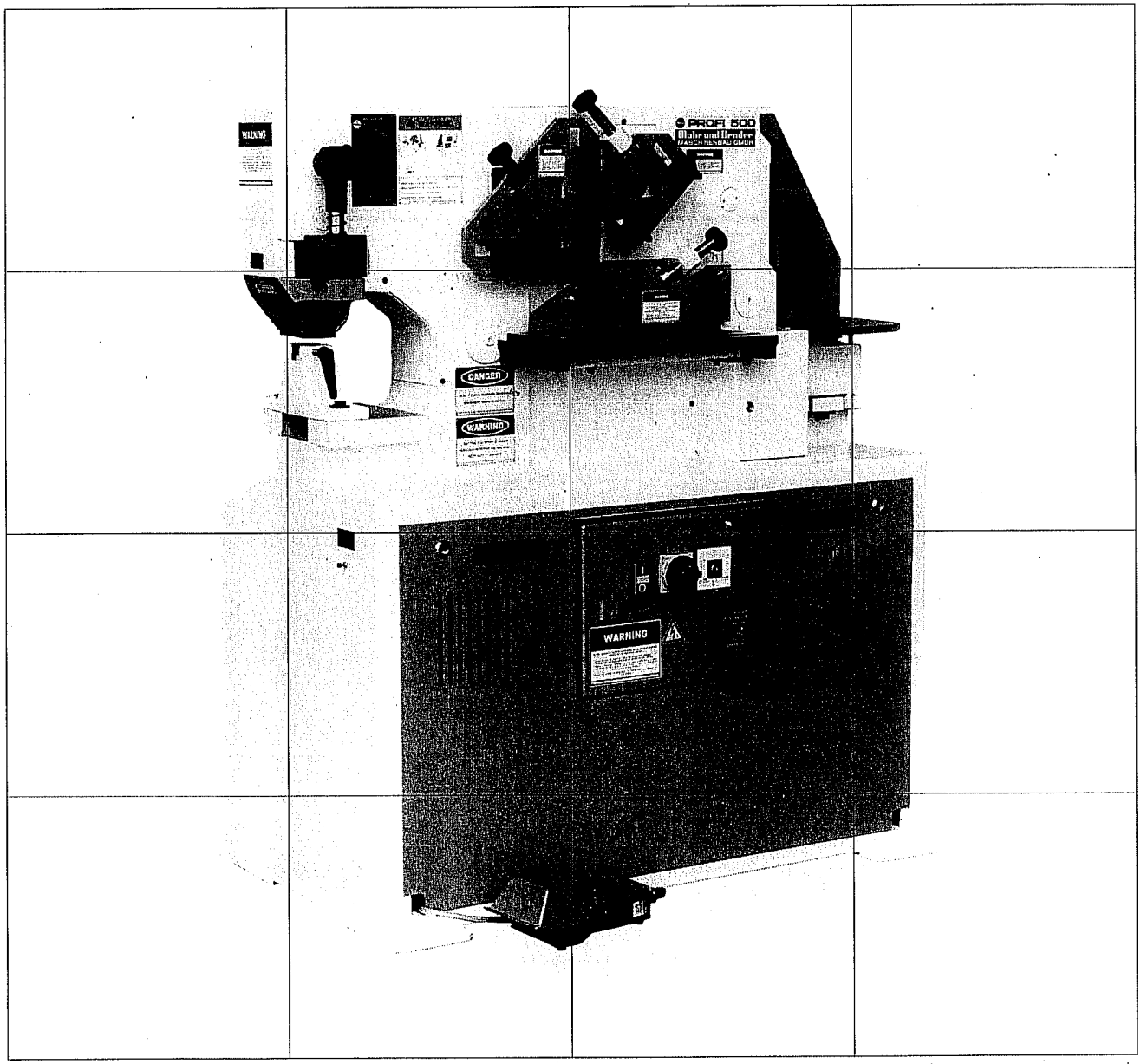
MUBEA
PROFI 500



User Manual

Preface

In this User Manual you will find all the information necessary for operating and maintaining your MUBEA **PROFI 500.**

Before you start working with the MUBEA **PROFI 500,** please read this User Manual through thoroughly.

Wherever you see this symbol in this User Manual, it indicates safety regulations, safety instructions and important information **which absolutely must be heeded.**

Note: For representation purposes, some of the illustrations **do not** depict the prescribed safety fixtures. But for working with the **PROFI 500,** these safety fixtures must absolutely be installed!

Performing maintenance regularly will ensure smooth operation of your machine.

Note: Throughout this manual references are made to "steel". Mubea recognizes that other materials i.e., stainless steel, copper, aluminium, may be cut or punched on this machine. Please ask a Mubea Machinery and Systems, Inc. representative for capacities and recommendations.

Customer Service

For technical service call Mubea Machinery and Systems, Inc. You can reach Mubea Machinery and Systems, Inc. under the following numbers:

(606) 525-6499 or

(606) 525-6504

Toll-free No. 1-800-255-5698

Tools and Spare Parts

For all questions concerning spare parts or tools, please contact Mubea Machinery and Systems, Inc. by dialing:

(606) 525-6499 or

(606) 525-6504

Toll-free No. 1-800-255-5698

Contents

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General Information

1 General Information

1.1 Technical Specifications

Machine type .....

Machine number .....

1.1.1 **Mechanical** (in standard version)

Weight	2500 lbs
Length	49 3/8 inches
Width	28 3/8 inches
Height	53 1/4 inches

1.1.2 **Electrical** (in standard version)

Motor type	AP 132 S4, B3 / B5
Motor power	7,5 HP
Power consumption	11 A
Operating voltage	208-240 / 440-480 V
Control voltage	115 V

1.1.3 **Hydraulic** (in standard version)

Oil grade	See label on oil container
Oil amount (tank capacity)	16 gal
Viscosity	ISO VG 46
Operating pressure of hydraulic system	3550 p.s.i.
Operating temperature	40°F to 160°F
Ambient temperature	40°F to 95°F

Always refill with the same grade of hydraulic oil; do not mix.

With extreme ambient temperatures, you must consult Mubea Machinery and Systems, INC. (see Customer Service).

1.2 General Description

The **PROFI 500** Ironworker is a hydraulically driven flat-steel, angle-steel and bar-steel shearing machine equipped with a coper/notcher fixture and a holepunch. It has a heavy-duty hydraulic cylinder which works at all the workstations.
PROFI 500 ironworkers have a long life, are especially easy to service and require little maintenance.

Wear-away parts may be replaced with **genuine MUBEA spare parts** at any time.

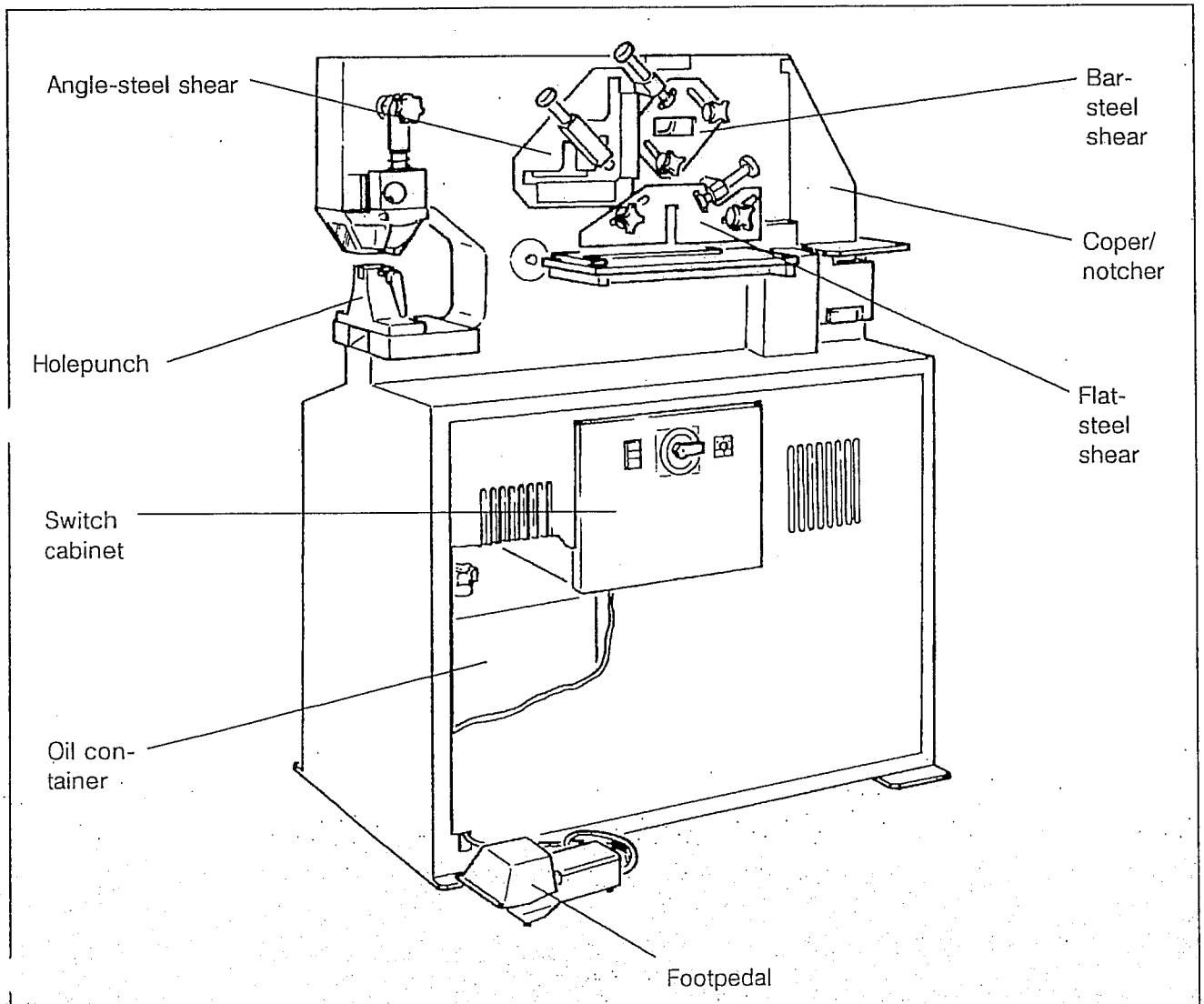
Please contact Mubea Machinery and Systems, Inc. (see chapter 12).

The standard version of the **PROFI 500** is designed to allow multiple expansion of the work ranges (for examples, see section 1.2.4).

For further information, please contact Mubea Machinery and Systems, Inc..

The machine comprises the mechanical, electrical and hydraulic subsystems.

The individual workstations are covered by safety fixtures.



1.2.1 Mechanical

The mechanical part essentially comprises the ironworker's frame with the five work-stations:

- Holepunch
- Flat-steel shear
- Coper/notcher
- Bar-steel shear and
- Angle-steel shear.

1.2.2 Electrical

The electrical portion comprises the switch cabinet, the motor and all other parts such as controls, limit switches, contactors, cables, etc. (Circuit diagrams, see chapter 11).

1.2.3 Hydraulic System

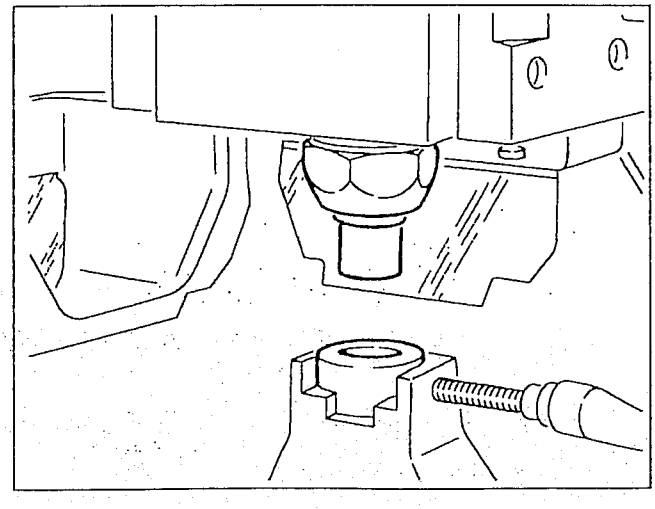
The hydraulic system comprises the pump, the oil container with oil filter, the working cylinder, the control block with pressure test connection and the various valves and lines. (Hydraulic system diagrams, see chapter 11).

