

Grizzly *Industrial, Inc.*®

MODEL H6233Z 50-TON SHOP PRESS OWNER'S MANUAL



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**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE
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(FOR MODELS MANUFACTURED SINCE 1/10) #CR12588 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.

Table of Contents

- INTRODUCTION..... 2**
 - Manual Accuracy..... 2
 - Machine Data Sheet..... 2
 - Contact Info..... 2
 - Identification 3
- SECTION 1: SAFETY 4**
 - Safety Instructions for Machinery..... 4
 - Additional Safety for Hydraulic Presses..... 6
- SECTION 2: SETUP 8**
 - Needed for Setup 8
 - Unpacking 8
 - Inventory..... 9
 - Site Considerations 10
 - Mounting to Shop Floor..... 11
 - Assembly..... 11
- SECTION 3: OPERATIONS 14**
 - Operation Overview..... 14
 - Workpiece Inspection..... 15
 - Controls..... 15
- SECTION 4: ACCESSORIES 17**
- SECTION 5: MAINTENANCE..... 18**
 - Schedule 18
 - Cleaning 18
 - Unpainted Cast Iron 18
 - Lubrication..... 18
- SECTION 6: SERVICE 19**
 - Troubleshooting..... 19
 - Changing 20
 - Hydraulic Oil..... 20
 - Pump Bleeding..... 20
- SECTION 7: PARTS..... 21**
 - Main Breakdown..... 21
 - Label Placement..... 22
- WARRANTY AND RETURNS 25**



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 questions or need help, use the information below to contact us. Before contacting, please get the serial number and manufacture date of your machine. This will help us help you faster.

Grizzly Technical Support
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
Email: techsupport@grizzly.com

We want your feedback on this manual. What did you like about it? Where could it be improved? Please take a few minutes to give us feedback.

Grizzly Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com



MACHINE DATA SHEET

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

MODEL H6233Z 50-TON SHOP PRESS

Ram Maximum Applied Force	100,000 lbs (50 tons)
Hand Winch Lifting Capacity	100 lbs.
Ram Maximum Stroke	6 ¹¹ / ₁₆ "
Gauge Convention	PSI and Bar
Ram Diameter	2 ¹ / ₂ "
Working Distance at Lowest Table Position	32 ⁵ / ₁₆ "
Working Distance at Highest Table Position	3/4"
Bed Support Pin Diameter	1 ³ / ₈ "
Number of Bed Adjustment Holes	6 Holes
Bed Adjustment Hole Spacing	6 ⁵ / ₁₆ " On-Center
Overall Dimensions	38"W x 49"D x 72"H
Shipping Dimensions	74"W x 36"D x 18"H
Arbor Plate Set Included	Yes
Hydraulic Fluid Type	Standard Hydraulic Jack Oil
Net Weight	475 lbs.
Shipping Weight	483 lbs.



Identification

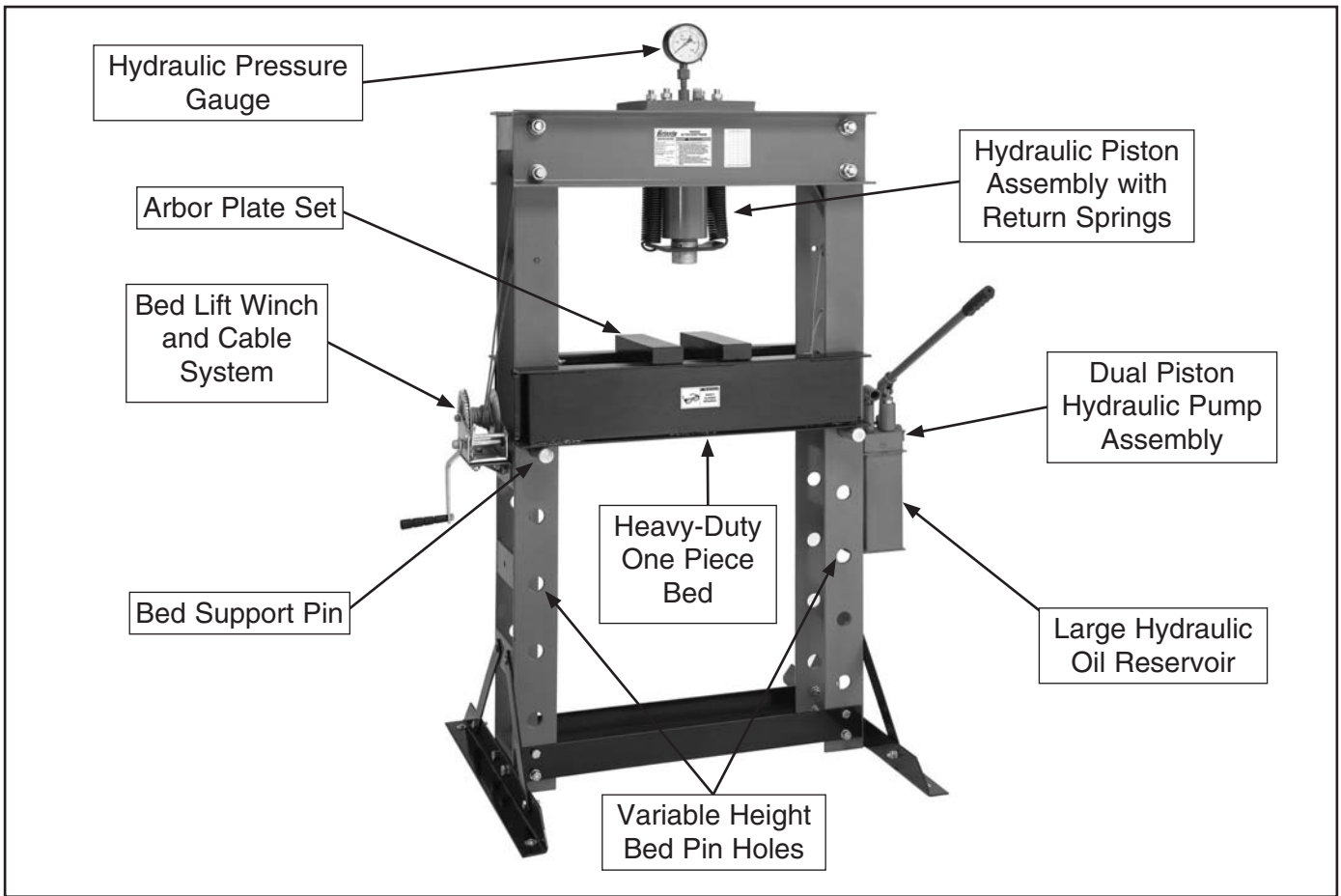


Figure 1. Identification.

