

INSTRUCTION MANUAL

DS-1632
Drum Sander (240V)
400 x 127mm (W x H) Material Capacity



L110

29/6/09

L110 DS-1632

HARE & FORBES

MACHINERYHOUSE

Established 1930

Distributors of New & Used Workshop Equipment

DRUM SANDER

MODEL: DS-1632

OPERATION MANUAL AND PARTS LIST



WARNING

General Machinery Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

- 1. Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
- 2. Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
- 3. Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
- 4. Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
- 5. Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
- 6. Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
- 7. Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
- 8. Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
- 9. Keep children and visitors away.** Make sure children and visitors are at a safe distance for your work area.
- 10. Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
- 11. Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
- 12. Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
- 13. Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
- 14. Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
- 15. Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
- 16. Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
- 17. Do not overreach.** Keep proper footing and balance at all times.
- 18. Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
- 19. Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
- 20. Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
- 21. Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
- 22. Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
- 23. Lock mobile bases.** Make sure any mobile bases are locked before using machine.
- 24. Allergic reactions.** Certain metal shavings and cutting fluids may cause an allergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
- 25. Call for help.** If at any time you experience difficulties, stop the machine and call your nearest branch service department for help.

WARNING

Drum Sander Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

- 1. Maintenance.** Make sure the Drum Sander is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.
- 2. Drum Sander Condition.** Drum Sander must be maintained for a proper working condition. Never operate a Drum Sander that has damaged or worn parts. Scheduled routine maintenance should be performed on a scheduled basis.
- 3. Belt Condition.** Never operate a Drum Sander with a damaged or badly worn belt. Replace if required.
- 4. Belt Rotation.** Be aware of the belt rotation when sanding.
- 5. Hand Hazard.** Keep hands and fingers clear from sanding drums during operation. Do not allow hands and fingers to get pinched between board and conveyor belt during operation. This may pull the operator's hand into the machine during operation and cause serious injury.
- 6. Leaving a Drum Sander Unattended.** Always turn the Drum Sander off and make sure all moving parts have come to a complete stop before leaving the Drum Sander. Do not leave Drum Sander running unattended for any reason.
- 7. Avoiding Entanglement.** Drum Sander guards must be used at all times. Remove loose clothing, belts, or jewelry items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the Drum Sander moving parts.
- 8. Understand the machines controls.** Make sure you understand the use and operation of all controls.
- 9. Power outage.** In the event of a power failure during use of the machine, turn off all switches to avoid possible sudden start up once power is restored.
- 10. Work area hazards.** Keep the area around the Drum Sander clean from oil, tools, chips. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.
- 11. Feeding material.** Never feed more than one piece of material at a time. Do not allow anyone to stand directly in front of this sander when feeding your material. Do not jam material into sander during operation. Firmly hold the workpiece in both hands and ease it into the machine using light pressure.
- 12. Hearing protection and hazards.** Always wear hearing protection as noise generated from Drum Sander and workpiece vibration can cause permanent hearing loss over time.
- 13. Dust hazards.** Always use a dust collector when using machine.
- 14. Job Material.** Check material prior to sanding for nails, staples, knots and other objects that may cause any danger when sanding.
- 15. Starting position/speed.** Never turn the Drum Sander on when the workpiece is resting on the disc or belt. Allow disc to reach full speed before sanding.
- 16. Replacing Sanding paper.** Replace sanding paper when it becomes worn or damaged.
- 17. Guards.** Do not operate Drum Sander without the correct guards in place.
- 18. Wood dust may cause allergic reactions.** Make sure you know what type of dust you are exposed to as it may cause you an allergic reaction. Always wear an approved respirator.
- 19. Call for help.** If at any time you experience difficulties, stop the machine and call your nearest branch service department for help.

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Drum Sander

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures
This program is based upon the Australian Worksafe Standard for Plant(NOHSC:1010-1994)

Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies (Recommended for Purchase / Buyer / User)
A	ENTANGLEMENT	HIGH	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Heavier timber must be supported Be sure that when rising and falling belt table, hands are well away from locating, clamping and pivoting area.
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Isolate power to machine prior to any checks or maintenance. Do not open or clean inside until the machine has completely stopped. Keep hands clear of all belts and moving parts. Use a push stick where necessary. Care must be taken when handling belts. Make sure all guards are secured shut when machine is on.
D	SHEARING	MEDIUM	Make sure all guards are secured shut when machine is on.
F	STRIKING	MEDIUM	Do not stand behind timber when feeding into machine. A face mask must be worn at all times. Ensure to use correct feed rates for material.
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine. Machine should be installed & checked by a Licensed Electrician.
O	OTHER HAZARDS, NOISE, DUST.	LOW	Wear hearing protection as required. Must be connected to dust extraction
Plant Safety Program to be read in conjunction with manufactures instructions			



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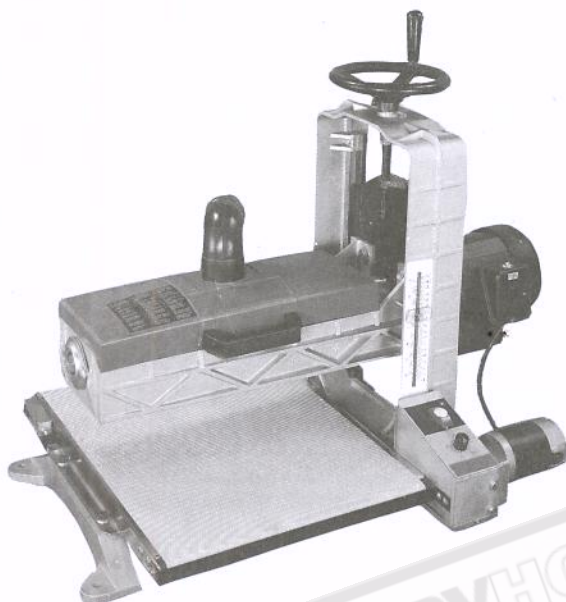
Authorised and signed by:
Safety officer: 

Manager: 

Revised Date: Aug-08

OWNER'S OPERATING MANUAL

DS-1632A WIDE DRUM SANDER



SPECIFICATIONS	
Input	240V 7AMP
Horsepower	1 HP
No load speed	17 25 RPM
Feed speed	Variable 2-10 fpm
Sanding capacities	
Maximum width	16" Single pass, 32" Two passes
Maximum height	5 5"
Maximum depth	1/16" (-0.0125)
Overall dimensions (L x W x H)	14" x 28" x 27"
Net weight	50 Kgs/104.5 lbs.

THANK YOU FOR BUYING A WIDE DRUM SANDER

Your new 16"-32" Wide Drum Sander has been engineered and manufactured to high standard for dependability, ease of operation, and operator safety. Properly cared for, it will give you years of rugged, trouble-free performance.



Caution: Carefully read through this entire owner's manual before using your new drum sander. Pay close attention to the Rules for Safe Operation, Warnings, and Cautions. If you use your sander properly and only for what it is intended, you will enjoy years of safe, reliable service.

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and the explanations with them, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

SYMBOL

MEANING



SAFETY ALERT SYMBOL

Indicates caution, warning, or danger. May be used in conjunction with other symbols or pictographs.



DANGER: Failure to obey a safety warning *will* result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.



WARNING: Failure to obey a safety warning *can* result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.



CAUTION: Failure to obey a safety warning *may* result in property damage or personal injury. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.

NOTE: Advises you of information or instructions vital to the operation or maintenance of the equipment.

RULES FOR SAFE OPERATION

KNOW YOUR POWER TOOL

Safe operation of this power tool requires that you read and understand this owner's manual and all labels affixed to the tool. Learn its applications and limitations as well as the potential hazards peculiar to a drum sander. Keep this manual readily available for future reference.

IMPORTANT

Servicing of a tool requires extreme care and knowledge of the system and should be performed only by a qualified service technician.



WARNING: Do not attempt to operate this tool until you have read thoroughly and understand completely all instructions, safety rules, etc., contained in this manual. Failure to comply can result in accidents involving fire, electric shock, or serious personal injury. Save the Owner's Manual and review frequently for continuing safe operation and instructing others who may use this tool.



WARNING: When using power tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the precautions beginning on the following page.

READ ALL INSTRUCTIONS

SAFETY PRECAUTIONS

1. **KEEP GUARDS IN PLACE** and in good working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Get in the habit of checking to see that hex keys and adjusting wrenches are removed from the tool before turning it on.
3. **KEEP THE WORK AREA CLEAN.** Cluttered work areas and work benches invite accidents.
4. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** Do not use power tools near gasoline or other flammable liquids, in damp or wet locations, or expose them to rain. Keep the work area well lighted.
5. **KEEP CHILDREN AWAY FROM POWER TOOLS.** All visitors should be kept at a safe distance from the work area.
6. **MAKE THE WORKSHOP CHILD-PROOF** with padlocks and master switches or by removing starter keys.
7. **DO NOT FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE THE RIGHT TOOL.** Do not force the tool or attachment to do a job for which it was not designed.
9. **USE THE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. A minimum 12 AWG gage extension cord no more than 50 feet long may be used with this tool. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.
10. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry that could get in moving parts. Non-slip footwear is recommended. Wear protective covering over long hair.
11. **ALWAYS WEAR SAFETY GLASSES.** Everyday eyeglasses have only impact-resistant lenses; they are NOT safety glasses.
12. **SECURE THE WORK.** Use clamps or a vise to hold work when practical. It is safer than using your hands and frees both hands to operate the tool.
13. **DO NOT OVERREACH.** Keep proper footing and balance at all times.
14. **MAINTAIN THE TOOL WITH CARE.** Keep saw tools sharp and clean for the best and safest performance. Follow instructions for changing accessories.
15. **DISCONNECT POWER TOOLS BEFORE SERVICING** or before changing accessories such as the blade.
16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure the switch is in the OFF position before plugging in the tool.
17. **USE ONLY THE MANUFACTURER'S RECOMMENDED ACCESSORIES.** Consult this Owner's Manual for recommended accessories. Using improper accessories may increase the risk of injury.

