

HAFCO

METALMASTER



Edition : 1.0
Date: (07/25)

Instruction Manual

RING ROLLING MACHINE

RR-10

ORDER CODE: (S681)

MACHINE DETAILS

MACHINE.

RING ROLLING MACHINE

MODEL NO.

RR-10

SERIAL NO.

DATE OF MANF.

Imported by

Australia

New Zealand

HARE & FORBES
MACHINERYHOUSE

MACHINERYHOUSE

www.machineryhouse.com.au

www.machineryhouse.co.nz

NOTE:

This manual is only 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. Please ensure the local voltage is the same as listed on the specification plate before operating any electric machine.

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: RR-10	
Capacity: 50 x 10FB	MFG Date:
Serial No:	
Imported by www.machineryhouse.com.au	Made in China www.machineryhouse.co.nz

Fig.1

CONTENTS:

1. GENERAL MACHINE INFORMATION	
1.1 Specifications.....	4
1.2 Included Accessories.....	4
1.3 Identification.....	5
2. SAFETY	
2.1 General Woodworking Machine Safety.....	6
2.2 Specific Safety For Dust Collectors.....	9
3. SETUP	
3.1 Unpacking.....	10
3.2 Clean Up.....	10
3.3 Site Preparation.....	10
3.4 Lifting Instructions.....	10
3.5 Anchoring to The Floor.....	11
3.6 Machine Levelling.....	11
3.7 Assembly.....	12
4. OPERATION	
4.1 Operational Overview.....	12
4.2 Profile Types.....	13
4.3 Operation Instructions.....	14
4.4 Profiles With Custom Made Rolls.....	15
5. MAINTENANCE	
5.1 Schedule.....	16
Spare Parts.....	17

1.1 SPECIFICATIONS

Order Code	S681
Model	RR-10
Powered Driven Rolls (Qty)	2 x Manual
Bending Rolls (Type)	Manual Top
Top Roll Diameter (Ø) (mm)	98
Upper Roll Diameter (mm)	98
Lower Roll Diameter (mm)	118
Flat Bar Edge Capacity - MS (size / Ø) (mm)	30 x 10 / 500 - (20 x 5 / 190)
Flat Bar Capacity - MS (size / Ø) (mm)	50 x 10 / 400 - (20 x 5 / 160)
Square Bar Solid Capacity - MS (size / Ø) (mm)	20 x 20 / 500 - (10 x 10 / 160)
Dimensions (L x W x H) (mm)	500 x 480 x 680
Note: Requires Additional Tooling (No / Yes*)	No
Nett Weight (kg)	185

1.2 INCLUDED ACCESSORIES

Stand
Crank Handle
Instruction Manual

 WARNING!	
PINCH POINTS 	<i>This machine has many places that are pinch points and could cause injury to the operator or any person around this type of equipment</i>



1.3 IDENTIFICATION

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



A	Guide Rollers	E	Cabinet
B	T - Handle To Adjust Top Roller	F	Power Crank Handle
C	Adjustable Top Roller	G	Rear Guard
D	Manually Powered Roller	H	Rolls Scale

2. IMPORTANT INFORMATION

2.1 GENERAL METALWORKING MACHINE SAFETY

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



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 workpiece.
- ✓ 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.

2.1 GENERAL SAFETY REQUIREMENTS 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

- × Do not distract an operator. Horseplay can lead to injuries and should be strictly prohibited.
- × Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewellery that can become entangled in moving parts. Confine long hair.
- × Do not 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.
- × Do not use rags or wear gloves near moving parts of machines.
- × Do not use compressed air to blow debris from machines or to clean dirt from clothes.
- × Do not force the machine. It will do the job safer and better at the rate for which it was designed.

2.1 GENERAL SAFETY REQUIREMENTS 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!

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.

2.2 SPECIFIC SAFETY FOR ROLLING MACHINES

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 when operating this equipment



Safety footwear must be worn when operating this equipment



Rings and jewellery must not be worn when operating this machine



Long and loose hair must be contained when operating this equipment.



