



**sahinler**  
METAL MAKINE ENDÜSTRİ A.Ş.

## **USER'S MANUAL MODEL HPK 50 HYDRAULIC SECTION BENDING MACHINE**



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## EC DECLARATION OF CONFORMITY

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Teknik dosyayı derleyen yetkili ki i ve adresi

The undersigned Company certifies under its sole responsibility that the item of equipment specified below satisfies the requirements of the Machinery Directive **2006/42/EC** which is apply to it.

The item of equipment identified below has been subject to internal manufacturing checks with monitoring of the final assessment by **AH NLER**

A a ıda tanımlanmı olan ekipmanlar için Makine Emniyeti Yönetmeli i **2006/42/AT** nin uygulanabilen gerekliliklerinin yerine getirildi ini ve sorumlulu un alınmı oldu unu beyan ederiz.

A a ıda tanımlanan ekipmanlar iç üretim kontrollerine ba lı olarak **AH NLER** tarafından kontrol edilmi tir.

**PRODUCT****Hydraulic Profile and Pipe Bending Machine****ÜRÜN**

Hidrolik Profil ve Boru Kıvrırma Makinesi

**MODEL / TYPE****HPK 50****MODEL / T P**

HPK 50

**DIRECTIVES / YÖNETMEL KLER**

MACHINERY DIRECTIVE 2006/42/EC

MAK NE EMN YET YÖNETMEL 2006/42/AT

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

BEL RL GER L M SINIRLARI DÂH L NDE ÇALI MAK ÜZERE TASARLANMI ELEKTR KL TECH ZAT YÖNETMEL  
2006/95/AT

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

ELEKTROMANYET K UYUMLULUK YÖNETMEL 2004/108/AT

**Regulations Applied acc. to HARMONIZE STANDARDS Regulations Applied acc. to HARMONIZE STANDARDS /**

UYGULANAN UYUMLA TIRILMI STANDARTLAR

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**Name and position of authorized person****: Ferhan AH N**

Yetkili ki inin adı ve görevi

**Signature of authorized person****General Manager / Genel Müdür**

Yetkili ki inin imzası

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## GENERAL NOTES

### 1. Introduction

Thank you for choosing a Şahinler Sheet / Metal Working Machine. We are proud to have you in our long list of satisfied customers all over the world.

This User's Manual is absolutely for your safety and is essential for the machine to have a long production life. As long as you keep up with our Manual you will be able to run your machine smoothly and safely. Keep in mind that the machine is designed absolutely to perform maximum safety and for efficient working.

In this Manual you can find instructions and information about:

- Correct installations of the machine
- Description of the functional parts of the machine
- Set-up and start-up adjustments
- Correct standard and scheduled maintenance
- Simple safety regulations and accident prevention.

Therefore, as far as the user's safety is concerned, in this handbook the possible risks connected with machine operation are pointed out as follows:



**ATTENTION:** Showing the risks of accident, if instructions are not followed.



**WARNING:** Showing the probable damages to the machine or equipment, if the instructions are not strictly followed.



**NOTE:** It gives useful information.

It is certainly necessary that the operator should read and understand all the ATTENTION, WARNING notes specified in this Manual before starting with operation of the machine and before any lubrication or maintenance intervention.

On all steps of installation, operation and maintenance safety must be your first concern for the protection of yourself, other users and the service of the machine.

In case of any failure please first refer to this Manual, and then if a solution cannot be found contact first of all the distributor where you purchased our product. Do not forget to refer to the

drawings and the numbers for any spare part needed or to define any problem. Make sure you have the serial number and production year of the machine.

*Our technical staff will make their best to help you in the most convenient way.*

## **2. Transport**

*As soon as you receive the machine, check for any visible transport damages. Should there be any visible damages; report it straight away to the transporter company and of course Şahinler Metal Mak. End. A.Ş. or your supplier.*

*Remove any protective crates around the machine and read the instructions on related chapters of this Manual carefully to set up the machine. If the machine is damaged while transport, **immediately take some photographs for insurance** claims.*

*Take precautions while loading / unloading or moving the machine to avoid any injuries. Refer also to related chapter of this Manual for the best way of handling the machine.*

## **3. Electrical Information**

*All necessary connection procedure can be found on this Manual. Do not try to connect the machine before reading these procedures and fully understanding the drawings. For any unclear matters get in touch with Şahinler Metal Mak. End. A.Ş. or any of the Şahinler distributors. Have the machine connected by a qualified electric technician. For, as we made clear in the “general conditions of guarantee”, under no circumstances installing mistakes, one of which is the electrical connection mistake, can be covered in the guarantee agreement. Always turn off power before making any connections or disconnecting the machine.*

## **4. Maintenance**

*Your machine is designed and produced to work efficiently and smoothly. To achieve this you should also take care while operating the machine. Regard Maintenance sections to have the longest life from your machine. Try and use original spare parts where necessary and most importantly do not overload the machine or do not make any unauthorized modifications.*

## **5. Safety**

*Take all precautions possible to avoid any personal injury while using the machine. Keep in mind to protect the third party people around the machine. Refer to safety instructions.*

## GENERAL WARRANTY TERMS

- *Your machine is covered by manufacturer's guarantee for a period of 12 months from the date of purchase against manufacture defects. The warranty period does not exceed 18 months from the date of delivery from the manufacturer's factory.*
- *Warranty covers only manufacture defective parts and / or components that are reported as "defective" by a Sahinler Technician or the Agent Technician and must be reported to Sahinler in writing by fax or email.*
- *The manufacturer is responsible for the supply of free of charge spares only and cannot be held responsible for loss of work.*
- *Shipping and customs fees for the spare part must be paid by the end-user.*
- *If a technician travel is necessary Sahinler will not charge for labor and workmanship costs but the customer must pay traveling and accommodation charges.*
- *A Warranty claim does not relieve the Customer from payment obligations.*
- *The Customer can not ask or demand any reimbursement of damage nor the Customer will have the right to extend or delay payment obligations nor the cancellation of order and the refunding of damages as the guarantee is given for the defective parts of the machine and not for the job.*



**Note:** *All warranty claims must be applied with the Model, Serial Number and the Manufacture Year of the machine.*

## GENERAL SAFETY TERMS

### 1. Machine's Safety Accessories and Accident Prevention Terms

- The machine is provided with fixed shelters for the protection of all gears. But some mobile parts, because of their shape for the bending processing cannot be protected within a case. However, safety is guaranteed by the machine features and by the use of "human presence" controls.
- The machine is controlled by means of foot-pushed buttons present at the downside of the Mobile Control Panel. During operation the specified safety distance must always be observed.
- There is a red mushroom emergency button at the upside of the Mobile Control Panel to stop all the machine activity by disabling the electric supply until released. In case of an extraordinary situation, please push this button straight away.
- No other persons except for the qualified and well-trained operator should be allowed to use the machine and to be present in the working area of the machine.
- Any damaged or defective connections to the different energy supplies must be replaced.
- All interventions concerning installation, start-up, change of equipment, use, change to the use and the operation, regular maintenance, inspection and periodical maintenance can be performed only after disabling the machine according to relevant chapter of this handbook.
- For any intervention to change the machine's use, please contact to Şahinler Metal Mak. End. A.Ş. previously and ask for their written approval.

### 2. Abnormal Conditions

In order to avoid unusual working conditions, in the following several recommendations to the operator are listed. Also, do not forget that this machine can be used only in the conditions presented in this operation and maintenance handbook.

- Before connecting the machine double-check electrical connections read the instructions carefully. For, almost 65% of the failure reports we receive are based on either wrong electric connection or use in contradiction to the User's Manual.
- Avoid the approach of persons to the operator while the machine is running.
- Loading and unloading of the material should be done according to the instructions of this handbook.
- During the bending process avoid holding material with the hand.
- Never wear garments with loose parts, which may be dragged by the machine parts, long loose hair, necklaces, rings etc.
- Never use goods except for the allowed ones as operational materials.
- Never run the machine without safety devices.
- Don't climb on the machine.
- If the customer wants to install on the HPK 50 machine a piece of equipment, which has not been supplied by Şahinler Metal Mak. End. A.Ş., the compliance with the safety conditions explained here has to be checked.
- The machine cannot be installed and used in corrosive environments.
- The machine must always be operated with one qualified operator who has the required knowledge to use this machine properly.

## HPK 50's TECHNICAL PROPERTIES

As a superior model in its own class the HPK 50 is equipped with a powerful motor and a low noise reduction gearbox, which gives the machine power to bend with ease. The digital Read-Out (optional) that can be fitted to top roll gives higher accuracy and helps increase the efficiency. By using Mobile Control Panel that includes foot pedal and an emergency stop you can easily and safely bend the required materials. General Technical Information of HPK 50 is given below.



MODEL: HPK 50		
Shaft Diameters	Ø mm	50
Rolls Diameters	Ø mm	162
Hydraulic Power	ton	8
Motor Rotation	d/dk. U/min - rpm	4,5
Motor Power	Kw	1,1
Weight	Kg.	510
Length	mm	810
Width	mm	950
Height	mm	1500

### STANDARD SPECIFICATIONS

- Three rolls are powered
- Steel-welded construction frame
- Hardened shafts from special-steel material
- Top roll hydraulic moveable
- Horizontal and vertical working position
- Standard rolls
- Guide roller
- Mobile control panel
- User's manual and maintenance book
- Brake motor equipped

### SPECIAL FEATURES

- Pipe / Tube Bending Rolls
- Profile Bending Rolls
- Angle Bending Rolls
- Digital Read-Out (optional)
- Special Lateral Angle Guides

### SAFETY UNITS








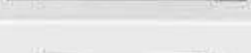

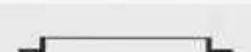

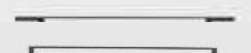


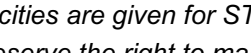
- Emergency Button on Mobile Control Panel
- Various DANGER signs around the machine
- Overload Circuit – Breaker



**Note:** Due to various safety regulations, the specifications presented here can change from country to country without prior notice. Above dimensions and other characteristics can also change without prior notice due to our constant improvements on our products.



