WARNING!

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

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

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

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

WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.
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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 errors do happen and we apologize for them.

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
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com

If you have any comments regarding this manual, please write to us at the address below:

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

Machine Description

This deburring & beveling machine is used to cut away the sharp edges of metal sheets, plates, and blocks. A consistent smooth edge is achieved, so metal can be handled safely and positioned against other surfaces without rough burrs and flashing that prevent proper mating.

An adjustable table guides the workpiece into a carbide cutter where the deburring & beveling occurs. Cutting depth is adjustable via an adjustable table, and cutter speed is adjustable with a variable speed knob. For traction on the workbench, the Model T10091 is equipped with non-slip rubber feet.

Two other cutters are available for greater deburring & beveling options.
Identification

Figure 1. Identification.
# MACHINE DATA SHEET

**MODEL T10091**

**DEBURRING AND BEVELING MACHINE**

## Product Dimensions:
- **Weight:** 37 lbs.
- **Depth/Width/Height:** 11" x 10" x 7"
- **Foot Print (Depth/Width):** 9½" x 10"

## Shipping Dimensions:
- **Type:** Cardboard
- **Content:** Machine
- **Weight:** 38 lbs.
- **Length/Width/Height:** 14" x 14" x 10"

## Electrical:
- **Switch:** Variable Speed Dial
- **Switch Voltage:** 110V
- **Cord Length:** 5 ft.
- **Cord Gauge:** 18 gauge
- **Minimum Circuit Size:** 15 amp
- **Plug Included:** Yes
- **Plug Type:** 5-15

## Motor:
- **Type:** Universal Brush Type
- **Horsepower:** ½ HP
- **Voltage:** 110V
- **Phase:** Single
- **Amps:** 1.3A
- **Speed:** Variable from 0-4300 RPM
- **Cycle:** Direct Shaft Drive
- **Bears:** Shielded and Permanently Sealed

## Main Specifications:

### Operation Information
- **Bevel Angle:** 45 Degrees
- **Chamfer Size:** 0-5mm
- **Table Adjustment:** Hinged with Thumb Knobs
- **Cutter Shank Size:** 20 mm

### Construction
- **Body Construction:** Cast Iron
- **Paint:** Powder Coated
- **Country Of Origin:** China
- **Warranty:** 1 Year
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.
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

Safety Instructions for Deburring & Beveling Machines

1. CUTTER CONDITION. To prevent workpiece grab and vibration, do not operate with a dull, cracked or badly worn cutter. Inspect cutter blades for cracks or damage before each use.

2. HAND PLACEMENT. Never position fingers where they could be grabbed by the cutter.

3. ATTENTION TO WORK AREA. Never leave this machine running and unattended. Pay attention to the actions of others in the area to avoid unintended accidents.

4. WORKPIECE TYPE. Never attempt to deburr or bevel a small finger-held workpiece; the end of a bolt, rod, cable, pin; or any other item that may be grabbed by the cutter and draw your fingers into the blades.

5. MAINTENANCE/SERVICE. All inspections, adjustments, and maintenance are to be done with the power OFF and the plug pulled from the outlet. Wait for all moving parts to come to a complete stop.

6. LOSS OF STABILITY. Do not allow the machine table to solely support heavy beams or large plates. Otherwise, you could lose control of the workpiece and be injured. Always support long or heavy beams with infeed and outfeed extension tables, or with the help of an assistant.

7. ENTANGLEMENT HAZARDS. Do not operate this machine without the chip shield or chip chute in place. Loose clothing, jewelry, long hair and work gloves can be drawn into the cutter.

8. FIRE HAZARD. To avoid chip fire, use EXTREME CAUTION if cutting magnesium and clear away all combustible materials.

9. CUTTER REPLACEMENT. When replacing the cutter, disconnect the machine from power, wear gloves to protect hands and safety glasses to protect eyes.

WARNING

No list of safety guidelines can be complete. Every shop environment is different. Like all machines there is danger associated with the Model T10091. 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.
SECTION 2: CIRCUIT REQUIREMENTS

110V Operation

⚠️ WARNING
Serious personal injury could occur if you connect the machine to power before completing the setup process. DO NOT connect the machine to the power until instructed later in this manual.

⚠️ WARNING
Electrocution or fire could result if machine is not grounded and installed in compliance with electrical codes. Compliance MUST be verified by a qualified electrician!

