

Grizzly **Industrial, Inc.**®

MODEL T32719 **36" BENCHTOP** **PAN & BOX BRAKE** **OWNER'S MANUAL**

(For models manufactured since 06/21)



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**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE
OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.**

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V1.07.21

 **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

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.

Grizzly Industrial MODEL GXXXX
MACHINE NAME

SPECIFICATIONS	WARNING!
Motor: _____ Specification: _____ Specification: _____ Specification: _____ Weight: _____	To reduce risk of serious injury when using this machine: 1. Read manual before operation. 2. Wear safety glasses and respirator. 3. Make sure machine is properly adjusted/setup and power is connected to grounded circuit before starting. 4. Make sure the motor has stopped and disconnect power before adjustments, maintenance, or service. 5. DO NOT expose to rain or dampness. 6. DO NOT modify this machine in any way. 7. _____ 8. _____ 9. _____ 10. Maintain machine carefully to prevent accidents.

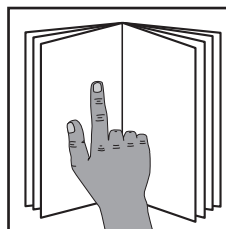
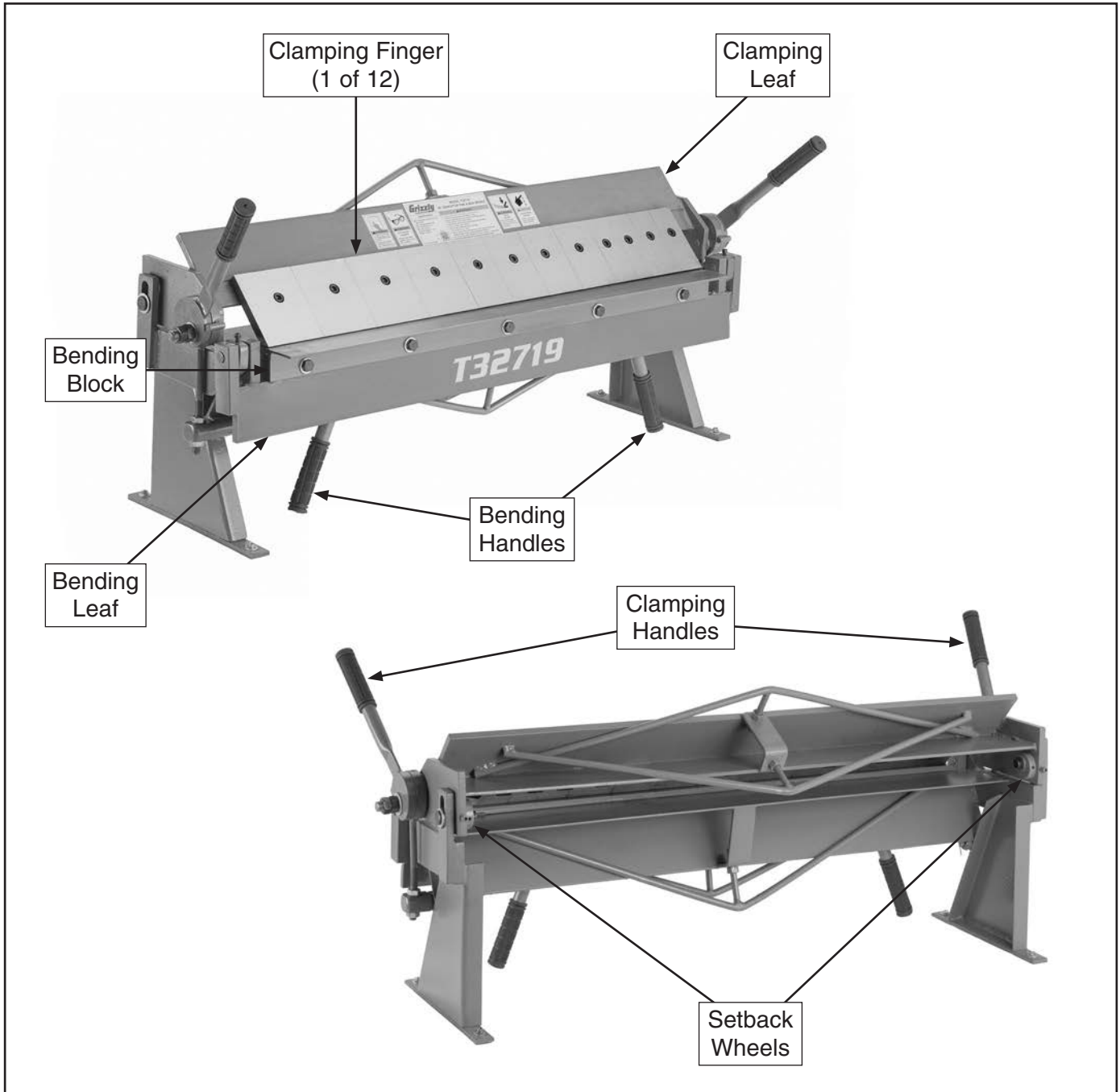
Manufacture Date: _____
Serial Number: _____

Manufactured for Grizzly in Taiwan



Identification

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.



!WARNING

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



Controls & Components



Refer to the following figures and 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.

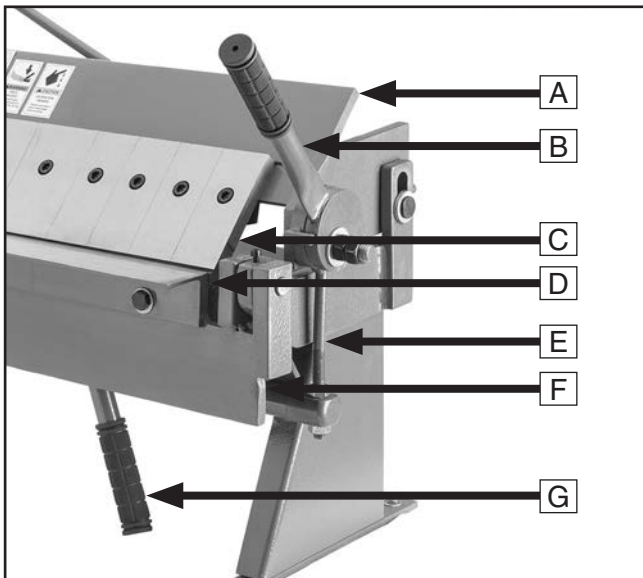


Figure 1. Controls and components—front.

