

5772 12-2014

PLATES BENDING ROLL MACHINE

MANUAL

Machine Type: AR2506

Machine Serial No: 140608006

Date Of Manufacture: 2014.6

1105-21 2222

Bending machines are designed and manufactured to comply with ANSI B11.12.1996 standards. The employer of the operator is responsible for providing and insuring the usage of point of operation guards and/or properly applied and adjusted point of operation devices as required to meet OSHA, state and local safety requirements.

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INFORMATION ON MANUAL

This manual contains the safety precautions, the installation, running and maintenance instructions as well as the chapter referring to the technical assistance including the spare part list and the electric and hydraulic diagrams. Possible modifications to improve the running of the machine may not be included in this book. Read and keep this manual within reach.

A T T E N T I O N

In case of resale of the machine, same must be delivered with this manual and all relevant enclosures.

SAFETY

In the safety chapter the basic precautions are listed. Furthermore all information concerning the wording and location of the warning plates, applied to the machine, are given. Before starting up of the machine or accomplishing the lubrication, maintenance or repairing operations, read the precautions listed in the safety chapter.

INSTALLATION

In this chapter the assembling of the machine components and the operations to be accomplished before starting up, are given. Furthermore the user will also find all details concerning transportation.

OPERATION

The operator who has knowledge of this machine, may refer to this chapter for the operation. This chapter gives all information concerning the indicators, switches and machine operation.

The pictures will help the operator to start, run and stop the machine correctly. The operation procedures described in this manual are the basic ones. The ability in running the machine will develop as the operator will get more used to the machine and its operation.

MAINTENANCE

This chapter will guide the user in taking a good care of the machine.

SPARE PARTS, HYDRAULIC AND ELECTRIC DIAGRAMS

(Necessary for the technical assistance)

This chapter will allow, with the help of drawings of the parts, the machine is consisting of, and of lists, to find the part of the machine to be replaced and its corresponding code to order the new part.

The chapter referring to the electric parts indicates the position of the electric parts of the machine and supplies the electric diagrams.

The machine will be supplied in two separate parts:

A: MACHINE

B: CONTROL PANEL

ATTENTION

THE CUSTOMER MUST CHECK THAT MACHINE DURING TRANSPORTATION HAS NOT SUFFERED STRUCTURE DAMAGES WHICH MAY COMPROMISE ITS OPERATION AND/OR SAFETY.

IN ORDER TO AVOID DAMAGES TO THE MACHINE STRUCTURE DURING TRANSPORTATION, RECOMMEND ITS PACKING IN A WOODEN CRATE.

GUARANTEE

Before leaving the factory all machines are checked and tested carefully. The machine installation is at customer's charge and its use must be strictly done in compliance with the instructions given in this manual.

Any material and equipment for tests will be at buyer's charge.

GUARANTEE CONDITIONS AND LIMITATIONS

A: We have fixed for each model the maximum performance assuring the good running and long life of the machine, we guarantee the machine and labor, provided same are used in compliance with the instructions given in this manual. In case the machine will be used above their performance, even if occasionally, the guarantee will be no more valid.

B: The user has the right, in the suppliers judgment, to the replacement or repairing at no charge of those parts which would come out to be defective during the guarantee period. Any other form of guarantee and indemnity for direct or indirect damages are excluded.

C: The shipping costs for the defective parts to be repaired or replaced are at buyer's charge and we must have at disposal the time necessary for repairing or replacing these parts.

D: In case of technical assistance during the guarantee period from our technical staff, the buyer must ensure, if required, the necessary help.

E: In case the claim should come out to be unjustified, all expenses connected to the repairing and /or replacement of the parts will be charged to the buyer.

F: The guarantee does not cover defects and faults due to: natural wear, causes beyond control, bad installation, improper use of the machine, non-observance from the operator of the instructions for use and maintenance contained in the manual.

G: The guarantee will automatically stop should devices, accessories or parts be used and/or modifications be done, which have not been supplied by us or which have not been recommended or approved in writing by us and should be ascertained that during the guarantee period the number of the machine has been removed or changed.

TECHNICAL INSTRUCTIONS

— WORLING LENGTH	mm	1580
— MAX BENDING THICKNESS		
(FOR SHEETS WITH Kr 40kg/mm ²)	mm	6.5
— ROLLS DIAMETER	mm	170
— TOTAL LENGTH	mm	3600
— TOTAL WIDTH	mm	900
— TOTAL HEIGHT	mm	1150
— WORLING LEVEL	mm	900
— POWER OF THE MAIN ENGINE	KW	4
— POWER OF THE ENGINE FOR		
THE NENDING ROLL RAISING	KW	1.5
— WORKING SPEED	m/min	4,5
— SPEED OF THE BENDING	m/min	0,15
ROLL RAISING		
— FEEDING VOLTAGE	Volt.	220/3PH/60HZ
— WEIGHT	Kg.	1900

SAFETY CHAPIER

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IMPORTANT INFORMATION ON SAFETY

The major part of the accidents, occurring during the operating, the maintenance and repairing of the machine, is due to the non-observance of the regulations and basic precautions concerning safety. Often an accident can be avoided, if the potential dangerous situations are identified before this occurs.

The operator must be careful about the possible potential dangers and he must be trained and have the competence and the necessary tools to attend to these duties correctly.

The improper use of the machine during the operation, Lubrication, maintenance and repairing can be harmful and cause serious accidents.

Don't set the machine into operation or don't perform the lubrication, the maintenance or repairing before reading the instructions.

The safety precautions and warnings are indicated in this manual as well on the machine itself.

The non-observance of the danger warnings may cause serious problems to the operator as well as to other people.

The dangers are identified with the writing: ATTENTION

ATTENTION

The meaning of this writing is the following

PAY ATTENTION! YOUR SAFETY IS IN DANGER

The message can be written or illustrated.

The functions which may cause a damage to the machine are indicated with a plate bearing the word **ATTENTION**, applied to the machine and they are explained in this manual.

We are not in a position to foresee any possible circumstance which may bring to a potential danger. Therefore, the warnings indicated in this manual and applied to the machine must not be considered as definitive. In case of use of tools, procedures, working methods, not expressly recommended by us, it will be necessary first to ascertain that no danger for the operator and other people will arise.

