

# METALMASTER

## OPERATION MANUAL



### Shrinker Stretcher - Bench Mount

Model. SHST1.2H

Order Code S2262

*Edition No* : SHST1.2H-1

*Date of Issue* : 02/2021

[www.machineryhouse.com.au](http://www.machineryhouse.com.au)

**MACHINE DETAILS****MACHINE**

SHRINKER STRETCHER

**MODEL NO.**

SHST1.2H

**SERIAL NO.****DATE OF MANF.**

Distributed by

[www.machineryhouse.com.au](http://www.machineryhouse.com.au)[www.machineryhouse.co.nz](http://www.machineryhouse.co.nz)**Note:**

This manual is only for your reference. Owing to the continuous improvement of the 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.

**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)

An example of a specification plate for a Metalmaster machine. It features the Metalmaster logo at the top, followed by the text "PRODUCT SPECIFICATION". Below this, there are four rows, each with a label and a corresponding empty box for information: "MODEL:", "SER NO:", "MFG DATE:", and "CAPACITY:". At the bottom of the plate, the website "www.machineryhouse.com.au" and "Made in China" are printed.

<b>METALMASTER</b>	
PRODUCT SPECIFICATION	
MODEL:	<input type="text"/>
SER NO:	<input type="text"/>
MFG DATE:	<input type="text"/>
CAPACITY:	<input type="text"/>
<a href="http://www.machineryhouse.com.au">www.machineryhouse.com.au</a> Made in China	

Fig.1

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**1.1 SPECIFICATION**

Order Code	S22642
<b>MODEL</b>	<b>SHST1.2H</b>
Operation (Type)	Hand Operated
Mild Steel - Capacity (mm/gauge)	1.2 / 18
Aluminium - Capacity (mm/gauge)	1.8 / 15
Throat Depth (mm)	25.4
Working Height (mm)	Bench Height
Dimensions (L x W x H) (mm)	350 x 90 x 350
Packing Dimensions (L x W x H) (mm)	350 x 190 x 90
Weight (kg)	10.5

