MODEL G0496
PROFESSIONAL ENGLISH WHEEL
OWNER'S MANUAL

(FOR MODELS MANUFACTURED SINCE 5/06) #BL8295 PRINTED IN TAIWAN

⚠ WARNING!

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

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

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

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

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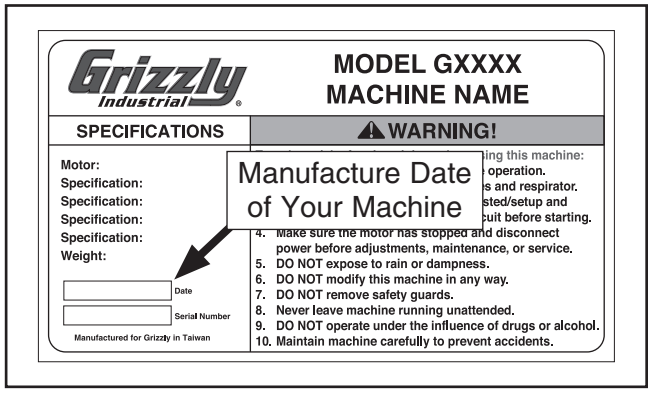
INTRODUCTION

Manual Accuracy

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

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

Before calling, find the manufacture date of your machine by looking at the date stamped into the machine ID label (see below). This will help us determine if the manual version you received matches the manufacture date of your machine.



For your convenience, we post all available manuals and manual updates for free on our website at **www.grizzly.com**. Any updates to your model of machine will be reflected in these documents as soon as they are complete.

Contact Info

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

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

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

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

MACHINE DATA SHEET

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

MODEL G0496 PROFESSIONAL ENGLISH WHEEL

Product Dimensions:

Weight ..... 388 lbs.
Width (side-to-side) x Depth (front-to-back) x Height ..... 26" x 46" x 62-3/4"
Foot Print (Length/Width) ..... 31-1/2" x 26"

Shipping Dimensions:

Type ..... Wood Crate
Content ..... Machine
Weight ..... 496 lbs.
Length/Width/Height ..... 67-3/4" x 50" x 14-5/8"

Overall Dimensions:

Upper Wheels ..... 6" Diameter (1 Flat, 2 Ridged)
Flat/Track: ..... 2-1/4"(1), 3/4"(1), 19/64"(1)
Radius ..... 1/8" Edge (3), 3/8" Ridge (2)
Lower Wheels ..... 3" Diameter (9)
Radius: ..... 6" Crown (B, C, D, E), 3/32" Edge (F, Grooved, Step), 1/8" Edge (A)
Flat/Track: ..... 1/8" (1), 1/4"(1), 1/2"(1), 3/4"(1), 3"(2)
Grooved: ..... 0.82"W x 0.317"D (1), 1.55" W x 0.32"D (1), 2.65"W x 0.122"D (1)
Throat ..... 32-3/8"

Main Specifications:

Construction

Frame Construction ..... Steel Tubing
Kick Wheel Material ..... Cast Iron Wheel with Rubber Wrap
Wheels ..... Hardened Steel
Paint ..... Powder Coated

Capacities

Mild Steel ..... 16 Gauge (0.0598")
Aluminum ..... 1/8"
Copper ..... 16 Gauge (0.0508")

Features

Quick-Release Lever
Kick Wheel
90º Swivel Head
3 Upper Wheels, 9 Lower Wheels
Wheel Storage Racks

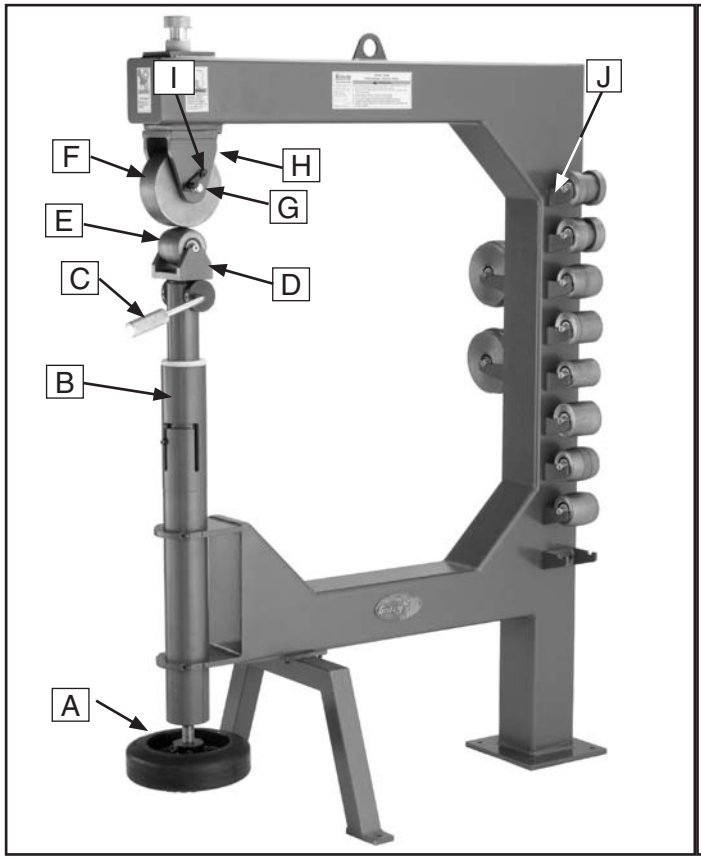


Figure 1. Model G0496 front view.

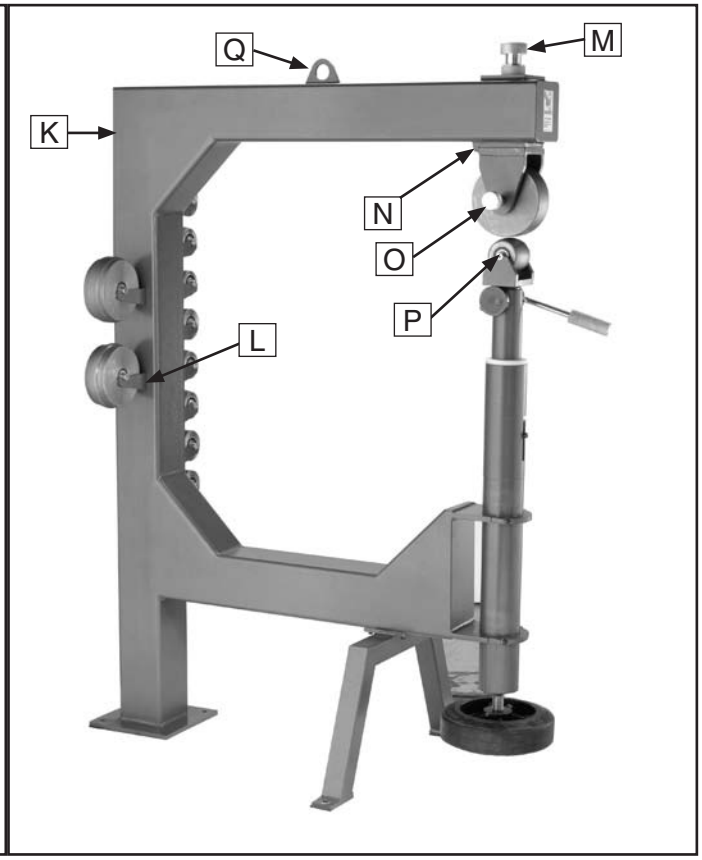


Figure 2. Model G0496 rear view.

A. Kick Wheel
B. Lower Wheel Assembly
C. Quick Release Lever
D. Lower Wheel Bracket
E. Lower Wheel
F. Upper Wheel
G. Upper Wheel Axle
H. Upper Wheel Bracket
I. Upper Axle Latch
J. Lower Wheel Storage Bracket
K. Frame
L. Upper Wheel Storage Bracket
M. Upper Wheel Knob
N. Frame Bracket
O. Upper Wheel Axle Knob
P. Lower Wheel Axle
Q. Lifting Eye

SECTION 1: SAFETY

⚠WARNING

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

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

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

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

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

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

⚠WARNING
Safety Instructions for Machinery

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

⚠WARNING
Safety Instructions for Machinery

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

⚠WARNING
Additional Safety for English Wheels

1. **METAL EDGES**. Always chamfer and deburr sharp metal edges before inserting them into the English wheel. Sharp edges on sheet metal can cut your fingers to the bone.

2. **HAND PROTECTION**. Always wear leather gloves when using this tool.

3. **PINCHING HAZARD**. Keep fingers out of wheel path during operation.

4. **CRUSHING HAZARD**. Make sure wheels are fully supported during installation and removal. Wear steel toe footwear during operation to protect your feet if you drop a wheel.

