



OPERATOR'S MANUAL



C-FRAME PRESS BRAKE MODEL: CFP-30HD

Baileigh Industrial, Inc.
P.O. Box 531
Manitowoc, WI 54221-0531
Phone: 920.684.4990
Fax: 920.684.3944
sales@baileigh.com

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THANK YOU & WARRANTY

Thank you for your purchase of a machine from Baileigh Industrial. 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 30 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's 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 attorneys' 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 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 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 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 Baileigh Industrial 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.



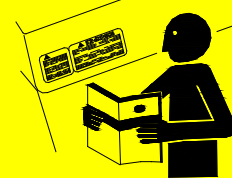
Note: *This symbol refers to useful information throughout the manual.*



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

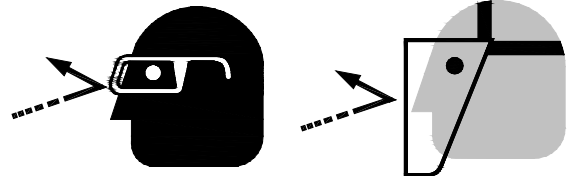


SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.



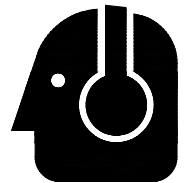
PROTECT EYES

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



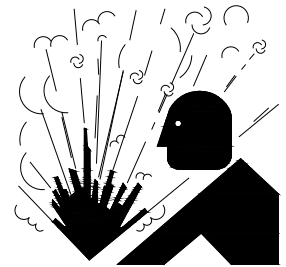
PROTECT AGAINST NOISE

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.



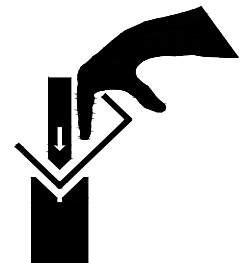
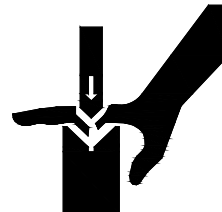
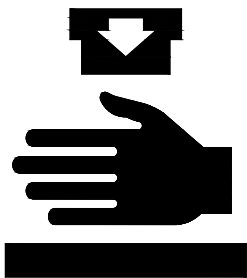
HYDRAULIC HOSE FAILURE

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



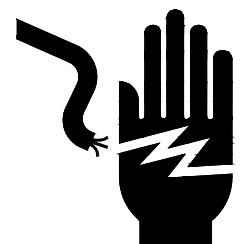
BEWARE OF CRUSH HAZARD

NEVER place your hands, fingers, or any part of your body in the die area of this machine. Keep hands and fingers away from the ram and tooling when the machine is in operation.



HIGH VOLTAGE

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





EMERGENCY STOP BUTTON

In the event of incorrect operation or dangerous conditions, the machine can be stopped immediately by pressing the **E-STOP** button. Twist the emergency stop button clockwise (cw) to reset. Note: Resetting the E-Stop will not start the 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. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** Learn the machine's application and limitations as well as the specific hazards.
2. **Only trained and qualified personnel can operate this machine.**
3. **Make sure guards are in place and in proper working order before operating machinery.**
4. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
5. **Keep work area clean.** Cluttered areas invite injuries.
6. **Overloading machine.** By overloading the machine you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
7. **Dressing material edges.** Always chamfer and deburr all sharp edges.
8. **Do not force tool.** Your machine will do a better and safer job if used as intended. **DO NOT** use inappropriate attachments in an attempt to exceed the machines rated capacity.



9. **Use the right tool for the job.** **DO NOT** attempt to force a small tool or attachment to do the work of a large industrial tool. **DO NOT** use a tool for a purpose for which it was not intended.
10. **Dress appropriate.** **DO NOT** wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
11. **Use eye and ear protection.** Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
12. **Do not overreach.** Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
13. **Stay alert.** Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
14. **Check for damaged parts.** Before using any tool or machine, carefully check any part that appears damaged. Check for alignment and binding of moving parts that may affect proper machine operation.
15. **Observe work area conditions.** **DO NOT** use machines or power tools in damp or wet locations. Do not expose to rain. Keep work area well lighted. **DO NOT** use electrically powered tools in the presence of flammable gases or liquids.
16. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
17. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep them out of reach of children.
18. **DO NOT operate machine if under the influence of alcohol or drugs.** Read warning labels on prescriptions. If there is any doubt, **DO NOT** operate the machine.
19. **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. **DO NOT** bypass or defeat any safety interlock systems.
24. Keep visitors a safe distance from the work area.



TECHNICAL SPECIFICATIONS

Nominal Down Force	33T (30mT)
Nominal Return Force	10T (9mT)
Throat Depth	25.4" (645mm)
Maximum Ram Stroke	7.875" (200mm)
Maximum Distance Between Bolsters	20.625" (523.8mm)
Minimum Distance Between Bolsters	4.125" (104.7mm)
Ram Speed	Working 0.196"/s (5mm/s)
	Return 0.39"/s (10mm/s)
Bed Bolster Size (W x D)	27.56" x 23.625" (700 x 600mm)
Ram Bolster Size (W x D)	27.56" x 13.8" (700 x 350mm)
Height of Worktable Above Floor	27.25" (692mm)
Shank Hole	3.9" (100mm)
Power Supply	480V 3ph, 60hz
Motor	5hp (3.6kW), 480V 3ph, 60hz, 10.1A
Maximum Working Pressure	3538psi (244bar)
Oil Tank Capacity	23.7gal (90L)
Overall Dimensions (W x D x H)	44.25" x 62" x 86.5" (1124 x 1575 x 2197mm)
Weight (Dry)	4410lbs (2000kg)

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.





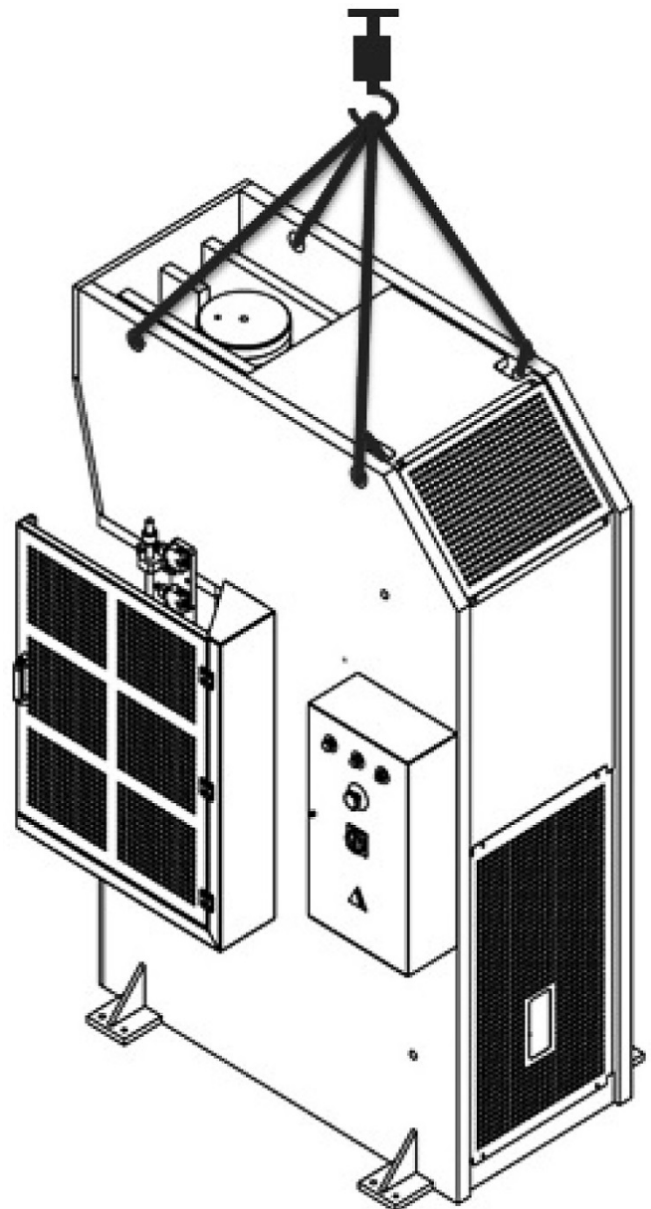
TRANSPORTING AND LIFTING



CAUTION: 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. Choose a location that will keep the machine free from vibration and dust from other machinery. Keep in mind that having a large clearance area around the machine is important for safe and efficient working conditions.

Follow these guidelines when lifting:

- 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. Avoid rough or jerky motion, and maintain a safe clearance zone around the transport area.
- 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.
- Level the machine so that all the supporting feet are taking the weight of the machine and no rocking is taking place.





INSTALLATION

IMPORTANT:

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

- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles.
- Maintain an adequate working area around the machine for safety.
- Have the work area well illuminated with proper lighting.
- Keep the floor free of oil and make sure it is not slippery.
- Remove scrap and waste materials regularly, and make sure the work area is free from obstructing objects.
- If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.
- **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.
- **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. This machine must be leveled to 0.0015"/yd. (0.04mm/m) in all directions.
- **BOLSTER LEVELING:** Once the press is fully installed, check the bolster plates for parallelism. Use shims (customer supplied) to bring the bolster plates to be parallel to each other. It is recommended to use stainless steel shims and to recheck the parallelism annually and replace the shims as needed. If the press is used for multiple shifts and especially if the press is normally being operated at or over 85% of full capacity, then the shims may require replacement more often.
- **WORKING CLEARANCES:** Take into consideration the size of the material to be processed. Make sure that you allow enough space for you to operate the machine freely.
- **POWER SUPPLY PLACEMENT:** The power supply should be located close enough to the machine so that the power cord is not in an area where it would cause a tripping hazard. Be sure to observe all electrical codes if installing new circuits and/or outlets.