Close fitting/protective clothing must be worn when operating the machine



Hearing protection must be used when operating in a noisy environment

PRE-OPERATIONAL SAFETY CHECKS

- ✓ Locate and ensure you are familiar with all machine operations and the controls.
- ✓ Ensure all guards are fitted, secure and functional. Do not operate if guards are missing or faulty.
- ✓ Working parts should be well lubricated and the rolls are free of rust and dirt.
- ✓ Check workspaces and walkways to ensure no slip/trip hazards are present.
- ✓ Be aware of other people in the area and ensure the area is clear before using equipment.

OPERATIONAL SAFETY CHECKS

- ✓ Adjust the chosen rollers slowly and in small adjustments.
- ✓ Take care during the initial feeding of the workpiece into the rollers.
- ✓ Hold the workpiece sufficiently far enough back from the edge being fed into the rolls, to allow for the in-feed speed of the machine.
- ✓ Adjust the rollers at a slow even rate. Be aware of rotating rolls
- ✓ Only one person may operate this machine at any one time.

ENDING OPERATIONS AND CLEANING UP

- ✓ Ensure the machine is left in a safe condition after use.
- ✓ Leave the work area in a safe, clean and tidy state.

POTENTIAL HAZARDS AND INJURIES

- ✓ Sharp edges and burrs.
- ✓ Crush and pinch points.
- ✓ Hair/clothing getting caught in moving machine parts.
- ✓ Operator's hands may be caught and drawn into the rolls.

DON'T

- × Do not use faulty equipment. Immediately stop and repair suspect machinery.
- × Do not attempt to roll material beyond the capacity of the machine.

3 SET-UP

3.1 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.

3.2 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 preventive 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.

3.3 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.

3.4 LIFTING INSTRUCTIONS



This machine is extremely heavy.

Serious personal injury may occur if safe moving methods are not followed. To be safe, you will need assistance and power equipment when moving the shipping crate and removing the machine from the crate.



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.

3.5 ANCHORING TO THE FLOOR

OPTIONS FOR MOUNTING

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. 3.1)

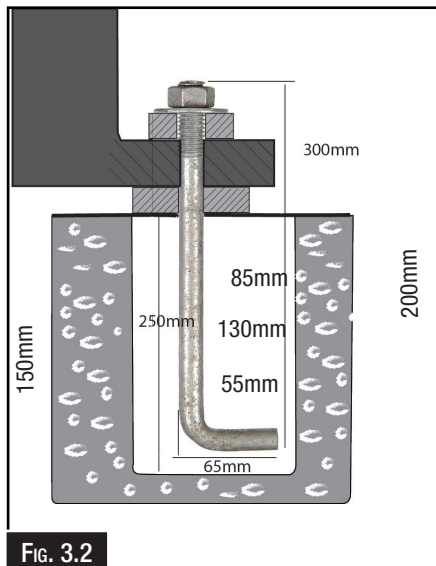


Fig. 3.2

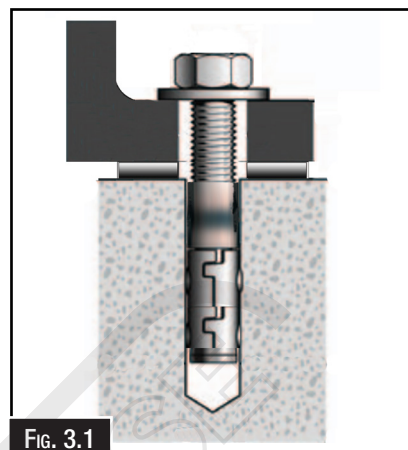


Fig. 3.1

In some cases a suitable foundation may not be available and a new one may need to be prepared.

The foundation should be concrete approximately 200mm thick with pockets left clear for the hold down bolts. The hold down bolts can be "L" shape as per the example in Fig. 3.2.

3.6 MACHINE LEVELLING

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 levelled. 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. 3.3).