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

⚠WARNING

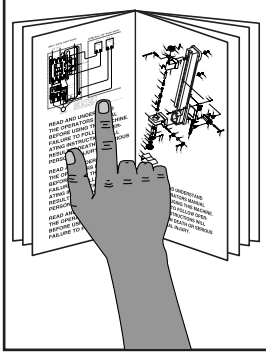
Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored,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

Setup Safety



⚠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!

⚠WARNING

Wear safety glasses during the entire set up process!

⚠WARNING

The Model G0496 is a heavy machine. DO NOT over-exert yourself while unpacking or moving your machine—get assistance.

Items Needed for Setup

The following items are needed to complete the set up process, but are not included with your machine:

Description	Qty
• Safety Glasses (for each person)	1
• Assistants for Lifting Help	2
• Shop Rags for Cleaning	As Needed
• Degreaser	As Needed
• Optional Mounting Hardware	As Needed

Unpacking

The Model G0496 was carefully packed when it left our warehouse. If you discover the machine is damaged after you have signed for delivery, *please immediately call Customer Service at (570) 546-9663 for advice.*

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

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

Inventory

⚠WARNING

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

After all the parts have been removed from the crate, you should have the following items:

Crate: (**Figure 3**)	**Qty**
A. English Wheel	1

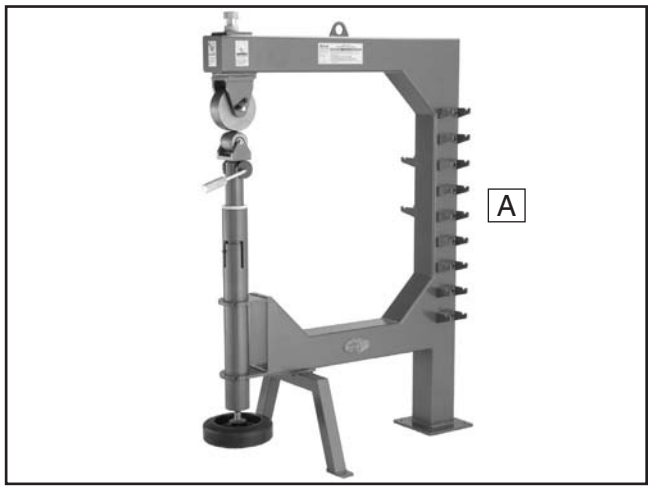


Figure 3. Model G0496 uncrated.

Box 1: (**Figure 4**)	**Qty**
B. Upper Wheel Resting Shafts	2
C. Narrow Ridge Upper Wheel	1
D. Wide Ridge Upper Wheel	1

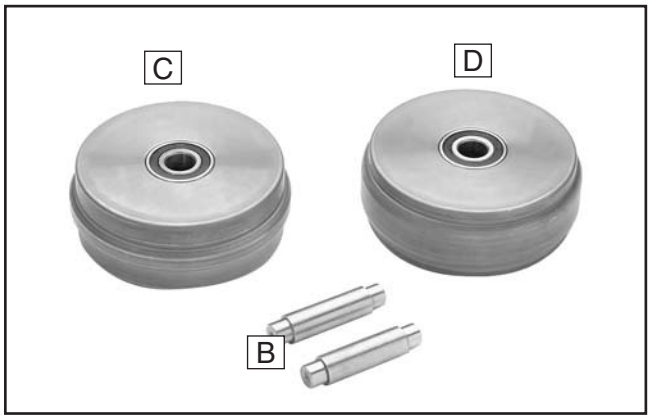


Figure 4. Box 1 contents.

Box 2: (**Figure 5**)	**Qty**
E. Lower Wheel B, 1/8" Flat, 6" Radius	1
F. Lower Wheel C, 1/4" Flat, 6" Radius	1
G. Lower Wheel D, 1/2" Flat, 6" Radius	1
H. Lower Wheel E, 3/4" Flat, 6" Radius	1
I. Lower Wheel F, 2" Diameter	1
J. Wide Groove Wheel	1
K. Narrow Groove Wheel	1
L. Step Roller Wheel	1

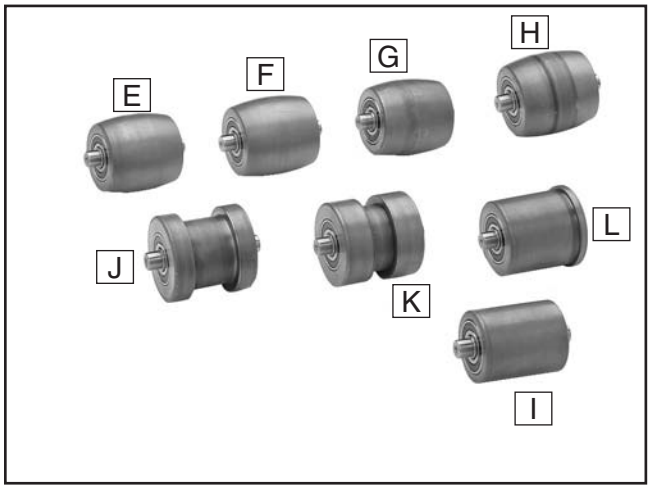


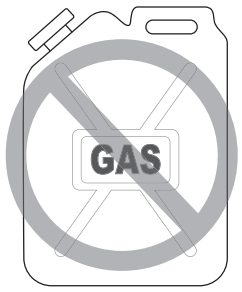
Figure 5. Box 2 contents.

In the event that any nonproprietary parts are missing (e.g. a nut or a washer), we would be glad to replace them, or for the sake of expediency, replacements can be obtained at your local hardware store.

Cleanup

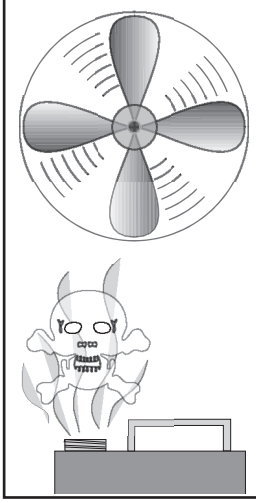
The unpainted surfaces are coated with a waxy oil to protect them from corrosion during shipment. Remove this protective coating with a solvent cleaner or citrus-based degreaser such as Grizzly's G7895 Degreaser. To clean thoroughly, some parts may need to be removed. **For optimum performance from your machine, make sure you clean all moving parts or sliding contact surfaces that are coated.** Avoid chlorine-based solvents, such as acetone or brake parts cleaner, as they may damage painted surfaces should they come in contact. Always follow the manufacturer's instructions when using any type of cleaning product.

The upper and lower wheels are coated and must be cleaned.



⚠WARNING

Gasoline and petroleum products have low flash points and could cause an explosion or fire if used to clean machinery. DO NOT use gasoline or petroleum products to clean the machinery.



⚠CAUTION

Many of the solvents commonly used to clean machinery can be toxic when inhaled or ingested. Lack of ventilation while using these solvents could cause serious personal health risks or fire. Take precautions from this hazard by only using cleaning solvents in a well ventilated area.

Site Considerations

Floor Load

Refer to the **Machine Data Sheet** for the weight and footprint specifications of your machine. Some residential floors may require additional reinforcement to support both the machine and operator.

Operating Clearances

Consider existing and anticipated needs, size of material to be processed through each machine, and space for auxiliary stands, work tables or other machinery when establishing a location for your new machine. See **Figure 6** for the minimum operating clearances.

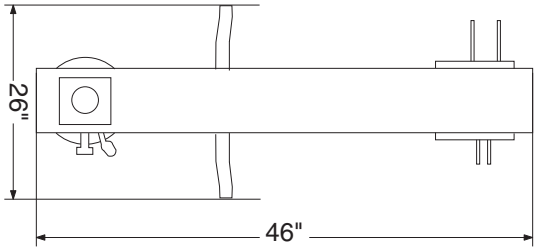
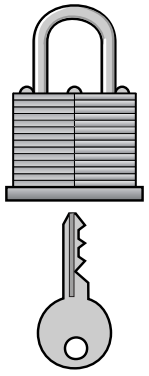


Figure 6. Minimum working clearances.



⚠CAUTION

Unsupervised children and visitors inside your shop could cause serious personal injury to themselves. Lock all entrances to the shop when you are away and DO NOT allow unsupervised children or visitors in your shop at any time!

Moving & Placing Base Unit

⚠WARNING

The Model G0496 is a heavy machine (388 lbs). DO NOT over-exert yourself while unpacking or moving your machine—get assistance.

To place the English wheel in a permanent location:

1. With the help of a minimum of two other people, lift the Model G0496 off of the pallet and onto the floor near the location it will be operated, or hoist it using the provided lifting eye.

Mounting to Shop Floor

We strongly recommend that you mount your new machine to the floor. Because this is an optional step and floor materials may vary, floor mounting hardware is not included.

