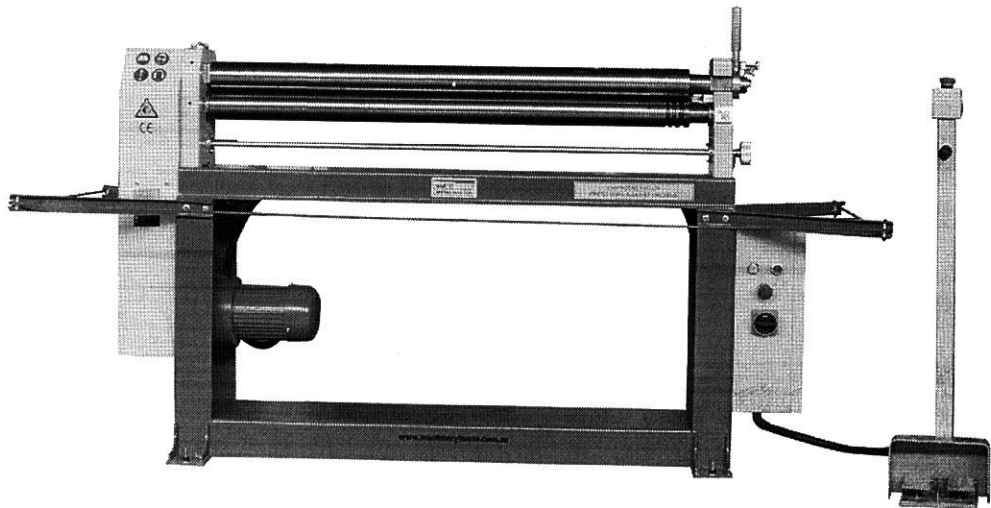


# Operating manual

## Rolling Machine



**PR-132H**

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<b>The machine production in our factory is suitable to the standards below. European standards and instructions are listing at the table below.</b>	
<b>Machine name</b>	<b>ASYMMETRICAL THREE ROLLER BENDING MACHINE</b>
<b>Machine Type</b>	<b>PR-132H</b>
<b>Production Year and Serial Number</b>	...../.....
<b>EC- Instruction</b>	
<b>EC-Standartds</b>	
<b>International Standards</b>	

## **1.GUARANTEE**

- The guarantee machine is 12 months
- This guarantee is valid for the materials and parts wadable from fabrication faulty , should repair and exchangeable only in this terms .
- This guarantee don't verify the replacement and repair parts,carriage ,workmanship,travel journey expenses
- For carlees usage and damage ,this guarantee should be invalid
- At normaly conditions this guarantee shold be invalid for the erod parts .
- This guarantee should be invalid,if the machine is using on the other working operation and places
- The user manual for the cylinder machine ,should give you the correct information and provide only general information

## **2.INTRODUCTION**

This manual includes placement operation, safety rules, maintenance, techinal specification, spare parts list and electrical plan of Asymmetrical 3 Roller Bending Machine,

There may be some difference between the manual and the machine because of renwals and developments. Please contact the seller company during assembling, operating and maintenance, this manual will help you and it should always be handy

**ATTENTION !**

The machine should be operated by trained staff

Any modification on the machine without written conformation from is strictly forbidden as such changes in the machine may cause damage or injuries.

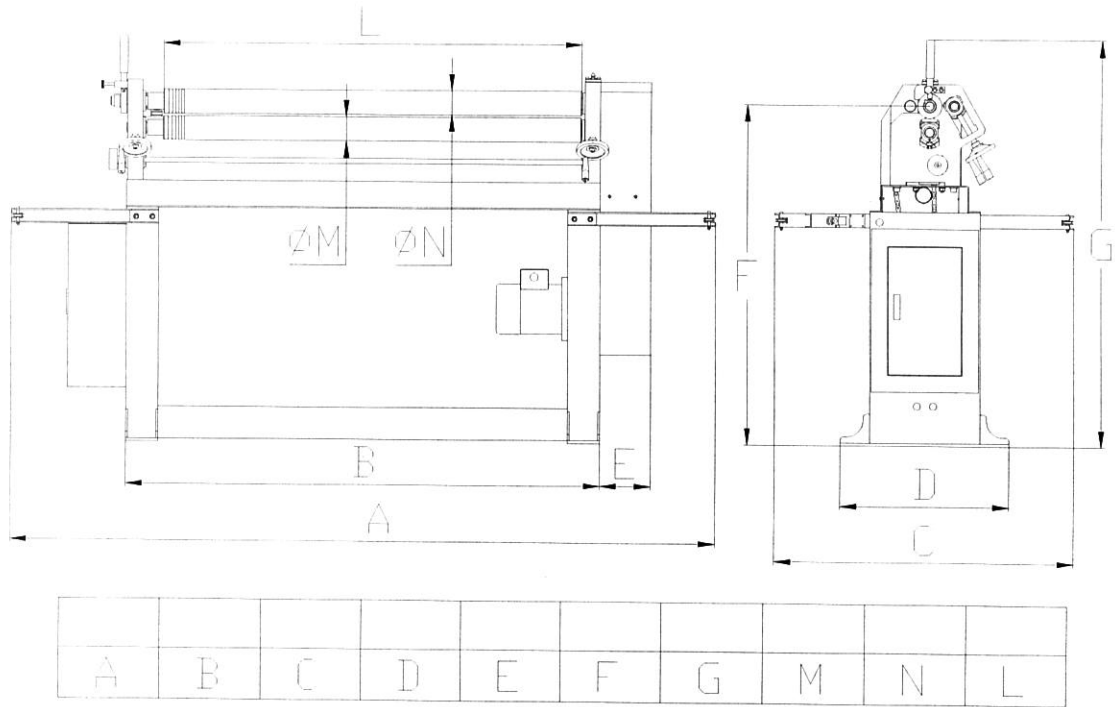
Working area of the machine should be away from flammable and explosive materials. It should be closed and should not be effected from air conditions.

