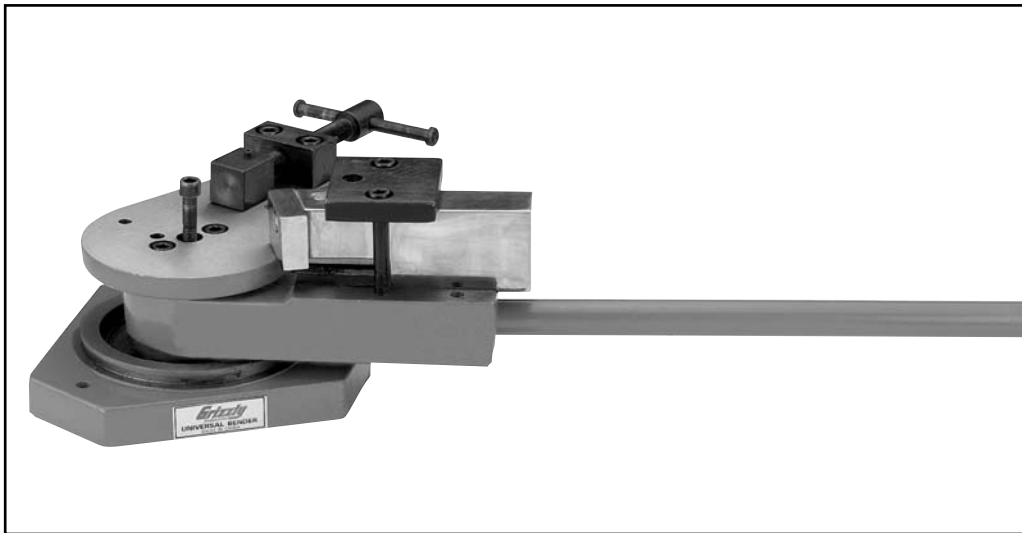


Grizzly Industrial, Inc.®

UNIVERSAL BENDER MODEL G7153 INSTRUCTION MANUAL



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GRIZZLY ID # 404001623. REVISED JANUARY, 2003. PRINTED IN CHINA

ONLINE MANUAL DISCLAIMER

THE INFORMATION IN THIS MANUAL REPRESENTS THE CONFIGURATION OF THE MACHINE AS IT IS CURRENTLY BEING SHIPPED. THE MACHINE CONFIGURATION CAN CHANGE AS PRODUCT IMPROVEMENTS ARE INCORPORATED. IF YOU OWN AN EARLIER VERSION OF THE MACHINE, THIS MANUAL MAY NOT EXACTLY DEPICT YOUR MACHINE. CONTACT CUSTOMER SERVICE IF YOU HAVE ANY QUESTIONS ABOUT DIFFERENCES. PREVIOUS VERSIONS ARE NOT AVAILABLE ONLINE.

IMPORTANT SAFETY INFORMATION

For Your Own Safety Read Instruction Manual Before Operating This Equipment

WARNING

- 1. ALWAYS WEAR EYE PROTECTION.** Use safety approved lenses, everyday glasses only have impact resistant lenses, they are NOT safety glasses.
- 2. WEAR PROPER APPAREL** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
- 3. KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- 4. KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.
- 5. MAKE WORK SHOP CHILD PROOF** with padlocks, master switches, or by removing starter keys.
- 6. MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 7. DON'T OVERREACH.** Keep proper footing and balance at all times.
- 8. SUPPORT THE WORKPIECE** adequately at all times during operation; maintain control of the work at all times. Use clamps or a vise to hold the work securely.
- 9. DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
- 10. USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
- 11. USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury.
- 12. CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function.-Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

UNPACKING

The Model G7153 Heavy-Duty Universal Bender is shipped from the manufacturer in a carefully packed carton. If you discover the tool is damaged after you've signed for delivery, *please call Customer Service immediately 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 its parts.

Refer to the attached parts list and make certain you have all the parts and dies included with this bending tool. If any components are missing, contact Customer Service.

In the event that any non-proprietary 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.



CLEAN UP

The cast iron and other unpainted parts of the Model G7153 may be coated with a waxy oil that protects them from corrosion during shipment. Remove the protective coating with mineral spirits and paper towels.

WARNING

Do not use gasoline or other petroleum based solvents because of their extremely low flash points. Do not use chlorine-based solvents – if you happen to splash some onto a painted surface, you'll ruin the finish.

