OPERATOR'S MANUAL

Metal Working

METAL FORMING SHRINKER STRETCHER

MODEL: MSS-14H (B8860)

HARE&FORBES MACHINERYHOUSE

Rev. 07/2019

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INTRODUCTION

The quality and reliability of the components assembled on a Baileigh Industrial Holdings LLC machine guarantee near perfect functioning, free from problems, even under the most demanding working conditions. However, if a situation arises, refer to the manual first. If a solution cannot be found, contact the distributor where you purchased our product. Make sure you have the serial number and production year of the machine (stamped on the nameplate). For replacement parts refer to the assembly numbers on the parts list drawings.

Our technical staff will do their best to help you get your machine back in working order.

In this manual you will find: (when applicable)

- Safety procedures
- Correct installation guidelines
- Description of the functional parts of the machine
- Capacity charts
- Setup and start-up instructions
- Machine operation
- Scheduled maintenance
- Parts lists

GENERAL NOTES

After receiving your equipment remove the protective container. Do a complete visual inspection, and if damage is noted, **photograph it for insurance claims** and contact your carrier at once, requesting inspection. Temporarily suspend installation.

Take necessary precautions while loading / unloading or moving the machine to avoid any injuries.

Your machine is designed and manufactured to work smoothly and efficiently. Following proper maintenance instructions will help ensure this. Try and use original spare parts, whenever possible, and most importantly; **DO NOT** overload the machine or make any modifications.

Note: *This symbol refers to useful information throughout the manual.*

IMPORTANT

PLEASE READ THIS OPERATORS MANUAL CAREFULLY

It contains important safety information, instructions, and necessary operating procedures. The continual observance of these procedures will help increase your production and extend the life of the equipment.

SAFETY INSTRUCTIONS

LEARN TO RECOGNIZE SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your machine or in this manual, **BE ALERT TO THE POTENTIAL FOR PERSONAL INJURY!**

Follow recommended precautions and safe operating practices.

UNDERSTAND SIGNAL WORDS

A signal word – **DANGER**, **WARNING**, or **CAUTION** – is used with the safety alert symbol. **NOTICE**, which is not related to personal injury, is used without a symbol.

DANGER: Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

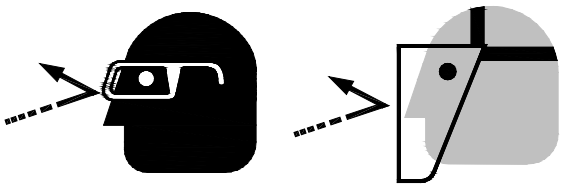
CAUTION: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE: Indicates a situation which, if not avoided, could result in property damage.

SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.

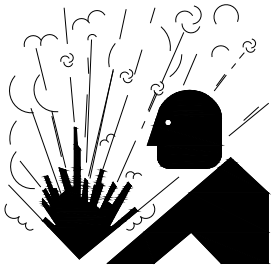
PROTECT EYES

Wear safety glasses or suitable eye protection when working on or around machinery.



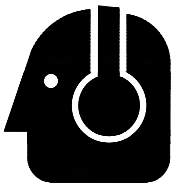
HYDRAULIC HOSE FAILURE

Exercise **CAUTION** around hydraulic hoses in case of a hose or fitting failure.



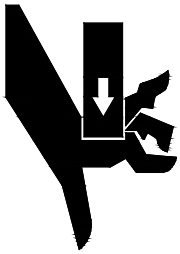
PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protective devices such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



BEWARE OF PINCH AND CRUSH HAZARD

Keep hands and fingers away from the pivoting jaw Mechanism.
NEVER place your hand or any part of your body in this machine.



SAFETY PRECAUTIONS

Metal working can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.
Safety equipment such as guards, hold-downs, safety glasses, dust masks and hearing protection can reduce your potential for injury. But even the best guard will not make up for poor judgment, carelessness or inattention. **Always use common sense** and exercise **caution** in the workshop. If a procedure feels dangerous, don't try it.
REMEMBER: Your personal safety is your responsibility.

WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

Dear Valued Customer:

- All Baileigh machines should be used only for their intended use.
- Baileigh does not recommend or endorse making any modifications or alterations to a Baileigh machine. Modifications or alterations to a machine may pose a substantial risk of injury to the operator or others and may do substantial damage to the machine.
- Any modifications or alterations to a Baileigh machine will invalidate the machine's warranty.

PLEASE ENJOY YOUR BAILEIGH MACHINE! ....PLEASE ENJOY IT SAFELY!

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** Learn the machine's application and limitations as well as the specific hazards.
2. **Only trained and qualified personnel can operate this machine.**
3. **Make sure guards are in place and in proper working order before operating machinery.**
4. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
5. **Keep work area clean.** Cluttered areas invite injuries.
6. **Overloading machine.** By overloading the machine you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.

7. **Dressing material edges.** Always chamfer and deburr all sharp edges.
8. **Do not force tool.** Your machine will do a better and safer job if used as intended. **DO NOT** use inappropriate attachments in an attempt to exceed the machines rated capacity.
9. **Use the right tool for the job. DO NOT** attempt to force a small tool or attachment to do the work of a large industrial tool. **DO NOT** use a tool for a purpose for which it was not intended.
10. **Dress appropriate. DO NOT** wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
11. **Use eye and ear protection**. Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
12. **Do not overreach**. Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
13. **Stay alert**. Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
14. **Check for damaged parts**. Before using any tool or machine, carefully check any part that appears damaged. Check for alignment and binding of moving parts that may affect proper machine operation.
15. **Observe work area conditions**. **DO NOT** use machines or power tools in damp or wet locations. Do not expose to rain. Keep work area well lighted. **DO NOT** use electrically powered tools in the presence of flammable gases or liquids.
16. **Keep children away**. Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
17. **Store idle equipment**. When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep them out of reach of children.
18. **DO NOT operate machine if under the influence of alcohol or drugs**. Read warning labels on prescriptions. If there is any doubt, **DO NOT** operate the machine.
19. **DO NOT** touch live electrical components or parts.
20. **Turn off** power before checking, cleaning, or replacing any parts.
21. Be sure **all** equipment is properly installed and grounded according to national, state, and local codes.
22. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!**
23. **DO NOT** bypass or defeat any safety interlock systems.
24. Keep visitors a safe distance from the work area.

TECHNICAL SPECIFICATIONS

Mild Steel Capacity	14 ga.
Aluminum Capacity	12 ga.
Movement	Hydraulic Down/Close, Pneumatic Up/Open
Throat Depth	6" (152mm)
Stand	Included
Electrical Power	240V, 50hz, 15A
Motor	2hp (1.5kw)
Air Supply	80-120psi (5.5-8.2bar)
Shipping Weight	300 lbs.
Shipping Dimensions	60" x 44" x 66"

***Note**: The photos and illustrations used in this manual are representative only and may not depict the actual color, labeling or accessories and may be intended to illustrate technique only.*

***Note:** The specifications and dimensions presented here are subject to change without prior notice due to improvements of our products.*

UNPACKING AND CHECKING CONTENTS

Your Baileigh machine is shipped complete. Separate all parts from the packing material and check each item carefully. Make certain all items are accounted for before discarding any packing material.

WARNING: SUFFOCATION HAZARD! Immediately discard any plastic bags and packing materials to eliminate choking and suffocation hazards to children and animals.
If any parts are missing, DO NOT place the machine into service until the missing parts are obtained and installed correctly.

Cleaning

WARNING: DO NOT USE gasoline or other petroleum products to clean the machine. They have low flash points and can explode or cause fire.

CAUTION: When using cleaning solvents work in a well-ventilated area. Many cleaning solvents are toxic if inhaled.

