# OPERATOR'S MANUAL

Metal Working

CE


## POWER HAMMER

## MODEL: PH-28HD-VS (B9045)

www.machineryhouse.com.au

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## INTRODUCTION

*The quality and reliability of the components assembled on a Baileigh Industrial 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
- Set-up 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. Also contact your distributor and inform them of the unexpected occurrence. 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.

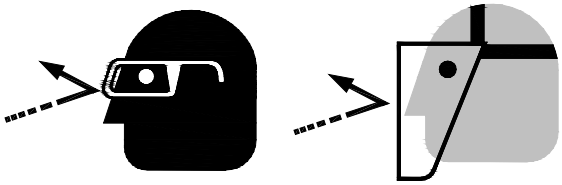
**CAUTION**: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**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.

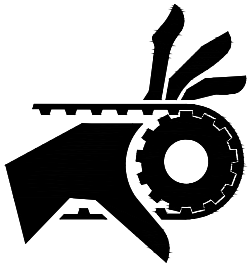


## PROTECT AGAINST NOISE

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

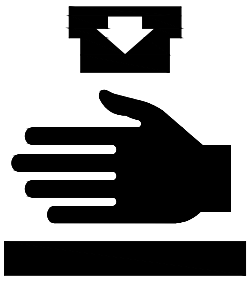
## BEWARE OF PINCH POINTS

Keep hands and fingers away from the servo motors drive belt and pulleys when performing maintenance. Keep motor guards in place at all times while the machine is running.

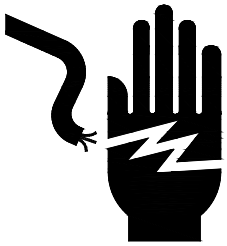


## BEWARE OF CRUSH HAZARD

**NEVER** place your hands, fingers, or any part of your body in the die area of this machine.



## HIGH VOLTAGE



**USE CAUTION IN HIGH VOLTAGE AREAS. DO NOT** assume the power to be off.
**FOLLOW PROPER LOCKOUT PROCEDURES.**

## 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 machine's 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 appropriately. 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. **Turn off** power before checking, cleaning, or replacing any parts.
20. Be sure **all** equipment is properly installed and grounded according to national, state, and local codes.

21. Keep **all** cords dry, free from grease and oil, and protected from sparks and hot metal.
22. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill! DO NOT** touch live electrical components or parts.
23. Keep visitors a safe distance from the work area.

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Mild Steel Capacity | 16ga. (1.519mm) |
| Aluminum Capacity | 12ga. (2mm) |
| Speed | 0 - 1000 beats / min (Variable) |
| Throat Depth | 28" (711mm) |
| Working Height | 52" (1321mm) |
| Length of Stroke Adjustment | Variable from 1/4" – 3/4" (6.35 – 19mm) |
| Power | 240V, 1 Phase, 50Hz |
| Motor | 3hp, (2.25kw) |
| Shipping Dimensions | 48" x 48" x 96" (1220 x 1220 x 2439mm) |
| Shipping Weight | 2,000lbs. (907kgs) |
| Based on a material tensile strength of *60000 PSI – mild steel | |

***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.**

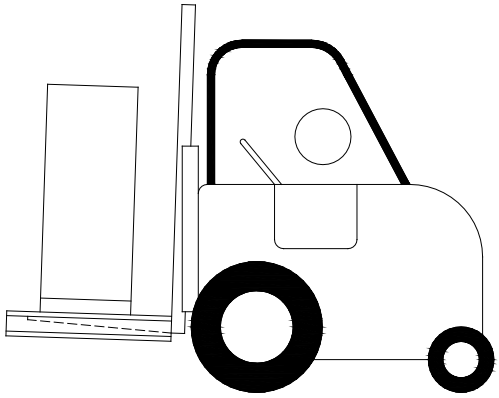
Your machine may be shipped with a rustproof waxy coating and/or grease on the exposed unpainted metal surfaces. Fully and completely remove this protective coating using a degreaser or solvent cleaner. Moving items will need to be moved along their travel path to allow for cleaning the entire surface. 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.

**Follow these guidelines when lifting crane or hoist:**

- Always lift and carry the machine with the lifting holes provided at the top of the machine.
- Use lift equipment such as straps, chains, capable of lifting 1.5 to 2 times the weight of the machine.
- Take proper precautions for handling and lifting.
- Check if the load is properly balanced by lifting it an inch or two.
- Lift the machine, avoiding sudden accelerations or quick changes of direction.
- Locate the machine where it is to be installed, then lower slowly until it touches the floor.

# 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.

### Levelling Feet

1. Remove the machine from the pallet and install the leveling feet.
2. Once the machine is moved to its location, level the machine keeping firm even contact on all four feet.

## ELECTRICAL

**ATTENTION: HAVE ELECTRICAL UTILITIES CONNECTED TO MACHINE BY A CERTIFIED ELECTRICIAN!**

**Your Baileigh Machine is CE**

**Check if the available power supply is the same as required by the machine (consult nameplate on machine)**

**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 tool is wired for 240 volts, 50Hz alternating current. Before connecting the tool to the power source, make sure the machine is cut off from power source. 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 a amperage rating slightly higher than the full load current of machine.
- A separate electrical circuit should be used for your tools. 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 tool.
- 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 tool 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 tool 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:**

3. Turn the main disconnect switch on the control panel to the OFF position.
4. 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 is a way that does NOT create a trip hazard.
5. Connect the power cord to the power supply and check that the power cord has not been damaged during installation.
6. When the hammer and dies area is clear of any obstruction. The main disconnect may be turn ON to test the operation. Turn the main disconnect to OFF when the machine is not in operation.

## OPERATION

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

**⚠ WARNING: HEARING PROTECTION MUST BE WORN ALWAYS WHEN OPERATING THIS MACHINE.**

The PH-28HD Power Hammer is a multi-stroke reciprocating machine.
The upper slide ram (hammer) is connected to the crank toggle mechanism via a multi stack leaf spring. As the crank turns, speed and momentum load the spring which in turn "throws" the upper slide ram 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 foot control and a limiting potentiometer on the upper control box.
The foot control fully depressed will max out at whatever the limiting potentiometer is set to.
Using a power hammer is a highly artistic operation. It requires time and experience to become proficient at creating the desired results. The best recommendation is to practice, take notes, experiment, and seek out advice through technical colleges, individual mentoring with an experienced operator, and through online forums and trade magazines. Practice!

### Setup and Adjustments

1. Turn the main disconnect "off".
2. Rotate the stroke handwheel to raise the upper slide ram (hammer) to the high point of the stroke.

3. Pull outward and down on the release lever to raise the hammer to allow additional clearance for tool changes. Verify that the lever is locked into the lower position (Up position shown).
4. Install the desired tooling (sold separately) into the lower and upper rams and lock in position using the retaining pins.
5. Pull outward and up on the release lever to lower the hammer to the operating position. Verify that the lever is locked into the upper position (Shown).

***IMPORTANT:*** *The tool change release lever MUST be locked in the UP position before and during operation. Operating the power hammer with the release lever in the lower position will damage the machines operating linkage.*

6. Adjust the anvil height by loosening the two guide screws just enough to allow the anvil to move up or down.
7. Turn the handwheel on the right side of the frame so that the hammer tool is at the lowest (closest) point of its travel.
8. Turn the adjustment collar to raise or lower the anvil post. The initial setting for the gap between the lower and upper tool should be the same as the material thickness.

