



OPERATOR'S MANUAL



POWER HAMMER MODEL: MH-19 (B8935)

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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 unauthorized modifications.



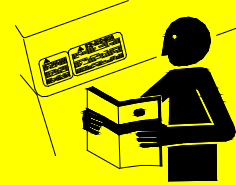
Note: This symbol refers to useful information throughout the manual.



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. **DANGER** identifies a hazard or unsafe practice that will result in severe **Injury or Death**.

Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.

General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual.



DANGER



WARNING

CAUTION

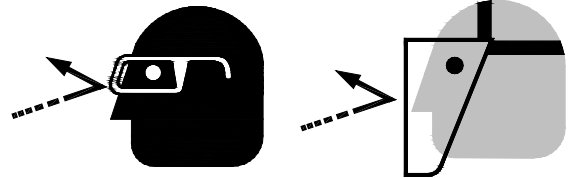


SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.



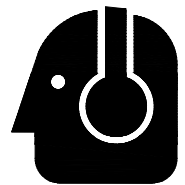
PROTECT EYES

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



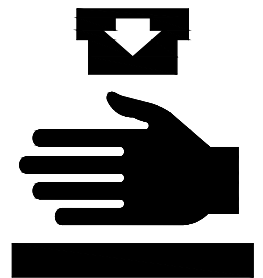
PROTECT AGAINST NOISE

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 AND CRUSH HAZARD

NEVER place your hands, fingers, or any part of your body in the die area of 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 won't 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

1. **Only trained and qualified personnel can operate this machine.**
2. **Make sure guards are in place and in proper working order before operating machinery.**
3. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
4. **Keep work area clean.** Cluttered areas invite injuries.
5. **Overloading machine.** By overloading the machine you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
6. **Dressing material edges.** Always chamfer and deburr all sharp edges.
7. **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.
8. **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.
9. **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.
10. **Use eye and ear protection.** Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.



11. **Do not overreach.** Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
12. **Stay alert.** Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
13. **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.
14. **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.
15. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
16. **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.
17. **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.
18. **DO NOT** touch live electrical components or parts.
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. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!**
22. **DO NOT** bypass or defeat any safety interlock systems.
23. Keep visitors a safe distance from the work area.



TECHNICAL SPECIFICATIONS

Mild Steel Capacity	16ga. (1.52mm)
Aluminum Capacity	12ga. (2mm)
Tooling Height Adjustment	2" (50.8mm)
Throat Depth	19" (483mm")
Length of Stroke Adjustment	.177" - .550" (4.5 – 14mm)
Speed	0~1500 bpm (beats/minute)
Power	240V, 1ph, 50hz, 10A
Motor	240V, 2Hp (1.5kw)
Shipping Weight	1600lbs (726kgs)
Shipping Dimensions	60" x 60" x 84" (1524 x 1524 x 2134mm)



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 in one crate. 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 plug in the power cable, or turn the power switch on until the missing parts are obtained and installed correctly.

Cleaning

Your machine may be shipped with a rustproof waxy oil coating and grease on the exposed unpainted metal surfaces. To remove this protective coating, use a degreaser or solvent cleaner. 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.

⚠ 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.





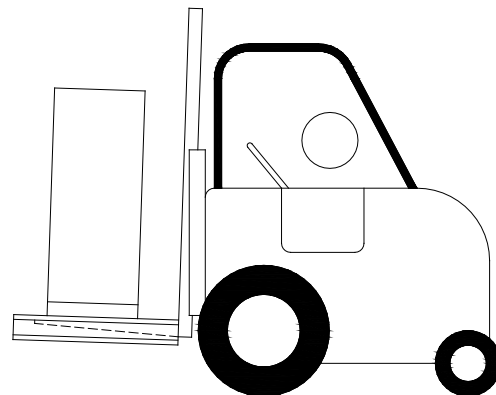
TRANSPORTING AND LIFTING



IMPORTANT: *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, and 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 tool 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.




ELECTRICAL

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

Your Baileigh Machine is  Certified

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.

Motor Specifications

Your tool is wired for 240 volt, 50Hz alternating current. Before connecting the tool to the power source, make sure the machine is cut off from power source.

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:

AMP RATING	LENGTH		
	25ft	50ft	100ft
0-6	16	16	16
7-10	16	16	14
11-12	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 is 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 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.

The MH-19 Reciprocating Hammer is a multi-stroke reciprocating machine, capable of many different metal forming operations. In the next few steps, we will explain each mode of operation as well as setting the tooling

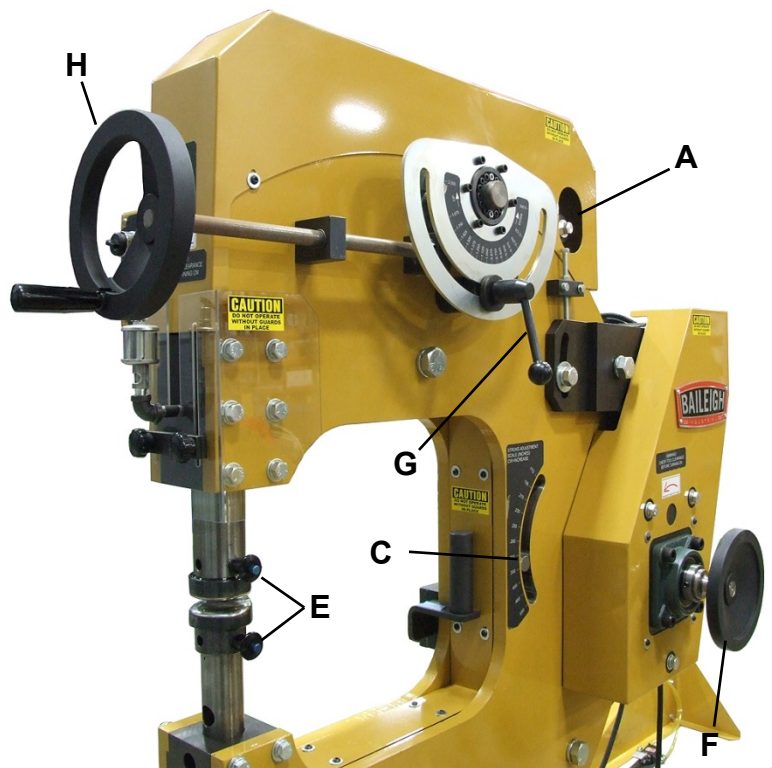
⚠ WARNING: HEARING PROTECTION MUST BE WORN AT ALL TIMES WHEN OPERATING THIS MACHINE.

Power Hammer Mode

In power hammer mode, the upper slide ram 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.

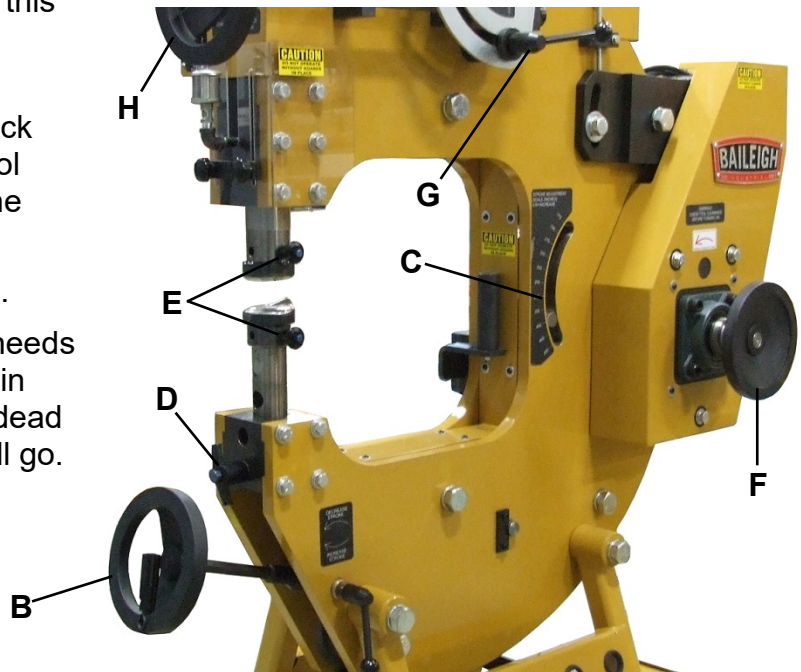
The speed is controlled through a variable foot control and a limiting potentiometer on the upper control box. The foot control fully depressed will max out at whatever the limiting potentiometer is set to.

