INSTRUCTION MANUAL

Original Instructions

18" Open-End Drum Sander

ITEM # 21106

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

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

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

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

⚠ WARNING!

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

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

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

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SECTION 1: SAFETY

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

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

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

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

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

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

Safety Instructions for Machinery

⚠WARNING

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using machine.

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make your workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are NOT approved safety glasses.

⚠WARNING

WEARING PROPER APPAREL. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

HAZARDOUS DUST. Dust created by machinery operations may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material. Always wear a NIOSH-approved respirator to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB. Only use this tool for its intended purpose—do not force it or an attachment to do a job for which it was not designed. Never make unapproved modifications—modifying tool or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly BEFORE operating machine.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine ***OFF*** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

DAMAGED PARTS. Regularly inspect machine for damaged, loose, or mis-adjusted parts—or any condition that could affect safe operation. Immediately repair/replace BEFORE operating machine. For your own safety, DO NOT operate machine with damaged parts!

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

Additional Safety for Drum Sanders

⚠WARNING

Serious injury or death can occur from getting hands trapped between workpiece and conveyor table and being pulled into machine, or becoming entangled in rotating parts inside machine. Workpieces thrown by sander can strike nearby operator or bystanders with significant force. Long-term respiratory damage can occur from using sander without proper use of a respirator. To reduce the risk of these hazards, operator and bystanders MUST completely heed the hazards and warnings below.

FEEDING WORKPIECE. Placing fingers between workpiece and conveyor can result in pinching injuries, or possibly getting trapped and pulled into sanding area of machine. DO NOT place fingers under bottom of workpiece while feeding it into sander.

SANDING DUST. Sanding creates large amounts of fine airborne dust that can lead to eye injury or serious respiratory illness. Reduce your risk by always wearing approved eye and respiratory protection when sanding. Never operate without adequate dust collection system in place and running. However, dust collection is not a substitute for using a respirator.

POWER DISCONNECT. An accidental startup while changing sanding belts or performing adjustments or maintenance can result in serious entanglement or abrasion injuries. Make sure machine is turned ***OFF***, disconnected from power and air, and all moving parts are completely stopped before changing belts, doing adjustments, or performing maintenance.

SANDPAPER CONTACT. Rotating sandpaper can remove a large amount of flesh quickly. Keep hands away from rotating sanding drum(s) during operation. Never touch moving sandpaper.

AVOIDING ENTANGLEMENT. Tie back long hair, remove jewelry, and do not wear loose clothing or gloves. These can easily get caught in moving parts. Never reach inside machine or try to clear jammed workpiece while machine is operating. Keep all guards in place and secure.

WORKPIECE MATERIAL. This sander is designed to sand only natural wood products or man-made products made from natural wood fiber. DO NOT sand any metal products.

WORKPIECE INSPECTION. Nails, staples, knots, or other imperfections in workpiece can be dislodged and thrown from sander at high rate of speed into operator or bystanders, or cause damage to sandpaper or sander. Never try to sand stock that has embedded foreign objects or questionable imperfections.

KICKBACK. Occurs when a workpiece is ejected out the front of sander at a high rate of speed toward operator or bystanders. To reduce risk of kickback-related injuries, always stay out of workpiece path, only feed one board at a time, and always make sure pressure rollers are properly adjusted below sanding roller. Never sand workpieces below minimum specifications listed in **Machine Data Sheet**.

⚠WARNING

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

⚠CAUTION

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

SECTION 2: POWER SUPPLY

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed. To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by an electrician or qualified service personnel in accordance with all applicable codes and standards.

⚠WARNING

Electrocution, fire, shock, or equipment damage may occur if machine is not properly grounded and connected to power supply.

Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating at 120V 13.92 Amps

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

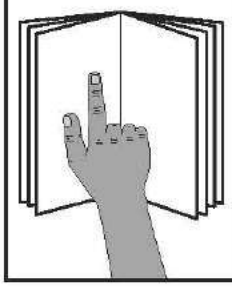
If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the specified circuit requirements.

⚠WARNING

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

This machine is prewired to operate on a power supply circuit that has a verified ground and meets the

SECTION 3: SETUP

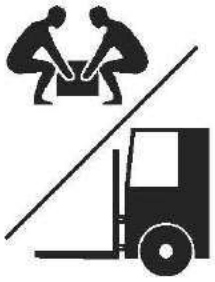


⚠WARNING

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!



⚠WARNING

HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.

Needed for Setup

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

Description	Qty
• Additional People	2
• Safety Glasses	1 Ea.
• Open-End Wrench or Socket 13mm	1
• Open-End Wrench or Socket 14mm	2
• Hex Wrench 4mm	2
• Phillips Head Screwdriver #2	1
• Wood Blocks 2x4	3

Unpacking

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage.

⚠WARNING

SUFFOCATION HAZARD!

Keep children and pets away from plastic bags or packing materials shipped with this machine. Discard immediately.

Inventory

The following is a list of items shipped with your machine. Before beginning setup, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.

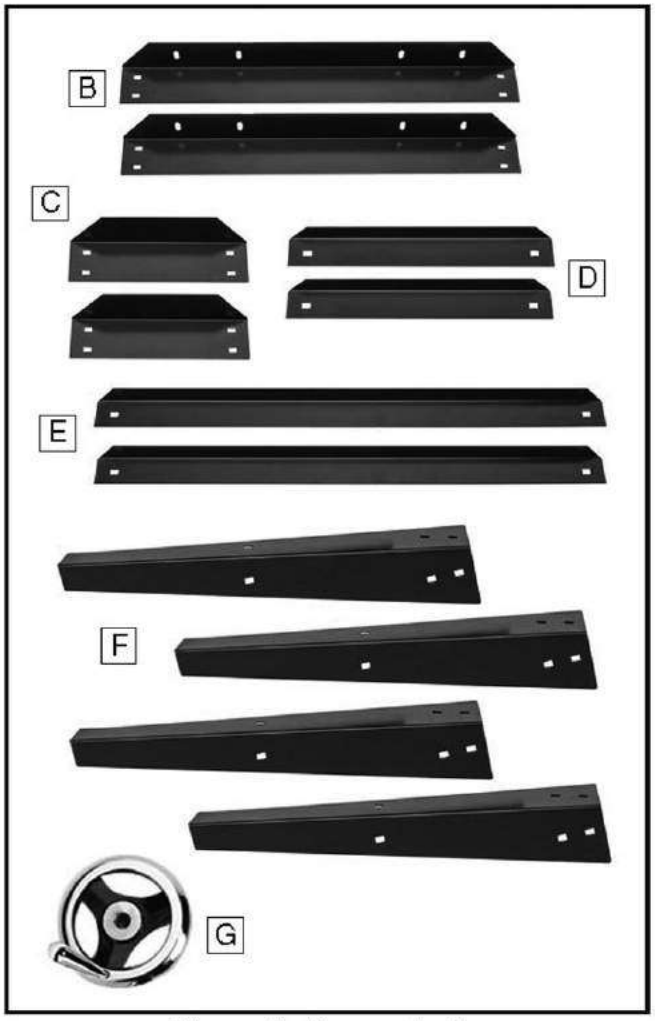


Figure 2. Box contents.

Box 1 (Figure 2)	Qty
A. Drum Sander (Not Shown)	1
B. Top Long Brackets	2
C. Top Short Brackets	2
D. Bottom Short Brackets	2
E. Bottom Long Brackets	2
F. Stand Legs	4
G. Handwheel	1
H. Hardware and Tools (Not Shown)	
— Handwheel w/Handle	1
— Hex Bolts M8-1.25 x 20	4
— Hex Nuts M8-1.25	4
— Flat Washers 8mm	8
— Carriage Bolts M8-1.25 x 15	16
— Flange Nuts M8-1.25	16
— Combination Wrench 8/12mm	1
— Hex Wrenches 4, 5, 6mm	1 Ea.

NOTICE

If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

Site Considerations

Weight Load

Refer to the **Machine Data Sheet** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual. **See below for required space allocation.**

⚠CAUTION

Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.

Physical Environment

The physical environment where the machine is operated is important for safe operation and longevity of machine components. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature range exceeds 41°–104°F; the relative humidity range exceeds 20%–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave enough space around machine to disconnect power supply or apply a lockout/tagout device, if required.

Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

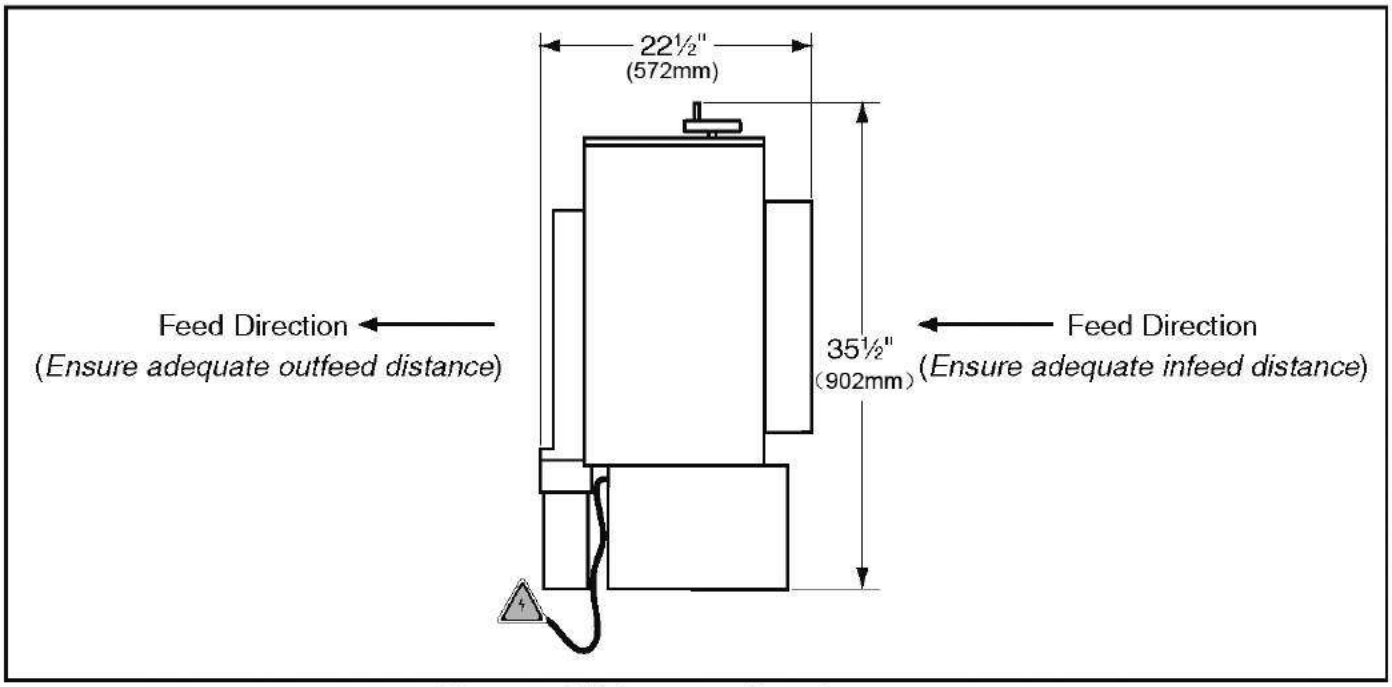


Figure 3. Minimum working clearances.

Assembly

The machine must be fully assembled before it can be operated. Before beginning the assembly process, refer to **Needed for Setup** and gather all listed items. To ensure the assembly process goes smoothly, first clean any parts that are covered or coated in heavy-duty rust preventative (if applicable).

Note: *We recommend assembling the stand upside down. To make it easier, have an assistant hold the pieces while you assemble the stand.*

NOTICE

DO NOT final-tighten stand bolts until stand components have been assembled.

To assemble sander:

1. Move sander crate to an appropriate location, as described in **Site Considerations** on previous page.

2. Mount a top and bottom long bracket to a stand leg and secure by hand with (2) M8-1.25 x 15 carriage bolts and (2) M8-1.25 flange nuts, as shown in **Figure 4**.

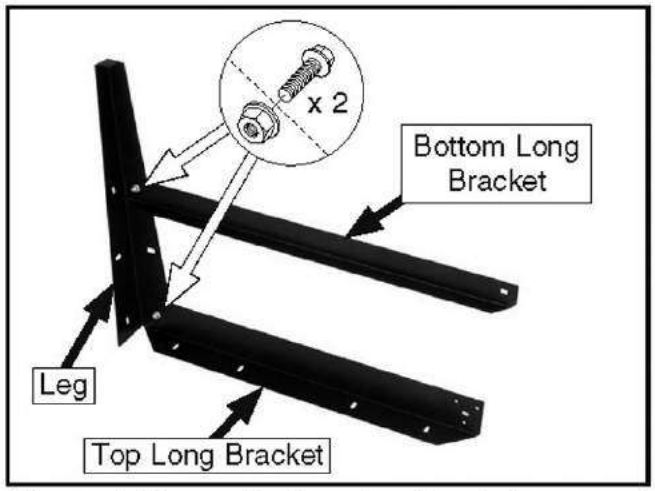


Figure 4. Top and bottom long brackets secured to a stand leg.

3. Secure a second leg to top and bottom long brackets with (2) M8-1.25 x 15 carriage bolts and flange nuts, as shown in **Figure 5**.