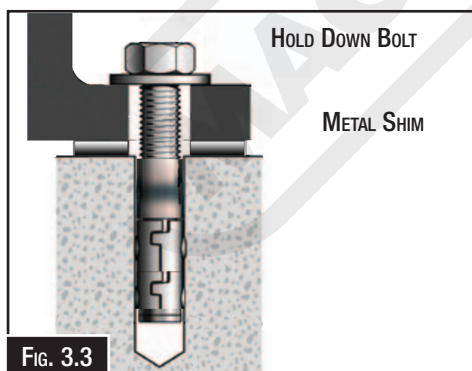


Fig. 3.3



CAUTION!

The machine must not rest on supports other than those defined in Fig. 3.3.



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.

3.7 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.

To Assemble The RR-10:

1. Unpack the machine close to where the machine is to be used.
2. Place the cabinet on the floor and with the help of an assistant lift the ring rolling machine on to the cabinet.
3. Attach the machine to the cabinet using the 2 off M12 x 45bolts, bolts, M12 washers. (Fig. 3.4)



FIG. 3.5

Crank Handle:

1. Locate the crank handle and slide it on to the spindle on the back of the machine.
2. Secure it with the M6 x 12mm bolt. (Fig. 3.5)



FIG. 3.4

4. OPERATION

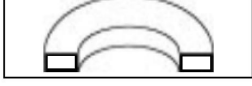
4.1 OPERATION OVERVIEW

This overview purpose is to provide a novice machine operator with a basic understanding of how the machine is used during operation, and so that if the machine controls or components are mentioned later in this manual, it will be easy to understand. The overview is not intended to be an instructional guide and is only generic in nature. To learn more about the specific operation, read this entire manual and seek additional training from an experienced machine operator. Another source of information may be found in video's on websites or by reading trade magazines.

A typical operation consists of:

1. Examine the workpiece to make sure it is suitable for bending and does not exceed the machines capacity.
2. Adjust the upper roller so that the workpiece can be inserted between the top and lower rollers.
3. Put on safety glasses and ensure that any clothing being worn cannot be caught in the machine during operation.
4. Insert the workpiece so it rests on both lower rollers, then adjust the upper roller down, using the T- handle, until it applies a slight pressure against the work piece
5. Uses the crank handle to move the workpiece back and forth while also adjusting the top roller down in small increments.
6. Repeat the operation until the required radius is achieved.

4.2 PROFILE TYPES

	MAX. SIZE (MM)	MIN. RADIUS (MM)
	20 x 5 30 x 10	500 160
	20 x 5 50 x 10	500 190
	10 x 10 to 20 x 20	160 500
	10 to 20	*With custom made rolls
	25 to 30	*With custom made rolls
	10 x 10 x 1 to 20 x 20 x 2	With custom made rolls
	30 x 20 x 1 to 38 x 20 x 2	*With custom made rolls
	30 x 30 x 4 to 35 x 35 x 4	*With custom made rolls
	N / A	*With custom made rolls
	30 x 30 x 4 to 35 x 35 x 4	400 600
	30 x 30- x 4 to 35 x 35 x 4	400 600
	30 x 30 x 4 to 40 x 20 x 4	400 600
	30 x 15 x 4 to 40 x 20 x 4	700 500

NOTE: The chart above is based on material ST-42 steel.

* Custom made rolls need to be designed and made by the owner of the machine.



WARNING!

Always check the capacity of the machine. Exceeding the capacity of the machine may result in sudden breakage that ejects dangerous metal debris at the operator or bystanders.

4.3 OPERATION INSTRUCTIONS

1. Ensure that the machine is properly set up and all safety measures are in place. Check the material to be rolled and make sure it is suitable for the machine.
2. Place the material onto the machine's rolling area. Ensure that the material is securely positioned and aligned between the top and lower rollers. (Figure 1)
3. Move the top roller down as in Figure 2 and position the work piece to apply enough force to bend the material.

NOTE: Too much force may cause the material to over bend and distort the arc.

4. To get to the desired arc or diameter, gradually lower the top roller on each pass. (Figure 3) After each pass the diameter value may be bigger than expected then continue to lower the top roller. If the opposite is the case then release the top roller up using the metric ruler as a guide.
5. It is likely that the work piece may tend to bend to the right or left. (Figure 4 & 5) To prevent this the guide rollers will need to be adjusted. The guide rollers can be adjusted either at the top or the bottom to control the direction of the work piece.

