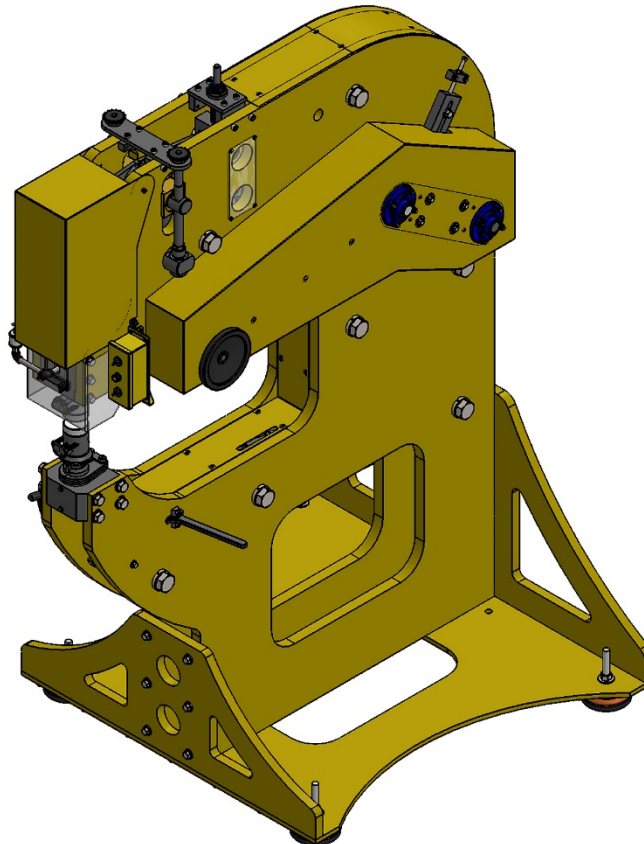




OPERATOR'S MANUAL

Metal Working



POWER-HAMMER MODEL: MH-37HD

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THANK YOU & WARRANTY

Thank you for your purchase of a machine from Baileigh Industrial Holdings LLC. We hope that you find it productive and useful to you for a long time to come.

Inspection & Acceptance. Buyer shall inspect all Goods within ten (10) days after receipt thereof. Buyer's payment shall constitute final acceptance of the Goods and shall act as a waiver of the Buyer's rights to inspect or reject the goods unless otherwise agreed. If Buyer rejects any merchandise, Buyer must first obtain a Returned Goods Authorization ("RGA") number before returning any goods to Seller. Goods returned without a RGA will be refused. Seller will not be responsible for any freight costs, damages to goods, or any other costs or liabilities pertaining to goods returned without a RGA. Seller shall have the right to substitute a conforming tender. Buyer will be responsible for all freight costs to and from Buyer and repackaging costs, if any, if Buyer refuses to accept shipment. If Goods are returned in unsalable condition, Buyer shall be responsible for full value of the Goods. Buyer may not return any special-order Goods. Any Goods returned hereunder shall be subject to a restocking fee equal to 30% of the invoice price.

Specifications. Seller may, at its option, make changes in the designs, specifications or components of the Goods to improve the safety of such Goods, or if in Seller's judgment, such changes will be beneficial to their operation or use. Buyer may not make any changes in the specifications for the Goods unless Seller approves of such changes in writing, in which event Seller may impose additional charges to implement such changes.

Limited Warranty. Seller warrants to the original end-user that the Goods manufactured or provided by Seller under this Agreement shall be free of defects in material or workmanship for a period of twelve (12) months from the date of purchase, provided that the Goods are installed, used, and maintained in accordance with any instruction manual or technical guidelines provided by the Seller or supplied with the Goods, if applicable. The original end-user must give written notice to Seller of any suspected defect in the Goods prior to the expiration of the warranty period. The original end-user must also obtain a RGA from Seller prior to returning any Goods to Seller for warranty service under this paragraph. Seller will not accept any responsibility for Goods returned without a RGA. The original end-user shall be responsible for all costs and expenses associated with returning the Goods to Seller for warranty service. In the event of a defect, Seller, at its sole option, shall repair or replace the defective Goods or refund to the original end-user the purchase price for such defective Goods. Goods are not eligible for replacement or return after a period of 10 days from date of receipt. The foregoing warranty is Seller's sole obligation, and the original end-user's exclusive remedy, with regard to any defective Goods. This limited warranty does not apply to: (a) die sets, tooling, and saw blades; (b) periodic or routine maintenance and setup, (c) repair or replacement of the Goods due to normal wear and tear, (d) defects or damage to the Goods resulting from misuse, abuse, neglect, or accidents, (e) defects or damage to the Goods resulting from improper or unauthorized alterations, modifications, or changes; and (f) any Goods that has not been installed and/or maintained in accordance with the instruction manual or technical guidelines provided by Seller.

EXCLUSION OF OTHER WARRANTIES. THE FOREGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ANY AND ALL OTHER EXPRESS, STATUTORY OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. NO WARRANTY IS MADE WHICH EXTENDS BEYOND THAT WHICH IS EXPRESSLY CONTAINED HEREIN.

Limitation of Liability. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR DOWN TIME) ARISING FROM OR IN MANNER CONNECTED WITH THE GOODS, ANY BREACH BY SELLER OR ITS AGENTS OF THIS AGREEMENT, OR ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY. BUYER'S REMEDY WITH RESPECT TO ANY CLAIM ARISING UNDER THIS AGREEMENT IS STRICTLY LIMITED TO NO MORE THAN THE AMOUNT PAID BY THE BUYER FOR THE GOODS.



Force Majeure. Seller shall not be responsible for any delay in the delivery of, or failure to deliver, Goods due to causes beyond Seller's reasonable control including, without limitation, acts of God, acts of war or terrorism, enemy actions, hostilities, strikes, labor difficulties, embargoes, non-delivery or late delivery of materials, parts and equipment or transportation delays not caused by the fault of Seller, delays caused by civil authorities, governmental regulations or orders, fire, lightening, natural disasters or any other cause beyond Seller's reasonable control. In the event of any such delay, performance will be postponed by such length of time as may be reasonably necessary to compensate for the delay.

Installation. If Buyer purchases any Goods that require installation, Buyer shall, at its expense, make all arrangements and connections necessary to install and operate the Goods. Buyer shall install the Goods in accordance with any Seller instructions and shall indemnify Seller against any and all damages, demands, suits, causes of action, claims and expenses (including actual attorneys' fees and costs) arising directly or indirectly out of Buyer's failure to properly install the Goods.

Work By Others; Safety Devices. Unless agreed to in writing by Seller, Seller has no responsibility for labor or work performed by Buyer or others, of any nature, relating to design, manufacture, fabrication, use, installation or provision of Goods. Buyer is solely responsible for furnishing, and requiring its employees and customers to use all safety devices, guards and safe operating procedures required by law and/or as set forth in manuals and instruction sheets furnished by Seller. Buyer is responsible for consulting all operator manuals, ANSI or comparable safety standards, OSHA regulations and other sources of safety standards and regulations applicable to the use and operation of the Goods.

Remedies. Each of the rights and remedies of Seller under this Agreement is cumulative and in addition to any other or further remedies provided under this Agreement or at law or equity.

Attorney's Fees. In the event legal action is necessary to recover monies due from Buyer or to enforce any provision of this Agreement, Buyer shall be liable to Seller for all costs and expenses associated therewith, including Seller's actual attorney fees and costs.

Governing Law/Venue. This Agreement shall be construed and governed under the laws of the State of Wisconsin, without application of conflict of law principles. Each party agrees that all actions or proceedings arising out of or in connection with this Agreement shall be commenced, tried, and litigated only in the state courts sitting in Manitowoc County, Wisconsin or the U.S. Federal Court for the Eastern District of Wisconsin. Each party waives any right it may have to assert the doctrine of "forum non conveniens" or to object to venue to the extent that any proceeding is brought in accordance with this section. Each party consents to and waives any objection to the exercise of personal jurisdiction over it by courts described in this section. Each party waives to the fullest extent permitted by applicable law the right to a trial by jury.

Summary of Return Policy.

- 10 Day acceptance period from date of delivery. Damage claims and order discrepancies will not be accepted after this time.
- You must obtain a Baileigh issued RGA number PRIOR to returning any materials.
- Returned materials must be received at Baileigh in new condition and in original packaging.
- Altered items are not eligible for return.
- Buyer is responsible for all shipping charges.
- A 30% re-stocking fee applies to all returns.

Baileigh Industrial Holdings LLC makes every effort to ensure that our posted specifications, images, pricing and product availability are as correct and timely as possible. We apologize for any discrepancies that may occur. Baileigh Industrial Holdings LLC reserves the right to make any and all changes deemed necessary in the course of business including but not limited to pricing, product specifications, quantities, and product availability.

For Customer Service & Technical Support:

Please contact one of our knowledgeable Sales and Service team members at:
(920) 684-4990 or e-mail us at sales@baileigh.com



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. Also contact Baileigh Industrial Holdings LLC 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.



