

ELEC. ROUND BENDING MACHINE

MODEL: ERBM10



OPERATING MANUAL

Table of contents

I. GENERAL NOTES.....	3
II. GENERAL WARRANTY TERMS.....	5
III. GENERAL SAFETY TERMS.....	6
IV. TRANSPORTING, LIFTING AND CARRYING.....	7
V. FOUNDATION AND MAIN DIMENSIONS OF THE MACHINE.....	9
VI. ERBM10HV's TECHNICAL PROPERTIES	10
VII. START-UP INSTRUCTIONS.....	13
VIII. MAINTENANCE.....	18
IX. PART LIST.....	19

I. GENERAL NOTES

1. Introduction

This manual is for your safety and is essential information for 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 for maximum safety and efficiency.

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

Possible risks connected with machine operation are pointed out as follows:

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

WARNING: Shows 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 operating machine and before any lubrication or

maintenance intervention.

Safety must be your first concern during all steps of installation, operation and maintenance 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 can not be found contact first of all the distributor where you purchased our product. Do not forget to refer to the drawings and the numbers and production year of the machine. Our technical staff will do their best to help you in the most convenient way.

2. Transport

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 in transport, immediately take photographs for insurance claims.

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

3. Maintenance

Your machine is designed and produced to work efficiently and smoothly. To achieve this, you should also take care while operating the machine. Take heed of the maintenance sections to give your machine the longest possible life. Try and use original spare parts

where necessary and most importantly do not overload the machine or do not make any unauthorized modifications.

4. 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.

II. GENERAL WARRANTY TERMS

- ◆ Your machine is covered by manufacturer's guarantee for a period of 12 months from the date of production against manufacture defects.
- ◆ The warranty covers only manufacture defective parts and / or components that are reported as "defective" by distributor technician or the agent technician and must be reported to distributor in writing by fax or e-mail.
- ◆ The manufacturer is responsible for the supply of free of charge spares only and can not be held responsible for loss of work.
- ◆ Shipping and customs fees for the spare part must be paid by the end-user.
- ◆ 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 include the model, serial number and the manufacture year of the machine.

III. GENERAL SAFETY TERMS

1. Machine's safety accessories and accident prevention terms

◆ No other persons except for a qualified and well-trained operator should be allowed to use the machine and be present in the working area of the machine

◆ Before making any modifications to change the machine's use, please contact to distributor. and ask their written approval.

2. Abnormal conditions

In order to avoid unusual working conditions, 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.

◆ Avoid approaching 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 by hand.

- ◆ Never wear garments with loose parts, which may become caught in the machine parts like necklaces, ring etc, and avoid long loose hair.
- ◆ Never use materials outside the operational specifications of the machine.
- ◆ Never run the machine without safety devices.
- ◆ Don't climb on the machine.
- ◆ If the customer wants to install a piece of equipment on the ERBM10HV, which has not been supplied by us. compliance with the safety conditions explained here must be checked.
- ◆ The machine can not 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.

IV. TRANSPORTING, LIFTING AND CARRYING

Before preparing the machine for installation and start-up, a detailed visual account is required in order to detect any possible damages that occurred during transporting and handing. The distributor has to be informed of unexpected occurrence straight away.

If one or several parts of the machine have been damaged while shipping, the installation of the machine has to be suspended.

While lifting take care of these points:

- ◆ Always lift and carry the machine from the handles.
- ◆ Use a steel rope capable of carrying 160 kg.
- ◆ Take precautions for handing and lifting.
- ◆ Check if the load is properly balanced by lifting it an inch or two.
- ◆ 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.