Full Load Amperage Draw
This machine draws the following amps under maximum load:

Amp Draw............................................. 1.3 Amps

Power Supply Circuit Requirements
You MUST connect your machine to a grounded circuit that is rated for the amperage given below. Never replace a circuit breaker on an existing circuit with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, consult a qualified electrician.

Minimum Circuit Size............................. 15 Amps

Power Connection Device
The Model T10091 comes with a 5-15 plug, similar to Figure 2, to connect the machine to power.

Figure 2. Typical 5-15 plug and receptacle.

⚠️ CAUTION
This machine MUST have a ground prong in the plug to help ensure that it is grounded. DO NOT remove ground prong from plug to fit into a two-pronged outlet! If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician.

Extension Cords
We do not recommend using extension cords, but if you find it absolutely necessary:

- Use at least a 14 gauge cord that does not exceed 50 feet in length!
- The extension cord must have a ground wire and plug pin.
- A qualified electrician MUST size cords over 50 feet long to prevent motor damage.
SECTION 3: SETUP

⚠️ WARNING
This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine!

⚠️ WARNING
Wear safety glasses during the entire setup process!

Needed for Setup

The following are needed to complete the setup process, but are not included with your machine.

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rags and Mineral Spirits..........</td>
<td>As needed</td>
</tr>
<tr>
<td>• Light Machine Oil ................</td>
<td>As needed</td>
</tr>
<tr>
<td>• Safety Glasses ...................</td>
<td>1 Pr.</td>
</tr>
</tbody>
</table>

Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover the machine is damaged, please immediately call Customer Service at (570) 546-9663 for advice.

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

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

Inventory

<table>
<thead>
<tr>
<th>Item: (Figure 3)</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Beveling Machine</td>
<td>1</td>
</tr>
<tr>
<td>B. Hex Wrench 4mm</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 3. Inventory.
Clean Up

The unpainted surfaces are coated with a waxy oil to prevent corrosion during shipment. Remove this protective coating with a solvent cleaner or degreaser, such as shown in Figure 4. For thorough cleaning, some parts must be removed. **For optimum performance, clean all moving parts or sliding contact surfaces.** Avoid chlorine-based solvents, such as acetone or brake parts cleaner that may damage painted surfaces. Always follow the manufacturer's instructions when using any type of cleaning product.

⚠️ WARNING
Gasoline and petroleum products have low flash points and can explode or cause fire if used to clean machinery. **DO NOT** use these products to clean the machinery.

⚠️ CAUTION
Many cleaning solvents are toxic if inhaled. Minimize your risk by only using these products in a well ventilated area.

G2544—Solvent Cleaner & Degreaser
H9692—Orange Power Degreaser
Great products for removing shipping grease.

Call 1-800-523-4777 To Order

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 both the machine and workpiece.

**Placement Location**
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 5 for the minimum working clearances.

![Figure 5. Minimum working clearances.](image)

⚠️ CAUTION
Children and visitors may be seriously injured if unsupervised around this machine. Lock entrances to the shop or disable start switch or power connection to prevent unsupervised use.

Figure 4. Cleaner/degreasers available from Grizzly.
Test Run

The test run consists of verifying the following: 1) The motor powers up and runs correctly, and 2) the speed dial controls the cutter RPM.

If, during the test run, you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review Troubleshooting on Page 17.

If you still cannot remedy a problem, contact our Tech Support at (570) 546-9663 for assistance.

To test run the machine:

1. Make sure you have read the safety instructions at the beginning of the manual and that the machine is set up properly.

2. Make sure all tools and objects used during setup are cleared away from the machine.

3. Turn the speed dial all the way to the left until it stops.

4. Connect the machine to the power source.

5. Verify that the machine is operating correctly by turning the speed dial to the right until you hear the switch click and the motor begins to turn.

   —When operating correctly, the machine runs smoothly with little or no vibration or rubbing noises.

   —Investigate and correct strange or unusual noises or vibrations before operating the machine further. Always disconnect the machine from power when investigating or correcting potential problems.

6. Rotate the dial from fast to slow speeds a few times to verify that the speed control is operational.

7. Turn the machine OFF when the test is complete.
SECTION 4: OPERATIONS

WARNING
Handling or dropping sheet metal can lead to lacerations or amputation. Using this machine without wearing safety glasses can lead to eye injury. Wear safety glasses and heavy leather gloves and boots when feeding metal into this machine.