Bolting to Concrete Floors

Lag shield anchors with lag bolts (**Figure 7**) and anchor studs (**Figure 8**) are two popular methods for anchoring an object to a concrete floor. We suggest you research the many options and methods for mounting your machine and choose the best that fits your specific application.

⚠CAUTION

CRUSHING HAZARD! Secure the English wheel to the floor before operating. Otherwise, it may become unstable and fall over during operation.

NOTICE

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

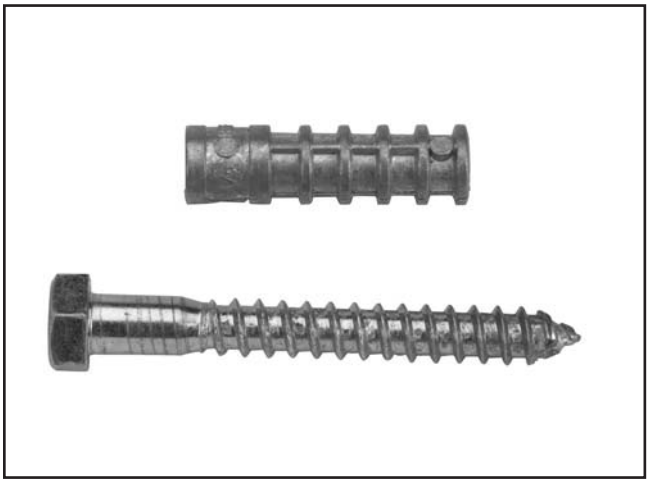


Figure 7. Typical lag shield anchor and lag bolt.

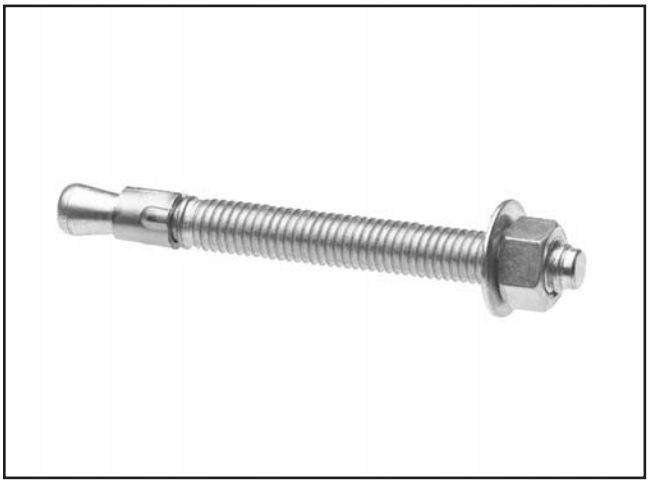


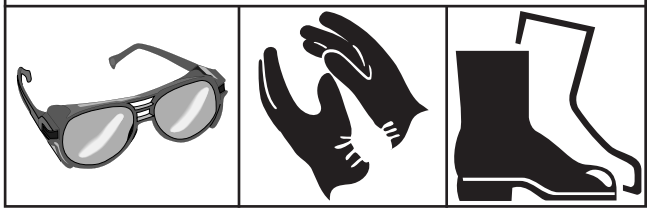
Figure 8. Typical anchor stud.

SECTION 3: OPERATIONS

Operation Safety

⚠WARNING

Damage to your eyes, hands and feet could result from using this machine without proper protective gear. Always wear safety glasses, leather gloves, and steel toe footwear when operating this machine.



NOTICE

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

Overview

The English wheel stretches metal workpieces thinner and longer as they are rolled between the upper wheel and lower wheel. Simultaneously, a track is pressed into the metal, creating a convex curve in the workpiece. By varying the amount and pattern of the tracks, a wide variety of contours can be produced.

The English wheel can be used to produce curves in mild steel up to 16 gauge/0.0598" and copper up to 16 gauge/0.0508", and aluminum up to ⅛".

Basic Operations

To operate the English wheel:

1. Clean the workpiece and wheels thoroughly, making sure any abrasive particles are removed.

   Note: *Grit or dirt will mar your workpiece and even damage the wheels.*

   Dull sharp edges with a deburring tool (See **Accessories**, **Page 21**) and put on a pair of leather gloves to prevent injury to your hands.

2. Turn the upper wheel knob clockwise to raise the upper wheel bracket against the frame bracket, as shown in **Figure 9**.

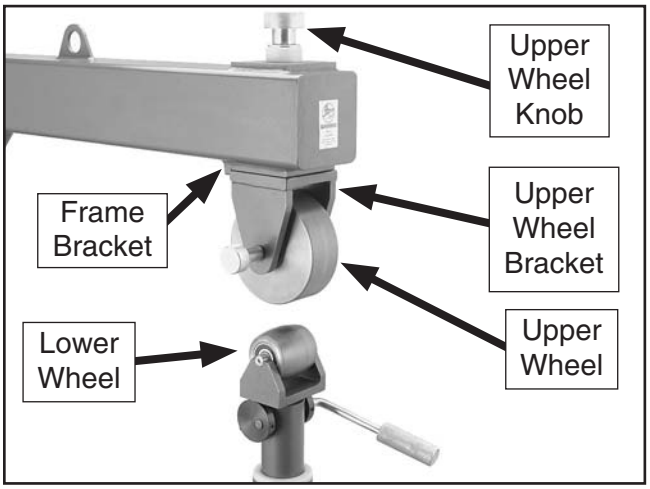


Figure 9. Upper wheel bracket seated against frame.

   Note: *Make sure the upper wheel bracket and frame bracket edges are parallel so they slide past each other when raising the upper wheel bracket. If not, they may bind.*

3. Check the distance between the bottom of the upper wheel and top of the lower wheel. They should be about an inch apart. To adjust the distance, rotate the kick wheel to lower or raise the lower wheel.

4. Engage the quick release lever to raise the lower wheel to the operating position.

   Note: *The button head cap screw on the cam should rest against the bottom of the lower wheel bracket as shown in* **Figure 10A**.

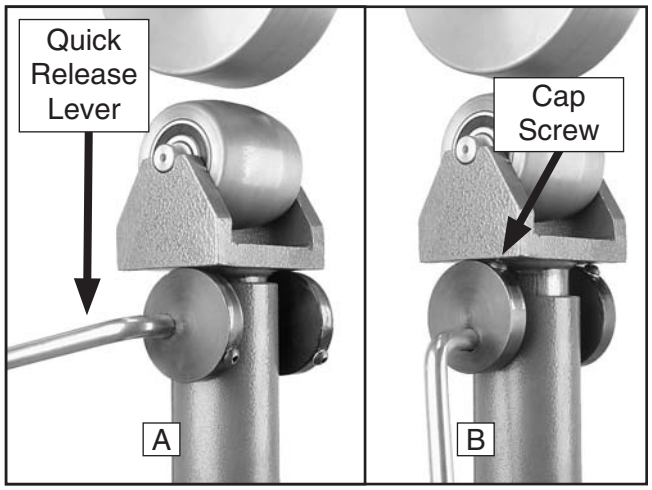


Figure 10. Quick release lever dis-engaged (left) and engaged (right).

⚠CAUTION

LACERATION HAZARD! Chamfer and deburr sharp metal edges and wear leather gloves. Sharp metal edges can cut your fingers.

5. Insert the workpiece between the wheels.

6. Rotate the kick wheel counterclockwise until there is light pressure on the workpiece.

7. Roll the workpiece up to an edge, rotate it slightly, then pull it back.

8. Turn the kick wheel counterclockwise to increase pressure on the workpiece; turn the kick wheel clockwise to decrease pressure.

   Note: *To reinsert a workpiece or insert another workpiece of the same thickness, use the quick release lever.*

Replacing Wheels

A flat upper and lower wheel are preinstalled on the English wheel. These can be replaced with the two grooved upper wheels or any of the eight lower wheel wheels, respectively.

⚠CAUTION

CRUSHING HAZARD! Hold an upper wheel securely when installing or removing it or it may fall on your foot! Wear steel toe footwear to protect your feet.

To replace an upper wheel:

1. Raise the lower wheel until the top touches the bottom of the upper wheel. This ensures the upper wheel is supported.

2. Flip the latch up and remove the upper wheel axle as shown in **Figure 11.**

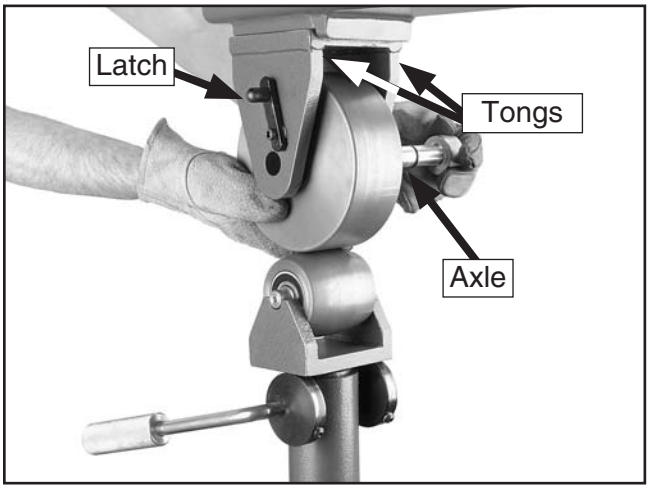


Figure 11. Removing axle from upper wheel.