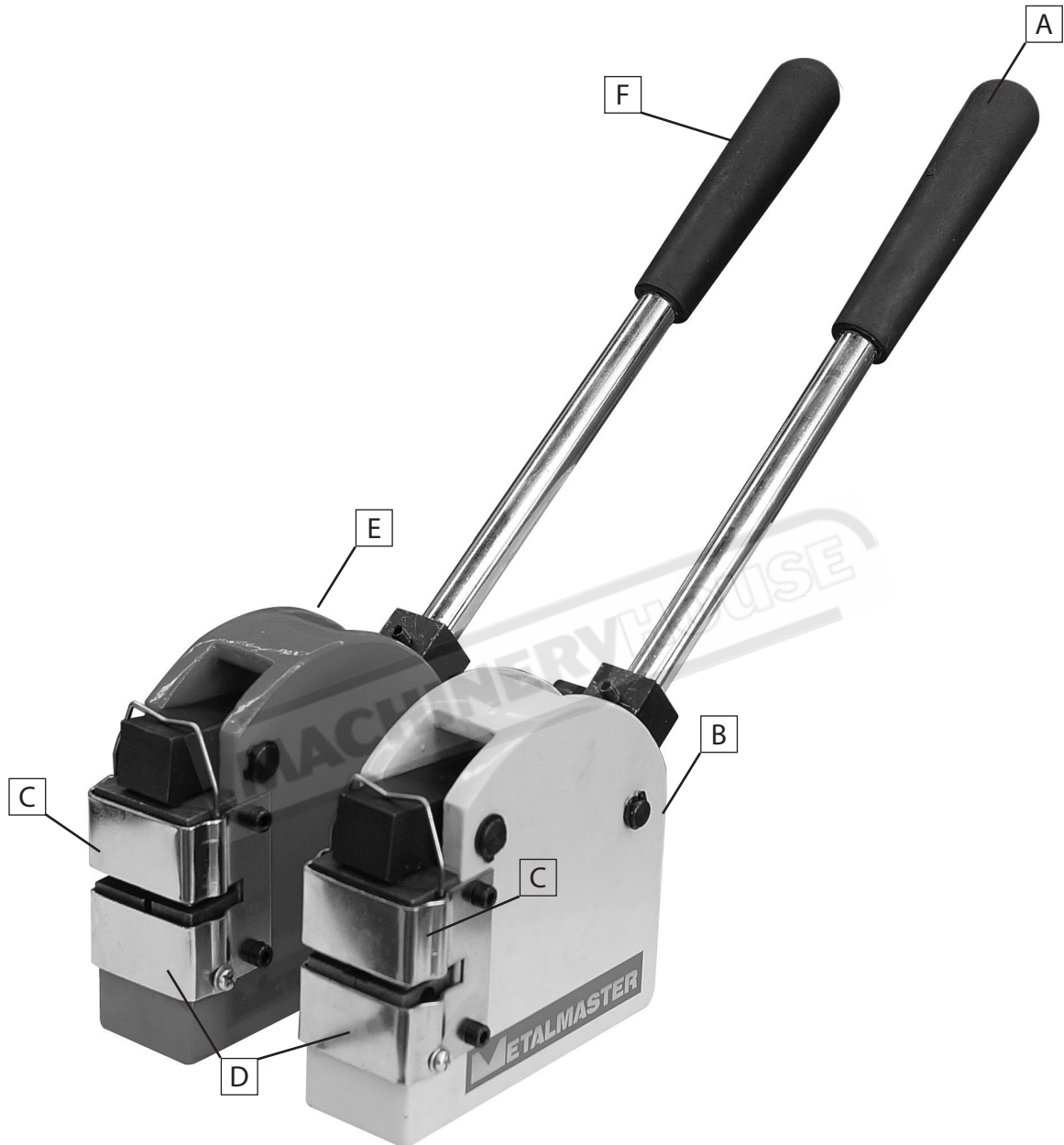
**1.2 ACCESSORIES INCLUDED**

1 Set CR12 Steel Shrinker Jaws  
1 Set CR12 Steel Stretcher jaws  
Instruction Manual

**Optional Accessories**

Metal Floor Stand (Order Code S2263)  
(See Fig. 2)

**FIG. 2**

**1.3 IDENTIFICATION**

<b>A</b>	Stretcher Handle	<b>D</b>	Bottom Jaw
<b>B</b>	Stretcher Head	<b>E</b>	Shrinker Head
<b>C</b>	Top Jaw	<b>F</b>	Shrinker Handle

## 2.1 GENERAL METALWORKING MACHINE SAFETY

**WARNING**

*When using any tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage. Read the instruction manual before using any tool or machine!*

1. **Keep work area clean.** Cluttered areas invite injuries.
2. **Observe work area conditions.** Do not use machines or power tools in damp or wet locations. Don't expose to rain. Keep the work area well lit. Do not use electric power tools or machinery in the presence of flammable gases or liquids.
3. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machinery, tools, or extension cords.
4. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
5. **Do not force tool.** It will do the job better and more safely at the rate for which it was intended. Do not use inappropriate attachments in an attempt to exceed the tool capacity.
6. **Use the right tool for the job.** Do not attempt to force any machine, tool or attachment to do the work of a larger industrial tool. Do not modify, and do not use any tool for a purpose for which it was not intended.
7. **Dress properly.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically non-conductive clothes and non-skid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
8. **Use eye and ear protection.** Always wear ANSI approved impact safety goggles. Wear a full face shield if you are producing metal filings or wood chips. Wear an ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists.
9. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across running machines. Keep hands and fingers clear of moving parts.
10. **Maintain tools with care.** Keep tools clean for better and safer performance. Follow the instructions for lubricating and changing accessories. Handles must be kept clean, dry, and free from oil and grease at all times.
11. **Remove adjusting keys and wrenches.** Check that keys and adjusting wrenches are removed from the tool or machine work surface before plugging it in.
12. **Stay alert.** Be attentive and use common sense. Do not operate any machine or tool when you are tired.
13. **Check for damaged parts.** Before using any machine or tool, parts that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function safely. Check for alignment and binding of moving parts. Any broken parts or mounting fixtures, or any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the machine or tool if any switch does not turn on and off properly.