1.2.4 Attachments

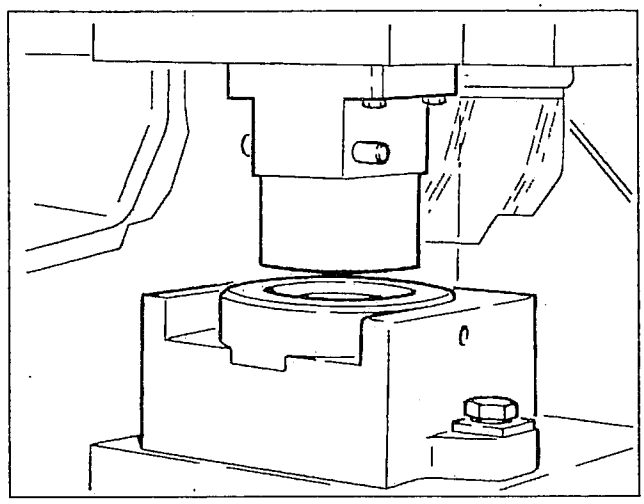
The examples given here are only a selection of the possible attachments. For detailed information, please refer to the brochure **MUBEA PROFI 500.**

The attachments shown in this section do **not** belong to the standard version. Thus, with the exception of the length stop, they are not discussed in this User Manual.

Attachments for **holepunch** (examples)

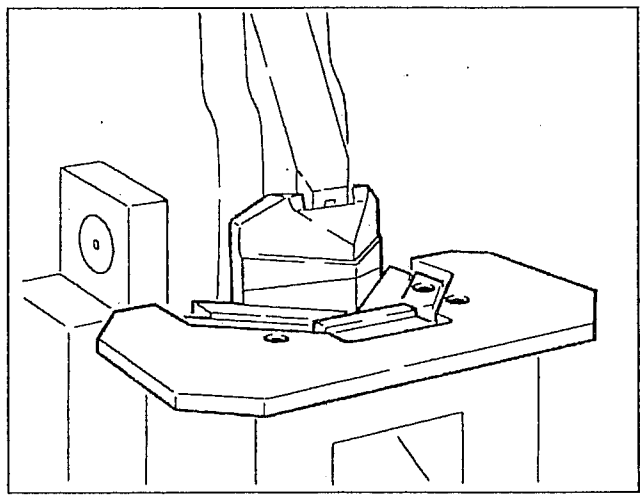


Special punching attachment for mounting punches and dies up to cutting diameter of 2".

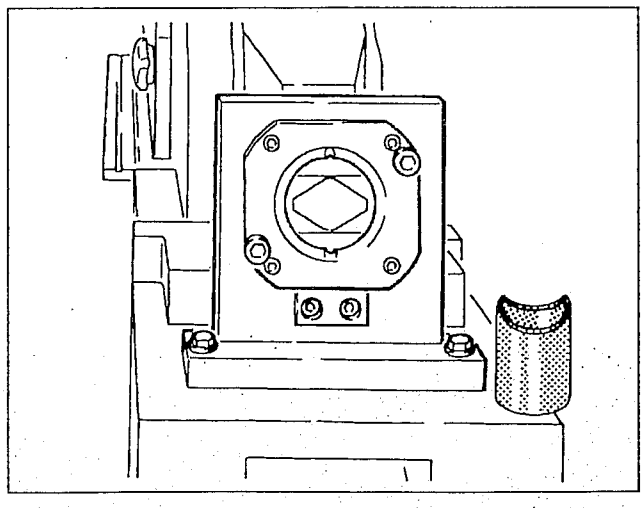


Special punching attachment for mounting punches and dies exceeding a cutting diameter of 2".

Attachments for **coper/notcher** (examples)

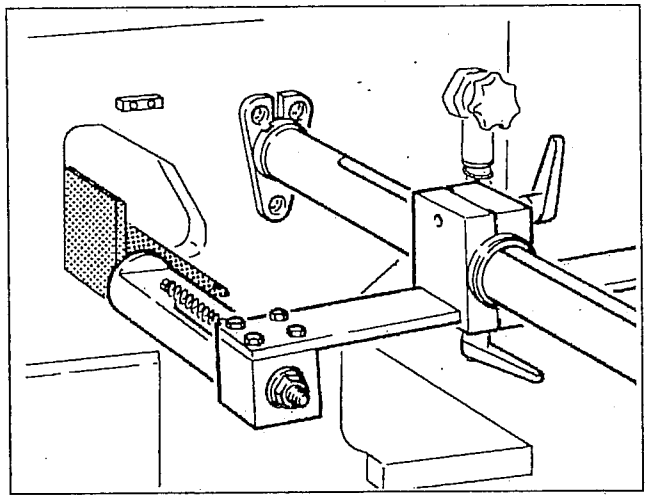


Triangular notching tool

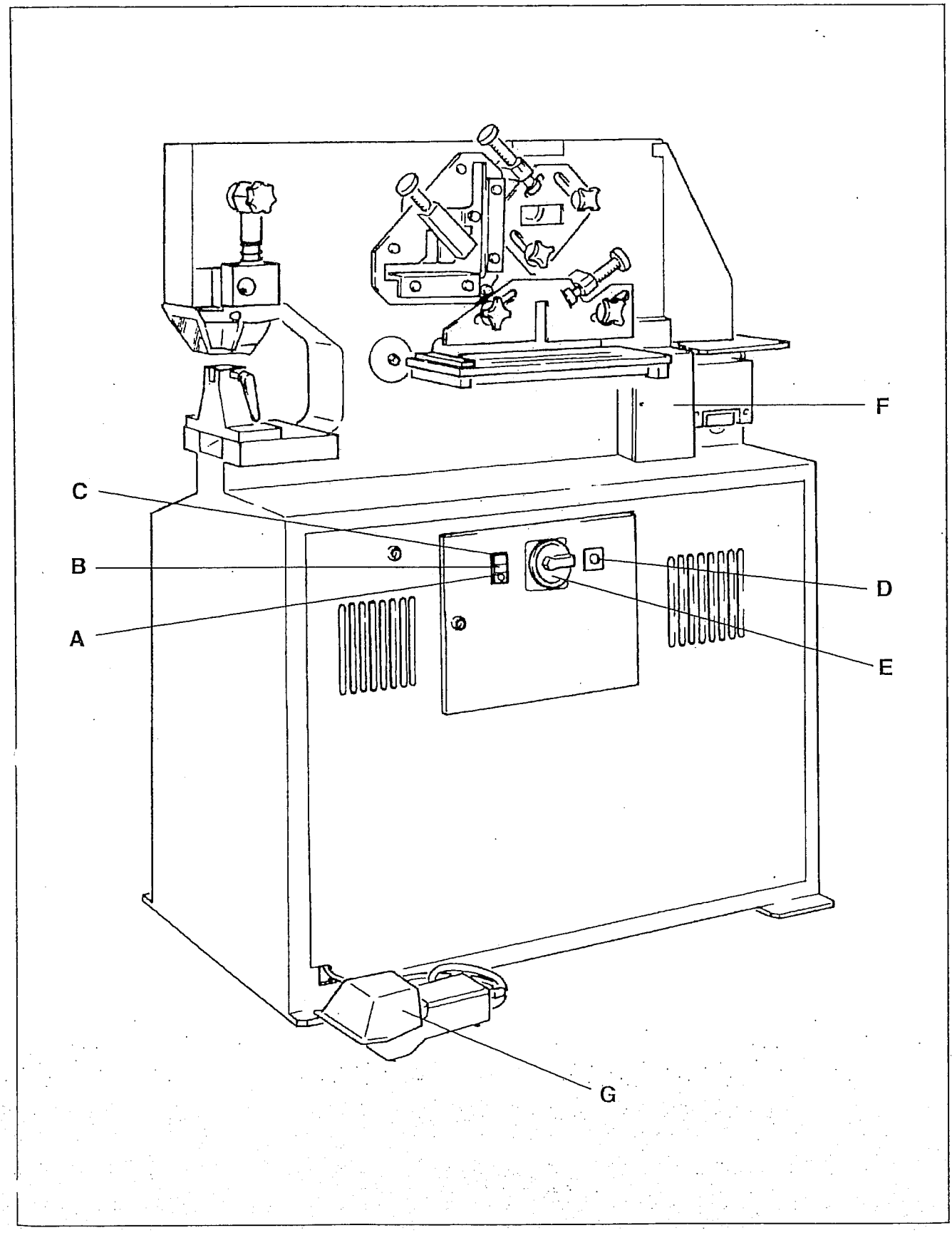


Pipe notching tool

Length stop
(for angle-steel shear, bar-steel shear and flat-steel shear)



Adjustable length stop


C
B
A
F
D
E
G

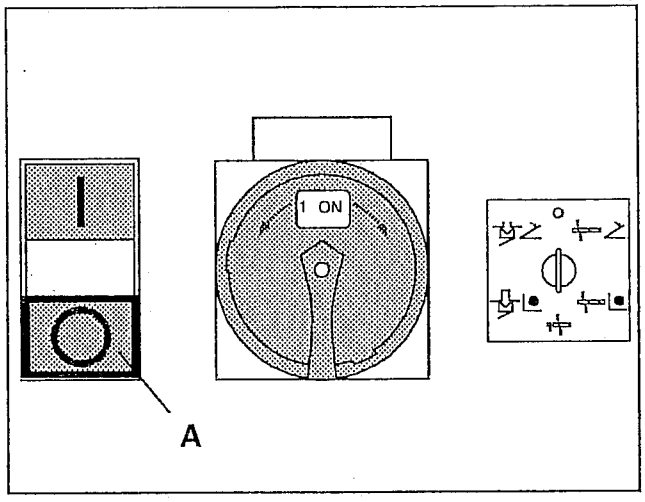
1.3 Controls

Stop button (A)

Positions: none

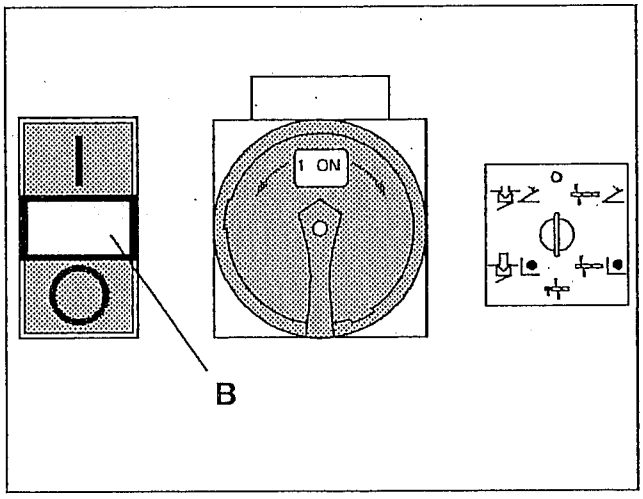
Pressing the Stop button stops the motor.

Electricity is still flowing through the machine. Only perform maintenance and adjustment work when the main switch (E) is off and secured with the padlock.



Pilot lamp (B)

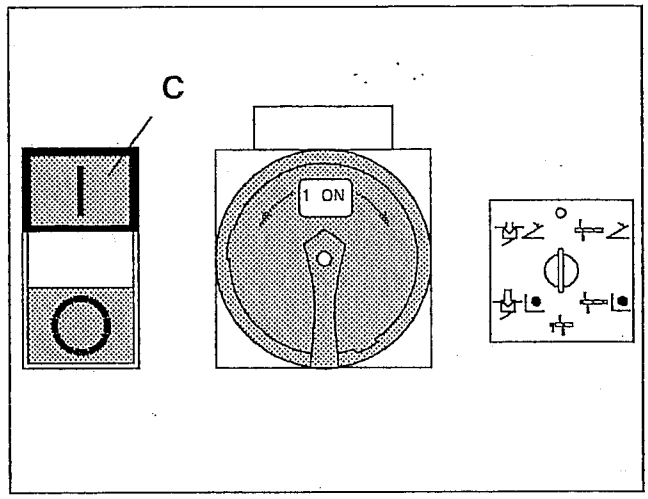
The pilot lamp lights up as soon as the motor is ready.



Start button (C)

Positions: none

Pressing the Start button activates the motor of the hydraulic pump.



