18" PROFESSIONAL BANDSAW

MODEL G4186Z

INSTRUCTION MANUAL

JUNE, 2002 PRINTED IN TAIWAN

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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SECTION 1: SAFETY

⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating This Equipment

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are 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 equipment.**

⚠WARNING

Safety Instructions For Power Tools

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES**. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning on.
3. **KEEP WORK AREA CLEAN**. Cluttered areas and benches invite accidents.
4. **DO NOT USE IN DANGEROUS ENVIRONMENT**. Do not use power tools in damp or wet locations, or where any flammable or noxious fumes may exist. Keep work area well lighted.
5. **KEEP CHILDREN AND VISITORS AWAY**. All children and visitors should be kept a safe distance from work area.
6. **MAKE WORKSHOP CHILD PROOF** with padlocks, master switches, or by removing starter keys.
7. **DO NOT FORCE TOOL**. It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Do not force tool or attachment to do a job for which it was not designed.

⚠WARNING
Safety Instructions For Power Tools

9. **USE PROPER EXTENSION CORD**. Make sure your extension cord is in good condition. Conductor size should be in accordance with the chart below. The amperage rating should be listed on the motor or tool nameplate. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Your extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords if they become damaged.

Minimum Gauge for Extension Cords

	LENGTH		
AMP RATING	25ft	50ft	100ft
0-6	18	16	16
7-10	18	16	14
11-12	16	16	14
13-16	14	12	12
17-20	12	12	10
21-30	10	10	No

10. **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.

11. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

12. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

13. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

14. **DO NOT OVERREACH.** Keep proper footing and balance at all times.

15. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** On machines with magnetic contact starting switches there is a risk of starting if the machine is bumped or jarred. Always disconnect from power source before adjusting or servicing. Make sure switch is in OFF position before reconnecting.

16. **MANY WOODWORKING TOOLS CAN "KICKBACK" THE WORKPIECE** toward the operator if not handled properly. Know what conditions can create "kickback" and know how to avoid them. Read the manual accompanying the machine thoroughly.

17. **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.

18. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Do not leave tool until it comes to a complete stop.

19. **NEVER OPERATE A MACHINE WHEN TIRED, OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Full mental alertness is required at all times when running a machine.

20. **NEVER ALLOW UNSUPERVISED OR UNTRAINED PERSONNEL TO OPERATE THE MACHINE.** Make sure any instructions you give in regards to the operation of the machine are approved, correct, safe, and clearly understood.

⚠WARNING

Additional Safety Instructions For Bandsaws

1. **DO NOT OPERATE WITH DULL OR BADLY WORN BLADES.** Dull blades require more effort to use and are difficult to control. Inspect blades before each use.

2. **NEVER POSITION FINGERS OR THUMBS IN LINE WITH THE CUT.** Serious personal injury could occur.

3. **DO NOT OPERATE THIS BANDSAW WITHOUT WHEEL, PULLEY, AND BLADE GUARDS IN PLACE.**

4. **WHEN REPLACING BLADES,** make sure teeth face down towards the table. The force of the cut is always down. Make sure the blade is properly tensioned.

5. **CUTS SHOULD ALWAYS BE FULLY SUPPORTED** by the table or some type of support fixture. Always support round stock in a V-block.

6. **DO NOT BACK WORKPIECE AWAY** from the blade while the saw is running. Plan your cuts so you always cut out of the wood. if you need to back the work out, turn the bandsaw off and wait for the blade to come to a complete stop. Do not twist or put excessive stress on the blade while backing work away.

7. **ALWAYS FEED STOCK EVENLY AND SMOOTHLY.** Do not force or twist blade while cutting, especially when sawing small radii.

8. **THIS MACHINE IS NOT DESIGNED TO CUT METAL** or other material except wood.

9. **BLADE SHOULD BE RUNNING AT FULL SPEED** before beginning a cut.

10. **DO NOT MANUALLY STOP OR SLOW BLADE** after turning the saw off. Allow it to come to a complete stop before you leave it unattended.

11. **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.

12. **HABITS – GOOD AND BAD – ARE HARD TO BREAK.** Develop good habits in your shop, and safety will become second-nature to you.

13. **IF AT ANY TIME YOU ARE EXPERIENCING DIFFICULTIES PERFORMING THE INTENDED OPERATION,** stop using the machine! Then contact our service department or ask a qualified expert how the operation should be performed.

⚠WARNING

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

SECTION 2: CIRCUIT REQUIREMENTS

220V Operation

The motor supplied with the Model G4186Z comes prewired for 220V. Refer to the wiring diagram supplied at the back of this manual for more specific information about wiring connections.

Under normal use, the motor draws approximately 12 amps at 220V. We recommend a 15 amp circuit breaker for 220V operation. This should be satisfactory for normal use while providing enough protection for the circuits. Also, be sure the wires in your circuit are rated for 15 amp service.

This machine does not come supplied with a plug, therefore a suitable 220V plug must be wired in. When operating at 220V, we recommend using a NEMA-style L6-15 plug and outlet. **See Figure 1A**. You may also "hard-wire" the machine directly to your panel, provided you place a disconnect switch near the machine. Check the electrical codes in your area for specifics on wiring requirements.

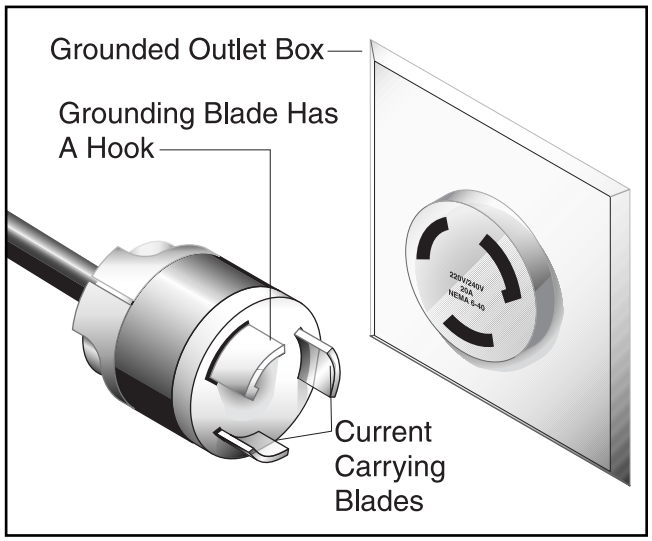


Figure 1A. Typical 220V 3-prong plug and outlet.

110V Operation

The G4186Z Bandsaw motor can be wired to operate at 110V. **See Figure 1B.** Under normal 110V use, the motor draws approximately 24 amps. We recommend a 30 amp circuit breaker, including wires in the circuit rated to handle 30 amps.

We also recommend that the circuit you use should be dedicated, (i.e., the G4186Z should provide the only draw from that circuit). If frequent circuit failures occur when using the bandsaw, contact our Service Department or your local electrical contractor.

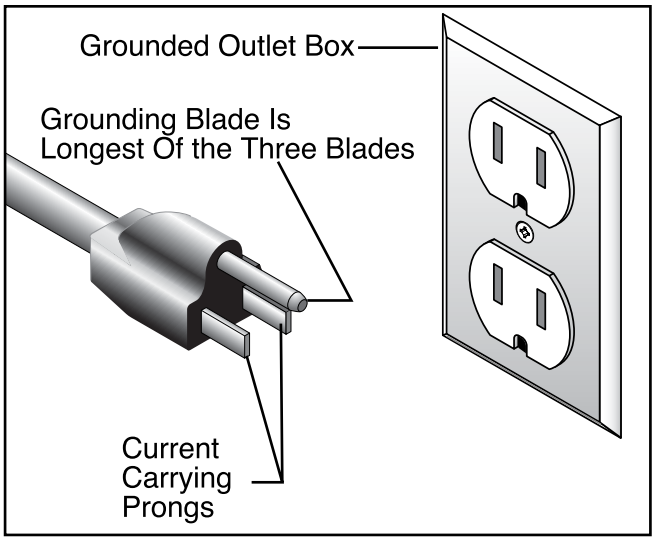
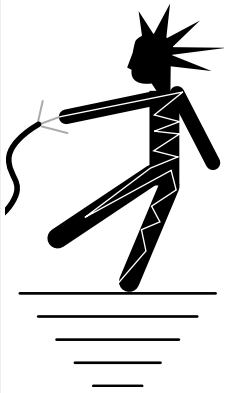


Figure 1B. Typical 110V 3-prong plug and outlet.

Grounding

In the event of an electrical short, grounding reduces the risk of electric shock by providing electric current a path of least resistance. This tool is equipped with a power cord having an equipment-grounding conductor. **See Figure 1.** The outlet must be properly installed and grounded in accordance with all local codes and ordinances.



⚠WARNING

This equipment must be grounded. Verify that any existing electrical outlet and circuit you intend to plug into is actually grounded. Under no circumstances should the grounding pin from any three-pronged plug be removed. Serious injury may occur.

Extension Cords

We do not recommend the use of extension cords on 220V equipment. It is much better to arrange the placement of your equipment and the installed wiring to eliminate the need for extension cords. Should it be necessary to use an extension, make sure the cord is rated Hard Service (Grade S) or better. Refer to the chart in **Section 1: Safety Instructions** to determine the minimum gauge for the extension cord. The extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords when they become worn or damaged.

Wiring Diagram

Your Model G4186Z Bandsaw comes pre-wired for 220 volt operation. A wiring diagram is provided at the back of this manual should it be necessary to repair or revise the wiring. Always utilize a qualified electrician when doing any electrical work on this equipment.

⚠CAUTION

We have covered some basic electrical requirements for the safe operation of your bandsaw. These requirements are not necessarily comprehensive. You must be sure that your particular electrical configuration complies with local and state codes. Ensure compliance by checking with your local municipality or a licensed electrician.

SECTION 3: INTRODUCTION

Commentary

We are pleased to offer the Model G4186Z 18" Bandsaw. The Model G4186Z is part of the Grizzly family of fine woodworking machinery. When used according to the guidelines set forth in this manual, you can expect years of trouble-free, enjoyable operation and proof of Grizzly's commitment to customer satisfaction.

The Model G4186Z is a woodcutting bandsaw with a 17¼" clearance left of the blade and a maximum cutting height of 9⅜". It also features a 2 H.P. dual voltage motor, cast iron wheels, double-locking aluminum fence, tilting table, rack and pinion guide adjustment and handwheel tensioning. It features an all steel construction frame and cast iron table. Grizzly also offers a complete line of blade replacements as well as accessories for your saw. Consult the current Grizzly catalog for prices and ordering information.

We are also pleased to provide this instructional manual with the Model G4186Z 18" Bandsaw. This instruction manual was written to guide you through assembly, review safety considerations, and cover general operating procedures. It represents our effort to produce the best documentation possible. If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
C/O Technical Documentation
P.O. Box 2069
Bellingham, WA 98227-2069

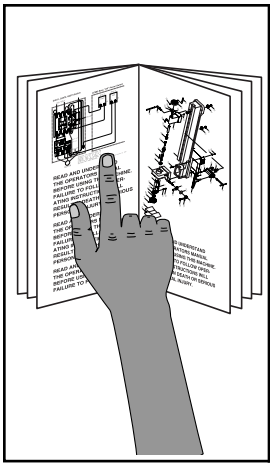
Most important, we stand behind our machines. If you have any service questions or parts requests, please call or write us at the location listed below.

Grizzly Industrial, Inc.
2406 Reach Road
Williamsport, PA 17701
Phone: (570) 546-9663
Fax: (800) 438-5901
E-Mail: grizzlytech@grizzly.com
Web Site: http://www.grizzly.com

Address after fall, 2001:

Grizzly Industrial, Inc
1203 Lycoming Road
Pennsdale, PA 17756

The specifications, drawings, and photographs illustrated in this manual represent the Model G4186Z as supplied when the manual was prepared. However, owing 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, we urge you to insert the new information with the old and keep it for reference.



⚠WARNING

Read the manual before assembly and operation. Become familiar with the machine and its operation before beginning any work. Serious personal injury may result if safety or operational information is not understood or followed.

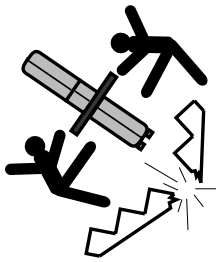
Unpacking

The bandsaw is shipped from the factory in a carefully packed crate. If you find the machine to be damaged after you have signed for delivery, and the truck and driver are already gone, you will need to file a freight claim with the carrier. Save the containers and all packing materials for inspection by the carrier or their agent. Without the packing materials, filing a freight claim can be difficult. If you need advice regarding this situation, please call us immediately.

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

⚠WARNING

The model G4186Z is a heavy machine (345 lbs. shipping weight). DO NOT over-exert yourself while unpacking or moving your machine – get assistance.



⚠WARNING

If moving this machine up or down stairs, the machine must be dismantled and moved in smaller pieces. Make sure the stairs are capable of supporting the combined weight of the machine parts and the people moving them.

⚠CAUTION

Some die-cut metal parts may have sharp edges ("flashing") on them after they are formed. Please examine the edges of all die-cut metal parts before handling them. Failure to do so could result in injury.

Parts Inventory

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

- Bandsaw Unit
- Table
- Table Bracket
- Fence
- Fence Rails
- Miter Gauge

Hardware Bag	Qty
Cap Screws ¼" - 20 x 1½"	4
Fence Spacers	4
Table Insert	1
Table Trunnion Knobs	2
Lock Washers ⅜"	2
Roll Pin 3 x 10mm	1
Allen® Wrench 3mm	1
Allen® Wrench 4mm	1
Allen® Wrench 5mm	1
Round Guide Block	6
Setscrew ¼"-20 x ¼"	6

In the event that any parts are missing, we will be happy to replace them. Contact our Customer Service number for assistance. If any non-proprietary parts such as nuts, bolts or washers are missing, we will be happy to replace these too, but for the sake of expediency, these items can be obtained at your local hardware store.

Clean Up

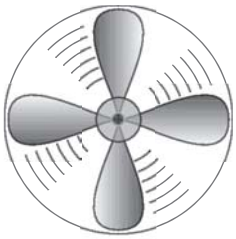
The unpainted surfaces are coated with a waxy oil to protect them from corrosion during shipment. Remove this protective coating with a solvent cleaner or citrus-based degreaser. Avoid chlorine-based solvents as they may damage painted surfaces should they come in contact. Always follow the usage instructions on the product you choose for clean up.

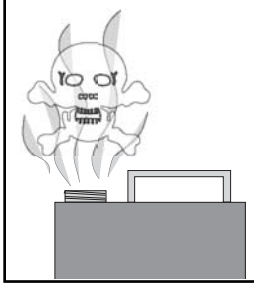
⚠WARNING

Do not use gasoline or other petroleum-based solvents to clean with. They have low flash points which make them extremely flammable. A risk of explosion and burning exists if these products are used. Serious personal injury may occur.

⚠WARNING

Do not smoke while using solvents. A risk of explosion or fire exists and may result in serious personal injury.





