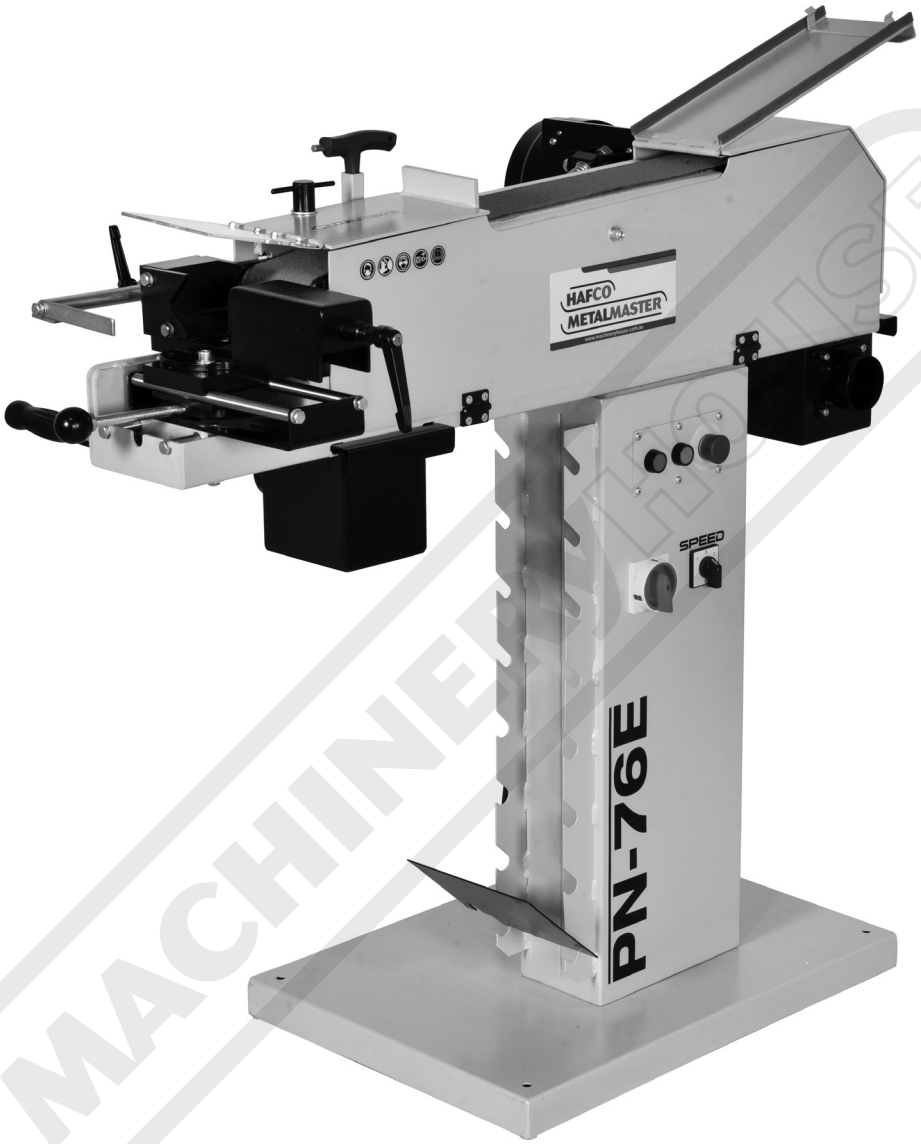
HAFCO METALMASTER



MACHINERY HOUSE

Edition : 2.0
Date: (10/24)

Instruction Manual

PIPE & TUBE NOTCHER / LINISHER
PN-76E

Order Code: (L850)

MACHINE DETAILS

MACHINE	Pipe & Tube Notcher - Linisher
MODEL NO.	PN-76E
SERIAL NO.	
DATE OF MANF.	

IMPORTED BY

AUSTRALIA

HARE&FORBES MACHINERYHOUSE

www.machineryhouse.com.au

NEW ZEALAND

MACHINERYHOUSE

www.machineryhouse.co.nz

NOTE:
This manual is for your reference. At the time of the compiling of this manual every effort to be exact with the instructions, specifications, drawings, and photographs of the machine was taken. Owing to the continuous improvement of the HAFCO METALMASTER machine, changes may be made at any time without obligation or notice.

SAFETY SYMBOLS

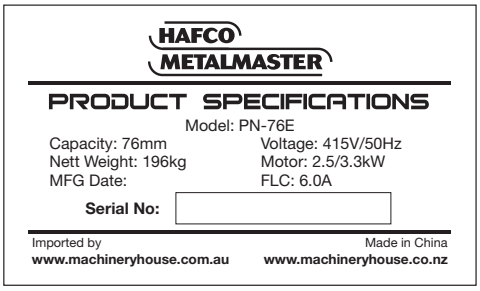
The purpose of safety symbols is to attract your attention to possible hazardous conditions

⚠ **WARNING** ***Indicates a potentially hazardous situation causing injury or death***

⚠ **CAUTION** ***Indicates an alert against unsafe practices.***

Note: ***Used to alert the user to useful information***

NOTE:
In order to see the type and model of the machine, please see the specification plate. Usually found on the back of the machine. See example (Fig.1)


HAFCO METALMASTER

PRODUCT SPECIFICATIONS

Model: PN-76E

Capacity: 76mm — Voltage: 415V/50Hz

Nett Weight: 196kg — Motor: 2.5/3.3kW

MFG Date: — FLC: 6.0A

Serial No:

Imported by **www.machineryhouse.com.au** — Made in China **www.machineryhouse.co.nz**

FIG.1

CONTENTS

1. INFORMATION
1.1 Specifications..... 4
1.2 Accessories Included..... 4
Optional Equipment..... 4
1.3 Identification..... 5

2. SAFETY INFORMATION
2.1 General Metalworking Machine Safety..... 6
2.2 Specific Safety For Tube And Pipe Notchers.. 9

3. POWER SUPPLY
3.1 Electrical Requirements..... 10
3.2 Full-Load Current Rating..... 10

4. SETUP
4.1 Unpacking..... 11
4.2 Clean Up..... 11
4.3 Site Preparation..... 11
4.4 Lifting..... 12
Lifting Point..... 12
4.5 Anchoring To The Floor..... 12
4.6 Machine Levelling..... 12
4.7 Assembly..... 13
4.8 Controls..... 14
4.9 Test Run..... 15
Testing The Emergency Stop Button..... 15

5. OPERATION
5.1 Operation Overview..... 16
5.2 Replacing/Tensioning The Belt..... 17
5.3 Changing The Profile Roller..... 18
5.4 Belt Tracking..... 18
5.5 Securing The Pipe Or Tube..... 19
5.6 Vice Angle Adjustment..... 19
5.7 Deburring/Linisher Table..... 19

6. MAINTENANCE
6.1 Schedule..... 20
6.2 Lubrication..... 20
6.3 Troubleshooting..... 21

Spare Parts..... 22

Risk Assessment..... 26

MACHINERY HOUSE

1.0 INFORMATION

1.1 SPECIFICATIONS

Order Code	L850
MODEL	**PN-76E**
Machine (Type)	Pipe & Tube Notcher / Linisher
Notching Cutter (Type)	Abrasive Belt
Tube Capacity (OD) - Mild Steel (mm)	Ø20 - Ø76
Pipe Capacity (NB) - Mild Steel (Inch / mm)	Ø1/2" - Ø2-1/2"
Belt Size (mm)	100 x 2000
Belt Speed (rpm)	1400 / 2800
Motor Power (kW / hp)	2.8 / 3.7
Motor Direction (Type)	Single
Voltage (V)	415
Weight (kg)	160

