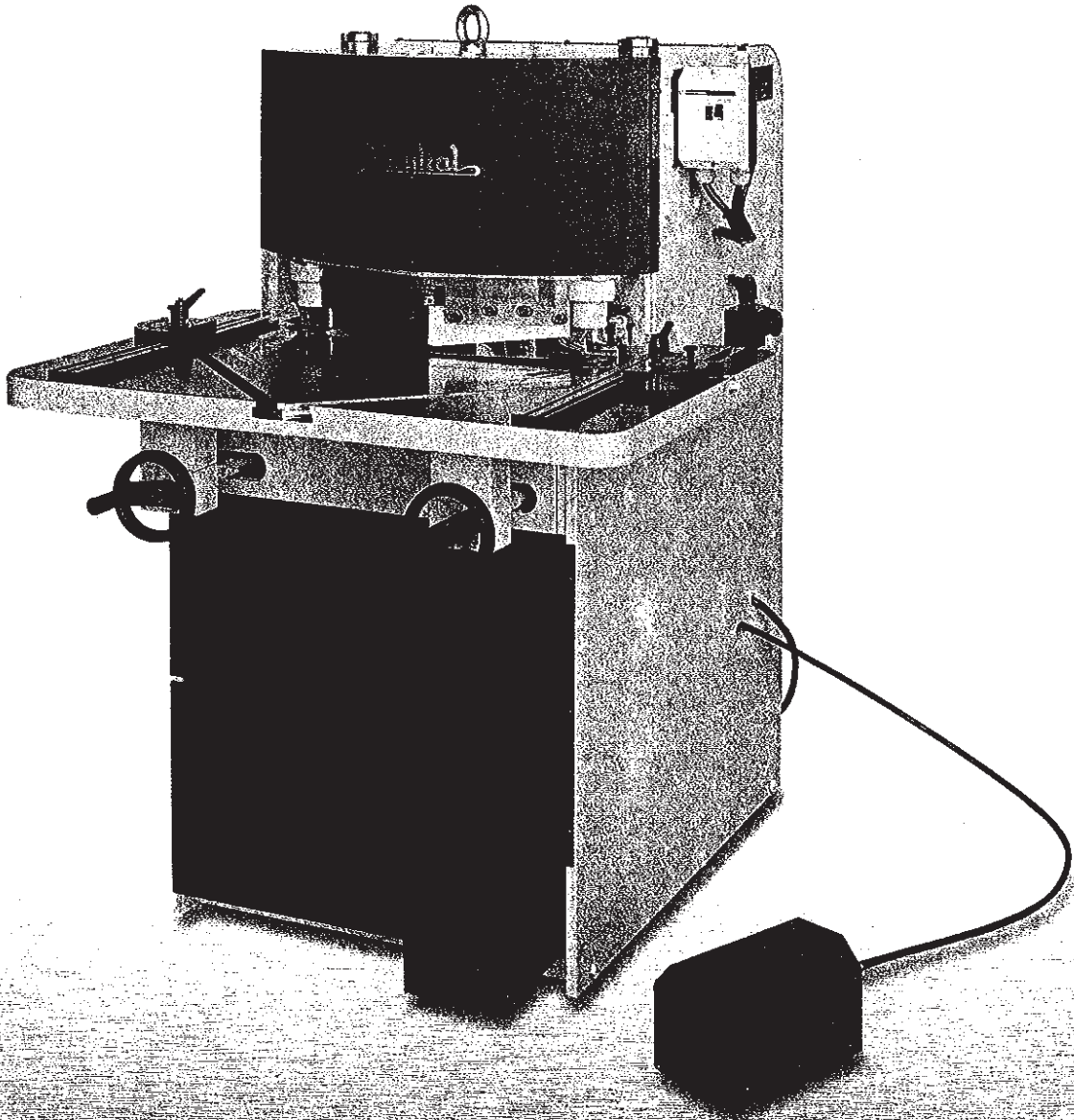


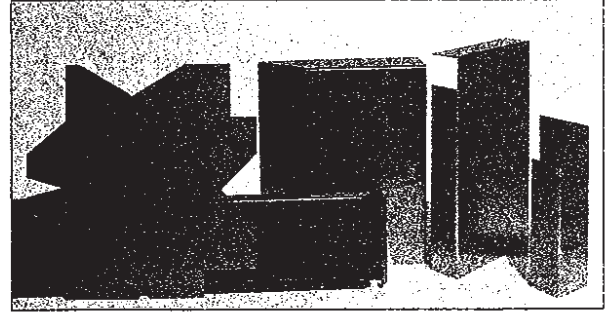
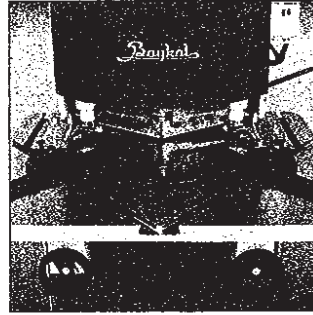
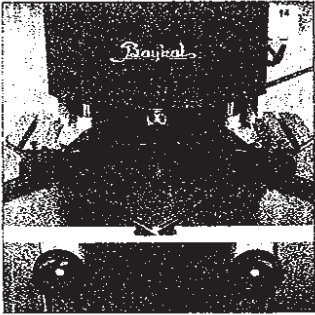
Baykal

HKA

Hidrolik Köşe Kesme Makineleri
Hydraulic Notching Machines



- Statik ve dinamik rijitliği sağlanmış ayak, tabia ve üst çene
- Çift direksiyon vasıtası ile, kolay köşe kesme açısı ayarı
- Farklı sac kalınlıkları için ayrı ayar gerektirmeyen otomatik sentil ayar sistemi
- Ön dayama kolları, cetvel, ve açılı gönye ekipmanları
- Düzgün ve çapaksız bir kesim için; yağlama gerektirmeyen, hassas kılavuzlama milleri
- Ekstra genişlikte, T-kanallı çalışma tablası
- CEI ve EMPI normlarına uygun, termikmanyetik start/stop şalteri ve ayak pedalları ile güvenli, uzun ömürlü, ve kolay operasyon imkanı
- Bakım gerektirmeyen hidrolik donanım
- Atık toplama çekmecesini
- Rigidly constructed lower frame, work table, and cutting beam
- Easy setting of notching angle by two hand wheels
- Automatic blade gap adjustment for all sheet thicknesses
- Squaring guides, scales, and angle gauge
- Self-lubricating, precision guides for a burr-free cutting quality
- Extended work table with t-slots
- Safe, durable, and easy operation with footswitches and a thermic-magnetic on/off switchbox which conforms to CEI and EMPI norms
- Scrap-collection drawer
- Maintenance-free hydraulics