## CAPACITY CHART FOR MODEL HPK 50

No	Profile type	Maximum size	Min. int Ø	Notes
1		60x10 20 x 10	600 300	Standard rolls
2		100x15 50x10	600 300	Standard rolls
3		35x35 15x15	600 300	Standard rolls
4		Ø35 Ø20	600 300	Optional rolls
5		Ø70x2 Ø25x1,5	1200 400	Optional rolls
6		2"x2,9 ½"x2,3	1000 300	Optional rolls
7		70X30X3 30X15X2	1500 400	Optional rolls
8		50 x 3 20 x 2	1600 400	Optional rolls
9		50x 50X6 30x 30X3	600 400	Optional rolls
10		50x 50X6 30x 30X3	900 600	Optional rolls
11		60X7 30X4	800 500	Standard rolls
12		50X6 30X4	800 500	Standard rolls
13		60X7 30X4	800 500	Standard rolls
14		UPN 80 UPN 30	800 400	Standard rolls*
15		UPN 80 UPN 30	1200 600	Standard rolls*

- Capacities are given for ST 42 material.
- We reserve the right to make changes without notices.
- \* Optional rolls can be necessary to bend small diameter



**Warning:** Do not feed profiles having a higher thickness than specified for the capacity of the machine.

Do not feed more than one piece at a time.

Do not use the machine for any other scope the one for which it has been designed.

## TRANSPORTING, LIFTING AND CARRYING

Before preparing the machine for installation and start-up, an accurate visual control is required in order to detect any possible damages occurred during transporting and handling phases.

Your machine is located on a wooden grid and the package is a waterproof plastic cover.

If one or several parts of the machine have been damaged while shipping, the installation of the machine has to be suspended. ŞAHİNLER A.Ş. has to be informed of the unexpected occurrence straight away.

While lifting take care of these points:

- Always lift and carry the machine from the handles.
- Use a steel rope capable of carrying 600 kg.
- Do not forget the Mobil Control Panel.
- Take precautions for handling and lifting.
- Check if the load is properly balanced by lifting it some centimeters.
- Lift the machine, proceeding with care, without sudden accelerations or quick changes of directions.
- Place the machine where it must be installed, lower the machine slowly till it touches the floor.

Figure 1 shows a way of carrying the machine. You can use a crane with hook or a forklift for handling operation.



**Attention:** Lifting and carrying operations should be carried out by skilled workers, such as truck operator, crane operator, etc. Also, it is necessary to keep in mind that having large safety margins will provide you efficient working conditions and enable you to take into consideration most of the precautions.

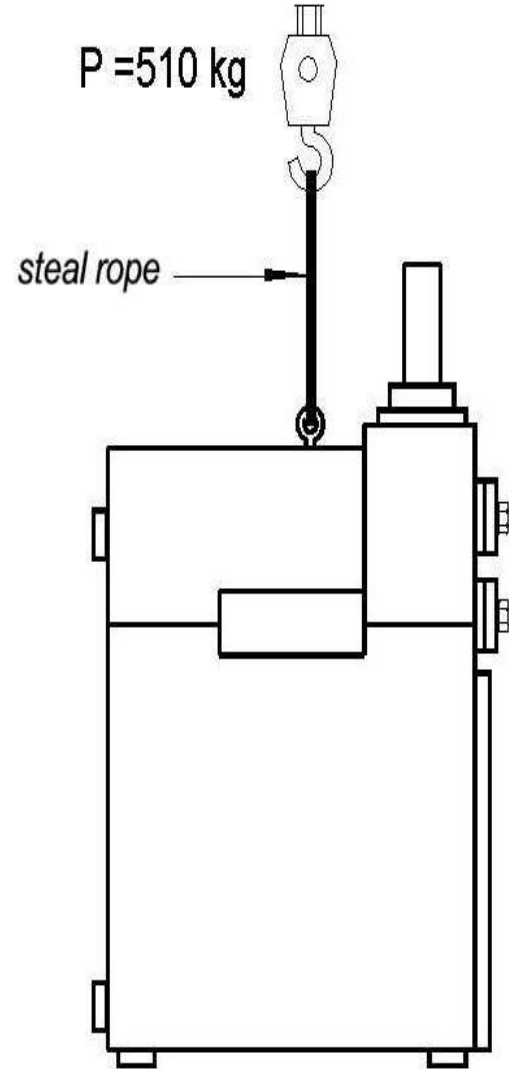


Figure 1

## FOUNDATION AND MAIN DIEMENSION OF THE MACHINE



The manufacturer doesn't accept any responsibility for damages due to the nonobservance of the above specifications.

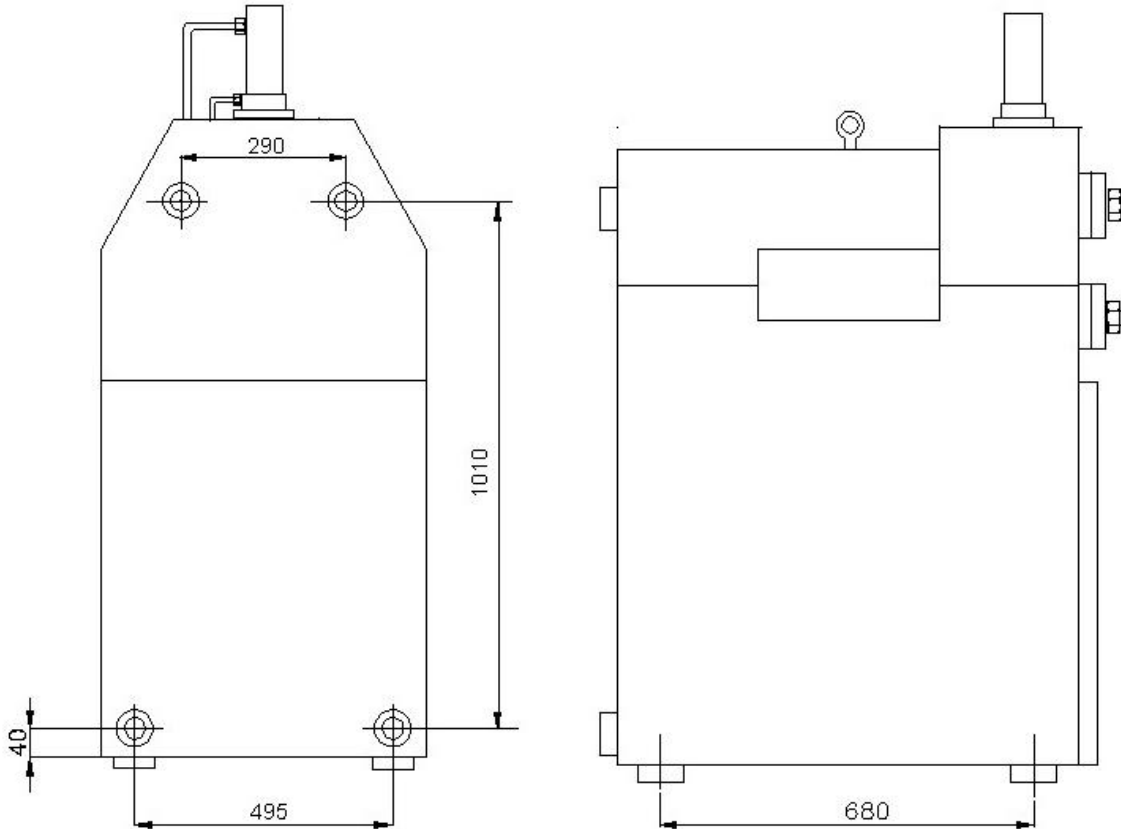


Figure 1

Figure 1 the main dimension of the machine is given above. Figure 2 shows the work area. This areas illustrated considering the machine located horizontally. If you operate it vertical, then the borders will be the same. That is, no matter how you located the machine ( vertical or horizontal ) you should always keep the safety distance of one meter around machine.

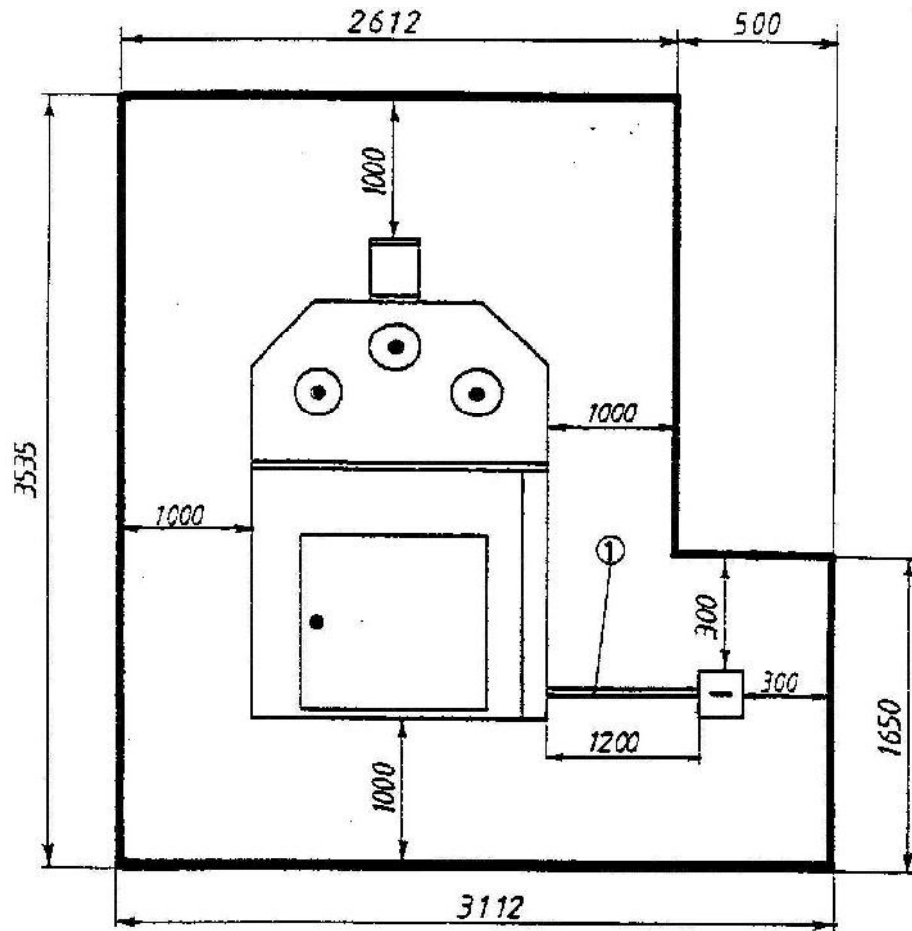


Figure 2



**Note:** All machines must be carefully adjusted before operation with a water gauge.



## OPERATING HPK 50 AS HORIZONTAL

Before positioning the machine it is necessary to leave enough working area for the proper bending operations such as: extraction of the cylindrical profile, feeding of the semi product, bending of big diameters.