18. **NEVER STAND ON THE TOOL.** Serious injury could occur if the tool is tipped or if the blade is unintentionally contacted.
19. **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, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
20. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
21. **NEVER LEAVE THE TOOL RUNNING UNATTENDED.** Turn off the power. Do not leave the tool until it comes to a complete stop and is disconnected from power source.
22. **STAY ALERT.** Never operate a power tool when tired or while under the influence of drugs, alcohol, or medication.
24. **MAKE SURE A TOOL IS CONNECTED** only to the voltage marked on the nameplate.
25. **NEVER USE A TOOL** if its cover or any bolts are missing. If the cover or bolts have been removed, replace them prior to use. Maintain all parts in good working order.
26. **NEVER START A TOOL** when its rotating component is in contact with the work piece.
27. **SAVE THESE INSTRUCTIONS.** Refer to them frequently and use to instruct other users. If you loan someone this tool, also loan them these instructions.



WARNING: The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before commencing power tool operation, always wear safety goggles or safety glasses with side shields and a full face shield when needed. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields.

ADDITIONAL SAFETY RULES FOR WIDE DRUM SANDERS

1. **DURING NORMAL OPERATIONS**, there is a tendency for the tool to tip over, slide, or walk on the supporting surface. Always secure tool to workbench or workstand.
2. **NEVER PERFORM THE SANDING OPERATION** with the sanding drum dust cover or drive guard removed.
3. **NEVER MAKE A SANDING PASS** deeper than 1/32" (.03125).
4. **DO NOT SAND MATERIAL** shorter than 3" or narrower than 3/4".
5. **MAINTAIN THE PROPER RELATIONSHIP** between the infeed and outfeed surfaces and the sander drum path.
6. **SUPPORT THE WORK PIECE ADEQUATELY** at all times during operation; maintain control of the work at all times.
7. **DO NOT BACK THE WORK** toward the infeed table.
8. **DO NOT ATTEMPT TO PERFORM** an abnormal or little used operation without the use of sturdy and adequate jigs, fixtures, stops, and a thorough understanding of the operation being performed.
9. **BEFORE STARTING**, recheck to make certain adjustments are correct and all locks and screws are tight.
10. **ALWAYS STOP THE MOTOR** and disconnect the power source before making any adjustments or changing abrasive strips.
11. **STOP THE MACHINE** and recheck the motor/drum mounting bolts and feed rollers for tightness after about 50 hours of operation. (See Figure 8.)
12. **DO NOT FORCE-FEED THE WORK PIECE** through the machine. Let the sander apply the proper feed rate.
13. **CHECK THE FEED BELT** occasionally to be sure there is no debris or sawdust between any components.
14. **SAND ONLY SOUND LUMBER**; there should be no loose knots and as few tight knots as possible. Make sure the work piece is free from nails, screws, stones, or other foreign objects that could damage the sanding drum or feed belt.
15. **NEVER STAND DIRECTLY IN LINE** with either the infeed or outfeed sides. Stand to one side.
16. **MAKE SURE THE ABRASIVE STRIP IS ATTACHED** as described in the operation instructions. An improperly attached abrasive strip could come loose during operation and damage the work piece or internal components.
17. **NEVER PUT YOUR FINGERS** into the dust port or under the drum dust cover. (See Figure 2.)
18. **ALLOW THE SANDING DRUM** to reach full speed before using the Wide Drum Sander.

GROUNDING INSTRUCTIONS

1. In the event of an electrical malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood or if in doubt as to whether the tool or outlet is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Have a damaged or worn cord repaired or replaced immediately.

7. This tool is intended for use on a circuit that has an outlet like the one shown in Figure 1, Illustration A. The tool has a grounding plug that looks like the plug illustrated in Figure 1. A temporary adapter, like the one shown in Figure 1, Illustration B, may be used to connect this plug to a 2-pole receptacle as shown in Illustration B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, or wire extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

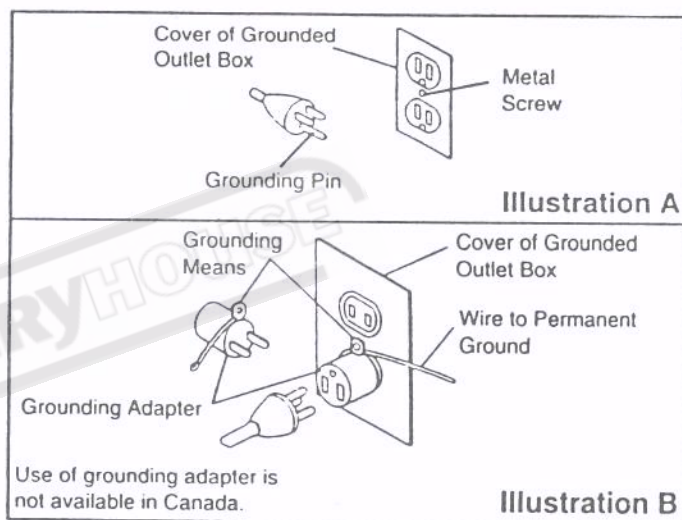


Figure 1

EXTENSION CORDS

When using a power tool at a considerable distance from a power source, use an extension cord heavy enough to carry the current that the tool will draw. An undersized extension cord will cause a drop in line voltage, resulting in a loss of power and overheating. A minimum 12 AWG (gage) extension cord no longer than 50 feet in length may be used with this tool. Only round jacketed cords listed by Underwriter's Laboratories (UL) should be used.

When working with the tool outdoors, use an extension cord that is designed for outside use. This is indicated by the letters "WA" on the cord's jacket.

Before using an extension cord, inspect it for loose or exposed wires and cut or worn insulation.

Also, do not use an extension cord on a take up reel. The electric current passing through the extension cord will generate heat, and if the cord is wrapped around a reel, a heat buildup will result that could melt the insulation, causing a fire and/or electric shock.



CAUTION: Keep the cord away from the sanding area and position the cord so that it will not be caught on lumber, tools, or other objects during sanding.

SAVE THESE INSTRUCTIONS

INTRODUCTION TO DRUM SANDING

FUNCTION

Drum sanding, sometimes referred to as "abrasive planing," is a repetitive process of sanding both sides of wooden stock to a desired thickness and/or smoothness. When this process is performed correctly, both face surfaces will be parallel to one another.

Do not confuse drum sanding with thickness planing! Drum sanding gradually removes material in increments of 1/32" or less depending on sanding grit, stock hardness, stock width, etc. Thickness planing, on the other hand, is for quick, bulk material removal at rates up to 1/8" per pass with portable machines. If you have used a thickness planer to smooth and dimension stock you will quickly learn to work *with* your new drum sander and *not against* the machine. Be patient, let the drum sander do the work, 1/32" or less per pass for best results.

The most common mistake made with a drum sander is forcing it to remove too much material too fast. Variables such as sandpaper grit, stock width, wood type, feed rate, and moisture content all influence how much material can be removed in a single pass.

DRUM SANDING ADVANTAGES

One advantage of the wide drum sander is that you can work with material up to 32" wide with the because of its open side design. Although you still abrasive sand *with* the grain, you do not have to read the grain to prevent tear-out. This is especially important with thin stock and material with convoluted or mixed grain directions, like burl, crotch, and tiger patterns.

Drum sanders exert much less pressure on stock than a thickness planer, giving you the capability of working with very thin material. You have the ability to sand to veneer thickness if desired, expanding your woodworking horizons. You can also sand smaller length wood, odd-shaped pieces, and end-grain.

REMOVING LUMBER CUP

The ideal machine for removing cup from lumber is a jointer. However, because of the minimal pressure exerted by the drum sander, it is possible to remove cup, since the lumber is not compressed flat on feed belt and table. Be patient, this process can take quite a while depending on cup depth. Feed the stock into the machine cup crown up (edges resting on feed belt) and use a coarse grit abrasive. Repeat until the crown is flat. With one face now flat, flip the board over and sand it flat. Do not be shocked by how thin the board may become after all cup has been removed.

Board warp and twist will not be remedied by a drum sander, or a planer, for that matter. Always inspect your lumber for warp and twist before drum sanding since it is prone to hanging-up in the machine, shorter length lumber in this condition is especially troublesome.

PLAN YOUR WORK IN ADVANCE

Planning your drum sanding operations in advance will minimize setups, work time, and frustration level. Group material to be sanded by thickness and grit requirements and work through each required sanding grit starting with the thickest material through the thinnest, then change over to next finer grit and begin the process again.

We suggest that you experiment with the various sanding grits and wood species to determine the results you can expect before ruining project material. With new set-ups, always test with scrap lumber before sanding your project material.

WOOD SPECIES TO BE CAUTIOUS WITH

Highly resinous species will tend to quickly clog (load-up) abrasives and in many cases abrasive loading cannot be removed with belt cleaning sticks. The most notorious abrasive loaders are some common pine species. It is nearly impossible to clear the abrasive of the pitch, sap, sawdust combination.

Be aware of species that have toxic properties, such as members of the rosewood family (*i.e. cocobola*). Despite dust control, you may inhale small airborne particulate or suffer allergic reactions through handling of stock. Wear a mask and gloves for extra protection.

UNPACKING

1. Carefully remove all parts from the shipping carton.
2. Do not discard the packing materials until you have identified all the parts using the *Loose Parts List*.
3. If you are missing a part, contact your dealer to obtain it.
4. Examine all parts to make sure that no breakage has occurred during shipping. Any damaged parts should be replaced before attempting to use the tool.