HKA 200 x 4

Açı ayarlı köşe kesme makinesi
Variable angle notcher

Kesme Boyu	200	mm
Kesme Kapasitesi	4	mm (42 kg/mm ²)
Kesme Kapasitesi	2	mm (70 kg/mm ²)
Kesme Açısı	5°	derece - degrees
Köşe Açısı	30° - 140°	derece - degrees
Strok Sayısı:	50	adet/dk. - cuts/min
Motor Gücü	4	kW
Tabla Boyu	920 x 730	mm
Boy	920	mm
Genişlik	1115	mm
Yükseklik	1250	mm
Takribi Ağırlık	930	kg

HKA 200 x 6

Açı ayarlı köşe kesme makinesi
Variable angle notcher

Kesme Boyu	200	mm
Kesme Kapasitesi	6	mm (42 kg/mm ²)
Kesme Kapasitesi	3	mm (70 kg/mm ²)
Kesme Açısı	5°	derece - degrees
Köşe Açısı	30° - 140°	derece - degrees
Strok Sayısı:	50	adet/dk. - cuts/min
Motor Gücü	4	kW
Tabla Boyu	920 x 730	mm
Boy	920	mm
Genişlik	1115	mm
Yükseklik	1300	mm
Takribi Ağırlık	1200	kg

Dizayn ve teknik özellikler önceden haber vermeden değiştirilebilir.

Design and specifications are subject to change without notice.

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Mayıs 2004

SATICI/DEALER

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- 2- SAFETY REGULATIONS
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1. IMPORTANT INFORMATIONS!

1. BEFORE STARTING THE MACHINE THE RUBBER SUPPORTING FEETS MUST BE SCREWED IN UNDER THE FOUR MACHINE BED CORNERS AND THE MACHINE WORKING BENCH LEVEL SHOULD BE CHECKED WITH WATER LEVEL.
2. NEVER USE THE MACHINE WITHOUT CHECKING THAT THE MOTOR TURNS IN CLOCKWISE DIRECTION.

2. SAFETY REGULATIONS

2 (A). Danger and warning plates

Respect the warnings written on the plates. The inobservance can cause the death or offence to the personal safety. Make sure of the presence and the comprehension of the plates; otherwise put or substitute them.

2.A.1.) Danger plate: pay attention to the current.

2 (B). Safety devices.

Before using the machine, check the correct position and functioning of the safety devices. The transport could have damaged them. Never tamper with the safety devices, check them carefully before every work shift. If they are not perfectly efficient, contact immediately the staff responsible for the maintenance.

2. B. 1.) Plexiglas protections for the area of work.

They protect your hands from any possible accidents caused by the downstroke of the mobile knives.

2 (C). Safety regulations.

This manual must be read very carefully before starting up, use and maintenance or any other intervention on the machine.

Do not permit the non-authorized staff to operate on the machine.

Do not wear rings, watches, ties, jewels, torn clothes, scarfs, unbuttoned jakets or aprons.

We recommend you to wear clothes specially designed and approved for accident prevention purposes such as anti-slip shoes, special anti-noise caps and safety glasses.

Consult your employer as to the regulations in force and the accident prevention devices.

Do not use the machine if out of order.

Before using the machine, make sure that every dangerous condition is eliminated.

Check that all covers or protections are in place and that all safety devices are available and efficient.

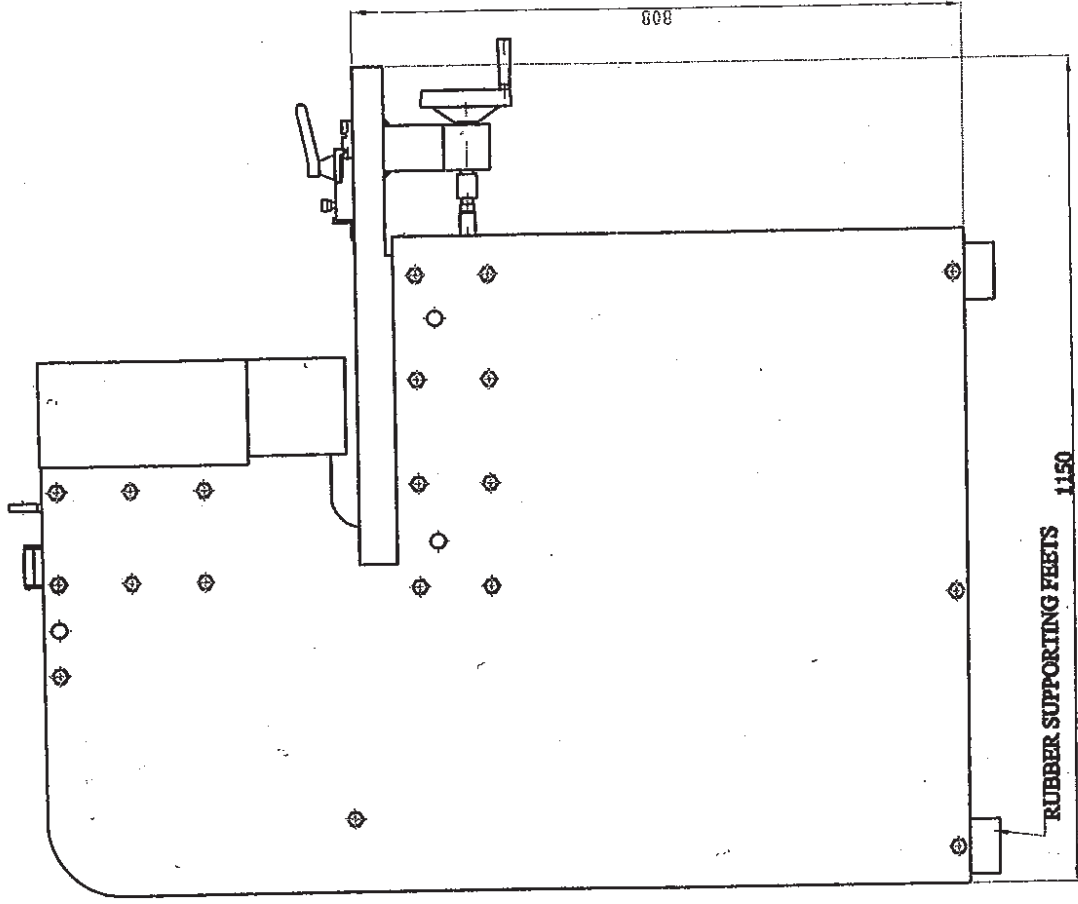
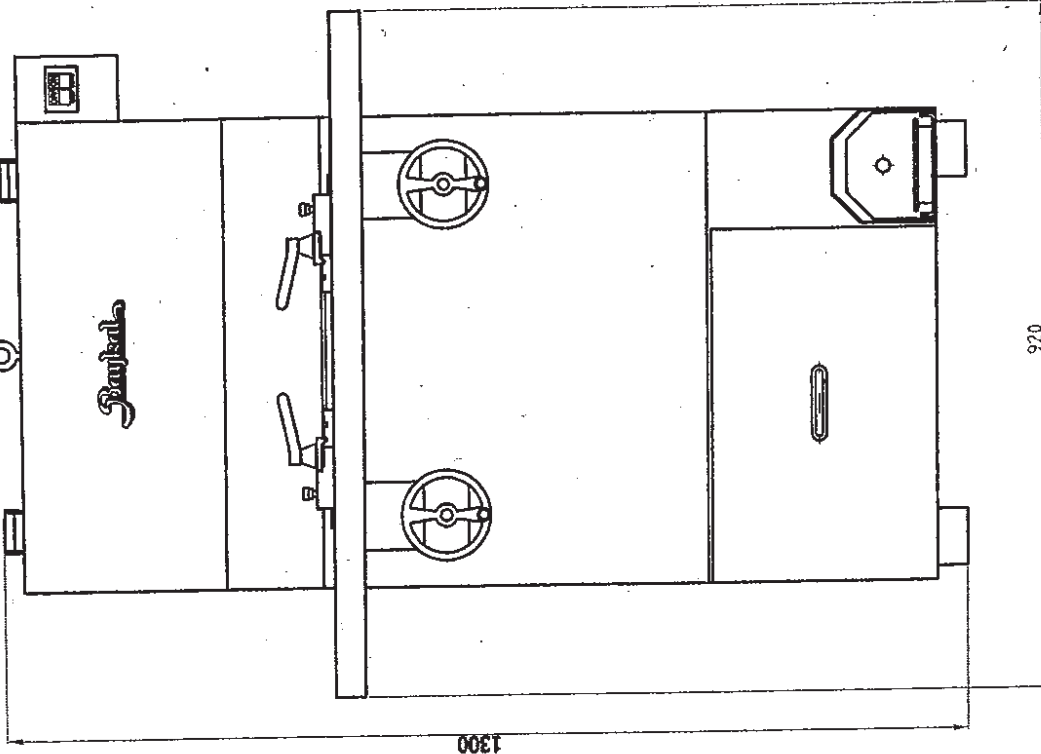
The area of the operator must be free from extraneous objects.

