MODEL H6228Z
30-TON SHOP PRESS
OWNER'S MANUAL

FOR MODELS MANUFACTURED SINCE 1/10 #CR12508 PRINTED IN CHINA

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine/equipment.

Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including amputation, electrocution or death.

The owner of this machine/equipment is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, blade/cutter integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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INTRODUCTION

Manual Accuracy

We are proud to offer this document with your new machine! We've made every effort to be exact with the instructions, specifications, drawings, and photographs of the machine we used when writing this manual. However, sometimes we still make an occasional mistake.

Also, owing to our policy of continuous improvement, **your machine may not exactly match the manual**. If you find this to be the case, and the difference between the manual and machine leaves you in doubt, immediately call our technical support for updates or clarification.

For your convenience, we post all available documentation on our website at **www.grizzly.com**. Any updates to this document will be reflected on our website as soon as complete.

Contact Info

We stand behind our machines. If you have any service questions, parts requests or general questions about the machine, please call or write us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
E-Mail: techsupport@grizzly.com

We want your feedback on this manual. If you can take the time, please email or write to us at the address below and tell us how we did:

Grizzly Industrial, Inc.
C/O Technical Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

Grizzly Industrial, Inc.®

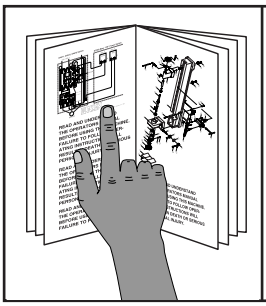
MACHINE DATA SHEET

Customer Service #: (570) 546-9663 • To Order Call: (800) 523-4777 • Fax #: (800) 438-5901

MODEL H6228Z 30-TON SHOP PRESS

Ram Maximum Applied Force	60,000 lbs (30 tons)
Ram Maximum Stroke	5⅞"
Ram Diameter	1¼"
Maximum Working Distance	32⅞"
Minimum Working Distance	1 3/16"
Bed Support Bar Diameter	1"
Number of Bed Adjustment Holes	6 Holes
Bed Adjustment Hole Spacing	5½" On-Center
Overall Dimensions	32"W x 26"D x 66¾"H
Arbor Plate Set Included	Yes
Hydraulic Fluid Type	Standard Hydraulic Bottle Jack Oil
Shipping Weight	252 lbs.

Identification



⚠WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.

A. Hydraulic Bottle Jack.
B. Pump Lever.
C. Control Valve.
D. Return Spring.
E. Arbor Plate Set.
F. Press Ram.
G. Bed Assembly.
H. Bed Lift Handle.
I. Bed Support Pin.
J. Press Base Mounting Hole.

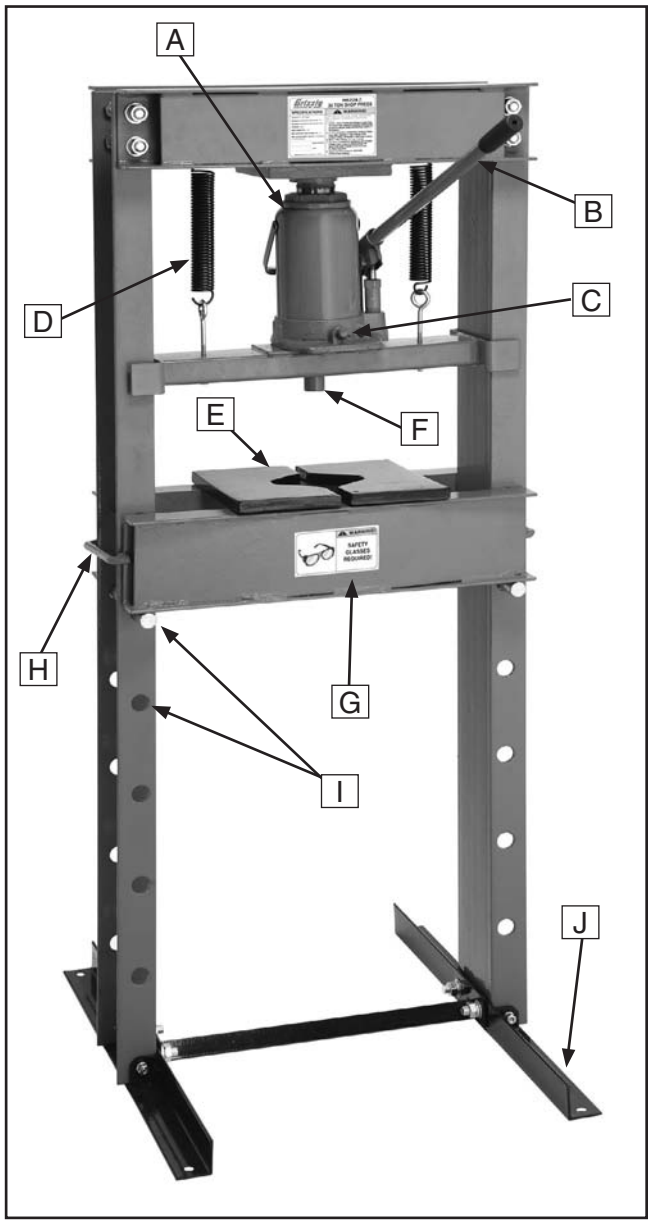


Figure 1. Identification.

SECTION 1: SAFETY

⚠WARNING

For Your Own Safety, Read Instruction Manual Before Operating this Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **This symbol is used to alert the user to useful information about proper operation of the machine.**

⚠WARNING

Safety Instructions for Machinery

1. **READ ENTIRE MANUAL BEFORE STARTING.** Operating machine before reading the manual greatly increases the risk of injury.
2. **ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses—they are NOT safety glasses.
3. **ALWAYS WEAR A NIOSH APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Most types of dust (wood, metal, etc.) can cause severe respiratory illnesses.
4. **ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing loss.
5. **WEAR PROPER APPAREL.** DO NOT wear loose clothing, gloves, neckties, rings, or jewelry that can catch in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.
6. **NEVER OPERATE MACHINERY WHEN TIRED OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.

⚠WARNING
Safety Instructions for Machinery

7. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL TO OPERATE MACHINERY.** Make sure operation instructions are safe and clearly understood.

8. **KEEP CHILDREN/VISITORS AWAY.** Keep all children and visitors away from machinery. When machine is not in use, disconnect it from power, lock it out, or disable the switch to make it difficult for unauthorized people to start the machine.

9. **UNATTENDED OPERATION.** Leaving machine unattended while its running greatly increases the risk of an accident or property damage. Turn machine ***OFF*** and allow all moving parts to come to a complete stop before walking away.

10. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.

11. **KEEP WORK AREA CLEAN AND WELL LIGHTED.** Clutter and dark shadows may cause accidents.

12. **USE A GROUNDED POWER SUPPLY RATED FOR THE MACHINE AMPERAGE.** Grounded cords minimize shock hazards. Operating machine on an incorrect size of circuit increases risk of fire.

13. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY**. Make sure switch is in OFF position before reconnecting.

14. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

15. **MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**

16. **REMOVE CHUCK KEYS OR ADJUSTING TOOLS.** Make a habit of never leaving chuck keys or other adjustment tools in/on the machine—especially near spindles!

17. **DAMAGED MACHINERY.** Check for binding or misaligned parts, broken parts, loose bolts, other conditions that may impair machine operation. Always repair or replace damaged parts before operation.

18. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.

19. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.

20. **DO NOT OVERREACH.** Maintain stability and balance at all times when operating machine.

21. **MANY MACHINES CAN EJECT WORKPIECES TOWARD OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."

22. **STABLE MACHINE.** Machines that move during operations greatly increase the risk of injury and loss of control. Verify machines are stable/secure and mobile bases (if used) are locked before starting.

23. **CERTAIN DUST MAY BE HAZARDOUS** to the respiratory systems of people and animals, especially fine dust. Be aware of the type of dust you are exposed to and always wear a respirator designed to filter that type of dust.

24. **EXPERIENCING DIFFICULTIES.** If at any time you are experiencing difficulties performing the intended operation, stop using the machine! Contact our Technical Support Department at (570) 546-9663.

