MODEL G0421
100" PAN AND BOX BRAKE
OWNER'S MANUAL
(For models manufactured since 03/26)



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#LS23996 PRINTED IN CHINA V1.04.26

******Keep for Future Reference******

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

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

The owner of this machine/tool 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, cutting/sanding/grinding tool 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

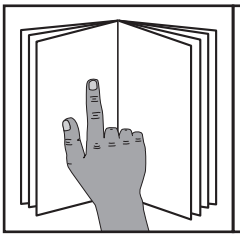
Contact Info

We stand behind our machines! If you have questions or need help, contact us with the information below. Before contacting, make sure you get the **serial number** and **manufacture date** from the machine ID label. This will help us help you faster.

Grizzly Technical Support
1815 W. Battlefield
Springfield, MO 65807
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



⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

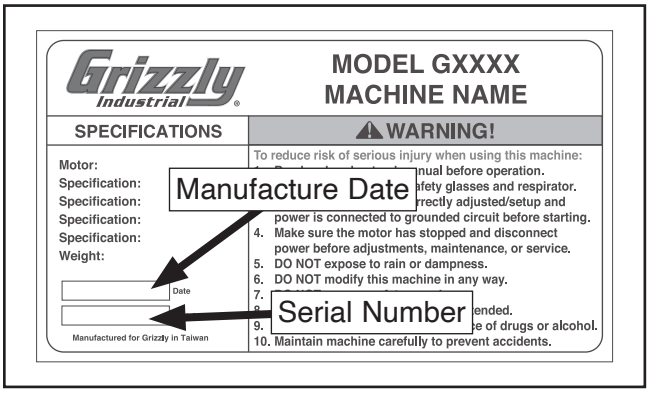
Manual Accuracy

We are proud to provide a high-quality owner's manual with your new machine!

We made every effort to be exact with the instructions, specifications, drawings, and photographs in this manual. Sometimes we make mistakes, but our policy of continuous improvement also means that **sometimes the machine you receive is slightly different than shown in the manual**.

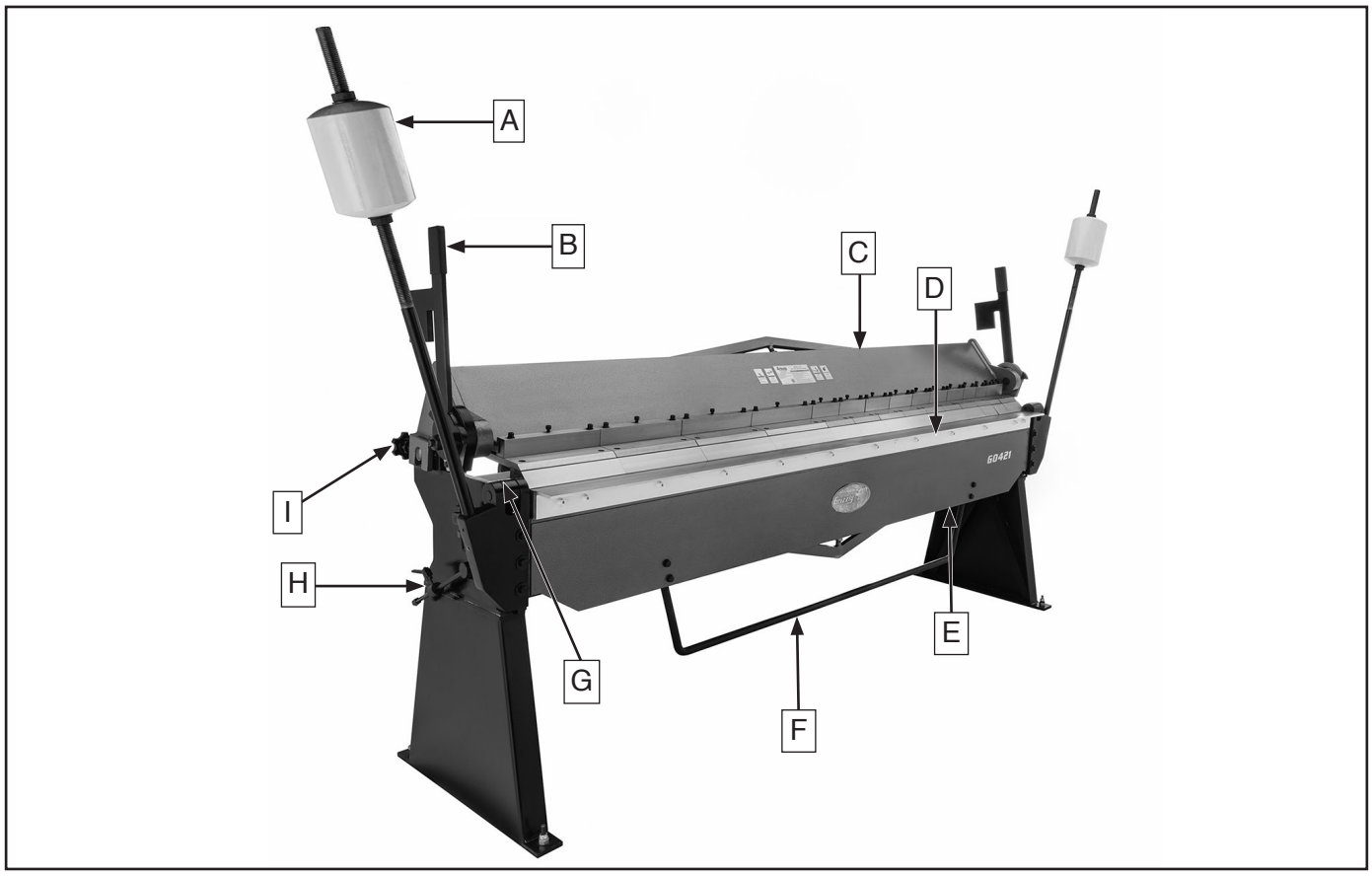
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

Alternatively, you can call our Technical Support for help. Before calling, make sure you write down the **manufacture date** and **serial number** from the machine ID label (see below). This information is required for us to provide proper tech support, and it helps us determine if updated documentation is available for your machine.



Identification

Refer to the following descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and minimize your risk of injury when operating this machine.



A. Counterweight (1 of 2): Provides leverage for bending thick workpieces. Can be adjusted or removed.

B. Clamping Handle (1 of 2): Raises and lowers clamping leaf to secure workpiece.

C. Clamping Leaf: Holds and positions clamping fingers.

D. Clamping Finger (1 of 15): Holds workpiece in place while bending block produces bend. Fingers can be individually removed or repositioned to allow clearance for workpiece.

E. Bending Leaf: Swivels up to bend workpiece.

F. Bending Handle: Raises bending leaf against fingers.

G. Clamp Block: Supports workpiece.

H. Stop Collar Assembly: Limits how far bending leaf can be lifted to determine angle of bend.

I. Setback Adjustment Knob (1 of 2): Moves clamping leaf and attached fingers forward and backward in relation to clamp block to account for bend allowance, bend radius, and material thickness.

MACHINE DATA SHEET

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

MODEL G0421 100" PAN AND BOX BRAKE

Product Dimensions:

Weight	2844 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	141 x 30 x 77 in
Footprint (Length x Width)	106 x 29 in.
Space Required for Full Range of Movement (Width x Depth)	141 x 60 in.

Shipping Dimensions:

Type	Wooden Crate
Content	Machine
Weight	3000 lbs.
Length x Width x Height	119 x 30 x 40 in.
Must Ship Upright	Yes

Main Specifications:

Capacities

Maximum Width	100 in.
Maximum Thickness Mild Steel	12 Gauge
Maximum Thickness at Full Width Mild Steel	12 Gauge
Aluminum	6 Gauge
Soft Brass	10 Gauge
Annealed Phosphor Bronze	11 Gauge
Soft Copper	10 Gauge
Hard Copper	11 Gauge
ABS Plastic	4 Gauge
Stainless Steel	16 Gauge
Brake Range	0 - 135 deg.
Minimum Reverse Bend	3/4 in.
Maximum Height of Pan/Box Brake Sides	2-1/2 in.
Number of Fingers	15
Width of Fingers	2-1/2, 3, 3-1/2, 4, 5, 6, 12 in.
Working Height	35 in.

Construction

Base	Steel
Bending Leaf	Steel
Clamping Leaf	Ground Steel
Fingers	Precision-Ground Steel, Hardened Edges

Other Specifications:

Country of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	60 Minutes
Serial Number Location	Machine ID Label

SECTION 1: SAFETY

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. Always use common sense and good judgment.

⚠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 **Alerts the user to useful information about proper operation of the machine to avoid machine damage.**

Safety Instructions for Machinery

⚠WARNING

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using machine.

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make your workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are NOT approved safety glasses.

⚠WARNING

WEARING PROPER APPAREL. Do not wear loose clothing, gloves, neckties, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

HAZARDOUS DUST. Dust created by machinery operations may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material. Always wear a NIOSH-approved respirator to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB. Only use this tool for its intended purpose—do not force it or an attachment to do a job for which it was not designed. Never make unapproved modifications—modifying tool or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly BEFORE operating machine.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine ***OFF*** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

DAMAGED PARTS. Regularly inspect machine for damaged, loose, or mis-adjusted parts—or any condition that could affect safe operation. Immediately repair/replace BEFORE operating machine. For your own safety, DO NOT operate machine with damaged parts!

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

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

Additional Safety for Pan & Box Brakes

⚠WARNING

Fingers can be broken or severely pinched if caught between clamping fingers and bending blocks during operation. Severe cuts can occur to hands/fingers when contacting sharp workpiece edges. To minimize risk of injury, anyone operating this machine MUST completely heed the hazards and warnings below.

CRUSHING & AMPUTATION INJURIES. The brake can quickly crush or amputate fingers, hands, or body parts. Never place fingers, hands, or body parts between or near the clamping fingers and bending blocks during operation.

SECURING BRAKE. Before using, secure the brake to the floor so it can support the weight and dynamic forces involved in bending sheet metal. Otherwise, the brake may unexpectedly move or tip during operation, causing serious injury or property damage.

TOOLS IN POOR CONDITION. Using this tool with loose hardware or damaged components could result in sudden, unexpected movements during use. Inspect the brake for cracked components, damaged linkage, levers, or loose fasteners. Correct any problems before use.

METAL EDGES. Sharp edges on sheet metal can produce severe cuts. Always wear leather gloves and chamfer/de-burr sharp sheet metal edges before bending the workpiece with this machine.

LEAVING UNATTENDED. To reduce the risk of crushing or amputation injuries with children or visitors, lower the clamping leaf when not in use.

COMFORTABLE BODY POSITION. The required body motion to operate the brake can result in operator injury over time if proper ergonomics are not used during operation. Always keep your body centered with the machine and your back straight when using the bending handle.

HEATING METAL. Heating the workpiece with a torch or welding it while clamped in the brake may weaken the fingers, blocks, and frame. Do not use a torch, welder, or other similar heating tool near the brake.

CAPACITY. Exceeding the capacity of the brake may result in sudden breakage that ejects dangerous metal debris at the operator or bystanders, or causes machine damage. Only use sheet metal that is within the rated capacity of this brake (refer to the **Machine Data Sheet**).

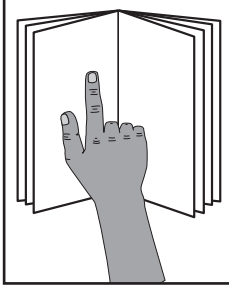
⚠WARNING

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

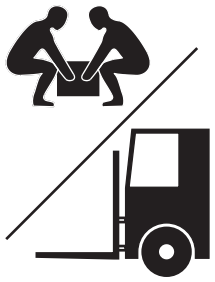
No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or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

HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.



⚠WARNING

Wear safety glasses during the entire setup process!

Needed for Setup

The following items are needed, but not included, for the setup/assembly of this machine.