WARNING

Follow the safety rules listed below when working with solvents:

1. Read and follow all directions and warnings on the solvent label.
2. Work only in a well ventilated area.
3. Do not work near any type of open flame (e.g., pilot lights, kerosene heaters, and so on).
4. **DO NOT** smoke while working with flammable material.
5. Paper towels from the cleaning process are extremely combustible. Dispose of waste towels so they do not create a fire hazard. **Serious personal injury may occur.**

MOUNTING

The G7153 Universal Bender must be securely mounted to a solid surface before using. Operating the tool for certain operations will require exerting considerable force on the handle, thus it is essential that the tool be mounted to a heavy or immovable work bench or other work surface. Be certain there will be adequate clearance for the entire range of motion of the handle with no potential pinch points for the operator's hands.



G7153 Universal Bender

GENERAL INFORMATION

Grizzly Industrial, Inc. is proud to offer the Model G7153 Heavy-Duty Universal Bender. The G7153 is part of Grizzly's growing family of fine metalworking machinery. When used according to the guidelines stated in this manual, you can expect years of trouble-free, enjoyable operation.

The Model G7153 is intended for home and medium duty professional use. The G7153 features cast iron construction for rigidity and strength. This bender has a bending capacity of 28½ tons per square inch which can be used to shape iron, steel, wrought iron, brass, copper and aluminum.

Maximum Capacities for these various materials are:

Steel & Iron	5/8" Round Stock 1/2" x 1/2" Square Stock 1 3/16" x 5/16" Strip Stock
Wrought Iron	1 5/32" Round Stock 1 3/32" x 1 3/32" Square Stock 1 3/16" x 1/4" Strip Stock
Brass & Copper	5/8" Round Stock 1 5/32" x 1 5/32" Square Stock 1 3/16" x 5/16" Strip Stock
Aluminum	2 3/32" Round Stock 1 9/32" x 1 9/32" Square Stock 1 3/16" x 1 3/32" Strip Stock

We are also pleased to provide this manual with the Model G7153. It was written to guide you through assembly, review safety considerations, and cover general operating procedures. It represents our latest effort to produce the best documentation possible. If you have any criticisms that you feel we should address in our next printing, please write to us at the Bellingham, WA address at the end of this section.

Most important, we stand behind our tools. We have an excellent service department at your disposal should the need arise. If you have any service questions or parts requests, please call or write to us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Circle
Muncy, PA 17756
Phone:(717) 326-3806
Fax:(800) 438-5901
E-Mail: Grizzlytec@aol.com
Web Site: <http://www.grizzlyimports.com>

To comment on this manual write to:

Grizzly Industrial, Inc.
% Technical Documentation
P.O. Box 2069
Bellingham, WA 98227

WARNING

To operate this, or any other tool safely and efficiently, it is essential to become as familiar with it as possible. The time you invest before you begin to use your Model G7153 will be time well spent. **DO NOT** operate this tool until you are completely familiar with the contents of this manual.



OPERATING PROCEDURES

General

Your tool is capable of many different types of bending operations. Materials which can be shaped include steel, iron, brass, wrought iron and aluminum.

To determine how to properly set the tool up, you first must determine what type of bending operation you wish to perform. Round shapes, angles or spiral operations are each described in the following sections. The numbers in parentheses relate to the reference number on the exploded parts view on page 8.

When performing the bending operations, be aware of the “spring-back” characteristic of certain materials. This will require that you overbend the material to a certain degree to end up with the desired degree of bend. Different materials have differing degrees of springback. Do a test bend to determine how much “spring-back” you will need to compensate for.

Round Operations

1. Make sure the Die Mounting Plate (4) is attached to the Body. Refer to **Figure 1** for the hole positions needed for Round Operations.
2. Make sure the Stop (2) is loose.
3. Move the Vise Assembly (5-9 & 15) to the rear position on the arm of the Mounting Plate.
4. Screw the Round Die Mounting Shaft (28) into the Mounting Plate.
5. Set the Round Die (29) onto the Mounting Shaft.
6. Move the Bending Block Assembly (16, 17, 22-24) back all of the way. You may have to release the Bending Block Locking Plate (21) by loosening the two Hex Key Bolts (20). Do not secure the Locking Plate at this time.