***Note****: Shown with no tool installed. Normal adjustment would have a tool set installed.*

9. Next, adjust the stroke as needed to provide the amount of force desired to produce the results desired. The longer the stroke, the greater the force generated. When starting for the first time, use the factory setting (typically the mid-point) until some practice has occurred to become familiar with the machines operation.

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

## Operation


1. Set the control switch to the “ON Foot Control” position.
2. Set the limiting potentiometer to 100%, about 1000 BPM (Beats Per Minute), slowly press the foot control, the machine should begin to “hammer”, hitting harder the faster you go.
3. Turn the main disconnect to ON.
4. Shrinking as well as most of the shaping functions will take time to learn and control. To practice shrinking, use 3003-H14 .059 wall aluminum. This is a good material to learn on because it shapes easily and is more forgiving. To shrink start feeding the metal in slowly controlling the shrink by your foot control; slowing as you pull out not to flatten the edge too much.
5. The hammer mode is also used for planishing. Install the flat top die and the 6000R x 1000F lower hammer die. This die has a contact patch of 1” diameter. Install the tools following the same steps as before. Adjusting the stroke will give different results. Shortening the stroke will allow different speed settings, faster speeds can be achieved by finding the “sweet spot”, just before the spring begins to float. The combinations of stroke / speed / down feed are almost endless.
6. These dies can be used for planishing as well as stretching. The flat top die is used for most of the stretching applications except for aggressive doming. The rubber die can be installed on either the top or bottom depending on your application.