3. Carefully remove the upper wheel and set it on the upper wheel rack using a bracket mounting shaft.

4. Place a new upper wheel between the upper wheel bracket tongs.

5. Align the bracket and wheel bearing holes, insert the axle, and rotate the latch to secure the wheel.

   Note: *Adjust the lower wheel height if you have difficulty replacing the upper wheel.*

To replace a lower wheel:

1. Disengage the quick release lever and lower the lower wheel bracket until it stops.

2. Remove the lower wheel and replace it with another one.

3. Engage the quick release lever and raise the lower wheel to the operating position.

Rotating Wheels

The wheels can be positioned perpendicular to the frame (**Figure 12, A**) for long workpieces or parallel (**Figure 12, B**) to the frame for wide workpieces.

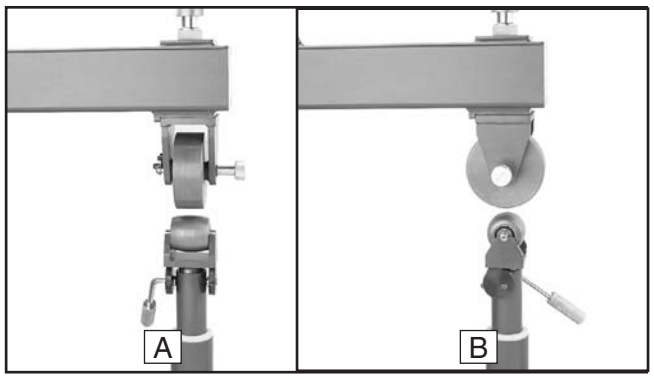


Figure 12. Wheels positioned to accomodate different workpiece sizes.

To rotate the wheels:

1. Disengage the quick release lever.

2. Lower the lower wheel bracket.

⚠CAUTION

PINCHING HAZARD! Avoid placing fingers in wheel path during operation.

3. Remove the lower wheel.

4. Lift the lower wheel assembly until the cap screw reaches the top of the groove.

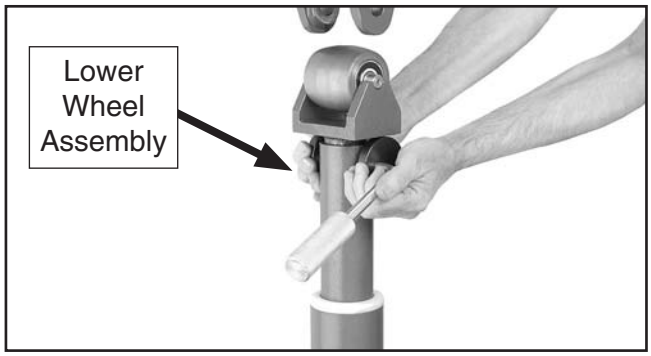


Figure 13. Lifting lower wheel assembly.

5. Rotate the lower wheel assembly until it reaches the opposite end of the groove as shown in **Figure 14**.

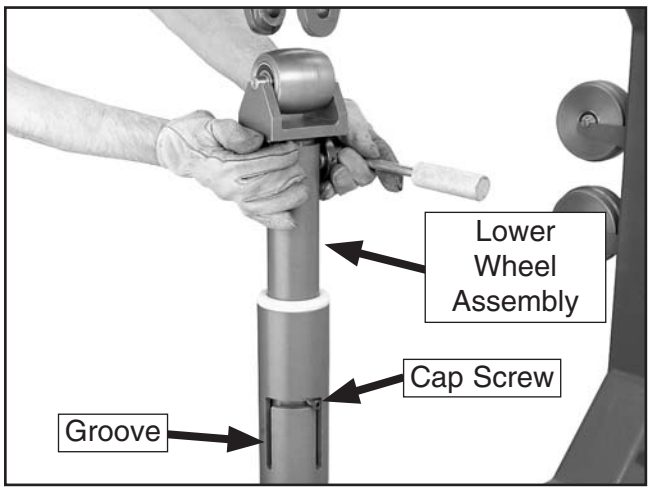


Figure 14. Rotating lower wheel bracket and upper wheel.

6. Lower the lower wheel assembly until it reaches the bottom of the groove.

7. Turn the upper wheel knob counterclockwise to lower the upper wheel bracket below the frame bracket.

8. Rotate the upper wheel 90º, then raise the upper wheel bracket until it is seated against the frame.

9. Reinstall the lower wheel, engage the quick release lever, and raise the upper wheel to the operating position.

Rolling Tips

The following tips can help you operate the English wheel more successfully:

- Clean the workpiece and wheels, making sure all grit is removed.
- Start rolling slowly and increase your speed.
- Try rolling the wheels up to, but not past the workpiece edge.
- Mark the workpiece with a non-permanent marker to make it easier to follow tracking patterns or contour the metal.
- Try using the lightest wheel pressure possible to shape the workpiece. Too much pressure will crease or ruin the metal.
- Light pressure is best for smoothing; higher pressure is best for rough shaping.

Adjusting Lever

The quick release lever is adjusted at the factory. However, due to variables involved with shipping, it may need to be adjusted.

If the setscrews on the steel cams are not engaging the flats on the quick release lever, the lever shaft will slip in the cams, causing it to malfunction.

Tools Needed:
Hex Wrench 3mm..... 1

To adjust the quick release lever:

1. Examine the flats (**Figure 15**) on the lever.

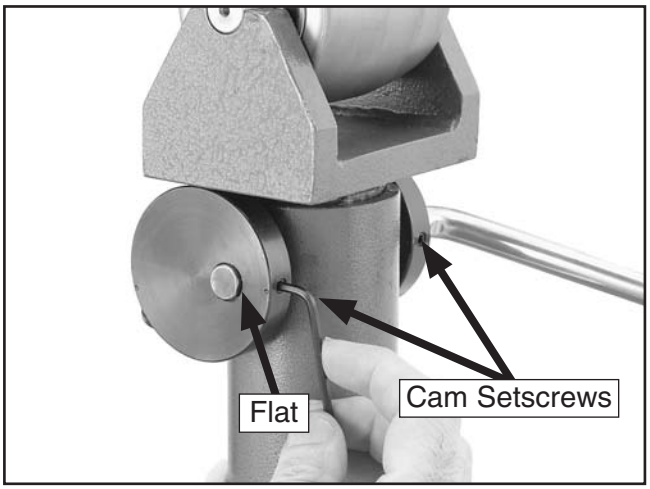


Figure 15. Tightening cam setscrew.

2. If a setscrew does not contact a flat on the lever, loosen the setscrew, turn the cam so the setscrew is aligned with the flat and tighten the setscrew.

Tracking Patterns

As metal passes between the upper and lower wheels, a "track" or shiny line is pressed into the metal. Various tracking patterns can be used to shape workpieces depending upon their shape or size.

Zigzag Pattern

This patterns resembles the closely-spaced tracks of a lawn mower cutting a lawn. It can be used for a variety of workpiece shapes.

To use the zigzag tracking pattern:

1. Insert the workpiece between the wheels at point **A**, and start rolling it along the left edge, as shown in **Figure 16**.

   CAUTION: *Move your hands out of the wheel pathway so you do not pinch them!*

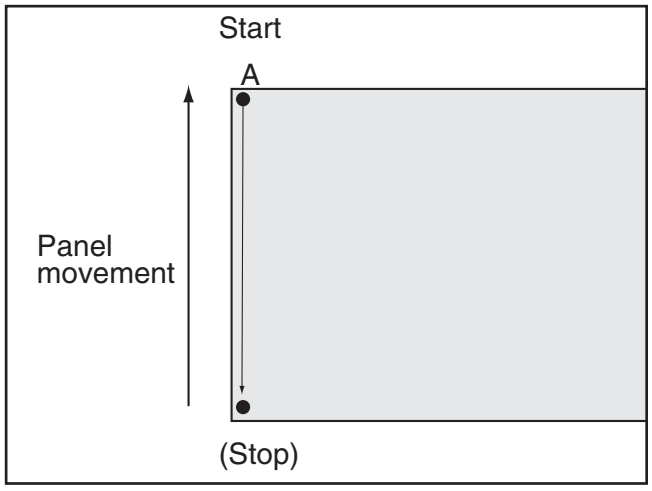


Figure 16. Starting zigzag pattern.