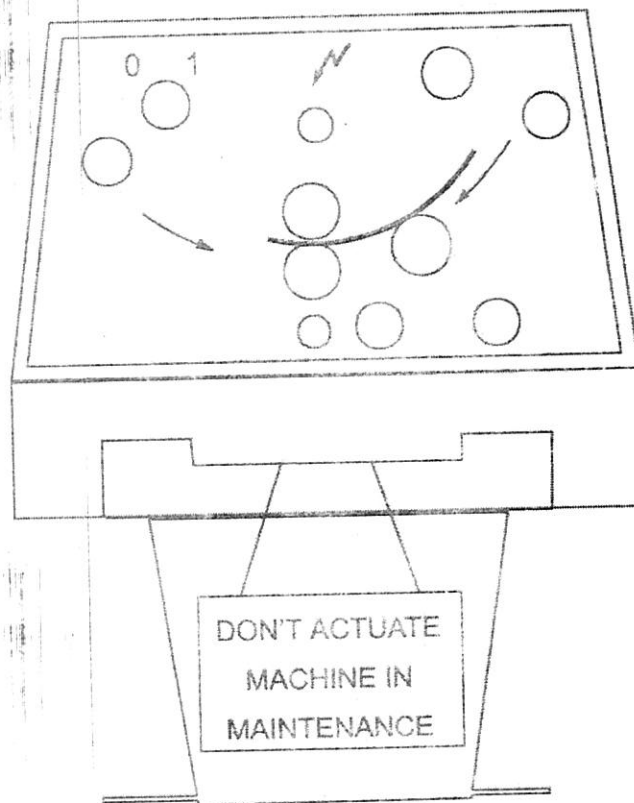
Furthermore it must be ensured that the machine will not be damaged or will not be safe due to the operation, lubrication, maintenance or repairing procedures adopted other than the ones recommended by us.

The information, specifications and drawings contained in this manual are based on the data available when issuing it. They may be changed at any moment and modifications may affect the maintenance procedure.

GENERAL REMARKS

ATTENTION

When proceeding to maintenance or repairing of the machine a warning label advising that these operations are ahead, must be applied to the control panel.



DON'T WEAR LARGE OR PROJECTING GARNMENTS THAT MAY GET ENTRAPPED BY THE COMMANDS OR THE MOVING PARTS OF THE MACHINE.

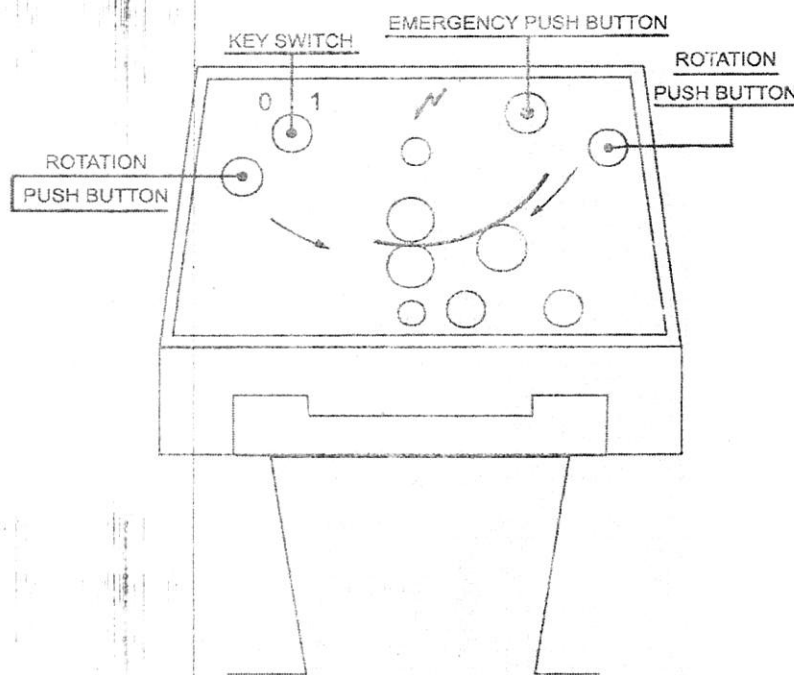
- * KEEP THE MACHINE AND IN PARTICULAR THE BENDING ROLLS, CLEAN FROM FOREIGN BODIES SUCH AS DEBRIS, FAT, TOOLS AND OTHER OBJECTS THAT MAY DAMAGE THE OPERATION OR CAUSE TO THE OPERATOR.
- * WHEN THE MACHINE IS RUNNING NO ONE MUST APPROACH TO IT WITH IN A REACH OF 5 (FIVE) MT.
- * UNAUTHORIZED PEOPLE MUST NOT BE ADMITTED AROUND THE MACHINE WHEN THIS IS OPERATING.
- * DURING THE OPERATION MAXIMUM TWO OPERATORS MUST STAND NEAR THE MACHINE THAT WILL BE OPERATED FROM THE CONTROL PANEL.
POSSIBLE OTHER PEOPLE OR ANIMALS MUST NOT STAND WITHIN A REACH OF MINIMUM 5 (FIVE) MT.
- * PAY ATTENTION TO THE RISKS DUE TO THE ROTATION OF THE POWER ED ROLLS. DURING THE ROLLING PHASE THE OPERATOR MUST NOT APPROACH WITH THE HANDS TO THE ROTATING ROLLS.
- * PAY ATTENTION TO CRUSHING RISKS ST ROLL ENDS DURING THE ROLLING PROCESS (RAISING-LOMERING)
- * IT IS FORBIDDEN TO USE THE MACHINE IN DXPLOSIVE ATMOSPHERE.

EMERGENCY PUSH BUTTON

For any emergency press the red mushroom-shaped push button located on the control panel.

The machine will stop immediately.

To set the machine into operation again, rotate the **emergency push button** rightwards and turn the key switch on position 1.



During the working process the rotation of the bending rolls will stop automatically if taking the finger away from the rotation rush button.

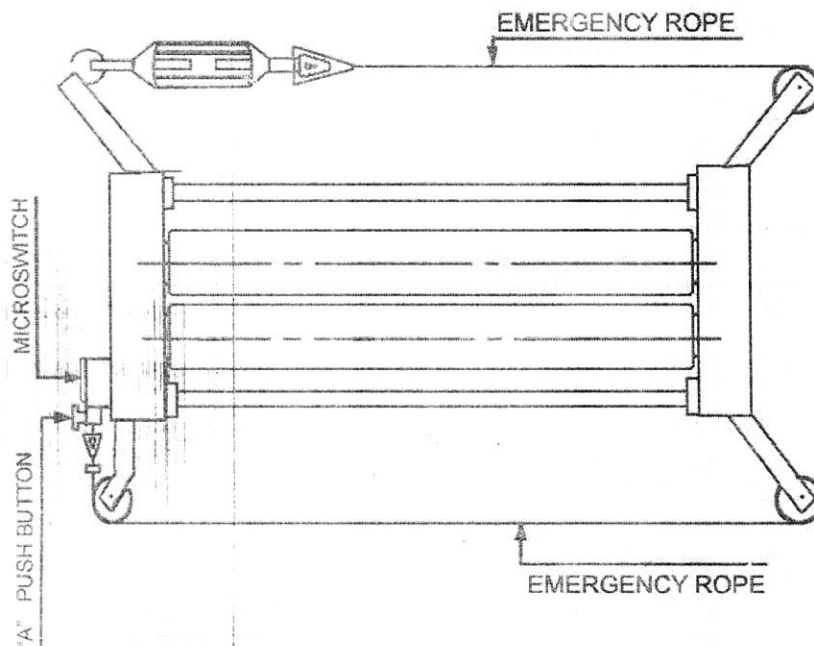
EMERGENCY ROPE

For any emergency press with one leg the safety rope around the three working sides of the machine,

The machine will stop immediately.