⚠WARNING
Additional Safety for Hydraulic Presses

1. **OPERATION SAFETY.** Applying pressure to parts with this press can cause them to spring out and strike you or bystanders with deadly force. Verify that bystanders are a safe distance away from the press during operations. Make sure that you are wearing gloves, safety glasses with a face shield. Heavy leather boots with extra toe protection are also required. Under certain conditions, a hard hat may be needed.

2. **CORRECT INSTALLATION.** An unsecured press on wheels can tip when being moved or exhibit severe spring-back during heavy pressing operations, which could cause a crushing or impact injury. Do not place the press on a mobile base or install casters. The press base must be bolted to the floor.

3. **PRE USE INSPECTIONS.** A loosely assembled press can cock under a load and cause the workpiece to shift or eject resulting in an impact injury. Before use inspect the press for loose or missing bolts and pins. Verify that no cracks exist and that the hydraulic system is in full working order.

4. **WORKPIECE SUPPORT.** When a part is pressed free, a workpiece may shift suddenly or fall from the press, causing a crushing injury to your foot or leg. Use a catch basket and support long or awkward workpieces with stands or chains, or have an assistant support the end of a long workpiece during pressing operations.

5. **UNSAFE WORKPIECE.** Applying pressure to unstable objects can eject the object, causing an impact injury. Never apply pressure to balls, round objects, springs, or elastic items.

6. **AVOIDING PROJECTILE INJURIES.** Being hit with a ejected workpiece or press tooling can cause severe impact injury or death. When using the press, stand out of the way of any possible projectile path. Never press with rods or pins that are long enough to cock off-center and kick out under a load. Never stack rods and spacers to create an extended press-pin. If pressing must occur with extended press-pins, the pin must be fastened with a safety chain or the press-pin must be enclosed in a safety cage to eliminate a projectile hazard.

7. **CORRECT TOOLING.** Without using the correct spring caging tool or jig to hold the a spring-loaded workpiece, the workpiece may shift suddenly, ejecting springs and causing a severe impact injury. Never use this press to unload spring-loaded assemblies without also using the correct spring caging tool or jig.

8. **CORRECTING MISALIGNED LOADS.** If a workpiece becomes misaligned during pressing operations, it may slip out of the press and cause a severe impact injury. Never attempt to realign a workpiece while it is under pressure. Relieve hydraulic pressure, and start pressing operations over if a workpiece or press pin has moved or become misaligned. Relieve hydraulic pressure if you suspect the workpiece is in a bind or structural failure is imminent.

9. **SAFE WORKING ZONE.** Tooling or arbor plates that shift and fall from the press can cause a crushing injury to your leg or foot. Keep out from under the bed, do not work under the press when it is loaded, and never leave the press loaded and unattended.

10. **AVOIDING INCORRECT PRESS OPERATIONS.** Some workpieces cannot withstand the force of pressing and can explode, causing an impact injury. Other workpieces have hidden retaining rings, shoulders, pins, welds, or are integral and cannot be pressed apart. Before using this press, make sure that you understand how a component is built and pressed apart.

11. **SAFE HYDRAULIC REPAIR.** Repair that is performed by an unqualified person can lead to press overload or a hydraulic line burst, causing hydraulic oil being injected into your blood stream causing blood poisoning. Do not attempt to repair the hydraulic system unless you are a qualified hydraulic service professional.

12. **UNAUTHORIZED MODIFICATION.** Modifying the press frame, increasing pump relief pressure, or installing a higher capacity jack or hydraulic system can cause structural failure, and lead to a severe crushing injury. If the press is insufficient for your pressing task, use a press that is rated for the correct load capacity.

13. **AVOIDING SPRING-BACK HAZARDS.** Under heavy pressing operations, when some parts finally break free of the host workpiece, sudden hydraulic press unloading can occur in the form of spring-back. As a result a workpiece, press pin, or an arbor plate can spring up and fall from the bed, causing a crushing injury to your foot or leg. Before press operations begin, anticipate what the workpiece may do if this sudden unloading occurs, and secure the workpiece so it will not fall.

14. **AVOIDING OVERLOAD.** Using a cheater pipe for increased leverage or exceeding rated press capacity can damage the press, shatter a workpiece, or launch a press pin, causing a severe impact injury. Do not exceed the rated capacity of this press. When the press has reached its maximum pressure or the pump lever becomes stiff to operate, the press has reached its limit and the jack lever must not be pumped any further.

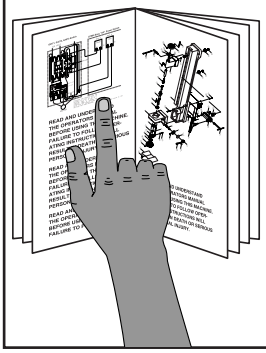
⚠WARNING

Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

SECTION 2: SETUP



⚠WARNING

This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before using the machine!

⚠WARNING

Wear safety glasses during the entire setup process!

⚠WARNING

This machine and its components are very heavy. Get lifting help or use power lifting equipment such as a forklift to move heavy items.

Needed for Setup

The following items are needed to complete the setup process, but are not included with your machine.

Description	Qty
• Safety Glasses	1
• Disposable Shop Rags	As Needed
• Additional People	1
• Crescent Wrench 8"	1
• Combination Wrench 14mm	1
• Combination Wrench 22mm	1
• Combination Wrench 24mm	1
• NIOSH Approved Dust Mask	1
• Electric Hand Drill or Hammer Drill	1
• Concrete Fasteners Using ½" Dia. Bolts	4
• Appropriate Concrete Drill Bit for Type of Drill and Concrete Fastener	1

Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover the machine is damaged, *please immediately call Customer Service at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*

When you are completely satisfied with the condition of your shipment, inventory the contents.

Inventory

The following is a description of the main components shipped with your machine. Lay the components out to inventory them.

Note: *If you can't find an item on this list, check the mounting location on the machine or examine the packaging materials carefully. Occasionally we pre-install certain components for shipping purposes.*

Description	Qty
A. Upper Cross Brace	1
B. Hydraulic Bottle Jack 30-Ton	1
C. Bed	1
D. Jack Lever	1
E. Bed Support Pins	2
F. Return Springs	2
G. U-Beams	2
H. Base Legs	2
I. Press Bar	1
J. Lower Cross Brace	1
K. Arbor Plates	2

Hardware	Qty
L. Hex Bolts M16-2 x 35 C8.8 (U-beams-upper brace)	8
Flat Washers 16mm (U-beams-upper brace)	8
Lock Washers 16mm (U-beams-upper brace)	8
Hex Nuts M16-2 (U-beams-upper brace)	8
M. Hex Bolts M8-1.25 x 25 (U-beams base)	4
Hex Nuts M8-1.25 (U-beams base)	4
Flat Washers 8mm (U-beams base)	4
Lock Washers (U-beams base)	4
N. Eye Bolts M8-1.25 x 100 (jack springs)	2
Hex Nuts M8-1.25 (jack springs)	2
O. Hex Bolts M14-2 x 40 (U-beams base)	4
Hex Nuts M14-2 (U-beams base)	4
Flat Washers 14mm (U-beams base)	4
Lock Washers 14mm (U-beams base)	4

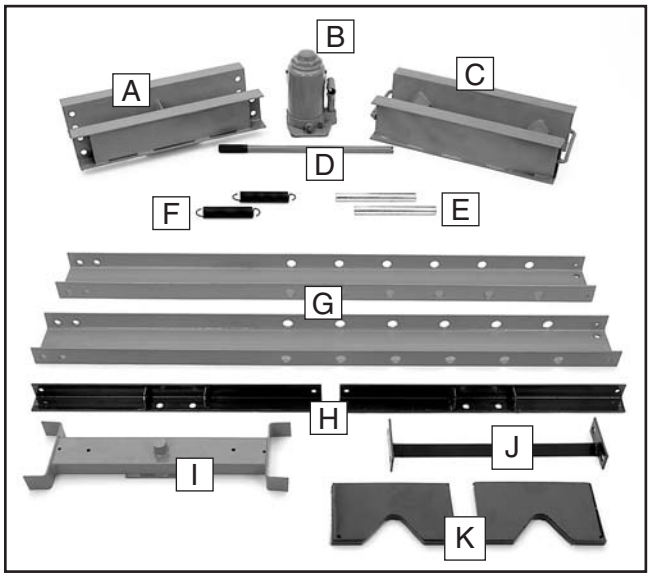


Figure 1. Main inventory.

