

METALMASTER



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Date: (01/25)

Instruction Manual

POWER HAMMER PHM-760HD & PHM-940HD

Order Code: (S2285 & S2287)

MACHINE DETAILS

MACHINE.	POWER HAMMER
MODEL NO.	PHM-760HD & PHM-940HD
SERIAL NO.	
DATE OF MANF.	

IMPORTED BY

AUSTRALIA



www.machineryhouse.com.au

NEW ZEALAND



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 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)

METALMASTER	
PRODUCT SPECIFICATIONS	
Model: PHM-760HD	Voltage: 240V, 50Hz
Capacity: 2.0mm Mild Steel	Motor: 2.2kW / 3HP
Nett Weight: 760kg	Full Load Current: 4.8Amps
MFG Date:	
Serial No:	<input type="text"/>
Imported by www.machineryhouse.com.au	Made in China www.machineryhouse.co.nz

Fig.1

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1.1 SPECIFICATIONS

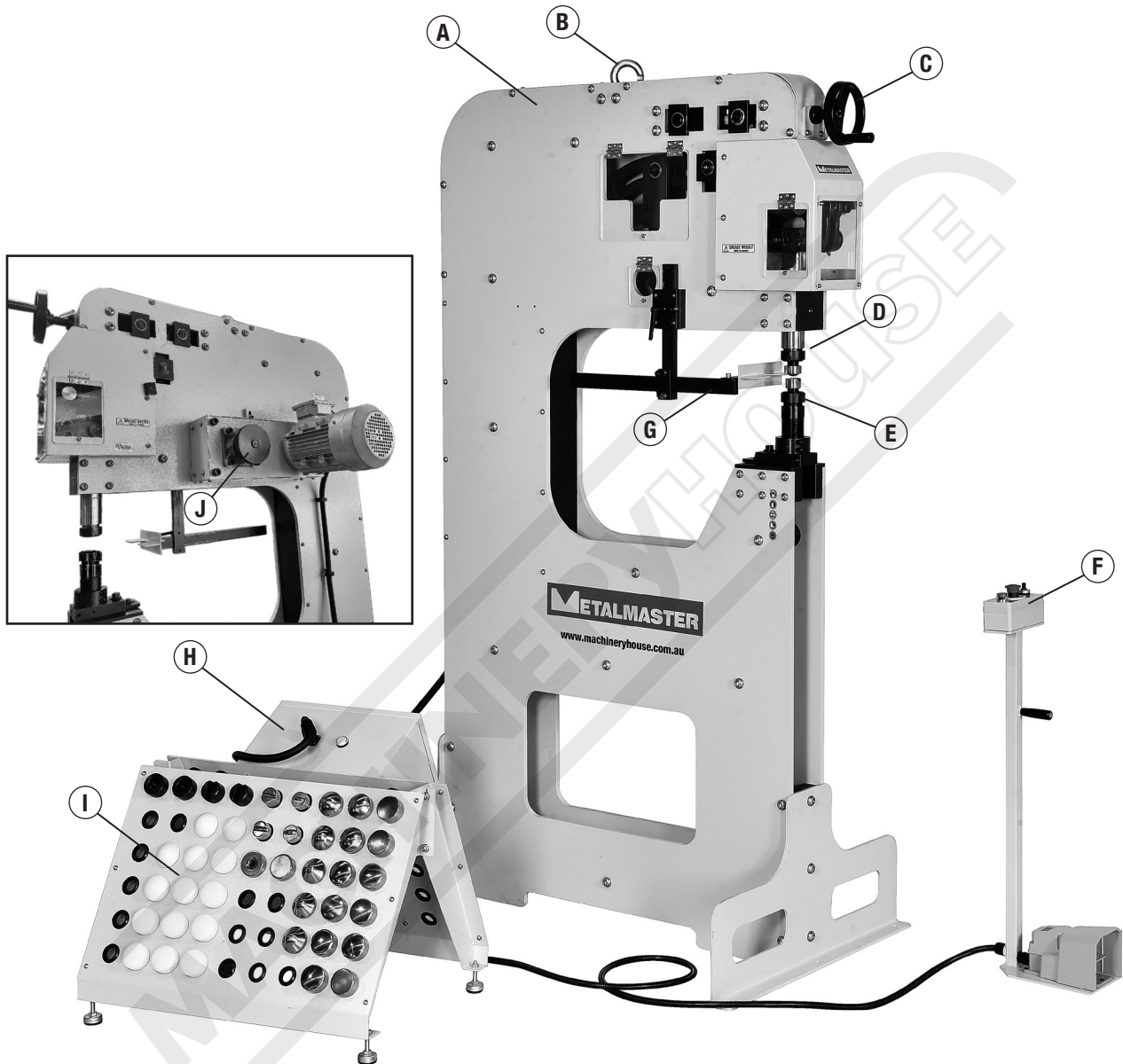
Order Code	S2285	S2287
Model	PHM-750HD	PHM-940HD
Mild Steel Capacity (mm / Gauge)	2.0 / 12	
Aluminium Capacity (mm / Gauge)	3.0 / 8	
Tooling Shank Size (mm)	22	
Throat Depth (mm)	760	940
Throat Height (mm)	570	570
Speed - Blows per minute (B.P.M)	0 - 960 (Variable)	0 - 960 (Variable)
Motor Power (kW / hp)	2.2 / 3	3 / 4
Voltage / Amps (V / amp)	240 / 15	240 / 15
Nett Weight (kg)	760	970

1.2 INCLUDED ACCESSORIES

- | | |
|---|---|
| <ul style="list-style-type: none"> 1 set (pair) of Thumbnail Shrinking Dies 1 set (pair) of Doming Dies 1pc Linear Stretching Die 1 set (pair) of 1/4" Beading Dies 1 set (pair) of 3/8" Beading Dies 1 set (pair) of 1/2" Beading Dies 1pcs Steel Upper Die 1pc Steel Lower Die - 3/4" Radius 1pc Steel Lower Die - 7/8" Radius 1pc Steel Lower Die - 1" Radius Dies 1pc Steel Lower Die - 1-1/2" Radius 1pc Steel Lower Die - 2" Radius 1 set (pair) of universal holders with 16mm opening. 1pc Steel Lower Die - 1-1/8" Radius 1pc Steel Lower Die - 1-7/8" Radius 1pc Steel Lower Die - 3" Radius 1pc Steel Lower Die - 4" Radius 1pc Steel Lower Die - 5" Radius 1pc Steel Lower Die - 6" Radius (1/16" Radius Edge) 1pc Steel Lower Die - 6" Radius (1/4" Radius Edge) | <ul style="list-style-type: none"> 1pc Steel Lower Die - 8" Radius 1pc Steel Lower Die - 14-1/2" Radius 1pc Steel Lower Die - 24" Radius 1pc Steel Lower Die - 36" Radius 1pcs Nylon Upper Die 1pc Nylon Lower Die - 3/4" Radius 1pc Nylon Lower Die - 7/8" Radius 1pc Nylon Lower Die - 1-1/8" Radius 1pc Nylon Lower Die - 1-1/2" Radius 1pc Nylon Lower Die - 1-7/8" Radius 1pc Nylon Lower Die - 4" Radius 1pc Nylon Lower Die - 5" Radius 1pc Nylon Lower Die - 6" Radius (1/16" Radius Edge) 1pc Nylon Lower Die - 6" Radius (1/4" Radius Edge) 1pc Nylon Lower Die - 8" Radius 1pc Nylon Lower Die - 14-1/2" Radius 1pc Nylon Lower Die - 24" Radius 1pc Nylon Lower Die - 36" Radius 1 set (pair) of Lourve Dies |
|---|---|

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	Main Frame	F	Foot Control
B	Lifting Point	G	Adjustable Fence
C	Stroke Length Adjustment Hand Wheel	H	Power Pack (Electrical Box)
D	Top Die	I	Die Holder
E	Bottom Die	J	Top Tool Adjustment Hand Wheel

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

- × Distract an operator. Horseplay can lead to injuries and should be strictly prohibited.
- × Wear loose clothing, gloves, neckties, rings, bracelets or other jewelry 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.