4. Repeat **Steps 2-3** with remaining components to build remaining stand leg assembly.

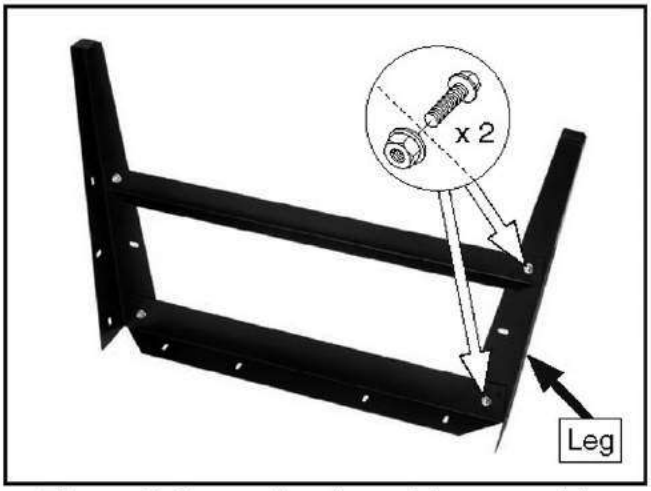


Figure 5. A completed stand leg assembly.

5. Mount top and bottom short brackets to stand leg assembly with (2) M8-1.25 x 15 carriage bolts and (2) M8-1.25 flange nuts, as shown in **Figure 6**.

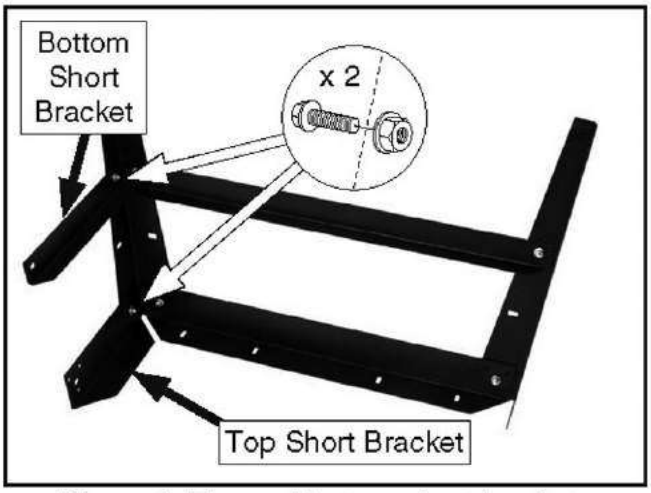


Figure 6. Top and bottom short brackets secured to stand leg assembly.

6. Assemble remaining stand components, as shown in **Figure 7**, with remaining hardware.

Figure 7. Completed stand assembly.

7. Turn stand upright and adjust it so legs are evenly positioned, then tighten all stand fasteners.

⚠WARNING

The sander is very heavy. DO NOT over-exert yourself while unpacking or moving your machine—get assistance.

8. Make sure sander is still resting on shipping pallet.

9. Place pallet and stand near appropriate location (once sander is mounted to stand it will be difficult to move).

10. With help of an assistant, tilt sander back so side with belt access panel faces pallet, move left bottom edge of sander forward, and rest left side of sander on pallet, as shown in **Figure 8**.

    Note: *The base should be even with or stick out from the edge of the pallet to properly install stand assembly.*

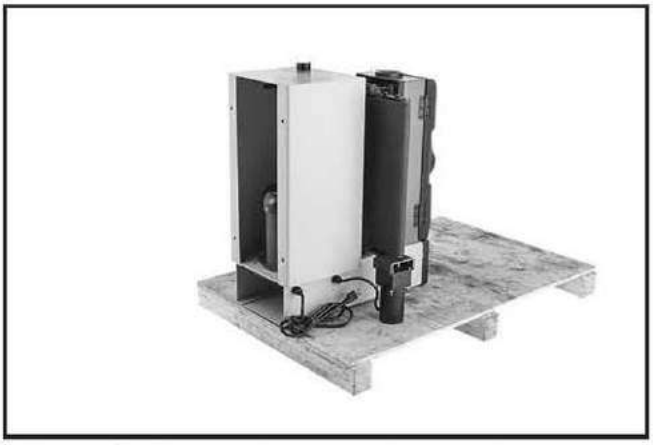


Figure 8. Sander tipped back on pallet against belt access panel.

Tip: *Place two stacks of blocks the same height as the pallet and about 15 inches apart on the floor near the sander base, and lay the stand assembly on the blocks, as shown in* **Figure 9**.

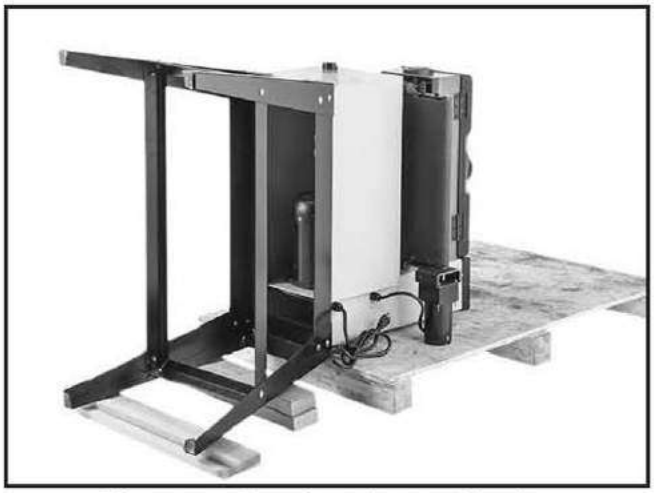


Figure 9. Stand resting on blocks.

11. Lay stand assembly on blocks, as shown in **Figure 9**.

12. Secure stand to sander with (4) M8-1.25 x 20 hex bolts, (8) 8mm flat washers, and (4) M8-1.25 hex nuts (see **Figure 10**).

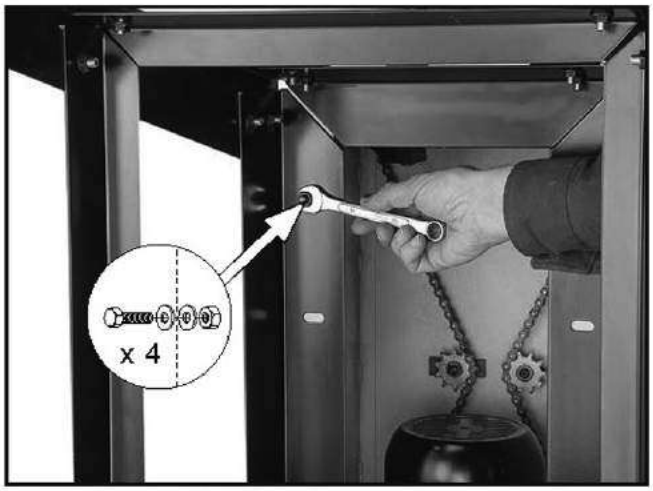


Figure 10. Mounting sander to stand.

13. Lift up on stand and remove blocks.

14. With help from an assistant, carefully tilt sander upright, as shown in **Figure 11**, so rear legs touch the floor.

Figure 11. Tilting sander upright.

⚠CAUTION

If the legs start to slide when tilting, you MUST have a third person hold the stand from sliding to avoid personal injury or machine damage!

15. Slide table elevation handwheel over shaft pin (see **Figure 12**).

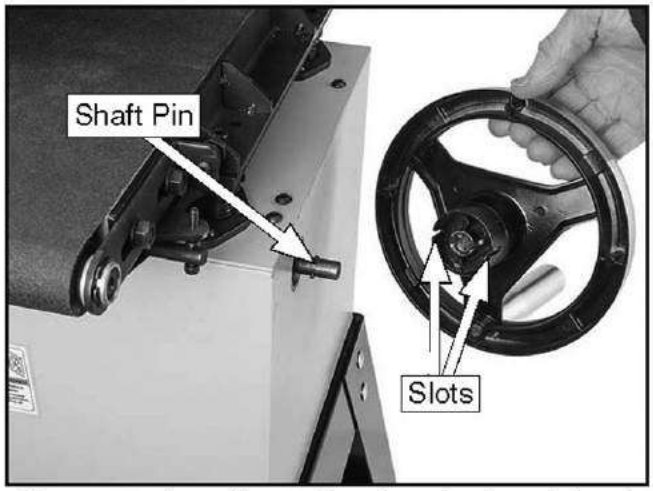


Figure 12. Installing table elevation handwheel.

Dust Collection

⚠CAUTION

This machine creates a lot of wood chips/dust during operation. Breathing airborne dust on a regular basis can result in permanent respiratory illness. Reduce your risk by wearing a respirator and capturing the dust with a dust collection system.

Minimum CFM at Dust Port: 400 CFM

Do not confuse this CFM recommendation with the rating of the dust collector. To determine the CFM at the dust port, you must consider these variables: (1) CFM rating of the dust collector, (2) hose type and length between the dust collector and the machine, (3) number of branches or wyes, and (4) amount of other open lines throughout the system. Explaining how to calculate these variables is beyond the scope of this manual. Consult an expert or purchase a good dust collection "how-to" book.

To connect dust collection system to machine:

1. Fit dust hose over dust port, and secure in place with a hose clamp.

2. Tug the hose to make sure it does not come off.

   Note: *A tight fit is necessary for proper performance.*

Power Connection

After you have completed all previous setup instructions and circuit requirements, the machine is ready to be connected to the power supply.

To avoid unexpected startups or property damage, use the following steps whenever connecting or disconnecting the machine from the power

Connecting Power

1. Turn the machine power switch **OFF**.

2. Insert the power cord plug into a matching power supply receptacle. The machine is now connected to the power source.

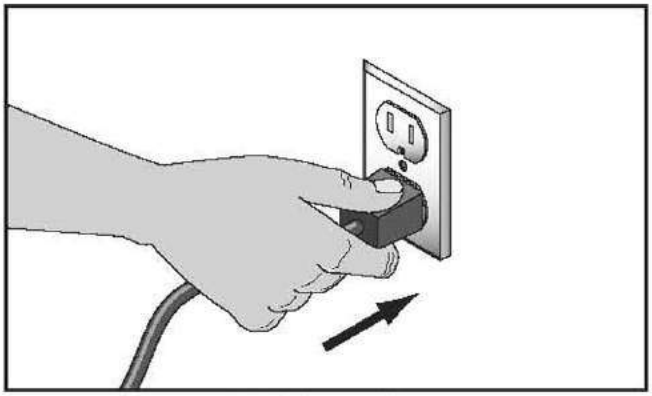


Figure 14. Connecting power.

Disconnecting Power

1. Turn the machine power switch **OFF**.

2. Grasp the molded plug and pull it completely out of the receptacle. DO NOT pull by the cord as this may damage the wires inside.

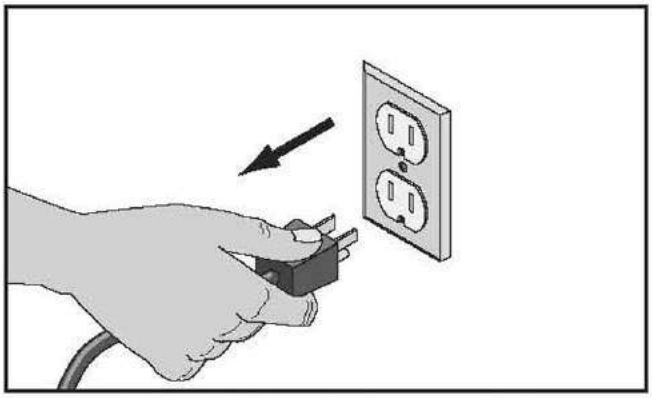


Figure 15. Disconnecting power.

Test Run

Once assembly is complete, test run the machine to ensure it is properly connected to power and safety components are functioning correctly.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine again. The **Troubleshooting** table in the **SERVICE** section of this manual can help.

The Test Run consists of verifying the following: 1) The motor powers up and runs correctly, and 2) the safety disabling mechanism on the switch works correctly.

⚠WARNING

Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, machine until the information is understood.

⚠WARNING

DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.

To test run machine:

1. Clear all setup tools away from machine.
2. Connect machine to power supply.
3. Turn machine ***ON***, verify motor operation, and then turn machine ***OFF***.

   The motor should run smoothly and without unusual problems or noises.

4. Remove switch disabling key, as shown in **Figure 16**.

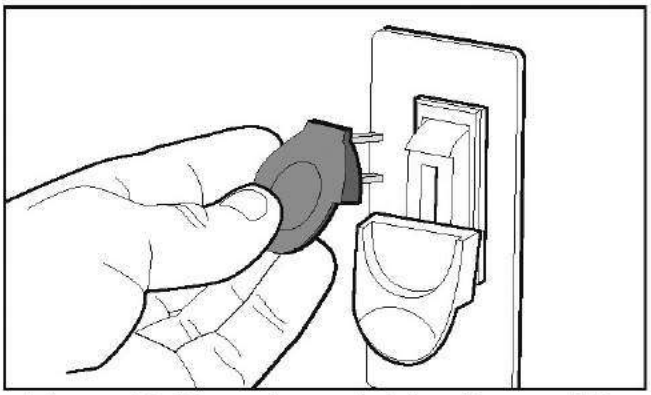


Figure 16. Removing switch key from paddle switch.