If you have no alternative to install the machine in a broad area but a low-height area, then there is a solution to this problem as shown in figure 2.

To set the machine horizontally follow these steps:

- Wrap a belt capable of carrying at least 500 kg around the top roll's shaft (shown by ① in fig.1).
- Lift the machine slowly by means of a forklift or a crane with hook.
- When you are satisfied that you have lifted the machine to the degree that only the corner shown by ② in figure 2 touches to the floor, rotate the machine right slowly with the help of a person so that the mass center of the machine tend to be at the left side of that corner.
- After that, slowly lower the machine.

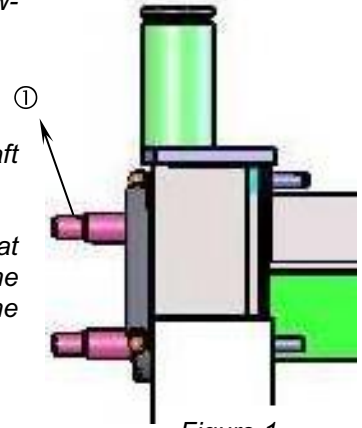


Figure 1



### Attention:

Do not wrap the belt around the top roll adjustment screw so that it may be bent or its teeth may be damaged.

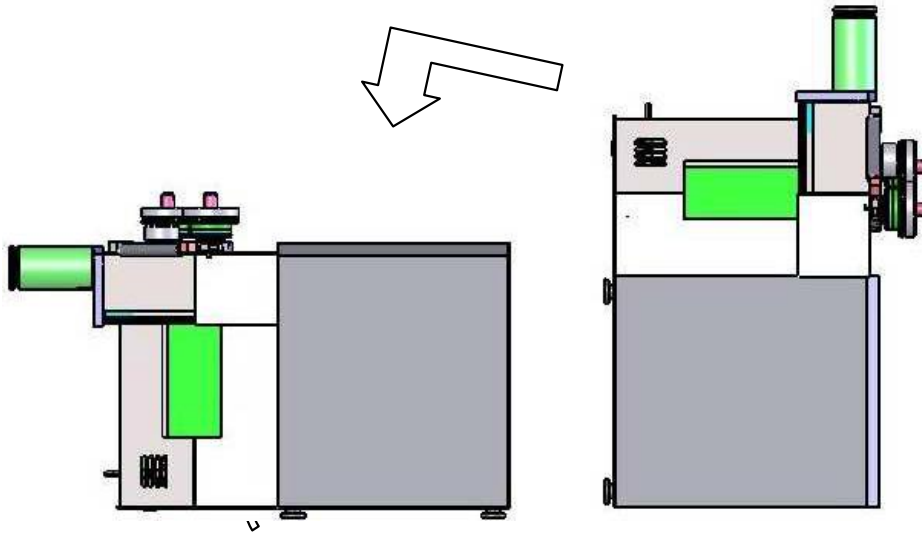
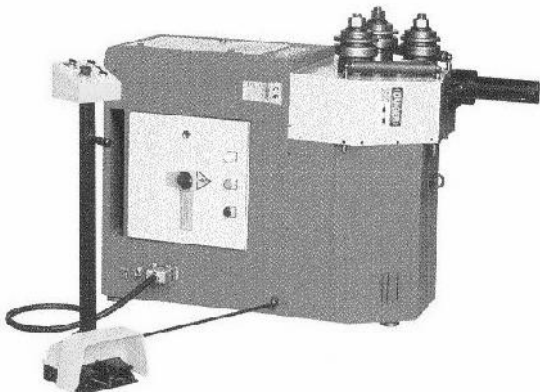


Figure 2

Figure 3 shows an example of horizontal working.



## START-UP INSTRUCTIONS

### 1. Materials and Products

The machine is mainly steel and it is not designed for handling inflammable or detrimental products. It is duty of the customer to check if the processed materials respond to these requirements. Also, it is duty of the customer to check if the processed materials can be dangerous for the operator working nearby.

When selecting the most appropriate operation material you should keep in mind those instructions:

- Material must be clean out of oil and dry ( without oil ).
- Material diameter must be regular with advised instructions.
- Hardness value must always be same thorough the material.  
So, we recommend you to buy certificated steel.
- Parts to be bended should have smooth surface to fulfill the procession correctly and easily.



**Note:** The thorough cleaning of the rolls is absolutely necessary in order to avoid possible sliding of the profile due to grease residues on the rolls.

### 2. Electrical Connection

Have a qualified electrician connect the machine to the electric supply. In some cases inverse electrical connection causes the motor burn out. To avoid such an undesirable event, after having connect the machine see that the motor turns to the direction shown by arrow when activated. Or you can check to see if the rolls are rotating to the same direction of the pedals. That is, if the right pedal is pushed, the rolls should rotate right and if the left pedal is pushed, the rolls should rotate left. If the machine does not comply then inverse the electric cables.

### 3. Electric Box

The HPK 50's electric box includes very important controls of the machine and is also connected to the below shown foot pedals. The keys on the electric box are shown and explained here:

1. Electric box lock
2. Main switch
3. Electric on indicator
4. Pump on indicator
5. Motor protection relay indicator  
(Thermal overload)

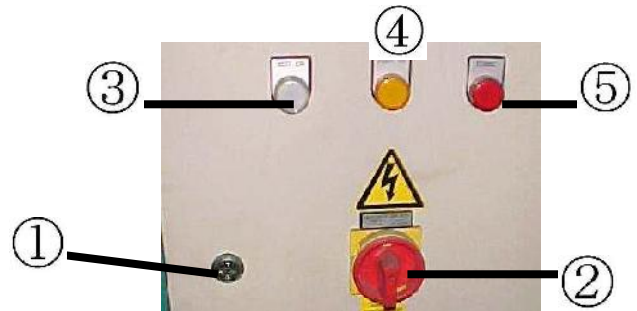


Figure 1



**Attention:** Electric box shelter must be removed only when the machine is stopped, or during maintenance or adjustment interventions.



**Warning:** It is suggested to protect the main electric line from possible overloads by means of safety switches.

#### 4. Control Panel

##### HPK 50'S STANDARD CONTROL PANEL

The mobile control panel is your interface with the machine and it is very easy to operate the machine. Here are the names of the buttons on standard control panel.

1. Start button
2. Emergency stop
3. Top roll up
4. Top roll down
5. Foot pedals (right for right rotation, left for left rotation)

##### How to use :

- Turn on the main switch the machine electric panel
- Push start button (when the machine's electric on it will light)
- You should hear the hydraulic system activating
- Use buttons 3 and 4 to move the top roll up and down



**Warning:** if the top roll doesn't move at this point risk of damaging hydraulic pump. It means that the electric cables have been connected inverse. Immediately **STOP** the machine and reverse the electric cables.

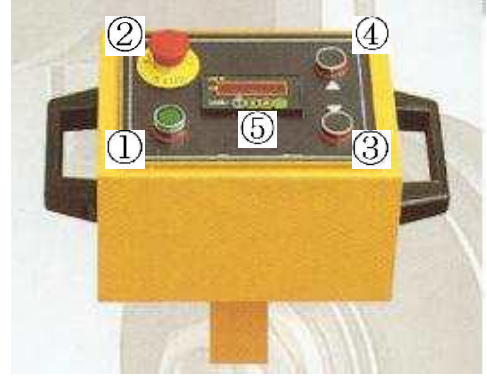
- In the case of any emergency use button No.2 stop all activity and cut electricity
- Emergency button No.2 is a lock – push button and once presses it must be released to re – start the machine
- Try rotating the rolls (No.5 foot pedals)
- If everything works properly you can proceed with bending



## HPK 50'S DIGITAL READ – OUT ( OPTIONAL )

The mobile control is your interface with the machine and it is very easy to operate the machine. Here are the names of the buttons on control panel

1. Start button
2. Emergency stop
3. Top roll down
4. Top roll up
5. Digital read – out (optional)
6. Foot pedals (right for right rotation, left for left rotation)



### How to use :

- ✓ Turn on the main switch the machine electric panel
- ✓ Push start button (No.1 when the power is on it will light)
- ✓ You should hear the hydraulic system activating
- ✓ Use buttons 3 and 4 to move the top roll up and down

- In the case of any emergency use button No.2 stop all activity and cut electricity
- Emergency button No.2 is a lock – push button and once presses it must be released to re – start the machine
- Try rotating the rolls (No.6 foot pedals)
- If everything works properly you can proceed with bending
- See annex a for using the digital

## 5. Basic Operation Terms

The PK 50 has three rolls powered. The all rolls are driven by a motor and gears to conduct rotation motion from gearbox system when all rolls shaft simultaneously. Top roll can be adjusted by a screw driven system to make the bending in a wide radius range. Therefore, bending operation is simple and smooth however requires experience for efficient working.