- A. **Clamping Leaf:** Holds and positions clamping fingers.
- B. **Clamping Handle (1 of 2):** Use to raise and lower clamping leaf.
- C. **Clamping Finger (1 of 12):** Holds workpiece in place while bending block produces bend. Fingers can be individually removed or repositioned to allow clearance for workpiece.
- D. **Bending Block:** Pivots with bending leaf to produce bend in workpiece.

- E. **Clamping Pressure Adjustment Rod (1 of 2):** Move up or down to set clamping pressure on workpiece according to workpiece gauge. Lock rod in place with jam nuts.

- F. **Bending Leaf:** Swivels up to bend workpiece.

- G. **Bending Handle (1 of 2):** Use to raise bending leaf and form bend in workpiece.

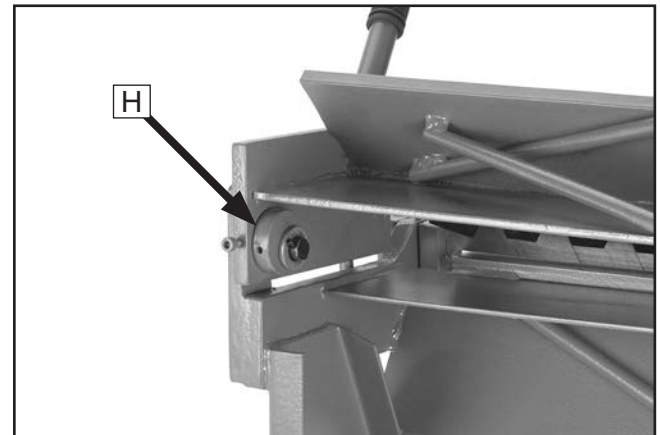
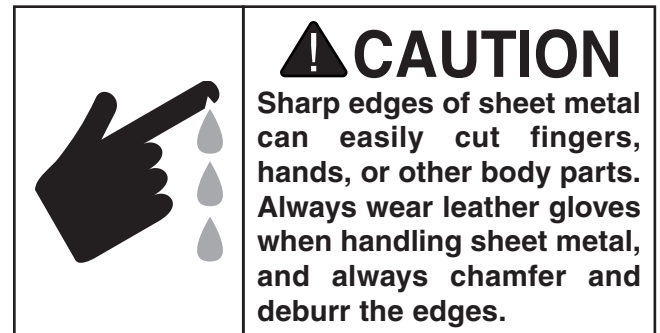


Figure 2. Controls and components—rear.

- H. **Setback Wheel (1 of 2):** Use to adjust distance between clamping fingers and bending block. Moves clamping leaf forward and backward.





MACHINE DATA SHEET

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

MODEL T32719 36" BENCHTOP PAN AND BOX BRAKE

Product Dimensions:

Weight..... 180 lbs.
 Width (side-to-side) x Depth (front-to-back) x Height..... 47-1/2 x 20 x 24 lbs.
 Footprint (Length x Width)..... 40-1/2 x 13 in.

Shipping Dimensions:

Type..... Wood Crate
 Content..... Machine
 Weight..... 226 lbs.
 Length x Width x Height..... 50 x 17 x 22 in.
 Must Ship Upright..... Yes

Main Specifications:

Capacities

Maximum Width..... 36 in.
 Maximum Thickness at Half Width Mild Steel..... 16 Gauge
 Maximum Thickness at Full Width Mild Steel..... 18 Gauge
 Aluminum..... 16 Gauge
 Stainless Steel..... 20 Gauge
 Brake Range..... 0 - 135 deg.
 Minimum Reverse Bend..... 5/16 in.
 Maximum Height of Pan/Box Brake Sides..... 2 in.
 Number of Fingers..... 12
 Width of Fingers..... 2, 3, 4 in.

Construction

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

Other Specifications:

Country of Origin China
 Warranty 1 Year
 Approximate Assembly & Setup Time 15 Minutes
 Serial Number Location Machine ID Label
 ISO 9001 Factory Yes

Features:

Precision-Ground Steel Fingers with Hardened Edges
 Twelve Adjustable/Removable Fingers

Accessories Included:

Open-End Wrench 17/19mm
 Hex Wrenches 5, 8mm



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 clothing, apparel 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

Hands/fingers can be crushed 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 workbench 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.

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

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.

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

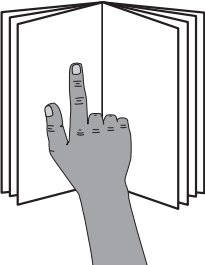
Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious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

WARNING

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

	<p>!WARNING This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine!</p>
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<p>!WARNING Wear safety glasses and leather work gloves during the entire setup process!</p>	
	

	<p>!WARNING Lifting heavy machinery or parts without proper assistance or equipment may result in strains, back injuries, crushing injuries, or property damage.</p>
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Needed for Setup

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

Description	Qty
• Additional Person	1
• Safety Glasses (each person)	1
• Leather Work Gloves (each person)....	1 Pair
• Solvent/Cleaner (Page 10)	As Needed
• Shop Rags.....	As Needed
• Mounting Hardware (Page 12) ...	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 (Figures 3–4)	Qty
A. Pan & Box Brake	1
B. Open-End Wrench 17/19mm	1
C. Hex Wrench 8mm.....	1
D. Hex Wrench 5mm.....	1

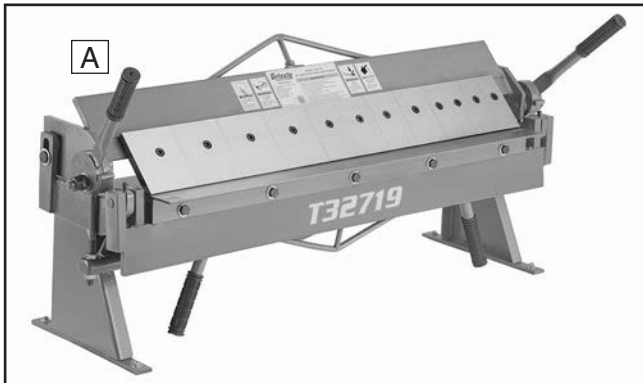


Figure 3. Pan and box brake.