⚠CAUTION

Many of the solvents commonly used to clean machinery can be toxic when inhaled or ingested. Always work in well-ventilated areas far from potential ignition sources when dealing with solvents. Use care when disposing of waste rags and towels to be sure they do not create fire or environmental hazards.

Site Considerations

FLOOR LOAD

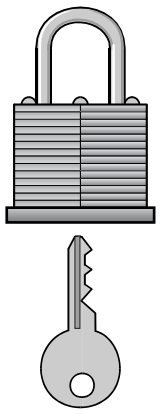
Your Model G4186Z Bandsaw represents a large weight load in a small footprint. Most commercial or residential shop floors should be sufficient to carry the weight of the machine. If you have any question about the floor structure being able to support the weight, contact your local city building inspector or a qualified civil engineer or contractor.

WORKING CLEARANCES

Working clearances can be thought of as the distances between machines and obstacles that allow safe operation of every machine without limitation. Consider existing and anticipated machine needs, size of material to be processed through each machine, and space for auxiliary stands and/or work tables. Also consider the relative position of each machine to one another for efficient material handling. Be sure to allow yourself sufficient room to safely run your machines in any foreseeable operation.

LIGHTING AND OUTLETS

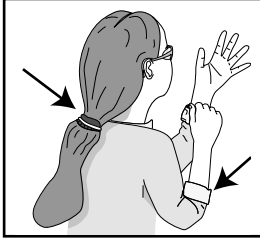
Lighting should be bright enough to eliminate shadow and prevent eye strain. Electrical circuits should be dedicated or large enough to handle combined motor amp loads. Outlets should be located near each machine so power or extension cords are not obstructing high-traffic areas.



⚠CAUTION

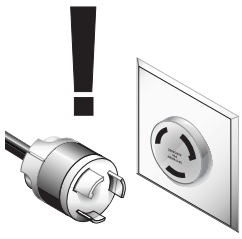
Make your shop "child safe." Ensure that your workplace is inaccessible to youngsters by closing and locking all entrances when you are away. Never allow visitors in your shop when assembling, adjusting or operating equipment.

SECTION 4: ASSEMBLY



⚠WARNING

Keep loose clothing out of the way of machinery and keep hair pulled back.



⚠WARNING

Disconnect power to the machine when performing any maintenance or assembly. Failure to do this may result in serious personal injury.

⚠WARNING

Wear safety glasses during the entire assembly process. Failure to comply may result in serious personal injury.

⚠CAUTION

Some metal parts may have sharp edges on them after they are formed. Please examine and file the edges of all metal parts before handling them. Failure to do so could result in injury.

Beginning Assembly

Most of your Model G4186Z Bandsaw has been assembled at the factory, but some parts must be assembled or installed after delivery. We have organized the assembly process into steps. Please follow along in the order presented here.

TOOLS REQUIRED: You will need an adjustable square, 12mm and 14mm open end wrenches and a Phillips® and regular screwdriver.

Table and Support Bracket

The bandsaw table comes with the table trunnions already attached. These trunnions mount to the trunnion support bracket which needs to be mounted to the bandsaw unit before the table can be installed. To attach the bandsaw table:

1. Remove the two trunnion support bracket mounting bolts from the bandsaw body. Note the two alignment holes shown in **Figure 2**.

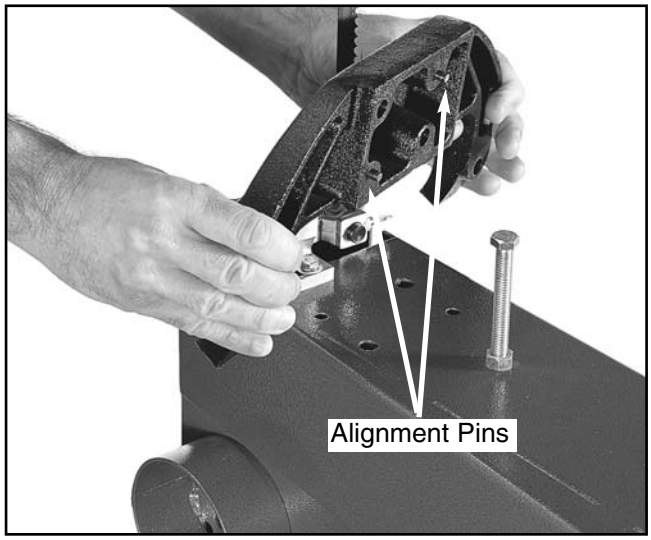


Figure 2. Alignment pins on bracket support.

2. Position the bracket over the alignment holes on the bandsaw body. Alignment pins are located on the bottom of the table support bracket. Secure the bracket with the two bolts. **See Figure 3.**

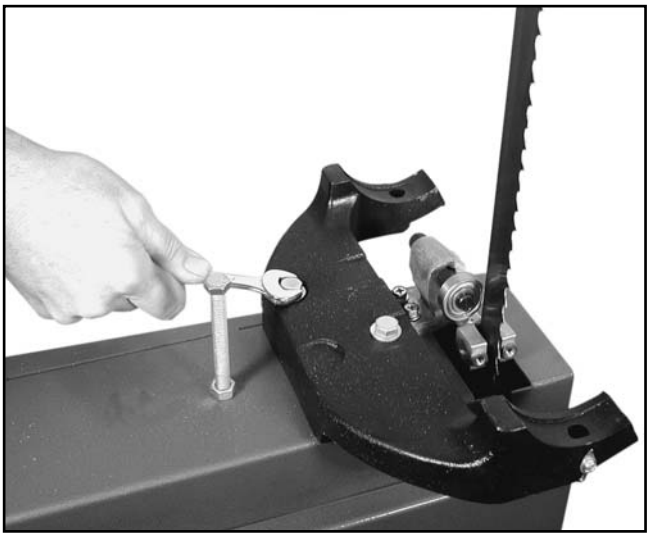


Figure 3. Trunnion support in correct position.

3. Before you place the table on the trunnion support, install the blade guides and thumbscrews that hold them in place. **See Figure 4.**

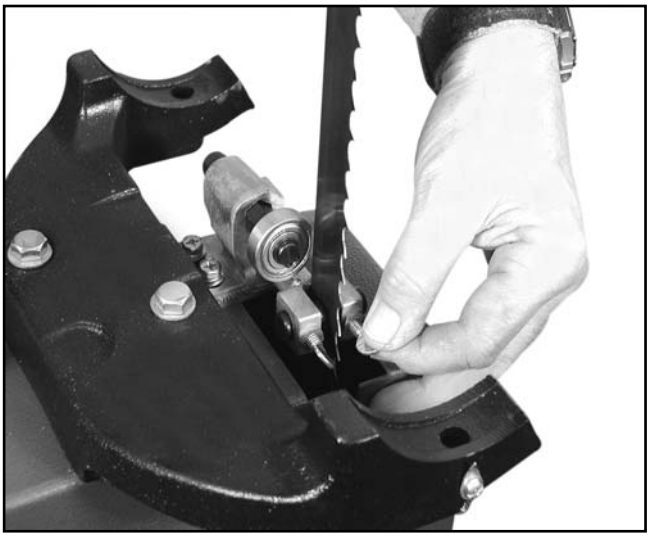


Figure 4. Installing blade guide assemblies.

4. Remove the tapered pin from the slot in the table edge.

5. Move the table past the blade through the table slot, rotate the table 90°, and set the table trunnions onto the bracket. Make sure the trunnion bolts drop through the support bracket. Remember to position the table so that the miter slot is to the right of the blade as you face the front of the bandsaw.

6. Secure the table to the support bracket by securing the two trunnion knobs (shown in **Figure 5**) onto the trunnion bolts.

7. Place the round table insert in the table top and replace the tapered pin so it fits snugly in the hole on the side of the table. Do not use excessive force.

⚠CAUTION

The tapered table pin should always be in position when operating the bandsaw. Operating without the pin can allow a step in the table top which can catch your workpiece during cutting. Serious personal injury may occur if this caution is ignored.

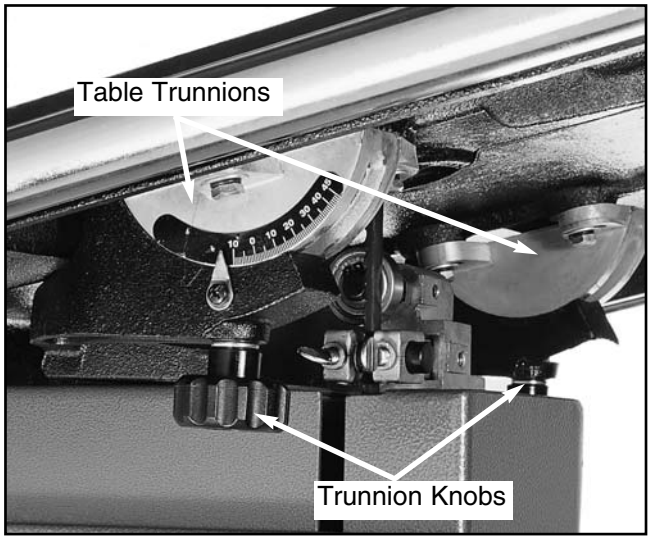


Figure 5. Table mounting components.

Rails and Fence

When installing the fence, notice that the front and back edges of the table have two threaded holes. These holes accept the round spacers and socket head cap screws that attach the fence rails to the table. **To install the rails and fence:**

1. Place the two spacers in the table, similar to **Figure 6.**

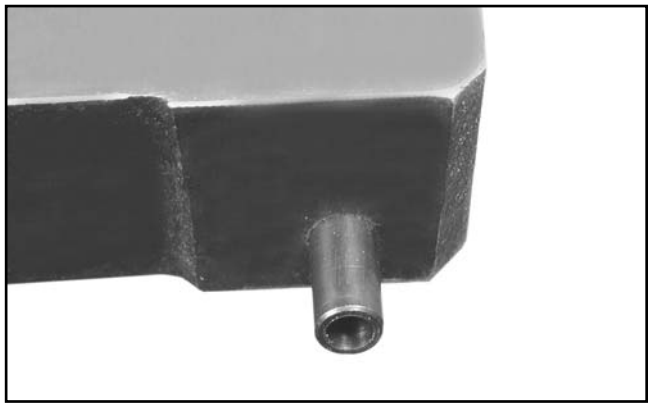


Figure 6. Spacer in table recess.

2. Slide one of the rails into the circular casting at the front of the fence.

3. Slide the cap screws through the rail and spacers, and tighten the cap screws as shown in **Figure 7**, so the rail is secured to the table. Be sure the fence rail is mounted so that it extends beyond the left edge of the table as shown in **Figure 8**.

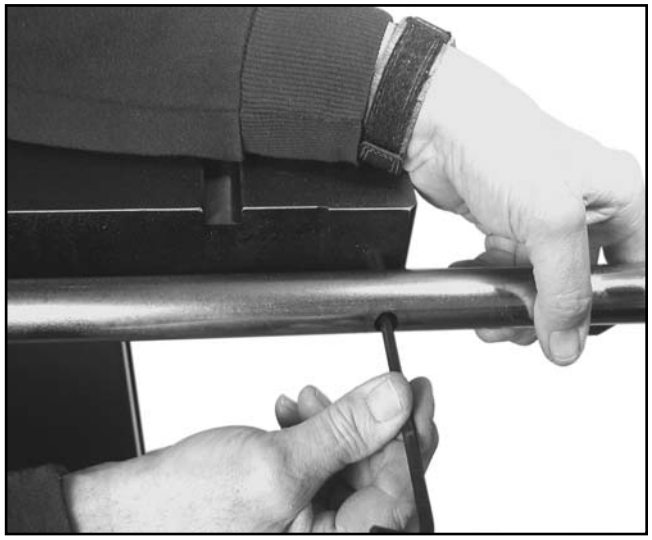


Figure 7. Securing the rail to the table.

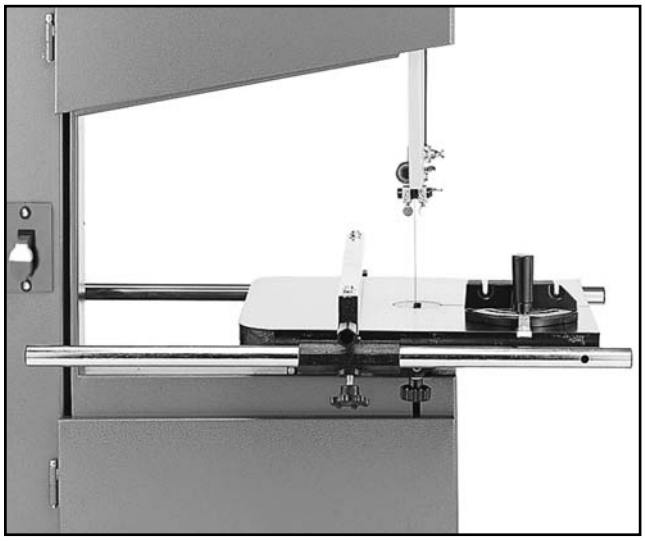


Figure 8. Rail and fence assembly.

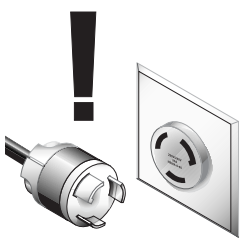
4. Slide the back rail into the fence rear lock and secure the rail to the back edge of the table with the cap screws and spacers provided.

5. Check to make sure that the fence moves smoothly along the fence rails.

See the **Adjustments Section** for more information on how to align the table and fence to the blade.

For quick fence removal and replacement:

The easiest way to remove the fence is to remove the cap screws from the rail and slide the rail through the fence. This procedure will prevent you from having to remove the blade and will avoid all the adjustments associated with tracking and tension when you install the blade again.



WARNING

Disconnect power to the machine when changing or adjusting blades. Failure to do this may result in serious personal injury.

Blades

A ⅝" blade is included with the bandsaw and is already installed on the machine. When removing or installing blades, make sure the power is disconnected and moving parts have come to a complete stop.

To remove the blade:

1. Back the upper and lower guide block assemblies, support bearings away from the blade, and raise the blade guard up and away from the table.

2. Release the blade tension by turning the tension handwheel counter-clockwise.

3. Remove the table insert and the tapered table pin.

4. Open the top and bottom wheel covers, and slide the blade guard off of the mounting screws.

5. Put on leather gloves to protect your hands. Pull the blade straight off the wheels, rotate 90° and feed through the table slot.

To install the blade:

1. With leather gloves protecting your hands, hold the blade in both hands so the blade teeth in your right hand are pointing down.

2. Feed the blade into the slot in the table. Turn the blade 90° and position the blade over the top and bottom wheels. **See Figure 9.** The teeth of the blade must be pointing down toward the table.

3. Apply tension to the blade by turning the tension control knob. Rotate the upper wheel by hand as tension is applied to allow the blade to center itself on the wheel. Adjust tracking if needed. See **Adjustment** section.