<p>An illustration of a hand pointing to a stack of manuals. The manuals are open, showing technical diagrams and text. The hand is pointing to the left side of the manuals.</p>	<p>⚠ WARNING</p> <p>To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.</p>
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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. AVOIDING OVERLOAD.** Exceeding rated press capacity can damage the press, shatter a workpiece, or launch a press pin causing a severe impact injury. When the press has reached its maximum pressure or the pump lever becomes stiff to operate, the press has reached its limit. Never use a cheater pipe for extra leverage.
- 2. 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 leather gloves and safety glasses with a face shield. Heavy leather boots with extra toe protection are also required. Under some conditions, a hard hat may be needed.
- 3. 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 workbench.
- 4. PRE-USE INSPECTIONS.** A loose press frame 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.
- 5. 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.
- 6. UNSAFE WORKPIECE.** Applying pressure to unstable objects can cause the object to eject, causing an impact injury. Never apply pressure to balls, round objects, springs, or elastic items.
- 7. AVOIDING PROJECTILE INJURIES.** Being hit by a launched 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 shift off-center and kick out under a load. Never stack rods and spacers to create an extended press pin. If pressing must occur with an extended press pin, 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.
- 8. CORRECT TOOLING.** Without using the correct spring caging tool or jig to hold the spring-loaded workpiece, the workpiece may shift suddenly, launching springs that could cause a severe impact injury. Never use this press to unload spring-loaded assemblies without also using the correct spring caging tool or jig.
- 9. CORRECTING MISALIGNED LOADS.** If a workpiece becomes misaligned during pressing operations, it may slip out of the press and cause 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.



10. SAFE WORKING ZONE. Falling tooling, arbor plates, or a shifting workpiece 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.

11. 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.

12. SAFE HYDRAULIC REPAIR. Repair that is performed by an unqualified person can lead to press overload and line burst where hydraulic oil is injected into your blood stream, resulting in blood poisoning. Do not attempt to repair the hydraulic system or adjust the pressure relief valve unless you are a qualified hydraulic service professional.

13. AVOIDING HYDRAULIC POISONING. Hydraulic fluid reaches extremely high pressures and can cause blood poisoning if injected into your blood stream. Never remove any hydraulic line, fitting, or component, or attempt to check for leaks in lines with your hands or fingers while the system is under pressure.

14. AVOIDING SPRING-BACK HAZARDS. Under heavy pressing operations, when some parts finally break free of the host workpiece, sudden hydraulic press unloading can result in spring-back. As a result, a workpiece, press pin, or 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.

15. AVOIDING WINCH OVERLOAD. The winch and pulley system is rated at 100 lbs total, and is designed to lift and lower only the bed. Using the bed winch to lift the bed and workpiece at the same time can cause system failure, resulting in the bed and workpiece falling, severely crushing the fingers, hands, or feet the press operator. Always remove the workpiece and arbor plates before using the winch to raise or lower the bed.

16. UNAUTHORIZED MODIFICATION. Modifying the press frame, increasing pump relief pressure, installing non-hydraulic hoses or fittings, or adding a higher capacity piston or pump can cause structural failure leading 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.

WARNING

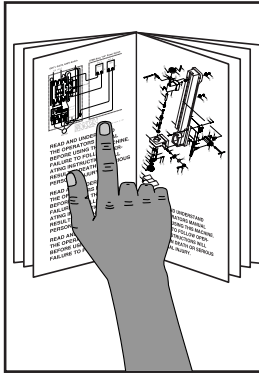
Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious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

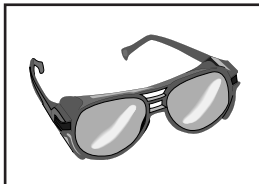


SECTION 2: SETUP



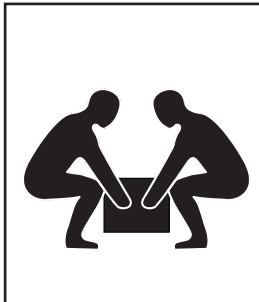
!WARNING

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
• Open-End Wrench 17mm	1
• Open-End Wrench 19mm.....	1
• Open-End Wrench 22mm	1
• Open-End Wrench 28mm	1
• Standard Screwdriver #3.....	1
• 1/4" Pin-Type Spanner Wrench	1
• Dust Mask or Respirator	1
• Electric Hammer Drill	1
• Concrete Fasteners Using 1/2" 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. Press Assembly.....	1
B. Base Rails	2
C. Bed Support Pins	2
D. Pump Handle.....	1
E. Arbor Plates.....	2
F. Pressure Gauge	1
G. Base Straps.....	4

Hardware	Qty
Hex Bolts M10-1.5 x 30 (Base Straps)	8
Flat Washer 10mm (Base Straps)	8
Lock Washer 10mm (Base Straps).....	8
Hex Nuts M10-1.5 (Base Straps)	8

Hex Bolts M16-2 x 40 (Base Rails)	4
Flat Washer 16mm (Base Rails).....	4
Lock Washer 16mm (Base Rails)	4

Hex Bolts M12-1.75 x 35 (Pump)	2
Flat Washer 12mm (Pump).....	2
Lock Washer 12mm (Pump)	2
Hex Nuts M12-1.75 (Pump).....	2

Hex Bolts M12-1.75 x 35 (Winch)	2
Flat Washer 12mm (Winch).....	2
Lock Washer 12mm (Winch)	2
Hex Nuts M12-1.75 (Winch)	2

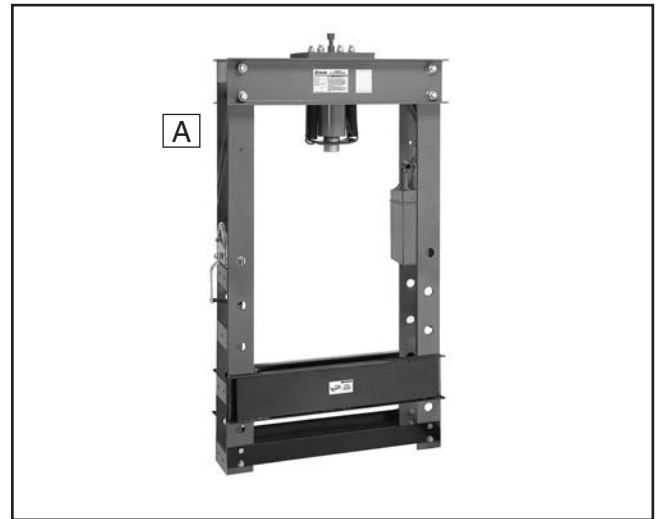


Figure 2. Main inventory.