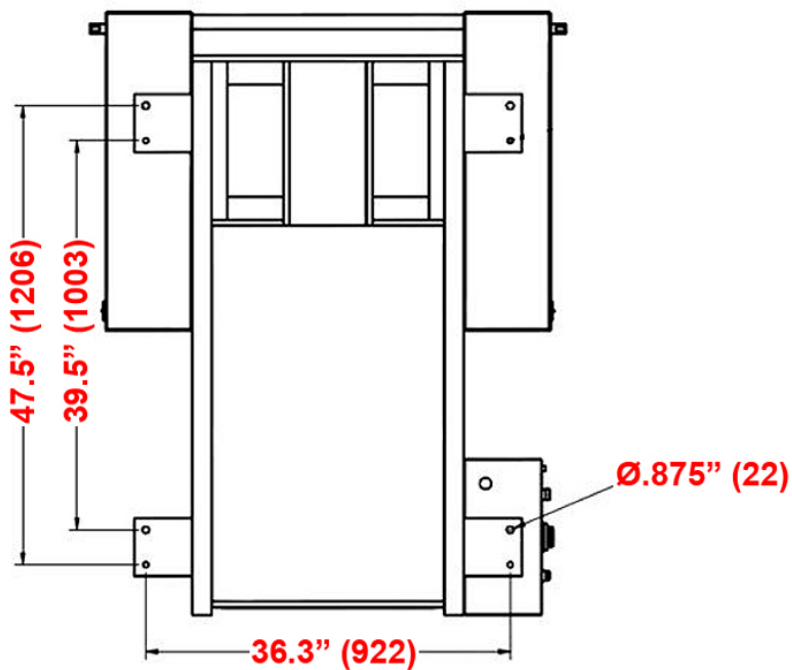
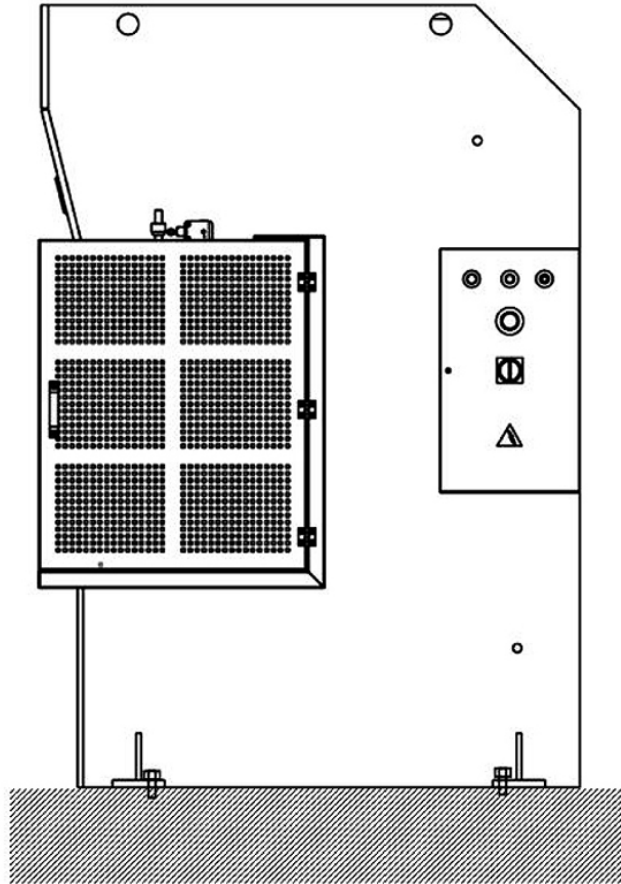
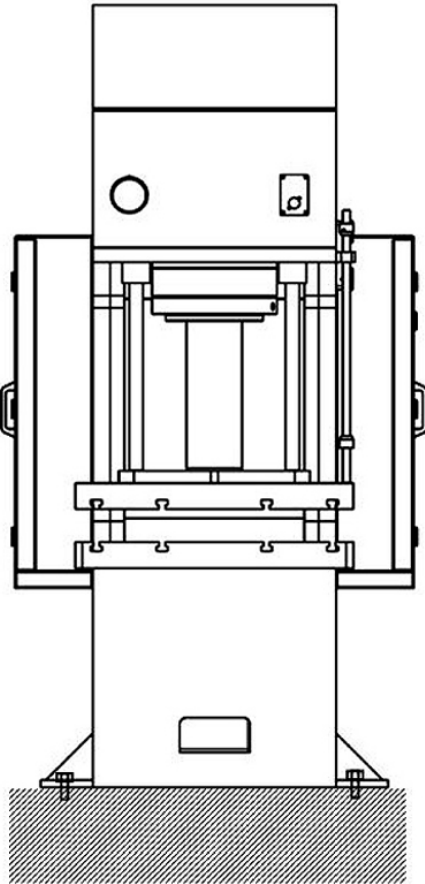


Anchoring the Machine

- Once positioned, anchor the machine to the floor. Use bolts and expansion plugs or sunken tie rods (customer supplied) that connect through and are sized for the holes in the base of the stand.
- This machine requires a solid floor such as concrete at a minimum of 6" (153mm) thick. 8" (204mm) minimum is preferred with a properly prepared base. Check with local engineering firms for specific information for your installation.

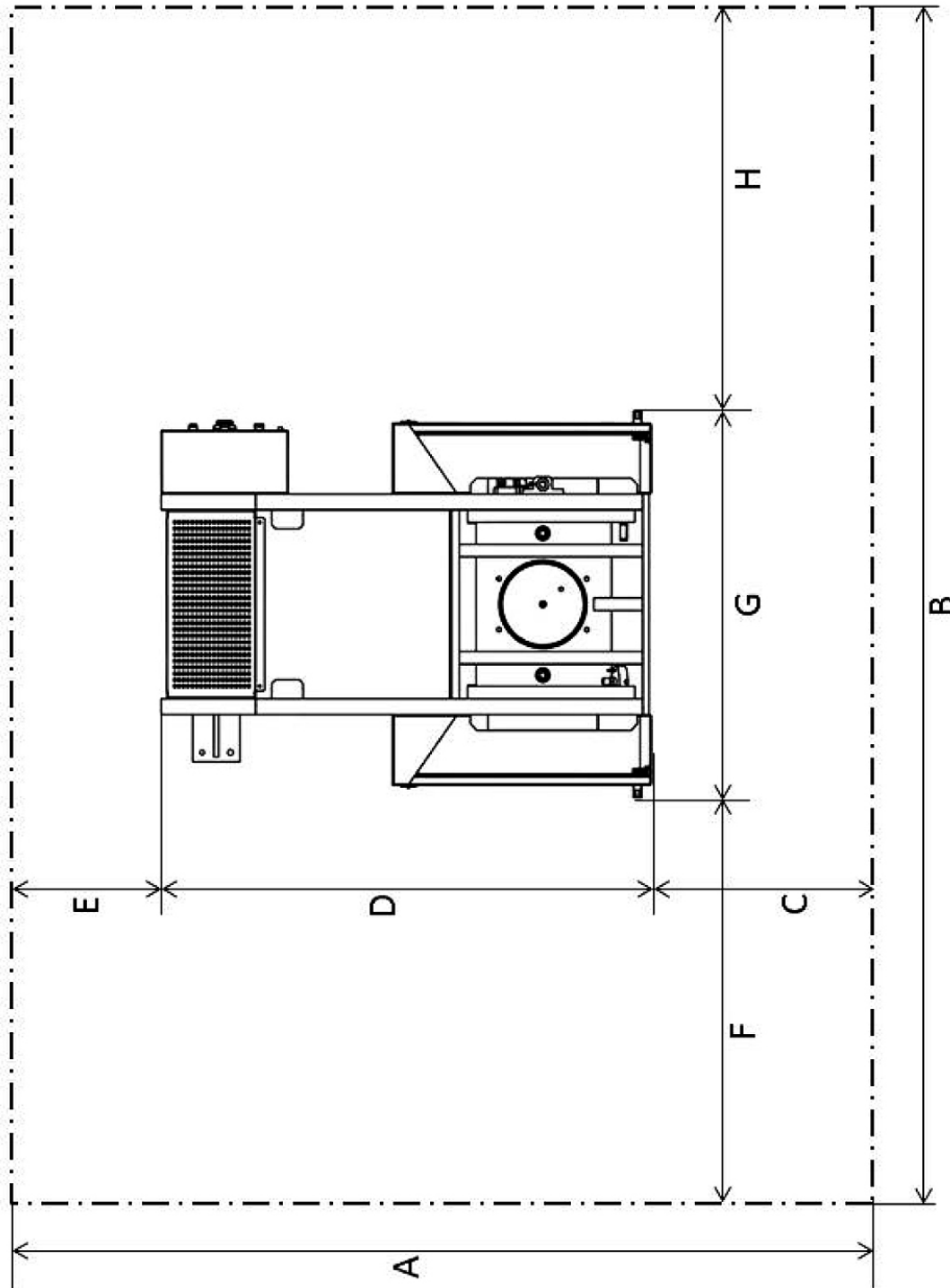


Foundation





Working Clearance



A	B	C	D	E	F	G	H
140" (3556)	204" (5182)	39" (990)	62" (1575)	39" (990)	78" (1981)	44.25" (1124)	78" (1981)



Tank Filling

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

After installation of the machine and before machine startup, remove the lower back panel and fill the hydraulic tank oil level up to 90% of capacity. Verify that any cylinder rams are in the retracted position to prevent overfilling of the tank.

Recheck the oil level after the first few hours of operation and again after the first full week of operation.

A shortage of hydraulic oil can cause hydraulic system breakdown and damage to the hydraulic pump.



Air Purge



CAUTION: DO NOT perform this function with any tooling or objects between the bolster plates. DO NOT perform this function until the press is fully installed, functional, and a basic understanding of the controls is known.

When starting up for the first time or when maintenance on the hydraulic system has been performed, the hydraulic system needs to be purged.

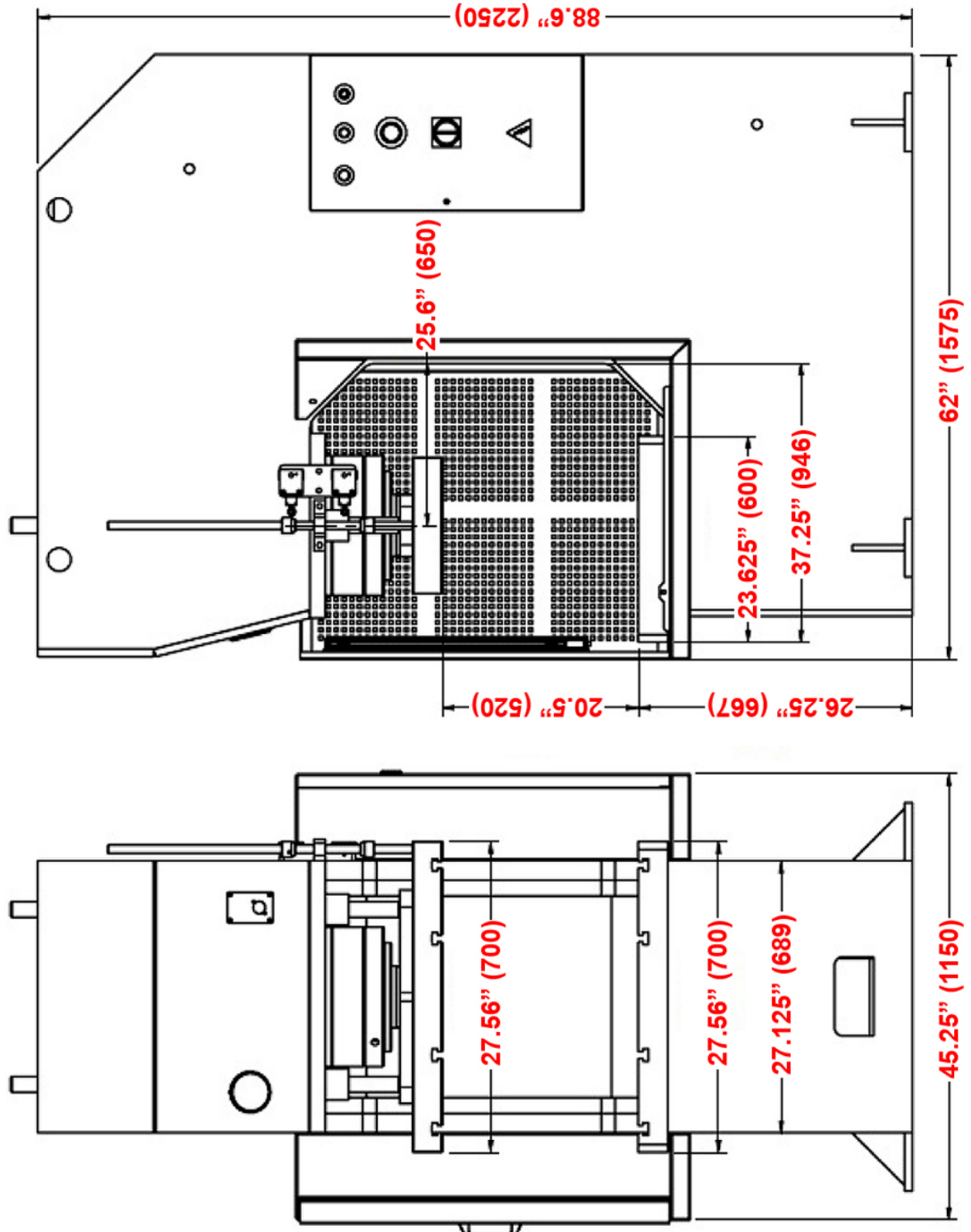
1. Make sure there is no material or tooling on the table.
2. Set the upper travel limit collar as high as it will go and the lower travel limit collar as low as it will go.
3. Set the speed change rod so that it will not contact the speed change switch.
4. Start the hydraulic unit.
5. If not already fully retracted, using the ram up button on the control pedestal to fully retract the ram.
6. Place the stroke switch in position 2 (automatic return) and the operation control switch in the foot position.
7. Press the foot pedal and allow the ram to fully extend until the pressure switch is activated to retract the ram.
8. Repeat this complete cycle at least 6 times to be sure all air is out of the system.