1.2 INCLUDED ACCESSORIES

1 x Ø1.1/4" NB pipe or Ø42mm tube Notching roller
1 x Linishing belt

1.3 OPTIONAL ACCESSORIES

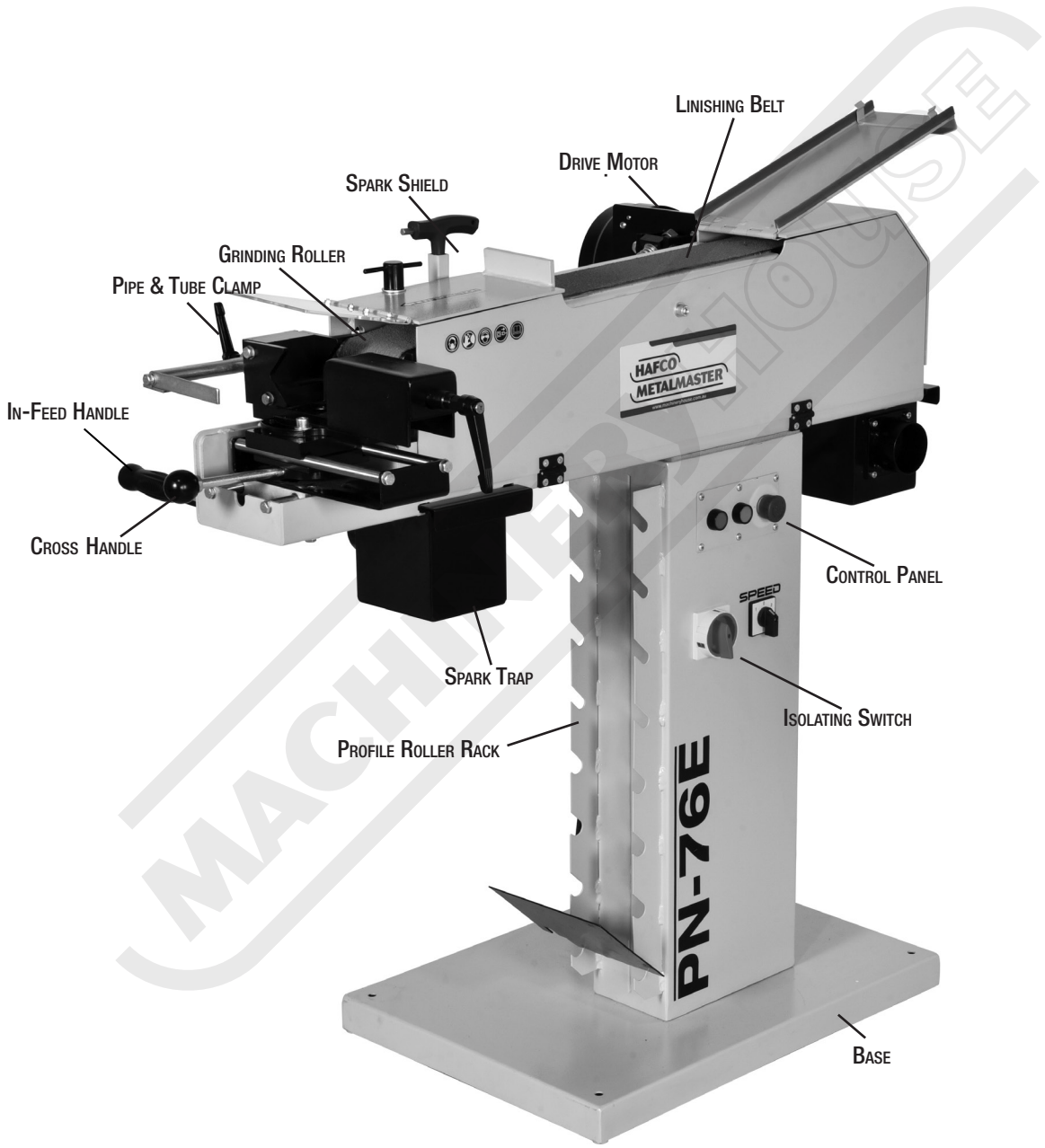
Notching rollers suitable for the following material sizes

- 1/2" NB pipe or Ø20mm tube
- Ø3/4" NB pipe or Ø26mm tube
- Ø1" NB pipe or Ø32mm tube
- Ø1-1/4" NB pipe or Ø42mm tube
- Ø1-1/2" NB pipe or Ø48mm tube
- Ø2" NB pipe or Ø60mm tube
- Ø2-1/2" NB pipe or Ø76mm tube
- Replacement Belt (A8085)

MACHINERY HOUSE

1.4 IDENTIFICATION

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.



MACHINERYHOUSE

2.0 SAFETY INFORMATION

2.1 GENERAL METALWORKING MACHINE SAFETY

DO NOT use this machine unless you have read this manual or have been instructed in the safe use and operation of this machine.

WARNING

This manual provides safety instructions on the proper setup, operation, maintenance, and service of this machine. Save this manual, refer to it often, and use it to instruct other operators.
Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine is solely responsible for its safe use. This responsibility includes, but is not limited to proper installation in a safe environment, personnel training and authorization to use, proper inspection and maintenance, manual availability and comprehension, of the application of the safety devices, integrity, and the use of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

- ✓ Always wear safety glasses or goggles.
- ✓ Wear appropriate safety footwear.
- ✓ Wear respiratory protection where required.
- ✓ Gloves should never be worn while operating the machine, and only worn when handling the work piece.
- ✓ Wear hearing protection in areas > 85 dBA. If you have trouble hearing someone speak from one metre (three feet) away, the noise level from the machine may be hazardous.
- ✓ DISCONNECT THE MACHINE FROM POWER when making adjustments or servicing.
- ✓ Check and adjust all safety devices before each job.
- ✓ Ensure that guards are in position and in good working condition before operating.
- ✓ Ensure that all stationary equipment is anchored securely to the floor.
- ✓ Ensure all machines have a start/stop button within easy reach of the operator.
- ✓ Each machine should have only one operator at a time. However, everyone should know how to stop the machine in an emergency.

MACHINERY HOUSE

2.1 GENERAL METALWORKING MACHINE SAFETY Cont.

- ✓ Ensure that keys and adjusting wrenches have been removed from the machine before turning on the power. Appropriate storage for tooling should be provided.
- ✓ Ensure that all cutting tools and blades are clean and sharp. They should be able to cut freely without being forced.
- ✓ Stop the machine before measuring, cleaning or making any adjustments.
- ✓ Wait until the machine has stopped running to clear cuttings with a vacuum, brush or rake.
- ✓ Keep hands away from the cutting head and all moving parts.
- ✓ Avoid awkward operations and hand positions. A sudden slip could cause the hand to move into the cutting tool or blade.
- ✓ Return all portable tooling to their proper storage place after use.
- ✓ Clean all tools after use.
- ✓ Keep work area clean. Floors should be level and have a non-slip surface.
- ✓ Use good lighting so that the work piece, cutting blades, and machine controls can be seen clearly. Position any shade lighting sources so that they do not cause any glare or reflections.
- ✓ Ensure there is enough room around the machine to do the job safely.
- ✓ Obtain first aid immediately for all injuries.
- ✓ Understand that the health and fire hazards can vary from material to material. Make sure all appropriate precautions are taken.
- ✓ Clean machines and the surrounding area when the operation is finished.
- ✓ Use proper lock out procedures when servicing or cleaning the machines or power tools.

DO NOT

- × Distract an operator. Horseplay can lead to injuries and should be strictly prohibited.
- × Wear loose clothing, gloves, neck ties, rings, bracelets or other jewellery that can become entangled in moving parts. Confine long hair.
- × Handle cuttings by hand because they are very sharp. Do not free a stalled cutter without turning the power off first. Do not clean hands with cutting fluids.
- × Use rags or wear gloves near moving parts of machines.
- × Use compressed air to blow debris from machines or to clean dirt from clothes.
- × Force the machine. It will do the job safer and better at the rate for which it was designed.

WARNING.

Before operating any machine, take time to read and understand all safety signs and symbols. If not understood seek explanation from your supervisor.

MACHINERY HOUSE

2.1 GENERAL METALWORKING MACHINE SAFETY Cont.

HAZARDS ASSOCIATED WITH MACHINES include, but are not limited to:

- Being struck by ejected parts of the machinery.
- Being struck by material ejected from the machinery.
- Contact or entanglement with the machinery.
- Contact or entanglement with any material in motion.

HEALTH HAZARDS (other than physical injury caused by moving parts):

- Chemicals hazards that can irritate, burn, or pass through the skin.
- Airborne items that can be inhaled, such as oil mist, metal fumes, solvents, and dust.
- Heat, noise, and vibration.
- Ionizing or non-ionizing radiation (X-ray, lasers, etc.).
- Biological contamination and waste.
- Soft tissue injuries (for example, to the hands, arms, shoulders, back, or neck) resulting from repetitive motion, awkward posture, extended lifting, and pressure grip).

OTHER HAZARDS

- Slips and falls from and around machinery during maintenance.
- Unstable equipment that is not secured against falling over.
- Safe access to/from machines (access, egress).
- Fire or explosion.
- Pressure injection injuries from the release of fluids and gases under high pressure.
- Electrical Hazards, such as electrocution from faulty or ungrounded electrical components.
- Environment in which the machine is used (in a machine shop, or on a work site).

WARNING!

Machines are safeguarded to protect the operator from injury or death with the placement of guards. Machines must not be operated with the guards removed or damaged.

WARNING!

People with pacemakers should consult their physician(s) before use. Electro-magnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.

2.2 SPECIFIC SAFETY FOR TUBE & PIPE NOTCHER

DO NOT use this machine unless you have been instructed in its safe use and operation and have read and understood this manual

Safety glasses must be worn at all times in work areas.

Long and loose hair must be contained or restrained.

Sturdy footwear must be worn at all times in work areas.

Close fitting/protective clothing must be worn.

Rings and jewelery must not be worn.

A mask must be worn when excessive airborne dust is created.