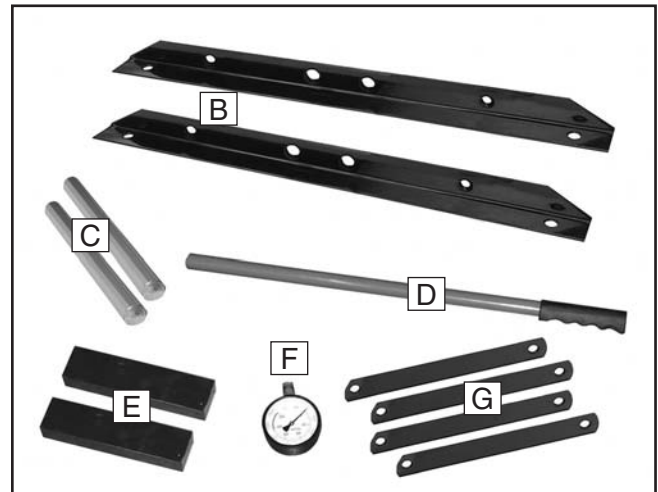


Figure 3. Sub components inventory.

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.

	<p>⚠ WARNING SUFFOCATION HAZARD! Immediately discard all plastic bags and packing materials to eliminate choking/suffocation hazards for children and animals.</p>
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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

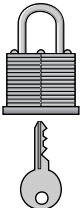
Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers 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.

	<p>⚠ CAUTION Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.</p>
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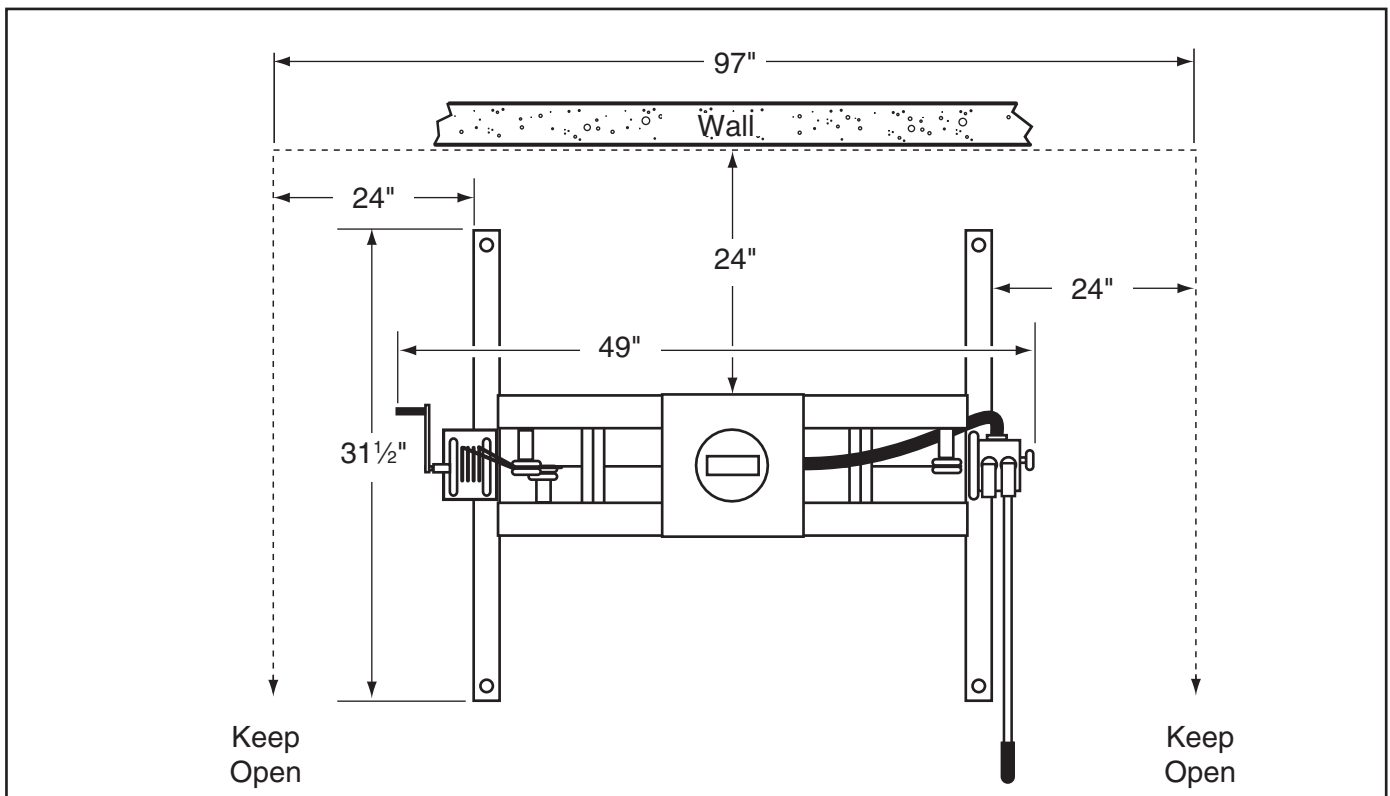


Figure 4. Minimum working clearances.



Assembly

To assemble your press:

1. Put on safety glasses and heavy leather boots.
2. Wrap the upper U-beams with straps or chains rated to lift at least 500 lbs. each.
3. Using a forklift or overhead hoist, connect the load and raise the hydraulic press until it is vertical, as shown in **Figure 5**.



Figure 5. Lifting strap location.

4. Connect both base rails to each U-beam with four M16-2 x 45 hex bolts, and 16mm flat washers, lock washers, and hex nuts, as shown in **Figure 6**.