The working area of the machine must be properly lit up.

Use the machine within the limits of the established values for any technical services. Use this machine only to do what it is designed for.

Avoid to fold and to stretch the cable. Use appropriate extensions. The section of the extension cable will be bigger than the power supply cable of the machine in order to avoid dangerous overheatings.

LIFTING HOOK



RUBBER SUPPORTING FEET 1150

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VARIABLE ANGLE HYDRAULIC NOTCHING MACHINE

4. TECHNICAL DATA

	<u>UNITS</u>	<u>HKA- 204</u>
1- Shearing lenght	mm	200
2- Max. Shearing thickness (42kg/mm ²)	mm	4
3- Max. Shearing thickness (70kg/mm ²)	mm	2
4- Shearing angle	Degree	5
5- Machine bench	mm	920x730
6- Machine weight	kg	930
7- Strokes per minute	Strok/min.	50
8- Installed power	Kw	4
9 Notching angle (3mm)	Degree	30-140
Notching angle (4mm)	Degree	60-140
10- Central hydraulic unit capacity	lt	40

5. HKA 200 x 4 HYDRAULIC NOTHING MACHINE

(A) GENERAL MACHINE INFORMATION

- 1.) Steel plate frame.
- 2.) The working bench has two T-shaped splines with millimetre scaled bars to position the bevel protractors.
- 3.) The shearing angle is manually adjusted by means of the two handwheels on the machine front side, under the working bench.
- 4.) The two cylinder- shaped guides on the machine are of ground tempered steel and slide on graphite coated metal bushes. They result so wear- free and self- lubricating and, therefore, maintenance free.
- 5.) Interlocked automatik magnetothermik swich according to CEI and EMPI norms, it is the only electric component to use to operate the machine. As no additional components are present on the machine, this results even easier and safer to use also after long time.
- 6.) Shearing control pedal acts directly on a valve which reverses the header movement, so that the oil entry and exit in the double- action cylinder are exchanged and ascending and descending travel of the blades is obtained.
- 7.) The blade unlock pedal operates on a valve which releases the 5 small locking cylinders simultaneously and makes therefore possible to adjust the shearing angle of the blade through the handwheels described at position (3).

(B) UNPACKING AND INSTALLATION

Check that the floor to place the machine on can bear the machine weight. To transport the machine, two wood beams are fixed under it; they will be removed when the machine is placed definitely on its working position. In the place of the wood beams, the rubber supporting feet must be screwed in under the four machine bed corners. Check the working bench level with a water level. A minimum 800mm free space must be left around the machine perimeter.

To obtain a good performance of all the machine parts, the machine should work in an environment with a temperature ranging from 10 °C to 40 °C and with a humidity degree under %90.

ATTENTION

BEFORE CONNECTING THE ELECTRIC, CHECK WHETHER TENSION IS

PRESENT AND ALL UPSTREAM THE MAIN SWITCHES ARE LOCKED IN ITS (OFF- STOP) POSITION.

Check that the voltage and the line frequency match the values given on the machine label. Check the motor rotation speed way (look at the arrow) or push the shear control pedal; if the cylinder does not come ahead, one phase of the electric connection must be reversed. **The motor must rotate in clockwise direction.**

Check that the oil reservoir of the central control unit is filled up to the given level. If necessary, top it up in following the operation sequence described later and use oils with the features given below:

Oil viscosity 2.9 at 50 °C and freezing point at -30 °C.

BP	ENERGOL HLP 65
CASTROL	HYSPIIN 70
SHELL	TELLUS 27
AGIP	OSO 32
TOTAL	PRESLIA
GULF	ARMONY 43AW

The oil brand names given above match the features required.

Filling up the reservoir:

- 1) Remove the rear panel to the hydraulic central unit.
- 2) Unscrew the plug on the reservoir.
- 3) Fill hydraulic oil into.
- 4) Check the oil level through the glass in the reservoir front part (the level must reach about half the glass).
- 5) Tighten the plug again .

(C) CONTROL PANEL

No control panel is mounted on the machine, as it is switched on only by the main switch on the machine front right side.

(D) STARTING

ATTENTION

BEFORE STARTING THE MACHINE. MAKE SURE ALL HAZARDS FOR YOUR SAFETY HAS BEEN REMOVED.

NEVER START THE MACHINE IF ANY FAULT HAS BEEN NOTED ON IT: CONTACT THE MANUFACTURER IMMEDIATELY TO SOLVE THE PROBLEM.

THIS OPERATION MUST BE CARRIED OUT BY TRAINED AND SKILLED PERSONEL WHO KNOW THE OPERATION METHOD AND THE SAFETY PRECAUTIONS RELEVANT TO THE MACHINE.

The machine is started through a main switch, which is on the right side of the machine. Press the START- ON button the machine will set ready to shear.