1. To set the machine to power hammer mode the control box must be turned in the “off” position.
2. Remove the shear bolt (A) and bushings in the upper rear lever connection point. Store the bolt and spacer bushings in a safe place. Removing the bolt will separate the leaf spring from rigid mode and the spring will be free to move.
3. Next, the stroke can be set. Insert the hand wheel (B) onto the hex shaft.





4. Rotate until the scale (C) reads .400, this is a good place to start for thumbnail shrink dies. Tighten the lock lever.
5. To install the tools, remove the 1" quick release pin (D) and drop the lower tool holder out of the way, then remove the 1/2" pins (E).
6. Install the tools and re install the pins.
7. After the tools are installed, the gap needs to be set. To set the gap, turn the main crank hand wheel (F) to the "bottom dead center" or the lowest the slide ram will go.



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

8. Loosen the down feed lock lever (G) and rotate the down feed hand wheel (H) until the gap between the tools is about 1/4". This is where most dies work the best. Make sure all lock levers are tight and the quick release pins are fully installed. Check the motion, tool clearance and verify the gap by rotating the main crank hand wheel (F).
9. Set the control switch (I) to the "ON Foot Control" position.
10. Set the limiting potentiometer (J) to about 1000 BPM (Beats Per Minute), slowly press the foot control, the machine should begin to "hammer", hitting harder the faster you go.






11. 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.
12. 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 stroke CAN be adjusted on the fly. The combinations of stroke / speed / down feed are almost endless.
13. 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.

Rigid Mode

Rigid mode is used for functions similar to a Pullmax® machine. The hammer spring is deactivated and bolted rigid. This mode is used for short stroke tooling such as beading, flanging, mechanical shrinking, mechanical stretching etc.

1. To set the machine in this mode, turn the control switch to "Off".
2. Loosen the down feed lock lever and rotate the down feed hand wheel to lift the upper tooling all the way "up". This will allow enough clearance to install the lock bolt.
3. Install the lock bolt and bushings through the lever assembly and tighten to 50ft.lbs. The lock bolt is designed to shear off if the machine is set to crash, or the load is too great.
4. With the bolt in place, install the mechanical stretch dies. There is no top or bottom, but make sure they are both "stretch" dies.

 **IMPORTANT:** With the tools installed, it is very important that the tool gap is set properly or the shear bolt will fail.

5. Always set your tools with the main crank hand wheel. The gap should be set to material thickness first, then slowly bring the slide ram down to get the desired stretch. Be careful not to give it too much stretch or the tools may bottom out. The stroke should be no greater than .250 and the max speed around 200 BPM. Use the foot control to work the stretching tools.
6. Beading tools can be installed in the same fashion; but the tool clearance is more critical. It must be slightly greater than the material thickness.
7. When beading or flanging, use of the roller fence will ensure perfectly straight forms. Setting the roller fence is self-explanatory.



8. When beading, flanging, or forming the control can be either foot or the preset "on", whichever the user wants.
9. The maximum speed is 1500 BPM; you should only use maximum BPM if the stroke is set to the minimum. Most forming applications in rigid mode work at 1000 BPM.
10. Another common tool in this mode is a joggle tool which can be simply made from 1/2" mild steel and installed in the universal tool holder.

English Wheel Mode



Note: *Optional tooling required.*

1. To set the machine to English wheel mode, the main power switch must be turned off to prevent accidental machine start up.
2. The machine must be in rigid mode.
3. Set the stroke to the minimum and bottom dead center.
4. Remove all the tooling and quick release pins.
5. Now you can install the upper wheel assembly. The down feed may need to be adjusted down to gain enough clearance for the wheel assembly. It is best if two people do this job, one person holding the wheel assembly, and one person to install the 1/2" quick release pin.
6. Once the pin is installed, the pinch bolt can be tightened locking the upper wheel assembly onto the slide ram.
7. Raise up the upper wheel with the down feed hand wheel and install the lower wheel holder onto the lower tool holder receiving hole, install the 1/2" quick release pin.
8. Choose a lower roller and drop it into the saddles and lower the upper wheel to match the material thickness. The lower wheel can be tipped by loosening the center arc bolt and rotating its holder, this is used for "tipping" or edging panels.
9. When wheeling, the down force is controlled by the down feed hand wheel.




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.
- There are 7 grease fittings on the machine. Grease these 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.

