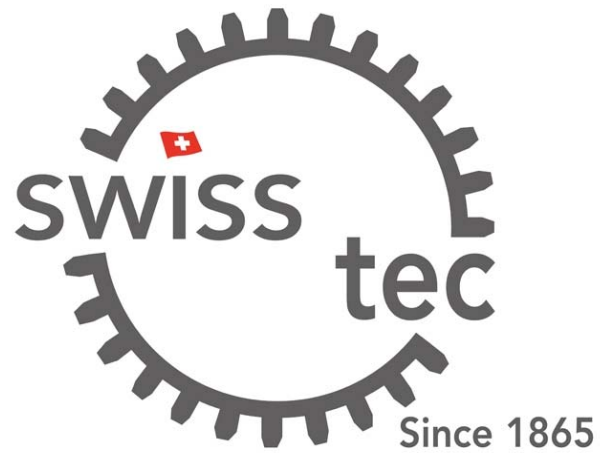




Operating Instructions and Parts Manual

Combo Brush/ Drum Sander

Model ST-480 BDS M



Revision A 1/2012

CE-Conformity Declaration

Product: Brush/ Drum Sander

ST-480 BDS M

Article Number: 77.830.83001.11

Brand: SWISSTEC

Manufacturer:

DKSH Hong Kong Limited

23/F Tower A, Southmark, 11 Yip Hing Street, Wong Chuk Hang, Hong Kong

On our own responsibility we hereby declare that this product complies with the regulations

- * 2006/42/EC Machinery Directive
- * 2004/108/EC EMC Directive (Electro Magnetic Compatibility)
- * 2006/95/EC Low Voltage Directive
- * 2002/95/EC RoHS Directive (Reduction of Hazardous Substances)

designed with consideration of the standards

** EN ISO 12100-1, EN ISO 12100-2, EN ISO 13857, EN 349, EN 953,
EN 60204-1, EN ISO 13849-1, EN ISO 11202, EN ISO 14121-1

Technical file compiled by: Marcel Baumgartner, General Manager Sourcing – Technology

2012-1-5 Marcel Baumgartner, General Manager Sourcing – Technology
DKSH Hong Kong Limited
23/F Tower A, Southmark, 11 Yip Hing Street, Wong Chuk Hang, Hong Kong

Safety: Authorized Use

1. The machine is not suitable for wet sanding.
2. The proper use also includes compliance with the operating and maintenance instructions given in this manual.
3. The machine must be operated only by persons familiar with its operation and maintenance and who are familiar with its hazards.
4. The required minimum age must be observed.
5. The machine must only be used in a technically perfect condition.
6. When working on the machine, all safety mechanisms and covers must be mounted.
7. In addition to the safety requirements contained in these operating instructions and your country's applicable regulations, you should observe the generally recognized technical rules concerning the operation of machines.
8. Any other use exceeds authorization. In the event of unauthorized use of the machine, the manufacturer renounces all liability and the responsibility is transferred exclusively to the operator.
7. Always wear eye protection while operating the sander.
8. Wear safety shoes; never wear leisure shoes or sandals.
9. Always wear the approved working outfit.
10. Do **not** wear gloves.
11. Remove jammed work pieces only when motors are turned off and the machine is at a complete standstill.
12. Install the machine so that there is sufficient space for safe operation and work piece handling.
13. Keep work area well lighted.
14. The machine is designed to operate in closed rooms and must be placed stable on firm and leveled ground.
15. Make sure that the power cord does not impede work and cause people to trip.
16. Keep the floor around the machine clean and free of scrap material, oil and grease.
17. Stay alert! Give your work undivided attention. Use common sense. Do not operate the machine when you are tired.
18. Do not operate the machine under the influence of drugs, alcohol or any medication. Be aware that medication can change your behavior.

Safety: General Safety Notes

Machines can be dangerous if not used properly. Therefore the appropriate general technical rules as well as the following notes must be observed.

1. Read and understand the entire instruction manual before attempting assembly or operation.
2. Keep this operating instruction close by the machine, protected from dirt and humidity, and pass it over to the new owner if you part with the tool.
3. No changes to the machine may be made.
4. Daily inspect the function and existence of the safety appliances before you start the machine. Do not attempt operating in this case, protect the machine by unplugging the main cord.
5. Remove all loose clothing and confine long hair.
6. Before operating the machine, remove tie, rings, watches, other jewelry, and roll up sleeves above the elbows.
19. Never reach into the machine while it is operating or running down.
20. Never leave a running machine unattended. Before you leave the workplace switch off the machine.
21. Keep children and visitors a safe distance from the work area.
22. Do not operate the electric tool near inflammable liquids or gases. Observe the fire fighting and fire alert options, for example the fire extinguisher operation and place.
23. Don't use in a dangerous environment. Don't use the machine in damp or wet locations, or expose it to rain.
24. Wood dust is explosive and can also represent a risk to health. Dust from some typical woods in particular, and from hardwoods like beach and oak, is classified as a carcinogenic substance. Always use a suitable dust extraction device. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.

25. Before machining, remove any nails and other foreign bodies from the work piece.
26. Never operate with the guards not in place – serious risk of injury!
27. Use a feeding aid if you want to feed short stock into the machine.
28. Machine only stock which rests securely on the table.
29. Specifications regarding the maximum or minimum size of the work piece must be observed.
30. Do not machine more than two work pieces at the same time.
31. Connection and repair work on the electrical installation may be carried out by a qualified electrician only.
32. Have a damaged or worn power cord replaced immediately.
33. Replace any torn or worn sanding paper immediately.
34. Make all machine adjustments or maintenance with the machine unplugged from the power source.
35. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
36. Stand to one side of the conveyor and make sure no one else is standing in line with the conveyor while feeding stock into the machine. Should a part slip while being fed, it may exit the machine at a high rate of speed and can cause injuries to anyone standing directly in front of the infeed.
37. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and safer.
38. Use recommended accessories; improper accessories may be hazardous.
39. Always feed stock against the rotation of the drum or brush.
40. Keep your hands clear when feeding parts onto the conveyor. The part will be forced down as it begins to feed, causing a pinching action between the part and the conveyor bed. Never reach into a running machine. Turn off sander and disconnect from power before attempting to retrieve parts from within the machine.
41. Always maintain control of stock to avoid kickback; know how to prevent it.