PRE-OPERATIONAL SAFETY CHECKS

- ✓ Check the workroom and walkways to ensure there are no slip/trip hazards present.
- ✓ Ensure you are familiar with the operation of the ON/OFF DOL switch and emergency stop.
- ✓ Check the linishing belt is in a serviceable condition with no edge fraying, tears or holes.
- ✓ Ensure the operator be positioned out of direct line of abrasive belt at all times.
- ✓ Ensure dust extraction is on before operating sanding machine.
- ✓ Faulty equipment must not be used. Immediately report suspect machinery.
- ✓ Ensure material is well supported – use roller/support stand/s for longer lengths.

OPERATIONAL SAFETY CHECKS

- ✓ Allow machine to reach maximum revolutions before operating to avoid overloading.
- ✓ Hold material firmly in the clamp before applying pressure on the abrasive belt.
- ✓ Keep fingers clear of the linishing belt while sanding.
- ✓ NEVER attempt to sand small items or try to sharpen metal items.
- ✓ Never leave the machine while it is running.
- ✓ Before making adjustments switch off and bring the machine to a complete standstill.

DON'T

- × Operate equipment without wearing appropriate PPE.
- × Use the wrong type of belt for the operation.
- × Attempt to sand very small items or use heavy pressure.
- × Leave the machine running unattended.
- × Use faulty equipment. Immediately report any suspect equipment & apply a "Do Not Use" tag.

POTENTIAL HAZARDS

- ❑ Exposure to moving, abrasive and rotating parts
- ❑ Pinch and squash
- ❑ Eye injuries
- ❑ Ejected waste
- ❑ Burns to skin
- ❑ Excessive dusts

MACHINERY HOUSE

3.0 POWER SUPPLY

3.1 ELECTRICAL REQUIREMENTS

Place the machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure there is access to a means of disconnecting the power source. The electrical circuit must meet the requirements for 415V. To minimize the risk of electrocution, fire, or equipment damage, these machines should be hard wired with installation work and electrical wiring done by a qualified electrician.

NOTE : The use of an extension cord is not recommended as it may decrease the life of electrical components on your machine.

ELECTRICAL REQUIREMENTS

Nominal Voltage.....415V
Cycle.....50 Hz
Phase.....Three Phase
Power Supply Circuit.....15 Amps
Full Load Current..... 6.0 Amps

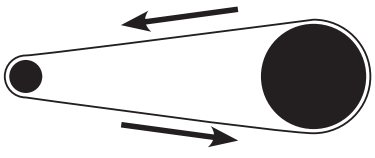
(Full load current rating is also on the specification plate on the motor.)

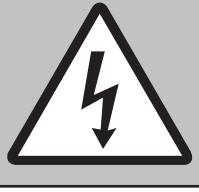
3.2 FULL-LOAD CURRENT RATING

The full-load current rating is the amperage a machine draws when running at 100% of the output power. Where machines have more than one motor, the full load current is the amperage drawn by the largest motor or a total of all the motors and electrical devices that might operate at one time during normal operations. Full-Load Current Rating for this machine is 6.0 amps. It should be noted that the full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating and if the machine is overloaded for a long period of time, damage, overheating, or fire may be caused to the motor and circuitry. This is especially true if connected to an undersized circuit or a long extension lead. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements.

MOTOR BELT DIRECTION

When the switch is in the 1 or 2 position, the belt must rotation in the following direction when power in on.





WARNING

These machines must be connected to a permanent earth wiring system. Due to the complexity and high voltage, the installation MUST be done by a qualified electrician.

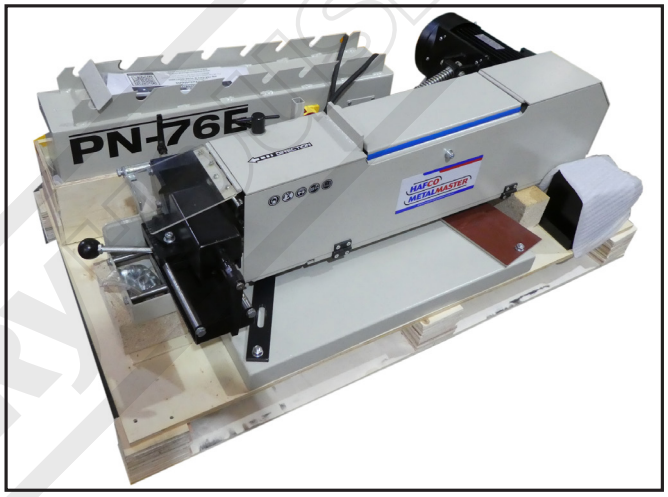
4.0 SET-UP

4.1 UNPACKING

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. If items are damaged, please contact your distributor.

NOTE: Save all the packaging materials until you are completely satisfied with the machine and have resolved any issues with the distributor, or the shipping agent.

When unpacking, check the packing list to make sure that all parts shown are included. If any parts are missing or broken, please contact your distributor.



4.2 CLEAN - UP

The unpainted surfaces of the machine have been coated with a waxy oil to protect them from corrosion during shipment. Remove the protective coating with a solvent cleaner or a citrus based degreaser.
Optimum performance from your machine will be achieved when you clean all moving parts or sliding contact surfaces that are coated with rust prevented products.
It is advised to avoid chlorine based solvents, such as acetone or brake parts cleaner, as they will damage painted surfaces and strip metal should they come in contact. Always follow the manufacturer's instructions when using any type of cleaning product.

4.3 SITE PREPARATION

When selecting the site for the machine, consider the largest size of workpiece that will be processed through the machine and provide enough space around the machine for operating the machine safely. Consideration should be given to the installation of auxiliary equipment. Leave enough space around the machine to open or remove doors/covers as required for the maintenance and service as described in this manual.
It is recommended that the machine is anchored to the floor to prevent tipping or shifting. It also reduces vibration that may occur during operation.

4.4 LIFTING INSTRUCTIONS

On the day that the machine arrives, make sure that a forklift or lifting device, with sufficient capacity is available to unload the machine from the vehicle. Ensure access to the chosen site is clear and that doors and ceilings are sufficiently high and wide enough to receive the machine.

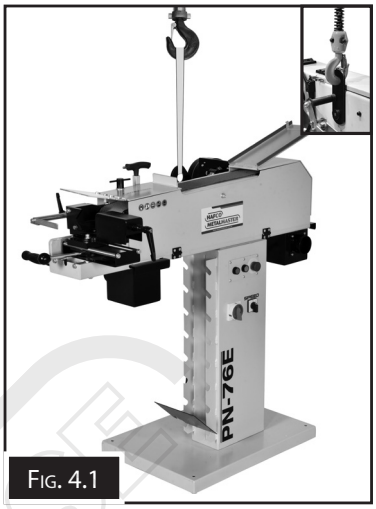


FIG. 4.1

Lifting Point

When lifting the machine only certified lifting slings should be used. Ensure that when lifting, the machine does not tip over. Check that the lifting slings do not interfere with the electrical conduits. Failure to follow these instructions could cause damage to the machine (Fig. 4.1).

4.5 ANCHORING TO THE FLOOR

The machine is best mounted on a concrete slab.
Masonry anchors with bolts are the best way to anchor machinery, because the anchors sit flush with the floor surface, making it easy to unbolt and move the machine later, if needed. (Fig. 4.2).

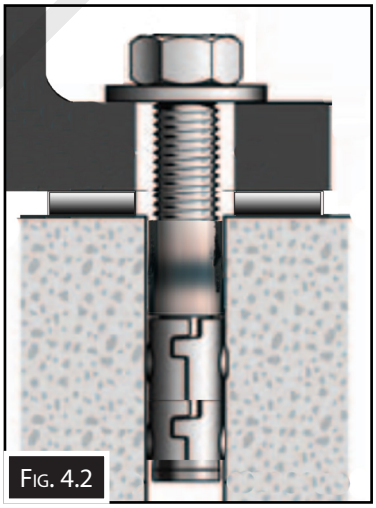


FIG. 4.2

4.6 MACHINE LEVELING

To set your machine up so that it operates to optimum performance, apply the following procedure. After your machine has been anchored to a concrete slab floor, it then needs to be leveled. Loosen the hold down bolts and place a level on the surface of the working table. Metal shims need to be placed under the corner of the base of the machine until level. Once level then tighten the hold down bolts. (Fig. 4.3).

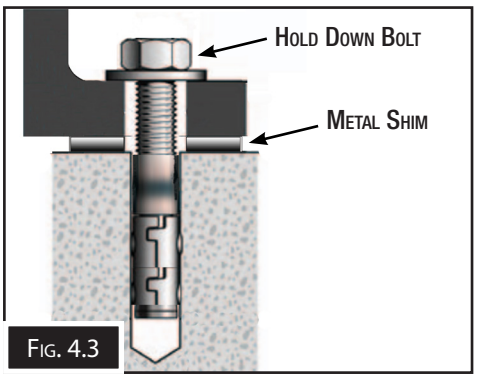


FIG. 4.3

CAUTION

The machine must not rest on supports other than those defined in Fig. 4.3

MACHINERY HOUSE

4.7 ASSEMBLY

The machine must be fully assembled before it can be operated. First clean any parts that are coated in rust preventative to ensure the assembly process can proceed smoothly.