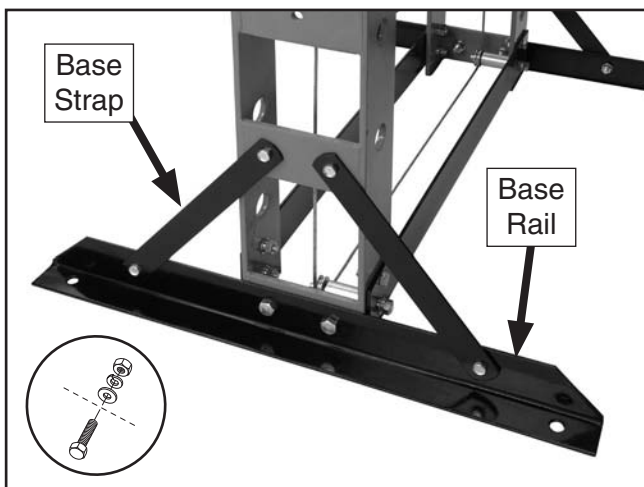


Figure 6. Base rails and straps installed.

5. Using a 17mm wrench, connect the four support straps to the U-beams and the base rails with the eight M10-1.5 x 30 hex bolts, and 10mm flat washers, lock washers, and hex nuts, as shown in **Figure 6**.
6. Lower the hydraulic press to the floor and remove the lifting equipment.
7. Route the bed winch cables around the appropriate pulleys, as shown in **Figure 7**.

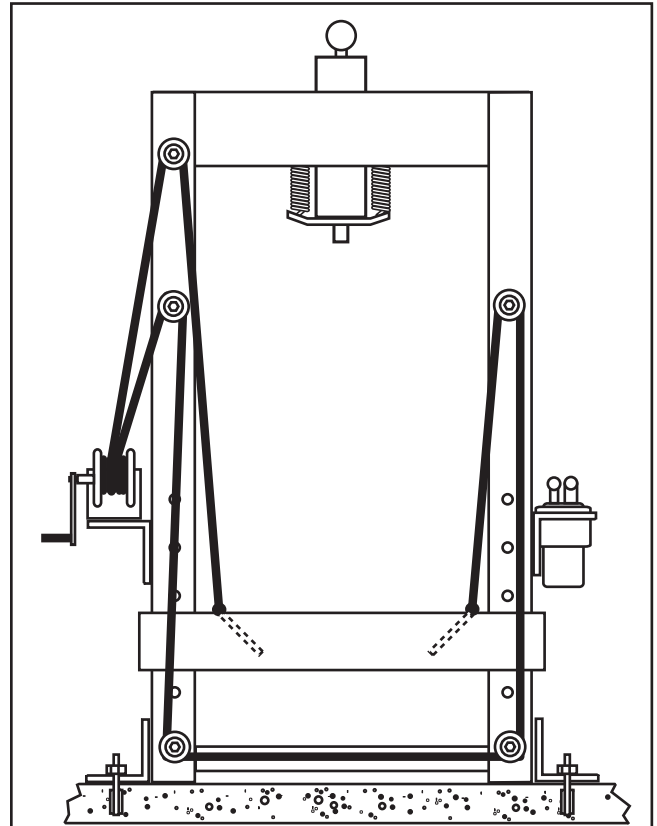


Figure 7. Cable routing.



8. Using a 19mm wrench, install the bed winch shown in **Figure 8** to the U-beam with two M12-1.75 x 35 hex bolts, and the 10mm flat washers, lock washers, and hex nuts.

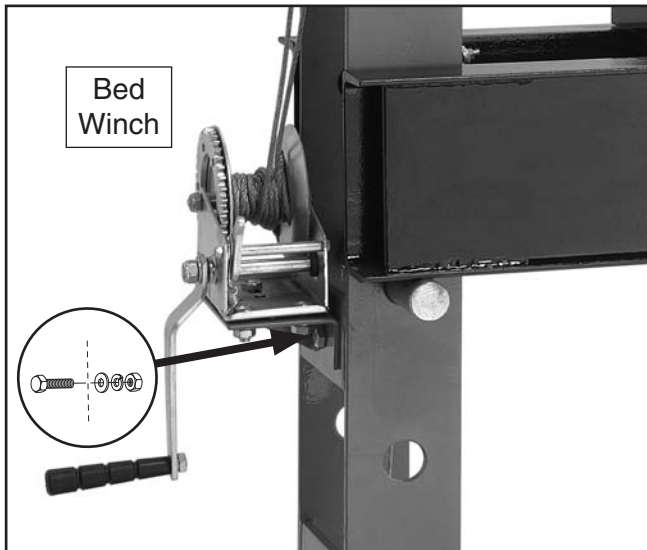


Figure 8. Winch installed.

9. Using a 19mm wrench, install the hydraulic pump shown in **Figure 9** to the U-beam with two M12-1.75 x 35 hex bolts, and 12mm flat washers, lock washers, and hex nuts.

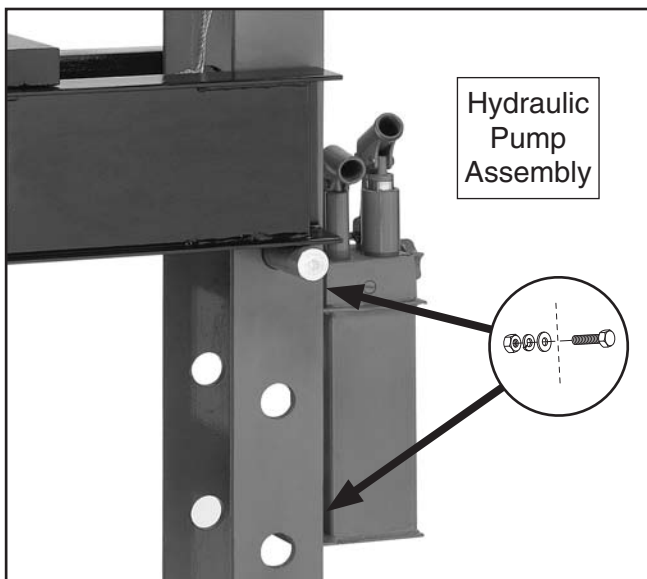


Figure 9. Pump installed.

10. Remove the plastic cap from the gauge and the plug from the pump inlet.
11. Using a 28mm wrench, connect the pressure gauge shown in **Figure 10** to the top of the piston housing. Do not use Teflon tape or thread sealant of any kind on this type of fitting, as it employs a sealing ring.



Figure 10. Pressure gauge installed.

12. Remove the plastic caps from the pump port and the pressure line.
13. Connect the line to the port and thread the knurled nut onto the self-sealing hydraulic fitting. Do not use Teflon tape or thread sealant of any kind on this type of fitting, as it employs a seal pin design shown in **Figure 11**.