42. Turn off the machine and disconnect from power before cleaning. Use a brush or compressed air to remove chips or debris — do not use your hands.
43. Do not stand on the machine. Serious injury could occur if the machine tips over.

Remaining Hazards

When using the machine according to regulations some remaining hazards may still exist.

1. The moving sanding drum or brush in the work area can cause injury.
2. Drawing-in/trapping hazard by power feed mechanism.
3. Squeezing hazard by work piece power-outfeed.
4. Thrown workpieces can lead to injury.
5. Sanding dust and noise can be health hazards. Be sure to wear personal protection gear such as safety goggles, ear plugs and dust mask. Use a suitable dust exhaust system.
6. The use of incorrect main supply or a damaged power cord can lead to injuries caused by electricity.

Congratulations

You have made a wise purchasing decision by adding this machine to your tool line-up. The main purpose in inventing and developing the combo machine you've purchased was to bring a new dimension of productivity to your shop, be it large or small. Right from the start, our goal is to design and manufacture equipment that is capable of providing you with maximum economy, maximum utility, and maximum performance.

Your 19-38 Combo will pay you back many fold in the years ahead by helping you get better results in less time, start to finish. This tool incorporates a bundle of exclusive features which you will appreciate more every time you use it. This Combo sander features a variable brush speed (RPM) and the exclusive variable-speed power feed conveyor system.

Together, they provide you with ultra-precise control, for a variety of applications. Swisstec and its dealers are committed to providing you with innovative solutions, from selecting the right machine to helping you get top performance when you put it to work in your shop. Regardless of how you take advantage of these innovations, we are confident our equipment will help bring you a giant step forward in precision shop productivity.

ABOUT THE Combo Sander SYSTEM

Combo Sander Nomenclature	4
Unpacking Your Sander.....	5

SETTING UP YOUR Combo Sander

Connecting Dust Collectors.....	6
Checking For Machine Level.....	6
Checking Height Adjustment.....	7
Checking Brush Alignment.....	7
Checking Drum Alignment.....	7
Drum Brush Speed Adjustment.....	7
RPM Gauge	8
Checking Conveyor Belt Tracking.....	8

OPERATING YOUR Combo Sander

Basic Operating Procedures.....	9
Adjusting Tension Rollers.....	9
Selecting Stock Feed Rates.....	10
Drum	10
Setting Brush Depth of Cut	11
Setting Drum Depth of Cut.....	11
Using The Depth Gauge.....	11
Monthly Maintenance.....	12

TIPS FOR MAXIMUM PERFORMANCE ... 12

ABRASIVE SELECTION GUIDE..... 16

Wrapping Abrasive Strips	17
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TROUBLESHOOTING YOUR Combo Sander

Troubleshooting Guide: Motors	20
Troubleshooting Guide: Conveyor	21
Troubleshooting Guide: Machine.....	22

SERVICING YOUR Combo Sander

Adjusting Height Controls	7
Leveling Table	7
Brush Speed Adjustment	8
Changing Brush or Drum	12
Replacing Flatter Strips	14
Replacing Conveyor Belts.....	19
Electrical Diagram.....	23

Combo Sander TECHNICAL DATA

Parts List For Head Assembly	24
Parts List For Conveyor & Motor Assembly.....	27
Combo Sander Specifications	32

FOR YOUR SAFETY: Read all instructions carefully, and note the safety cautions on the opposite page and on the back cover of this manual.

ABOUT THE Combo Sander System

This manual is designed to help familiarize you with your Combo sander and to help you take advantage of its exclusive features. By understanding its major components, and how they work together, you will be able to get the most from your investment. The Combo sander is basically made up of: 1) a height adjustment handle which raises and lowers the

sanding head; 2) a brush speed control knob which controls brush speed from 200 to 1000 RPM and drum speed to 1750 RPM; 3) a motor starter switch which starts and stops the drive motor and sanding brush; and 4) a feed rate control knob which starts feed conveyor and selects feed rate from 0-3 meter per minute.

