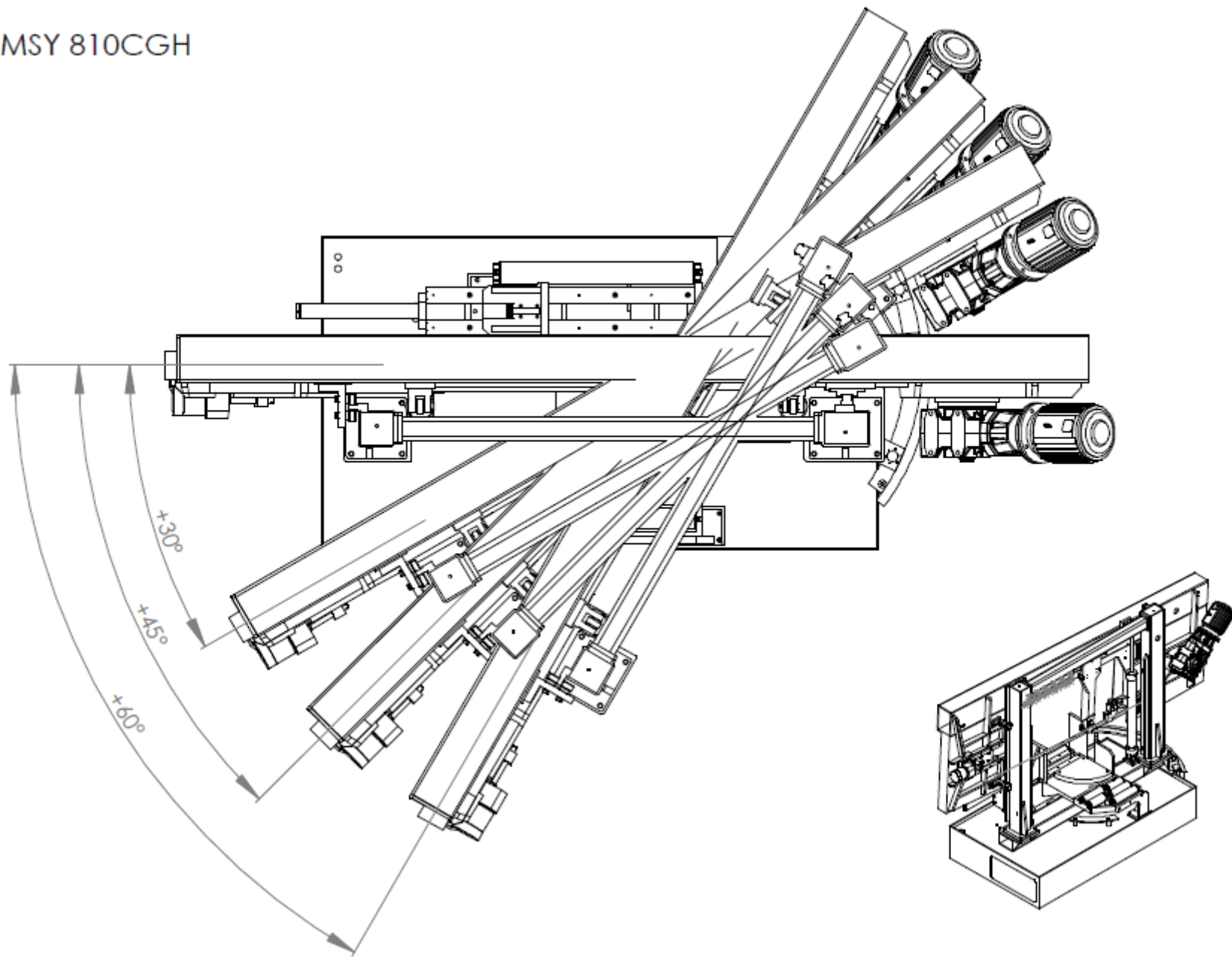
Transportation And Carrying Of Machine Important

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

Bekamak may change the properties of the product without notice.



BMSY 810CGH



Statement of Noise

Conditions for measurement

Tested Machine: BMSY 810CGH – Blade size: 8200x 41 x 1,3mm

Material in use: ø250 Solid Material

A Nominal sound pressure level in warehouse

$L_{pfa,1m}=77\text{db(a)}$ Coefficient of uncertainty $k:4\text{ db}$ (testing appropriate to en 11202)

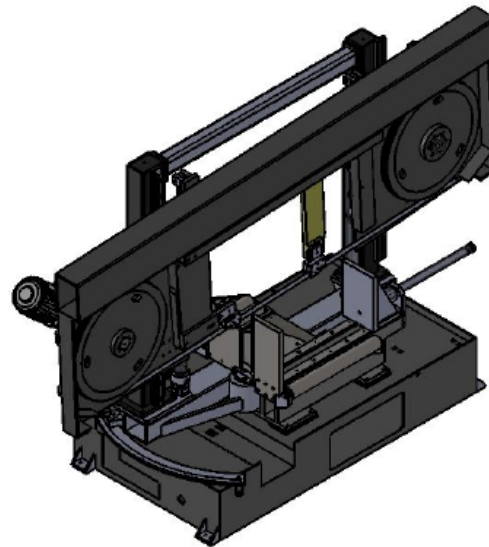
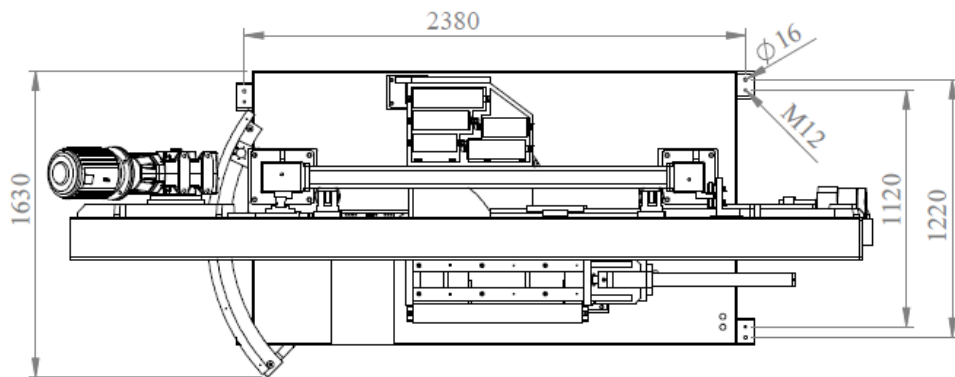
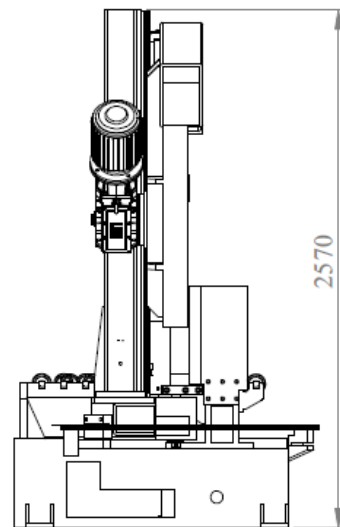
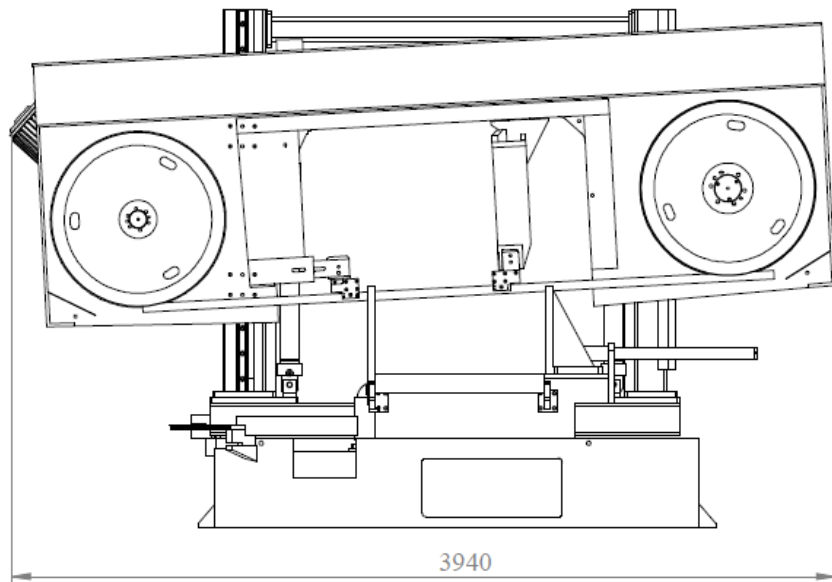
A nominal sound power level

Power level $L_{wa}=69,7\text{db(a)}$ (measured value)

Coefficient of uncertainty $k:4\text{ db}$ (testing appropriate to en iso 3476)

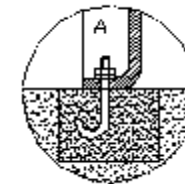
Values for noise are level of issue and it doesn't state it's on safe working level. Even there is a connection between issue and exposure levels, this can not be used safely to decide if advanced precautions are needed. Factors that effect the real level of exposure that effects work force are depending on feautres 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 lets the operator to consider the dangers and risks.



Fixing

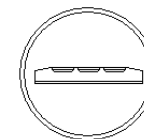
Area that machine will be fixed should be flat and bowless. Machine base should be placed properly , linear and diagonal way . Get the machine to balance with 4pcs m16screws that are on the legs, you should fix it with $\phi 13$ steel pins.