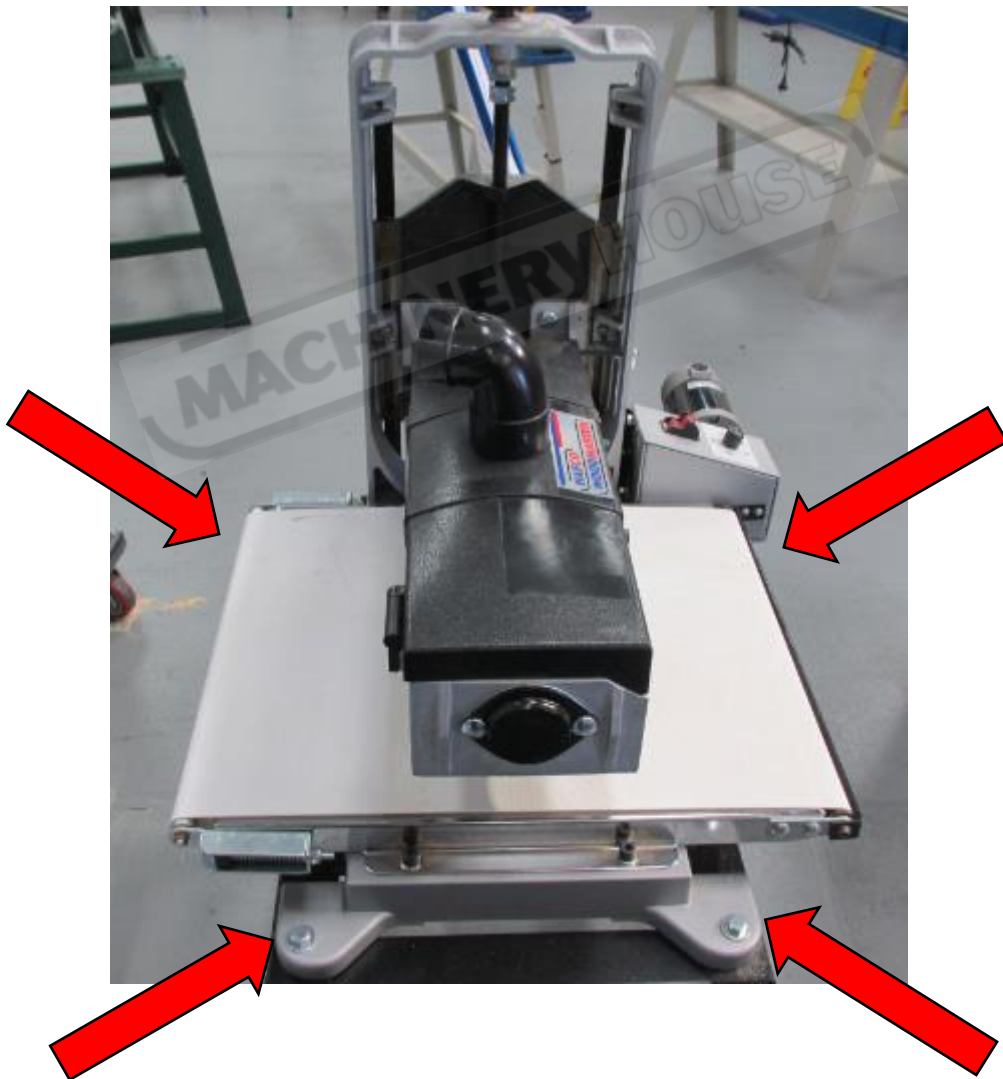
Loose Parts List

The following items are included with the Wide Drum Sander:

- 1 - 4 mm hex wrench key
 - 1 - 6 mm hex wrench key
 - 1 - 10/12 mm open-end wrench
 - 2 - Conveyor table height adjustment shims (010" each, see alignment procedure)
 - 1 - Owner's Operating Manual
 - 1 - Warranty Registration
 - 1 - Height adjustment handle
 - 1 - Height adjustment crank
- (See Figure 4.)

ATTENTION CUSTOMER

WHEN REMOVING MACHINE OUT OF BOX, IT IS CRITICAL THAT YOU LIFT IT FROM THE 4 CORNERS UNDERNEATH THE BASE AS SHOWN. FAIL TO DO SO MAY CAUSE MISALIGNMENT OF HEAD



FEATURES

Familiarize yourself with the following components and features of the Wide Drum Sander using Figures 2, 3, and 4 before connecting the power cord or using the tool.