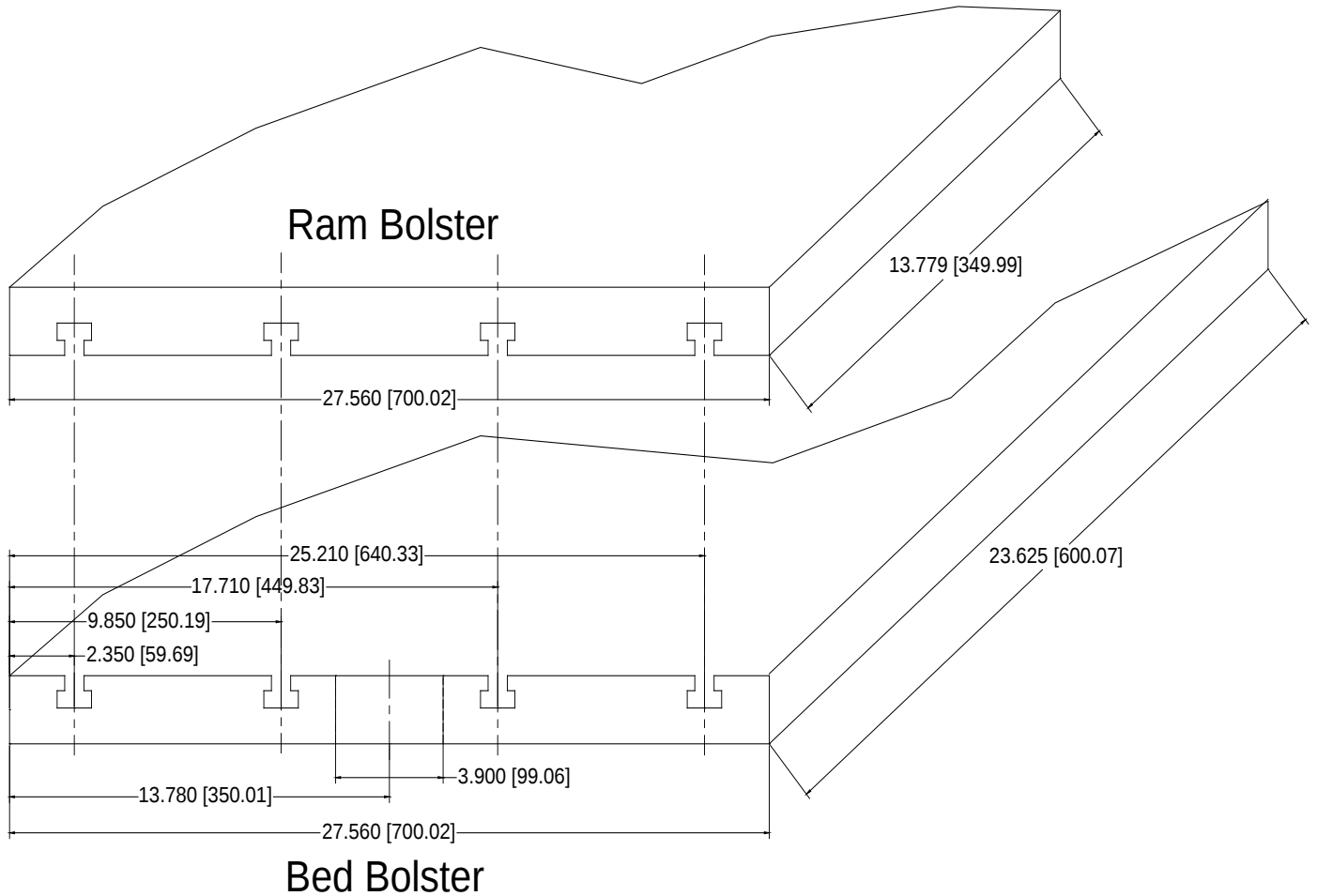


IMPORTANT: Air in the hydraulic system can cause unexpected piston movement and poor overall press operation.