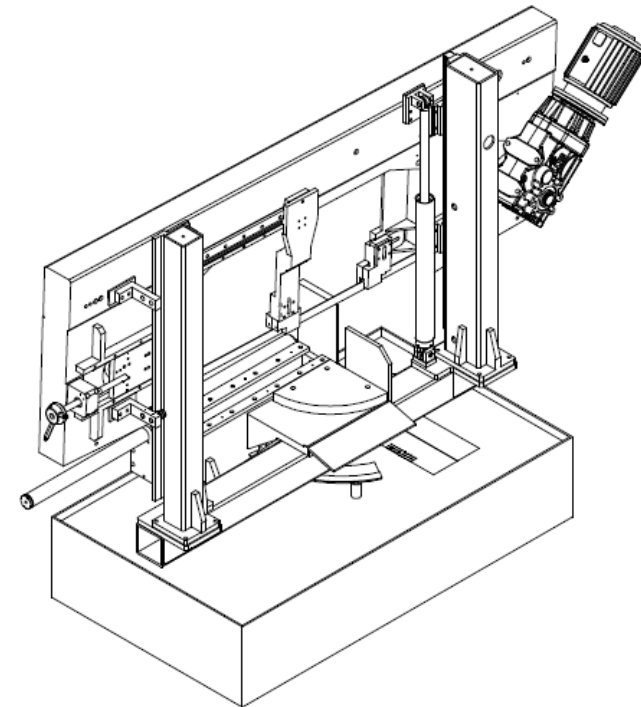
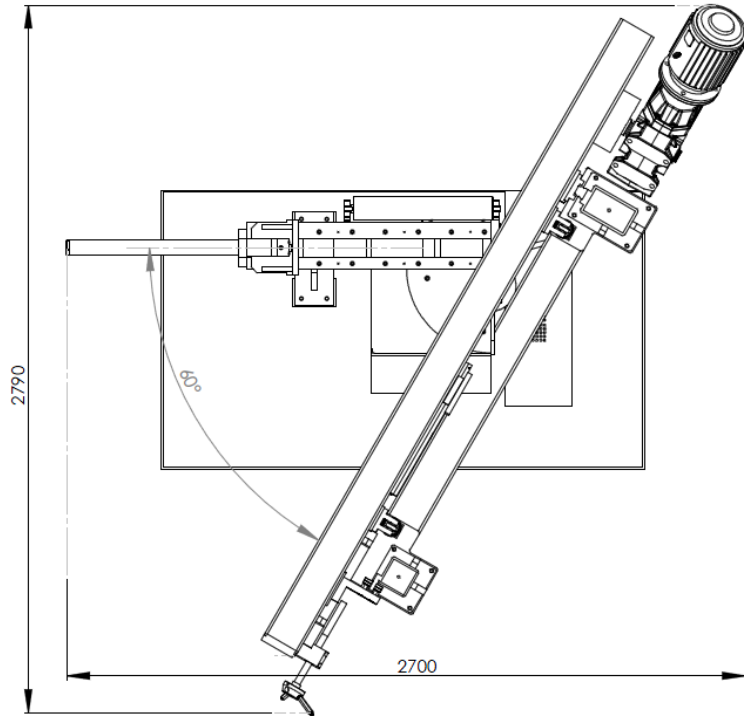
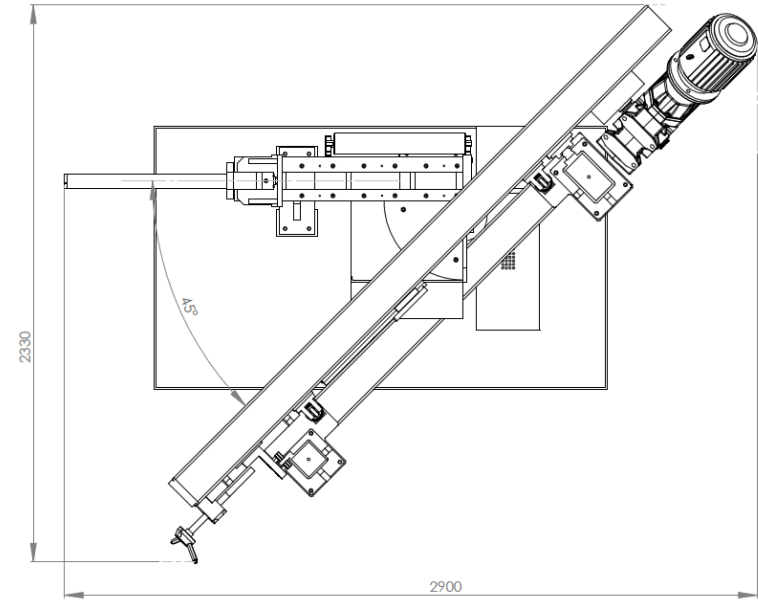
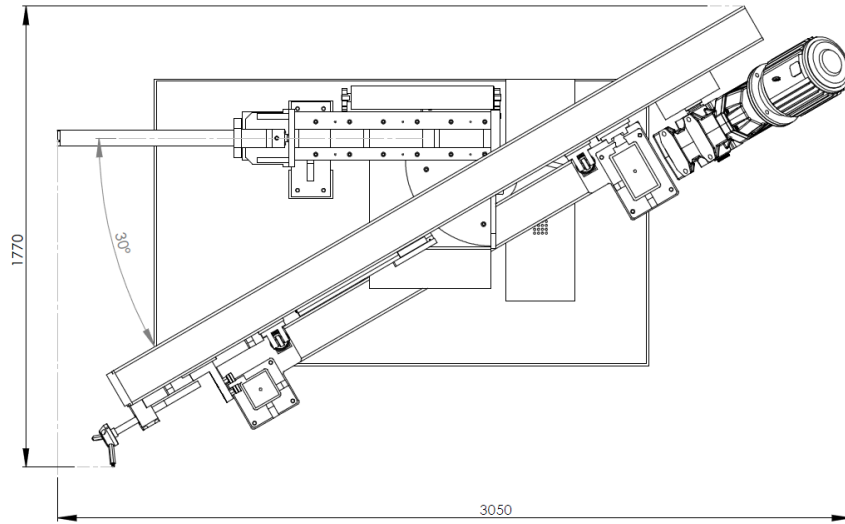


Balancing The Machine

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.

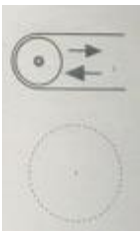







OPERATING INSTRUCTION



	<p>SPEED CONTROL POTMETER : CONTROLS THE INVERTER TO ADJUST THE TURNING SPEED OF BLADE</p>		<p>EMERGENCY STOP BUTTON:PREVENTS ACCIDENTS AT UNEXPECTED SITUATIONS.</p>
	<p>START BUTTON : START THE CUTTING</p>		<p>STOP BUTTON :STOPS THE CUTTING</p>
	<p>Signal button : Power supply off/on</p>		<p>COOLANT BUTTON : IT IS USED TO LET THE COOLANT LIQUID FLOW.</p>
	<p>BOW UP BUTTON: MOVES THE BOW UP MANUALLY AND STOPS CUTTING.</p>		<p>BOW DOWN BUTTON: MOVES DOWN THE BOW MANUALLY.</p>
	<p>START (READY) BUTTON:ENERGISES POWER CIRCUIT OF THE MACHINE</p>		<p>VICE PRES BUTON:IT IS USED TO PRESS THE MATHERIAL</p>

	<p>BLADE TIGHTENING BUTTON: TIGHTEN THE BLADE.</p>		<p>TOP CLAMPING SELECTOR(OPTIONAL): THIS OPTION IS FOR TIGHTENING THE MATERIAL VERTICALLY FOR BUNDLE CUTTING</p>
	<p>ADJUSTING DOWN FEED SPEED: THIS VALVE IS USED TO SET DOWN FEED SPEED AFTER ADJUSTING THE CUTTING PRESSURE. SPEED IS CHANGED BY OBSERVING CHIPS COMING OUT FROM CUTTING MATERIAL. AT ADEQUATE SPEED CHIPS ARE CLEAN AND UNBURNED .</p>		<p>ANGLE DISPLAY: DISPLAYS THE POSITION OF BOW IN DEGREES BETWEEN 0° AND +60°</p>

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.

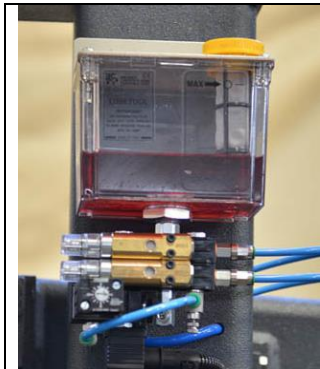
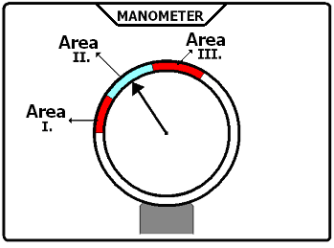
Area I : this shows that the tension of the blade is less than it must be. Adjust the blade tension.

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 : BAR / MAIN MOTOR: BAR

HYDROMECHANIC BLADE TENSION: BAR / HYDRAULIC BLADE TENSION:



Microspray (optional):

To enhance more qualified cutting procedure and to protect saw blade microspray system is applied instead of coolant liquid system. To coolant the blade pulverised microspray oil and pressured air is sprayed via the nozzle on the saw blade . Oil level can be traced from indicates of min.- max. On oil container. Oil amount, air amount, lubrication sequence can be adjusted from device.

Air pressure : min.4, max6 bar

Oil specifications: kt/2000

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

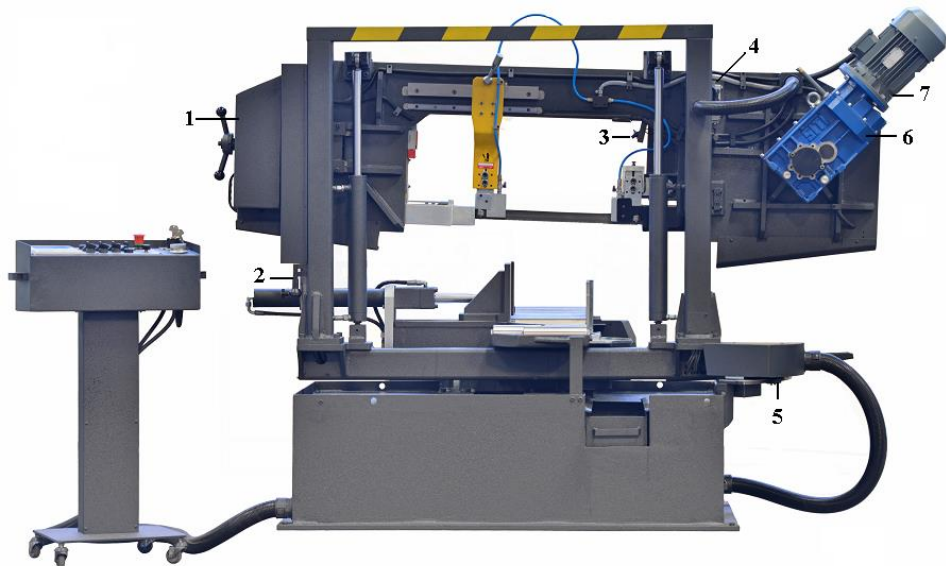
5- Dijital Encoder

6- Wheel Reductor

7- Wheel Motor

8- Protection Cover Switch

9- Fotocell



MACHINE MAINTENANCE INSTRUCTIONS

1) Daily Maintenance

1) Clean the chips behind the wheels.



1.2. a) How the chip conveyor removes the chips



1.2 b) Chip conveyor cover.



1.2 c) Coolant oil tank



1.2 d) How to remove the chips from oil tank.

1.3) Clean the chips from the vice block



1.4) Lubricate the upper clamping blocks.



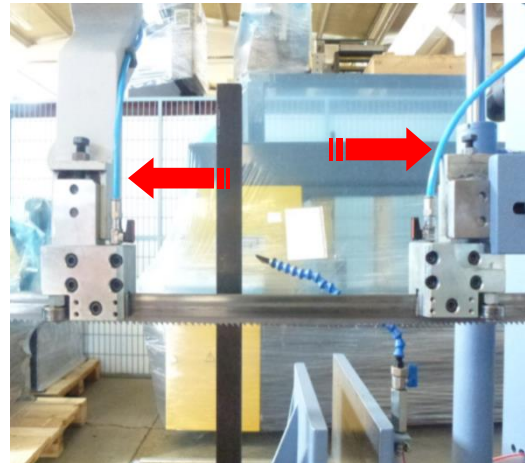
1.5) Clean the vice clamping shaft.



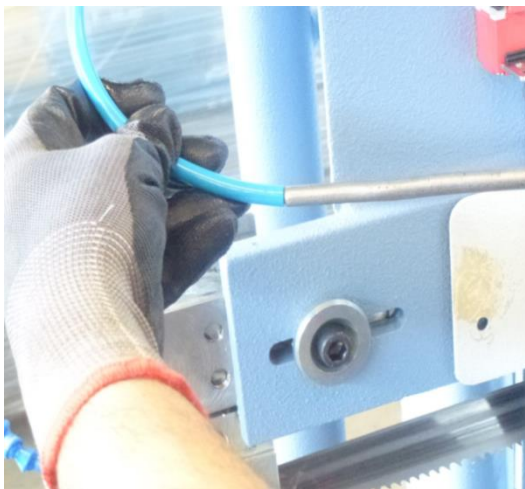
1.6) Lubricate the vice clamping shaft.



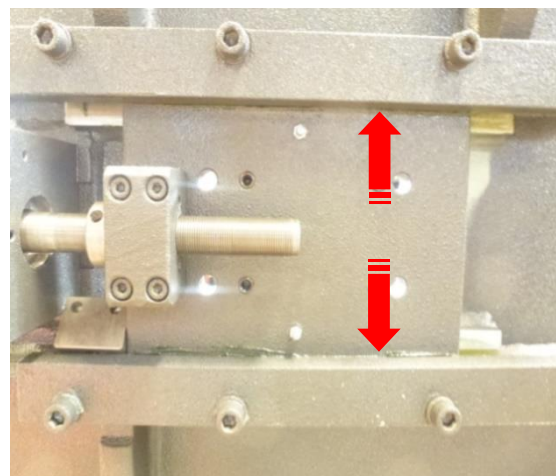
1.7 a) Coolant hoses



1.7 b) How to air the hoses mentioned above.



1.8) How to clean the tensioning rails



1.9) The manometer should be at 43 bars.