5. Try to start machine with paddle switch. The machine should not start.

   —If the machine *does not* start, the switch disabling feature is working as designed.

   —If the machine *does start*, immediately stop the machine. The switch disabling feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

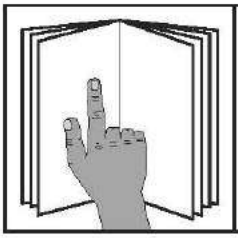
Recommended Adjustments

For your convenience, the adjustments listed below have been performed at the factory and no further setup is required to operate your machine.

However, because of the many variables involved with shipping, some of these adjustments may need to be repeated to ensure optimum results.

- **Tensioning V-Belt**
- **Tensioning & Tracking Conveyor Belt**
- **Table Adjustments**

SECTION 4: OPERATIONS

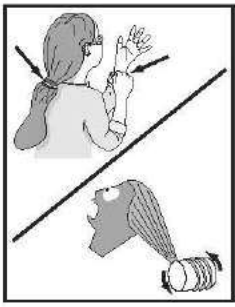


⚠WARNING

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

⚠WARNING

Eye injuries, respiratory problems, or hearing loss can occur while operating this tool. Wear personal protective equipment to reduce your risk from these hazards.



⚠WARNING

Keep hair, clothing, and jewelry away from moving parts at all times. Entanglement can result in death, amputation, or severe crushing injuries!

NOTICE

If you are not experienced with this type of machine, WE STRONGLY RECOMMEND that you seek additional training outside of this manual. Read books/magazines or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

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

1. Examines workpiece to verify it is suitable for sanding and to determine which sanding belt grit size to use.

2. Verifies workpiece has necessary outfeed clearance and support. If workpiece is wider than conveyor table, operator supports workpiece full width. If workpiece is overly long and difficult to handle, operator uses a roller support stand to assist with feeding.

3. Adjusts table height to approximate workpiece thickness.

4. Puts on required safety glasses and respirator, and ensures dust collection is connected to dust port.

5. Turns motor ***ON***.

6. Feeds workpiece into sander by placing front end on infeed side of conveyor table and supporting back end until workpiece engages with pressure rollers.

   Note: *During initial pass with a new workpiece, operator adjusts table height as necessary so workpiece only makes light contact with sanding belt and does not overload sander.*

7. Receives workpiece from outfeed side of conveyor table. If workpiece is wider than conveyor table, operator rotates workpiece 180° and feeds workpiece back through sander.

8. Raises height of conveyor table a small amount (typically ¼ of a full rotation of handwheel), then repeats the feeding process of workpiece through sander.

9. Changes sandpaper to a finer grit, as needed.

10. Repeats **Steps 8–11** as needed, turns sander ***OFF***, and disconnects it from power.

Stock Inspection & Requirements

Some workpieces are not safe to sand, or they may require further preparation before they can be safely sanded without increasing risk of injury to the operator or damaging the sanding belt or the sander.

Before sanding, inspect all workpieces for the following:

- ***Material Type:*** This machine is intended for sanding natural and man-made wood products, and laminate-covered wood products. This machine is NOT designed to sand glass, stone, tile, plastics, drywall, cementious backer board, metal, etc.

  Sanding metal objects can increase the risk of fire. Sanding improper materials increases the risk of respiratory harm to the operator and bystanders due to the especially fine dust inherently created by all types of sanding operations—even if a dust collector is used. Additionally, the life of the machine and sanding belts may be greatly reduced (or immediately damaged) from sanding improper materials.

- ***Foreign Objects:*** Nails, staples, dirt, rocks and other foreign objects are often embedded in wood. While sanding, these objects can become dislodged and tear the sanding belt. Always visually inspect your workpiece for these items. If they can't be removed, DO NOT sand the workpiece.

- ***Wet or "Green" Stock:*** Sanding wood with a moisture content over 20% causes unnecessary clogging and wear on the sanding belt, increases the risk of kickback, and yields poor results.

- ***Excessive Warping:*** Workpieces with excessive cupping, bowing, or twisting are dangerous to sand because they are unstable and often unpredictable when being sanded. DO NOT use workpieces with these characteristics!

Setting Depth of Cut

The optimum depth of cut will vary based on the type of wood, feed rate, and sandpaper grit. Attempts to remove too much material can cause jamming, wood burning, rapid paper wear or tearing, poor finish, and belt slippage.

To set depth of cut:

1. Rotate table elevation handwheel (see **Figure 17**) until conveyor table is well below sanding drum, then raise table, allowing a gap between workpiece and sanding drum.

   Note: *When adjusting table to sand a thicker workpiece, lower and then raise table to remove backlash from adjustment mechanism.*

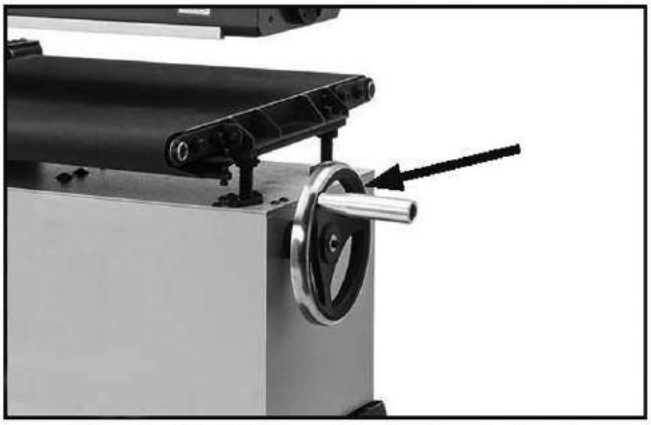


Figure 17. Table elevation handwheel.

2. Turn machine ***ON*** and feed workpiece into sander. SLOWLY raise conveyor belt until workpiece makes light contact with sanding drum. This is the correct height to begin sanding the workpiece.

3. After initial pass, turn handwheel up to ¼ turn (1/64" or 0.4mm)—maximum depth for most sanding conditions.

   Note: *Each full turn of the table elevation handwheel raises the conveyor table approximately 0.060" (1/16") or 1.5mm.*

Adjusting Conveyor Feed Rate

The potentiometer (see **Figure 18**) allows you to increase the feed rate from 0 -3 MPM . The correct speed to use depends on the type of stock you are using (hardwood vs. softwood) and the stage of finish with that workpiece.

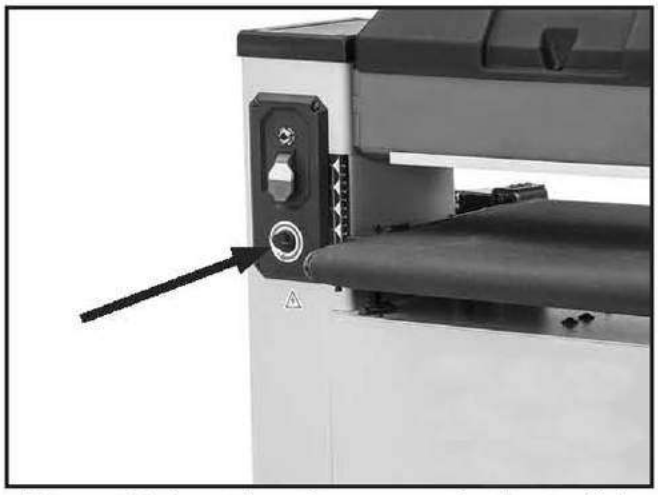


Figure 18. Location of conveyor feed rate dial.

As a general rule, a slower feed rate will sand the surface smoother, but runs the risk of burning the wood; a faster feed rate will remove material faster, but runs the risk of overloading the motor or damaging the sandpaper.

Use trial-and-error to determine the best settings for your specific applications.

To adjust feed belt speed:

1. Turn ***ON*** the conveyor belt (DO NOT adjust conveyor speed when the conveyor motor is ***OFF***).

2. Rotate potentiometer (see **Figure 18**) clockwise to increase the feed speed or counterclockwise to decrease the conveyor feed speed.

Sanding

⚠WARNING

DO NOT sand more than one board at a time. Minor variations in thickness can cause one board to be propelled by the rapidly spinning sanding drum and ejected from the machine. NEVER stand directly in front of the outfeed area of the machine. Failure to do so could result in severe personal injury.

To sand a workpiece:

1. Adjust table height according to instructions

2. Make sure dust collection hose and collection system is secured and turned on before turning sander ***ON***.

3. Feed workpiece through sander. Retrieve workpiece by standing at the side—not at the outfeed end.

4. Run wide stock through two or three times without adjusting table height. Turn stock 180° between passes to ensure an evenly sanded surface.

NOTICE

Overloading the motor or pushing the sander to failure weakens the electrical system. Repeatedly doing so is abuse to the machine that will cause motor, capacitor, or circuit breaker damage, which is not covered under warranty.

Sanding Tips

- Replace coarse grit sandpaper with a finer grit to achieve a smoother finish.
- Raise the table a maximum of ¼ turn of the handwheel until the workpiece is the desired thickness.
- Reduce snipe when sanding more than one board of the same thickness by feeding them into the sander with the front end of the second board touching the back end of the first board.
- Feed boards into the sander at different places on the conveyor to maximize sandpaper life and prevent uneven conveyor belt wear.
- DO NOT sand boards less than 6" long or less than ⅛" thick to prevent damage to the workpiece and the drum sander.
- When sanding workpieces with irregular surfaces, such as cabinet doors, take very light sanding passes to prevent gouges. When the drum moves from sanding a wide surface to sanding a narrow surface, the load on the motor will be reduced, and the drum will speed up, causing a gouge.
- DO NOT edge sand boards. This can cause boards to kickback, causing serious personal injury. Edge sanding boards also can cause damage to the conveyor belt and sandpaper.
- When sanding workpieces with a bow or crown, place the high point up (prevents the workpiece from rocking) and take very light passes.
- Feed the workpiece at an angle to maximize stock removal and sandpaper effectiveness, but feed the workpiece straight to reduce sandpaper grit scratches for the finish passes.

Choosing Sandpaper

There are many types of sanding belts to choose from. We recommend aluminum oxide for general workshop environments. Below is a chart that groups abrasives into different classes, and shows which grits fall into each class.

Grit	Class	Usage
60	Coarse	Fast sanding, dimensioning, and glue removal.
80–100	Medium	Removing planer marks and initial finish sanding.
120–180	Fine	Finish sanding.

The general rule of thumb is to sand a workpiece with progressively higher grit numbers, with no one grit increase of more than 50. Avoid skipping grits; the larger the grit increase, the harder it will be to remove the scratches from the previous grit.

Ultimately, the type of wood you use and your stage of finish will determine the best grit types to install on your sander.

Replacing Sandpaper

The machine is designed for 3" wide sandpaper rolls.

Items Needed	Qty
Flat Head Screwdriver	1
Hex Wrench 4mm	1
Hex Wrench 5mm	1
Carton Cutter or Utility Knife	1

To change sandpaper:

1. DISCONNECT MACHINE FROM POWER!

2. Open top cover and loosen cap screw on right spring-loaded clamp, as shown in **Figure 19**.

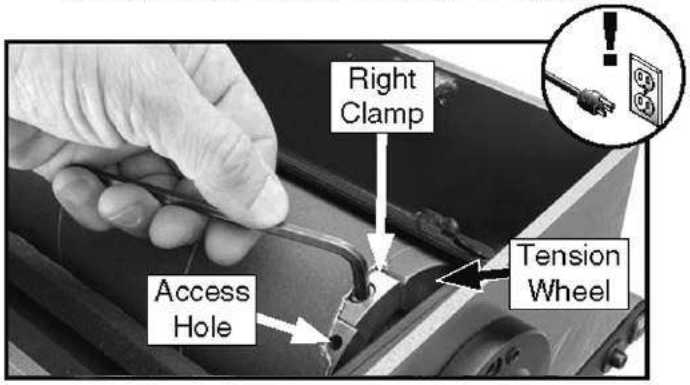


Figure 19. Example of loosening cap screw on right spring-loaded clamp (dust hood removed for clarity).

3. Remove sandpaper from clamp. Use a flat head screwdriver, if necessary, to loosen clamp to free sandpaper.

4. Rotate drum to carefully remove sandpaper strip from most of the drum but the end.

   Note: *Take care not to rip or tear the old sandpaper, so you can use it as a template when cutting out the replacement sandpaper strip. This is easier than using the drawing shown in* ***Figure 20.***

5. Loosen cap screw on left clamp and fully remove sandpaper strip.

6. Use old sandpaper strip as a pattern, if at all possible. Otherwise, use pattern in **Figure 20**, to cut a new piece of sandpaper to the necessary shape. After cutting the 12½" angled sides, measure 2" along same sides and cut off ends with a knife.

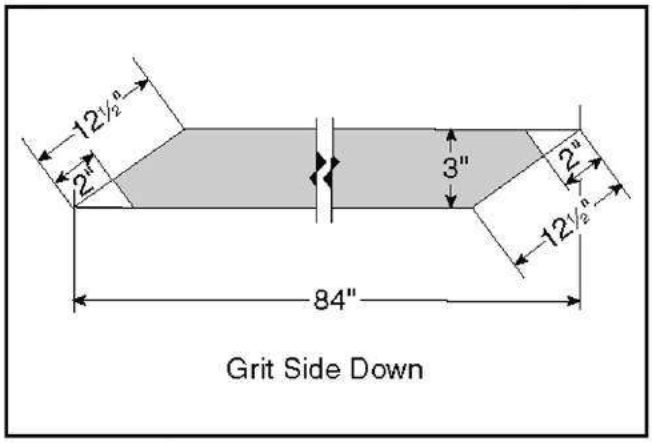


Figure 20. Sandpaper pattern for drum.