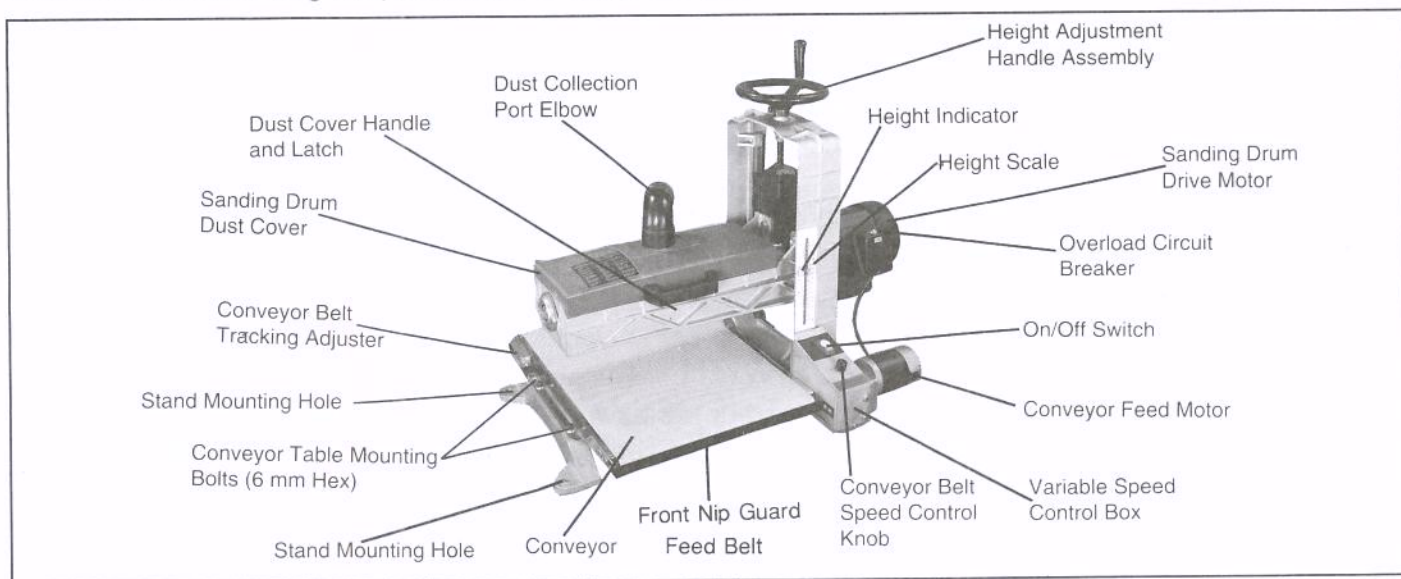


Figure 2

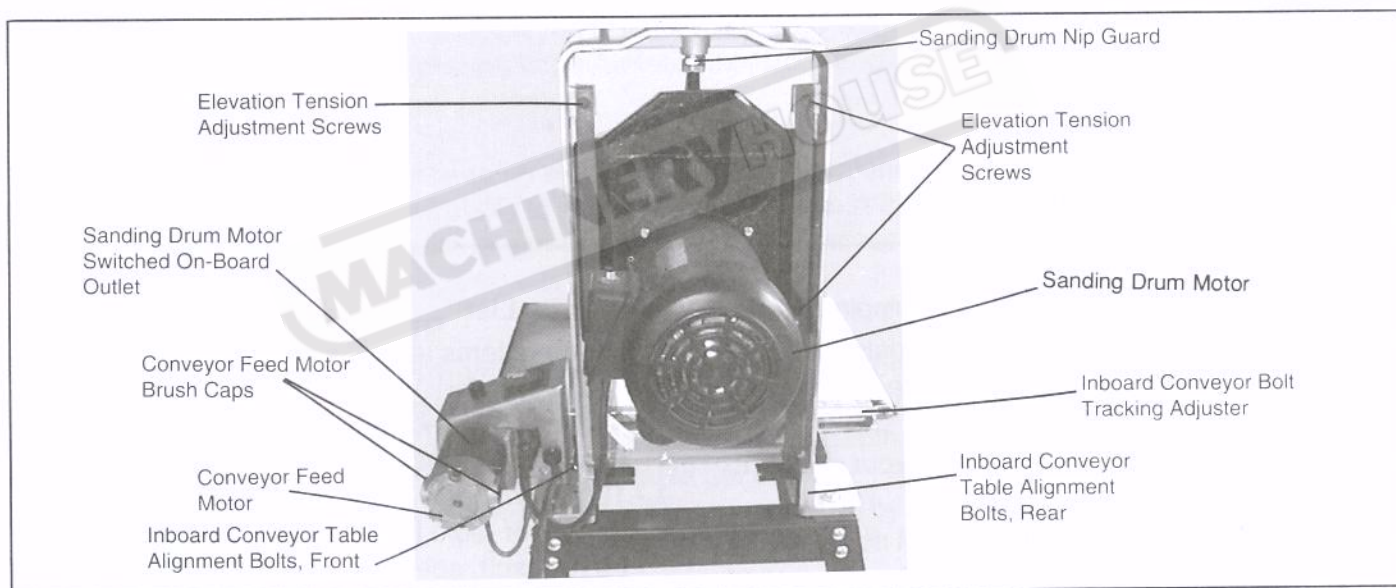


Figure 3

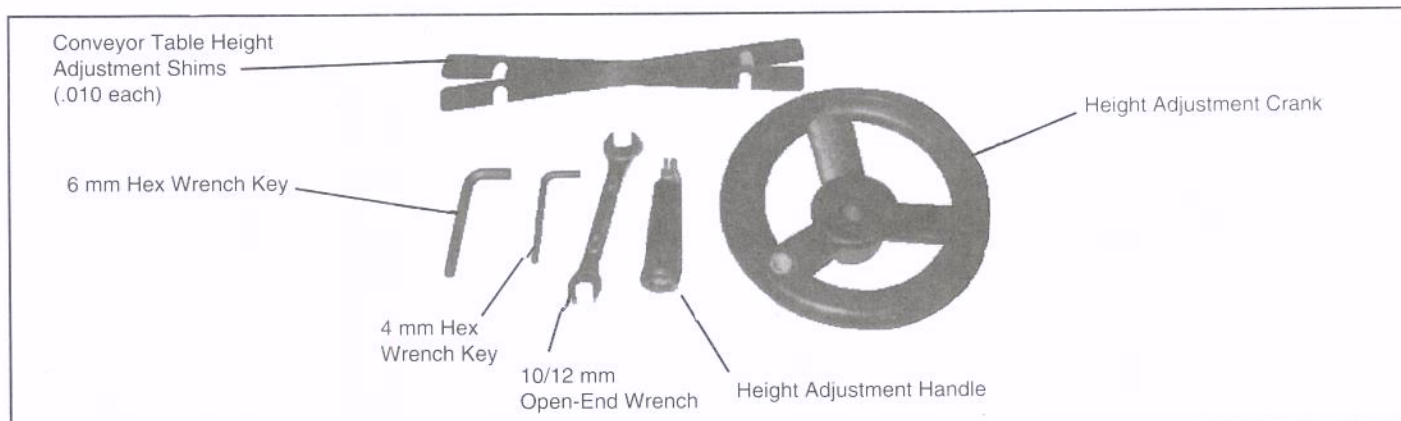


Figure 4

ASSEMBLY

After unpacking your WDS Wide Drum Sander and checking the Loose Parts List for missing components, you are ready to assemble and install the Height Adjustment Handle Assembly.

1. Screw the Height Adjustment Handle into the threaded nut in the Height Adjustment Crank using a slotted screwdriver until snug. (See Figure 5.)
2. Locate the 4 mm set screw threaded into the side of the Height Adjustment Crank. Position the Height Adjustment Crank over the Height Adjustment Shaft with the set screw aligned with the machined flat area on the Height Adjustment Shaft. (See Figure 6.)
3. Lower the Height Adjustment Handle Assembly onto the Height Adjustment Shaft and tighten the set screw with the supplied 4 mm Hex Wrench Key. (See Figure 7.)
4. Secure the assembled Wide Drum Sander to the accessory workstand or to an adequately stable workbench or stand before operating the machine.

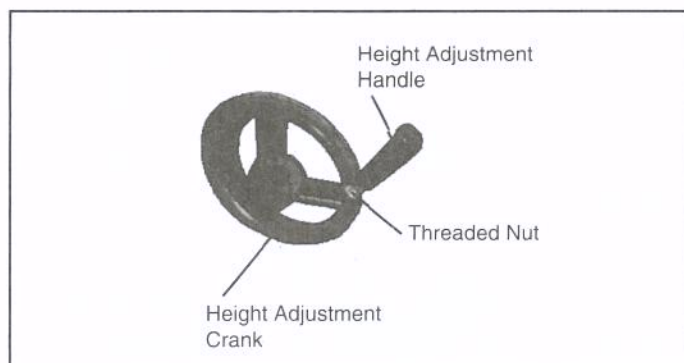


Figure 5

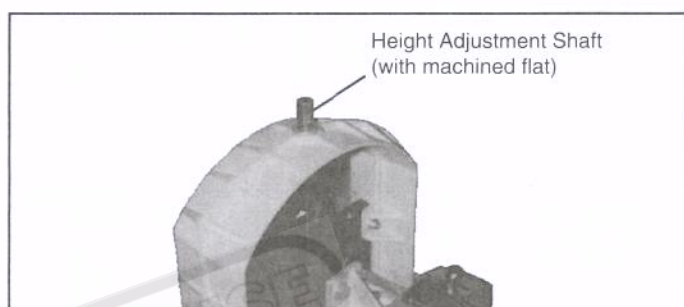


Figure 6

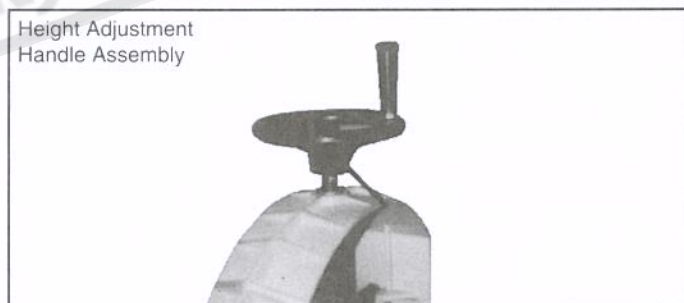


Figure 7



WARNING: To prevent possible serious personal injury, always disconnect the Wide Drum Sander from the power source before servicing the unit or changing the abrasive strips.



WARNING: For your own safety, never connect the plug to a source outlet until you have read and understand the safety and operating instructions for your Wide Drum Sander.



WARNING: Make certain that the switch is in the OFF position before inserting the plug into a power source. Do not connect the power until you are ready to operate the machine. Be sure that the bolts are firmly tightened before connecting to power source.



CAUTION: The surface to which the Wide Drum Sander is mounted must not be warped or uneven. Mounting the base to a warped surface will cause distortion and poor operation.

ADJUSTMENTS

Your Wide Drum Sander was aligned and completely adjusted during assembly. However, due to stresses imposed on the unit during shipment, you may need to adjust or align your unit to return it to perfect alignment. It is very important that the following adjustments be performed as described.



WARNING: Never make any adjustments with the unit connected to the power source. Failure to heed this warning can result in serious personal injury.



WARNING: Always secure tool to workbench or workstand to avoid tendency for tool to tip over, slide, or walk on the supporting surface. Failure to secure tool can result in serious personal injury.

SANDING DRUM DEFLECTION

Before beginning the sanding drum alignment procedures outlined in the following section, ensure that minimal upward deflection of the sanding drum occurs when sanding. The three primary causes of excessive sanding deflection are:

1. **Excessive depth of cut.** Decrease the depth of cut to minimize pressure on the sanding drum assembly. Refer to the *Introduction to Drum Sanding* section for hints regarding depth of cuts. (See Page 7.)
2. **Loose Elevation Tension Screws.** Refer to Step 1 in the *Drum Alignment* section for correct adjustment procedure. (See Page 12.)
3. **Loose Motor/Sanding Drum Assembly Mounting Bolts.** (See Figure 8.) Check the tightness of the four (4) bolts, 2 upper and 2 lower, and tighten as needed.

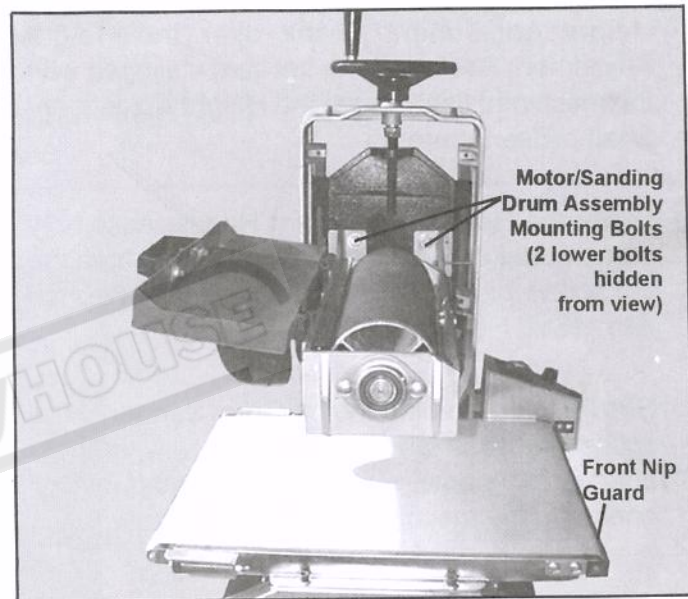


Figure 8

DRUM ALIGNMENT



WARNING: To prevent possible serious personal injury, always disconnect the Wide Drum Sander from the power source before servicing the unit, aligning, or making any adjustments.

1. Check the tightness of the Elevation Tension Adjustment Screws (Figure 9). The tightness of these screws must be adjusted to allow smooth height adjustments, while ensuring a tight enough fit to limit drum deflection. (If the screws are too loose, the drum will deflect during use, causing an uneven sanding surface. If the screws are too tight, sanding drum height adjustments will be difficult.)

To adjust the Elevation Tension Adjustment Screws, loosen the locknuts, securing each screw in place. Loosen or tighten each screw, as required, in 1/4 turn increments to attain the desired fit and smoothness. Retighten the locknuts to secure the tension screws in position.

2. Check the sanding drum to conveyor table alignment by first removing the abrasive strip from the drum. The purpose of this adjustment is to achieve equal distances at point A and point B which will ensure that the drum is parallel to the feed table and provide uniform sanding. (See Figures 10 and 11.)