Description	Qty
• Forklift (Rated 3750 lbs.)	1
• Lifting Straps (Rated 3750 lbs.)	2
• Lifting Chain (Rated 3750 lbs.)	1
• Additional People	As Needed
• Safety Glasses (Each Person)	1 Pair
• Leather Work Gloves (Each Person)	1 Pair
• Disposable Gloves (Each Person)	1 Pair
• Cleaner/Degreaser	As Needed
• Metal Protectant	As Needed
• Clean Shop Rags	As Needed
• Hex Wrenches 6, 8mm	1 Ea.
• Wrench or Socket 24mm	1
• Wrenches or Sockets 18mm	2
• Wrenches or Sockets 12mm	2
• Pliers	1
• Mounting Hardware	As Needed

Unpacking

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. ***If items are damaged, please call us immediately at (570) 546-9663.***

IMPORTANT: Save all packaging materials until you are completely satisfied with the machine and have resolved any issues between Grizzly or the shipping agent. *You MUST have the original packaging to file a freight claim. It is also extremely helpful if you need to return your machine later.*

Inventory

The following is a list of items shipped with your machine. Before beginning setup, lay these items out and inventory them.

If any non-proprietary 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.

NOTICE

If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

Inventory (Figure 1–Figure 2)	Qty
A. Machine (Not Shown)	1
B. Supports	2
C. Counterweight Assemblies	2
D. Stop Rod	1
E. Lock Handle M8-1.25 x 25	1
F. Bending Handle	1

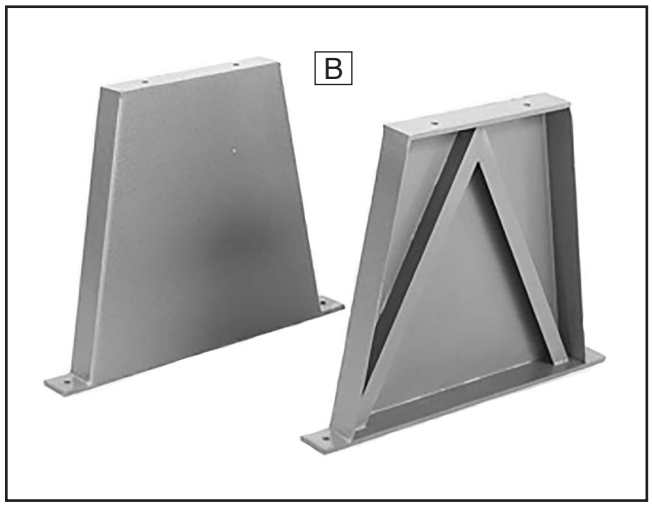


Figure 1. Machine supports.

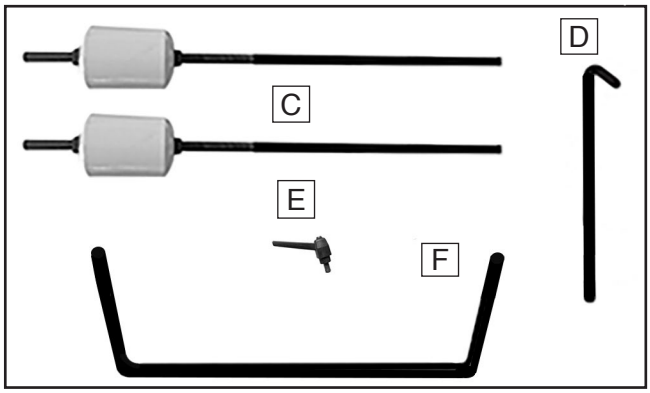


Figure 2. Pan and box brake loose parts.

Hardware Bag (Figure 3)	Qty
G. Hex Bolts M12-1.75 x 45	8
H. Flat Washers 12mm	8
I. Flat Washers 16mm	3
J. Hex Nuts M12-1.75	5
K. Lock Washers 12mm	8
L. Hex Nuts M16-2	3
M. Stop Collar	1
N. Pivot Shaft	1
O. Cotter Pin	1

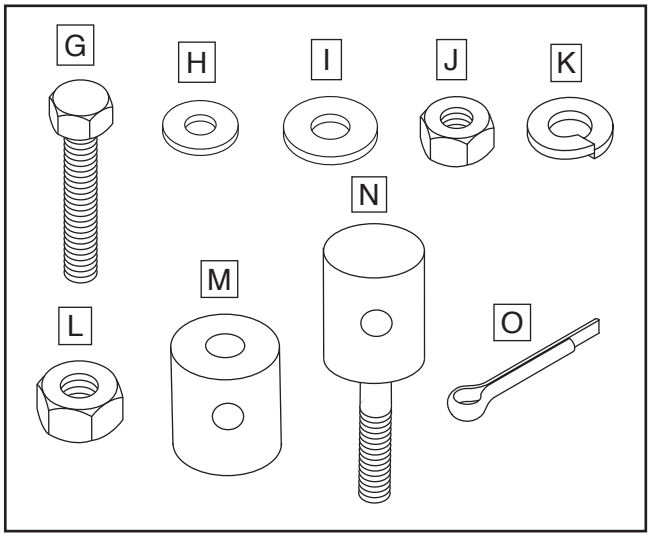


Figure 3. Contents of hardware bag (one of each fastener shown).

Cleanup

The unpainted surfaces of your machine are coated with a heavy-duty rust preventative that prevents corrosion during shipment and storage. This rust preventative works extremely well, but it will take a little time to clean.

Be patient and do a thorough job cleaning your machine. The time you spend doing this now will give you a better appreciation for the proper care of your machine's unpainted surfaces.

There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

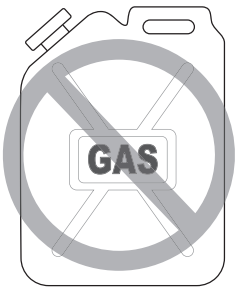
Basic steps for removing rust preventative:

1. Put on safety glasses and disposable gloves.

2. Coat rust preventative with liberal amount of cleaner/degreaser (WD•40 works well), then let it soak for 5–10 minutes.

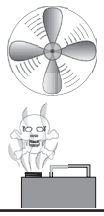
3. Wipe off surfaces. If cleaner/degreaser is effective, rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with a rag.

4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with quality metal protectant to prevent rust.



⚠WARNING

Gasoline and petroleum products have low flash points and can explode or cause fire if used to clean machinery. Avoid using these products to clean machinery.



⚠CAUTION

Many cleaning solvents are toxic if inhaled. Only work in a well-ventilated area.

NOTICE

Avoid harsh solvents like acetone or brake parts cleaner that may damage painted surfaces. Always test on a small, inconspicuous location first.

Site Considerations

Physical Environment

The physical environment where the machine is operated is important for safe operation and longevity of 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 is outside 41°–104°F; the relative humidity range is outside 20–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Space Allocation

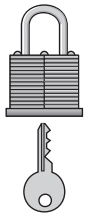
Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers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

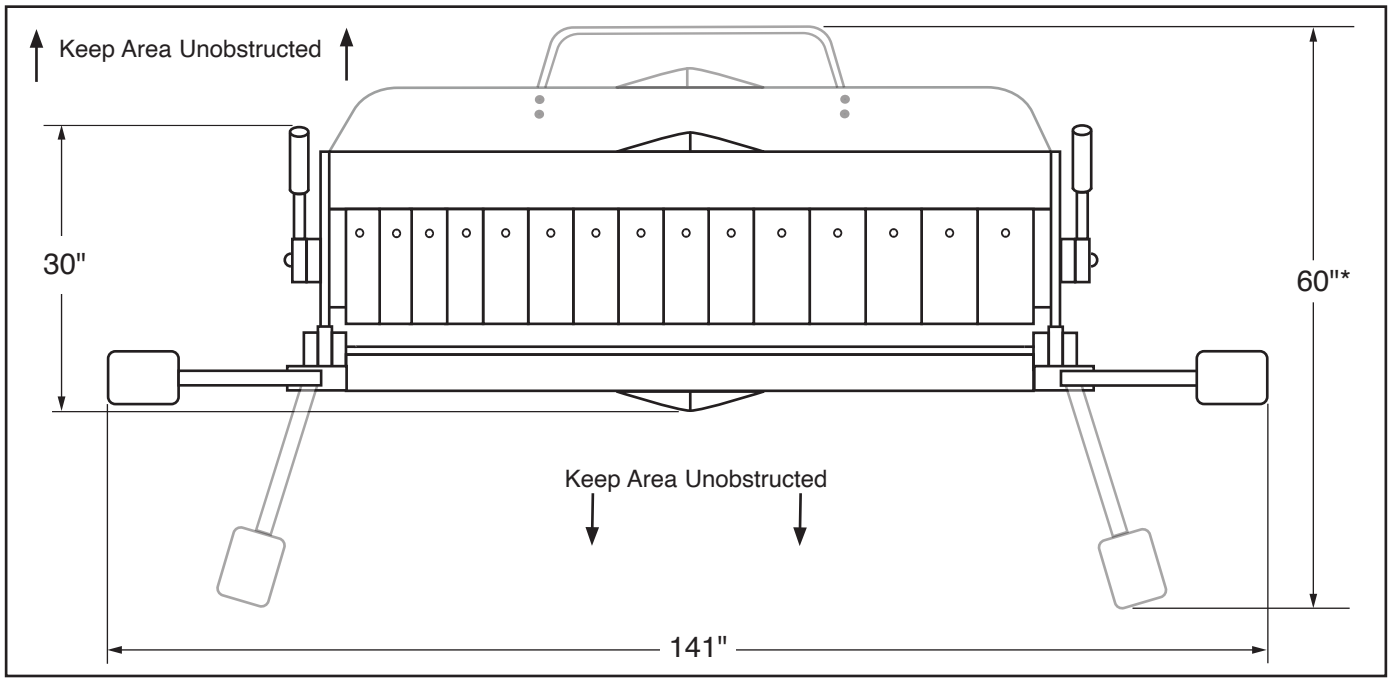
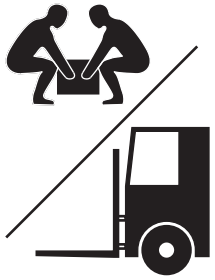


Figure 4. Minimum working clearances.

**60" reflects the full front-to-back range of motion when the machine is in operation.*

Assembly

The machine must be fully assembled before it can be operated. Before beginning the assembly process, refer to **Needed for Setup** and gather all listed items. To ensure the assembly process goes smoothly, first clean any parts that are covered or coated in heavy-duty rust preventative (if applicable).



⚠WARNING

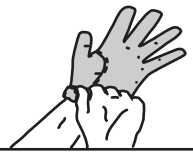
HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.

⚠WARNING

Wear safety glasses and leather work gloves during the entire assembly process!





To assemble machine:

1. Use lifting equipment to move shipping crate to installation location.

2. Remove crate top and sides, loose components inside crate, and blocks around machine base.

3. Remove fasteners securing machine to pallet.

4. Attach lifting straps to machine:

   — Pass a strap around each side of machine, just above where the supports will be installed.

   — Bring ends of lifting strap around machine and pass one end through loop on end of strap (see **Figure 5**). Repeat on other side of machine.

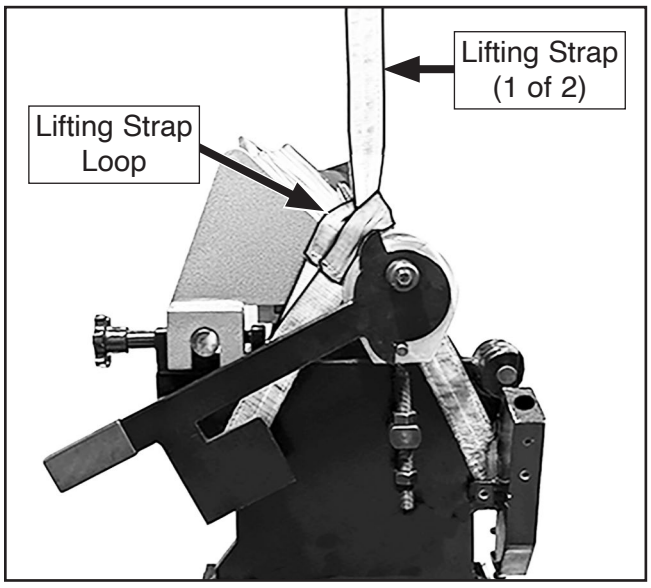


Figure 5. Lifting strap in place, looped around one side of machine.