## 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.

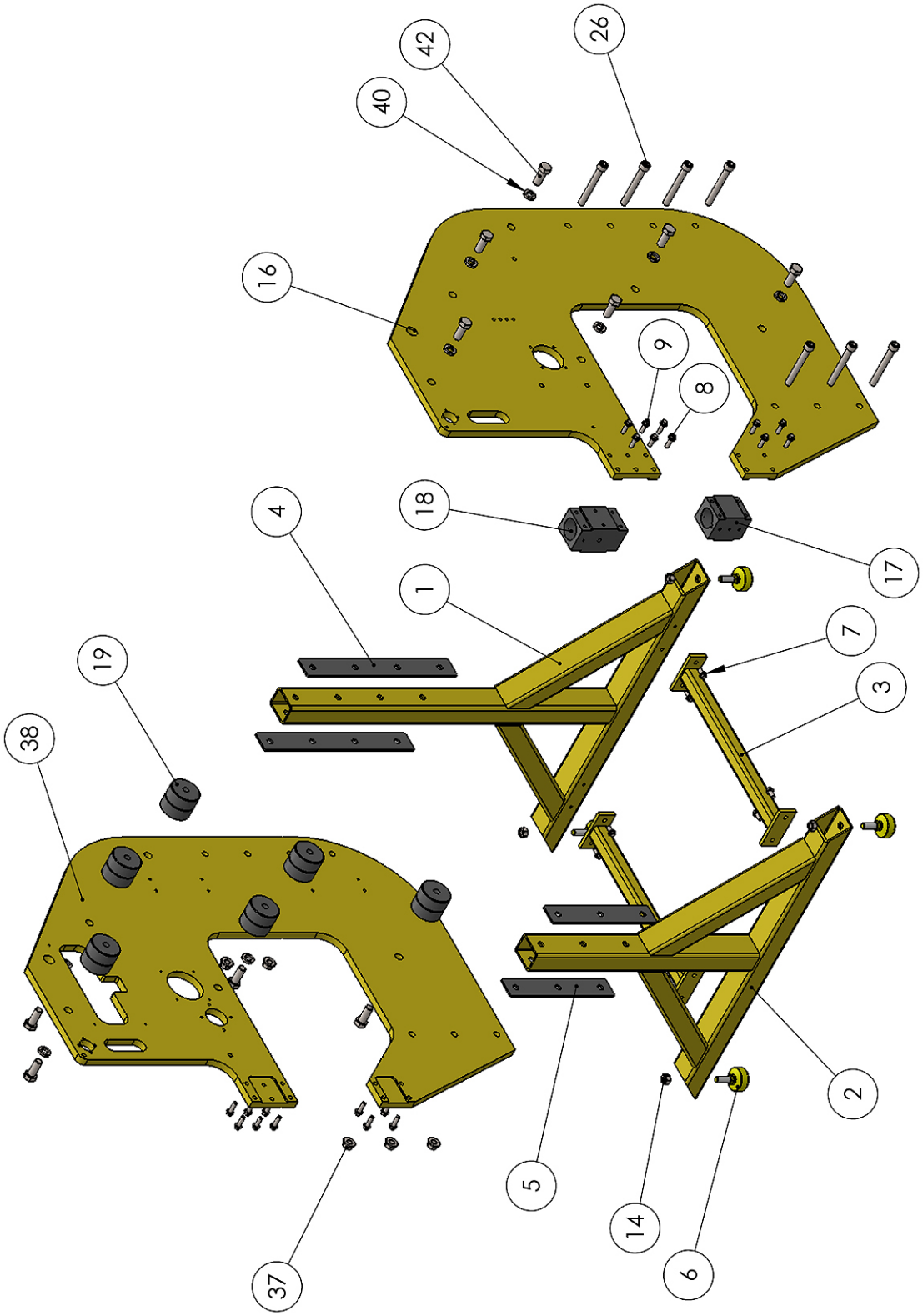
## LUBRICATION AND MAINTENANCE

**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.**

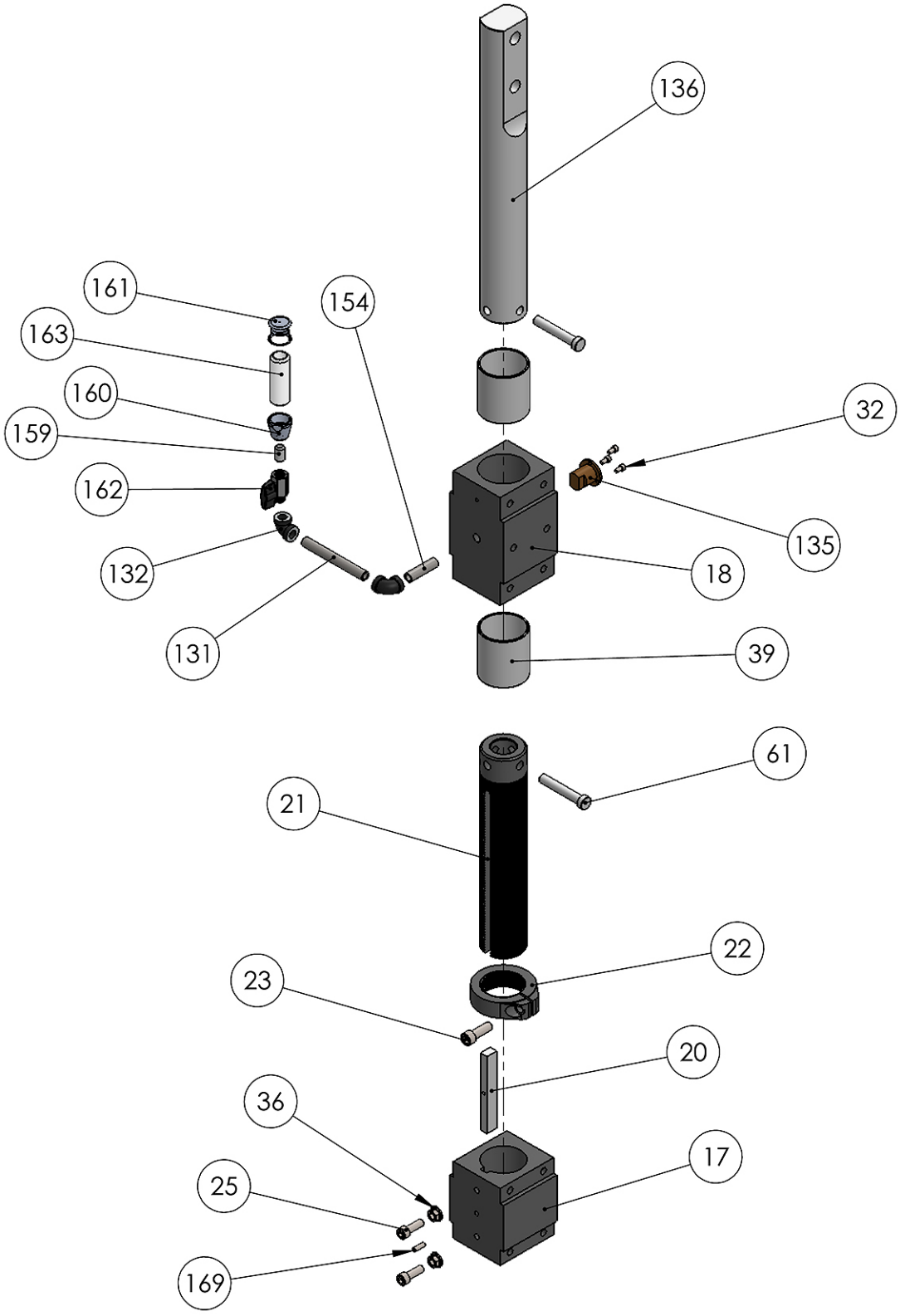
- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.
- Grease the fittings every month with two pumps from a standard grease gun.
- Check for any worn or damaged parts and replace immediately.
- Check and fill oil cup as needed. Use AW-46 hydraulic oil.