(E) STOPPING THE MACHINE

The machine can be stopped only by means of the main switch located on the up right side of the machine. Press the OFF- STOP button and the machine will be cut off.

6. OPERATING

ATTENTION

THIS MACHINE HAS NOT BEEN DEVELOPED TO WORK SAFELY IN PRESENCE OF EXPLOSION HAZARDS.

ANY USE OF THE MACHINE DIFFERENT FROM THE ONE DESCRIBED IN THE PRESENT MANUAL IS ABSOLUTELY FORBIDDEN, AS NO PROTECTIONS ARE GIVEN AGAINST THE HAZARDS WHICH MAY ARISE.

The Hydraulic Notching Machine Tool (HKA 200x4) can shear plates with a variable angle ranging from 30° to 140° and is operated by a completely hydraulic system. Shearing is performed by the shearing header traveling from the upper to the lower position. A great advantage on this machine is that the two guides are placed around the shearing position baricentre. The blades peaks start shearing the plate, so that the plate can not shift away. The reversed process occurs when working on greasy plates or with slightly worn blades. The shearing is started by the movable control pedal on the floor. Keeping the pedal pressed, the shearing header is driven from the upper to the lower position. Releasing the pedal will make the shearing header travel again upwards.

A) Notching angle

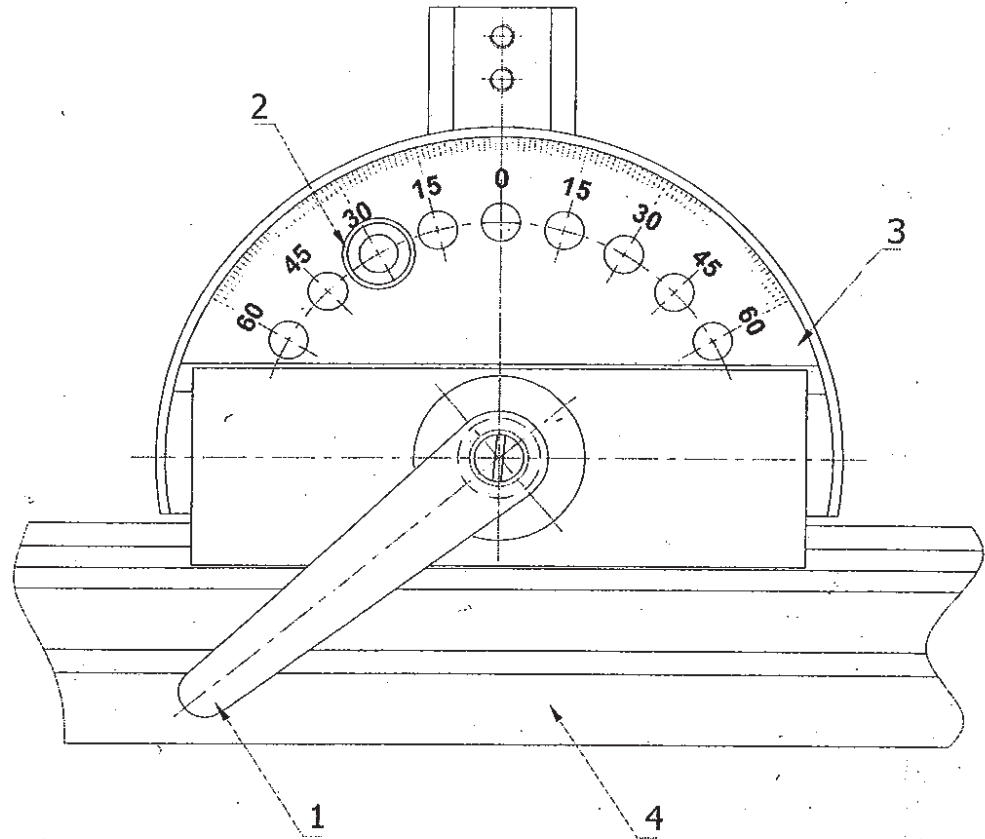
To adjust the shearing angle, press the movable control pedal to let the blades go down to the lower stop point. Then press the fixed pedal to unlock the five blade holder cylinders.

By means of the two handwheels under the working bench the chosen angle can be adjusted. The shearing angle degree is shown by the indicators on the working bench. After setting the new shearing angle, lock the blade holders again by releasing the fixed pedal.

B) Setting the bevel protractors

The simple bevel protractor serve as a counter references for the shearing to be carried out. To set the incidence angle to the blades, set the rotation free through handle (1), then remove the pin (2) and set the new angle value you need.

If the new angle value is one of 15°, 30°, 45° or 60°, the pin (2) must be inserted again and the handle (1) must lock the setting again. If different angle value is set, insert the pin in



any of the holes and lock through handle (1).