5. Attach lifting straps to chain. Lift using forklift (see **Figure 6**).

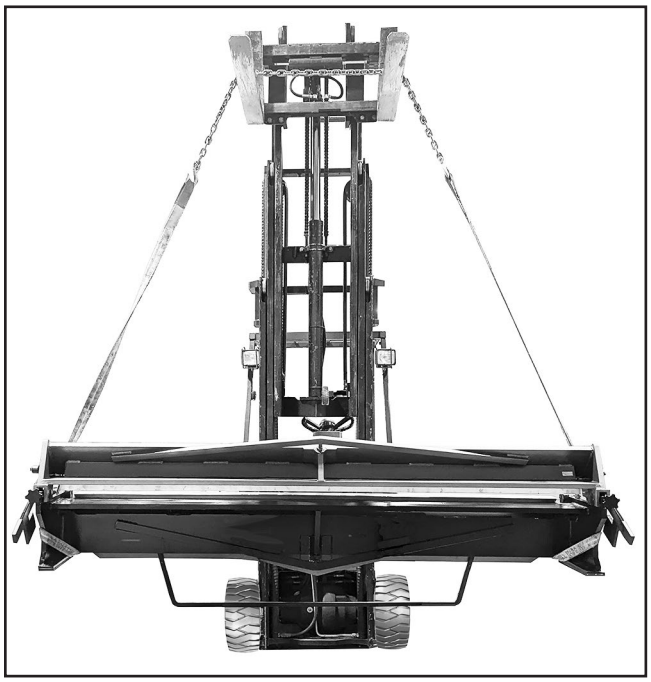


Figure 6. Machine lifted by forklift.

IMPORTANT: Make sure lifting straps are separated by forks of forklift or a spreader beam. A narrow lifting point will cause an unstable lift.

6. Use (4) M12-1.75 x 45 hex bolts, 12mm flat washers, 12mm lock washers, and M12-1.75 hex nuts to attach supports to machine (see **Figure 7**).

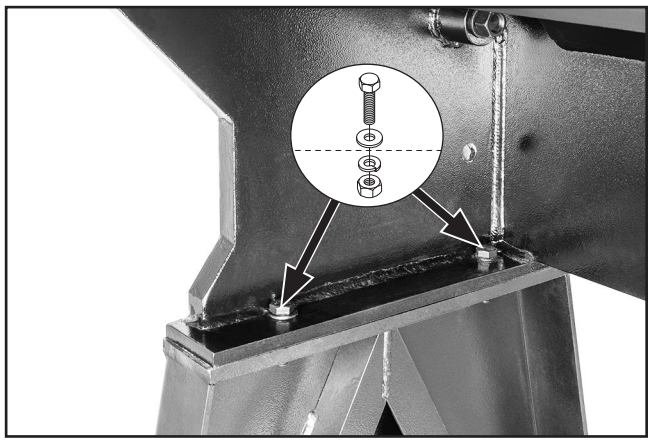


Figure 7. Machine mounted to support (1 of 2 shown).

7. Lower machine to floor and disengage lifting equipment.

8. Use (4) 12mm-1.75 x 45 hex bolts, 12mm lock washers, and 12mm flat washers to attach bending handle to front of bending leaf (see **Figure 8**).

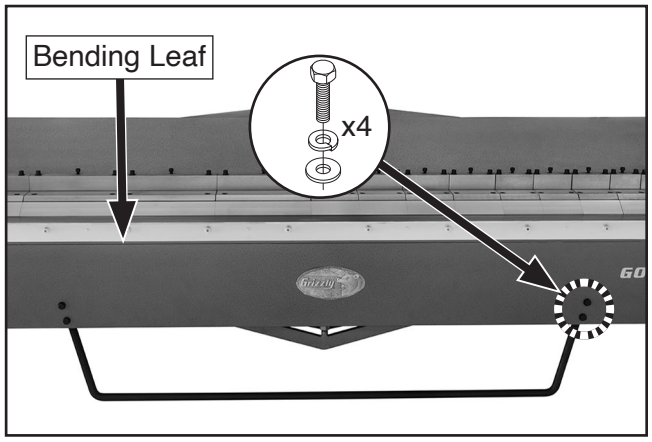


Figure 8. Bending handle attached to bending leaf.

9. Have assistant help you lift counterweight assembly up to side of machine and align shaft with hole in bending leaf hinge.

10. Insert shaft into bending leaf hinge (see **Figure 9**).

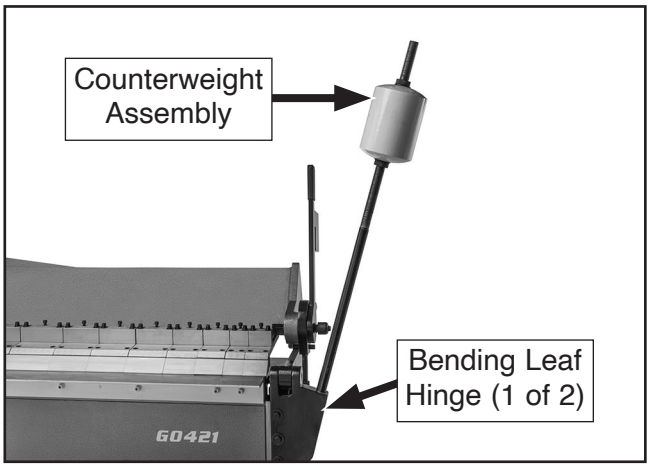


Figure 9. Counterweight mounted in bending leaf hinge.

11. Tighten (2) pre-installed set screws on outside edge of hinge to secure (see **Figure 10**).

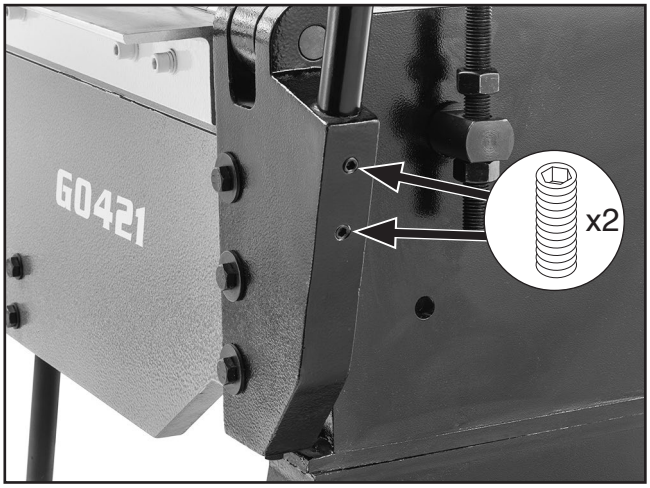


Figure 10. Set screws in bending leaf hinge.

12. Repeat **Steps 9–11** on other side of machine with remaining counterweight assembly.

13. Insert stop rod through hole in pivot shaft (see **Figure 11**).

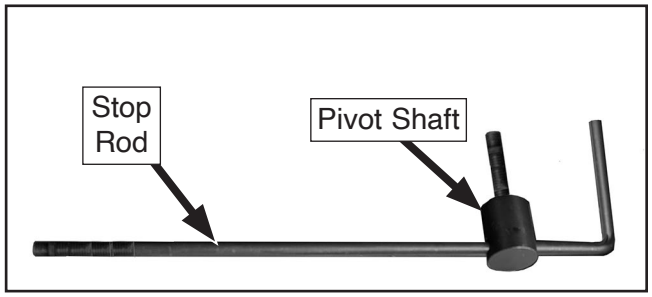


Figure 11. Stop rod inserted into pivot shaft.

14. Insert pivot shaft into hole in left side of machine, and insert short section of stop rod through anchor behind left bending leaf hinge (see **Figure 12**).

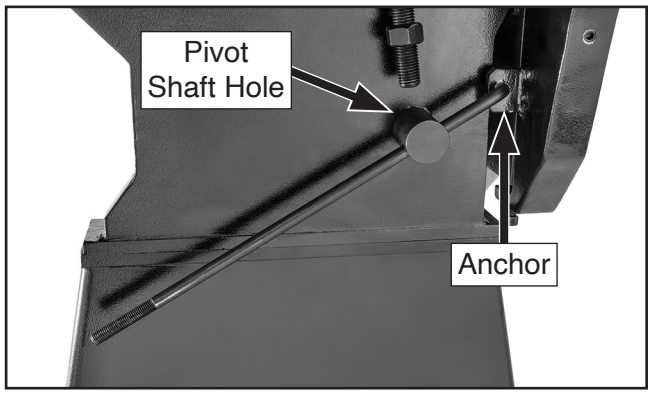


Figure 12. Pivot shaft and stop rod inserted through hole and anchor.

15. Secure short section of stop rod with cotter pin (see **Figure 13**).

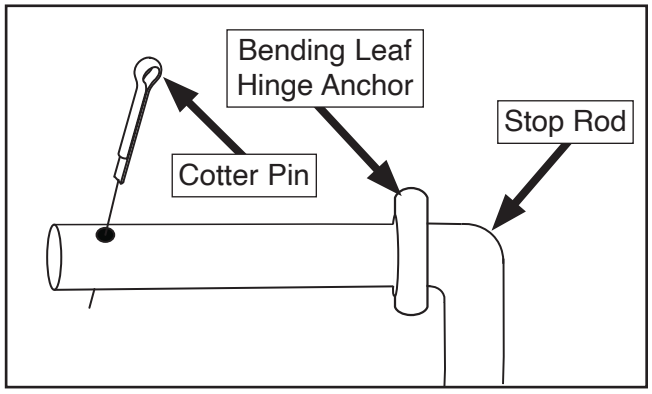


Figure 13. Securing short section of stop rod with cotter pin.

16. Secure pivot shaft with 16mm flat washer and M16-2 hex nut (see **Figure 14**). Adjust hex nut so that pivot shaft can still pivot without binding when bending leaf is in operation.

17. Install (1) 16mm flat washer and (1) M16-2 hex nut on each clamping handle pivot block, as shown in **Figure 14**.

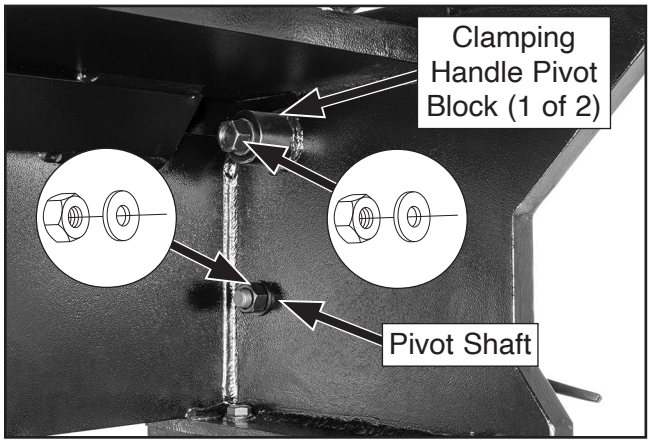


Figure 14. Pivot shaft and clamping handles secured to machine.

18. Thread stop collar and M12-1.75 hex nut onto end of stop rod (see **Figure 15**).

19. Thread lock handle into side of stop collar (see **Figure 15**).

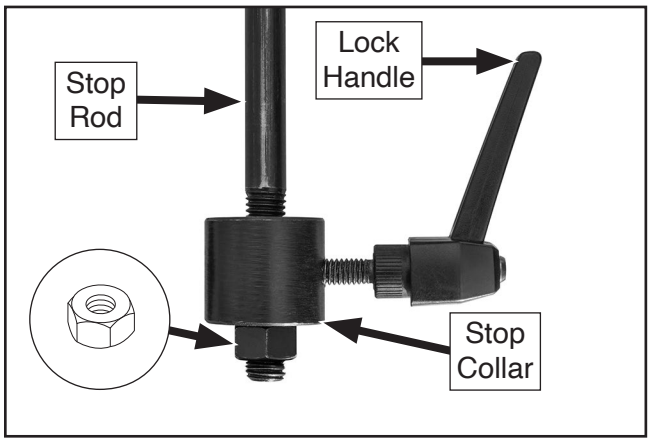


Figure 15. Stop collar assembly.