FIG. 4.4

Below are the steps for assembly:

1. Remove the machine from the packaging. To do so, use the lifting eye.

Note HAFCO advises that a lifting device should be used to lift the chassis and when lifting use the lifting eye.

2. With the stand upside down, attach the stand, to the base plate, using the four screws. (Fig. 4.4)

3. Turn the base and stand the right way up ready to attach the machine chassis.

4. Open the side cover of the machine.

5. Lift the machine chassis onto the stand. Put the intermediate plate between the pipe notcher and the stand before the screws are inserted then tighten. (Fig. 4.5)

FIG. 4.5

6. Put both screws in and lighten them, then close the side belt cover to the housing.

NOTE: Take care when assembling the machine that the electrical wires are not damaged or disconnected.

7. Attach the spark trap using the screws supplied.

MACHINERY HOUSE

WARNING

The machine is the sole responsibility of the owner for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training, proper inspection and maintenance, manual availability and comprehension. The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

4.8 CONTROLS

The purpose of this control overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, and the machine controls and what they do. It also helps the operator to understand if they are discussed later in this manual.

NOTE: DO NOT start the machine until all of the setup instructions have been performed. Operating a machine that is not setup may result in malfunction or unexpected results that can lead to serious injury, death or damage to the machine or property.

CONTROLS (FIG. 4.6)

A. ON Button: When pressed starts the motor and the abrasive belt.

B. OFF Button: When pressed stops the motor and the abrasive belt.

C. Emergency Stop Button: When pressed stops the motor and the abrasive belt and stops the machine from being restarted until the button is reset.

NOTE: To reset the emergency stop button, twist the red top until it pops up.

D. Isolating Switch: When switched isolates the machine from the power supply.

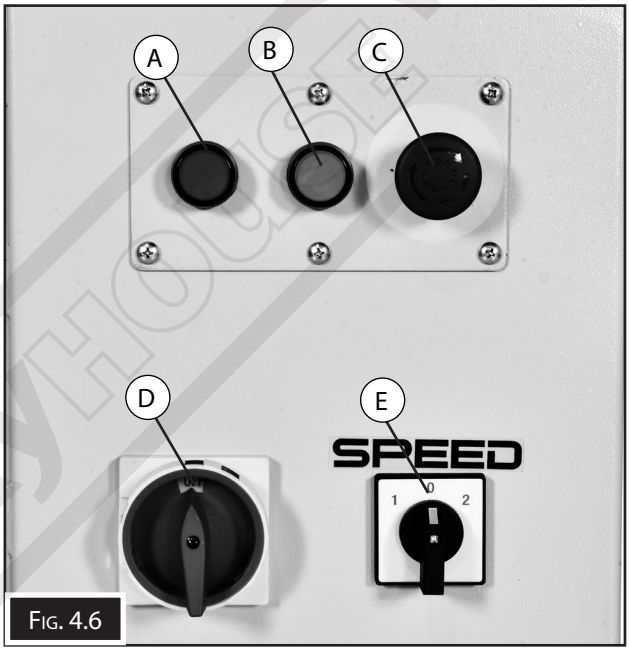


FIG. 4.6

E. Speed Selection Switch: When switched changes the speed from high to low speed of the abrasive belt

WARNING

Disconnect all power from the machine before servicing. There may be multiple power sources present. Remove the plug from the power point or remove the fuse if hardwired. Failure to do may cause death or injury.

CAUTION

Some service processes should only be carried out by professional maintenance personnel. If you are unsure of your ability to complete a task, please contact your local HAFCO service engineer.

4.9 TEST RUN

Once assembly is complete, test run the machine to ensure it is properly connected to the power and safety components are functioning correctly. Check that the direction of the motor is correct and make sure that the machine rotates in the correct direction.
If the direction is incorrect, isolate the machine and have the electrician make changes to the wiring.
If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine again. The Troubleshooting table in the Maintenance section of this manual may be able to help. If the problem persists then contact your local distributor.

TO TEST RUN THE MACHINE:

1. Connect the machine to the power supply.

2. Make sure that the manual has been read and that the safety instructions at the beginning of the manual are understood. Make sure the machine has been setup correctly.

3. Make sure all tools and objects used during set up have been cleared away from the machine.

4. Turn the machine ON.

5 Make sure that the machine belt travels in the both directions correctly.

6. Listen to and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.

7. Any strange or unusual noises should be investigated and corrected before operating the machine again. Always disconnect the machine from power supply when investigating or correcting potential problems. The troubleshooting chart in the maintenance section may be helpful in rectifying a problem.

TESTING THE EMERGENCY STOP BUTTON

Make sure that the emergency button is working correctly.

1. Twist the top of the Emergency Stop button to ensure that it is in the raised position.
2. Start the machine and then press the emergency stop button. The machine should stop and the power should be cut off. If the machine cannot be started then the emergency stop is working correctly.
3. To reset the Emergency Stop twist the red top until it pops up. The machine should now work again.
4. Repeat the process with the second Emergency Stop.

MACHINERYHOUSE

5.0 OPERATION

5.1 OPERATION OVERVIEW

This overview is to provide the novice machine operator with an understanding of the basics and how the machine is used during the operation. This helps them to understand if the machine controls and components are discussed later in this manual.

Due to the generic nature of this overview, it is not intended to be an instructional guide. Hafco advises that if more specific information is required to operate this machine, that the operator reads this entire manual, seek additional training from experienced machine operators, or do additional research outside of this manual by reading “how-to” books, trade magazines, or websites.

TO COMPLETE A TYPICAL OPERATION, THE OPERATOR WILL:

1. Examine the tube to make sure the diameter is appropriate for operation and the end does not have any burrs that could damage the abrasive belt or the machine.
2. Fits the correct notcher roller to suit the cut required.
3. Adjusts the vice angle, if necessary, to the correct angle of the desired cut.
4. Make sure that the abrasive belt is properly tensioned and is tracking correctly.
5. Put on personal protective equipment.
6. Secures the tube in the vice.
7. Properly adjusts the spark shield.
8. Starts the machine.
9. Uses feed lever and traverse crank to make light side-to-side passes of tube against abrasive belt.
10. Stops the machine and remove the tube.

WARNING.

Abrasive sparks from grinding can cause serious and permanent eye damage. Always use a face shield and safety glasses together to insure best eye protection.

MACHINERY HOUSE

5.2 REPLACING/TENSIONING THE BELT

When the abrasive belt becomes worn or damaged, it is time to replace it. The HAFCO PN-76E uses a 100 x 2000 silicon-carbide abrasive belt.
Use coarser grit belts for fast cutting and hard metals. Use finer grit belts for softer metals and a smoother finish.

TO REPLACE THE ABRASIVE BELT:

1. DISCONNECT MACHINE FROM POWER!
2. Wind the belt tension handle to release the pressure off the belt. (Fig. 5.1)
3. Loosen screw that secures the belt cover, then open the side belt guard and remove the abrasive belt from the machine. (Fig. 5.2)
4. Select the desired profile roller and place it into the support bracket.
5. Slide the abrasive belt onto the profile roller, drive pulley, and over deburring table making sure that direction arrows printed on inside of belt are pointing in the same direction as the arrow on the machine. (Fig. 5.3)
6. Center the belt on the drive pulley.
7. Without holding the abrasive belt lever, push the motor back with moderate force until it stops. This will apply the correct abrasive belt tension. Wind the belt tension screw until it tensions the belt.
8. Adjust abrasive belt tracking (refer to Abrasive Belt Tracking on Page 25 for instructions).
9. Close the belt guard and secure it with the screw so that it cannot be opened.

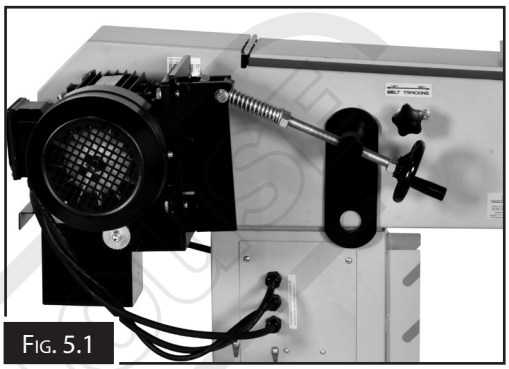


FIG. 5.1

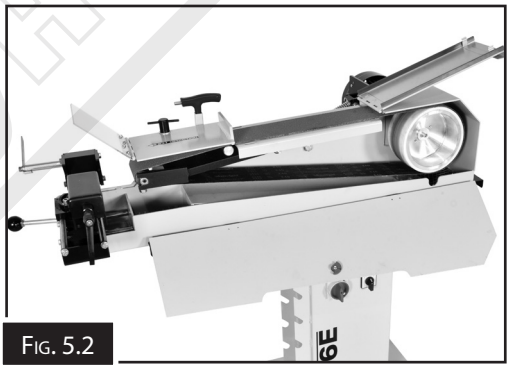


FIG. 5.2

FIG. 5.3

WARNING

Disconnect all power from the machine before servicing.
There may be multiple power sources present.
Remove the plug from the power point or remove the fuse if hardwired.
Failure to do may cause death or injury.