### Following recommendations will be helpful during operation:

- It is recommended that the user have basic bending information with this kind of machines.
- Making a tight bend in one pass is not possible. So you need several passes before you can achieve a certain radius. Tighter curves and full radius always take a lot of time.
- During operation never wear garments with loose parts, which may be dragged by the machine parts, long loose hair, necklaces, rings etc.
- Use emergency button in case of any emergency.

**Note:** Before starting to use machine, be sure that hydraulic motor pump is started. When back door is opened for greasing of fractioning parts, oil tank of hydraulic system must be checked we're recommending to keep tank always full of shell Tellus.27.



## OPERATION

### 1. Operating Instructions

Place the material on the rolls flatly as shown in the figure 1. Make sure that material is placed parallel to the ground and touching all three rolls at the same time. This position is called "zero position".

Move the upper roll down like in figure 2 and position it to apply enough force to bend the material. Do not apply force more than necessary. If you apply too much force with the help of moving the upper roll down a lot more than enough, you may deflate the material during bending operation.

Push the foot pedal to rotate the rolls to which direction you want (look at figure 3). To get desired diameter value make more than one pass by gradually lowering the upper roll after each pass. After a pass if the diameter value is bigger than expected, move the upper roll down to apply more force. If the case is vice versa, than move the upper roll to upside by making use of milimetric ruler.

It is likely that the material will intend to bend right or left because of the existence of bending forces. To prevent this, you must adjust the guide rolls as shown in the figures 4 and 5.

As the guides are adjustable on digital bottom, you can arrange them to the opposite side of the material's directional inclination.



**Note:** To get a circular profile, side guide joints must be parallel to the machine surface. Otherwise, you just get spiral profiles.

Figure 6 shows bending operations for different kind of sections with special rolls.

In case of bending long materials, material feeder is advised to use in order to keep workpiece parallel to the base ground (see figure 7). This will make easier to bend such workpieces.