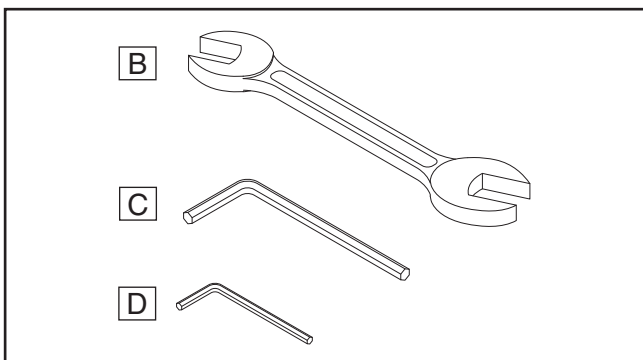


Figure 4. Tools.

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.

Before cleaning, gather the following:

- Disposable rags
- Cleaner/degreaser (WD•40 works well)
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

Basic steps for removing rust preventative:

1. Put on safety glasses.
2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5–10 minutes.
3. Wipe off the surfaces. If your cleaner/degreaser is effective, the 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 the rag.
4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.

NOTICE

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



Cleaning Fingers

Although rust preventative was applied only to the visible surfaces of the clamping fingers (see **Figure 5**), some may have worked in between and underneath them. We recommend you remove all clamping fingers and thoroughly clean them.

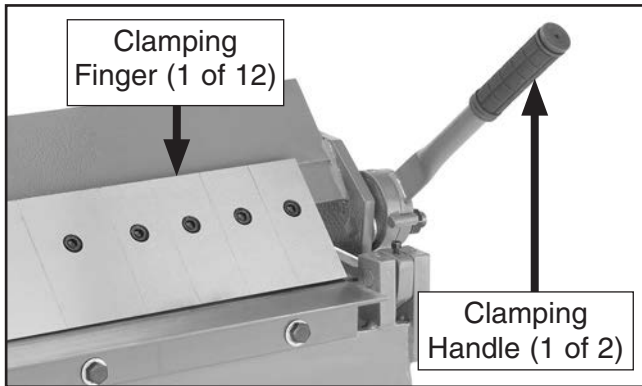


Figure 5. Location of clamping handle and fingers.

To remove the clamping fingers, move clamping handles (see **Figure 5**) toward back of machine to raise the clamping leaf, then loosen the cap screws and remove the clamping fingers and toe clamps (see **Figure 6**).

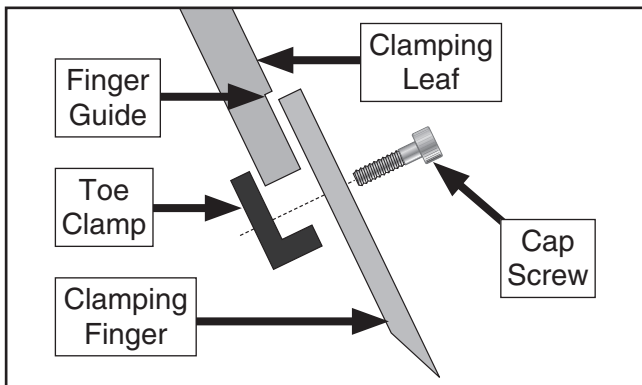


Figure 6. Clamping finger components.

After all fingers have been cleaned, coat them liberally with a metal protectant (see **Page 18**), and clean the finger guide on the clamping leaf.

Place the fingers along the guide on the clamping leaf, align the toe clamps to catch the bottom of the clamping leaf, and tighten the cap screws enough so the fingers will not fall off. When done, make sure fingers are properly aligned (refer to **Aligning Fingers** on **Page 14**).

Site Considerations

Workbench Load

Refer to the **Machine Data Sheet** for the weight and footprint specifications of your machine. Some workbenches may require additional reinforcement to support the weight of the machine and workpiece materials.

Placement Location

Consider anticipated workpiece sizes and additional space needed for auxiliary stands, work tables, or other machinery when establishing a location for this machine in the shop. Below is the minimum amount of space needed for the machine.

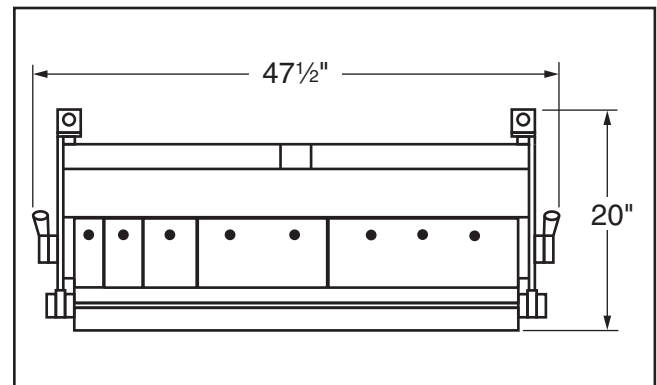
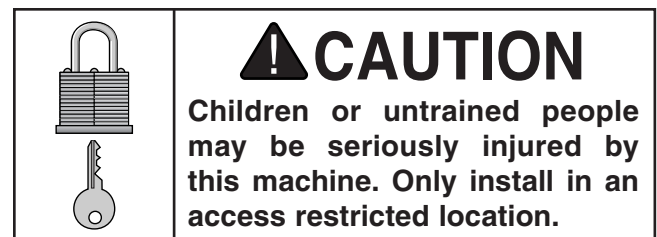
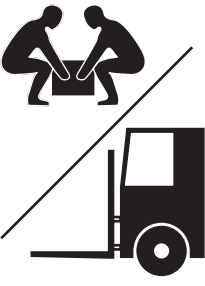


Figure 7. Minimum working clearances.



Lifting & Placing

	<p>! 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.</p>
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To lift and place machine on workbench:

1. Move pallet to location near workbench.
2. Remove fasteners securing machine to pallet.
3. With help from an assistant or using a forklift, lift machine and place onto workbench.
4. Fasten machine to workbench following instructions in **Bench Mounting**.

Bench Mounting

Number of Mounting Holes 4
 Diameter of Mounting Hardware Needed .. 3/8"

The base of this machine has mounting holes that allow it to be fastened to a workbench or other mounting surface to prevent it from moving during operation and causing accidental injury or damage.

The strongest mounting option is a "Through Mount" (see example below) where holes are drilled all the way through the workbench—and hex bolts, washers, and hex nuts are used to secure the machine in place.