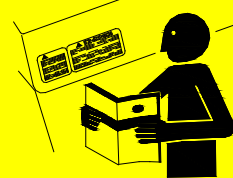
Note: This symbol refers to useful information throughout the manual.



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.

 **DANGER**

 **WARNING**

 **CAUTION**

NOTICE

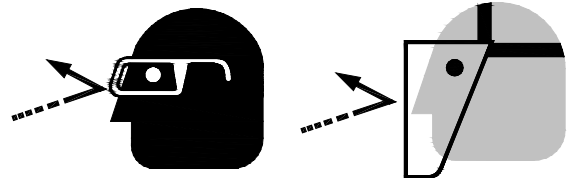


SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.



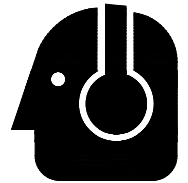
PROTECT EYES

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



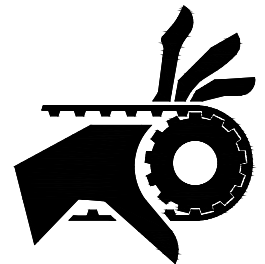
PROTECT AGAINST NOISE

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.



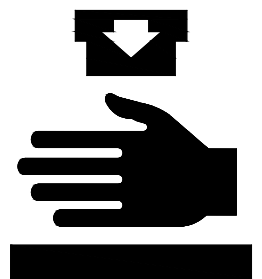
BEWARE OF PINCH POINTS

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	.125" (3.175mm)
Aluminum Capacity	.250 (6.35mm) Soft
Speed	0 - 1500 beats / min (Variable)
Throat Depth	37" (940mm)
Working Height	52" (1321mm)
Length of Stroke Adjustment	Variable from 0.1" – 3/4" (2.5 – 19mm)
Power	220V / 3 Phase / 50Hz / 25A
Motor	5hp, (3.72kw) 220V / 3 Phase / 50Hz / 22A
Shipping Dimensions	79" x 60" x 100" (2007 x 1524 x 2540mm)
Shipping Weight	6,000lbs. (2722kgs)
Based on a material tensile strength of *64000 PSI – mild steel	

TECHNICAL SUPPORT

Our technical support department can be reached at 920.684.4990, and asking for the support desk for purchased machines. Tech Support handles questions on machine setup, schematics, warranty issues, and individual parts needs: (other than die sets and blades).

For specific application needs or future machine purchases contact the Sales Department at: sales@baileigh.com, Phone: 920.684.4990, or Fax: 920.684.3944.



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.



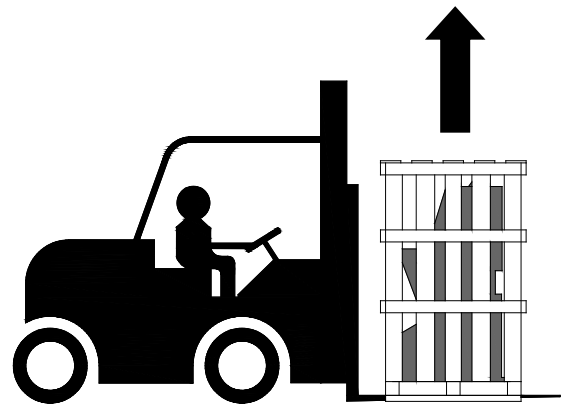


TRANSPORTING AND LIFTING

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



WARNING: Baileigh Industrial Holdings LLC is not responsible for any damage caused by wiring up to an alternative 3-phase power source other than direct 3-phase. If you are using an alternate power source, consult a certified electrician or contact Baileigh Industrial Holdings LLC prior to energizing the machine.



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 220 volts, 60hz 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 $\pm 5\%$, and for the frequency is $\pm 1\%$.

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.

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 in 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 turned 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 MH-37HD 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 on the right side of the machine to raise the upper slide ram (hammer) to the high point of the stroke.
3. Use the quick release on the front of the upper and lower tool holders to lock the tooling into the holders.





4. Use the Height Adjuster Handwheel on the left side of the frame to set the gap between the upper and lower dies. This gap is usually set to the thickness of the material and then readjusted / fine-tuned as the material is being formed.



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

5. 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 machine's operation.





Operation

1. Install the desired tooling into the upper and lower tool holders.
2. Set the clearance and stroke to the desired setting.
3. Turn the main disconnect to ON.
4. Set the control switch to the "ON Foot Control" position.
5. Set the limiting potentiometer to 100%, about 1500 BPM (Beats Per Minute), slowly press the foot control, the machine should begin to "hammer", hitting harder the faster you go.
6. 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.
7. The hammer mode is also used for planishing. Install the flat top die and the 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.
8. 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.

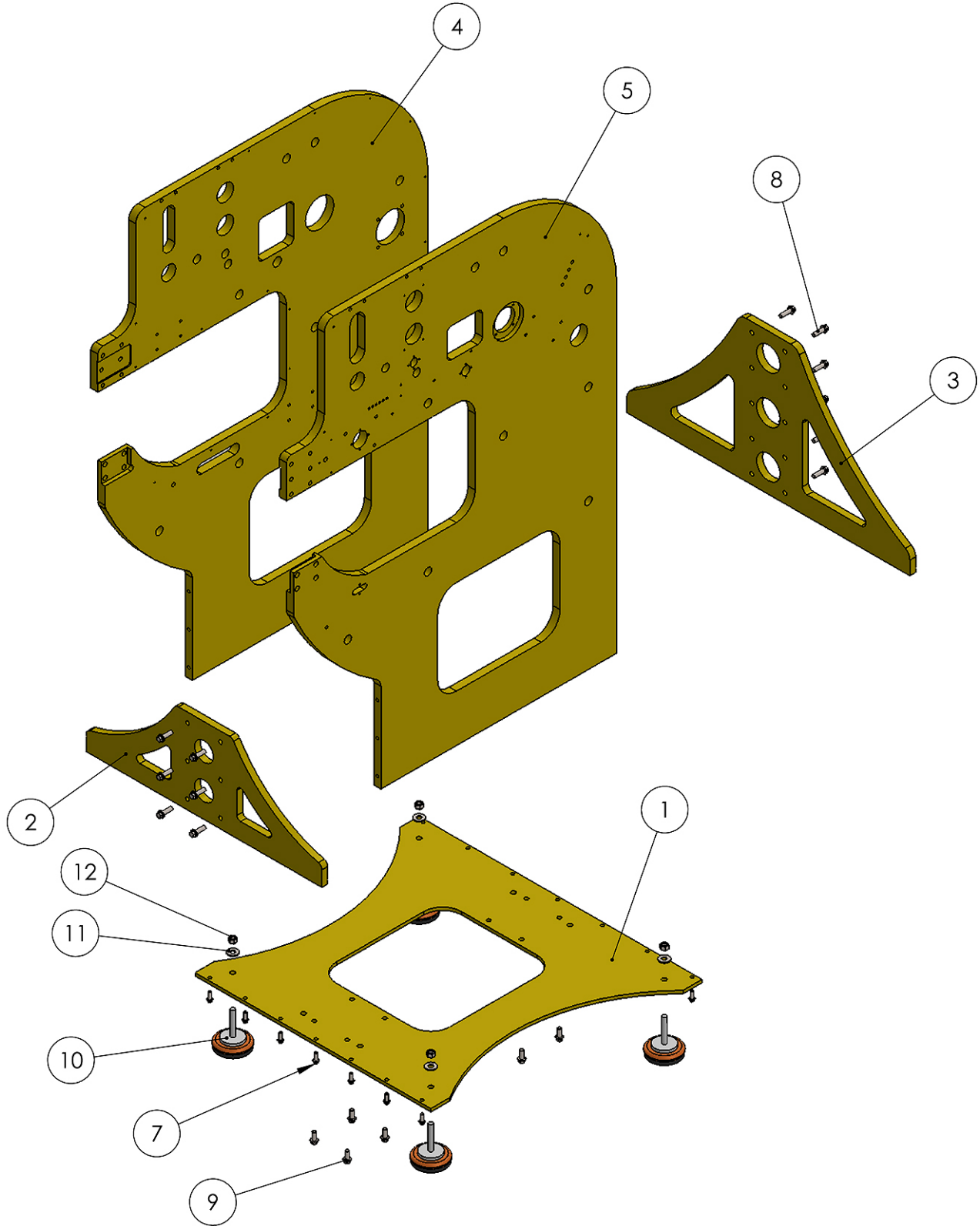
- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.
- Grease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