## 2.1 GENERAL METALWORKING MACHINE SAFETY

14. **Replacement parts and accessories.** When servicing, use only identical replacement parts. The use of any other parts will void the warranty. Only use accessories intended for use with the machine or tool.
15. **Do not operate** machinery if under the influence of alcohol or drugs. Read warning labels if taking prescription medicine to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the machinery or tools.
16. **Maintenance.** For your safety, service and maintenance should be performed regularly by a qualified technician.
17. **Workpiece may be sharp.** After bending or cutting workpieces use caution. Be aware of sharp edges or metal debris of metal that may be created. Use heavy duty gloves when handling the workpiece.
18. **Health and fire hazards.** Understand that the health and fire hazards can vary from material to material. Make sure all appropriate precautions are taken.
19. **Clean-up when finished.** Clean machines and the surrounding area when the operation is finished.
20. **Use proper lock out procedures.** When servicing or cleaning machines, make sure that the machine cannot be started by accident.

### DO NOT

- × Do not distract an operator. Horseplay can lead to injuries and should be strictly prohibited.
- × Do not wear loose clothing, gloves, necktie's, rings, bracelets or other jewellery that can be come 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.



**BEFORE OPERATING ANY MACHINE, TAKE TIME TO READ AND UNDERSTAND ALL SAFETY SIGNS AND SYMBOLS. IF NOT UNDERSTOOD SEEK EXPLANATION FROM YOUR SUPERVISOR.**

**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.**

## 2.2 SPECIFIC SAFETY FOR SHRINKER STRETCHERS

**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.*



*Close fitting protective clothing or overalls are encouraged*



*Appropriate protective footwear with substantial uppers must be worn.*



*Rings and jewellery must NOT be worn in the workshop*



*Gloves should be worn when handling the work piece*



*Ear protection should be used in loud and noisy conditions*

### PRE-OPERATIONAL SAFETY CHECKS

1. Ensure you are familiar with the operation of the Shrinker Stretcher
2. Check for any damage or parts missing
3. The area around the machine must be clean and free of trip hazards.
4. Any forming die must be inspected for safe use i.e. no cracks.
5. Ensure safety glasses or goggles are available and are worn by all persons in the vicinity.
6. Any test piece, project or material (work piece) to be worked must be of an appropriate thickness and safe to use on this equipment.
7. Faulty equipment must not be used. Immediately check suspect machinery.

### OPERATIONAL SAFETY CHECKS

1. Place your test piece, project or material (work piece) securely between the top and bottom jaws
2. Do not over reach. Maintain a balanced stance at all times, so that you do not fall or lean against the machine.
3. Use the Shrinker Stretcher pedal, in a pumping action, to slowly work the material.
4. Keep hands and fingers away from jaws.
5. Wear leather gloves when handling the work piece.
6. Use the right tool. Do not force a jaw set to do a job that it was not designed to do.
7. Give your work undivided attention. Looking around, carrying on a conversation and "horseplay" are careless acts that can result in serious injury
8. DO NOT apply excessive force to the Shrinker Stretcher.

### AFTER OPERATION COMPLETED

1. After use, clean the machine down and place any tools and equipment in the appropriate storage area.
2. Place all scrap or waste in the appropriate bin.