Each time operator leaves off the machine, he should turn the main switch to position "0" and should

Do not take off the safety covers from the machine.

The operator that will use this machine should confirm that he read the instruction manual and understood everything.

Operator name and surname	Signature	Date	Employer



Type \_\_\_\_\_ Serial No \_\_\_\_\_

**OVERALL DIMENSIONS**

Height \_\_\_\_\_ mm

Length \_\_\_\_\_ mm

Width \_\_\_\_\_ mm

Weight \_\_\_\_\_ Kg

**ROLLS SIZES**

Central Rolls \_\_\_\_\_ mm

Side Rolls \_\_\_\_\_ mm

**BENDING SPEED**

One Speed \_\_\_\_\_

**POWER SUPPLY**

Voltage \_\_\_\_\_

Total Power Installed \_\_\_\_\_

Prebending Thickness \_\_\_\_\_ min  $\phi$ - \_\_\_\_\_ - mm.

Prebending Thickness \_\_\_\_\_ - mm.

Bending Thickness \_\_\_\_\_ - mm.

### **PERFORMANCES LIMITS**

The machine performance limits change according to:  
The kind of material (mechanic characteristics, hardness, yield point, etc.)  
The diameter to obtain  
The plate width in comparison with rolls working width

### **MACHINE INFORMATION**

#### **STANDARD EQUIPMENT AND OPTIONAL EXTRAS**

Standard and special equipments of the machine are listed below. Standard equipments already exists in all the machines. √ symbols are out in the boxes next to special equipments that are included in the machine you bought.

#### **STANDARD EQUIPMENT**

- The machine is fabricated of steel construction
- Rolls made of special steel
- Side roll bearing
- Upper and lower roll bushing
- Seperate control panel
- All functions of the machine are controlled from control panel
- Central rollers rotation is driven with reducer+electric motor
- Electrical precaution against overload.
- Electric installation. (Siemens, Telemecanique)
- To CE standars

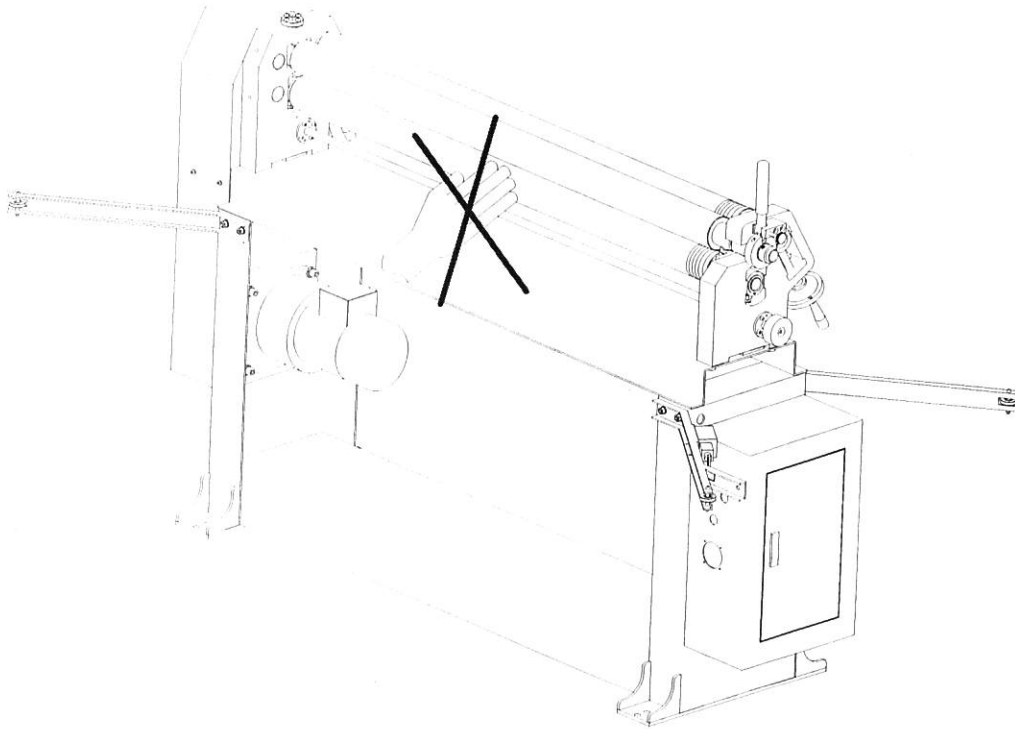
#### **OPTINAL EXTRAS**

- Side roll with motor
- - Lower Roll with motor
- Hardened rolls
- Cone bending device
- Extended rolls
- Section bending rollers
- Digital display
- Central lubrication system
- Material pushing table
- Foot pedal
- Electric

Voltage

### **SAFETY FACTORS**

ASYMMETRICAL 3 Roller Bending Machine has upper and lower rolls rotating. Between those rolls, operators hands or fingers may be trapped. Be careful no to allow any of your clothing or hands between these rolls while they are rotating.



Do not do any maintenance when the machine is working.

- Be sure that the machine is off when you take off the back cover
- After closing the covers, control safety rope carefully

### **AT ANY DANGEROUS INSTANT : PRESS THE EMERGENCY BUTTON OR STEP ON THE ROPE SURROUNDING THE MACHINE**

- In an emergency, the first thing to do is to press emergency-stop button on the panel or to step on the rope surrounding the machine
- Stop the machine before maintenance, repairing and cleaning -Never take off the safety covers from the machine.