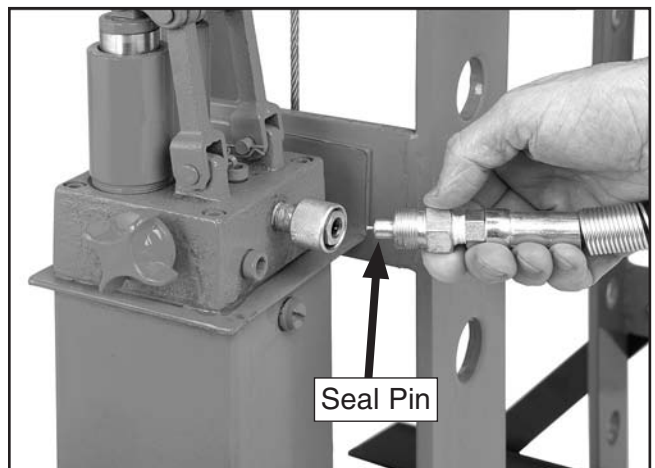


Figure 11. Hydraulic pump installation.



14. With the help of another person, hoist, or forklift, position the press on the floor where you want to fasten it.
15. Based on your choice of fasteners discussed under **Mounting to Shop Floor**, use the pre drilled holes in the base rails as a guide to drill and mount your press to the shop floor.
16. Position the bed with the bed support pins, and place the arbor plates on the bed, as shown in **Figure 12**.

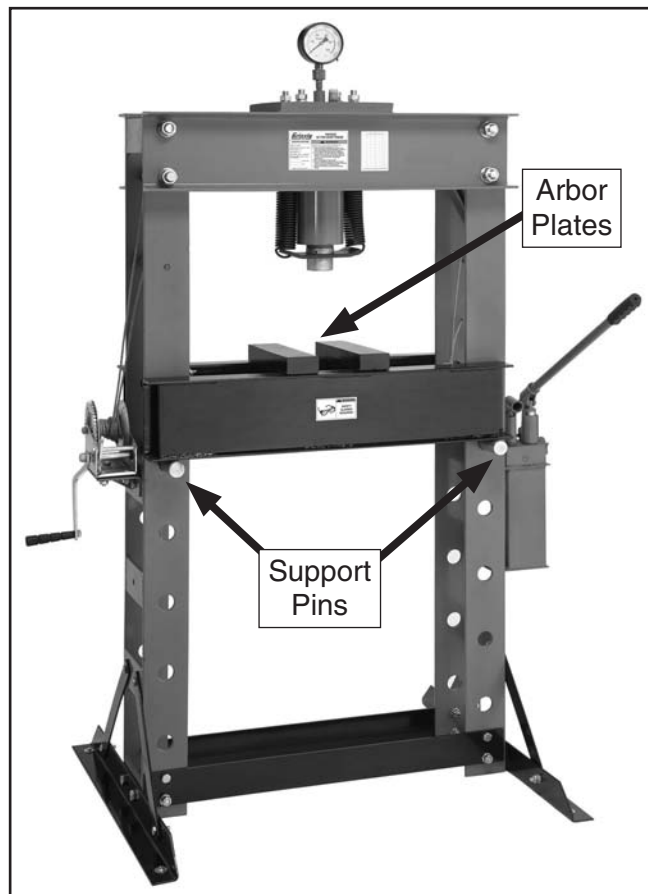


Figure 12. Typical arbor plate positioning.

17. Refer to the **Lubrication** section on **Page 20**, and bleed and top-off the hydraulic system.

Mounting to Shop Floor

Under heavy pressing operations, the press frame is subject to great forces of tension and compression. When the item being pressed off breaks free of the workpiece, the load on the workpiece is suddenly relieved. As a result of this sudden unloading, the entire machine and workpiece spring-back to the normal unloaded position. This repositioning can be loud and startling, and the workpiece, arbor plates, or the press-pin may fall or be ejected from the press bed causing injury.

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

Bolting to Concrete Floors

Since floor materials vary, mounting hardware is not included with your machine; however, lag shield anchors with lag screws or anchor studs as shown in **Figure 13** are two popular methods for anchoring machines to a concrete floor. Research the many options for press mounting so you can use the best option.

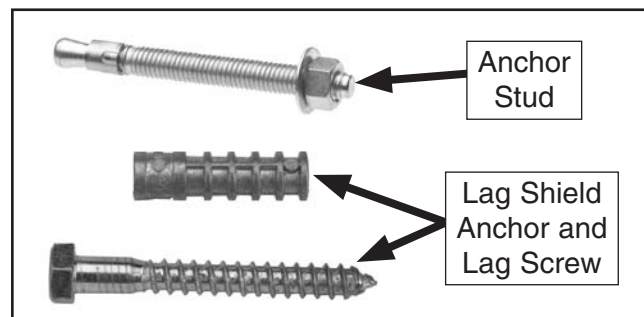


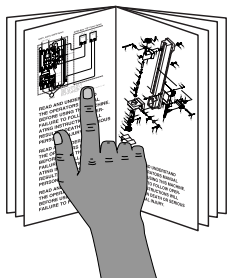
Figure 13. Typical fasteners for mounting to concrete floors.

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 eye and face protection, leather gloves, and leather boots with extra toe protection.



!WARNING
Exceeding rated press capacity can damage the press, shatter a workpiece, or launch a press pin causing a severe impact injury. When the press has reached its maximum pressure or the pump lever becomes very stiff to operate, the press has reached its limit. Never use a cheater pipe for extra leverage.

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 is not intended to be an exact step-by-step procedure, but rather a general example of a typical press operation to assist in an understanding of the controls discussed in this section.

In a typical press operation, the operator does the following:

1. Puts on the required personal safety equipment, and clears away all bystanders.
2. Inspects the workpiece and prepares it for press operations.
3. Retracts the hydraulic ram completely, and positions the bed so there is the shortest distance between the press pin 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. While watching the pressure gauge, the operator completes the press operation.
10. Relieves the hydraulic pressure and allows the ram to return to the retracted position.



Workpiece Inspection

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. 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 the 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 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. If in doubt, refer to the machinery repair manual for the part you are working on.

Controls

Review the list and **Figure 14** below to familiarize yourself with the hydraulic controls.