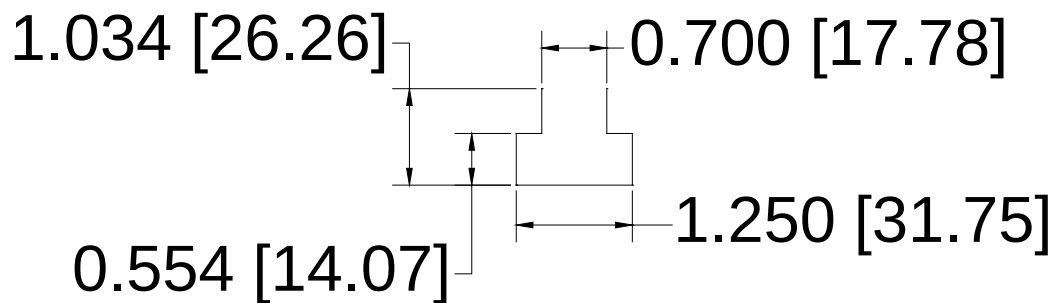


OVERALL DIMENSIONS





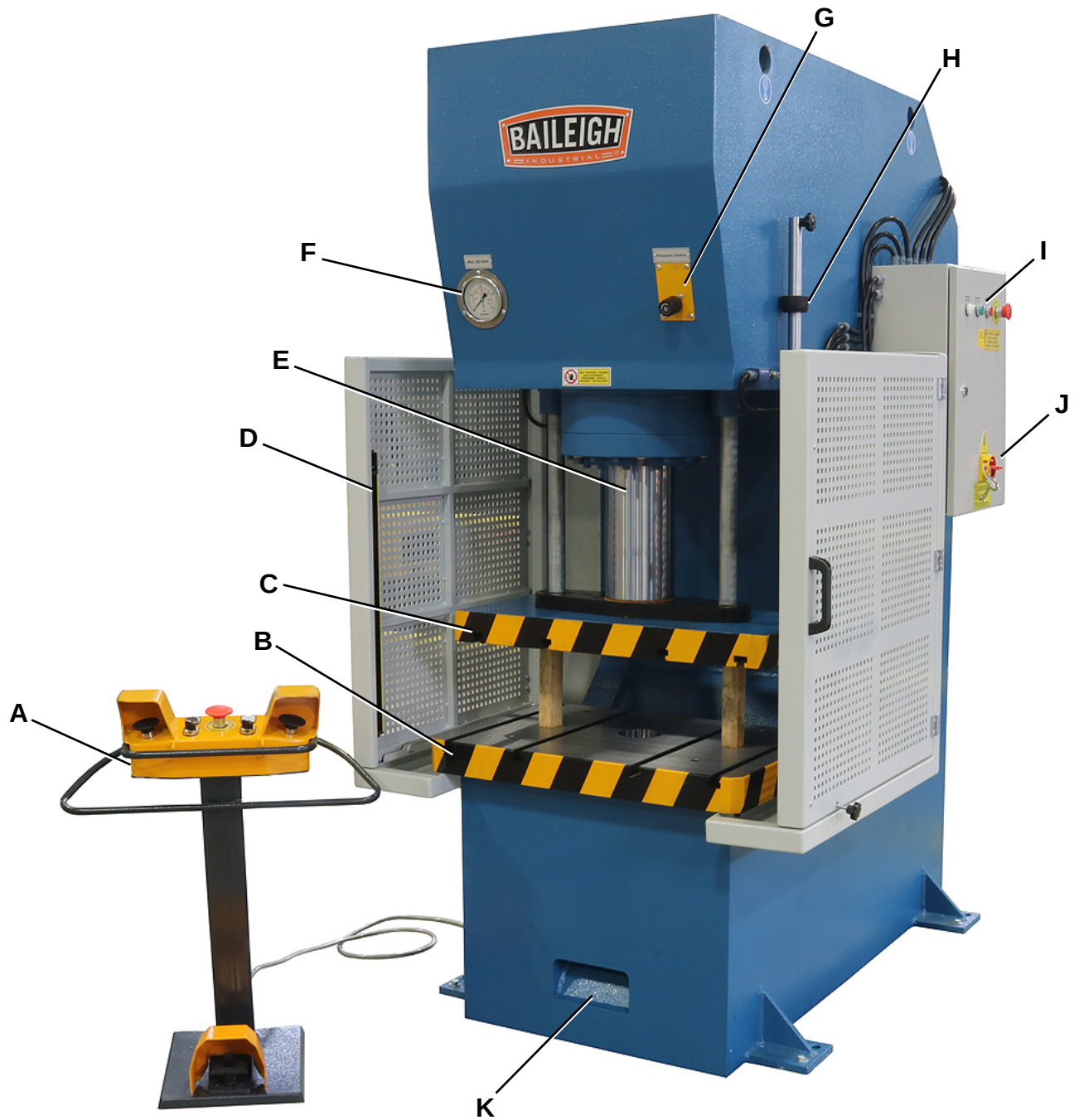
T-Slot

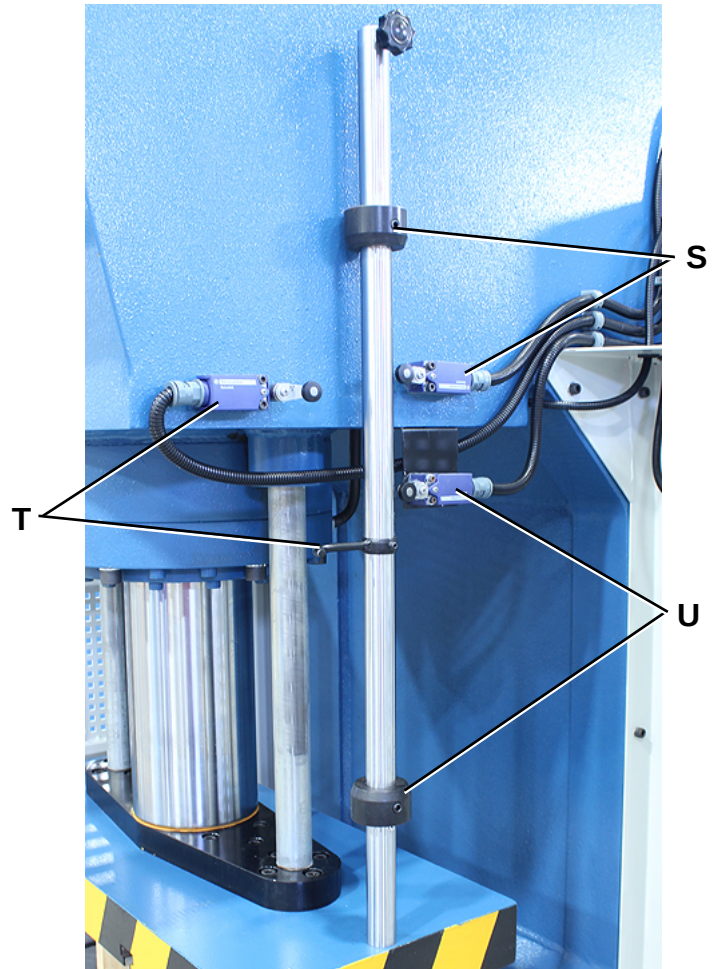


Note: T-Bolts and fasteners are not included.



GETTING TO KNOW YOUR MACHINE







Item	Description	Function
A	Control Pedestal	Houses the controls to operate the press.
B	Bed Bolster	Used to mount the lower tooling or die.
C	Ram Bolster	Used to mount the upper tooling, die, or punch.
D	Safety Guards with Light Curtains.	Protects the operator and bystanders from inadvertently getting into the ram area of the press. Safety curtains will stop ram movement when the light beam is broken. The guards may be opened during setup and installation and removal of tooling and material, they do need to be closed and secured during pressing operation.
E	Cylinder Ram	Extends down from the cylinder to provides the force to complete the press operation.
F	Pressure Gauge	Displays the current pressure during operation.
G	Pressure Adjustment Valve/Switch	Adjust as need for the material to be pressed. NEVER EXCEED THE MAXIMUM PRESSURE LISTED IN THE SPECIFICATIONS.
H	Ram Travel Control Post	Has adjustable collars to set the ram travel limits and speed.
I	Electrical Control Cabinet	Houses all of the electrical controls to operate the press.
J	Main Disconnect Switch	Turns power on and off to the operating controls of the press to allow the pump to be started and pressing operations to be completed. Turn off when the press is not in use or during any service functions.
K	Discharge Chute	Materials pressed through the bed bolster shank hole will be discharge at this location.
L	Ram Up Button	Press to raise the ram.
M	Emergency Stop Button	Press to stop the press functions in case of an incorrect operation or dangerous condition. When the condition is corrected to be safe, twist the cap to reset.
N	Power Lamp	Illuminates when the control pedestal is operational. The lamp will turn off when the operating system in in a fault condition such as if the light curtain light beam is broken for any reason.
O	Palm Buttons	Press and hold both palm buttons at the same (synchronized to 0.2 seconds) time to activate and extend the ram.
P	Stroke Switch	In the 1 position, generally used for set up, the ram will stop and start motion with the controls.



		In the 2 position, generally used for pressing operations, the ram will move when the controls are activated and retract when the pressure is reached, the down limit is reached, and or the controls are released.
Q	Operation Control Selector	Switches between palm button or foot pedal control.
R	Foot Pedal	Press and hold the foot pedal to activate and extend the ram.
S	Down Limit Switch/Collar	Slide the collar up or down as desired to set how far down the ram will travel. When the limit switch is activated, the ram will return up in #2 mode. This will be overridden by the pressure setting if the pressure set by the operator is reached first.
T	Speed Change Switch	Set the rod to activate the switch during the down strike of the ram. Usually slightly before contact between the upper and lower tooling and material. This will change the ram speed from approach speed to work speed to provide increased control of the pressing operation.
U	Up Limit Switch	Slide the collar up or down as desired to set how far up the ram will travel on the return stroke. When the limit switch is activated return travel will stop. Used to shorten pressing cycle times by raising the ram and tooling enough to provide safe clearance to work with the material and tooling.

ASSEMBLY AND SET UP



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

Connecting the Foot Pedal

1. Unpack the foot pedal and route the plug connector to the bottom of the electrical enclosure.
2. Connect and secure the plug into the socket.
3. Position the foot pedal as needed for ease of operation. **DO NOT** allow the harness to become a trip hazard.



ELECTRICAL



WARNING: Baileigh Industrial 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 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.

Motor Specifications

Your tool is wired for 480 volt, 60Hz 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.

Power Supply

The machine is supplied to run on 480VAC, 3ph, 60hz. The control transformer TC1 supplies the power of AC 24V and AC 220V to the control circuit. The solenoid valve is supplied with power of DC24V.

In order to avoid the cover high voltage drop caused by the current peak value, the section of the main supply cable must be selected correctly and connected reliably with the coil in of the machine power supply.

To guarantee the safety of you and you equipment, the machine must be connected with the earthen grid by the cable whose section is as same as that of the main supply cable. It is recommended to make an earth device especially for the machine.

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 change range for the voltage is $\pm 5\%$, and for the frequency is $\pm 1\%$.



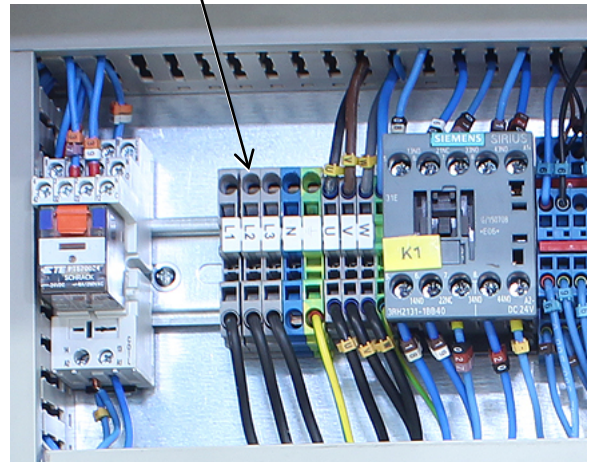
Power cord connection:

1. Unlock and open the electrical enclosure door.
2. Route a power cord through the strain relief in the lower back cabinet panel and into the cabinet to the top of the terminal strip at the upper left side of the cabinet.
 - a. Route the power cord so that it will NOT become entangled in the machine in any way.
 - b. Route the cord to the power supply in a way that does NOT create a trip hazard.
3. Connect the three power wires terminals L1, L2, & L3. Connect the ground wire (typically green) to the PE terminal.
4. Check that the power cord is routed inside the cabinet so as to avoid contact with other components inside the cabinet.



Check for correct rotation of the motor

5. Close the electrical enclosure door.
6. With power connected and the main disconnect turned ON, the power light on the control panel will be lit.
7. Place the Stroke switch in the 1 (JOG) position.
8. Press the motor start button and listen for the sound of the hydraulic pump pumping fluid. Check that the rotation direction of the motor is in accordance with the indication of the nameplate of oil pump. If not, change it at once. In case air is found in the hydraulic system, push the buttons for motor starting and stopping alternatively until the air is discharged. Recheck the hydraulic oil level.
9. Place the Hand Foot switch in the Foot position and press the ram up switch. The ram should raise. **If not**, disconnect power to the machine, and switch the L1 and L3 wires. **DO NOT** move the ground wire.





OPERATION PREPLANNING

This is a general discussion on press operation and is not intended to be an exact step-by-step procedure. This is intended to create a broad thought process to be considered prior to using the press to stimulate the operator into thinking about as many possible scenarios that could cause injury or material damage. The operator should then take all steps they can think of to prevent or protect against such possible scenarios

The following is a listing of some of the most common procedures the operator shall take into consideration and employ. The specific application will require the operator to address any items not covered here.

- Securely mount and fasten the tooling to the bolsters using the t-slots.
- View the setup from various angles, and verify that the work piece and tooling remains aligned with and centered with the ram and the bed.
- Is the working speed set to allow the ram speed limit switch to change to work speed before full contact and force is required.
- Are the travel limits set to match the tooling and material to be pressed and prevent damage to the machine, tooling, and material?
- Is the work area setup to provide a safe and efficient work flow.
 - o Safe operator work space to move freely with balance and vision.
 - o Room to feed material into and out of the press.
 - o Material collection of parts or material if material is removed during the pressing operation. This may include material which could fall through the shank hole.



WARNING: Failure to center the piece part on tooling which is centered under the ram may cause the piece part to be ejected causing serious injury. Never compress springs or objects that when compressed, could shatter, or explode out of the press causing serious injury.

Material Considerations

Before using this hydraulic press, you must inspect the workpiece. This is not a comprehensive list but rather a list of common issues. It is up to you to address any additional special items required to prepare your workpiece for press operations. Not addressing the items below can lead to galled, seized, or broken housings. Ignoring any of the items listed can lead to a workpiece or tooling being ejected from the press, which could cause severe injury or death.



- **Material Strength:** Make sure that the workpiece material is designed to withstand the intended force the press will apply.
- **Material Cleanliness:** Make sure that the workpiece is clean and that all burrs, grit, rust, or damage is removed from the pressing path. Light oiling on the components may prevent galling or seizing.
- **Pressing Path and Sequence:** Make sure that the direction of the component to be pressed on or off is correct and that the correct size of sleeve or arbor plate is used for support.
- **Fasteners and Retainers:** Make sure that all retaining rings, pins, or fasteners are removed, and no hidden secondary retainers are present.
- **Hidden Objects:** Some components house one or more pieces such as springs, retaining rings, or spacers. Make sure that the part to be dismantled with the press has the applicable caging system to catch hidden items. Should the workpiece slip or open up when the retaining ring is removed and the hydraulic pressure is relieved.
- **Special Fits:** Make sure that interference fits are correct before pressing a part on, and make sure that the applicable parts have been heated or chilled to the correct temperatures to avoid galling and seizing. Be aware, that not all parts were designed to be pressed off. If in doubt, refer to the OEM of the part you are working on.