### POTENTIAL HAZARDS

- Beware of high forces applied
- Eye injuries – flying or shattering objects
- Pinch and squash
- Laceration injuries



### 3. SETUP

#### 3.1 UNPACKING

When unpacking, check to make sure that all parts shown in the Parts Diagram are included. If any parts are missing or broken, please contact the distributor

#### 3.2 ASSEMBLY

THE METALMASTER Shrinker & Stretcher will require minor assembly prior to operation. It is important that the entire manual is read to become familiar with the unit BEFORE you assemble and use the Machine. Before assembling the Metal Shrinker Stretcher, be sure that you have all parts described in the Parts List. (Fig.3.1)

##### To assemble the machine:

1. Secure the tool to a workbench or the optional stand (sold separately).
2. For portability, the tool may also be clamped into the jaws of a vise.
3. The more rigidly the tool is secured, the easier it is to be used .
4. Two holes, pre-drilled and tapped into each base, accept M10 bolts.

### 4 OPERATION

#### 4.1 OPERATIONAL OVERVIEW

1. Before fabricating on the Shrinker & Stretcher, bend the metal to be formed 90° on a Sheet Metal bender or Press Brake, creating a maximum flange depth that is no greater than 25.4mm/1".
2. Make a template out of cardboard or a short piece of wire. A template is critical to achieve a good fit with minimal filler use.
3. Work the leading edge first. This breaks down the maximum resistance and permits easy and accurate working thereafter.
4. For best results and maximum forming power, insert metal only halfway into the jaws.
5. The bunching or pocketing that typically occurs when shrinking can be quickly hammered out.
6. Control the pressure exerted on the handle or the foot pedal while forming the metal.
7. Move the metal back and forth until the desired radius is obtained.
8. The jaws of the tools are "toothed" for better grip on the metal. These teeth leave slight markings, depending on the hardness of the metal, which can be removed with an abrasive cloth or wheel.

#### BASIC PANEL FABRICATION

For car and bike restorers, fabricating body parts is often the only way to go. With good planning, you can reproduce shapes to match the original contours.

Most older cars catch and hold moisture, thus rusting out. Usually so much metal is gone that there is very little left to rescue. A new, fabricated part is the only way to go.

First, make a cardboard template, then place the flanged section went into the shrinker & stretcher shrinking jaws. By pressing firmly on the handle or the foot pedal and moving the metal back and forth, the jaws' teeth keep drawing the metal closer and closer, creating a smooth curve. Check the new piece with the cardboard template, and within minutes the piece will be close to size.

## 5. MAINTENANCE

### 5.1 CLEANING AND OILING

When finished with the machine always clean down the machine and oil with a light oil all moving parts and machined surfaces.

Clean both of the jaws when finished. Using a vacuum will remove the surface dirt but to clean them properly, disassemble the jaws as follows.

1. Loosen the Screws M5 x 8mm (25#) to remove the jaw assembly.
2. Remove the jaws and V-block as a single unit.

**NOTE:** *Be careful not to loose the spring between the jaws*

3. Remove the Suspension Springs(23#).

**NOTE:** *There is a small jaw opposite a large jaw, top and bottom.*

4. Clean the jaws with cleaning fluid and a brush. Do not use a wire brush or a wire wheel. Always brush in the same direction as the teeth, with the grooves.
5. Clean the V-blocks(10#, 13#,17#,20#).
6. Lubricate the surface between the jaws and V-Blocks.
7. Reassemble. Be sure you place the large jaw opposite the small jaw.
8. When not in use for extended periods of time, lightly oil the jaws to prevent corrosion.

**REMEMBER:** *Clean the jaws after EVERY job.*

Shrinker Dies

Stretcher Dies



FIG.5.1

# SPARE PARTS SECTION

## Shrinker Stretcher

**Model. SHST1.2H**

Order Code S2262

*Edition No* : SHST1.2H-1

*Date of Issue* : 02/2021

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.