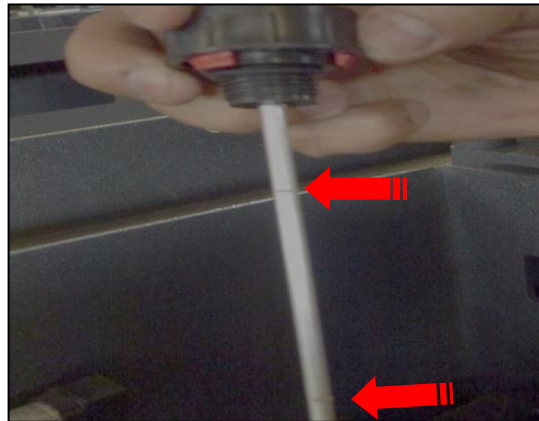


2) Weekly maintenace

2.1) Check the gearbox oil level (no 90)



2.2) Hydraulic oil tank oil level should ve between upper and lower levels. No 46



2.3) Remove the chips from the tank with shovel.

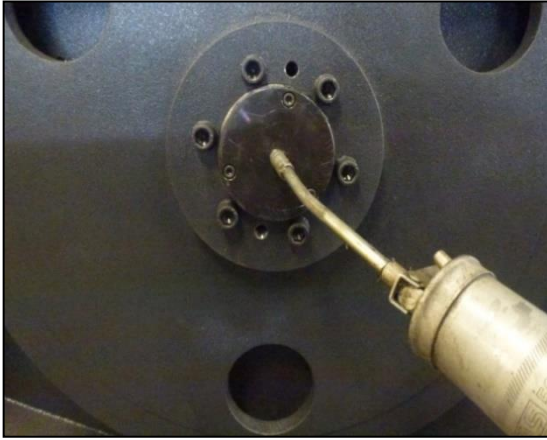


2.4) New type coolant case.

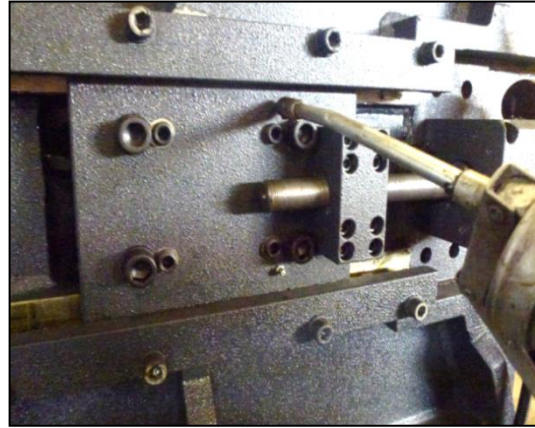


3) Monthly maintenance

3.1. Lubricate the front and drive wheels as shown.



3.2. Lubricate the tensioning sledge as it is shown.



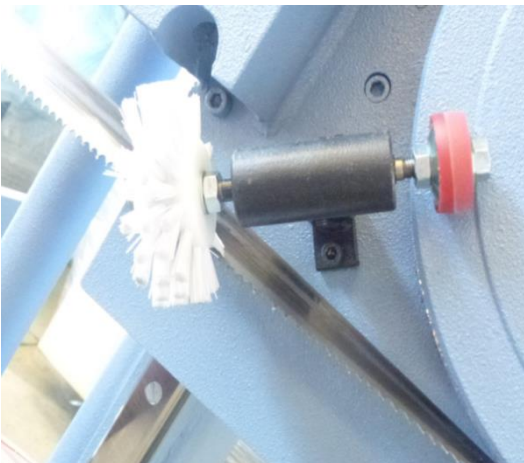
3.3. Lubricate the movable arm part shown.



3.4. Lubricate the linear sledge



3.5) Check the chip brush.



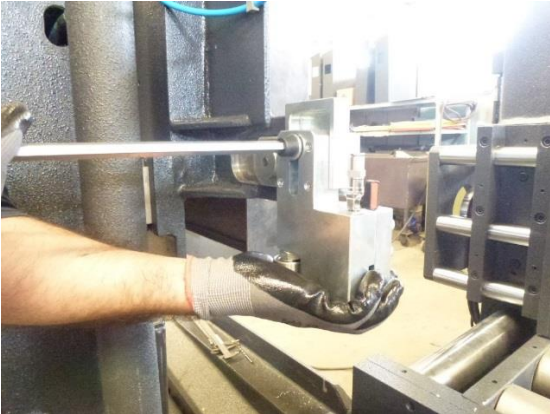
3.6) Check the wheel bolts.



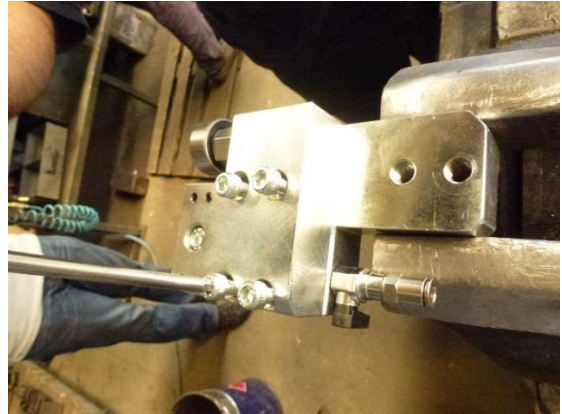
4) 6 Months Maintenance

Changing the bearings

4.1) Remove the carbide block



4.2) Remove the bolts.



4.3) Remove the (6202 2RS) bearing by hand.



4.4) Remove the inner pin of bearing. Put a new one.



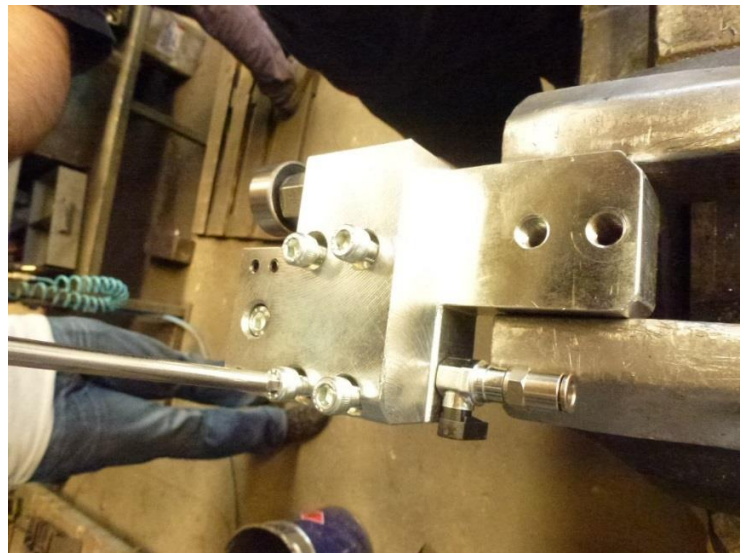
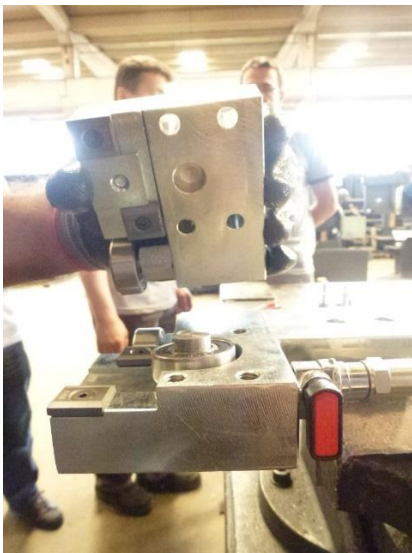
4.5 Place the eccentric shaft to the hole.



4.6 Fix the shaft by tightening the set screw.



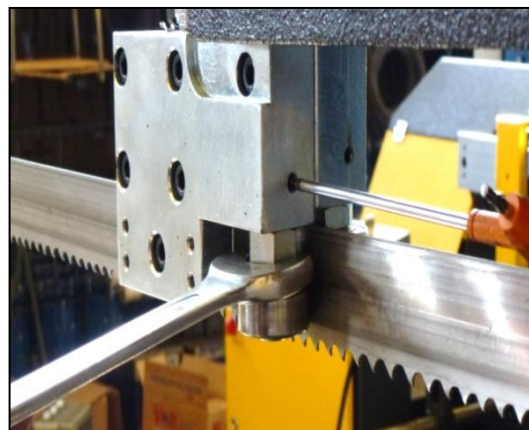
4.7 Put on the block cover and fix it with help of 4 bolts.



4.8 Mount on the carbide block.

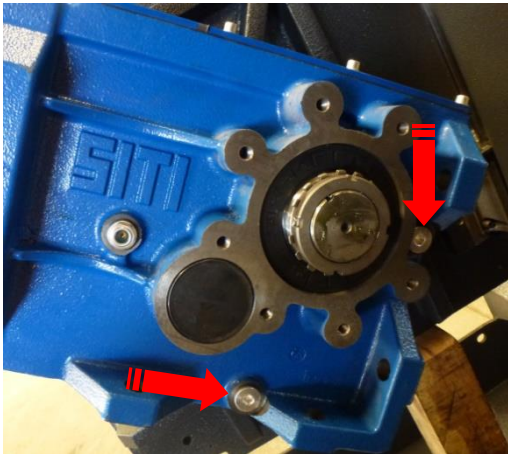


4.9 By loosening the set screw of the eccentric shaft, close the gap between the sawblade and bearing.

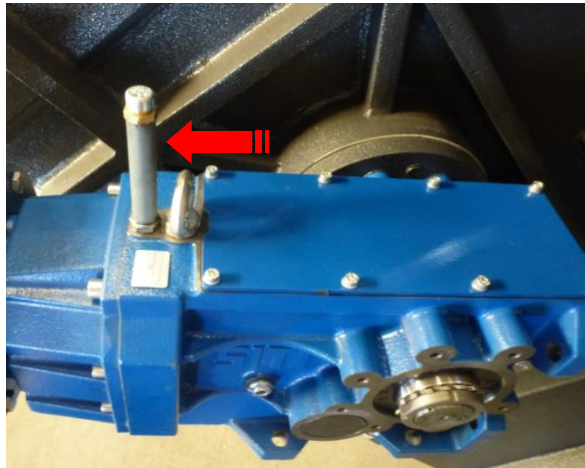


5) Annual maintenance

5.1 Empty the oil from marked points.



5.2 Remove the pointed pin and add 9,3 lt. Shell, Ip, Esso etc. Oil.



5.3 Remove the bolt by using a wrench



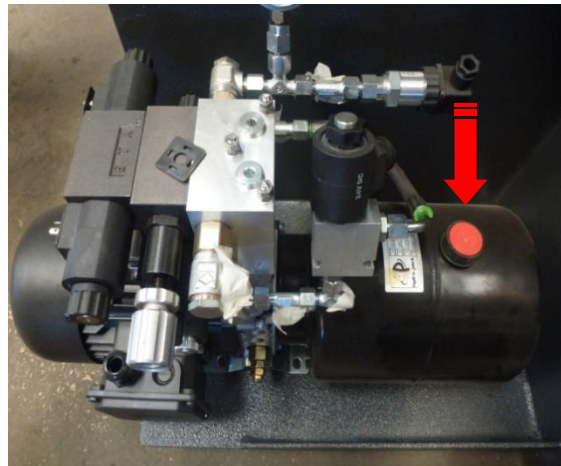
5.4 Remove the hose, start the tensioning and motor from control panel and drain the oil into a tin box.