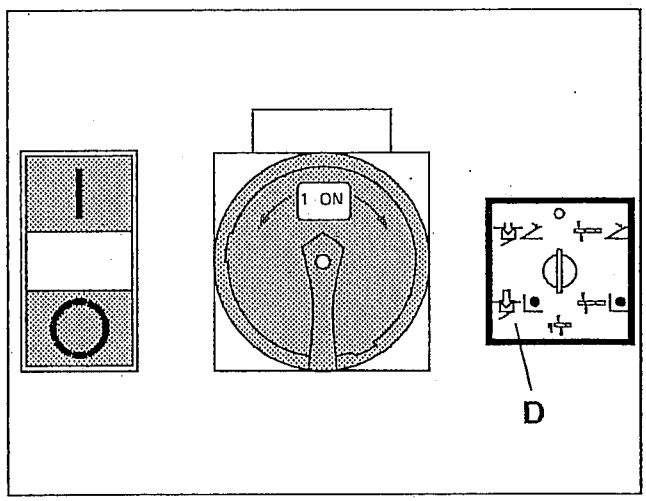
Selector keyswitch (D)

Positions for the punch:

O = Off

= Punch operation

= Punch toolsetting

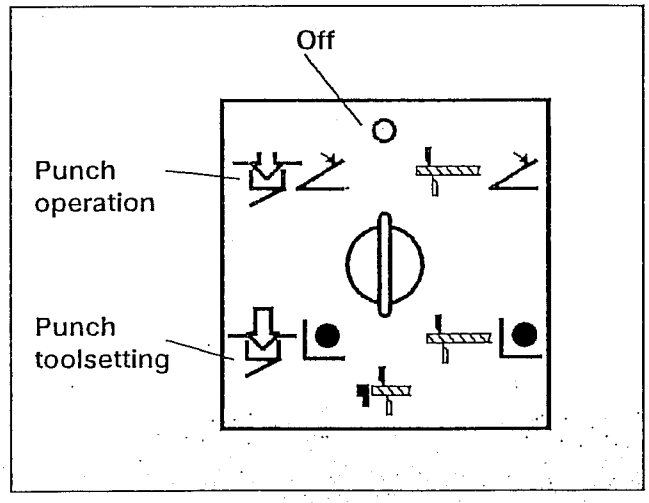


Note
When the "Punch operation" position is selected, the carriage moves up to the punch starting position.

The carriage moves up to the punch starting position.

With the keyswitch in the "Operation" position, pressing the footpedal (G) will move the punch down for as long as the pedal remains depressed.
When the footpedal is released, the punch automatically returns to its original position.

In the "Toolsetting" position, the carriage can be moved down to any desired position (e.g., to the punch toolsetting position) by pressing the footpedal (G).
The automatic return of the carriage upon release of the footpedal does not function.



When the ironworker is not being operated, turn the selector keyswitch to "O" and remove the key.

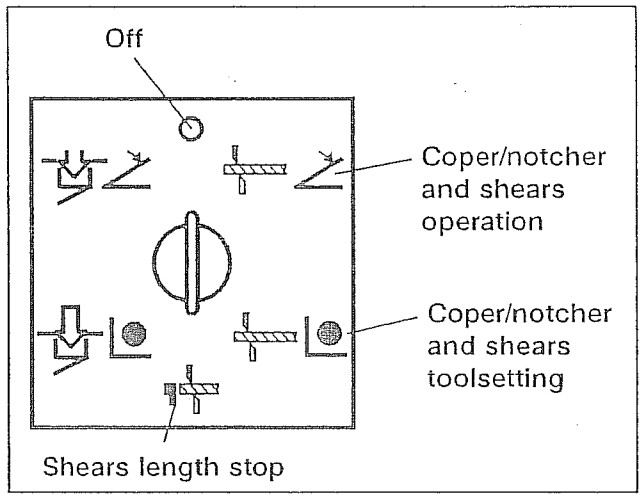
Positions for coper/notcher and shears:

O = Off

= Coper/notcher and shears operation

= Coper/notcher and shears tool-setting

= Shears length stop



Note
When the "coper/notcher and shears operation" position is selected, the carriage moves up to the shears starting position.

The carriage moves up to the shears starting position.

With the keyswitch in the "Operation" position, pressing the footpedal (G) will move the carriage down for as long as the pedal remains depressed.
When the footpedal is released, the carriage automatically returns to its original position.

In the "Toolsetting" position, the carriage can be moved down to any desired position (e.g., to the knife-change position) by pressing the footpedal (G).
The automatic return of the carriage upon release of the footpedal does not function.

With the keyswitch in the "Shears length stop" position, the footpedal (G) does not function, and the electrical length stop (see section 9.2.1) is in operation.
The electrical length stop can be obtained from **Mubea Machinery and Systems, Inc.** as a special attachment. The preparation for mounting the electric length stop is already present on the machine.

The length-stop outlet on the back of the ironworker is live when the switch is in the "Shears length stop" position.

When the ironworker is not being operated, turn the selector keyswitch to "O" and remove the key.

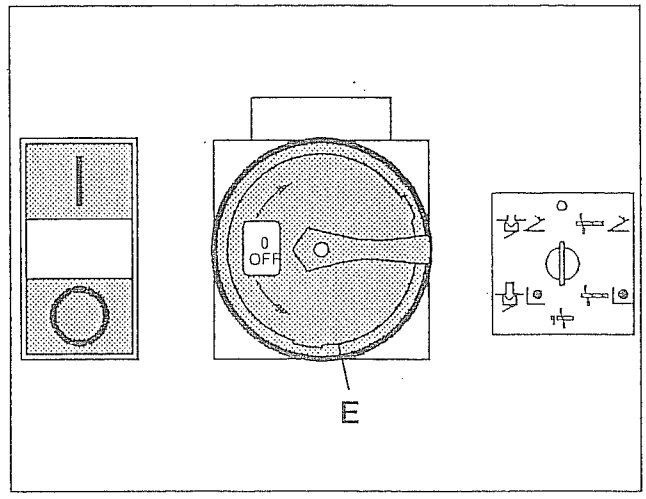
Main switch (E)

Positions:

I = On
O = Off

In the "Off" position the machine is separated from the power supply in all phases. The main switch can be secured with a padlock.

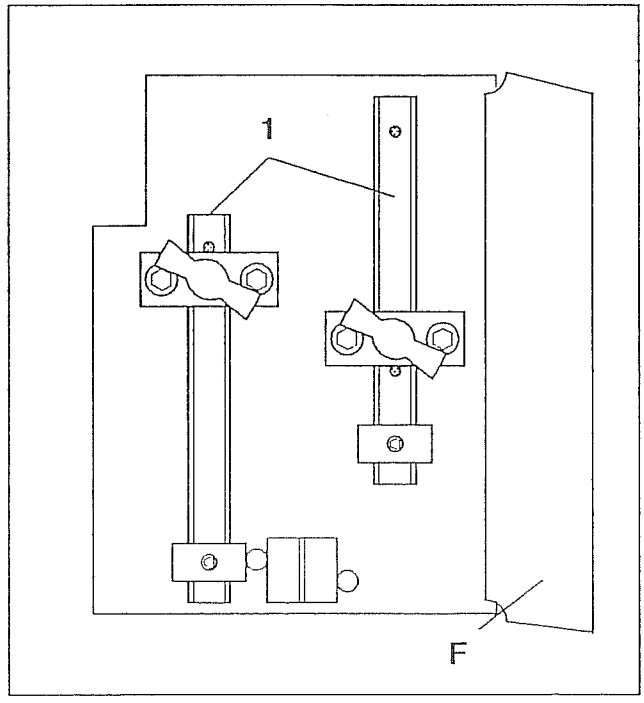
In the "Off" position the supply cables remain live. Therefore, whenever making repairs on the electrical components, make sure to disconnect the ironworker from the external power supply.



Switch racks for setting the stroke (F)

The stroke length of each workstation is set by means of the two switch racks (1), located behind the doors for the stroke setting (F).

Setting the stroke length is described in chapter 5 "Toolsetting".

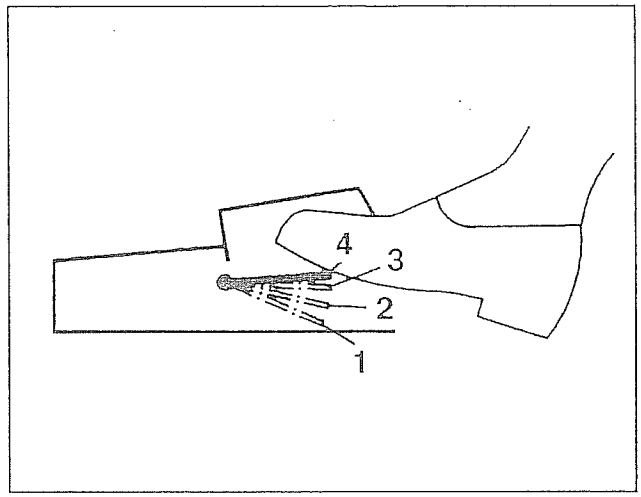


Footpedal (G)

Initial position: 4

The picture on the right shows the four positions of the footpedal.
Between positions 2 and 1 is a perceptible pressure point.

1 = Down
2 = Down (search)
3 = Pause
4 = Up



In footpedal position 2, the carriage moves into the selector-keyswitch positions "Punch operation" and "coper/notcher and shears operation" as well as "Punch toolsetting" and "coper/notcher and shears toolsetting" at reduced speed and reduced pressure.

With the selector-keyswitch (D) in the "Tool-setting" position, the footpedal position 4 does not function, i.e. the punch **does not** move upward automatically upon release of the footpedal.

2

Safety Instructions

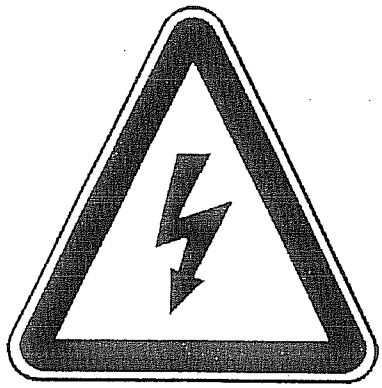
2 Safety Instructions

2.1 Warning Labels and Explanation of Warning Symbols

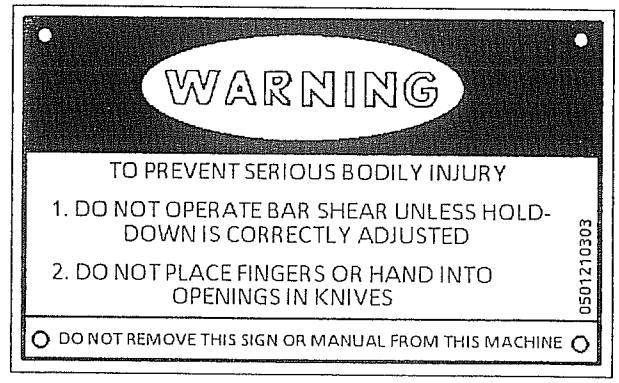
Warning labels are affixed to the machine at various places.

Do not remove the warning labels.
Replace damaged, scratched or illegible warning labels.
(Part no. printed on label).

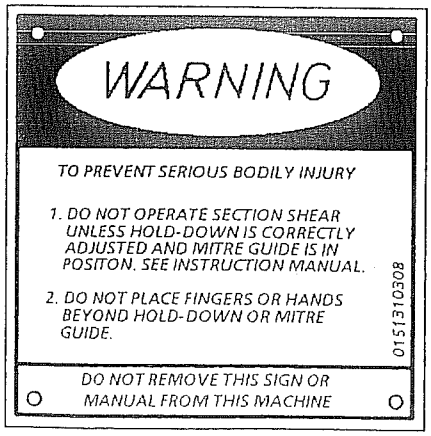
Warning Label 1
Warning against hazardous electric voltage