### **POSSIBILITY OF DANGER ON THE MACHINE**

On ASYMMETRICAL 3 Roller Bending Machines, safety measures towards danger are Taken. For example:

The electric installation has a metal closure.

Other dangerous part is the place where rolls rotate. By wrong and careless use, dangerous situations may arise. During working, safety rope is mounted around the machine towards accidents.

### **DAMAGE CAN HAPPEN**

- User operator's fingers or hands
- User operator's clothes or other subjects
- Deformed working material
- The third person when material is bending
- Machine bending equipment.....

All staff who run, install and maintain the machine are responsible to read the warnings and apply the instruction manual. Do not attempt to bend hard materials except form metal or aluminium sheet. You may give harm to either the machine or yourself. To make modification on the machine is forbidden because of safety and productivity. Working maintenance and safety factors in the instruction manual are supposed to be obeyed and applied.

### **FUNCTIONS OF THE MACHINE**

Asymmetrical Bending Machines are produced to shape material and their functions are shown below

This machine has the ability to bend closed and semi-closed pipes and conics. Our machines are produced in different capacity and dimensions depending on the thickness of the material bent Check sheet thickness on page 5 before starting to bend material. Do not attempt to bend material that is larger than indicated sheet thickness or quality.

To identify Asymmetrical Bending Machines, roll diameter, width of the bending material and thickness of it are indicated.

For example XYJB-C 75 x 1300 x 2

XYJB-C = Machine Type

75 = Roll diameter

1300 = Bending material width

2 = Thickness of material (mm) that is 1,5 times larger than roll diameter

These values are valid for materials in St-37 quality.

Yield Pressure = 90 N/mm<sup>2</sup>

Straight Pressure = 130N/mm<sup>2</sup>

### **APPROPRIATE USAGE OF THE MACHINE**

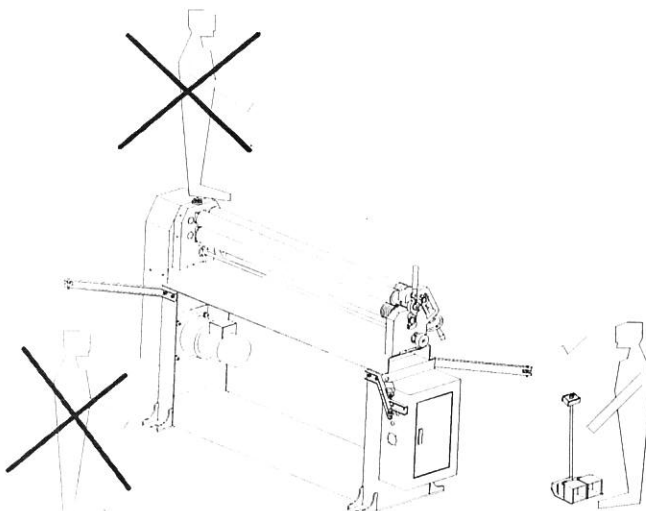
All bending process should be done in front of the machine where control panel takes place and only one person should operate. Then placing material in to the machine, another personnel should help, other bending process should be done only by operator himself. Therefore, operator take all safety precautions and he should control in each step throughly. Operator should take all safety precautions and he should control in each step throughly.

Around the machine, there should be a security area where max.bending material can take place. And no one should be allowed to enter this area except from the operator.

### **INAPPROPRIATE USAGE OF THE MACHINE**

There should be no one in security area during bending process. During maintenance electricity should be cut off.

No one should be allowed to step on the machine on any condition.



### **SUITABLE OPERATOR**

Young people under 16 is not permitted to run 3 Roller Bending Machine. The operator who wil run this machine should confirm that he read instruction manual and understood eveything.

### **OPERATOR PROTECTION**

In the situation that machine is working under normal conditions, operator should not need any other measures. In working situation:  
Because of the danger of dropping working material, workers should wear steel type shoes and when handling hard and sharp working material they should wear work gloves. For machine attention and maintenance expert staff should have the right equipment.

- Allen key set
- -Spanner Set
- -Oiling gun
- -Protective gloves
- -Steel tip protective shoes
- -Screwdriver set

### **SAFETY FACTORS WHEN SETTING UP THE MACHINE**

XYJB-C machine should be positioned on strong, hard and ground level.  
(Check the ground plan)  
The machine which have overturns can cause serious damage and accidents. Material can not be bent properly in the machine that is not positioned correctly. Besides,  
damage may happen due to wrong positioning.

If the machine stands with stocks for a while before running, it should be covered with an awning and should be protected from dust.

### **SAFETY PRECAUTINS**

On page 10, asymmetrical 3 Roller Bending machine safety precautions are shown. To check these factors also acheck list is added for the user (operator)

### **CONTROL THESE SAFETY PRECAUTIONS**

- Control those factors for each working shift
- Please, check the safety elements once a week periodically
- After every service intervention and maintenance, control those safety precautions.

### **THE CARE POINTS ON CONTROL**

- Check if the machine is in the correct position
- Check if the machine functions correctly.
- Check if the machine is mounted safety.

Eliminate any problem or failure before running the machine. Stop the machine immediately if you see any problem when the machine is running and contact with the salesman

**Do not take off the safety elements that instant of machine is running or before**

### **Safety Features**

- 1- Protection plates
- 2- Switch on electric panel
- 3- Energy indicator on electric panel that shows there is electric power
  
- 4- Thermal indicator on electric panel.(indicates overload trip)
- 5- Emergency-stop button on the control panel
- 6- Key switch on the control panel
  
- 7- Displays on the control panel
- 8- Other buttons on the control panel
- 9- Warning labels
  
- 10- Soundness of the energy cable.
- 11- Connection cables of the control panel
- 12- Safety rope

CHECK LIST OF SAFETY PRECAUTIONS

Fotocopy this check list in each control and use. Cofirm each point which functions correctly by putting a √ . And save it in case a failure arise.