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

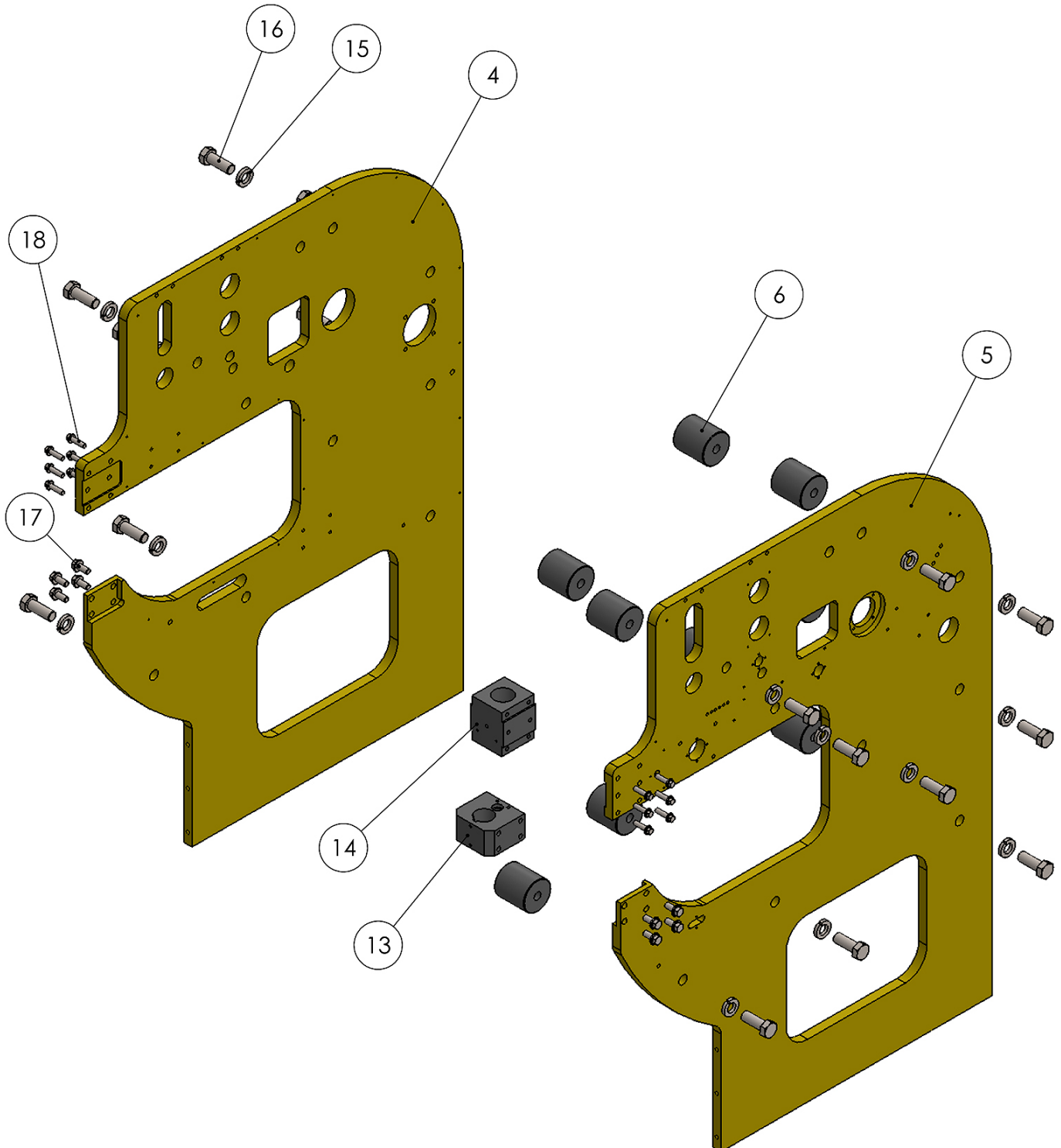


FRAME ASSEMBLY



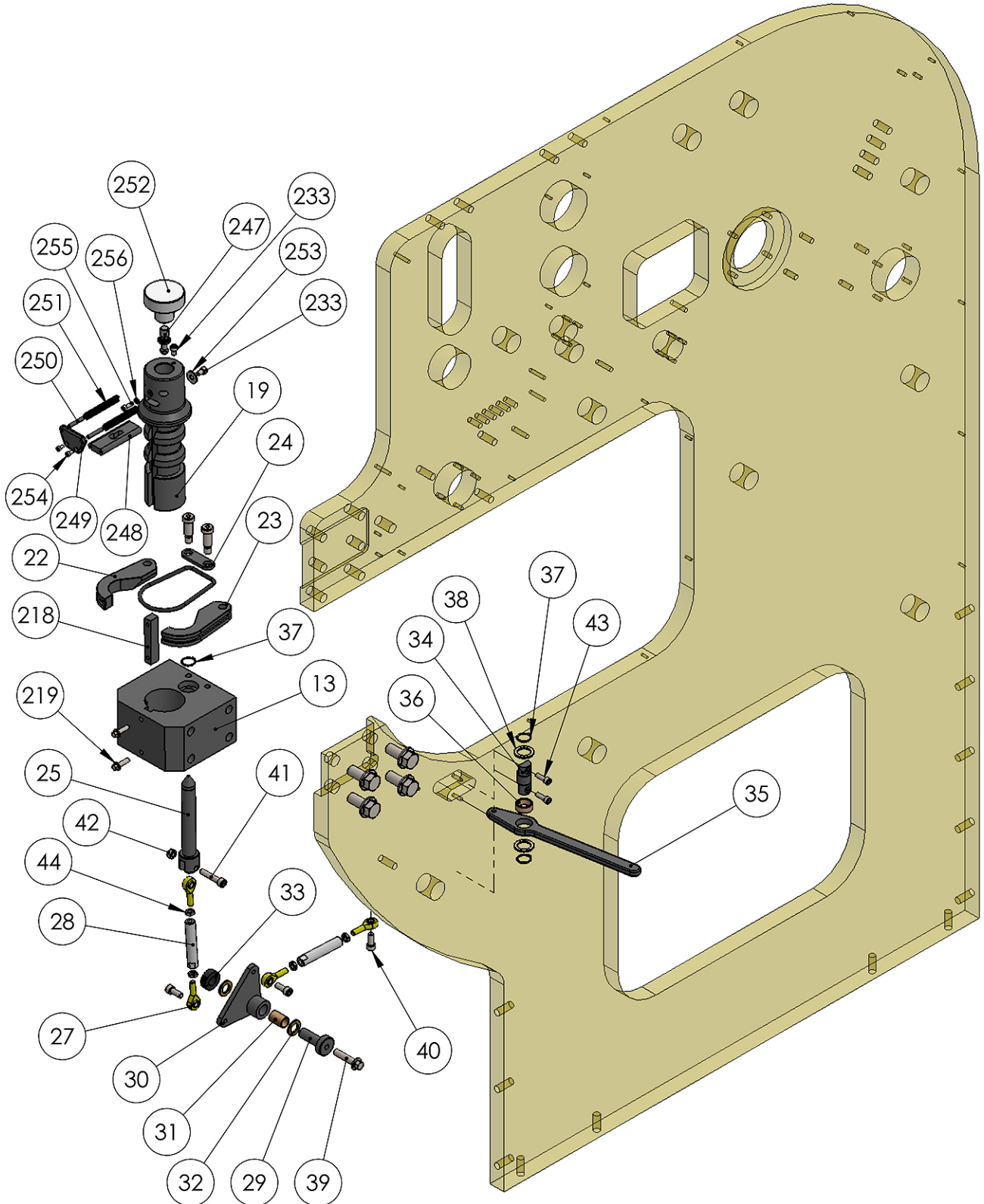


FRAME SPACER ASSEMBLY





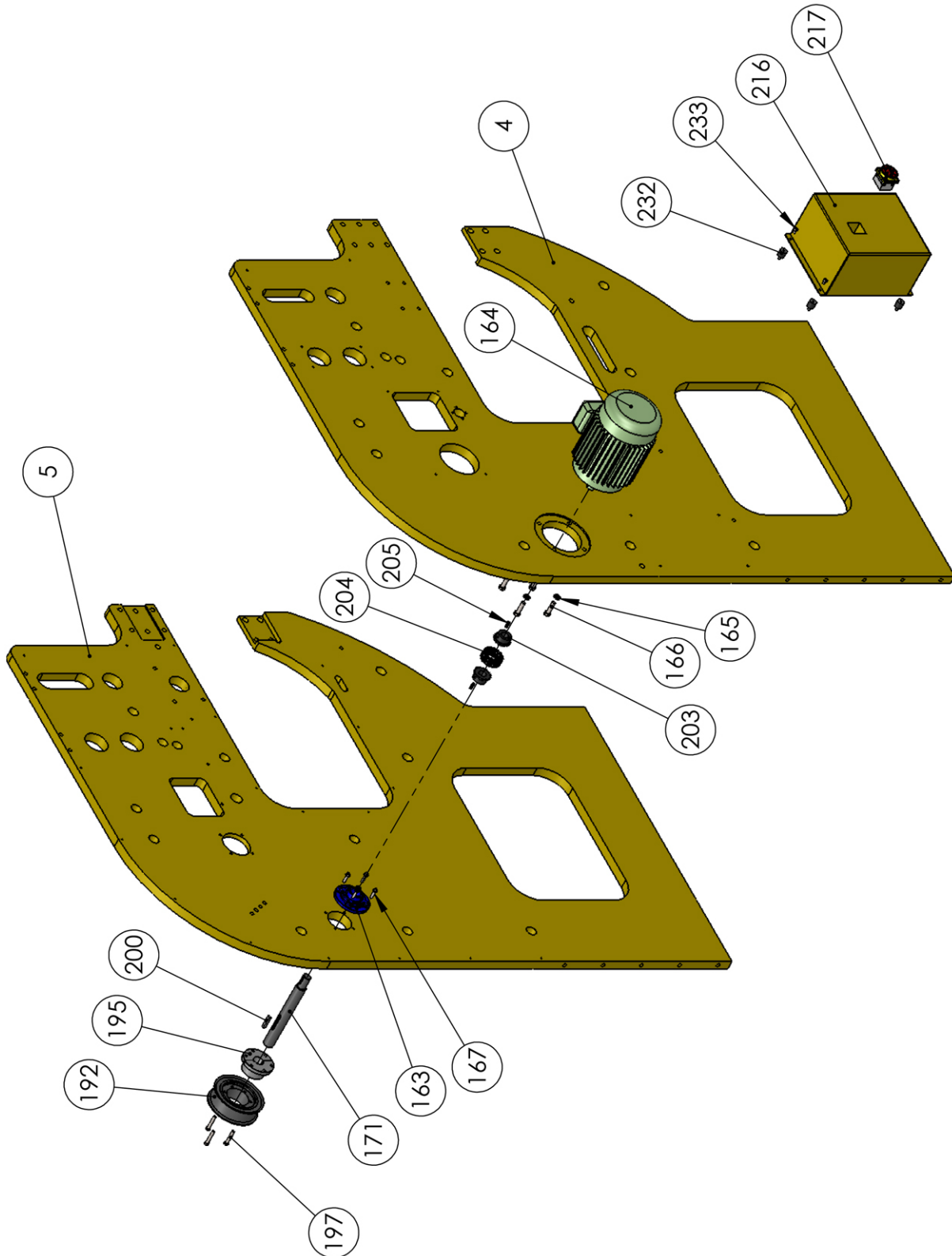
LOWER TOOL BASE ASSEMBLY







MOTOR ASSEMBLY

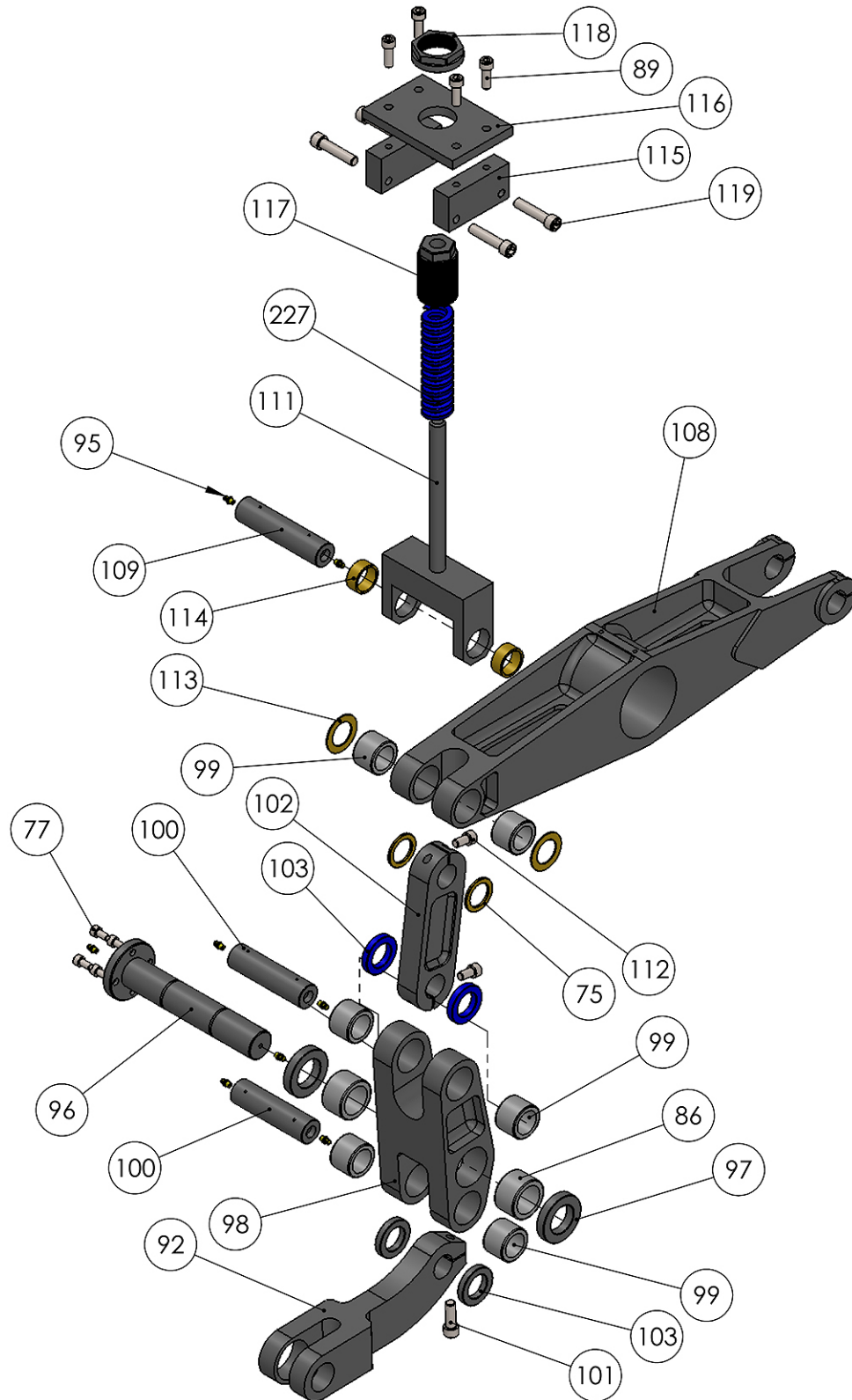






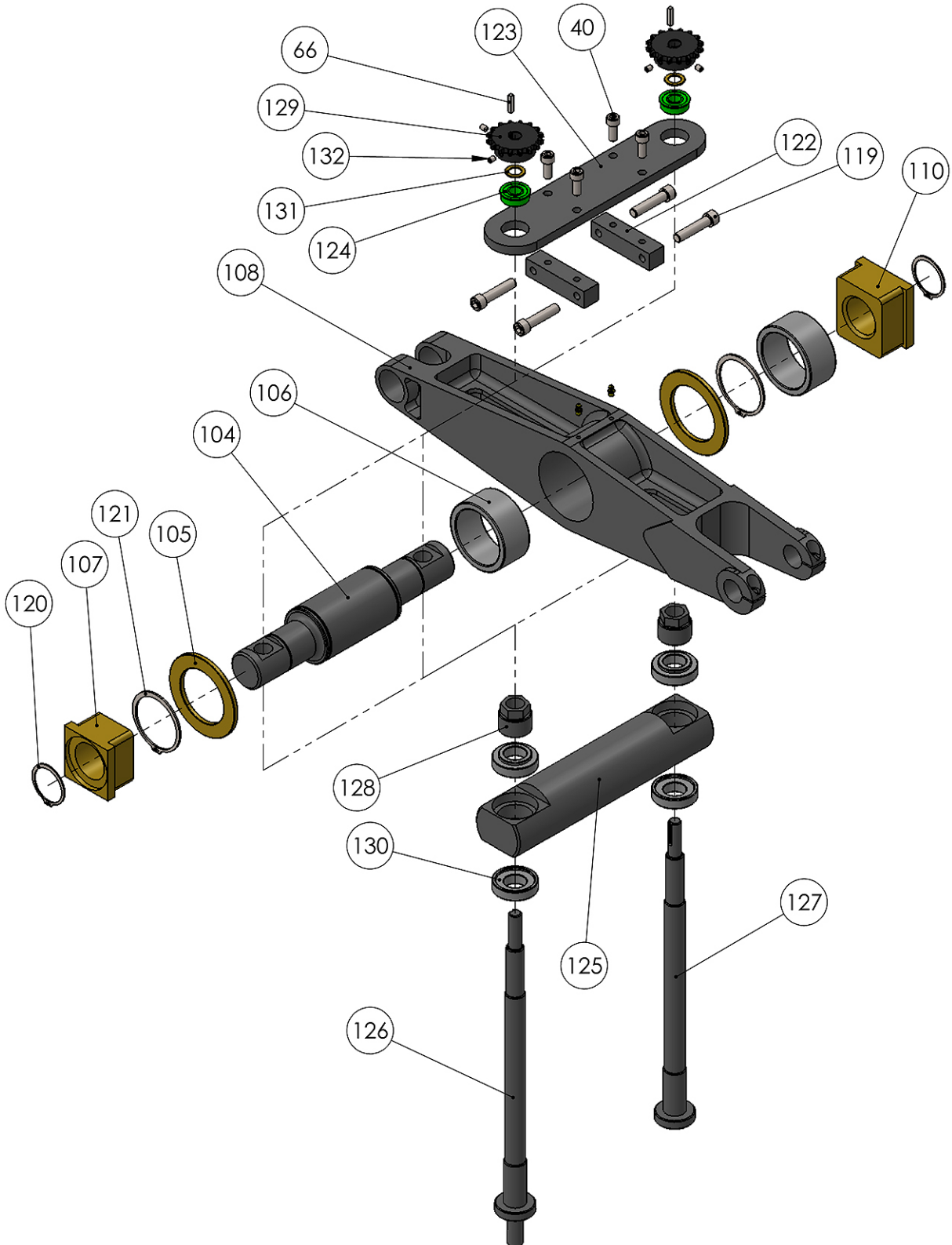


ROCKER BLOCK ASSEMBLY



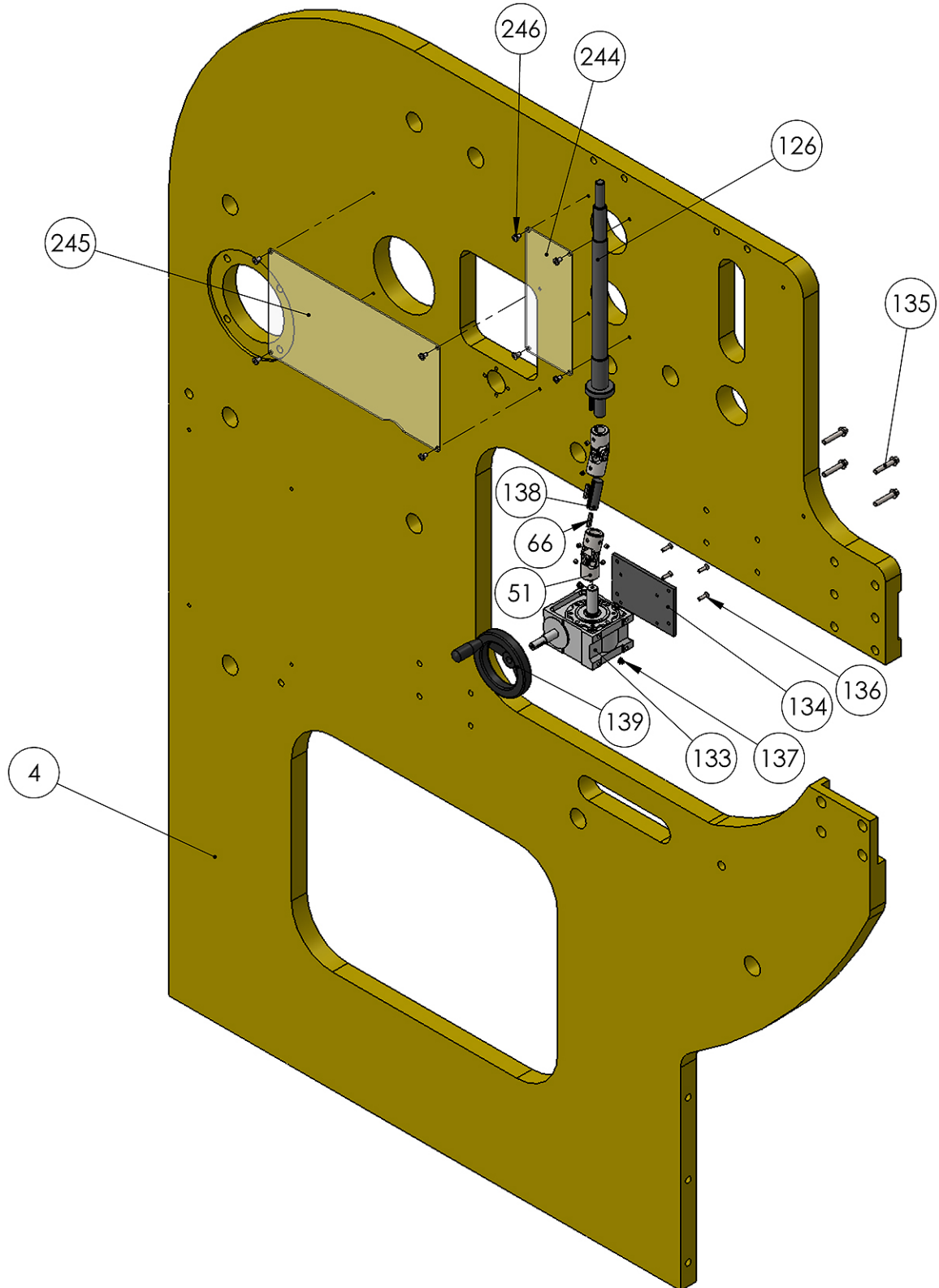


LEVER ARM ASSEMBLY



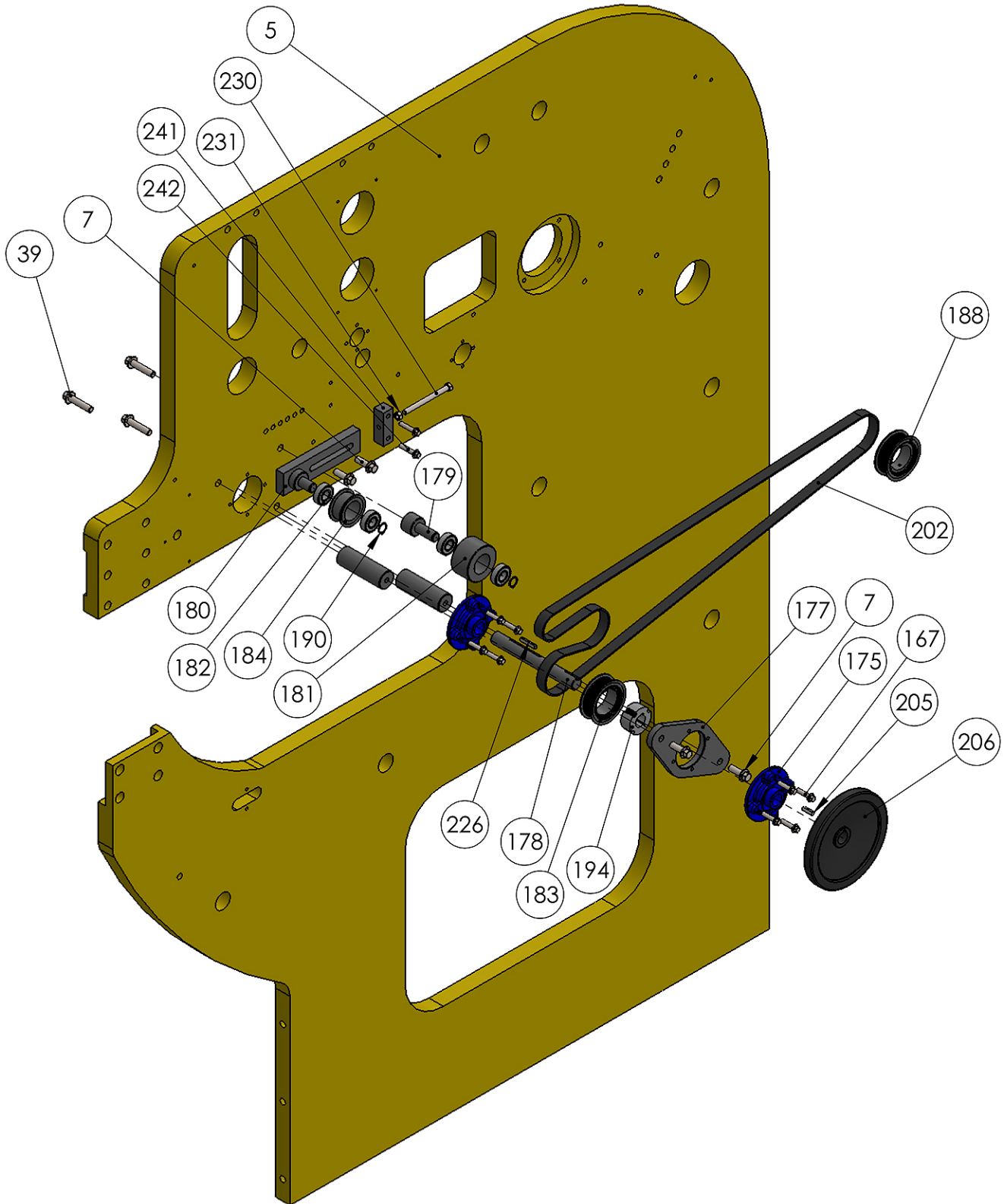


HEIGHT GEARBOX ASSEMBLY



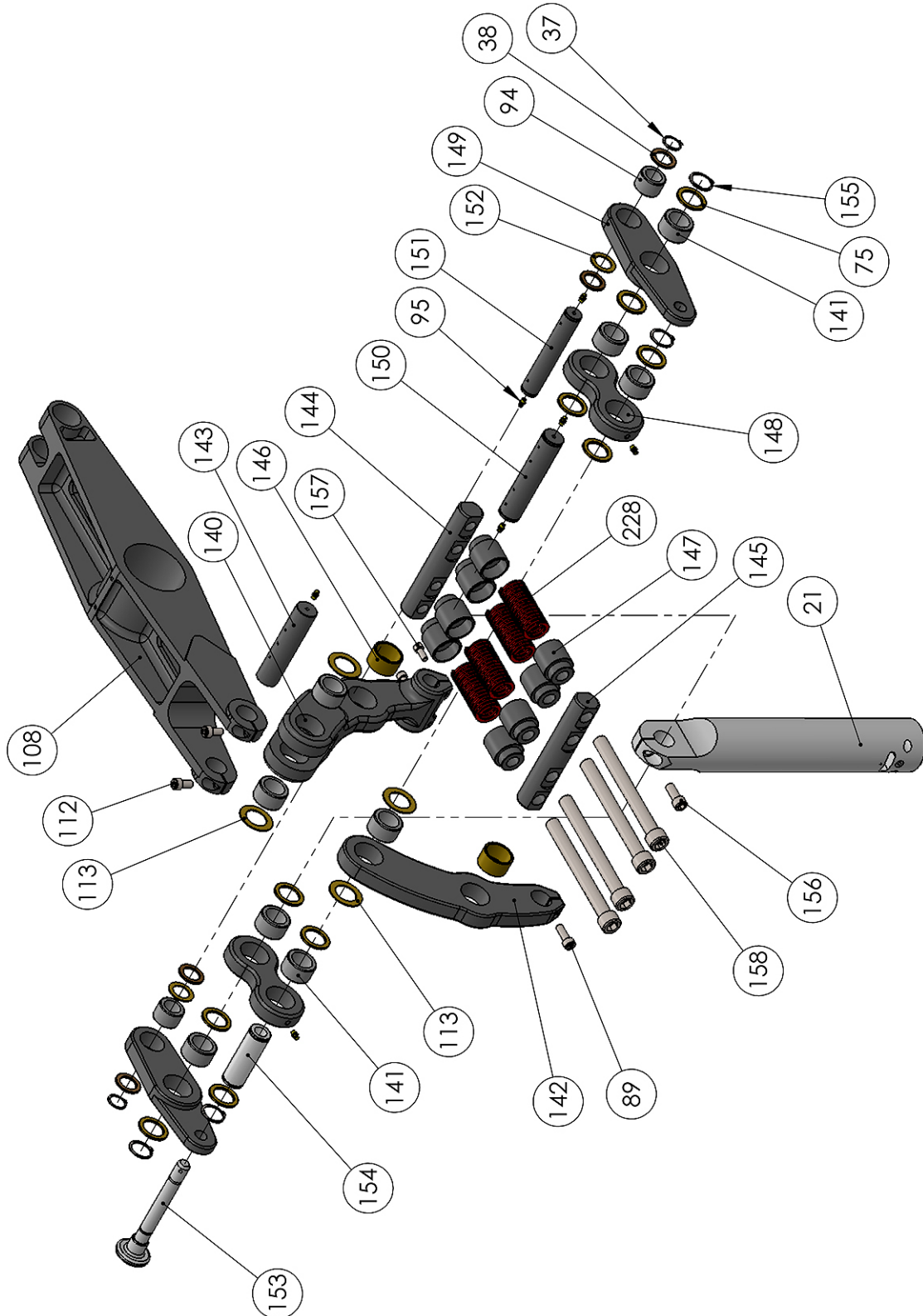


MANUAL ADJUSTMENT PULLEY ASSEMBLY



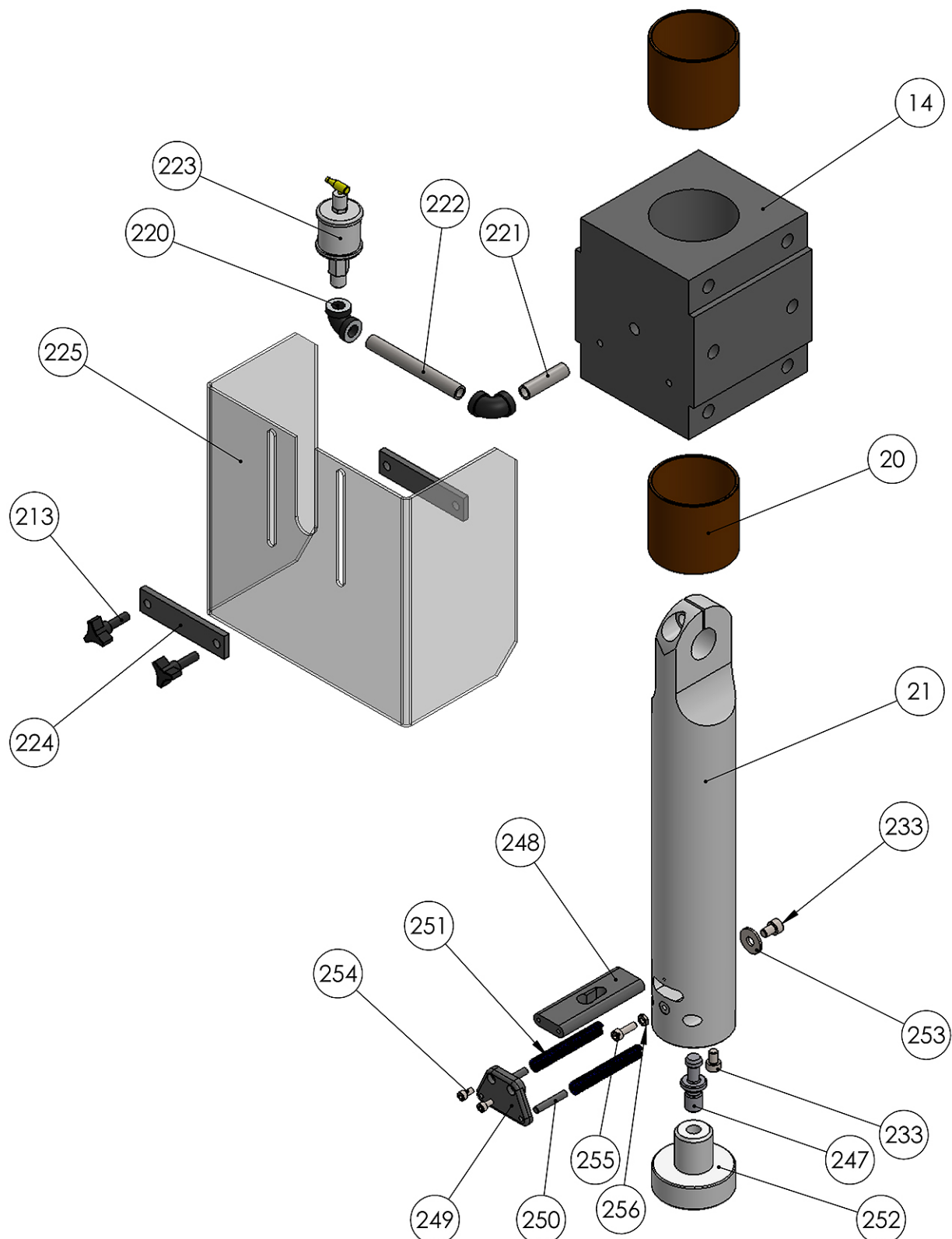


UPPER RAM ASSEMBLY



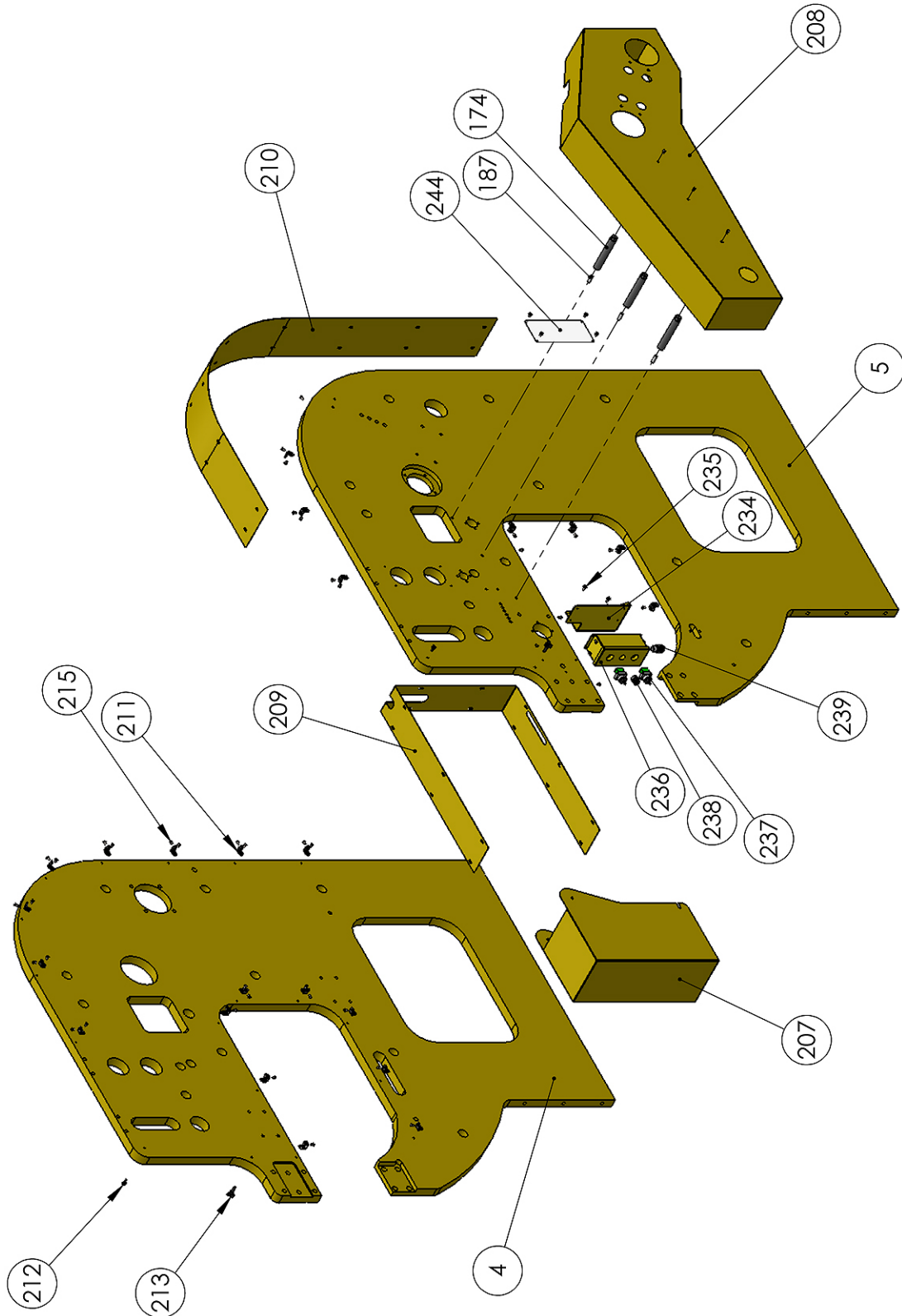


TOP SLIDE BLOCK ASSEMBLY





GUARD ASSEMBLY





Parts List

Item	Part No.	Description	Qty.
1	MH36-6A051-V2	BASE PLATE	1