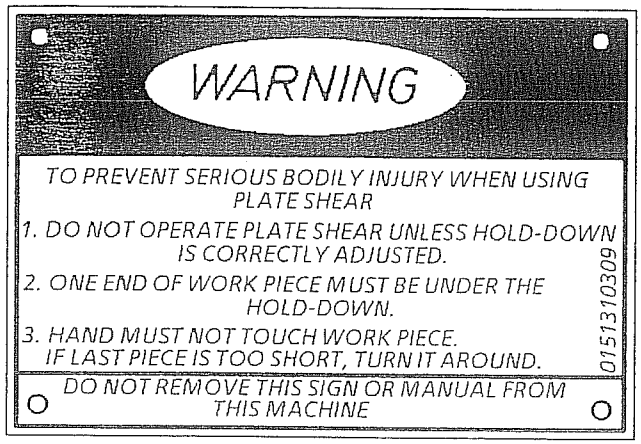
Warning Label 2



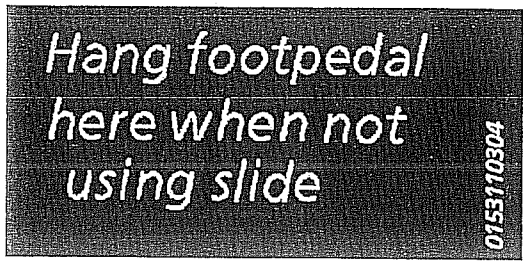
Warning Label 3



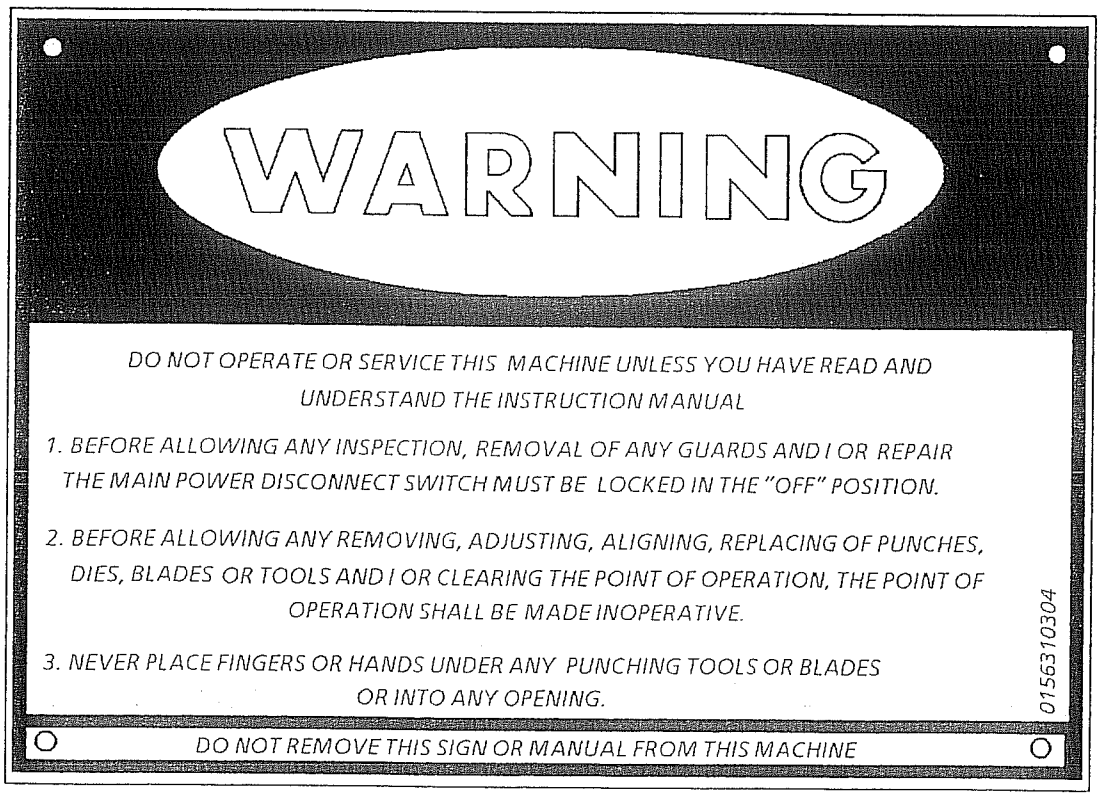
Warning Label 4



Warning Label 5

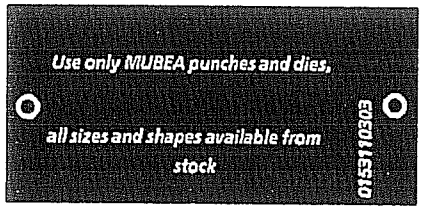


Warning Label 6

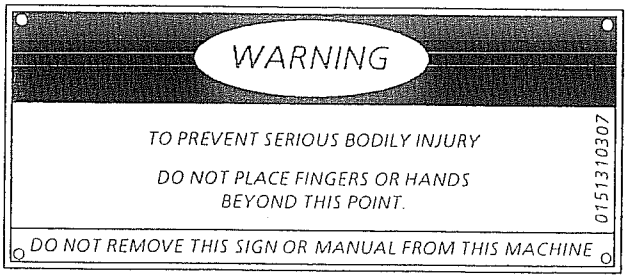


Warning Label 7

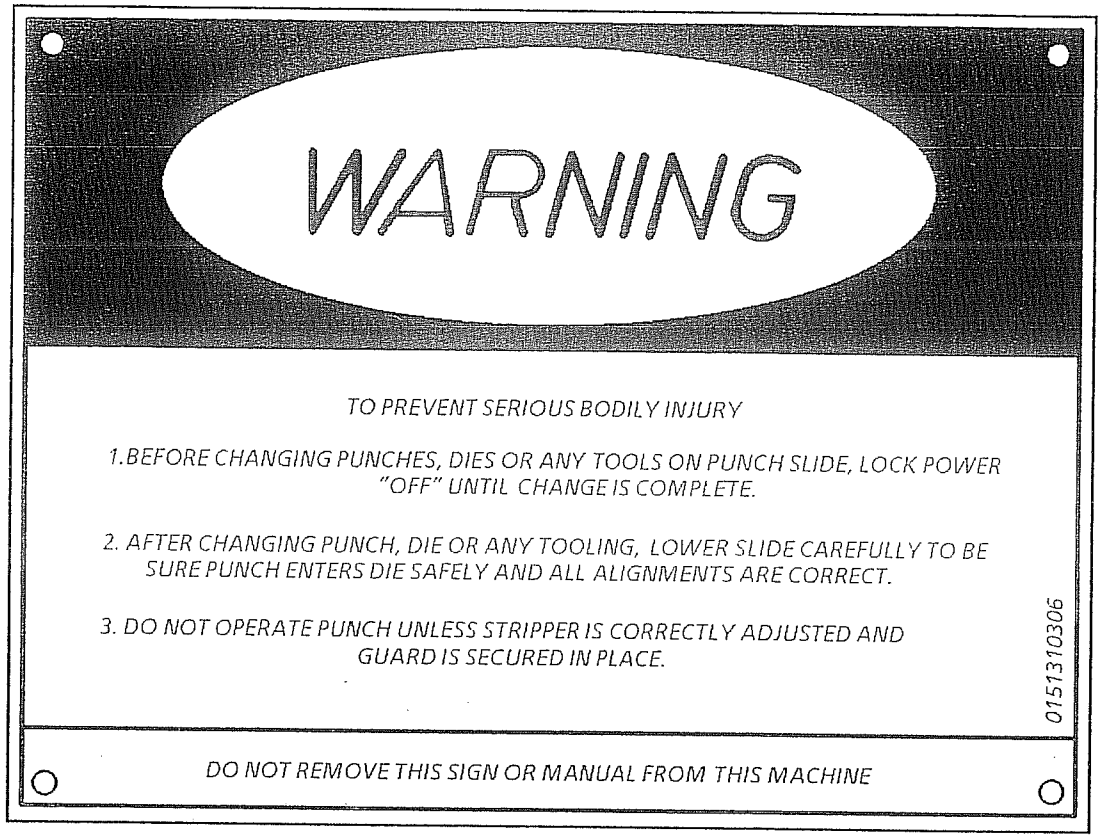
Warning Label 8



Warning Label 9



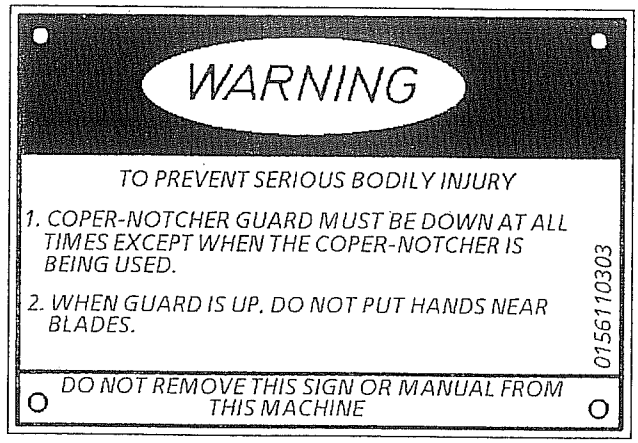
Warning Label 10



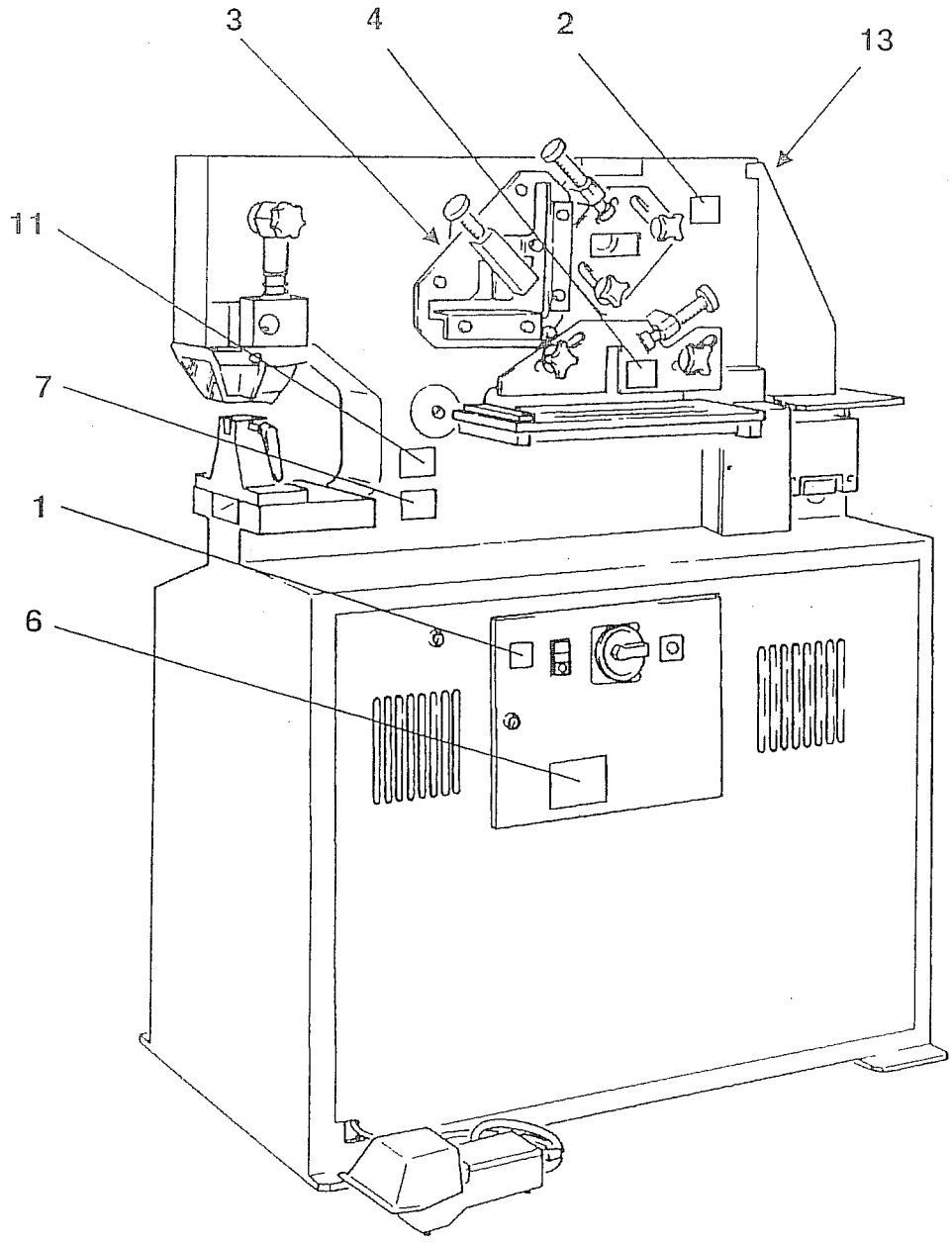
Warning Label 11

Warning Label 12

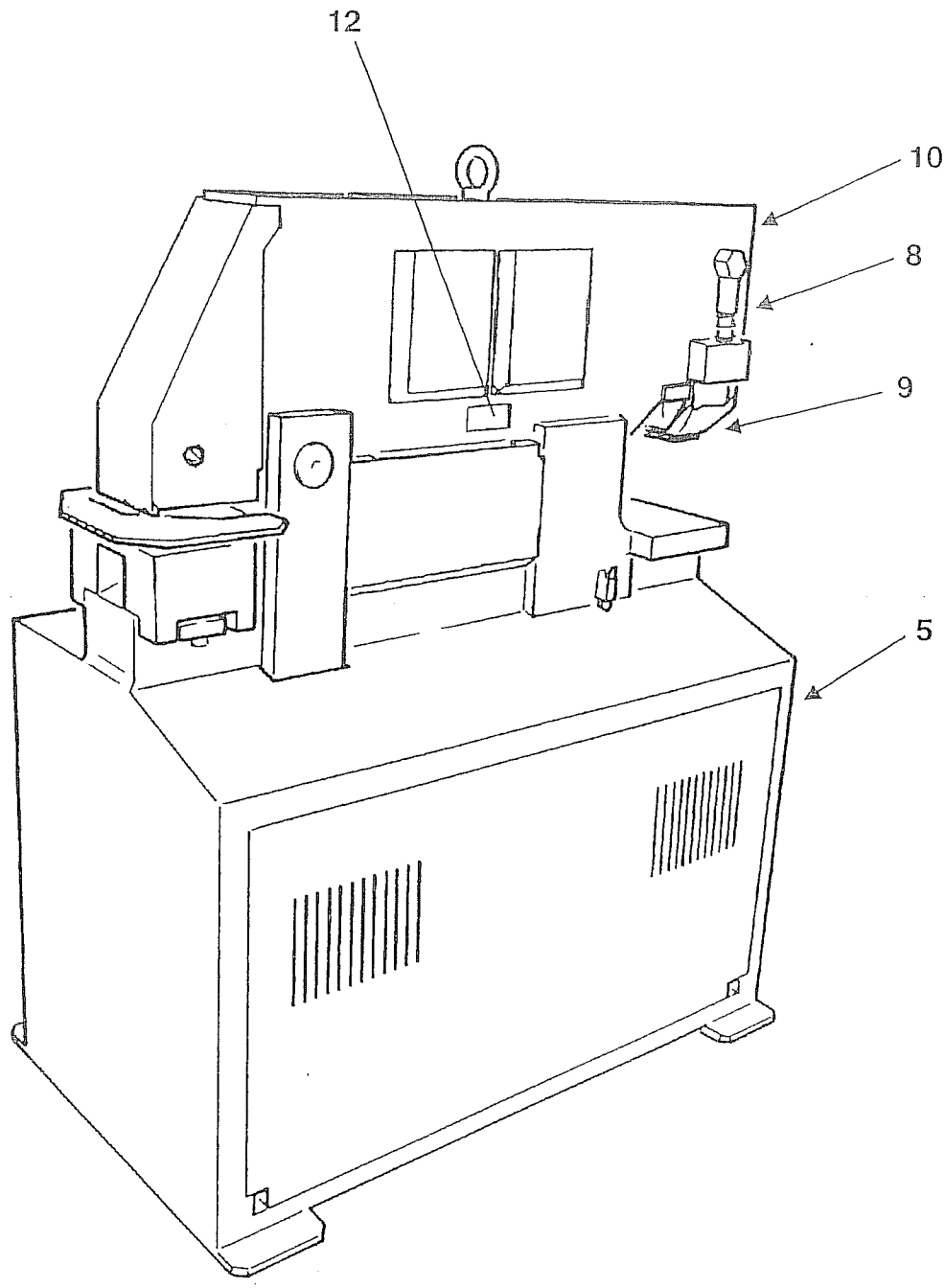
Warning Label 13



Warning labels on the front of the ironworker



Warning labels on the back of the ironworker



2.2 Instructions for Operator Safety

Basic instructions

Whenever performing work on the electrical system, always switch the ironworker off and disconnect it from the external power supply.

Whenever working near the cutting and punching tools, the ironworker must be deactivated by turning the main switch (E) off. Secure the main switch with a padlock.

When special tools are used, they must be designed as safe tools.

Instruction for safety fixtures

Safety fixtures must not be removed.
Before switching on the ironworker, they are to be checked for completeness and proper attachment.
Damaged safety fixtures must be replaced.

Instruction for the warning labels

Do not remove the warning labels.
Replace damaged, scratched or illegible warning labels.

Instruction for the main switch

In the "Off" position the supply cables remain live.
Therefore, whenever making repairs on the electrical components, make sure to disconnect the ironworker from the external power supply.

Instruction for the stop button

Electricity is still flowing through the ironworker.
Only perform maintenance and adjustment work when the main switch (E) is off and secured with the padlock.

Instructions for the selector keyswitch

When the ironworker is not being operated, turn the selector key-switch to "O" and remove the key.

The length-stop outlet on the back of the ironworker is live when the switch is in the "Length stop for shears" position.

Instruction for adjustment work

If you turn the selector keyswitch (D) from the "0", the "Coper/notcher and shears operation" or the "Coper/notcher and shears toolsetting" position to either the "Punch operation" or "Punch toolsetting" position, the carriage will move up to the punch starting position.
If you turn the selector keyswitch (D) from the "0", the "Punch operation" or the "Punch toolsetting" position to either the "Coper/notcher and shears operation" or "Coper/notcher and shears toolsetting" position, the carriage will move up to the shears starting position.

The carriage moves up to the punch starting position.

The carriage moves up to the shears starting position.

Instructions for all knives and tools

Defective or worn knives or tools should not be used.

Check knives and tools at regular intervals. Replace dull or chipped tools or blades.

Whenever knives are changed, the blade clearance must be checked.

Dull, worn and chipped tools and blades leave burrs and jagged spikes on the workpiece and increase the risk of injury.

Instructions for the holepunch

Only punching devices and tools that are equipped with sufficient means of protection against finger injuries up to the cutting point are permitted.

As a rule, check the alignment of punch and die after every tool change and from time to time while punching.

Use extreme caution when entering the punch into the die.
Make certain that the punch does not touch down upon the die.

The punch and die alignment must be checked whenever a tool change is made.

Should the view of the punch tool be obscured by a scratched or blind viewing window, it should be replaced with a genuine spare part (see spare parts).
Make absolutely sure that the safety device is securely fastened.

The carriage moves up to the punch starting position.