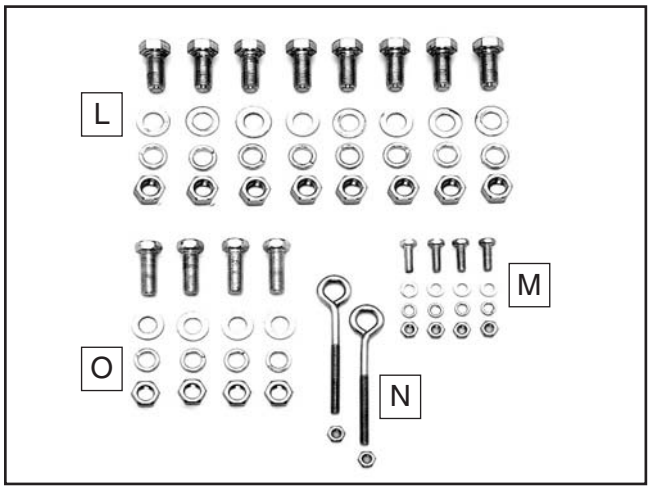


Figure 2. Fastener Inventory.

If any nonproprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.

⚠WARNING

SUFFOCATION HAZARD!

Immediately discard all plastic bags and packing materials to eliminate choking/suffocation hazards for children and animals.

Site Considerations

Physical Environment

The physical environment where your machine is operated is important for safe operation and the longevity of its components. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature range exceeds 41°–104°F; the relative humidity range exceeds 20–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Space Allocation

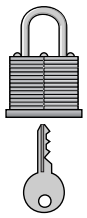
Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual. **See below for required space allocation.**

Weight Load

Refer to the **Machine Data Sheet** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.



⚠CAUTION

Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.

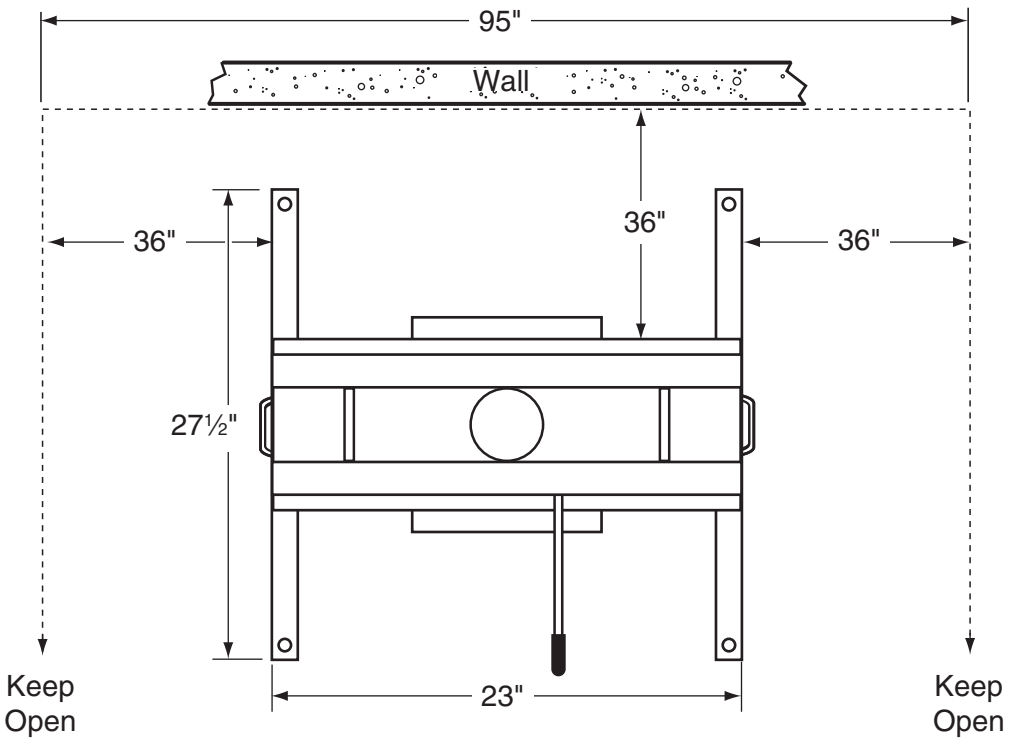


Figure 3. Minimum working clearances.

Assembly

To assemble your press:

1. Put on safety glasses and heavy leather boots.

2. Using a 14mm wrench, fasten both U-Beams to both base rails with four M8-1.25 x 25 hex bolts and four of the matching flat washers, lock washers, and hex nuts. Make sure the hex bolts are pointing outward away from the inside of the rails, as shown in **Figure 4**, or they will obstruct the bolts in the next step.

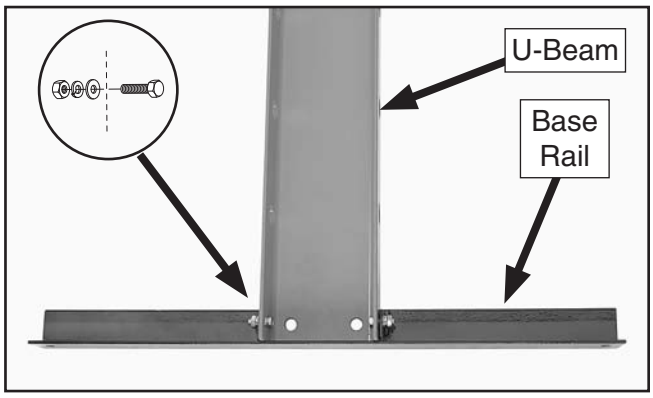


Figure 4. Base assembly.

3. Using a 22mm wrench, fasten the lower cross brace to both base rails with four M14-2 x 40 hex bolts and four of the matching flat washers, lock washers, and hex nuts, as shown in **Figure 5**.

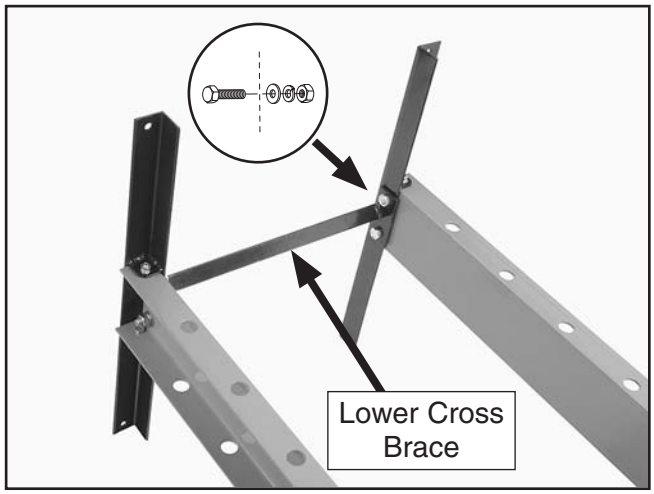


Figure 5. Lower cross-support installation.

4. With the help of your assistant, tilt the stand and rails upright on the base.

5. With the help of your assistant, hold the bed handles, lift and lower the bed onto the U-beams and lower the bed all the way to the base, as shown in **Figure 6**. Make sure that the apex of the bed cross-supports point upward, as shown in **Figure 6**.