7. Set stock against the Round Die and close the Vise so that it clamps the work securely against the Die.
8. Move the Bending Block in until it is up against the work and its Face (16) is even with the Vise Face (8). Secure the Bending Block by tightening the two Bolts.
9. Move the Bending Block to the left with the Handle (27) until you have achieved your desired angle bend, remembering to account for “spring-back”.
10. If you wish to do repeat bends at the same arc, tighten the Stop at the point where you finished making your bend and tighten it.
11. When you wish to do complete 360° rings, make sure you clamp the very end of your workpiece in-between the Vise and the Die. Bend your stock all the way around, and cut off the excess.
12. To make springs, loosen the Stop (2), and lift the stock to be formed slightly as you bend the stock around the Die. When starting and finishing the spring, make a complete 360° ring as described in Step #11.

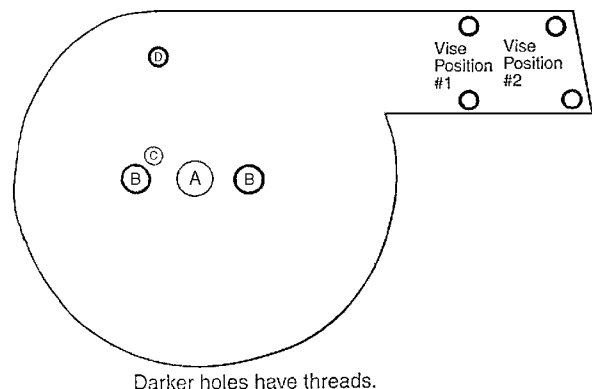


Figure 1. Die Mounting Plate Hole Location
(A) Insert Round Die Mounting Shaft here
(B) Insert Hex Key Bolts here
(C) Insert Angle Die Spring here
(D) Insert Angle Die Hex Bolt here

Angle Operations

1. Make sure the Die Mounting Plate (4) is attached to the Body. Refer to **Figure 1** for the hole positions needed for Angle Operations.
2. Make sure the Stop (2) is loose.
3. Move the Vise Assembly (5-9 & 15) to the forward position on the arm of the Mounting Plate.
4. Place the Angle Die's (13) Spring Pin (19) into the Mounting Plate's small unthreaded hole.
5. Attach the Angle Die by screwing the Hex Key Bolt (18) into the small threaded hole of the Mounting Plate.
6. Move the Bending Block Assembly (16, 17, 22-24) back all of the way. You may have to release the Bending Block Locking Plate (21) by loosening the two Hex Key bolts (20). Do not secure the Locking Plate at this time.
7. Set the stock against the Angle Die and close the Vise so that it clamps the work securely against the Die.
8. Move the Bending Block until it is up against the work and its Face (16) is even with the Vise Face (8).
9. Move the Bending Block to the left with the Handle (27) until you have achieved the your desired angle bend. Remember to account for "spring-back".
10. To make repeat bends at 90°, use the Angle Gauge Assembly (10-12). Screw the Gauge Shaft (10) into the Angle Die. Slide the Gauge Stop (11) onto the Shaft to the desired position (depending upon the length of your work). This will "stop" the bend at the proper location.
11. If you wish to do repeat bends at the same angle (other than 90°), use the Stop (2).

Spiral Operations

1. Remove the Die Mounting Plate (4) by removing the two Hex Key Bolts (4). Loosen the Stop (2).
2. Retract the Bending Block Assembly (16, 17 22-24) all of the way. Remove the Face Plate (16) by unscrewing the associated Hex Key (16) by unscrewing the associated Hex Key G7153 Universal Bender

Bolt (17). This will reveal the Bending Block Wheel (22).

For steps 3, 4, & 8, see Figure 2.

3. Attach the Spring Forming Mounting Disc (32) with two Hex Key Bolts (in position 1).
4. Place the Spring Pin (25) of the Spring Forming Die "A" (31) into the hole 3 and attach the long Hex Key Bolt (26) in position 2.

For steps 5 & 7, see Figure 3.

5. Insert the stock to be bent into the hole of Die "A".
6. Move the Bending Block Assembly forward until it contacts the stock and tighten it in position.
7. Bend the stock until the portion being formed is about at the Pin (marked with a "P" in the figure).
8. Now put the Spring Pins (25) of Spring Forming Die "B" (30) into holes 4 & 5.
9. Finish your bend by wrapping completely around the Forming Dies.