CHECK LIST		CONTROL	
CHECK LIST		DATE	

- PROTECTION PLATES : They should be mounted and screwed.
- ELECTRIC MAIN ISOLATING SWITCH : It should be assembled and it should be checked if it is working or not
- POWER LAMP : It should be assmbled and when there is power the lamp sholud be checked if its on or off. Check it against bulb failure
- THERMAL LAMP : It should be assembled and when the thermal overload is tripped it should turn on.
- EMERGENCY STOP BUTTON : It should be assembled on panel check if it does its functions stops main motor.
- SELECTIVE KEY SWITCH (0-1) it should be assembled on panel. It should function to switch on the display and control circuits
- DISPLAYS : Should be assambed and when there is power the display should be on. Check function
- ALL OTHER PANEL FUNCTION BUTTONS : Should be assembled in and function correctly
- WARNING LABEL : it should be fixed securely and it sholud be in a place that can be seen easily
- POWER CABLE : it should be fixed securly to the machine it should not be broken and or stripped. It should have safety protection against mechanical damage
- CONTROL PANEL CONNECTION CABLE : It should be assembled and the flexible outer cover should be checked for damage.
- OIL CONTROL : Machine's oil level should be checked and manual lucrication should be controlled. τ it is suggested that the machine is transported with a covered waterproof folio no to be effected from air conditions.

## HANDLING AND LEVELING THE MACHINE

Always use high capacity quay and synthetic rope to lift the machine. Check lift capacity of

ropes and compare them with the machine's weight on page 6

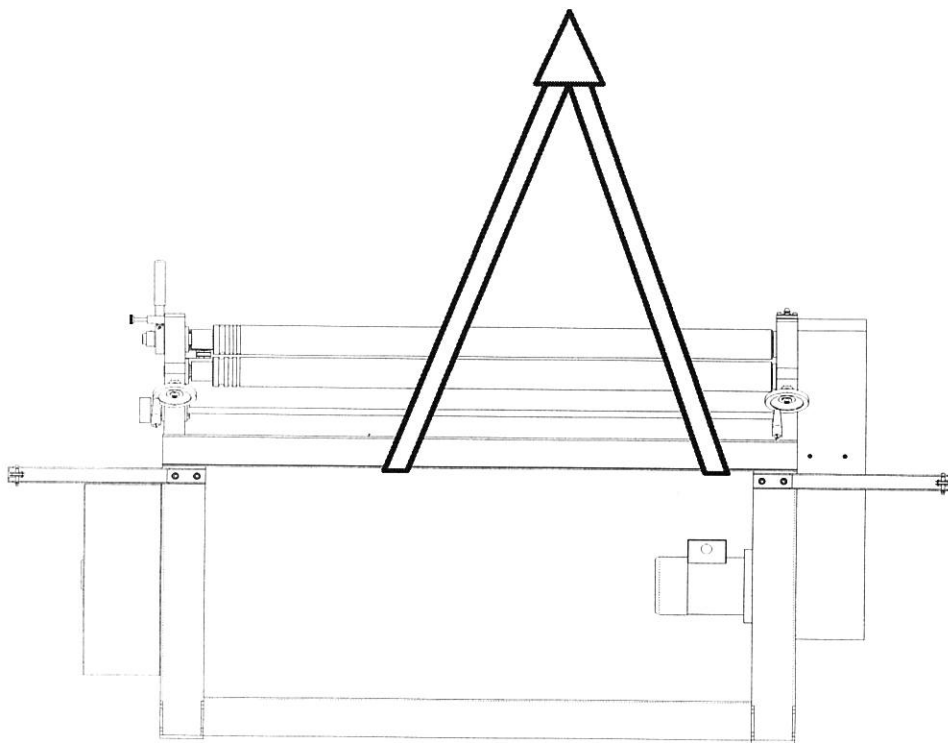
Pick up rolls and pin together as figure

It is suggested that ropes are tightened first and then you lift the machine in balance,

because

dominant weight is on the reducer side (not on the roll)

It is required that you do not loose the ropes. Otherwise the machine may slide and jolt.



## **UNPACKING**

Asymmetrical Bending Machine are oiled and covered with waterproof folio to protect machine from weather conditions during transport. During transport (in open vehicles) use suitable tarpaulins or other covers additional to above films to protect from weather

At unpacking, if you see any transport damage call the transporter or seller at once. Dispose of the packaging safety and with regard to the environment use gloves when unpacking. Unpainted surfaces are protected with oil for transport. Clean this off with "Kerosene" use gloves, dispose of waste wipers safely.