CAUTION !

A prepared list of safety guidelines can never be complete. Every workshop environment is different. Always consider Safety first, as it applies to your individual working conditions. Use this machine and other machinery with caution and respect. Failure to do so could result in serious Personal injury, damage to the equipment, or poor work results.

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.



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.

2.2 SPECIFIC SAFETY FOR POWER HAMMERS

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 a 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 Power Hammer.
2. Check for any damage or parts missing.
3. The area around the machine must be clean and free of trip hazards.
4. Hammer dies used, 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 pressed 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 securely between the top and bottom dies.
2. Using the hand-wheel, rotate the hand-wheel to check the two dies are not impacting & check clearance before turning the machine on.
3. Do not over reach. Maintain a balanced stance at all times, so that you do not fall or lean against the machine.
4. Use the Power Hammer pedal, to slowly work the material.
5. Keep hands and fingers away from the hammer dies.
6. Wear leather gloves when handling any work piece with sharp edges.
7. Use the right tool. Do not force a hammer die set to do a job that it was not designed to do.
8. Give your work undivided attention. Looking around, carrying on a conversation and "horseplay" are careless acts that can result in serious injury
9. DO NOT apply excessive force to the Power Hammer.

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
- Pinch and squash
- Eye injuries – flying or shattering objects
- Laceration injuries

3. POWER SUPPLY

3.1 ELECTRICAL INSTALLATION

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 240V.

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

ELECTRICAL REQUIREMENTS

PHM-760HD & PHM-940HD

Nominal Voltage.....	240V
Cycle.....	50 Hz
Phase.....	Single Phase
Power Supply Circuit.....	15 Amps
Full Load Current.....	See the Motor Plate

(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 these machine is available on the motor plate.

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.



4 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 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.

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



WARNING *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.



WARNING *Make sure that the lifting eyebolt is screwed completely in and is secured. Use only certified lifting equipment.*

4.5 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. 4.1)

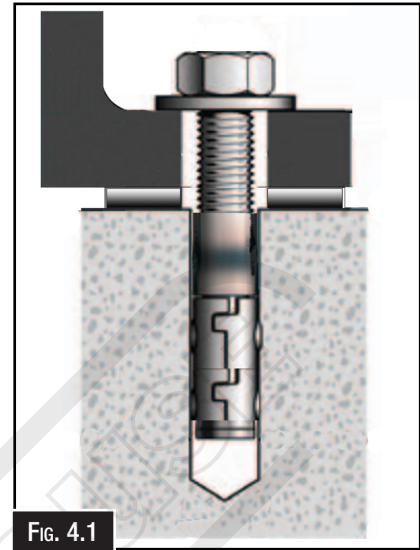


FIG. 4.1

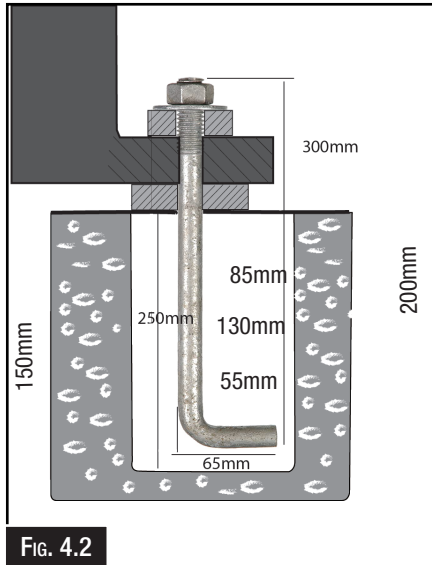


FIG. 4.2

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. 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).

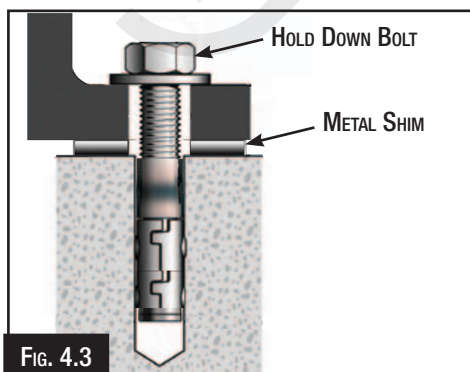


FIG. 4.3



CAUTION

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

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.

Die Holder and Power Pack

Place the die holder and power pack close to the machine in a place which is clear of foot traffic and operators working area. (Fig. 4.4)

Connect the pinned connector to the power pack. (Fig. 4.5)



Fig. 4.5

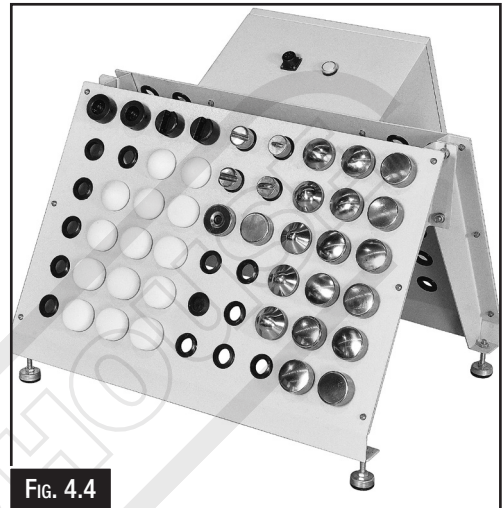


Fig. 4.4

4.8 TEST RUN

Before installing any tooling, test run the machine to ensure it is properly connected to power and safety components are functioning correctly. 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. If no solution can be found, then consult your service engineer for help.

The Test Run consists of verifying the following:

1. The motor powers up and runs correctly, and
2. The safety disabling mechanism on the emergency stop button works correctly.

TO TEST RUN THE MACHINE:

1. Clear all setup tools away from machine.
2. Press the Emergency STOP button (B in Fig. 4.6)
This will help prevent unexpected startup when the machine is connected to the power.
3. Connect the machine to the power supply. The lamp on the power pack will illuminate. (D in Fig. 4.5)
4. Reset the EMERGENCY STOP button by twisting the top until the top pops up, then press the ON button. (A in Fig. 4.6)

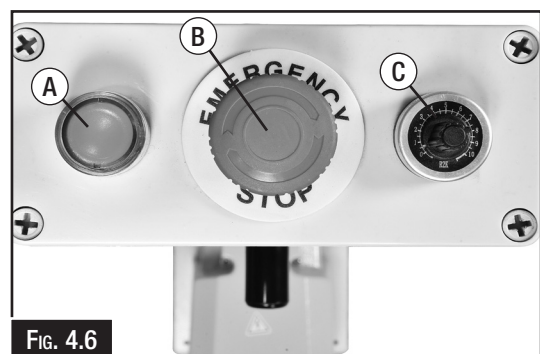


Fig. 4.6

4.8 TEST RUN Cont.

5. Press the foot pedal (E in Fig.4.7). The machine should run smoothly without any rubbing noises.
6. Check the speed control (C in Fig. 4.6) by adjusting the speed control knob up and down.
7. Hold the pedal down and press the Emergency stop button (B in Fig 4.6) and the machine should stop.
8. Without resetting EMERGENCY STOP button, press the foot pedal (E in Fig.4.7). The machine should not start.
9. Reset the emergency stop button (B in Fig. 4.6) and press the ON button (A in Fig. 4.6) then press the foot pedal and the machine should work.
10. Once the machine is working correctly, the Test Run is completed.