5.5 Move the tensioning button to arrow side.



5.6 Remove the cap and put 30 liters of number 46 oil (oil, mobil, Shell)



CHANGING THE SAWBLADE

1. Loosen the sawblade (at mechanical machine)



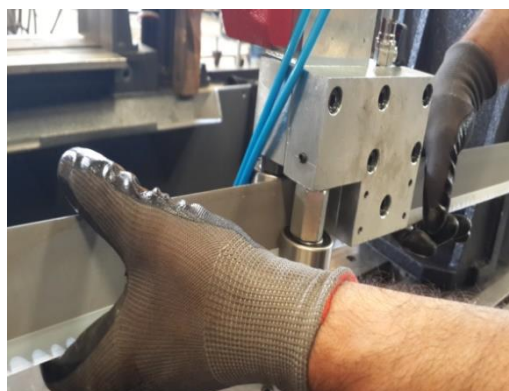
2. Loosen the sawblade (at hydraulic)



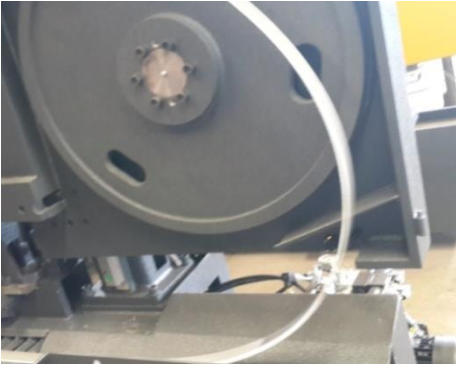
3. Remove the sawblade from the wheel.



4. Remove the sawblade from the carbide block.



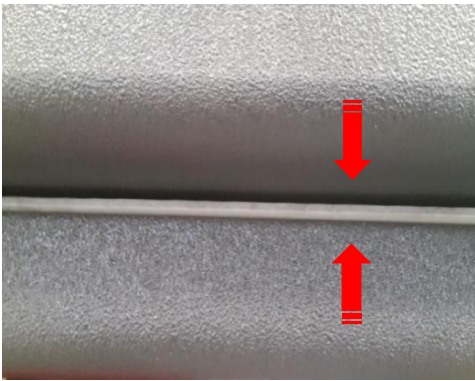
5. Change the blade with new one.



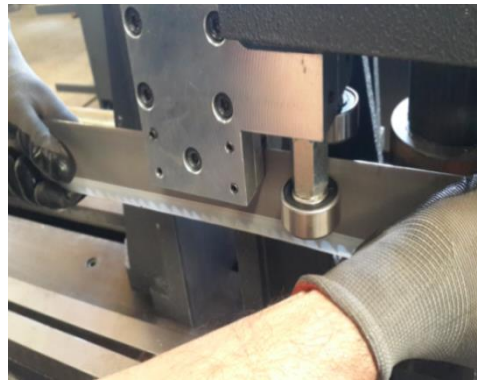
6. Place the blade to the wheel.



7. Place the sawblade.



8. Place the carbide blocks.



9. Place the sawblade between the carbide blocks straightly.



10. By using image 1 you may tighten the sawblade at mechanical machines and with 2 you may the hydraulical machines.



Şekil:1



Şekil:2

Filling up coolant

Coolant and water fixture should be used for cutting steel. Do not use coolant for cutting casting material. At periods (at least once a month) the coolant should be emptied and dreg should be cleaned. If the coolant oil is not enough, add to coolant tank. (the tank capacity is 20 liter. Coolant mixture rate is 1/10)

With using coolant it prevent to ignition at process area.

1) Remove the coolant case onto a chock.



2) How to add coolant to the coolant tank.



3) Add coolant till the marked place.



4) Placing the coolant tank.



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
STRUCTURAL 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 NICR 14	1.5752	30 - 40	40 - 50	1:10	X	
	21 NICR MO 2	1.6523	30 - 45	45 - 55	1:10	X	
NITRICTED STEEL	16 MRCR 5	1.7131	30 - 45	50 - 65	1:10	X	
	34 CRAL 6	1.8504	-----	20 - 35	1:20		X
FREE CUTTING STEEL	34 CR AL NI 7	1.8550	-----	20 - 35	1:20		X
	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 NICRMOV 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	
HIGH SPEED STEEL	S 5-6-2	1.3343	-----	25 - 40	1:30		X
	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
VALVE STEEL	X 45 CRSI 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 NICRTI 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 CRSI 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		

For cutting pipes and shapes

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

Tooth Style Selection

Economies of cutting can be achieved by choosing the tooth style or shape correcty 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 gulet, general purpose



Skip Tooth (L)

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



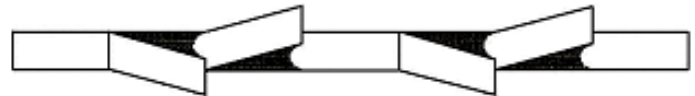
Hook Tooth (KL)

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



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.



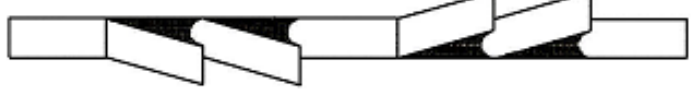
Regular or Raker Set

Is the most widely used setting if 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



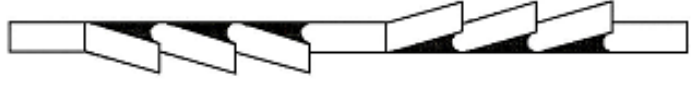
For softer materials, i.e. NF-metals, plastic & wood.



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

Basic information with technical inquiries

1. Customer

- Company: _____ - Customer No.: _____
 - Street: _____
 - City / Postal Code: _____

2. Currently used band saw blade (even competition)

- Quality: _____
 - Dimension: _____ [mm]
 - Tooth pitch: _____ [tpi]
 - Machine type: _____

4. Using information

- Material: _____, if annealed, strength _____ [N/mm²]
 - Cross-section: _____ [mm] (dimension and wall thickness in case of profiles)
 - Clamping: Single
 Layer (Layer width _____ [mm])
 Bundle (Width _____, height _____ [mm])
 - Cutting speed _____ [m/min]
 - Time per cut _____ [min] (pure cutting time)
 - Current blade life _____ [cm² or m²]
 - Vertical machines: kind of feed manual feed
 hydraulic feed
 - used cooling lubricant: emulsion
 spray mist system

5. Customer's requirement

- high cutting rate max. tool life good cutting surface none

5. Others / remarks



PRESSOSTATO REGOLABILE ADJUSTABLE PRESSURE SWITCH

F4

I pressostati della serie "F4" permettono la commutazione di un microinterruttore al raggiungimento di un valore di pressione, preimpostabile dall'utilizzatore, agendo sulla vite centrale (protetta da tappo di protezione) nell'esecuzione P3 o intercettando il grano di regolazione posto all'interno dello strumento con una chiave esagonale da 2mm. Ruotando in senso orario il punto d'intervento viene incrementato viceversa viene diminuito.

Caratteristiche Tecniche:

Corpo: esagonale da 24 mm in acciaio con zincatura trivalente

Montaggio: in ogni posizione

Temperatura d'impiego: da - 25°C a + 85°C

Frequenza di commutazione: 90 cicli/min

Punto d'intervento: regolabile con vite interna

Precisione d'intervento: ± 4% del F.S. a 20°C

Valore fisso d'isteresi:

- esecuzioni a membrana - 10% del F.S.
- esecuzioni a pistone - 15% del F.S.
- esecuzioni a pistone Y - 25% del F.S.

Peso: 0,05 Kg

Vita Meccanica: 10⁶cicli a 70bar(1000 psi) a 20°C

Caratteristiche Elettriche:

- Carico Max: 0.5 Ampère a 250 Volt AC (vedi anche pagina dedicata)
- Contatti in scambio (Comune, NA e NC)
- Attacco elettrico secondo norme DIN 43650 per M2 e M3
- Protezione elettrica secondo norme DIN40050: IP65 per esecuzione M2/M3 IP54 per esecuzione P3/P1

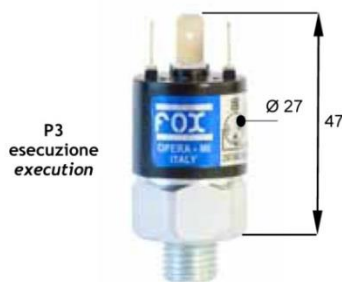
Garanzia: vedi pagina dedicata

Parti di ricambio: vedi pagina dedicata

Disponibile:

- F4_X con parti a contatto fluido Acciaio Inox
- F4_L corpo in ottone
- WF4: vuotostato con campo di regolazione da -0.15 a -0.8 bar

Nota: Certificazione ATEX solo per esecuzioni M2 ed M3



P3
esecuzione
execution



M2
esecuzione
execution



M3
esecuzione
execution

"F4" adjustable pressure switches allow a micro-switch commutation once a preset pressure value is reached. The set point is adjusted working on the central screw (P3 execution) or intercepting the regulation dowel situated inside the instrument, using a 2mm hexagonal key (M2 and M3). Rotating clockwise the set point is increased and vice-versa is decreased. Mechanical stops protect both the spring and the micro-switch from over pressurization.

Technical features:

Body: 24 mm hexagonal in zinc-plated carbon steel

Assembly: in every position

Working temperature: from -25°C to +85°C

Switching frequency: 90 cycles/min

Operating point: adjustable using internal screw

Switching accuracy: ± 4% of the end of scale at 20°C

Fixed hysteresis value:

- membrane execution - 10% of end of scale
- piston execution - 15% of end of scale
- Y execution - 25% of end of scale

Weight: 0,05 Kg

Mechanical life: 10⁶ cycles at 70 bar (1000 psi) at 20°C

Electric Features:

- Maximum load: 0.5 Ampère at 250 Volt AC (see dedicated page)
- Exchange contacts NO and NC (SPDT)
- Electric connection according to DIN 43650 for M2 and M3
- Electric protection according to DIN 40050: IP65 for M2/M3 execution IP54 for P3/P1 execution

Warranty: see dedicated page

Spare parts: see dedicated page

Also available:

- F4_X with fluid connection in AISI316L
- F4_L body in brass
- WF4 vacuum switch with adjustable pressure range from -0.15 to -0.8 [bar]

Note: Certificate ATEX only for M2 and M3 execution



ESEMPIO D'ORDINE - HOW TO ORDER

F4									P1	
Campo di regolazione	Esecuzione	P Max	Materiale del Corpo	Connessione Idraulica	Tipo di Guarnizione	Tipologia Micro Interruttori	Taratura	Condizione	Tipologia Connessione Elettrica	Cappuccio di Protezione
Switching pressure range	Execution	P Max	Body Material	Hydraulic Connection	Type of Seal	Type of Electric Contact	Preset value	Condition	Type of Electric Connection	Protection Cap
Bar		Bar					Bar			
R	0,2>2,5	25	X AISI316L	0 1/8" BSP	V VITON			D indica taratura in discesa di pressione	P3 6.3x0.8 Fast-on	Accessorio a richiesta indispensabile per proteggere lo strumento dallo sporco e dall'umidità (solo tipo P3)
S		25	L OTTONE BRASS	1 1/4" BSP	T PTFE	G Contatti dorati Gold plated contacts	Indicare il valore se desiderato impostato in fabbrica	means falling pressure setting		
SM	1>12	150	B OTTONE NICHELATO NICKEL PLATED BRASS	2 1/8"BSPT	E EPDM			U indica taratura in salita	M2 Connettore Connector 16x16	Accessory on request essential to protect the instrument from dirt, moisture and to have the IP54 Protection (only P3 type)
SP		300		3 M10x1	H HNBR	se omissio indica contatti argentati	Indicate the value if you want the pressure switch already preset in factory		M3 Connettore Connector 30x30	
T	5>50	300		4 1/8"NPT		if omissio indica NBR				
TM		150		5 1/4"NPT		if omissio means silver plated contacts				
V	10>100	300	se omissio indica Acciaio Zincato	6 1/4"BSPT						
VM		150								
Z	20>200	300	if omissio means zinc plated steel							
Y	50>400	600								