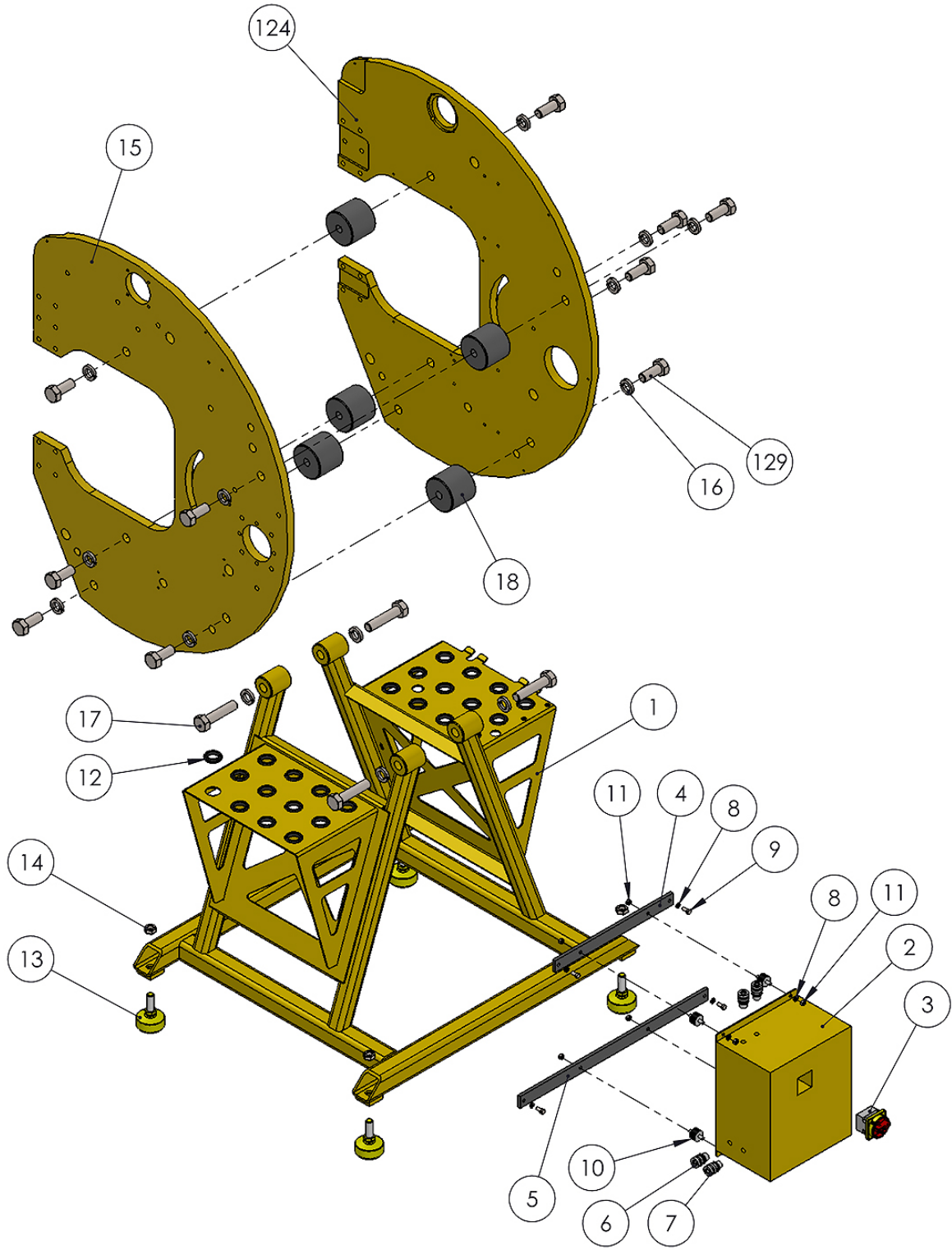


Note: *Proper maintenance can increase the life expectancy of your machine.*



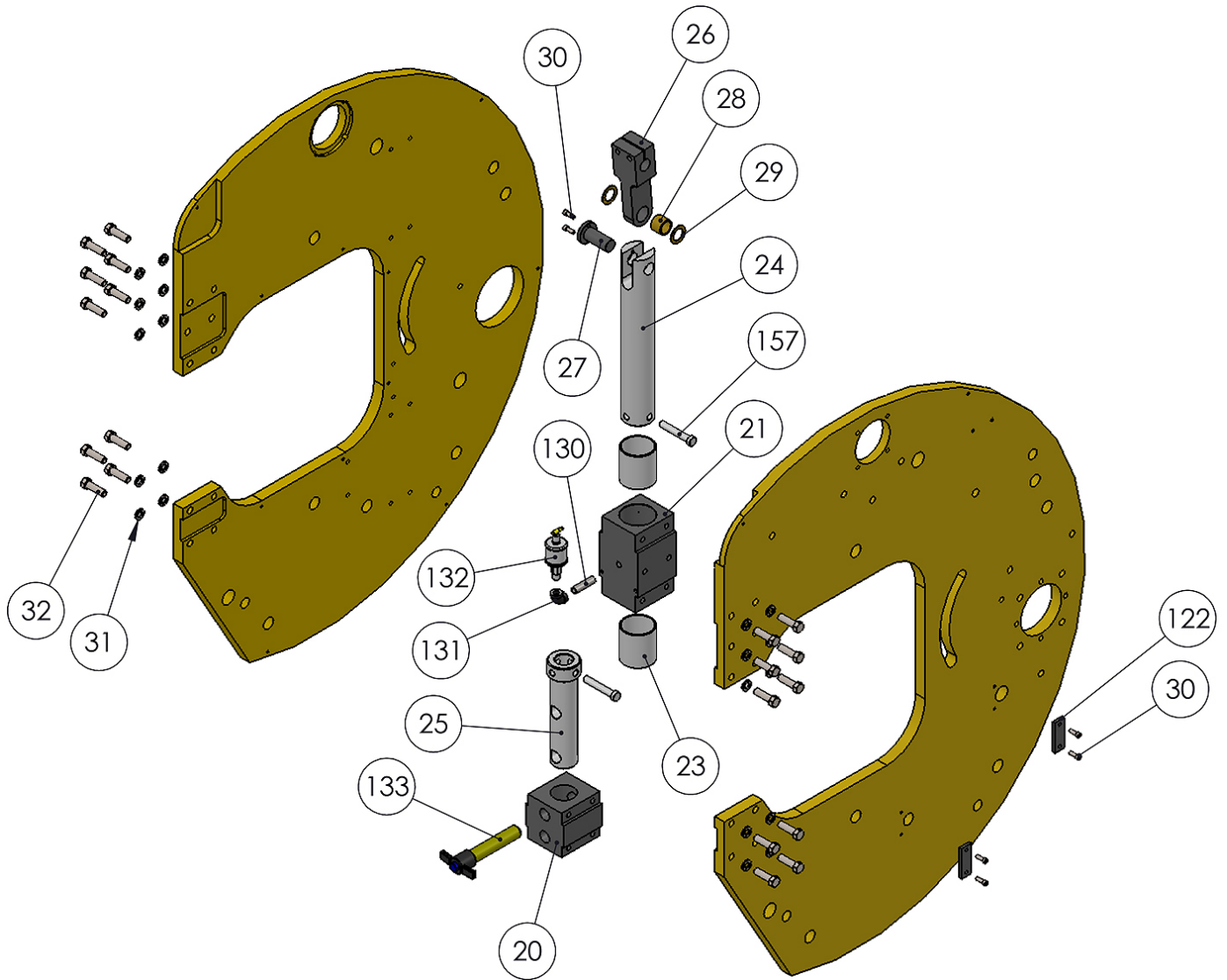
PARTS DIAGRAM

Stand/Frame Assembly Parts Diagram



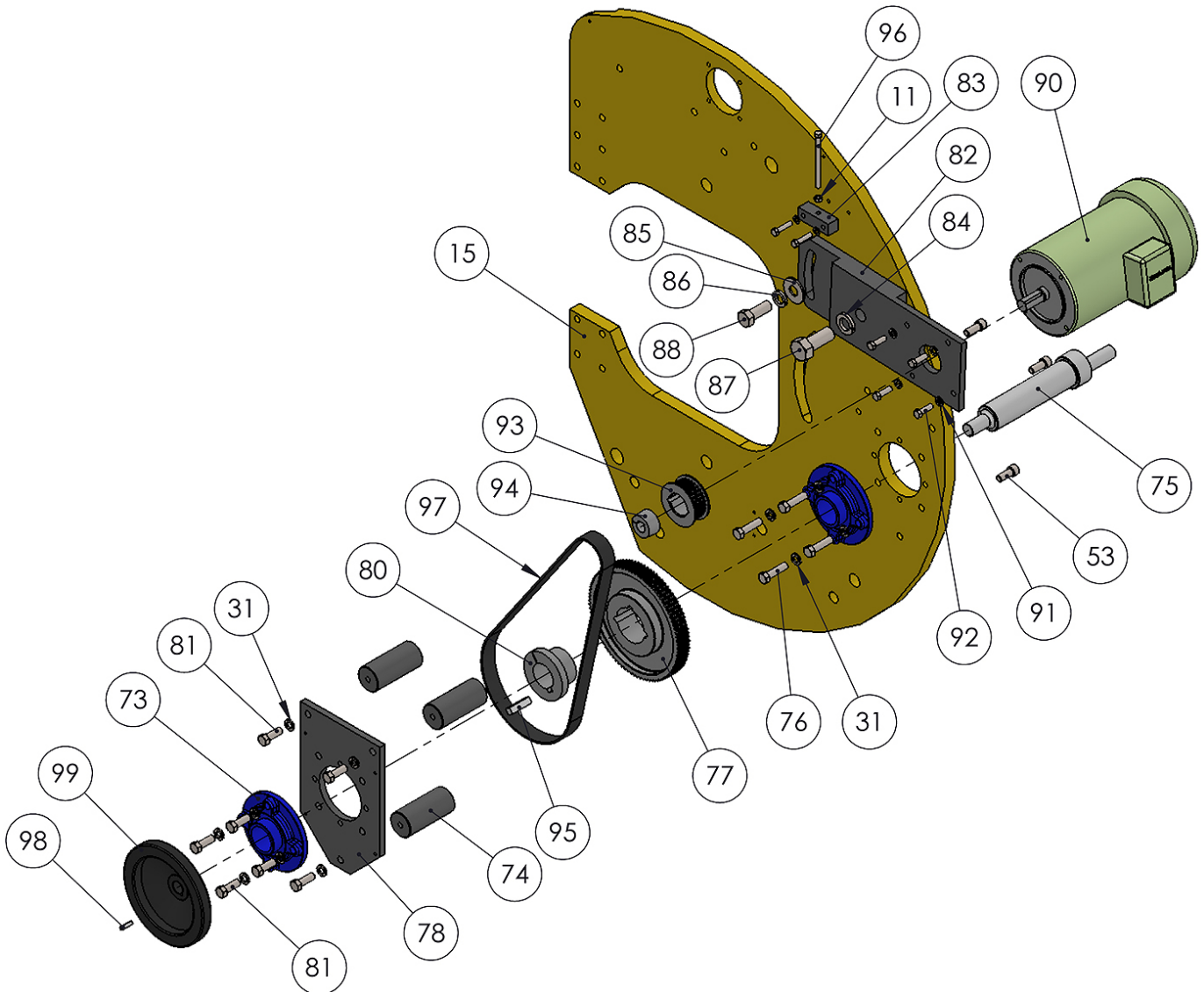


Slide Block Assembly Parts Diagram



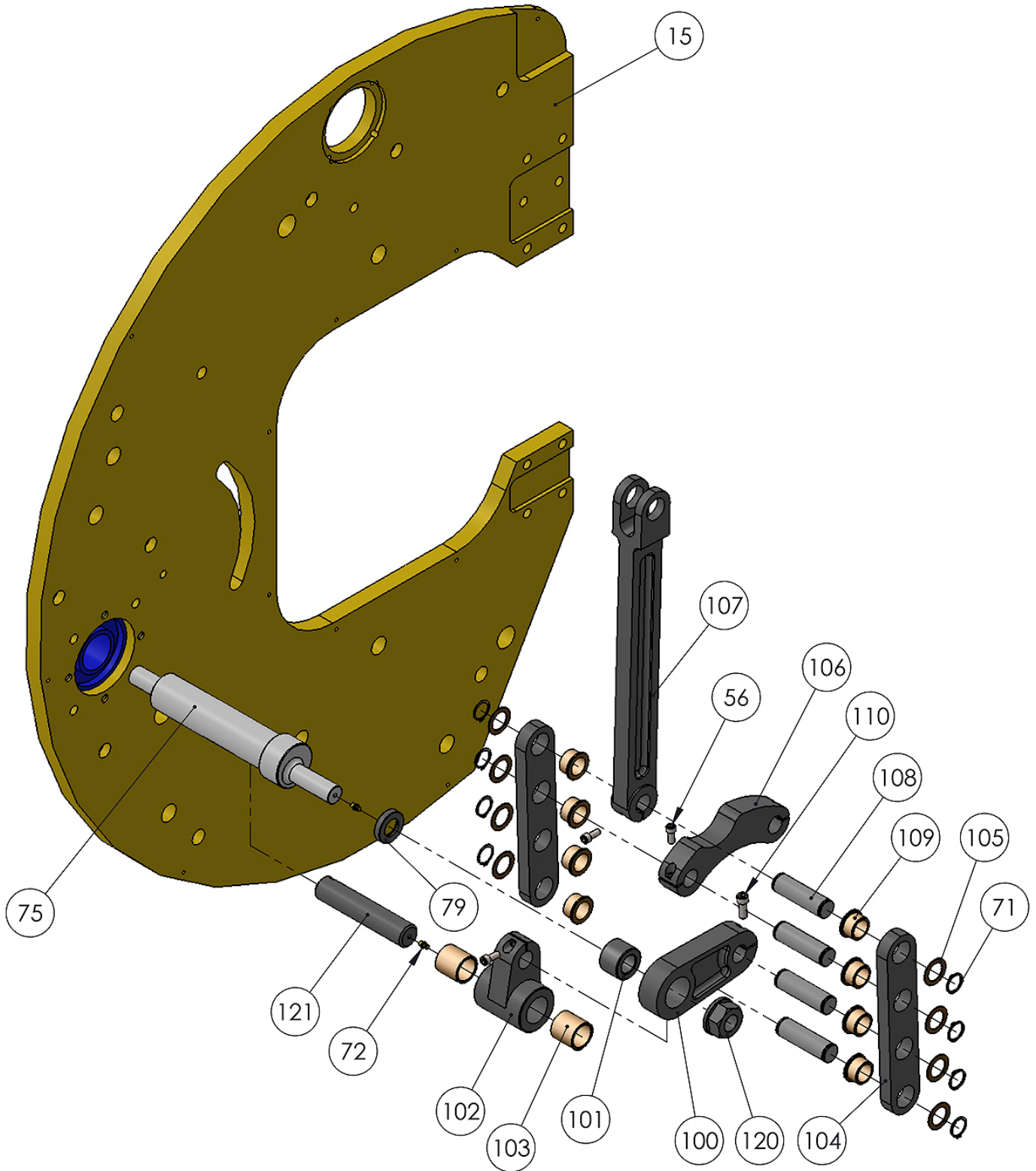


Pulley Assembly Parts Diagram