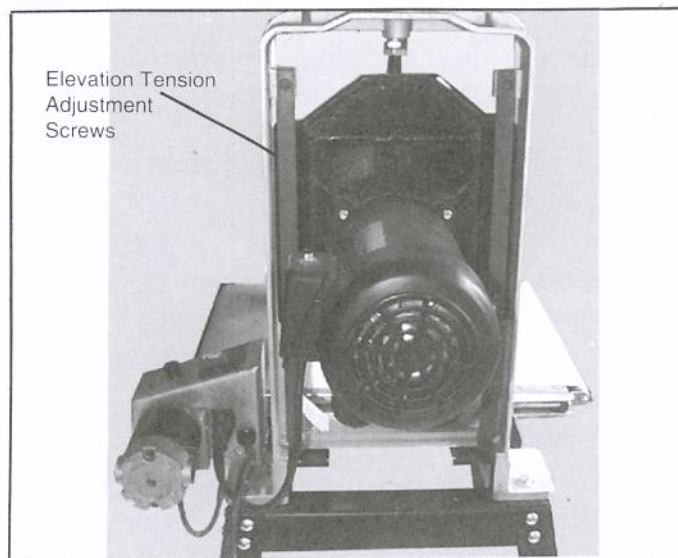


Figure 9

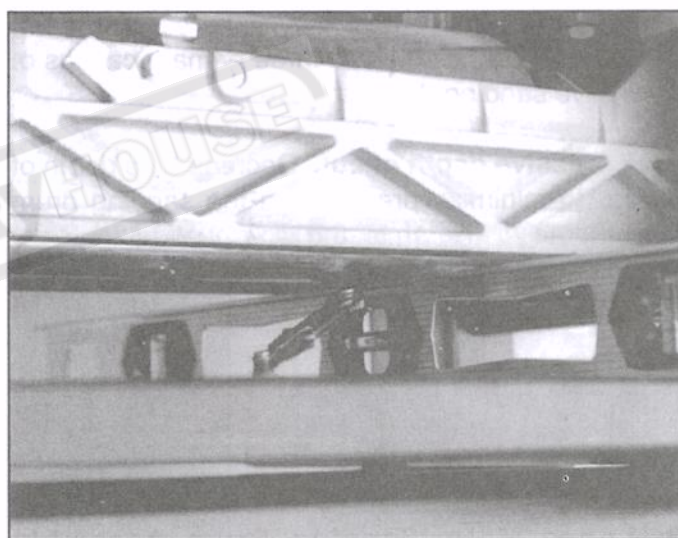


Figure 10

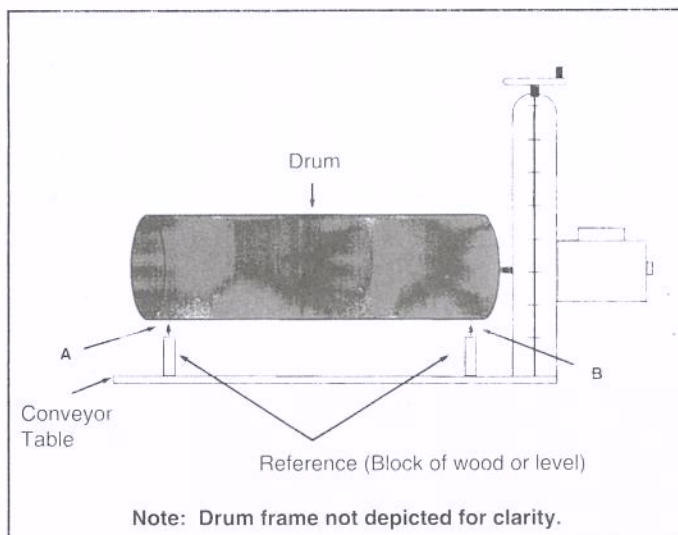


Figure 11

If the measurement at A is greater than the same point at B by .020 or less, proceed as follows:

1. Loosen the 2 outboard conveyor table mounting bolts as shown in Figure 12.
2. Slide one or both of the supplied shims as needed under the edge of the conveyor table as shown.
3. Tighten conveyor table mounting bolts. Recheck the measurement at A and at B.
4. Test sand a piece of wood and check for uniform thickness.

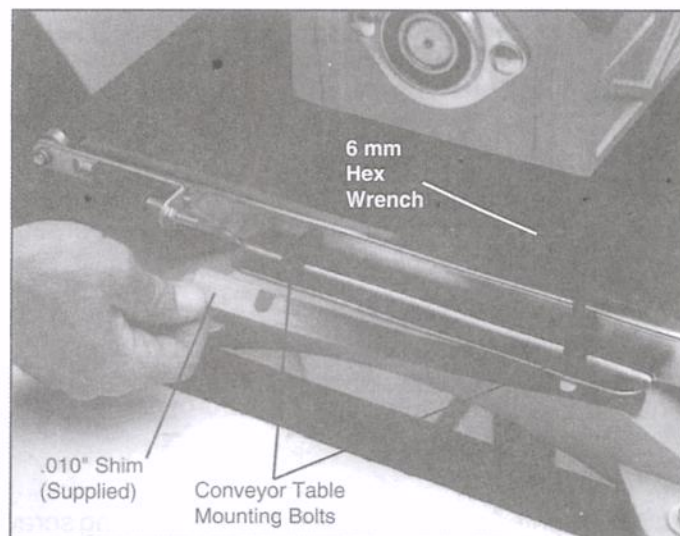


Figure 12

If the measurement at A exceeds B by more than .020", or if distance B is greater than A, proceed as follows:

1. Loosen the two front and two rear adjustment bolts as shown in Figure 13, thus allowing the entire drum assembly to pivot.

NOTE: If the unit is bolted to a stand or bench, loosen the mounting bolts at the motor end.

2. Using the Height Adjustment Handle Assembly, lower the drum until the distances at A and B are equal. Tighten the alignment bolts and the mounting bolts.
3. Test sand a piece of wood and check for uniform thickness. Repeat the above procedure if necessary.



Figure 13

CONVEYOR FEED BELT TRACKING ADJUSTMENT

Occasional adjustment of the conveyor feed belt tracking may be required due to belt stretching, normal wear and tear, and improper tensioning. Ideally, the conveyor feed belt should track in the center area of the conveyor feed belt table.

1. Conveyor feed belt tracking adjustment screws are located on both the inboard and outboard sides on the rear of the wide drum sander. (See Figures 14 and 15.)
2. To tighten the tracking tension, the tracking screw is rotated clockwise while holding its nut in place with a 7/16" open end wrench (not supplied). To loosen the tracking tension, the tracking screw is rotated counterclockwise while the nut is held with the wrench. (See Figure 15.)
3. If the conveyor feed belt is tracking towards the inboard (motor side) of the machine, tighten (add tension) to the tracking adjustment screw on that side of the machine.

NOTE: Due to the width of the conveyor feed belt, tracking adjustments may not become apparent immediately! Increase the speed of the conveyor feed belt to hasten the effects of your adjustments. Make small measured corrections of approximately 1/4 turn increments and evaluate the results. Readjust as necessary until the proper tracking solution is found.

HELPFUL

HINT: Tighten the side opposite the desired tracking direction. For example, tighten the right side tracking adjustment to make the conveyor feed belt track left.

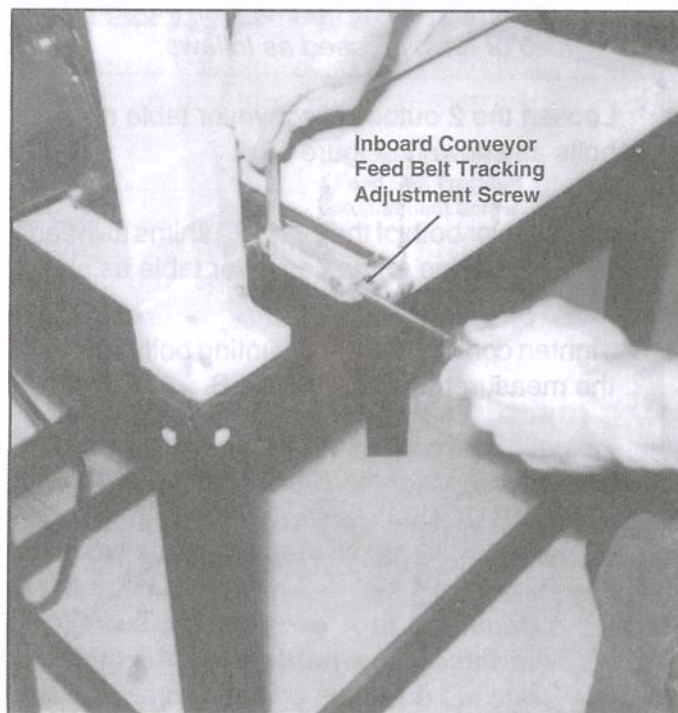


Figure 14

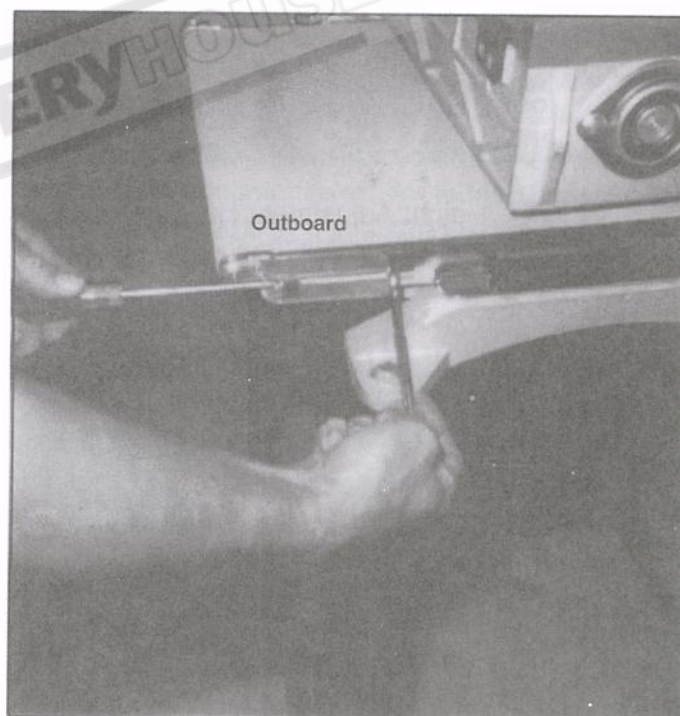


Figure 15

OPERATING INSTRUCTIONS



WARNING: Never put your fingers into dust port or under drum cover.



CAUTION: To avoid damage to your Drum Sander, adequate dust collection must be used during sanding operations. A 2-1/2" port is included in the sanding drum dust cover for connecting dust collection unit/hose to your Wide Drum Sander.