20. Move clamping handles (see **Figure 16**) toward rear of machine to raise clamping leaf and attached fingers.

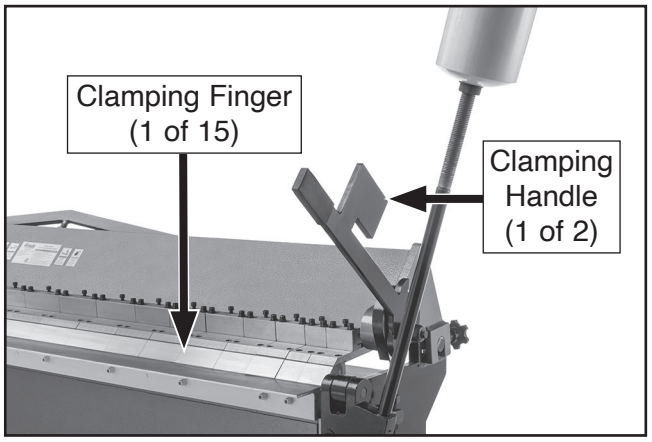


Figure 16. Location of clamping handle and fingers.

21. Remove (3) cap screws shown in **Figure 17** on each clamping finger assembly to remove each nose, nose clamp, body, and finger mount from clamping leaf (see **Figure 18**).

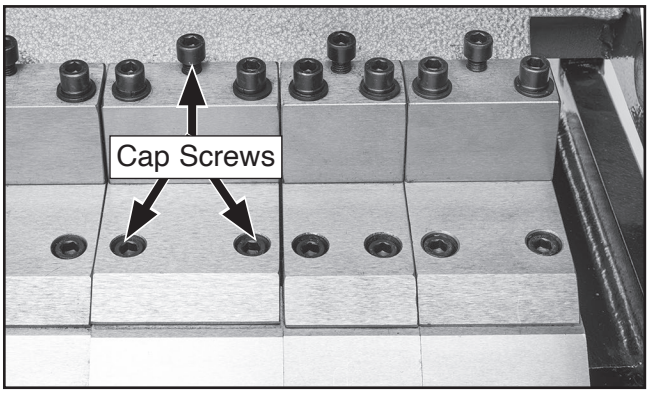


Figure 17. Location of cap screws.

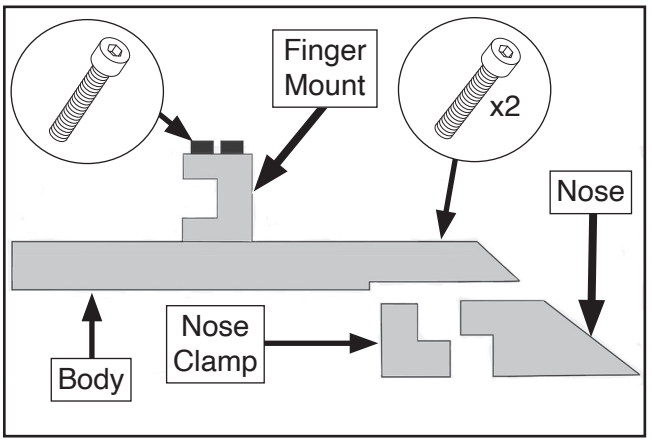


Figure 18. Clamping finger components.

22. Clean unpainted parts of clamping leaf and individual finger components, then coat them liberally with metal protectant (see **Cleanup** on **Page 10**).

23. Install finger components.

24. Make sure fingers are properly aligned (refer to **Aligning Clamping Fingers** on **Page 18**).

Anchoring to Floor

Number of Mounting Holes 4
Diameter of Mounting Hardware..... 7/16"

Anchoring machinery to the floor prevents tipping or shifting that may occur during operations involving large or heavy workpieces. Due to the dynamic forces encountered during operations with this machine, you MUST secure the machine to the floor.

If the machine will be installed in a commercial or workplace setting, local codes may legally require that it be anchored to the floor.

Anchoring to Concrete Floors

Lag shield anchors with lag screws (see below) are a popular way to anchor machinery to a concrete floor, because the anchors sit flush with the floor surface, making it easy to unbolt and move the machine later, if needed. However, anytime local codes apply, you MUST follow the anchoring methodology specified by the code.

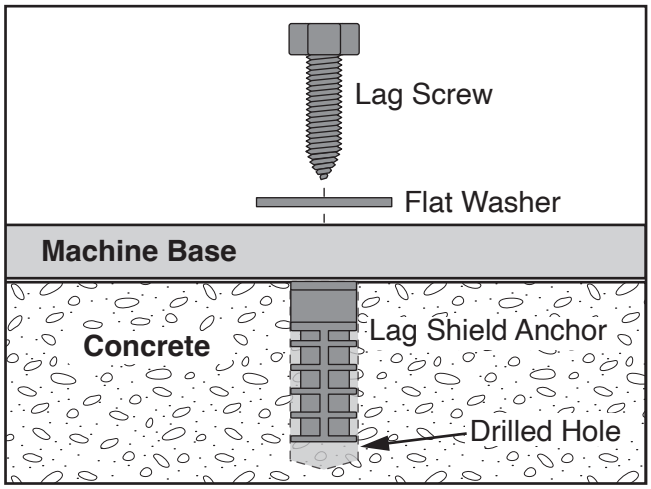


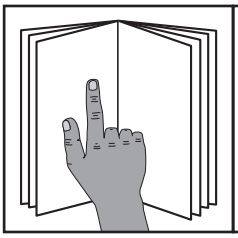
Figure 19. Popular method for anchoring machinery to a concrete floor.

SECTION 3: OPERATIONS

Operation Overview

The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.

Due to the generic nature of this overview, it is **not** intended to be an instructional guide. To learn more about specific operations, read this entire manual, seek additional training from experienced machine operators, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.



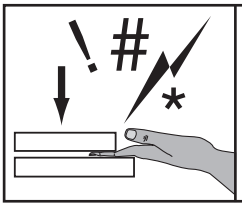
⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

⚠WARNING

Bodily injury could result from using this machine. Always wear safety glasses, leather work boots, and heavy duty leather work gloves when operating this machine or whenever handling sheet metal.





⚠WARNING

Crushing hazard! Always keep hands clear when using this machine.

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

1. Examines workpiece to make sure it is suitable for bending.
2. Installs clamping fingers and adjusts spacing for operation.
3. Positions counterweights depending on workpiece thickness.
4. Adjusts setback.
5. Adjusts clamping pressure for workpiece thickness.
6. Puts on safety glasses, leather boots, and leather gloves.
7. Positions workpiece underneath clamping fingers and lowers clamping leaf to secure workpiece.
8. With body square to brake and using both hands, raises bending leaf to form bend angle.
9. For repetitive bending, installs and adjusts stop collar assembly.
10. Lowers bending leaf and removes workpiece.

NOTICE

If you are not experienced with this type of machine, WE STRONGLY RECOMMEND that you seek additional training outside of this manual. Read books/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.

Spacing Clamping Fingers

The clamping fingers can be spaced apart for clearance when making pans or boxes. This requires removing one or more of the fingers so you can space the others to match the inside width of your pan or box.

Item Needed	Qty
Hex Wrench 8mm	1

To space clamping fingers:

1. Lift clamping leaf.

2. Loosen cap screw shown in **Figure 20** for each finger you need to remove or reposition.

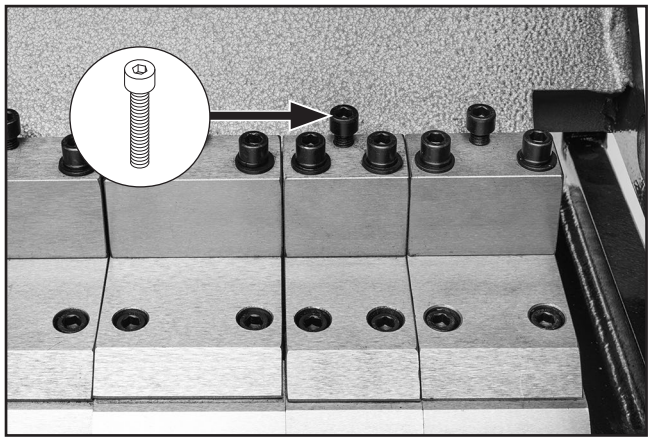


Figure 20. Location of cap screw that secures clamping finger to leaf.

3. Remove or reposition clamping finger assemblies along the clamping leaf so you have adequate room for workpiece edges (see **Figure 21**).

Note: *You may need to mix and match finger widths or space fingers appropriately to match width of pan or box.*

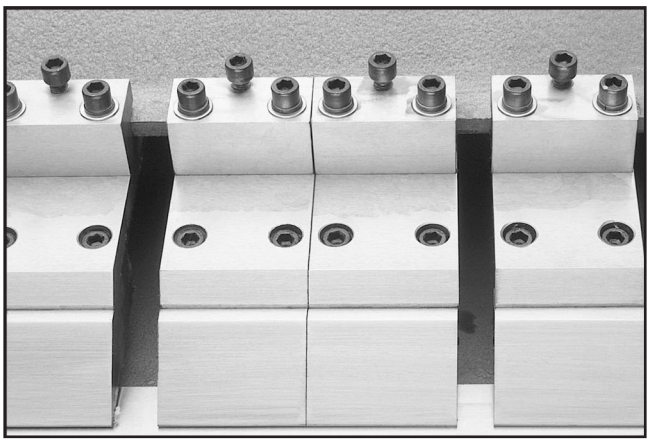


Figure 21. Example of finger spacing.

4. Loosely tighten cap screws loosened in **Step 3**, then proceed to **Aligning Clamping Fingers** on **Page 18**.

Aligning Clamping Fingers

To help ensure the bend is even along its length, the clamping fingers must be parallel with the clamp block edge and bending block.

Use a straight edge ruler to check alignment.

Items Needed	Qty
Hex Wrench 8mm	1
Straight Edge Ruler	1

To align clamping fingers:

1. Ensure clamping leaf setback is properly adjusted before aligning clamping fingers (refer to **Adjusting Setback** on **Page 20**).

2. Lower clamping leaf until clamping fingers just touch clamp block edge.

3. Look closely along bottom edge of each finger to determine if any are out of alignment with clamp block edge and bending block, as shown in **Figure 22**. Use a straight edge ruler to check alignment.

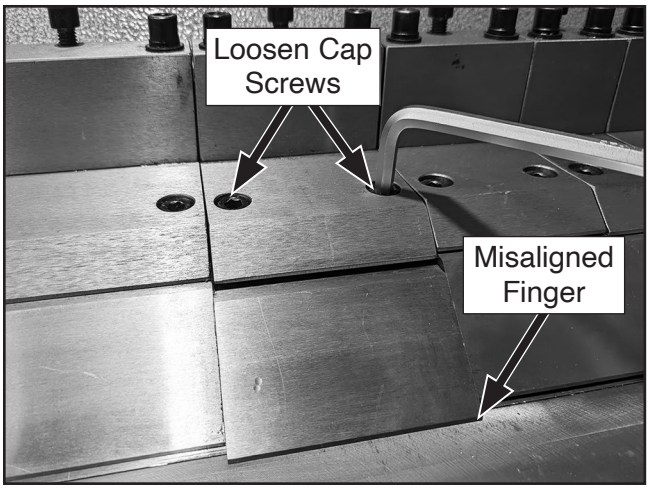


Figure 22. Adjusting misaligned finger.

4. If a finger is out of alignment, loosen cap screws on body (see **Figure 22**) to loosen nose just enough to move it forward and back.

5. Align nose parallel with clamp block edge and bending block, then tighten cap screws.

Positioning Counterweights

The gauge of the workpiece determines where the counterweight should be placed. For example, the counterweight would be positioned low on the rod for bending 20 gauge steel, and high for bending 14 gauge steel.