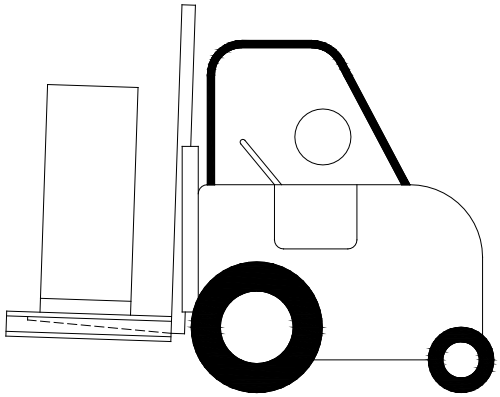
Your machine may be shipped with a rustproof waxy coating and/or grease on the exposed unpainted metal surfaces. Fully and completely remove this protective coating using a degreaser or solvent cleaner. Moving items will need to be moved along their travel path to allow for cleaning the entire surface. For a more thorough cleaning, some parts will occasionally have to be removed. **DO NOT USE** acetone or brake cleaner as they may damage painted surfaces.
Follow manufacturer's label instructions when using any type of cleaning product. After cleaning, wipe unpainted metal surfaces with a light coating of quality oil or grease for protection.

Important: *This waxy coating is **NOT** a lubricant and will cause the machine to stick and lose performance as the coating continues to dry.*

TRANSPORTING AND LIFTING

NOTICE: *Lifting and carrying operations should be carried out by skilled workers, such as a truck operator, crane operator, etc. If a crane is used to lift the machine, attach the lifting chain carefully, making sure the machine is well balanced.*

Follow these guidelines when lifting with truck or trolley:



- The lift truck must be able to lift at least 1.5 – 2 times the machines gross weight.
- Make sure the machine is balanced. While transporting, avoid rough or jerky motion, and maintain a safe clearance zone around the transport area.
- Use a fork lift with sufficient lifting capacity and forks that are long enough to reach the complete width of the machine.
- Remove the securing bolts that attach the machine to the pallet.
- Approaching the machine from the side, lift the machine on the frame taking care that there are no cables or pipes in the area of the forks.
- Move the machine to the required position and lower gently to the floor.
- Level the machine so that all the supporting feet are taking the weight of the machine and no rocking is taking place.

INSTALLATION

IMPORTANT:

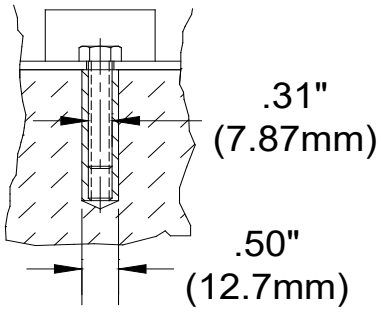
Consider the following when looking for a suitable location to place the machine:

- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles.
- Maintain an adequate working area around the machine for safety.
- Have the work area well illuminated with proper lighting.
- Keep the floor free of oil and make sure it is not slippery.

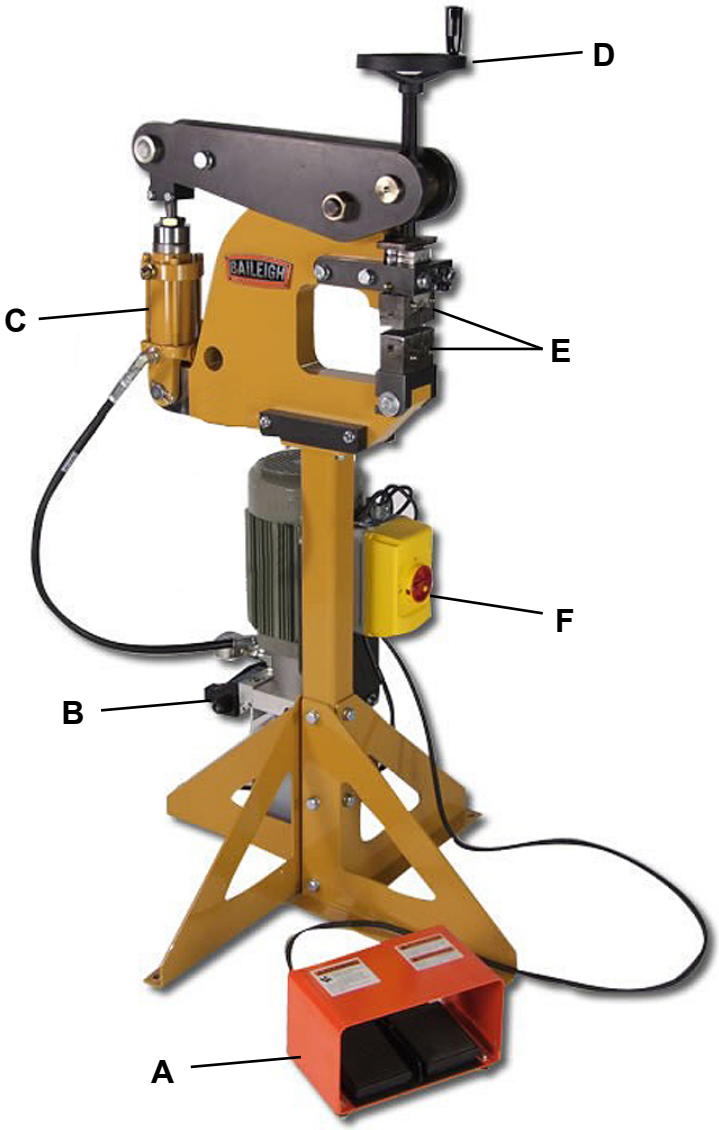
- Remove scrap and waste materials regularly, and make sure the work area is free from obstructing objects.
- If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.
- **LEVELING:** The machine should be sited on a level, concrete floor. Provisions for securing it should be in position prior to placing the machine. The accuracy of any machine depends on the precise placement of it to the mounting surface.
- **FLOOR:** This machine distributes a large amount of weight over a small area. Make certain that the floor is capable of supporting the weight of the machine, work stock, and the operator. The floor should also be a level surface. If the unit wobbles or rocks once in place, be sure to eliminate by using shims.
- **WORKING CLEARANCES:** Take into consideration the size of the material to be processed. Make sure that you allow enough space for you to operate the machine freely.
- **POWER SUPPLY PLACEMENT:** The power supply should be located close enough to the machine so that the power cord is not in an area where it would cause a tripping hazard. Be sure to observe all electrical codes if installing new circuits and/or outlets.

Anchoring the Machine

- Once positioned, anchor the machine to the floor, as shown in the diagram. Use bolts and expansion plugs or sunken tie rods that connect through and are sized for the holes in the base of the stand.
- This machine requires a solid floor such as concrete at a minimum of 4” (102mm) thick.



GETTING TO KNOW YOUR MACHINE



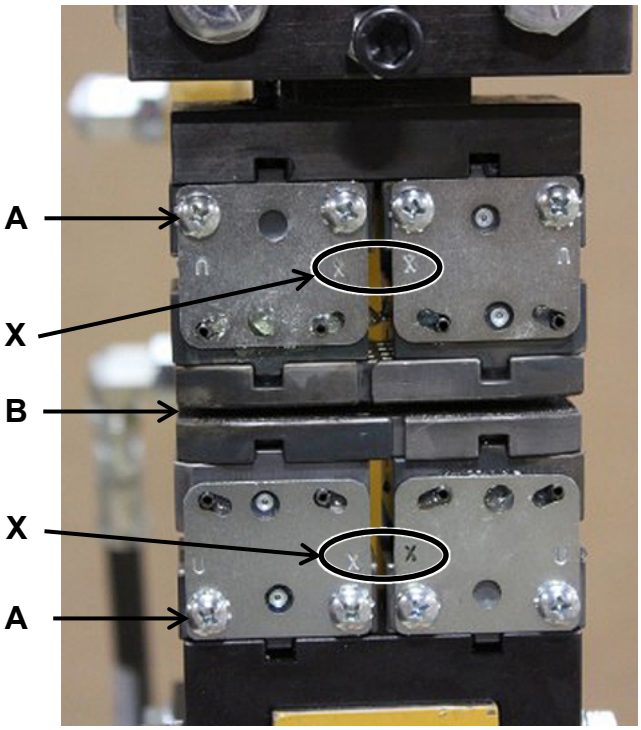
Item	Description	Function
A	Foot Pedal	Press the pedal to clamp the jaws together
B	Down Solenoid	Energized when clamping
C	Cylinder	Extends with hydraulic pressure when clamping. Retracts with pneumatic pressure.
D	Gap Adjustment	Increases or decrease the jaw gap.
E	Jaw	Stretch or shrink material
F	ON/OFF Switch	Starts and stops the motor.