DRUM HEIGHT CONTROL

The height of the drum is raised by turning the height control knob (refer to Figure 2) in a clockwise direction. To lower the drum, turn the height control knob in the counter-clockwise direction. The depth of the movement is approximately 1/64" per 1/4 turn in either direction. One complete turn is 1/16". Depth settings can be measured using the depth indicator scale located on the right side of the drum support frame.

NOTE: Depth settings used during surface sanding of stock are adjusted by considering several variables. The hardness of the material, the width of the material being surfaced, and the feed rate selected are all considered when determining the amount of material to be removed on each pass. Never remove more than 1/32" of material in one pass. The variable feed rate is set to prevent burning and provide a smooth sanded surface on different types and widths of materials. As a general rule, 1/4 turn or 1/64" or less is recommended stock removal for coarser grits and softer woods, while 1/8 of a turn or 1/128" may be more desirable with harder woods and/or finer grits of abrasives. When selecting the rate of feed for the material being surfaced, the wider the material, the slower the feed rate to be set. Similarly, the harder the wood, the slower the feed rate.

Some experimenting and practice will be required to become familiar with the sanding performance of your Wide Drum Sander. While performing a surfacing operation with your Wide Drum Sander closely parallels the wide surface preparation of a planer, a planer is much more capable of making deeper passes due to its characteristic knives, while a Wide Drum Sander is limited to its abrasive material for stock removal.

SANDING

1. With power off, rest stock on the feed table and advance the stock to a point so that you can adjust height of sanding drum to equal thickness of stock at its greatest point.
2. Connect and turn on dust collection equipment.
3. Adjust feed rate to match sanding requirements and width of stock.
4. Turn on unit and rest stock on the feed conveyor table allowing the feed belt to carry the stock into and engage the sanding action of the drum. Support long stock as necessary during the feed operation. Once the sanding operation feed allows, reposition yourself to the outfeed side of the machine to accept, support, and control the board as it exits the Wide Drum Sander.

NOTE: Do not apply upward or downward pressure when supporting and guiding stock through the sander. To do so may induce snipe (sander drum dig-in) into the sanded stock.

5. Reverse the feed direction of the stock on successive passes, while adjusting the depth of cut using the height adjustment handle assembly (refer to Figure 2). Several variables affect the proper depth of cut selected. They are: abrasive grit choice, width of stock, hardness of stock, feed rate, and moisture content of stock.

INSTALLING NEW REPLACEMENT ABRASIVE STRIPS



WARNING: To prevent possible serious personal injury, always disconnect the Wide Drum Sander from the power source before servicing the unit or changing the abrasive strips.

Abrasive strips are available from _____ in precut strips which require no special measuring or trimming before installation. The abrasive strips are tapered at the ends to be wrapped radially around the drum to provide a continuous sanding surface. You may cut your own strips from bulk stock using the simple cutting diagram (Figure 16), or using the included abrasive strip as a pattern for cutting your new replacement strip.

1. Make sure the power switch is off and disconnect the power cord from the outlet.
2. Using either a precut strip or one which you have cut for use, you begin the abrasive strip installation by inserting the tip of the tapered strip into the slot in the left side of the drum while depressing the clip (Figure 17). Approximately one inch of material should be inserted into the slot to make the connection in the abrasive clip. Release clip pressure once the inserted tapered end is securely loaded in the clip jaws.

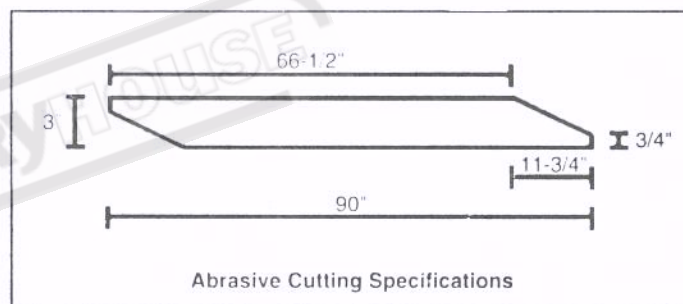


Figure 16

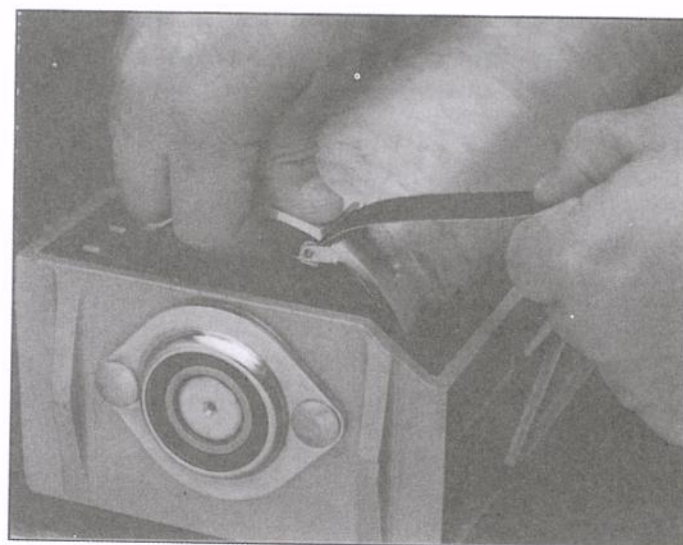


Figure 17

3. Once the abrasive strip is secured in the left clip, stand in front of the unit and radially wrap the abrasive material. Roll the drum away from you with your left hand while holding tension on the abrasive strip with your right hand and guiding the material onto the drum. Use this technique to wrap the abrasive strip edge to edge radially around the drum. Make sure you do not overlap the material as you wrap the abrasive (Figure 18). The material should be flush to slightly gapped, but not overlapped, during the wrap.
4. When you have completely wrapped the drum, keep tension on the strip and insert the remaining tapered end of the strip into the slot in the drum. Using your right hand, raise the tensioner clip completely to open the jaws. Insert the tapered end of the abrasive strip, and release the tensioner clip to secure the abrasive strip (Figure 19). The tensioner clip will secure and tension the abrasive strip during use and will hold tension in the event the strip stretches during use. If the abrasive strip is not tightly captured, the tensioner clip was not raised sufficiently to open the jaws properly before inserting the abrasive strip.

NOTE: In some cases, if the abrasive strip stretches, it may be necessary to readjust/reposition the abrasive clip points on the abrasive strip. Ensure the tension remains positive on the abrasive strip during extended use.

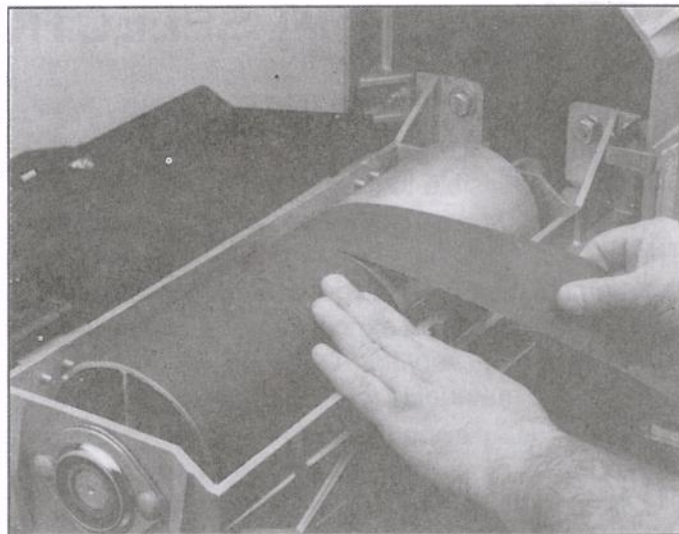


Figure 18

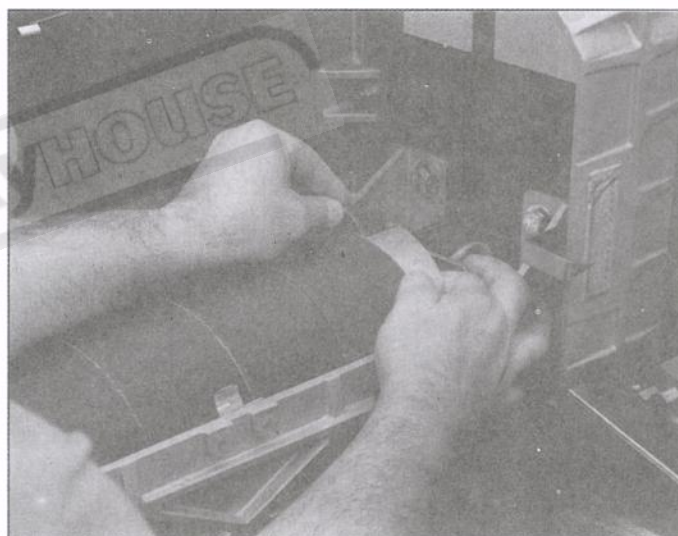


Figure 19

ABRASIVE GRIT SELECTION

THE SANDING PROCESS

Smoothing wood, or sanding, is the process of making finer and finer scratches until they become so small they are no longer visible to the human eye.

The grit size of the sandpaper designates the coarseness of the abrasive. The lower the grit number, the coarser the sandpaper and the larger the scratches made to the surface. Thus 36 grit sandpaper is coarser (bigger scratches) than 60 grit sandpaper, and 60 grit is coarser than 80 grit, and so on. With coarser grit papers such as 36 and 60 grit, very aggressive material removal and surface scratching occurs, whereas with 220 grit, very little surface material is removed and a buffed like look begins to appear.

GRIT SELECTION

Typically, you begin sanding with a coarse grit and progressively work through finer grits until the desired finish or thickness is achieved. Choosing which grit to begin sanding with is a subjective judgment based on your assessment of stock condition (rough, smooth, etc.), thickness, hard/soft wood, and the desired outcome. Below are some general guidelines regarding sanding grits. (Pre-cut strips in each listed grit size are available distributors and Factory Service Centers.)