2016

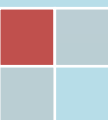
BEKA-MAK

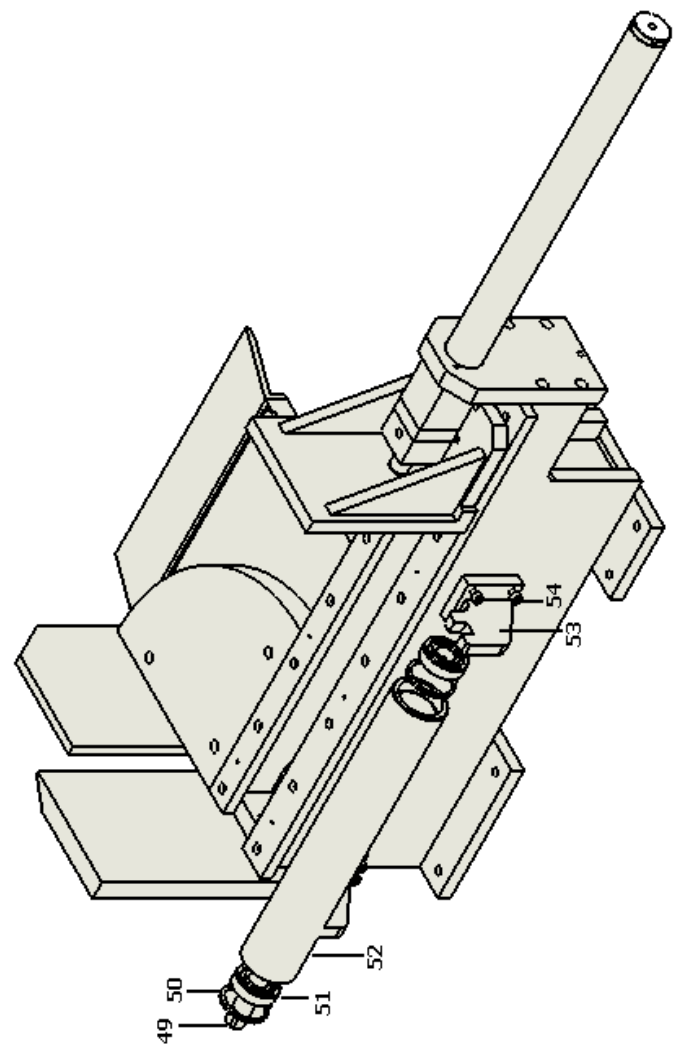
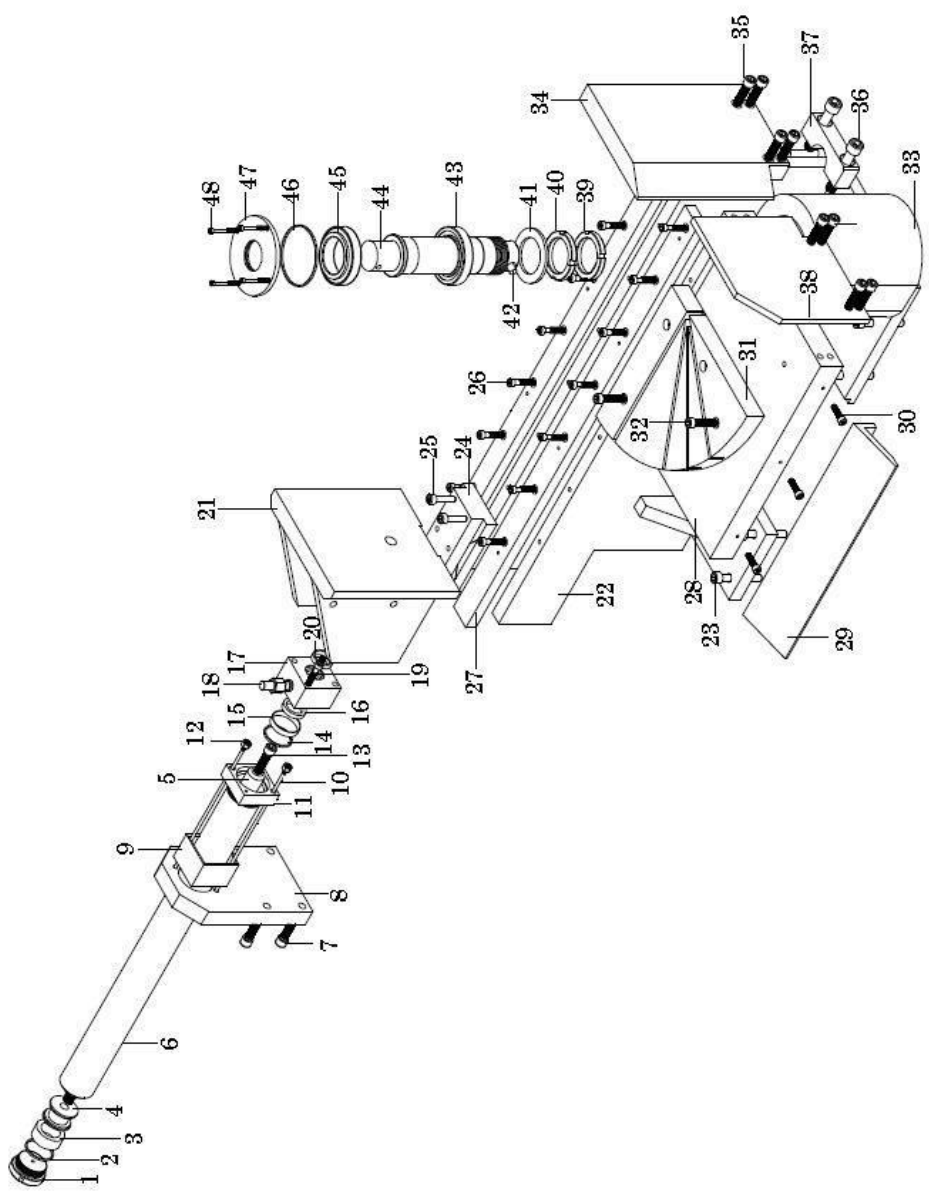
SEMI AUTOMATIC TWIN PILLAR BANDSAWING MACHINES