To start the working cycle again, proceed as follows:

- A. Trigger the micro-switch pressing down the "A" push button.
- B. Turn the key switch the control panel on position 1.



THERMIC PROTECTIONS

These are protection devices (thermic relays) avoiding motor overheating .

Each motor is provided with a thermic protection located inside of the control panel.

When the protection trips, it will be necessary to trigger the relay as follows :

- * The relay is provided with a small red push button which clicks out at protection tripping; to trigger it, it will be enough to press down the small red push button.
- * If it does not keep down, it will be necessary to wait a few minutes until the protection will cool down a little and then repeat the operation.

INSTALLATION CHAPTER

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* INSTALLATION OF THE EMERGENCY ROPE	PAGE	25 - 26

MACHINE POSITIONING

After checking the overall dimensions indicated in the manual, the proper place where to position the machine, must be found.

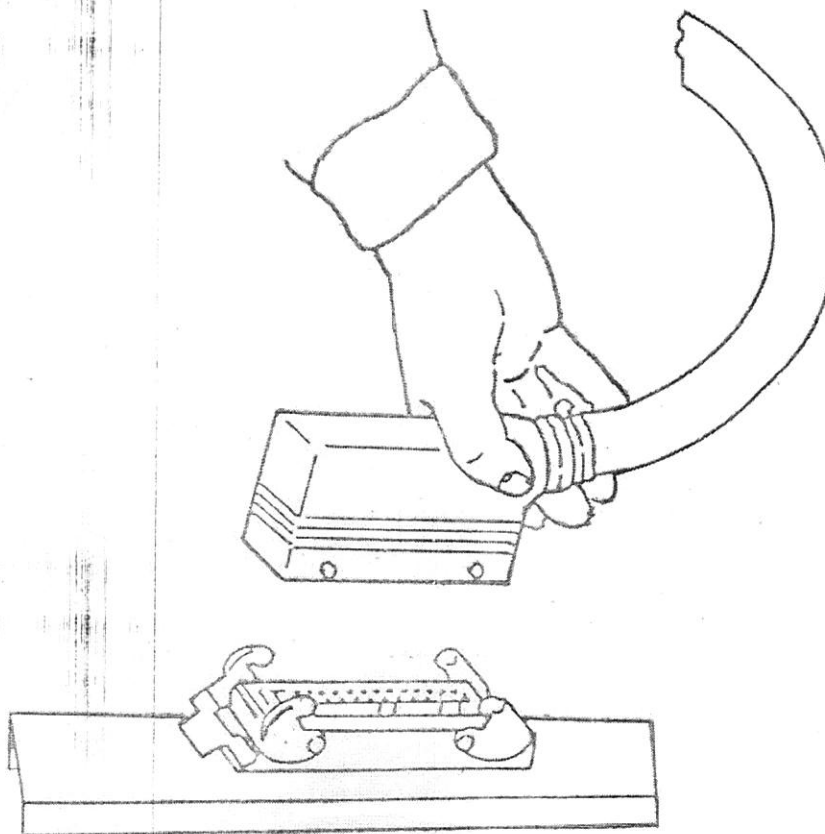
The floor must be perfectly flat and all around the machine the necessary space for loading and unloading the rolled and to be rolled plate without interfering with the other structures, must be left.

The positioning of the machine must be done in such a way that the rolls are perfectly horizontal and parallel.

It is absolutely necessary to check the roll flatness with the proper device (spirit level).

CONNECTION OF THE CONTROL PANEL WITH MACHINE

Approach the control panel to the machine and connect it by means of the proper plug.



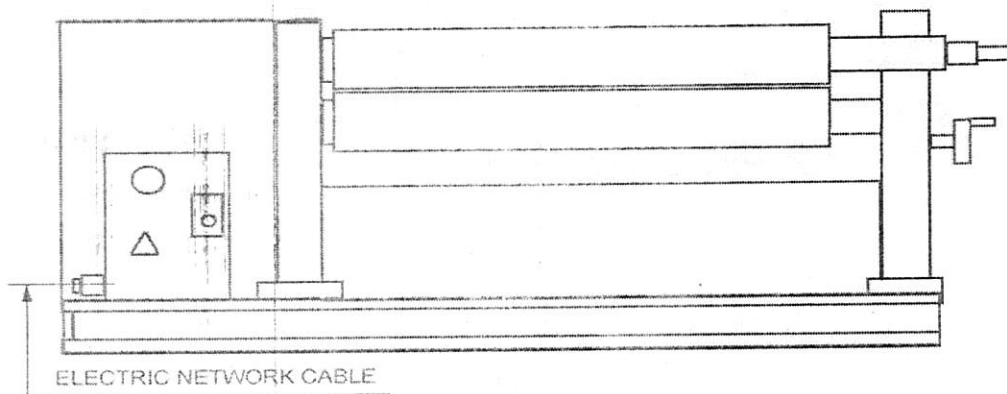
CONNECTION WITH THE ELECTRIC NETWORK

ATTENTION

Before connecting the machine to the electric network check if the voltage corresponds to the one indicated on the identification tag of the machine and in the

declaration of conformity.

The installation of the machine and its connection with the electric network must be performed by a qualified electrician.



The connection with the electric network will be performed as follows :

A: Open the control panel located on the machine by means of the key supplied with the machine, first positioning the general switch on “ O ” (otherwise the panel will not open) .

B: Connect the electrical feed cable with the L1–L2–L3 terminals on the control panel

C: Connect the electrical feed cable GROUND TO THE GREEN/YELLOW/TERMINAL ON THE CONTROL PANEL. The machine must be connected\ is ground through the

building's main electrical network. The grounding cables must be as short as possible and of cross-section no less than of the buss bar of the grounding of the entire system

D: Before supplying voltage to the machine check the following point:

- the electrical connectors have been inserted correctly;
- the connection of the supply cables and of the grounding cable the insulation and the voltage;

-Voltage:

the electrical equipment is designed to work between 0.9 and 1.1 times the rated voltage of the machine

frequency:

the electrical equipment is designed to work between 0.9 and 1.1 times the rated voltage of the machine.