2. Push the workpiece forward to the stop point.

3. Turn the workpiece counterclockwise slightly (**Figure 17**).

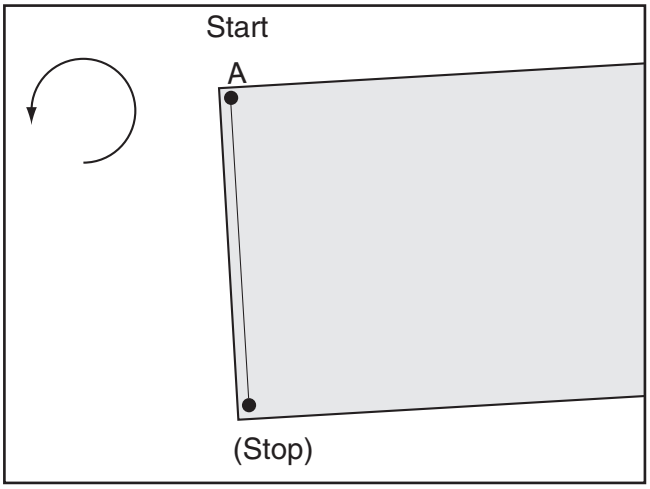


Figure 17. Workpiece turned counterclockwise.

4. Pull the workpiece back until it reaches the next point near the far edge as shown in **Figure 18.**

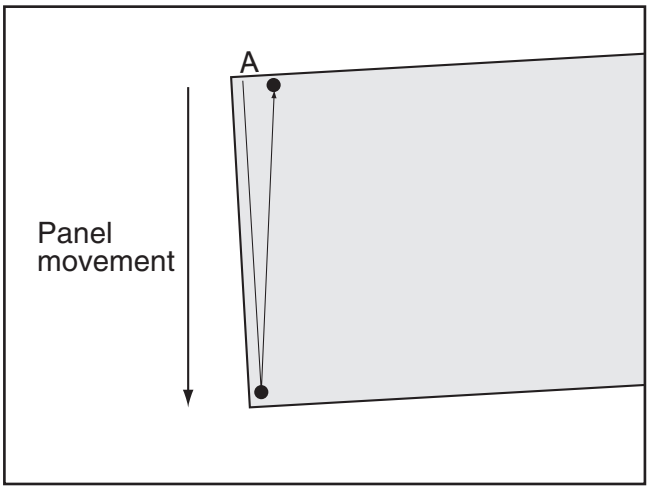


Figure 18. Wheels moved to next point.

5. Turn the workpiece clockwise (**Figure 19**).

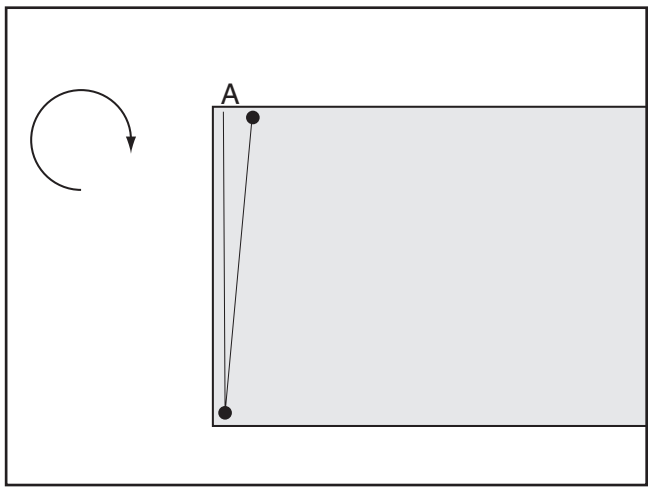


Figure 19. Workpiece turned clockwise.

6. Continue feeding the workpiece to the other side in the same manner, following the pattern shown in **Figure 20**.

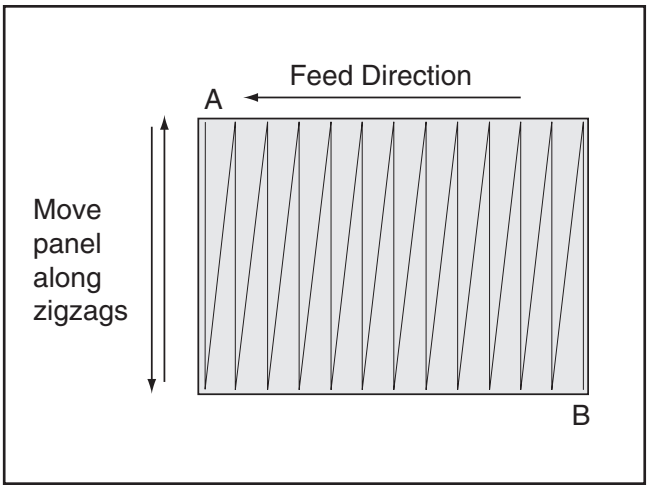


Figure 20. Zigzagging while feeding workpiece to the other side.

Note: *Try keeping the tracks close to each other.*

7. When the wheels reach point **B**, feed the workpiece (**Figure 21**) and return to point **A**.

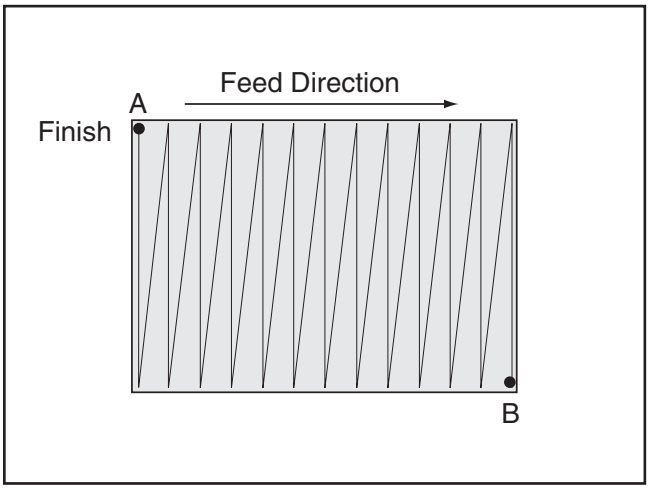


Figure 21. Zigzagging while feeding workpiece to right.

Star Pattern

The star pattern (**Figure 22**) is useful for shaping round workpieces.

Note: *Avoid rolling directly over the center of the workpiece, as too many passes could overstretch the metal.*

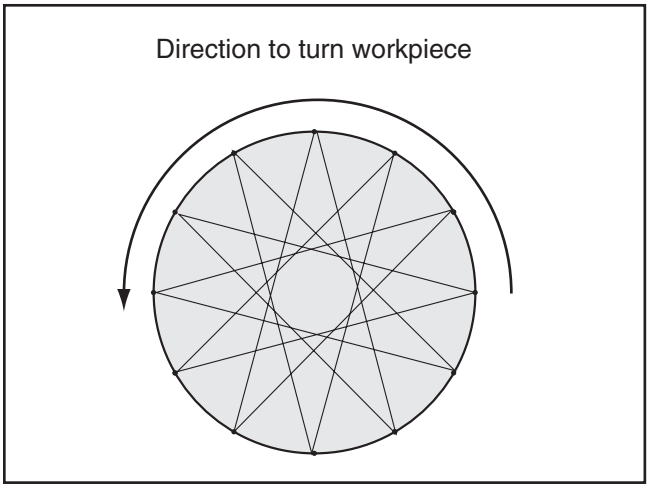


Figure 22. Star pattern.

Staggered Stop Pattern

With this pattern, the track alternates randomly between three different sets of lines.

Note: *It may help to draw lines on the workpiece with a non-permanent marker so you can see the outside, middle and inside lines more clearly. Clean the wheels and workpiece when you are finished.*

To use the staggered stop pattern:

1. From the starting point, roll the workpiece from the outside line on one side to the outside line on the opposite side (**Figure 23**).

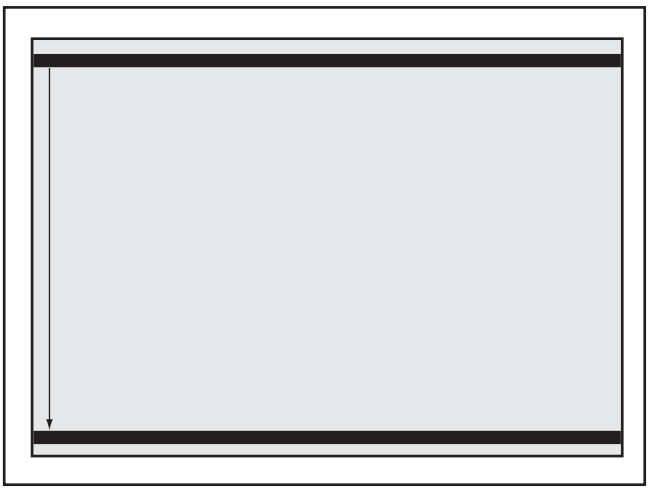


Figure 23. Outside to outside line.