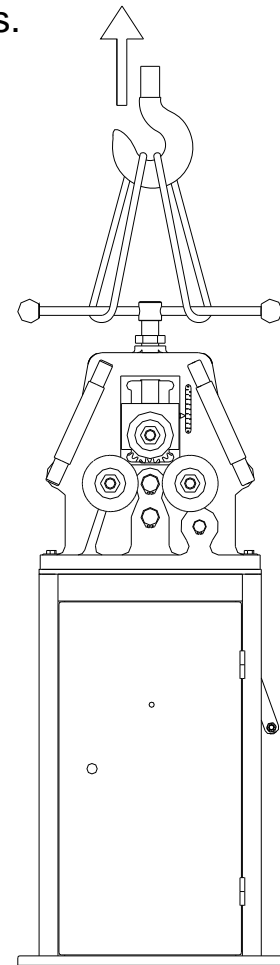
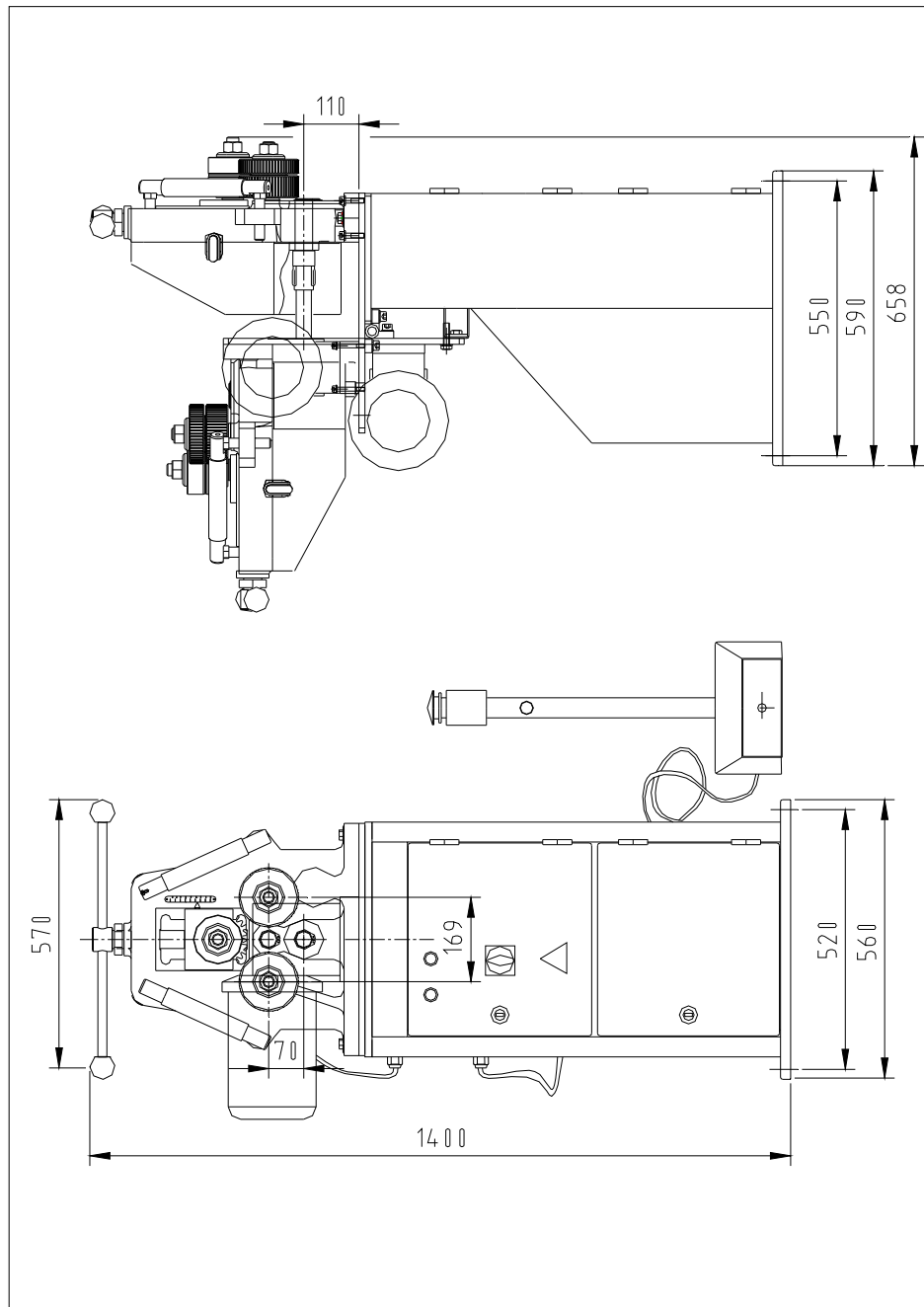


Figure 1

Figure 1 shows a way of carrying the machine. You can use a crane with hook or a forklift for handing 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 a large clearance area around the machine is important for efficient and safe working conditions.