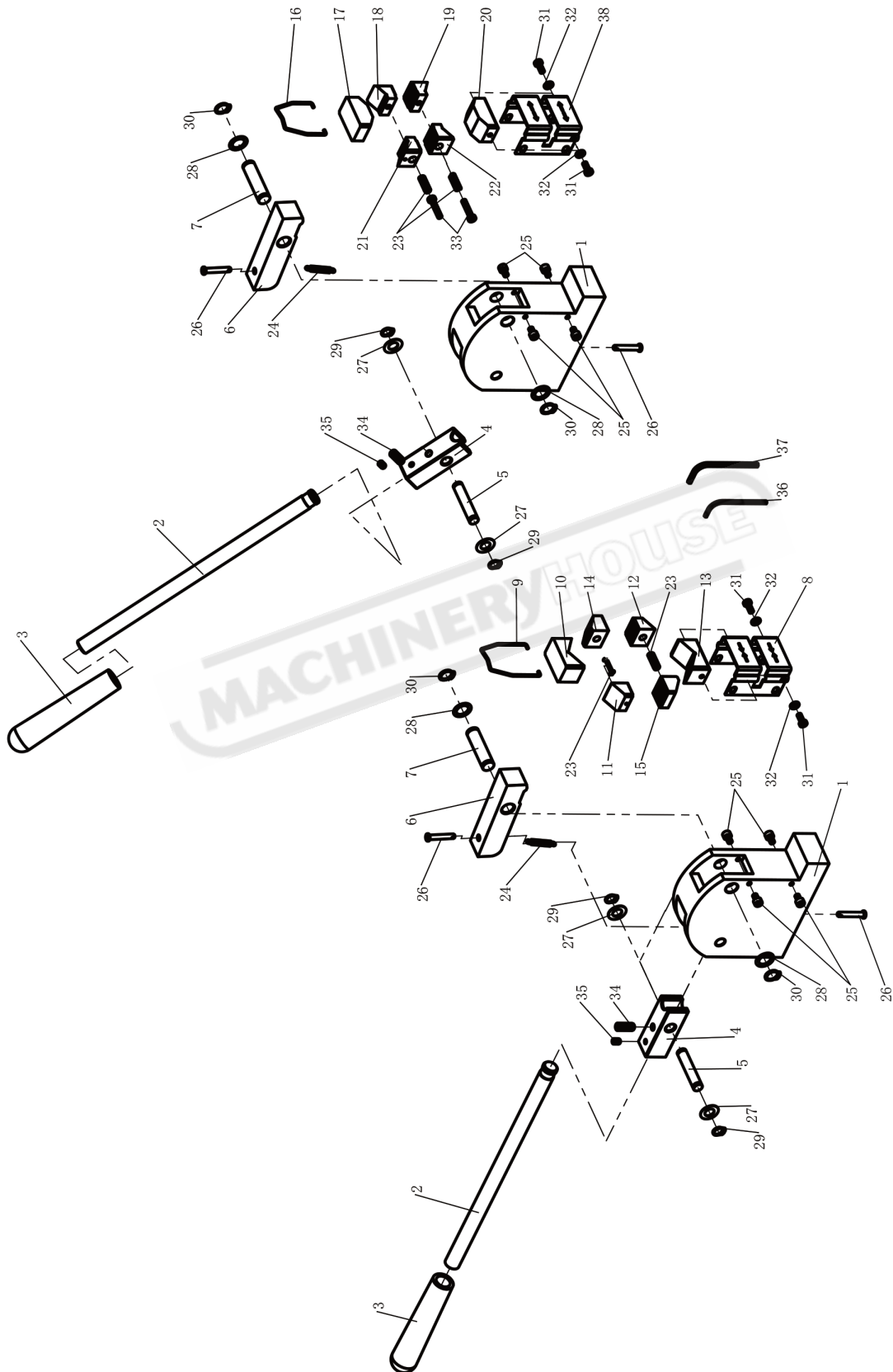
**NOTE: SOME PARTS MAY ONLY BE AVAILABLE AS AN ASSEMBLY**

3. Go to [www.machineryhouse.com.au/contactus](http://www.machineryhouse.com.au/contactus) and fill out the inquiry form attaching a copy of scanned parts list.