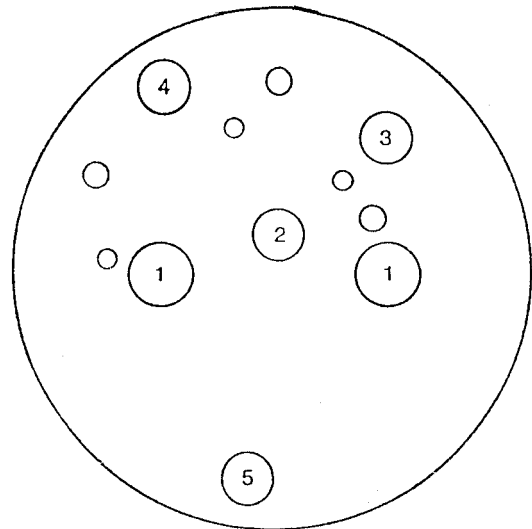


Figure 2 Spring Form Mounting Disc

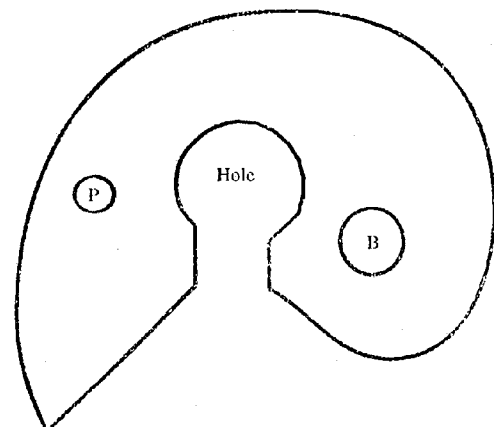
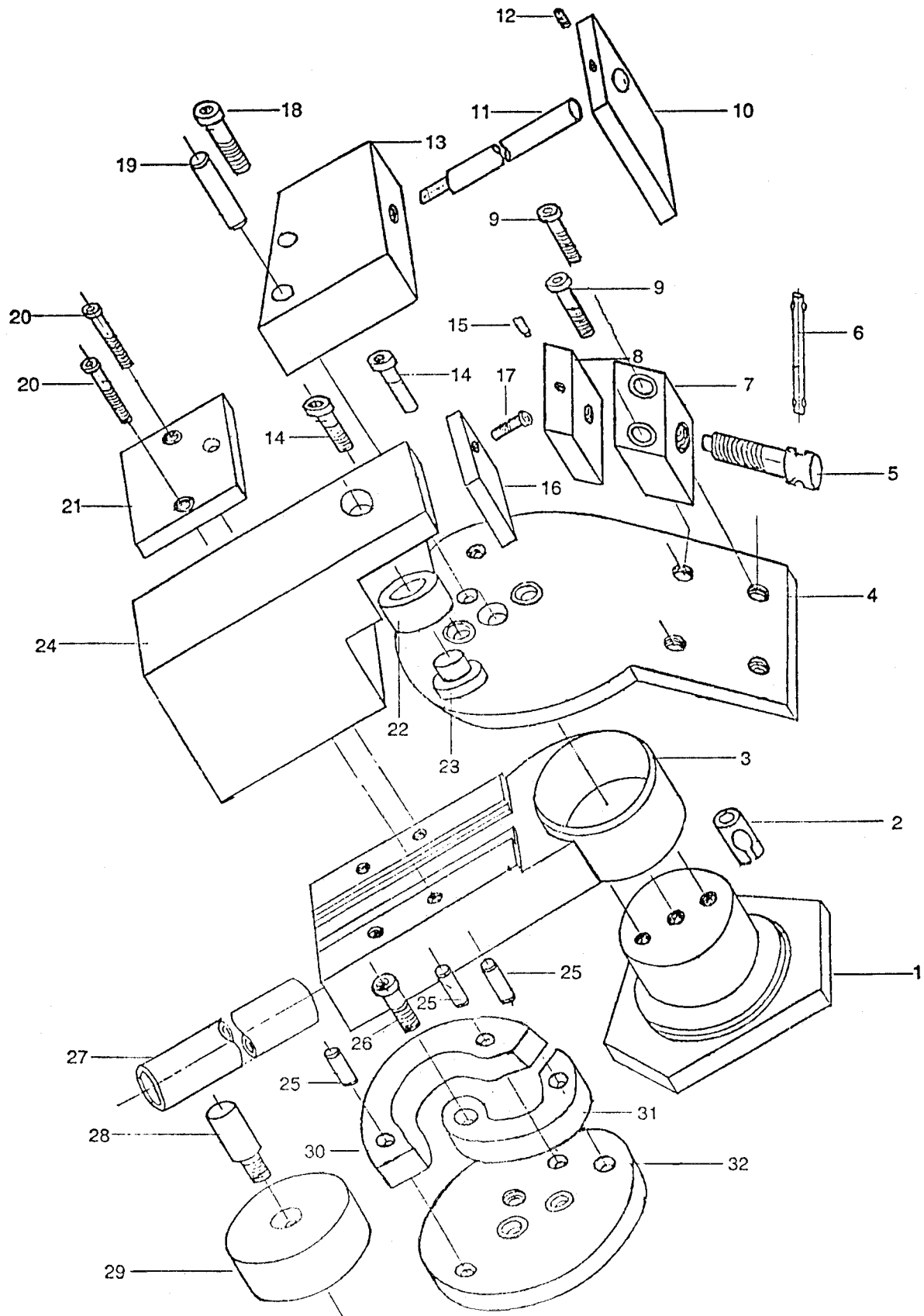