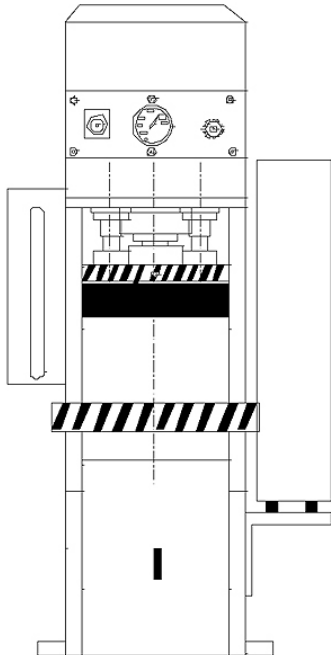
Material Considerations

Before using this hydraulic press, you must install and secure the tooling.

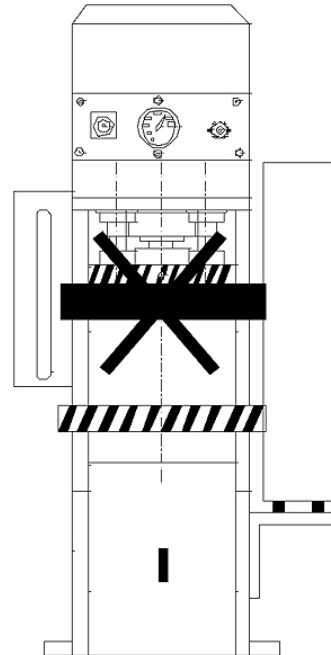
- The tooling should be securely mounted to the bolster plates using the T-slot.
- The tooling should not extend beyond the edge of the bolster plates in any direction.
- The tooling should be designed and mounted in such a way as to insure that the ram pushes down directly over the piece part being worked with.
- Tooling shall be designed in such a way as to support and contain the material from being ejected out of the press.
- Tooling shall be designed in such a way as to allow the operator to load and unload material from the press without getting their body into or between the bolster plates.



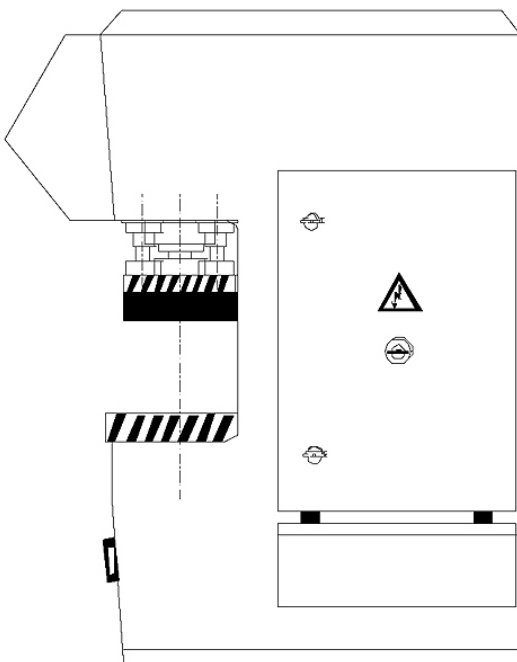
Tooling Alignment to Bolster



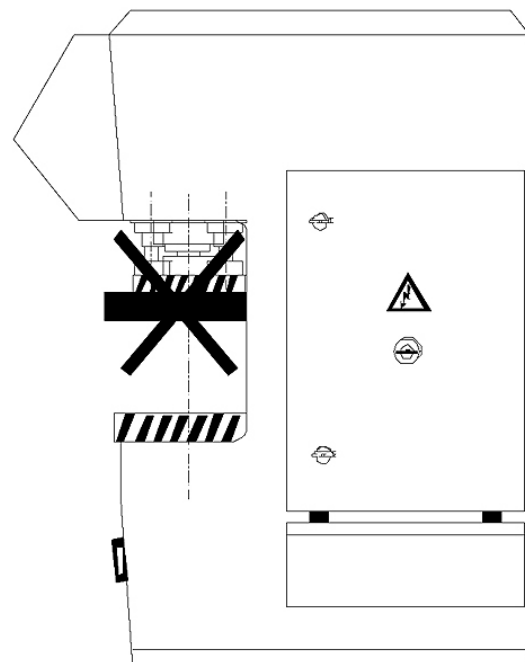
Tooling Length CORRECT,
same or less length as bolster.



Tooling Length INCORRECT,
longer than bolster.



Tooling Width CORRECT,
same or less length as bolster.

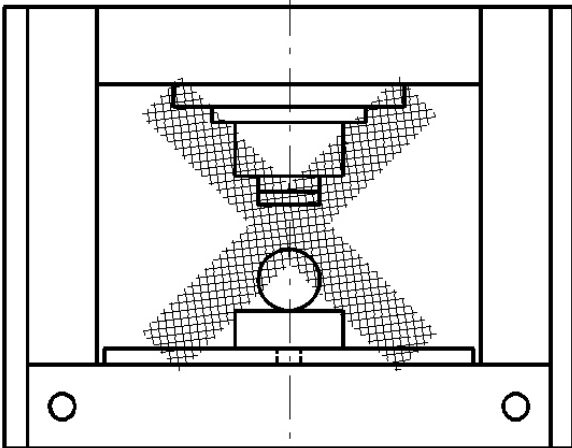
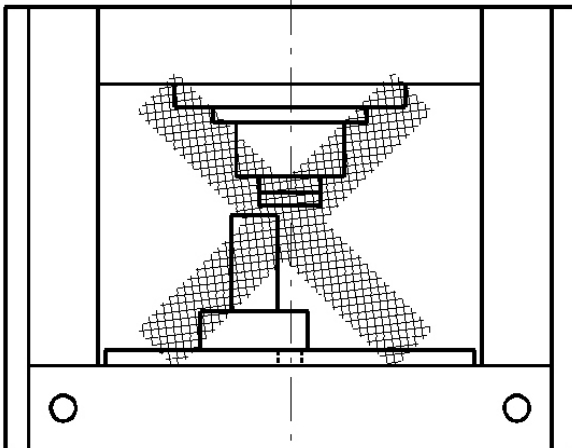
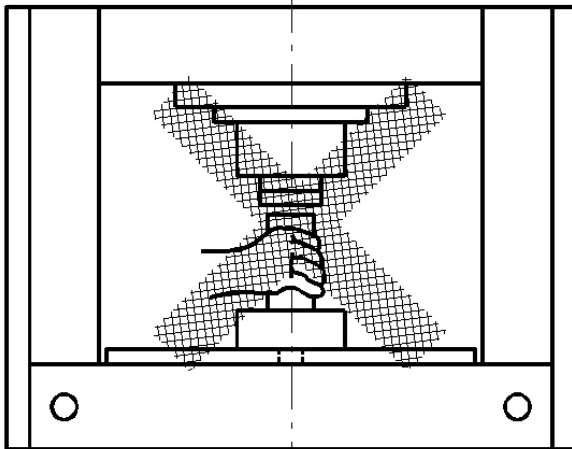


Tooling Width INCORRECT,
wider than bolster.

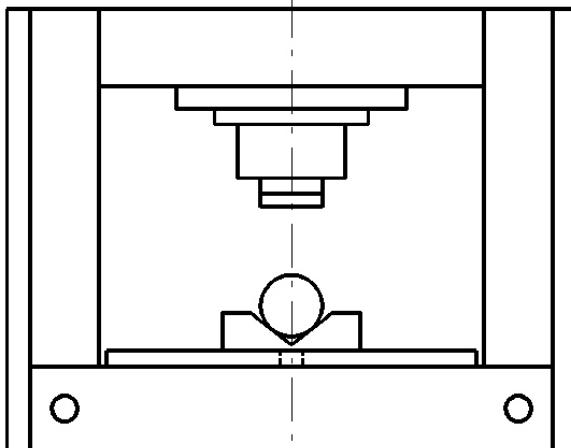
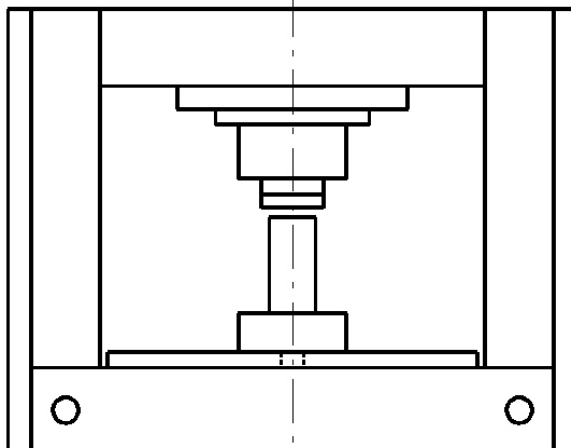
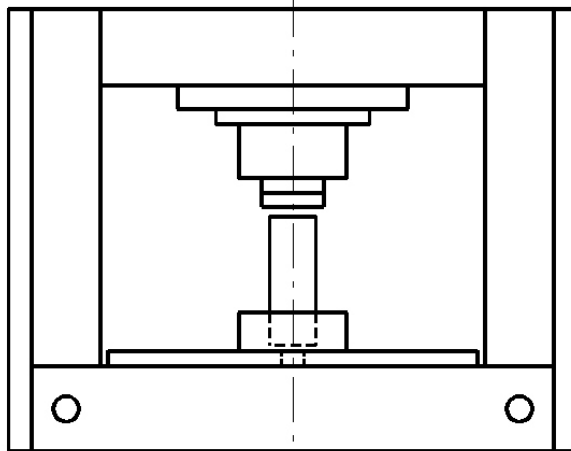


Material to Ram Alignment:

Incorrect

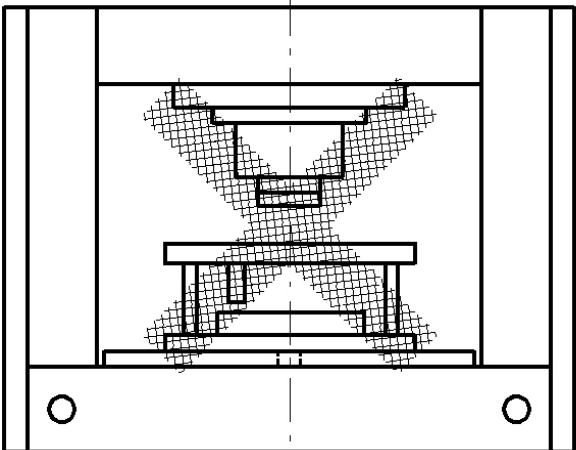
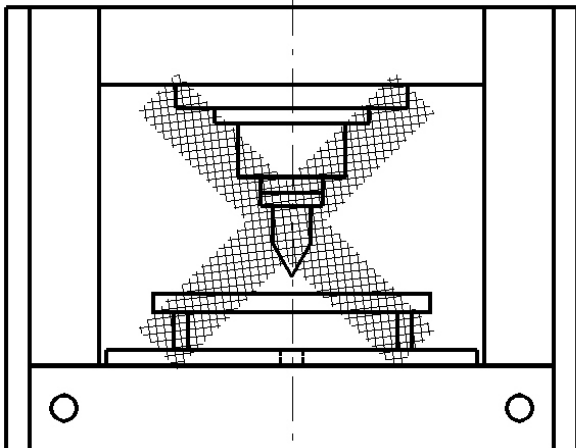
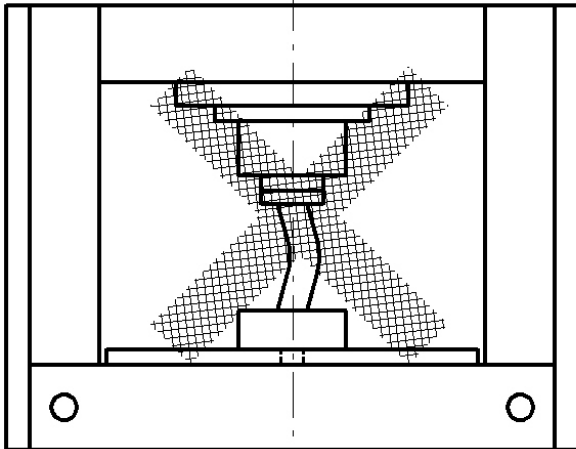