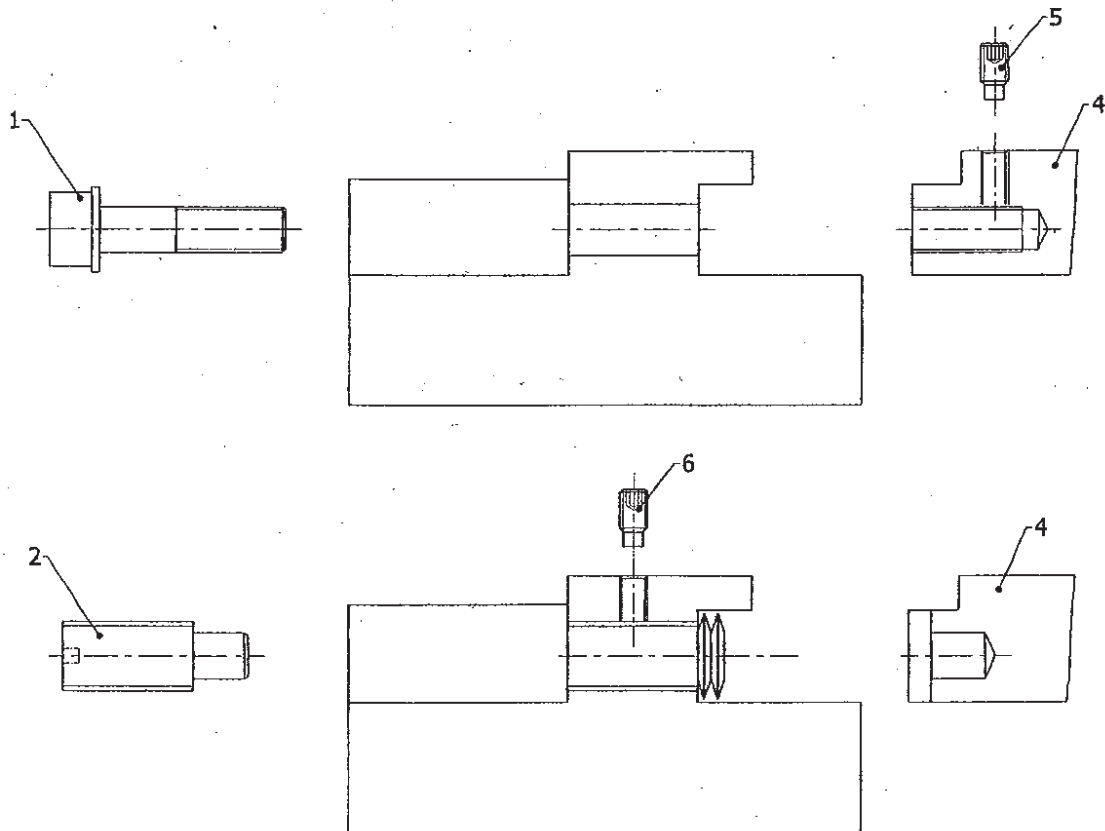
C) Replacing the upper blades

- 1) Switch the machine on and set the max. shearing angle (140°) then let the blades travel to the upper end point.
- 2) Switch the machine off.
- 3) Remove the hand protection.
- 4) Remove one blade; support it with one hand while unscrewing the last two holding screws.
- 5) Clean the blade seat and the new blade well.
- 6) Install the new blade
- 7) Repeat the operation 4,5, and 6 for the other blade.

- 11) Tighten the setscrews 6.
- 12) Insert the screws 1 until the bottom end and, keeping them pressed, insert the cup springs 7 into the same screws 1, 4 cup springs are needed and must be installed one opposite to the other.
- 13) Make sure the new blades are well clean.
- 14) Grease the lower and upper edges of the new blades slightly.
- 15) Insert the blade into its seat until it touches the two screws 1.
- 16) Screw the two screws 1 into the blade so that it is pulled into its seat to the bottom end.
- 17) Loosen the setscrews 6.
- 18) Screw in alternance the two setscrews 2 until the blade is shifted about 5 mm away from the beat point.
- 19) Loosen the setscrews 5.
- 20) Tighten the two screws 1 until the cup springs are completely pressed.
- 21) Unscrew the two screws 1 by 200° , i.e. slightly more than $\frac{1}{2}$ turn (equal to 0.7mm)
- 22) Tighten the setscrews 6.
- 23) Loosen the setscrew 5.
- 24) Shift the blade backward until the beat end using the setscrews 1.
- 25) Repeat the operation sequence from 11 to 24 for the other blade.
- 26) Close the rear carter and push the START button.
- 27) The blade clearance adjustment is shown on the next part.

D) Setting the blade distance

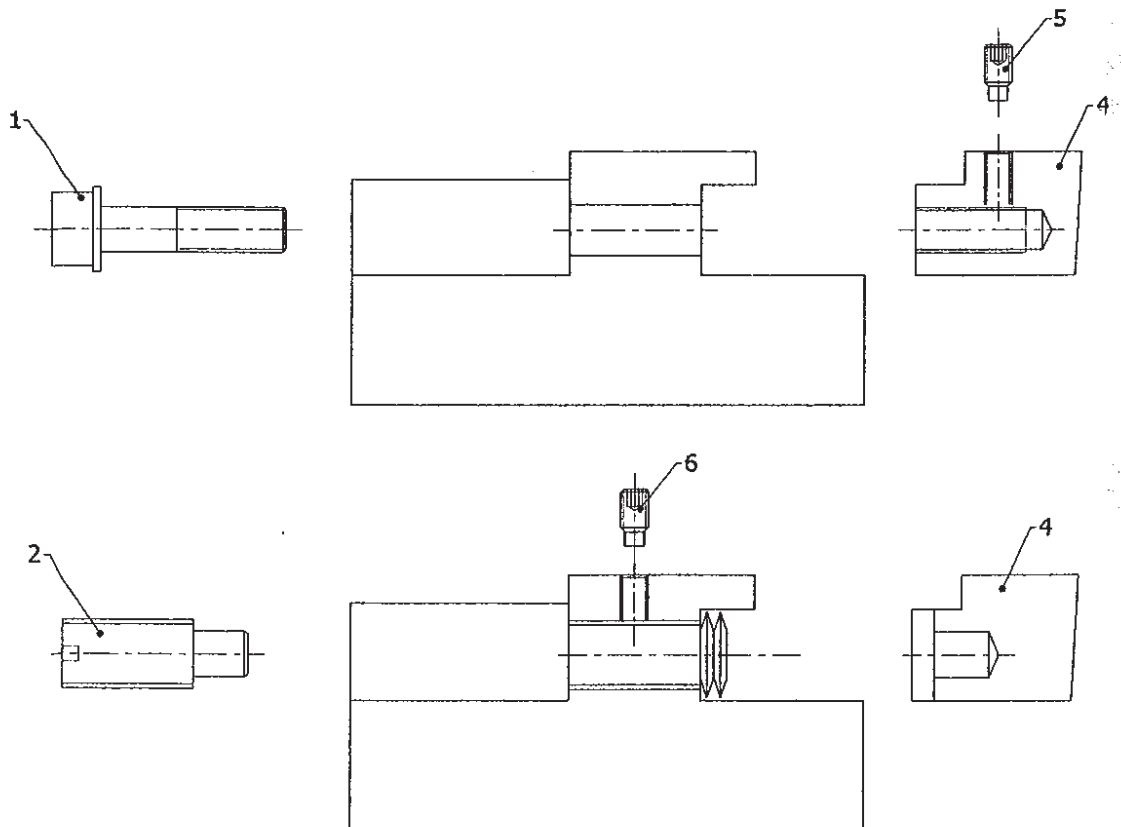
(THE BLADE DISTANCE MUST BE SET ONLY WHEN REPLACING OR SHARPENING THE LOWER BLADES)



- 11) Tighten the setscrews 6.
- 12) Insert the screws 1 until the bottom end and, keeping them pressed, insert the cup springs 7 into the same screws. For each screw 1, 4 cup springs are needed and must be installed one opposite to the other.
- 13) Make sure the new blades are well clean.
- 14) Grease the lower and upper edges of the new blades slightly.
- 15) Insert the blade into its seat until it touches the two screws 1.
- 16) Screw the two screws 1 into the blade so that it is pushed into its seat to the bottom end.
- 17) Loosen the setscrews 6.
- 18) Screw in alternance the two setscrews 2 until the blade is shifted about 5 mm away from the beat point.
- 19) Loosen the setscrews 5.
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- 24) Shift the blade backward until the beat end using the setscrews 1.
- 25) Repeat the operation sequence from 11 to 24 for the other blade.
- 26) Close the rear carter and push the START button.
- 27) The blade clearance adjustment is shown on the next part.