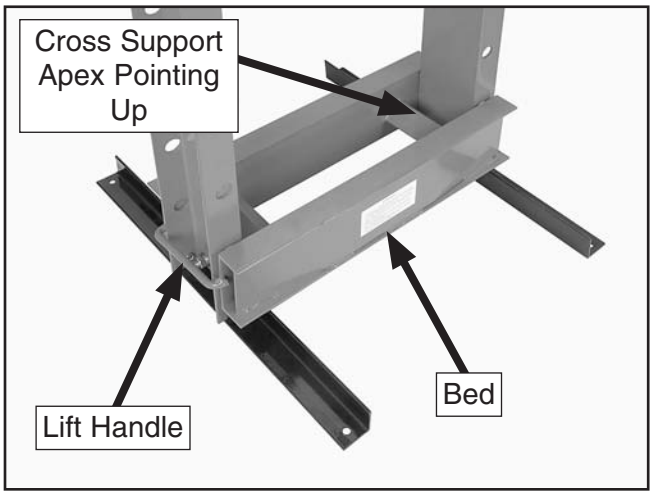


Figure 6. Bed installation.

6. With the help of your assistant, lift and position one side of the upper cross-support on the U-beam, and install one M16-2 x 35 hex bolt and finger-tighten with the matching flat washer, lock washer, and hex nut, as shown in **Figure 7**. Make sure that the gusset is at the upper side of the cross-support, as shown in **Figure 7**.

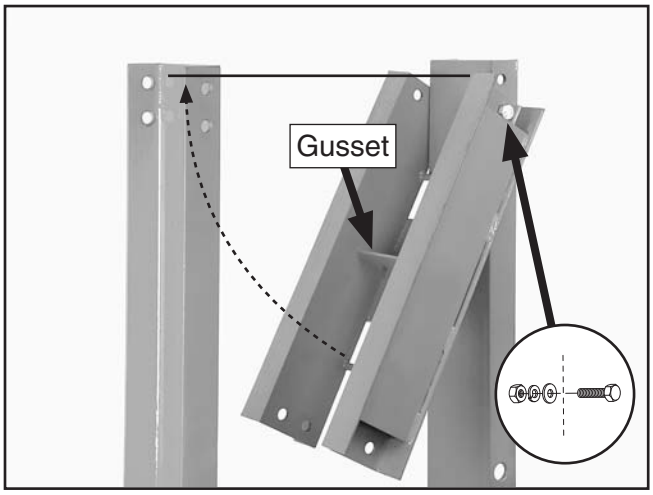


Figure 7. Upper cross-support installation.

Note: *The bolt installed in **Step 6** will serve as a hinge so the top cross-support can be swung into place as shown in **Figure 7.***

7. Swing the upper cross-support upward and into position with the mounting holes on the other U-beam, and install the remaining seven M16-2 x 35 hex bolts and matching flat washers, lock washers, and hex nuts, as shown in **Figure 8**.

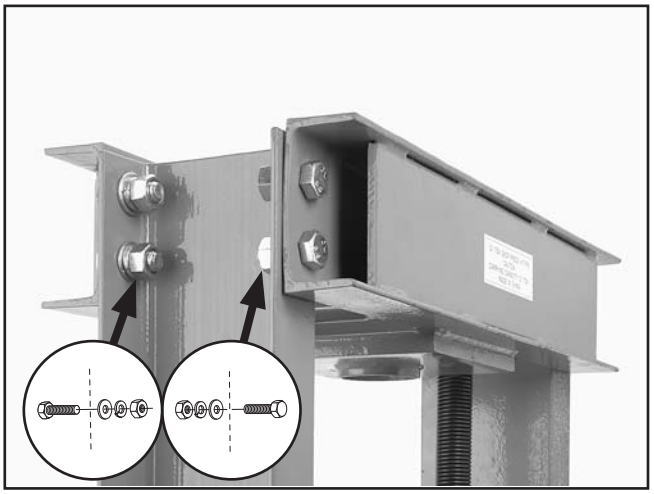


Figure 8. Upper cross-support bolt positioning.

8. Using a 24mm wrench, tighten all of the upper cross-support fasteners.

9. Install both eye bolts onto the springs, and install the springs onto the spring hangers so they span the upper cross-support rails, as shown in **Figure 9**.

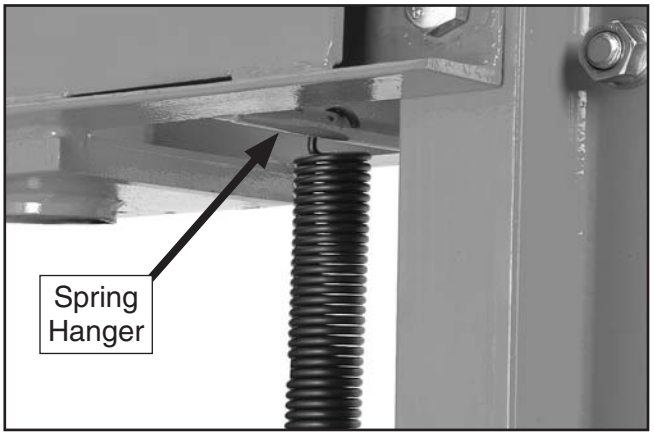


Figure 9. Return spring installation.

10. Position the press bar between the two U-beams and fasten it to the ends of the eye bolts, as shown in **Figure 10**. Make sure to only thread the hex nuts just far enough onto the eye bolts so the end of the eye bolt slightly protrudes through the hex nut. The hex nuts will be fully adjusted later.

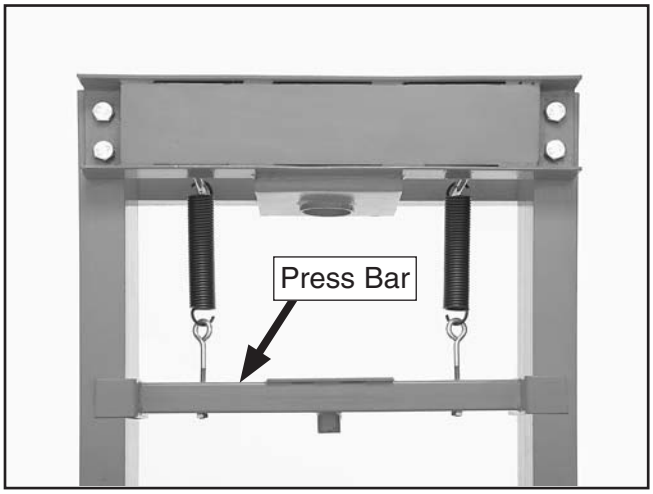


Figure 10. Press bar installation.

11. With the help of an assistant, place the fully compressed bottle jack onto the press plate, push down on the jack to stretch the springs slightly, and swing the jack into position so the ram slides up into the ram receiver, as shown in **Figure 11**.

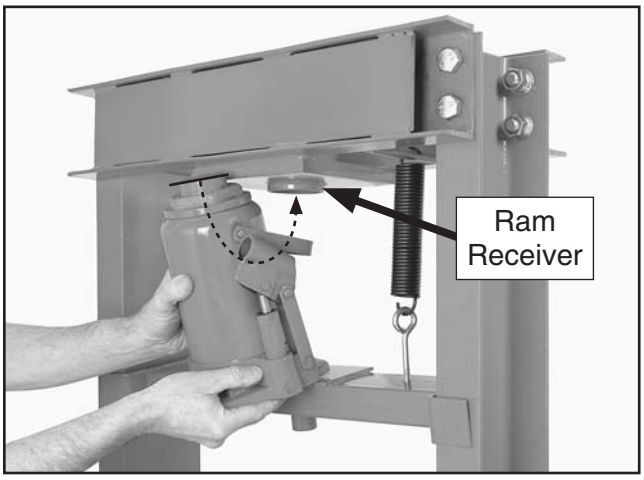


Figure 11. Jack installation.

12. Double check that the ram of the jack is fully seated in the ram receiver, as shown in **Figure 12**, or the jack could fall out of its mounting and cause severe injury.