V. FOUNDATION AND MAIN DIMENSIONS OF THE MACHINE



Note: The manufacturer does not accept any responsibility for damages due to the nonobservance of the listed specifications.

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

VI. ERBM10HV's TECHNICAL PROPERTIES

Shaft diameters: \varnothing 1.18"

Lower rolls diameters: \varnothing 4.65"

Upper roll diameters: \varnothing 3.86"

Weight: 230.00 kg

Length: 70.00 cm

Width: 70.00 cm

Height: 140.00 cm

STANDARD SPECIFICATIONS

- ◆ Two rollers are electric powered
- ◆ Special cast frame
- ◆ Rolls shafts are special hardened steel
- ◆ Standard rolls, guide rolls
- ◆ Solid cast gears
- ◆ User's manual book

SPECIAL FEATURES

- ◆ Special rolls for pipe, tube and profile bending
- ◆ Extended roll shafts

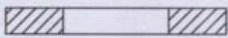
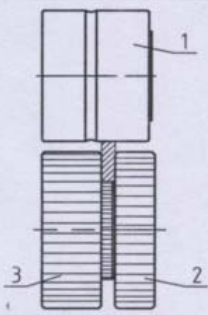
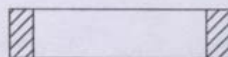
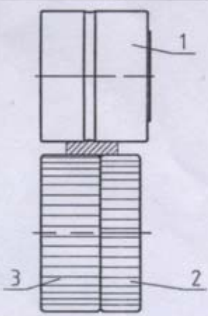
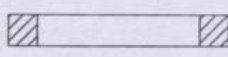
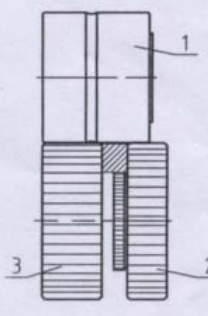
SAFETY UNITS

- ◆ Various DANGER signs around the machine

Note: Due to various safety regulations, the specifications presented

here can change 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 ERBM10HV

						
I	20x5 30x10	NO.	Art.no.	Description	Size	Quantity
		1	017	Driven	φ98x81	1
		2	025-2	Driver	φ118xφ74x45	2
	3	025-1	Driver	φ118x45	2	
						
						
II	20x5 50x10	NO.	Art.no.	Description	Size	Quantity
		1	017	Driven	φ98x81	1
		2	025-2	Driver	φ118xφ74x45	2
	3	025-1	Driver	φ118x45	2	
						
						
III	10x10 20x20	NO.	Art.no.	Description	Size	Quantity
		1	017	Driven	φ98x81	1
		2	025-2	Driver	φ118xφ74x45	2
	3	025-1	Driver	φ118x45	2	
						

Capacities are given for ST 42 material.

We reserve the right to make changes without notices.

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.