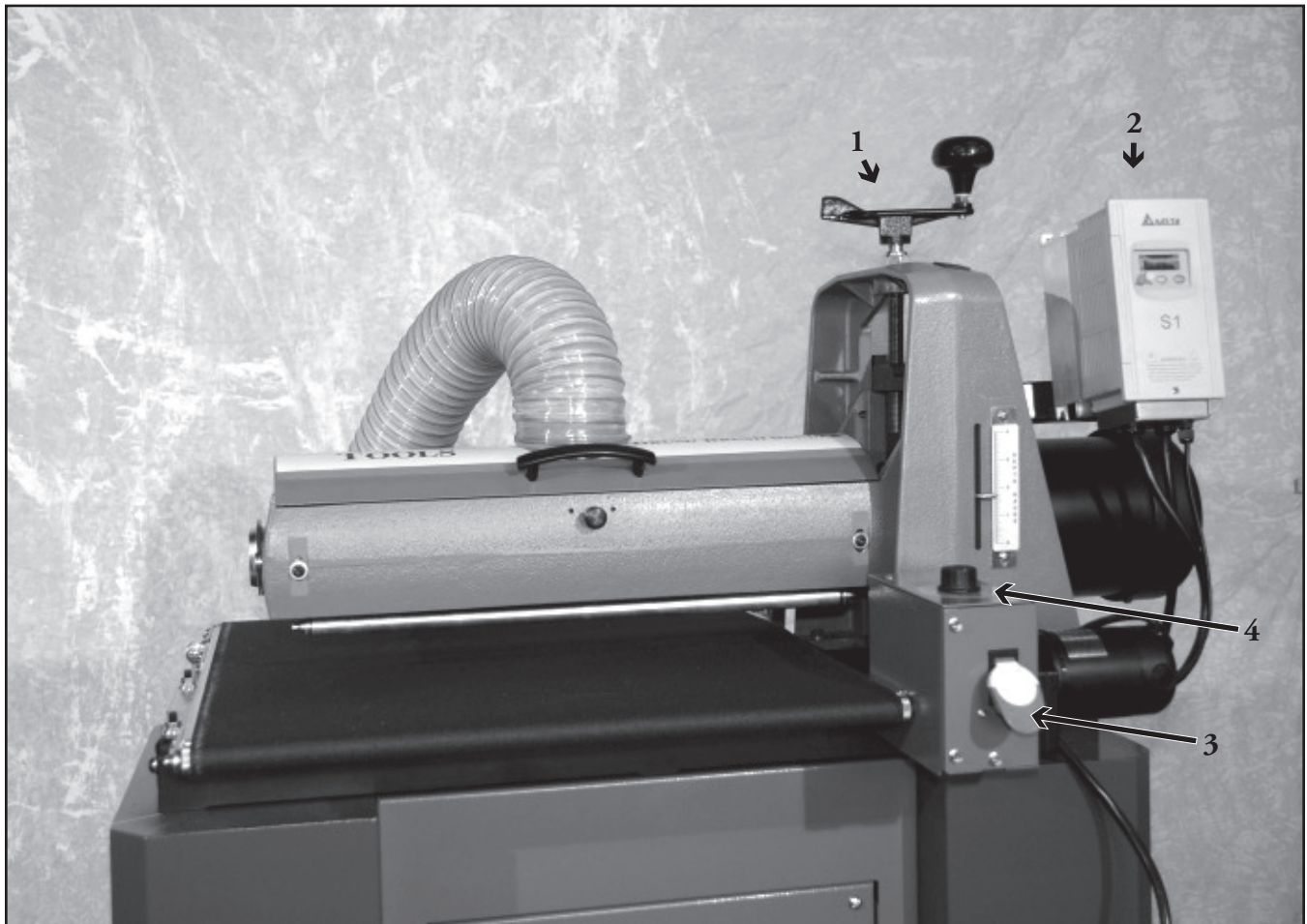


Fig. 1 Combo sander nomenclature.

UNPACKING YOUR Combo Sander

Your 19-38 Combo sander has been shipped mostly assembled from the factory. If any damage has occurred as a result of shipment, notify the transportation company as soon as possible and ask them to make an immediate inspection. Ask for a damage or loss report. Also notify your dealer of any loss or damage during shipment.

Important: To avoid problems and potential damage to the machine, please read through the unpacking instructions below before proceeding to set up the machine in your shop.

1. Assemble stand or prepare dedicated bench for sander attachment
2. Open "Box 1" with main sanding unit. Remove cardboard liner. Open plastic bag.
3. Cut each corner of Box 1 to fold sides flat, providing access to sanding unit. (Fig 2)
4. Remove two wood packing plates from bottom of sanding unit. (Fig 3)
5. With one or two helpers, place sanding unit on stand or bench and attach securely. Use bolts from packing plates.
6. Install knob to height adjustment handle, finger tighten nut to knob. Thread stud from knob into hand wheel (Fig 4A). Tighten nut against handwheel.
7. Using handle, raise sanding head to high position and remove packing block from under carriage arm and motor, if so equipped. (Fig 4)
8. Remove conveyor from packaging and place on sanding unit. The conveyor motor should be near main motor and depth gauge.
9. Install two lock washers and two flat washers on studs on outboard side of conveyor.
10. Install lock washer and flat washer onto two socket head bolts and install into flange of conveyor bed on inboard (motor side). Keep support plate in place on inboard side and make sure "fast lever" is positioned up. Fig. 4B
11. Tighten all bolts and nuts.

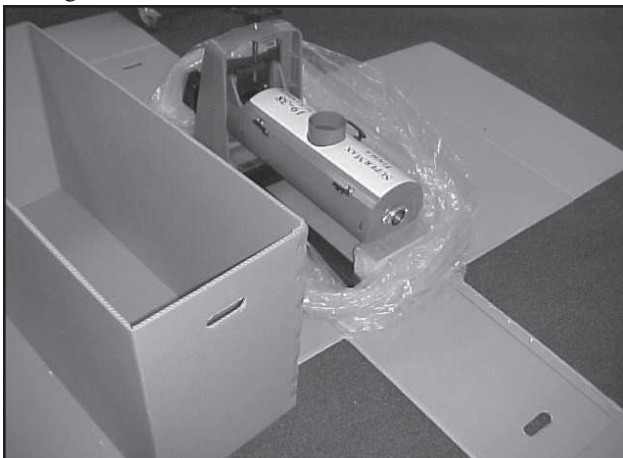


Fig. 2 Open plastic, remove liner, cut box

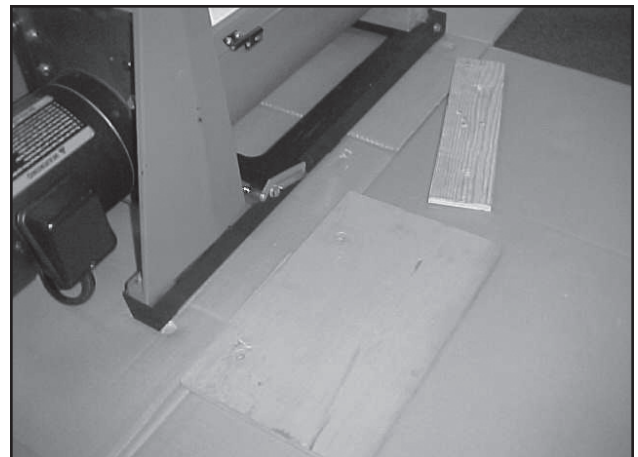


Fig. 3 Remove packing plates



Fig. 4 Secure to stand, remove packing block

SETTING UP YOUR Combo Sander

Your 19-38 Combo sander was adjusted and aligned at the factory, and it has been carefully packed for shipment. However, because of possible stress during transit, the unit should be thoroughly checked before being put to use. This section covers the preoperational checks you should make after unpacking and final assembly. Unnecessary problems can be avoided if these essential checks are performed before operating. Likewise, performing the recommended monthly maintenance procedures (page 12) will help assure trouble-free service.