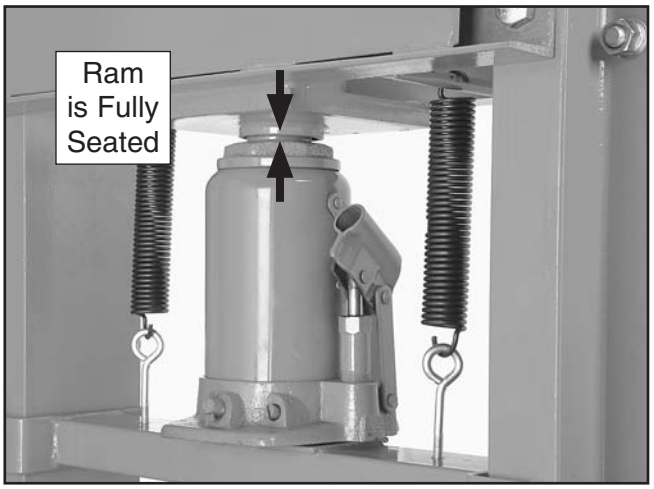


Figure 12. Ram seating verification.

13. Using a 14mm wrench, tighten both eye bolt hex nuts until 1" of thread is exposed, as shown in **Figure 13**.

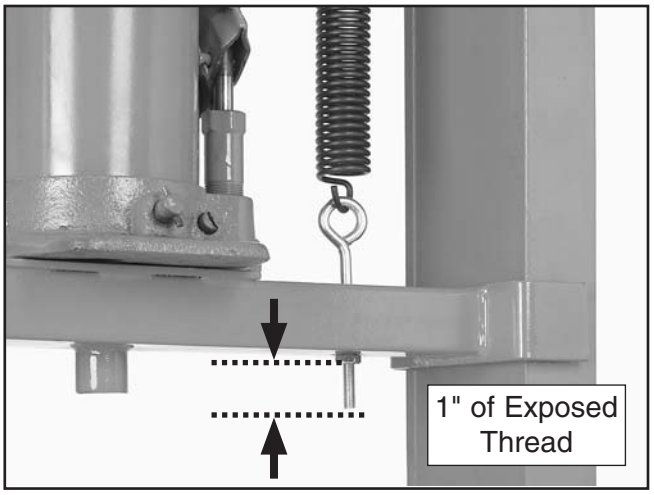


Figure 13. Return spring adjustment.

14. With the help of your assistant, grasp the bed lift handles and raise the bed to a position of your choice. Then install the support pins, as shown in **Figure 14**.

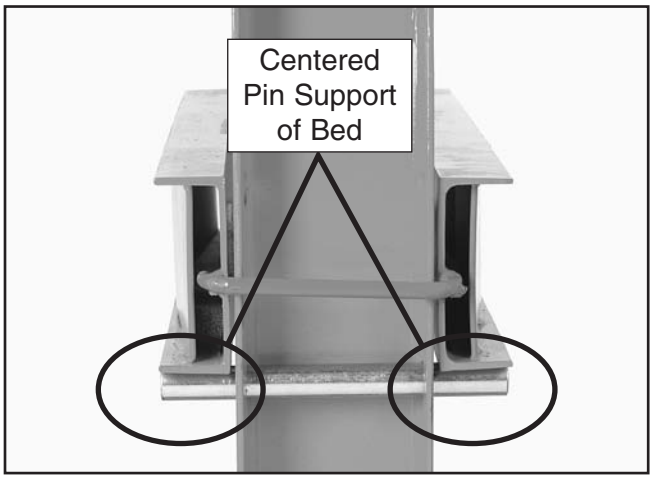


Figure 14. Bed support pin positioning.

15. Adjust the bed support pins so they are centered and the bed is supported equally at all four corners, as shown in **Figure 14**.

16. Bolt the press to the floor as summarized in **Mounting to Shop Floor** on **Page 14**.

17. Place the arbor plates on the bed, as shown in **Figure 15**.

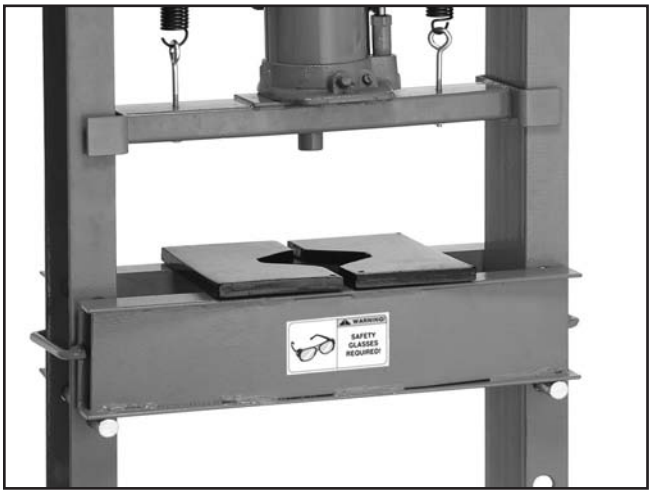


Figure 15. Typical arbor plate positioning.

Mounting to Shop Floor

Under heavy pressing operations, the entire press structure is under great tension and compression, when the item to be pressed off the workpiece breaks free, the load on the workpiece is suddenly relieved. The entire machine and workpiece spring-back to the normal unloaded condition. At times this can be loud and startling. As a result the workpiece, heavy arbor plates, or the press-pin may fall or be ejected from the press causing injury.

To eliminate a tipping hazard and increase the structural rigidity of the press, you must mount the press to a concrete floor that is at least 4" thick. Do not mount the press to a mobile base or install casters or you will create a tipping and spring-back hazard.

Bolting to Concrete Floors

Since floor materials vary, mounting hardware is not included with your machine; however, lag shield anchors with lag bolts and anchor studs as shown in **Figure 16** are two popular methods for anchoring machines to a concrete floor. We suggest you research the many options and methods for mounting your machine and choose the best that fits your specific application. Remember, always wear safety goggles and a NIOSH approved dust mask when drilling into concrete.

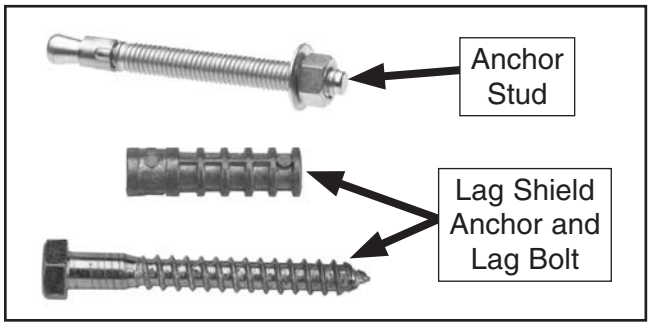
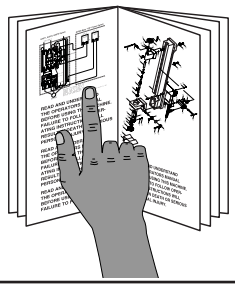


Figure 16. Typical fasteners for mounting to concrete floors.

NOTICE

Anchor studs are stronger and more permanent alternatives to lag shield anchors; however, they will stick out of the floor, which may cause a tripping hazard if you decide to move your machine.

SECTION 3: OPERATIONS

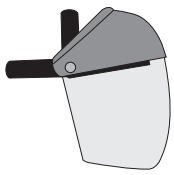


⚠WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.

⚠WARNING

Damage to your eyes, fingers, or feet could result from using this machine without proper protective gear. Always wear safety glasses, face shield, leather gloves, and leather boots that have extra toe protection.



NOTICE

If you have never used this type of machine or equipment before, WE STRONGLY RECOMMEND that you read books, review industry trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

Operation Overview

This overview describes you the basic process that happens during an operation with this machine. Familiarize yourself with this process to better understand the remainder of this section.

To complete a typical press operation, the operator does the following:

1. Puts on the required personal safety equipment, and clears away all bystanders.

2. Reviews workpiece inspection items, and prepares the workpiece to make it suitable for press operations.

3. Retracts the hydraulic ram completely, and positions the bed so there is the shortest distance between the ram and workpiece.

4. Verifies that both bed support pins are installed correctly, and fully supporting the bed.

5. Places a catch basket under the press with the applicable padding to protect the part when it drops.

6. Positions the arbor plates to support the workpiece and aligns the press-pin or tooling on the part to be pressed.

7. Lowers the press ram to slightly preload the workpiece.

8. Examines the setup from different angles and verifies that the press pin or tooling is maintaining alignment with the workpiece and the press ram.