NOTE: To get a circular profile, side guide rollers must be parallel to the machine surface. Failure to do so will produce spiral profile. (Figure 7)

If bending long material, the work piece should be placed on a stands so that the work piece is parallel to the ground. This will help with the rolling process. (Figure 6)

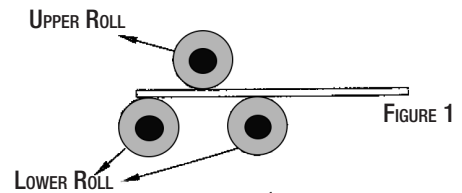


FIGURE 1

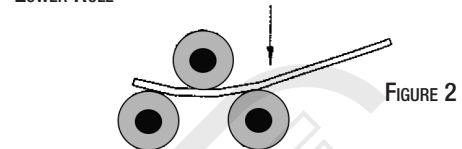


FIGURE 2

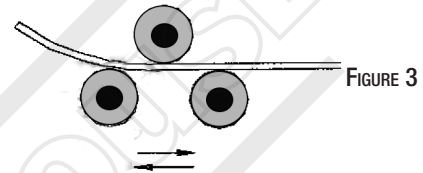


FIGURE 3

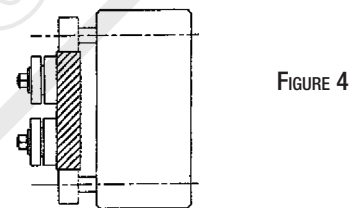


FIGURE 4

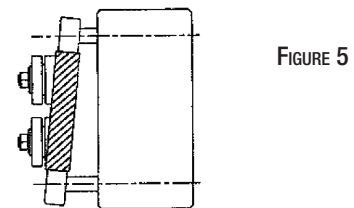


FIGURE 5

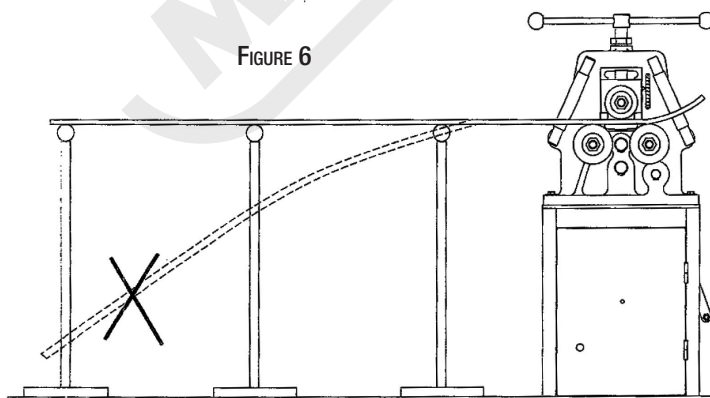
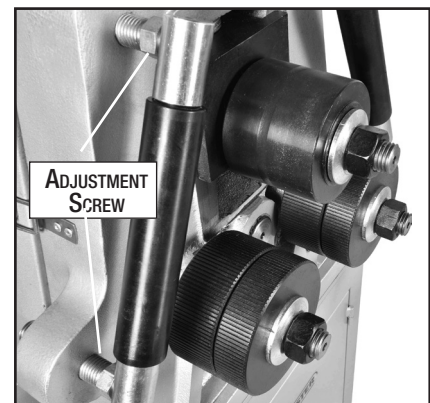