WARNING
Loose hair and clothing could get caught in machinery and cause serious personal injury. Keep loose clothing and long hair away from moving machinery.

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.

Changing Cutter

Note: To meet other cutting needs, order the optional T20989 9-tooth and the T20991 36-tooth carbide cutters through Grizzly.com. For a replacement 18-tooth cutter, order the T20990.

Tools Needed: Qty
Hex Wrench 4mm ............................................. 1 Ea.

To replace the cutter:

1. DISCONNECT MACHINE FROM POWER!

2. Un-thread the table height screw and lift the table out of the way (Figure 6).

3. Put on leather gloves. Use the 4mm hex wrench to loosen the set screw on the collet and remove the cutter.

4. Oil the shank of the new cutter, align the flat in the shank with the set screw, and insert the shank into the collet.

5. Snug the set screw, lower the table back into position, and thread the height screw into the table to hold the table at your cutting depth.

6. Re-adjust the table stop if required.

Figure 6. Removing cutter.
Deburring & Beveling

After reading all safety instructions and taking the appropriate measures, follow the basic outline below to perform safe and efficient deburring & beveling. Do not attempt to de-burr or bevel a steel workpiece where a weld will come in contact with the cutter, or the cutter will be damaged. You must still remove most welds with a grinder.

To de-burr or bevel the edge of a workpiece:

1. Adjust the table stop and the table height to achieve your required depth of cut.
2. Put on your safety glasses and gloves.
3. Turn the dial to start the machine, and adjust the cutter RPM to the desired speed for the type of finish that you want.
4. In a careful and controlled manner, and using the table as a guide, feed the workpiece into the cutter in the direction of work flow as indicated by the workflow arrow.

Cutting Tips

- Observe the chip characteristics and make the required adjustments to feed rate, cutter RPM, or depth of cut to maximize cutter life and your workpiece results. See Figure 7 for the chip inspection chart.
- If the cutter becomes dull in a certain band, loosen the cutter and reposition it in or out of the collet to expose a new cutting profile.
- Use even pressure while cutting. Heavy or irregular pressure can lead to poor cuts and damage the cutter.
- When deburring or beveling long or heavy workpieces, be sure to support the workpiece at both ends with stands or an assistant's help. Do not allow the machine table to solely support heavy beams or large plates.

Chip Inspection Chart

<table>
<thead>
<tr>
<th>Chip Appearance</th>
<th>Chip Description</th>
<th>Chip Color</th>
<th>Feed Rate</th>
<th>Cutter RPM</th>
<th>Depth of Cut</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Chip Image 1]</td>
<td>Medium &amp; Curled</td>
<td>Silver</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>![Chip Image 2]</td>
<td>Cracked, Hard, Thick &amp; Short</td>
<td>Brown or Blue</td>
<td>Decrease or Increase</td>
<td>Decrease</td>
<td></td>
</tr>
<tr>
<td>![Chip Image 3]</td>
<td>Hard, Strong &amp; Thick</td>
<td>Brown or Blue</td>
<td>Decrease or Increase</td>
<td>Decrease</td>
<td></td>
</tr>
<tr>
<td>![Chip Image 4]</td>
<td>Hard, Strong &amp; Thick</td>
<td>Silver or Light Brown</td>
<td>Decrease Slightly or Increase Slightly</td>
<td>Decrease Slightly</td>
<td></td>
</tr>
<tr>
<td>![Chip Image 5]</td>
<td>Powdery</td>
<td>Silver</td>
<td>Increase or Decrease or Increase</td>
<td>Increase</td>
<td></td>
</tr>
</tbody>
</table>

Figure 7. Chip inspection chart.
SECTION 5: ACCESSORIES

G5618—Deburring Tool w/2 Blades
G5619—Extra Aluminum Blades
G5620—Extra Brass and Cast Iron Blade

The quickest tool for smoothing freshly machined metal edges in bores or hard-to-reach areas. Comes with two blades, one for steel and aluminum and one for brass and cast iron.

Figure 8. G5618 Deburring tool.

G8983—Tilting Roller Stand
Adjusts from 26" to 44", 0°-45°. 150 lb. capacity.
G8984—Single Roller Stand
Adjusts from 26 5⁄8" to 45". 250 lb. capacity.
G8985—5 Roller Stand
Adjusts from 26" to 44¾". 250 lb. capacity. These super heavy-duty roller stands feature convenient hand knobs for fast height adjustment.

Figure 9. Shop Fox® Roller Stands.