Correct

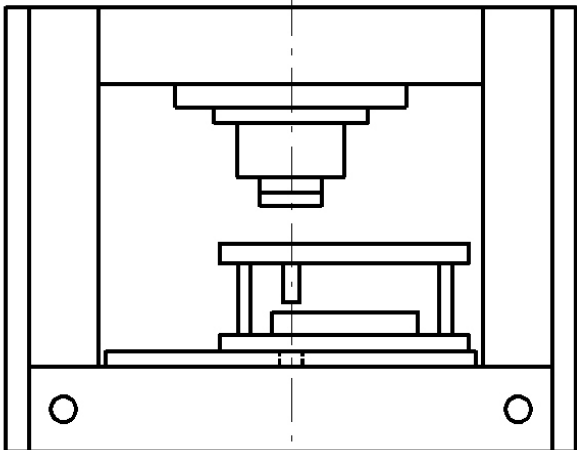
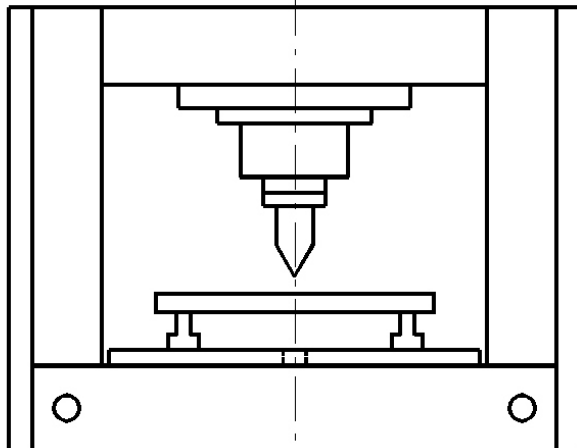
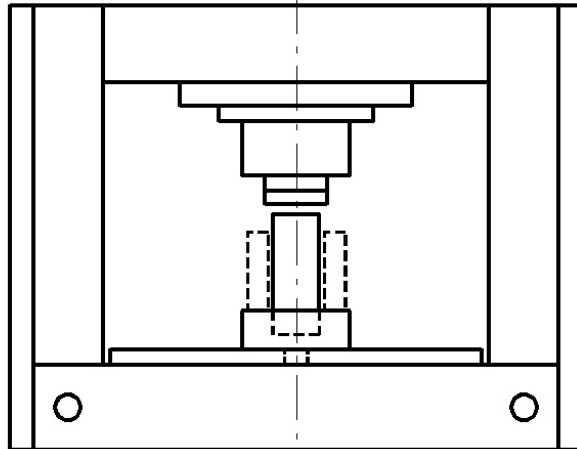




Incorrect



Correct





PRESS FUNCTIONS



CAUTION: Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges. When handling large heavy materials make sure they are properly supported.

The machine uses an electric over hydraulic operations system. There are two operation modes which are adjustment and work mode.

The working pressure, stroke speed transition point, upper travel limit, and lower travel limit may be changed and adjusted as needed to improve the pressing operation.

The ram stroke is operated from the control pedestal and controlled by the pressure setting (switch), and the 3 travel limit switches.

Electrical Cabinet Switch Functions

A Main Power Disconnect Switch. Turn OFF and lock out whenever changing tooling, or performing service or maintenance work on the press. Turn ON to supply power to the electrical system to operate the press.

B Power Lamp. This lamp will illuminate when the main disconnect is in the ON position with power to the press.

C Start Button. Press and hold to start the hydraulic pump.

D Stop Button. Press to stop the hydraulic pump.

E Cabinet Emergency Stop. Press to stop operating functions in the event of an incorrect or unsafe condition. Twist 1/4 turn to reset.





Control Pedestal Switch Functions

F Ram Up Button. Press and hold to raise the ram up to the point that the up travel collar (bottom collar on shaft) engages the up travel limit switch.

G Pedestal Emergency Stop. Press to stop operating functions in the event of an incorrect or unsafe condition. Twist 1/4 turn to reset.

H Pedestal Power Lamp. This lamp is illuminated when the electrical circuits in the pedestal are active and available to operate. When a fault occurs such as it the light curtain is interrupted, the light will turn off until the interruption is cleared.

I Mode Select Switch. Select between position 1 (Adjust Mode) and position 2 (Work Mode).

J Operation Control Selector Switch. Selects between operation using the palm button (K) or the foot pedal (L).

K Palm Buttons. When the ram area of the press is clear and ready for safe operation, the operator will press and hold

both palm buttons to complete the pressing operation. There is a 0.2 second timing factor between the palm buttons. If both buttons are not press within 0.2 seconds, the ram will not move until both buttons are released and then pressed within the time. The ram will extend downward until the buttons are released, the pressure setting is reached, or the down travel limit is engaged.

L Foot Pedal. When the ram area of the press is clear and ready for safe operation, the operator will press and hold the foot pedal to complete the pressing operation. The ram will extend downward until the buttons are released, the pressure setting is reached, or the down travel limit is engaged.





Adjustment Mode:

Place the Mode switch (I) in position 1. Place the Operation Control switch to either the Hand or Foot position as desired.

Speed Setting.

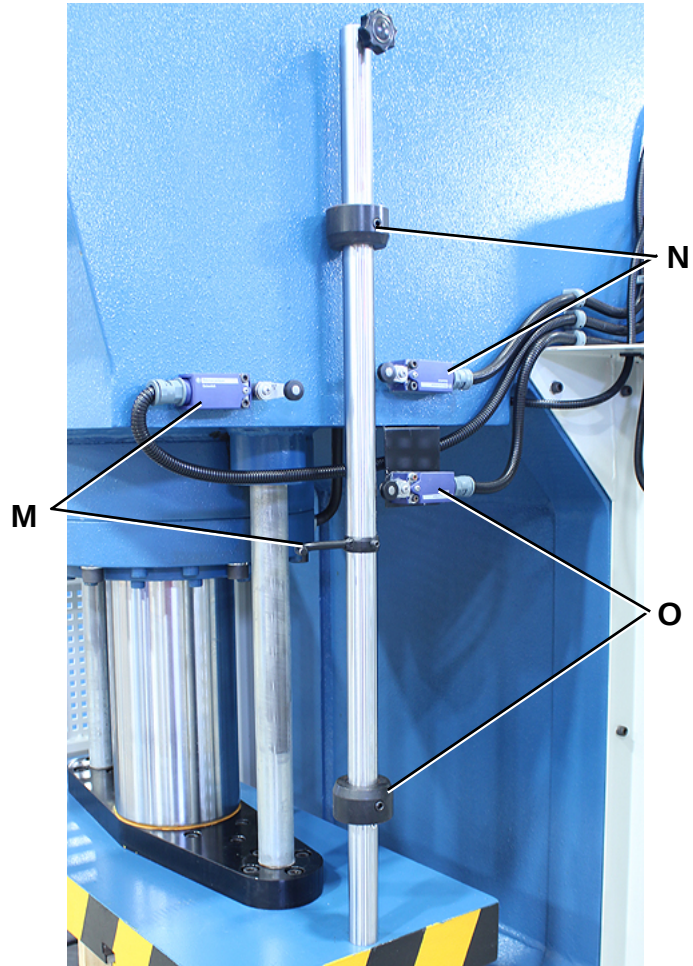
In the Hand position press the palm buttons (K). In the Foot position press the foot pedal (L) to cause the ram to go down. The ram will be moving down at fast speed until the contact rod engages the speed limit switch (M) and slows down to approximately 25% of the fast speed. When the controls being used is release, the ram travel stops.

Press and hold the ram up button to raise the ram until the button is released or the up travel limit switch is engaged.



Note: The speed activation rod is shown below the limit switch. Once the rod is below the switch, the system will remain in the slow speed mode until the rod travels up past the switch.

Loosen the set screw on the rod collar and raise or lower the rod to a desired location which will engage slow speed prior to any tooling contacting the work material.



Down Travel Limit, (Fixed Stroke)

The fixed stroke forming process can be achieved by setting the travel limit to engage and return the ram stroke before the set pressure is reached.

The fixed stroke is done by setting the down limit to the desired position and setting the pressure higher than is needed to complete the operation.

Loosen the down travel collar (N) so that it engages the limit switch (also N) at the desired ram position. During work mode operation, the ram will return automatically when the limit switch is engaged.

Up Travel Limit

The up travel of the ram can be controlled by use of the up travel limit switch and collar (O). The collar is shown in the lowest position thus providing the highest ram raised position.

Loosen the up travel collar (O) so that it engages the limit switch (also O) at the desired ram position. During operation, the ram will stop the return function automatically when the limit



switch is engaged. This is useful to shorten the pressing cycle of an operation by only raising the ram high enough to safely load and unload material.

Pressure Gauge

The pressure gauge (P) is located in the head of the press. The gauge gives the pressure in PSI and BAR. The maximum pressure for this press is 3538psi. (244 bar).

If this maximum pressure is reached, also the maximum capacity of the press is reached.

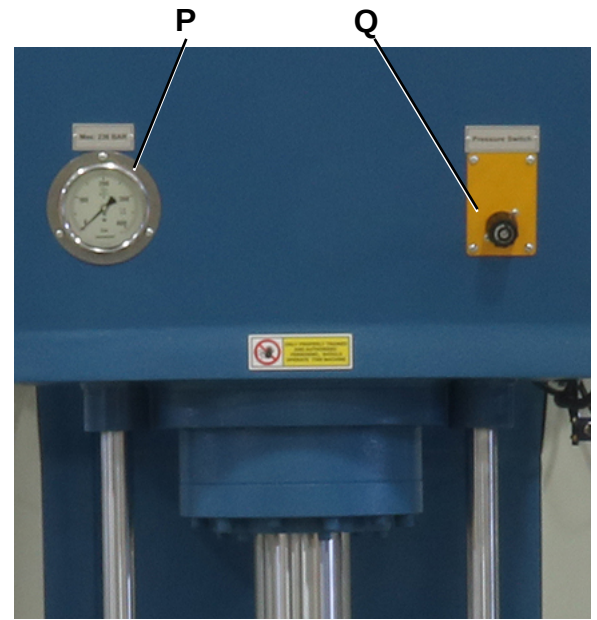
Fixed Pressure:

 **CAUTION: NEVER EXCEED THE MAXIMUM PRESSURE SETTING!**

The fixed pressure forming process can be achieved by setting the travel stop to allow for the ram to press onto the material and rise to the set pressure which will hold for a very short amount of time (less than 0.2seconds) and then return the ram automatically to the raised position.