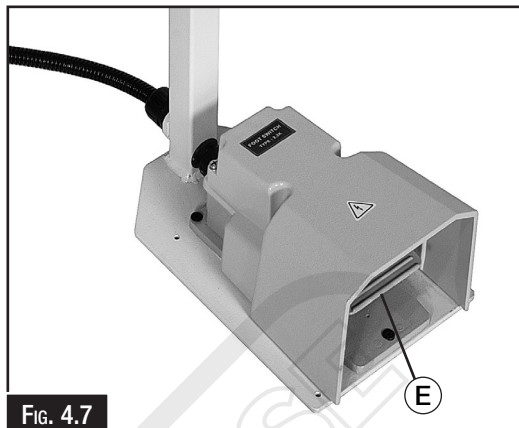


FIG. 4.7

5. OPERATION

This machine may perform many types of operations that are beyond the scope of this manual. Many of these operations may be dangerous or deadly if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. If at any time you are experiencing difficulties performing any operation, stop using the machine!

If you are an inexperienced operator, we strongly recommend that you read books, trade articles, or seek training from an experienced operator before performing any unfamiliar operations. **Above all, your safety should come first!**

5.1 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.

- A. **ON Button:** When pressed switches the motor ON
- B. **Emergency Stop Button:** When pressed, cuts the power to the machine and stays cut until the emergency button has been reset.
- C. **Speed Control:** Adjusts the speed of the machine.

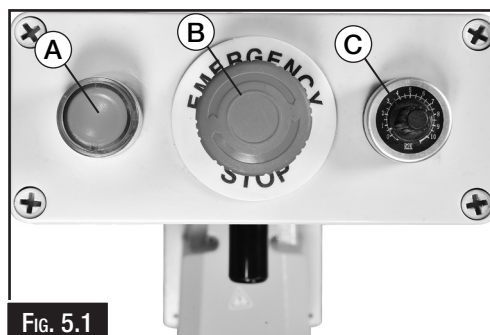


FIG. 5.1

5.1 CONTROLS Cont.

D. Foot Pedal: When pressed operates the hammer action of the machine. (D in Fig. 5.2)

5.2 SET UP & ADJUSTMENT

Straight Fence (Fig. 5.3)

The standard straight fence is a stop and support for straight edge work. It can be adjusted “up-down” to support the work piece and “in-out” by loosening the stop clamp to adjust the work piece in relation to the tooling. The vertical adjustment should support the work piece without putting a bow in the work piece.

Vertical adjustment is made by loosening the clamp (E in Fig. 5.3) on the side of the frame and moving the straight fence to the desired position.

Horizontal adjustment is made by loosening the clamp handle (F in Fig. 5.3) on the fence frame and moving the straight fence in and out as required.

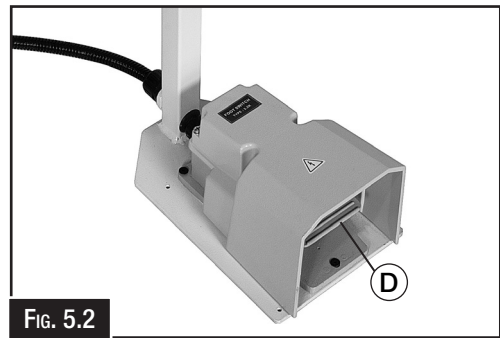


Fig. 5.2

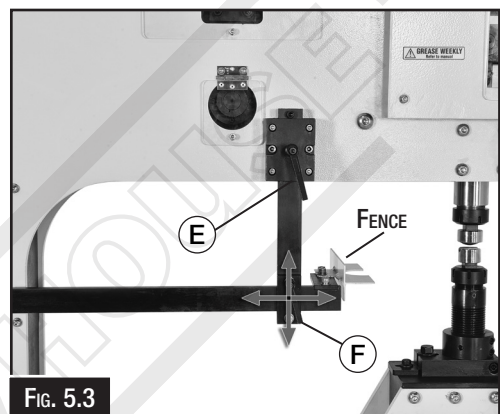


Fig. 5.3

Contour Fence (Fig. 5.5)

The contour fence is a stop for parts where a curved edge is required.

To change from the straight fence to the contour fence, remove the straight fence back stop from the support arm, and install the contour fence assembly. Adjust the contour fence “up-down” (E in Fig 5.3) so the center of the roller on the contour fence is on the centerline line of the tools. The “up-down” and “in-out” adjustments of the contour fence is the same as straight fence.

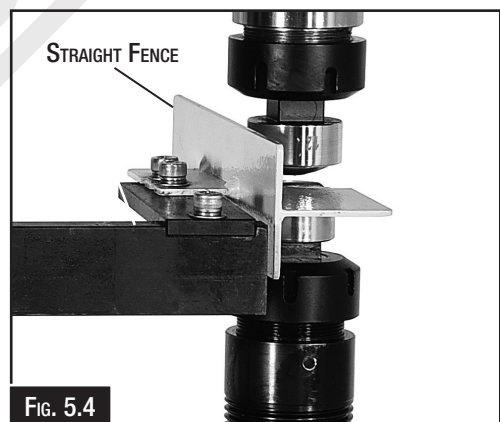


Fig. 5.4

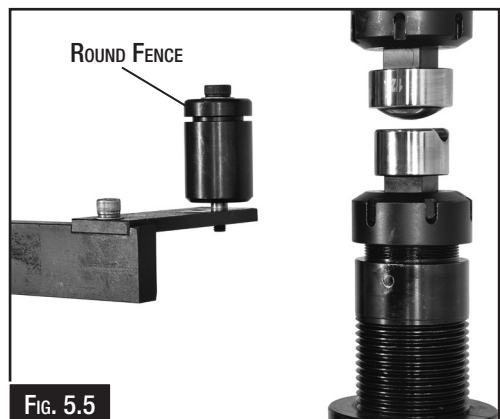


Fig. 5.5

5.2 SET-UP & ADJUSTMENT

The machine's top tool holder and bottom tool holder are designed for 22mm square shank tools. The tools are held in place by collet chucks for both the top and bottom tools. The collet chuck for the top tool is tightened to hold the tool in place. Before locking the tools in place, the tool's shank must be inserted into the tool holder until its shank bottoms out in the tool holder. The top collet chuck (Fig. 5.6) is fixed but the collet chuck for the bottom tool is set but has a mechanism so the bottom tool can be moved up after each pass for multiple pass work without loosening the collet chuck.

Tooling Adjustment

The bottom tool holder is adjustable "in-out" and "side to side" relative to the top tool holder.

To adjust the bottom tool holder "in-out", loosen the screw (E in Fig. 5.7) holding the adjuster lock plate in position. Loosen the screw holding the bottom post base and move it in and out as required. (C in Fig. 5.7) Check the "side to side" alignment. After final position is obtained first lock the bottom post in position, (C in Fig. 5.7) then slide the adjuster lock plate (E in Fig. 5.7) in position against the bottom post base and lock in position.

Up and down adjustment of the tool holder is usually not changed from the factory setting. Factory furnished dies are cut to a standard length for the factory setting of the up / down position. When it is necessary to adjust the bottom tool up or down follow this procedure. Release the clamp lock set screw "D" to allow the bottom tool adjuster screw to be turned. Rotate the lock ring (F in Fig. 5.7) to move the bottom tool up or down as needed. Then tighten the clamp lock set screw "D" to stop the tool adjusting screw shaking loose during operations.