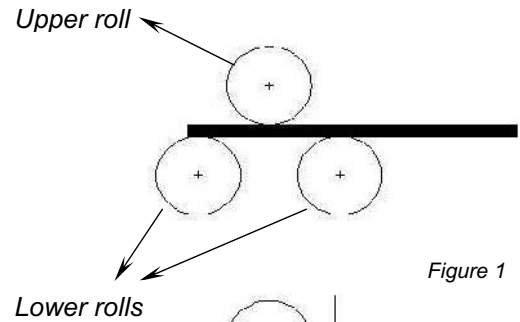


Figure 1

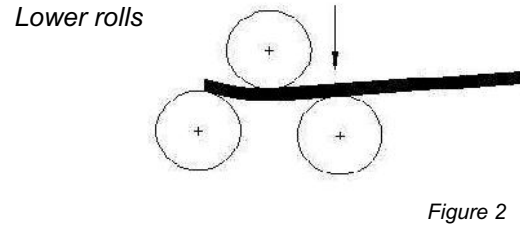


Figure 2

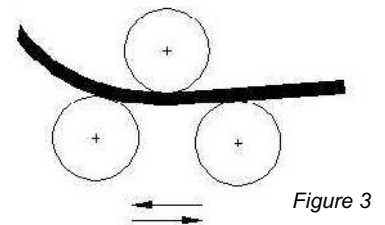


Figure 3

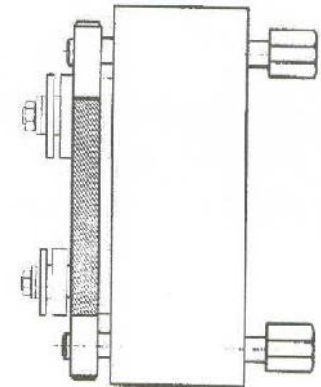


Figure 4

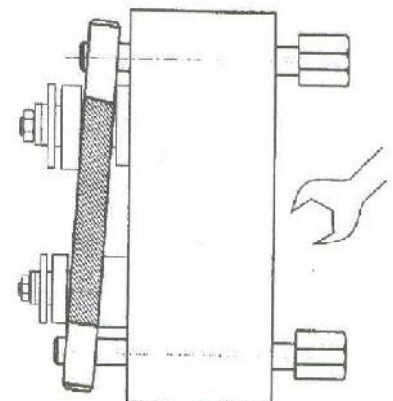


Figure 5

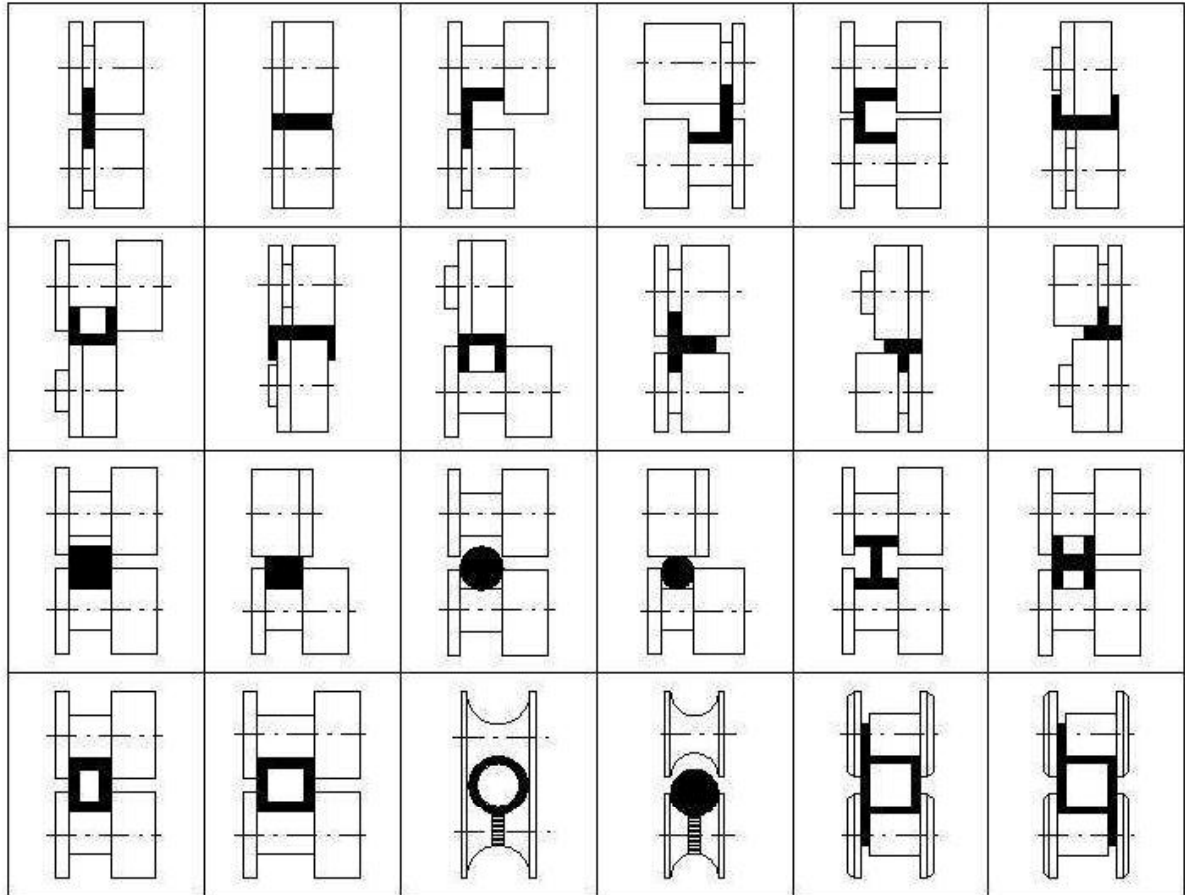


Figure 6

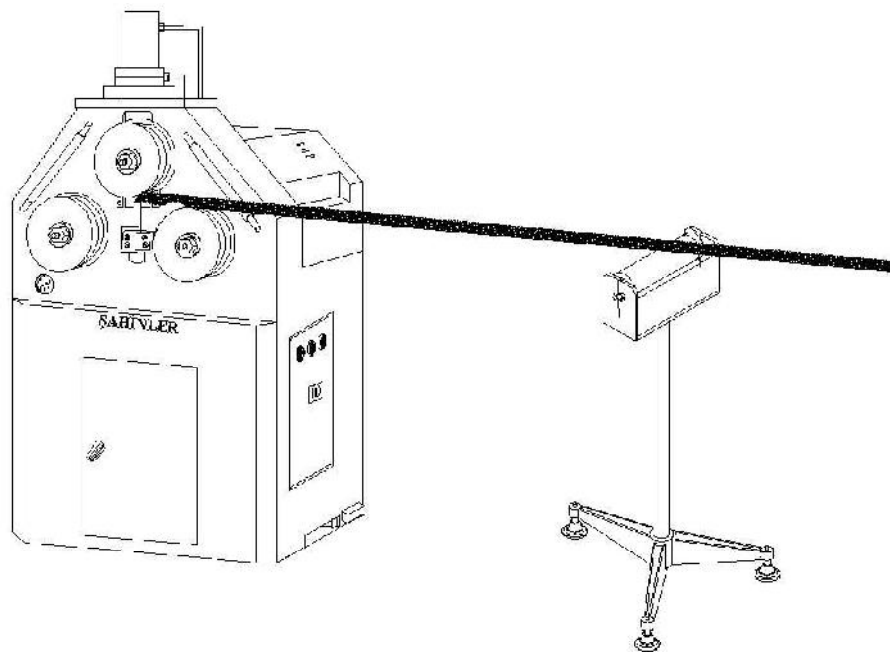


Figure 7

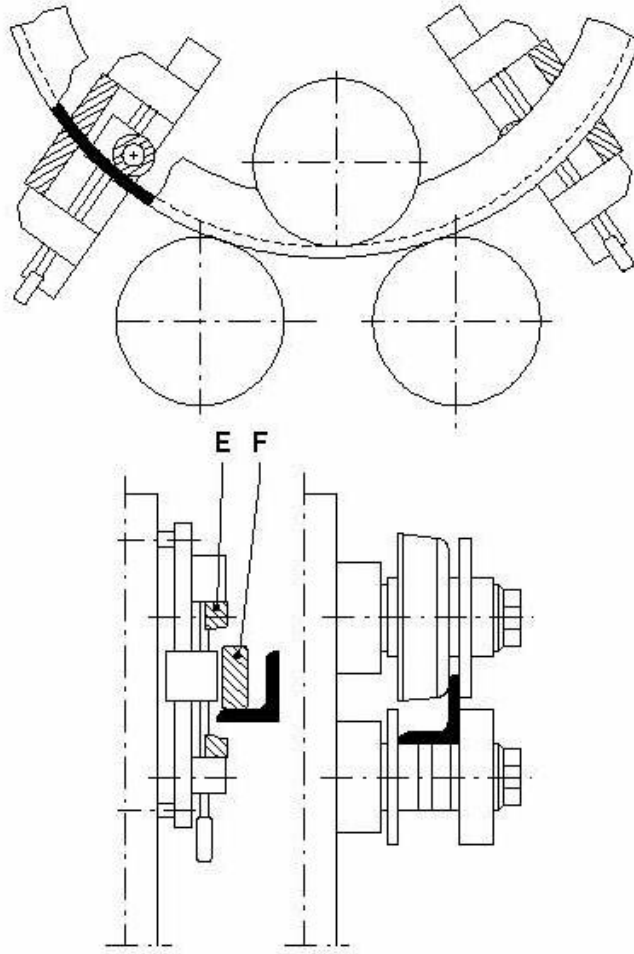


Figure 8

Figure 8 shows the use of “Leg-In Bending Guide Rolls”. These guide rolls are special accessory for bending leg-in (angle) material and are available for extra cost. They are adjustable for any size of material and easy to use. Special rolls are recommended for any batch jobs of leg-in or leg-out material. Some of the angle materials can be bent with standard rolls

## 2. Operational Hints

- Always clean the rolls and the material of dust, dirt and grease for bending
- If you are bending a pipe do not rotate the pipe while bending
- We advise you to fill the profiles or pipes with sand or any similar material if they have a wall thickness of less than .... mm
- Do not overload the machine and use special rolls for profiles as well as pipes
- Operate safely keeping in mind the third party people around the machine
- Leave enough workspace around the machine
- The machine can also work horizontally for extremely large diameters
- The machine has double-speed motor.

## MAINTENANCE

A suitable maintenance is also compulsory to get a maximum machine life and optimal working conditions for machine's efficiency.

A regular maintenance interventions should be performed by a well-trained safety responsible and if possible by a mechanical engineer.



### Attention:

Regular and scheduled maintenance interventions cannot be performed by running machine. The main switch must be turned off. Besides, a warning signal telling, "**DO NOT ACTIVATE - MACHINE IN MAINTENANCE**" must be clearly visible on the machine.



### Attention:

Any processing system, which may endanger the machine safety, must be avoided.

As the machine does not include any kind of hydraulic system, it is simple to lubricate its functional parts as shown in the below.

- Firstly, turn off the machine if it is active by moving the **main switch** "0" on the electric box.
- Remove the back lid by dismantling its screws.
- Grease the power joints inside the machine with the help of an oilfeeder (\*).
- Also grease the upper roll adjustment shaft (shown by X points in figure 1)(\*\*).
- After the lubrication, assemble again the back lid and the protections.
- Restart the machine according to the start procedure, and check if there are any anomalies due to faults or unintentional tampering during maintenance.



### Attention:

For replacement of oil, use a funnel with a filter in order to avoid that impurities enter into the gearbox or among the other movable parts and damage the good functioning of the machine.

Internal cleaning of the electric box is also needed and must be done like in the following:

- Turn off the machine moving the main switch on the electric box "0".
- Disconnect the mains supply from the electric board.
- Open the electric box lock.
- Do not use liquid detergents while cleaning the electric box inside.
- Check the connections to the terminals of the different devices.
- Tighten any loose connections.
- Close the door of the electric box and check if it is closed perfectly enough.
- Connect the electric board to the mains.
- Restart the machine according to the start procedure, and check if there are any anomalies because of faults or unintentional tampering during maintenance.

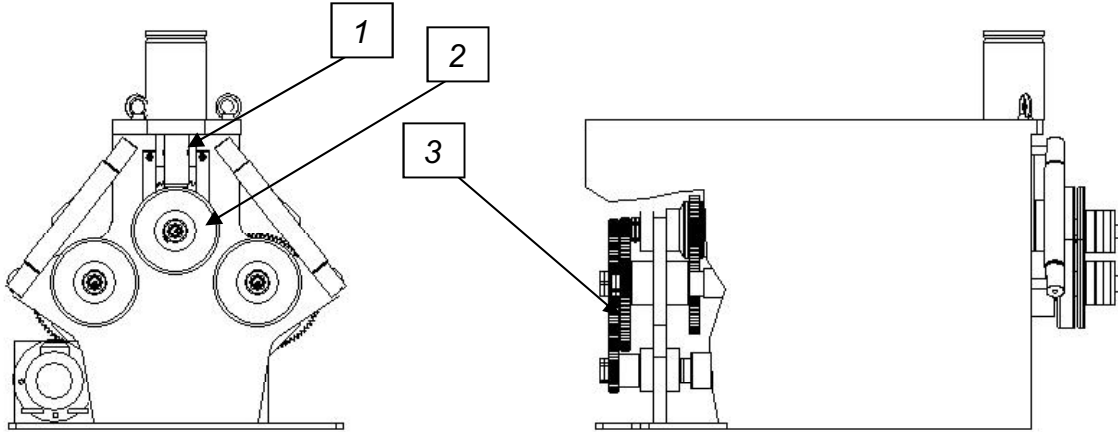
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(\*): Use commercial grease for lubrication and make this operation once per month.

## LUBRICATION SCHEDULE

### General Maintenance

The machine needs to be lubricating periodically for efficient working and longer to be lubricated periodically for efficient working and a longer life. You can see the points of lubrication list below and a lubrication chart for periods of lubricated



### Lubricate chart

#### IMPORTANT

The rolls of the machine must **NEVER** be greased or lubricated. Because , then the rolls will slip the material and will not bend. Always keep the rolls clean and free from grease or any lubricant. Also make sure that the material is free from grease and dirt.

These points must be greased periodically at least once a month or more if daily usage exceeds 8 hours a day. Note that some of these points are actually inside the machine cover and the front cover must be removed in order to reach them. Any standard commercial grease can be used for lubrication.

NUMBER	PERIOD	WHAT TO DO
1- Top Roll Housing	Once a month	Grease
2- Bottom Roll Shafts and Bushings	Every Week	Grease
3-Gears	Once a month	Grease

### REDUCTION GEARBOX MAINTENANCE

The reduction gearbox of the machine is inside the front cover and is maintenance free. Only you should control it periodically and tighten the bolts fixing it to motor and to the frame, if necessary.

### **Hydraulic maintenance**

Hydraulic oil may leak out of the system after a time and you need to refill the hydraulic oil. The hydraulic tank volume of the machine is approx. 5 liters and can be accessed when the back cover is opened.



**Attention: NEVER** operate the machine when the hydraulic tank is empty. It will cause a hydraulic pump burn - out.



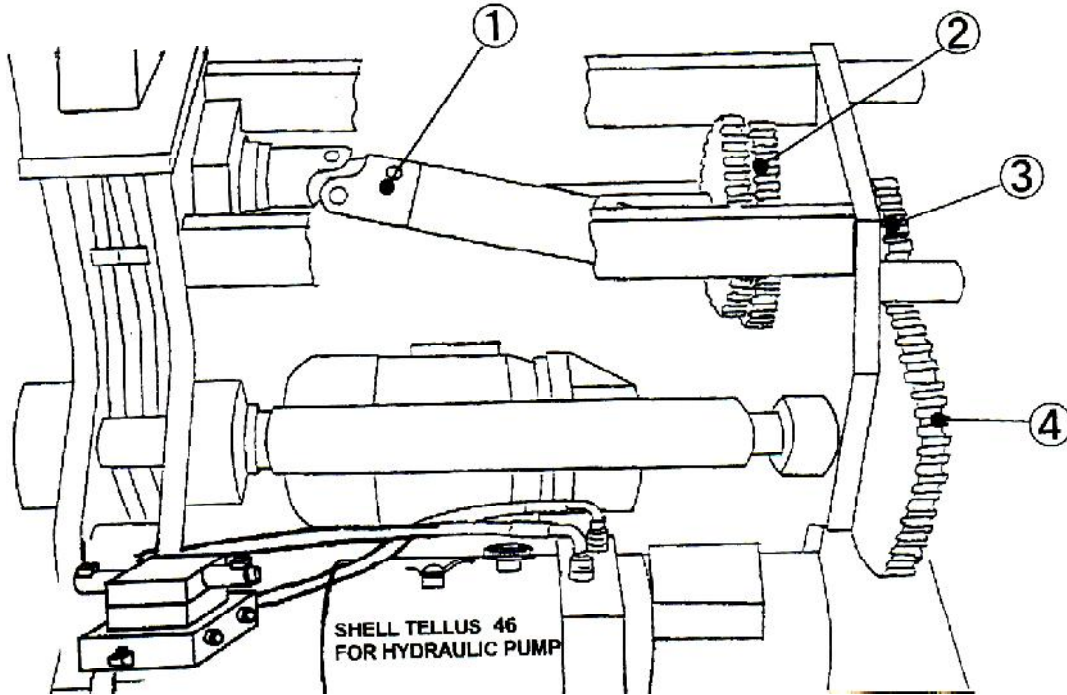
**Note:** the hydraulic tank cap of the machine has air holes. Only during and immediately after transport and when the machine works in horizontal position there may be visible oil leak from the bottom. There is nothing wrong with the machine and this oil is not important. It is only the excess oil from the tank. The machine will still operate normally.