ASSEMBLY AND SET UP

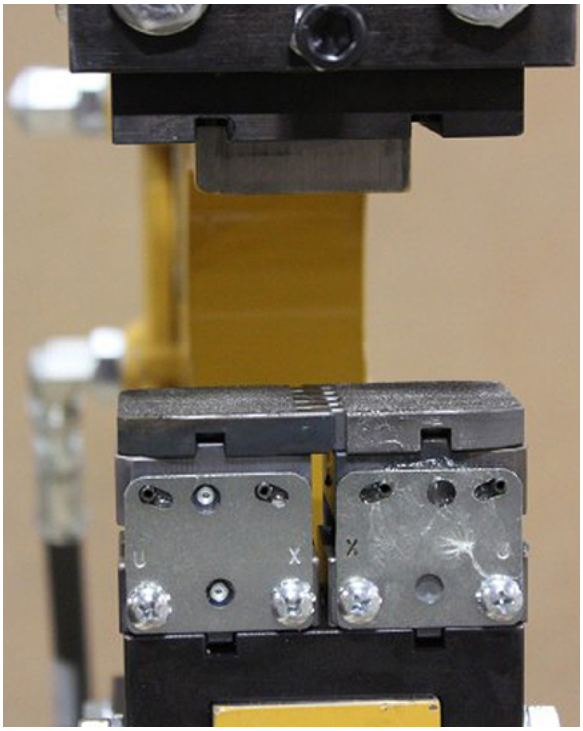
WARNING: For your own safety, DO NOT connect the machine to the power source until the machine is completely assembled and you read and understand the entire instruction manual.

Tooling Installation:

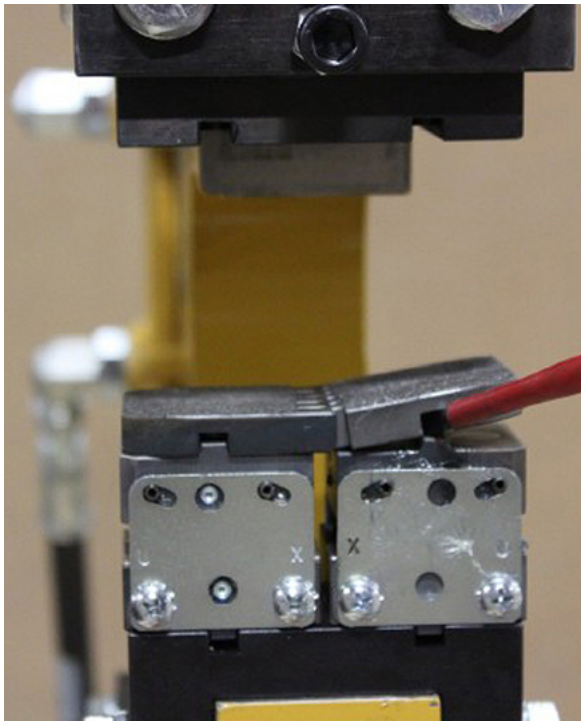
This set up show how the tools should be installed for shrinking. Notice the marking “X” is pointing toward each other in both the top and bottom die sets.
Also notice that the screw heads (A) point away from the material gap (B).



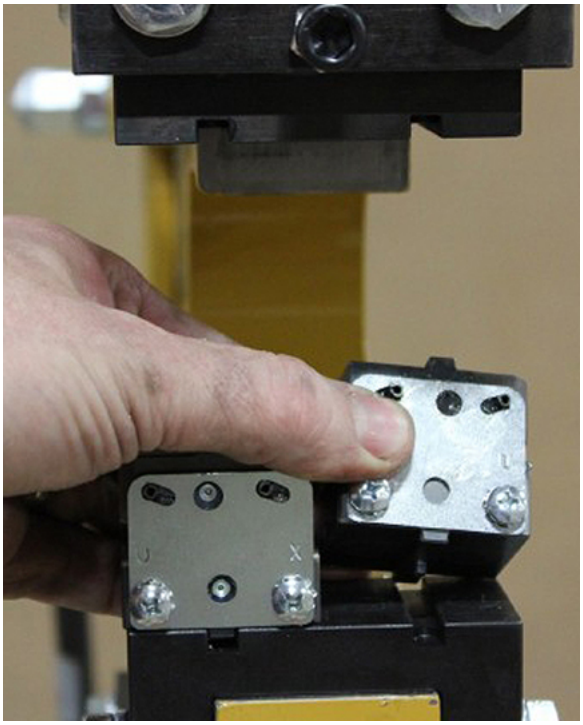
In this view it shows the top die assemblies removed so you can see the jaw orientation. The jaws with serrations are to be used for shrinking.



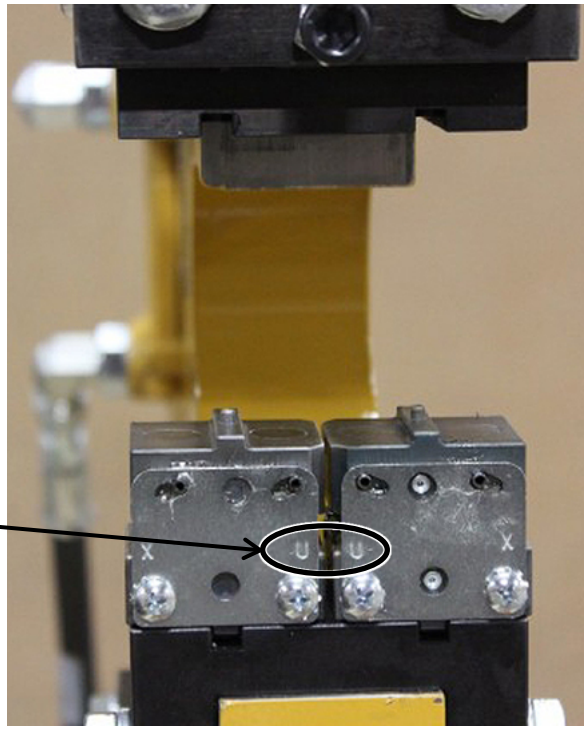
In this view it will shows how to remove the jaw caps. Insert a screwdriver into the machined slot to break the magnetic force.



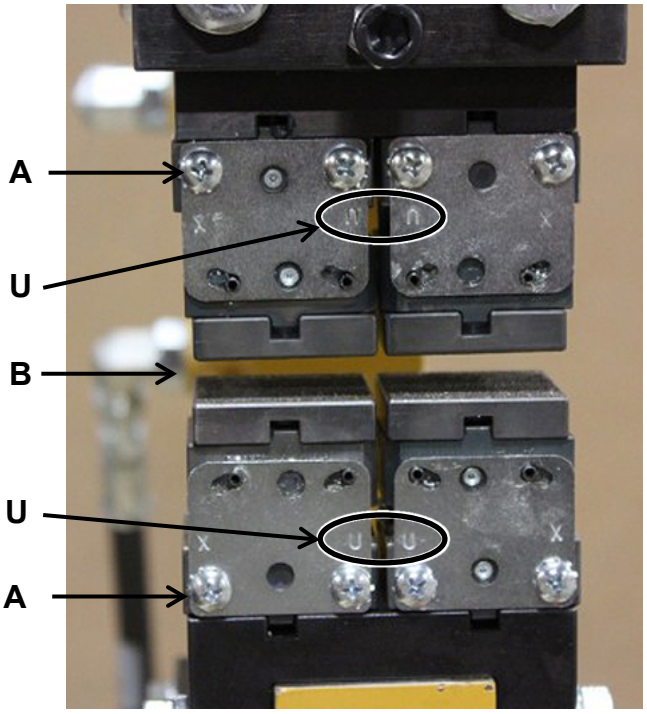
Once the force from the magnet is released, grab onto the assembly and remove.