4. Readjust upper and lower blade guides and support bearings. See **Adjustment** section.

Figure 9. Fitting blade over upper wheel.

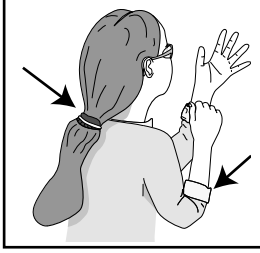
WARNING

This concludes the assembly process. Please DO NOT operate this saw until you have reviewed the Safety Information and have read the Adjustment and Operation Sections. Serious injury may occur.

WARNING

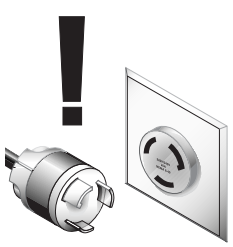
Like any machine of its type, the Model G4186Z has some inherent dangers, which, when used with a lack of care, can result in serious injury or fatality. Please do not attempt to use this machine without familiarizing yourself with the instructions for assembly, adjustment, and safe operation. Failure to do so could result in serious personal injury.

SECTION 5: ADJUSTMENTS



⚠WARNING

Keep loose clothing out of the way of machinery and keep hair pulled back.



⚠WARNING

Disconnect power to the machine when performing any adjustments or maintenance. Failure to do this may result in serious personal injury.

⚠WARNING

Wear safety glasses during the entire adjustment process. Failure to comply may result in serious personal injury.

Controls

⚠WARNING

Do not make adjustments while the bandsaw is running. Ensure that the switch is off, power is disconnected, and moving parts have stopped before making adjustments. Check adjustments while power is still disconnected by manually turning the bandsaw wheel by hand. Serious personal injury may occur if this warning is ignored.

General control and adjustment locations are shown in **Figures 10-12**.

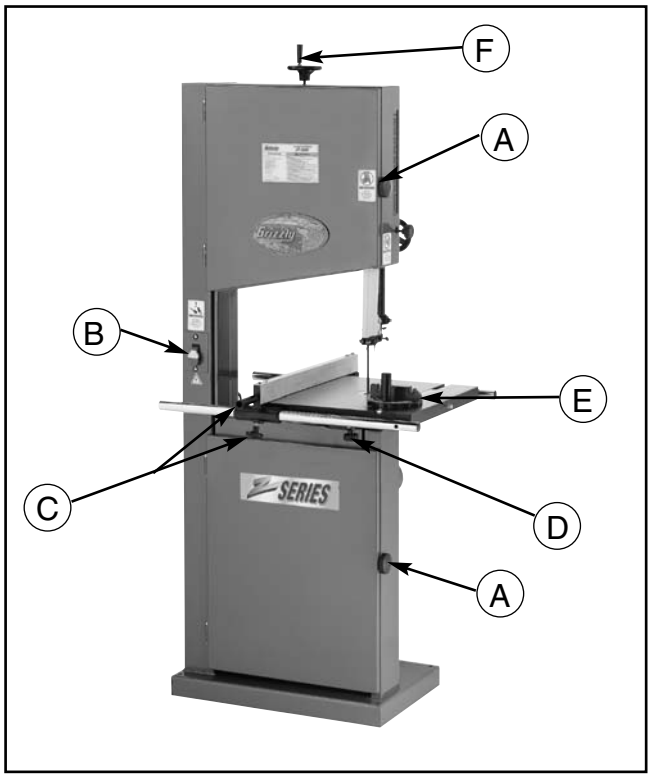


Figure 10. Controls from front of machine view.

A. These two knobs allow the wheel cover doors to be opened for access to the blade. These doors must never be opened while the machine is running.

B. This is the power ON/OFF switch.

C. This knob and handle lock the fence into position.

D. These are the trunnion lock knobs. These allow the table to be tilted 10˚ left and 45˚ right. Never attempt to loosen or tighten these while the machine is running.

E. The miter gauge slides in the milled groove in the table and can be set from 90˚ to 45˚ left and right. Use the miter gauge for crosscutting and miter-cutting.

F. This handwheel is used to control the blade tension. Turning the wheel clockwise increases the tension, while tuning counterclockwise decreases the tension.

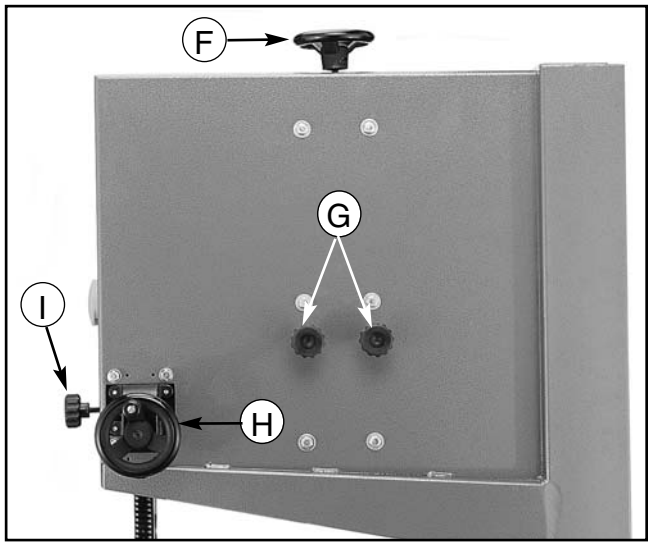


Figure 11. Controls from back of machine view.

G. These knobs control blade tracking. Note that the knobs have lock nuts to lock the tracking in place.

H. The upper guide can be easily adjusted using this handwheel. Adjust it to within ¼" of the workpiece for optimum blade support.

I. This knob locks the upper blade guide assembly in position. Do not operate the bandsaw without locking the guide post knob.

Figure 12. Lower wheel adjustment hub.

J. This hub controls the lower wheel movement. Each bolt on the hub moves that portion of the wheel in or out. For example, the top bolt controls the top of the wheel, the left bolt controls the left of the wheel and so forth.

Blade Tension

Proper blade tensioning is important for optimum bandsaw performance. **See Figure 11** for the location of the bandsaw tension controls.

Since a wide range of blades will work well in this saw, proper blade tension ultimately depends on the type and the size of blade you use. Thinner blades require less tension than wide blades. Too much tension will result in blade breakage. A properly tensioned blade will track the cutting line accurately and the cut will be smoother.

Proper blade tension can best be achieved by determining the amount of blade deflection:

1. Ensure that the power is off and the saw is unplugged. Raise the upper guide assembly all the way.

2. Press, with moderate pressure, on the face of the blade with your thumb. The blade should flex about 1/8".

3. Turn the tensioning knob at the top of the machine to change the amount of tension.

If the tension seems correct, make the other adjustments to the saw (making wheels coplanar, aligning guides, tracking, speed, table and fence) and test run the bandsaw. If the blade is not cutting properly, the tension may be incorrect and you will need to re-adjust the tension. Remember to reduce the blade tension when the saw will not be in use; this will help to prevent premature wear or breakage of the blade and/or rubber tires.

⚠CAUTION

The bandsaw blade is dangerously sharp. Use extreme caution when working near the saw blade. Failure to exercise care could result in severe injury.

Blade Tracking

Blade tracking involves positioning the blade on the wheels of the bandsaw. There are two methods of tracking: **Center Tracking** and **Coplanar Tracking**. Center tracking, the easiest, is simply adjusting the tilt of the upper wheel so the blade rides in the middle of the rubber tire. This adjustment works together with the slight crown on the tire to center the blade when the wheels spin.

To adjust the blade using center tracking:

1. Disconnect the bandsaw from the power source. Adjust the upper and lower guide blocks and the support bearings away from the blade.

2. Loosen the lock nuts on the tracking control knobs, and turn the knobs clockwise or counterclockwise while turning the upper wheel by hand. A slight amount of twist of the upper wheel can occur if these knobs are not adjusted evenly. This can result in tracking problems for smaller blades. When turning the wheel by hand, ensure that there are no sharp edges to cut your hand.

3. Turn the upper wheel and the tracking knobs until the blade is centered on the crown of the upper wheel tire. Turn the wheel at least three more full turns to ensure that the blade is tracking in its final position.

4. Retighten the lock nuts, double check blade tracking, and then close the upper wheel cover.

Coplanar Tracking is a more difficult process but provides longer blade life and allows straighter cuts. To learn more about this, read the next section on **Aligning Wheels.**

Wheel Alignment

Wheel alignment is one of best ways to ensure that you get optimal performance from your bandsaw.

When both wheels are aligned, or coplanar (see **Figure 13**), the bandsaw is more likely to cut straight without wandering. Vibration, heat, and blade wear are also considerably decreased.

For the best performance, verify that your wheels are coplanar when you first get your bandsaw.

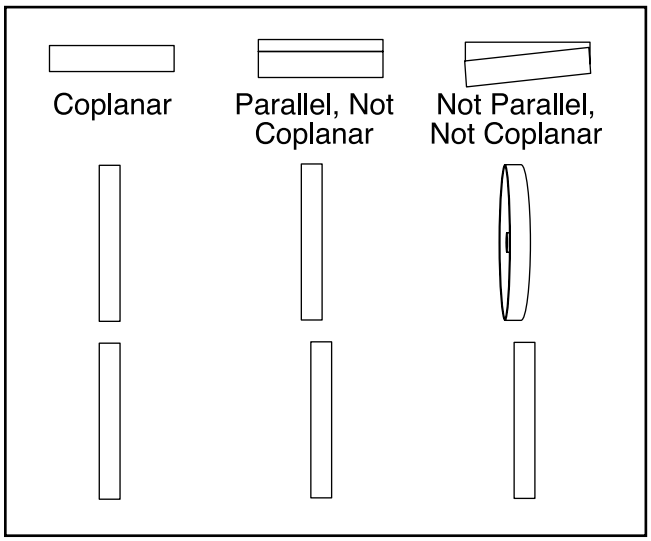


Figure 13.

Before measuring the wheels for being coplanar, you should always tighten the blade to the degree that it will be used during operation. The wheels may be coplanar with the blade loose, then be pulled out of alignment when the blade is tightened. **To check the wheel alignment:**

1. Unplug the bandsaw!

2. The body of the bandsaw does not allow you to place a regular straightedge across both wheels at the same time. To overcome this situation, you need make a coplanarity gauge. A 55" x 2" x 4" board will work well for this. Joint one side or make sure that one side is straight. Refer to **Figure 14** for more details on how to make this gauge.

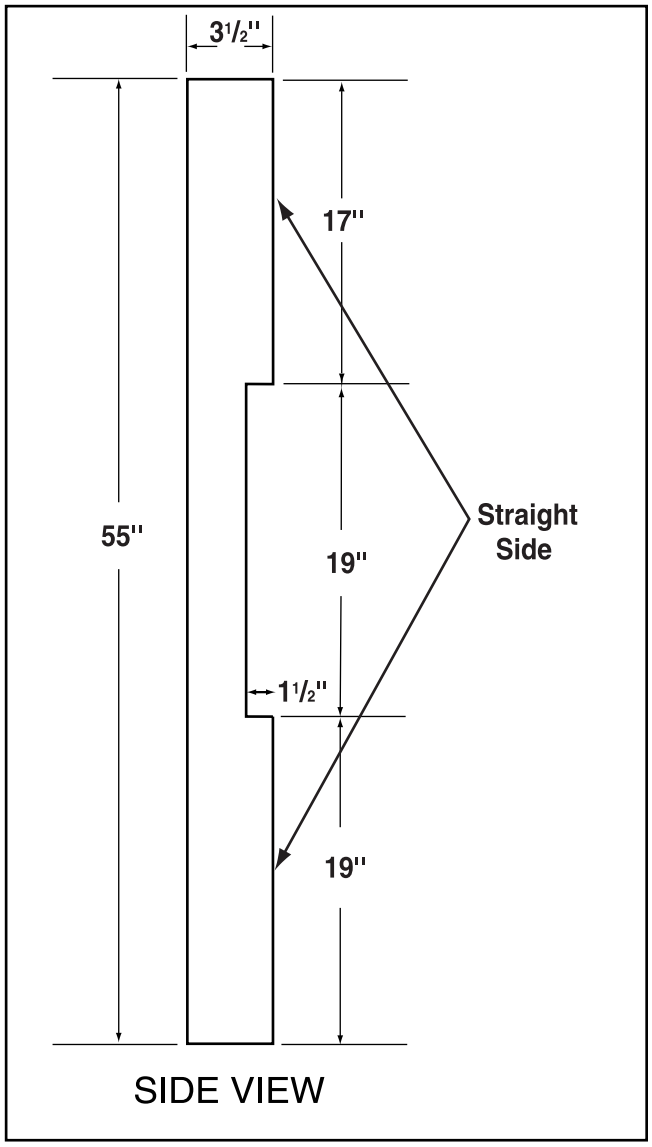


Figure 14. Coplanarity gauge.

3. After you have made your coplanarity gauge, remove the fence and table, then open both wheel covers.

4. Make sure the guide blocks and rear support bearings are away from the blade, then tighten your blade to the tension that it will be used during operation.

⚠WARNING

Disconnect power to the machine when performing any adjustments or maintenance. Failure to do this may result in serious personal injury.

5. Place your gauge up against both wheels in the positions shown in **Figure 15**.

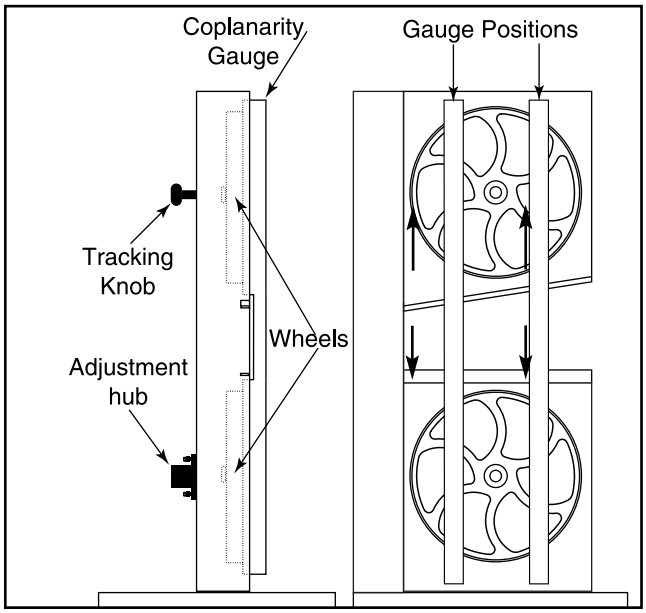


Figure 15. Coplanarity gauge placement.

6. Adjust the tracking knob to get both wheels coplanar. If the wheels will not go coplanar to each other, then move the lower wheel at the adjustment hub so they line up. If you are not familiar with the lower wheel adjustment hub, refer to the “Controls” section.

Blade Guides

Whenever changing a blade or adjusting tension and tracking, the upper and lower blade support bearings and guide blocks must be re-adjusted. Always adjust the assemblies away from the blade before installing a new blade or making blade tracking adjustments. After blade tension and tracking are set correctly, re-adjust the upper and lower support bearings and the guide block assemblies into position. **See Figures 16 and 17** for locations.