2. Roll the workpiece from the middle line on one side to the middle line on the opposite side (**Figure 24**).

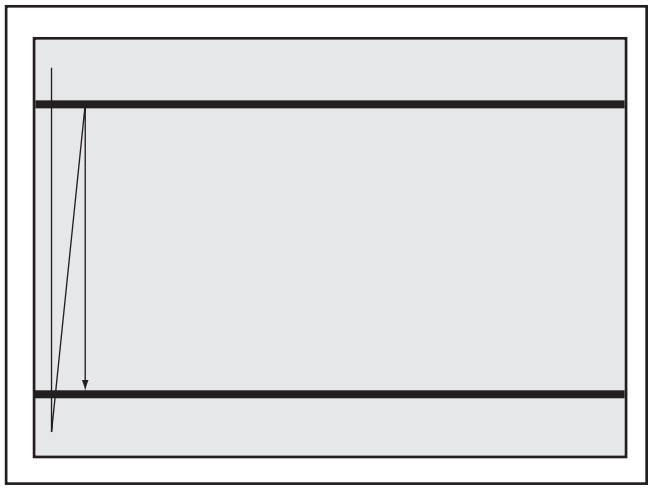


Figure 24. Middle to middle line.

3. Roll the workpiece from the inside line on one side to the inside line on the opposite side (**Figure 25**).

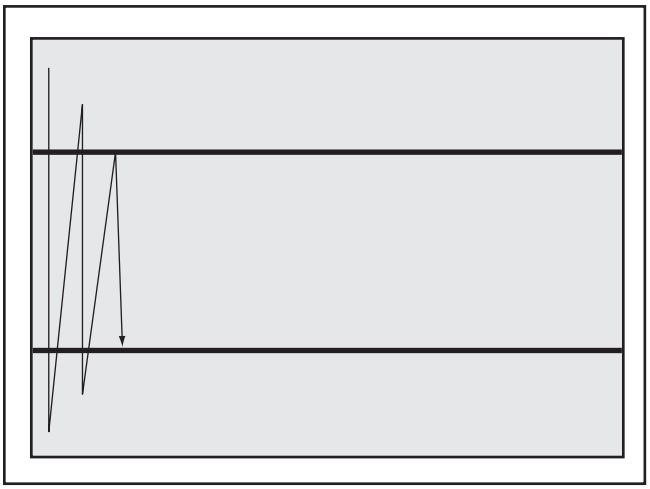


Figure 25. Inside to inside line.

4. Repeat **Steps 1-3**, as you move across the workpiece, randomly alternating between outside, middle, and inside lines as shown in **Figure 26 & 27.**

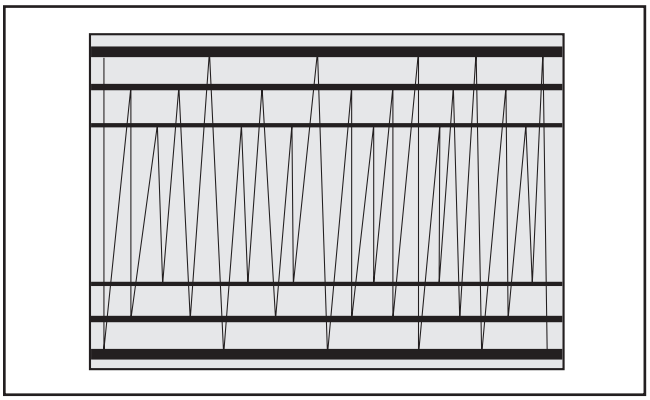


Figure 26. Staggered pattern, showing line sets.

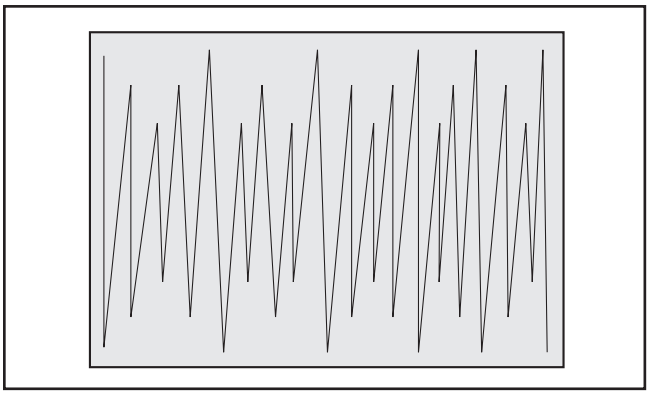


Figure 27. Staggered pattern shown without line sets.

Crisscrossing Tracks

Crisscrossing tracks can help produce smoother curves in your workpiece using the zigzag or staggered stop pattern.

After running tracks along one length of the workpiece (**Figure 28, 1**), turn the metal sheet 90° and run tracks along the opposite length. (**Figure 28, 2**) so the workpiece is equally covered by both sets of tracks (**Figure 28, 3**).

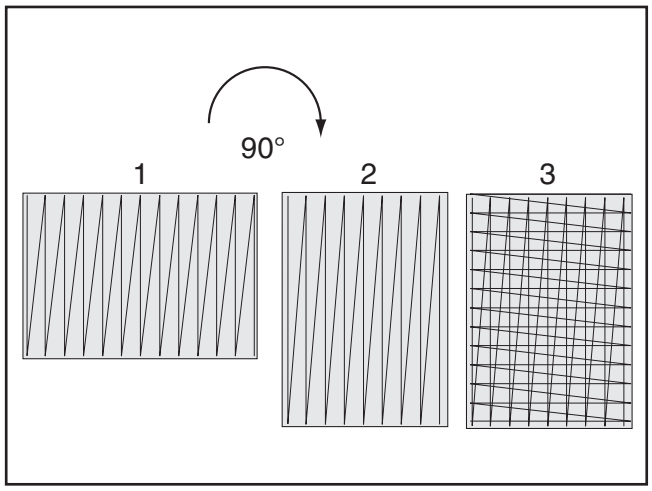


Figure 28. Crisscrossing tracks.

Selecting Lower Wheels

Choose a lower wheel (**Figure 29**) that will produce the contour you desire.

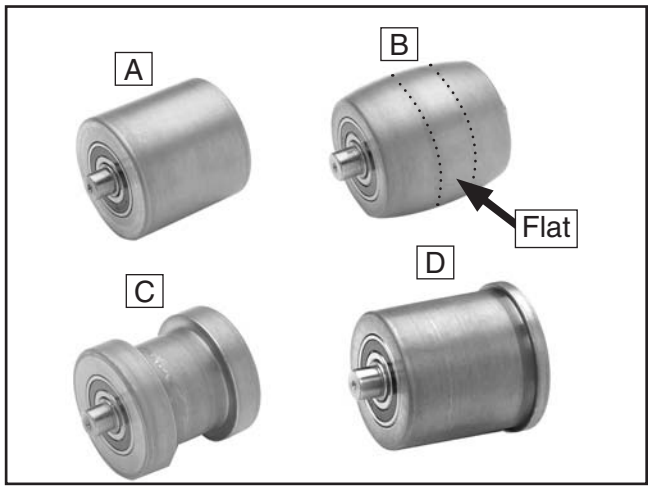


Figure 29. Lower wheels.

Flat lower wheels (**Figure 29A**) are good for adding gentle curves to large metal panels; these wheels have large flat surfaces.

Domed lower wheels (**Figure 29B**) create tighter curves; flat areas range from ¾" to ⅛". The wider the flat area, the wider the track produced on the workpiece.

Roll a workpiece between a grooved lower wheel (**Figure 29C**) and an ridged upper wheel to emboss metal as shown in **Figure 30**.

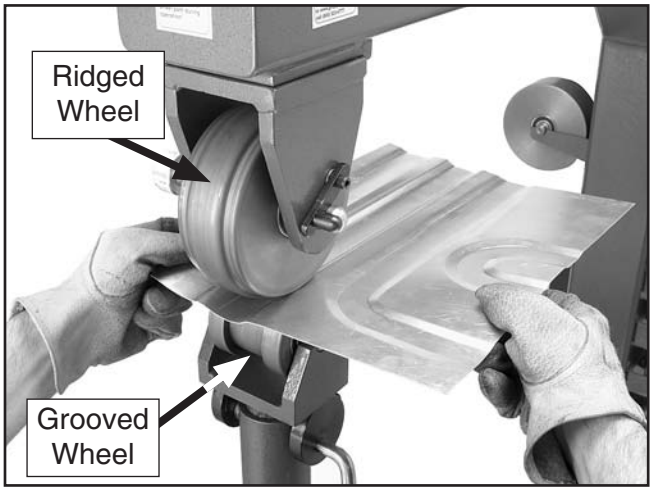


Figure 30. Embossing metal with grooved and ridged wheels.