2	MH36-6A049-V2	FRONT LEG	1
3	MH36-6A050-V2	REAR LEG	1
4	MH36-6A075	SIDE FRAME (L.H.)	1
5	MH36-6A076	SIDE FRAME (R.H.)	1
6	MH36-7A025	FRAME SPACER	9
7	M12 X 1.75 X 35	HEX FLANGE	18
8	M16 X 2.0 X 55	HEX FLANGE	16
9	M16 X 2.0 X 40	HEX FLANGE	8
10	PP-1455	LEVELING FOOT	4
11	M20 FLATWASHER	STD.	4
12	M20 X 1.5	HEX NUT	4
13	MH36-6A011	BOTTOM DIE HOLDER	1
14	MH36-6A010	TOP SLIDE BLOCK	1
15	M36 LOCK WASHER	STD.	18
16	M36 X 4.0 X 100	HHCS	18
17	M20 X 2.5 X 45	HEX FLANGE	8
18	M16 X 2.0 X 60	HEX FLANGE	12
19	MH36-7A003-V2	LOWER TOOL HOLDER	1
20	PP-1461	3.0 LINEAR BEARING	2
21	MH36-7A002-V2	TOP RAM	1
22	MH36-6A040	LATCH BLOCK (L.H.)	1
23	MH36-6A059	LATCH BLOCK (RH)	1
24	MH36-6A072	TIE STRAP	1
25	MH36-7A018	RELEASE ROD	1
26	STD.	10 MM ROD END BALL	4
27	PP-1459	10MM ROD END	4
28	MH36-7A027	ROD END ADJUSTER	2