UPPER GUIDES

Adjustment of the upper guides is a two-part procedure, consisting of adjustments to both the support bearings and the guide blocks.

Support Bearings - The support bearing runs against the back edge of the blade to keep it from being pushed out of position by the advancing workpiece. To adjust the support bearing, loosen the thumbscrews securing the support bearing shaft. Push or pull the shaft so that the upper support bearing is within 1/64" of the back edge of the blade. Retighten the thumbscrews.

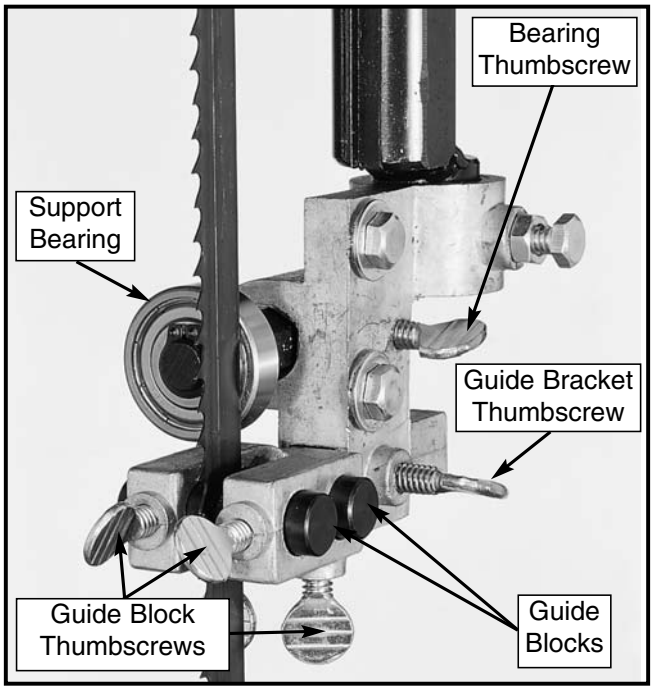
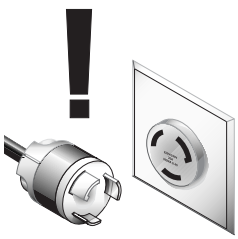


Figure 16. Upper guide adjustments.

Guide Blocks - The guide blocks ensure that the blade is not pushed too far laterally. To adjust the guide blocks, loosen the thumbscrews that secure the guide block shafts. Adjust them evenly so that the front of the blocks are 1/64" behind the gullet line of the blade. Tighten these thumbscrews. Now loosen the guide block thumbscrews. The ideal distance between the blade and each guide block is .004". This measurement is approximately the same as the thickness of a piece of paper or a dollar bill. For a quick gauge, fold a dollar bill in half, slide it over the blade so each half covers each side of the blade. Set the blade guides so each one touches the dollar bill. Be careful not to move the blade in either direction while you are performing this adjustment. Tighten the blade guides. The result of this adjustment should leave a .004" distance between the blade and each of the blade guides.

LOWER GUIDES

Adjustments for the lower guides are identical to those for the upper guides, except that the bearing and guide block positioning is controlled by setscrews. Use **Figure 17** to identify the lower guide assembly components.



⚠WARNING

Disconnect power to the machine when performing any adjustments or maintenance. Failure to do this may result in serious personal injury.

⚠CAUTION

The bandsaw blade is dangerously sharp. Use extreme caution when working near the saw blade. Failure to exercise care could result in severe injury.

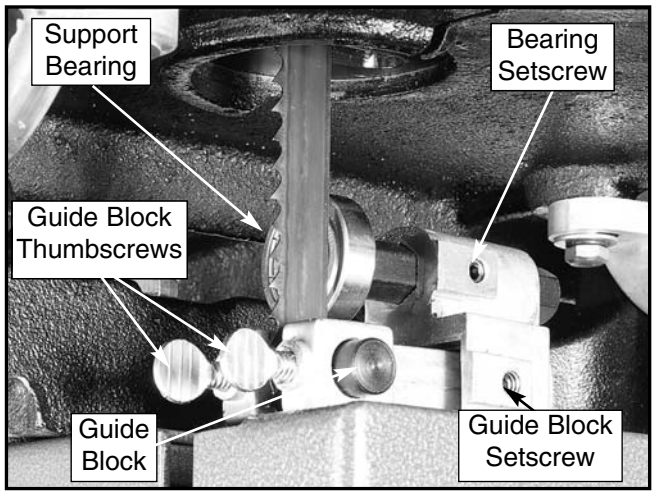


Figure 17. Lower guide adjustments.

Table Adjustment

The bandsaw table will tilt left 10° and right 45° from horizontal. There is a positive stop adjusting stud so the table can be reset perpendicular to the blade after tilting it left or right.

To tilt the table:

1. Loosen the two knobs below the trunnions. **See Figure 18** for knob location.

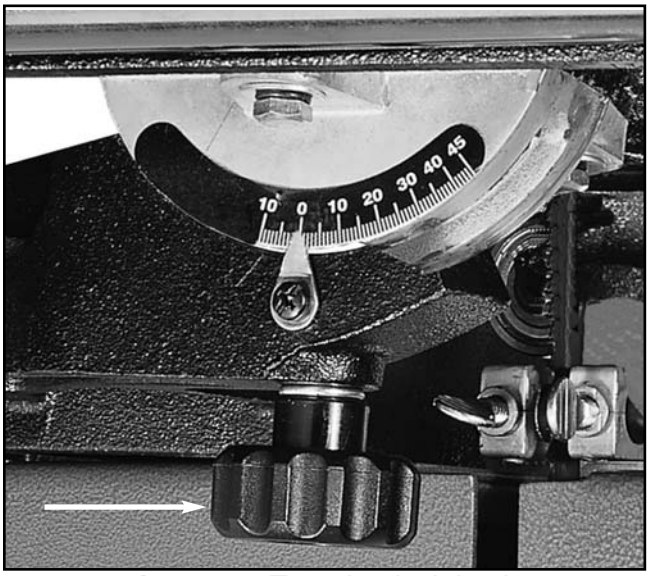


Figure 18. Trunnion lock knob.

2. Position the table to the desired angle. Refer to the angle gauge on the table support bracket.

3. Tighten the knobs.

If you are setting the table tilt to the left, first tilt the table to the right, loosen the check nut on the positive stop adjusting stud, remove the stud, and then tilt the table to the left. **Figure 19** shows the table in its maximum left tilt position.

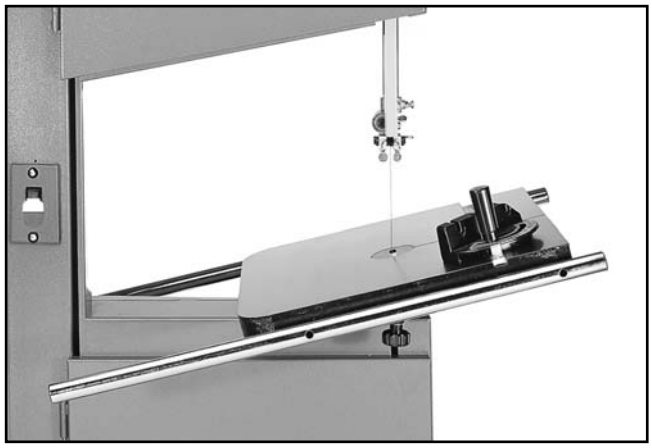


Figure 19. Table in maximum left tilt position.

To adjust the positive stop so the table will be perpendicular (90°) to the blade:

1. Loosen the two knobs and the checknut securing the positive stop adjusting stud.

2. Raise the upper blade guide assembly and place a 6" machinist's square or try-square on the table against the blade. **See Figure 20.** Adjust the positive stop adjusting stud so that the table will stop at a 90° angle to the blade.

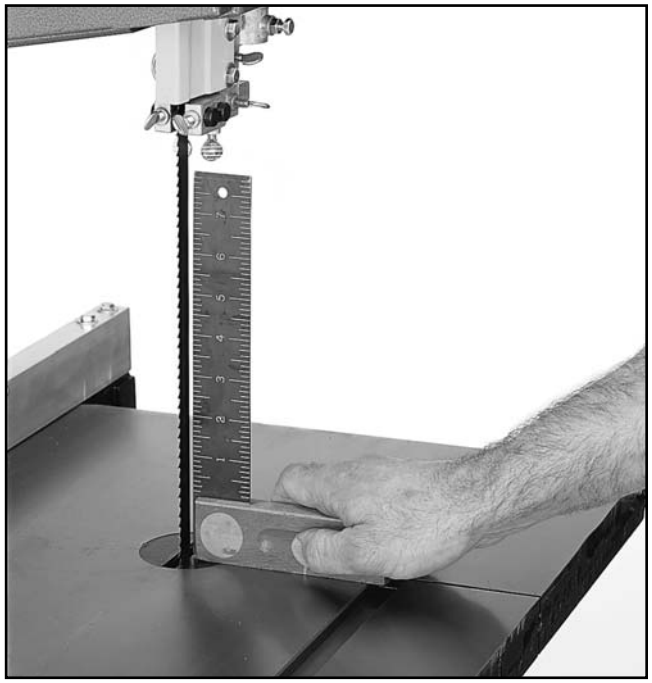


Figure 20. Checking blade to table.

3. Secure the knobs and lock the positive adjusting stud by tightening the checknut. Ensure that the stud does not turn while tightening the checknut. Set the angle pointer to zero.

The table should also be 90° to the back edge of the blade. If the table is not perpendicular to the back of the blade, shim the table in the desired direction with washers. Remove the trunnion bolts and add washers between the table and the trunnion so the table tilts in the desired direction. **See Figure 21.** Electrical washers are a good choice for shimming because they are very thin and will allow fine adjustment.

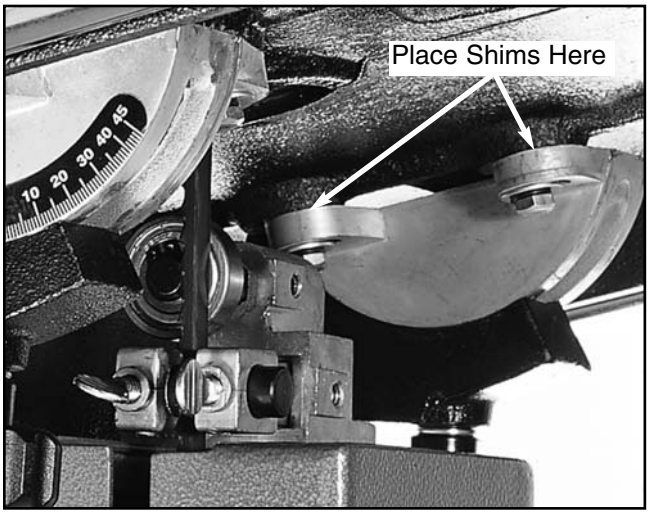


Figure 21. Front to back shimming.

The table can also be shifted side to side to properly align the miter slot and the blade:

1. Loosen the 6 trunnion bolts underneath the table.

2. Install the largest width blade available. Lay a straightedge along the blade and inspect it closely to make sure it is parallel to the blade. Make sure there is no deflection of the blade from the straightedge.

3. Measure the distance between the edge of the miter gauge slot and the straightedge at points **A** and **B**. See **Figure 22.** Distance **A** should be approximately equal to distance **B.** Adjust the table slightly until these distances are equal.

4. Secure the table by retightening the trunnion bolts. Recheck the table position to ensure that unwanted shifting did not occur during retightening.

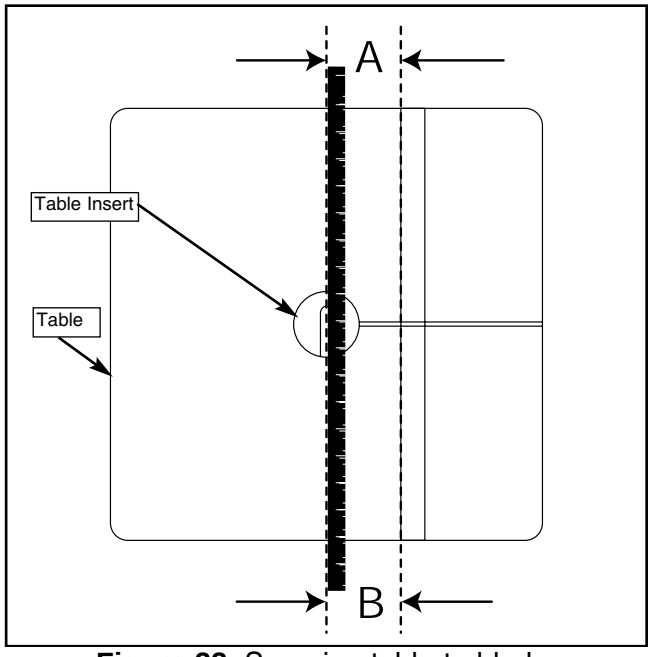


Figure 22. Squaring table to blade.

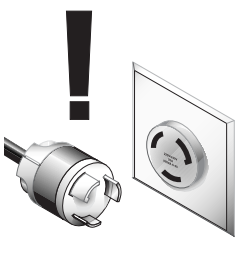
Belt Tensioning

The motor and motor mounting plate are already assembled in the base of the saw. **See Figure 23.** In the event any disassembly of the bandsaw is required, you may need to realign the motor pulley and the lower wheel pulley**.**

Figure 23. Motor mounting plate.

To perform the alignment:

1. Check for proper pulley alignment by placing a straightedge on the outside edge of the upper pulley so that it overlaps the motor pulley. If the straightedge does not touch both pulleys evenly, the pulleys are not aligned. Loosen one or both of the pulley setscrews on their shafts and slide the pulleys toward alignment. Remember to retighten the setscrews when finished. **See Figure 24**.



⚠WARNING

Disconnect power to the machine when performing any adjustments or maintenance. Failure to do this may result in serious personal injury.

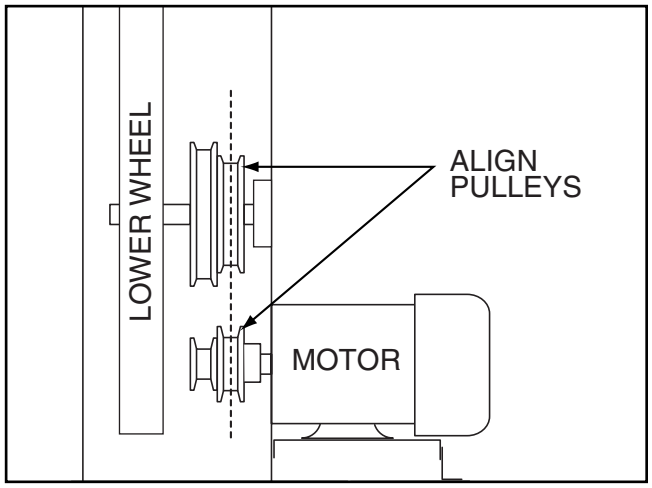


Figure 24. Wheel to pulley alignment.