The pressure regulation valve (Q) is located on the head of the press. With this valve the maximum pressure, referring to the maximum press capacity, can be changed. Turning the adjustment clockwise will increase the pressure, turning the adjustment counter clockwise will decrease the pressure. Adjusting the pressure to meet the material can be very beneficial in completing the pressing operation while reducing the chance to damage the piece part. Working at reduced pressure when available will also reduce the stress on the press and the hydraulic system.

Use the pressure chart to determine the pressing force at the pressures listed. Use the lowest pressure/force needed to complete the operation.





OPERATION



CAUTION: Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.

1. Place the work piece on the table so that it is aligned with the piston rod. If this is not possible, reposition the cylinder to achieve the best alignment.



WARNING: Failure to center the piece part on the blocks and the ram to the piece part may cause serious injury. Never compress springs or objects that when compressed, could shatter, or explode out of the press causing serious injury.

- Take care when performing operation on elements that are likely to fly off, break (especially casting element and hardened elements) or bounce up as a result of the applied force. In this case, a cover must be installed around the work piece or the operator should stand at a safe distance.
- After correct placement of the work piece, pressing force can be applied using the directional valve or the hand pump as described in the previous section.



Note: Upwards movement of the piston is only allowed for adjustment of the table, or returning the piston to its start position. Any other use of the return stroke (e.g. stretching) can result in broken parts and de-function of the press.

When pressing operations are finished:

- Return the piston back to its upper position.
- Position the cylinder back it the center of the machine.
- Turn of the hydraulic unit.
- Clean up the machine and working area.



BENDING ALLOWANCE

In order to bend sheet metal accurately, you will need to consider the total length of each bend. This is referred to as bend allowance. Subtract the bend allowance from the sum of the outside dimensions of the piece part to obtain the actual overall length or width of the piece. Because of differences in sheet metal hardness, and whether the bend is made with the grain or against it, exact allowances must sometimes be made by trial and error. However bend allowances for general use can be obtained from metal working books or from the Internet.

UNDERSTANDING SPRINGBACK

Springback, also known as elastic recovery, is the result of the metal wanting to return to its original shape after undergoing compression and stretch. After the bending leaf is removed from the metal and the load is released, the piece part relaxes, forcing the bent portion of the metal to return slightly to its original shape. The key to obtaining the correct bend angle is to over bend the metal a little and allow it to spring back to the desired angle. All metals exhibit a certain amount of spring back.

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.
- Check the hydraulic oil level weekly using the oil sight gauge at the rear of the machine.



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

Hydraulic Oil

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

1. Use hydraulic oil listed or an equivalent with similar specifications.
2. Keep hydraulic reservoir filled to 90% of capacity.
3. DO NOT rely totally on the oil gauge as they can sometimes indicate an incorrect level reading. Do a visual inspection with the oil fill cap removed as well.
4. A shortage of hydraulic oil will cause hydraulic system breakdown to major mechanical components due to overheating.
5. Change the hydraulic oil every 12 months along with the oil filter.
6. Clean the hydraulic suction filters inside the hydraulic tank and replace if necessary.
7. Always close the tank cap tightly



HYDRAULIC OIL LIST

Our machines hydraulic systems use Grade 32 Hydraulic Oil and Grade 46 Hydraulic Oil. Generally we recommend the use of Shell Tellus Nr.46 and BP Energol Nr.46 for hydraulic systems

BRAND	DIN 51524 SPECIFICATION 32 GRADE MINERAL OIL	DIN 51524 SPECIFICATION 46 GRADE MINERAL OIL
BP	ENERGOL HLP 32	ENERGOL HLP 46
CASTRO	HYSPIN AWS 32	HYSPIN AWS 46
ESSO	NUTO H 32	NUTO H 46
FINA	HYDRAN 32	HYDRAN 46
MOBIL	DTE 24	DTE 25
SHELL	TELLUS 32	TELLUS 46
TEXACO	RANDO HD 32	RANDO HD 46

Oil Disposal

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

Lubrication Point

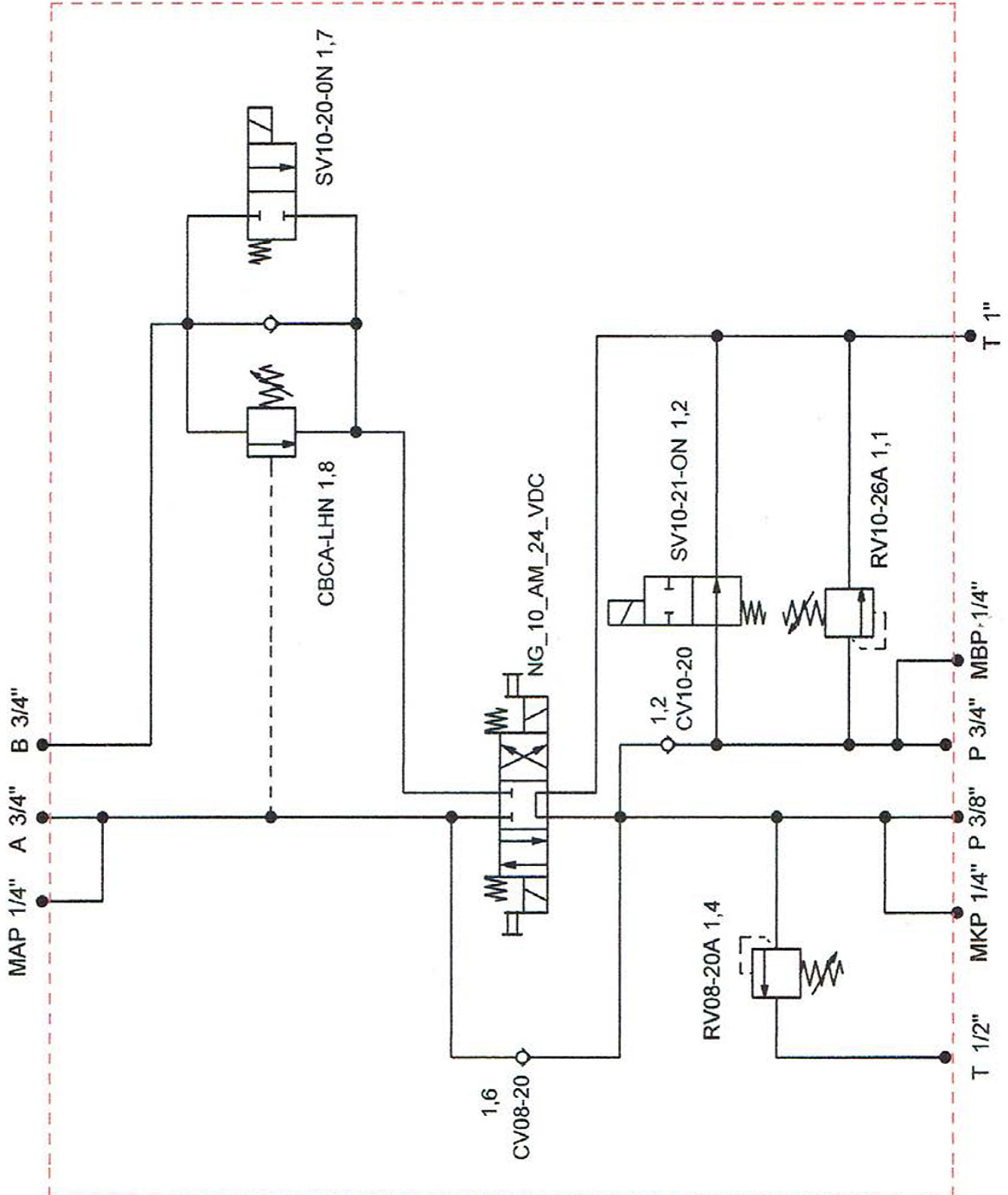
The guide post should be clean and coated with a general-purpose oil weekly.



Note: Coat bare metal parts with Calcium grease once per week.