Figure 3 Spring Forming Die



G7153 Universal Bender Exploded Parts View

REF	QTY	DESCRIPTION
1	1	BASE
2	1	STOP
3	1	BODY
4	1	DIE MOUNTING PLATE
5	1	WISE DRIVE SCREW
6	1	WISE HANDLE
7	1	WISE BASE
8	1	WISE FACE
9	2	HEX KEY BOLT
10	1	GAUGE STOP
11	1	GAUGE SHAFT
12	1	GAUGE LOCKING SCREW
13	1	ANGLE DIE
14	2	HEX KEY BOLT
15	1	SET SCREW
16	1	BENDING BLOCK FACE PLATE
17	1	HEX KEY BOLT
18	1	HEX KEY BOLT
19	1	SPRING PIN
20	2	HEX KEY BOLT
21	1	BENDING BLOCK LOCKING PLATE
22	1	BENDING BLOCK WHEEL
23	1	BENDING BLOCK SHAFT
24	1	BENDING BLOCK
25	3	SPRING PIN
26	1	HEX KEY BOLT
27	1	HANDLE
28	1	ROUND DIE MOUNTING SHAFT
29	1	ROUND DIE
30	1	SPRING FORMING DIE "B"
31	1	SPRING FORMING DIE "A"
32	1	SPRING FORMING DIE

CLOSURE

If you need parts or help in assembling your machine, or if you need operational information, we encourage you to call our Service Department. Our trained service technicians will be glad to help you.

If you have comments dealing specifically with this manual, please write to our Bellingham, Washington location using the address in the Introduction. The specifications, drawings, and photographs illustrated in this manual represent the Model G7153 as supplied when the manual was prepared. However, due to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. Whenever possible, though, we send manual updates to all owners of a particular tool or machine. Should you receive one, add the new information to this manual and keep it for reference.

NOTE

We have included some important safety measures that are essential to this machine's operation. While most safety measures are generally universal, Grizzly reminds you that each workshop is different and safety rules should be considered *as they apply to your specific situation*.

We recommend you keep a copy of our current catalog for complete information regarding Grizzly's warranty and return policy. If you need additional technical information relating to this machine, or if you need general assistance or replacement parts, please contact the Service Department listed in *Section 3: General Information*.

Additional information sources are necessary to realize the full potential of this machine. Trade journals, woodworking magazines, and your local library are good places to start.

WARNING

As with all tools, there is danger associated with the Model G17153 Universal Bender. Use the tool with respect and caution to lessen the possibility of mechanical damage or operator injury. If normal safety precautions are overlooked or ignored, injury to the operator or others in the area is likely. **Serious personal injury may occur.**

The Model G7153 was specifically designed for metal bending operations. **DO NOT MODIFY AND/OR USE THIS BENDER FOR ANY OTHER PURPOSE.** Modifications or improper use of this tool will void the warranty. If you are confused about any aspect of this machine, **DO NOT** use it until you have answered all your questions.



WARRANTY AND RETURNS

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

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

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

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

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

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

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