9. Completes the press operation, relieves the hydraulic pressure, and allows the ram to return to the retracted position.

Controls

Review the list and **Figure 17** below to familiarize yourself with the hydraulic controls.

A. Hydraulic Bottle Jack. Houses the control valve, relief valve, hydraulic fluid, and the pump system, which create the hydraulic force required for press operations.

B. Pump Lever. Gives the press operator the leverage to operate the bottle jack pump and the press. The lever is also used to open and close the jack control valve.

C. Hydraulic Pump. Creates the pressure for the press operations.

D. Pressure Relief Valve. This valve is factory set at safe levels and should not be re-adjusted.

E. Press Ram. Point at which the press applies force to the workpiece or press-pin.

F. Control Valve. When rotated clockwise to the closed position, the pump and jack can perform press operations. When rotated counterclockwise to the open position, applied pressure is relieved and the press and jack retract to the unloaded position.

G. Return Spring. Each spring retracts and supports the press ram assembly to the uppermost unloaded position when the control valve is opened.

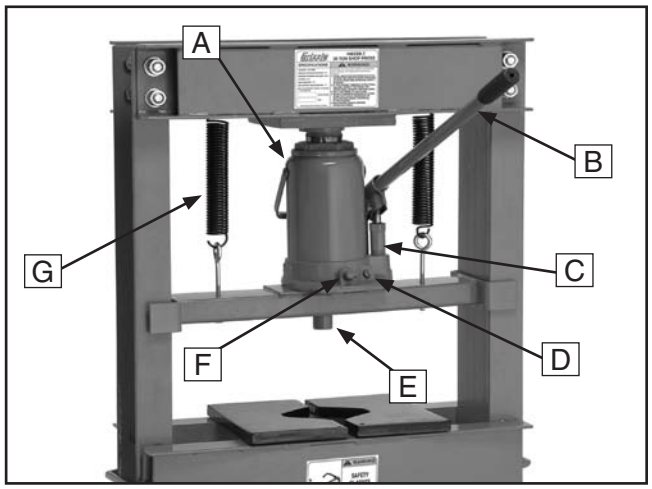


Figure 17. Pump controls.

Workpiece Inspection

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

- ***Workpiece Strength:*** Make sure that the workpiece material is designed to withstand the intended force the press will apply.

- ***Workpiece Cleanliness:*** Make sure that the workpiece is clean and that all burrs, grit, rust, or damage is removed from the pressing path. Often light oiling on the components is beneficial to prevent galling or seizing.

- ***Pressing Path:*** Make sure that the direction of component to be pressed on or off is correct, and that the correct size of sleeve or arbor plate is used for support.

- ***Retaining Mechanisms:*** Make sure that all retaining rings, pins, or fasteners are removed, and no hidden secondary retainers are present.

- ***Hidden Projectiles:*** Some components house one or more springs. Make sure that the part to be dismantled with the press has the applicable caging system to catch the springs should the workpiece slip or open up when the retaining ring is removed and the hydraulic pressure is relieved.

- ***Special Fits:*** Make sure that the 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. Recognize that not all parts were designed to be pressed off, we do not advise attempting to press these types of parts off.

SECTION 4: ACCESSORIES

G8983—Tilting Roller Stand
Adjusts from 26" to 44", 0º-45º. 150 lb. capacity.
G8984—Single Roller Stand
Adjusts from 26 5/8" to 45". 250 lb. capacity.
G8985—5 Roller Stand
Adjusts from 26" to 44 5/8". 250 lb. capacity.
Support long workpieces during pressing operations with adjustable height super heavy-duty roller stands.

Figure 18. SHOP FOX® Roller Stands.

G7832—Arbor Press Stand
This heavy-duty stand features a 3 1/4" x 4" x 5" catch box, a 3 3/4" x 3 3/4" tray and cast iron table and base. Table is 36" high. Slots at 4 5/8", 3 7/8" and 2 3/8" centers. Threaded holes at 3 3/4", 5 1/2" and 7 1/2" centers.

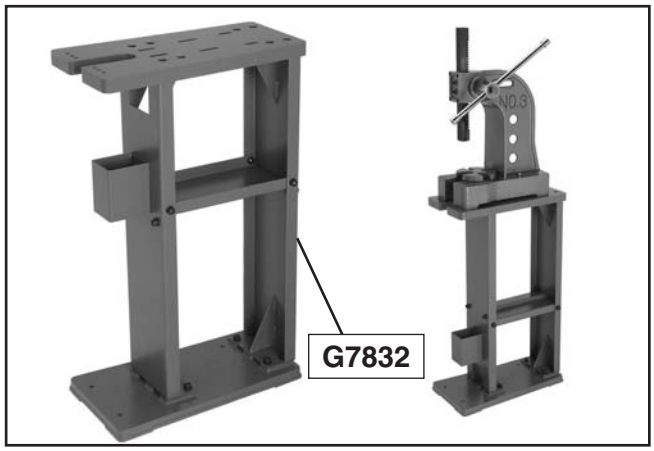


Figure 19. Arbor press stand (press not included).

Grizzly—Cast Iron Arbor Presses
Available in four powerful size configurations, these handsomely cast arbor presses take the effort out of stamping, seating, removing bearings, and other operations that require simple, well controlled mechanical pressure.

MODEL	CAPACITY	THROAT	WORKING HEIGHT	WEIGHT
G4017	1/2 Ton	3"	4"	20 lbs
G4018	1 Ton	3 3/4"	5"	29 lbs.
G4019	2 Ton	5"	7 3/4"	83 lbs.
G4020	3 Ton	7 1/2"	11 1/8"	135 lbs.

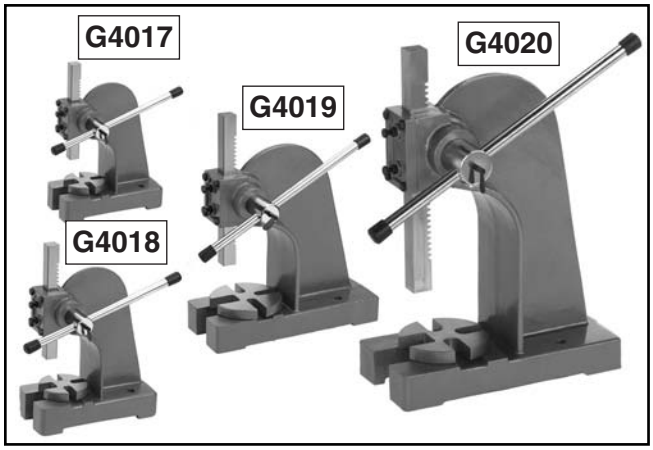


Figure 20. Grizzly arbor presses.

Grizzly—Number 2 and 3 Arbor Presses
These are Grizzly's top-of-the-line arbor presses made for heavy industrial application.

MODEL	CAPACITY	THROAT	WORKING HEIGHT	WEIGHT
H7830	2 Ton	5 3/4"	6 3/4"	70 lbs.
H7831	3 Ton	6 5/8"	11 3/4"	133 lbs.

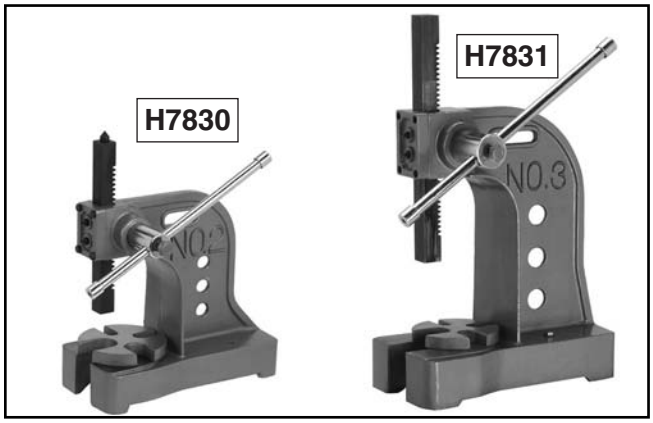


Figure 21. Industrial grade arbor presses.