Punch and die must be properly aligned.

The clearance between the punch and the die must be carefully controlled.

When using shaped tooling, pay attention to the position of the cutting form of the punch relative to the die.

When using shaped tooling, pay attention to the position of the cutting opening.

Instructions for the coper/notcher

When the coper/notcher is not being operated, the safety guard must be closed.

Instruction for flat-steel shear, coper/notcher and angle-steel shear

Proceed with extreme caution, so that the top knife does not touch the bottom knife.

The carriage moves up to the shears starting position.

The safety doors on the discharge side of the machine are placed there for your safety. Use and maintain the doors properly.

Instruction for transport

When transporting, make sure that cables and supply lines are not creased or squeezed.

Instructions for crane transport

The crane, ropes, cables or chains used to lift the equipment must have the required lifting capacity (ironworker weight, see technical specifications).
Do not stand under the hovering load.
Always screw the eyescrews tight.

When installing the ironworker, make sure that cables and supply lines are not creased or squeezed.

Instruction for connecting the ironworker

Connection of the ironworker to an electric power source must be done by a qualified technican. All local codes and regulations should be followed.

Prior to turning on the power make certain that the motor and transformer have been changed to correspond to the incoming voltage connection.

2.3 Instructions on Operation Safety

Instruction for all knives and tools

Blades and tools must be periodically resharpened. Dull blades put a strain on the ironworker and result in poor cut quality.

Instruction for the bar-steel shear

When installing reground knife blades, particular attention must be paid to the blade clearance.

Instructions for the angle-steel shear and the flat-steel shear

When installing flat-ground blades, particular attention must be paid to the blade clearance.

Hold onto to the blade firmly to prevent accidental dropping and possible damage.

Instruction for flat-steel shear

If you are cutting stock that is thinner than the stop rail, rotate the rail 180° so that it doesn't interfere with the adjustment of the hold-down.

Instruction for transporting with the forklift

When transporting the ironworker by forklift use only proper installed wooden platform to avoid damage.

General instruction for all work on the hydraulic system

Whenever working on the hydraulic system, make sure the equipment remains immaculately clean.

Instruction for operating pressure

Do not exceed the prescribed max. operating pressure.

Do not remove the built-in lead seal of the pressure-limiting valves; otherwise the warranty will be void.

Bottoming of the cylinder on the limit switch for an extended time will cause the overload cut-out to activate and the machine will switch off.

Instruction for refilling with hydraulic oil

Always refill with the same hydraulic-oil grade; never mix. At extreme ambient temperatures you must consult Mubea Machinery and Systems, Inc. (see Customer Service).

Instruction for cleaning the hydraulic system

Water, lyes or kerosene are unsuitable as cleaning agents.

Instructions for changing the oil

With every oil change, also change the oil filter.

Before draining the used oil, procure an appropriate collector vessel.

Avoid polluting the environment!

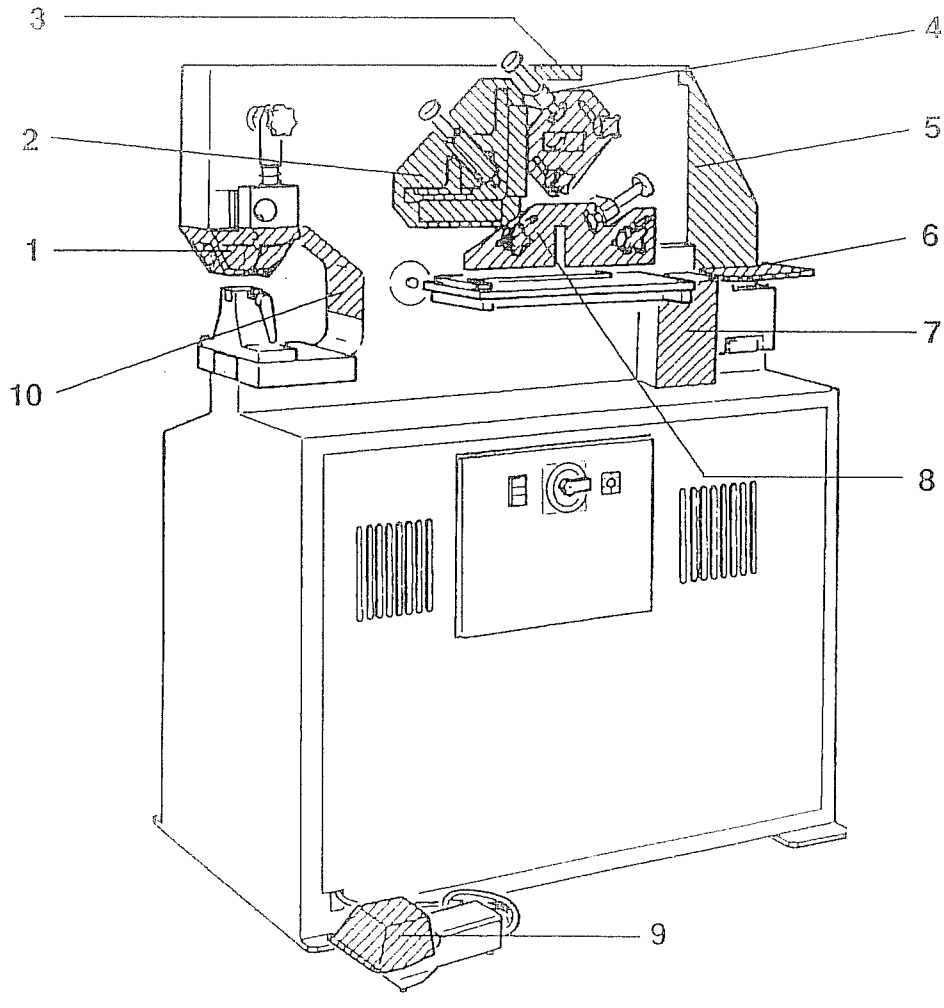
Take the used oil to a waste disposal facility.

2.4 Safety Fixtures

Safety fixtures must not be removed.
Before switching on the ironworker, they are to be checked for completeness and proper attachment.
Damaged safety fixtures must be replaced.

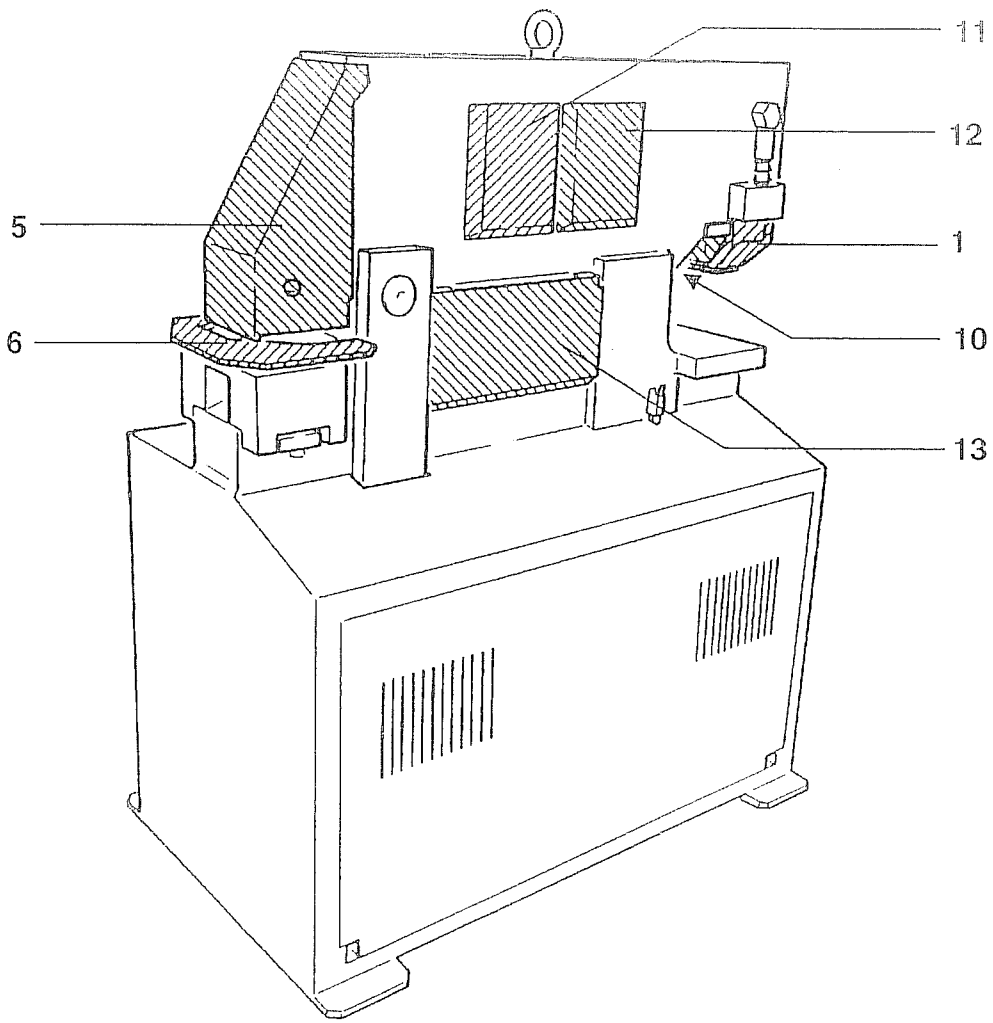
Note
Components 1, 2, 4, 6 and 8 fulfill dual functions. They are a safety fixture as well as a functional part of the machining process.