7. Insert corner of new sandpaper into left clamp and tighten cap screw, as shown in **Figure 21**.

   Note: *The angled side of the sandpaper must be flush with the left drum edge. If the sandpaper overlaps the edge, you may have difficulty closing the cover.*

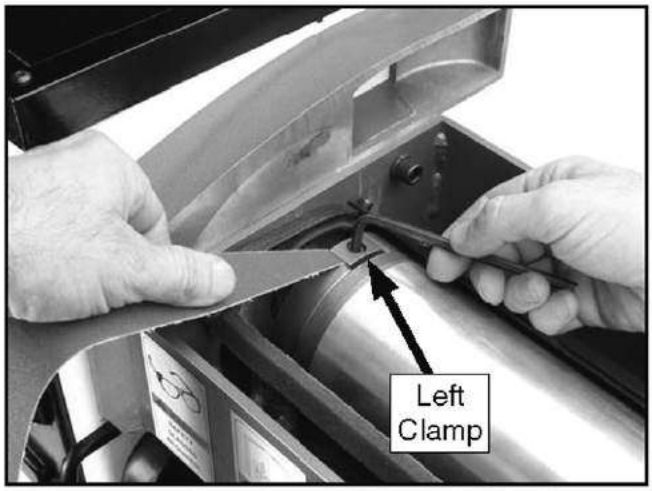


Figure 21. Securing sandpaper in left clamp.

8. Wrap sandpaper around drum (see **Figure 22**), ensuring there are no bubbles or overlapping edges.

Figure 22. Wrapping sandpaper around drum.

9. When sandpaper reaches right side of drum, move sandpaper out of the way with a 4mm hex wrench and place it into access hole.

10. Rotate drum toward you so hex wrench rests against frame, as shown in **Figure 23**.

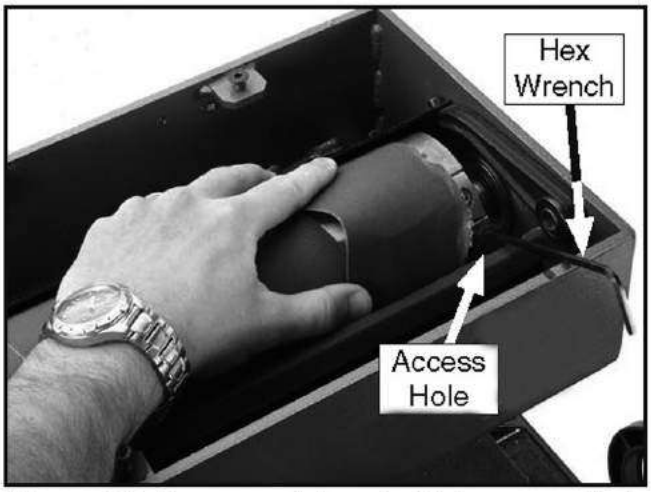


Figure 23. Hex wrench inserted into access hole on right tension wheel.

11. Firmly hold down sandpaper with both hands, rotate drum toward you, then wrap end of sandpaper over top of the drum (see **Figure 24**).

Figure 24. Wrapping sandpaper over tension wheel.

12. Place end of sandpaper into clamp, secure it, and remove hex wrench from access hole. Sandpaper should seat flat against roller and not overlap at any point.

    —If the sandpaper *does not* fit into the right clamp, you may have inserted sandpaper too deeply into left clamp. Also, check to make sure the length, width, and angled cuts match the pattern in **Figure 20**. Make adjustments to sandpaper if necessary.

    —If sandpaper completely covers access hole, you may have placed too little sandpaper into left clamp. Unwrap sandpaper and repeat **Steps 7–12**.

13. In either case, re-install sandpaper, repeat **Steps 7–12**, and continue adjusting paper until it fits into clamp.

14. When finished, reconnect dust collection system.

Changing Sanding Drum Speeds

This machine features two different sanding speeds, which are controlled by belt position on the pulleys (see **Figure 25**).

IMPORTANT: Proper belt tension is important for optimum power transmission. Any time pulley adjustments are made, be sure to re-tension the belt.

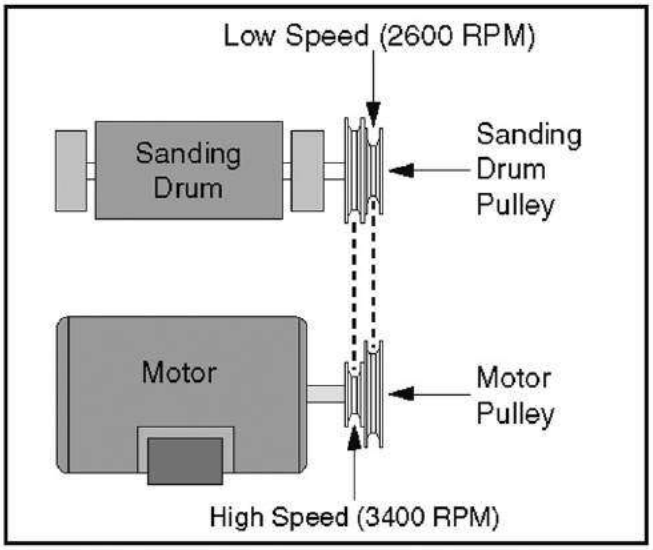


Figure 25. Pulley speed settings.

Tools Needed: **Qty**
Hex Wrenches 4, 8mm ..... 1 Ea.

To adjust V-belt location:

1. DISCONNECT MACHINE FROM POWER!

2. Remove the pulley cover.

3. Loosen the motor mount cap screws shown in **Figure 26**, and lift motor pulley to de-tension belt.

4. Tighten motor mount cap screws to keep motor de-tensioned during belt change.

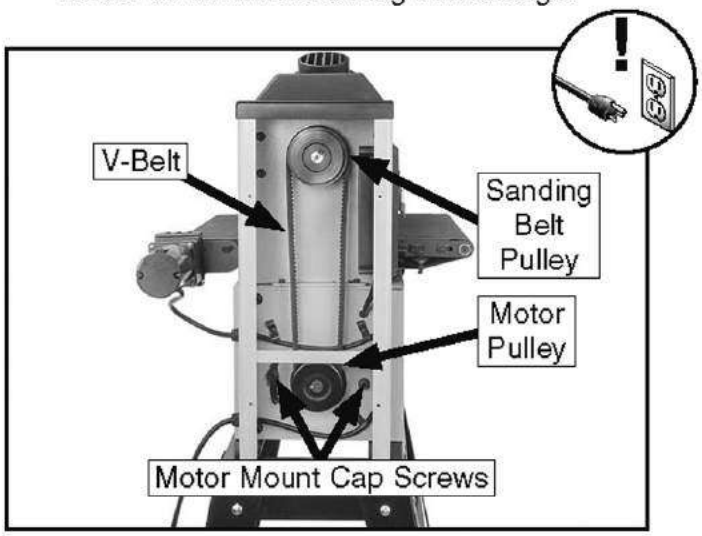
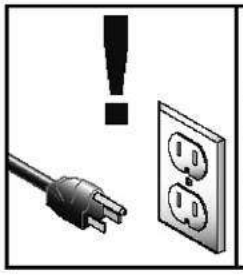


Figure 26. Belt drive system.

5. Roll V-belt onto correct pulley for sanding operation, and follow steps outlined in **Tensioning V-Belt** on **Page 31** to properly tension belt before operation.

SECTION 5 : MAINTENANCE



⚠WARNING

To reduce risk of shock or accidental startup, always disconnect machine from power before adjustments, maintenance, or service.

Schedule

Ongoing:
To maintain a low risk of injury and proper machine operation, if you ever observe any of the items below, shut down the machine immediately and fix the problem before continuing operations:

- Loose mounting bolts.
- Damaged sanding belt.
- Worn switch.
- Worn or damaged cords or plugs.
- Damaged V-belts.
- Any other unsafe condition.
- Oil the feed belt roller and drive bushings.
- Clean/vacuum dust buildup from inside cabinet and off of the motor.

Cleaning

Cleaning the
Vacuum excess sawdust, and wipe off the remaining dust with a dry cloth.

Lubrication

The feed belt bushings should be lubricated daily with

Avoid using excess lubrication. Too much lubricant attracts sawdust and will clog the belt bushings.

Bushings

Oil the drive bushings on each end of the feed belt rollers and remove the belt access cover to access the drive bushings (see **Figure 30**).

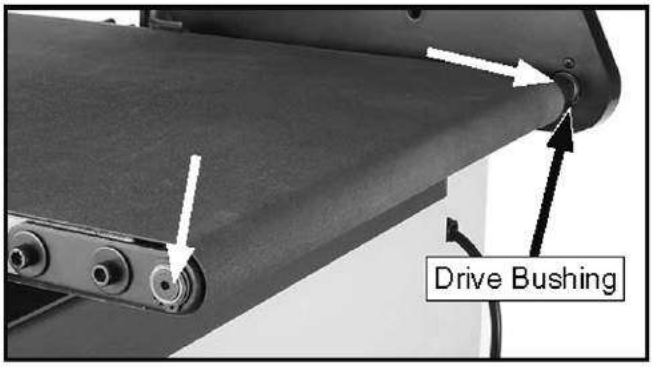


Figure 30. Bushing lubrication locations.

Bushings

Oil Amount.....As Needed
Check/Add Frequency.....6 Months

Lubricate the table lift screws, chain, and helical gear with lithium grease every six months. Clean the chain and table lift screws (see **Figure 31**), then apply grease onto the chain links and screw threads. Clean the helical gear (see **Figure 32**) and place a dab of grease on the teeth. Move the table up or down to spread the grease thoroughly throughout the mechanism.

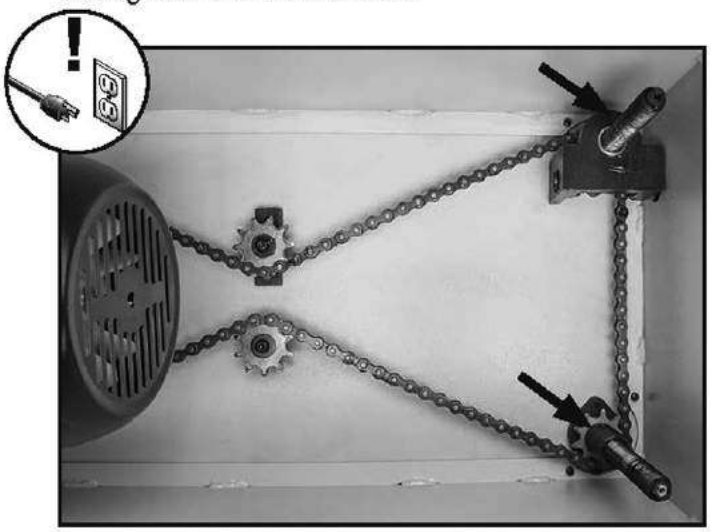


Figure 31. Table lift screws (2 of 4 shown).

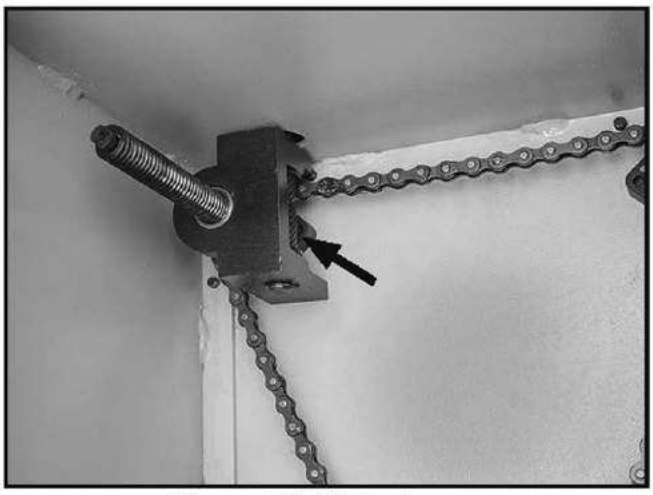


Figure 32. Helical gear.

Cleaning Sanding Belts

To increase the working life of your sanding belts, clean them whenever they decrease in performance due to heavy loading of material.

To clean sanding belt:

1. DISCONNECT MACHINE FROM POWER!
2. Set table to thickness of cleaning pad.
3. Connect machine to power, then run pad through sander two or three times. DO NOT take too deep of a cut—the belt should barely touch cleaning pad!