CONNECTING DUST COLLECTORS

Dust collection is necessary for all models. The 19-38 Combo is equipped with one 100 mm diameter dust exhaust port at the top of the cover.

To attach to your collection system, install hose from your collector. (See Tips For Maximum Performance, page 12 of this manual.) The minimum recommended dust collector capacities is 560m³/h. For best results, follow the recommendations of the manufacturer of your dust collection equipment. NOTE: Some applications will require a suitable dust collection equipment. (ex.: minimum capacity, different sanding materials).

CHECKING MACHINE FOR LEVEL

Proper leveling of the machine is important to achieve continued maximum performance from the 19-38 Combo.



Fig. 4A Install knob

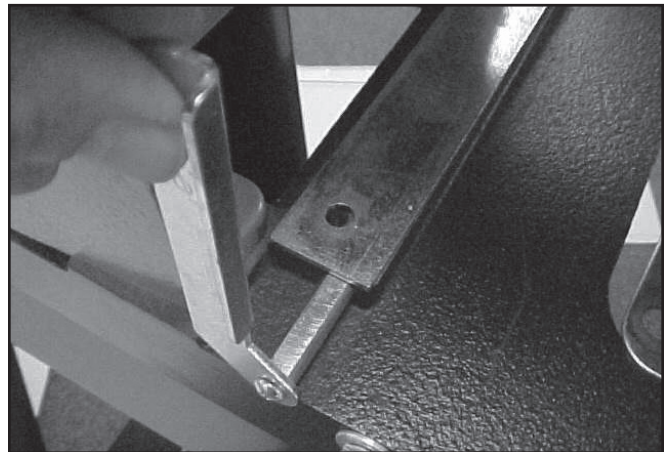


Fig. 4B FAST Lever "UP"

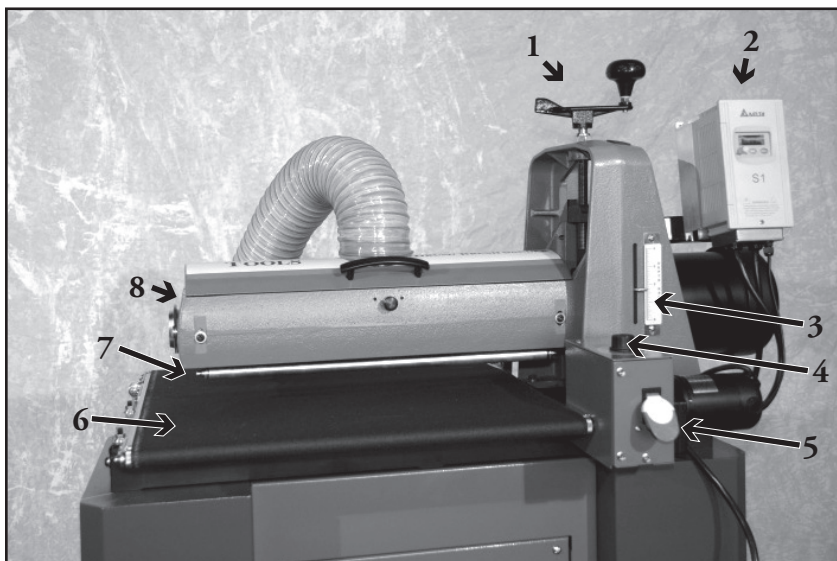


Fig. 5

Fig. 5 Sander Components.

1. Height Adjustment Handle
2. Brush Speed Knob (RPM)
3. Depth Gauge
4. Conveyor Adjustment
5. Drum/Brush ON/OFF Switch
6. Conveyor Table
7. Tension Rollers
8. Drum/Brush Carriage

HEIGHT ADJUSTMENT

The brush/drum height is controlled by the height adjustment handle (Fig. 5). Turning the handle raises or lowers the sanding head. One revolution of the handle raises or lowers the table 1.6 mm.

Before operating height adjustment, be sure the packing-block is removed. It is located under the outboard end of the carriage arm (Fig. 4). Raise drum/brush to remove.

BRUSH ALIGNMENT

The brush must be parallel to the conveyor bed surface. Brush alignment can be visually checked by raising the tension rollers (Fig. 6) to their highest position (See Tension Roller Adjustment page 9) and lowering the head so the brush just contacts the conveyor surface. Brush contact should be equal across the width of the conveyor. Brush misalignment can be corrected by loosening the four cap screws (A, Fig. 7) on the outboard edge of the conveyor and turning the adjustment nut (B, Fig. 7) to bring the conveyor parallel to the brush or drum.

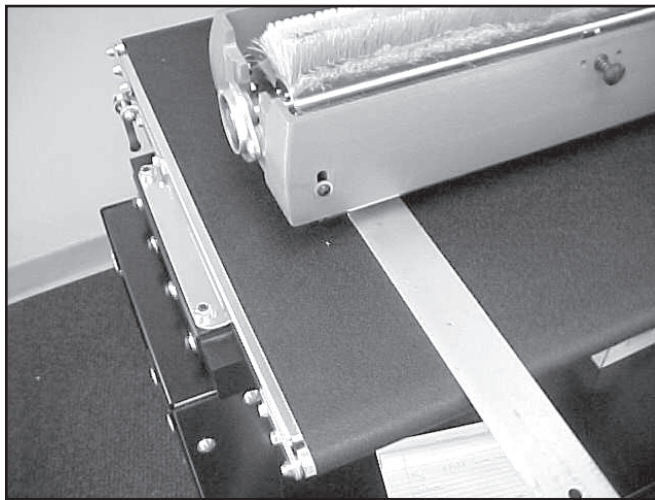


Fig. 6 Checking brush alignment and table height adjustment (outboard side).