Safety fixtures on the front of the ironworker

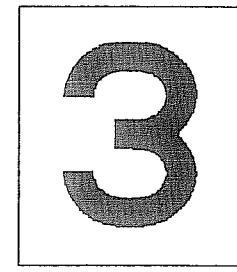


1 Holepunch stripper
2 Hold-down of angle-steel shear
3 Safety cover for bar-steel shear
4 Hold-down of bar-steel shear
5 Coper/notcher safety guard
6 Safety fixture for coping saddle
7 Door for stroke setting
8 Hold-down of flat-steel shear
9 Guard for footpedal
10 Holepunch safety fixture

Safety fixtures on the back of the ironworker



1 Holepunch stripper
5 Coper/notcher safety guard
6 Safety fixture for coping saddle
10 Holepunch safety fixture
11 Safety flap for bar-steel shear
12 Safety flap for angle-steel shear
13 Safety flap for flat-steel shear



Putting into Operation

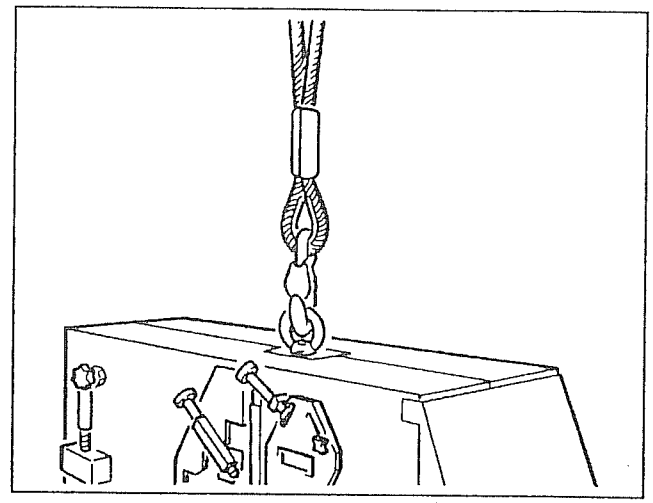
3 Putting into Operation

3.1 Transport

When transporting, make sure that cables and supply lines are not creased or squeezed.

3.1.1 Transporting by Crane

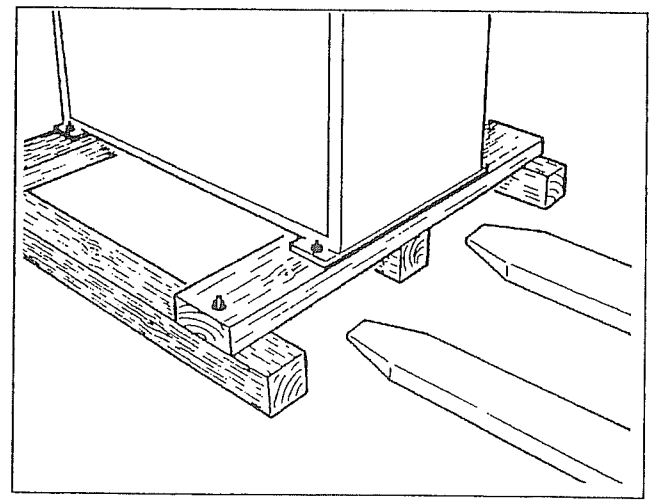
- Make sure the lifting eyescrew is fully tight.
- Transport the ironworker using only the eyescrew designed for that purpose.



The crane, ropes, cables or chains used to lift the equipment must have the required lifting capacity (ironworker weight, see technical specifications).
Do not stand under the hovering load.
Always screw the eyescrews tight.

3.1.2 Transporting by Forklift

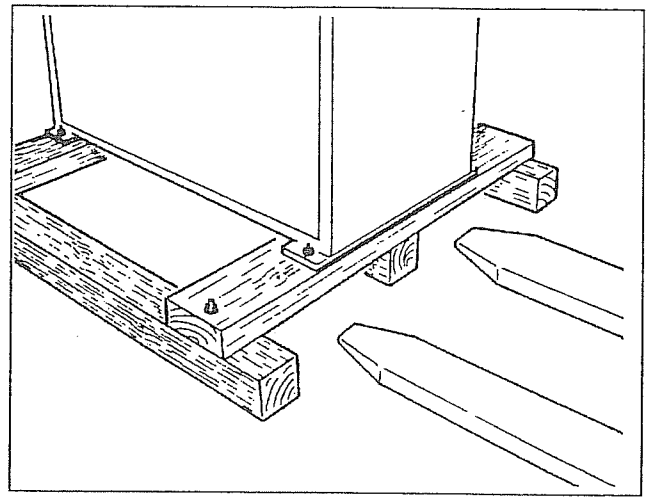
- Screw down the ironworker on a sturdy plank platform in such a way that it can be carried **lengthwise** by the forklift.
- Only carry the ironworker lengthwise, to prevent it from tilting.



When transporting the ironworker by forklift use only proper installed wooden platform to avoid damage.

3.1.3 Transporting by Truck or Rail

- Screw down the ironworker on sturdy planks so that it rests securely (the shipping agent is responsible for anchoring the thus prepared ironworker on the rail car or truck).

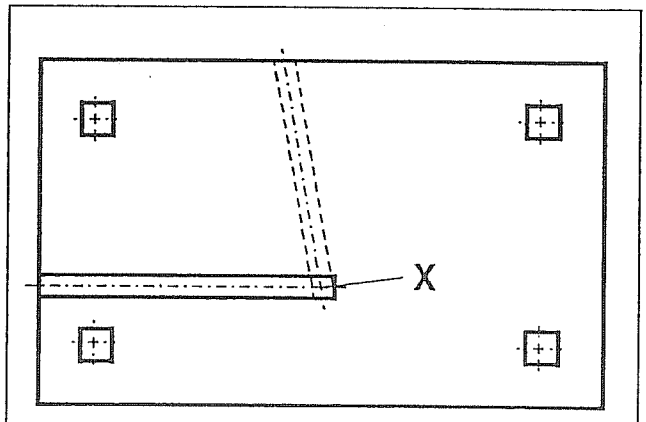


3.2 Installation

The ironworker's work sites have normal operating heights. Thus, it is not necessary to regulate the height using a baseplate or pedestal.
Before installation, check whether the floor is level and sufficiently strong. If a foundation is required, refer to section 3.2.1.

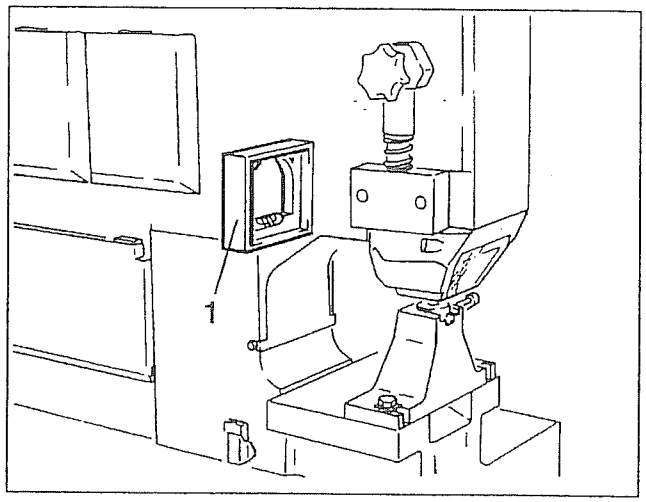
3.2.1 Preparing a Foundation
(if necessary)

- Prepare the foundation. (For foundation diagram, see chapter 11.)
- The depth of the foundation depends on the substructure.
- The cable duct from point "X" may run in any desired direction.



Foundation/machine front

3.2.2 Installing the Ironworker



When installing the ironworker, make sure that cables and supply lines are not creased or squeezed.

- Insert and run in anchor bolts according to foundation diagram, or bore holes according to foundation diagram (see chapter 11).
- Place ironworker at provided site and align it.
- Tighten fastening screws and nuts slightly, in crosswise fashion.
- Check upright alignment of ironworker by measuring with a level (1) in lateral direction.
- If necessary, correct alignment.
- Tighten fastening screws and nuts all the way.

3.3 Power Connection

- Hook ironworker up to power source according to electrical connection diagram (see chapter 11).

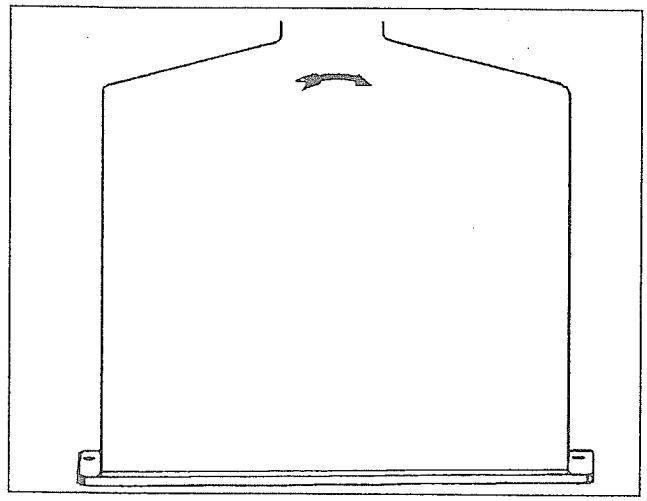
Connection of the ironworker to an electric power source must be done by a qualified technican. All local codes and regulations should be followed.

Prior to turning on the power make certain that the motor and transformer have been changed to correspond to the incoming voltage connection.

3.4 Final Checks Following Installation and Hookup

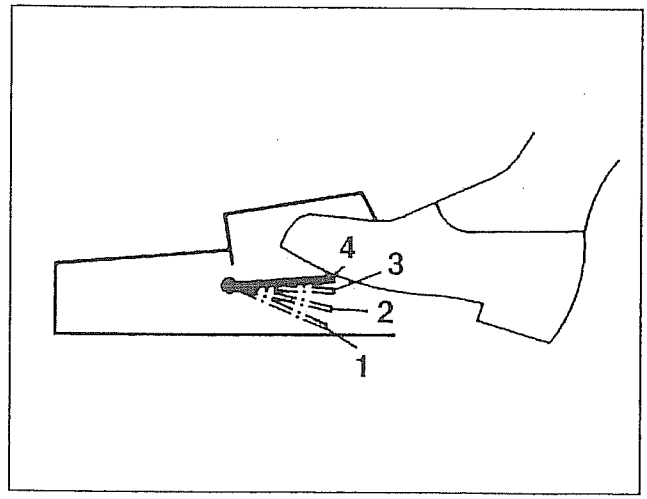
3.4.1 Electrical

- Check motor's direction of rotation.
- If direction of rotation is wrong, have it corrected by a skilled electrician.



3.4.2 Hydraulic

- Check oil level (see section 6.3.1).
- Ventilate system.
  Run the motor, letting it idle for approx. 4 min. Then use the footpedal (G) to move the working cylinder a number of times without any load.
- The max. operating pressure is factory-set, lead-sealed, and need not be tested. If so desired, it can be checked using the factory-installed test lead (see section 6.3.5).



Do not exceed the prescribed max. operating pressure.

Do not remove the built-in lead seal of the pressure-limiting valves; otherwise the guarantee will be void.

3.4.3 Mechanical

- Make sure the ironworker is seated firmly.
- Check whether all safety fixtures are present, securely fastened and operating properly.

Safety fixtures must not be removed.
Before switching on the ironworker, they are to be checked for completeness and proper attachment.
Damaged safety fixtures must be replaced.