29	MH36-7A045	PIVIT STUD	1
30	MH36-6A047	BELLCRANK	1
31	PP-0408	SLEEVE BUSHING	1
32	PP-0322	0.75 ID X 1.25 OD X .125 THK	2
33	PP-0090	3/4" SPLIT COLLAR	4



Item	Part No.	Description	Qty.
34	MH36-7A019	RELEASE PIVOT STUD	1
35	MH36-6A041	RELEASE LEVER	1
36	PP-0836	1.0 I.D. X 1.25 O.D. X .50 SLEEVE BUSHING	1
37	STD	1" EXT. RETAINING RING	7
38	PP-0056	1.0 ID X 1.5 OD X .125 THK	8
39	M12 X 1.75 X 55	HEX FLANGE	4
40	M10 X 1.5 X 25	SHCS	7
41	M10 X 1.5 X 50	SHCS	1
42	M10 X 1.5	HEX NUT	1
43	M8 X 1.25 X 25	SHCS	2
44	M10 X 1.5	JAM NUT	4
45	PP-0927	3/4" ROD END MALE	1
46	STD.	.75 ROD END BALL	1
47	3/4-16 HEX NUT	STD.	1
48	MH36-6A042	GEAR BOX BASE	1
49	MH36-7A057	GEAR SHAFT (THREADED)	1
50	MH36-7A023	SHAFT	1
51	BR36-7A019	U JOINT HALF	10
52	BR36-6A056	U JOINT BLOCK	5
53	PP-1224	3/4 ID X 1.0 OD X 1.0 LG BUSH	3