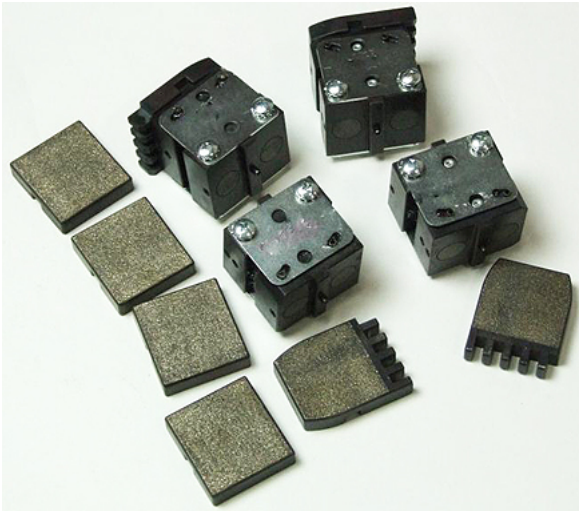
In this view it shows the jaws installed for stretching. Note that the markings “U” are now pointing together, This is the reversing of the jaws from shrinking.



Here you will see both top and bottom mechanisms installed for stretching. Both show the “U” pointing at each other
Also notice that the screw heads (A) point away from the material gap (B).
Here is a completed setup for stretching.



JAWS



- The jaw block assemblies should be lightly lubricated so that they will slide freely and evenly. Use a 40-weight motor oil or similar.
- Clean the blocks regularly to prevent them from collecting dirt and becoming sticky.
- The pads should be kept clean and dry. If the pads become oily or grease the will slip on the material. Use a mild solvent to remove any oil or grease.
- Use the Square pads for Stretching.
- Use the Serrated pads for Shrinking.

ELECTRICAL

CAUTION: HAVE ELECTRICAL UTILITIES CONNECTED TO MACHINE BY A CERTIFIED ELECTRICIAN!
Check if the available power supply is the same as listed on the machine nameplate.

WARNING: Make sure the grounding wire (green) is properly connected to avoid electric shock. DO NOT switch the position of the green grounding wire if any electrical plug wires are switched during hookup.

Power Specifications

Your machine is wired for 240 volts, 50hz alternating current. Before connecting the machine to the power source, make sure the power source is OFF.
Before switching on the power, you must check the voltage and frequency of the power to see if they meet with the requirement, the allowed range for the voltage is ±5%, and for the frequency is ±1%.

Considerations

- Observe local electrical codes when connecting the machine.
- The circuit should be protected with a time delay fuse or circuit breaker with an amperage rating slightly higher than the full load current of machine.
- A separate electrical circuit should be used for your machines. Before connecting the motor to the power line, make sure the switch is in the “OFF” position and be sure that the electric current is of the same characteristics as indicated on the machine.
- All line connections should make good contact. Running on low voltage will damage the motor.
- In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This machine is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING: In all cases, make certain the receptacle in question is properly grounded. If you are not sure, have a qualified electrician check the receptacle.

- Improper connection of the equipment-grounding conductor can result in risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
- Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the machine is properly grounded.
- Repair or replace damaged or worn cord immediately.

Extension Cord Safety

Extension cord should be in good condition and meet the minimum wire gauge requirements listed below:

	LENGTH		
AMP RATING	25ft	50ft	100ft
1-12	16	16	14
13-16	14	12	12
17-20	12	12	10
21-30	10	10	No
	WIRE GAUGE		

An undersized cord decreases line voltage, causing loss of power and overheating. All cords should use a ground wire and plug pin. Replace any damaged cords immediately.

Power cord connection:

1. Turn the main disconnect switch on the control panel to the OFF position.
2. Unwrap the power cord and route the cord away from the machine toward the power supply.
    a. Route the power cord so that it will NOT become entangled in the machine in any way.
    b. Route the cord to the power supply in a way that does NOT create a trip hazard.
3. Connect the power cord to the power supply and check that the power cord has not been damaged during installation.
4. When the machine is clear of any obstruction. The main power switch may be turn ON to test the operation. Turn the switch OFF when the machine is not in operation.

OPERATION

⚠ WARNING: DO NOT step on the foot pedal without having work material between the jaws. The jaws may chip or break causing injury from flying objects.

⚠ CAUTION: Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.
Keep hands and fingers clear of the dies.
When handling large heavy sheets make sure they are properly supported.

1. Connect an air supply with 80-120psi (5.5-8.2bar). This will fully open the gap between the jaws.
2. Install the jaws for either shrinking or stretching as desired.
3. Use the hand wheel to set the gap between the upper and lower jaws to allow the material to move easily between them when the jaws are fully open.
4. Practice with the material and place the foot pedal in a location which is comfortable for work. (A comfortable location will allow the operator to be balanced and in control of the material at all times.)
5. Start the hydraulics and begin to form the material by pressing on the foot pedal. The foot pedal may be held for a full cycle or be released at any time. When the pedal is released, the air pressure will retract the ram lift and open the jaws. PRACTICE.

Operating Tips

The function of this tool is to shrink or stretch sheet metal up to 14ga. (1.9mm).
The principal operation is made when the sheet work piece is placed between the jaws and then applying and releasing force with the foot on and off of the foot pedal. The work piece is moved as required each time the foot pedal is released. By moving smoothly, you will be able to make smooth shapes quickly and easily. PRACTICE.

Do a quick test by stepping on the foot pedal and ensuring that the jaws bite down and pull apart for the stretcher. For the shrinker the jaws should bite down and squeeze together. The jaws should return to their open relaxed position between strokes and when the foot pedal is released.

Try using the tool with a sample piece of metal to get a feel for how it operates. Place the material in the middle of the jaw box and step down on the foot pedal to form the metal. Work the leading edge of the material first to break down the initial resistance of the metal. Move the metal back and forth until the desired radius is obtained. You can control the pressure exerted on the metal by how tight the gap is set between the jaw and how long you hold down the foot pedal.

The jaws have fine toothed edges to hold the piece part in place. Marks left on your piece part can be removed with either an abrasive cloth or a wheel for appearance.

MATERIAL SELECTION

⚠ CAUTION: It must be determined by the customer that materials being processed through the machine are NOT potentially hazardous to operator or personnel working nearby.

When selecting materials keep these instructions in mind:

- Material must be clean and dry. (without oil)
- Material should have a smooth surface, so it processes easily.
- Dimensional properties of material must be consistent and not exceed the machine capacity values.
- Chemical structure of material must be consistent.
- Buy certificated steel from the same vendor when possible.

LUBRICATION AND MAINTENANCE

WARNING: Make sure the electrical disconnect is OFF before working on the machine.
Maintenance should be performed on a regular basis by qualified personnel.
Always follow proper safety precautions when working on or around any machinery.

- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.