On our hydraulic section bending machines we use Nr46 hydraulic mineral oil. Below is a chart showing various manufacturers hydraulic oils of equivalent grade. Consult industrial oil companies for brands not shown here.

## General Maintenance

The machine needs to be lubrication periodically for efficient working and longer to be lubricated periodically for efficient working and a longer life .You can see the points of lubrication list below and a lubrication chart for periods of lubricated.

### Lubricate chart



 **Note:**

The rolls of the machine must **NEVER** be greased or lubricated. Because , then the rolls will slip the material and will not bend. Always keep the rolls clean and free from grease or any lubricant. Also make sure that the material is free from grease and dirt.

These points must be greased periodically at least once a month or more if daily usage exceeds 8 hours a day.

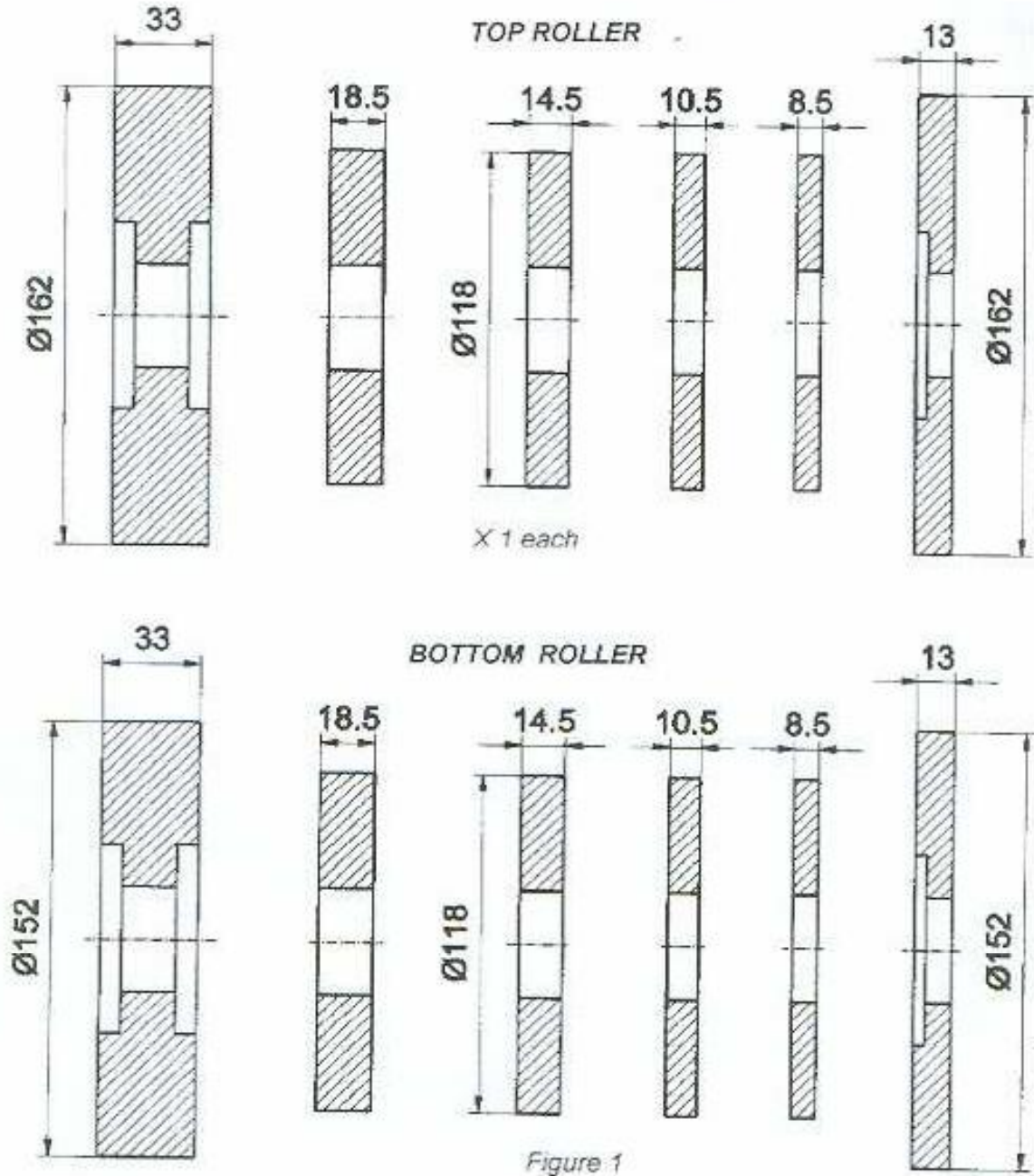
 **Note:**

That some of these points are actually inside the machine cover and the front cover must be removed in order to reach them. Any standard commercial grease can be used for lubrication.

CONTROL	PERIOD
Check for any visible oil leak	Every week
Clean the rolls from dirt and grease	Every week
Open the back cover and check the hydraulic oil level. Replace if necessary	Once a month
Grease all the gears inside the back cover	Once a month
Reduction gearbox control	Once a year



STANDARD ROLLER DIMENSIONS FOR HPK 50



- Roll material SAE 1050 hardened to > 56 HREC



**Note :** As the three have the same and standard sizes, the dimensions given in figure 1 is valid for them all. Also, Special Rollers can be available from ŞAHİNLER METAL MAKİNE ENDÜSTRİ AŞ.





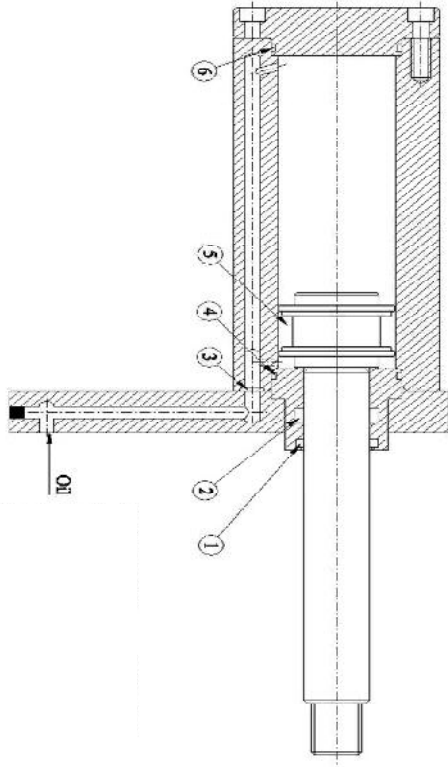


Figure 1 shows the hydraulic Piston and parts

#### Hydraulic Piston List of Parts

- 1- Scraper
- 2- Neck Seal
- 3- O-Ring
- 4- O-Ring
- 5- Compact Seal
- 6- O-Ring