FIGURE 6

FIGURE 7

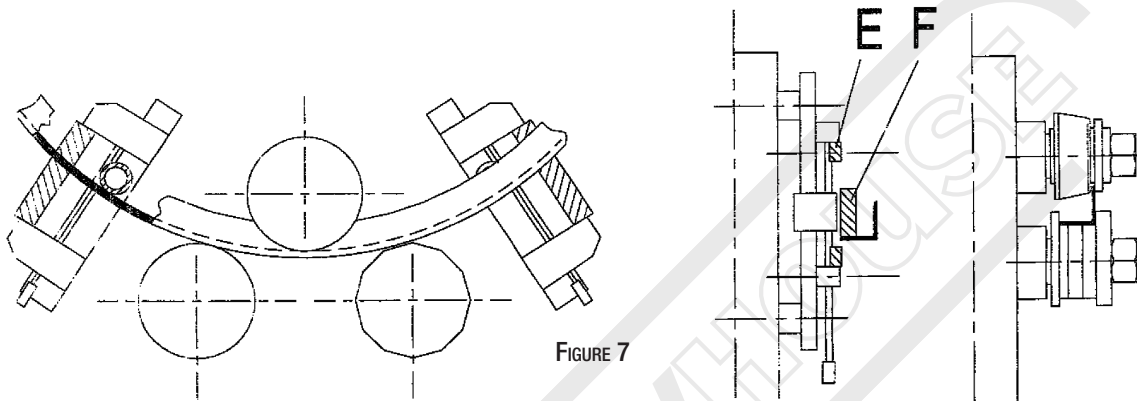


4.4 PROFILES WITH CUSTOM MADE ROLLS

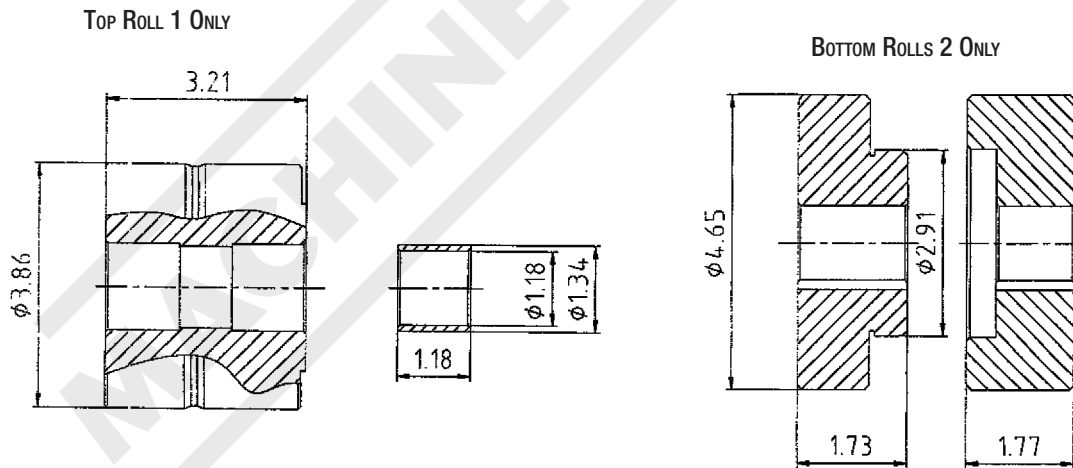
Angle Iron & Pipe:

To produce arcs or diameters in angle iron, custom rollers should be made. The diagrams below (Figure 8) show the “leg-in” bending material. The custom rolls should be adjustable for any size of material. (Must not exceed the capacity of the machine.)

Custom made rolls are recommended for profiles of leg-out material. Some of the angle iron profiles can be rolled with standard rolls. (Figure 7)



Standard Roll Sizes



WARNING.

Loose hair, clothing, or jewellery could get caught in machinery and cause serious injury or death. Keep these items away from moving parts at all times to reduce this risk.

5. MAINTENANCE

It is very important that regular maintenance of the equipment is carried out. The operators need to follow the daily maintenance procedures.

For optimum performance from this machine, the maintenance schedule listed below and in this section must be followed.

5.1 SCHEDULE

Daily Check

- ☐ Loose mounting bolts or fasteners.
- ☐ Cracked or damaged rollers, fingers and blade.
- ☐ Any other condition that could hamper the safe operation of this machine.

Weekly Check

- ☐ Clean machine
- ☐ Lubricate gears
- ☐ Lubricate roller bushings

Lubricate Gears:

Periodic lubricating the gears will extend the life of the machine.