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

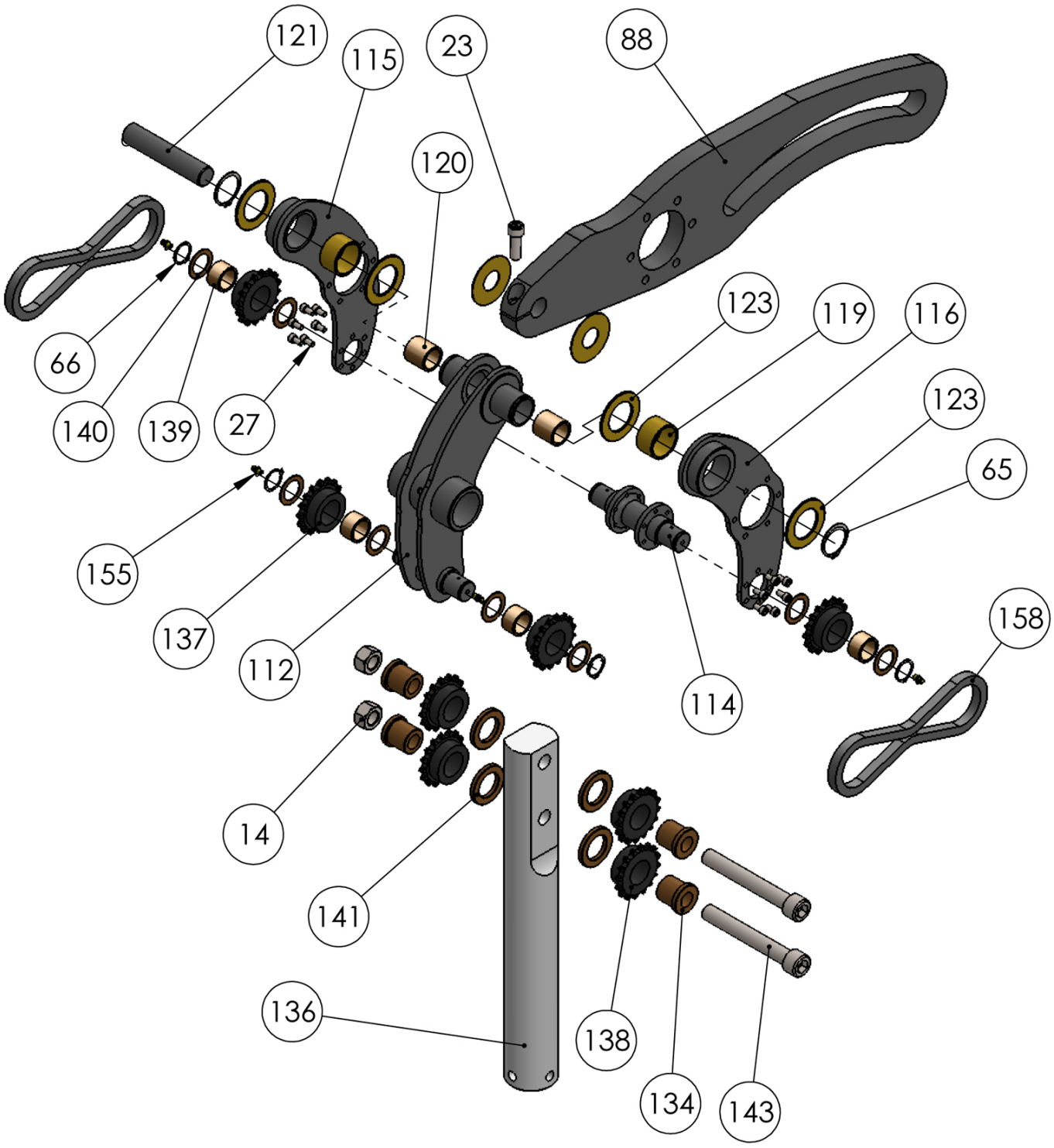
## PLATE ASSEMBLY



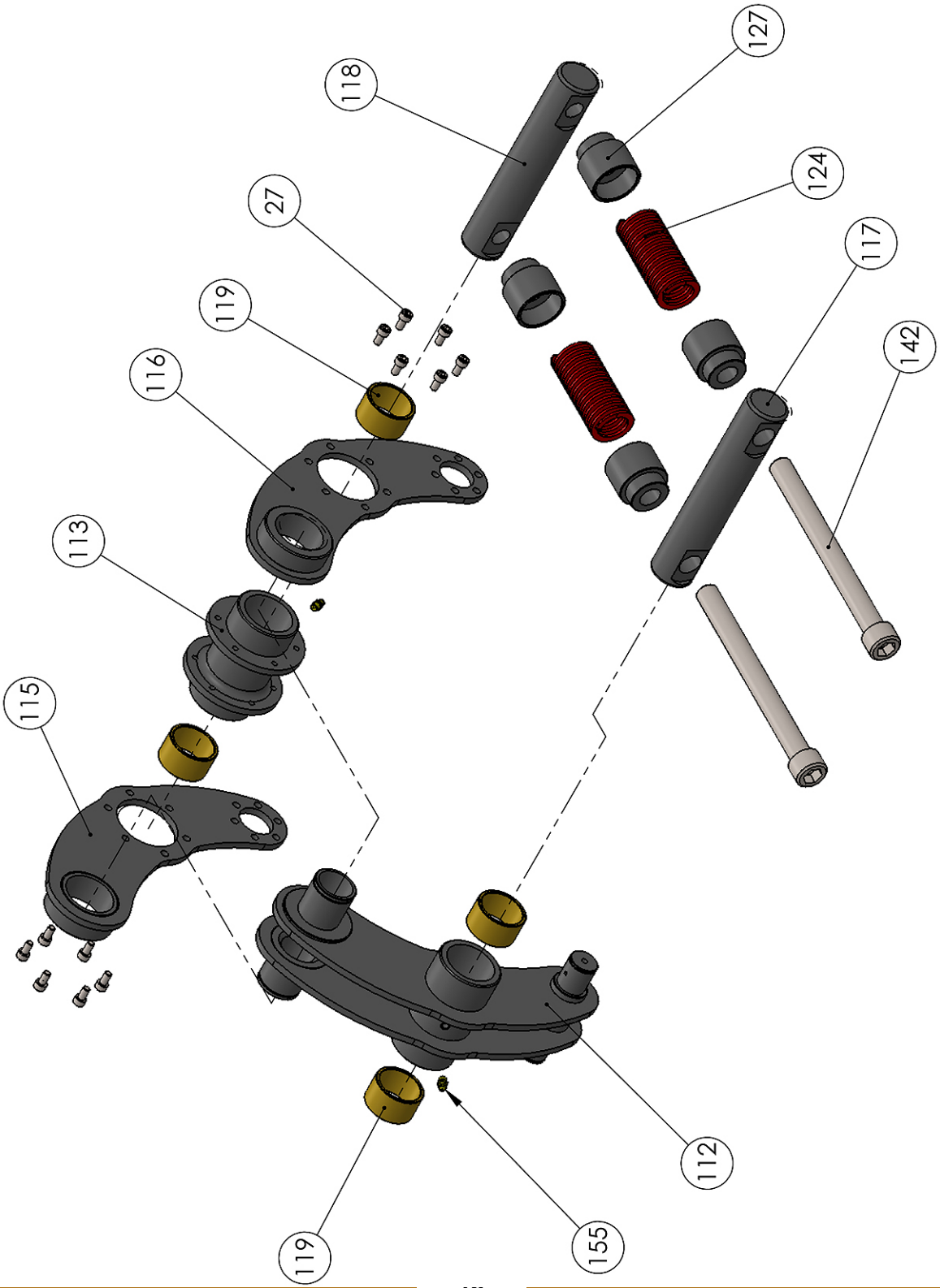
## UPPER / LOWER RAM ASSEMBLY



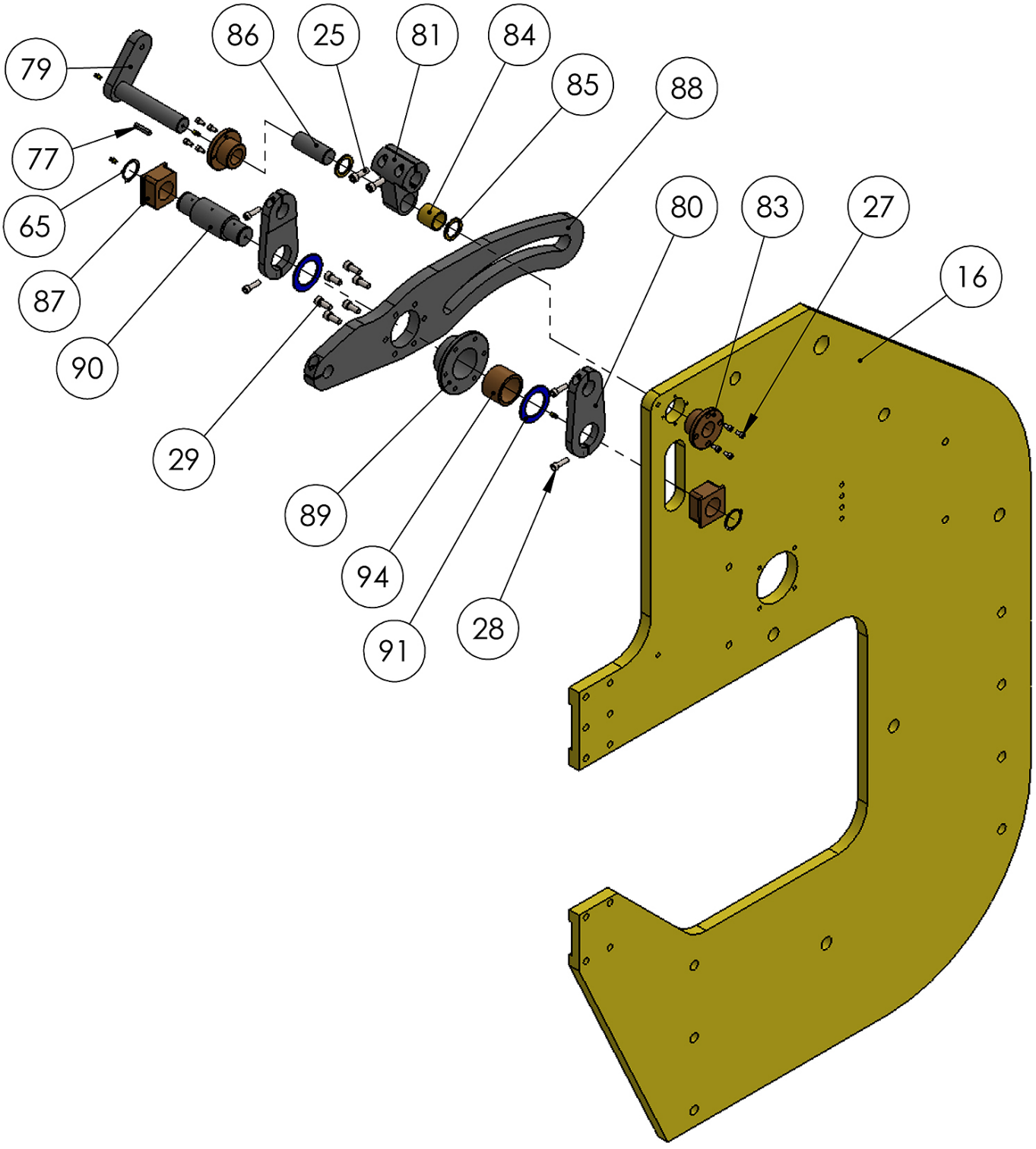
## SPROCKET ASSEMBLY



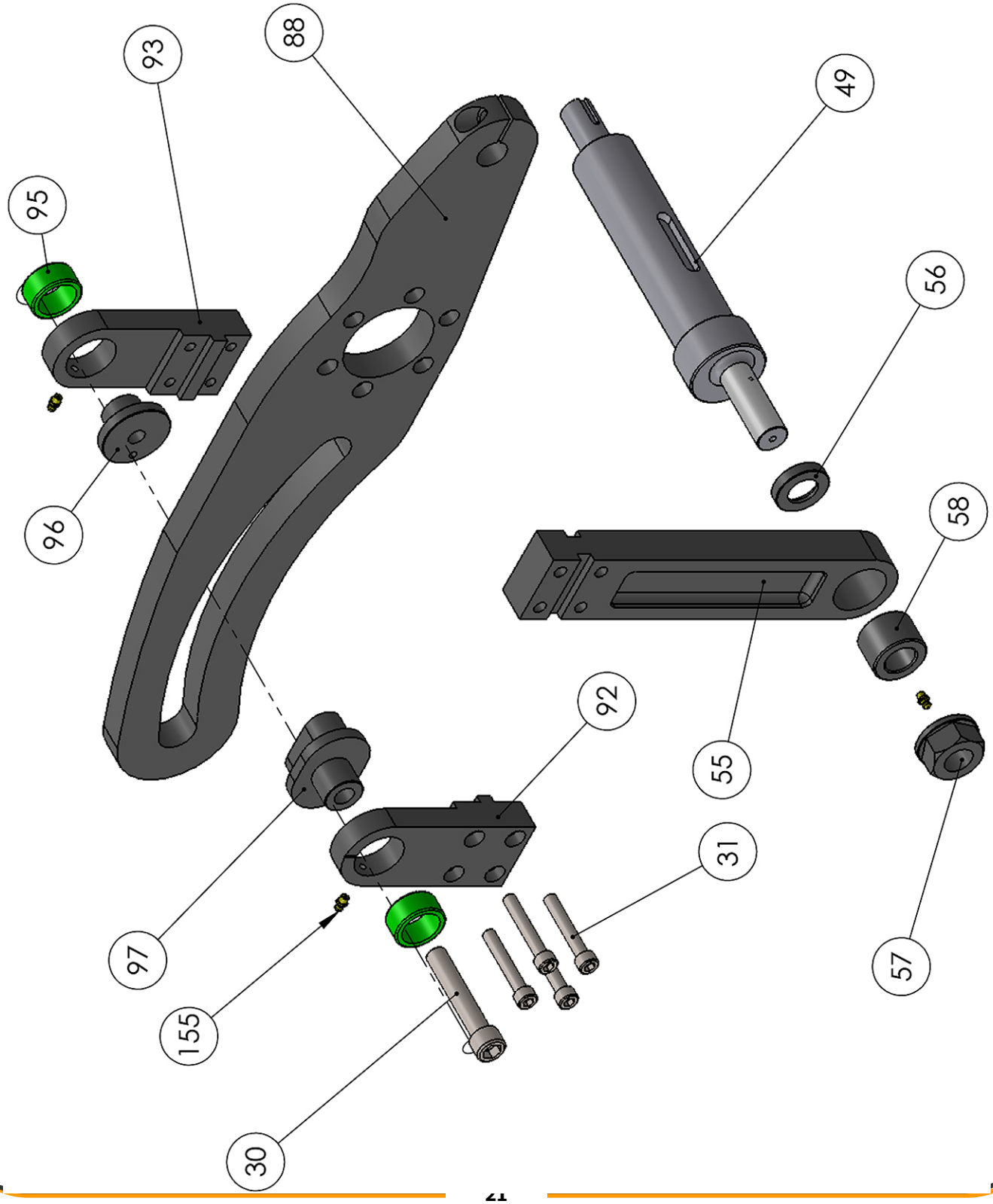
## SPRING ASSEMBLY



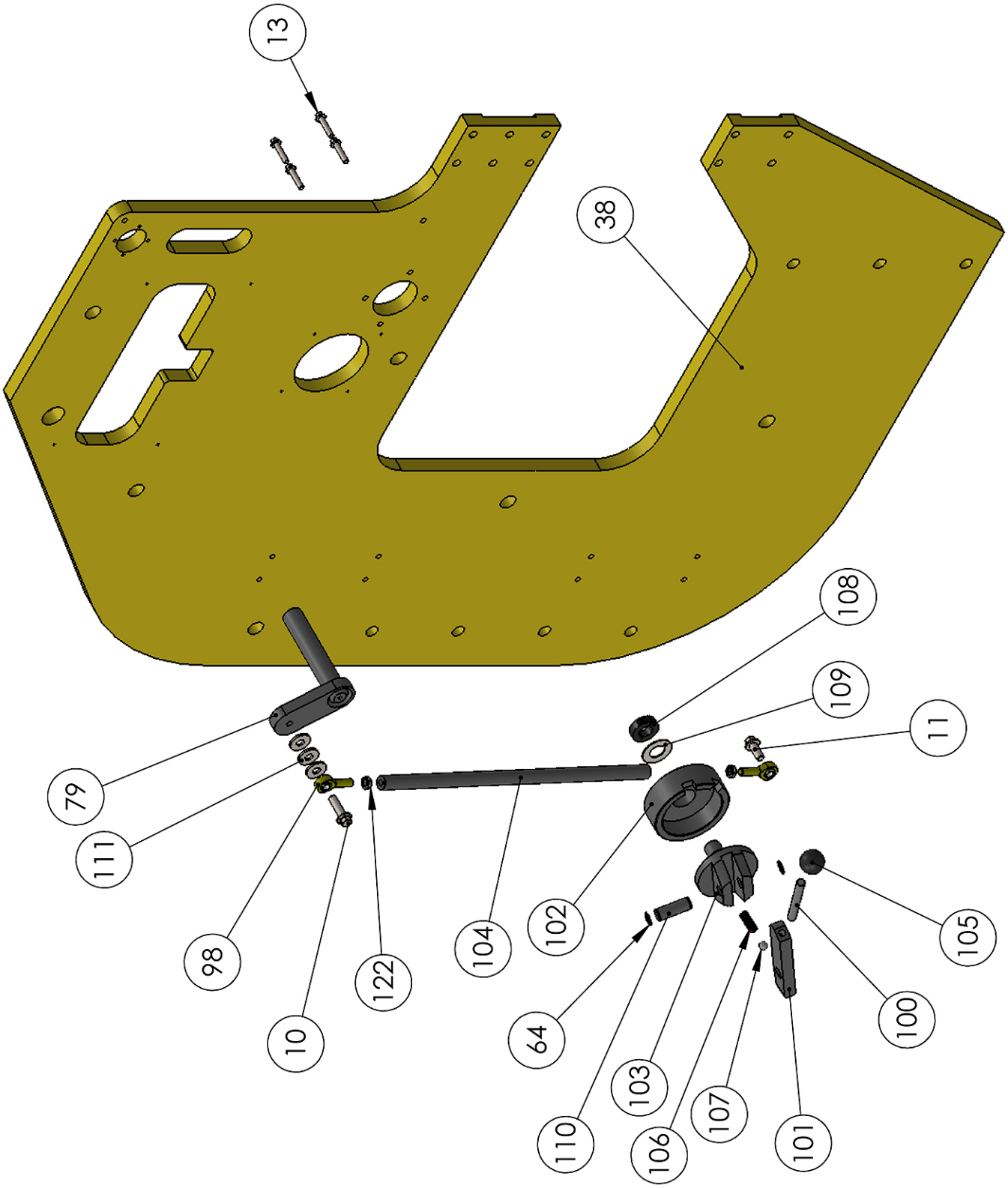
## LEVER ASSEMBLY



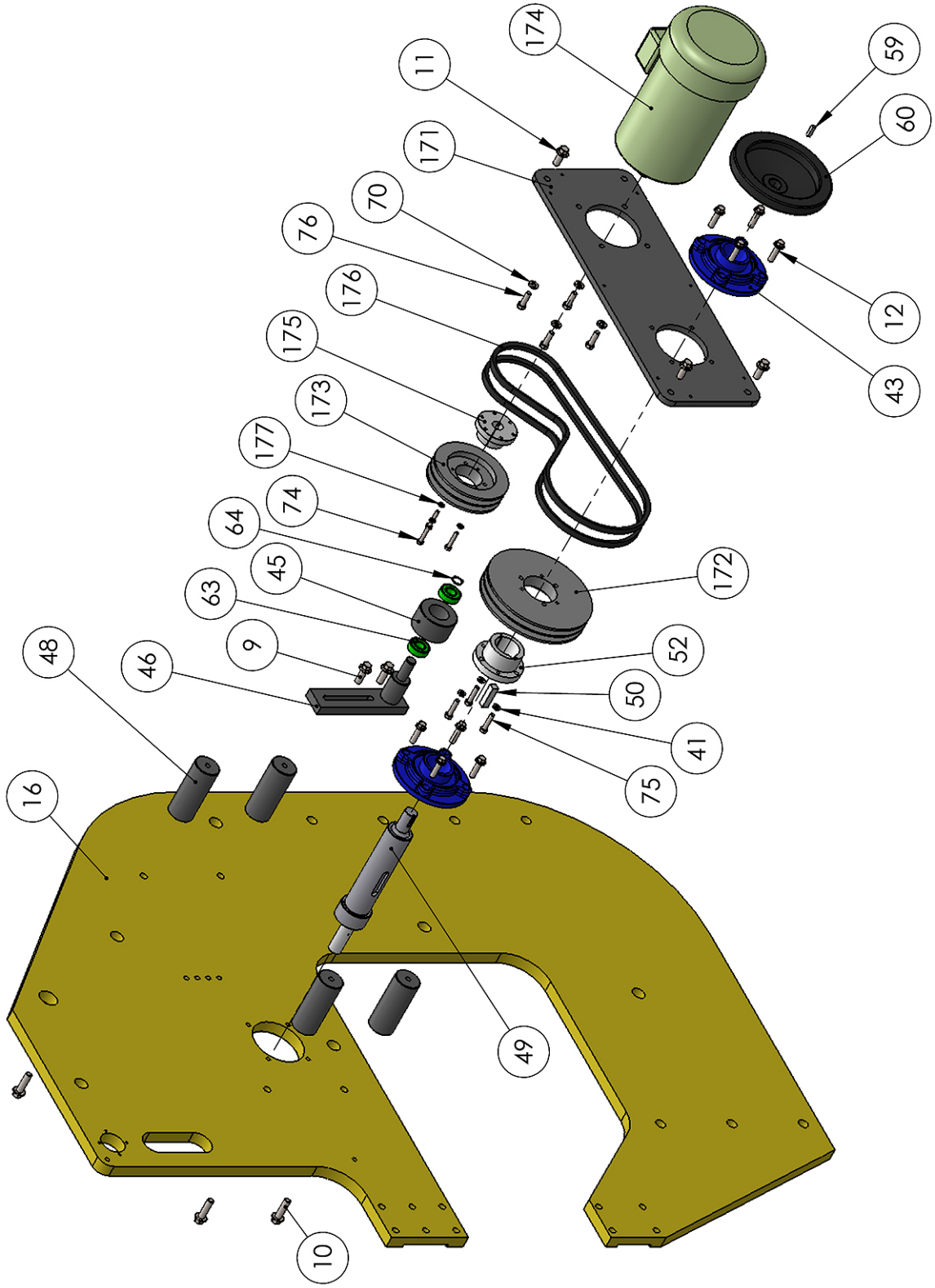
## SLIDE STROKE ASSEMBLY



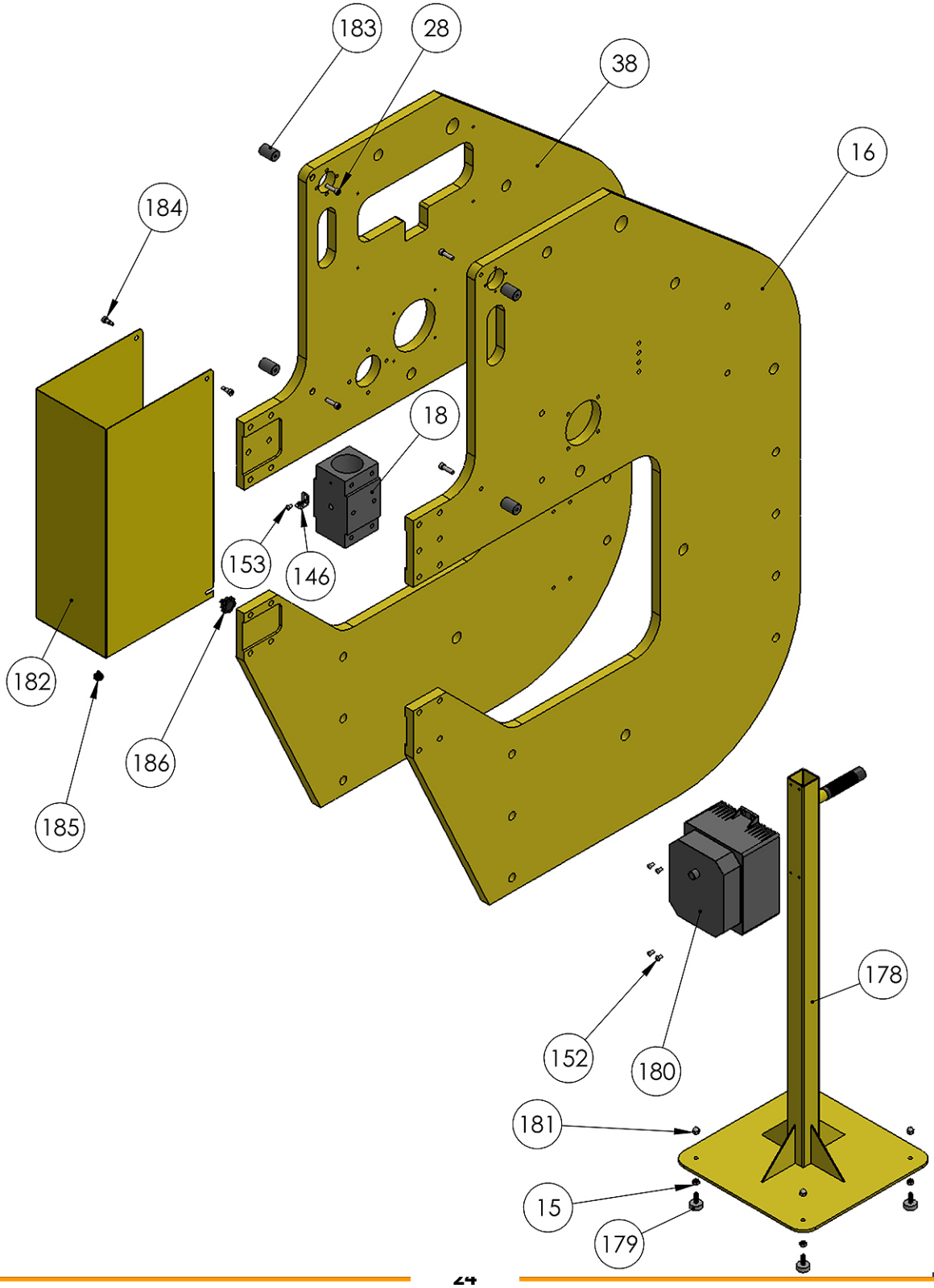
## QUICK RELEASE ASSEMBLY



## V-BELT ASSEMBLY POST



## GUARD AND CONTROL BOX ASSEMBLY



## Parts List

| Item | Part Number | Description | Qty. |
|---|---|---|---|
| 1 | PH24-5A005 | Rear Leg Weldment | 1 |
| 2 | PH24-5A006 | Front Leg Weldment | 1 |
| 3 | PH24-5A007 | Cross Tube Weldment | 2 |
| 4 | PH24-6A036 | Spacer Plate | 2 |
| 5 | PH24-6A037 | Spacer Plate | 2 |
| 6 | PP-0919 | Leveling Pad | 4 |
| 7 | M12 X 1.75 X 25 | Hex Flange | 8 |
| 8 | M12 X 1.75 X 40 | Hex Flange | 16 |
| 9 | M12 X 1.75 X 35 | Hex Flange | 6 |
| 10 | M12 X 1.75 X 45 | Hex Flange | 5 |
| 11 | M12 X 1.75 X 30 | Hex Flange | 5 |
| 12 | M10 X 1.5 X 40 | Hex Flange | 8 |
| 13 | M8 X 1.25 X 40 | Hex Flange | 4 |
| 14 | 3/4-10 HEX NUT | STD. | 6 |