STANDARD ROLLER DIMENSIONS IN INCHES FOR ERBM10HV

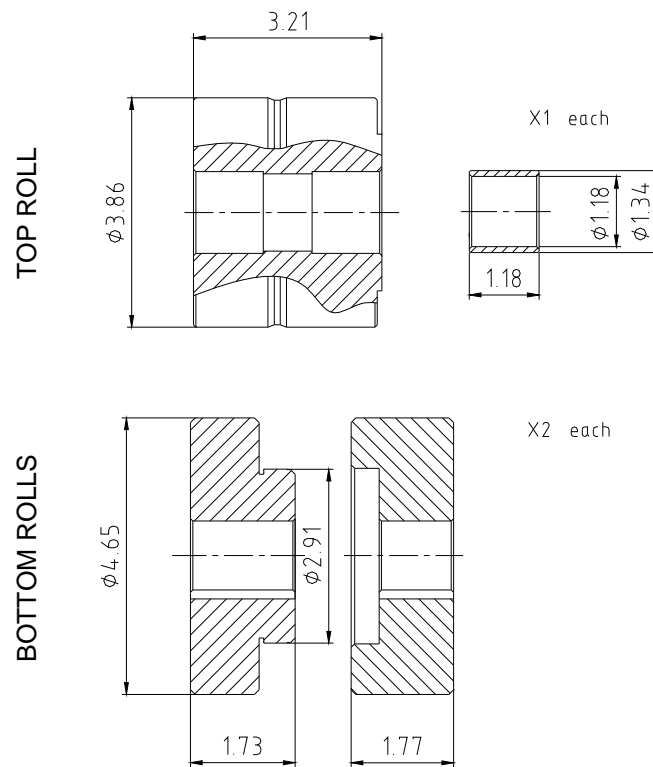


Figure 1

Roll material SAE 1050 hardened to >40 HRC

Note: Special rollers are available from us.

VII. START-UP INSTRUCTIONS

1. Materials and products

Although the machine is mainly steel, it is not designed for handling flammable or detrimental products. It is duty of the customer to check if the materials to be processed are potentially hazardous. 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 choice:

- ◆ Material must be clean of oil and dry. (without oil)
- ◆ Material should have a smooth surface so it processes correctly and easily.
- ◆ Material diameter must be regular and match the values explained in the instructions.
- ◆ Chemical structure of material must be homogenous and the hardness value must always be same throughout the material.
- ◆ We recommend you buy certificated steel.
- ◆ Material should also be bought from the same place when possible.

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

on the rolls.

2. Operating the machine

The following rules must be applied for better productivity

After you choose the desired working position, put the material to be bending between rollers. In order to get the desired bending act upon the leading roller in the bending direction by hand.

The desired profile bending is obtained by turning the upright driving shaft of slide war gradually, as well as the position of the main roller shaft.

The guiding rollers are driven by the bending mechanism activated by the electric motor. It allows repeated travels in both directions.

Starting of the electric motor in the both direction is made using the double pedal.

OPERATION

1. Operating instructions

Place the material on the roll flatly as shown in the figure 1. Make sure that material is place 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 you may deflate the material during bending operation.

To get desired diameter 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 opposite

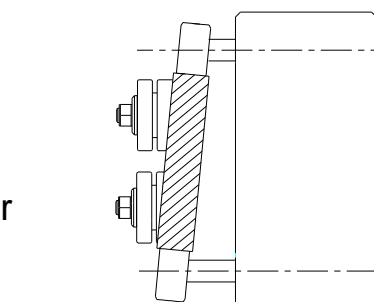
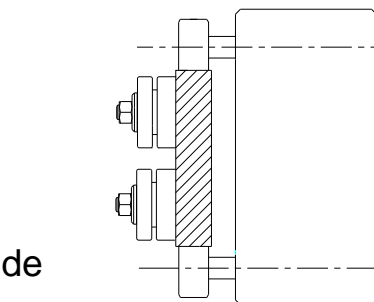
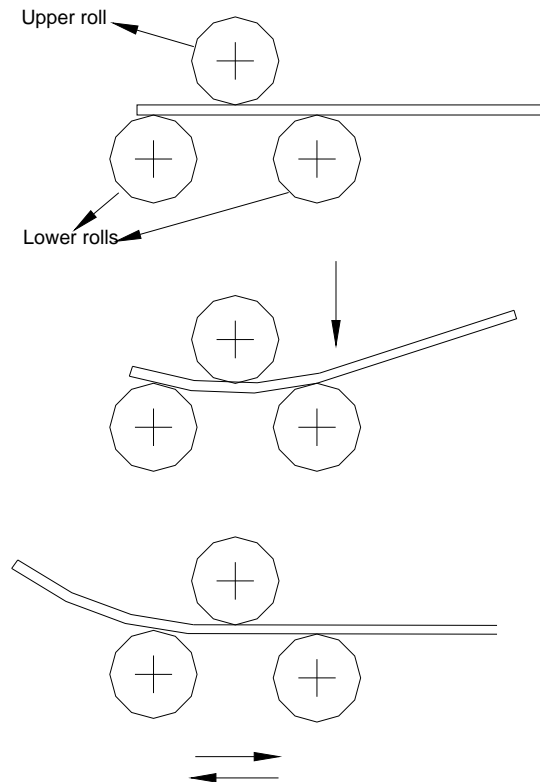
is the case, than move the upper roll upward using the milimetric ruler as a guide. (look at figure 3)