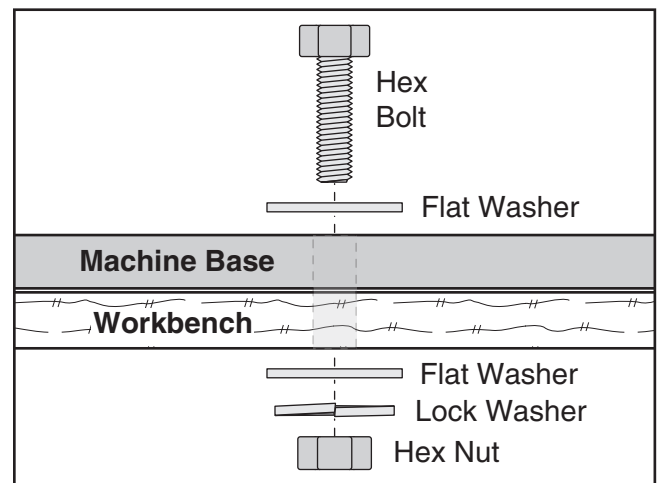


Figure 8. "Through Mount" setup.

Another option is a "direct mount" (see example below) where the machine is secured directly to the workbench with lag screws and washers.

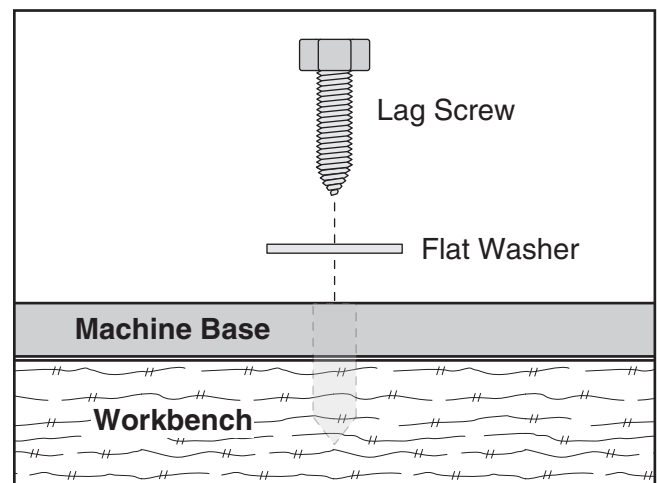


Figure 9. "Direct Mount" setup.






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.

	<p>!WARNING To reduce your risk of serious injury, read this entire manual BEFORE using machine.</p>
--	--

<p>!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.</p>		
		

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

1. Examines workpiece to make sure it is suitable for bending.
2. If required for the operation, adjusts clamping finger spacing.
3. Adjusts clamping pressure for workpiece thickness.
4. Correctly adjusts setback.
5. Puts on safety glasses, leather boots, and leather gloves.
6. Properly positions workpiece underneath clamping fingers and lowers clamping leaf to secure workpiece.
7. With body square to brake and using both hands, raises bending leaf to form correct bend angle.
8. Lowers bending leaf and removes workpiece.

<p>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.</p>
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Spacing 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 that you can space the others to match the inside width of your pan or box.

Item(s) Needed:	Qty
Hex Wrench 8mm.....	1

To space clamping fingers:

1. Loosen cap screw on each finger you need to remove.
2. Remove fingers and toe clamps from clamping leaf, as shown in **Figure 10**, and set them aside.

Note: You may need to mix and match finger widths to match the inside width of your pan or box.

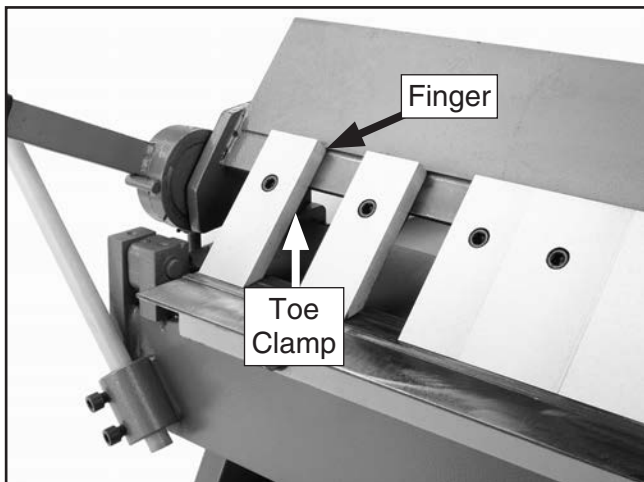


Figure 10. Example of finger spacing.

3. Align remaining fingers and tighten cap screws.

Aligning Fingers

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

Item(s) Needed:	Qty
Hex Wrench 8mm.....	1

To align clamping fingers:

1. Lower clamping leaf until clamping fingers just touch clamping surface (see **Figure 11**).
2. Look closely along bottom edge of each finger to determine if any are out of alignment with clamping surface and bending block, as shown in **Figure 11**.

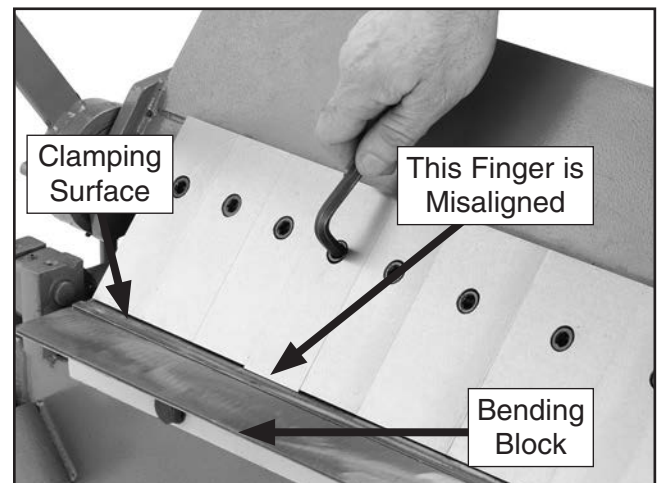


Figure 11. Example of a misaligned clamping finger.

3. Loosen cap screw on misaligned finger just enough to move it up or down.
4. Align finger parallel with clamping surface and bending block, and then tighten cap screw.



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.

Setback is the distance from the forward edge of the fingers to the edge of the bending leaf, as shown in **Figure 12**. The setback distance is determined by the gauge of the workpiece material and the desired radius of the bend.

Setback is normally adjusted $1\frac{1}{2}$ times the thickness of 22 gauge and thinner workpieces, and two times the thickness of workpieces thicker than 22 gauge. T32719 material gauge capacities are listed on the **Machine Data Sheet** on **Page 5**.)