| 15 | 5/16-18 HEX NUT | STD. | 4 |
| 16 | PH24-6A001 | Side Frame | 1 |
| 17 | PH24-6A022 | Lower Tool Block | 1 |
| 18 | PH24-6A031 | Top Slide Block | 1 |
| 19 | PH24-7A028 | Frame Spacer | 6 |
| 20 | PH24-6A044 | Lower Tool Shaft Key | 1 |
| 21 | PH24-7A007 | Lower Ram | 1 |
| 22 | PH24-7A036 | Ram Locknut | 1 |
| 23 | M12 X 1.75 X 35 | SHCS | 2 |
| 25 | M10 X 1.5 X 30 | SHCS | 3 |
| 26 | M20 X 2.5 X 160 SHCS | STD. | 7 |
| 27 | M6 X 1.0 X 12 | SHCS | 32 |
| 28 | M8 X 1.25 X 30 | SHCS | 8 |
| 29 | M10 X 1.5 X 25 | SHCS | 6 |
| 30 | M16 X 2.0 X 90 | SHCS | 1 |
| 31 | M10 X 1.5 X 65 | SHCS | 4 |
| 32 | M5 X 0.8 X 10 | SHCS | 3 |
| 33 | SHCS | M6 X 1.0 X 10 | 4 |

| Item | Part Number | Description | Qty. |
|---|---|---|---|
| 34 | M6 X 1.0 X 50 | SHCS | 6 |
| 35 | M5 X 0.8 X 16 | SHCS | 2 |
| 36 | M10 X 1.5 | Flange Nut | 2 |
| 37 | M20 X 2.5 FLANGE NUT | STD. | 7 |
| 38 | PH24-6A002 | Left Side Frame | 1 |
| 39 | PP-0825 | Slide Block Bushing | 2 |
| 40 | M24 LOCK WASHER | STD. | 12 |
| 41 | 5/16 LOCK WASHER | STD. | 3 |
| 42 | M24 X 3.0 X 60 | HHCS | 12 |
| 43 | PP-1454 | 2" Bore Cartridge Bearing | 2 |
| 44 | PP-1081 | 3hp 3phase Motor | 1 |
| 45 | MH36-7A041 | Idler Pulley | 1 |