Harmonic distortion:

Sensitivity to harmonic distortion is negligible

Asymmetry of the three-phase supply power

It must not exceed 200% of their efficiency:

Voltage pulses:

The peak values should not exceed 200% of their efficiency:

Voltage lacks:

Voltage lacks should not exceed 20%

E: Close the control panel located on the machine and position the main switcher on "1"

F: Check if the shiftings between the direction indicated on the control panel and the real roll shifting correspond. (The raising and lowering of the bending roll must correspond to the arrow direction indicated on the control panel)

If the electric connections have not been performed correctly, it will be necessary to invert one phase of the feeding cable otherwise the safety limit switch, located at the end of the bending roll, will be cut out with serious damages to the roll raising system.

ASSEMBLING OF THE EMERGENCY CABLE

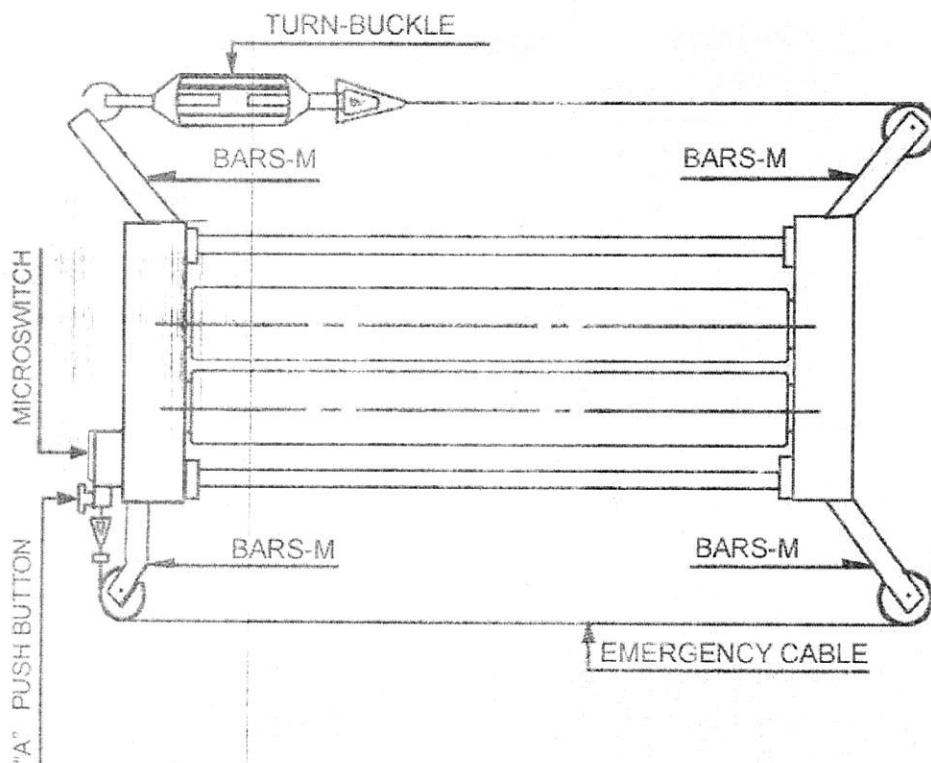
Due to transportation requirements the safety device by means of a cable will be supplied disassembled.

It will be, therefore, necessary to assemble it.

A) Screw up the four "M" bars to the side supports of the machine.

B) Set the safety cable on the three sides of the machine.

C) Pull the safety cable acting on the turn-buckle until the adjusting slider of the release limit switch will reach an intermediate position between “full closed” and “full opened”.



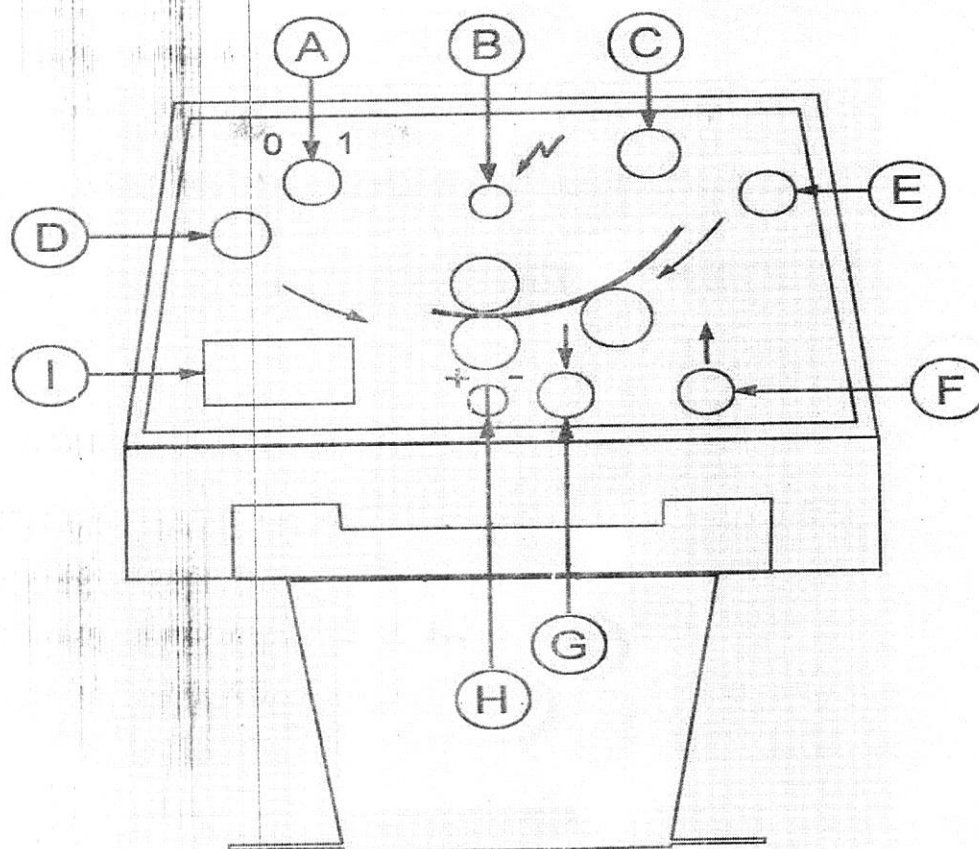
RELEASE LIMIT SWITCH

It has been provided with 3 positions:

1. FULL CLOSED—The machine will not run.
2. FULL OPENED — The machine will not run.

Press push-button "A" for resetting.