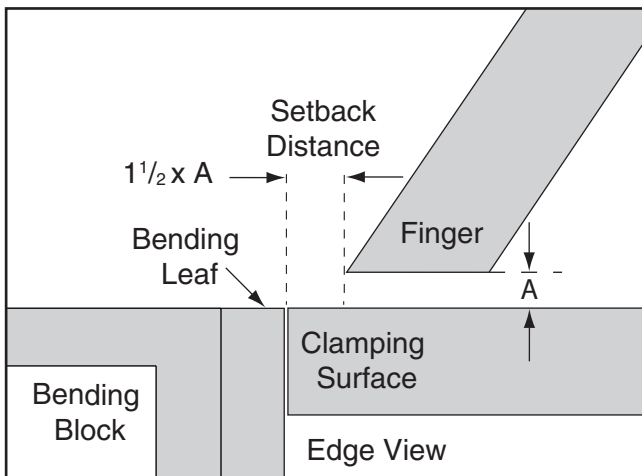


Figure 12. Determining setback distance for workpieces 22 gauge and thinner.

Item(s) Needed: Qty
Hex Wrench 5mm..... 1

To adjust setback:

1. Determine setback required for bend.
2. Raise clamping fingers about $\frac{1}{2}$ " off of clamping surface.

3. Loosen cap screws that secure setback wheels (see **Figure 13**).

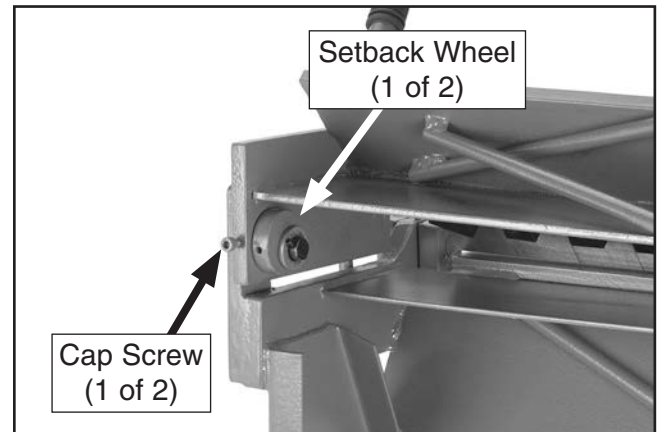


Figure 13. Location of setback wheel and cap screw.

4. Rotate both setback wheels until desired setback distance is achieved.

Note: Setback wheels are eccentric. Turning them one full turn will bring clamping leaf back to its original position.

Tip: If you find it hard to turn setback wheels with your fingers, insert a hex wrench into the holes on edges of wheels to gain leverage.

5. Lower clamping fingers onto clamping surface and check setback distance.
6. If necessary, repeat **Steps 2–4** until desired setback is achieved.
7. Check finger alignment (refer to **Aligning Fingers** on **Page 14**).



Adjusting Clamping Pressure

Clamping pressure must be properly adjusted for different workpiece thicknesses. The ideal pressure will have medium resistance at the clamping handles, and will lock the workpiece into position easily—much like a pair of Vice-Grips®. Pressure is adjusted by rotating the adjustment nuts on the clamping pressure adjustment rods (see **Figure 14**). These are located on both ends of the pan and box brake.

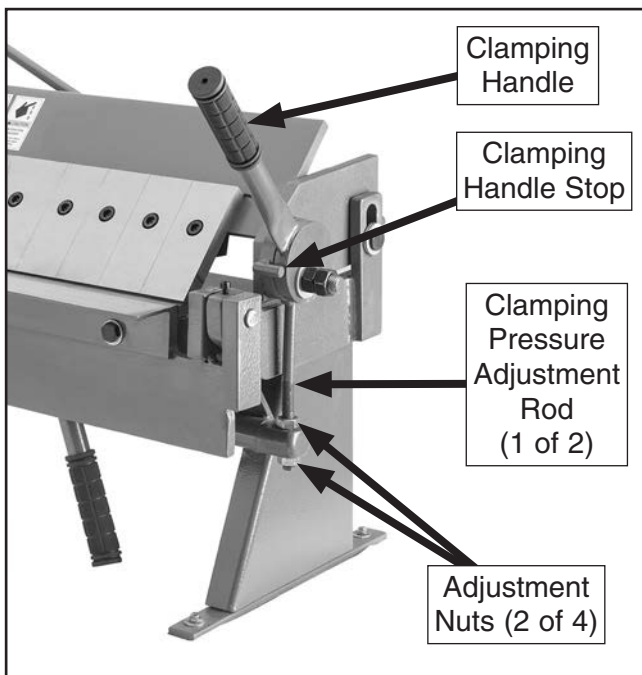


Figure 14. Locations of clamping components.

Item(s) Needed:	Qty
Open-End Wrench 17/19mm	1

To adjust clamping pressure:

1. Lower clamping leaf so clamping fingers just touch workpiece.

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

— If clamping handles are at 10 o'clock (viewed from right end of brake) and 2 o'clock (viewed from left end of brake) position, then clamping pressure is suitable for workpiece. Proceed to **Step 4**.

— If clamping handles are *not* at 10 o'clock (viewed from right end of brake) and 2 o'clock (viewed from left end of brake) position, then clamping pressure is not suitable for workpiece. Proceed to **Step 2**.

2. Loosen adjustment nuts (see **Figure 14**) and turn both sets up or down until clamping handles are in 10 and 2 o'clock position when clamping fingers just touch workpiece.
3. Tighten adjustment nuts to secure position.
4. 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.
5. If necessary, repeat **Steps 1–4** until proper clamping pressure is achieved.

Note: *Proper clamping pressure is achieved when the clamping handle "snaps" (or locks) into position against handle stop (see **Figure 14**).*



Basic Bending

⚠️ WARNING

Do not operate machine unless it has been securely mounted to a workbench, or it could tip over on you, causing severe injury!

⚠️ 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 the clamping fingers to be parallel with the edge of the clamping surface 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 if needed (refer to **Adjusting Setback** on **Page 15**).
2. Raise clamping leaf.
3. Insert workpiece between clamping fingers and clamping surface.
4. Align bend mark(s) on workpiece with fingers, then clamp it in place using clamping handles.

Note: If clamping handles do not lock, the clamping pressure may need to be adjusted (refer to **Adjusting Clamping Pressure** on **Page 16**).

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

⚠️ CAUTION

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

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.

As a rule of thumb, subtract the bend allowance from the sum of the workpiece outside dimensions to obtain the overall length and width of the blank needed to make a particular part.