| 46 | PH24-5A004 | Idler Bracket | 1 |
| 47 | PH24-6A023-V2 | Motor MTG Plate | 1 |
| 48 | PH24-7A033 | Plate Spacer | 4 |
| 49 | MH19-7A005-V2 | Crank Shaft (.25 Offset) | 1 |
| 50 | MH19-6A071 | Crankshaft Key | 1 |
| 51 | PP-1778 | 56T Timing Pulley | 1 |
| 52 | PP-0828 | Tapered Lock Bushing | 2 |
| 53 | PP-1692 | Rubber Standoff | 4 |
| 54 | PP-1782 | 80T Timing Pulley | 1 |
| 55 | PH24-6A053 | Drive Lever V3 | 1 |
| 56 | MH19-7A036 | Bearing Spacer | 1 |
| 57 | MH19-7A057 | Crank Nut | 1 |
| 58 | PP-0921 | Needle Bearing | 1 |
| 59 | STD. | .25 X .25 X 1.0 Key | 1 |
| 60 | PP-1034 | 8" Solid Handwheel | 1 |
| 61 | PP-1492 | Tooling Pin | 2 |
| 62 | PP-1779 | 1.125 OD Bushing | 1 |
| 63 | PP-1470 | 0.75 Ball Bearing | 2 |
| 64 | 3/4" EXT. RETAINING RING | STD. | 3 |
| 65 | 1.50 EXT. RETAINING RING | STD. | 4 |
| 66 | STD | 1" Ext. Retaining Ring | 4 |
| 67 | 1/2 LOCK WASHER | STD. | 4 |
| 68 | 5/16 LOCK WASHER | STD. | 3 |

| Item | Part Number | Description | Qty. |
|---|---|---|---|
| 69 | 1/4 LOCK WASHER | STD. | 3 |
| 70 | 3/8 LOCK WASHER | STD. | 4 |
| 71 | 1/2-13 X 1.25 | HHCS | 4 |
| 72 | 5/16-18 X 1.875 | HHCS | 3 |
| 73 | 1/4-20 X 1.25 | HHCS | 3 |
| 74 | 1/4-20 X 1.50 | HHCS | 3 |
| 75 | 5/16-18 X 1.50 | HHCS | 3 |