D) Setting the blade distance

(THE BLADE DISTANCE MUST BE SET ONLY WHEN REPLACING OR SHARPENING THE LOWER BLADES)



BAYKAL

- 1) Switch the machine ON.
- 2) Let the upper blades travel to their lower end switch but do not let them touch the lower blades.
- 3) Set the shearing angle at 140°.
- 4) Push the OFF button.
- 5) Open the rear carter.
- 6) Remove the hand protection.
- 7) Loosen the two setscrews 2.
- 8) Operate the setscrew 2, using hexagonal wrench, until a distance of 0.05-0.1 mm is set between the blades. With the thickness gauge check the distance is the same along the whole blade. Work on the machine rear side.
- 9) Tighten the setscrew 6.
- 10) Repeat the operation 7,8 and 9 for the other blade.
- 11) Close the rear carter and push the START button.
- 12) The machine is now ready to work.

IT IS POSSIBLE TO CUT PARTS WITH THICKNESS RANGING FROM 1 TO 4 mm WITHOUT ADJUSTMENT OF THE BLADE CLEARANCE.

7. MAINTENANCE

ATTENTION

Never carry out any cleaning, lubrication or maintenance operation on the machine in motion

a) Generally

- 1- Lubricate blade edges by thin oil prior to cutting.
- 2- Do not shear granular, hydrous or over-capacity sheet pieces. Also do not attempt to shear more than one workpiece one over another.
- 3- For precise squaring of the cut, the workpiece should be properly shored up with the rulers fitted on the table.
- 4- Elektricity and earthign connections should be checked monthly.
- 5- In continuous shearing frequently check the motor temperature.
- 6- Make sure that the machine adjustments are done by skilled Personnel. Not the machine operator.

Before beginning the maintenance operations or replacing the blades it is necessary to swich of the machine. When using the compressed air to clean the machine protect your eyes with safety glasses and never use a pressure more than 2 bars.

a. 1) Before every work shift or daily.

Clean the working table from scraps if necessary by means of compressed air. With a clean table the sheet can be better placed and the quality of cut will improve.

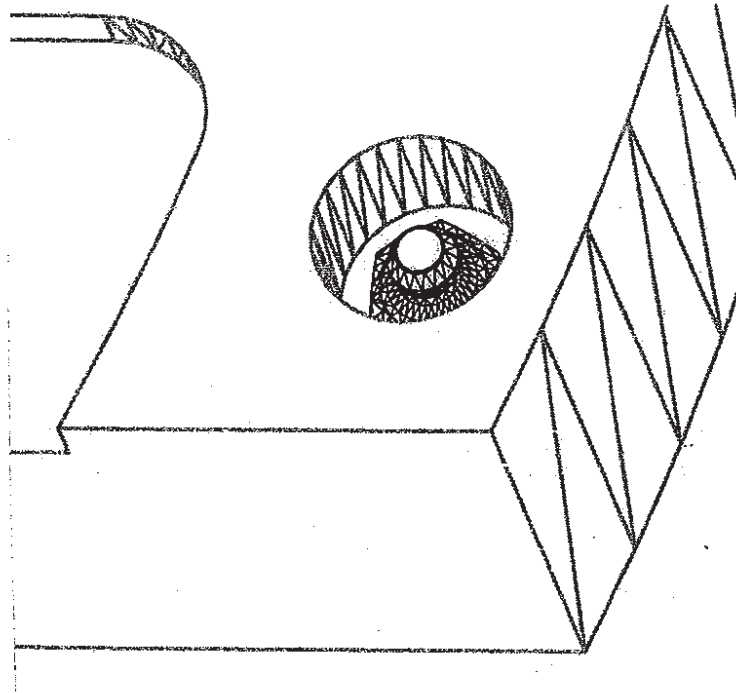
a. 2) Hydraulic unit refilling operation.

Hydraulic oil should be replaced after every 2000 working hours in the way explained before with the oil types written.

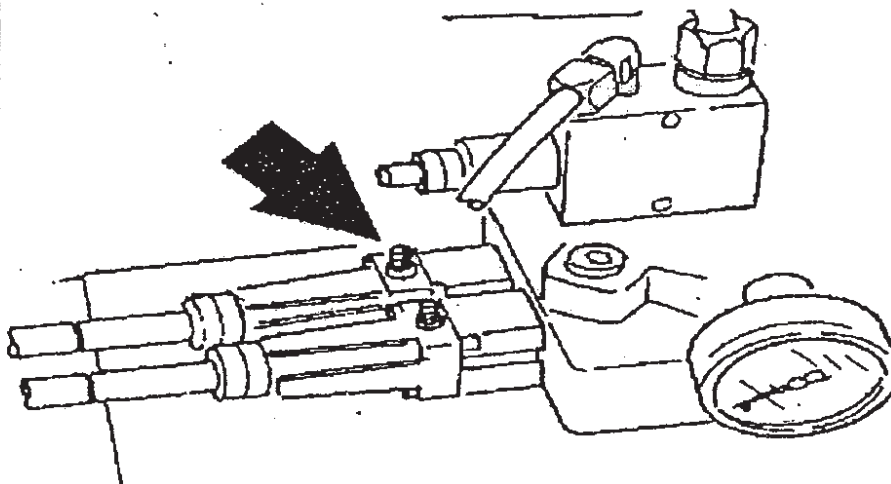
NOTE: the discharged oil can not be dispersed in the environment but most be consigned to the agencies in duty to collect used oils.

a. 3) Greasing and lubrication.

a.3.1) After every 4 months, grease the rotation support of the lower and upper blade holders.