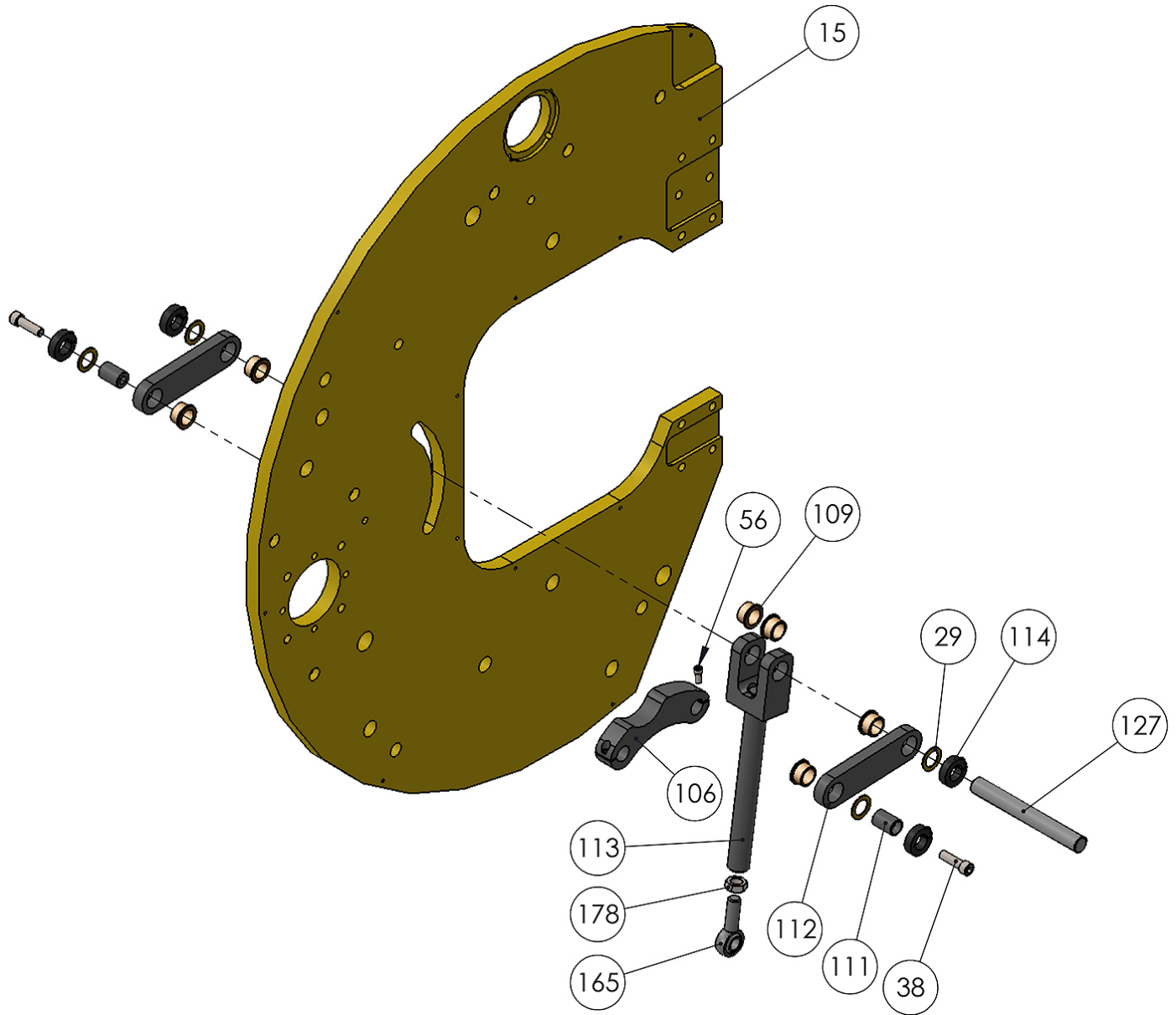


Crankshaft Assembly Parts Diagram



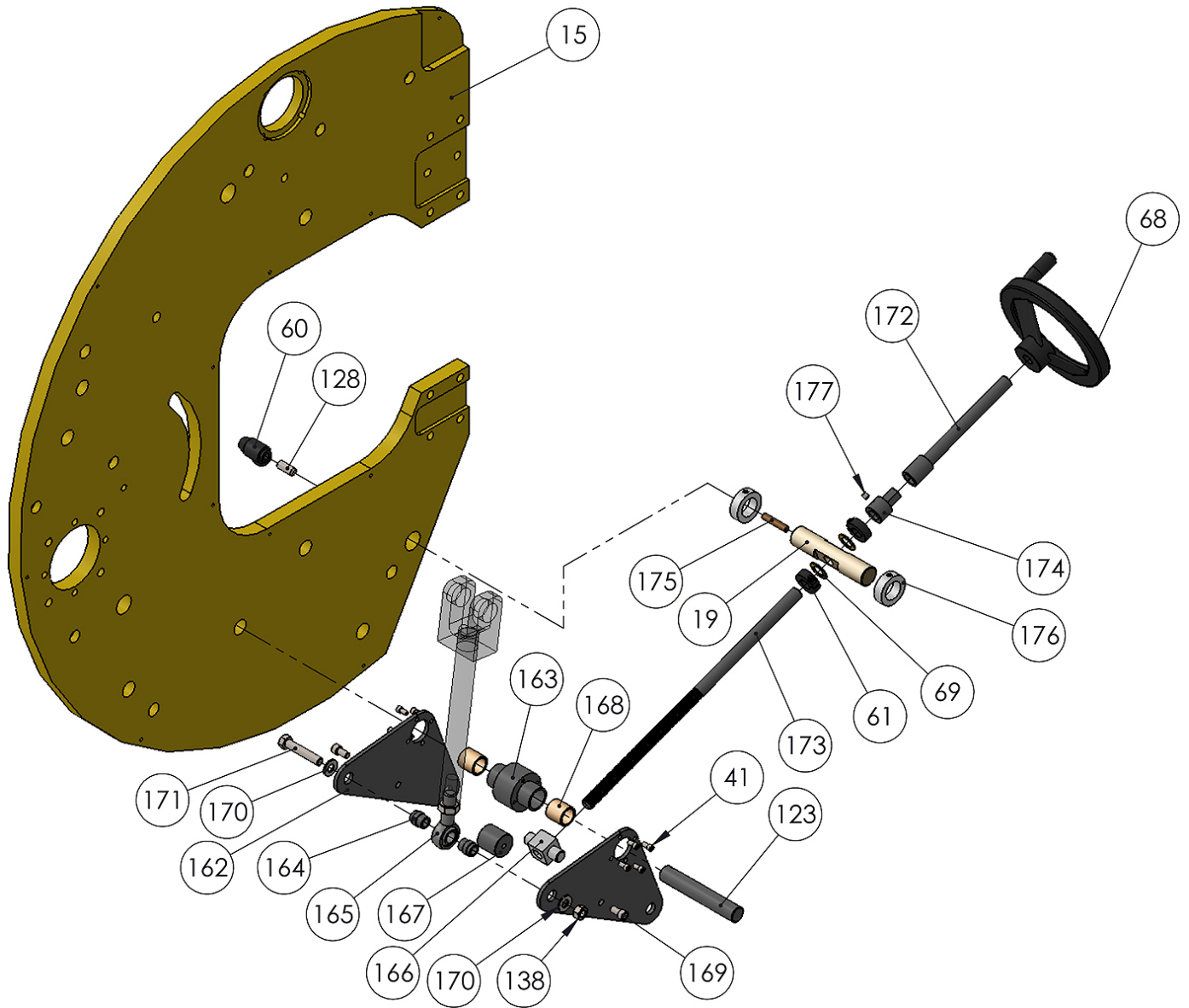


Clevis Shaft Assembly Parts Diagram



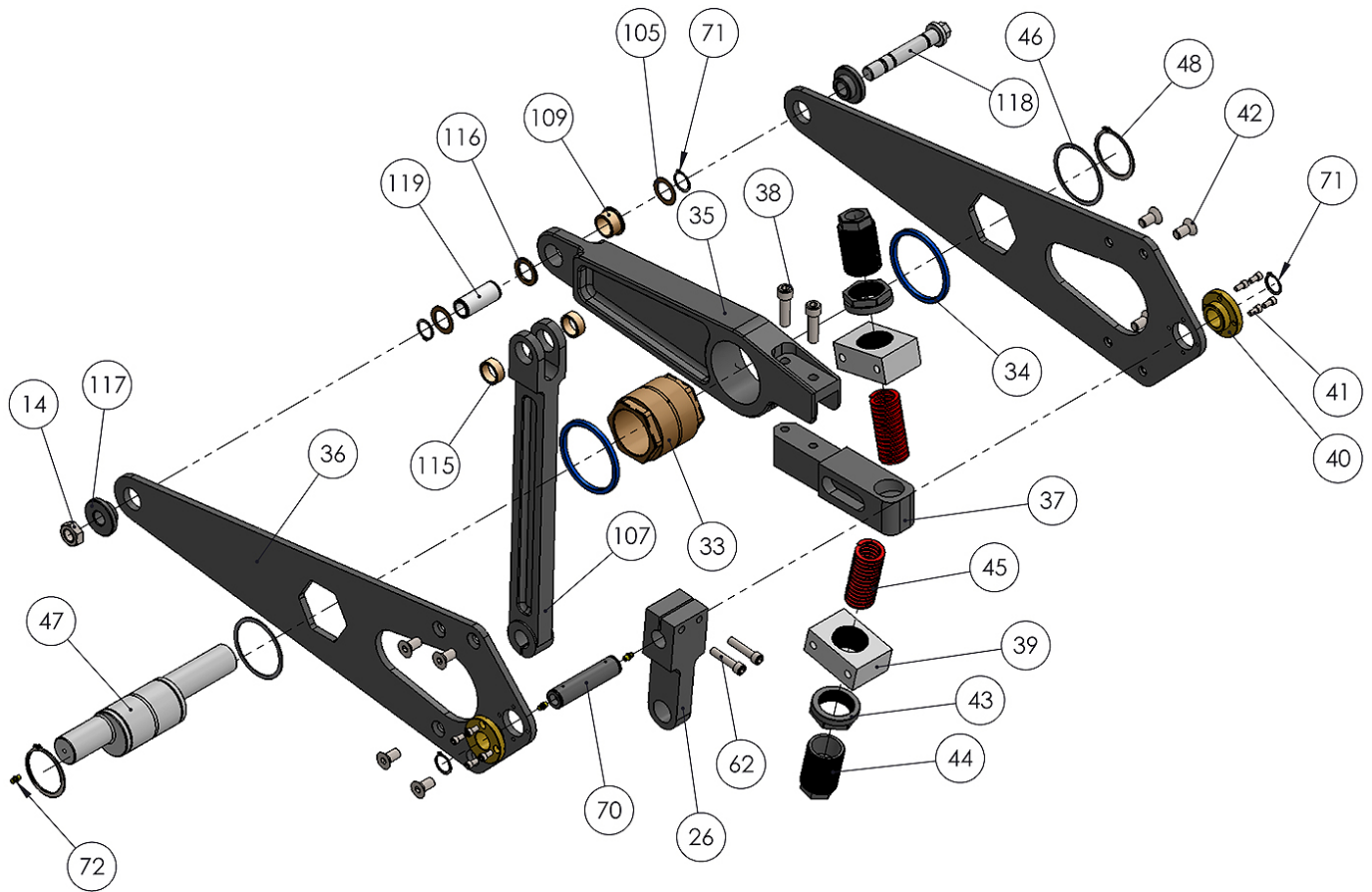


Bell Crank Assembly Parts Diagram



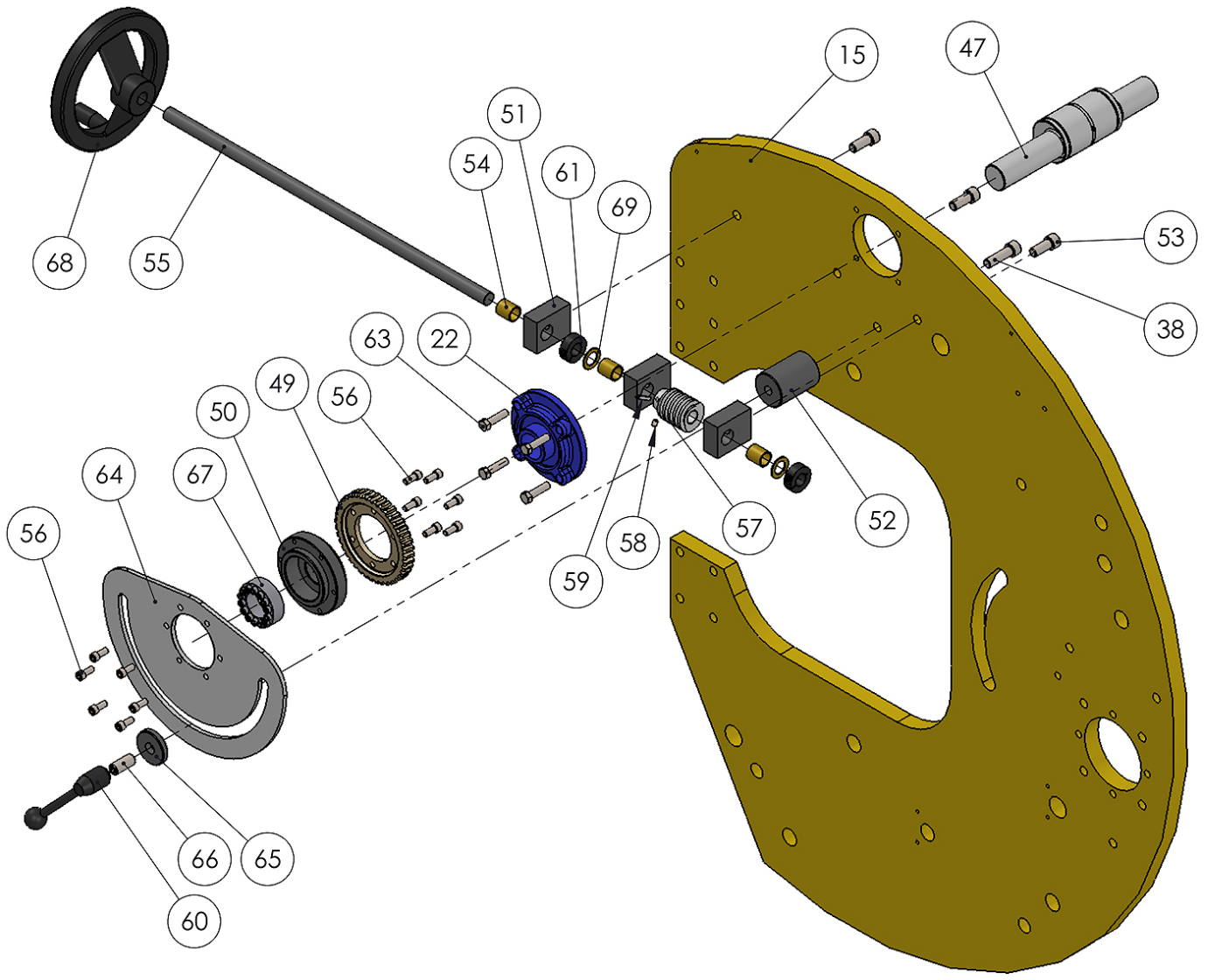


Main Lever Assembly Parts Diagram



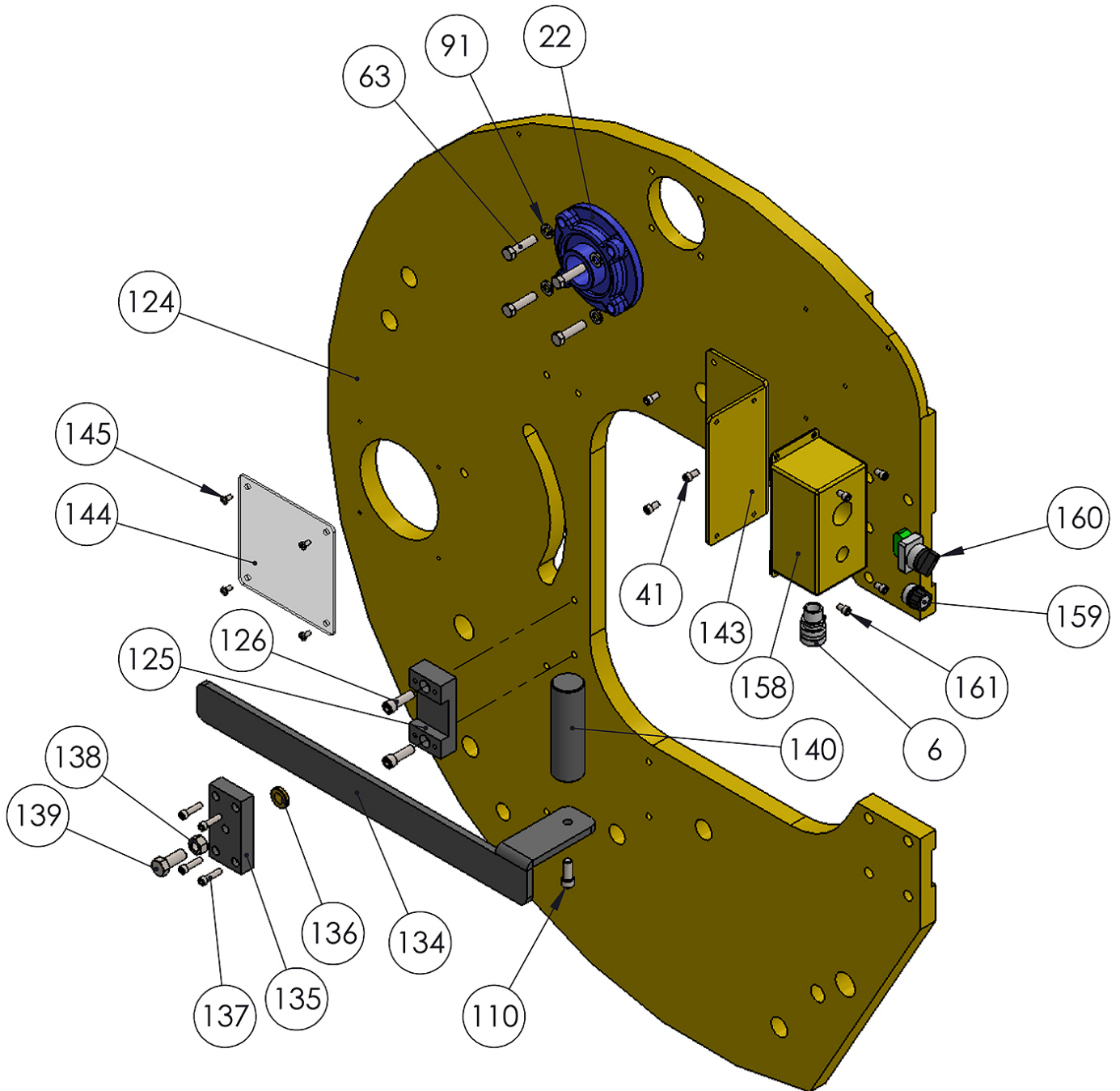


Height Adjustment Assembly Parts Diagram