Items Needed	Qty
Additional People	As Needed

To position counterweights:

1. Adjust (2) lock collars up or down shoulder stud to move weight, using either your hands or an adjustable soft wrench (see **Figure 23**).

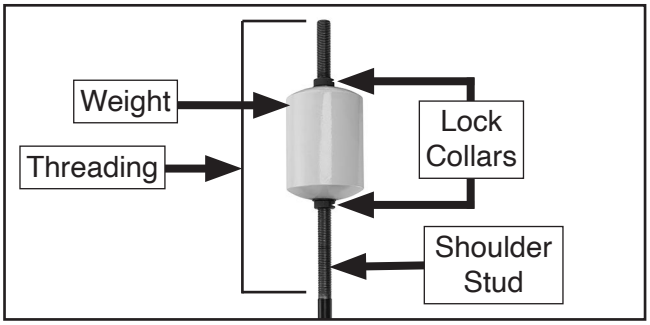


Figure 23. Location of bending leaf counterweight components.

— For maximum weight leverage, position weight near top of shoulder stud.

— For less weight leverage, position weight near bottom of shoulder stud.

Bending Allowance

When a bend is made in sheet metal, the inside surface of the bend compresses and the outside surface stretches. To bend metal objects accurately, you need to consider the length of each bend, especially when more than one bend is required. This is called bend allowance.

The bend allowance is added to the sum of the outside dimensions of the workpiece flat surfaces to obtain the overall length and width of the blank needed to make a particular part.

Exact allowances can be obtained only by trial due to differences in sheet metal hardness, how the workpiece is positioned, and difficulties in making an exact bend radius. Formulas for calculating the bend allowance can be found in metalworking handbooks or the internet.



⚠CAUTION

Sharp edges of sheet metal can cut fingers, hands or other body parts. Always wear leather gloves when handling sheet metal, and always chamfer and deburr the edges.

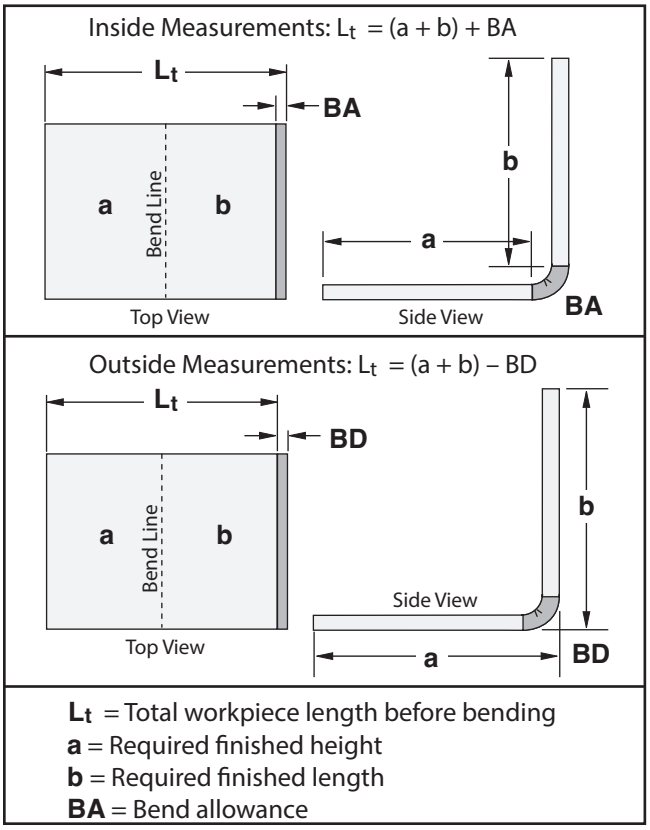


Figure 24. Bend allowance measurements.

Adjusting Setback

NOTICE

You must include the thickness of folded edges or joints when determining the proper setback, or the brake may be damaged.

Before you begin any bending operation, consider the differences of sheet metal gauges when trying to achieve either sharp or rounded bends, and allow for the differences by adjusting the setback (also see **"Bending Allowance"** on **Page 19**).

Setback is the distance from the forward edge of the fingers to the edge of the clamp block, as shown in **Figure 25**. The setback distance is determined by the gauge of the workpiece material and the desired radius of the bend.

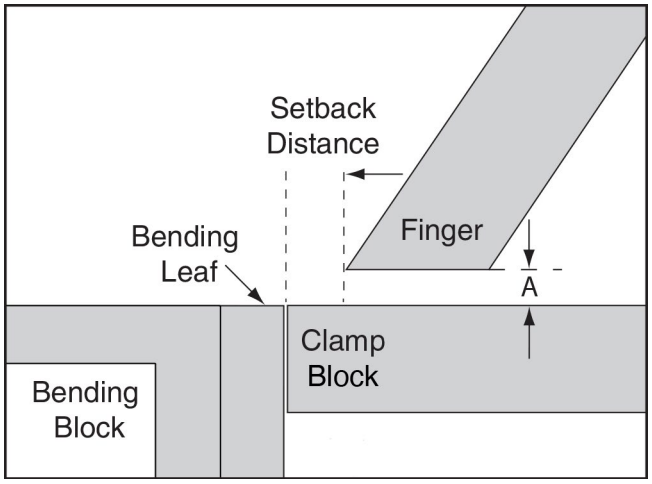


Figure 25. Profile view of adjusting setback distance.

Setback is normally adjusted 1½ times the thickness of 22 gauge and thinner workpieces, and two times the thickness of workpieces thicker than 22 gauge. The Model G0421 material gauge capacities are listed on the **Machine Data Sheet** on **Page 4**.

To adjust setback:

1. Determine setback required for bend.

2. Raise clamping fingers about ½" off of clamp block (see **Figure 25**).

3. Adjust (2) setback knobs until desired setback distance is achieved (see **Figure 26**).

   IMPORTANT: Adjust both sides equally, and ensure fingers are parallel to clamp block.

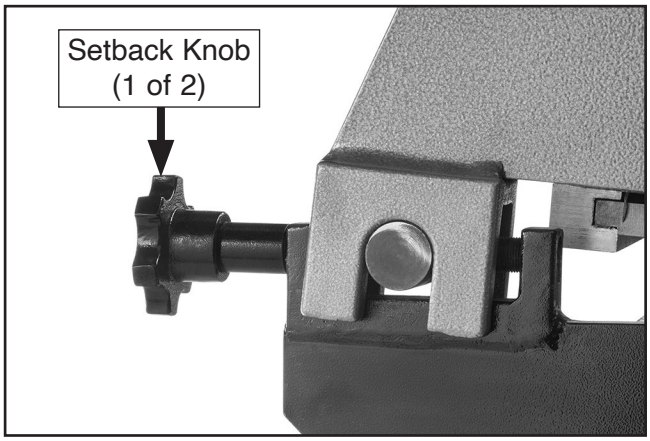


Figure 26. Location of setback knobs.

4. Lower clamping fingers onto clamp block and check setback distance (see **Figure 27**).

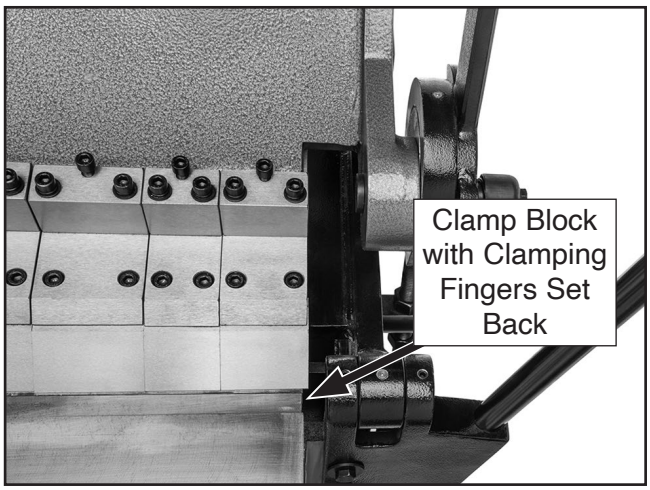


Figure 27. Clamp block with clamping fingers set back.

5. If necessary, repeat **Steps 2–4** until desired setback is achieved.

6. Check finger alignment (refer to **Aligning Clamping Fingers** on **Page 18**).

Adjusting Clamping Pressure

The clamping pressure must be properly adjusted for workpiece thickness. The ideal pressure produces medium clamping handle resistance, and locks the workpiece into position easily—much like a pair of locking pliers. Adjust the pressure by rotating the adjustment nuts on the clamping pressure adjustment rods (see **Figure 28**). These are located on both ends of the pan and box brake.

Tip: *It is best if the workpiece used in this procedure is the same width as the pan and box brake. If not, place two pieces of metal of the same thickness as the workpiece on each end of the brake.*

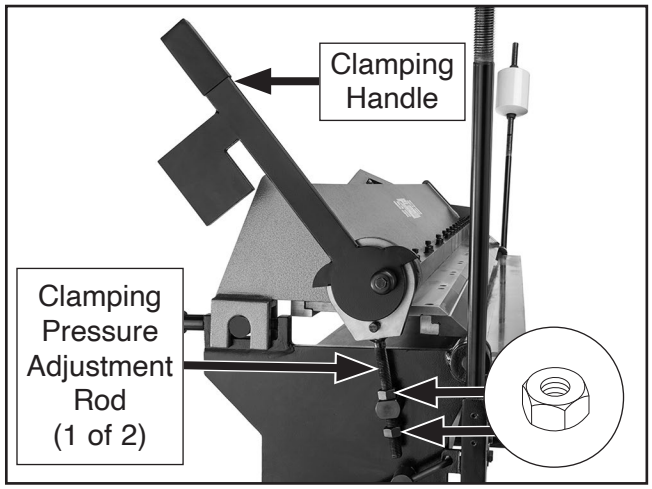


Figure 28. Location of clamping components.

Tool Needed **Qty**
Open-Ended Wrench 30mm 1

To adjust clamping pressure:

1. Lift clamping leaf by pushing clamping handles toward rear of machine, and insert workpiece.

2. Lower clamping leaf by pushing clamping handles toward front of machine so clamping fingers just touch workpiece.

3. Adjust top adjustment nut against stop to secure handle position (see **Figure 29**).

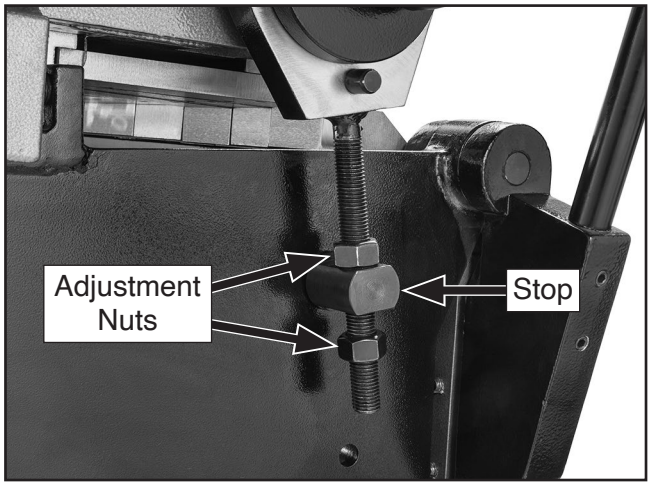


Figure 29. Location of adjustment nuts.

4. Adjust lower adjustment nut up or down until clamping handles lock firmly into place when pulled toward front of machine.

   — If clamping handles do not lock, loosen lower adjustment nut.

   — If clamping handles lock but workpiece is not held firmly enough, tighten lower adjustment nut.

5. Make sure clamping pressure is even on both ends of brake by raising one end and testing clamping action of other end. Clamping action should be same on both ends.

6. If necessary, repeat **Steps 1–5** until proper clamping pressure is achieved.

Basic Bending

⚠WARNING

Do not operate machine unless it has been securely anchored to floor, or it could tip over on you, causing severe injury or death!