Exact allowances can only be obtained by trial and error due to differences in sheet metal hardness, whether the bend is with or across the grain, and the bend radius. Use metalworking handbooks or the internet to find bend allowances accurate enough for average use.



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.

T23692—Orange Power Degreaser

A great product for removing the rust-preventative grease from your machine during clean up.



Figure 15. T23692 Orange Power Degreaser.

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 because they tend to resist run-off and maintain their lubricity under a variety of conditions.



Figure 16. Recommended product for machine lubrication.

Recommended Metal Protectants

- G5562—SLIPIT® 1 Qt. Gel
- G5563—SLIPIT® 12 Oz. Spray
- G2870—Boeshield® T-9 4 Oz. Spray
- G2871—Boeshield® T-9 12 Oz. Spray
- H3788—G96® Gun Treatment 12 Oz. Spray
- H3789—G96® Gun Treatment 4.5 Oz. Spray



Figure 17. Recommended products for protecting unpainted cast iron/steel parts on machinery.

T26419—Syn-O-Gen Synthetic Grease

Formulated with 100% pure synthesized hydrocarbon base stocks that are compounded with special thickeners and additives to make Syn-O-Gen non-melt, tacky, and water resistant. Extremely low pour point, extremely high temperature oxidation, and thermal stability produce a grease that is unmatched in performance.



Figure 18. T26419 Syn-O-Gen Synthetic Grease.

order online at www.grizzly.com or call 1-800-523-4777



T10456—Heavy-Duty Anti-Fatigue Mat 3' x 5'

This Heavy-Duty Anti-Fatigue Mat features beveled edges and no-slip tread for safety and comfort. Open-hole design allows liquid to drain through, so it's perfect for wet or oily conditions. Measures 3' wide x 5' long x 3/8" thick.

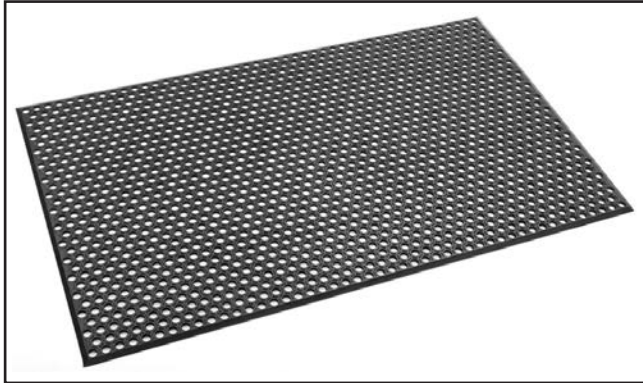


Figure 19. T10456 Anti-Fatigue Mat.

T25208—23-Pc. Deburring Set

Includes: 380-0060 double burr; 2-pc. 380-0088 handle; 380-0097, 380-0098, and 380-0091 holders; D25 and D40 scrapers; C20 countersink; ES100 and ES200 blades (5 each); V13, and A13 blades; wrench and hex wrenches; case.



Figure 20. T25208 Deburring Set.

H5503—Electric Sheet Metal Shear

- Motor: 1/2 HP, 110V, 2500 RPM, 3.8 Amp
- Swivel head adjust 360°
- Variable speed: 0–2500 RPM
- Cuts up to 14 gauge in mild steel and 18 gauge in stainless, at up to 150 in./min.
- Weighs 5 lbs.



Figure 21. H5503 Electric Sheet Metal Shear.

T10091—Deburring and Beveling Machine

Deburr & bevel edges the easy way while getting consistent results every time. This stationary Deburring & Beveling Machine is powered by a 1/2 HP motor and includes a carbide cutter. Features include variable-speed to 4300 RPM & adjustable depth of cut.



Figure 22. Model T10091 Deburring and Beveling Machine.

order online at www.grizzly.com or call 1-800-523-4777



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 pivots.
- Lubricate bending leaf pivots.

Weekly Maintenance

- Lubricate clamping leaf guide pin slots.

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 **Page 18** for offerings from Grizzly) to all exposed unpainted surfaces to prevent corrosion.

Lubrication

Clamping Leaf Pivots

Oil Type.... Grizzly 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 hole shown in **Figure 23** (one on each side of the brake), then raise and lower the clamping leaf several times to distribute the lubricant.

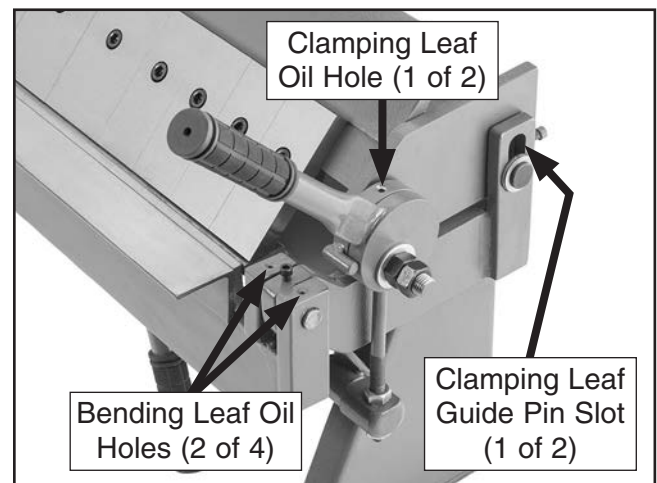


Figure 23. Lubrication points.

Bending Leaf Pivots

Oil Type.... Grizzly 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 23** (two on each side of the brake), then raise and lower the bending leaf several times to distribute the lubricant.

Clamping Leaf Guide Pin Slots

Oil Type... Grizzly T26419 or NLGI#2 Equivalent
Oil Amount.....Thin Coat
Lubrication Frequency..... Weekly, or As Needed

Apply a thin coat of grease to the guide pin slots shown in **Figure 23**.



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.	<ol style="list-style-type: none">1. Machine capacities exceeded.2. Not enough setback.	<ol style="list-style-type: none">1. Use sheet metal gauge/thickness size within machine capacities (Page 5).2. Properly calculate and adjust setback (Page 15).
Bend radius not consistent along workpiece.	<ol style="list-style-type: none">1. Clamping fingers not aligned.2. Bending block not flush with bending leaf.3. Too much setback.	<ol style="list-style-type: none">1. Properly align clamping fingers (Page 14).2. Properly align bending block (Page 22).3. Properly calculate and adjust setback (Page 15).
Workpiece moves while bending.	<ol style="list-style-type: none">1. Machine capacities exceeded.2. Clamping pressure not correctly adjusted.	<ol style="list-style-type: none">1. Use sheet metal gauge/thickness size within machine capacities (Page 5).2. Correctly adjust clamping pressure for workpiece thickness (Page 16).