Fig. 5.6

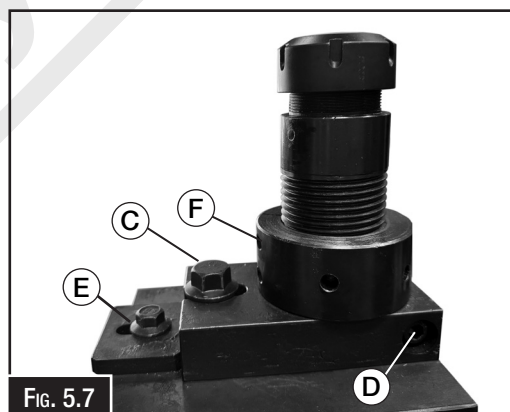


Fig. 5.7

5.3 BEADING DIE SETUP

Tool Alignment. (Fig. 5.8)

From the operator side of the machine the bead runs L to R, place the dies in the tool holders appropriately. For alignment use a straight edge. For checking the "in-out" alignment, place the straight edge against the diameters on front of the top tool and front of bottom tool. For checking the "side to side" alignment, place the straight edge 90 degrees from front face against the sides of the top tool and bottom. Adjust bottom tool to align with the top tool. The principal adjustment for the bottom die is "in-out" from the operator position. Minor adjustments in the "side to side" direction can be made. The dies should be aligned as close as possible "front to back" to avoid pinching the metal.



Fig. 5.8

5.4 STROKE SETUP

The **METALMASTER PHM series** are fitted with a spring system that uses speed and momentum to load the spring which in turn “throws” the upper die down with spring force and gravity. The amount of throw and force are controlled by speed and/or stroke.

The speed is controlled through a variable potentiometer on the foot controller.

When the foot control is fully depressed it will only operate at the speed that the speed variable potentiometer is set to.

Setting The Stroke.

1. Turn the stroke handwheel to raise the upper die slide to the top point of the stroke. (Fig. 5.9)
2. Install the selected tooling into both the lower and upper rams and lock in position.
3. Turn the handwheel on the right side of the frame so that the top die is at the lowest point of its travel.
4. Adjust the bottom die height by loosening the lock screw (D in Fig. 5.10) with the “C” spanner move the bottom die up.
5. Adjust the collar (F in Fig. 5.10) to raise or lower die up until the gap between the lower and upper dies is the same size as the material thickness.

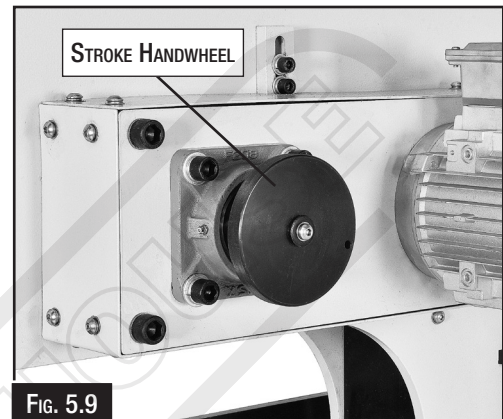


FIG. 5.9

NOTE: The material when placed between the top and bottom dies should be firm yet able to be removed with a little pressure.

6. Adjust the length stroke as needed to provide the amount of force desired to match the process desired. The longer the stroke, the greater the force generated. When starting for the first time, use the mid-point until some practice has occurred to become familiar with the machines operation. (Fig. 5.11)

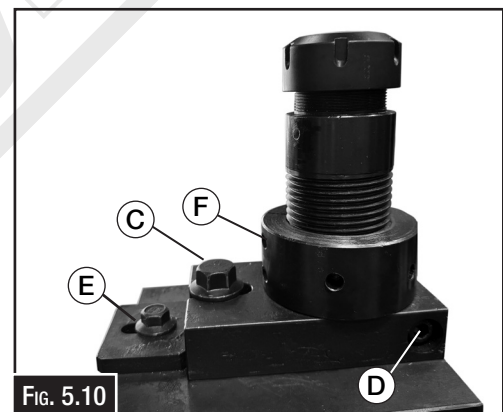


FIG. 5.10

NOTE: When planishing or metal forming the stroke is usually firmer with the hammer having less bounce. When shrinking or stretching the machine is usually set with the hammer having more bounce.



FIG. 5.11



WARNING!

The tools on this machine should never come in contact with each other, if they do, machine damage will occur.

5.5 CHANGING THE LENGTH STROKE SPRINGS

Stroke length adjustment is used to provide the amount of force desired to produce the results desired. The longer the stroke, the greater the force will be generated. Two spring sets are supplied and can be changed in the machine.

To change the springs,

1. DISCONNECT THE MACHINE FROM THE POWER
2. Using the hand wheel on the back of the motor, raise the top die to the top of the stroke. (Fig. 5.12)
3. Use the stroke handle (Fig. 5.13) until the spring is in the position as shown in (Fig. 5.15).
4. Remove the top die cover to expose the spring mechanism. (Fig, 5.14)
5. Disconnect the top die hammer shaft from the spring mechanism. (Fig. 5.16)
6. Once the hammer shaft has been removed, using a hex key, slowly remove both the screws that contains the springs then remove the springs. (Fig. 5.17)

NOTE: Take care when removing the springs as they may be under a small amount of tension.

7. Mount the new springs in the end cups and place both the springs into the mechanism and then place the retaining screws and tighten.

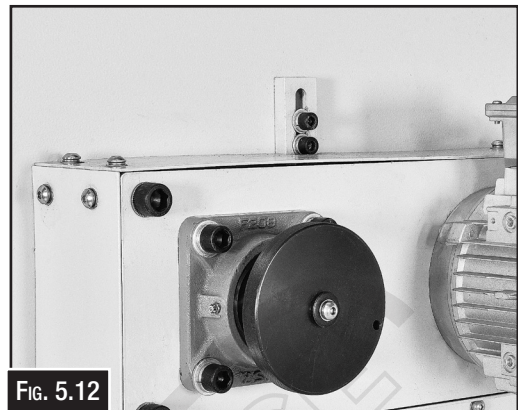


Fig. 5.12



Fig. 5.13



Fig. 5.14

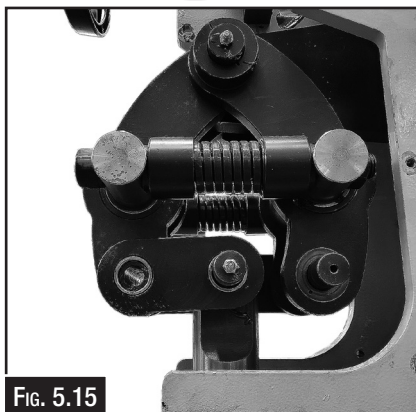


Fig. 5.15

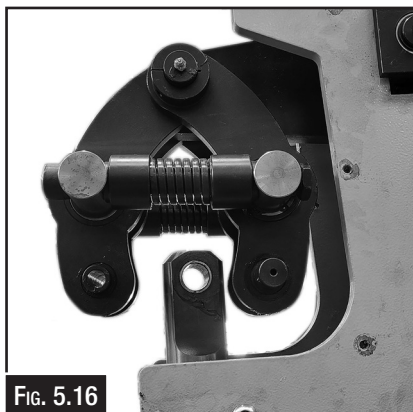


Fig. 5.16

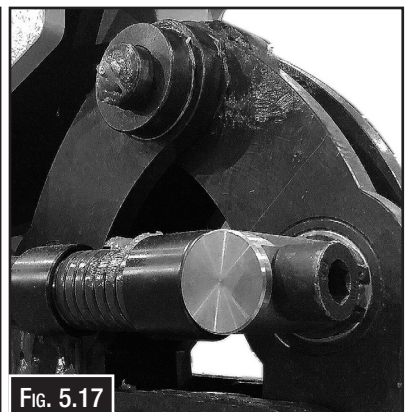


Fig. 5.17

5.6 LOUVRE DIES SETUP (FIG. 5.18)

NOTE: With the tools installed, it is very important that the tool gap is set properly or the machine could fail.

Set the machine to a more Rigid Mode and load the dies

1. DISCONNECT THE MACHINE FROM THE POWER.
2. Using the hand wheel in front of the motor, and lower the top die to the lowest part of the stroke.
3. Set the gap between the top and bottom dies to the material thickness by raising the bottom die and lock.
4. Align the bottom die so that it lines up with the top die and then secure.

NOTE: Always set the tools with the hand wheel on the side of the machine. The gap should be set to the material thickness.