⚠WARNING

Bodily injury could result from using this machine. Always wear safety glasses, leather work boots, and heavy duty leather work gloves when operating this machine or whenever handling sheet metal.



All bending operations require clamping fingers to be parallel with the edge of the clamp and bending block, and the setback and clamping pressure must be correctly adjusted for the thickness of the workpiece.

To perform basic bending operations:

1. Determine setback required for bend and adjust machine as needed (refer to **Adjusting Setback** on **Page 20**).

2. Raise clamping leaf.

3. Insert workpiece between clamping fingers and clamp block.

4. Align bend mark(s) on workpiece with fingers, then clamp it in place using clamping handles.

   Note: *If clamping handles do not lock, clamping pressure may need to be adjusted (refer to **Adjusting Clamping Pressure** on **Page 21**).*

5. With body square to brake and using both hands, lift bending leaf until workpiece reaches desired bend angle.

   Note: *If bending leaf is difficult to lift, counterweights may need to be adjusted (see **Positioning Counterweights** on **Page 18**).*

⚠CAUTION

Hold onto the workpiece so it does not drop and hit you when it is released!

6. Raise clamping leaf and remove workpiece.

Setting Stop Collar

The stop collar limits the amount that the bending leaf can travel during bending, allowing you to repeat a bend at an exact angle.

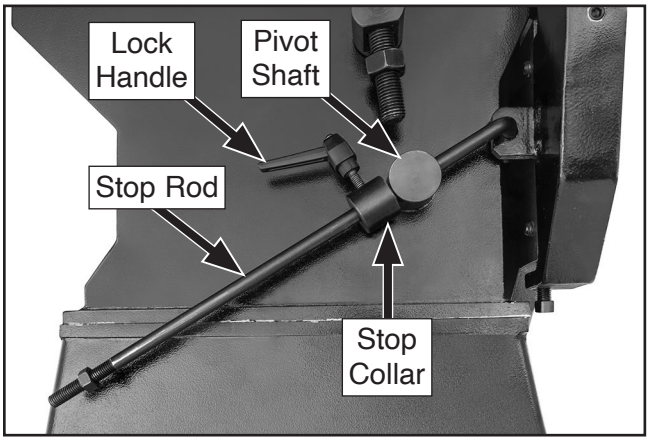


Figure 30. Stop rod assembly components.

To set stop collar:

1. Loosen lock handle enough that stop collar coming into contact with pivot shaft will slide collar down stop rod (see **Figure 30**). Make the bend you want to repeat.

2. Tighten stop collar lock handle.

3. Check stop collar by lowering bending leaf and then raising bending leaf into a bend. If stop is working correctly, bending leaf will stop in same position as first bend.

SECTION 4: ACCESSORIES

⚠WARNING

Installing unapproved accessories may cause machine to malfunction, resulting in serious personal injury or machine damage. To reduce this risk, only install accessories recommended for this machine by Grizzly.

NOTICE

Refer to our website or latest catalog for additional recommended accessories.

T26685—Moly-D Machine Oil-ISO 32

Moly-D oils are some of the best we've found for maintaining the critical components of machinery.



Figure 31. Recommended oil for machine lubrication.

T26419 Syn-O-Gen High-Speed Bearing Grease

T26419 Syn-O-Gen 777 High-Speed Bearing Grease is a 100% pure synthetic grease for wide-range multi-purpose applications.



Figure 32. Recommended grease for machine lubrication.

Recommended Metal Protectants

G5562—SLIPIT® 1 Qt. Gel
G5563—SLIPIT® 11 Oz. Spray
H5486—SLIPIT® 16 Oz. Trigger Sprayer
T24882—SLIPIT® 1 Gal. Sliding Compound



Figure 33. Recommended products for bare metal protection.

H5503—Grizzly ½ HP Electric Sheet Metal Shear

The H5503 ½ HP Electric Sheet Metal Shear features a heavy-duty aluminum head that swivels 360° for ease of use.

It can cut up to 14 gauge mild steel and 18 gauge stainless steel, while being capable of cutting 12.5 feet per minute.



Figure 34. H5503 ½ HP Electric Sheet Metal Shear.

SECTION 5: MAINTENANCE

Schedule

For optimum performance from this machine, this maintenance schedule must be strictly followed.

Ongoing
To minimize your risk of injury and maintain proper machine operation, stop operations immediately if you ever observe any of the items below, and fix the problem before continuing:

- Loose mounting bolts.
- Worn or damaged clamping fingers.
- Any other unsafe condition.

Daily Maintenance
- Lubricate clamping leaf ball oilers.
- Lubricate bending leaf ball oilers.

Weekly Maintenance
- Lubricate clamping leaf guide pin slots.
- Lubricate setback knob shaft threads.
- Lubricate counterweight shaft threads.

Cleaning & Protecting

Use a brush to clear away any metal debris and dust from the clamping fingers, clamping base, and bending blocks.

Use a shop rag to carefully apply a thin coat of quality metal protectant (see **Accessories** on **Page 23**) to all exposed unpainted surfaces to prevent corrosion.

Lubrication

Clamping Leaf Ball Oilers

Oil Type ..... T26685 or ISO 32 Equivalent
Oil Amount.....1–2 Drops
Lubrication Frequency.....Daily, or As Needed

Use an oil can to add lubricant to the holes shown in **Figure 35** (one on each side of the brake), then raise and lower the clamping leaf several times to distribute the lubricant.

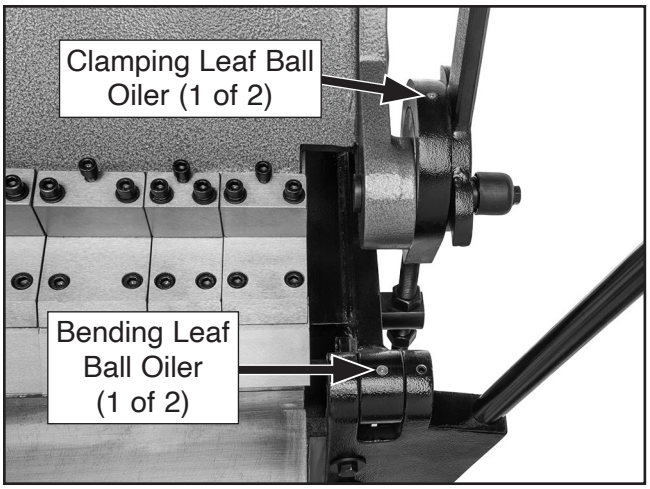


Figure 35. Location of ball oilers.

Bending Leaf Ball Oilers

Oil Type ..... T26685 or ISO 32 Equivalent
Oil Amount.....1–2 Drops
Lubrication Frequency.....Daily, or As Needed

Use an oil can to add lubricant to the holes shown in **Figure 35** (one on each side of the brake), then raise and lower the bending leaf several times to distribute the lubricant.

Clamping Leaf Guide Pin Slots

Grease Type..... T26419 or NLGI#2 Equiv.
Grease Amount ..... Light Coating
Lubrication Frequency..... Weekly

To lubricate clamping leaf guide pin slots:

1. Apply a thin coat of grease to guide pin slots shown in **Figure 36**).

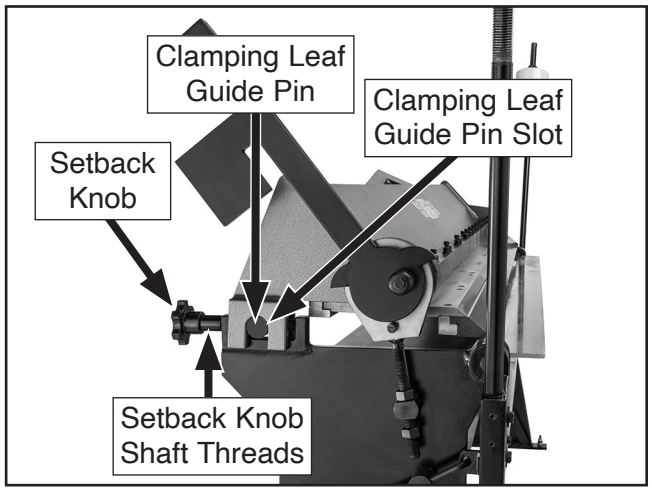


Figure 36. Location of clamping leaf guide pin and setback lubrication components.

2. Use clamping handles to raise and lower bending leaf to distribute grease.

3. Use a shop rag to wipe off any excess grease.

Setback Knob Shaft Threads

Grease Type..... T26419 or NLGI#2 Equiv.
Grease Amount ..... Light Coating
Lubrication Frequency..... Weekly

To lubricate setback knob shaft threads:

1. Turn setback knobs to move clamping fingers fully forward and expose knob threads (see **Figure 36**).

2. Clean threads: wipe away any metal shavings, old lubricant, or other debris using shop rag.

3. Apply a thin coat of grease to setback knob threads and twist setback knobs back and forth a few times to distribute.

4. Wipe away any excess grease.

Counterweight Shaft Threads

Grease Type..... T26419 or NLGI#2 Equiv.
Oil Amount..... Light Coating
Lubrication Frequency..... Weekly

To lubricate counterweight shaft threads:

1. Clean counterweight shaft threads: wipe away any metal shavings, old lubricant, or other debris using shop rag (see **Figure 37**).

2. Apply a thin coat of grease to counterweight shaft threads. Be sure to move lock collars and counterweight to get all threads (see **Figure 37**).

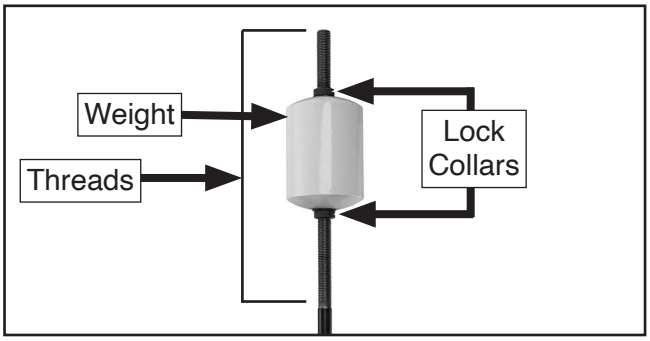


Figure 37. Location of counterweight threads

2. Apply a thin coat of grease to counterweight shaft threads. Be sure to move lock collars and counterweight to get all threads.

3. Use a shop rag to wipe off any excess grease.

SECTION 6: SERVICE

Review the troubleshooting procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure, call our Technical Support. **Note:** *Please gather the serial number and manufacture date of your machine before calling.*

Troubleshooting

Operation

Symptom	Possible Cause	Possible Solution
Heavy resistance during bends.	1. Machine capacities exceeded. 2. Not enough setback.	1. Use sheet metal gauge/thickness size within machine capacities (**Page 4**). 2. Properly calculate and adjust setback (**Page 20**).
Workpiece moves while bending.	1. Machine capacities exceeded. 2. Clamping pressure not correctly adjusted.	1. Use sheet metal gauge/thickness size within machine capacities (**Page 4**). 2. Correctly adjust clamping pressure for workpiece thickness (**Page 21**).
Dimple(s) in bend.	1. One or more fingers out of alignment.	1. Align clamping fingers (**Page 18**).
Angle is not accurate or is not repeatable.	1. Stop collar on stop rod not adjusted correctly. 2. Lock handle is not tightened on stop collar. 3. Bending block and clamp block are not aligned.	1. Adjust stop collar (**Page 22**). 2. Tighten lock handle on stop collar to prevent angle from changing (**Page 22**). 3. Align bending block (**"Aligning Bending Block" on page 27**).
Moving bending leaf or clamping leaf is extra difficult.	1. Debris in hinges 2. Machine capacities exceeded.	1. Clean and lubricate ball oilers (**Page 24**). 2. Refer to material and gauge capacities on **Machine Data Sheet** on **Page 4**.
Cannot complete the desired bend, incorrect radius, or cracked material.	1. Not enough setback. 2. Attempting to bend material that is too thick.	1. Adjust the setback to 1½ to 2 times thickness of workpiece (**Page 20**). 2. Refer to material gauge capacities on **Machine Data Sheet** on **Page 4**.
Finished workpiece is too short.	1. Inadequate bend allowance.	1. Lay out workpiece with enough material to compensate for length of bend (**Page 19**).
Fingers or stop rod nuts stuck.	1. Waxy oil used as a protectant during shipping not removed during set-up.	1. Use degreaser to clean off waxy oil (**Page 10**).
Machine not level or bed twisted.	1. Machine not on level surface.	1. Level machine and check bed flatness.
Overloading at center or ends.	1. Bend width too great or material too thick.	1. Use sheet metal gauge/thickness and size within machine capacities (**Page 4**).