4

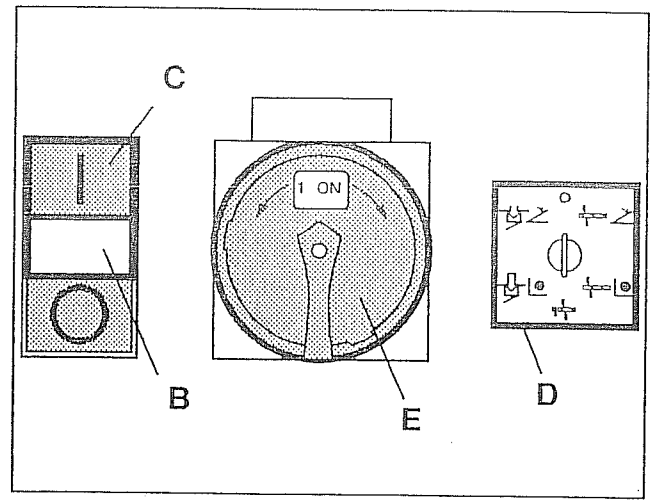
Operation

4 Operation

4.1 Preparations

- Check safety fixtures for secure seating and proper operation.
- Test tools for damages, secure seating and sharp cutting edges.

4.2 Switching On the Ironworker



- Turn main switch (E) to "I".
- Press Start button (C).
  When the pilot lamp (B) lights up, the ironworker is ready.
- Set the selector keyswitch (D) to the desired function.

  Notes
  If you select the "Punch operation" position, the carriage will move up to the punch starting position.

  The carriage moves up to the punch starting position.

  If you select the "Coper/notcher and shears operation" position, the carriage will move up to the shears starting position.

  The carriage moves up to the shears starting position.

- **Only when using the electric length stop:**
  Turn the selector keyswitch (D) to the "Shears length stop" position (footpedal (G) out of operation, length stop in operation).

4.3 Operating the Holepunch

4.3.1 Safety Instructions

Only punching devices and tools that are equipped with sufficient means of protection against finger injuries up to the cutting point are permitted.

Should the view of the punch tool be obscured by a scratched or blind viewing window, it should be replaced with a genuine spare part (see spare parts). Make absolutely sure that the safety device is securely fastened.

The carriage moves up to the punch starting position.

Punch and die must be properly aligned.

The clearance between the punch and the die must be carefully controlled.

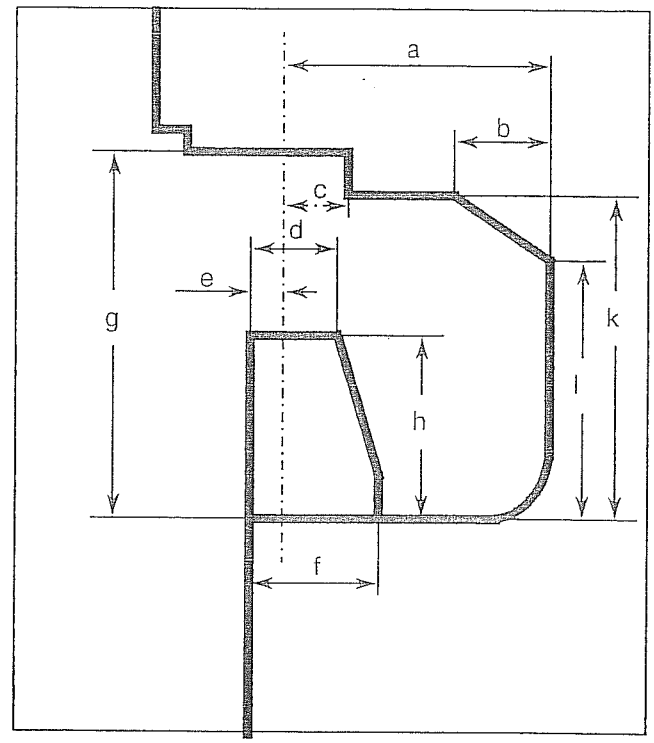
Defective or worn knives or tools should not be used.

Check knives and tools at regular intervals. Replace dull or chipped tools or blades.

4.3.2 General

For the most important dimensions of the holepunch, refer to the following table and drawing.

PROFI 500	inch	PROFI 500	inch
a	8	f	$3^1/_8$
b	$3^3/_8$	g	9
c	$1^7/_8$	h	$4^3/_4$
d	$2^1/_8$	i	$5^3/_4$
e	$^7/_8$	k	8

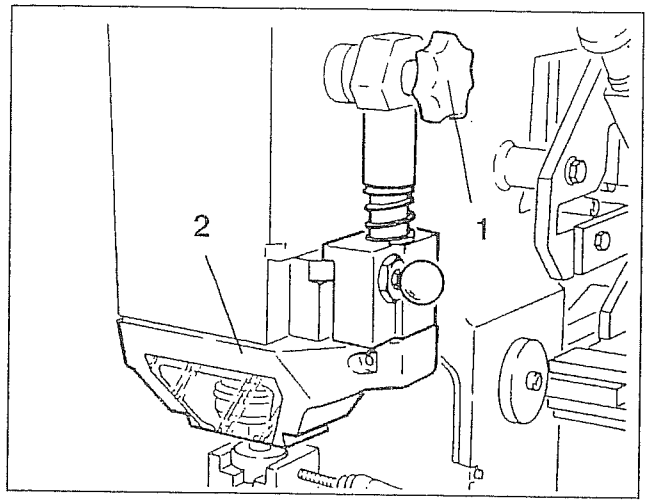


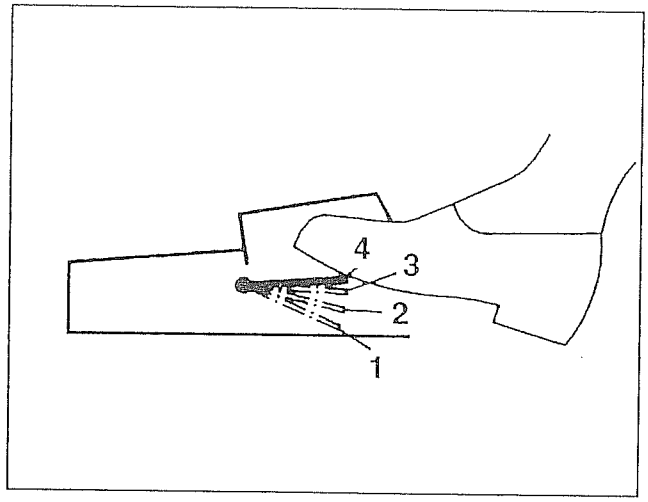
- For series production or large piece numbers, the coupling nut should be used instead of the quick-change fixture (see section 9.1.1).
- For small sections and for holes with small diameters, the reducing plate included in the delivery is to be attached to the stripper (see section 9.1.2).

4.3.3 Working With the Holepunch

- Observe safety regulations.
- Switch on the ironworker (see section 4.2).
- Check whether punch and die have the required dimensions; determine the cutting play as described in section 5.2.1. If necessary, change punch and die as described in section 7.1.
- Check whether the stroke of the punch suits the thickness of the stock to be processed. If necessary, optimize the punch stroke according to section 5.1.1.
- Insert and position the stock.
- Using the star handle (1), adjust the height of the stripper (2) according to the stock thickness.
- Press the footpedal (G).

  For precise punching (e.g. centered stock), first bring the footpedal into position 2 "Down (search)" and then, after positioning the stock, step all the way down on it.
- After punching, release the footpedal. The holepunch will automatically return to its original position at the top.
- From time to time check the cutting play and/or the centering of the tools (see sections 5.2.1 and 5.2.2).





4.4 Operating the Flat-Steel Shear

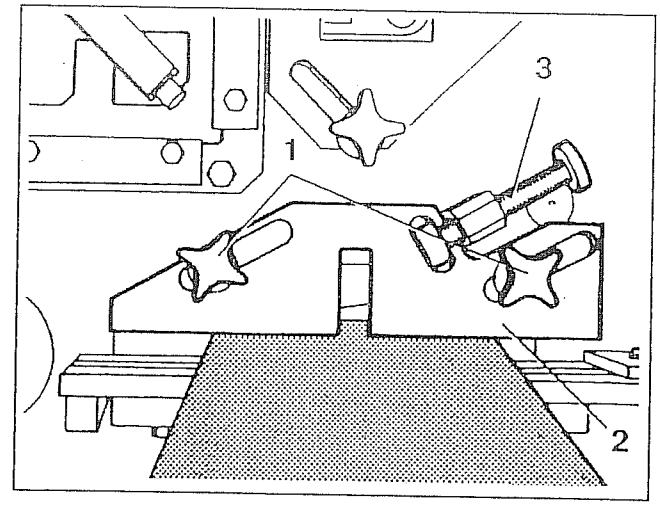
4.4.1 Safety Instructions

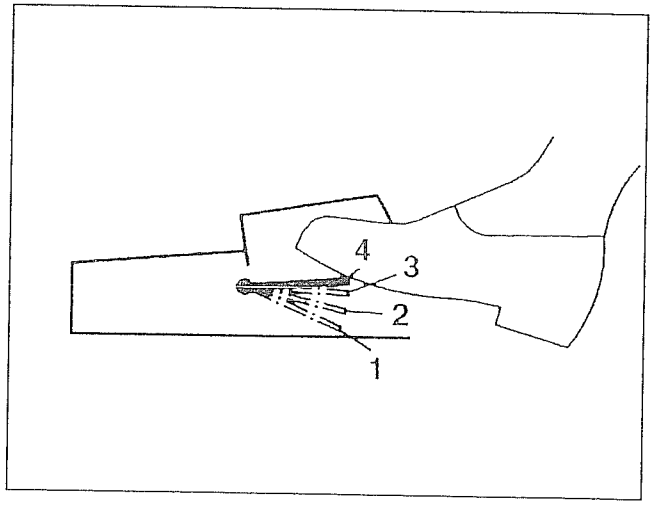
Defective or worn knives or tools should not be used.

Check knives and tools at regular intervals. Replace dull or chipped tools or blades.

4.4.2 Working With the Flat-Steel Shear

- Observe safety regulations.
- Switch on ironworker (see section 4.2).
- Check whether the carriage stroke of the flat-steel shear suits the thickness of the stock to be processed. If necessary, optimize the carriage stroke according to section 5.1.2.
- Loosen the star handles (1) of the hold-down (2).
- Insert and position the stock.
- Rotating the spindle (3), set the hold-down onto the stock.
- Tighten the star handles (1).
- Press the footpedal (G).
- After cutting, release the footpedal. The shear carriage will automatically return to its original position at the top.
- From time to time check the cutting play of the flat-steel shear (see section 5.3.1).



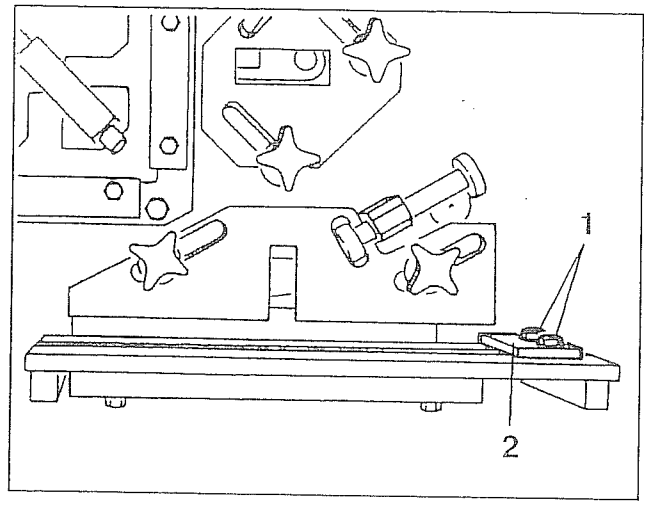


4.4.3 Setting the Stop Rails on the Supporting Table

The stop rail on the suporting table can be set according to the requirements.

- Switch off the ironworker.
- Unscrew both fastener screws (1).
- Move the stop rail (2) to the desired position.
- Screw the two fastener screws (1) tight.

If you are cutting stock that is thinner than the stop rail, rotate the rail 180° so that it doesn't interfere with the adjustment of the holddown.