To Grease The Gears:

1. Remove the back cover. (Fig. 5.1)
2. Using "Super Blue Grease" cover the gears with a smear of grease over the teeth.
3. Replace the back cover

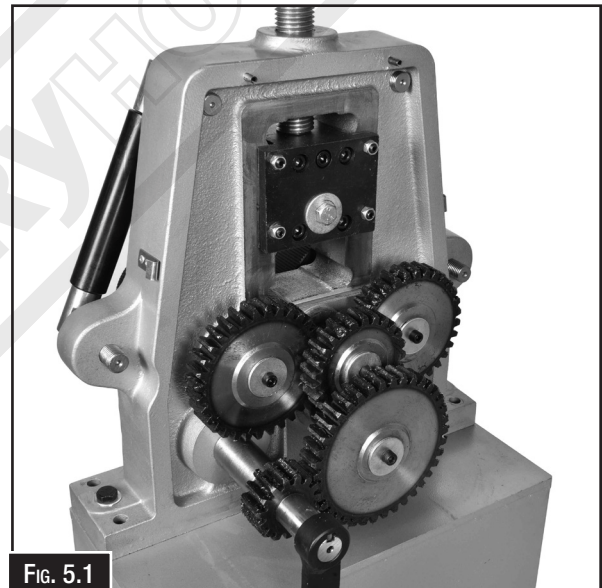


FIG. 5.1



CAUTION!

Check the oil levels and lubrication points before running the machine for the first time. Lack of lubrication can cause damage to the machine and may void the warranty.



CAUTION!

It is impossible to cover all possible hazards. All workshop environments are different. These are designed as a guide to be used to compliment training and as a reminder to users prior to equipment use. Always consider safety first, as it applies to the individual working conditions.

RING ROLLING MACHINE

RR-10

Order Code: (S681)

Edition : 1.0

Date: (07/25)

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 anytime 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.



WARNING!

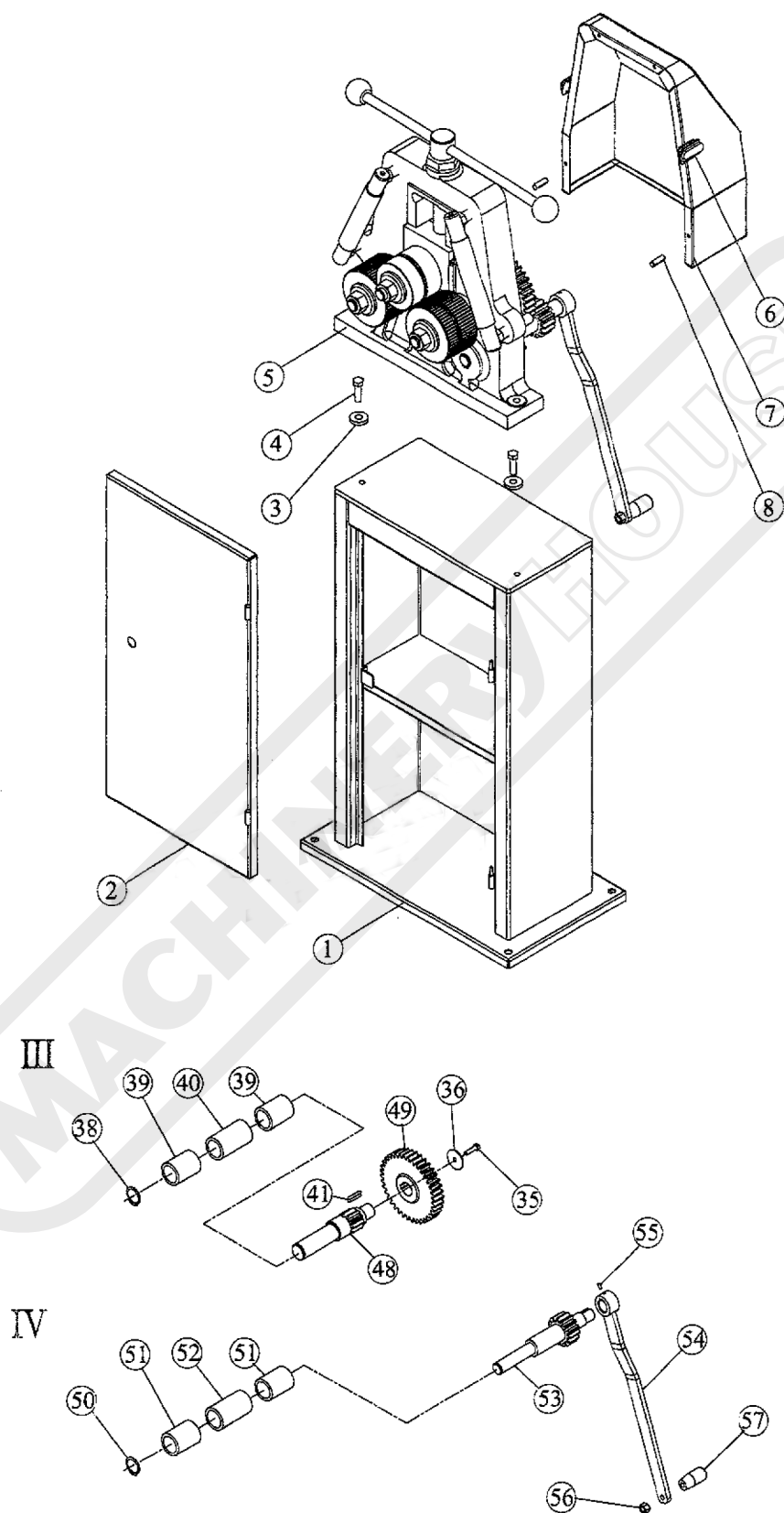
*Electricity is dangerous and could cause death
All electrical work must be carried out by a qualified electrician.*