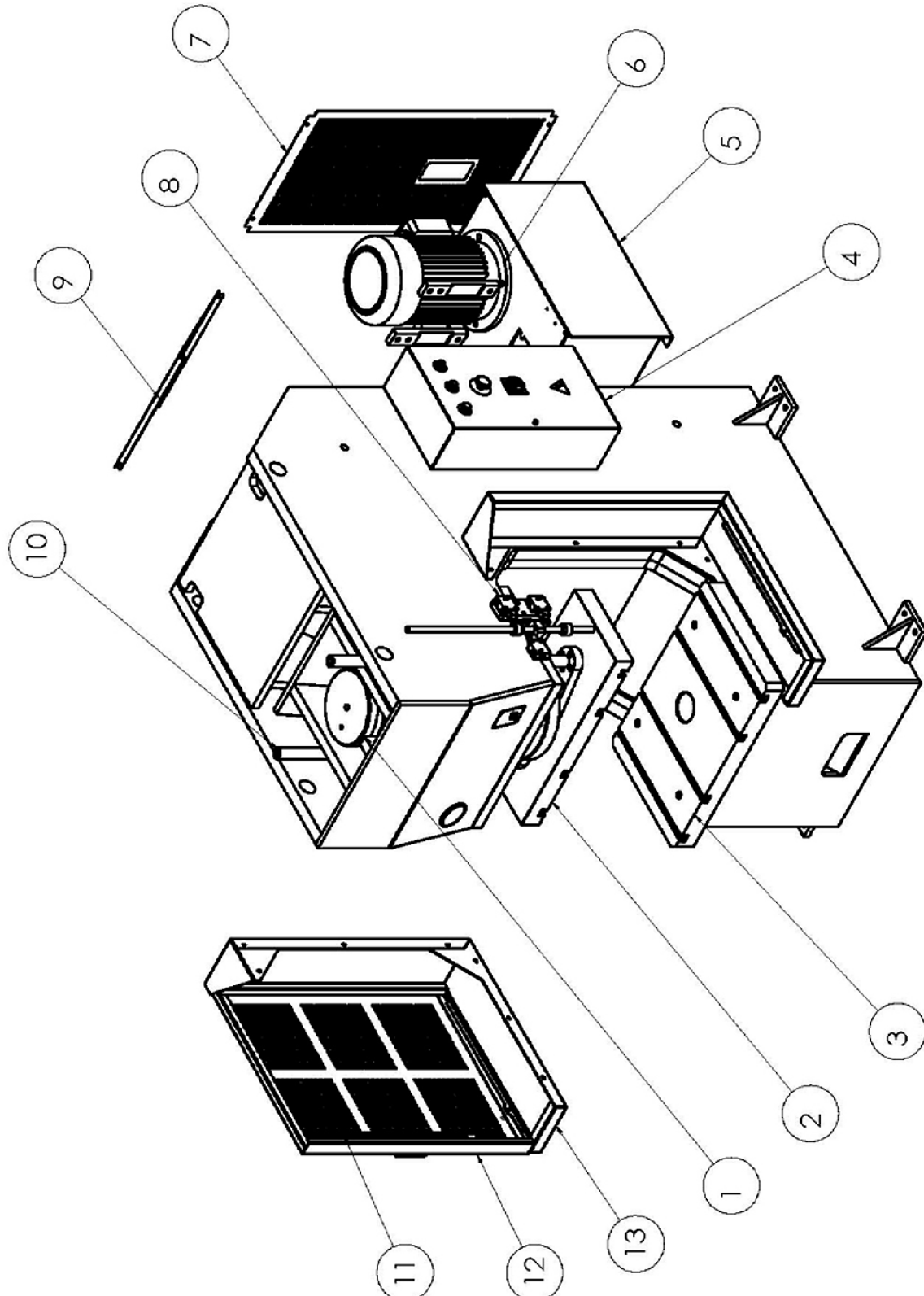


HYDRAULIC DIAGRAM





FRAME PARTS DIAGRAM



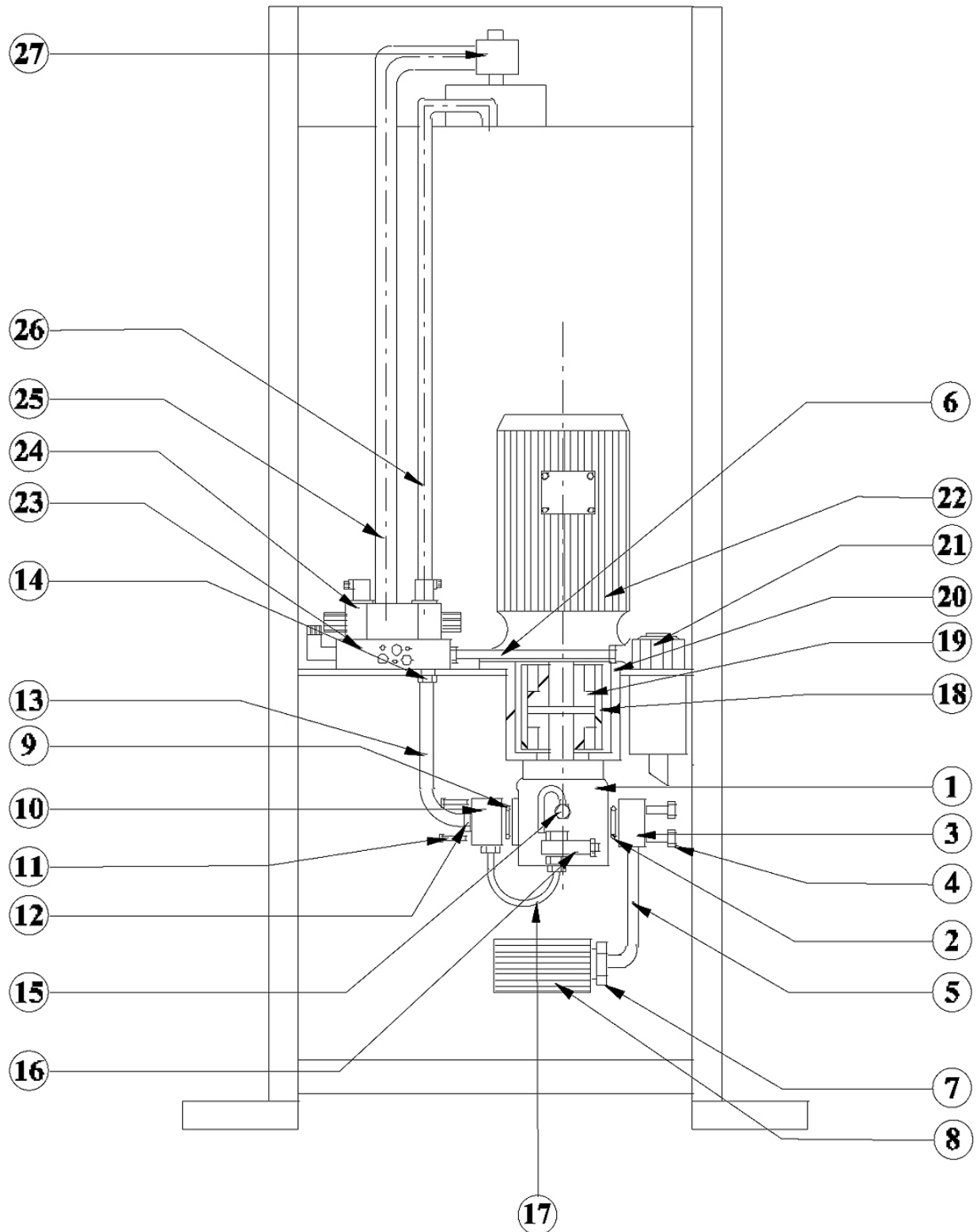


Frame Parts List

Item	Description
1.	Cylinder
2.	Ram
3.	Lower Table
4.	Electric Box
5.	Oil Tank
6.	Motor
7.	Back Sheet
8.	Switch System
9.	Back Sheet
10.	Bearing Shaft
11.	Barrier Cover
12.	Safety Light Curtains
13.	Barrier Door Frame



HYDRAULIC SYSTEM PARTS DIAGRAM



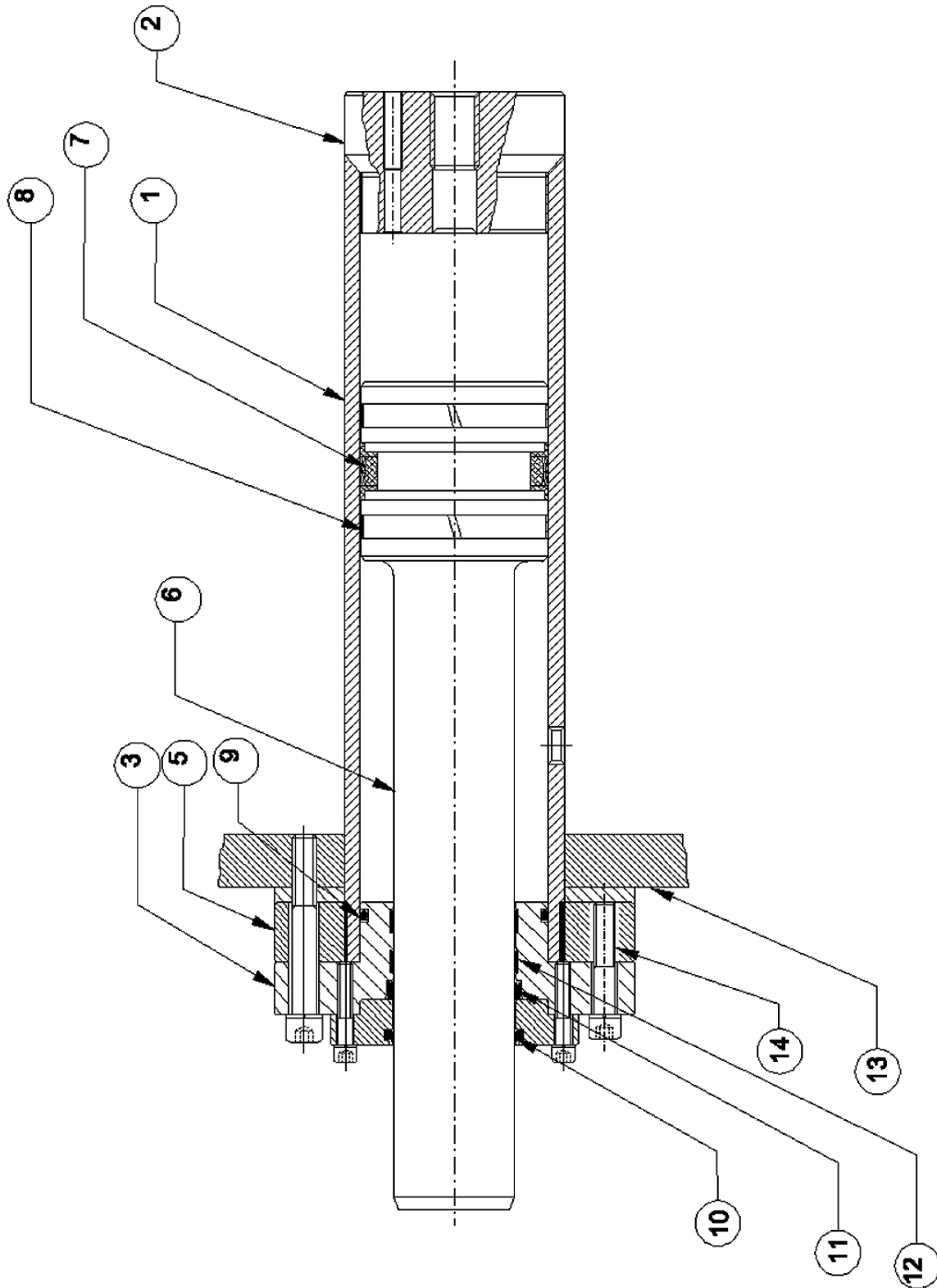


Hydraulic System Parts

Item	Description	Item	Description
1.	Hydraulic Pump	15.	Out Pipe
2.	O-Ring	16.	Pump Adjustment
3.	Sucking Block	17.	Return Flow Pipe
4.	Bolts	18.	Plastic Coupling
5.	Sucking Pipe	19.	Coupling
6.	Return Pipe	20.	Motor Pump Flange
7.	Fittings	21.	Return Filter
8.	Sucking Filter	22.	Motor
9.	O-Ring	23.	Hydraulic Block
10.	Pressure Block	24.	Directional Valve
11.	Bolts	25.	Flow Pipe From Top
12.	Fittings	26.	Flow Pipe From Bottom
13.	Pressure Pipe	27.	Record
14.	Fittings		



CYLINDER PARTS DIAGRAM





Cylinder Parts List

Item	Description
1.	Cylinder
2.	Cylinder Cap
3.	Neck Flange
4.	Dust Cap
5.	Cylinder Flange
6.	Piston
7.	PolyPac Seal
8.	Teflon Stripe
9.	O-Ring
10.	Scraper
11.	Neck Seal
12.	Bushing Band
13.	Presses frame
14.	Bolt



NOTES



BAILEIGH INDUSTRIAL, INC. 1625 DUFEK DRIVE MANITOWOC, WI 54220
PHONE: 920. 684. 4990 FAX: 920. 684. 3944
www.baileigh.com

BAILEIGH INDUSTRIAL LTD. UNIT D SWIFT POINT
SWIFT VALLEY INDUSTRIAL ESTATE, RUGBY
WEST MIDLANDS, CV21 1QH UNITED KINGDOM
PHONE: +44 (0)24 7661 9267 FAX: +44 (0)24 7661 9276
WWW.BAILEIGH.CO.UK