Cleaning of the machine, that is oiled with protective oil, is as follows,

Rolls and bright wrought surfaces are cleaned with thinner

- Painted surfaces are cleaned with a mixture of diesel oil and water

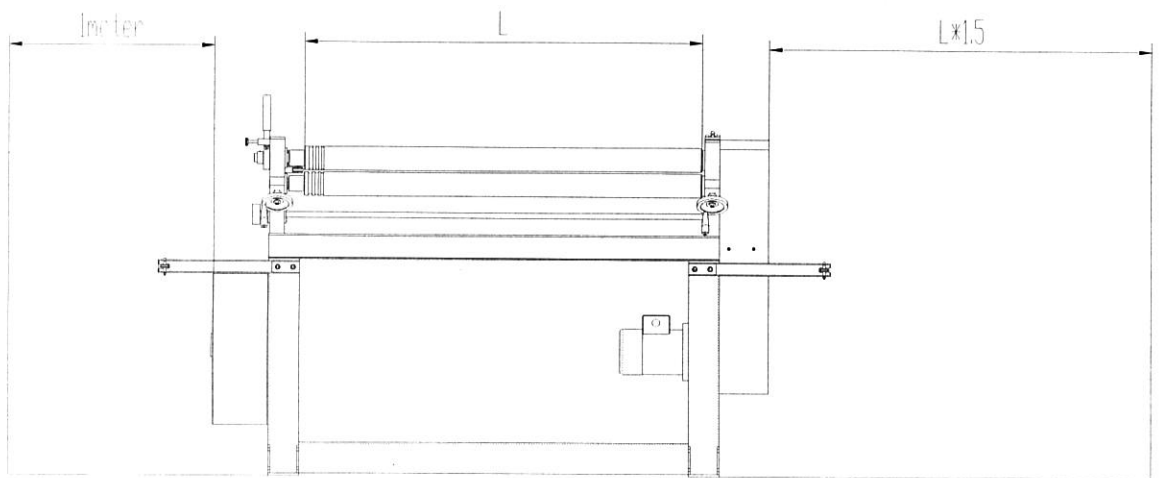
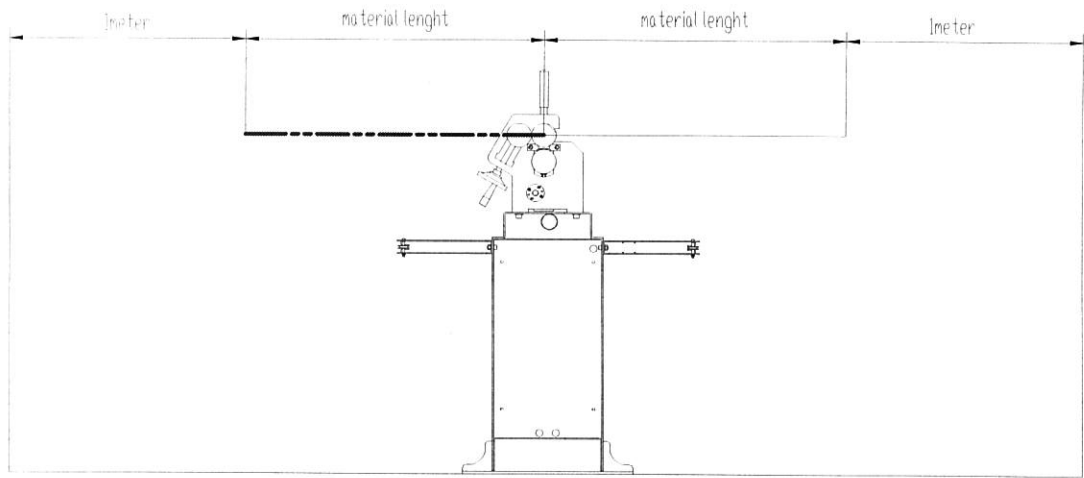
## **MACHINE GROUNDING MOUNTING PLAN**

Machine mounting area should be arranged in accordance with mounting information shown on page 16 and mounting plan on page 17. After controlling the machine's position if balanced or not, it should be fixed. Decimal balance device should be used to position the machine correctly and nuts should be checked.

## **MOUNTING INFORMATION**

Before mounting the machine, pay attention to dimensions on page 5 and explanations below

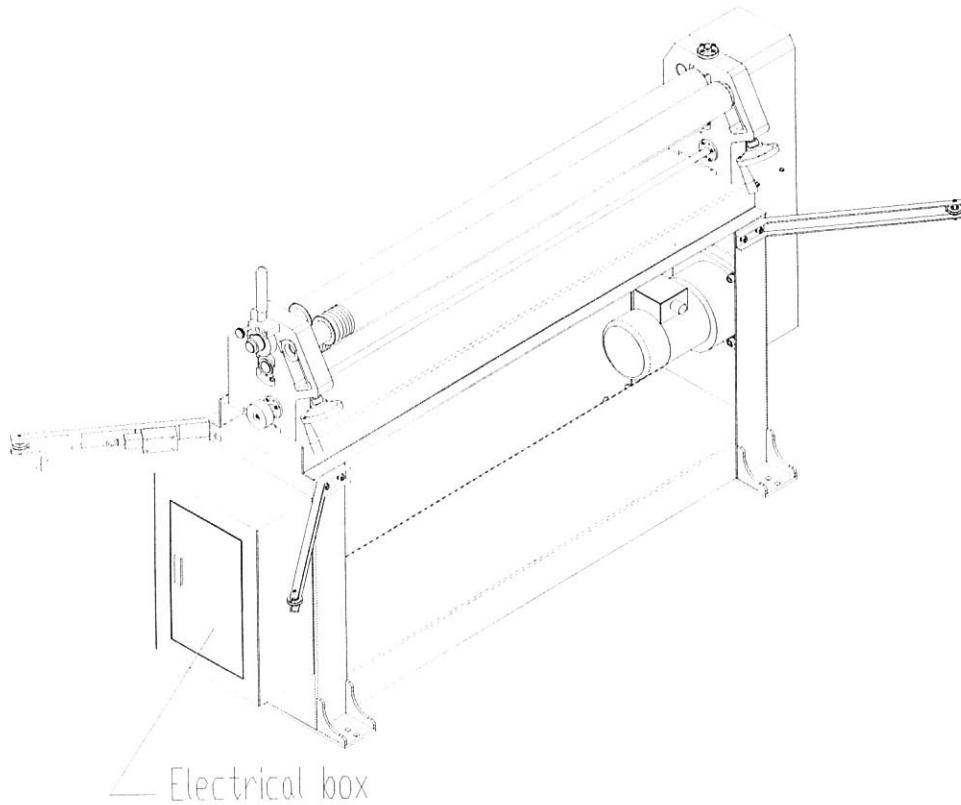
- 1- Enough space should be left around the machine to reach every side of the machine for maintenance.
- 2- On the front side of the machine, there should be space (Lx1,5) that is, 5 times larger than sheet length to take off the material easily.
- 3- There should be enough space on both sides of the machine to bend material easily and after this space, 1 meter walking area should be left