DRUM ALIGNMENT

Check alignment when using sanding drum. After installing sanding drum, remove abrasive from drum. Using a flat piece of wood or aluminum as a thickness gauge, insert it between the conveyor belt and the drum on the right (inboard) side of the machine (Fig. 6A). Lower the sanding head so the drum just contacts the thickness gauge. Then, holding up the front tension roller, check both sides of the drum using the thickness gauge. If the drum is not parallel, loosen the four socket head cap screws (along the outboard edge of the conveyor) and raise or lower the conveyor with the adjustment nut to achieve parallel alignment. Tighten the four socket head cap screws.

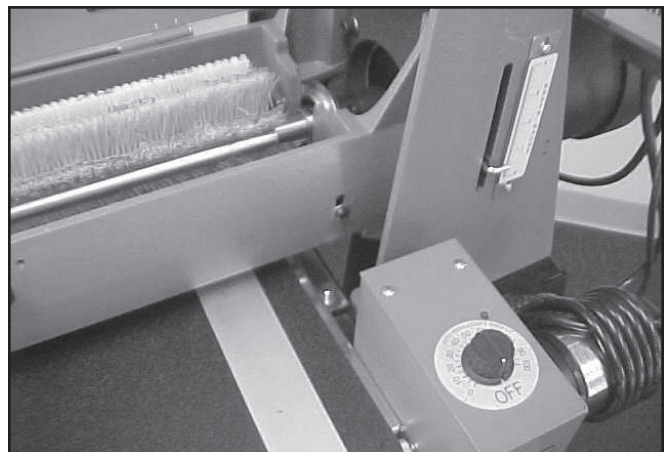


Fig. 6A Checking brush alignment (inboard side).

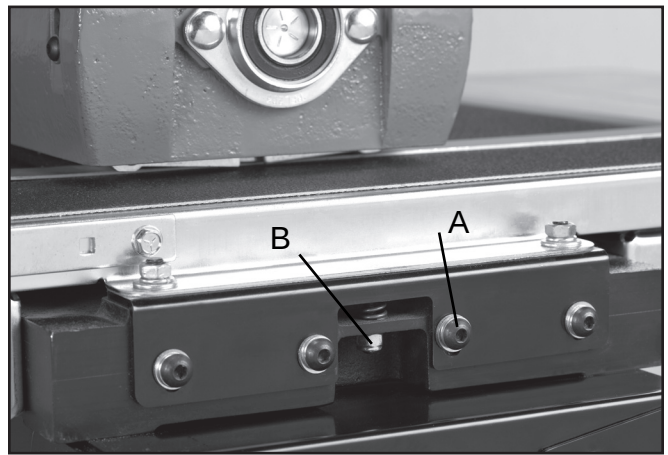


Fig. 7 Adjusting brush alignment.

IMPORTANT! When using the sanding drum accessory, adjust RPM Gauge to “drum sanding” highest setting, turned fully clockwise. Only use drum sander at this setting!

RPM GAUGE

The RPM gauge or readout (Fig. 8) displays the brush speed or rotation. The label under the control knob is a guide. **IMPORTANT:** The brush heads are to be run between 200-1000 RPM only! The sanding drum is to be run at max (1750) RPM only! Damage to the machine, brush or drum can result from not following this guide. Choose proper brush RPM for the best results and type of brush.

CHECKING CONVEYOR BELT TRACKING

Conveyor belt tracking adjustments may occasionally be necessary during break-in and normal operation to compensate for belt stretching. If adjustments are necessary, follow the instructions below: Belt tracking adjustments are made while the conveyor unit is running. With the conveyor unit on and set at the fastest speed setting, watch for a tendency of the conveyor belt to drift to one side of the conveyor. To adjust the belt tracking, tighten the take-up screw nut (A, Fig. 9) on the side the belt is drifting toward, and loosen the take-up screw nut on the opposite

side. Adjusting the take-up screw nuts on both sides of the conveyor allows belt tracking adjustments to be made without affecting belt tension. Adjust the takeup screw nuts only 1/4 turn at a time. Then allow time for the belt to react to the adjustments before proceeding further. Try to avoid over-adjustments. **NOTE:** Make sure wrench is below surface when brushing or sanding.



Fig. 8 Brush RPM gauge.



Fig. 9 Hanging wrench 1 of 2, for tracking conveyor

OPERATING YOUR 19-38 COMBO DRUM/BRUSH

Before using your Brush, review the previous pages in this manual on initial set-up and adjustment. In this section, you will learn how to operate the machine. Note that connecting the machine to an adequate dust collection system is necessary before operating the unit.

The Brush offers considerable control and versatility through variable brush speed and feed rate. Experiment with both to find the proper sander performance for a given application. Varying the brush speed makes the brush more or less aggressive. Too aggressive on the brush may tend to raise the grain or excessively round edges. Sometimes it may be better to make two or more passes with a less aggressive brush or setting.

The brush is rotating against the direction of feed; therefore, the leading edges of contours will receive more sanding than trailing edges. Stock should be reversed on subsequent passes to sand all surfaces. Stock may also be fed at an angle to allow more brush penetration on the sides.

BASIC OPERATING PROCEDURES

After you have connected the machine to a dust collection system, you are ready to begin to use the sander. The basic operating procedure for the brush sander is as follows (Fig. 10):

1. Set depth of cut/bristle contact (page 10).
2. Set tension rollers to type of stock being sanded (See Tension Roller Adjustment below and Fig. 11).