2. Adjust the belt tension by pivoting the motor along the circular slot. Proper tension is achieved when the belt can be deflected roughly 1/2" with moderate finger pressure.

3. Tighten the nuts and bolts securely. Recheck the belt tension and pulley alignment.

Dust Collection

The G4186Z has an integral 4" dust port built into the lower wheel housing. You will achieve the best results if you connect the machine to a dust collection system when you are using the saw. This helps to keep the blade and the wheels clear of chips and dust. Plus, there is the added benefit of having less dust put into the air of your shop. Connect your dust collection hose securely to this port using hose clamps, and activate the dust collection system at the time you start the bandsaw.

Changing Speeds

The Model G4186Z offers 3100 and 2000 F.P.M. speeds. To change the speed:

1. Unplug the bandsaw from the power supply!

2. Loosen the lock bolt on the body of the bandsaw, near the motor.

3. Pivot the motor up to loosen the V-belt. Move the V-belt into one of the grooves shown in **Figure 25**, depending on the desired speed.

4. Pivot the motor down and tighten the lock bolt. Proper tension is achieved when the belt can be deflected roughly 1/2" with moderate finger pressure. Check the belt tension and adjust if necessary.

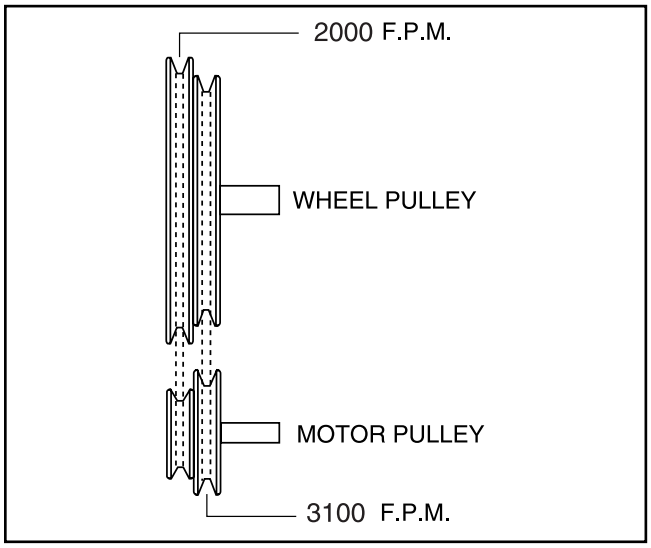


Figure 25. Wheel to pulley alignment.

Fence Adjustment

Align the fence to the miter slot by first loosening the (2) bolts nearest the operator. **See Figure 26.** Lock the front rail lock knob and measure between the front edge of the fence and the front edge of the miter slot. Compare this to a measurement taken at the back of the fence and the miter slot. Swing the fence to correct for any difference and measure again. When you are satisfied that both of the front and back measurements are equal, carefully tighten the two bolts at the top of the fence.

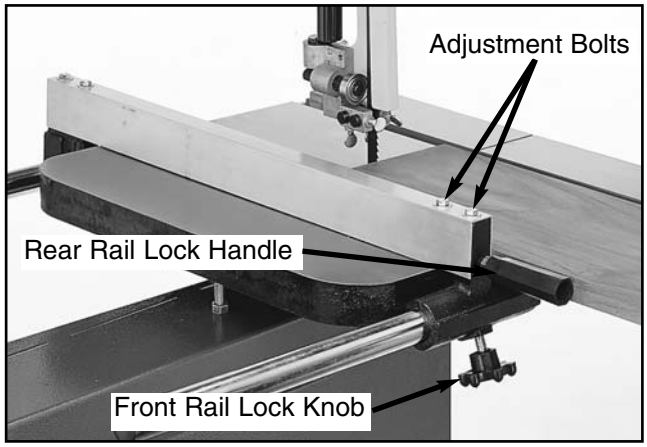


Figure 26. Fence adjustment and controls.

Fence operation is controlled by the handle and knob located on the front of the fence. The handle, when screwed tight, locks the fence to the rear rail. The knob on the lower side of the fence, when screwed tight, locks the fence to the front rail. To change the fence position, loosen the handle and knob, and slide the fence along the rails. To relock the fence, always tighten the lower knob first (this helps the fence to square itself to the rails), then lock the top handle to secure the fence.

Read the "Ripping" instructions before using the fence.

Test Run

Once assembly is complete, adjustments are done to your satisfaction and tools are safely put away, you are ready to test run the machine.

⚠CAUTION

Turn on the power supply at the main panel. Press the START button. Make sure that your finger is poised over the switch to press the STOP button, just in case there is a problem. The bandsaw should run smoothly, with little or no vibration or rubbing noises. Strange or unnatural noises should be investigated and corrected before operating the machine further.

⚠WARNING

DO NOT attempt to investigate or adjust machine while it is running. Wait until the machine is turned off, unplugged, and all working parts have come to a stop before you do anything or serious injury may occur.

If you cannot easily locate the source of an unusual noise or vibration, contact our Service Department for help.

If the bandsaw runs smoothly, make a cut into a piece of scrap lumber. If a problem exists, stop the machine and review all the adjustments. Call for assistance if needed.

SECTION 6: OPERATIONS

⚠WARNING

Keep loose clothing out of the way of machinery and keep hair pulled back.

⚠WARNING

Disconnect power to the machine when performing any adjustments or maintenance. Failure to do this may result in serious personal injury.

⚠WARNING

Wear safety glasses during the entire operation process. Failure to comply may result in serious personal injury.

⚠CAUTION

Always wear a dust mask when operating the bandsaw. Using this machine produces sawdust which may cause allergic reactions or respiratory problems.

NOTICE

The following section was designed to give instructions on the basic operations of this bandsaw. However, it is in no way comprehensive of every bandsaw application. There are many different jigs that can be built to increase the safety and accuracy of different kinds of cuts. WE STRONGLY RECOMMEND that you read books, trade magazines, or get formal training to maximize the potential of your bandsaw.

The bandsaw is one of the most versatile machines in the shop. It can cut miters, compound angles, simple and complex curves, circles, and a wide variety of irregular shapes. It can also rip and crosscut, as well as cut a variety of joints. The bandsaw will also resaw stock into thinner boards.

Pre-Run Check

There are many adjustment points and compensating differences to consider when operating this type of saw. Therefore, cutting results can be somewhat unpredictable if some or all of the crucial adjustments are neglected. Here are a few simple things you can do to increase the predictability of your bandsaw performance:

1. **Always use a sharp, high-quality blade.**

2. **Use the right blade for the job.** Resawing with a $^{1}/_{16}$" blade or doing scrollwork with a 1" blade are extreme examples of using the wrong blade for the job.

3. **Allow the saw to cut. Do not force the workpiece into the blade.** Remember that while negotiating a curve, the blade should still be cutting the wood. Simply turning the workpiece will only bind the blade and could break it.

4. **Maintain your bandsaw in top condition.** See the following section of this manual for maintenance procedures.

Bandsaw Blades

A bandsaw blade is a delicate piece of steel that is subjected to tremendous strain. Be sure you use quality blades of the proper width for the various types of cutting operations. The Grizzly G4186Z 18" Bandsaw accepts 130" blades.

Always use the widest blade possible for the workpiece you are cutting. Use narrow blades only for sawing small, abrupt curves and for fine, delicate work. Bandsaw blades can be purchased welded, set, and sharpened ready-for-use from most saw shops. We also supply bandsaw blades in widths of 1/4", 3/8", 1/2", and 3/4" and 1" for this saw. Please refer to our current catalog for prices and ordering information.

Always select and use good-quality saw blades and choose the right blade for the job. Poor quality blades and improper use are often the cause of premature blade failure.

Many conditions can lead to breakage. Blade breakage is, in some cases, unavoidable, since it is the natural result of the peculiar stresses that bandsaw blades are subjected to. Blade breakage is also due to avoidable causes. Avoidable breakage is most often the result of poor care or judgement on the part of the operator when mounting or adjusting the blade or support guides. The most common causes of blade breakage are: (1) faulty alignment and adjustment of the guides; (2) forcing or twisting a wide blade around a curve or short radius; (3) feeding too fast; (4) tooth dullness or absence of sufficient set; (5) excessive tension; (6) upper blade guide assembly set too high above the workpiece; (7) using a blade with a lumpy or improperly finished weld; and (8), continuously running the bandsaw when not in use.

There are several key factors to consider in choosing a blade:

Tooth Pitch - The number of teeth per inch (TPI) on the blade, also known as tooth pitch. Select a pitch which will assure that at least three teeth, but not more than twelve, are contacting the workpiece while cutting. This helps to distribute the cutting forces and avoids tooth breakage.

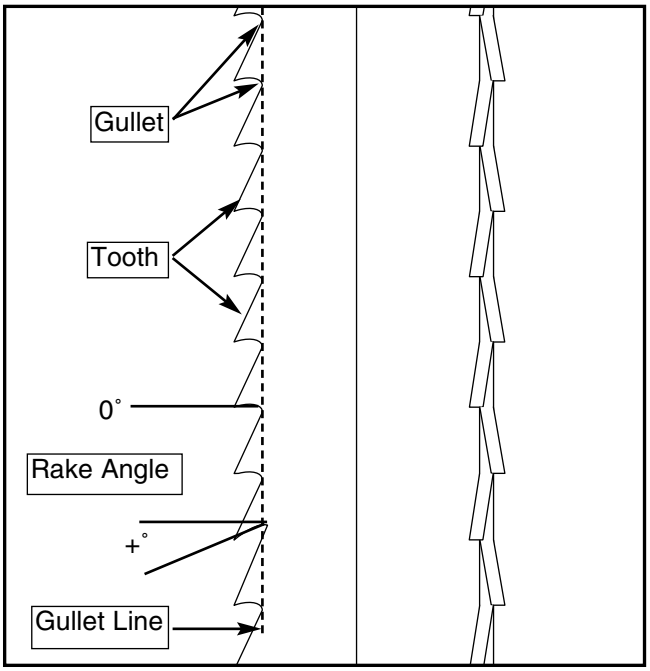


Figure 26. Side and front views of a standard bandsaw blade.

Tooth Form - There are four common forms of teeth on the blade:

Regular - Also called standard, teeth are evenly spaced and the rake angle is 0˚ (**See Figure 26**). Provides a smooth cut and is great for cutting curves.

Hook - Large gullets and teeth with a positive rake angle, very aggressive cutting. Good for resawing and ripping thick stock.

Skip - Similar to hook with a 0˚ rake angle, also good for resawing and ripping thick stock.

Tooth Set - Set is the degree to which the

teeth are bent away from plane of the blade:

Raker - The most common with one tooth offset to the right, the next one to the left, and the third is straight.

Wave - Will have 3-4 teeth bent progressively one direction, then to the other in a wave-like pattern.

Straight - Alternating teeth set right, then left.

Blade Gauge and Material - Gauge is the thickness of the blade measured near the back edge. Generally thick blades are wider and stiffer. The blade material can range from carbon steel to spring steel to bimetallic composition.

Blade Width - This is the measurement of the blade from the tip of a tooth to the back edge. The wider the blade, the less of a radius it can cut.

Always select and use good-quality saw blades and choose the right blade for the job. Discuss your cutting requirements with your saw blade dealer to make sure you are getting the type of blade which best suits your need.

Changing Blades

To remove the blade, ensure the power is disconnected and:

1. Loosen tension on the blade by turning the tension control knob counterclockwise when facing the front of the saw. **See Figure 27**.
2. Remove the table insert and table pin.
3. Adjust upper and lower guide blocks away from the blade.
4. Before handling the blade, put on gloves. Open the upper and lower wheel covers and slide the blade off both wheels. **Use caution, the blades are sharp!**
5. Rotate the blade 90° so it will slide through the slot in the table.

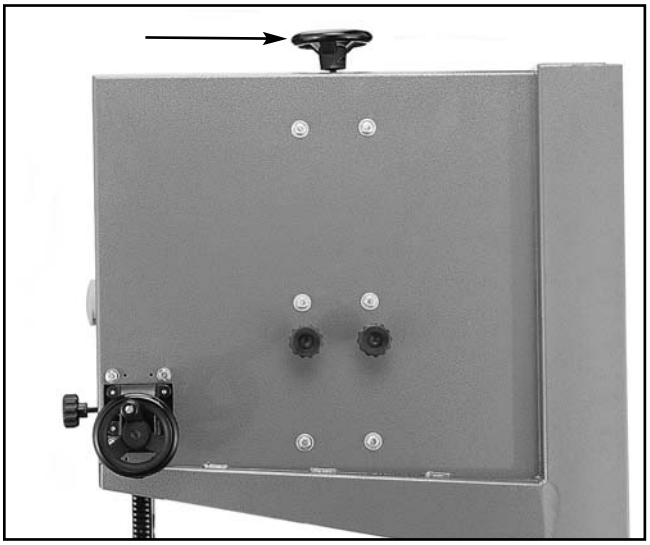


Figure 27. Tension control knob.

To replace the blade, ensure that the power is disconnected, you are wearing gloves and:

1. Slide the blade through the table slot, ensuring that the teeth are pointing down toward the table.

   If the teeth will not point downward in any orientation, the blade is inside out. **See Figure 26** for typical blade geometry. Put on heavy gloves, remove the blade, and twist it until it is rightside out. Reinstall the blade.

2. Slip the blade through the upper and lower guides, and mount it over the upper and lower wheels.

3. Apply tension to the blade by turning the tension control knob. Refer to the blade tensioning instructions earlier in the **Adjustments** Section.

NOTICE

When removing or installing wide blades, it may be convenient to completely remove the upper and lower guide blocks. Don't forget to replace them before cutting!

4. Rotate the upper wheel manually and check the blade tracking.

5. Adjust the upper and lower guide blocks, as well as the upper and lower guide bearings as described earlier in this section.

6. Close the wheel covers. Turn the guard knobs on the wheel covers to lock them shut.

7. Replace the table insert and table pin, being sure not to use excessive force.

⚠WARNING

Use extreme caution when replacing blades. Teeth are dangerously sharp and coiled blades are prone to spring when released from their packaging. Use gloves and safety glasses/goggles whenever handling blades. Failure to do so could result in serious personal injury.

Ripping

Ripping is the process of cutting a wide board into two or more thinner boards. **See Figure 28.** The maximum board width that can be ripped is limited by the maximum throat dimension of the bandsaw. Maximum cutting width for this bandsaw is 17 1/4".

For ripping, a wider blade is better. In most ripping applications, a standard raker tooth style will be sufficient. Also, since most ripped lumber will be jointed smooth, you can choose blades with fewer teeth-per-inch.

To perform ripping operations:

1. The bandsaw must be adjusted correctly. See "Blade Tension/Tracking" instructions and "Table Adjustment" instructions.

2. Adjust the blade guard so it is just above the workpiece with a minimum amount of blade exposed. Read instructions on "Blade Lead" before making a cut.