54	PP-0101	0.75 ID X 1.25 OD X .0625 THK	3
55	MH36-7A065	GEARBOX SPACER	4
56	MH36-7A021	GEAR SHAFT (SHORT)	1
57	1/2-13 X 1.25	SHOULDER BOLT	2
58	MH36-6A066	SHAFT GUIDE PLATE	1
59	MH36-7A058	INDICATOR SHAFT	1
60	MH36-6A071	INDICATOR BLOCK	1
61	MH36-6A067	ACTUATOR BLOCK	1
62	M5 X 0.8 X 20	SHCS	1
63	M6 X 1.0 X 25	SHCS	1
64	M8 X 1.25 X 10	BUTTON HEAD	2
65	M8 X 1.25 X 100	SHCS	4
66	STD.	.1875 X 1 KEYSTOCK	13
67	M5 X 0.8 X 6	SET SCREW	4
68	1/4-20 X .25	SET SCREW	20



Item	Part No.	Description	Qty.
69	MH36-7A022	SHAFT	1
70	MH36-6A027	PIVOT FORK	1
71	MH36-7A011	PIVOT STUDS	2
72	PP-1458	1.25 I.D. X .75 NEEDLE BRG.	4
73	PP-1483	MITER GEAR	2
74	MH36-7A066	1.0 I.D. X 1.25 O.D. INNER RACE	2
75	PP-1004	1.25 ID X 1.75 OD X .125 THRUST WASHER	14
76	PP-1227	0.75 ID X 0.875 OD X 0.75 WIDE	1
77	M8 X 1.25 X 16	SHCS	12
78	MH36-6A022	INTERMEDIATE LINK (R.H.)	1