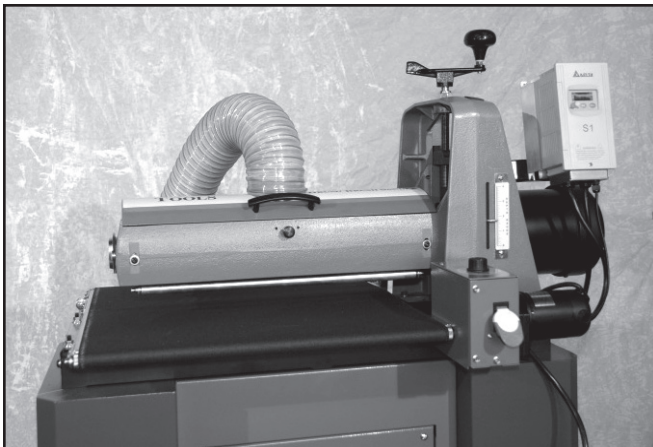


Fig. 10 Operating controls.

3. Start sanding brush and select slow brush speed (page 8).
4. Start conveyor and select feed rate (page 10)
5. Start dust collector system.
6. Feed stock through unit.
7. Gradually increase brush speed (RPM) until the desired finish is achieved (Fig. 8).

To feed stock through the sander, rest and hold the stock to be sanded on the conveyor table, allowing the conveyor belt to carry the stock into the brush. Once the stock is halfway through, reposition yourself to the outfeed side of the machine to receive and control the stock as it exits the unit.

TENSION ROLLER ADJUSTMENT

Spring loaded infeed and outfeed Tension Rollers (B, Fig. 11) are provided to maintain downward pressure on stock being sanded and to prevent slippage of the stock on the conveyor. When properly set, the Tension Rollers should engage or raise up about 3mm to accommodate the stock being brushed.

The Tension Rollers can and must be adjusted to accommodate flat surfaced stock vs highly contoured surface stock. Tension Roller height is adjusted as follows: Note: Make sure brush head is appropriate for application and contact.

TENSION ROLLER PRESSURE

The tension roller pressure is factory set for most applications. However, the pressure of each roller can be adjusted. Caution, too little pressure can result in slippage of stock on conveyor belt or kick-back. Too much tension can cause snipe when drum sanding or not enough lift when sanding profiled material. To increase tension turn the tension adjusting screw (A, Fig. 11) clockwise ¼ revolution at a time. To decrease tension turn the adjusting screw counter-clockwise ¼ revolution at a time.

TENSION ROLLER PRESSURE

The tension rollers are factory set for the most versatile use and longest minimum length, approximately 115mm for most applications. The rollers can be adjusted closer to the sanding drum when sanding

short, flat stock only. To adjust, remove the four tension adjusting screws (A, Fig.11), keeping track of screw penetration into retaining nut. Slide rollers in toward drum using retaining nut closest to drum. Reinstall four adjusting screws with the same tension or penetration into retaining nut.

Flat Surfaced Stock: Loosen the four socket head screws (A, Fig.11A) holding the tension roller brackets. Place stock under brush. Lower brush to proper bristle penetration. Raise brush two-to-three revolutions. Tighten the four socket head screws. Remove stock, lower brush head to previous setting when adjusting and brush material.

Bristle Contact: Proper bristle penetration is critical for the best finish and longest brush life. Flatter brushes should be set to penetrate between 3 to 6mm into the deepest part of the profile being sanded. Nylon brushes should be set to penetrate approximately 1.6mm into the deepest part of the profile being sanded. Wire brushes should be set to penetrate 0.8 to 1.6mm into the material being brushed.

SELECTING BRUSH STOCK FEED RATES

Selecting the proper feed rate is essential to proper Brushing and sanding. Feed rate controls the duration or “dwell time” of brushing on the contact area. A slower feed rate allows more brushing to occur. In some instances, a slow feed rate and slow brush speed may produce the same result as a fast feed rate and fast brush speed. The variable feed rate control of the conveyor belt adjusts the load on the machine; it can be infinitely adjusted for maximum operating

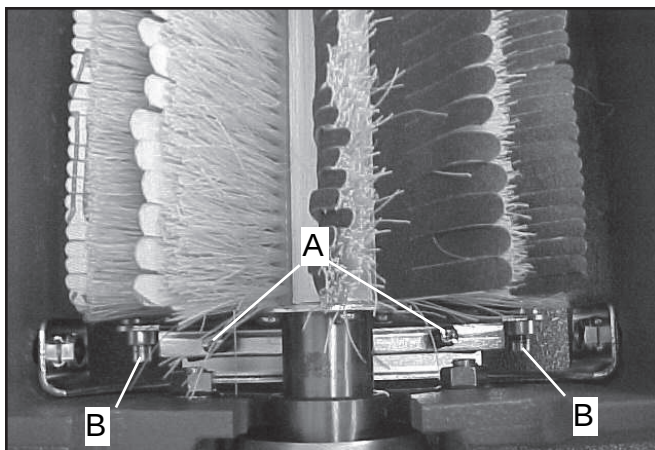


Fig. 11 Tension rollers and adjustment bracket

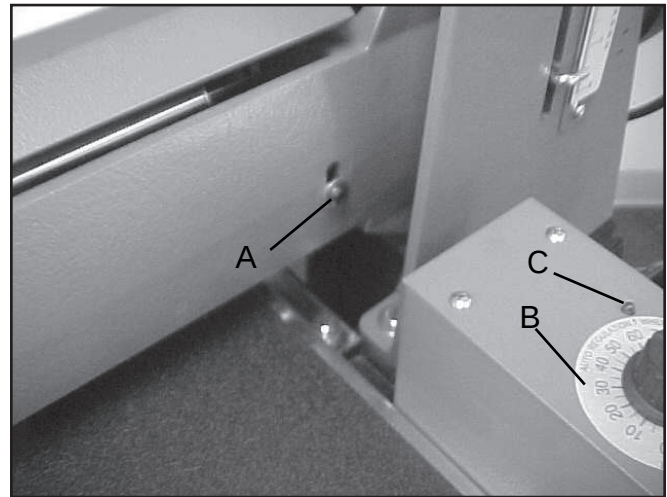


Fig. 11A Tension roller height and depth gauge adjustment

performance. A faster feed rate allows faster brushing but fewer revolutions of the brush per centimeter of sanding. A slower feed rate provides more revolutions of the brush per centimeter of sanding (B, Fig. 11A).