3. Use a fence to guide the work. Set the distance between the fence and the blade to the desired width.

4. Support the ends of the board if necessary.

5. Feed the work slowly and evenly with the straightest edge against the fence.

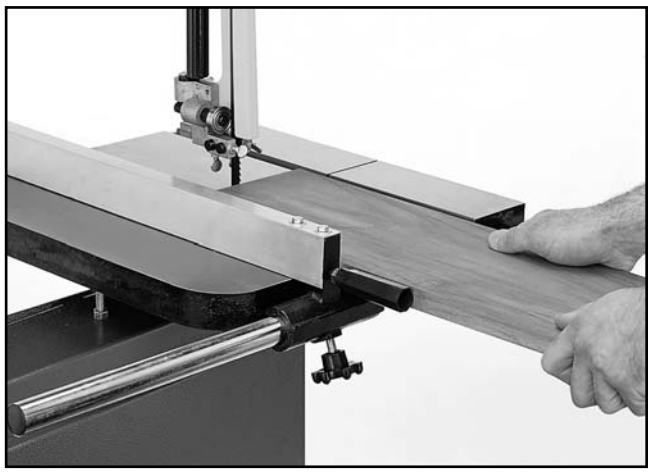


Figure 28. Typical ripping operation.

Stacked Cuts

One of the benefits of a bandsaw is its ability to cut multiple copies of a particular shape by stacking a number of workpieces together.

Before making stacked cuts, it is essential to ensure that both the table and the blade are properly adjusted to 90°. Otherwise, any error will be compounded with each piece from the top to the bottom of the stack.

To complete a stacked cut:

1. Align your pieces from top to bottom to ensure that each piece has adequate scrap to provide a clean, unhampered cut.

2. Using brads in the waste portion of each piece, secure all the pieces together.

3. Lay out the shape you intend to cut on the face of the top piece.

4. Adjust the blade guard so it is just above the workpiece with a minimum amount of the blade exposed.

5. Make relief cuts perpendicular to the outline of your intended shape in areas where changes in blade direction could strain the blade.

6. Cut the stack of pieces as though you were cutting a single piece. Follow the layout line with the blade kerf on the waste side of your line.

Cutting Curves

When cutting curves, simultaneously feed and turn the stock carefully so that the blade follows the layout line without being twisted. If a curve is so abrupt that you need to repeatedly back up and cut a new kerf, use either a narrower blade or a blade with more set. A blade with more set can cut relatively tighter radii; however, the cut is usually rougher than cuts produced by blades with medium set.

Always make short cuts first, then proceed to the longer cuts. Relief cuts will also reduce the chance that the blade will be pinched or twisted. Relief cuts are cuts made through the waste portion of the workpiece and stopped at the layout line. As you cut along the layout line, waste wood is released from the workpiece, alleviating any pressure on the back of the blade. Relief cuts also make backing the workpiece out easier, if needed. The table below lists blade widths and corresponding minimum radii each blade will cut.

BLADE WIDTH	MINIMUM RADII
1/8"	3/16"
3/16"	5/16"
1/4"	5/8"
3/8"	1 1/2"
1/2"	2 1/2"
5/8"	4"
3/4"	5 1/2"

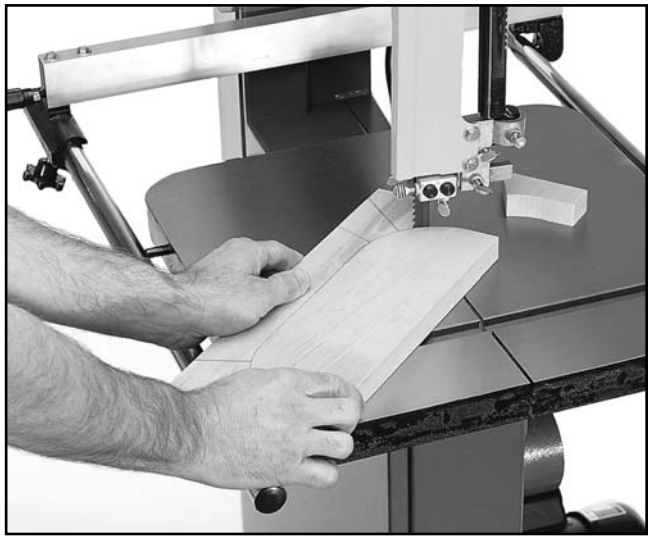


Figure 29. Typical curve cutting operation.

Resawing

Resawing (**See Figure 30**) is the process of cutting the thickness of a board into two or more thinner boards. Each new board is the same width and length as the original board, but the thickness is less. The maximum board width that can be resawn is limited by the maximum cutting height of the bandsaw. The maximum cutting height for this bandsaw is 9 3/8".

The most important consideration when resawing is blade selection. When selecting a blade, keep in mind that generally a wider blade is easier to control.

In most applications a hook or skip tooth style will work fine. Also, since most resawn lumber will be planed smooth, you can choose blades with fewer teeth per inch (3 to 6). While blades with fewer teeth per inch produce rougher cuts, these types of blades offer larger gullet capacities for clearing sawdust, produce less heat, and yield more horsepower per tooth.

NOTICE

When operating with wide blades, run the bandsaw at the slowest speed.

To resaw lumber, follow the procedure below:

1. The blade must be adjusted correctly for tension and tracking.
2. The table must be square to the blade.
3. Adjust the blade guard so it is just above the workpiece with a minimum amount of blade exposed.
4. Use the widest blade that will fit this saw (1" to 1¼"). The blade must also be sharp and in good condition. Read "Blade Lead" instructions.
5. Use the fence to guide the work.
6. Support the ends of the board if necessary.
7. Feed the work slowly and evenly.

⚠WARNING

Do not force the wood into the blade during cutting. This will distort the blade, cause excessive heat and often results in blade breakage. Breakage can cause lacerations, cuts, or serious personal injury.

When resawing, consider using an auxiliary fence that is higher than the standard fence. This provides a more solid surface for the workpiece to slide against. An auxiliary fence can be made from any straight and flat piece of lumber and can be bolted or screwed to the standard fence.

When using a fence to guide the board, the actual line of cut may not be exactly parallel to the fence. In fact, most bandsaw blades will not cut exactly parallel to the fence. This is due to a number of reasons involving the configuration of the table, condition of the blade, the cutting forces, and the blade tension. To correct this condition, refer to the "Blade Lead" instructions on the next page.

Figure 30. Resawing with an auxiliary fence.

Blade Lead

Most bandsaw blades will not cut straight when using the fence or miter gauge. This is called "lead." See **Figure 31.** Lead occurs (1) if the blade tension is incorrect, (2) if the teeth are dull on one side, or (3) if the teeth are set heavier on one side of the blade than the other.

If you notice that your blade is not cutting straight (i.e. leading) while using the fence or miter gauge:

1. Check that the fence is parallel to the blade line.

2. Check that you have proper blade tension. If the blade tension is correct and you do not want to replace the blade, compensate for lead by skewing the fence or adjusting the table.

To skew your fence:

1. Obtain a piece of scrap wood that is approximately ¾" thick x 3" wide x 17" long. On a wide face of the board, draw a straight line parallel to the long edge.

2. Slide the fence out of the way and cut freehand along the line. Stop at the halfway point. Turn the bandsaw off and wait for the blade to stop.

3. Clamp the board to the bandsaw table **without moving it.** Now slide the fence over to the board so it barely touches one end of the board.

4. Loosen the two skewing cap screws on top of the fence. (Refer back to **Figure 25** for details on skewing fence.)

5. Skew the fence left or right so it is parallel to the edge of the scrap piece. You may need to readjust the fence locking mechanisms to gain maximum adjustment.

6. While maintaining the skew, tighten the cap screws.

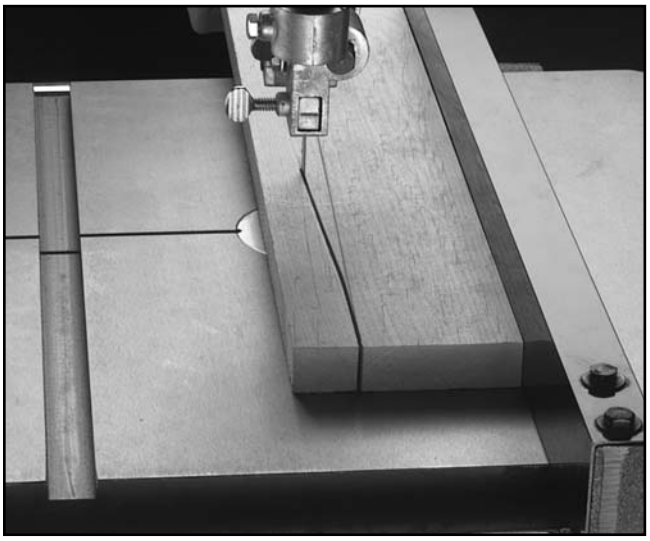


Figure 31. Blade leading away from line of cut.

To compensate for lead if making straight crosscuts using the miter gauge, you will need to shift the table. To do this:

1. On a scrap piece of wood, mark a line that is perpendicular to the front edge. Starting where the line begins, cut the board by pushing it through the blade with the miter gauge.

2. Loosen the table mounting bolts according to the instructions about "Table Parallelism." Shift the table to compensate for the blade lead.

3. Repeat **steps 1 and 2** until the blade cuts straight when wood is pushed through with the miter gauge.

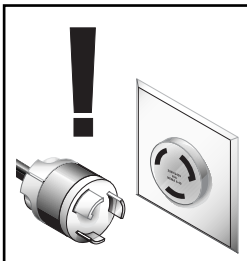
NOTICE

If the table is shifted, the fence will be affected since it is attached.

NOTICE

Lead adjustments will change when new blades are mounted in the saw.

SECTION 7: MAINTENANCE



⚠WARNING
Disconnect power to the machine when performing any adjustments or maintenance. Failure to do this may result in serious personal injury.

Lubrication

Shielded and pre-lubricated ball bearings require no lubrication for the life of the bearings. All bearings are standard sizes, and replacements can be purchased from our parts department or a bearing supply store.

As for other items on this machine, such as adjustment controls, an occasional “shot” of light oil is just about all that is necessary. Before applying, however, wipe off any sawdust with a clean cloth, towel, or dry paint brush, and spray on the lubricant. Ensure that oil does not get on the pulleys or V-belts because it could cause belt deterioration and slipping.

Miscellaneous

Always be aware of the condition of your bandsaw before using it. Routinely check the condition of the following items and repair or replace as necessary:

1. Loose bolts on the stand, table or fence systems.
2. Worn switch or electrical cords.
3. Worn or damaged blade.
4. Proper blade tensioning.
5. Worn V-Belt.
6. Worn or damaged support bearings or guide bearings.

Table

The table and other non-painted surfaces on the Model G4186Z should be protected against rust and pitting. Wiping the saw clean after every use ensures that wood dust is not allowed to trap moisture against bare metal surfaces.

Tables can be kept rust-free with regular applications of products like Boeshield® T-9. For long term storage you may want to consider products like Kleen Bore's Rust Guardit™. See the Grizzly catalog for other table maintenance applications.

V-Belts

To ensure optimum power transmission from the motor to the blade, the V-belt must be in good condition and operate under proper tension. Belts should be checked for cracks, fraying and wear. Belt tension should be checked at least every 3 months; more often if the bandsaw is used daily.

The V-belt is accessed via the bottom cover:

1. Squeeze the center of each V-belt.
2. Note the amount of deflection. Deflection should be approximately ½" with moderate pressure.

Maintenance Notes

Date	Approximate Hours Of Use	Maintenance Performed

SECTION 8: CLOSURE

The following pages contain general machine data, parts diagrams and Warranty/Return information for your Model G4186Z 18" Bandsaw.

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 **Section 3: Introduction**. The specifications, drawings, and photographs illustrated in this manual represent the Model G4186Z 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.

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.*

⚠WARNING

Operating this equipment has the potential for flying debris to cause eye injury. Always wear safety glasses or goggles when operating equipment. Everyday glasses or reading glasses only have impact resistant lenses, they are not safety glasses. Be certain the safety glasses you wear meet the appropriate standards of the American National Standards Institute (ANSI).

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: Introduction**.

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

⚠WARNING

Like all power tools, there is danger associated with the Model G4186Z Bandsaw. Use these tools 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.

⚠WARNING

The Model G4186Z was specifically designed for wood cutting operations. DO NOT MODIFY AND/OR USE THIS BANDSAW 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. Serious personal injury may occur.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Motor will not start.	1. Low voltage. 2. Open circuit in motor or loose connections.	1. Check power line for proper voltage. 2. Inspect all lead connections on motor for loose or open connections.
Motor will not start; fuses or circuit breakers blow.	1. Short circuit in line cord or plug. 2. Short circuit in motor or loose connections. 3. Incorrect fuses or circuit breakers in power line.	1. Inspect cord or plug for damaged insulation and shorted wires. 2. Inspect all connections on motor for loose or shorted terminals or worn insulation. 3. Install correct fuses or circuit breakers.
Motor overheats.	1. Motor overloaded. 2. Air circulation through the motor restricted.	1. Reduce load on motor. 2. Clean out motor to provide normal air circulation.
Motor stalls (resulting in blown fuses or tripped circuit).	1. Short circuit in motor or loose connections. 2. Low voltage. 3. Incorrect fuses or circuit breakers in power line. 4. Motor overloaded.	1. Inspect connections on motor for loose or shorted terminals or worn insulation. 2 Correct the low voltage conditions. 3. Install correct fuses or circuit breakers. 4. Reduce load on motor.
Machine slows when operating.	1. Applying too much pressure to workpiece. 2. Blade is dull. 3. Belt is loose.	1. Feed workpiece slower. 2. Replace blade. 3. Tighten belt.
Blade does not run evenly on wheels or runs off.	1. Tracking is not adjusted properly. 2. Rubber tire on wheel is damaged or worn. 3. Wheels are not coplanar.	1. Adjust tracking. 2. Replace rubber tires. 3. Adjust wheel coplanarity.
Blade does not cut evenly	1. Blade tension is incorrect. 2. Tooth set is uneven. 3. Teeth are sharper on one side than the other.	1. Adjust tension. 2. Replace blade, or have it professionally sharpened. 3. Replace blade, or have it professionally sharpened.
Ticking sound when the saw is running.	1. Blade weld contacting support bearing. 2. Blade weld may be failing.	1. Use file or stone to smooth and round the back of the blade. 2. Inspect and replace blade if necessary.
Blade contacting table insert.	1. Excessive side pressure when cutting. 2. Table improperly adjusted.	1. Reduce side pressure. 2. Adjust table.
Excessive vibration.	1. Wheels not coplanar. 2. Tires incorrectly installed. 3. Bent or worn out blade. 4. Wheels out of balance.	1. Adjust wheels coplanar. 2. Re-install tires. 3. Replace blade. 4. Replace wheels
Burn marks on the edge of the cut.	1. Too much side pressure when feeding workpiece. 2. Blade too wide for size of radius being cut.	1. Feed workpiece straight into the blade. 2. Install a smaller width blade, and/or increase blade tension.