5.3 CHANGING THE PROFILE ROLLERS

The HAFCO PN-76E can accommodate seven profile rollers ranging from 20 to 76mm. The size of profile roller that is used will depend on the size of tubing your workpiece will be mated to.

TO CHANGE THE PROFILE ROLLER

1. DISCONNECT THE MACHINE FROM THE POWER
2. Wear safety gloves during exchange of the grinding roller and or the grinding belt. Through continuous use, the roller can become extremely hot.
3. Before the grinding roller is exchanged, the belt must be removed. For more information, see section 5.2
4. The grinding roller is held in place by two screws. Loosen the screws until the grinding roller can be easily removed from the holder.
5. Clean the roller with a rag and lightly cover the roller with a light oil before placing it in the roller rack.
6. Select the roller to suit the pipe or tube required and place it in the support bracket, then replace the belt

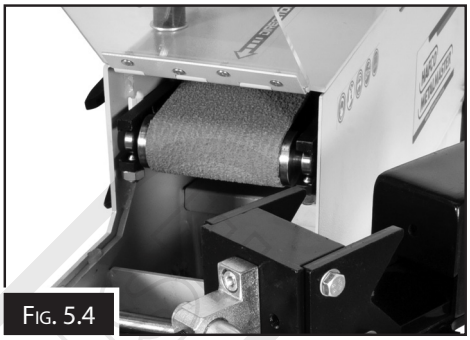


FIG. 5.4

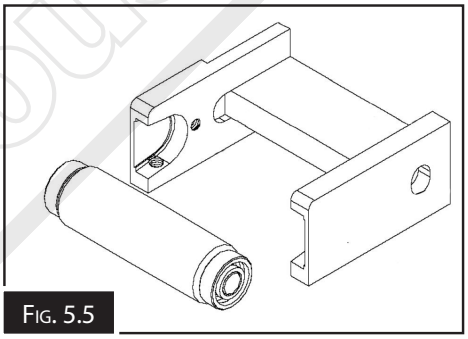


FIG. 5.5

5.4 BELT TRACKING

After changing a grinding roller the following check and adjustments may need to be made:

a. The side movement of the grinding belt should be restricted.

PROCESS

Using the adjusting knob, the belt rough adjustment should be done by turning the belt by hand. For a more specific adjustment the motor must be turned on and the tracking adjusted until the belt runs in the centre of the pulleys. (Fig. 5.6)

FIG. 5.6

b. The centerline height of the grinding roller has to be equal to the tube section, which is to be ground.

PROCESS

The height of the grinding roller may have to be adjusted by releasing the two levers and adjusting the height of the cutting roller using the adjusting screw until it is on the centre line of the pipe or tube. After the adjustment, the levers must be fastened again.

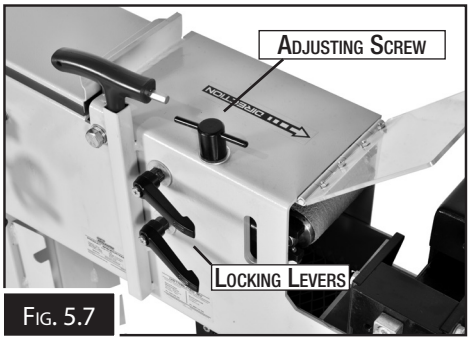


FIG. 5.7

MACHINERY HOUSE

5.5 SECURING THE PIPE OR TUBE.

To operate the machine, the tube or pipe must be secured in the vice. (Fig. 5.8) The vice is mounted on the cross movement support and can accommodate pipe and tube from 20mm to 76mm. When the V-shaped side plates are removed, the vice can also be used to secure rectangular or square profile tubing.

In the case of rectangular and square profile tubing, the centre of the tubing profile must be at the same height as the centre of the grinding roller. To achieve the correct height of the tubing profile, a fill block can be used under the tubing section.

The workpiece must be secured in the vice before operation can begin.

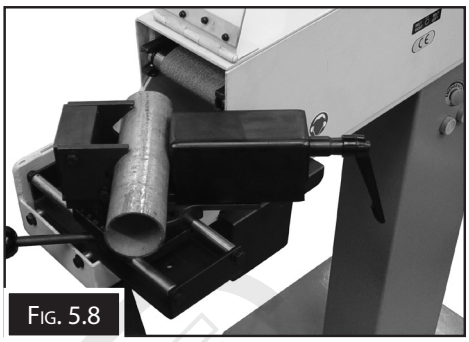


FIG. 5.8

5.6 VICE ANGLE ADJUSTMENT

To adjust the angle, the socket head cap screws must be loosened. The scale divisions allow the correct angle to be set In relation to the grinding roller.

The vice is adjustable from 90 to 30 degrees. After adjustment, the socket head cap screws must be re-tightened. (Fig. 5.9)

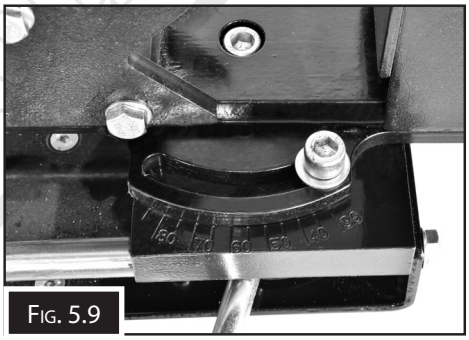


FIG. 5.9

5.7 DEBURRING/LINISHING TABLE

The top of the machine is equipped with a deburring and linishing table for deburring the notched tubing section or can be used as a linisher table. (Fig. 5.10)
To use the table the cover needs to be opened.

FIG. 5.10

WARNING!

Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, the machine until the information is understood.

MACHINERY HOUSE

6.0 MAINTENANCE

This chapter provides information about the maintenance of the machine. To maintain the optimum performance, the following maintenance schedule must be strictly followed.

6.1 SCHEDULE

To ensure a low risk of injury and proper machine operation, if the operator observes any of the items below, shut down the machine immediately and have the problem repaired before continuing with the operations:

DAILY

- Missing or loose mounting bolts.
- Abrasive belt either worn or damaged.
- Debris in spark trap.
- Debris on or around machine.
- Electrical wires worn or damaged.
- Any other unsafe condition.

WEEKLY MAINTENANCE

- Clean the machine.
- Clean and protect the profile rollers.
- Clean and lubricate the vise guide rods and lead-screws.

6.2 LUBRICATION

VICE GUIDE RODS AND VICE SCREW

Move the vice as necessary to access the full length of the guide rods and clean any debris from their surfaces with shop rags and mineral spirits. When dry, wipe guide rods with light machine oil using a clean shop rag. (Fig. 5.11)

Move the vice as necessary through the full length of the leadscrews and clean any debris from the threads with a stiff brush and mineral spirits. When dry, apply a thin coat of light machine oil and work the lubricant into the threads with a clean, stiff brush. Wipe away any excess oil. Move the vice through the full length of each leadscrew to distribute the oil.

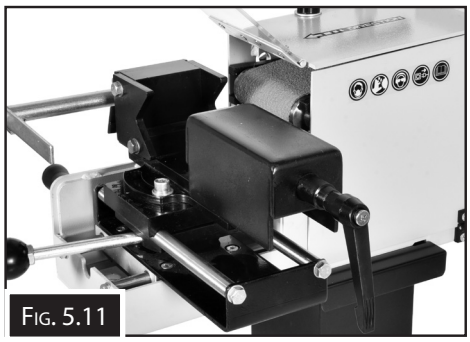


Fig. 5.11

BELT TENSION SCREW

Clean any debris from the thread with a stiff brush and mineral spirits. When dry, apply a thin coat of light machine oil and work the lubricant into the threads with a clean, stiff brush. Wipe away any excess oil. (Fig. 5.12)

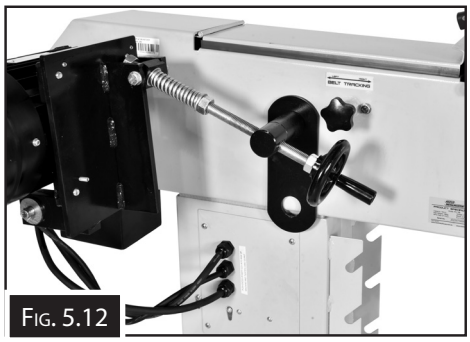


Fig. 5.12

MACHINERYHOUSE

6.3 TROUBLESHOOTING

Review the troubleshooting and procedures in this section if a problem develops with your machine. If you need replacement parts then follow the procedure in the beginning of the spare parts section or if additional help with a procedure is required, then contact your distributor.