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

As the guides are adjustable on top and bottom, you can arrange them to the opposite of material 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 work piece parallel to the base ground (see figure 7). This will make it easier to bend such work pieces.

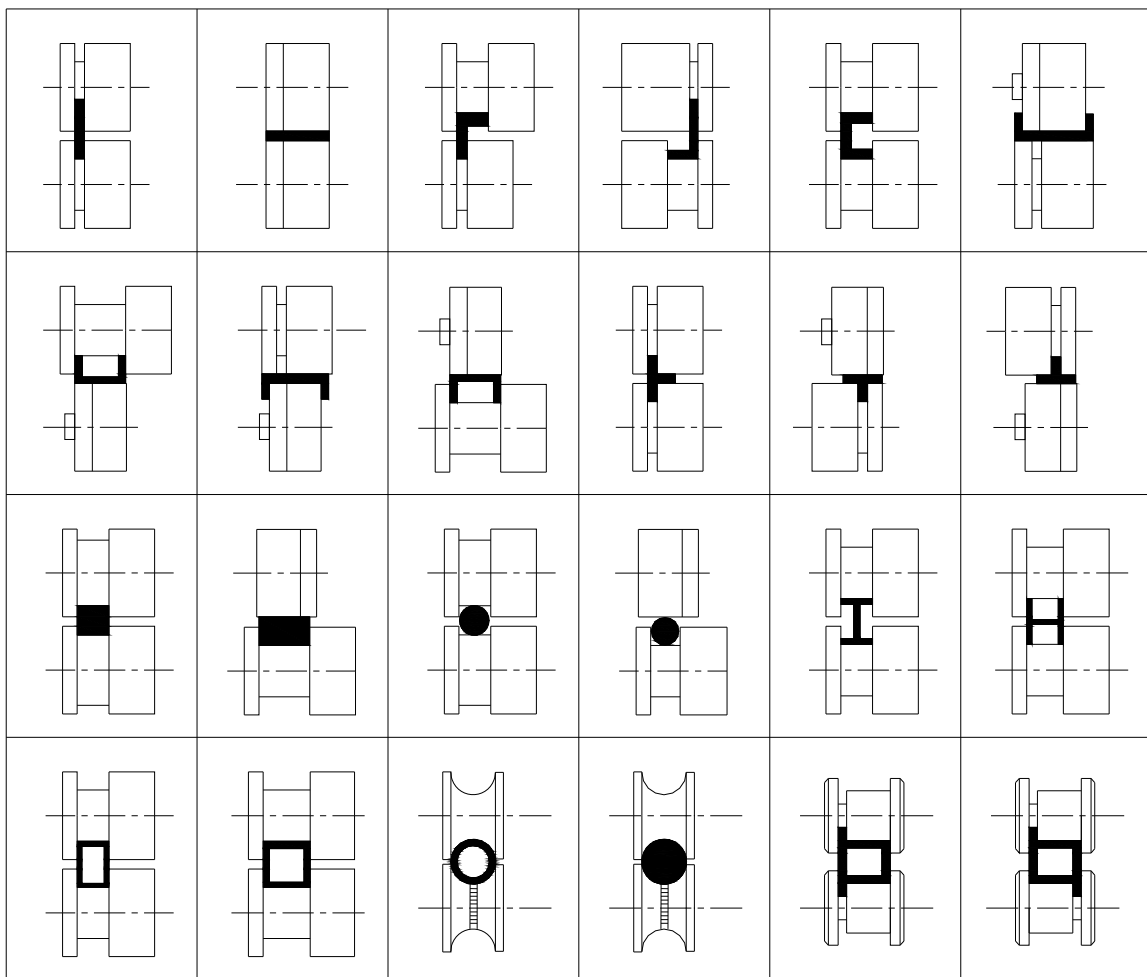


Figure 6

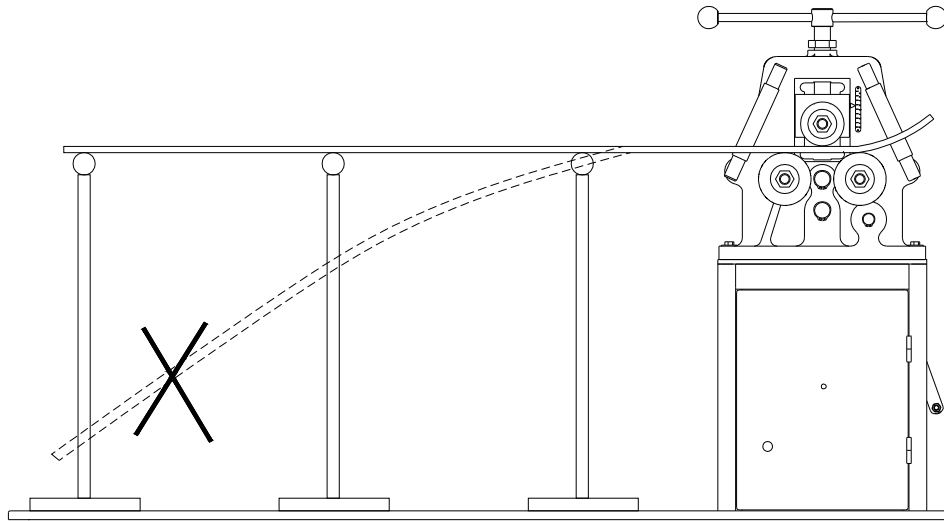


Figure 7