| 76 | 3/8-16 X 1.25 | HHCS | 4 |
| 77 | STD. | .25 X .25 X 1.50 Key | 2 |
| 78 | PP-0826 | Timing Belt | 1 |
| 79 | PH24-5A003 | Release Lever | 1 |
| 80 | PH24-6A027 | Toggle Plate | 1 |
| 81 | PH24-6A032 | Toggle Block | 1 |
| 82 | PH24-6A034 | Toggle Plate LH | 1 |
| 83 | PH24-7A025 | Bearing Hub | 2 |
| 84 | PP-0837 | 1.25 ID. X 1.50 OD. X 1.50 Long | 1 |
| 85 | PP-1004 | 1.25 ID X 1.75 OD X .125 Thrust Washer | 2 |
| 86 | PH24-7A039 | Toggle Block Shaft | 1 |
| 87 | PH24-6A028 | Slide Block | 2 |
| 88 | PH24-6A050 | Main Lever-V2 | 1 |
| 89 | PH24-7A014 | Main Pivot Hub | 1 |
| 90 | PH24-7A015 | Main Pivot Pin | 1 |
| 91 | PH24-7A040 | Toggle Link Washer | 2 |
| 92 | PH24-6A054 | LH Slide Cap | 1 |
| 93 | PH24-6A055 | RH Slide Cap | 1 |
| 94 | PP-1808 | 2.0ID X 2.5OD X 1.75 Bushing | 1 |
| 95 | PP-1806 | 32ID X 42OD X 20 Needle Bearing | 2 |
| 96 | PH24-7A037-V2 | Slide Stroke Washer | 1 |
| 97 | PH24-7A038-V3 | Slide Stroke Clamp | 1 |
| 98 | PP-1781 (RH) PP-1780 (LH) | 12mm Male Rod End | 2 |
| 99 | STD. | 10mm Rod End Ball | 2 |
| 100 | M150-7A013 | Quick Release Shaft | 1 |
| 101 | PH24-6A030 | Release Block | 1 |
| 102 | PH24-7A017 | Latch Disc | 1 |
| 103 | PH24-7A018 | Release Hub | 1 |