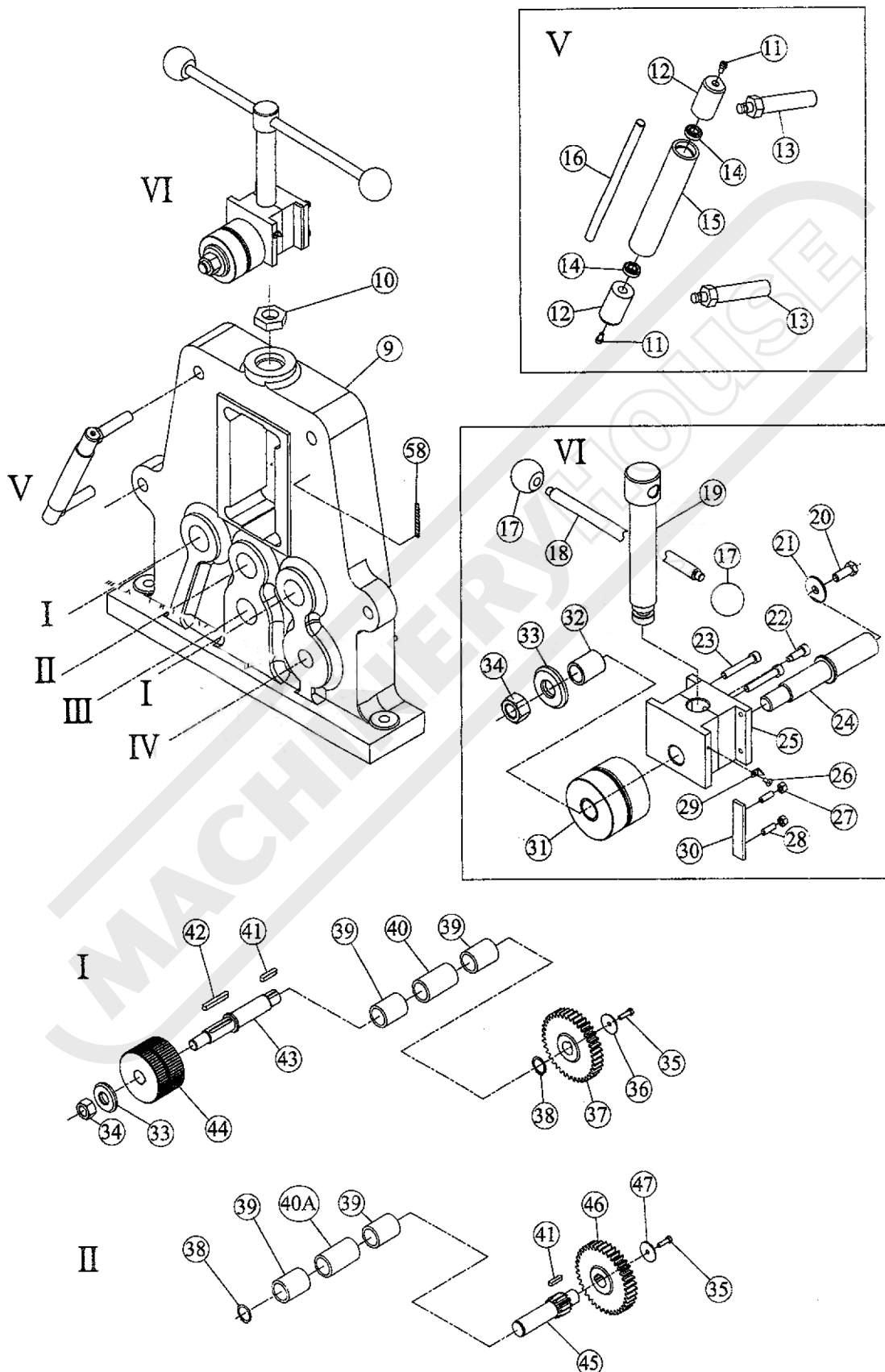
CAUTION!