SECTION 6: SERVICE

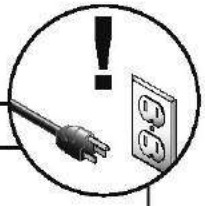
Review the troubleshooting and procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure, call our Technical Support. **Note:** *Please gather the serial number and manufacture date*

Troubleshooting

Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	1. Switch disabling key removed. 2. Incorrect power supply voltage or circuit size. 3. Machine circuit breaker tripped. 4. Variable speed dial at fault. 5. Start capacitor at fault. 6. Motor wires connected incorrectly. 7. Power supply circuit breaker tripped or fuse blown. 8. Centrifugal switch/contact points is at fault. 9. Wiring open/has high resistance. 10. Motor at fault.	1. Install switch disabling key. 2. Ensure correct power supply voltage and circuit size. 3. Reset circuit breaker on switch. 4. Test/repair if at fault. 5. Test/replace if at fault. 6. Correct motor wiring connections 7. Ensure circuit is sized correctly and free of shorts. Reset circuit breaker or replace fuse. 8. Test/repair/replace. 9. Check/fix broken, disconnected, or corroded wires. 10. Test/repair/replace.
Machine stalls or is underpowered.	1. Workpiece material is not suitable for machine. 2. Feed rate/cutting speed too fast. 3. Machine undersized for task. 4. V-belt is slipping. 5. Plug or receptacle at fault. 6. Run capacitor at fault. 7. Motor bearings at fault. 8. Motor overheated, tripping machine circuit breaker. 9. Centrifugal switch at fault. 10. Motor is at fault.	1. Only sand wood; ensure moisture is below 20% and there are no foreign materials in the workpiece. 2. Decrease feed rate/cutting speed. 3. Clean/replace sandpaper; reduce feed rate/sanding depth. 4. Replace bad belt, align pulleys, and re-tension V-belt 5. Test for good contacts/correct wiring. 6. Test/repair/replace. 7. Test/repair/replace. 8. Clean motor/let cool, and reduce workload. Reset breaker. Test/repair/replace. 9. Test/replace. 10. Test/repair/replace.
Machine has vibration or noisy operation.	1. Machine undersized for task. 2. Motor or component loose. 3. V-belt is worn, loose, or misaligned. 4. Pulley loose. 5. Motor fan rubbing on fan cover. 6. Motor mount loose/broken. 7. Motor bearings at fault.	1. Reduce feed rate/sanding depth. 2. Inspect/replace damaged bolts/nuts, and re-tighten with thread-locking fluid. 3. Inspect/replace belt; realign pulleys 4. Realign/replace shaft, pulley, set screw, and key. 5. Replace dented fan cover/damaged fan. 6. Tighten/replace. 7. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

Operation



Symptom	Possible Cause	Possible Solution
Grinding, screeching, or rubbing noise when sanding drum is powered up.	1. Drum bearings are worn and need replacement.	1. Replace drum bearings.
Short V-belt lifespan.	1. Pulleys not aligned correctly. 2. Improperly tensioned.	1. Align pulleys 2. Properly tension V-belt
Machine lacks power; drum stops turning under load.	1. V-belt loose. 2. Too much pressure on sanding drum.	1. Tighten V-belt 2. Lower conveyor table
Conveyor belt slips under load.	1. Belt tension not properly adjusted. 2. Belt tracking not properly adjusted. 3. Conveyor belt worn. 4. Workpiece too heavy.	1. Properly adjust belt tension 2. Properly adjust belt tracking. 3. Replace conveyor belt. 4. Use lighter workpiece.
Conveyor belt tracks to one side or hits the conveyor table mounts.	1. Conveyor belt tracking is incorrect.	1. Track the conveyor belt so it runs straight
Excessive snipe.	1. Lack of outfeed support. 2. Too much pressure from pressure rollers. 3. Too much pressure from the rear pressure roller.	1. Set up an outfeed table or have someone catch the workpiece as it comes out. 2. Raise pressure rollers 3. Raise rear pressure roller
Workpiece kicks out of sander.	1. Not enough pressure from pressure rollers.	1. Lower pressure roller
Sandpaper comes off drum or is loose.	1. Sandpaper not properly wrapped onto drum. 2. Sandpaper not cut to correct dimensions. 3. Torn or damaged sandpaper. 4. Sandpaper not tightened or fastened correctly. 5. Sanding drum not parallel with table.	1. Re-install sandpaper 2. Use sandpaper cut to correct dimensions. 3. Replace sandpaper. 4. Re-install sandpaper. 5. Adjust sanding drum parallel to table.
Table elevation controls are stiff and hard to adjust.	1. Table lift screws are dirty or loaded with sawdust. 2. Chain idler sprocket cap screws have been over tightened. 3. Elevation handwheel helical gear is dirty or loaded with sawdust.	1. Clean and re-grease table lift screws 2. Adjust the cap screws on the idler sprocket so it can spin freely. 3. Clean and re-grease the helical gear
Burn marks on workpiece.	1. Using too fine of sanding grit for depth of cut. 2. Sandpaper loaded with sawdust and gum 3. Feed rate too slow. 4. Sandpaper not properly wrapped onto drum. 5. Worn sandpaper.	1. Use coarser grit sandpaper or decrease depth of cut. 2. Clean/replace sandpaper. 3. Increase feed rate. 4. Re-install sandpaper. 5. Replace sandpaper.

Tensioning V-Belt

Proper tension is important for optimum power transmission. However, too much tension may cause premature bearing failure.

Correct V-belt tension is achieved when the V-belts can be deflected ½"–¾" when pushed in the middle with moderate pressure. See **Figure 34** for an example of how to perform a V-belt deflection test with a straightedge and ruler.

Items Needed	**Qty**
Hex Wrenches 4 & 8mm	1 Ea.
Phillips Head Screwdriver #2	1
Straightedge	1
Ruler	1

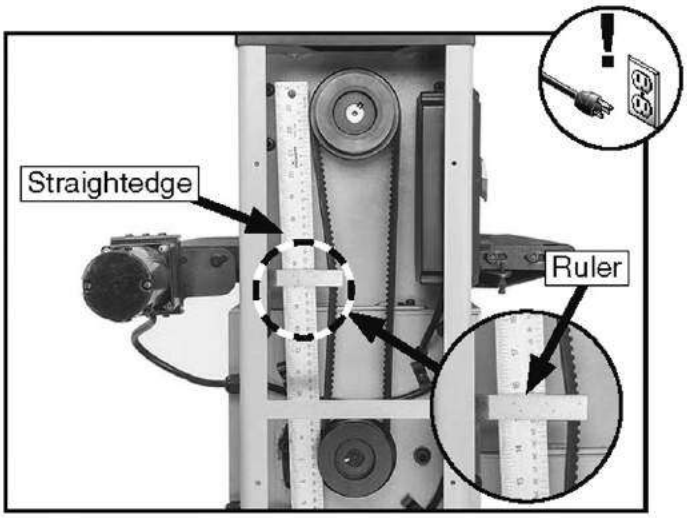


Figure 34. Checking V-belt tension with a straightedge and a ruler (belt access panel removed).

⚠CAUTION

Always inspect V-belt for damage or deterioration when adjusting for tension. Should you find evidence of cracking, abrasion or damage from wood chips or other foreign materials, replace the belt immediately. Belt breakage may lead to mechanical damage or operator injury.

To adjust V-belt tension:

1. DISCONNECT MACHINE FROM POWER!
2. Open belt access panel.
3. Check tension of V-belt, then adjust tension by loosening motor mount cap screws shown in **Figure 35**.

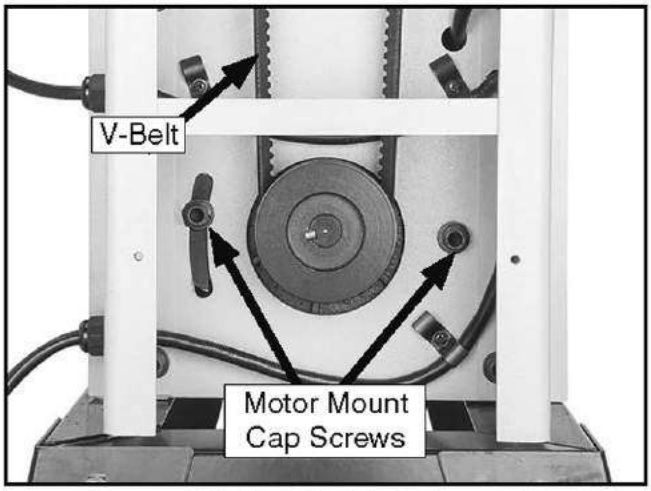


Figure 35. Feed belt V-belt tension.

4. Tension V-belt by pushing down on bottom motor pulley with one hand, then tighten motor mount cap screws and check belt tension.
5. Repeat **Steps 3-4** as needed until V-belt is correctly tensioned, then replace belt access panel.

NOTICE

New V-belts will often stretch and loosen after approximately 16 hours of use. Check frequently after installation and re-tension if necessary.

Changing V-Belt

A worn/damaged V-belt will not provide optimum power transmission from the motor to the drum belt. Inspect the V-belt closely; if you notice fraying, cracking, glazing, or any other damage, replace the belts.

V-belt removal and replacement is simply a matter of loosening the V-belt, rolling it off of the pulleys, replacing it with a new belt, then re-tensioning pulleys.

Items Needed	Qty
Hex Wrenches 4, 8mm	1 Ea.
Phillips Head Screwdriver #2	1
V-Belt (Part P0458Z069)	1
Straightedge	1

To replace V-belt:

1. DISCONNECT MACHINE FROM POWER!
2. Remove pulley belt access cover.
3. Loosen motor mount cap screws shown in **Figure 36**.
4. Lift motor pulley to de-tension belt, and tighten motor mount cap screws (see **Figure 36**) to keep motor de-tensioned during belt change.

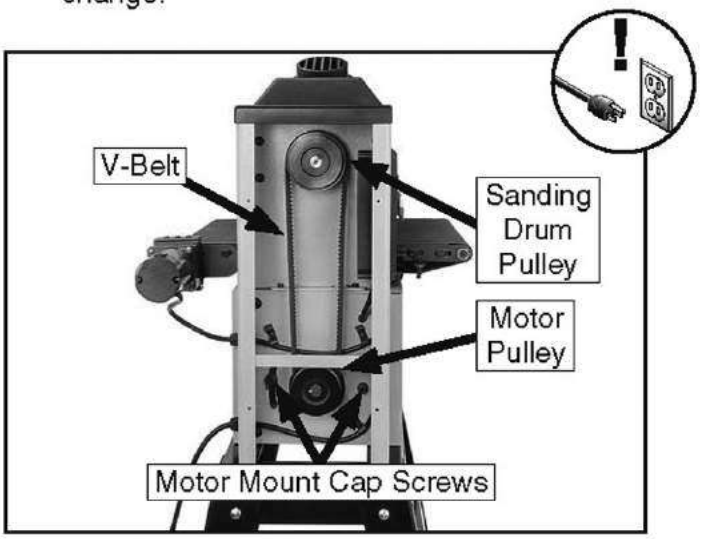


Figure 36. Belt drive system.

5. Roll V-belt off both pulleys and install new V-belt on pulley grooves for desired speed setting (see **Adjusting Sanding Drum Speeds**).
6. Properly tension V-belt (refer to **Tensioning V-Belt** for more information).

NOTICE

New V-belts will often stretch and loosen after approximately 16 hours of use. Check frequently after installation and re-tension if necessary.

7. Re-install V-belt cover from **Step 2**.

Aligning Pulleys

Pulley alignment is an important factor in power transmission and belt life. The pulleys should be parallel to each other and in the same plane (coplaner) for optimum performance.

Each pulley can be adjusted by loosening the set screw that secures the pulley to the shaft, sliding the pulley in/out, and retightening the set screw to lock the pulley in place.

Items Needed	Qty
Hex Wrenches 4, 8mm	1 Ea.
Phillips Head Screwdriver #2	1
Pry Bar	1

To align pulleys:

1. DISCONNECT MACHINE FROM POWER!
2. Open pulley cover.
3. Looking from top, sight down outside face of pulleys to see if pulleys are parallel and aligned with each other (see **Figure 37**).

   — If pulleys *are* aligned, go to **Step 9**.

   — If pulleys are *not* aligned, perform **Steps 4–8**.

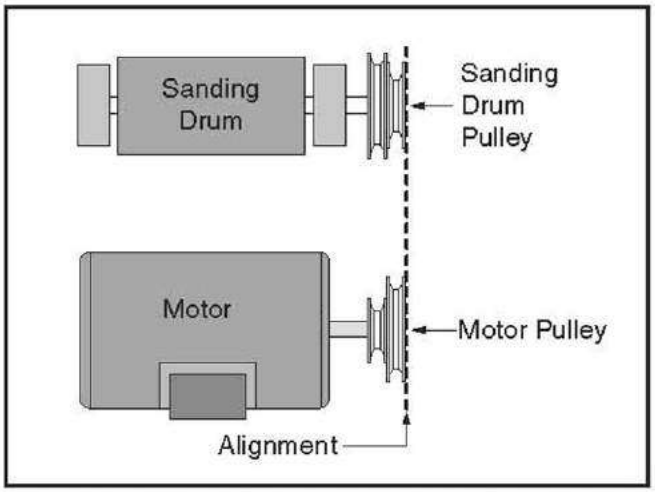


Figure 37. Proper pulley alignment for optimum power transmission.