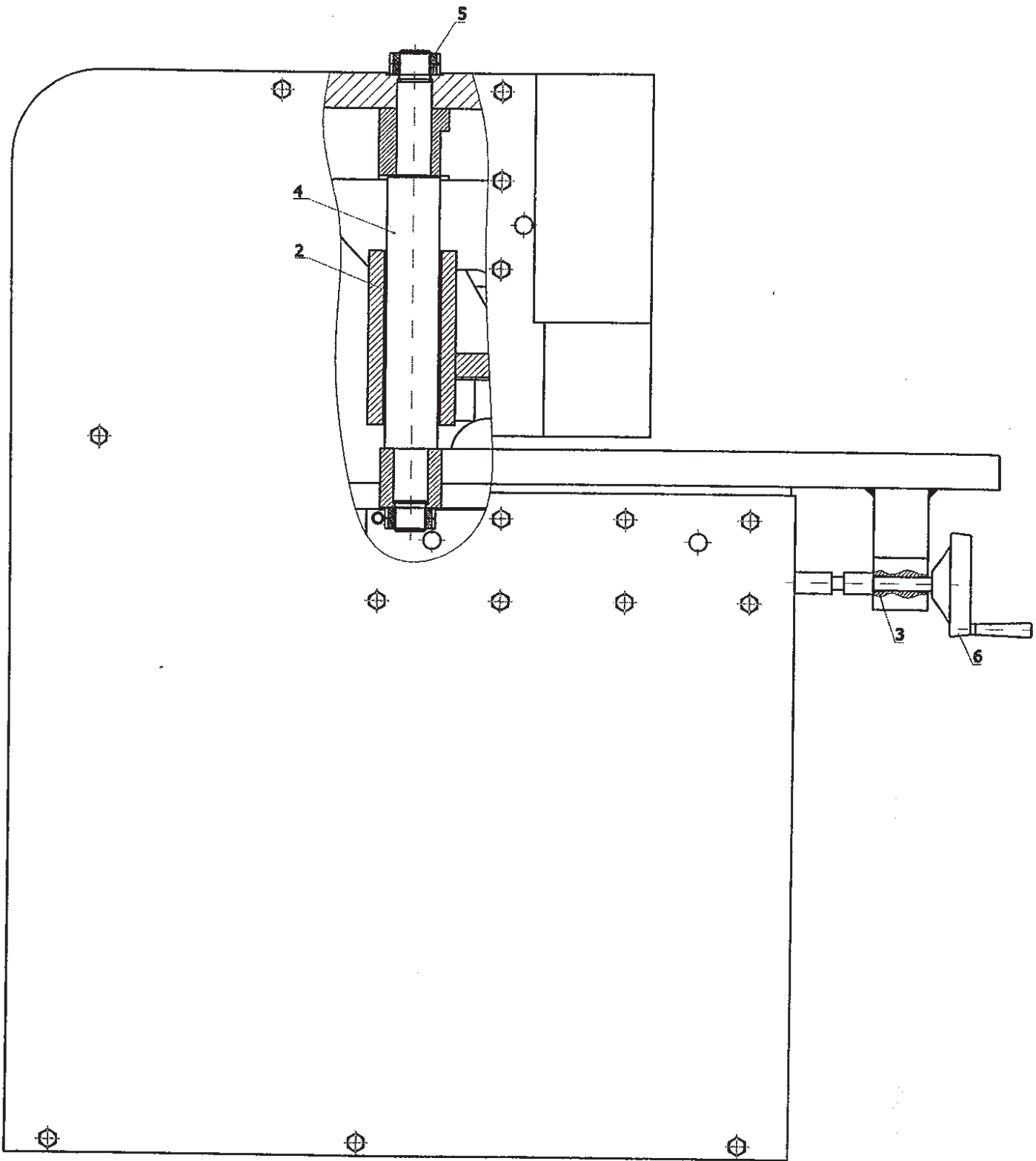


a.3.2) Grease pedal control cable guides every 4 months.



8.SPARE PARTS LIST

No	PART NAME	PART No.	QUAN.	REMARKS
1	Lower Blade Holder Bushing	-	1	20.1x24x30
2	BUSHING	-	4	PAP 6060P10
3	BUSHING	-	4	PAP 1612P10
4	GUIDE	HK204110	2	-
5	LOCK NUTS	HK204103	10	M36x1.5
6	HANDWHEEL	-	2	-
7	UPPER BLADE (LEFT, RIGHT)	HK204010/11	1+1	
8	LOVER BLADE	HK204020	2	
9	HYDRAULIC CYLINDER	HK204050	1	
10	LOCKING CYLINDER	HK204230	2	
11	LOCKING CYLINDER	HK204330	2	
12	LOCKING CYLINDER	HK204340	1	



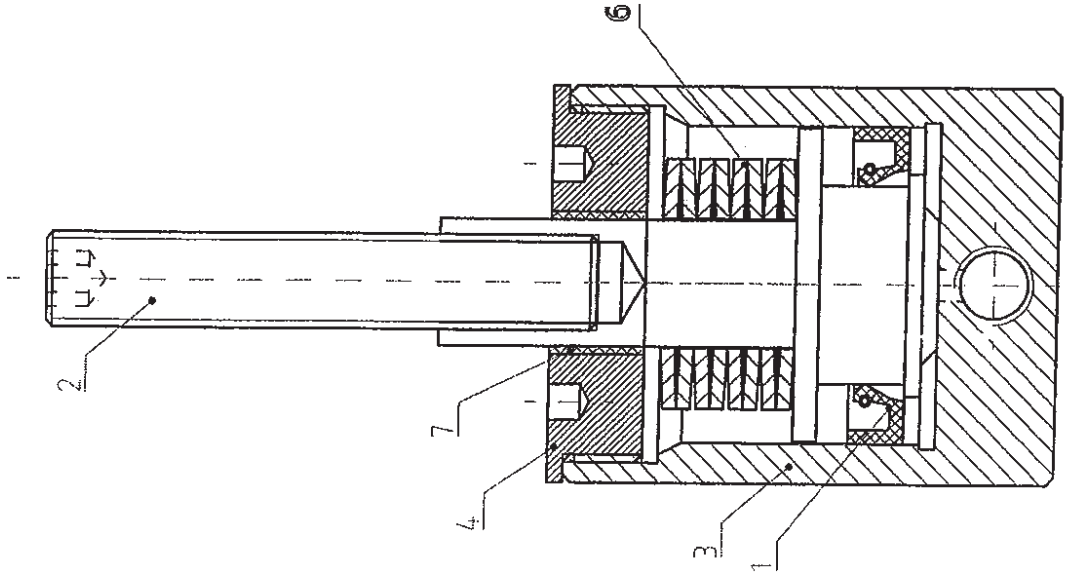
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1	PISTON SEAL		08	75x100x22.4/6.35
1	BEARING BAND	-	07	12x2
1	SCRAPER	-	06	ø50xø60x7/5
1	ROD SEAL	-	05	ø50xø60x7
1	O-RING	-	04	ø89.69x5.34
	CYLINDER	HK204056	03	ø133x156
1	CYLINDER CAP	HK204055	02	ø110x74
1	PISTON	HK204053	01	ø110x252
QUAN.	PART NAME	PART No.	ASS. NO	REMARKS

PART LIST

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CYLINDER ASSEMBLY			

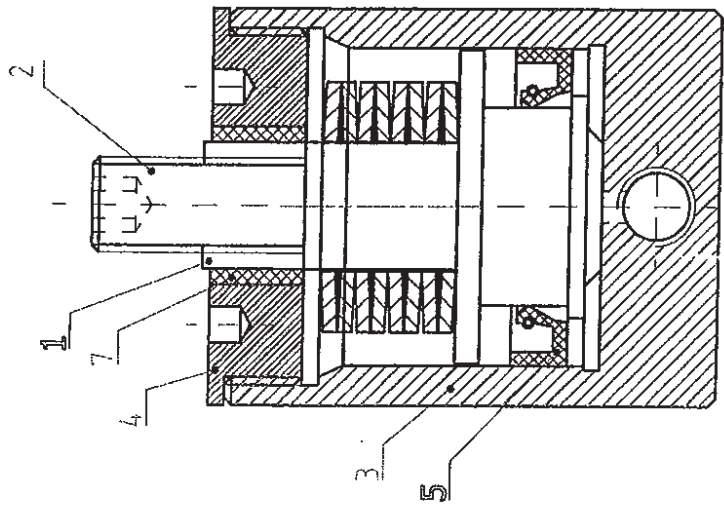


QUAN.	PART NAME	PART No	ASS. No	REMARKS
2	BUSHING	PAP 1612P10	07	18x16x12
16	BELLEVILLE SPRING	-	06	31.5x16.3x1.75
1	PISTON SEAL	-	05	40x25x10
2	LOCKING CYLINDER CAP	HK204234	04	Ø55x15
2	LOCKING CYLINDER	HK204233	03	Ø55x65
2	STUD	-	02	M12x70
2	LOCKING PISTON (LONG)	HK204231	01	Ø45x66
	PART NAME	PART No	ASS. No	REMARKS