It is impossible to cover all possible hazards Every workshop environment is different. These are designed as a guide to be used to compliment training and as a reminder to users prior to equipment use. Always consider safety first, as it applies to the individual working conditions.

SPARE PARTS DIAGRAM 1



SPARE PARTS DIAGRAM 2



SPARE PARTS LIST

ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY.
1	STAND	1	30	MIDDLE BEDDING SLIDE	2
2	DOOR	1	31	LOWER ROLL	1
3	WASHER M12	2	32	BEARING BUSHING	2
4	BOLT M12 X 45	2	33	WASHER	3
5	BODY	1	34	NUT M24	3
6	LOCK BUCKLE	2	35	BOLT M8 X 30	4
7	SHIELD	1	36	WASHER	3
8	SPRING PIN Ø6 X 35	4	37	MAIN GEAR	2
9	BODY	1	38	RETAINING RING 35	4
10	NUT M36	1	39	GRAPHITE BEARING (1)	3
11	BOLT M5 X 10	4	40	GRAPHITE BEARING (2)	2
12	SIDE GUIDE JOINT	4	41	GRAPHITE BEARING (3)	2
13	SIDE GUIDE BOLT	4	42	KEY 8 X 30	4
14	BEARING	4	43	KEY 8 X 63	2
15	POWERED GEAR SHAFT	2	44	LOWER ROLL	2
16	SIDE GUIDE SHAFT	2	45	MIDDLE GEAR SHAFT	1
17	LEVER BOLT M12 X 50	4	46	MIDDLE GEAR	1
18	ROTATING LEVER	1	47	WASHER	1
19	TURNING SHAFT	1	48	LOWER GEAR SHAFT	1
20	BOLT M12 X 30	1	49	GEAR	1
21	WASHER	1	50	WASHER M25	1
22	BOLT	1	51	GRAPHITE BEARING (1)	2
23	BOLT M10 X 60	4	52	GRAPHITE BEARING (2)	1
24	TOP ROLL SHAFT	1	53	TURNING HAND LEVER	1
25	MIDDLE BEDDING BLOCK	1	54	HANDLE	1
26	BOLT M5 X 10	1	55	BOLT M6 X 12	1
27	NUT M8	4	56	NUT M12	1
28	BOLT M8 X 25	4	57	HAND BAR HOLDER	1
29	FINGER	1	58	SCALE	1

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



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.

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