| Item | Part Number | Description | Qty. |
|---|---|---|---|
| 104 | PH24-7A020 | Drive Rod | 1 |
| 105 | PP-0133 | Black Ball Knob | 1 |
| 106 | PP-1186 | .5 X 1.5 Spring | 1 |
| 107 | PP-1192 | 1/2" Steel Ball | 1 |
| 108 | PP-0388 | 1"-14 UNF Clamp Collar | 1 |
| 109 | PP-0483 | Spring Washer | 1 |
| 110 | M350-7A062 | Pivot Pin | 1 |
| 111 | M12 FLATWASHER | Std. | 3 |
| 112 | PH24-5A001-V2 | Front Spring Lever Assembly | 1 |
| 113 | PH24-7A030 | Bolted Spindle | 1 |
| 114 | PH24-7A023 | Sprocket Shaft | 1 |
| 115 | PH24-5A008 | LH Toggle Arm Weldment | 1 |
| 116 | PH24-5A009 | RH Toggle Arm Weldment | 1 |
| 117 | PH24-7A010 | Spring Shaft | 1 |
| 118 | PH24-7A011 | Threaded Spring Shaft | 1 |
| 119 | PP-0835 | 1.50ID X 1.75OD X 1.0 Bushing | 6 |
| 120 | PP-0143 | 1.25OD X 1.0ID X 1.25LG | 2 |
| 121 | PH24-7A029 | Rocker Pin | 1 |
| 122 | M12 X 1.75 | Jam Nut | 2 |
| 123 | PH24-7A041 | 1.50 Bronze Washer (0.115 THK) | 4 |
| 124 | PP-1300 | Spring | 2 |
| 125 | PP-1402 | Black Switch | 1 |
| 126 | PP-1310 | Electrical Box | 1 |
| 127 | MH36-7A009-1.0 | Spring Cup 1.0 | 4 |
| 128 | PP-0023 | Cord Grip | 1 |
| 129 | PP-0044 | Potentiometer | 1 |
| 130 | PP-0304 | On/Off 2 Pole Switch | 1 |
| 131 | PP-0588 | 1/4" X 4 1/2" Pipe | 1 |
| 132 | PP-0589 | 1/4" Elbow | 2 |
| 133 | PP-0831 | Switch Box | 1 |
| 134 | PH24-7A022 | Sprocket Bushing | 4 |
| 135 | PH24-7A021-v2 | Guide Sleeve | 1 |
| 136 | PH24-7A005 | Main Ram | 1 |
| 137 | PH24-7A032 | 16T Sprocket | 4 |
| 138 | PH24-7A042 | 16T Sprocket (Ram) | 4 |

| Item | Part Number | Description | Qty. |
|---|---|---|---|
| 139 | PP-1191 | 1.25OD X 1.0ID X .75LG | 4 |
| 140 | MH19-7A059 | Thrust Washer | 8 |
| 141 | PH24-7A043 | Sprocket Bushing Washer | 4 |
| 142 | 3/4-10 X 8.0 | SHCS | 2 |
| 143 | 3/4-10 X 5.50 | SHCS | 2 |
| 144 | MH19-6A034 | Angle Bracket | 1 |
| 145 | MH19-6A058 | Crank Guard | 1 |
| 146 | MH19-5A005 | Guard Tab | 9 |
| 147 | PH24-6A047 | Lower Pulley Guard | 1 |
| 148 | PH24-6A048 | Upper Pulley Guard | 1 |
| 149 | PH24-6A049 | Spring Guard | 1 |
| 150 | PH24-7A035 | Spring Guard Spacer | 6 |
| 151 | M8 X 1.25 X 10 | Button Head | 4 |
| 152 | M6 X 1.0 X 12 | Button Head | 7 |
| 153 | M6 X 1.0 X 10 | Button Head | 18 |
| 154 | PP-0587 | 1/4" X 2" Pipe | 1 |
| 155 | STD. | Straight Grease Zerk | 13 |
| 156 | PH24-6A056 | Slide Stroke Guard | 1 |
| 157 | M5 X 0.8 X 10 | PPMS | 4 |
| 158 | STD. | #40 Chain | 2 |
| 159 | PP-1698 | 1/4 NPT Adaptor | 1 |
| 160 | MH19-7A062 | Filler Adapter | 1 |
| 161 | MH19-7A063 | Breather Cap | 1 |
| 162 | PP-1673 | Ball Valve | 1 |
| 163 | PP-1672 | Sight Tube | 1 |
| 164 | PH24-6A057 | Hinge Bracket | 1 |
| 165 | PH24-6A058 | 15.0 Piano Hinge | 1 |
| 166 | PP-0487 | M800 Guard Rivets | 8 |
| 167 | STD. | M5 Star Washer | 2 |
| 168 | PP-1812 | M5 Knob | 2 |
| 169 | M6 X 1.0 X 20 | Set Screw | 1 |
| 170 | PH24-7A046 | 1.00 Bronze Washer (0.050 THK) | 2 |
| 171 | PH24-6A023-V3 | Motor MTG Plate | 1 |
| 172 | PH24-7A047 | 8.5 Diameter Vee Pulley | 1 |
| 173 | PH24-7A048 | 6.0 Diameter Vee Pulley | 1 |

| Item | Part Number | Description | Qty. |
|---|---|---|---|
| 174 | PP-1075 | 2 Hp Yen Motor | 1 |
| 175 | PP-1848 | .875 OD Bushing | 1 |
| 176 | PP-1847 | 49" Perimiter V Belt | 2 |
| 177 | STD | .25 Lock Washer | 3 |
| 178 | PH24-5A010 | Controller Stand | 1 |
| 179 | PP-1846 | Leveling Foot | 4 |
| 180 | PP-1831 | Control Box | 1 |
| 181 | 5/16-18 | Acorn Nut | 4 |
| 182 | PH24-6A049-V2 | Spring Guard Version 2 | 1 |
| 183 | PH24-7A050 | Spring Guard Spacer V2 | 4 |
| 184 | M8 X 1.25 X 9 X 9 | Shoulder Bolt | 2 |
| 185 | PP-1881 | .25-20 X .375 Knob | 1 |
| 186 | PP-1882 | M8 X 16 Knob | 2 |

## NOTES

## NOTES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# ⚠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

# 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 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 you 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 (Recommended for Purchase / Buyer / User) |
|---|---|---|---|
| B | CRUSHING | HIGH | Ensure machine is bolted down.<br>Secure & support work material.<br>Wear safety boots.<br>Ensure correct tooling clearance is set for each material used.<br>Ensure hand & fingers are clear from moving parts "Tooling Dies" |
| C | CUTTING, STABBING, PUNCTURING | MEDIUM | 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 enviroment. |
| O | OTHER HAZARDS, NOISE, DUST. | HIGH<br>MEDIUM | Hearing protection must be worn at all times.<br>Safety gloves, shoes, pants must be worn.<br>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: 25th February 2019