3. INTERMEDIATE POSITION – The machine will run.



A – Key switch

B –Warning light

C –Emergency

D –Roll notation push button

E –Roll notation push button

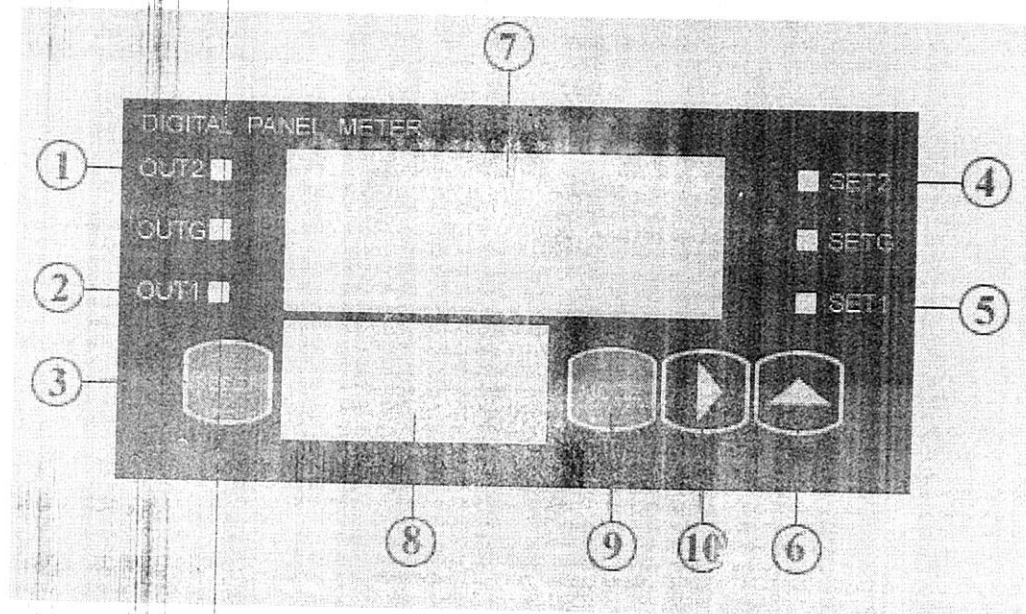
F –Roll raising push button

G –Roll lowering push button

H –Push button for lower roller raising and lowering

I –Digital display

OPERATION



- | | |
|---------------------------------|--|
| ① Over Upper Limit Instruction | ⑥ Numerical Addition /Setting Value Changing |
| ② Over Lower Limit Instruction | ⑦ Display Measured Value |
| ③ Reset Button | ⑧ Display Setting or Measured Value |
| ④ Upper Limit Value Instruction | ⑨ System Enter Key (3S Enter) |
| ⑤ Lower Limit Value Instruction | ⑩ Figure Right-shift Key |

Comparison Out-put

1. Upper Limit Comparison Out-put (HI)

Measured Value $\geq$ upper limit setting value . Upper Limit Out-put. Panel OUT 2 lights:

Measured Value $\leq$ the difference between the upper limit setting value and return difference value. the upper limit output resetting

2. Lower Limit Comparison Output (LO)

Measured Value $\leq$ lower Limit Setting Value. Lower limit output. Panel OUT1 lights;

Measured Value $\geq$ the sum of lower limit setting value and return difference value.

lower limit output resetting. Panel OUT1 light goes out.

3. Normal operation output (GO)

When all does not conform to the upper limit or the lower limit output condition, Go outputs, Panel OUTG lights.

*The output way of one section output type appliance is the upper limit output. (Specially assigns to be an exception).

*When establishes the start delay time, after on the electricity, arrives the delay time, the measuring appliance only then can carry on the comparison output.

Lock Function

 Cancel Locking

 Lock Parameter Setting. Can be checked no amendment

 Lock Setting Value Alteration Can be checked no amendment

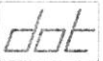
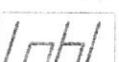
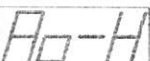
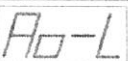
 Lock all the Setting Function Can be checked no amendment

* Remove Locking Function Before Setting Value Revising

* Terminal Connection Figure

* Routine Relay Out-put and Single Signal Input Figure

Setting Parameter

Item	Display	Function	Remark
		Choose PV/PH/VH Display	
		Set Output Return Difference Value	0~999
		Set Maximum in Display Value	-999~9999
		Set Minimum in Display Value	-999~9999
		Set Dot Position	
		Set Display cycle	0.1~4.9S
		Set Delayed Time	0.1~9.9S
		Set Entirely Measuring Range Correction Value	0.800~1.200
		Set Zero Point Correction Value	-99~+99
		Transuding Output Highest Display Value	0001~9999
		Transuding Output Initial Value	0.00~9.99

1. The establishment of setting value of the comparison output

Press , the setting value minimum place glimmers unceasingly, indicate that enter setting value changing procedure.

Press  move scintillation place; Press  change scintillation place numerical value;

Press  or , withdraw

2. The established method of two-segment output setting value

Press , changing the setting value of the upper limit or lower limit

SET1 lights indicate that the current display is lower limit setting value.

SET2 lights indicate that the current display is upper limit setting value.

Press **RST**, change the setting value into the current display.

Press **RST**, the setting value minimum place glimmers unceasingly, indicate that enter setting value changing procedure.

Press , move scintillation place; Press  change scintillation place numerical value;

Press **RST** or **MODE**, withdraw

*For the instrument which has peak value or valley value keep, press , enter set changing procedure.

RST is peak or valley value zero clearing key.

*Cancel lock function can be resettled.

DESCRIPTION

The engine gives motion to rolls 1 and 2 through a reduction gear and a chain.

The lower roll can be raised by.

By using a hand wheel.

The bending roll 3 can be raised are connected together by means of an electric engine which controls 2 worm - reduction gears.

these two worm reduction - gears are connected together by means of a fixed joint and a half - toothed joint.

You can tilt roll 3 by disengaging the half - toothed joint and by handling the hand wheel in this way it is possible to obtain conical pieces.

After the rotation of 45° of the guide lever, the upper roll 2 can be taken away from the right shoulder to allow the cylinder dxttraction.

All operations concerning the movements of rolls 1 and 2, the raising or lowering of the bending roll 3, can be obtained by pushing the buttons of the electric control desk.