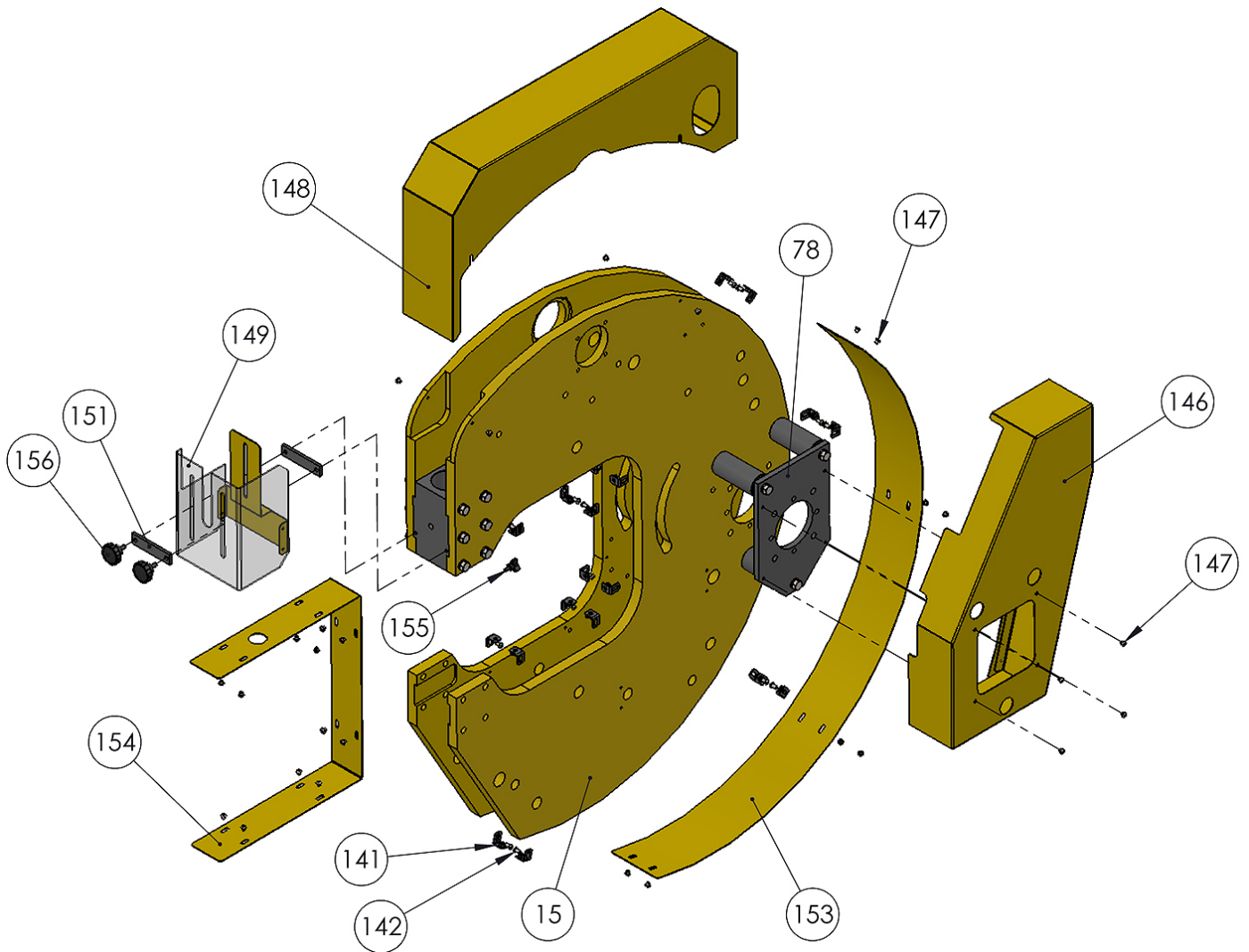


Left Hand Frame Assembly Parts Diagram





Guard Assembly Parts Diagram





Parts List

Item	Part Number	Description	Qty.
1	MH19-5D001-V2	Stand Assembly	1
2	PP-1310	Electrical Box	1
3	PP-0304	On/Off 2 Pole Switch	1
4	MH19-6A025	Box Mount (Short)	1
5	MH19-6A026	Box Mount (Long)	1
6	PP-0023	Cord Grip	3
7	PP-0025	Cord Grip	2