***Note**: Proper maintenance can increase the life expectancy of your machine.*

Hydraulic Oil

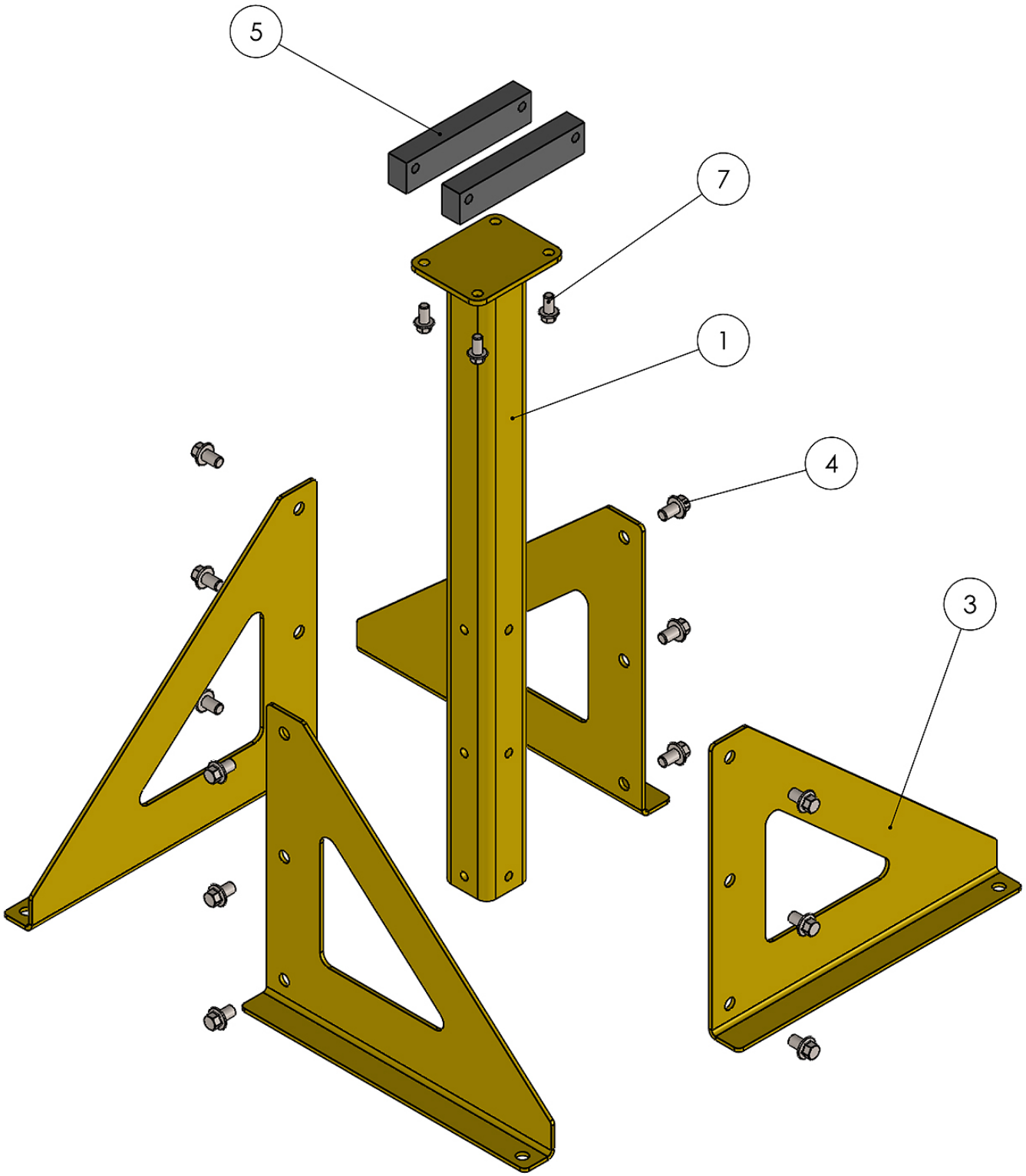
The hydraulic oil is the primary medium for transmitting pressure and also must lubricate the running parts of the pump.

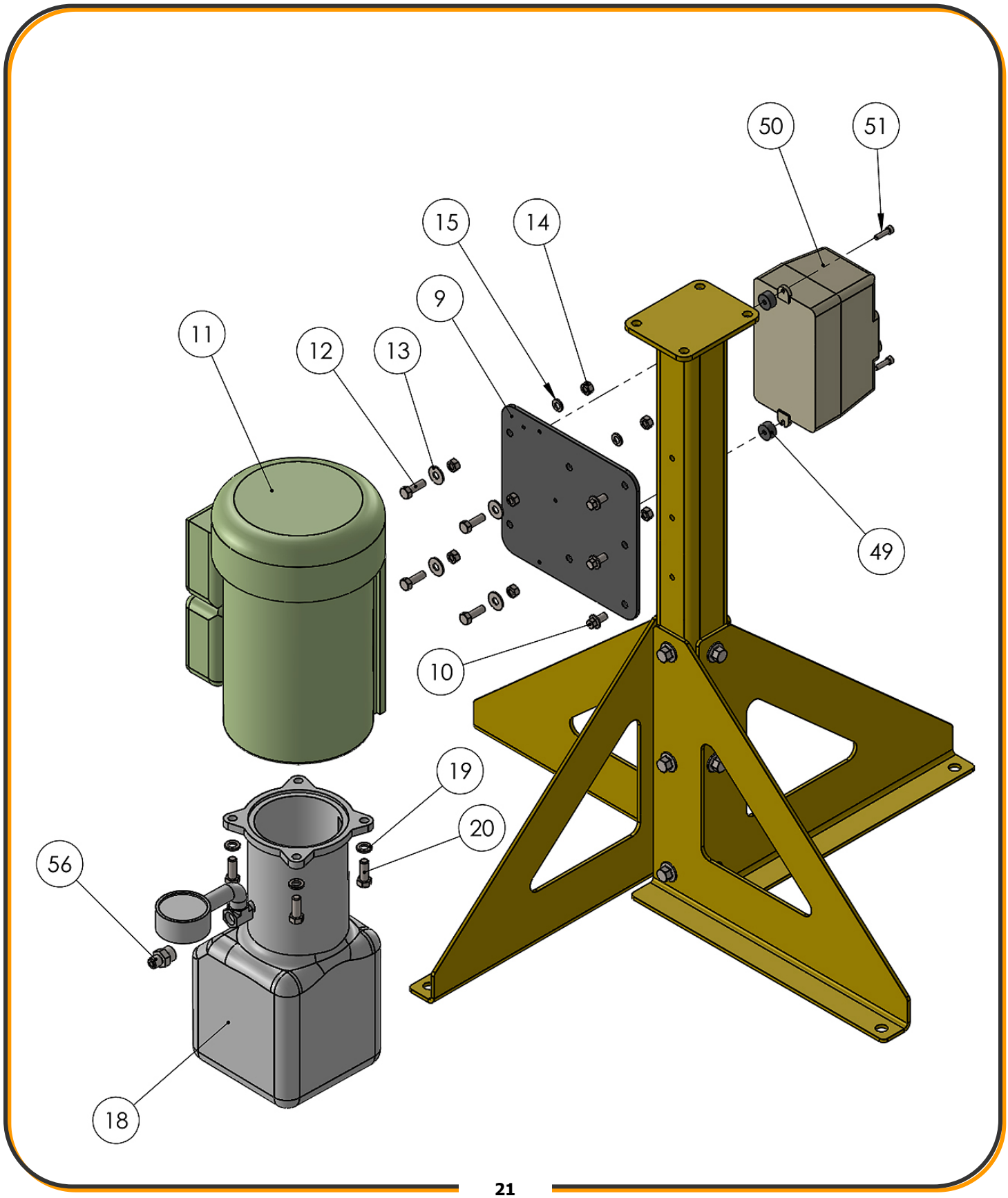
1. Use hydraulic oil #68 SHELL BRAND or an equivalent with similar specifications.
2. Keep hydraulic reservoir filled to 90% of capacity.
3. DO NOT rely totally on the oil gauge as they can sometimes indicate an incorrect level reading. Do a visual inspection with the oil fill cap removed as well.
4. A shortage of hydraulic oil will cause hydraulic system breakdown to major mechanical components due to overheating.
5. Change the hydraulic oil every 12 months.

Oil Disposal

Used oil products must be disposed of in a proper manner following your local regulations.