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### SPARE PARTS DIAGRAM



**SPARE PARTS LIST**

ITEM	DESCRIPTION	QTY.	ITEM	DESCRIPTION	QTY.
1	BASE	2	20	STRETCHER LOWER V-BLOCK	
2	HANDLE	2	21	STRETCHER UPPER JAW 2	
3	HANDLE COVER	2	22	STRETCHER LOWER JAW 2	
4	BACK BLOCK	2	23	SUSPENSION SPRING	
5	BACK SHAFT	2	24	SPRING	
6	FRONT BLOCK	2	25	SCREW M5 X 8MM	
7	FRONT SHAFT	2	26	PIN	
8	JAW COVER	1	27	WASHER 10MM	
9	SHRINKER HOOK	1	28	WASHER 13MM	
10	SHRINKER UPPER V-BLOCK	1	29	C-RING	
11	SHRINKER UPPER SMALL JAW	1	30	C-RING	
12	SHRINKER LOWER SMALL JAW	1	31	SCREWM5 X 12	
13	SHRINKER LOWER V-BLOCK	1	32	WASHER 5MM	
14	SHRINKER UPPER BIG JAW	1	33	SCREW M5 X 25MM	
15	SHRINKER LOWER BIG JAW	1	34	SCREW M8 X 20MM	
16	STRETCHER HOOK	1	35	SCREW M6 X 10	
17	STRETCHER UPPER V-BLOCK	1	36	HEX HEAD WRENCH 3MM	
18	STRETCHER UPPER JAW 1	1	37	HEX HEAD WRENCH 4MM	
19	STRETCHER LOWER JAW 1	1	38	JAW COVER	

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

# WARNING

## General Machinery Safety Instructions

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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 allergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
- 25. Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

# WARNING

## Shrinker Stretcher Safety Instructions

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

- 1. Maintenance.** Make sure all moving parts are locked down before any inspection, adjustment or maintenance is carried out.
- 2. Shrinker Stretcher Condition.** Shrinker Stretcher machine must be maintained for a proper working condition. Never operate a Shrinker Stretcher machine that has damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Hand Hazard.** Keep hands and fingers clear from moving parts. Serious injury can occur if hands or finger tips are placed between moving parts.
- 4. Gloves & Glasses.** Always wear leather gloves and approved safety glasses when using this machine.
- 5. Avoiding Entanglement.** Tie up long hair and use the correct hair nets to avoid any entanglement with the Shrinker Stretcher machine moving parts.
- 6. Understand the machine's controls.** Make sure you understand the use and operation of all controls.
- 7. Work area hazards.** Keep the area around the Shrinker Stretcher machine clean from oil, tools, chips. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.
- 8. Guards.** Do not operate this machine without the correct guards in place. Necessary guards protect you from moving parts.
- 9. Material condition.** Material must be clean from oil and dry. Oily material can slip.
- 10. Material hardness.** Make sure your hardness is the same throughout the material, we recommend that you use certified material. Never use hardened steel, glass or fragile material on this machine.
- 11. Level machine.** Level the machine on a flat concrete surface by using a spirit level and secure with to floor.
- 12. Feeding material.** Shrinking or Stretching a tight radius in one pass is not possible. So you need several passes before you can achieve a certain radius.
- 13. Call for help.** If at any time you experience difficulties, stop the machine and call your nearest branch service department for help.

# PLANT SAFETY PROGRAM

## **NEW** MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

### **Shrinker Stretcher**

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

Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies (Recommended for Purchase / Buyer / User)
B	CRUSHING	LOW	Secure & support work material. Ensure machine is bolted down.
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Wear gloves to prevent cuts from sharp material.
D	SHEARING	MEDIUM	Keep hands clear from moving parts.

Plant Safety Program to be read in conjunction with manufactures instructions



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Authorised and signed by:

Safety officer:

Manager:

Revised Date: 12th March 2012