Note: Make sure you have the model of the machine, serial number,and manufacture date before calling.

Symptoms	Possible Cause	Possible Solution
Machine does not work	1. Plug not in 2. Cables defective 3. Switch defective 4. Motor defective	1. Put in the plug 2. Call your distributor 3. Call your distributor 4. Call your distributor
Material is not being clamped properly	1. High speed stretcher not correctly adjusted 2. Piece of work is very long and heavy	1. Adjust high speed stretcher 2. Use a material support
Belt does not run in the center	1. Belt running not correctly adjusted 2. Damage to bearings in grinding roller	1. Adjust belt running 2. Replace grinding roller
Belt makes contact with the chassis near the abrasive belt	1. Belt not tracking correctly.	1. Adjust the belt tracking.
Bad grinding result	1. Wrong belt 2. Belt worn out	1. Put in the correct belt 2. Change the belt
Grinding roller starts crawling	1. Grinding roller starts crawling	1. Clean the contact surfaces near the roller holder. Tighten the fixing screws on the grinding roller.

WARNING

Disconnect all power from the machine before servicing.
There may be multiple power sources present.
Remove the plug from the power point or remove the fuse if hardwired.
Failure to do may cause death or injury.

CAUTION

Some service processes should only be carried out by professional maintenance personnel. If you are unsure of your ability to complete a task, please contact your local Metalmaster service engineer.

MACHINERY HOUSE

SPARE PARTS SECTION

Pipe & Tube Notcher - Linisher

Models

PN-76E

Order Code, L850

The following section covers the spare parts diagrams and lists that were current at the time this manual was originally printed. Due to continuous improvements of the machine, changes may be made at any time without notification.

HOW TO ORDER SPARE PARTS

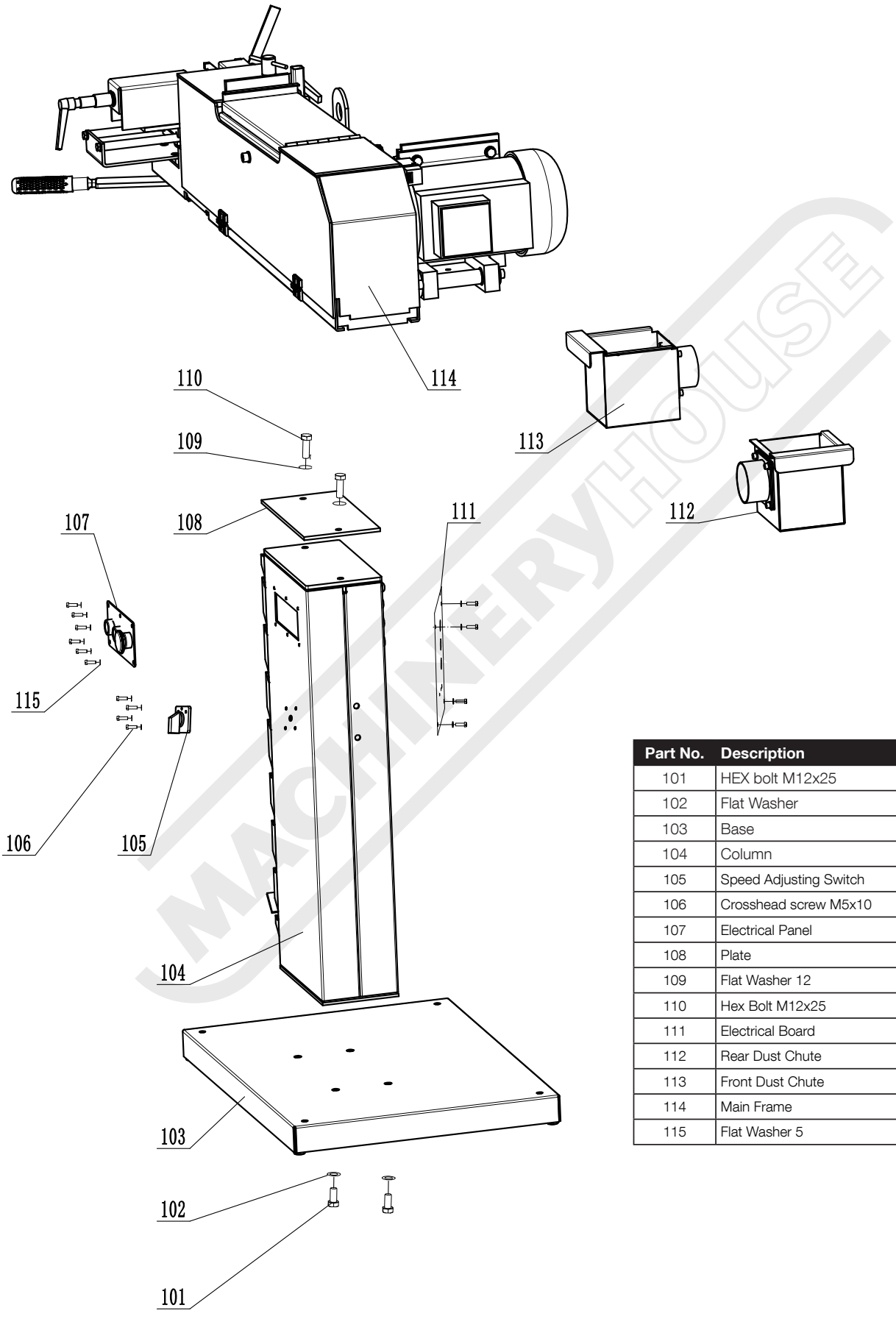
1. Have your machines model number, serial number & date of manufacture on hand, these can be found on the specification plate mounted on the machine.
2. A scanned copy of your parts list/diagram with required spare part/s identified.