## **ELECTRIC CONNECTION**

Electric connection should be done by an experienced electrician. Before making connection, the values should be checked on the label in electric box and electric connection should be done according to these values

Push the energy cable in to the hole on the side of the machine. Connect energy cable to the electric box through tube which is between electric box and hole. Connecting cable that is between the machine and control panel is screwed off separately. Attach the multiple plug to socket



## **MACHINE USAGE**

To get high productivity, correct usage, correct maintenance and regular cleaning should be done

Material should be prepared before bending due to its structure. For this:

- 1- Clean burrs which is on the edges of material cut with oxygen.
- 2- Clean all the spurs, rust, cinder. These may give harm to rolls, even if rolls are hardened.
- 3- Clean both sides of the sheet.

4- Before starting to bend, check the sheet again. If there is a problem, clean again.

Physical condition of the sheet effects quality of material bent. If the face of the material is

dirty, the sheet may be grained.

## **QUALITY OF MATERIAL**

You know that semi-quality material, which is to bend, is delivered in different qualities. Multiple bending materials can not give the same result because of the difference between material quality.

The most important factor that effects bending quality:

- 1- Sheet quality
- 2- Flow limit
- 3- Elasticity limit
- 4- Material direction
- 5- If thickness is same on all surfaces of sheet or not; thickness homogeneity

These factors are so important that if one of them is changed, you can not get the dimensions you bent.

For example, when you want to bend a material whose elasticity factor is high with the same machine adjustment, diameter obtained will be different.

You might obtain different results, if you want to bend material in one step rather than in two steps. Because, in two step procedure, flow limit might have changed after the first step

These factor differences are faced (met) often even in the same material groups. Therefore, you

Another bending fault occurs while bending big diameter material. While bending this kind of material, it is bent correctly at the beginning. In the middle, it is sagged due to its weight and spoils the radius. To prevent this, central and side guides should be used.

## **PLACING MATERIAL**

After doing all the safety factors shown on page 10, you can start to bend materia lFirst step of bending process is to place material. To obtain a high quality material bent, you should push and position correctly the material that is squeezed in to rolls Initial steps of this process are:

- 1-Material should be placed into the rolls on any condition.
- 2-Material should be placed paralel to rolls axis.

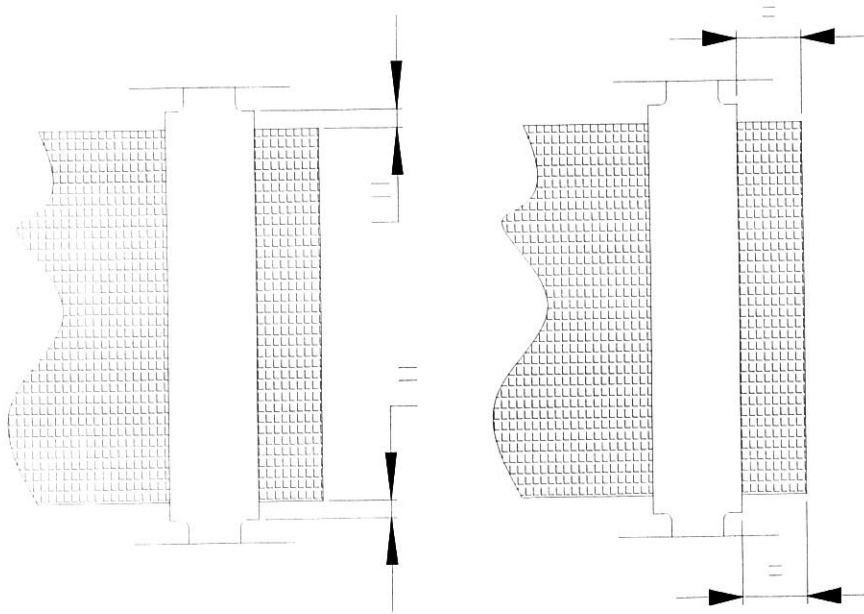




FIGURE:1

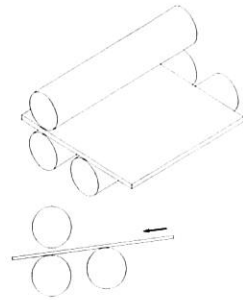


FIGURE:2

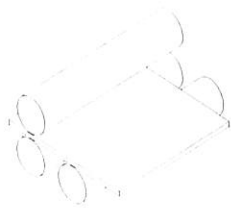


FIGURE:3

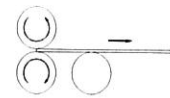
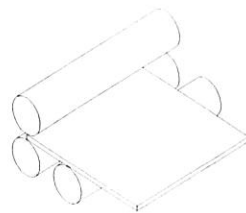


FIGURE:4



FIGURE:5

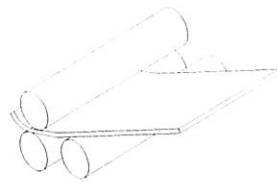


FIGURE:6

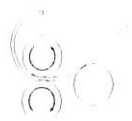
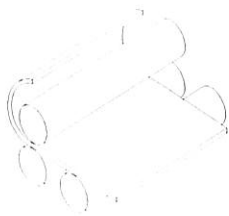


FIGURE:7

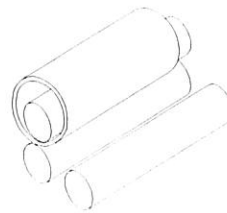


FIGURE:8

## **BENDING PROCESS SEQUENCE**

**FIGURE 1** : Move down bottom and back rolls depending on the material

thickness. **FIGURE 2** : Push the material in to rolls.