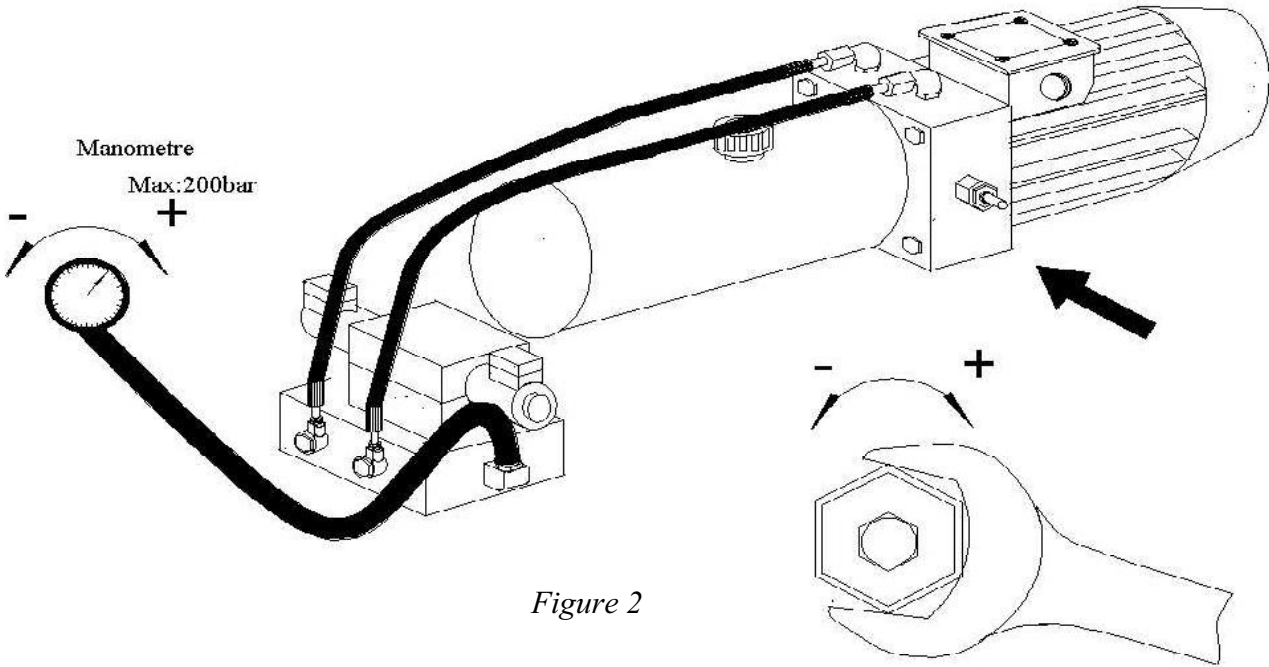


Figure 2

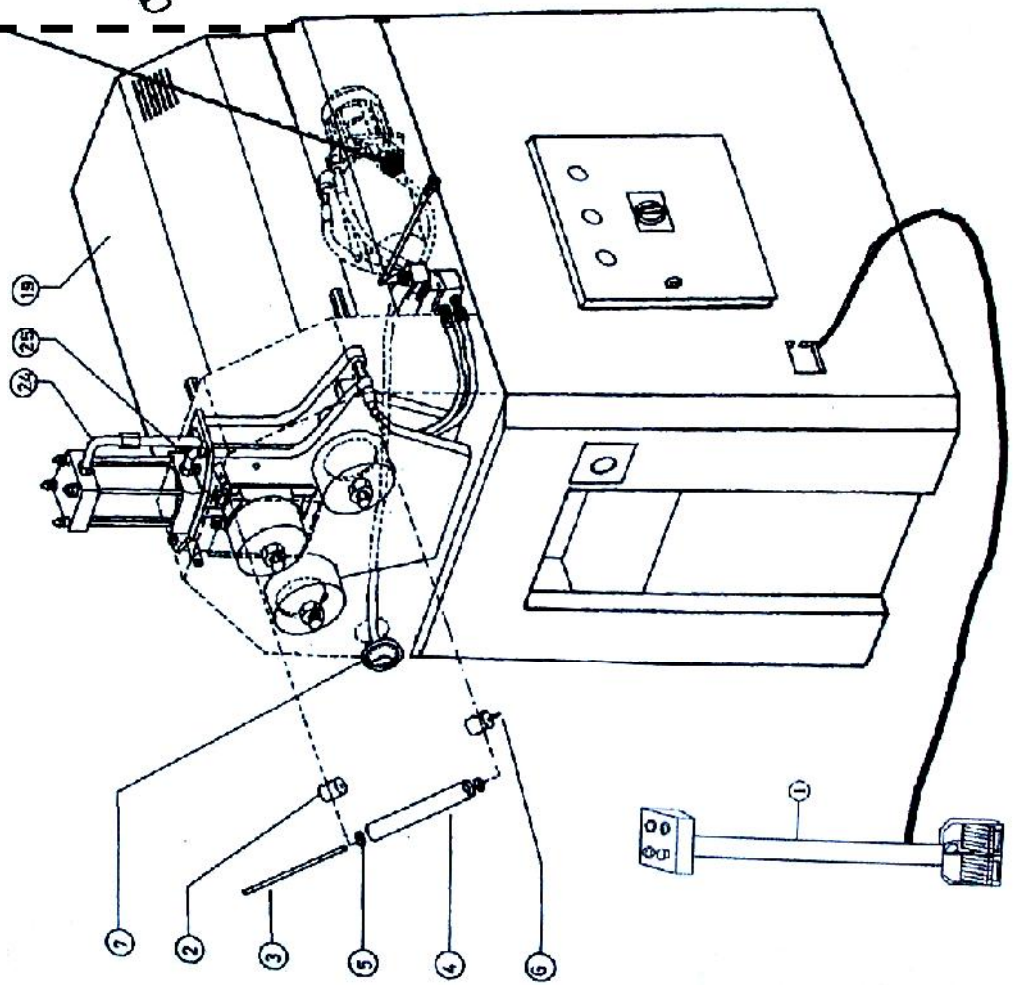
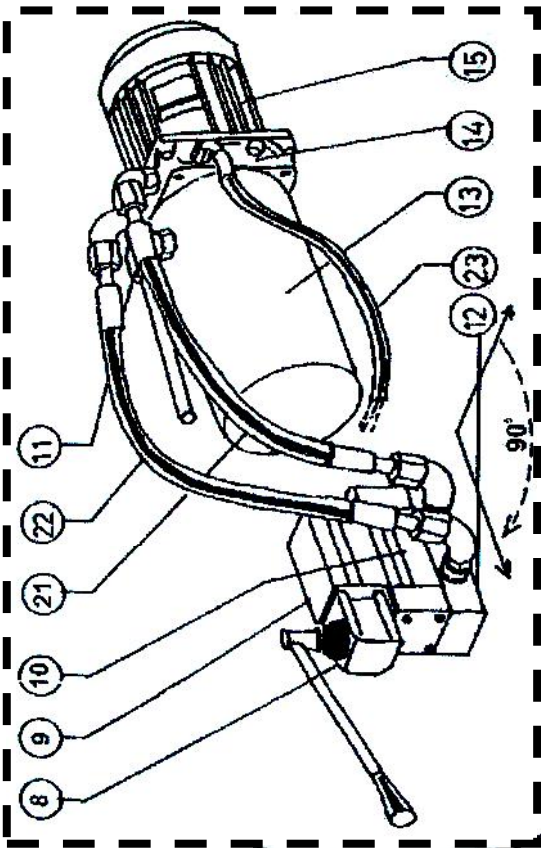
#### **PRESSURE HAS BEEN ADJUSTED BY MANUFACTURER**

Don't change the adjustment of preset pressure. Your guarantee may be canceled if change the pressure adjustment without written consent of ŞAHİNLER A.Ş.

#### **How can we use;**

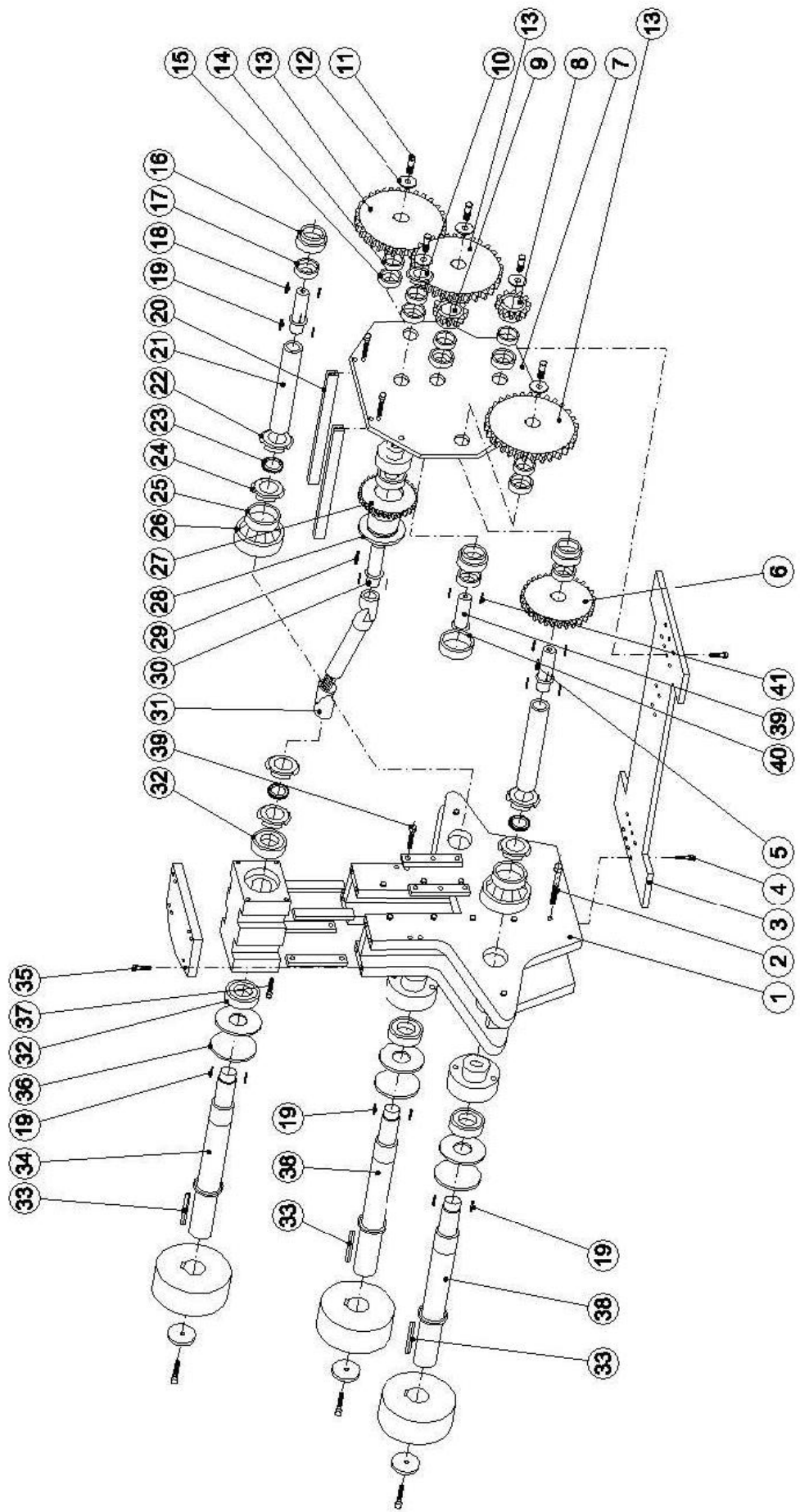
- To increase the pressure adjustment to (+) sign.
- To decrease pressure turn adjustment to (-) sign.