NOTE: SOME PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY

3. Go to www.machineryhouse.com.au/contactus and fill out the inquiry form attaching a copy of scanned parts list.

MACHINERY HOUSE

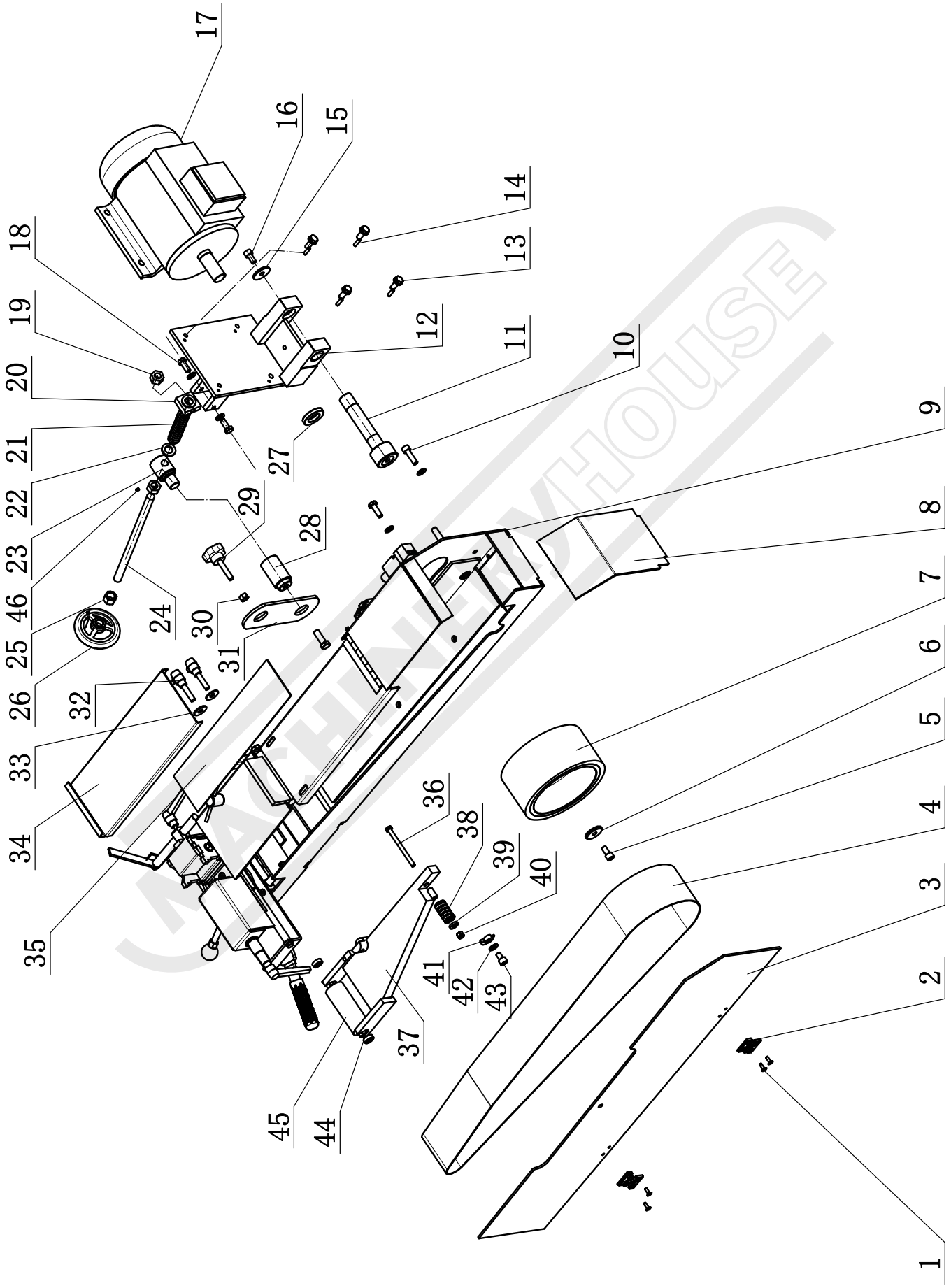
7.1 SPARE PARTS



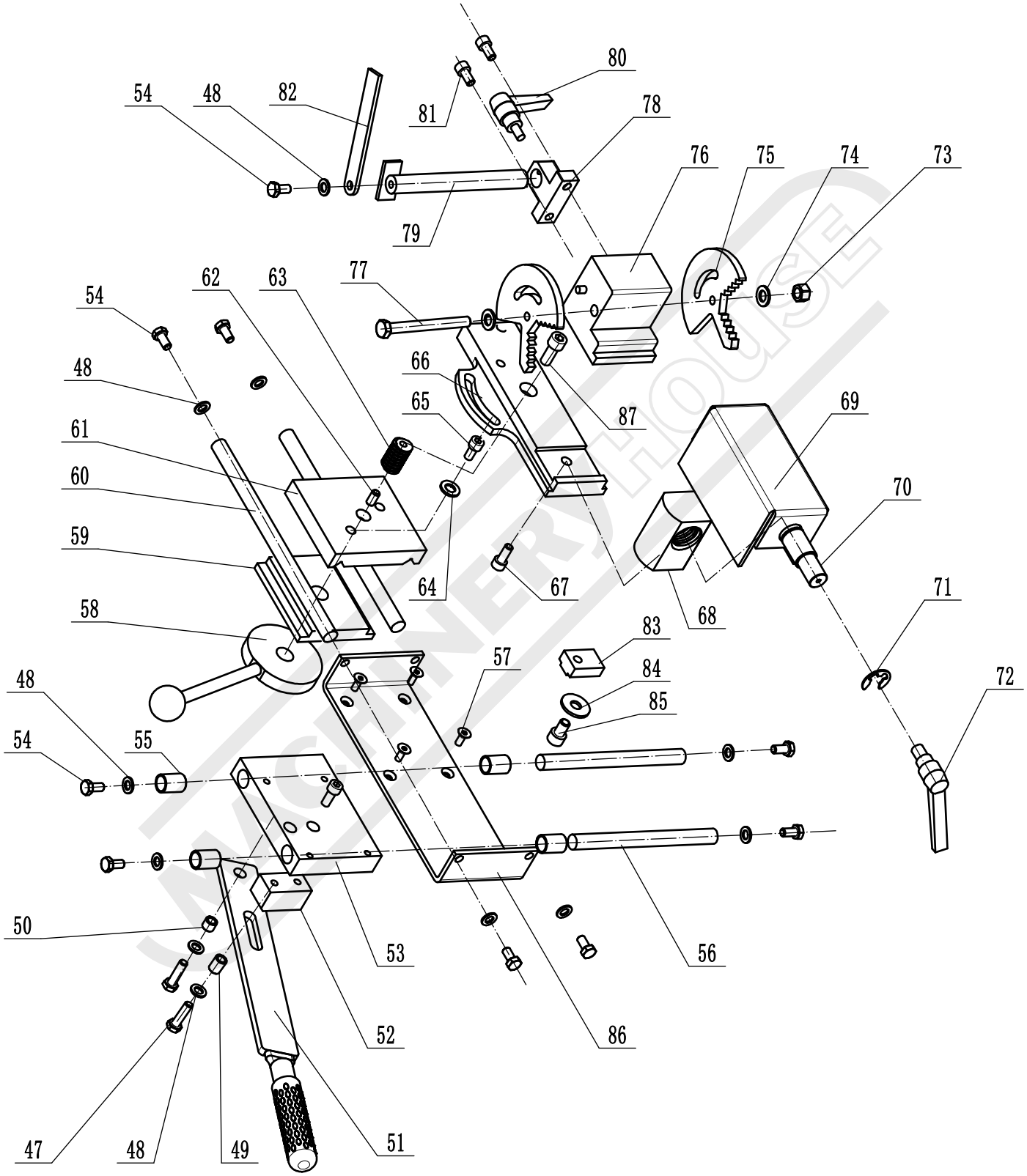
Part No.	Description	QTY
101	HEX bolt M12x25	4
102	Flat Washer	4
103	Base	1
104	Column	1
105	Speed Adjusting Switch	1
106	Crosshead screw M5x10	14
107	Electrical Panel	1
108	Plate	1
109	Flat Washer 12	2
110	Hex Bolt M12x25	2
111	Electrical Board	1
112	Rear Dust Chute	1
113	Front Dust Chute	1
114	Main Frame	1
115	Flat Washer 5	14

MACHINERYHOUSE

7.2 SPARE PARTS



7.3 SPARE PARTS - VICE



7.4 SPARE PARTS LIST Cont.

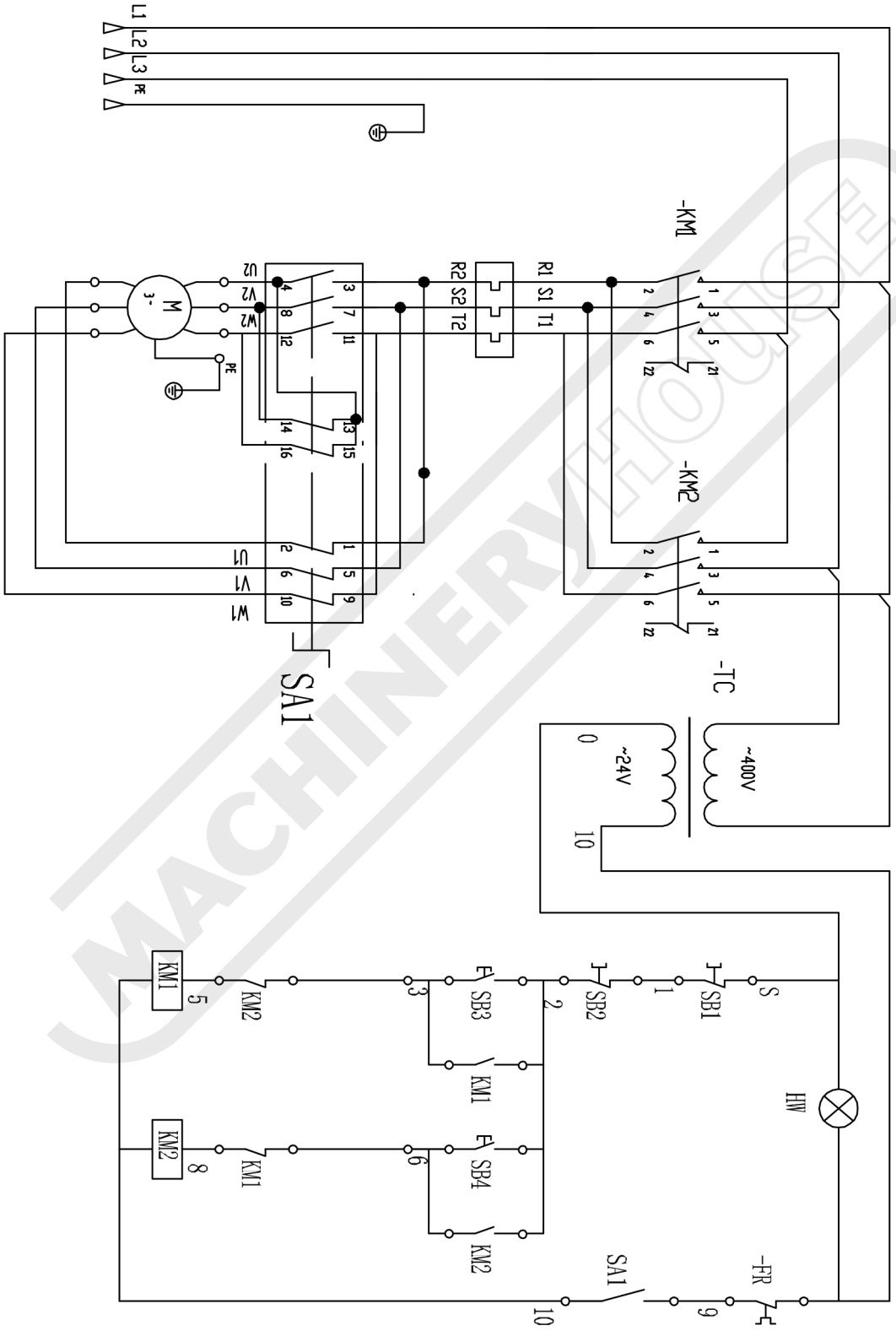
Part No.	Description	QTY
1	HEX.SOCKET COUNTERSUNK SCREW M5x16	4
2	HINGE	2
3	FRONT COVER	1
4	SANDING BELT 100#	1
5	HEX.SOCKET CAP SCREW M10x20	1
6	WASHER 10	8
7	DRIVE WHEEL	1
8	REAR COVER	1
9	MACHINE FRAME	1
10	HEX. SOCKET CAP SCREW M10x35	1
11	FIXING SHAFT	1
12	MOTOR BRACKET	1
13	HEX. BOLT M10x25	4
14	HEX. SET SCREW M6x20	4
15	BIG WASHER 10	1
16	HEX.SOCKET CAP SCREW M10X20	1
17	MOTOR	1
18	HEX. BOLT M10x20	2
19	HEX. NUT M16	3
20	SCREW SEAT	1
21	COMPRESSION SPRING	1
22	FLAT WASHER 16	2
23	NUT	1
24	SCREW	1
25	HEX, NUT M16	1
26	HAND WHEEL	1
27	BUSH	1
28	FIXING NUT	1
29	KNOB	1
30	HEX. NUT M10	1
31	LIFTING PLATE	1
32	ADJUSTING HANDLE	2
33	BIG WASHER 10x2	2
34	TOP COVER	1
35	GRAPHITE GASKET	1
36	HEX. BOLT M8x100	1
37	SPECIAL SHAFT	1
38	RECTANGULAR SPRING	1
39	BIG WASHER 8	1
40	HEX. NUT M8	1
41	CAM	1
42	FLAT WASHER	1
43	HEX.SOCKET CAP SCREW	1
44	BALL BEARING 608-2z	2
45	SHAFT	1