**FIGURE 3** : Place the material in to rolls as shown on page 22 and move up bottom roll and

**FIGURE 4** : Pull the material to parallel of rolls as near as possible

**FIGURE 5** : Move up back roll depending on desired diameter to make pre-bending.

**FIGURE 6** : Push moving right or left button and turn the material to some degree. Check pre-bending by means of gauge depending on desire diameter. If pre-bending is correct, then apply same process to opposite edge by reversing material.

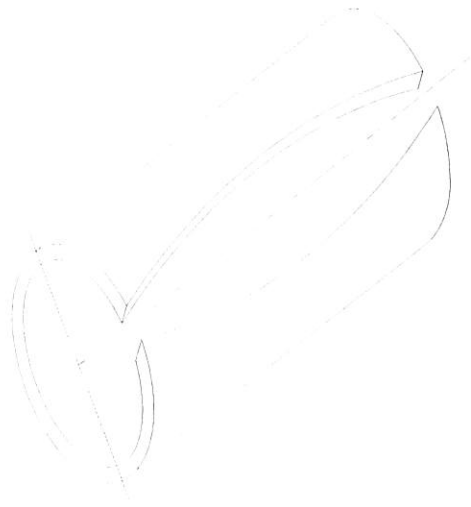
**FIGURE 7** : Move "side roll" upwards till desired diameter obtained, then rotate rolls.

**FIGURE 8** : When desired dimension is obtained, calibrate the material, rotating once and more

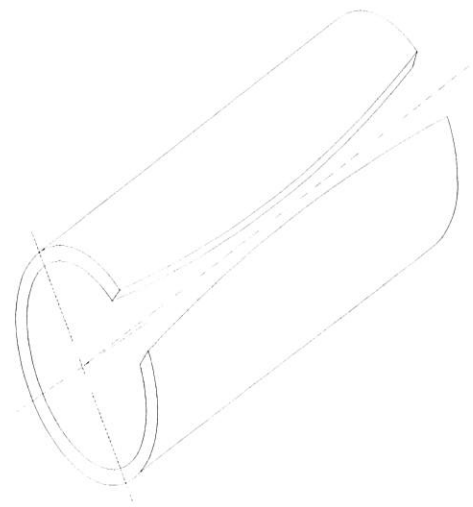
Other important point on bending properly is angle location of material. Material should be Compression of bottom and upper rolls are done manually in standard machines. Yet, if special equipment is desired, this compression is done by means of motor.

If roll compression force is bigger than desired, sides of material bent becomes adjacent, and middle part of material becomes distinct. This is called "barrel fault". If roll compression force is smaller than desired, material slides through rolls and sides of material bent becomes distinct, middle part of material becomes adjacent. This is called

"anti-barrel fault"