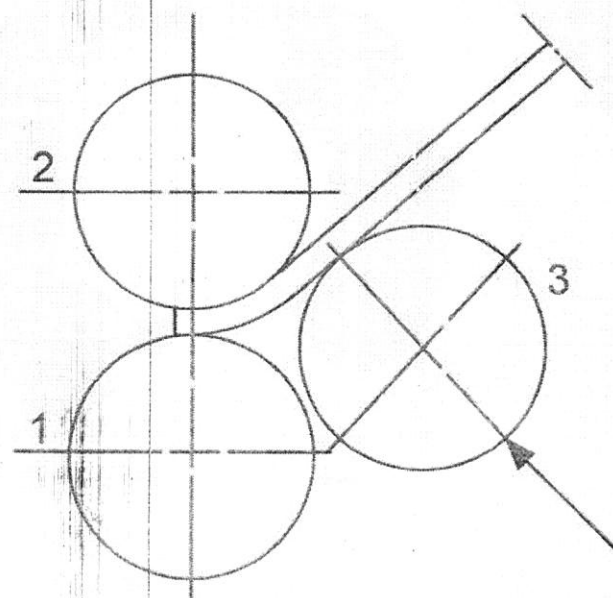
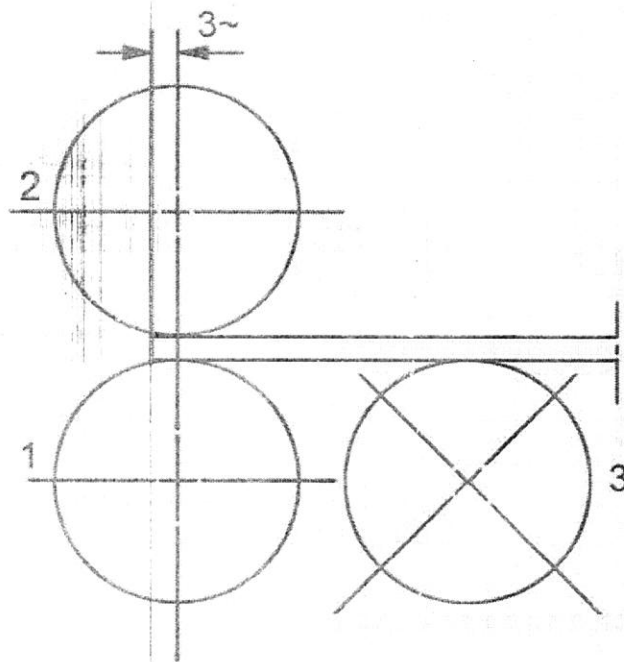
Our machine is provided with a safety device which is always able to stop immediately both rolls 1 and 2.

The roll bending of a plate is effectued in 3 phases:

- A) The roll bending of the first piece of plate (Front Prebending).
- B) Plate overturning and roll bending of the last piece of plate (End Prebending)
- C) Roll bending and formation of the cylinder.

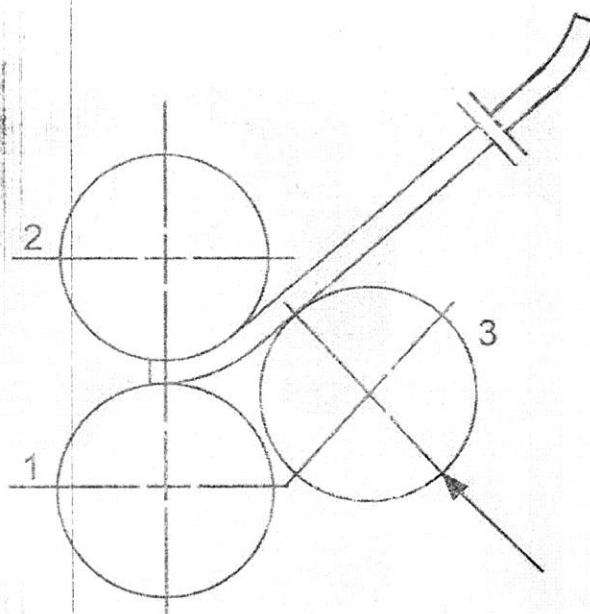
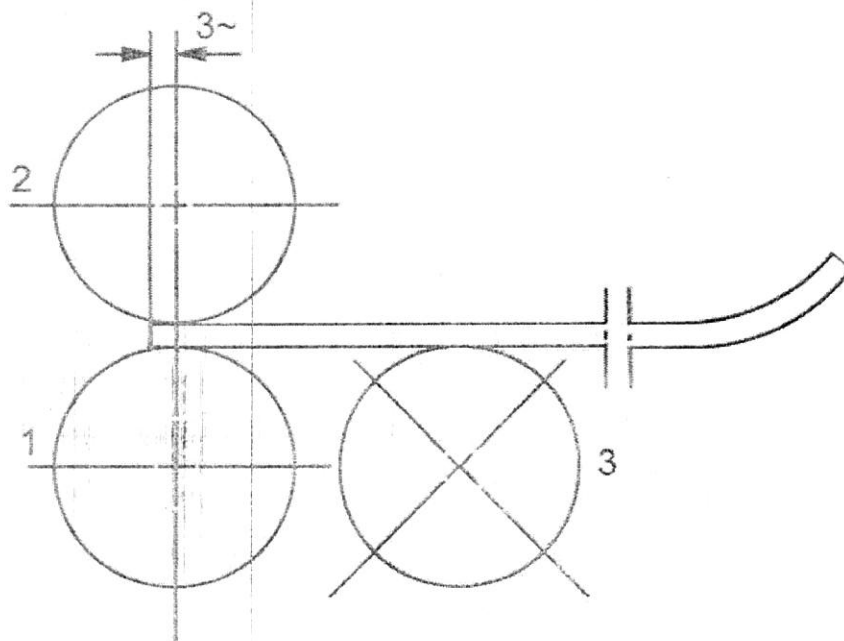
A) FUONT PREBENDING

- 1) Push the main button, lower bending roll 3 by pushing the suitable button.
- 2) Lower the lower cylinder 1 by means of the hand wheel.
- 3) Place the plate on lower rolls and positionate it as indicated in Fig. 1 .
- 4) Lift the bending roll 3 as indicated in Fig. 2 .