BMSY 810Cgh



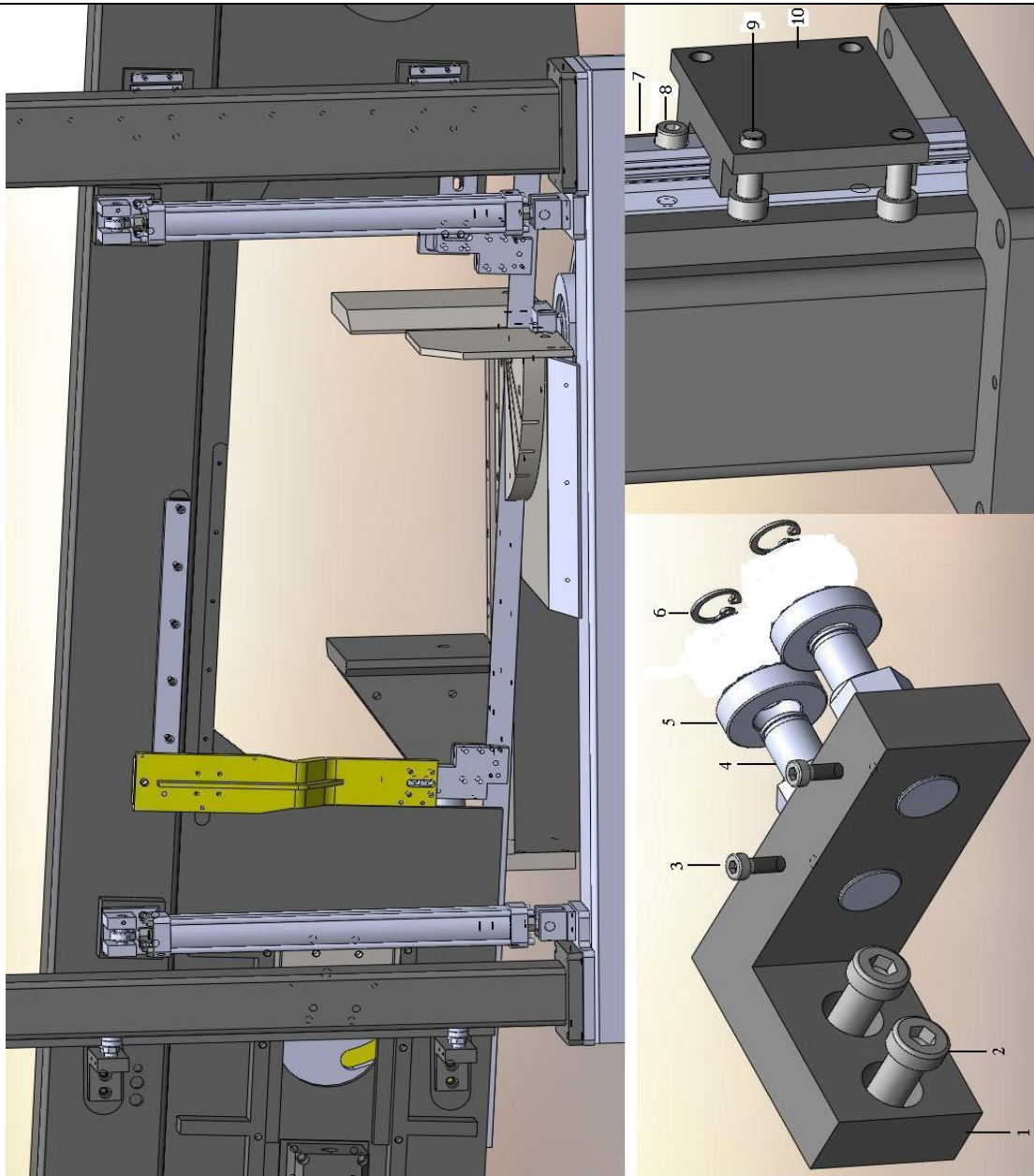
SPARE PART TABLES





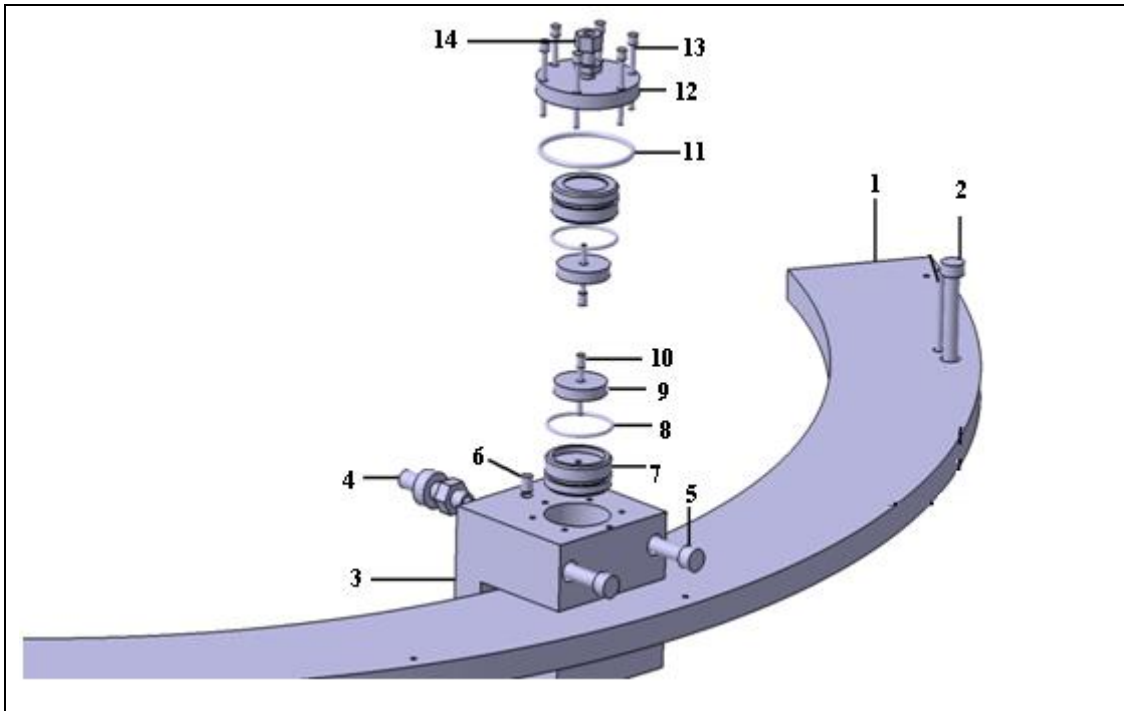
TURN TABLE ASSEMBLY

PART NMR	PART CODE	PART NAME	PART NMR	PART CODE	PART NAME
001	810CGH.001.001	PISTON COVER	028	810CGH.001.028	VICE SUPPORT
002	810CGH.001.002	ORING 49X3	029	810CGH.001.029	CUTTING PLATE (FRONT)
003	810CGH.001.003	50X34X20,5 SELA SET	030	810CGH.001.030	M8X30 INBUS
004	810CGH.001.004	PISTON HEADER	031	810CGH.001.031	VICE PLATINA
005	810CGH.001.005	PISTON SHAFT	032	810CGH.001.032	M12X80 INBUS
006	810CGH.001.006	PISTON PIPE	033	810CGH.001.033	QUARTER BEND
007	810CGH.001.007	M12X35 INBUS	034	810CGH.001.034	FIXED JAW
008	810CGH.001.008	PISTON JOINT	035	810CGH.001.035	M12X40 INBUS
009	810CGH.001.009	70X70X95 PROILE	036	810CGH.001.036	M16X50 INBUS
010	810CGH.001.010	M8X180	037	810CGH.001.037	SHAFT CONNECTION BLOCK
011	810CGH.001.011	NUT	038	810CGH.001.038	MOVING JAW
012	810CGH.001.012	M8 NUT	039	810CGH.001.039	M60X2 AY NUT
013	810CGH.001.013	M12X35 INBUS	040	810CGH.001.040	M60X2 AY NUT
014	810CGH.001.014	ORING 49X3	041	810CGH.001.041	WASHER
015	810CGH.001.015	STRIP 2X10	042	810CGH.001.042	Ø12X70 PIM
016	810CGH.001.016	OIL SEAL 30X40X8	043	810CGH.001.043	32012 BEARING
017	810CGH.001.017	PISTON BEARING	044	810CGH.001.044	MOVING SHAFT
018	810CGH.001.018	Ø8 1/4 REKOR	045	810CGH.001.045	32012 BEARING
019	810CGH.001.019	M8X70 INBUS	046	810CGH.001.046	100X3 ORING
020	810CGH.001.020	DUST SEAL 30X36	047	810CGH.001.047	COVER
021	810CGH.001.021	MOVING JAW	048	810CGH.001.048	M6X15 INBUS
022	810CGH.001.022	VICE BODY	049	810CGH.001.049	M10 SOMUN
023	810CGH.001.023	M14X50 INBUS	050	810CGH.001.050	SEGMENT 471/30
024	810CGH.001.024	VICE MOVEMENT NUT	051	810CGH.001.051	BEARING 6306
025	810CGH.001.025	M10X40 INBUS	052	810CGH.001.052	PISTON PIPE
026	810CGH.001.026	M10X30 INBUS	053	810CGH.001.053	CONNECTION FLAT
027	810CGH.001.027	SLEDGE PLATE	054	810CGH.001.054	M10x40 INBUS

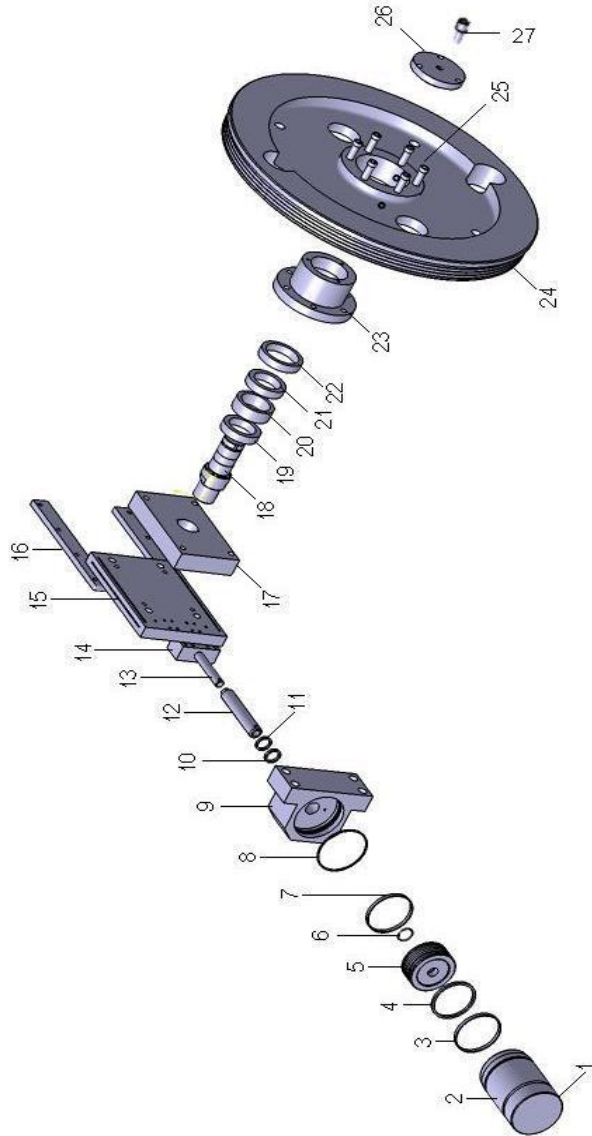


LINEAR SLEDGE GROUP

PART NMR	PART CODE	PART NAME
001	810CGH. 002.001	AXIS PLATE
002	810CGH. 002.002	M14X50 IMBUS
003	810CGH. 002.003	M6X10 SESTKUR
004	810CGH. 002.004	EXCENTRIC SHAFT FOR BEARING
005	810CGH. 002.005	BEARING NATR 20 PP
006	810CGH. 002.006	SEGMENT
007	810CGH. 002.007	LINEAR SLEDGE
008	810CGH. 002.008	M12X40 INBUS
009	810CGH. 002.009	M14X40 INBUS
010	810CGH. 002.010	GUIDEWAY



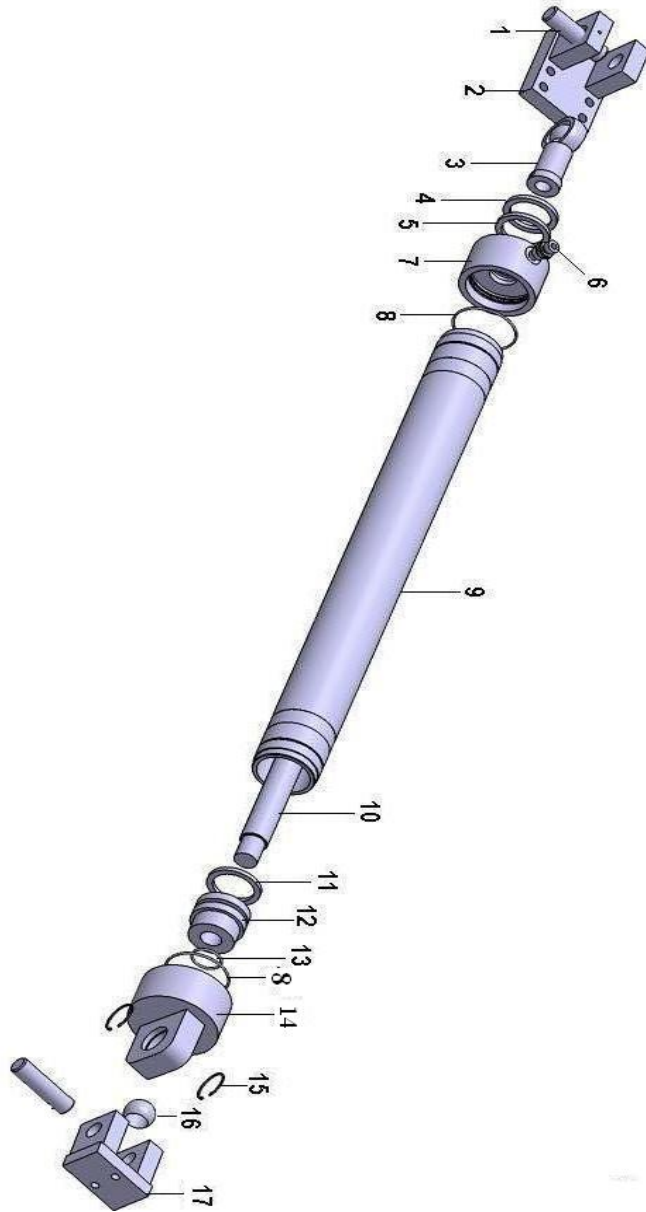
LOCKER ASSEMBLY		
PART NMR	PART CODE	PART NAME
001	810CGH.003.001	DEGREE ADJUST FLAT
002	810CGH.003.002	M12X35 INBUS
003	810CGH.003.003	LOCKING FLAT
004	810CGH.003.004	1/8" REKOR
005	810CGH.003.005	M8X110 INBUS
006	810CGH.003.006	STOPPER
007	810CGH.003.007	WHEEL
008	810CGH.003.008	OIL SEAL 35X45X6
009	810CGH.003.009	BRASS
010	810CGH.003.010	M5X15 INBUS
011	810CGH.003.011	O-RING 47,63X3,53
012	810CGH.003.012	COVER
013	810CGH.003.013	M6X20 INBUS
014	810CGH.003.014	Ø8 1/4" REKOR



HYDRAULIC TENSIOING GROUP (OPTIONAL)

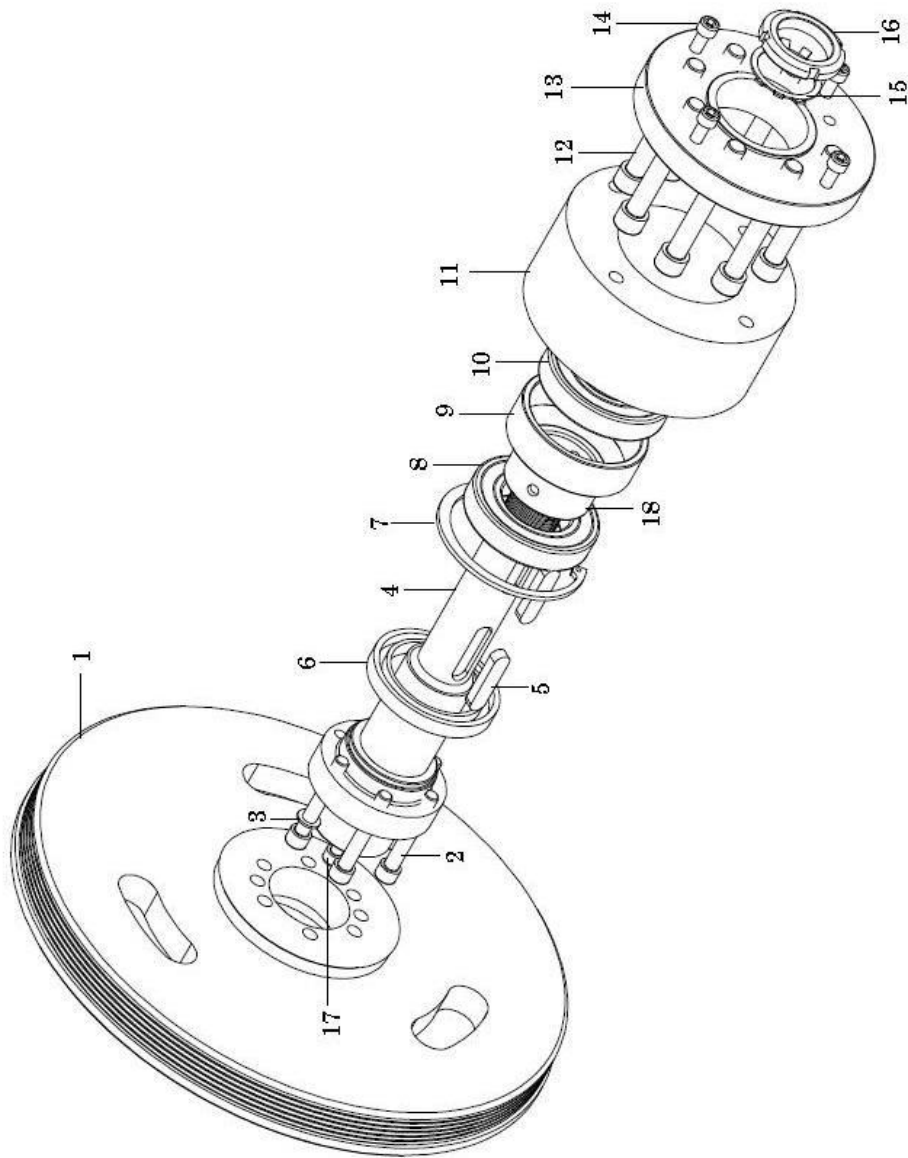
PART NMR	PART CODE	PART NAME
001	810CGH.005.01	PISTON COVER
002	810CGH.005.02	TENSIONING PISTON
003	810CGH.005.03	BRONZE BAND Ø110x8x2,5
004	810CGH.005.04	PISTON SEAL
005	810CGH.005.05	PISTON HEAD
006	810CGH.005.06	O-RING K17-095
007	810CGH.005.07	TEFLON BANT Ø110x8x2,5
008	810CGH.005.08	O-RING 120,32X2,62
009	810CGH.005.09	CONNECTION BLOCK
010	810CGH.005.10	OIL SEAL 30X38X5,8
011	810CGH.005.11	DUST SEAL 30X38X4,8
012	810CGH.005.12	TENSIONING SHAFT
013	810CGH.005.13	M20x2,5 CONNECTION BOLT
014	810CGH.005.14	TENSIONING SLEDGE BLOCK
015	810CGH.005.15	TENSIONING FLAT
016	810CGH.005.16	FIXING FLAT
017	810CGH.005.17	WHEEL FLAT
018	810CGH.005.18	WHEEL SHAFT
019	810CGH.005.19	OIL SEAL Ø85x65x12
020	810CGH.005.20	BEARING 32210
021	810CGH.005.21	METAL RING
022	810CGH.005.22	BEARING 32210
023	810CGH.005.23	WHEEL FLANGE
024	810CGH.005.24	FRONT WHEEL
025	810CGH.005.25	M16x80 INBUS
026	810CGH.005.26	WHEEL COVER
027	810CGH.005.27	M10x1 GREASE UNION