The best feed rate will depend on a number of factors, including type of stock, brush, depth of cut used, and whether the stock is fed directly in line with the conveyor bed or at an angle. When testing feed rates, begin with a mid range (50%) setting and adjust faster or slower depending on conditions and performance.

DRUM SANDING FEED RATES

Selecting the proper feed rate is essential to proper finish sanding. For finish sanding the best finish is usually achieved with a slow to moderate feed rate, after the proper depth of cut has been determined. This allows for the most revolutions of the drum per centimeter of sanding. When abrasive planning, faster feed rates can be used as long as the machine is not over stressed. Please note, angling stock as it is sanded will allow the most effective stock removal and least loading of the abrasives. Feeding stock straight through yields the widest sanding capacity and least noticeable scratch pattern.

Please note; when drum sanding with RPM adjusted to fastest speed, INTELLISAND will automatically adjust the conveyor feed rate if an excess load is detected. This prevents excessive gouging, reduces the risk of burning and it protects the machine from overload or stalling. The red light by the adjustment

knob will come on when INTELLISAND is operating. (C, Fig. 11A) When the load is decreased, INTELLISAND will automatically increase the feed rate to the pre-selected speed. INTELLISAND **does not** engage when brush sanding or if drum sanding at a slower RPM than recommended.

SETTING BRUSH DEPTH OF CUT/CONTACT

When a nylon or wire brush is worn and needs changing, the bristles will either have fractured and the brush head looks “bald” or the bristle length has worn and the bristles are too short for effective brushing.

When an abrasive or cloth brush is worn, the brushing material will become smooth or the brush will be considerably smaller in diameter as compared to new. Please call your dealer if you have any questions.

Brush life can vary considerably, due to RPM, contact, type of brush, and material being brushed.

Some types of brush heads, some flatter brushes, for example, will allow changing of the brush material by the operator.

When using a wire brush for “distressing” wood, slowing brush RPM, using light contact and a moderate feed rate generally will give the best finish and longest brush life. When using a wire brush on metal, it is important to use a light contact of the bristle tips. **Nylon Brushes.** If a nylon brush becomes uneven dressing the tips of bristle brush to maintain uniform brush wear will be a benefit.

Dressing Instructions:

Staple or glue a wide sheet of 60 grit sandpaper to a 12mm thick flat wood surface. Strips of narrow sandpaper can also be used. Lower the brush so the tips of the bristles contact the sandpaper by 0.8mm. Set the conveyor speed to approximately 50% feed rate. Pass the abrasive loaded board through the machine until the brush fibers are sharp and even

SETTING DRUM DEPTH OF CUT

Determining the depth of cut is the most **IMPORTANT** set-up procedure before operating as a **drum sander**. It may take some experimentation to determine the proper depth of cut, given the variables

of abrasive grit, type of wood, and conveyor feed rate. Practicing on scrap before sanding a project can be beneficial.

A good rule-of-thumb when sanding is to place the workpiece under the drum and lower the sanding head until the workpiece contacts the drum but the drum can still be rotated by hand. When making successive passes, lower the sanding head no more than the thickness of the grit abrasive, I.e. 1/8-1/16 of a turn for 80 grit and less for finer grits. **Note:** one revolution of the height adjustment handle moves the sanding head 1.6mm.

DEPTH GAUGE OPERATION

The depth gauge (A, Fig. 12) measures the distance between the conveyor table and the bottom of the sanding brush or drum. The sanding head must be parallel to the conveyor bed surface. To calibrate the depth gauge, loosen the two screws holding the scale. Lower the brush or sanding head (with abrasive installed) until the head touches the conveyor belt. Slide the scale to align with the pointer at the “0” mark. Tighten the two screws holding the scale. An optional DRO (digital read out) for depth is available. Fig. 12. This offers the most precise reading of sanded thickness and allows for accurate repeatability of a thickness. Great when making parts that must be an exact thickness or when matching a thickness.

To operate, turn ON and select standard inch “in” or metric millimeter “mm”. Lower drum, with abrasive installed, until it touches the conveyor belt. Press “zero” button to calibrate.

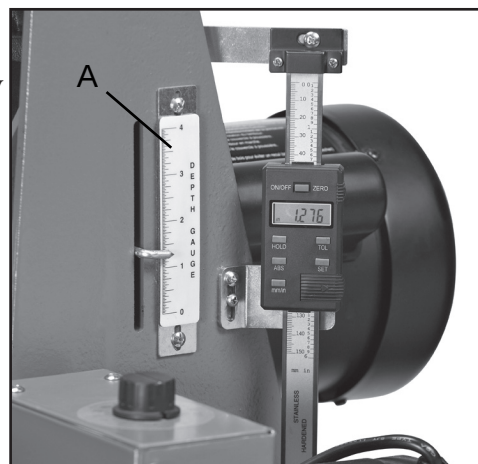


Fig. 12 Depth Gauge and optional DRO

CHANGING BRUSH HEADS OR DRUM.

To remove head:

Unplug sander. Loosen two set screws in motor coupler half. Loosen two set screws in outboard (left) bearing. Loosen two set screws in inboard (right) bearing. Remove two bolts from outboard bearing, and two bolts from inboard bearing. Lift and pivot brush or drum from outboard side and pull from motor coupler. Use gloves when handling wire brush.

To install head:

Install bearings on shaft with set screws loose. Install coupler with key on inboard side. Tighten set screws in coupler half of head. Install rubber spider in coupler half of head. Make certain no spider is in coupler half on motor. Pivot new head into place by first aligning couplers. When pivoting new head in place, lower head. Tapping on the outboard end of the shaft with a rubber hammer can help seat coupler. Caution, do not damage bearing when tapping. When head is in place install bolts into both bearings and tighten. Make sure head is centered in housing and couplers seated. If needed, slide motor coupler half into new head and tighten set screws. Tighten two set screws in each bearing, inboard and outboard. Make sure all bolts and screws are tight.