The step roller (**Figure 29D**) can be used with the flat upper wheel to add a small crease in a metal panel.

See **Figure 31** on **Page 20** for more detailed specifications for each wheel. (**Note:** ** Indicates wheel is not actually marked with a number or letter. These numbers are arbitrary.*)

WHEEL DESIGNATION	FLAT	DIA.	CROWN RADIUS	EDGE RADIUS	FORMING RADIUS	INSIDE RADIUS	GROOVE WIDTH	GROOVE DEPTH
Upper Wheels								
1*	2.25"	6"	—	0.125"	—	—	—	—
2* (Wide Ridge)	0.75"	6"	—	0.125"	0.375"	—	—	0.19"
3* (Narrow Ridge)	0.29"	6"	—	0.125"	0.375"	—	—	0.19"
Lower Wheels								
A (Flat)	3"	3"	—	0.125"	—	—	—	—
B (Domed)	0.125"	3"	6"	0.125"	—	—	—	—
C (Domed)	0.25"	3"	6"	0.125"	—	—	—	—
D (Domed)	0.50"	3"	6"	0.125"	—	—	—	—
E (Domed)	0.75"	3"	6"	0.125"	—	—	—	—
F (Flat)	3"	2.43"	—	0.093"	—	—	—	—
1* (Narrow Groove)	0.82"	3"	—	0.093"	—	0.032"	0.82"	—
2* (Wide Groove)	1.53"	3"	—	0.093"	—	0.032"	1.55"	—
3* (Step Roller)	2.65"	3"	—	0.093"	—	0.032"	—	—

Figure 31. Upper and lower wheel specifications.

SECTION 4: ACCESSORIES

⚠WARNING

Using accessories or attachments not recommended for this machine may cause the machine to function differently than intended, which may increase the risk of serious personal injury. Only use recommended accessories for ths machine.

G5618—Deburring Tool with two Blades
The quickest tool for smoothing freshly sheared metal edges. Comes with two blades, one for steel and aluminum and one for brass and cast iron.

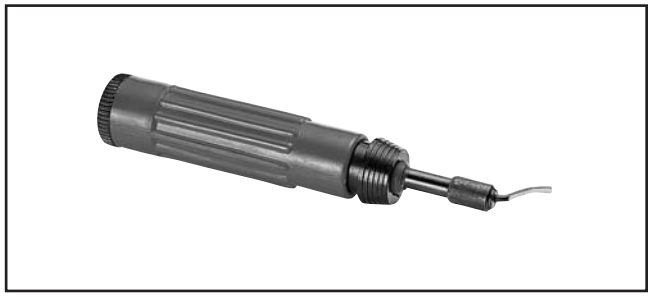


Figure 32. Model G5618 Deburring tool.

T20501—Face Shield Crown Protector 4"
T20502—Face Shield Crown Protector 7"
T20503—Face Shield Window
T20452—"Kirova" Anti-Reflective S. Glasses
T20451—"Kirova" Clear Safety Glasses
H0736—Shop Fox® Safety Glasses
H7194—Bifocal Safety Glasses 1.5
H7195—Bifocal Safety Glasses 2.0
H7196—Bifocal Safety Glasses 2.5

Figure 33. Eye protection assortment.

G0497—Professional Planishing Hammer
Great for all sheet metal forming, this Professional Planishing Hammer will shape mild steel up to 16 gauge. Air operated, it includes filter, oiler and foot pedal. Stainless steel main shaft and hardened steel hammer head.

Figure 34. Model G0497 Planishing Hammer.

Figure 35. Recommended products for protecting unpainted cast iron/steel parts on machinery.

Call 1-800-523-4777 To Order

NOTICE

Refer to the newest copy of the Grizzly Catalog for other accessories available for this machine.

SECTION 5: MAINTENANCE

Lubrication

There are four main areas on the Model G0496 to keep lubricated: 1) Upper and lower wheel brackets, 2) jack screw, 3) upper wheel axle, 4) cams, and 5) pivot points.

Upper and Lower Wheel Brackets
Occassionally apply a light coating of automotive oil, such as SAE 30W, to the lower wheel bracket. Occassionally apply a coating of lithium grease to the upper wheel brackets as shown in **Figure 36**.

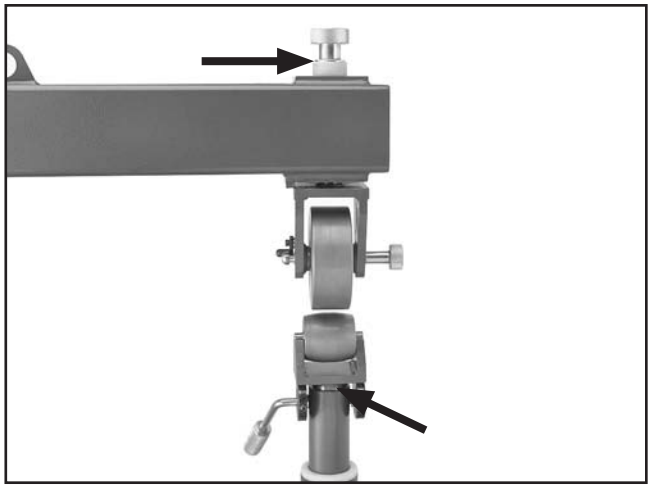


Figure 36. Location to lubricate upper and lower brackets.

Jack Screw
Apply lithium grease as needed to the jack screw threads shown in **Figure 37**.

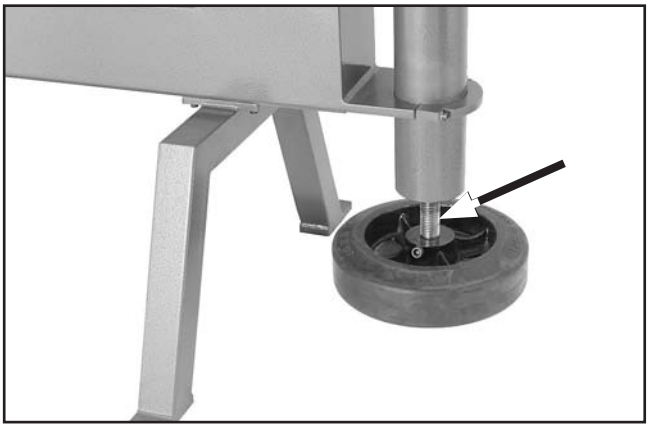


Figure 37. Lubricate jack screw with grease.

Cams
Apply a coating of lithium grease to the cams where they contact the bottom of the lower wheel bracket as shown in **Figure 38**.

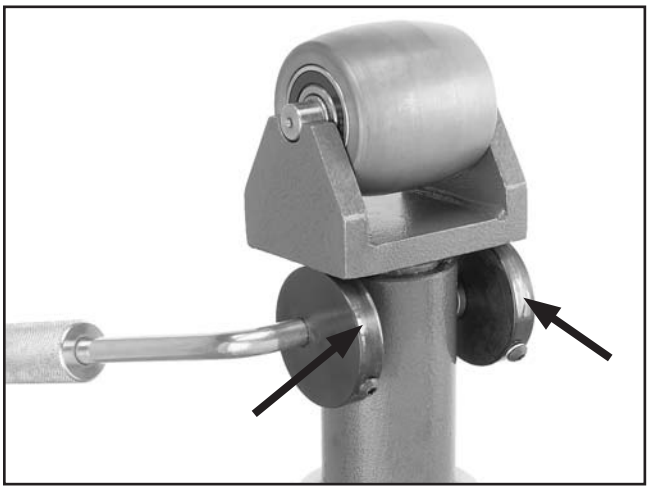


Figure 38. Location to lubricate cams.

Pivot Points
Apply a small amount of automotive oil, such as SAE 30W, to the pivot points indicated in **Figure 39**.

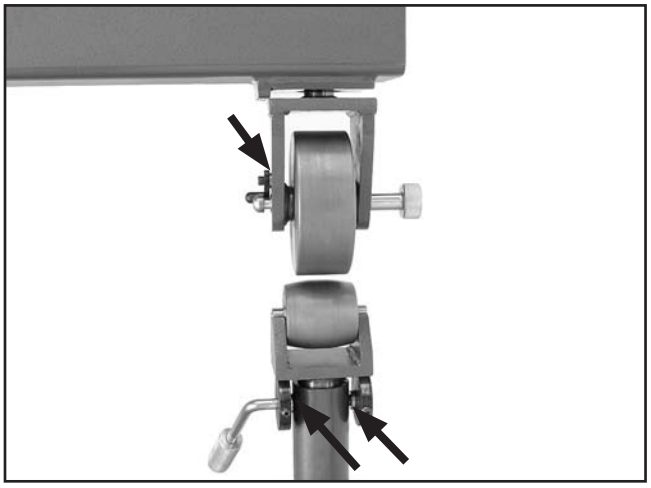


Figure 39. Pivot point lubrication locations.