Aligning Bending Block

To achieve accurate bends, the top surface of the bending leaf and the attached bending block must be flush with the top surface of the clamp block when the bending leaf is in the down position (see **Figure 38**).

Check for proper alignment by examining how the edges of each component meet each other. Only perform the instructions below if the top surfaces of these components are NOT flush with each other.

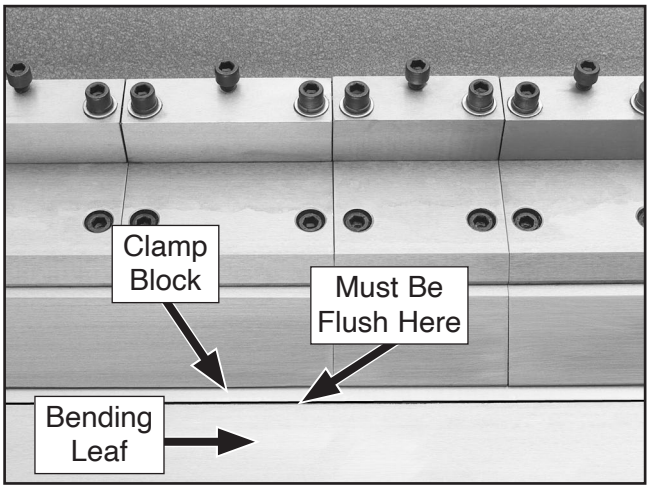


Figure 38. Example of clamp block and bending leaf flush.

There are two adjustments that help to align the clamp block and bending leaf.

You can adjust the ends of the bending leaf to make it even with the clamp block, and if further adjustment is needed, you can straighten the main body of the bending leaf or clamp block by tightening a large nut on the center of the truss assembly, which is mounted to each.

Tools Needed	**Qty**
Wrench or Socket 12mm	1
Hex Wrench 8mm	1
Wrench 30mm	1

To align bending block:

1. Loosen (3) bending leaf hex bolts on each end of brake (see **Figure 39**).

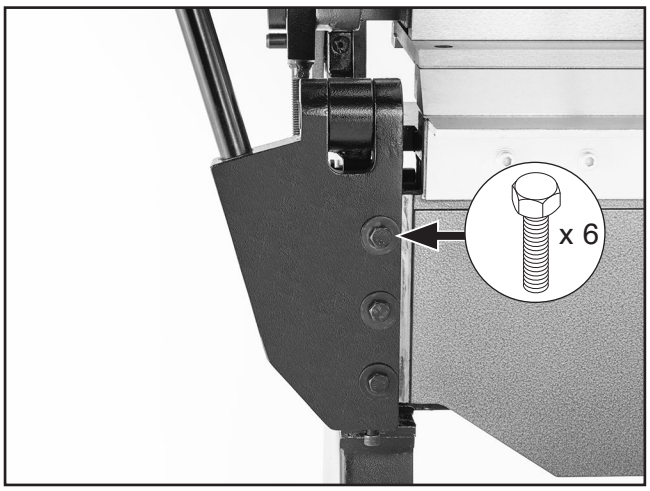


Figure 39. Location of bending leaf hex bolts.

2. Adjust bending leaf adjustment cap screws (see **Figure 40**) to align bending leaf flush with clamp block.

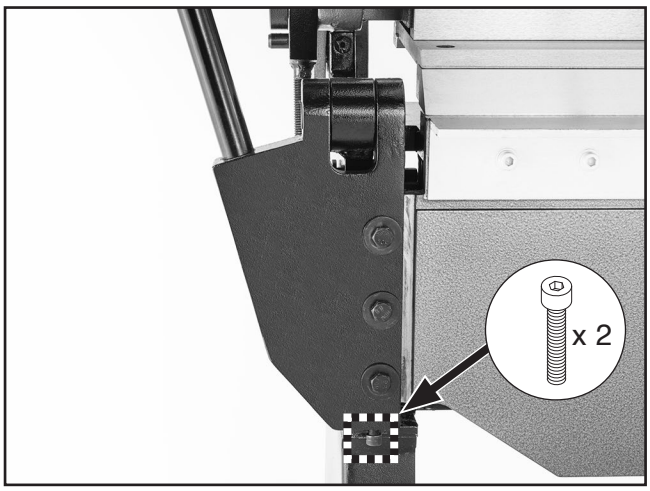


Figure 40. Location of bending leaf adjustment cap screws.

3. Tighten bending leaf hex bolts from **Step 1**.

— If entire length of bending leaf is flush with clamp block, no further adjustments are necessary.

— If bending leaf is flush with clamp block at both ends but is not flush in center, proceed to **Step 4**.

4. Examine center area where clamp block and bending wing meet.

— If bending leaf is lower than clamp block, truss nut behind bending leaf needs to be tightened (see **Figure 41**).

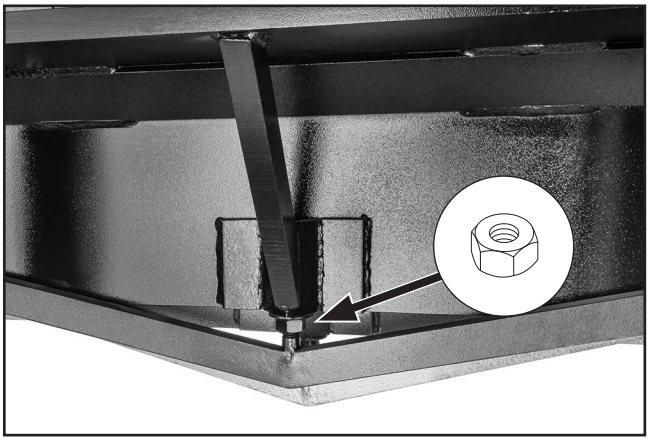


Figure 41. Bending leaf truss nut.

— If bending leaf is higher than clamp block, truss nut over clamp block needs to be tightened (see **Figure 42**).

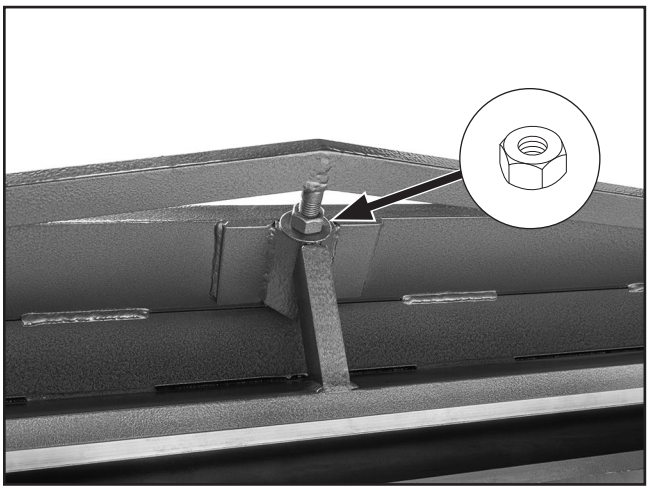


Figure 42. Clamp block truss nut.

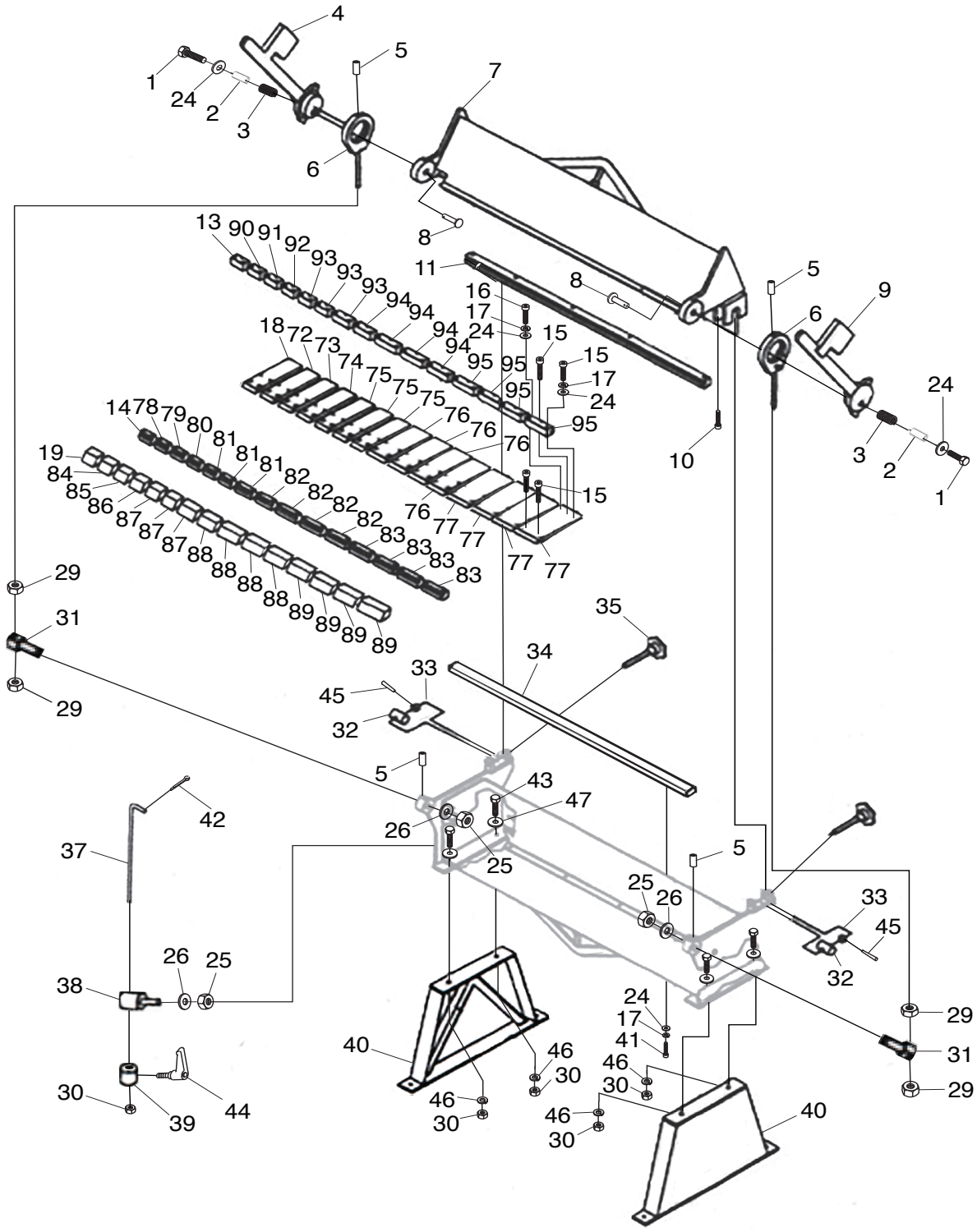
5. Tighten appropriate truss nut as determined by **Step 4** until bending leaf and clamp block are flush with each other throughout length of bending surface.

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SECTION 7: PARTS

We do our best to stock replacement parts when possible, but we cannot guarantee that all parts shown are available for purchase. Call (800) 523-4777 or visit www.grizzly.com/parts to check for availability.