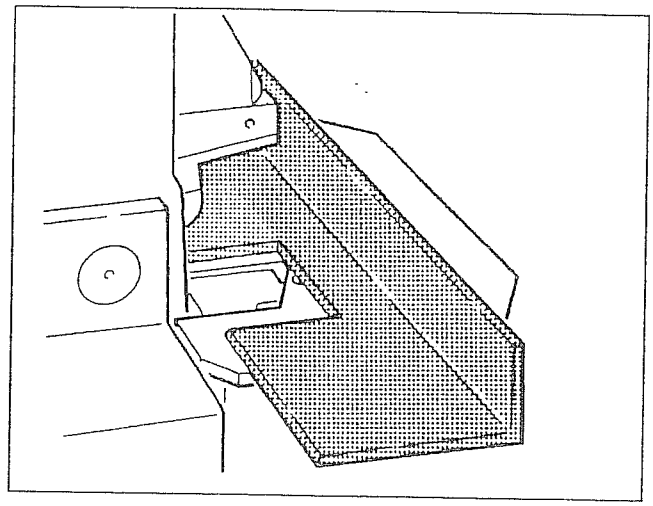
4.5 Operating the Coper/Notcher

4.5.1 Safety Instructions

When the coper/notcher is not being operated, the safety guard must be closed.

Defective or worn knives or tools should not be used.

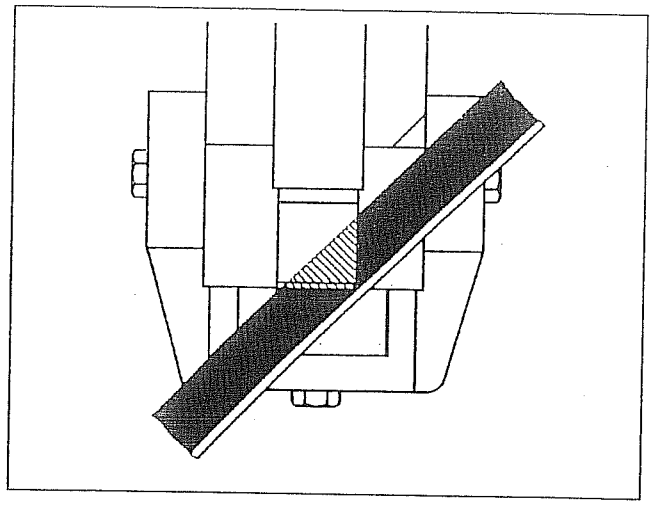
Check knives and tools at regular intervals. Replace dull or chipped tools or blades.



4.5.2 General

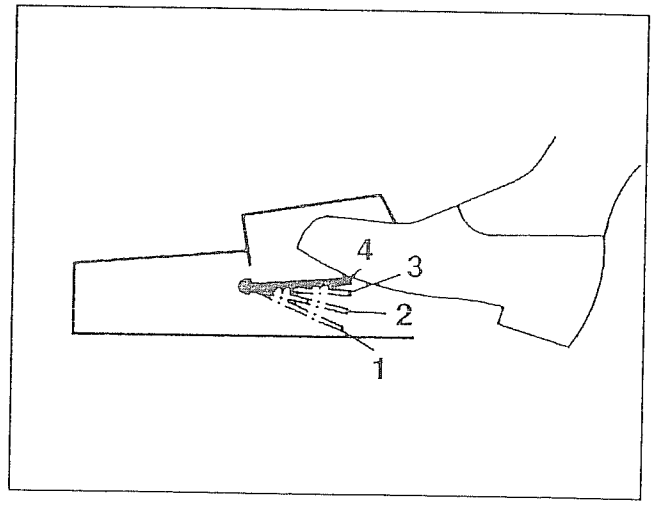
- Make wider copes by repositioning the stock.
- Make triangular notches by placing the stock at a 45° angle.

  Note
  Due to the sharp tips in the notched triangle, these notches are not suitable for making frames.



4.5.3 Working With the Coper/Notcher

- Observe safety regulations.
- Switch on machine (see section 4.2).
- Check whether the carriage stroke of the coper/notcher suits the thickness of the stock to be processed. If necessary, optimize the carriage stroke according to section 5.1.2.
- Open the safety hood by flipping it up.
- Insert and position the stock.



- Press the footpedal (G).
- After coping, release the footpedal. The coper/notcher returns to its starting position.
- After finishing the work, close the coper/notcher safety hood.

When the coper/notcher is not being operated, the safety guard must be closed.

- From time to time check the cutting play of the coper/notcher (see section 5.4.1).

4.6 Operating the Bar-Steel Shear

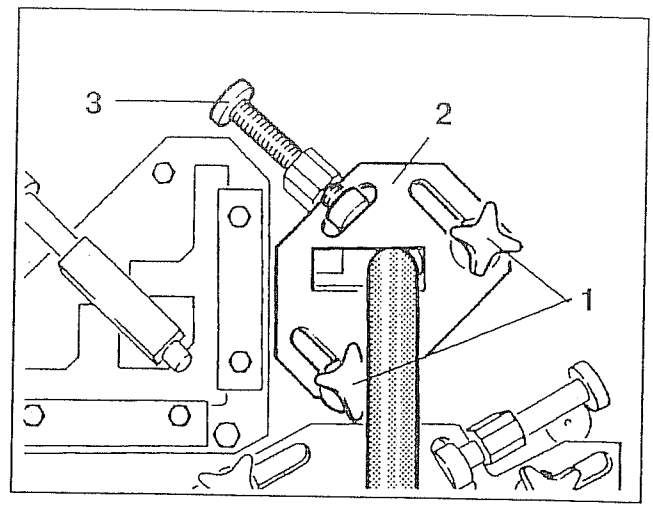
4.6.1 Safety Instructions

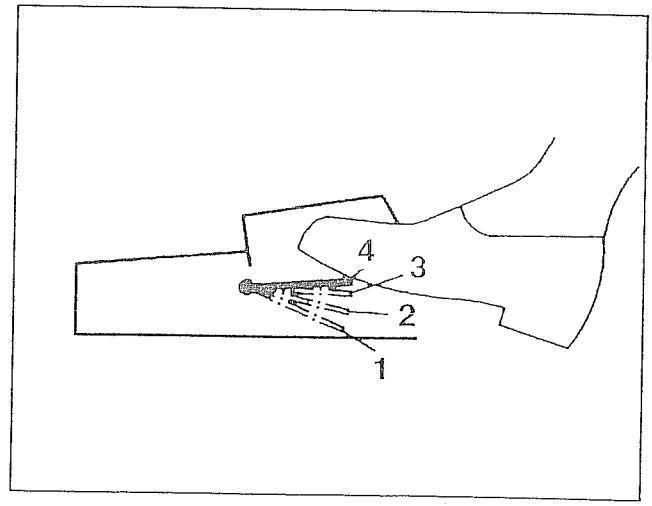
Defective or worn knives or tools should not be used.

Check knives and tools at regular intervals. Replace dull or chipped tools or blades.

4.6.2 Working With the Bar-Steel Shear

- Observe safety regulations.
- Switch on ironworker (see section 4.2).
- Check whether the carriage stroke of the bar-steel shear suits the thickness of the stock to be processed. If necessary, optimize the carriage stroke according to section 5.1.2.
- Loosen the star handles (1) of the hold-down (2).
- Insert and position the stock.
- Rotating the spindle (3), set the hold-down.
- Tighten the star handles (1).
- Press the footpedal (G).
- After cutting, release the footpedal. The carriage returns to its original position at the top.
- From time to time check the cutting play of the bar-steel shear (see section 5.5.1).





4.7 Operating the Angle-Steel Shear

4.7.1 Safety Instructions

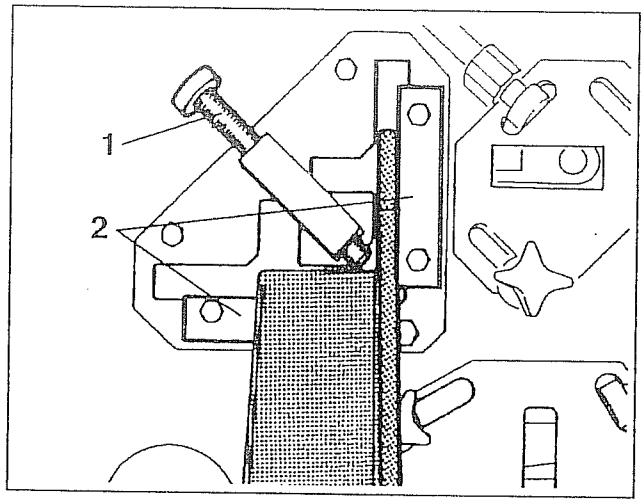
Defective or worn knives or tools should not be used.

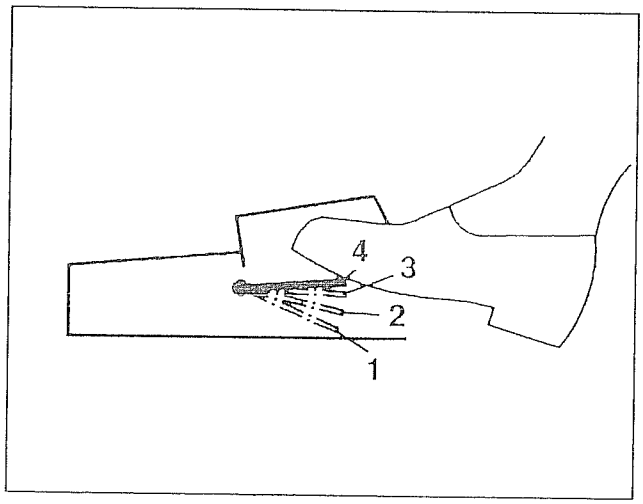
When installing flat-ground blades, particular attention must be paid to the blade clearance.

4.7.2 Working With the Angle-Steel Shear

a) Rectangular Cut

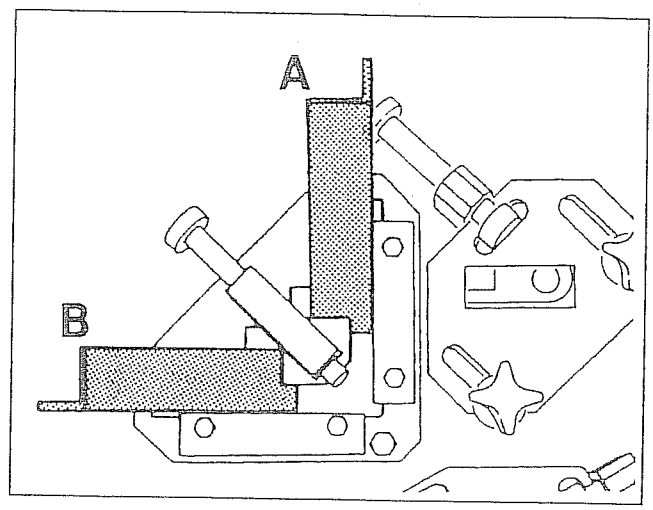
- Observe safety regulations.
- Switch on machine (see section 4.2).
- Check whether the carriage stroke of the angle-steel shear suits the thickness of the stock to be processed. If necessary, optimize the carriage stroke according to section 5.1.2.
- Insert and position the stock.
- Screw the hold-down spindle (1) tight.
- Press the footpedal (G).
- After cutting, release the footpedal. The shear carriage will return to its original position at the top.
- If the cut is not rectangular enough, adjust the stock support rails (2) to attain the proper angle on the workpiece (see section 4.7.3).
- From time to time check the cutting play of the angle-steel shear (see section 5.6.1).

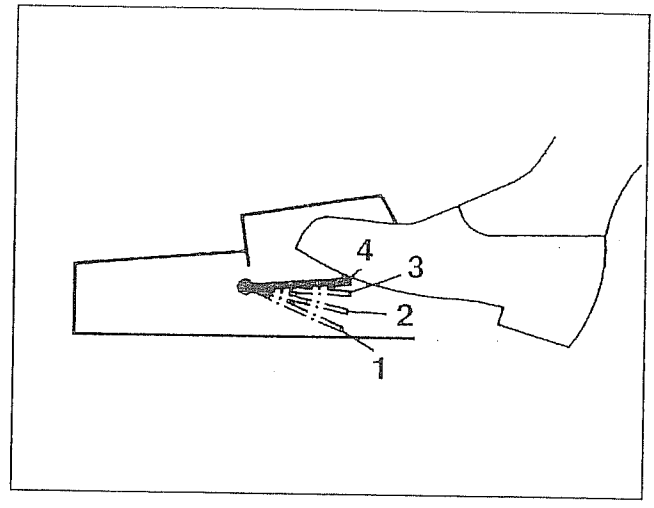




b) Bevel (Miter) Cut

- Observe safety regulations.
- Switch on ironworker (see section 4.2).
- Cut the angle section to the required length using a rectangular cut.
- Depending on the bevel desired, insert the angle section 45° to the vertical (A) or 45° to the horizontal (B).
- Press the footpedal (G).
- After cutting, release the footpedal. The carriage will return to its original position at the top.
- From time to time check the cutting play of the angle-steel shear (see section 5.6.1).





4.7.3 Setting the Stock Support Rails

- After loosening the screws (1), adjust the stock support rails (2) to attain the desired cutting angle (see section 4.7.2)
- Perform a test cut and, if necessary, correct the setting.