PART LIST

NO	HKA
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LOCKING CYLINDER



2	BUSHING	PAP 1612P10	07	18x16x12	
16	BELLEVILLE SPRING	-	06	31.5x16.3x1.75	
1	PISTON SEAL	-	05	40x25x10	
2	LOCKING CYLINDER CAP	HK204234	04	Ø55x15	
2	LOCKING CYLINDER	HK204233	03	Ø55x65	
2	STUD	-	02	M12x35	
2	LOCKING PISTON (SHORT)	HK204331	01	Ø45x66	
QUAN.	PART NAME	PART No	ASS. No	REMARKS	

PART LIST

NO	HKA
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LOCKING CYLINDER

5

4

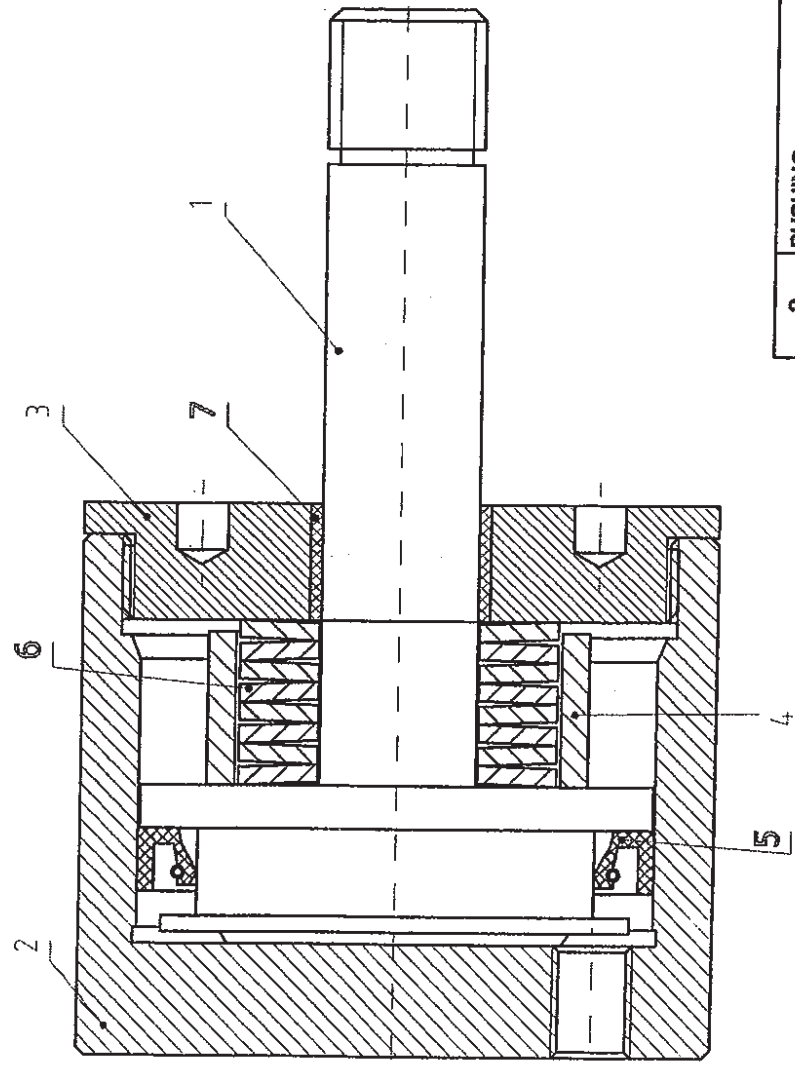
3

D

C

B

A



QUAN.	PART NAME	PART No	ASS. No	REMARKS
2	BUSHING	-	07	23x20x15
8	BELLEVILLE SPRING	-	06	40x20.5x2.5
1	PISTON SEAL	-	05	65x50x10
1	LOCKING CYLINDER COLLAR	HK204244	04	Ø55x20
1	LOCKING CYLINDER CAP	HK204244	03	Ø55x15
1	LOCKING CYLINDER	HK204243	02	Ø55x65
1	LOCKING PISTON	HK204341	01	Ø45x68

PART LIST

NO	HKA
DATE	02/09/2002

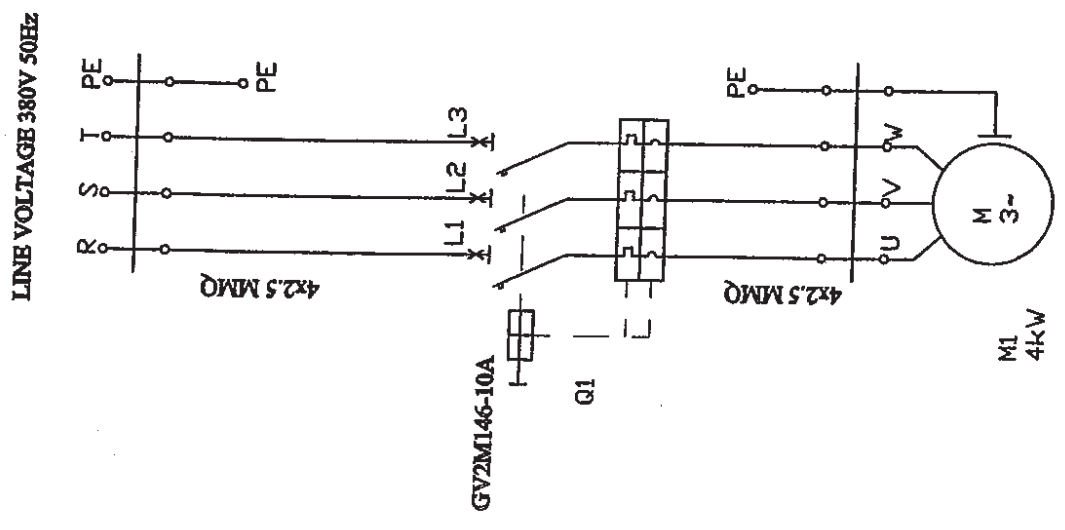
LOCKING CYLINDER

SECTION 8

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EXPLANATION

Q1 INRERLOCKED AUTOMATIK
MAGNETOTHERMIK SWICH



NO	HKA	ELECTRIC DIAGRAM	SECTION	9
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