PARTS DIAGRAM

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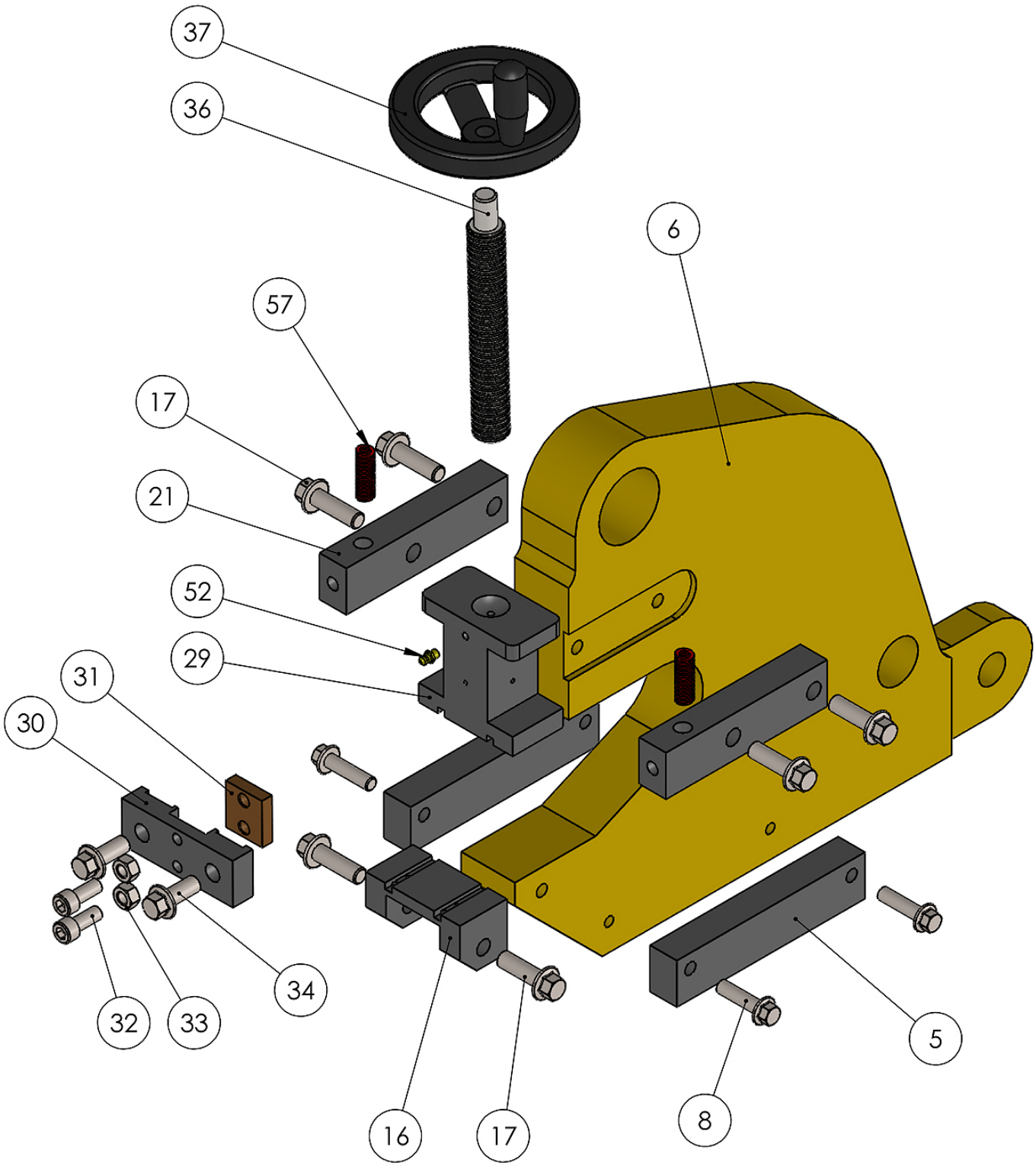
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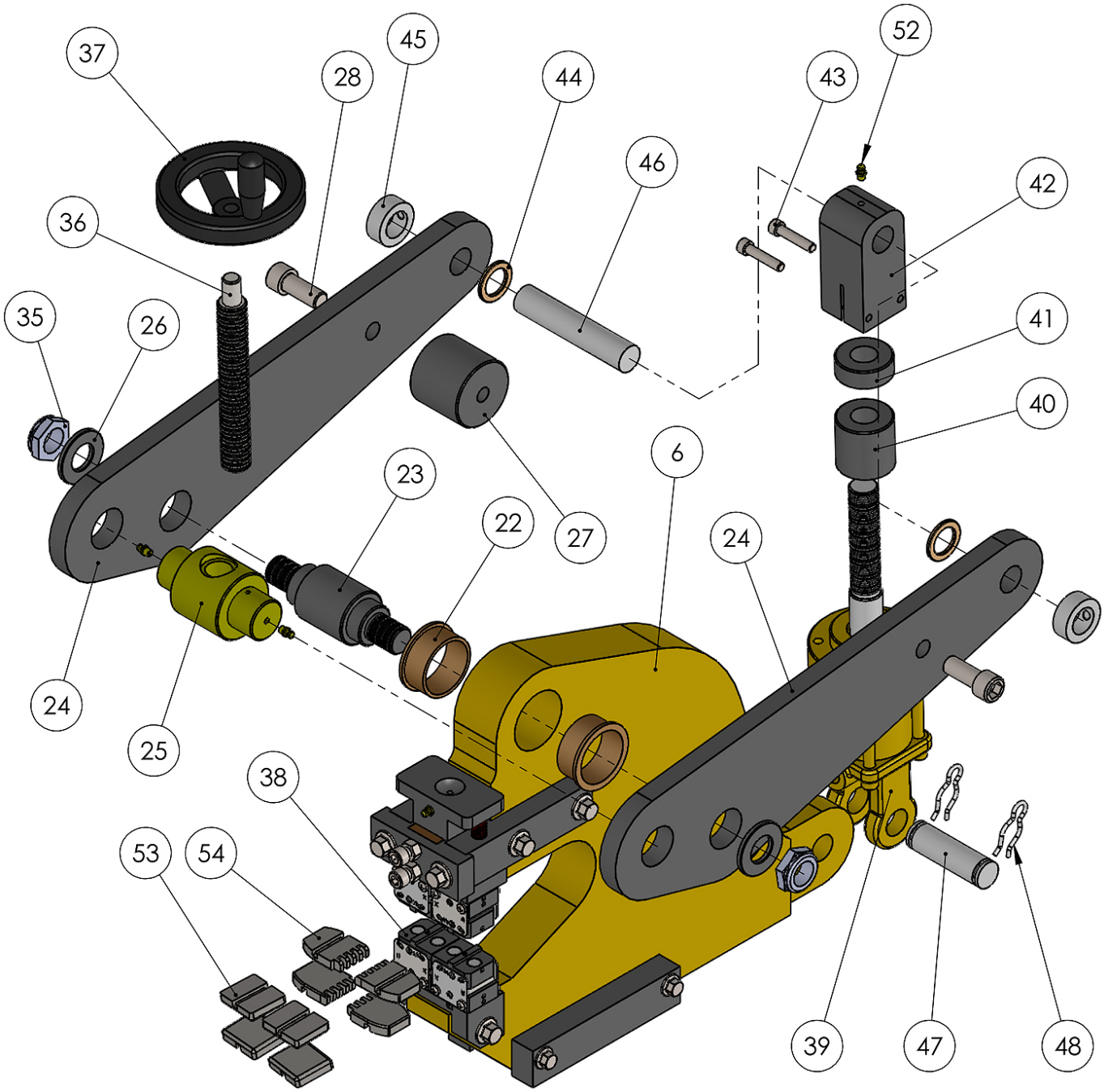
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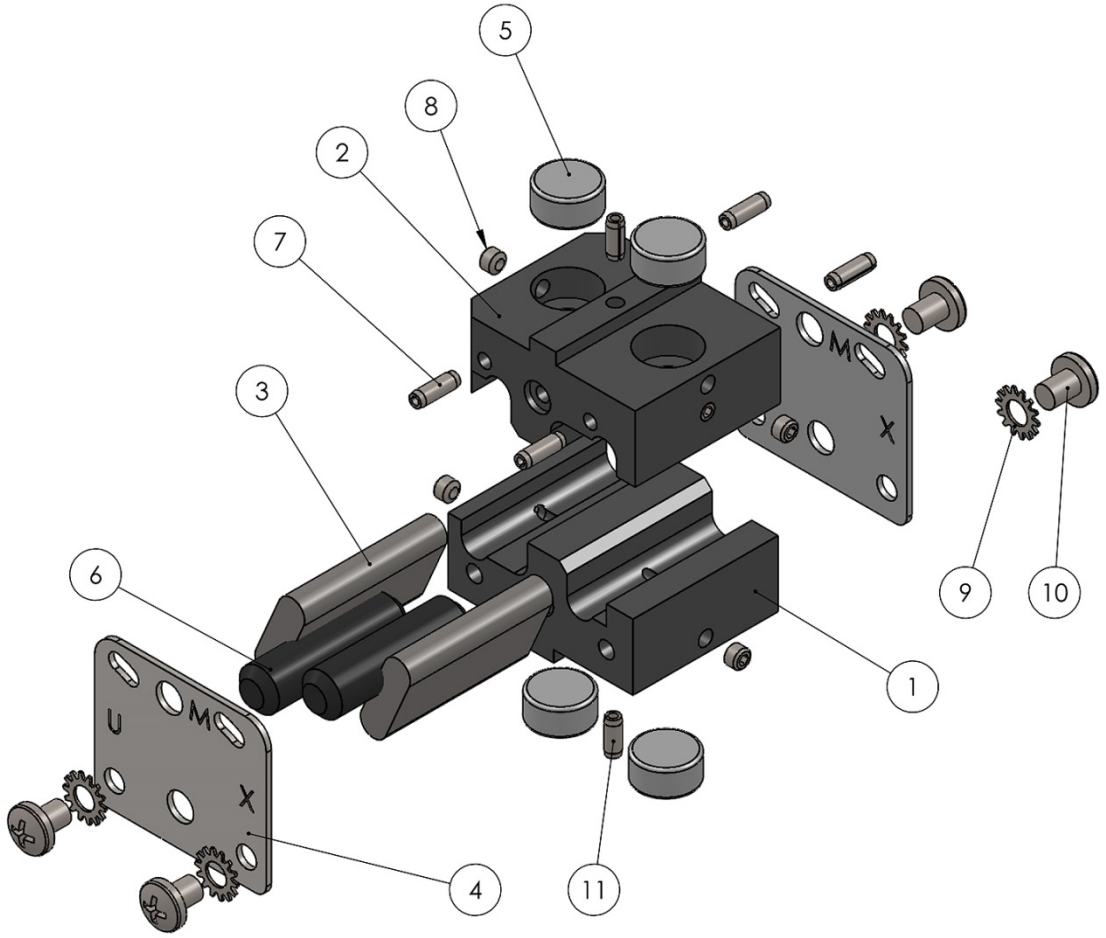
Parts List