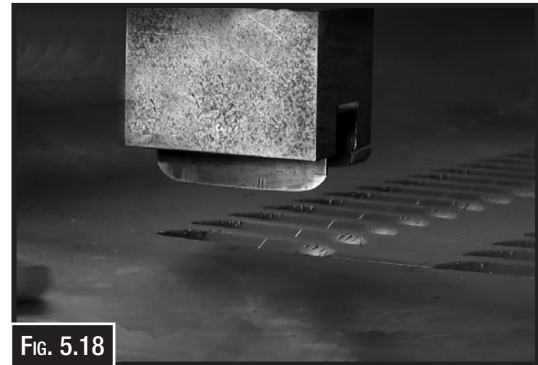


FIG. 5.18



FIG. 5.19

5.7 PLANISHING DIES (FIG. 5.19)

Planishing is where the dies impact both sides of the material to stretch or smooth the metal.

The advantage of planishing dies is that it can work in very tight spaces and affect a precise area on the panel. A more rigid mode should be set for all planishing operations.

Planishing dies can vary from very extreme shrinking to very fine shrinking or stretching, flattening dies and nylon dies.



FIG. 5.20

5.8 SHRINKING & STRETCHING DIES SETUP

Sometimes knowing whether to shrink or stretch the material can be a problem. A paper template with cuts from the high line to the edge of the paper may help with this discussion.

Thumbnail dies are used to shrink and create a compound curve. (Fig. 5.20)

Liner Stretch Dies are used to stretch the material. (Fig. 5.21)



FIG. 5.21

6. MAINTENANCE



WARNING Before maintaining or cleaning the machine, turn off the circuit breaker, or disconnect the machine from the power supply. Post a sign to inform other workers that the machine is under maintenance.

For optimum performance from the machine, it is important that the machine is well cleaned and maintained. Follow the maintenance schedule listed in the following section and refer to any specific instructions given.

6.1 SCHEDULE

Daily Check

- Loose mounting bolts.
- Worn or damaged wires.
- Check/adjust lubrication.
- Any other unsafe condition.

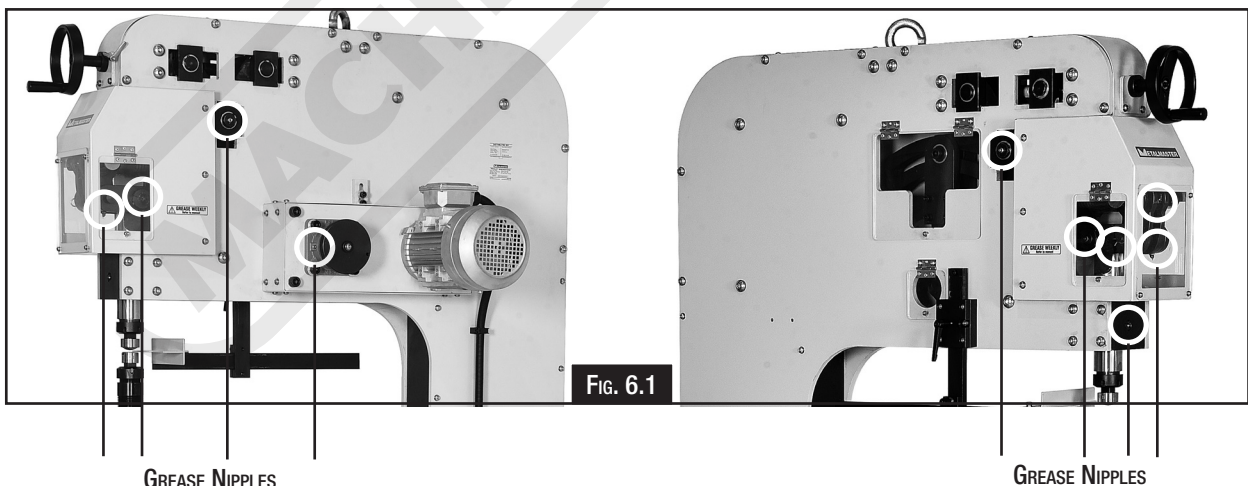
Cleaning

Cleaning the machine is relatively easy. Wipe down all unpainted and machined surfaces daily to keep them rust free and in top condition. This includes any surface that is vulnerable to rust if left unprotected. Use ISO 68 machine oil or any other quality metal lubricant.

6.2 LUBRICATION

Below are the grease point for the machine (Fig. 6.1) These should be lubricated weekly.

Metalmaster recommends using Super Blue Complex Grease (Order Code G057) machine grease.



POWER HAMMER

PHM-760HD & PHM-940HD

ORDER CODE: (S2285 & S2287)

EDITION : 1.0
DATE: (01/25)

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.

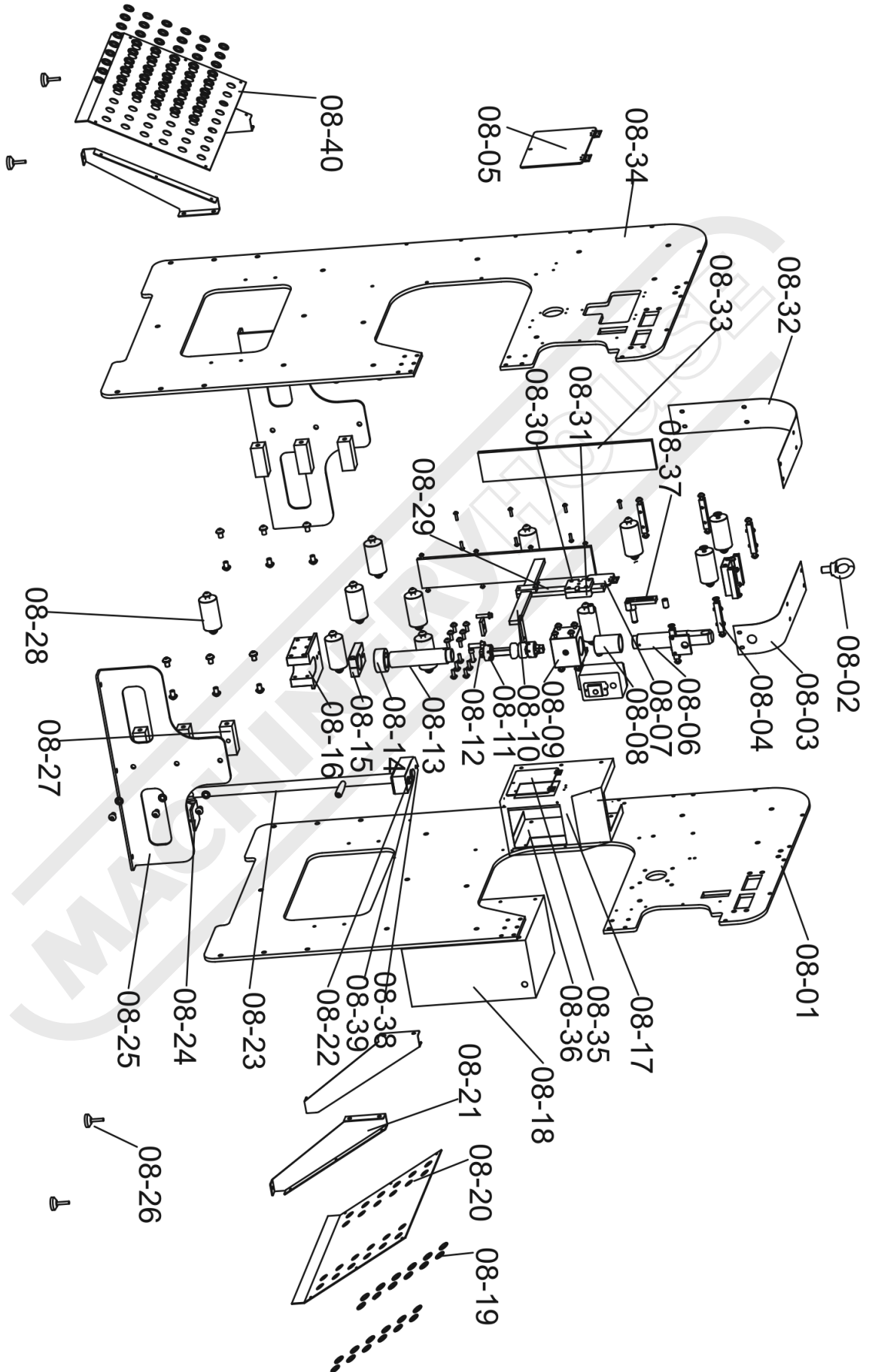
**WARNING!**

*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.