- A. Hydraulic Pump Assembly.** Houses the control valve, relief valve, hydraulic fluid, and a dual pump system that creates the hydraulic force required for press operations.
- B. Rapid Pump.** For rapid piston movement, use the handle in the right-side pump. However, in this position, the press has less hydraulic leverage and maximum press loads will be difficult to reach.
- C. Pressure Pump.** For maximum press loads, use the handle in the left-side pump. However in this position the piston will move very slowly as hydraulic leverage is maximized.
- D. Pressure Relief Valves.** These valve are factory set at a safe relief pressure and should not be re-adjusted.
- E. Control Valve.** When the valve is rotated clockwise to the closed position, the pump and piston are ready for press operations. When the valve is rotated counterclockwise to the open position, the pump and piston are relieved of pressure, and the press retracts to the unloaded position.
- F. Fill Plug.** Location where the pump reservoir is filled.
- G. Hydraulic Reservoir.** Stores and cools hydraulic fluid.

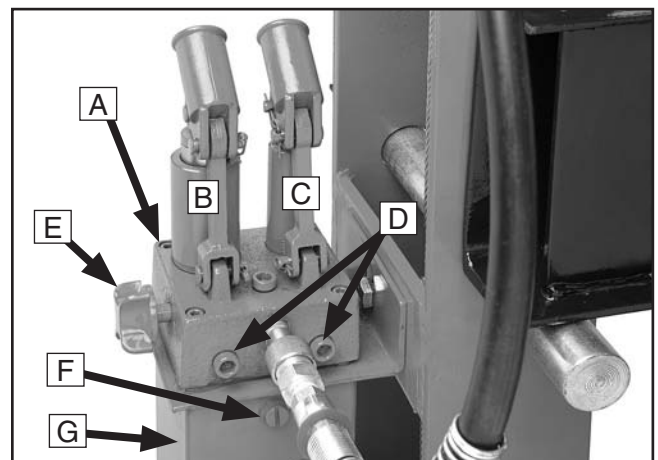


Figure 14. Pump controls.



H. Pressure Gauge. Indicates the hydraulic system pressure in the PSI and Bar conventions.



Figure 15. Pressure gauge.

! WARNING

The bed winch and pulley system is rated at 100 lbs. total and is designed to lift and lower the bed only. Using the bed winch to lift the bed and a workpiece at the same time can cause system failure, resulting in the bed and workpiece falling, severely crushing the fingers, hands, or foot of the press operator. Always remove the workpiece and arbor plates before using the winch to raise or lower the bed position the bed.

I. Bed Winch. Used to raise and lower the bed onto the bed support pins. This winch has a 100 lb. capacity, and is not intended to lift or lower the bed with the workpiece resting on the bed.

J. Spool Lock Lever. Controls the direction of winch operation to either raise or lower the press bed.

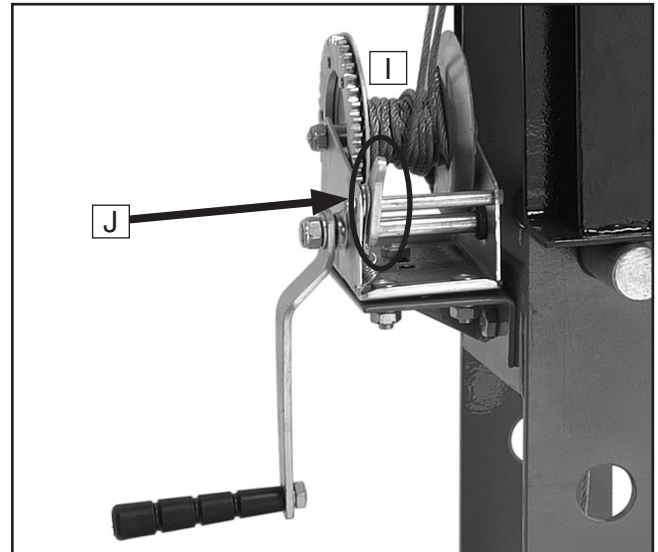


Figure 16. Bed lift winch.



SECTION 4: ACCESSORIES

G8983—Tilting Roller Stand

Adjusts from 26" to 44", 0°-45°. 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 17. SHOP FOX® Roller Stands.

G7832—Arbor Press Stand

This heavy-duty stand features a 3 3/4" 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.

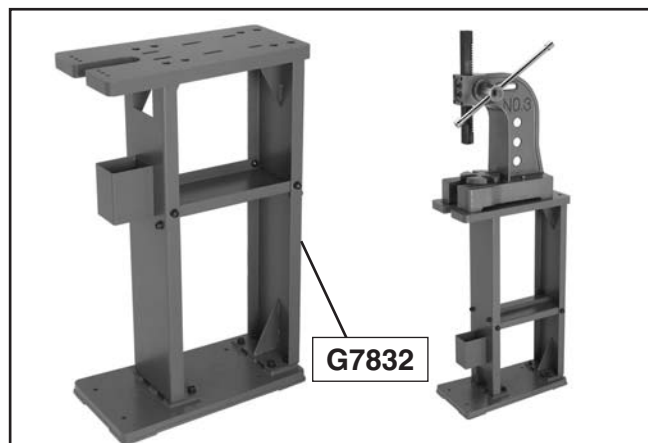


Figure 18. Arbor press stand (press not included).

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 19. 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.

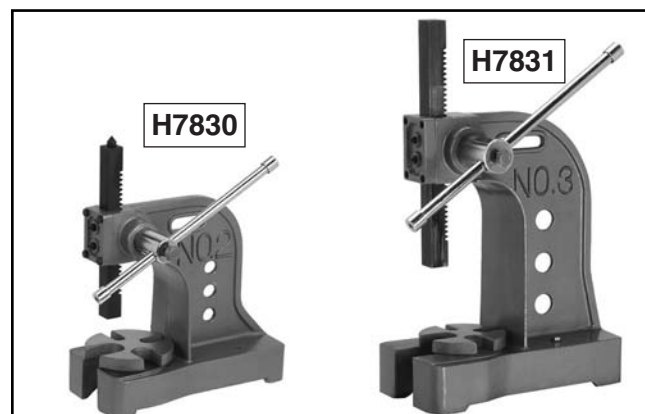


Figure 20. Industrial grade arbor presses.

Call 1-800-523-4777 To Order

Model H6233Z (Mfg. since 1/10)



SECTION 5: MAINTENANCE

⚠️ WARNING

Hydraulic fluid reaches extremely high pressures and can cause blood poisoning if injected into your blood stream. Never remove any hydraulic line, fitting, or component, or attempt to check for leaks in lines with your hands or fingers while the system is under pressure. Always relieve hydraulic pressure before performing maintenance.