4. Remove the V-belt (refer to **Changing V-Belt** of **Page 32**).

5. Loosen motor pulley set screws and sanding drum pulley set screws and align both pulleys (see **Figure 38**).

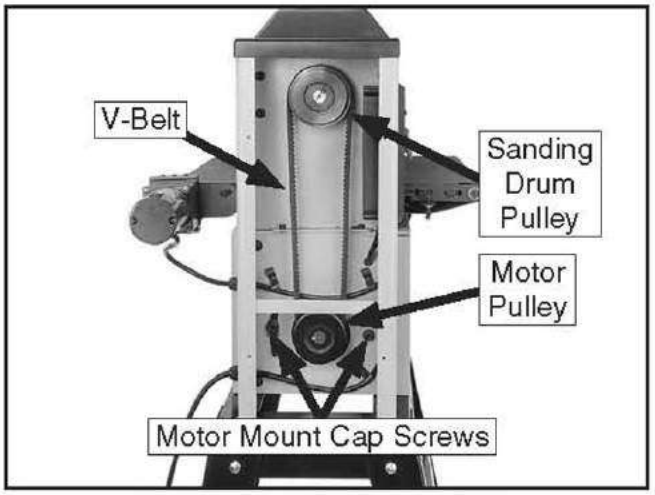


Figure 38. Belt drive system.

6. Tighten the set screws, replace the V-belt, and repeat **Step 3** to verify proper pulley alignment. Pulleys should be parallel and aligned, as shown in **Figure 37**, when belt is properly tensioned.

7. Replace the pulley cover.

Tracking Conveyor Belt

The conveyor belt must track straight. If the feed belt tracks to either side, then the tracking must be corrected or the conveyor belt will become damaged and have to be replaced. The tracking was properly set at the factory, but it is the responsibility of the end user to keep it tracking properly during the life of the machine.

Tracking the conveyor belt is a balancing process that takes patience and a small degree of trial-and-error. Usually you must over-tighten the loose side (the side the belt is tracking towards) to make the conveyor belt move to the middle of the rollers, then loosen that same side to make the feed belt stay in position. If you adjust the tracking screw too much either way, then you have to repeat the process until the conveyor belt rides in the middle and stays there during continuous operation.

Note: *Tracking affects tension, so tension must always be adjusted after tracking.*

Items Needed	**Qty**
Wrench 8mm	1
Hex Wrench 4mm	1

⚠CAUTION

Working around moving conveyor and parts presents pinch/entanglement hazards that can cause personal injury. Use extreme care to keep hands clear of in-running pinch points while adjusting tracking nut/screw when machine is running. Roll up sleeves and do not wear gloves or other apparel that could become entangled in moving parts.

To track conveyor belt:

1. Turn conveyor belt ***ON*** and watch it track.

   —If the belt quickly moves to one side, immediately stop the machine and adjust the belt tracking before running the conveyor again.

   —If the belt tracks evenly, leave it alone.

2. Loosen lock nut (**Figure 39**) on side that conveyor belt tracks towards and tension tracking adjustment screw until conveyor belt tracks in opposite direction.

   Note: *Small tracking changes may take up to three minutes before they are noticeable.*

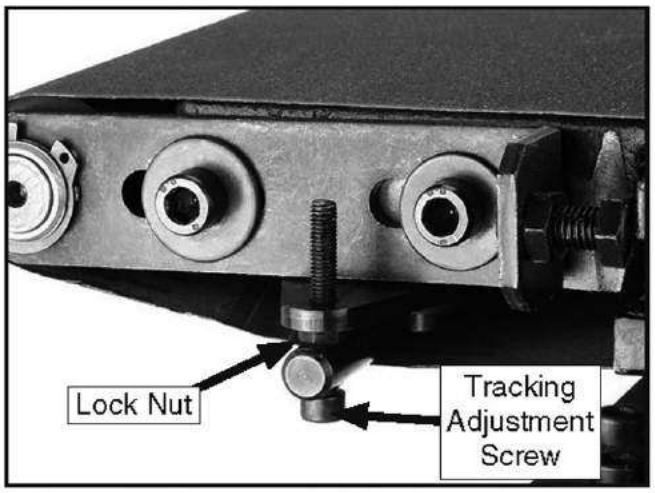


Figure 39. Conveyor belt tracking adjustment bolt.

3. When conveyor belt is near the middle of the rollers or table, loosen tracking adjustment screw until feed belt stops moving and tracks straight.

   —If conveyor belt tracks too far to the other side, loosen tracking adjustment screw as necessary to bring it back. Repeat **Steps 2 & 3** until tracking is correct.

Tensioning Conveyor Belt

The conveyor belt will stretch when new and will eventually need to be tensioned. This is most obvious if the conveyor belt starts slipping on the rollers.

When you tension the conveyor belt, focus on adjusting the tensioning bolts in even increments. Adjusting one side more than the other will cause tracking problems, which will require you to make additional adjustments to get the sander tracking correctly again.

Items Needed	**Qty**
Wrench 12mm	2
Hex Wrench 6mm	1

⚠CAUTION

Working around moving conveyor and parts presents pinch/entanglement hazards that can cause personal injury. Use extreme care to keep hands clear of in-running pinch points while adjusting tracking nut/screw when machine is running. Roll up sleeves and do not wear gloves or other apparel that could become entangled in moving parts.

To tension conveyor belt:

1. Loosen feed roller lock screws, shown in **Figure 40**, on both sides of conveyor belt.

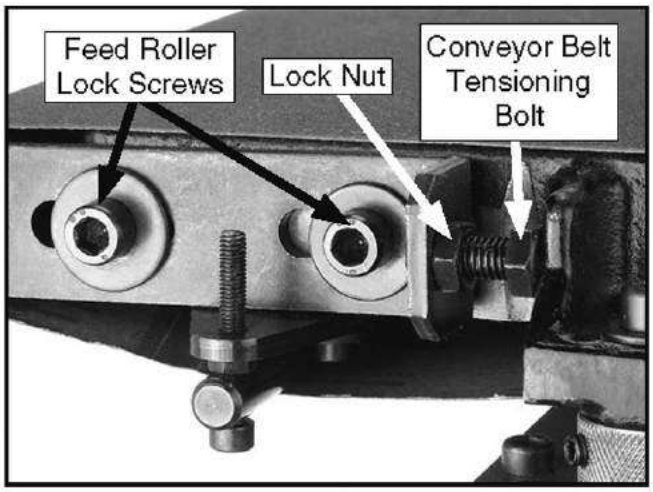


Figure 40. Conveyor belt tensioning controls.

2. Use a permanent marker, paper correction fluid, or fingernail polish to mark conveyor belt tensioning bolt on both sides. This step will aid you in keeping track of the rotations as you turn the bolts, so they remain as even as possible.

3. Loosen lock nuts and turn both conveyor belt tensioning bolts clockwise one full turn at a time until feed belt no longer slips during operation.

   —If conveyor belt starts tracking to one side, back off the conveyor belt tensioning bolt that is being adjusted.

   —If conveyor belt continues tracking to one side, immediately turn drum sander ***OFF*** and perform tracking instructions.

4. Tighten lock nuts to lock conveyor belt tensioning bolts in place.

   Note: *When tensioned properly the belt should not lift off the table, slide back and forth, or slip.*

NOTICE

DO NOT over-tension the conveyor belt. This may cause premature wearing of belt, bushings, and cause strain on the motor.

Replacing Conveyor Belt

Replacing the conveyor belt is a relatively simple process, but it will require re-tensioning and tracking once the new conveyor belt is installed.

Items Needed	**Qty**
Wrench 12mm	2
Hex Wrench 6mm	1
An Assistant	1

To replace conveyor belt:

1. DISCONNECT MACHINE FROM POWER!

2. Use a permanent marker to mark the front of the feed belt tensioning bolt (see **Figure 41**) on both sides. This step will aid you in returning the bolts to their original position, reducing the amount of tracking necessary.

3. Loosen lock nuts shown in **Figure 41**. Turn both of the feed belt adjustment bolts counterclockwise one full turn at a time to release tension from feed belt.

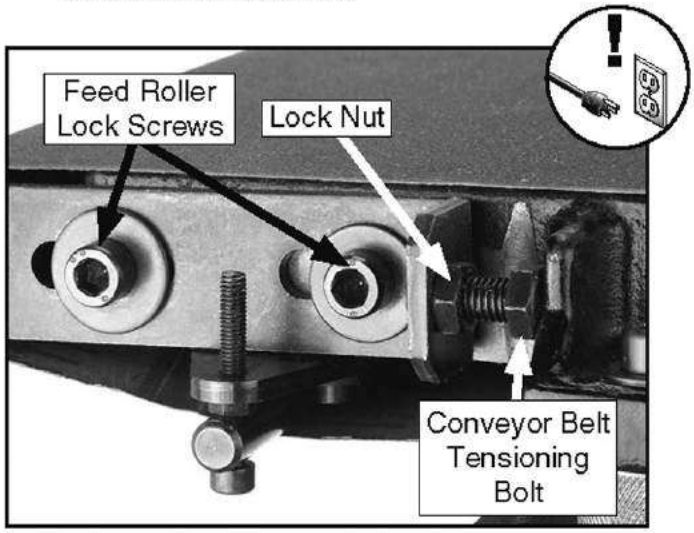


Figure 41. Conveyor belt tensioning controls.

4. Remove outside table cap screws shown in **Figure 42** and loosen corresponding cap screws on inside edge.

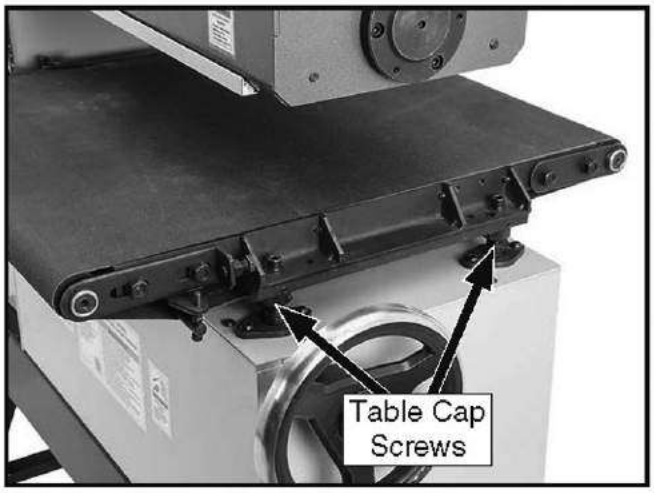


Figure 42. Feed belt table outside cap screws.

5. Have an assistant lift outside edge of the table, then slide conveyor belt off.

6. Clean any dirt or dust off of table and rollers, have an assistant lift the table, then slide the new conveyor belt on.

7. Re-install and tighten all of the table cap screws.

8. Tighten conveyor belt adjustment bolts equally, then follow tensioning instructions

   Note: *The conveyor belt will stretch slightly when new and will need to be re-tensioned after a short amount of use.*

9. Track new conveyor belt according to instructions

   Note: *One side of the belt may need to be tighter than the other for the belt to track straight.*

Making Blocks

The blocks described here will be required to complete the remaining service procedures in this section.

Items Needed	**Qty**
6' Long 2x4	1
Miter Saw (or Circular Saw)	1
Jointer	1
Table Saw	1

To make blocks:

1. Edge joint concave edge of 2x4 flat on a jointer, as shown in **Figure 43**.

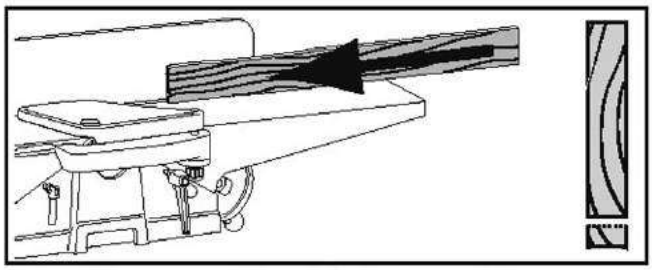


Figure 43. Edge jointing on a jointer.

2. Place jointed edge of the 2x4 against the table saw fence and rip cut just enough off the opposite side to square up the two edges of the 2x4, as shown in **Figure 44**.

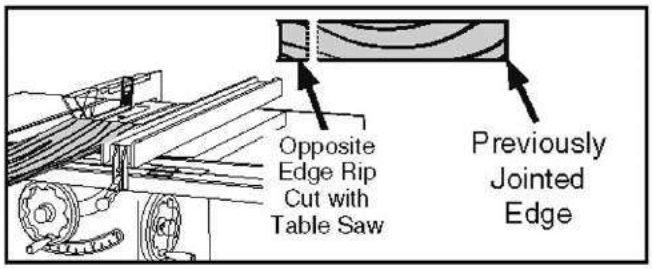


Figure 44. Rip cutting on a table saw.

3. Cut 2x4 into two even pieces to make two 36" long wood gauge blocks.

   Note: ***Steps 1-2*** *can be skipped, but having the gauge blocks at an equal height is critical to the accuracy of your adjustments.*

Aligning Drum

Aligning the drum parallel to the conveyor belt (see **Figure 45**) is critical for sanding accuracy. Care should be taken to make the tolerances as close as possible (within 0.002" from one side to the other) when adjusting the drum height.