Part No.	Description	QTY
46	HEX.SOCKET SET SCREW M5X6	2
47	HEX. BOLT M8x30	2
48	FLAT WASHER 8	10
49	BUSH A	1
50	BUSH B	1
51	HANDLE	1
52	TIGHT STOP BLOCK	1
53	AL.SLIDING PLATE	1
54	HEX. BOLT M8x16	4
55	SLIDING SLEEVE C	4
56	GLIDE AXIS	2
57	HEX.SOCKET SET SCREW M6x16	4
58	LOCKING PLATE	1
59	LOWER FIXING BLOCK	1
60	UPGLIDE AXIS	2
61	UPGLIDE BLOCK	1
62	HEX.SOCKET SET SCREW M8x16	1
63	LOCKING LEAD SCREW	1
64	HEX.SOCKET SCREW M10x25	1
65	FLAT WASHER 10	1
66	VICE BASE	1
67	HEX.SOCKET SCREW M10X35	1
68	FIXING NUT	1
69	LEAD SCREW SOCKET	1
70	LEAD SCREW A	1
71	SPLIT WASHER	1
72	ADJUSTING HANDLE C	1
73	HEX. NUT M10	1
74	FLAT WASHER 10	2
75	ADJUSTING JAW	2
76	ADJUSTING JAW SOCKET	1
77	HEX. BOLT M10x100	1
78	LIMIT BOLCK	1
79	LIMIT BAR	1
80	ADJUSTING HANDLE A	1
81	HEX.SOCKET SET SCREW M8X16	2
82	LIMIT PLATE	1
83	LIMIT BLOCK	1
84	BIG WASHER 10	1
85	HEX. BOLT M10x16	1
86	UPGLIDE PLATE BRACKET	1
87	HEX. BOLT M8x16	1

NOTE: SOME INDIVIDUAL PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY

MACHINERY HOUSE

7.5 ELECTRICAL DIAGRAM



⚠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 childproof.** 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 ellergic 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
Pipe Notcher & Linisher Safety Instructions

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

1. **Maintenance.** Make all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.

2. **Pipe Notcher & Linisher Condition.** Pipe Notcher & Linisher must be maintained for a proper working condition. Never operate a Pipe Notcher & Linisher that has damaged or worn parts. Maintenance should performed on a scheduled basis. Warning and safety signs must be maintained and replaced if damaged.

3. **Linishing Belt Condition.** Never operate Pipe Notcher & Linisher with a damaged or badly worn belt. Replace if required.

4. **Linishing Belt Direction.** Ensure when fitting linishing belts that they are fitted around the correct way with Arrows marked on belt corresponding to the direction of machine rotation.

5. **Belt Selection Warning.** Pipe Notcher & Linishers with a belt direction change switch, must only be fitted with a specifically manufactured bi-directional belt, failure to do this could result in Serious injury.

6. **Understand the machines controls.** Make sure you understand the use and operation of all controls.

7. **Hand Hazard.** Keep hands and fingers clear from moving parts. Serious injury will occur if hand or finger tips come between workpiece and notching / linishing area.

8. **Switching.** Always turn the Pipe Notcher & Linisher off and make sure all moving parts have come to a complete stop before leaving. Do not leave running unattended for any reason.

9. **Authorized and trained personnel.** The machine must be operated by authorized and trained personnel.

10. **Avoiding Entanglement.** Supplied guards must be used at all times. Remove loose clothing, belts, or jewelry items. Tie up long hair and use the correct hair nets to avoid any entanglement with the linishing belts and moving parts.

11. **Work area hazards.** Keep the area around the Pipe Notcher & Linisher clean from oil, tools, objects & swarf. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.

12. **Power outage.** In the event of a power failure during use of the Pipe Notcher & Linisher, turn off all switches to avoid possible sudden start up once power is restored.

13. **Secure Material.** During the notching process, the workpiece must always be secured in the work holding vice.

14. **Feeding material.** Always feed material evenly and smoothly against the direction of rotation. Never use excessive force when linishing or serious injury can occur.

15. **Starting position/speed.** Never turn the linisher on when the workpiece is resting on the belt. Allow belt to reach full speed before Notching or linishing.

16. **Stopping the Belt.** Do not stop or slow the Belt with your hand or workpiece. Allow the machine to stop on its own.

17. **Guards.** Do not operate linisher without the correct guards in place.

18. **Dust hazards.** Always wear dust mask or respirator when Notching / linishing and to keep dust to a minimum ensure machine is fitted to a Dust Collector that is manufactured for the collection of metallic Dust. Ensure a suitable flame retardant dust hose is used between the two.

19. **Hearing protection and hazards.** Always wear hearing protection as noise generated from Pipe Notcher & linisher and workpiece vibration can cause permanent hearing loss over time.

20. **Glasses.** Always wear approved safety glasses when using this machine.

21. **Keep Children Away.** Children must never be allowed in the work area.

22. **Secure machine.** Secure the Pipe Notcher & linisher by bolting to a solid working surface.

23. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

MACHINERY HOUSE

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Pipe Notcher & Linisher

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)
A	ENTANGLEMENT	LOW	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Secure & support work material on Notcher. Secure notcher by bolting to a solid working surface
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Make sure all guard are secured shut when machine is on. Do not adjust or clean machine until the machine has fully stopped. Isolate power to machine prior to any checks or maintenance being carried out. Do not place hands or fingers inside moving parts of linisher/notcher
D	SHEARING	MEDIUM	Remove handle prior to any checks or maintenance being carried out. Do not place hands or fingers inside moving parts of notcher
E	FRICTION	MEDIUM	Keep hands and body clear from sanding disc/belt.
F	STRIKING	LOW	Ensure work material is secure when in operation Wear safety glasses. Stand clear of moving parts on machine. Remove all loose objects around moving parts. Ensure belts are in good condition and at correct tension.
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine.
O	OTHER HAZARDS, NOISE, DUST.	LOW	Wear hearing protection as required. Must be connected to a dust extraction.
Plant Safety Program to be read in conjunction with manufactures instructions			

HARE&FORBES MACHINERYHOUSE

www.machineryhouse.com.au

MACHINERYHOUSE

www.machineryhouse.co.nz

Authorised and signed by:
Safety officer: .....
Manager: .....

Revised Date: 17th July 2023

ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

Imported by

HARE&FORBES MACHINERYHOUSE

Australian Distributor

Hare & Forbes Machineryhouse
Sydney - Melbourne
Adelaide - Brisbane - Perth

Ph: 1300 202 200
www.machineryhouse.com.au

MACHINERYHOUSE

New Zealand Distributor

Machineryhouse
Auckland
Christchurch

Ph: 0800 142 326
www.machineryhouse.co.nz