Schedule

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

Daily Check:

- Loose mounting bolts.
- Damaged or leaking hydraulic seals.
- Loose bolts, frame cracks.
- Winch and cable condition.
- Any other unsafe condition.

Weekly Maintenance:

- Floor mounting bolts.

Every Three Years:

- Replace hydraulic fluid.

Cleaning

Cleaning the Model H6233Z 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.

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 pump:

1. Using a hand-held oil gun, apply one or two drops of any standard machine oil or motor oil to all clevis pins shown in **Figure 21**.

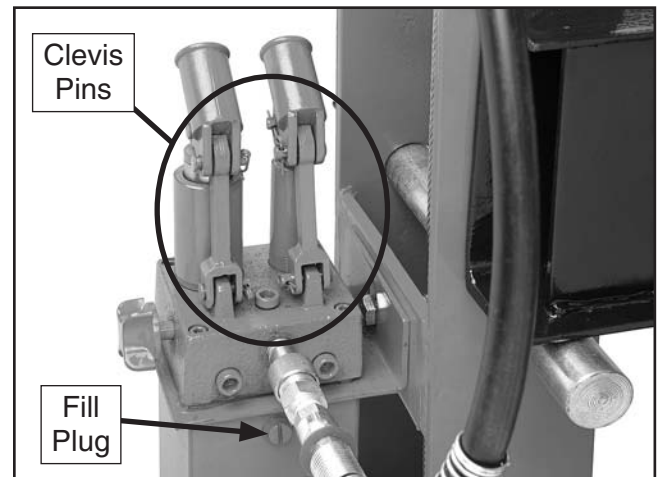


Figure 21. Clevis pins.

2. With the press completely retracted in the uppermost position, use a #3 standard screwdriver, and un-thread the fill plug shown in **Figure 21**.
3. Fill the pump reservoir with any standard hydraulic oil until it runs from the port.
4. Reinstall the fill plug.



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

Piston is weak or does not reach rated pressing capacity.	<ol style="list-style-type: none"> 1. Pump reservoir is low on oil. 2. System has air bubbles trapped in pump. 3. Control valve is at fault. 4. Pump or piston is at fault. 	<ol style="list-style-type: none"> 1. Fill pump reservoir to correct oil level (Page 18). 2. Bleed air out of the pump as outlined on (Page 20). 3. Verify that the control valve is closed. 4. Replace or have pump or piston rebuilt or replaced.
System loses pressure under a load.	<ol style="list-style-type: none"> 1. Control valve is at fault. 2. Pump or piston is at fault. 	<ol style="list-style-type: none"> 1. Verify that the control valve is closed. 2. Replace or have pump or piston rebuilt or replaced.
Pump lever feels spongy during pumping, or lever has lost stroke.	<ol style="list-style-type: none"> 1. Pump reservoir is low on oil. 2. Air bubbles are trapped in pump. 3. Pump or piston is at fault. 	<ol style="list-style-type: none"> 1. Fill pump reservoir to correct oil level (Page 18). 2. Bleed air out of pump as outlined on (Page 20). 3. Replace or have pump or piston rebuilt or replaced.
Pump handle moves upward while press is under a load.	<ol style="list-style-type: none"> 1. Air bubbles are trapped in pump. 2. Pump or piston is at fault. 	<ol style="list-style-type: none"> 1. Bleed air out of pump as outlined on (Page 20). 2. Replace or have pump or piston rebuilt or replaced.
Oil leaking from fill plug, or other seals.	<ol style="list-style-type: none"> 1. Pump reservoir is overfilled. 2. Hydraulic hose or fitting is leaking. 3. Pump or piston is at fault. 	<ol style="list-style-type: none"> 1. Remove the fill plug and drain-off excess oil (Page 18). 2. Replace hydraulic hose or fitting. 3. Replace or have pump or piston rebuilt or replaced.



Changing Hydraulic Oil

To change the hydraulic oil:

1. Open the control valve (**Figure 22**), and allow the press and the piston to fully retract until the pressure gauge reads zero.

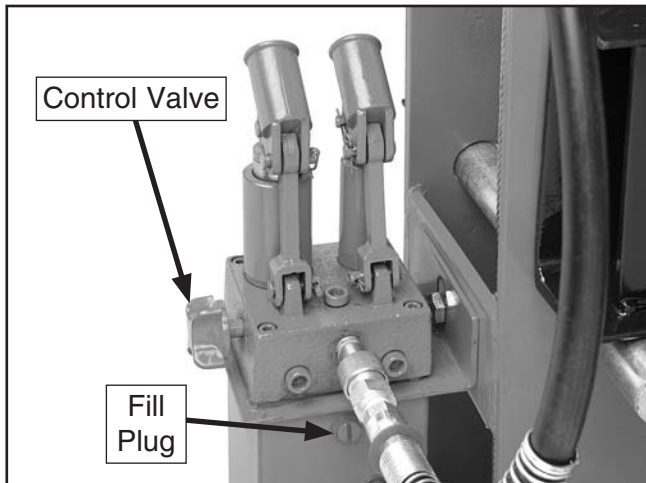


Figure 22. Control valve.

2. Use a 17mm wrench to remove the two pump retaining bolts (**Figure 22**) and the pump.
3. Using a #3 standard screwdriver, remove the fill plug shown in **Figure 22**, and invert the pump assembly to drain out all hydraulic oil into a container from the pump reservoir.
4. Reinstall the pump and refill the pump reservoir with any quality hydraulic jack oil to the point where oil begins to pour out of the port.
5. Reinstall the fill plug.
6. Close the control valve and pump the handle to extend the press piston a few inches.
7. Open the control valve, and allow the press and the piston to fully retract once again until the pressure gauge reads zero.

8. Remove the fill plug shown in **Figure 22**, and top-off the hydraulic oil level until oil begins to pour out of the port.
9. Wipe down all fittings and lines.