FRAME ASSEMBLY PARTS DIAGRAM

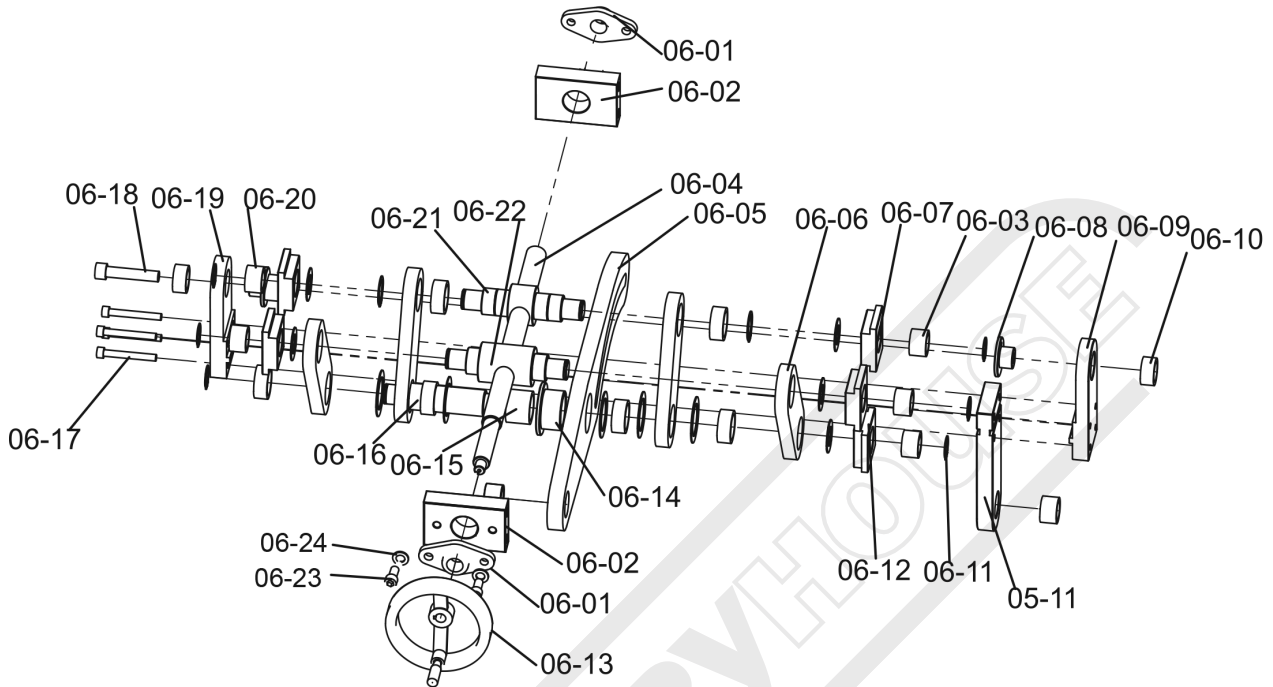


FRAME ASSEMBLY PARTS LIST

ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY.
08-01	RIGHT SIDE FRAME	1	08-21	STAND	4
08-02	LIFTING RING	1	08-22	POTENTIOMETER	1
08-03	COVER	1	08-23	CONTROLLER STAND	1
08-04	PLATE SPACER	6	08-24	VARIABLE SPEED FOOT PEDAL	1
08-05	ACRYLIC PLATE	1	08-25	LEG	2
08-06	MAIN RAM	1	08-26	FEET	4
08-07	ACRYLIC PLATE	1	08-27	PLATE SPACER	6
08-08	SLIDE BLOCK BUSHING	1	08-28	PLATE SPACER	11
08-09	TOP POST BASE	1	08-29	ROD	1
08-10	STOP ROD	1	08-30	STOP CLAMP	1
08-11	COLLET NUT	2	08-31	STOP SUPPORT	1
08-12	COLLET	2	08-32	COVER	1
08-13	BOTTOM POST	1	08-33	PLATE	2
08-14	LOCK NUT	1	08-34	LEFT SIDE FRAME	1
08-15	BOTTOM POST BASE	1	08-35	ACRYLIC PLATE	2
08-16	SEAT	1	08-36	ACRYLIC PLATE	1
08-17	SPRING GUARD	1	08-37	IDLER BRACKET	1
08-18	CONTROL BOX	1	08-38	SWITCH	1
08-19	RUBBER SHEATH	78	08-39	EMERGENCY STOP	1
08-20	DIE RACK	1	08-40	DIE RACK	1