OPTIONAL



UPPER PISTON ASSEMBLY

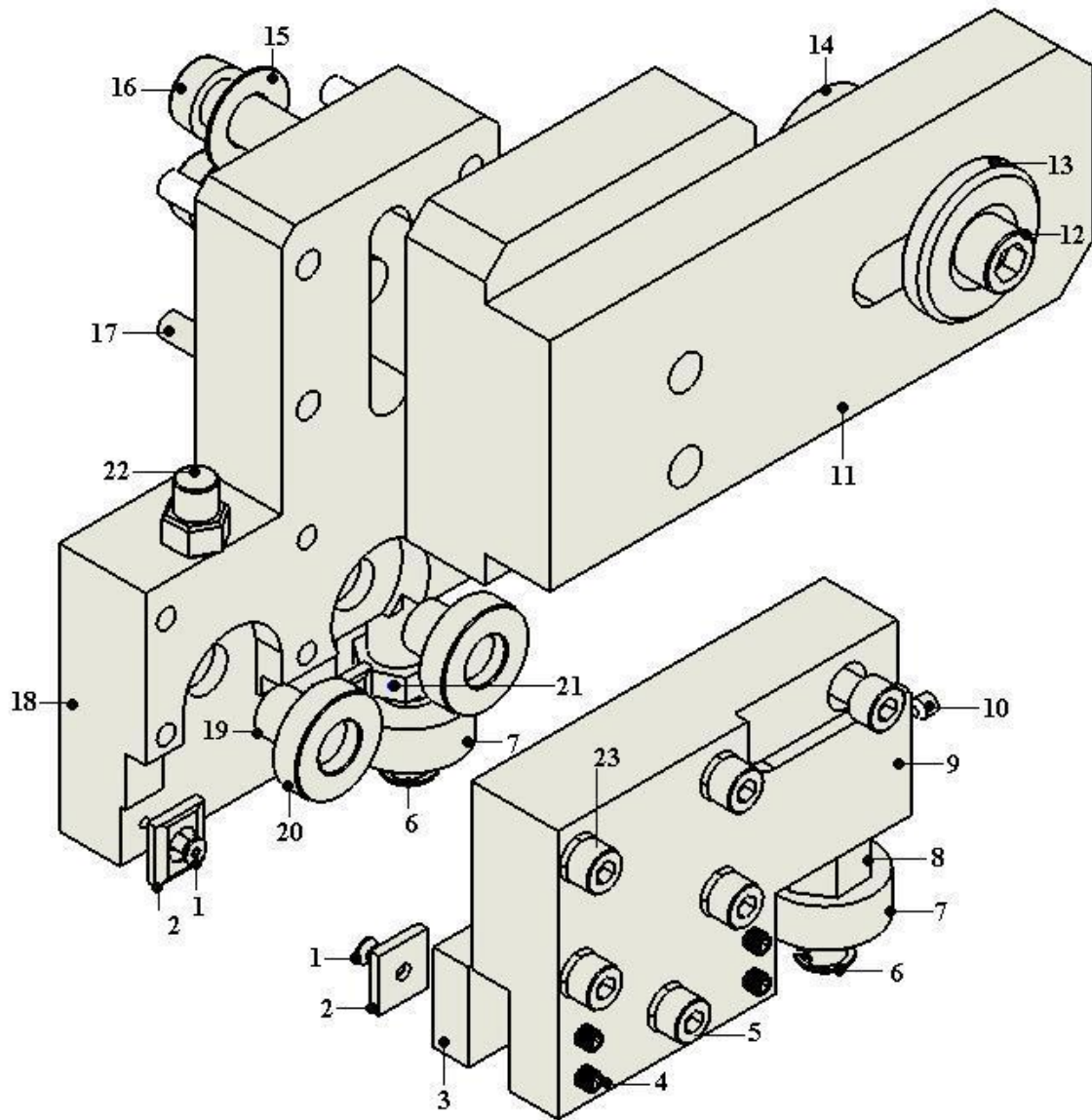
PART NMR	PART CODE	PART NAME
001	810CGH.006.01	Ø25x95 PIN
002	810CGH.006.02	BODY UP CONNECTION BLOCK
003	810CGH.006.03	HELGES
004	810CGH.006.04	DUST SEAL 36x44
005	810CGH.006.05	OIL SEAL 36x46x8
006	810CGH.006.06	ELBOW 3/8"
007	810CGH.006.07	UP COVER
008	810CGH.006.08	O-RING 82,22x2,62
009	810CGH.006.09	PISTON PIPE
010	810CGH.006.10	PISTON SHAFT
011	810CGH.006.11	SEAL 70x54,5x6,3
012	810CGH.006.12	PISTON HEAD
013	810CGH.006.13	O-RING 36,17x2,62
014	810CGH.006.14	LOWER COVER
015	810CGH.006.15	SEGMAN DIN 472/42
016	810CGH.006.16	GE25ES JOINT
017	810CGH.006.17	LOWER CONNECTION BLOCK



REDUCTOR GROUP

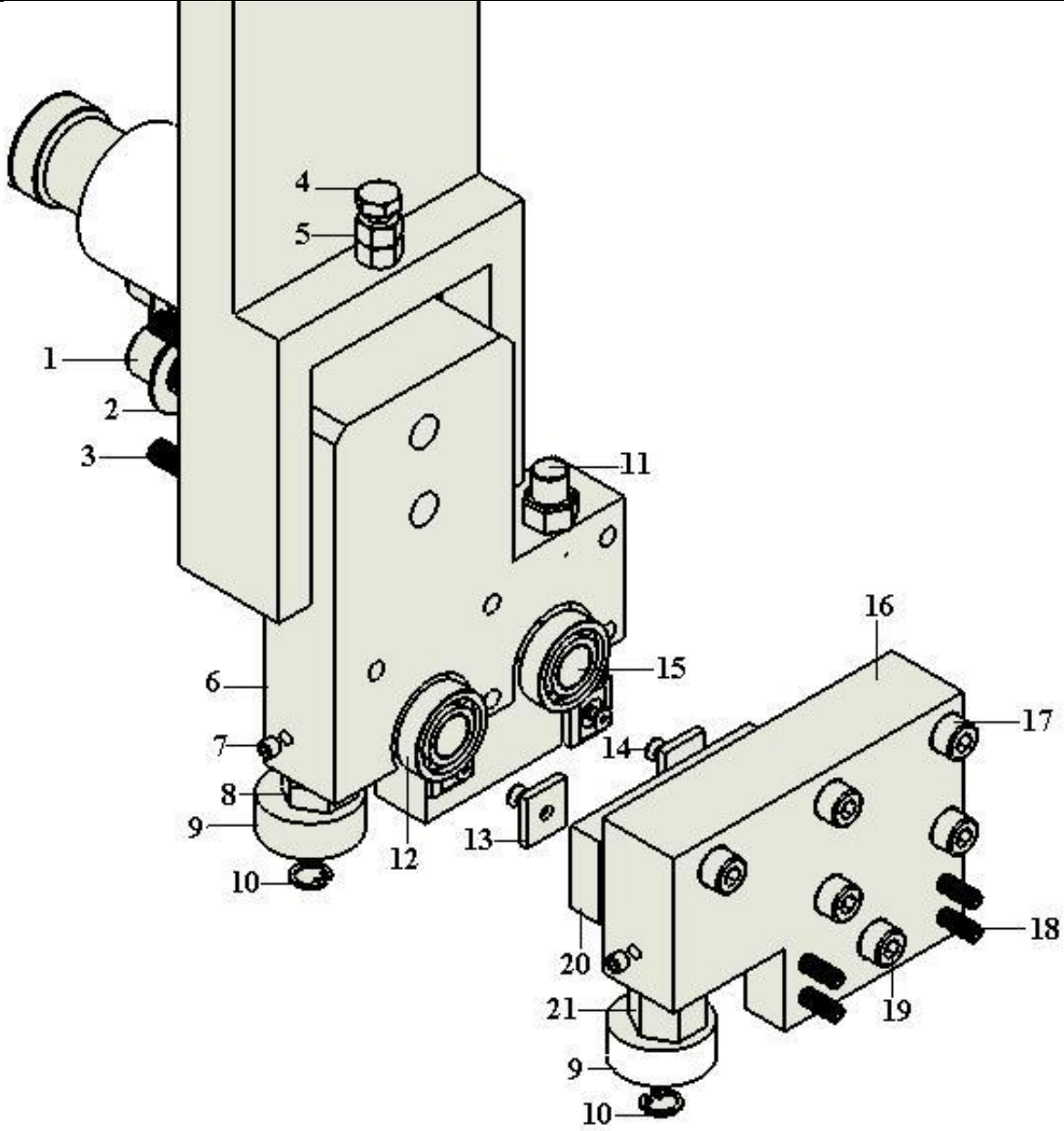
PART NMR	PART CODE	PART NAME
001	810CGH.007.01	DRIVE WHEEL
002	810CGH.007.02	M12X80 INBUS
003	810CGH.007.03	SPRONG WASHER M12
004	810CGH.007.04	REDUCER SHAFT
005	810CGH.007.05	KEY
006	810CGH.007.06	SEAL 90*150*13
007	810CGH.007.07	RING DIN472/150
008	810CGH.007.08	BEARING NJ 314
009	810CGH.007.09	OUTER RING
010	810CGH.007.10	BEARING RS 6314
011	810CGH.007.11	BODY
012	810CGH.007.12	M16X110 INBUS
013	810CGH.007.13	FLANGE
014	810CGH.007.14	M10X30 INBUS
015	810CGH.007.15	MB 10 WASHER
016	810CGH.007.16	KM 10 NUT
017	810CGH.007.17	M10X1 GREASE UNION
018	810CGH.007.18	INNER RING