Aligning Bending Block

To help ensure the bend is even along its length, the bending block must be mounted flush with the top of the bending leaf. The bending block is factory-aligned and should only need re-alignment after extended use.

Item(s) Needed:	Qty
Open-End Wrench 17mm.....	1

To align bending block:

1. Look closely along tops of bending block and bending leaf (see **Figure 24**) to determine if they are out of alignment.

2. Loosen (5) hex bolts (see **Figure 24**) that secure bending block to bending leaf just enough to move it up or down.

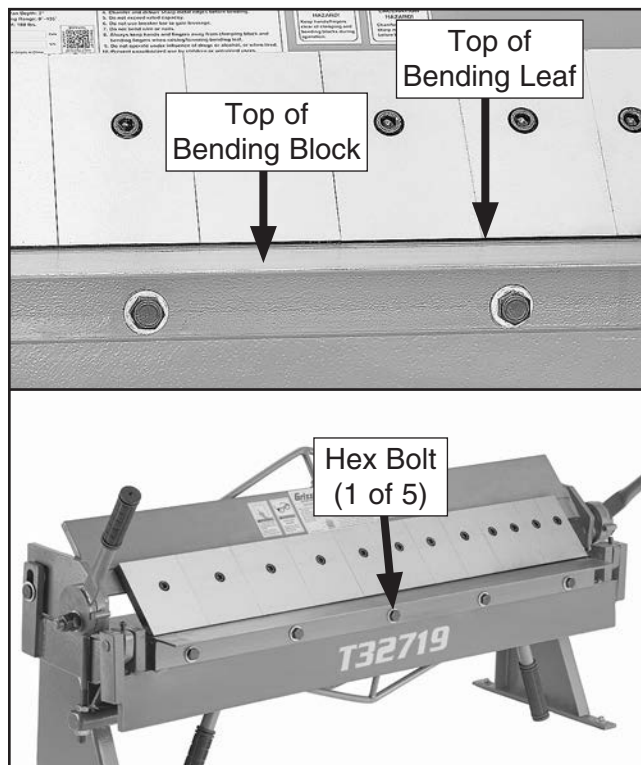


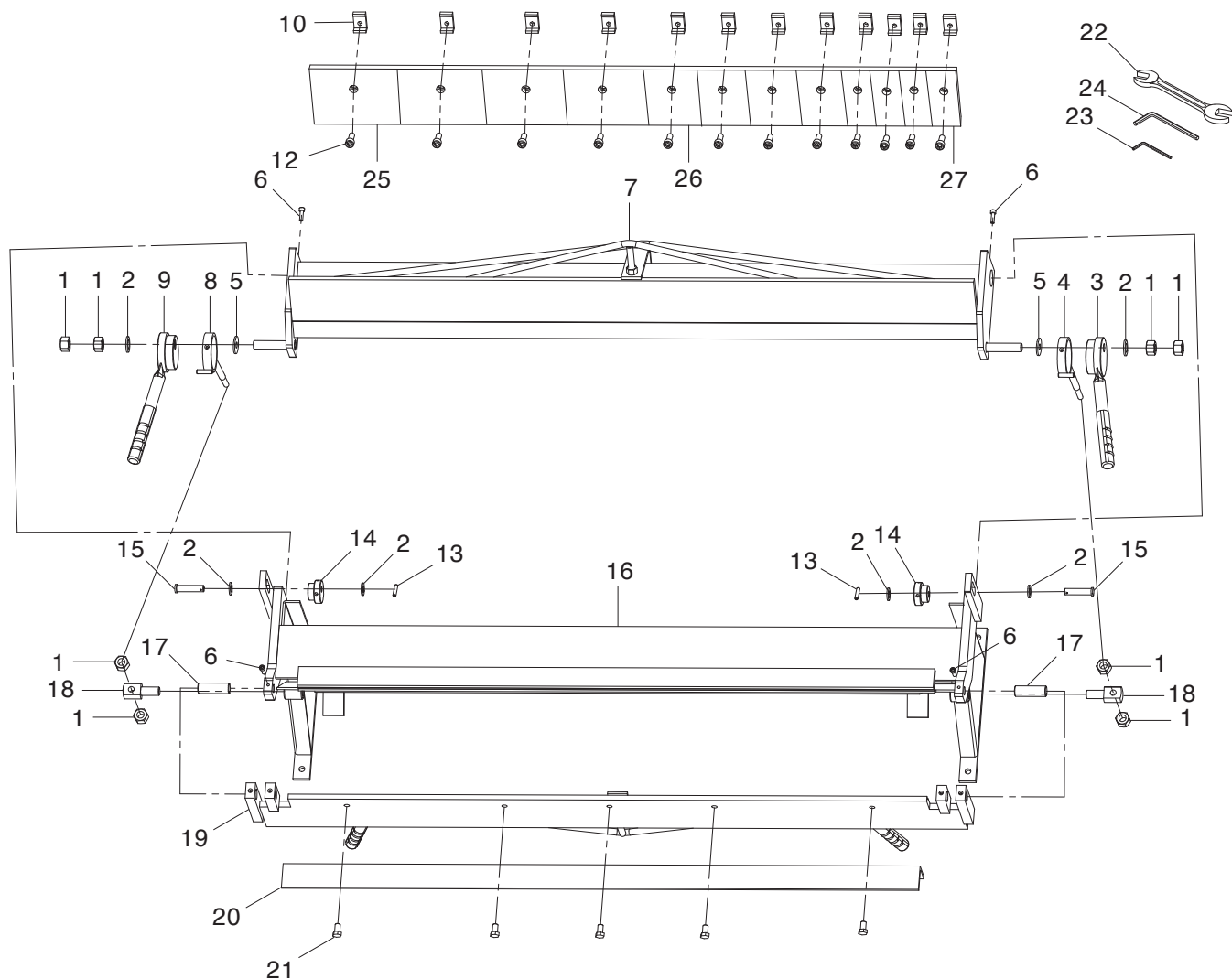
Figure 24. Location of hex bolts for aligning bending block.