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

LEVER ASSEMBLY PARTS DIAGRAM

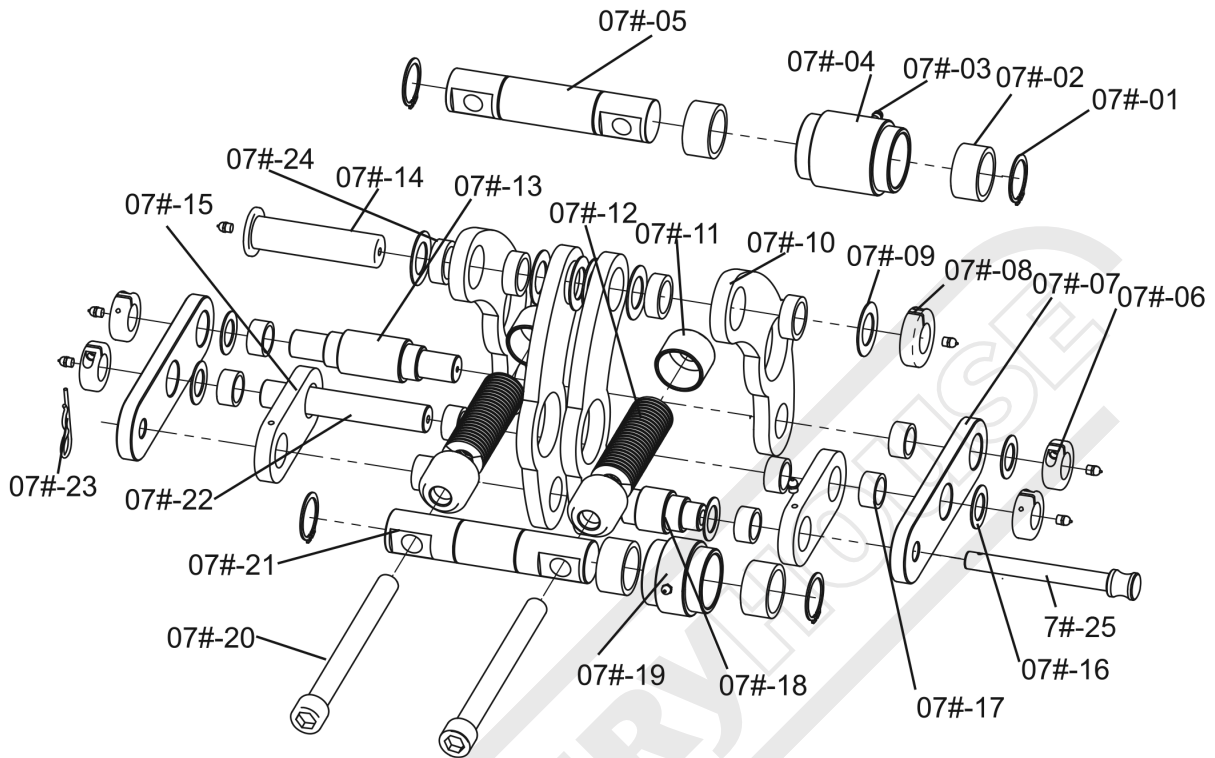


LEVER ASSEMBLY PARTS LIST

ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY.
05-11	DRIVE LEVER	1	06-12	PLATE	2
06-01	BEARING	2	06-13	HAND WHEEL	1
06-02	PLATE	2	06-14	SLIDE STROKE WASHER	1
06-03	BUSHING	7	06-15	BUSHING	1
06-04	SCREW	1	06-16	SHAFT	1
06-05	MAIN LEVER	1	06-17	SCREW	4
06-06	PLATE	4	06-18	SCREW	1
06-07	SEAT	4	06-19	RH SLIDE CAP	1
06-08	SLIDE STROKE WASHER	1	06-20	SLIDE STROKE CLAMP	1
06-09	LH SLIDE CAP	1	06-21	SHAFT	1
06-10	BUSHING	2	06-22	SHAFT	1
06-11	RING	6	06-23	SCREW M12X30	4
			06-24	WASHER 12MM	4

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

SPRING ASSEMBLY PARTS DIAGRAM

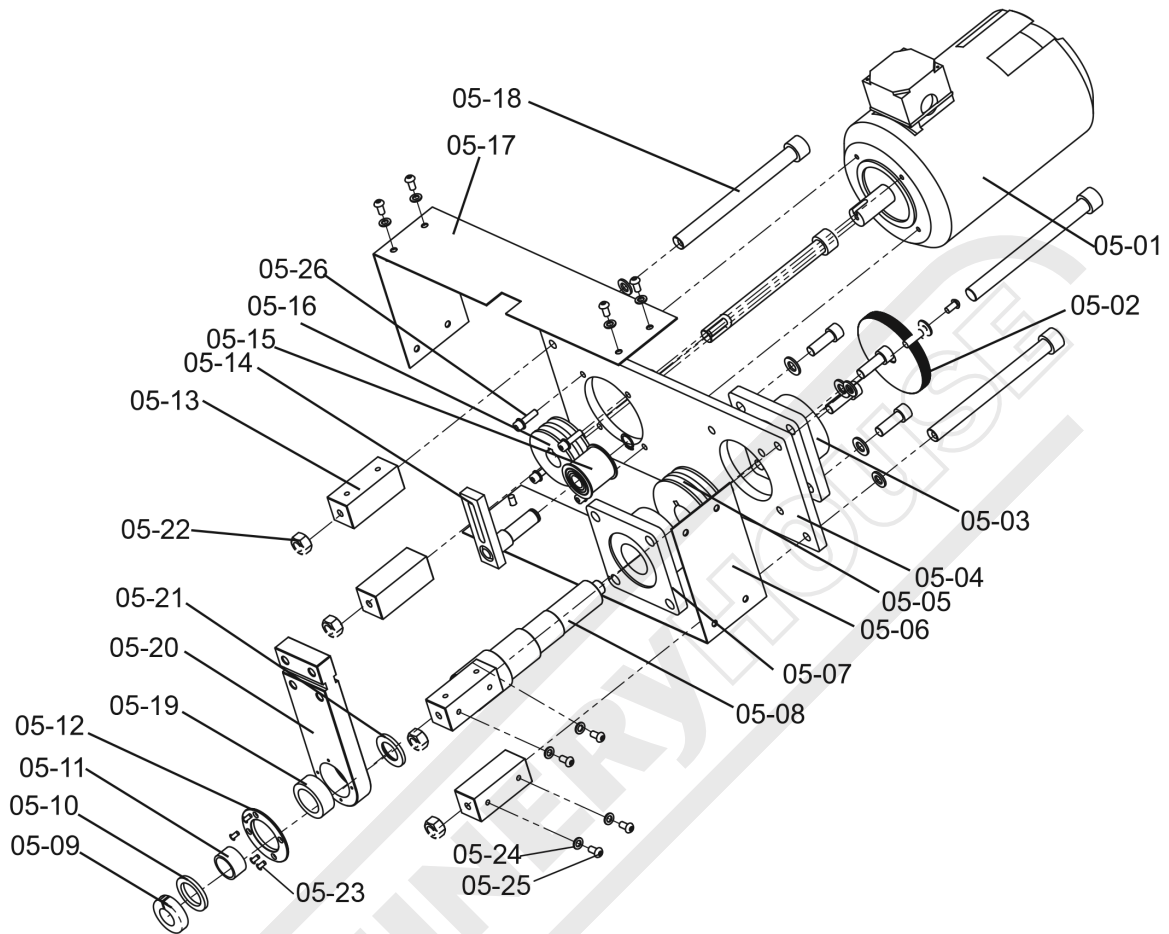


SPRING ASSEMBLY PARTS LIST

ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY.
07-01	RING 40MM	4	07-13	SHAFT	1
07-02	BUSHING 40X50X25	4	07-14	SHAFT	1
07-03	GREASE CUP M6X1	6	07-15	SHORT ARM	2
07-04	LONG BUSHING	1	07-16	WASHER 25X40X1.5	6
07-05	THREADED SPRING SHAFT	1	07-17	BUSHING 25X32X15	8
07-06	COLLAR 25	4	07-18	SHAFT	1
07-07	LONG ARM	2	07-19	SHORT BUSHING	1
07-08	COLLAR 30	1	07-20	SCREWM20X200	2
07-09	WASHER 30X50X1.5	6	07-21	SPRING SHAFT	1
07-10	TOGGLE ARM	4	07-22	SHAFT	1
07-11	SPRING CUP	4	07-23	R-PIN	1
07-12	SPRING	2	07-24	BUSHING 30X40X15	4
			07-25	SHAFT	1