79	MH36-6A043	INTERMEDIATE LINK (L.H.)	1
80	MH36-7A031	PLATE SPACER	2
81	MH36-6A021	SLIDE ADJUSTER	2
82	M12 X 1.75 X 25	SHCS	4
83	MH36-7A040	PIVOT PIN	1
84	MH36-7A056	SPACER	2
85	MH36-6A026	CONNECTING ROD 7.5 B.C.	1
86	PP-1457	1.50 I.D. X 1.25LG NEEDLE BRG.	3
87	MH36-7A049	BEARING WASHER	1
88	MH36-7A050	CRANK NUT	1
89	M10 X 1.5 X 30	SHCS	6
90	MH36-7A006	ADJUSTMENT SHAFT	1
91	MH36-7A004-V2	ADJUSTING CROSS SHAFT	1
92	MH36-6A023	INTERMEDIATE LINK	1
93	PP-1465	1.50 ID X 2.0 OD X 1.0 NEEDLE BEARING	1
94	PP-1462	1.0 I.D. X 1.0 LG. NEEDLE BRG.	3
95	STD.	STRAIGHT GREASE ZERK	24
96	MH36-7A024	MAIN PIVOT PIN	1
97	MH36-7A051	SPACER	2
98	MH36-6A024	ROCKER BLOCK	1
99	PP-1456	1.25 I.D. X 1.25LG NEEDLE BRG	6
100	MH36-7A039	PIVOT PIN	2
101	M12 X 1.75 X 35	SHCS	1
102	MH36-6A025	VERTICAL LINK	1
103	MH36-7A052	SPACER	4