8	5/16 LOCK WASHER	Imperial	10
9	5/16-18 x .75	HHCS	4
10	PP-0823	Rubber Standoff Peg	4
11	5/16-18 HEX NUT	Imperial	9
12	PP-0895	Rubber Grommet	24
13	PP-0919	Leveling Pad	4
14	3/4-10 HEX NUT	Imperial	5
15	MH19-6D009	Right Side Frame	1
16	1" LOCK WASHER	Imperial	14
17	1.0-8 X 4.5	HHCS	4
18	MH19-7A002	Frame Spacer	5
19	MH19-7A012	Trunnion	1
20	MH19-6A006	Bottom Die Holder	1
21	MH19-6A007	Top Slide Block	1
22	PP-1548	1.5 Bore Cartridge Bearing	2
23	PP-0825	Slide Block Bushing	2
24	MH19-7A004	Main Slide	1
25	MH19-7A019	Lower Die Mount	1
26	MH19-6A066	Short Link	1
27	MH19-7A034	Lock Pin	1
28	PP-0144	1.0 ID x 1.25 OD x 1.0 Long	1
29	PP-0935	1.0 ID x 1.5 OD x .0625 THK	6
30	.25-20 x .75	SHCS	6
31	STD	.5 Lock Washer	31
32	1/2-13 x 1.75	HHCS	20
33	MH19-7A008	Pivot Bushing	1