MACHINE DATA SHEET

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

GRIZZLY MODEL G4186Z BANDSAW

Design Type:.....Floor Model

Overall Dimensions:
- Table .....17¾" x 17¾ x 1½" Thick
- Height .....69"
- Height from Floor to Table .....34¾"
- Width of Unit .....32"
- Depth of Unit.....26¼"
- Shipping Weight.....375 lbs.
- Weight in Place .....345 lbs.
- Box Size .....72½" L x 29" W x 16" H
- Footprint .....25" x 16"

Cutting Capacity:
- Left of Blade .....17¼"
- Height .....9⅜"
- Table Tilt .....45° R - 10° L

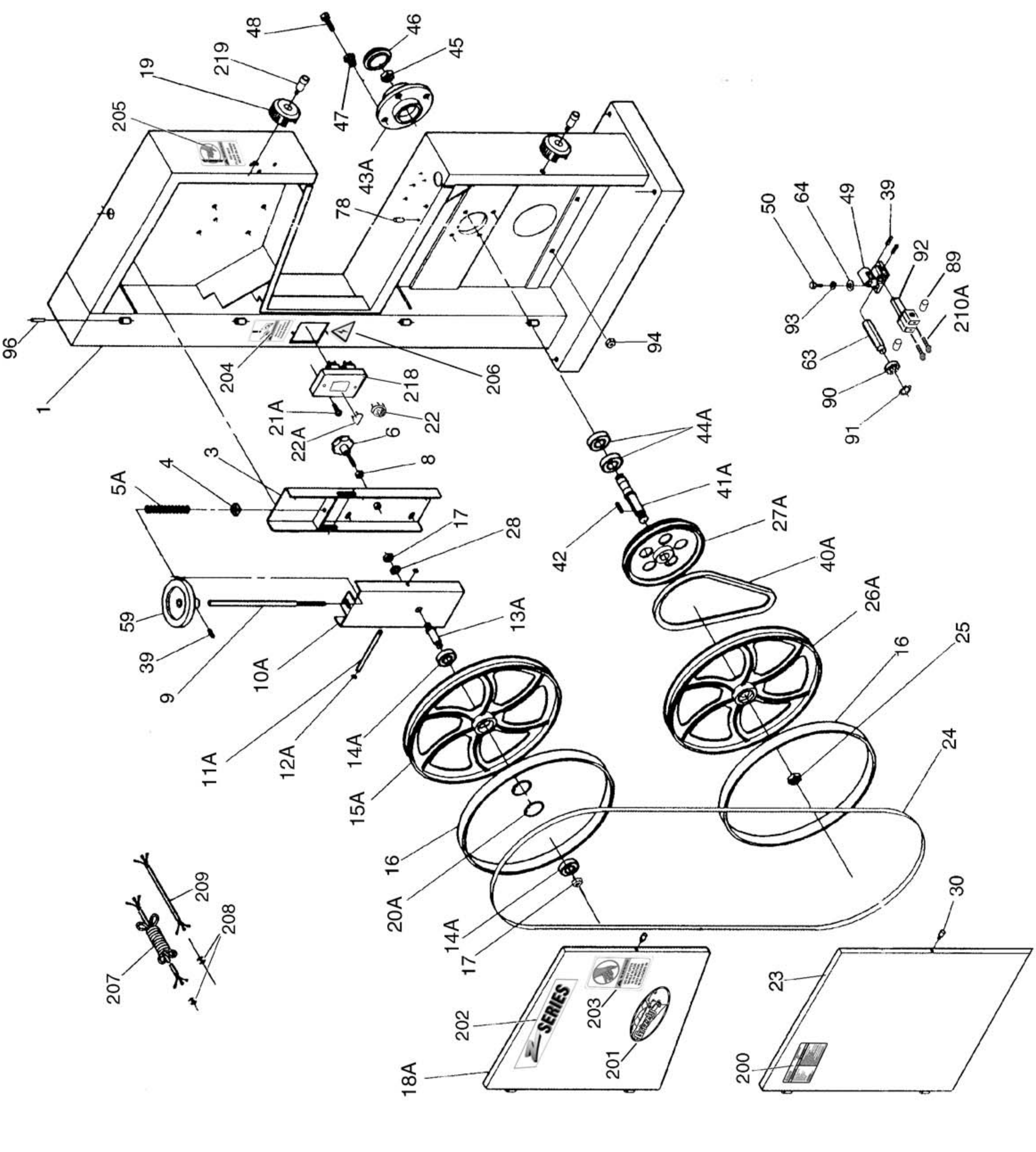
Construction:
- Table .....Precision Ground Cast Iron
- Body .....Preformed Steel
- Wheels .....Balanced Cast Iron with Rubber Tire
- Rip Fence .....Double Lock, Adjustable, Extruded Aluminum Guide
- Wheel Covers.....Pre-Formed Steel
- Upper & Lower Guides .....Steel Guide Blocks With Thrust Bearings

Motor:
- Type .....TEFC Capacitor Start Induction
- Horsepower.....2 H.P.
- Phase / Cycle .....Single-Phase / 60 Hz
- Voltage .....110V / 220V
- Prewired 220V
- Amps (110/220) .....24 / 12
- R.P.M. 1720
- Bearings .....Shielded and Permanently Lubricated Ball
- Switch .....Grizzly Paddle

Blade:
- Range of Sizes .....¼" - 1¼"
- Standard Blade Length .....130"
- Blade Speed.....3100 & 2000 F.P.M.

Features:
- .....Rack & Pinion Upper Guide Adjustment
- .....Miter Gauge
- .....Fence
- .....Powder Coated Paint

Specifications, while deemed accurate, are not guaranteed.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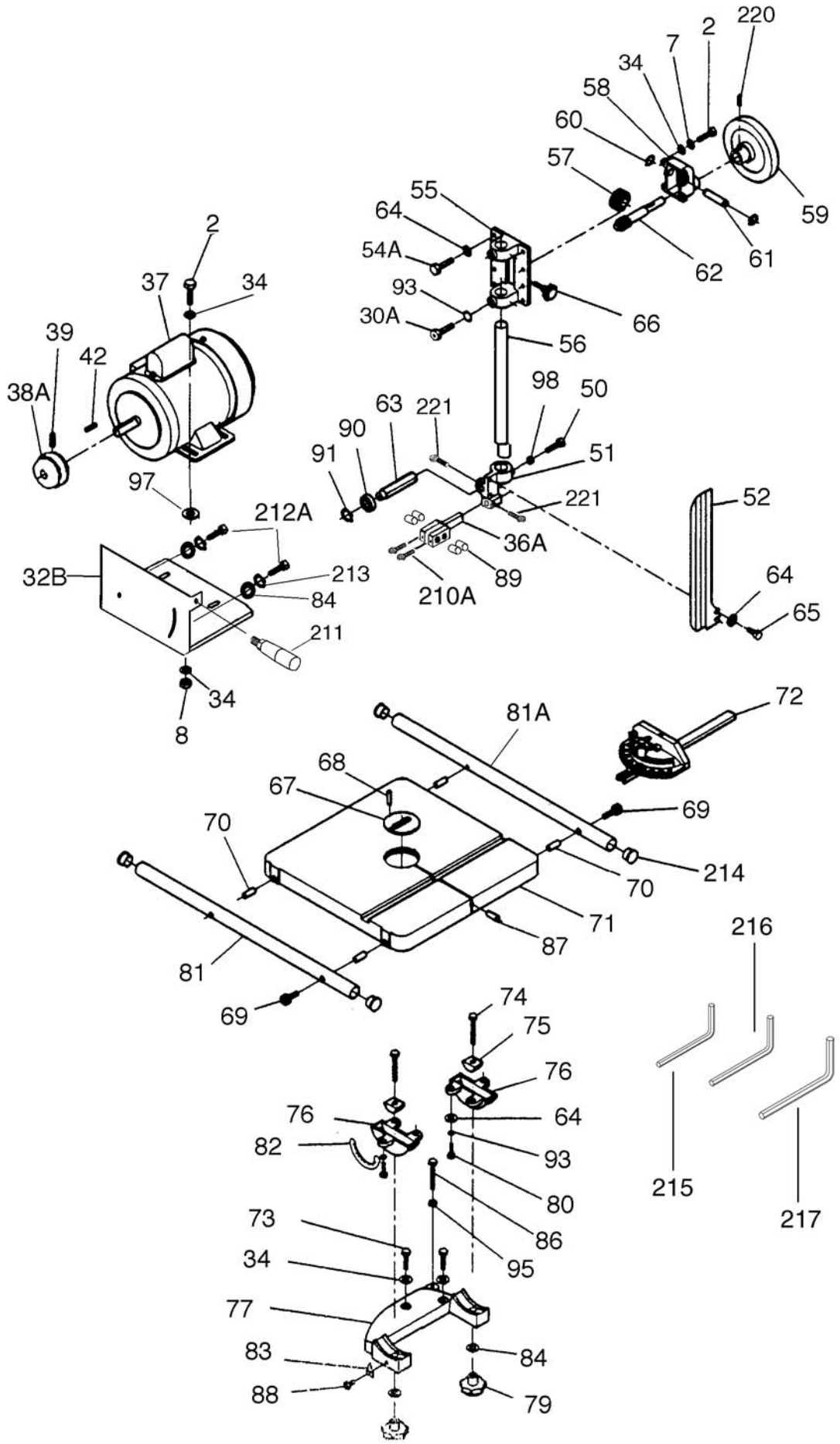
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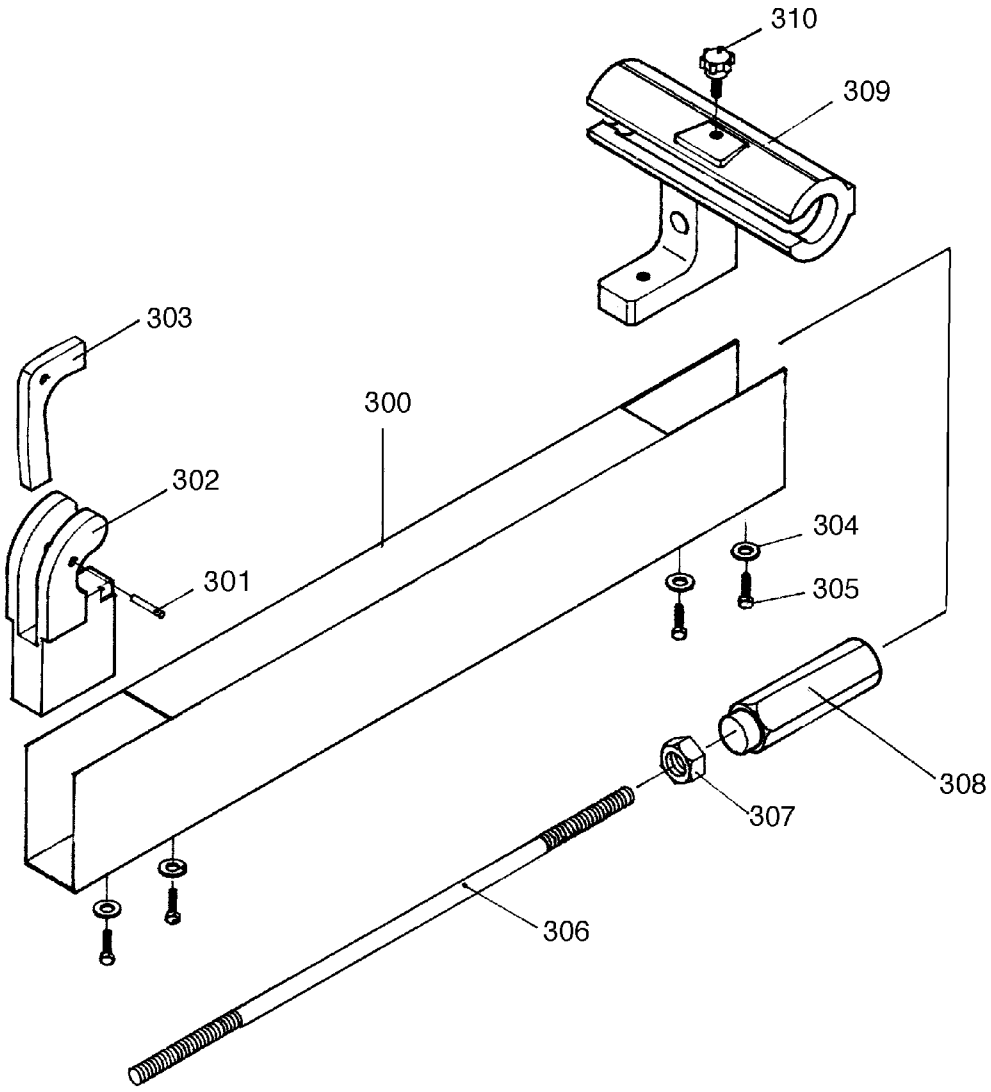
PARTS LIST