Wheels
Apply a coating of automotive oil to the upper and lower wheels when not used, or before storing to prevent rust. Remove the oil before using the wheels.

SECTION 6: SERVICE

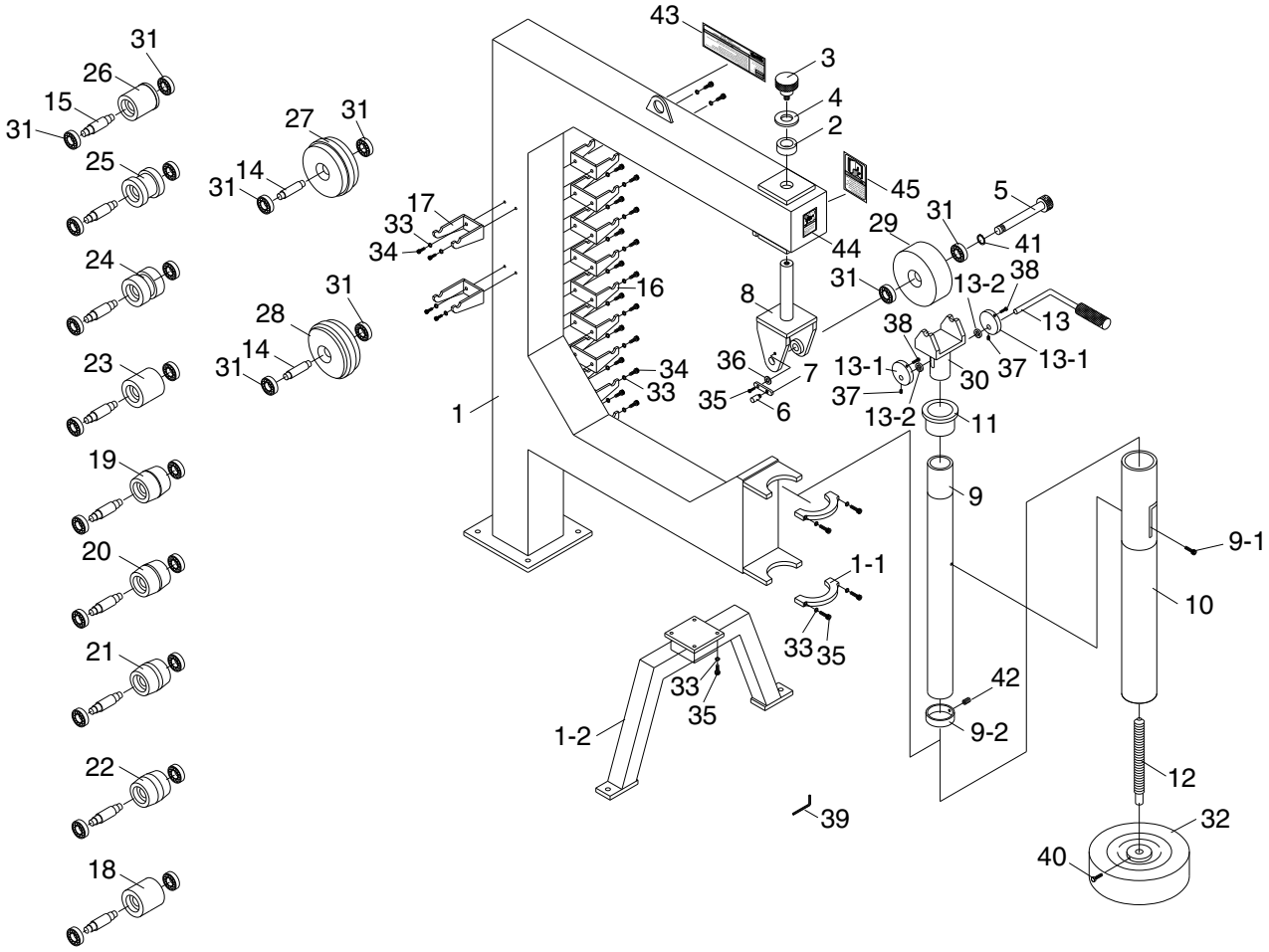
Review the troubleshooting and procedures in this section to fix your machine if a problem develops. If you need replacement parts or you are unsure of your repair skills, then feel free to call our Technical Support at (570) 546-9663.

Troubleshooting

Operations

Symptom	Possible Cause	Possible Solution
Quick release lever will not engage, or has trouble engaging.	1. Lower wheel bracket and cams bind. 2. Setscrews on cams loose and not contacting quick release lever flats.	**1.** Lubricate top of cams where they contact the bracket (See **Page 22**). 2. Align setscrews over lever flats and tighten (See **Page 15**).
Upper wheel swivels.	1. Upper wheel is not secured by frame bracket.	1. Turn upper wheel knob clockwise to raise upper wheel bracket so it is snug against frame bracket. (See **Page 12**).
Wheel does not shape workpiece.	1. Workpiece is too thick. 2. Crown is too low. 3. Incorrect pressure.	1. Use sheet metal of appropriate thickness. (See **Page 3**). 2. Use a lower wheel with a higher crown. 3. Increase pressure on the workpiece.
Upper wheel bracket will not seat against frame.	1. Upper wheel bracket catches on frame bracket; surfaces are not parallel.	1. Align upper wheel and upper frame bracket surfaces and raise upper wheel bracket up to frame.
Wheels form too high a crown in workpiece.	1. Using lower wheel with too small a flat area.	1. Use a lower wheel with a larger flat.
Wheels form too low a crown in workpiece.	1. Lower wheel flat is too large.	1. Use a lower wheel with a smaller flat area.

Parts Breakdown



Parts List

REF	PART #	DESCRIPTION
1	P0496001	FRAME
1-1	P0496001-1	CLAMP
1-2	P0496001-2	SUPPORT BRACKET
2	P0496002	SPACER
3	P0496003	UPPER WHEEL KNOB 1/2-12
4	P0496004	SPECIAL WASHER 1/2
5	P0496005	UPPER WHEEL SHAFT
6	P0496006	WHEEL SHAFT
7	P0496007	UPPER AXLE LATCH
8	P0496008	UPPER WHEEL BRACKET
9	P0496009	INNER TUBE
9-1	P0496009-1	SPECIAL SCREW
9-2	P0496009-2	COLLAR
10	P0496010	OUTER TUBE
11	P0496011	T-BUSHING
12	P0496012	JACK SCREW
13	P0496013	QUICK RELEASE LEVER
13-1	P0496013-1	CAM
13-2	P0496013-2	SPACER
14	P0496014	UPPER WHEEL RESTING SHAFT
15	P0496015	LOWER WHEEL RESTING SHAFT
16	P0496016	LOWER WHEEL STORAGE BRACKET
17	P0496017	UPPER WHEEL STORAGE BRACKET
18	P0496018	LOWER WHEEL A
19	P0496019	LOWER WHEEL B
20	P0496020	LOWER WHEEL C

REF	PART #	DESCRIPTION
21	P0496021	LOWER WHEEL D
22	P0496022	LOWER WHEEL E
23	P0496023	LOWER WHEEL F
24	P0496024	NARROW GROOVE WHEEL
25	P0496025	WIDE GROOVE WHEEL
26	P0496026	STEP ROLLER WHEEL
27	P0496027	NARROW RIDGE UPPER WHEEL
28	P0496028	WIDE RIDGE UPPER WHEEL
29	P0496029	FLAT UPPER WHEEL
30	P0496030	LOWER WHEEL BRACKET
31	P6204	BALL BEARING 6204ZZ
32	P0496032	KICK WHEEL
33	PLW02	LOCK WASHER 1/4
34	PSB05	CAP SCREW 1/4-20 X 3/4
35	PSB06	CAP SCREW 1/4-20 X 1
36	PW06	FLAT WASHER 1/4
37	PSS07	SET SCREW 1/4-20 X 1/2
38	PSBS20	BUTTON HD CAP SCR 1/4-20 X 1/2
39	PAW05M	HEX WRENCH 5MM
40	PSB19	CAP SCREW 3/8-16 X 1-1/4
41	PR09M	EXT RETAINING RING 20MM
42	PSS04	SET SCREW 1/4-20 X 5/16
43	P0496043	G0496 MACHINE ID LABEL
44	P0496044	PINCH HAZARD LABEL 1-1/2" X 2-1/2"
45	PLABEL-12	READ MANUAL LABEL

⚠WARNING

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

WARRANTY AND RETURNS

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

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

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

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

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

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

Grizzly Industrial, Inc. WARRANTY CARD

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City _____ State _____ Zip _____

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Model # _____ Order # _____ Serial # _____

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

1. How did you learn about us?

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

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

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

3. What is your annual household income?

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

4. What is your age group?

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

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

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

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

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

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

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

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

10. Comments: _____

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