SECTION 5: MAINTENANCE

⚠WARNING

Always relieve hydraulic pressure before performing maintenance. Failure to do this may result in serious personal injury.

Schedule

For optimum performance from your machine, follow this maintenance schedule, and refer to any specific instructions given in this section.

Daily Check:
- Inspect for loose mounting bolts.
- Inspect for damaged or leaking hydraulic seals, fittings, or lines.
- Inspect for frame cracks.
- Inspect for any other unsafe condition.

Weekly Maintenance:
- Inspect floor mounting bolts.

Every Three Years:
- Replace bottle jack oil (**Page 20**).

Cleaning

Cleaning the Model H6228Z is relatively easy. Vacuum excess metal chips or contaminants away from hydraulic seals and pivot pins. Wipe off the remaining dust with a dry or lightly oiled cloth. Treat all unpainted cast iron and steel with a non-staining lubricant after cleaning.

Unpainted Cast Iron

Protect the unpainted metal surfaces on the bed and arbor plates by wiping them clean after every use.

Keep tooling and arbor plates rust-free with regular applications of products like G96® Gun Treatment, SLIPIT®, or Boeshield® T-9.

Lubrication

To lubricate the jack:

1. Using a hand-held oil gun, apply one or two drops of any standard machine oil or motor oil to all clevis pins, as shown in **Figure 22**.

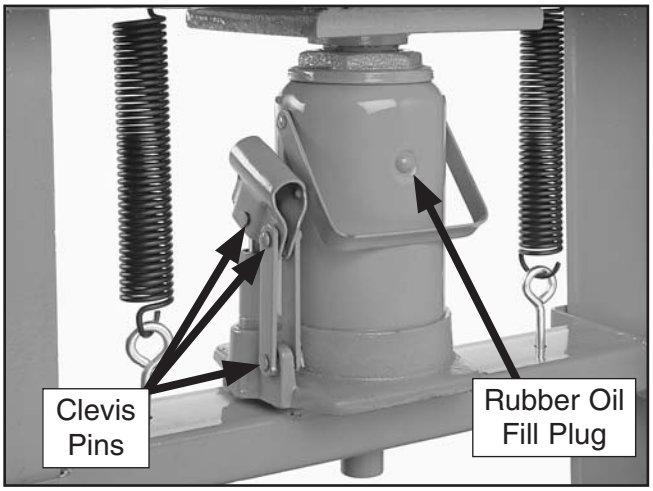


Figure 22. Oil fill and clevis pin locations.

2. With the press completely retracted in the uppermost position, remove the rubber plug (**Figure 22**), and fill the bottle jack reservoir with any standard hydraulic oil until oil runs from the port. Reinstall the plug.

3. Use the valve control socket at the end of the pump handle to close the control valve, then pump the jack a few times to bleed the hydraulic system.

SECTION 6: SERVICE

Review the troubleshooting and procedures in this section to fix or adjust your machine if a problem develops. If you need replacement parts or you are unsure of your repair skills, then feel free to call our Technical Support at (570) 546-9663.

Troubleshooting

Operation

Jack is weak or does not reach rated pressing capacity.	1. Jack is low on oil. 2. Jack has air bubbles trapped in pump. 3. Control valve is at fault. 4. Jack valves not closing or are obstructed. 5. Jack is at fault.	1. Fill jack to correct oil level **Page 18**. Replace or have jack repaired if leaking. 2. Bleed air out of jack as outlined on **Page 20**. 3. Verify that the control valve is closed. 4. Flush the jack valves as outlined on **Page 20**. 5. Replace jack.
Jack loses pressure under a load.	1. Control valve is at fault. 2. Jack valves not closing or are obstructed. 3. Jack is at fault.	1. Verify that the control valve is closed. 2. Flush the jack valves as outlined on **Page 20**. 3. Replace jack.
Lever feels spongy during pumping, or jack has lost stroke.	1. Jack is low on oil. 2. Jack has air bubbles trapped in pump. 3. Jack is at fault.	1. Fill jack to correct oil level **Page 18**. Replace or have jack repaired if leaking. 2. Bleed air out of jack as outlined on **Page 20**. 3. Replace jack.
Pump handle moves upward while press is under a load.	1. Jack has air bubbles trapped in pump. 2. Jack is at fault.	1. Bleed air out of jack as outlined on **Page 20**. 2. Replace jack.
Oil leaking from fill plug, or other seals.	1. Jack is overfilled. 2. Jack is at fault.	1. Remove the fill plug and drain-off excess oil **Page 18**. 2. Replace jack.

Changing Jack Oil

To change the jack oil:

1. Using a 14mm wrench, loosen both return spring eye bolt hex nuts, so the springs are relieved and the end of the eye bolt protrudes from the nut approximately ⅛".

2. Push down on the press bar until the jack ram is free of the ram receiver, and lift the jack out of the press as shown in **Figure 23**.

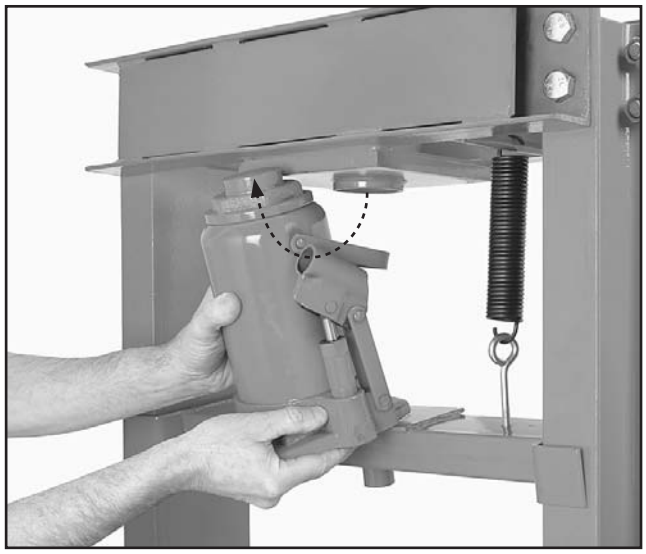


Figure 23. Jack removal.

3. Remove the oil filler plug, and tip the jack to empty the oil.

4. Refill the jack with any quality bottle jack oil to the point where when the jack is standing upright the oil level is at the filler plug hole.

5. Reinstall the fill plug, wipe the jack clean with a rag, and reinstall the jack as outlined in **Steps 11–13** starting on **Page 12**.

Bleeding Jack

To bleed air from the jack:

1. Open the control valve completely and allow the return springs to compress the jack fully.

2. Remove the oil fill plug, and top-off the oil level with hydraulic jack oil, do not reinstall the fill plug at this time.

3. With the control valve still open, pump the jack quickly with five or ten strokes of the handle.

4. Close the control valve, top off the oil level, and reinstall the fill plug.

Flushing Jack Valves

To flush the jack valves:

1. Remove the jack as outlined in **Changing Jack Oil**, and place it on the shop floor.

2. Verify that the jack oil is at the full level.

3. Close the control valve and pump the jack handle to extend the jack ram completely.

4. Open the control valve completely.

5. Forcefully push on the jack ram so the ram quickly retracts as fast as possible.

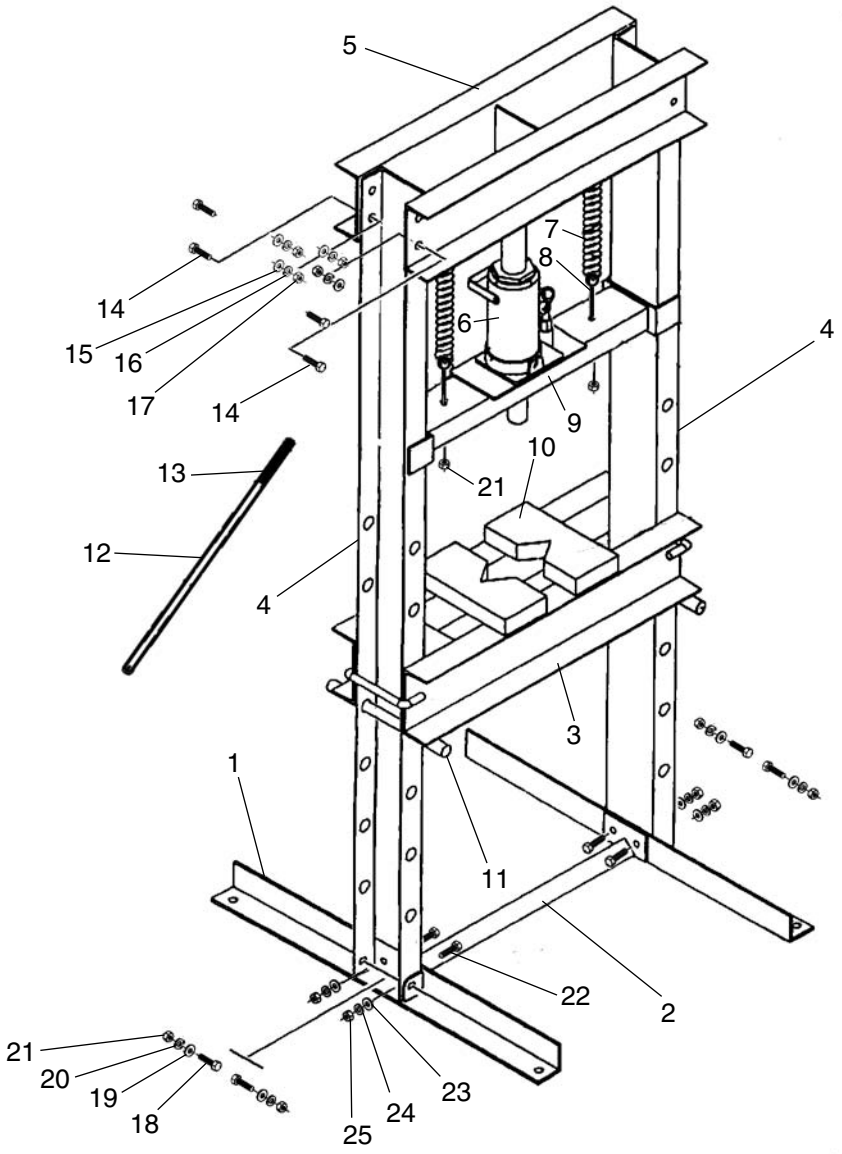
6. Repeat **Steps 3** and **4** a few times.

7. With the control valve still open, pump the jack quickly with five or ten strokes of the handle.

8. Close the control valve, retract the jack piston into the jack, and change the jack oil.

SECTION 7: PARTS

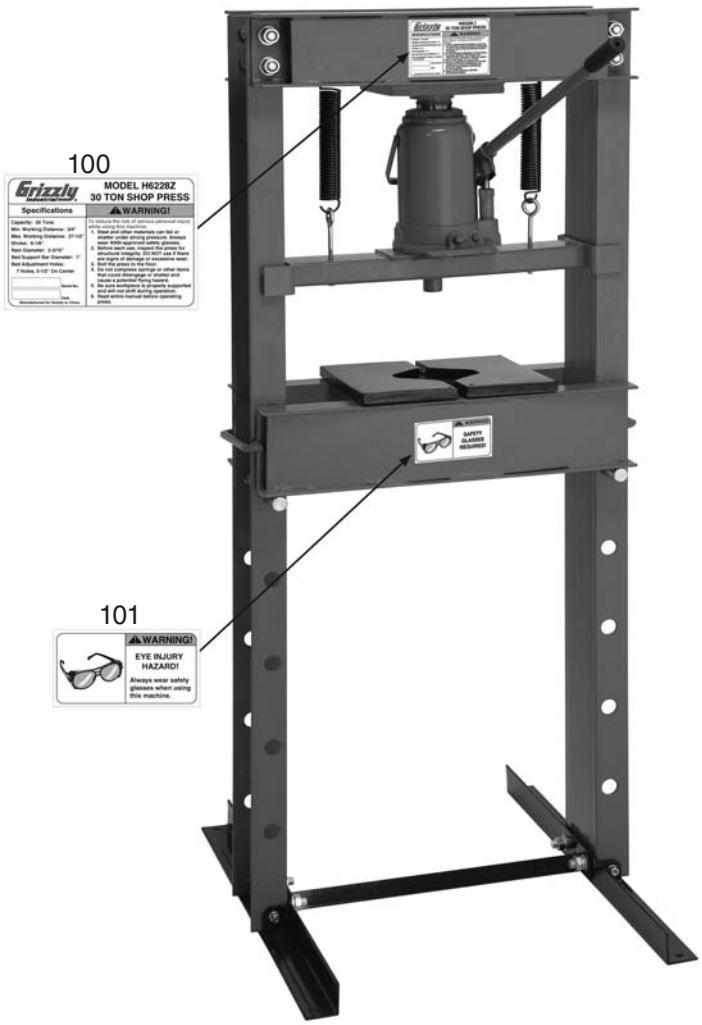
Main Breakdown



REF	PART #	DESCRIPTION
1	PH6228Z001	BASE LEG
2	PH6228Z002	LOWER CROSS SUPPORT
3	PH6228Z003	BED
4	PH6228Z004	U-BEAM
5	PH6228Z005	UPPER CROSS SUPPORT
6	PH6228Z006	HYDRAULIC BOTTLE JACK 30-TON
7	PH6228Z007	EXTENSION SPRING
8	PH6228Z008	EYE BOLT M8-1.25 X 100
9	PH6228Z009	PRESS BAR
10	PH6228Z010	ARBOR PLATE
11	PH6228Z011	TABLE SUPPORT PIN
12	PH6228Z012	PUMP LEVER W/GRIP
13	PH6228Z013	PLASTIC GRIP

REF	PART #	DESCRIPTION
14	PH6228Z014	HEX BOLT M16-2 X 35 C8.8
15	PH6228Z015	HEX NUT M16-2 C8.8
16	PLW10M	LOCK WASHER 16MM
17	PW08M	FLAT WASHER 16MM
18	PB07M	HEX BOLT M8-1.25 X 25
19	PW01M	FLAT WASHER 8MM
20	PLW04M	LOCK WASHER 8MM
21	PN03M	HEX NUT M8-1.25
22	PB153M	HEX BOLT M14-2 X 40
23	PW10M	FLAT WASHER 14MM
24	PLW08M	LOCK WASHER 14MM
25	PN32M	HEX NUT M14-2

Label Placement



REF	PART #	DESCRIPTION
100	PH6228Z100	MACHINE DATA LABEL

REF	PART #	DESCRIPTION
101	PLABEL-11C	SAFETY GLASSES LABEL

⚠WARNING

Safety labels warn about machine hazards and ways to prevent injury. The owner of this machine MUST maintain the original location and readability of the labels on the machine. If any label is removed or becomes unreadable, REPLACE that label before using the machine again. Contact Grizzly at (800) 523-4777 or www.grizzly.com to order new labels.

Grizzly Industrial, Inc. WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____ Invoice # _____

Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

____ Advertisement ____ Friend ____ Catalog
____ Card Deck ____ Website ____ Other:

2. Which of the following magazines do you subscribe to?

____ Cabinetmaker & FDM
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

3. What is your annual household income?

____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

4. What is your age group?

____ 20-29 ____ 30-39 ____ 40-49
____ 50-59 ____ 60-69 ____ 70+

5. How long have you been a woodworker/metalworker?

____ 0-2 Years ____ 2-8 Years ____ 8-20 Years ____ 20+ Years

6. How many of your machines or tools are Grizzly?

____ 0-2 ____ 3-5 ____ 6-9 ____ 10+

7. Do you think your machine represents a good value? _____Yes _____No

8. Would you recommend Grizzly Industrial to a friend? _____Yes _____No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
Note: *We never use names more than 3 times.* _____Yes _____No

10. Comments: _____

_____

_____

_____

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P.O. BOX 2069
BELLINGHAM, WA 98227-2069

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Send a Grizzly Catalog to a friend:

Name_____

Street_____

City_____State_____Zip_____

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

WARRANTY AND RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number,'' which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.