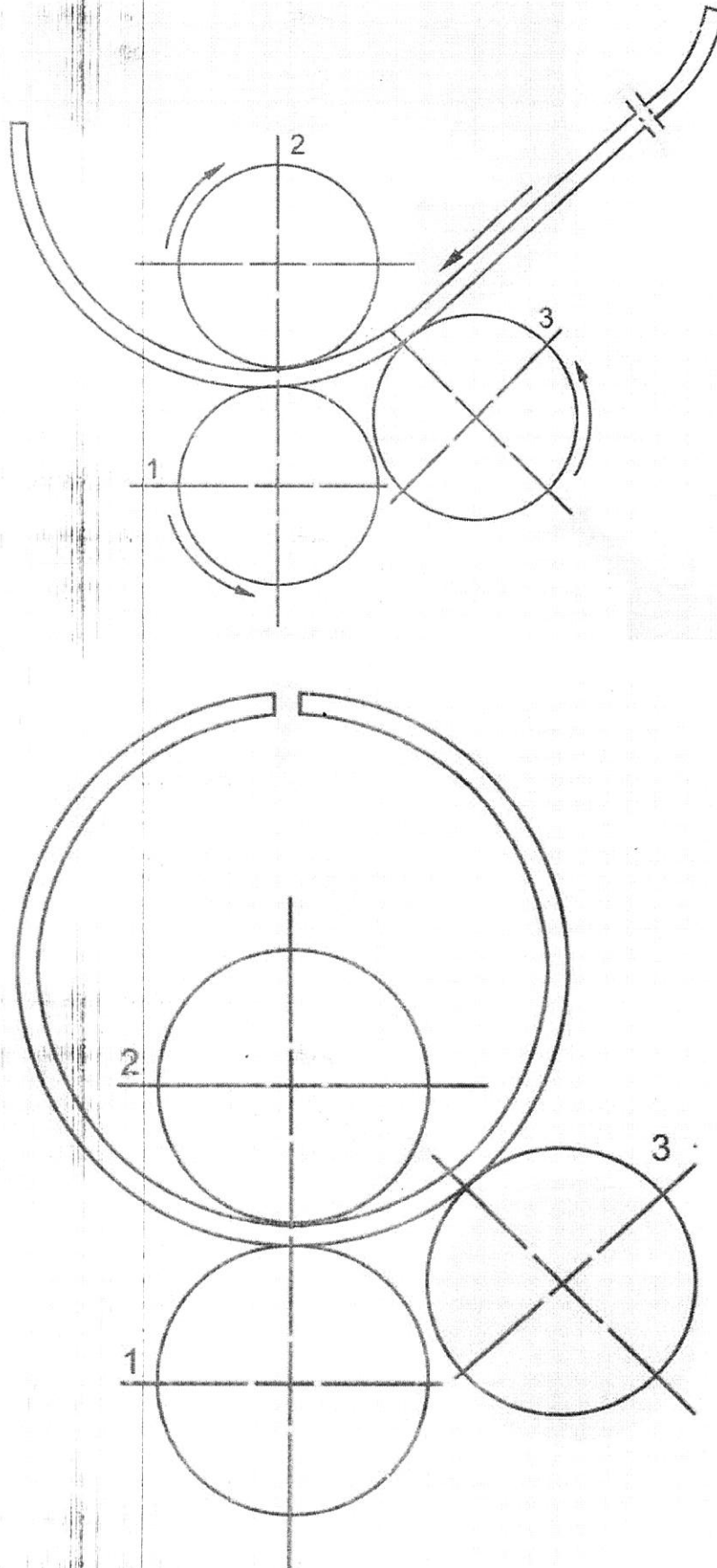
B) END PREBENDING

- 1) Turn the plate and positioning it as in Fig. 3.
- 2) Lift the bending roll as in Fig. 4.



C) ROLL-BENDING AND RORMATION OF THE CYLINDER

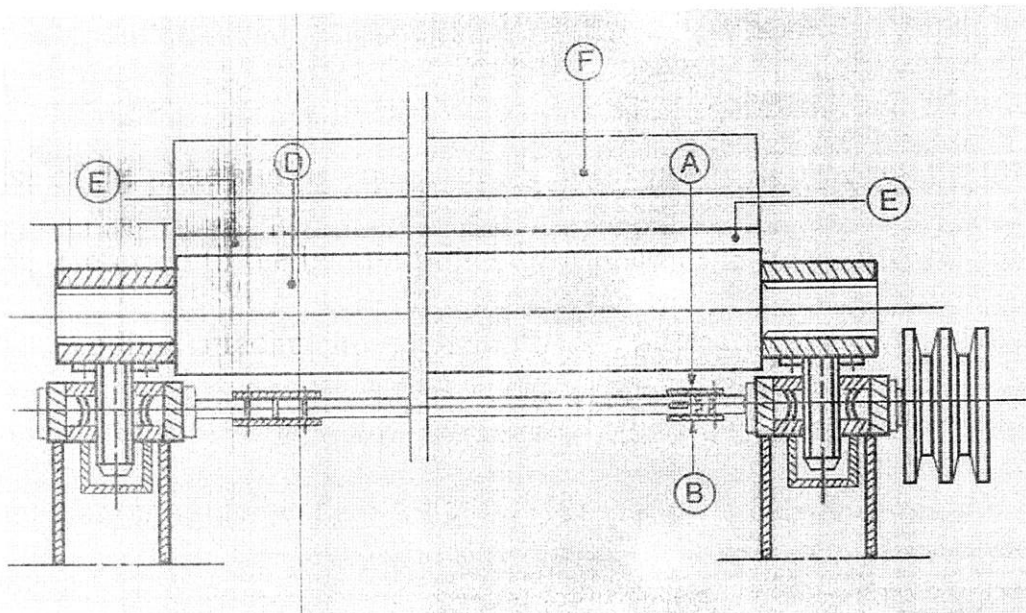
Move ahead the plate as in Fig. 5, to obtain the complete cylinder Fig. 6.