<u>GRIT</u>	<u>USES and ABRASIVE CHARACTERISTICS</u>
36	Very aggressive: maximum stock removal, glue removal, abrasive planing, removing "cup", paint removal
60	Medium aggressive: stock removal, surfacing, glue removal, end grain surfacing
80	Medium coarse: light surfacing, glue removal, end grain smoothing, planer mark removal
100	Medium: light surfacing, end grain smoothing, planer mark removal
120	Medium fine: light surfacing and stock removal, thin stock dimensioning
150	Fine: minimum stock removal, finish sanding surface preparation, thin stock dimensioning
180	Fine: finish sanding
220	Very fine: finish sanding

MAINTENANCE OF UNIT



WARNING: To prevent possible serious personal injury, always disconnect the Wide Drum Sander from the power source before servicing the unit or changing abrasive strips.

Keep your Wide Drum Sander clean. Remove accumulated sawdust from the drum and other working parts. Frequently clean resin buildup from the inner drum using a kerosene or a resin remover dampened cloth with the unit disconnected from the power source.



WARNING: Provide adequate ventilation when using solvents. Do not use solvents to clean plastic parts.

Some basic requirements are necessary to ensure a long and enjoyable life for your Wide Drum Sander:

1. Periodically lubricate moving parts using a non-petroleum based lubricant, including the threaded depth control, sliding surfaces, and bronze bushings associated with the depth control mechanism. Do not use oil or grease because they tend to attract and hold sawdust.
2. Periodically check the tightness of all frame bolts and motor/drum mounting bolts/screws.
3. Keep sanding drum feed belt clean.
4. Use only clean sanding abrasives.
5. Periodically check the sanding drum feed belt table alignment. If out of alignment, see alignment procedure.



WARNING: Do not operate the Wide Drum Sander with the drum cover open. Use extreme caution when performing drum cleaning maintenance on your Wide Drum Sander. **DO NOT** wear long sleeve shirts, neckties, or jewelry. Tie back long hair when cleaning the sanding drum. Failure to heed this warning can result in serious personal injury.

DRUM ABRASIVE STRIP CLEANING

During use, the sanding strip abrasive may become clogged with sawdust, causing insufficient sanding, marring of workpiece, and burning of the workpiece. With the machine off and unplugged from its power source, occasionally check the condition of the abrasive strip on the sanding drum for clogging. This should be done often, especially with resinous woods, because material can become so packed into the abrasive that it cannot be removed, and the abrasive strip must be replaced.

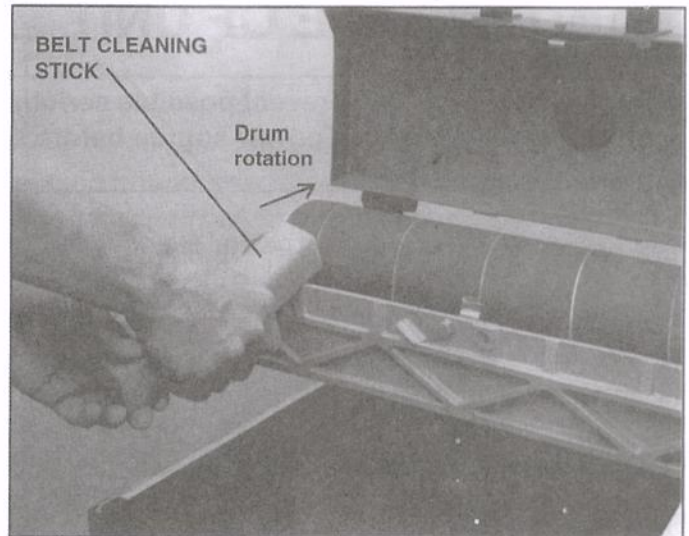


Figure 20

1. Heed all warnings and use extreme caution when performing this cleaning operation.
2. Set the conveyor belt speed control knob to lowest feed setting. Avoid contact with conveyor feed belt.
3. Open the protective dust cover to expose the sanding drum and abrasive strip.
4. Use a long belt cleaning stick to distance your hands from the rotating drum. (See Figure 20.)
5. Turn on the machine, grip the belt cleaning stick with two hands, rest the cleaning stick on the casting which houses the sanding drum. Gently lower the cleaning stick onto the rotating drum, moving the cleaning stick from side to side to remove the impacted sawdust. (See Figure 20.)
6. When cleaning is completed, remove the stick, turn off the machine, and close and latch the protective dust cover.

CONVEYOR FEED BELT REPLACEMENT

Common causes which require replacement of the conveyor feed belt are: normal wear and tear, inadvertent contact with the sanding drum abrasive during operation, tears caused by mistracking of the conveyor feed belt, or excessive build-up of non-removable film.

The following steps describe how to remove and replace the conveyor feed belt when necessary:

1. Disconnect the machine from the power source.
2. Using the Height Adjustment Handle, raise the sanding drum to its highest position (roughly 3" above the conveyor belt table).
3. Using a phillips type screwdriver, remove the 2 screws and star washers securing the front nip guard to the variable speed control box. Then remove the front nip guard by sliding it to the left and off the outboard drive roller bushing. (See Figure 21 for reference.)
4. Using the supplied 6 mm hex wrench key, remove both conveyor table mounting bolts on the outboard, open side of the wide drum sander. (See Figure 12 in the *Drum Alignment* section for reference.)
5. Reduce tension on the conveyor feed belt by rotating both the inboard and outboard conveyor feed belt tracking adjustment screws in a counterclockwise direction. (See Figures 14 and 15 in the *Conveyor Feed Belt Tracking Adjustment* section for reference.)
6. Remove the used conveyor feed belt by grasping both sides of the belt as shown in Figure 21. Gently lift the conveyor table as you slide off the conveyor feed belt. If the belt will not move, further reduce the tension on the feed belt and ensure you are lifting the table high enough to allow the feed belt to slide off.
7. To install the replacement conveyor feed belt, follow Steps 6 through 3 in reverse order. Center the new feed belt on the conveyor feed belt table and evenly tension the new feed belt using the inboard and outboard tracking adjusters. If you experience tracking problems, consult the *Conveyor Feed Belt Tracking Adjustment* section.

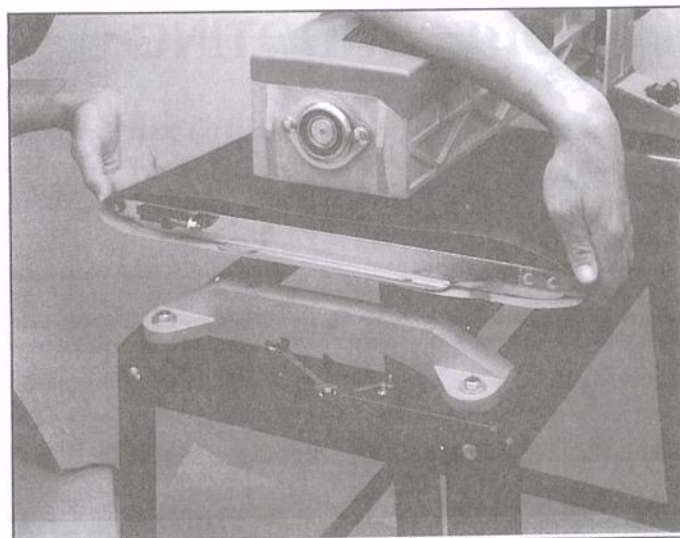
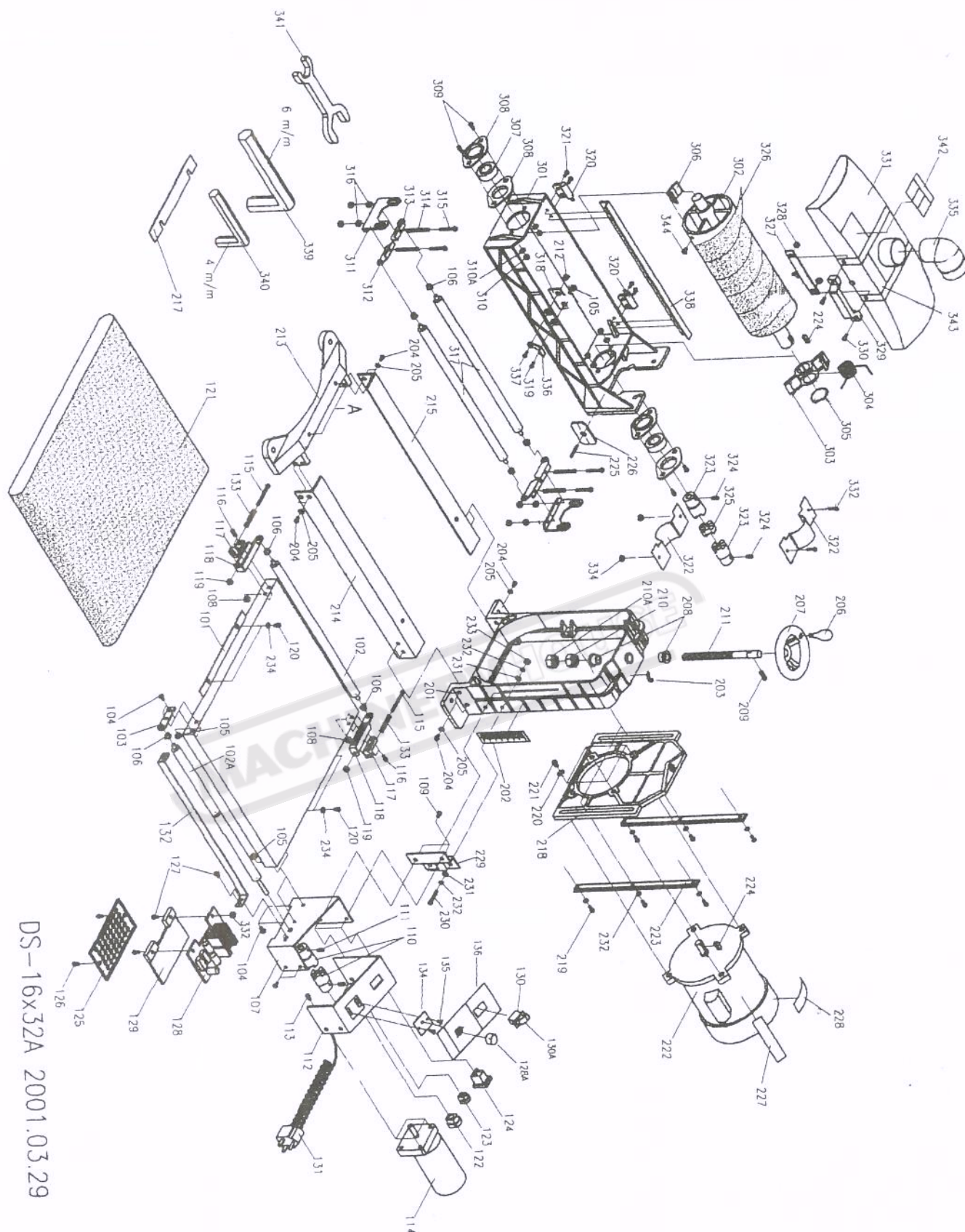