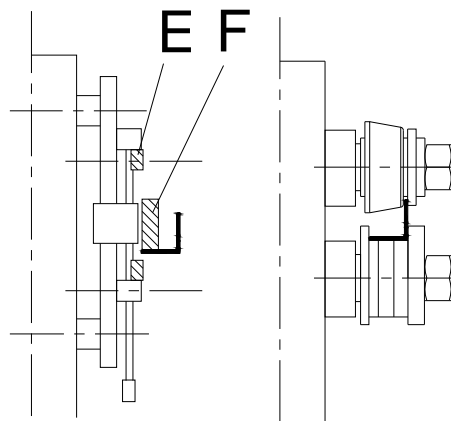
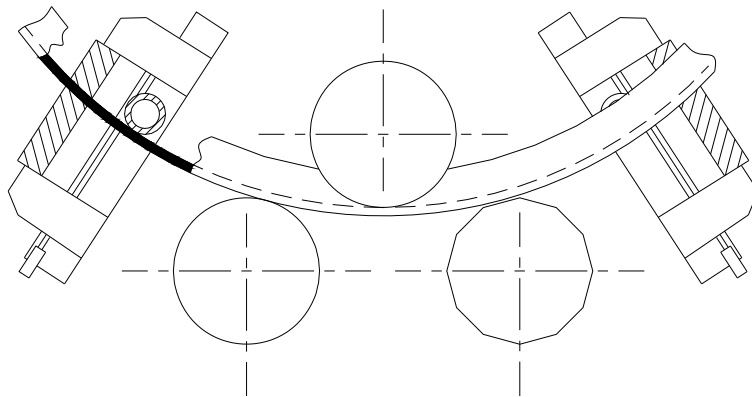


Figure 8

Figure 8 shows the use of “leg-in bending guide rolls”. These guide rolls are an optional accessory for bending leg-in (angle) material. They are adjustable for any size of material and easy to use. Special rolls are recommended for any batch jobs of leg-out material. Some of the angle materials can be bent with standard rolls.