Beam & Clamping Leaf



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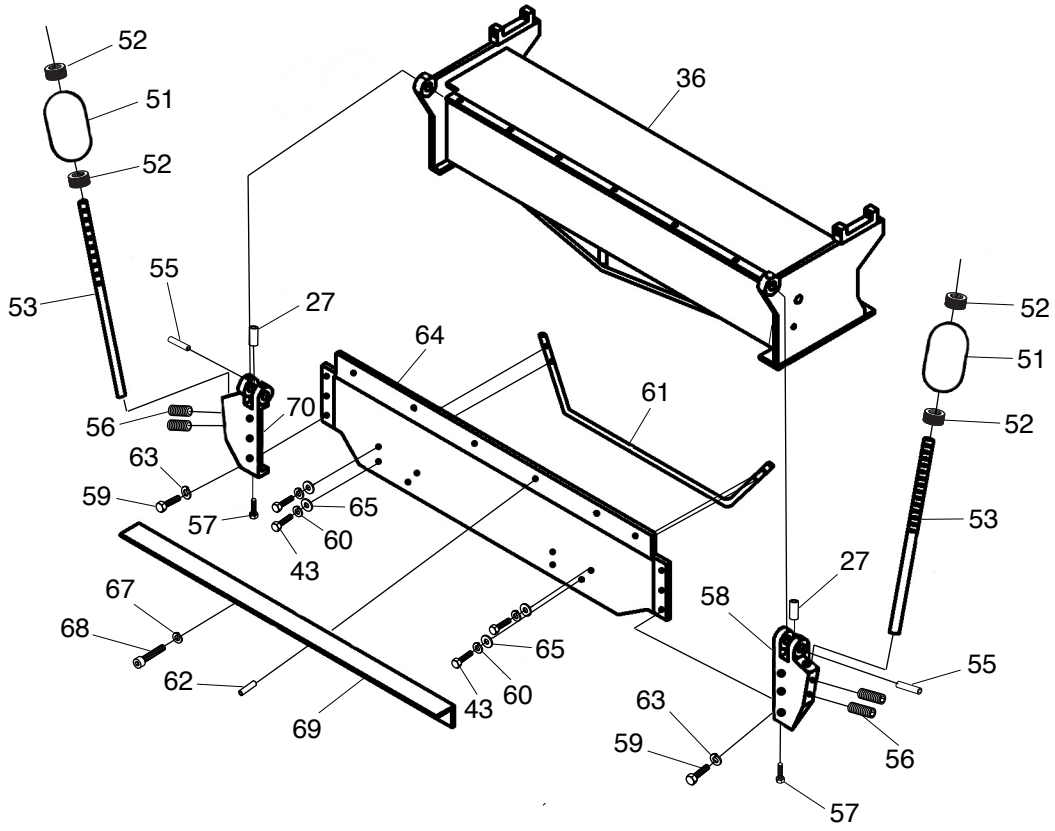
Beam & Clamping Leaf Parts

REF	PART #	DESCRIPTION
1	P0421001	HEX BOLT M10-1.5 X 20
2	P0421002	SPACER 38 X 40 X 36MM
3	P0421003	COMPRESSION SPRING 3 X 35 X 50
4	P0421004	CLAMPING HANDLE, LEFT
5	P0421005	BALL OILER 8MM PRESS-IN
6	P0421006	LINK
7	P0421007	CLAMPING LEAF
8	P0421008	CLEVIS PIN 25 X 132
9	P0421009	CLAMPING HANDLE, RIGHT
10	P0421010	CAP SCREW M10-1.5 X 45
11	P0421011	SUPPORT BLOCK
13	P0421013	FINGER MOUNT 2-1/2"
14	P0421014	NOSE CLAMP BAR 2-1/2"
15	P0421015	CAP SCREW M10-1.5 X 30
16	P0210016	CAP SCREW M10-1.5 X 70
17	P0421017	LOCK WASHER 10MM
18	P0421018	CLAMPING FINGER 2-1/2"
19	P0421019	FINGER TIP 2-1/2"
24	P0421024	FLAT WASHER 10MM
25	P0421025	HEX NUT M16-2
26	P0421026	FLAT WASHER 16MM
29	P0421029	HEX NUT M20-2.5
30	P0421030	HEX NUT M12-1.75
31	P0421031	PIVOT BLOCK
32	P0421032	HEX NUT M20-1.5
33	P0421033	COLLAR
34	P0421034	TOP BAR
35	P0421035	KNOB BOLT M20-1.5 X 150
37	P0421037	STOP ROD
38	P0421038	PIVOT SHAFT
39	P0421039	COLLAR
40	P0421040	SUPPORT

REF	PART #	DESCRIPTION
41	P0421041	CAP SCREW M10-1.5 X 40
42	P0421042	COTTER PIN 3 X 40MM STANDARD
43	P0421043	HEX BOLT M12-1.75 X 45
44	P0421044	ADJUSTABLE HANDLE M10 X 1.5
45	P0421045	TAPER PIN 6 X 30MM
46	P0421046	LOCK WASHER 12MM
47	P0421047	FLAT WASHER 12MM
72	P0421072	CLAMPING FINGER 3"
73	P0421073	CLAMPING FINGER 3-1/2"
74	P0421074	CLAMPING FINGER 4"
75	P0421075	CLAMPING FINGER 5"
76	P0421076	CLAMPING FINGER 6"
77	P0421077	CLAMPING FINGER 12"
78	P0421078	NOSE CLAMP BAR 3"
79	P0421079	NOSE CLAMP BAR 3-1/2"
80	P0421080	NOSE CLAMP BAR 4"
81	P0421081	NOSE CLAMP BAR 5"
82	P0421082	NOSE CLAMP BAR 6"
83	P0421083	NOSE CLAMP BAR 12"
84	P0421084	NOSE BAR 3"
85	P0421085	NOSE BAR 3-1/2"
86	P0421086	NOSE BAR 4"
87	P0421087	NOSE BAR 5"
88	P0421088	NOSE BAR 6"
89	P0421089	NOSE BAR 12"
90	P0421090	JAW CLAMP BAR 3"
91	P0421091	JAW CLAMP BAR 3-1/2"
92	P0421092	JAW CLAMP BAR 4"
93	P0421093	JAW CLAMP BAR 5"
94	P0421094	JAW CLAMP BAR 6"
95	P0421095	JAW CLAMP BAR 12"

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Bending Leaf

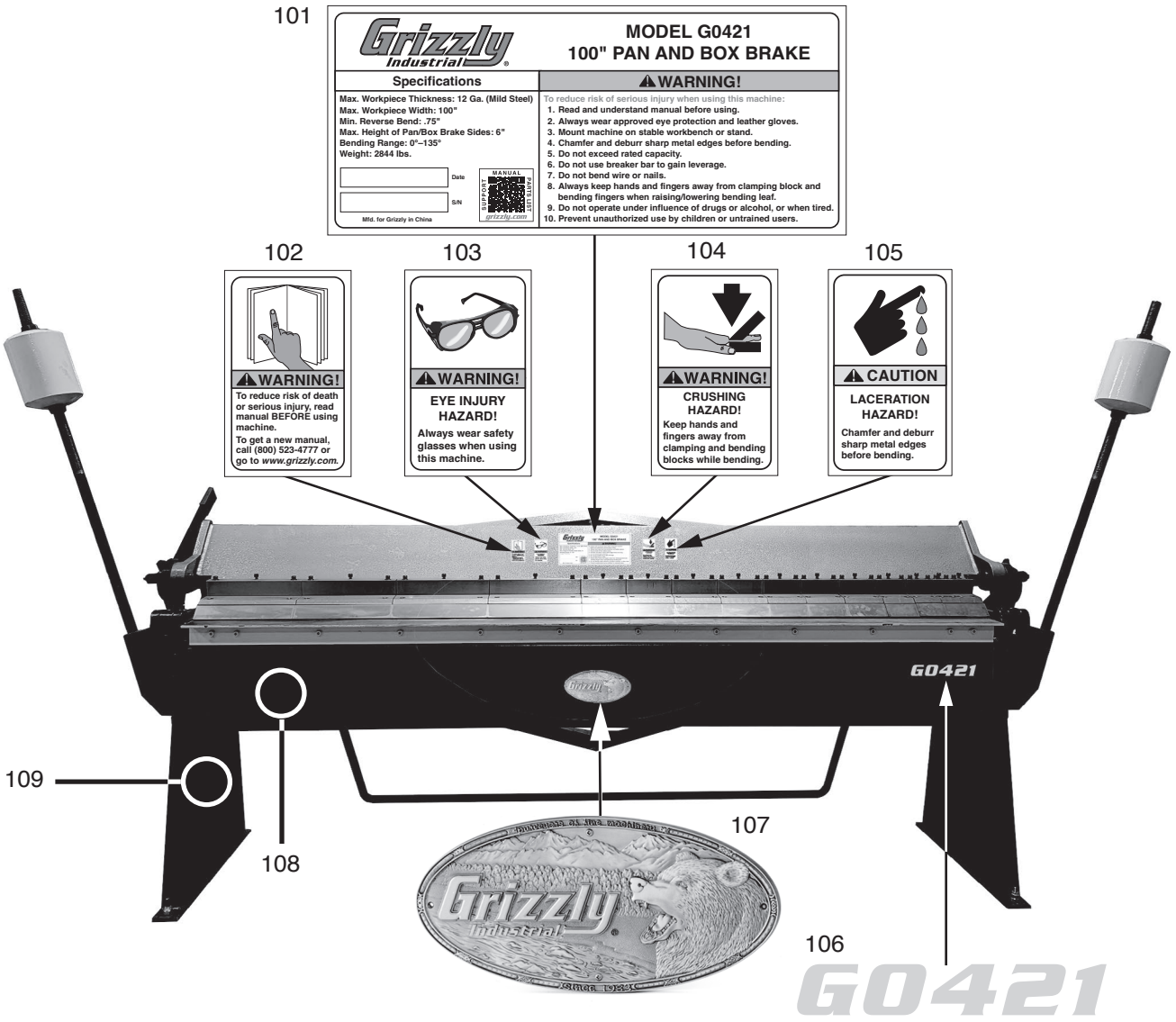


REF	PART #	DESCRIPTION
27	P0421005	BALL OILER 8MM PRESS-IN
36	P0421036	BASE
51	P0421051	COUNTERWEIGHT
52	P0421052	LOCK COLLAR M30-3.5
53	P0421053	SHOULDER SCREW M32-3.5 X 48"
55	P0421055	PIVOT PIN 25 X 90
56	P0421056	SET SCREW M12-1.75 X 12
57	P0421057	CAP SCREW M10-1.5 X 35
58	P0421058	HINGE, RIGHT
59	P0421059	HEX BOLT M12-1.75 X 40
60	P0421060	LOCK WASHER 12MM

REF	PART #	DESCRIPTION
61	P0421061	BENDING HANDLE
62	P0421062	DOWEL PIN 8 X 25
63	P0421063	LOCK WASHER 12MM
64	P0421064	BENDING LEAF
65	P0421065	FLAT WASHER 12MM
66	P0421066	HEX BOLT M12-1.75 X 45
67	P0421067	LOCK WASHER 10MM
68	P0421068	CAP SCREW M10-1.5 X 25
69	P0421069	BENDING BLOCK
70	P0421070	HINGE, LEFT

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Labels & Cosmetics



REF	PART #	DESCRIPTION
101	P0421101	MACHINE ID LABEL
102	P0421102	READ MANUAL LABEL
103	P0421103	EYE INJURY HAZARD LABEL
104	P0421104	CRUSHING HAZARD LABEL
105	P0421105	LACERATION HAZARD LABEL

REF	PART #	DESCRIPTION
106	P0421106	MACHINE MODEL NUMBER LABEL
107	P0421107	GRIZZLY NAMEPLATE-SMALL
108	P0421108	TOUCH-UP PAINT, GRIZZLY GREEN
109	P0421109	TOUCH-UP PAINT, GRIZZLY BLACK

⚠WARNING

Safety labels help reduce the risk of serious injury caused by machine hazards. If any label comes off or becomes unreadable, the owner of this machine MUST replace it in the original location before resuming operations. For replacements, contact (800) 523-4777 or www.grizzly.com.

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WARRANTY & 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.

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.

In the event you need to use 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.

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.

For further information about the warranty, visit **https://www.grizzly.com/forms/warranty** or scan the QR code below to be automatically directed to our warranty page.

WARRANTY

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