Item	Part No.	Description	Qty.
104	MH36-7A012	MAIN PIVOT SHAFT	1
105	MH36-7A044	THRUST WASHER	2
106	PP-1468	3.0 I.D. X 3.75 O.D. X 1.75 NEEDLE BRG.	2
107	MH36-6A029	SLIDE BLOCK	1
108	MH36-6A009	MAIN LEVER BAR	1
109	MH36-7A060	PIVOT PIN (TOP)	1
110	MH36-6A048	SLIDE BLOCK (WIDE)	1
111	MH36-5A003	SPRING FORK ASSEMBLY	1
112	M10 X 1.5 X 20	SHCS	4
113	PP-1279	1.25" THRUST WASHER	6
114	PP-1678	1.25 I.D. x 1.50 O.D. x .625 SLEEVE BUSHING	2
115	MH36-6A073	MTG BLOCK (TALL)	2
116	MH36-6A065	CROSS BAR	1
117	MH19-7A054	SPRING CAP	1
118	MH19-7A055	SPRING LOCK NUT	1
119	M12 X 1.75 X 55	SHCS	8
120	2.0" EXT. RETAINING RING	STD.	2
121	3.0" EXT. RETAINING RING	STD.	2
122	MH36-6A052	MTG BLOCK	2
123	MH36-6A038	CHAIN CROSS BAR	1
124	PP-1463	5/8 FLANGED BALL BEARING	2
125	MH36-7A015	PIVOT SHAFT	1
126	MH36-7A014	ADJUSTMENT SHAFT	1
127	MH36-7A032	ADJUSTMENT SHAFT	1
128	MH36-7A047	SPECIAL NUT	2
129	PP-1473	16 TOOTH #40 SPROCKET	2
130	PP-1466, PP-1467	1.125 ID X 2.25 OD X .6875 BRG SET	4
131	PP-0168	.625 ID X 1.0 OD X .0625	2
132	1/4-20 X 3/8	SET SCREW	4
133	PP-1674	GEAR BOX	1
134	MH36-6A068	GEARBOX MTG PLATE	1
135	M8 X 1.25 X 45	HEX FLANGE	4
136	M5 X 0.8 X 20	FHCS	4
137	M5 X 0.8	FLANGE NUT	4



Item	Part No.	Description	Qty.
138	MH36-7A067	U JOINT SHAFT	1
139	PP-1033	5.0 HANDWHEEL	2
140	MH36-6A016	SPRING LEVER	1
141	PP-1460	1.25ID X 1.75OD X 1.0 NEEDLE BRG	9
142	MH36-6A015	SPRING LINK (NARROW)	1
143	MH36-7A035	PIVOT PIN	1
144	MH36-7A008	SPRING SHAFT ADJUSTER	1
145	MH36-7A007	SPRING SHAFT	1
146	PP-1472	1.50 ID X 1.75 OD X 1.0 LG	2
147	MH36-7A009	SPRING SOCKET	8
148	MH36-6A017	SHORT TOGGLE LINK	2
149	MH36-6A018	LONG TOGGLE LINK	2
150	MH36-7A033	PIVOT PIN	1
151	MH36-7A034	PIVOT PIN	1
152	PP-0935	1.0 ID X 1.5 OD X .0625 THK	2
153	MH36-7A062	SHEAR PIN	1
154	MH36-7A016	PIN RECIEVER SHAFT	1
155	STD.	1.25" EXT. RETAINING RING	4
156	M12 X 1.75 X 30	SHCS	1
157	M8 X 1.25 X 20	SHCS	2
158	3/4-16 X 7.50	SHCS	4
159	MH36-5A010	SPACER TUBE	1
160	PP-1454	2" BORE CARTRIDGE BEARING	1
161	M12 X 1.75 X 30	HEX FLANGE	4
162	M10 X 1.5 X 40	HEX FLANGE	4
163	PP-1482	1.50 CARTRIDGE BEARING	3
164	PP-1079	5 HP 3 PHASE MOTOR	1
165	1/2 LOCK WASHER	STD.	4
166	1/2-13 X 2.0	HHCS	4
167	M8 x 1.25 x 35	HEX FLANGE	20
168	MH36-5A011	IDLER MOUNT	1
169	MH36-7A037	IDLER PULLEY	1
170	PP-1471	1.50" BALL BEARING	2
171	MH36-7A013	INTERMEDIATE SHAFT	1
172	MH36-6A020	BEARING PLATE	1



Item	Part No.	Description	Qty.
173	MH36-7A005	CRANKSHAFT 0.375 OFFSET	1
174	MH36-7A059	GUARD SPACER	3
175	PP-1453	1.0 CARTRIDGE BEARING	2
176	MH36-7A026	PLATE SPACER	2
177	MH36-6A046	BEARING PLATE	1
178	MH36-7A028	JACK SHAFT	1
179	MH36-7A042	IDLER PIN	1
180	MH36-5A012	IDLER BRKT	1
181	MH36-7A041	IDLER PULLEY	1
182	PP-1470	0.75 BALL BEARING	4
183	PP-1676	TIMING PULLEY 32 TOOTH	1
184	MH36-7A074	TIMING PULLEY 22 TOOTH	1
185	M16 X 2.0 X 50	HEX FLANGE	2
186	M12 X 1.75 X 25	HEX FLANGE	4
187	STD.	M10 X 1.50 X 1.25 STUD	3
188	MH36-7A076	TIMING PULLEY 32T (2" BORE)	1
189	1.50 EXT. RETAINING RING	STD.	1
190	3/4" EXT. RETAINING RING	STD.	2
191	PP-1474	TIMING PULLEY 56 TOOTH	1
192	PP-1475	TIMING PULLEY 40 TOOTH	1
193	PP-1478	TIMING BELT	1
194	PP-1481	TAPER LOCK BUSHING	1
195	PP-1480	QD BUSHING 1.50	1
196	PP-1479	QD BUSHING 2.0"	1
197	3/8-16 X 2.25	HHCS	3
198	1/2-13 X 2.50	HHCS	3
199	M6 X 1.0 X 8	SET SCREW	2
200	STD.	.375 SQ X 2.0 KEY	1
201	STD.	.50 SQ X 3.875 KEY	1
202	PP-1477	TIMING BELT 8MM	1
203	PP-1649	CHAIN COUPLING SPROCKET	2
204	PP-1649	CHAIN COUPLING CHAIN	1
205	STD.	.25 X .25 X 1.0 KEY	3
206	PP-1034	8" SOLID HANDWHEEL	1
207	MH36-6A055	END GUARD	1



Item	Part No.	Description	Qty.
208	MH36-6A069	FRONT PULLEY GUARD	1
209	MH36-6A057	INSIDE GUARD	1
210	MH36-6A058	REAR GUARD	1
211	M19-5A005	GUARD TAB	32
212	STD.	M8 X 1.25 X .25 SHOULDER BOLT	2
213	PP-1382	M8 KNOB	4
214	M6 X 1.0 X 10	BUTTON HEAD	7
215	M6 X 1.0 X 12	BUTTON HEAD	64
216	PP-1310	ELECTRICAL BOX	1
217	PP-0304	ON/OFF 2 POLE SWITCH	1
218	MH36-6A077	TOOL HOLDER KEY	1
219	M8 X 1.25 X 35	HEX FLANGE	2
220	PP-0589	1/4" ELBOW	2
221	PP-0587	1/4" X 2" PIPE	1
222	PP-0588	1/4" X 4 1/2" PIPE	1
223	PP-0821	OIL RESERVOIR	1
224	MH19-6A027	GUARD STRAP	2
225	MH36-6A078	HAMMER GUARD	1
226	STD.	.25 X .25 X 1.50 KEY	1
227	1.5 DIA X 6.0 SPRING	1.50 DIA. X 6.0 SPRING	1
228	PP-1300	SPRING	4
229	PP-1464	1.25 ID X 1.50 OD X 1.25	1
230	3/8-16 X 4.5	HHCS	2
231	STD.	3/8"-16 HEX NUT	2
232	PP-1692	RUBBER STANDOFF	4
233	M8 X 1.25 X 12	SHCS	8
234	MH36-6A074	CONTROL BOX BRACKET	1
235	M6 X 1.0 X 16	HEX FLANGE	3
236	PP-1230	SWITCH BOX	1
237	PP-1402	BLACK SWITCH	2
238	PP-0044	POTENTIOMETER	1
239	PP-0023	CORD GRIP	1
240	M5 X 0.8 X 10	PPMS	4
241	MH19-6A024	JACK SCREW BLOCK	2
242	M8 X 1.25 X 40	HEX FLANGE	4



Item	Part No.	Description	Qty.
243	PP-1695	RUBBER O-RING	1
244	MH36-6A084	GUARD 1	2
245	MH36-6A085	GUARD 2	1
246	M6 X 1.0 X 10	CROSS HEAD SCREW	12
247	PP-1685	RETENTION STUD	2
248	MH36-6A082	WEDGE KEY	2
249	MH36-6A083-V2	PUSH PAD	2
250	MH36-7A078	SPRING SHAFT	4
251	PP-1687	QUICK RELEASE SPRING	4
252	N/A	TEST TOOLING	2
253	M8 FLATWASHER	STD.	2
254	M5 X 0.8 X 10	SHCS	4
255	M6 X 1.0 X 20	SHCS	2
256	M6 X 1.0	JAM NUT	2



NOTES



NOTES



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