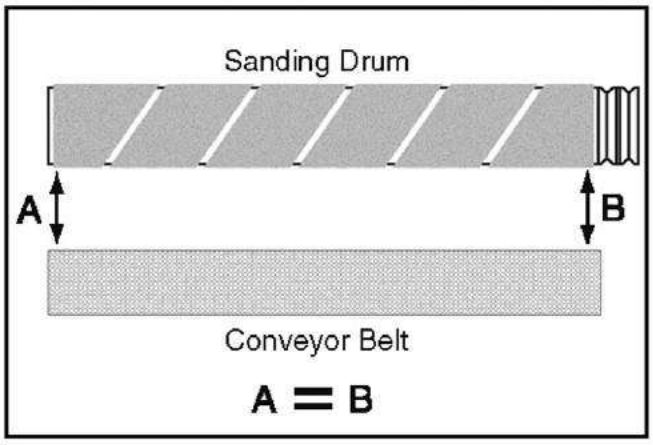


Figure 45. Drum parallel to conveyor belt.

Tools Needed:	**Qty**
Hex Wrenches 3 & 6mm	1 Ea.
Gauge Blocks	2
Feeler Gauge Set	1

To align sanding drum:

1. DISCONNECT MACHINE FROM POWER!

2. Remove sandpaper from drum and place gauge blocks as shown in **Figure 46**.

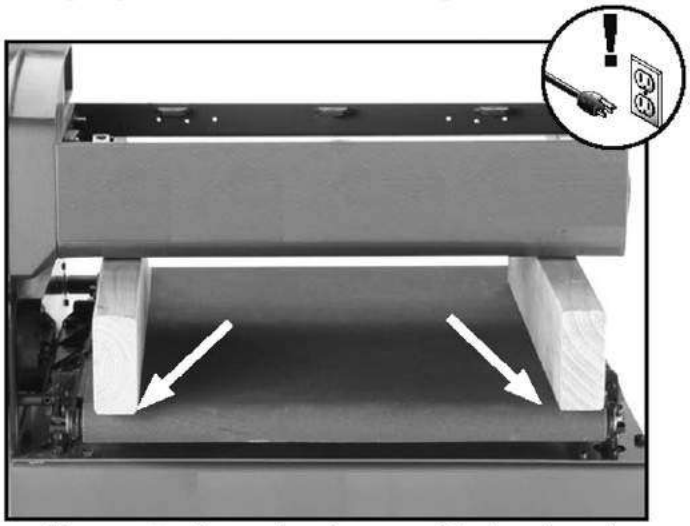


Figure 46. Example of gauge blocks placed under drum.

3. Raise table until gauge blocks just touch the drum.

   Note: *A good way to know when they are touching is to rock the drum back and forth while raising the table until you hear or feel contact with the gauge blocks.*

4. Lower table one full crank of the handwheel (taking handwheel free-play into consideration; or in other words, wait until the chain starts moving before starting to count the handwheel rotation).

5. Starting at one end, find the largest size feeler gauge that can pass between the drum and your gauge block. (The feeler gauge should slide with moderate resistance, without forcing the drum to roll.)

6. Repeat **Step 5** at other end of the drum.

   —If the difference between the two sizes is 0.002" or less, then no adjustment is necessary.

   —If the difference between the two sizes is more than 0.002", then one end must be adjusted to within 0.002" of the other. Continue to the next step.

7. Loosen table cap screws and adjust height of table by rotating adjustment knob shown in **Figure 47**.

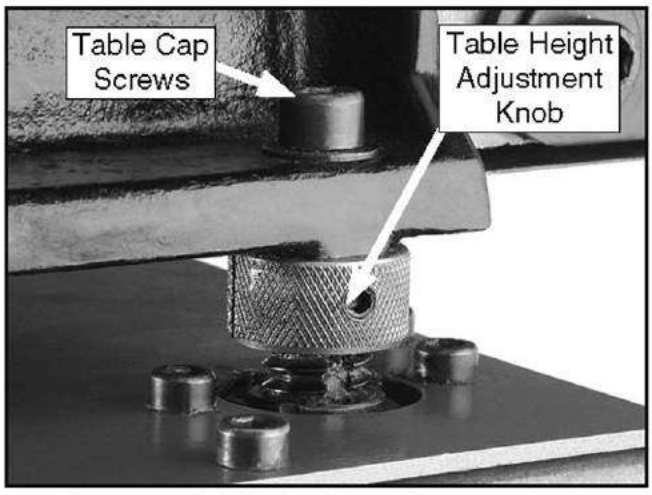


Figure 47. Table height adjustment knob.

8. Tighten table cap screws and repeat **Steps 5-6**.

Aligning Pressure Rollers

Two spring-loaded pressure rollers help maintain consistent pressure on the workpiece as it passes the sanding drum. The pressure rollers have been set correctly at the factory. DO NOT adjust the pressure rollers unless absolutely necessary.

When properly positioned, the pressure rollers should be approximately 0.004" lower than the drum.

Adjusting the pressure rollers is a fine balance between too much pressure and not enough. Too much pressure can cause problems like snipe or overloading the motor. Not enough pressure may allow the workpiece to kick out of the sander towards the operator.

Items Needed	**Qty**
Wrench 8mm	1
Hex Wrench 4mm	1
Gauge Blocks	2
Feeler Gauge Set	1

To check pressure rollers:

1. DISCONNECT MACHINE FROM POWER!

2. Place gauge blocks on feed belt as shown in **Figure 48**.

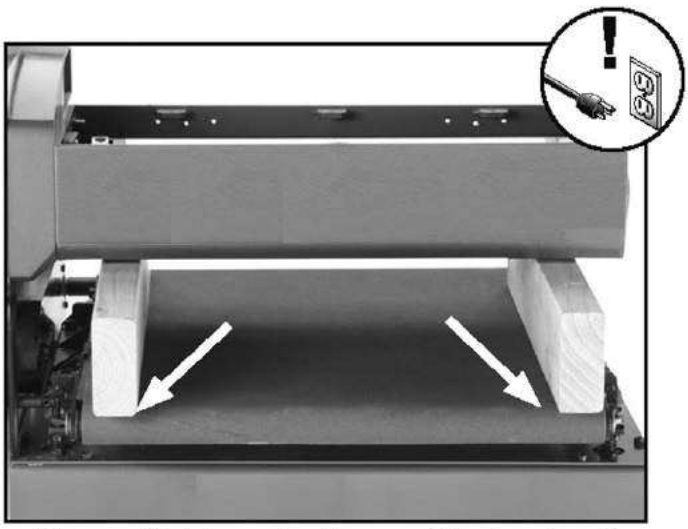


Figure 46. Example of gauge blocks placed under drum.

3. Raise table until blocks just touch the rear pressure roller.

4. Find the largest size feeler gauge that can pass between sanding drum and your gauge block. (The feeler gauge should slide with moderate resistance, without forcing drum to roll.)

   —If gap is 0.004" (0.1mm) or less, then no adjustment of rear pressure roller is necessary.

   —If gap is more than 0.004" (0.1mm), then rear pressure roller must be adjusted.

5. Raise table until gauge blocks just touch the drum.

6. Find the largest size feeler gauge that can pass between the front pressure roller and your gauge block. (The feeler gauge should slide with moderate resistance, without forcing the drum to roll.)

   —If the gap is 0.004" (0.1mm) or less, then no adjustment of front pressure plate is necessary.

   —If the gap is more than 0.004" (0.1mm), then front pressure plate must be adjusted.

To adjust rear pressure roller:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen hex nut securing tensioner cap screws on both ends of rear pressure roller shown in **Figure 49.**

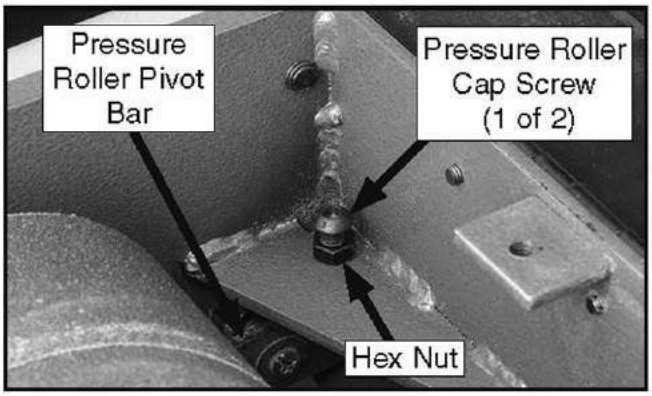


Figure 49. Rear pressure roller adjustments.

3. Rotate cap screw clockwise to raise the pressure roller, or counterclockwise to lower pressure roller.

4. Adjust rear pressure roller until it is equal to or up to 0.004" (0.1mm) lower than height of the drum.

To adjust front pressure roller:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen hex nut securing adjustment cap screws on both ends of rear pressure roller shown in **Figure 50.**

3. Rotate cap screw clockwise to raise pressure roller, or counterclockwise loosen cap screw to lower pressure roller.

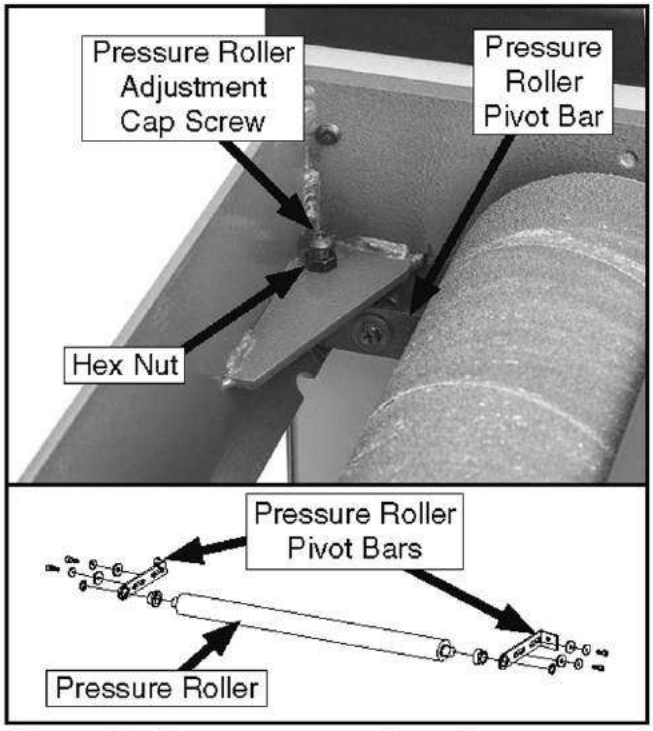


Figure 50. Front pressure roller adjustments and pressure roller overview.

4. Adjust rear pressure roller until it is equal to, or up to 0.004" (0.1mm) lower than height of the drum.

Brush Replacement

This sander is equipped with a universal motor that uses two carbon brushes to transmit electrical current inside the motor. These brushes are considered to be regular "wear items" or "consumables" that will need to be replaced during the life of the motor. The frequency of required replacement is often related to how much the motor is used and how hard it is pushed.

Replace the carbon brushes (part number: P0458Z042-1) at the same time when the motor no longer reaches full power, or when the brushes measure less than ¼" long (new brushes are ⅝" long).

Tools Needed:	**Qty**
Standard Screwdriver #2	1

To inspect and replace motor brushes:

1. DISCONNECT MACHINE FROM POWER!

2. Remove brush caps and worn brushes (see **Figure 1**) from conveyor belt motor.

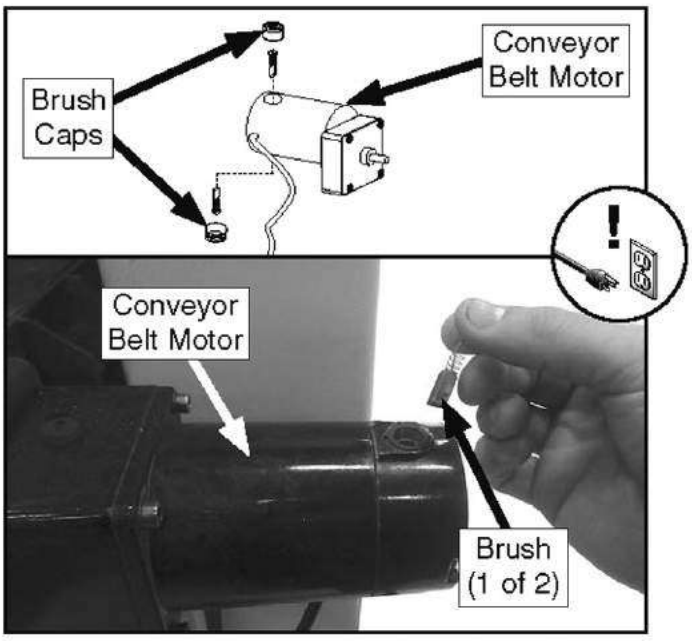
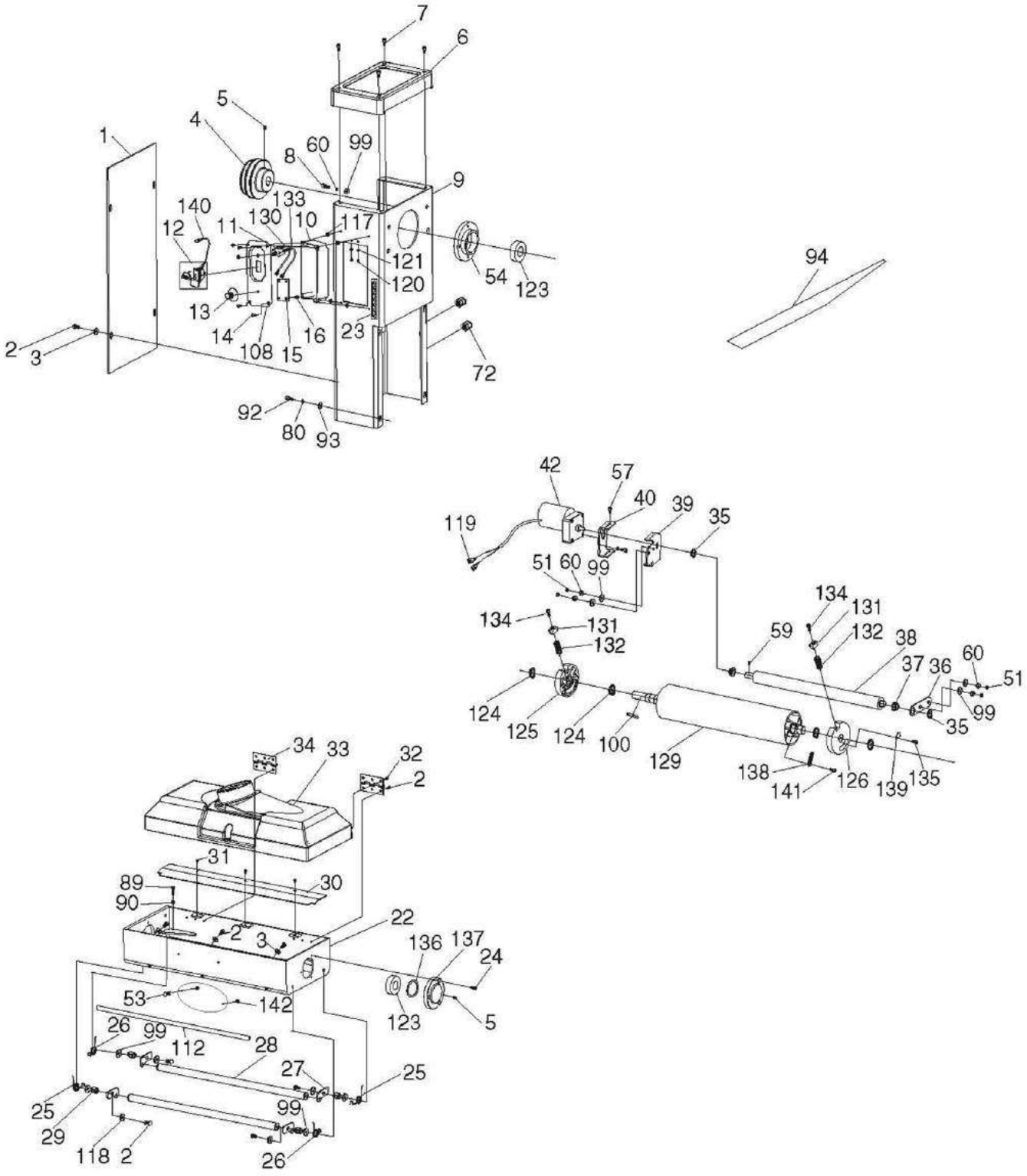


Figure 1. Location of motor cover cap screws.

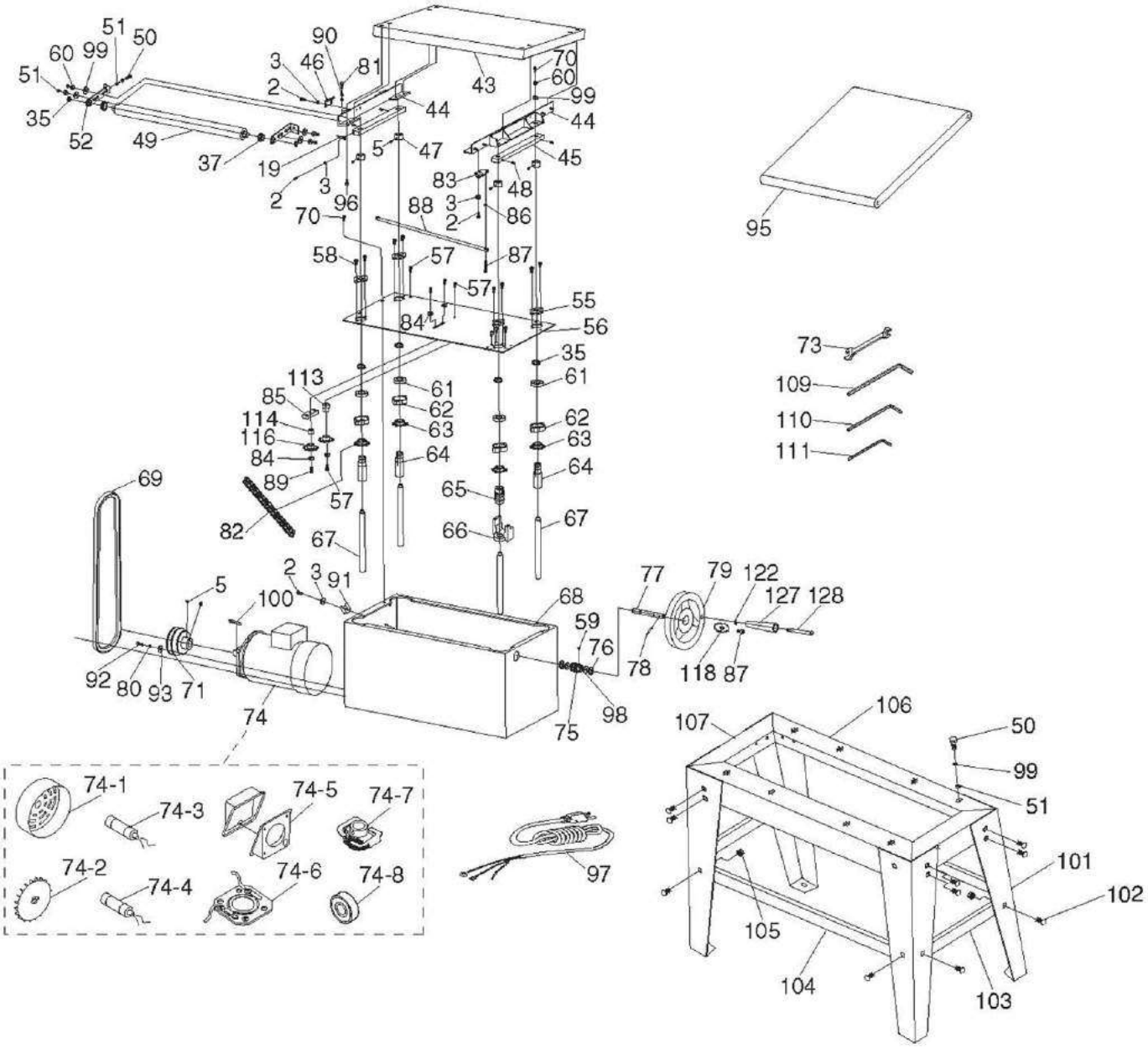
3. Replace both motor brushes and install brush caps.

SECTION 7: PARTS LIST

Main Breakdown



Main Breakdown (Base& Stand)



Main Parts List

REF	DESCRIPTION
1	SIDE COVER
2	PHLP HD SCR M5-.8 X 8
3	FLAT WASHER 5MM
4	DRIVE PULLEY
5	SET SCREW M6-1 X 10
6	FIXED COVER
7	CAP SCREW M5-.8 X 16
8	CAP SCREW M8-1.25 X 16
9	SIDE CABINET
10	ELECTRICAL BOX COVER
11	CIRCUIT BREAKER L1 SERIES 25A
12	PADDLE SAFETY SWITCH KEDU HY18-4P
13	POTENTIOMETER W/DAIL
14	PHLP HD SCR M5-.8 X 15
15	CIRCUIT BOARD TN40-55 (JSC)
16	TAP SCREW M3.5 X 8
19	POINTER
22	HEAD CASTING
23	TABLE HEIGHT SCALE
24	CAP SCREW M6-1 X 12
25	TORSION SPRING (LEFT)
26	TORSION SPRING (RIGHT)
27	ROLLER MOUTING PLATE
28	ROLLER
29	PIVOT SHOULDER PIN
30	CHIP DEFLECTOR PLATE
31	CAP SCREW M6-1 X 10
32	TAP SCREW M5 X 10
33	TOP COVER
34	HINGE 3"
35	EXT RETAINING RING 20MM
36	FEED ROLLER BRACKET
37	BUSHING
38	FEED BELT ROLLER
39	MOTOR SUPPORT BRACKET
40	MOTOR MOUNTING BRACKET
42	FEED MOTOR 1.5HP 110DC
42-1	MOTOR BRUSHES (2-PC SET)
43	CONVEYOR TABLE
44	TABLE GUIDE
45	STEEL BAR
46	PLATE
47	LOCK COLLAR 16MM
48	SET SCREW M5-.8 X 8
49	FEED BELT ROLLER
50	HEX BOLT M8-1.25 X 20
51	HEX NUT M8-1.25
52	FEED ROLLER BRACKET (REAR)
53	CARRIAGE BOLT M3-.5 X 16
54	BEARING COVER (LEFT)
55	LEADSCREW FIXED PLATE
56	BASE COVER PLATE

REF	DESCRIPTION
57	CAP SCREW M6-1 X 12
58	CAP SCREW M6-1 X 15
59	SET SCREW M5-.8 X 5
60	LOCK WASHER 8MM
61	BALL BEARING
62	BEARING SEAT
63	SPROCKET
64	ELEVATION SCREW CAP
65	GEAR 65T
66	BRACKET
67	ELEVATION SCREW ROD
68	LOWER CASTING
69	V-BELT B40
70	CAP SCREW M8-1.25 X 12
71	DRIVE PULLEY
72	STRAIN RELIEF TYPE-3 M20-2.5
73	WRENCH 8 X 12 OPEN-ENDS
74	MOTOR 1.5HP 120V 1-PH
74-1	MOTOR FAN COVER
74-2	MOTOR FAN
74-3	S CAPACITOR 350M 125V 1-5/16 X 3-1/2
74-4	R CAPACITOR 40M 250V 1-5/8 X 3-1/8
74-5	JUNCTION BOX
74-6	CONTACT PLATE
74-7	CENTRIFUGAL SWITCH
74-8	BALL BEARING 6204-2RS (FRONT & REAR)
75	WORM GEAR
76	EXT RETAINING RING 12MM
77	SHAFT
78	ROLL PIN 3 X 16
79	HANDWHEEL W/HANDLE TYPE-3 177D X M6-1
80	LOCK WASHER 10MM
81	HEX BOLT M6-1 X 45
82	CHAIN 410-132
83	FIXED PLATE
84	FLAT WASHER 6 X 16 OD X 1.5 T
85	ADJUSTMENT BLOCK
86	HEX NUT M5-.8
87	CAP SCREW M6-1 X 35
88	ADJUSTMENT ROD
89	CAP SCREW M6-1 X 20
90	HEX NUT M6-1
91	CORD CLAMP
92	CAP SCREW M10-1.5 X 25
93	FLAT WASHER 10MM
94	SANDING BELT 100-GRIT 3" X 84"
95	CONVEYOR BELT
96	CAP SCREW M6-1 X 30
97	POWER CORD 14G 3W 72" 5-15P
98	FLAT WASHER 12MM
99	FLAT WASHER 8MM

Parts List

Base & Stand

REF	DESCRIPTION
100	KEY 6 X 6 X 40
101	STAND LEG
102	HEX BOLT M8-1.25 X 16
103	SHORT BRACKET (BOTTOM)
104	LONG BRACKET (BOTTOM)
105	FLANGE NUT M8-1.25
106	LONG BRACKET (TOP)
107	SHORT BRACKET (TOP)
108	CONTROL PANEL PLATE
109	HEX WRENCH 6MM
110	HEX WRENCH 5MM
111	HEX WRENCH 4MM
112	INFEED COVER
113	SPACER BLOCK
114	BUSHING
116	SPROCKET
117	HEX NUT M5-.8
118	FLAT WASHER 5 X 14 OD X 0.8 T
119	SPADE TERMINAL (F)
120	CAP SCREW M5-.8 X 8
121	FLAT WASHER 5MM

REF	DESCRIPTION
122	FLAT WASHER 8MM
123	BALL BEARING 6205ZZ
124	EXT RETAINING RING 25MM
125	SANDING BELT CLAMP BRACKET (RIGHT)
126	SANDING BELT CLAMP BRACKET (LEFT)
127	HOLLOW HANDLE 26 X 106, 9
128	SHOULDER SCREW M8-1.25 X 16, 10 X 116
129	BELT DRUM
130	CONNECTION WIRE 2, 14AWG, 100L
131	BELT LOCKING BLOCK
132	COMPRESSION SPRING
133	CONNECTION WIRE 1, 14AWG, 100L
134	CAP SCREW M6-1 X 25
135	CAP SCREW M5-.8 X 10
136	WAVY WASHER 40MM
137	BEARING COVER (RIGHT)
138	EXTENSION SPRING
139	SPRING RETAINER
140	CONNECTION WIRE 3, 14AWG, 50L
141	CAP SCREW M5-.8 X 12
142	HEX NUT M3-.5