Figure 21

TROUBLESHOOTING

Troubleshooting Guide for Wide Drum Sander

PROBLEM	PROBABLE CAUSE	SOLUTION
Abrasive strip comes loose from clips	Slack in abrasive strip abrasive improperly installed	Reattach abrasive strip. (Refer to pages 8 and 9.)
Wood burned during sanding	1. Abrasive strip edges overlapped 2. Abrasive loaded with resin 3. Depth of cut excessive 4. Feed rate too slow	1. Reattach abrasive strip properly. 2. Replace abrasive. 3. Try coarser grit - limit depth of cut. 4. Increase feed rate.
Sanding drum feed belt - runs intermittently	Shaft coupling loose	See Authorized Service Center.
Sanding drum feed belt slips on drive rollers	Belt tension loose	• Adjust belt tension. • Reduce depth of cut. • Reduce feed rate.
Stock slips on sanding drum feed belt	1. Feed rate excessive 2. Dirty/worn conveyor belt	1. Reduce feed rate. 2. Replace/clean feed belt.
Non-evenly spaced ripples on stock	Uneven feed rate	• Check for belt/gear slipping on feed drive belt. • Motor stalls on conveyor feed drive. • Adjust belt tension.
Evenly spaced ripples on stock	1. Sanding bed flexing 2. Sander vibration - loose parts 3. Drum dirty - out of balance	1. Reduce depth of cut. 2. Reduce feed rate. 3. Check for: loose bolts, loose shaft coupling set screws. Clean sanding drum if out of balance. (Have service performed by a Factory or Authorized Service Center.)
Motor overload trips or shop wiring circuit breaker trips	1. Excessive combined total load on sanding drum and motor 2. Low line voltage/extension cord gage too small 3. Excessive length or inadequate gage extension cord.	1. Allow motor to cool and reset overload button. 2. Reduce feed rate and/or depth of cut. Limit length of cord and gage of wire 50' or less, 12 gage minimum. 3. If overload continues to trip, see Factory or Authorized Service Center.



PARTS LIST OF DS-1632A DRUM SANDER

No.	COM No.	DESCRIPTION	QTY
101	20701001	FEED TABLE	1
102	20701002	OUT FEED ROLLER	1
102A	20701002A	IN FEED ROLLER	1
103	20701003	FIXING PLATE	1
104	S0060410	SCREW 1/4"-20UNC X 3/4"	4
105	S0110400	NUT 1/4"-20UNC	5
106	20701006	FEED ROLLER BUSHING	8
107	20701007	SWITCH BOX HOUSING	1
108	S0110610M	NUT M6-1.0	4
109	S0020500	HEX BOLT 5/16"-18UNC X 5/8"	4
110	20701010	COUPLE AXEL	2
111	S0050405N	SOC. SET SCREW 1/4"-20UNC*1/4"	2
112	20701012	SWITCH BOX COVER	1
113	S0010510M	SCREW CAP M5-0.8*10mm	4
114	M0271211A	REDUCTION MOTOR 1/15HP	1
115	S0030488	FASTEN BOLT 1/4"-20UNC*3-1/2"	2
116	S0010615M	HEX. SCREW M6-1.0*15mm	4
117	20701017	TENSION ADJ. BLOCK	2
118	20701018	ADJ. SLIDE PLATE	2
119	S0120200	NUT 1/4"-20UNC	4
120	S0010510M	SCREW 5/16"-18UNC X 5/8"	4
121	20701019n	FEED BELT	1
122	S1017W-2	CABLE HOLDER	1
123	S1006R-3	CABLE HOLDER	1
124	20702013A	PLUG SET (PLUG+WIRE)	1
125	20701007A	SWITCH BOX BOTTOM PLATE	1
126	S0030304	SCREW 3/16"-24UNC X 1/4"	2
127	S0030318	FRONT NIP GUARD SCREW	4
128	40501013a	PC BOARD	1
128A	40501019	REGULATOR KNOB	1
129	40501018	INSULATED BOARD	1
130	W1110001	SWITCH	1
130A	W1110002	SAFETY SWITCH KEY	1
131	L0000035A	POWER CORD 14AWG	1
132	20701020	FRONT NIP GUARD	1
133	20701018S	FIXED SPRING	2
134	20701011	RESISTANCE BOARD	1
135	S0040510M	SCREW M5-0.8*10mm	2
136	J20704003	INDICATOR	1
201	20600001	ARCH	1
202	J20706002	DEPTH INDICSTOR	1
203	20702003	ROTATION INDICATOR	1

PARTS LIST OF DS-1632A DRUM SANDER

204	S0020501a	SCREW 5/16"-18UNC X 1"	8
205	S0210500c	WASHER 5/16"*8*2	4
206	10105056	HAND KNOB	1
207	20702008	HEIGHT CONTROL WHEEL	1
208	20702009	CONNECTING BUSH	2
209	S0050500	SOC. SET SCREW 5/16"-18UNC*5/16"	1
210	S0110501	NUT 5/8"-18UNF*10t	2
210A	S0110501A	NUT 5/8"-18UNF*8t	2
211	20706001	HEIGHT CONTROL SHAFT	1
213	20702015	ARCH STAND	1
214	20702016L	FEED ROLLER SUPPORT(L)	1
215	20702016R	FEED ROLLER SUPPORT®	1
217	20702017	ADJUSTING SHIM	2
218	20600003	MOTOR MOUNTING FRAME	1
219	S0010501	SLIDING SCREW 5/16"-18UNC	6
220	S0210623	WASHER 3/8"*23	4
221	S0021040M	SCREW M10-1.5*40mm	4
222	M2071211	MOTOR	1
223	20600004	SLIDING RING 8x18	2
224	S0410525	KEY 5*5*25	2
225	20600005	SCREW 3/16"-24UNC X 1/4"	1
226	20706003	POINTER	1
227	J20704005	WARNING PLATE	1
228	J20704001	NAME PLATE	1
229	20702030	ARCH BRACKET	1
230	S0020501	HEX. HD. SCREW	2
231	S0210500c	FLAT WASHER 5/16"*18*2t	8
232	S0230506	SPRING WASHER 5/16"	4
233	S0110500	NUT 5/16"	2
301	20703001	DRUM CASE	1
302	20703011	DRUM ROLLER	1
303	20703010	PULL CLAMP BRACKET	1
303B	20703010B	PULL CLAMP	1
303C	20703014A	SPRING	1
304	20703010A	SPRING	1
305	S0520028	STW-28	1
306	20703014	FIXED CLAMP BRACKET	1
306B	20703014B	FIX CLAMP	1
306C	20703014C	SPRING	1
307	C1106205	BEARING 6205ZZ	2
308	20703002	BEARING CAP	4
309	S0060510	SCREW 5/16"-18UNC*1"	4
310	S0110500	NUT 5/16"-18UNC	4

PARTS LIST OF DS-1632A DRUM SANDER

310A	S0230506	SPRING WASHER	4
311	20702028	FIX BRACKET	2
312	20702027	FIX BRACKET(L)	2
313	20702026	FIXING BLOCK(R)	2
314	20702031	SPRING	4
315	S0030435M	SCREW M4-0.7*35	4
316	S0120400M	NUT M4	8
317	20702025	FASTEN BAR	2
318	20703018A	FASTEN PLATE	1
319	S0040410	SCREW 1/4"-20UNC * 5/8"	1
320	20702019	COVER HINGE	2
321	S0040401	INTERNAL NIP GUARD SCREW 1/4"-20UNC*1"	4
322	20703019	AUX GUARD	2
323	30102006	COMPOUND JOINTER	2
324	S0050405N	SOC.SET SCREW 1/4"-20UNC*1/4"	2
325	30102007	COMPOUND BLOCK	1
326	20703011C	SANDING SLEEVE	1
327	20703018	HOOKING PLATE	1
328	S0120500	NUT 5/16"-18UNC	2
329	20703016	HANDLE	1
330	S0010501	BOLT 5/16"-18UNC*1"	2
331	20703017	DUST COVER	1
332	S0030324	SCREW 3/16"24UNC*1-1/2"	2
334	S0110300	NUT 3/16"-24UNC	4
335	20703017a	ELBOW	1
336	20703020	FASTENER	1
337	S0020510	LATCHE SCREW 5/16*5/8"	1
338	20703021	INTERNAL NIP GUARD	1
339	S0910104	6mm WRENCH	1
340	S0910102	4mm WRENCH	1
341	S0911012	WRENCH 10X12	1
344	S0040300	SCREW 3/16X3/8	1