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

V-BELT ASSEMBLY PARTS DIAGRAM

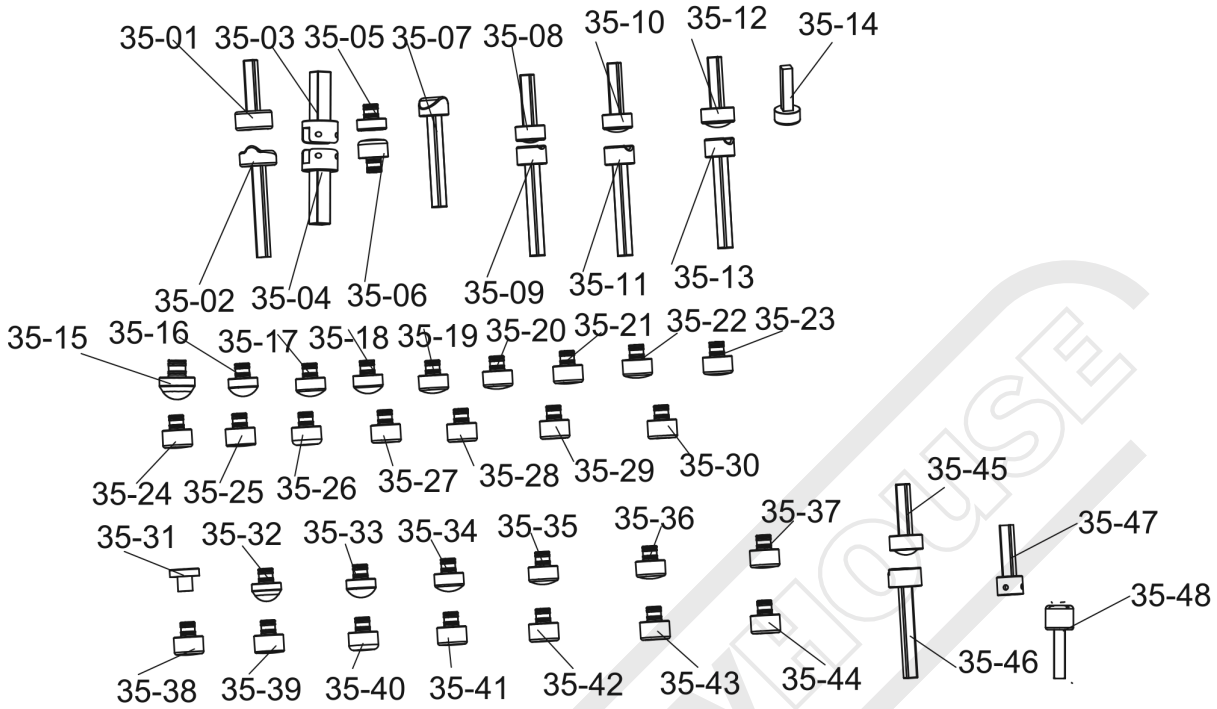


V-BELT ASSEMBLY PARTS LIST

ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY.
05-01	MOTOR	1	05-14	IDLER BRACKET	1
05-02	HAND WHEEL	1	05-15	IDLER PULLEY	1
05-03	BALL BEARING	1	05-16	VEE PULLEY	1
05-04	MOTOR MTG PLATE	1	05-17	UPPER COVER	1
05-05	VEE PULLEY	1	05-18	SCREW M16X150	4
05-06	LOWER COVER	1	05-19	NEEDLE BEARING	1
05-07	BALL BEARING	1	05-20	DRIVE LEVER	1
05-08	CRANK SHAFT	1	05-21	COPPER WASHER	1
05-09	COLLAR	1	05-22	NUT M16	4
05-10	COPPER WASHER	1	05-23	SCREW M4X10	4
05-11	BUSHING	1	05-24	WASHER 8MM	21
05-12	BEARING MOUNTING WASHER	1	05-25	SCREW M8X16	17
05-13	PLATE SPACER	1	05-26	SCREW M8X30	4

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

PARTS DIES DIAGRAM



PARTS DIES LIST

ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY.
35-01	UPPER SHRINKING DIE	1	35-25	1 PC STEEL LOWER DIE-6"(1/16" R.)	1
35-02	LOWER SHRINKING DIE	1	35-26	1 PC STEEL LOWER DIE-6"(1/4"RADIUS)	1
35-03	16MM UPPER UNIVERSAL DIE HOLDER	1	35-27	1 PC STEEL LOWER DIE-8"	1
35-04	16MM LOWER UNIVERSAL DIE HOLDER	1	35-28	1 PC STEEL LOWER DIE-14-1/2"	1
35-05	UPPER DOMING DIE	1	35-29	1 PC STEEL LOWER DIE-24"	1
35-06	LOWER DOMING DIES	1	35-30	1 PC STEEL LOWER DIE-36"	1
35-07	1 PC OF LINEAR STRETCHING DIES	1	35-31	1 PC NYLON UPPER DIE	1
35-08	UPPER 1/4" BEADING DIES	1	35-32	1 PC NYLON LOWER DIE-3/4"	1
35-09	LOWER 1/4" BEADING DIES	1	35-33	1 PC NYLON LOWER DIE-7/8"	1
35-10	UPPER 3/8" BEADING DIES	1	35-34	1 PC NYLON LOWER DIE-1-1/8"	1
35-11	LOWER 3/8" BEADING DIES	1	35-35	1 PC NYLON LOWER DIE-1-1/2"	1
35-12	UPPER 1/2" BEADING DIES	1	35-36	1 PC NYLON LOWER DIE-1-7/8"	1
35-13	LOWER 1/2" BEADING DIES	1	35-37	1 PC NYLON LOWER DIE-4"	1
35-14	1 PC STEEL UPPER DIE	1	35-38	1 PC NYLON LOWER DIE-5"	1
35-15	1 PC STEEL LOWER DIE-3/4"	1	35-39	1 PC NYLON LOWER DIE-6"(1/16" RADIUS)	1
35-16	1 PC STEEL LOWER DIE-7/8"	1	35-40	1 PC NYLON LOWER DIE-6"(1/4" RADIUS)	1
35-17	1 PC STEEL LOWER DIE-1"	1	35-41	1 PC NYLON LOWER DIE-8"	1
35-18	1 PC STEEL LOWER DIE-1-1/8"	1	35-42	1 PC NYLON LOWER DIE-14-1/2"	1
35-19	1 PC STEEL LOWER DIE-1-1/2"	1	35-43	1 PC NYLON LOWER DIE-24"	1
35-20	1 PC STEEL LOWER DIE-1-7/8"	1	35-44	1 PC NYLON LOWER DIE-36"	1
35-21	1 PC STEEL LOWER DIE-2"	1	35-45	UPPER LOUVRE DIE	1
35-22	1 PC STEEL LOWER DIE-3"	1	35-46	LOWER LOUVRE DIE	1
35-23	1 PC STEEL LOWER DIE-4"	1	35-47	20MM UPPER ROUND DIE HOLDER	1
35-24	1 PC STEEL LOWER DIE-5"	1	35-48	20MM LOWER ROUND DIE HOLDER	1

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

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

WARNING

Power Hammer Safety Instructions

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

- 1. Maintenance.** Make sure the Power Hammer is turned off and disconnect electrical power before any inspection, adjustment or maintenance is carried out.
- 2. Power Hammer Condition.** Power Hammer must be maintained for proper working condition. Never operate a Power Hammer that has damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Leaving a Power Hammer Unattended.** Always turn the Power Hammer off before leaving the Power Hammer. Do not leave Power Hammer running unattended for any reason.
- 4. Hand Hazard.** Keep hands and fingers clear from moving parts. Serious injury can occur if hand or finger tips get pinched between tooling.
- 5. Gloves & Glasses.** Always wear leather gloves and approved safety glasses when using this machine.
- 6. Avoiding Entanglement.** Tie up long hair and use the correct hair nets to avoid any entanglement with moving parts.
- 7. Understand the machines controls.** Make sure you understand the use and operation of all controls.
- 8. Warning Labels.** Take note of any warning labels on the machine and do not remove them.
- 9. Overloading Machine.** Do not exceed the rated capacity of the Power Hammer. Please refer to the manual for capacities.
- 10. Hearing Protection and Hazards.** Always wear hearing protection as noise generated from machine and workpiece vibration can cause permanent hearing loss over time.
- 11. Eye Protection.** Always wear safety glasses when using and cleaning this machine.
- 12. Work Area Hazards.** Keep the area around the Power Hammer 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.
- 13. Level Machine.** Level the machine on a flat concrete surface by using a spirit level.
- 14. 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

Power Hammer

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 <small>(Recommended for Purchase / Buyer / User)</small>
B	CRUSHING	HIGH	Ensure machine is bolted down. Secure & support work material. Wear safety boots.
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Ensure correct tooling clearance is set for each material used. Ensure hand & fingers are clear from moving parts "Tooling Dies" Wear gloves to prevent cuts from sharp material.
D	SHEARING	MEDIUM	Keep hands clear from moving parts.
F	STRIKING	LOW	Power hammer must be used with extreme precaution and in a controlled environment.
O	OTHER HAZARDS, NOISE, DUST.	HIGH MEDIUM	Hearing protection must be worn at all times. Safety gloves, shoes, pants must be worn. Make sure work area is clear from objects to save tripping.

Plant Safety Program to be read in conjunction with manufactures instructions



www.machineryhouse.com.au



www.machineryhouse.co.nz

Authorised and signed by:
 Safety officer:

Manager:

Revised Date: 25th February 2019



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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