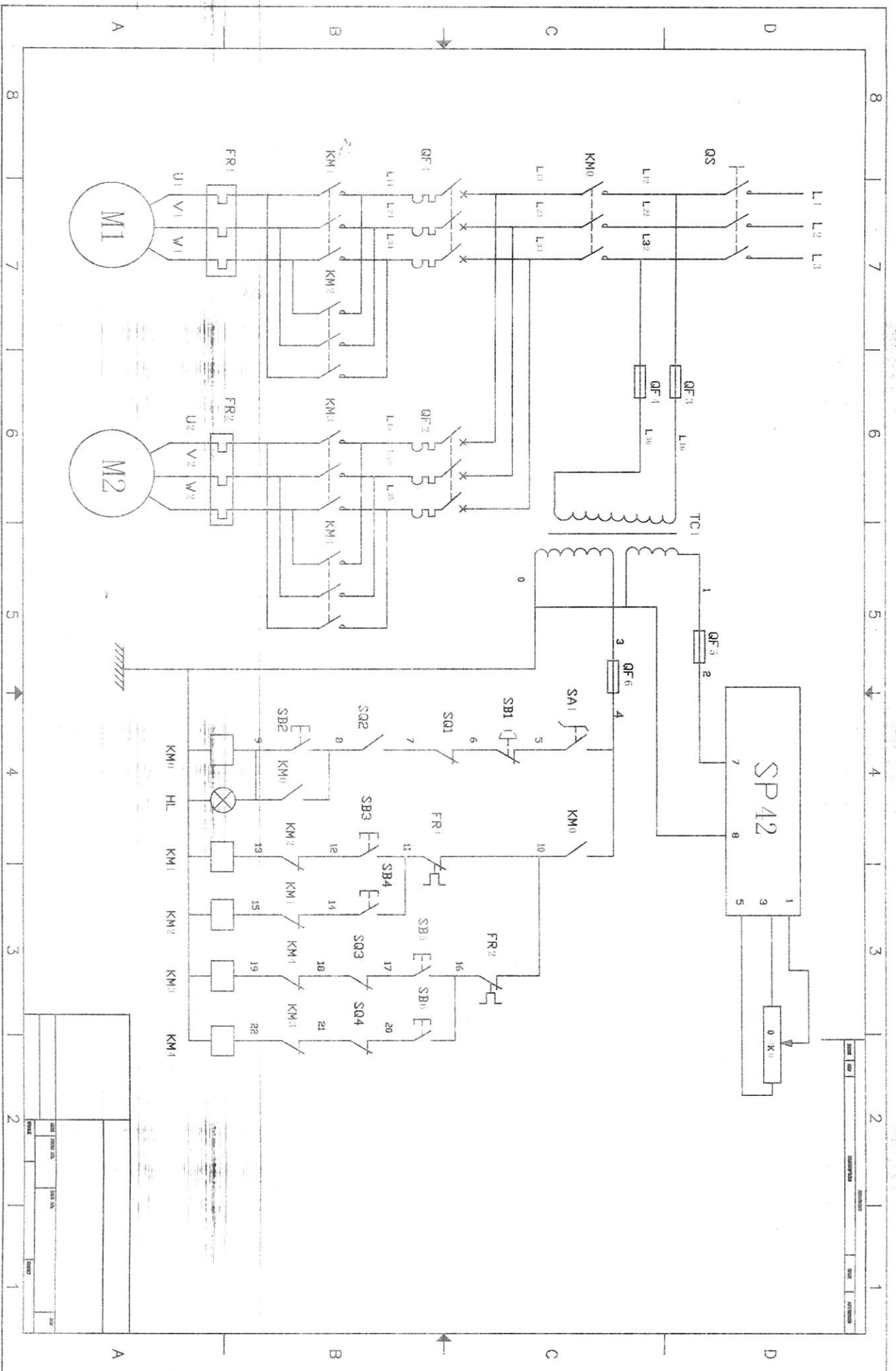
CONICAL BENDING

Due to the high friction forces which are developing during the conical bending because of the plate sliding on the rollers, the capacity of the machine must be reduced of 50% (referred to the bending thickness). The conical bending is obtained with the conical bending attachment applied to the right machine shoulder and with the inclination of the side (bending) and bottom rollers as much as necessary.

The inclination of the bending roller must be performed as follows: (see dwg. Below)



1. Loose "A" screw.
2. Disconnect "B" semi coupling.
3. Start motor for bending roller raising.



WARNING

General Machinery Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

- 1. Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
- 2. Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
- 3. Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
- 4. Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
- 5. Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
- 6. Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
- 7. Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
- 8. Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
- 9. Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
- 10. Keep your workshop child proof.** Use padlocks, Turn off master power switches and remove start switch keys.
- 11. Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
- 12. Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
- 13. Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
- 14. Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
- 15. Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
- 16. Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
- 17. Do not overreach.** Keep proper footing and balance at all times.
- 18. Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
- 19. Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
- 20. Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
- 21. Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
- 22. Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
- 23. Lock mobile bases.** Make sure any mobile bases are locked before using machine.
- 24. Allergic reactions.** Certain metal shavings and cutting fluids may cause an allergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
- 25. Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.



WARNING

Power Operated Guillotine Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

- 1. Maintenance.** Make sure the Guillotine is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.
- 2. Guillotine Condition.** Guillotine must be maintained for a proper working condition. Never operate a Guillotine that has low oil levels, damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Blade Condition.** Never operate a Guillotine with a damaged or badly worn blades. Replace if required.
- 4. Pump Direction.** Pump rotation must be in arrow direction otherwise the pump will be damaged.
- 5. Hand Hazard.** Keep hands and fingers clear from moving parts. Serious injury can occur if hand or finger tips come between blades.
- 6. Personal Protection.** Gloves are recommended when handling the workpieces.
- 7. Authorized and trained personnel.** The machine must be operated by authorized and trained personnel. The shear is designed to be operated by a single user. Using the machine with more than one operator is forbidden, except for certain maintenance situations.
- 8. Power outage.** In the event of a power failure during use of the machine, turn off all switches to avoid possible sudden start up once power is restored.
- 9. Work area hazards.** Keep the area around the Guillotine clean from oil, tools, objects & chips. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.
- 10. Guards.** Do not operate Guillotine without the correct guards in place. Necessary guards protect you from injuries by the shear blades.
- 11. Material.** Material must NOT be hardened ceramic or glass-originated, non flat metals (at origin) e.g. rods, bars, tubes & pipes.
- 12. Blade gap adjustment.** Do NOT operate the machine without proper blade gap adjustment according to sheet thickness.
- 13. Warning Labels.** Take note of any warning labels on the machine and do not remove them.
- 14. Backgauge Area.** Do not access the backgauge area, while the machine is working.
- 15. Protective fence.** Do not bridge the safety limit switch of the rear protective fence.
- 16. Squaring arm.** Do not use side squaring arm and front support arms for intermediate storage of workpieces.
- 17. Operation.** During the shearing process, the workpiece may slide or move unexpectedly. Therefore, the material must be handled carefully.
- 18. Emergency stop.** Use the emergency stop button in case of any emergency.
- 19. Level machine.** Level the machine on a flat concrete surface by using a spirit level.
- 20. Overloading machine.** Do not exceed the rated capacity of the guillotine. Please refer to the manual for capacities.
- 21. Hearing protection and hazards.** Always wear hearing protection as noise generated from machine and workpiece can cause permanent hearing loss over time.
- 22. Call for help.** If at any time you experience difficulties, stop the machine and call your nearest branch service department for help.

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Power Operated Guillotine

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures
This program is based upon the Safe Work Australia, Code of Practice - Managing Risks of Plant in the Workplace (WHSA 2011 No10)

Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies (Recommended for Purchase / Buyer / User)
B	CRUSHING	LOW	Secure & support work material on table.
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Wear gloves to prevent cuts from sharp material offcuts.
D	SHEARING	MEDIUM	Hands should be kept clear of moving parts and blades. Isolate power to machine prior to any checks or maintenance. Ensure front blade guard is fitted securely. Do not adjust or clean until machine has fully stopped. Access to the rear of machine must be interlock or photoelectric guarded to prevent access when the machine is operating, (see workcover authority principles of machine guarding for guidelines).
F	STRIKING	MEDIUM	Wear safety glasses. Stand clear of falling offcuts. Ensure material hold downs are correctly adjusted. Ensure guards are secured properly.
H	ELECTRICAL	MEDIUM	Machine should be installed & checked by a Licensed Electrician. All electrical enclosures should only be opened with a tool that is not to be kept with the machine.
O	OTHER HAZARDS, NOISE.	LOW	Wear hearing protection as required.
Plant Safety Program to be read in conjunction with manufactures instructions			



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Authorised and signed by:

Safety officer: 

Manager: 

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