Item	Part Number	Description	Qty.
1	ME-M100-6A026	Stand Tube	1
3	M100-6A025	M100 Leg Brace	4
4	M12 X 1.75 X 20	Hex Flange	12
5	ME-PS16-6A009	Stand Adaptor	2
6	ME-PS16-6A001	Main Frame	1
7	M10 X 1.5 X 20	Hex Flange	4
8	M10 X 1.5 X 40	Hex Flange	4
9	ME-M125-6A010-V3	Motor Mounting Plate	1
10	M8 X 1.25 X 14	Hex Flange	3
11	PP-1075	2hp Yen Motor	1
12	STD.	5/16-18 X 1 HHCS	4
13	STD.	5/16 Flat Washer	4
14	STD.	5/16-18 Hex Nut	8
15	STD.	5/16 Lock Washer	4
16	PS16-6A005-V3	Lower Base Plate	1
17	M12 X 1.75 X 40	Hex Flange	6
18	PP-1185	Power Unit	1
19	STD.	3/8 Lock Washer	4
20	STD.	3/8-16 X 1 HHCS	4
21	ME-PS16-6A003	Support Finger	2
22	PP-0295	Flanged Sleeve Bearing	2
23	PS16-7A001	Main Pivot Pin	1
24	PS16-6A004	Main Lever	2
25	PS16-7A002	Drive Shaft	1
26	PS16-7A011	Special Washer	2
27	ME-PS16-7A003	Spacer	1
28	M16 X 2.0 X 40	SHCS	2
29	PS16-6A014	Top Master Die Mount	1
30	ME-PS16-6A002	Tie Bar	1
31	PS16-6A006	Slide Gib	1
32	M10 X 1.5 X 25	SHCS	2
33	STD.	M10 X 1.5 Hex Nut	2
34	M12 X 1.75 X 30	Hex Flange	2

Item	Part Number	Description	Qty.
35	STD.	1"-14 Lock Nut	2
36	PS16-7A009	Adjusting Shaft	1
37	PP-0170	5.0 Handwheel	1
38		Replacement Tooling Set	4
39	PP-1163	PS16 Cylinder Assembly	1
40	PS16-7A006	Adjusting Nut	1
41	PS16-7A007	Lock Nut	1
42	ME-PS16-6A007	Clevis End	1
43	M8 X 1.25 X 40	SHCS	2
44	PP-0056	1.0 Id X 1.5 Od X .125 THK	2
45	PP-0035	1" Set Screw Collar	2
46	NONE	Clevis Shaft	1
47	PP-0403-J	Pin	1
48	PP-0403-K	Hairclip	2
49	PS16-7A010	Switch Spacer	2
50	PP-1294	WEG European On/Off Switch	1
51	M5 X 0.8 X 20	SHCS	2
52	.25-28 GREASE ZERK	Straight Grease Zerk	4
53	PS16-6A013-Set	Stretch Jaw Insert Set (4)	1
54	PS16-6A013-V3-Set	Jaw Insert Interlocking Set (4)	1
55	PP-0666	Foot Pedal	1
56	PP-0858 (6-F5OLO-S)	Straight O Ring Adapter	1
57	PP-1186	.5 X 1.5 Spring	2