barrel fault



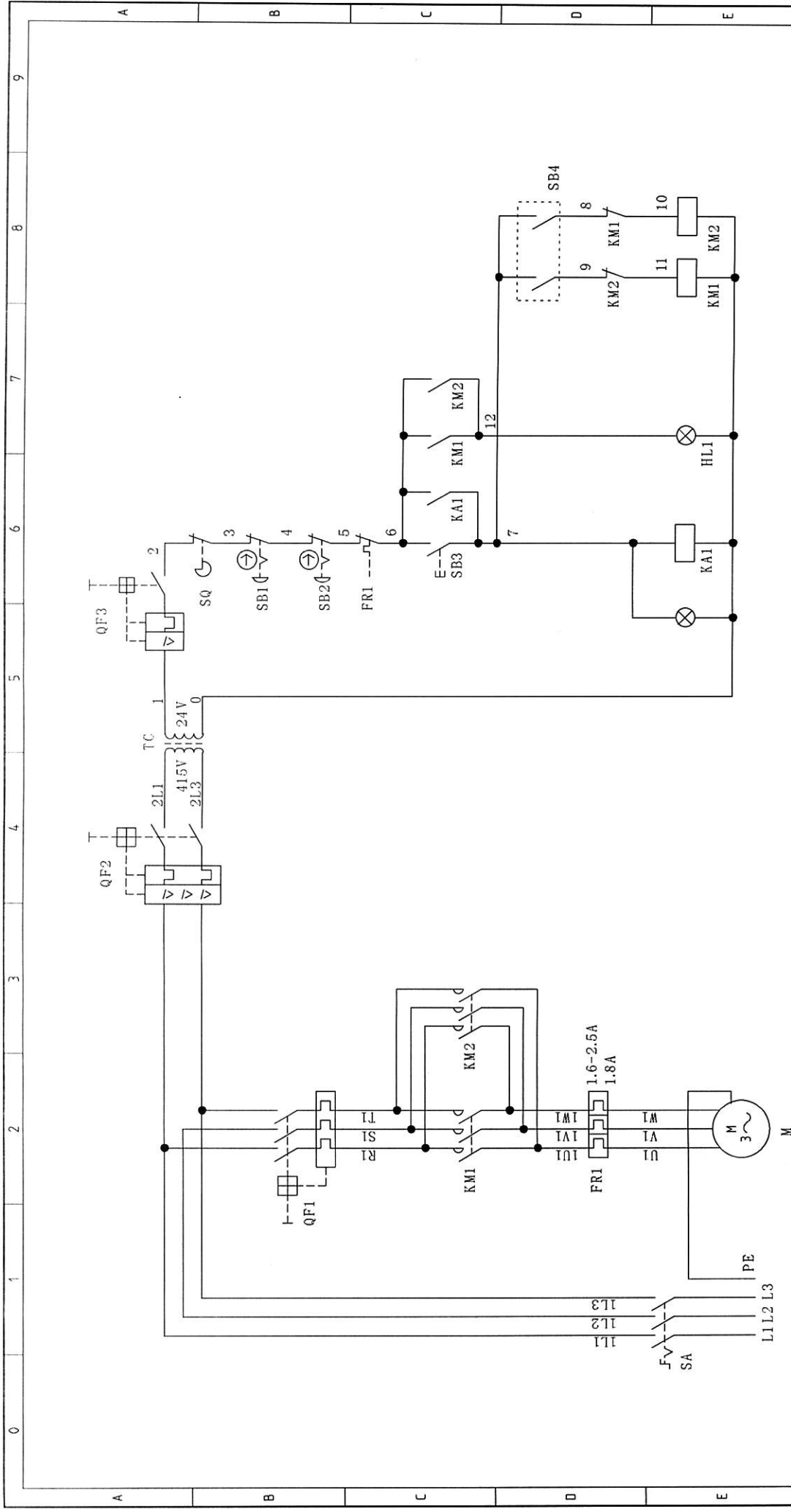
anti-barrel fault



	Part name	Drawing No.	Number
1	The base	XY-1300-080101	1
2	Handwheel	XY-1300-080102	1
3	Roller sleeve	XY-1300-080103	8
4	M5 nut		4
5	GB_FASS M5X50-N bolt		4
6	SN6170-SL-C-R pull rope switch		1
7	The left supporting	XY-1300-080104	1
8	Flat washer Phi 12		16
9	Bolt M12X30-N		4
10	The right support	XY-1300-080105	1
11	Mobile suit	XY-1300-080106	2
12	Copper sleeve	XY-1300-080107	8
13	The lower press roller	XY-1300-080108	1
14	Shaft circlip 30		1
15	18-2.5 gear	XY-1300-080109	2
16	Shaft circlip 25		4
17	Axle sleeve	XY-1300-080110	1
18	The upper pressure roller	XY-1300-080111	1
19	Bolt 6X22		2
20	The vertical axis of rotation	XY-1300-080112	1
21	Bolt M6X20-N		4
22	M10-1 nozzle		1
23	On the spindle sleeve	XY-1300-080113	1
24	Handle bar	XY-1300-080114	1
25	Bolt 6X30		1
26	A fixing ring	XY-1300-080115	1
27	Bolt M8X10-N		1
28	After the pressure roller	XY-1300-080116	1
29	7943-25 small shaft		1
30	7943-25 needle roller bearing		3
31	30-2.5 driven gear	XY-1300-080117	1
32	Shim	XY-1300-080118	2
33	30-2.5 driving gear	XY-1300-080119	1
34	The driven sprocket	XY-1300-080120	1
35	Bearing 6005		5
36	Bolt M8X16-N		2
37	Bracket	XY-1300-080121	1
38	Flat washer 10		8
39	Bolt M10X35-N		4
40	Nut M10-N		14
41	Cover plate	XY-1300-080122	1

42	Bolt M10X50-N		4
43	The motor mounting plate	XY-1300-080123	1
44	Electric machinery		1
45	12B-1 driving sprocket	XY-1300-080124	1
46	Flat key 10X63		1
47	Card	XY-1300-080125	1
48	Bolt M8X35-N		2
49	M8 high head screws	XY-1300-080126	1
50	12B chain		1
51	Worm	XY-1300-080127	2
52	Turbine	XY-1300-080128	2
53	Cover	XY-1300-080129	4
54	Bearing 6003		4
55	Screw	XY-1300-080130	2
56	A plane bearing 51104		2
57	The 2415 sliding sleeves		4
58	Turbine bottom gasket	XY-1300-080131	2
59	The rotating rod 17	XY-1300-080132	1
60	Taper support	XY-1300-080133	1
61	Taper support pin	XY-1300-080134	1
62	The electric appliance box	XY-1300-080135	1
63	Bolt M6X12-N		8
64	Elastic cushion 12		4
65	Bolt M12X40-N		4
66	Nut M12-N		4
67	Bolt M5 x 10		20
68	After the move sets	XY-1300-080136	2
69	Hu Chong washer 25	XY-1300-080137	2
70	A left support shield A	XY-1300-080138	1
71	Taper roller	XY-1300-080139	1
72	The main transmission shaft	XY-1300-080140	1
73	Flat key 4X20		1
74	Flat washer Phi 8		16
75	Bolt M8 x 20 - 20C		10
76	Flat gasket 5		8
77	Increase the gasket 6		3
78	Bolt M6 x 10		3
79	Bolt M5 x 8-C		2
80	Pull rope bracket 22	XY-1300-080141	1
81	The adjusting screw HFC	XY-1300-080142	2
82	The regulating handle HFC	XY-1300-080143	2
83	Flat key 6X18		2
84	The crank handle sleeve	XY-1300-080142	2

85	The crank handle bar	XY-1300-080143	2
86	Bolt M8 x 45		4
87	Fastening screws - M8 x 12-C		2
88	Pull rope bracket 2	XY-1300-080144	3
89	Nut -M8 - C		8
90	Roller	XY-1300-080145	4



扬州欧普有限公司		PR-132H		图样标记		数量		重量		比例	
机械		电气原理图		S		A		B			
设计		徐长林		审核		凌敏		日期		14-10-13	
校核				日期				第 1 页		共 1 页	
工艺				日期				7		8	

标记		更改文件		签字		日期	
设计		徐长林		凌敏		14-10-13	
校核							
工艺							