## PARTS LISTS OF HPK 50

Assembly No	Quantity	Part Identification	Brand
1	1	Foot command pedal	Şahinler
2	4	Guide joint	Şahinler
3	2	Guide shaft	Şahinler
4	2	Guide roll	Şahinler
5	4	6001 Ball bearing	OEM
6	4	M5x10 Socket Head Cap Bolt	OEM
7	1	Manometer	Şahinler
8	1	Valve command arm	Şahinler
9	1	Direction check valve	Şahinler
10	1	Control valve	Şahinler
11	1	Oil filling pipe	Şahinler
12	1	Valve distribution block	Şahinler
13	1	Oil depot	Şahinler
14	1	Valve distribution block	Şahinler
15	1	Reductor	Şahinler
16	1	Electricity panel cover	Şahinler
17	1	Electric socket	Şahinler
18	1	Emergency button	Şahinler
19	1	Upper sheet cover	Şahinler
20	1	Lower body	Şahinler
21	2	Tank hose – pipe	Şahinler
22	2	Pressure hose – pipe	Şahinler
23	1	Manometer hose – pipe	Şahinler
24	1	Piston oil pipe –A-	Şahinler
25	1	Piston oil pipe –B-	Şahinler

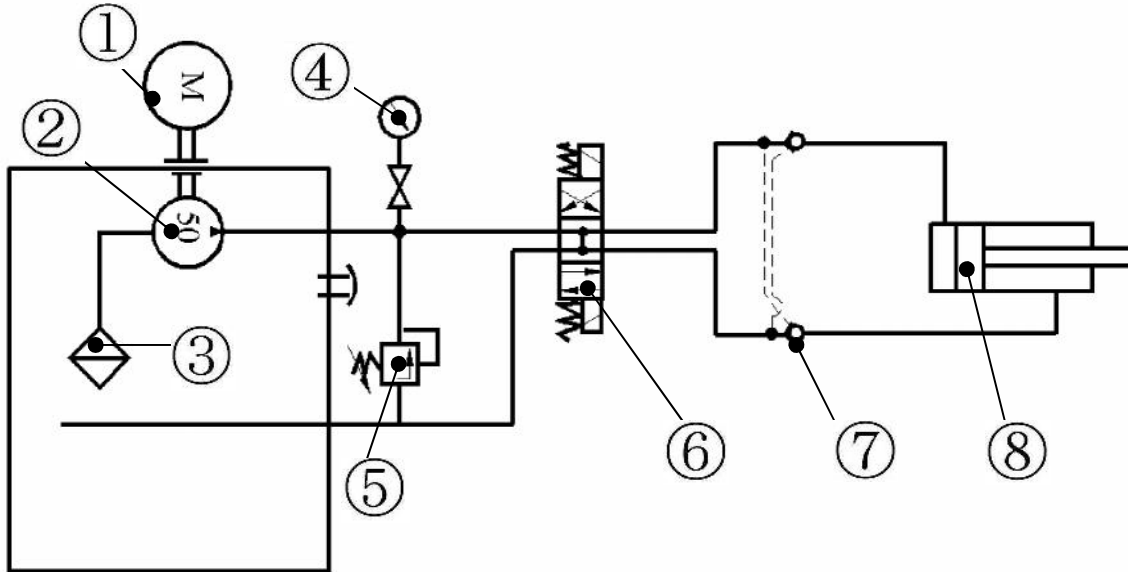


## PARTS LISTS OF HPK 50

### 1. Parts and Parts List of The Main Frame

Assembly No/Montaj no	Parça adı	Part Identification
1	Ön gövde	Front Body
2	Gövde tespit civatası	Body fixing bolt
3	Alt taban	Bottom table
4	Alt taban tespit civatası	Bottom table fixing bolt
5	Kama	Key
6	Alt top tahrik dişlisi	Bottom roll powering gear
7	Arka gövde	Back cover
8	Tahrik dişlisi	Powering gear
9	Üst mil tahrik küçük dişlisi	Top shaft powering small gear
10	Üst tahrik mili emniyet somunu	Top powering shaft safety nut
11	Alt top tahrik dişli tespit civatası	Bottom roll powering gear fixing bolt
12	Alt top tahrik dişli civata rondelası	Bottom roll powering gear bolt washer
13	Alt vals mili tahrik dişlisi	Bottom roll shaft powering gear
14	Rulman	Bearing
15	Rulman yatağı	Bearing bushing
16	Rulman yatağı	Bearing bushing
17	Rulman	Bearing
18	Kama	Key
19	Kama	Key
20	Ara bağlantı flanşı	Interval connection flange
21	Ara bağlantı mili	Interval connection shaft
22	Emniyet somunu	Safety nut
23	Emniyet pulu	Safety washer
24	Emniyet somunu	Safety nut
25	Rulman	bearing
26	Rulman yatağı	Bearing bushing
27	Üst vals tahrik dişlisi	Top roll powering gear
28	Kavrama yatağı	Coupling bushing
29	Kama	Key
30	Üst vals tahrik ara mili	Top roll powering interval shaft
31	Kardan kavraması	Kardan shaft
32	Rulman	Bearing
33	Kama	Key
34	Üst vals mili	Top roll shaft
35	Üst piston flanş bağlantı civatası	Top piston flange fixing bolt
36	O-ring	O - ring
37	Kızak tespit civatası	Sledge fixing bolt
38	Alt vals mili	Bottom roll shaft
39	Avare mili	Idle shaft
40	Yatak burcu	Bushing ring
41	Kama	Key

## HYDRAULIC PLAN AND COMPONENTS

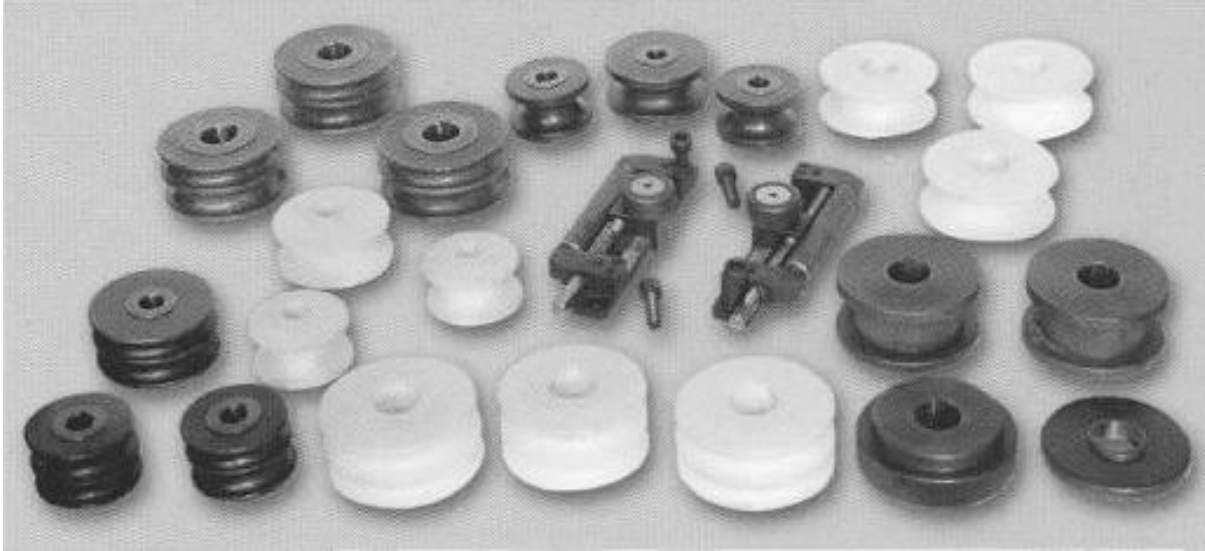


NO	ITEM	BRAND	SPECIFICATION
1	Motor	Wat / Gamak / Abana	0.75 kW 3 Ph
2	Pump	Salami / Sauer / Bosch	2 cm <sup>3</sup> 0510110002
3	Filter	GEMFA	25 μ ( micron )
4	Manometer	Pakkens	0 – 400 bar
5	Pressure control	Rexroth / Duplomatic	
6	Solenoid valve	Rexroth Duplomatic Parker	4WE6H5XAG24NZ4 0810092132 D1VW2CNJP75
7	Twin check valve	Rexroth Duplomatic Parker	Z2FS4 – 2 – 1X CPOM2DD
8	Hydraulic piston	Şahinler	

### Attention :

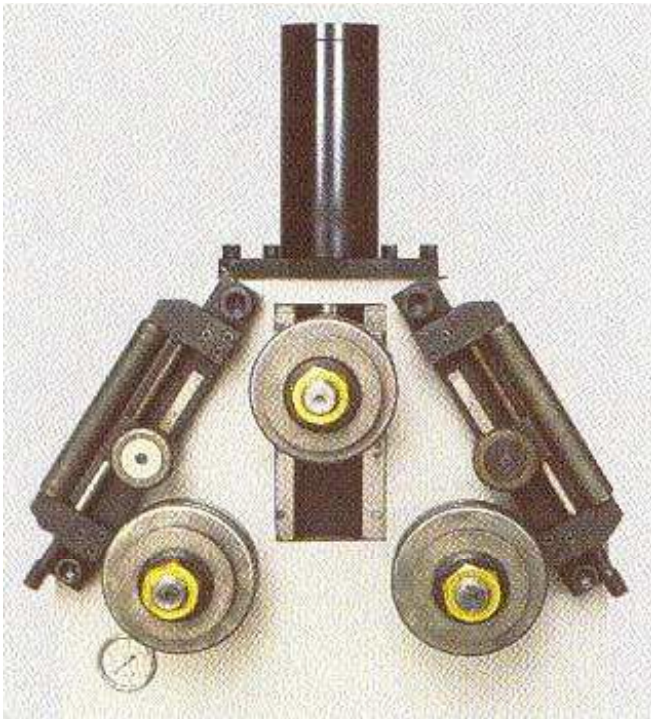
- Don't change value of the pressure valve. It is preset in the factory
- Check the oil level frequently and refill if necessary
- On items Nr.6 and Nr.7 your machine is equipped with only one set of these either Rexroth or Bosch

## **SPECIAL ACCESSORIES FOR MODEL HPK 50**



### ***Various special rolls;***

1. *For bending*
2. *Aluminum profiles*
3. *Pipes, tubes*
4. *Hollow sections*
5. *Angle sections*



*Special lateral angle guides*