3. Align bending block flush with bending leaf, and then tighten hex bolts.



SECTION 7: PARTS

Main

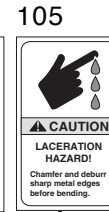
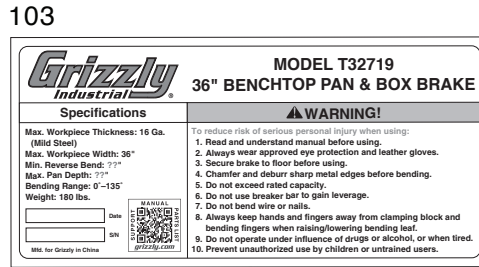
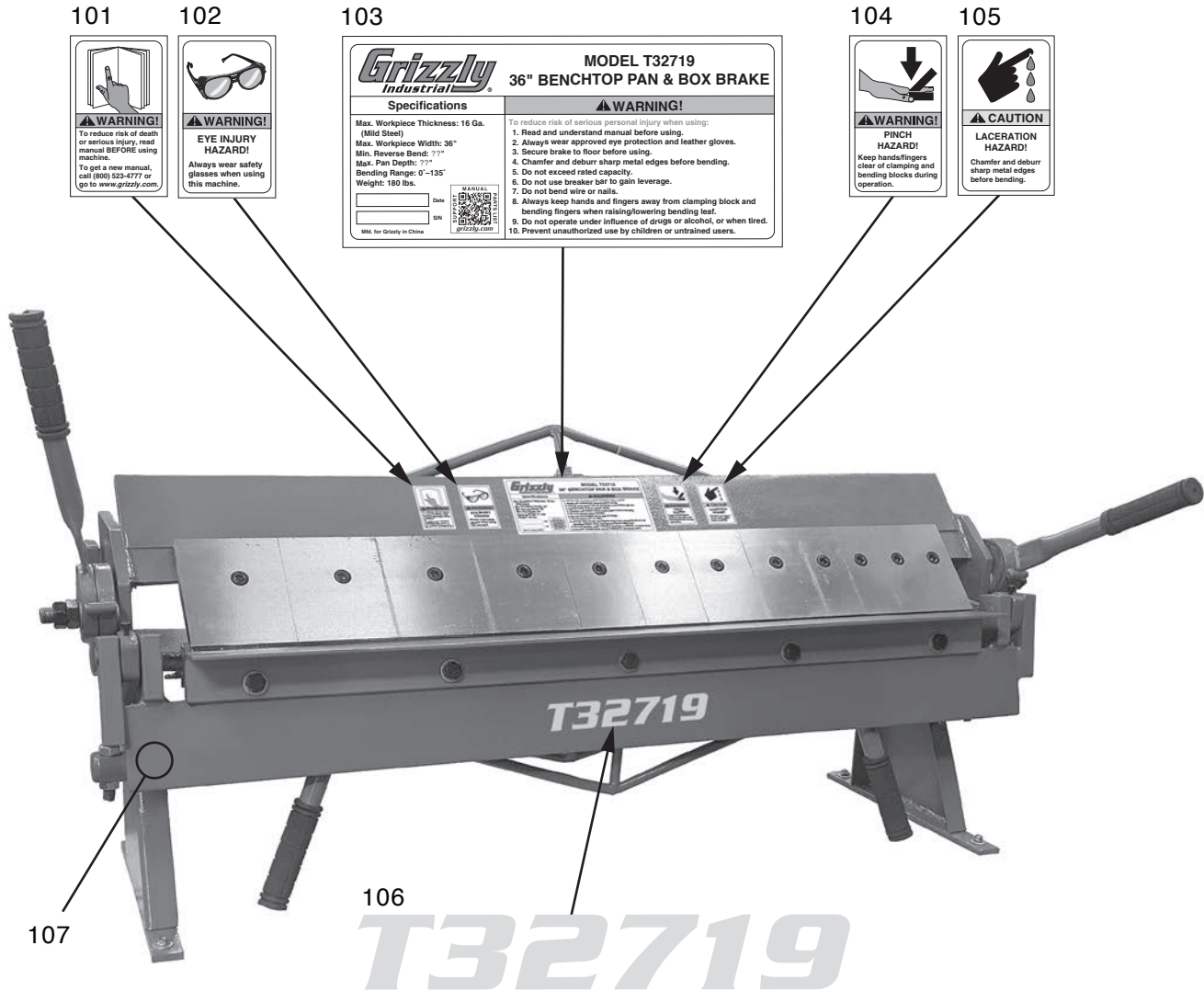


REF	PART #	DESCRIPTION
1	PT32719001	HEX NUT M16-2
2	PT32719002	FLAT WASHER 16MM
3	PT32719003	HANDLE (RIGHT)
4	PT32719004	SWIVEL ROD (RIGHT)
5	PT32719005	FLAT WASHER 16MM
6	PT32719006	CAP SCREW M6-1 X 16
7	PT32719007	CLAMPING LEAF
8	PT32719008	SWIVEL ROD (LEFT)
9	PT32719009	HANDLE (LEFT)
10	PT32719010	TOE CLAMP M10-1.5
12	PT32719012	CAP SCREW M10-1.5 X 25
13	PT32719013	ROLL PIN 4 X 30
14	PT32719014	PIVOT SHAFT

REF	PART #	DESCRIPTION
15	PT32719015	ECCENTRIC SHAFT
16	PT32719016	STAND
17	PT32719017	BUSHING
18	PT32719018	BENDING LEAF PIVOT SHAFT
19	PT32719019	BENDING LEAF
20	PT32719020	BENDING BLOCK
21	PT32719021	HEX BOLT M12-1.75 X 20
22	PT32719022	WRENCH 17 X 19MM OPEN-ENDS
23	PT32719023	HEX WRENCH 5MM
24	PT32719024	HEX WRENCH 8MM
25	PT32719025	CLAMPING FINGER 4"
26	PT32719026	CLAMPING FINGER 3"
27	PT32719027	CLAMPING FINGER 2"



Labels & Cosmetics



REF PART #	DESCRIPTION
101	PT32719101 READ MANUAL LABEL
102	PT32719102 WEAR GLASSES LABEL
103	PT32719103 MACHINE ID LABEL
104	PT32719104 PINCH HAZARD LABEL

REF PART #	DESCRIPTION
105	PT32719105 LACERATION HAZARD LABEL
106	PT32719106 MODEL NUMBER LABEL
107	PT32719107 TOUCH-UP PAINT, GRIZZLY GREEN

! 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.

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.



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.

To take advantage of this warranty, you must register it at <https://www.grizzly.com/forms/warranty>, or you can scan the QR code below to be automatically directed to our warranty registration page. Enter all applicable information for the product.



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