Pump Bleeding

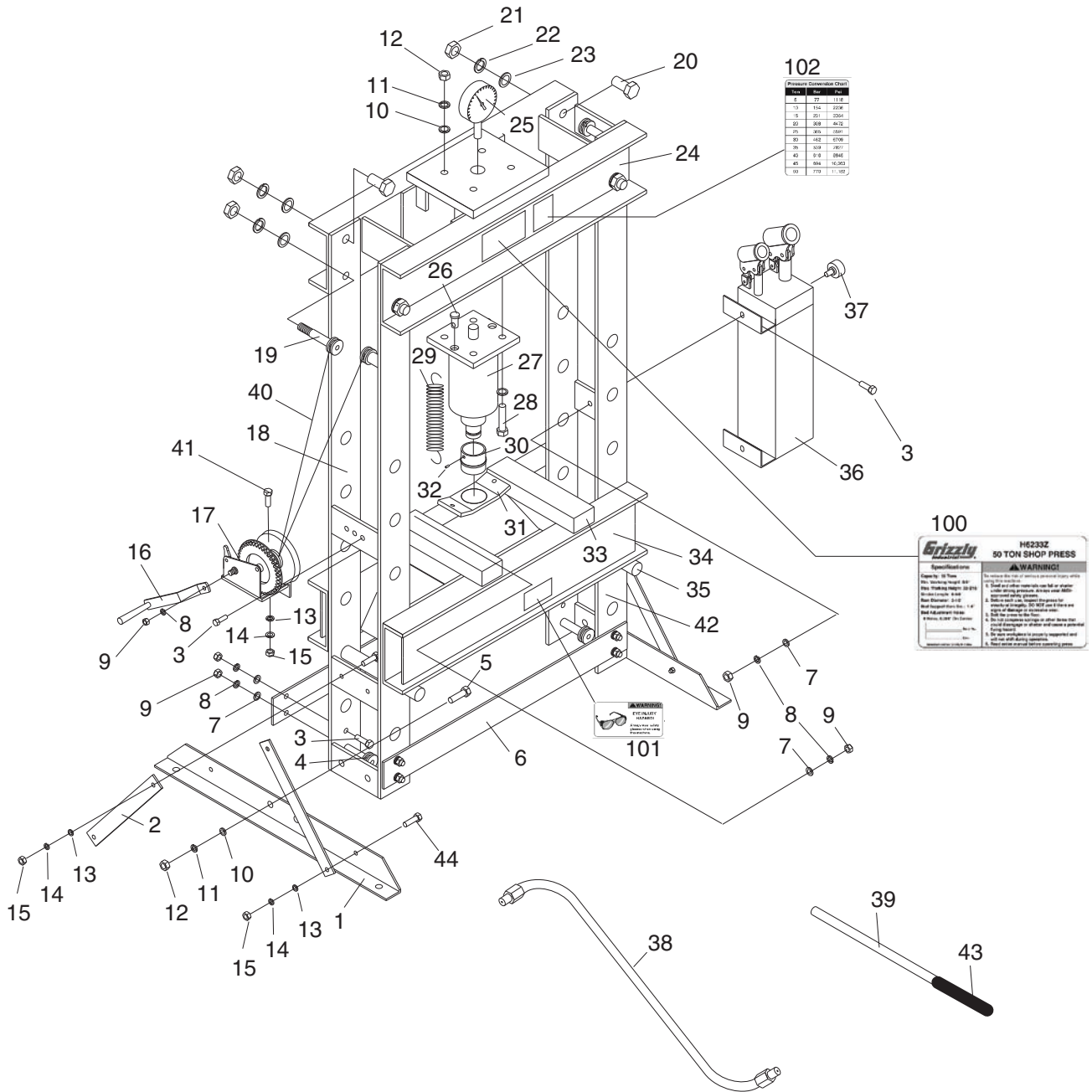
To bleed air from the pump:

1. Open the control valve completely and allow the return piston to fully retract.
2. Using a #3 standard screwdriver, remove the fill plug shown in **Figure 22**, and top-off the hydraulic oil level as required to the point where oil begins to pour out of the port.
3. With the control valve still open, pump both pump pistons with the handle quickly with five or ten strokes each.
4. Close the control valve, top off the oil level, and reinstall the fill plug.



SECTION 7: PARTS

Main Breakdown



Parts List

REF	PART #	DESCRIPTION
1	PH6233Z001	BASE RAIL
2	PH6233Z002	BASE STRAP
3	PB75M	HEX BOLT M12-1.75 X 35
4	PH6233Z004	SMALL PULLEY
5	PB175M	HEX BOLT M16-2 X 45
6	PH6233Z006	SUPPORT STRAP
7	PW06M	FLAT WASHER 12MM
8	PLW05M	LOCK WASHER 12MM
9	PN09M	HEX NUT M12-1.75
10	PW08M	FLAT WASHER 16MM
11	PLW10M	LOCK WASHER 16MM
12	PN13M	HEX NUT M16-2
13	PW04M	FLAT WASHER 10MM
14	PLW06M	LOCK WASHER 10MM
15	PN02M	HEX NUT M10-1.5
16	PH6233Z016	HANDLE
17	PH6233Z017	WINCH
18	PH6233Z018	U-BEAM LEFT
19	PH6233Z019	LARGE PULLEY
20	PH6233Z020	HEX BOLT M22-2.5 X 50 C8.8
21	PH6233Z021	HEX NUT M22-2.5 C8.8
22	PLW18M	LOCK WASHER 22MM
23	PW26MM	FLAT WASHER 22MM
24	PH6233Z024	UPPER CROSS BEAM

REF	PART #	DESCRIPTION
25	PH6233Z025	PRESSURE GAUGE
26	PH6233Z026	SPRING HANGER PIN
27	PH6233Z027	HYDRAULIC PISTON
28	PB159M	HEX BOLT M16-2 X 80
29	PH6233Z029	EXTENSION SPRING
30	PH6233Z030	PRESS PIN
31	PH6233Z031	PRESS PLATE
32	PSS31M	SET SCREW M5-.8 X 8
33	PH6233Z033	ARBOR PLATE
34	PH6233Z034	BED
35	PH6233Z035	BED SUPPORT PIN
36	PH6233Z036	HYDRAULIC PUMP
37	PH6233Z037	CONTROL KNOB
38	PH6233Z038	HYDRAULIC HOSE
39	PH6233Z039	PUMP LEVER W/GRIP
40	PH6233Z040	WIRE ROPE
41	PB74M	HEX BOLT M10-1.5 X 20
42	PH6233Z042	U-BEAM RIGHT
43	PH6233Z043	HANDLE GRIP
44	PB01M	HEX BOLT M10-1.5 X 30
100	PH6233Z100	MACHINE DATA LABEL
101	PLABEL-11C	SAFETY GLASSES LABEL
102	PH6233Z102	PRESSURE CHART LABEL





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 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?

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

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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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.

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