H8003—Hydraulic Lifting Table - 450 lbs.
This rugged and affordable lifting table allows you to move and lift metal workpieces right up to the height of the bevelling machine with minimal effort. Features 39¾" x 19¾" table, 39½" maximum table height, 8" fixed and swivel casters with brakes.

Figure 10. Model H8003 Hydraulic Lifting Table.

H3153—Pigskin Palm Gloves
H3154—Lined Pigskin Palm Gloves
Durable pigskin leather is combined with cloth backs for true comfort. One size fits many.

Figure 11. Work gloves.

Call 1-800-523-4777 To Order
H5614—Wire Gauge US Standard
Calibrated for sheet metal sized from 0 to 30 gauge. The front is marked with gauge sizes, the back is marked with actual inch measurements.

![Figure 12. H5614 Wire Gauge.](image)

H6160—Super Nibbler.
The Super Nibbler is just the ticket for cutting sheet metal up to 3/16" thick. Extremely narrow headed design allows cuts in hard to reach areas, yet still features a safety guard to prevent flying splinters. 10 1/4" overall.

![Figure 14. H6160 Super nibbler.](image)

H5923—Carbide Scribe
Carbide tipped for marking or etching metal and glass. Ideal for machinists, metalworkers and tinsmiths. Hex shaped with pocket clip. Measures 6" long.

![Figure 13. H5923 Carbide Scribe.](image)

H5958—Sheet Metal Pliers
For bending and forming sheet metal. The jaws are 3 1/2" wide. Rubber grips. Overall length is 8". Great for HVAC installers.

![Figure 15. H5958 Sheet metal pliers.](image)

Call 1-800-523-4777 To Order
SECTION 6: MAINTENANCE

WARNING
Always disconnect power to the machine before performing maintenance. Failure to do this may result in serious personal injury.

Schedule

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

Daily Check:
- Loose mounting bolts/screws/nuts.
- Damaged or worn cutter.
- Any other unsafe condition.
- General cleanup to prevent buildup of metal shavings.

Lubrication

Periodically use an oil can filled with any quality machine or motor oil to lubricate the table hinge pin, arbor, and table height screw threads (Figure 16).

Cleaning

Cleaning the Model T10091 is relatively easy. Vacuum excess metal chips away from around the cutter and motor spindle. Once every few months, vacuum any dust out of the motor fan area (Figure 17).

Unpainted Cast Iron

Keep the unpainted cast iron table surface (Figure 18) rust-free with regular applications of products like G96® Gun Treatment, SLIPIT®, or Boeshield® T-9, all available through the Grizzly catalog or website.
# SECTION 7: SERVICE

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

## Troubleshooting

### Motor & Electrical

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine does not start.</td>
<td>1. Power supply switched off/has incorrect voltage. 2. Blown fuse/tripped circuit breaker at main panel. 3. Break or short in wiring; or loose connections. 4. Plug or receptacle is corroded or mis-wired. 5. Circuit board fuse has blown. 6. Motor brushes worn/at fault. 7. Motor speed switch at fault. 8. Circuit board at fault. 9. Motor speed rheostat at fault. 10. Motor at fault.</td>
<td>1. Switch power supply on/verify voltage. 2. Correct the cause of overload, then reset/replace fuse or breaker. 3. Trace/replace broken or corroded wires; fix loose connections. 4. Clean/retighten contacts; correct the wiring. 5. Correct the cause of overload; replace blown fuse on circuit board. 6. Replace brush set. 7. Replace speed switch. 8. Replace circuit board. 9. Test/replace if at fault. 10. Test for shorted windings or bad bearings; repair or replace.</td>
</tr>
<tr>
<td>Machine has excessive vibration or noise.</td>
<td>1. Motor fan rubbing on fan cover. 2. Machine incorrectly mounted to bench. 3. Motor brushes worn/at fault. 4. Motor bearings worn or damaged. 5. Spindle bearings at fault.</td>
<td>1. Fix/replace fan cover; replace loose or damaged fan. 2. Level/shim base; tighten/adjust mounting hardware or feet. 3. Replace brush set. 4. Replace motor bearings or replace motor. 5. Test by manually rotating spindle, readjust bearing preload if possible, replace bearings.</td>
</tr>
<tr>
<td>Machine stalls or slows when operating.</td>
<td>1. Too much pressure when feeding workpiece. 2. Workpiece material not suitable for machine. 3. Motor overheated. 4. Motor brushes at fault. 5. Circuit board at fault. 6. Motor speed rheostat at fault.</td>
<td>1. Reduce pressure when feeding workpiece. 2. Only cut applicable metals with the correct grade and size of cutter. 3. Let cool, clean motor, and reduce workload. 4. Remove/replace brushes. 5. Inspect circuitry for arcing or burns. Replace if at fault. 6. Test and replace if at fault.</td>
</tr>
</tbody>
</table>
Motor Brush Replacement

During the life of your machine, you may find it necessary to replace the motor brushes if the motor becomes noisy or loses power.