Item	Part Number	Description	Qty.
34	MH19-7A018	Thrust Washer (Top Eccentric THK)	2
35	MH19-6D011	Main Leaf Lever	1
36	MH19-6D010-3	Lever Arm (Hex)	2
37	MH19-6A063	Master Spring Seat	1
38	1/2-13 x 1.75	SHCS	5
39	MH19-6A065	Spring Mounting Block	2
40	MH19-7A051	End Bushing	2
41	1/4-20 x .50	SHCS	19
42	1/2-13 x 1.0	FHCS	8
43	MH19-7A055	Spring Lock Nut	2
44	MH19-7A054	Spring Cap	2
45	PP-1300	Spring	2
46	PP-0972	Spiral Retaining Ring	2
47	MH19-7A007	Height Eccentric	1
48	2.5" EXT. RETAINING RING	Imperial	2
49	MH19-7A009	40 Tooth Worm Gear	1
50	MH19-7A006	Gear Hub	1
51	MH19-6A028	Worm Shaft Block	3
52	MH19-7A024	Lock Spacer	1
53	1/2-13 x 1.25	SHCS	6
54	PP-0838-B	.75 ID x 1.0 OD x 1.0 LNG Bushing	3
55	MH19-7A017	Worm Shaft	1
56	5/16-18 x .75	SHCS	16
57	PP-0507	Worm Gear	1
58	1/4-20 x 3/8	Set Screw	1
59	3/16 x 1.125	Slotted Spring Pin	1
60	PP-0570	Release Handle	2
61	PP-0090	3/4" Split Collar	4
62	3/8-16 x 1.75	SHCS	2
63	3/8-16 x 1.5	HHCS	8
64	MH19-6A029	Locking Ring	1
65	MH19-7A031	Special Washer	1
66	5/8-11 x 1.50	Set Screw	1
67	PP-1047	Tapered Locking Bushing	1
68	PP-1035	8" Handwheel	2



Item	Part Number	Description	Qty.
69	PP-0101	0.75 ID x 1.25 OD x .0625 THK	4
70	MH19-7A052	Ram Shaft	1
71	STD	1" Ext. Retaining Ring	12
72	.25-28 GREASE ZERK	Straight Grease Zerk	5
73	PP-1454	2" Bore Cartridge Bearing	2
74	MH19-7A013	Plate Spacer	3
75	MH19-7A005-V2	Crank Shaft (.25 Offset)	1
76	1/2-13 x 2.0	HHCS	4
77	PP-0907	90 Groove Pulley	1
78	MH19-6A021	Bearing Plate	1
79	MH19-7A036	Bearing Spacer	1
80	PP-0828	Tapered Lock Bushing	1
81	1/2-13 x 1.5	HHCS	7
82	MH19-6C022	Motor Mount	1
83	MH19-6A024	Jack Screw Block	1
84	1" LOCK WASHER	Imperial	1
85	3/4" FLAT WASHER	Imperial	1
86	3/4" LOCK WASHER	Imperial	1
87	1"-8 x 2.5	HHCS	1
88	3/4-10 x 2.0	HHCS	1
89	5/16-18 x 1.50	HHCS	2
90	PP-1075	2Hp (1.5kw) Yen Motor	1
91	IMPERIAL	.375 Lock Washer	8
92	3/8-16 x 1.25	HHCS	4
93	PP-0908	30 Groove Pulley	1
94	PP-0918	1210 Taper Bushing	1
95	KEY	Camshaft Key	1
96	5/16-18 x 4.5	HHCS	1
97	PP-0826	Belt	1
98	IMPERIAL	.25 x .25 x 1.0 Key	1
99	PP-1034	8" Solid Handwheel	1
100	MH19-6A014	Connecting ROD 4.375 B.C.	1
101	PP-0921	Needle Bearing	1
102	MH19-6A012	Base Link	1
103	IMPERIAL	1.25ID x 1.50OD x 1.50LNG Bushing	2



Item	Part Number	Description	Qty.
104	MH19-6A013	Toggle Link	2
105	MH19-7A059	Thrust Washer	10
106	MH19-6A015	Stroke Link	1
107	MH19-6A018	Long Link	1
108	MH19-7A011	Pivot Pin	4
109	PP-0913	1.0 ID x 1.25 OD x 0.75LG	15
110	IMPERIAL	3/8-16 x 1.0	2
111	MH19-7A058	Pivot Pin	2
112	MH19-6A069	Pivot Link	2
113	MH19-5A002	Clevis Shaft Assembly	1
114	PP-0036	1.0 Clamp Collar (Split)	4
115	PP-0836	1.0 ID x 1.25 OD x .50 LNG	2
116	PP-0056	1.0 ID x 1.5 OD x .125 THK	1
117	MH19-7A014	Pin Bushing	2
118	MH19-7A025	Shear Bolt	1
119	MH19-7A033	Pilot Pin	1
120	MH19-7A057	Crank Nut	1
121	MH19-7A032	Pivot Pin	1
122	MH19-6A030	Shaft Keeper	2
123	MH19-7A010	Pivot Pin	1
124	MH19-6D008	Left Side Frame	1
125	MH19-6A032	Slide Base	1
126	3/8-16 x 1.25	SHCS	2
127	MH19-7A038	Pivot Shaft	1
128	STD	0.5-13 x 1.25 Set Screw	1
129	1.0-8 x 2.5	HHCS	10
130	PP-0587	1/4" x 2" Pipe	1
131	PP-0589	1/4" Elbow	1
132	PP-0821	Oil Reservoir	1
133	PP-0893	Quick Release Pin	1
134	MH19-6A031	Fence Arm	1
135	MH19-6A033	Slide Cap	1
136	MH19-7A050	Lock Disc	1
137	1/4-20 x 1.0	SHCS	4
138	1/2-13 HEX NUT	Imperial	2



Item	Part Number	Description	Qty.
139	1/2-13 x 1.25	HHCS	1
140	MH19-7A029	Guide Shaft	1
141	M19-5A005	Guard Tab	20
142	1/4-20 x .50	BHCS	20
143	MH19-6A034	Angle Bracket	1
144	MH19-6A058	Crank Guard	1
145	10-24 x .375	Cross Machine Screw	4
146	MH19-6D044-V2	Belt Guard	1
147	1/4-20 x .25	BHCS	28
148	MH19-6D068	Top Spring Guard	1
149	MH19-6A059	Hammer Guard	1
150	MH19-6A062	Guard Back	1
151	MH19-6A027	Guard Strap	2
152	MH19-6A043	Back Panel	1
153	MH19-6A042-ARC	Rear Guard	1
154	MH19-6A041	Inside Guard	1
155	HAND KNOB	DK-1216	1
156	.3125-18 KNOB	Auto-Stop Knob	2
157	PP-1492	Tooling Pin	2
158	PP-0831	Switch Box	1
159	PP-0044	Potentiometer	1
160	PP-1402	Black Switch	1
161	1/4-20 x .375	SHCS	4
162	MH19-6A020-V2	Bell Crank	2
163	MH19-7A060	Bell Crank Hub	1
164	MH19-7A061	Rod End Spacer	2
165	PP-0927	.75 Male Rod End	1
166	MH19-6A019	Threaded Trunnion	1
167	MH19-7A035	Plate Spacer	1
168	PP-0143	1.25 OD x 1.0 ID x 1.25 LG	2
169	3/8-16 x .75	SHCS	2
170	1/2" FLAT WASHER	Imperial	2
171	1/2-13 X 2.75	Imperial	1
172	MH19-5A004	Shaft Extension	1
173	MH19-5A003	Adjusting Shaft	1



Item	Part Number	Description	Qty.
174	MH19-7A020	Hex Drive Collar	1
175	MH19-7A037	Pressure Shaft	1
176	PP-0138	1.25" Set Screw Collar	2
177	5/16-18 x .375	Set Screw	1
178	3/4-16 HEX NUT	Imperial	1



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 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			



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Authorised and signed by:

Safety officer:

Manager:

Revised Date: 25th February 2019