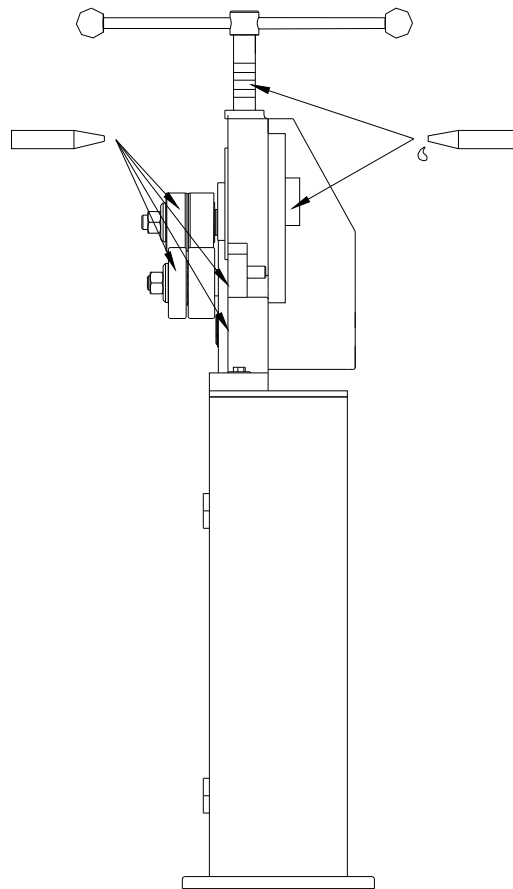
2. Operational hints

- ◆ 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 pipe with sand or any similar material if they have a wall thickness of less than 0.079”.
- ◆ Do not overload the machine and use special rolls for profiles as well as pipes
- ◆ Operate safety keeping in mind the third party people around the machine
- ◆ Leave enough workspace around the machine.

VIII. MAINTENANCE

Regular maintenance should be performed by a well-trained mechanical engineer. Gears, shafts, parts under friction stress, and bearings should be greased once a month. Periodic lubricating

can help the machine to have a long life and high productivity.



IX. PART LIST

Part No.	Description	Qty	Part No.	Description	Qty
1	Base	1	36	Washer	2
2	Door	1	37	Main gear	2
3	Washer 12	2	38	Retaining ring	4
			35		
4	Bolt M12x45	2	39	Graphite	8

				bearing(1)	
5	Body	1	40	Graphite bearing(2)	2
6	Lock buckle	2	40A	Graphite bearing(2)	2
7	Shield	1	41	Key 8x30	4
8	Spring pin 6x35	4	42	Key 8x63	2
9	Body	1	43	Lower roll	2
10	Nut M36	1	44	Middle gear shaft	2
11	Bolt M5x10	4	45	Middle gear	1
12	Side guide joint	4	46	Washer	1
13	Side guide bolt	4	47	Lower gear shaft	1
14	Bearing	4	48	Gear	1
15	Powering gear shaft	2	49	Door	1
16	Side guide shaft	2	50	Washer 10	4
17	Lever ball M12x50	4	51	Bolt M8x60	4

18	Rotating lever	1	52	Washer 8	4
19	Turning shaft	1	53	Washer 8	4
20	Bolt M12x30	1	54	Speed reduce NMRV063	1
21	Washer	1	55	Subplate	1
22	Bolt	1	56	Turning table	1
23	Bolt M10x60	4	57	Nut M8	4
24	Top roll shaft	1	58	Scale	1
25	Middle bedding	1	59	Turning axis	1
26	Bolt M5x10	1	60	Subplate	2
27	Nut M8	4	61	Hinge	2
28	Bolt M8x25	4	62	Hinge	2
29	Finger	1	63	Washer 12	8
30	Middle bedding slide	2	64	Bolt M12x30	8
31	Lower roll	1	65	Bolt M10x40	4
32	Bearing bushing	2	66	Gate lock	2
33	Washer	3	67	Foot switch	1
34	Nut M24	3	68	Stand for switch	1

35	Bolt M8x30	3	69	Emergency	1
----	------------	---	----	-----------	---