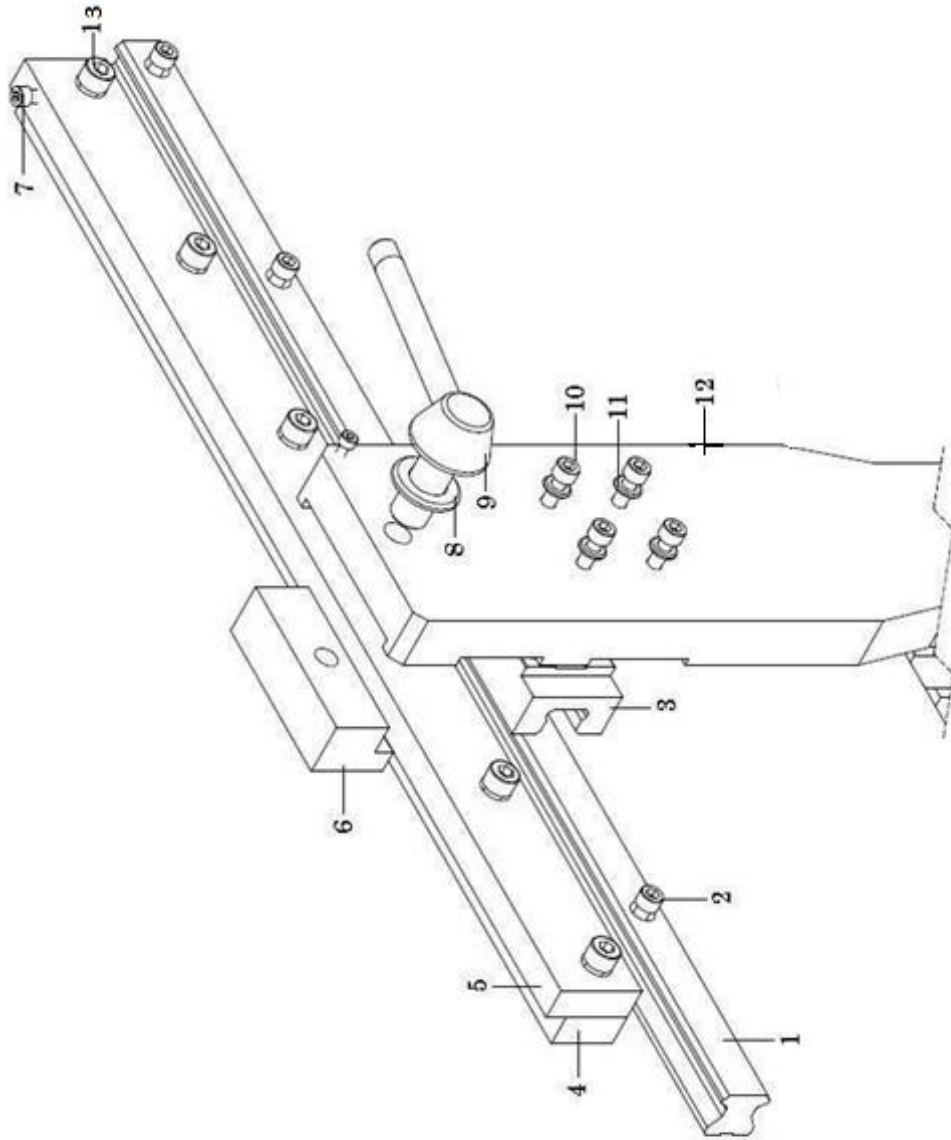
FIXED CARBIDE GUIDE ASSEMBLY

PART NMR	PART CODE	PART NAME
001	810CGH.008.01	M4X8 BOLT
002	810CGH.008.02	CARBIDE BSM-8785
003	810CGH.008.03	CARBIDE PLATE
004	810CGH.008.04	M6X40 SESTKUR
005	810CGH.008.05	M8X35 INBUS
006	810CGH.008.06	SEGMENT
007	810CGH.008.07	62202 BEARING
008	810CGH.008.08	ECCENTRIC SHORT PIN
009	810CGH.008.09	FIXED CARBIDE BLOCK UPPER PLATE
010	810CGH.008.10	M5X6 SESTKUR
011	810CGH.008.11	FIXED CARBIDE BLOCK BASE
012	810CGH.008.12	M14X50 INBUS
013	810CGH.008.13	WASHER
014	810CGH.008.14	FIXING NUT
015	810CGH.008.15	WASHER
016	810CGH.008.16	M14X50 INBUS
017	810CGH.008.17	M10X40 SESTKUR
018	810CGH.008.18	CARBIDE PLATE
019	810CGH.008.19	BEARING INNER SHAFT
020	810CGH.008.20	6202 BEARING
021	810CGH.008.21	ECCENTRIC LONG PIN
022	810CGH.008.22	JOINT
023	810CGH.008.23	M8X35 INBUS



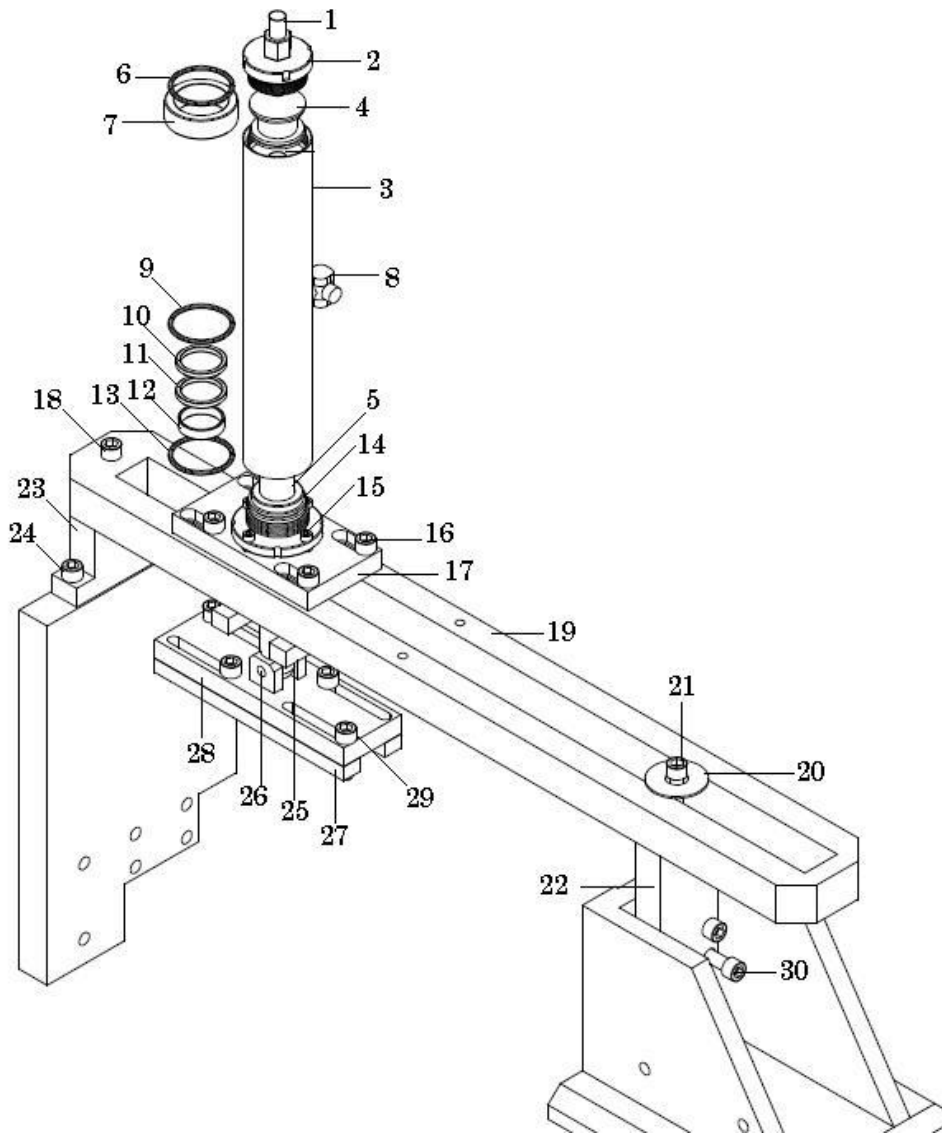
ARM CARBIDE BLOCK ASSEMBLY

PART NMR	PART CODE	PART NAME
001	810CGH.009.01	M14X50 INBUS
002	810CGH.009.02	Ø8 WASHER
003	810CGH.009.03	M8X20 SESTKUR
004	810CGH.009.04	M8X35 BOLT
005	810CGH.009.05	M8 NUT
006	810CGH.009.06	MOVING CARBIDE BLOCK LOWER
007	810CGH.009.07	M6X6 SESTKUR
008	810CGH.009.08	ECCENTRIC LONG PIN
009	810CGH.009.09	62202 BEARING
010	810CGH.009.10	RING 471/12
011	810CGH.009.11	JOINT
012	810CGH.009.12	6202 BEARING
013	810CGH.009.13	CARBIDE BSM-8785
014	810CGH.009.14	M4X8 BOLT
015	810CGH.009.15	BEARING INNER SHAFT
016	810CGH.009.16	MOVING CARBIDE BLOCK UPPER
017	810CGH.009.17	M8X25 INBUS
018	810CGH.009.18	M6X40 SESTKUR
019	810CGH.009.19	M8X15 INBUS
020	810CGH.009.20	CARBIDE PLATE
021	810CGH.009.21	ECCENTRIC SHORT PIN



ARM ASSEMBLY

PART NMR	PART CODE	PART NAME
001	BMSY 810CGH.10.01	LINEAR SLEDGE
002	BMSY 810CGH.10.02	M6X25 INBUS
003	BMSY 810CGH.10.03	LINEER SLEDGE
004	BMSY 810CGH.10.04	LOWER FLAT
005	BMSY 810CGH.10.05	UPPER FLAT
006	BMSY 810CGH.10.06	FXING BLOCK
007	BMSY 810CGH.10.07	M5X10 FIXING BOLT
008	BMSY 810CGH.10.08	WASHER
009	BMSY 810CGH.10.09	HANDLE
010	BMSY 810CGH.10.10	M6X25 INBUS
011	BMSY 810CGH.10.11	WASHER
012	BMSY 810CGH.10.12	MOVING ARM
013	BMSY 810CGH.10.13	M8X35 INBUS



HYDRAULIC TOP CLAMP ASSEMBLY (OPTIONAL)

PART NMR	PART CODE	PART NAME
001	810CGH.011.01	REKOR 1/4"
002	810CGH.011.02	PISTON COVER (BACK)
003	810CGH.011.03	PISTON PIPE
004	810CGH.011.04	PISTON HEAD
005	810CGH.011.05	PISTON SHAFT
006	810CGH.011.06	ORING 49X3
007	810CGH.011.07	KOMPACT SET 50X34X20,5
008	810CGH.011.08	REKOR 1/8 "
009	810CGH.011.09	ORING 49X3
010	810CGH.011.10	DUST SEAL 30X38
011	810CGH.011.11	OIL SEAL 30X40X8
012	810CGH.011.12	BAND 2X10
013	810CGH.011.13	ORING 42,86X3,53
014	810CGH.011.14	LOWER COVER
015	810CGH.011.15	M6X25 INBUS
016	810CGH.011.16	M10X25 INBUS
017	810CGH.011.17	LOWER FIXING PLATE
018	810CGH.011.18	M16X60 INBUS
019	810CGH.011.19	TOP CLAMP PLATE
020	810CGH.011.20	WASHER
021	810CGH.011.21	M16X30 INBUS
022	810CGH.011.22	CONNECTION BLOCK
023	810CGH.011.23	FIXED VICE CONNECTION BLOCK
024	810CGH.011.24	M10X30 INBUS
025	810CGH.011.25	MOUNTING PLATE
026	810CGH.011.26	PIN Ø10
027	810CGH.011.27	VICE PLATE (LOWER)
028	810CGH.011.28	VICE PLATE
029	810CGH.011.29	M10X30 INBUS
030	810CGH.011.30	M8X30 INBUS

OPTIONAL