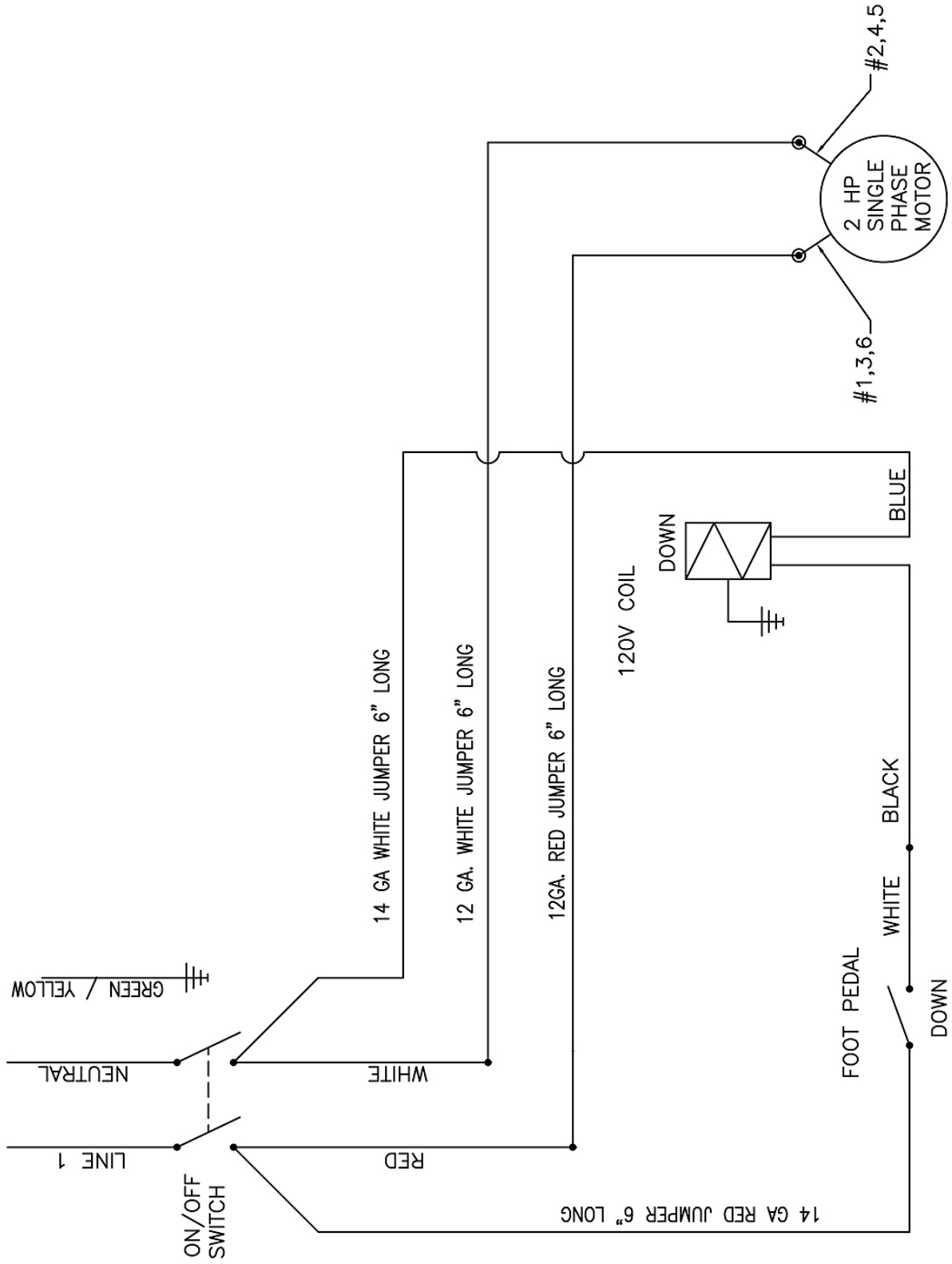
Tooling Block Parts Diagram



Tooling Block Parts List

Item	Part Number	Description	Qty.
1	PS16-6A010	Lower Tool Block	1
2	PS16-6A015	Upper Tool Block	1
3	PS16-6A011	Pivot Key	2
4	PS16-6A012	Capture Plate	2
5	PP-1177	Magnet	4
6	PP-1178	Polyurethane	2
7	STD.	1/4 X 3/8 Split Pin	4
8	STD.	.164-32 X 1/8 Set Screw	6
9	STD.	1/4 Ext. Tooth Washer	4
10	STD.	10-24 X 1/4 Cross Machine	4
11	STD.	1/8 X 5/16 Split Pin	2

ELECTRICAL SCHEMATIC



⚠WARNING

General Machinery Safety Instructions

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

1. **Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
2. **Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
3. **Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
4. **Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
5. **Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
6. **Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
7. **Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
8. **Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
9. **Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
10. **Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
11. **Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
12. **Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
13. **Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
14. **Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
15. **Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
16. **Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
17. **Do not overreach.** Keep proper footing and balance at all times.
18. **Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
19. **Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
20. **Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
21. **Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
22. **Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
23. **Lock mobile bases.** Make sure any mobile bases are locked before using machine.
24. **Allergic reactions.** Certain metal shavings and cutting fluids may cause an ellergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
25. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

⚠WARNING

Hydraulic/Pneumatic Shrinker Stretcher Safety Instructions

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

1. **Maintenance.** Make sure the Hydraulic/ Pneumatic Shrinker Stretcher is turned off and disconnect from the air before any inspection, adjustment or maintenance is carried out.
2. **Hydraulic/Pneumatic Shrinker Stretcher Condition.** Hydraulic/ Pneumatic Shrinker Stretcher must be maintained for a proper working condition. Never operate a Hydraulic/ Pneumatic Shrinker Stretcher that has low oil levels, damaged or worn parts. Scheduled routine maintenance should performed on a scheduled basis.
3. **Pump Direction.** Pump rotation must be in arrow direction otherwise the pump will be damaged.
4. **Leaving a Hydraulic/ Pneumatic Shrinker Stretcher Unattended.** Always turn the Hydraulic/ Pneumatic Shrinker Stretcher off and dissconect air before leaving the Hydraulic/ Pneumatic Shrinker Stretcher. Do not leave Hydraulic/ Pneumatic Shrinker Stretcher running unattended for any reason.
5. **Hand Hazard.** Keep hands and fingers clear from moving parts. Serious injury can occur if hand or finger tips get pinched between Dies and ram moving parts. Gloves must be worn at all times to avoid contact with sharp material.
6. **Gloves & Glasses.** Always wear leather gloves and approved safety glasses when using this machine.
7. **Avoiding Entanglement.** Tie up long hair and use the correct hair nets to avoid any entanglement with moving parts.
8. **Authorized and trained personnel.** The machine must be operated by authorized and trained personnel. The machine is designed to be operated by a single user. Using the machine with more than one operator is forbidden, except for certain maintenance situations.
9. **Power Outage.** In the event of a power failure during use of the machine, turn off all swtiches to avoid possible sudden start up once power is restored.
10. **Hydraulic/ Pneumatic Shrinker Stretcher kPa capacity.** Never use the Shrinker Stretcher over its rated PSI rating.
11. **Hydraulic Ram.** Do not over exceed the Shrinker Stretcher ram capacity. Keep body parts clear of moving parts and hydraulic downstroke.
12. **Warning Labels.** Take note of any warning labels on the machine and do not remove them.
13. **Material Hazard.** Do not Shrink or Stretch material or objects that could shatter or be ejected from the dies. Ensure correct type of material and thickness is used at all times. Serious injury can occur.
14. **Hearing protection and hazards.** Always wear hearing protection as noise generated from Shrinker Stretcher and workpiece can cause permanent hearing loss over time.
15. **Eye protection.** Always wear safety glasses when using and cleaning this machine.
16. **Emergency stop.** Use the emergency stop button in case of any emergency.
17. **Work area hazards.** Keep the area around the Hydraulic/ Pneumatic Shrinker Stretcher 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.
18. **Level machine.** Level the machine on a flat concrete surface by using a spirit level.
19. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Hydraulic Pneumatic - 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. Do not exceed maximum capacity. Wear safety boots. Never put any part of your body between Dies and material. Always support material properly on Shrinker Stretcher Do not exceed recommended maximum PSI rating. Check equipment for damage prior to use. Ensure Shrinker Stretcher is bolted down on level solid ground.
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Wear gloves to prevent cuts from sharp material. Shrinker Stretcher must be used with extreme precaution. Keep clear of moving parts
D	SHEARING	MEDIUM	Keep hands clear from moving parts and shrinker stretcher dies.
F	STRIKING	LOW	Shrinker Stretcher must be used with extreme precaution and in a controlled enviroment.
G	HIGH PRESSURE AIR	MEDIUM	Disconnect air supply to Shrinker Stretcher prior to checks or maintenance. Do not exceed recommended maximum PSI rating. (applies to Pheumatic model only)
O	OTHER HAZARDS, NOISE, DUST.	HIGH MEDIUM	Hearing protection must be worn at all times. Safety gloves, shoes, pants must be warn. Make sure work area is clear from objects to save tripping.
Plant Safety Program to be read in conjunction with manufactures instructions			

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

Revised Date: 4th March 2020