Tools Needed

<table>
<thead>
<tr>
<th>Tool</th>
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<tbody>
<tr>
<td>Safety Glasses</td>
<td>1</td>
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<tr>
<td>Phillips Screwdriver #2</td>
<td>1</td>
</tr>
<tr>
<td>Flat Screwdriver #2</td>
<td>1</td>
</tr>
<tr>
<td>Open-end Wrench 3/8&quot;</td>
<td>1</td>
</tr>
<tr>
<td>Shop Vacuum</td>
<td>1</td>
</tr>
</tbody>
</table>

To replace the brushes:

1. DISCONNECT MACHINE FROM POWER!

2. Put on safety glasses.

3. Unthread the table height adjustment screw and raise the table out of the way.

4. Put on gloves and remove the cutter.

5. Remove the two Phillips head screws that hold the chip chute, and remove the chute (Figure 19).

6. Carefully turn the machine upside down for access to the motor cover plates.

7. Remove the four Phillips screws (Figure 20), and swing the motor cover out of the way.

8. Being careful that the spring does not eject when the brush cap is removed (Figure 21), un-thread the cap and remove the brush and spring.

9. Vacuum out the brush bore to remove carbon dust. Do not use compressed air to blow out dust as the pressure can force dust into bearings or bushings, causing premature wear.

10. Replace the brush assembly and reinstall the cap.
11. Remove the four motor retaining bolts (Figure 22).

![Figure 22. Motor plate.](image)

12. Carefully rotate the motor assembly to expose the secondary brush cap (Figure 23).

![Figure 23. Secondary brush location.](image)

13. Being careful that the spring does not eject when the brush cap is removed, un-thread the cap and remove the brush and spring.

14. Vacuum out any carbon dust from the brush bore.

15. Replace the brush assembly and reinstall the cap.

16. Reassemble the machine and complete the Test Run on Page 11.
These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Study this section carefully. If there are differences between your machine and what is shown in this section, call Technical Support at (570) 546-9663 for assistance BEFORE making any changes to the wiring on your machine.

**WARNING**

**Wiring Safety Instructions**

1. **SHOCK HAZARD.** Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

2. **QUALIFIED ELECTRICIAN.** Due to the inherent hazards of electricity, only a qualified electrician should perform wiring tasks on this machine. If you are not a qualified electrician, get help from one before attempting any kind of wiring job.

3. **WIRE CONNECTIONS.** All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

4. **CIRCUIT REQUIREMENTS.** You MUST follow the requirements on **Page 8** when connecting your machine to a power source.

5. **MODIFICATIONS.** Using aftermarket parts or modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire.

6. **MOTOR WIRING.** The motor wiring shown in these diagrams is current at the time of printing, but it may not match your machine. Always use the wiring diagram inside the motor junction box.

7. **WIRE/COMPONENT DAMAGE.** Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components before completing the task.

8. **EXPERIENCING DIFFICULTIES.** If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (570) 546-9663.

---

**NOTICE**

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

**COLOR KEY**

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Wiring Diagram

Figure 24. Circuit board.

Figure 26. Speed switch.

Figure 25. Universal brush type motor.

110 VAC

Circuit Board

Neutral

Ground

Hot

Universal Brush Type Motor

10A Fuse

Ground

Hot

Neutral

Machine Cabinet

Speed Switch

A C

L IN N
### SECTION 9: PARTS

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<td>FUSE 10A</td>
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WARRANTY CARD

Name__________________________________________________________

Street_____________________________________________________________________

City __________________________ State ________________ Zip ______________

Phone # __________________________ Email __________________________ Invoice # __________

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

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:______________________________________________________________________________
    ____________________________________________________________________________________________
    ____________________________________________________________________________________________
    ____________________________________________________________________________________________
    ____________________________________________________________________________________________
    ____________________________________________________________________________________________
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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