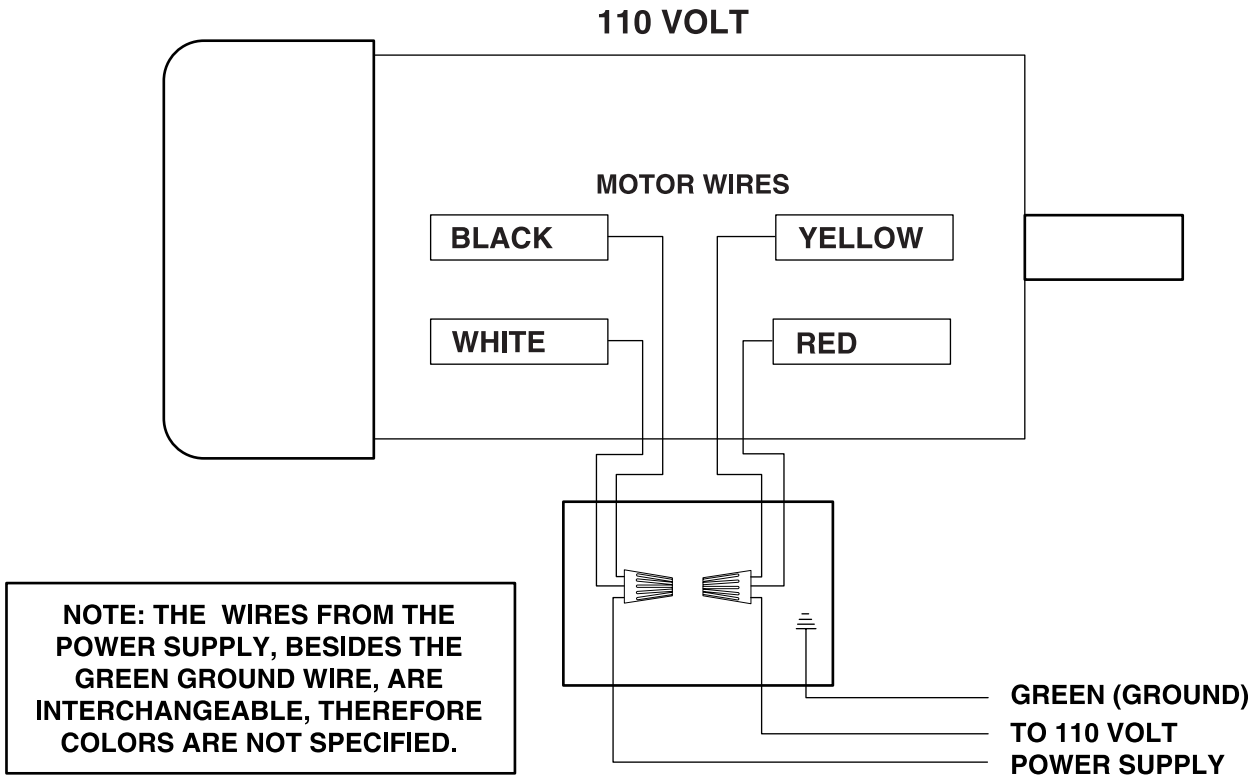
REF	PART #	DESCRIPTION
01	P4186Z001	BODY
02	PB32	HEX BOLT 5/16"-18 X 5/8"
03	P4186Z003	WHEEL BRACKET
04	P4186Z004	NUT
05A	P4186Z005A	SPRING-N/S
06	P4186Z006	TRACKING KNOB
07	PLW01	LOCK WASHER 5/16"
08	PN02	HEX NUT 5/16"-18
09	P4186Z009	ADJUSTING SCREW
10A	P4186Z010A	UPPER WHEEL BRACKET-CI
11A	P4186Z011A	TILT AXLE-CI
12A	PN03M	HEX NUT 8MM
13A	P4186Z013	UPPER WHEEL SHAFT-CI
14A	P6203	BEARING 6203 ZZ
15A	P4186Z015A	UPPER WHEEL-CAST IRON
16	P1012029	WHEEL PROTECTOR
17	PN01	HEX NUT 1/2" -20
18A	P4186Z018A	UPPER GUARD-N/S
19	P4186Z019	GUARD LOCKING KNOB
20A	PR23M	INT RETAINING RING 40MM
21A	PS01	SCREW 10 -24 X 1/2"
22	P4186Z022	SWITCH
22A	P4186Z022A	SWITCH KEY
23	P4186Z023	LOWER GUARD
24	SEE CATALOG	BLADE
25	P4186Z025	HEX NUT 3/4" -18 LH
26A	P4186Z026A	LOWER WHEEL-CAST IRON
27A	P4186Z027A	PULLEY-2 SPEED
28	PLW07	LOCK WASHER 1/2"
30A	PSB17	CAP SCREW 1/4"-20 x 3/8"
32B	P4186Z032B	MOTOR PLATE
34	PW07	WASHER 5/16"
36A	P1012007A	GUIDE BLOCK HOLDER-CI
37	P4186Z037	MOTOR
38A	P4186Z038A	MOTOR PULLEY- 2 SPEED
39	PSS04	SET SCREW 1/4" -20 x 5/16"
40A	PVA37	V-BELT A-37
41A	P4186Z041	SHAFT-N/S
42	PK36M	KEY 5 x 5 x 50mm
43A	P4186Z043A	BEARING BASE-CAST IRON
44A	P6005	BEARING 6005 ZZ
45	PN03	HEX NUT 3/4" -16
46	P4186Z046	BEARING COVER
47	P4186Z047	ADJUSTING SCREW
48	PB11	HEX BOLT 5/16" -18 x 1 1/2"
49	P1019055	LOWER BLADE SUP BRKT
50	PB02	HEX BOLT 1/4" -20 x 5/8"
51	P1012005	SUPPORT BRACKET
52	P4186Z052	BLADE GUARD
53	PB32	HEX BOLT 5/16" -18 x 5/8"
54A	PB05	HEX BOLT 1/4" -20 x 3/4"
55	P4186Z055	GUIDE BAR BRACKET
56	P4186Z056	GUIDE BAR
57	P4186Z057	WORM GEAR
58	P4186Z058	GEAR BOX
59	P4186Z059	HAND WHEEL
60	P4186Z060	EXT RETAINING RING
61	P4186Z061	GEAR SPINDLE

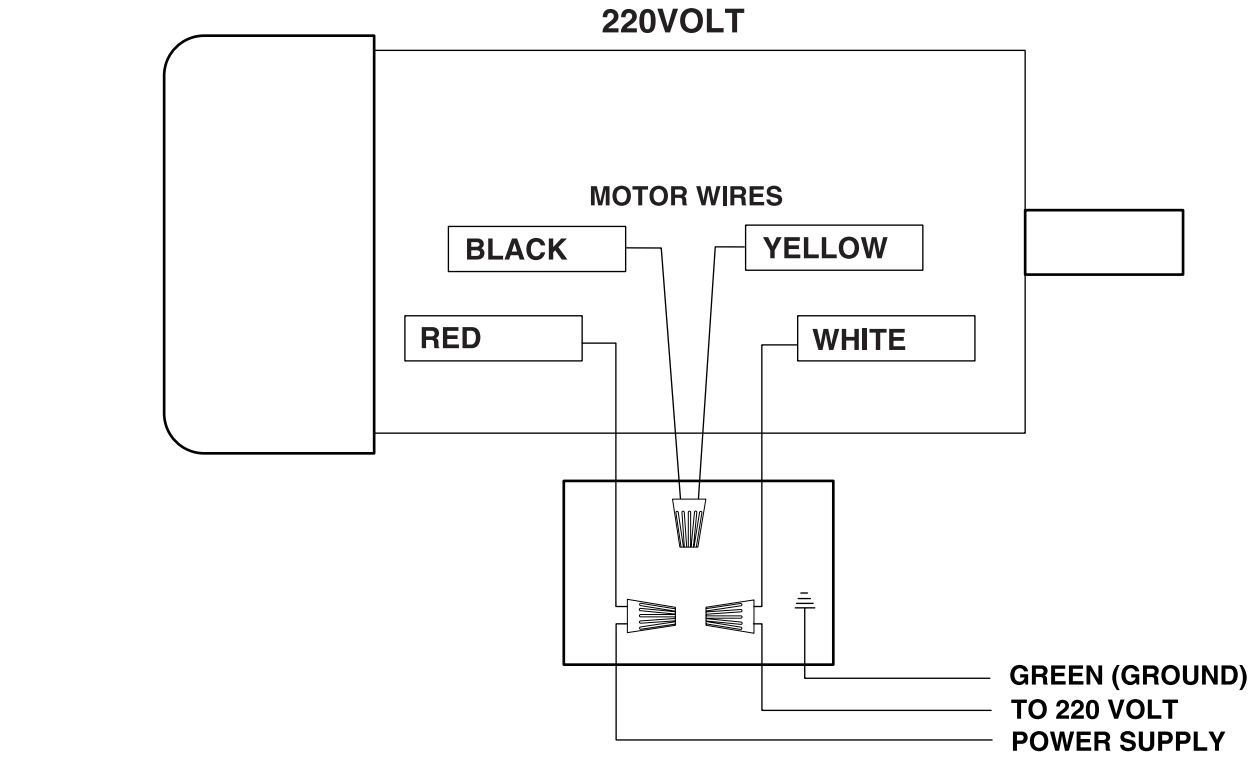
REF	PART #	DESCRIPTION
62	P4186Z062	WORM
63	P1012013	SPACING SLEEVE
64	PW06	FLAT WASHER 1/4"
65	PB51	SCREW 1/4" -20 x 3/8"
66	P4186Z066	LOCK KNOB
67	P1012044	TABLE INSERT
68	PRP44M	ROLL PIN 3 x 10MM
69	PSB62	CAP SCREW 1/4"-20 x 1 1/2"
70	P1012102	RAIL SPACER
71	P1012047	TABLE
72	P1012105	MITER GAUGE
73	PB58	HEX BOLT 3/8" -16 x 2"
74	PB35	HEX BOLT 3/8" -16 x 2 1/2"
75	P1012049	TRUNNION CLAMP SHOE
76	P1012050	TRUNNION
77	P4186Z077	TRUNNION SUPPORT BRKT
78	P4186Z078	LOCATING PIN
79	P1012052	CROSS KNOB
80	PB05	HEX BOLT 1/4" -20 x 3/4"
81	P1012101	FENCE RAIL
82	P1012054	GAUGE
83	P1012053	INDICATOR
84	PW02	FLAT WASHER 3/8"
86	P4186Z086	HEX BOLT 3/8"-16 x 4"
87	P4186Z087	TABLE PIN
88	PS23	PHLP HD SCR 8-32 x 1/4"
89	P1012008	ROUND GUIDE BLOCK
90	P6200	BALL BEARING 6200
91	PR01M	EXT RETAINING RING 10mm
92	P1019Z071	GUIDE BLOCK HOLDER
93	PLW02	LOCK WASHER 1/4"
94	PLN01	LOCK NUT 3/8"-16
95	PN08	HEX NUT 3/8"-16
96	P4186Z096	HINGE PIN
97	P4186Z097	RUBBER WASHER 5/16"
98	PN05	HEX NUT 1/4"
200	P4186Z200	ID/WARNING LABEL
201	G8588	GRIZZLY NAMEPLATE
202	PLABEL-5	"Z" SERIES LABEL
203	PLABEL-20	DO NOT OPEN LABEL
204	PLABEL-18	DISCONNECT POWER LABEL
205	PLABEL-19	HAND NEAR BLADE LABEL
206	PLABEL-14	ELECTRICITY LABEL
207	PWRCRD220L	POWER CORD 220V LONG
208	P4186Z208	STRAIN RELIEF
209	PWRCRD220S	MOTOR CORD
210A	PTS006	THUMBSCREW 1/4"-20 X 3/4"
211	P4186Z211	HANDLE
212A	PB21	HEX BOLT 3/8"-16 x 1"
213	PLW04	LOCK WASHER 3/8"
214	P1012110	FENCE RAIL PLUG
215	PAW03M	ALLEN WRENCH 3mm
216	PAW04M	ALLEN WRENCH 4mm
217	PAW05M	ALLEN WRENCH 5mm
218	P4186Z218	SWITCH MOUNT
219	PS02	PHILIP SCREW 1/4"-20 X 3/4"
220	PSS02	SETSCREW 5/16"-18 X 3/8"
221	PTS002	THUMBSCREW 1/4"-20 X 5/8"



300	P4186Z300	FENCE TUBE
301	P4186Z301	ROLL PIN
302	P4186Z302	REAR FENCE BRACKET
303	P4186Z303	REAR CLAMP
304	PW06	FLAT WASHER ¼"
305	PB19	HEX BOLT ¼"-20 x ½"
306	P4186Z306	CLAMP ROD
307	PN08	HEX NUT ⅜"-16
308	P4186Z308	REAR LOCKING KNOB
309	P4186Z309	FRONT FENCE CLAMP
310	P4186Z310	FRONT LOCKING KNOB

G4186Z Wiring Diagram





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.

WARRANTY CARD

Name _____

Street _____

City _____State_____Zip_____

Phone Number_____E-Mail_____FAX_____

MODEL # ____G4186Z 18" Bandsaw _____Order #_____

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
___Catalog
___World Wide Web
___Friend
___Card Deck

___Other_____

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

___American Woodworker
___Cabinetmaker
___Family Handyman
___Fine Homebuilding
___Fine Woodworking
___Home Handyman
___Journal of Light Construction
___Old House Journal
___Popular Mechanics
___Popular Science
___Popular Woodworking
___Practical Homeowner
___Shop Notes
___Today's Homeowner
___WOOD
___Wooden Boat
___Woodshop News
___Woodsmith
___Woodwork
___Woodworker
___Woodworker's Journal
___Workbench

___Other_____

3. Which of the following woodworking/remodeling shows do you watch?

___Backyard America
___Home Time
___The American Woodworker
___The New Yankee Workshop
___This Old House
___Woodwright's Shop

___Other_____

4. What is your annual household income?

___$20,000-$29,999
___$30,000-$39,999
___$40,000-$49,999
___$50,000-$59,999
___$60,000-$69,999
___$70,000-$79,999
___$80,000-$89,999
___$90,000 +

5. What is your age group?

___20-29
___30-39
___40-49
___50-59
___60-69
___70 +

6. How long have you been a woodworker?

___0 - 2 Years
___2 - 8 Years
___8 - 20 Years
___20+ Years

7. How would you rank your woodworking skills?

___Simple
___Intermediate
___Advanced
___Master Craftsman

8. What stationary woodworking tools do you own? Check all that apply.

___Air Compressor
___Band Saw
___Drill Press
___Drum Sander
___Dust Collector
___Horizontal Boring Machine
___Jointer
___Lathe
___Mortiser
___Panel Saw
___Planer
___Power Feeder
___Radial Arm Saw
___Shaper
___Spindle Sander
___Table Saw
___Vacuum Veneer Press
___Wide Belt Sander

___Other_____

9. How many of your woodworking machines are Grizzly? _____

10. Which benchtop tools do you own? Check all that apply.

___1" x 42" Belt Sander
___5" - 8" Drill Press
___8" Table Saw
___8" - 10" Bandsaw
___Disc/Belt Sander
___Mini Jointer
___6" - 8" Grinder
___Mini Lathe
___10" - 12" Thickness Planer
___Scroll Saw
___Spindle/Belt Sander

___Other_____

11. How many of the machines checked above are Grizzly? _____

12. Which portable/hand held power tools do you own? Check all that apply.

___Belt Sander
___Biscuit Joiner
___Circular Saw
___Detail Sander
___Drill/Driver
___Miter Saw
___Orbital Sander
___Palm Sander
___Portable Planer
___Saber Saw
___Reciprocating Saw
___Router

___Other_____

13. What machines/supplies would you like Grizzly Industrial to carry?

___12" Table Saw
___12" Jointer
___Combination Planer/Jointer
___Paint & Finishing Supplies
___Contractor's Supplies
___Radial Arm Saw
___Panel Saw
___Brass Hardware
___Lumber

___Other_____

14. What new accessories would you like Grizzly Industrial to carry?

___Builders Hardware
___Fasteners
___Hand Tools
___Wood Components

___Other_____

15. What other companies do you purchase your tools and supplies from?

_____

_____

16. Do you think your purchase represents good value?

___Yes ___No

17. Would you recommend Grizzly Industrial to a friend?

___Yes ___No

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

___Yes ___No

19. Comments:_____

_____

_____

_____

_____

CUT ALONG DOTTED LINE

FOLD ALONG DOTTED LINE

Place
Stamp
Here

GRIZZLY INDUSTRIAL, INC.
P.O. BOX 2069
BELLINGHAM, WA 98227-2069

FOLD ALONG DOTTED LINE

Send a Grizzly Catalog to a friend:

Name_____

Street_____

City_____State_____Zip_____

TAPE ALONG EDGES--PLEASE DO NOT STAPLE