MONTHLY MAINTENANCE

For best results, perform the following recommended maintenance procedures on a monthly basis:

- Lubricate conveyor bushings and check for wear.

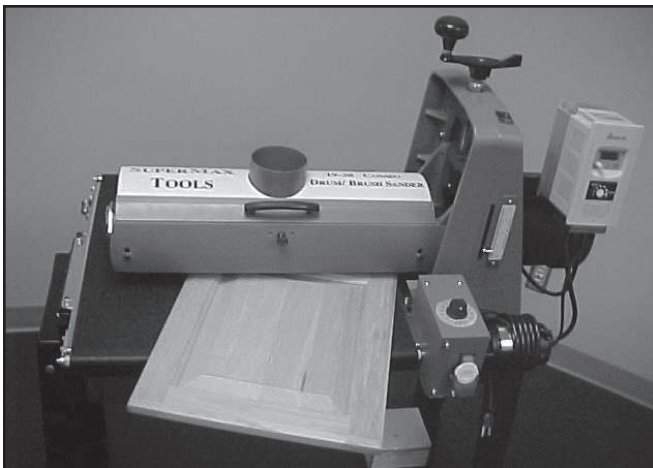


Fig. 13 Offset stock feeding angle.

- Lubricate all moving parts, such as threaded rods and washers
- Clean dust from the conveyor belt.
- Blow dust from the motors.
- Check all set screws for tightness.
- Clean brush or drum and abrasives, if applicable.

TIPS FOR MAXIMUM PERFORMANCE

The versatility designed into the 19-38 Combo allows it to be used for a wide-ranging variety of tasks that will boost the return on your investment. Learning to use its multiple adjustments and controls will allow you to fine-tune the machine for maximum results, regardless of the job to be done. The best results come from experimenting with different machine adjustments to fit the job at hand. Following is a listing of useful tips which can help you improve performance of your brush sander.

Dust Collection. When connecting dust collectors, remember that straight pipe will not restrict airflow as much as flexible tubing. Also, Ys and elbows will restrict airflow less than Ts.

Brushing Multiple Pieces At Once. When brushing multiple pieces simultaneously, make sure to stagger (step) the pieces across the width of the conveyor belt. This provides better contact with the tension rollers. Try to only process multiple pieces of similar thickness. If there is a significant thickness difference, the thinner pieces can slip on the conveyor belt if they do not contact the tension rollers. When brushing high stock, special care is needed to prevent tipping.

Brushing Imperfect Stock. To avoid personal injury, take special care when sanding/brushing stock that is twisted, bowed, or otherwise varies in thickness from end to end. If possible, support such stock as it is being brushed to keep it from slipping or tipping. Use extra roller stands, help from another person, or hand pressure on the stock, to minimize potentially hazardous situations.

Stock Feeding Angle. Some pieces, because of their dimensions, will need to be fed into the machine at a 90° angle (perpendicular to the brush). However, even a slight offset angle of the stock can provide for more effective sanding/brushing on some stock (Fig. 13).

Keeping the Machine Clean. For best results, make cleaning the machine a regular shop procedure. Allowing excess build-up of dust and debris can adversely affect performance, slippage on the conveyor belt, and/or the accumulation of material on the brush which can throw off the center of balance. Leave the dust collector on when cleaning dust from the drum or brush. Also sweep the conveyor belt after cleaning operations. If not cleaned, the conveyor belt could allow stock to slip during operation.

Sanding Stock wider than drum: The "Fast Lever" is very useful when sanding stock wider than the drum. Sanding stock wider than the drum may require extra space between the drum and the conveyor along the outboard edge. The extra space helps prevent an overlap line or ridge from developing along the sanded part when it extends beyond the sanding drum.

The 19-38 sander is equipped with a "Fast Lever" adjuster mechanism that allows easy changing of the drum alignment in relationship to the conveyor without changing the initial drum alignment.

To operate, loosen the two bolts through the flange of the conveyor on the inboard side (motor side) of the conveyor bed. Flip "Fast Lever" down (Fig. 4B). Tighten the two bolts through the flange of the conveyor bed. It is a good idea to test a scrap piece before sanding good stock. If a line or ridge is still visible after adjusting "Fast Lever" additional adjustments can be made to the initial drum alignment (Page 7).

To sand stock narrower than the drum, reverse the previous steps making sure the "Fast Lever" is in the UP position (Fig. 4B) and bolts are tight in flange of conveyor bed on inboard side.

CHANGING FLATTER STRIPS

19-38 Combo Flatter abrasive strip changing:

Unplug sander.

Loosen two set screws from outboard (left) brush support bearing. Fig. 14A

Remove two carriage bolts from outboard brush support bearing. Fig. 14B

Remove outboard bearing from shaft of brush.

Remove four screws from end-caps of outboard side of brush head. Fig. 14C

Remove two end caps.

Pull strips of abrasive from outboard side of brush head. Remove one strip at-a-time.

Replace strips by sliding them into brush head. Abrasive side must face “up” on infeed or front of brush head. Fig. 14D

Note: Abrasive side of strips must be oriented so abrasive side contacts top of stock as it passes through sander.

Replace end caps of brush head and install four screws.

Reinstall bearing and tighten the two carriage bolts.

Tighten the two set screws, in the bearing, to the brush shaft.

Close dust cover.

Plug in sander.

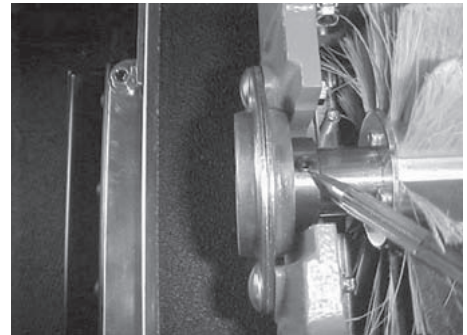


Fig. 14A

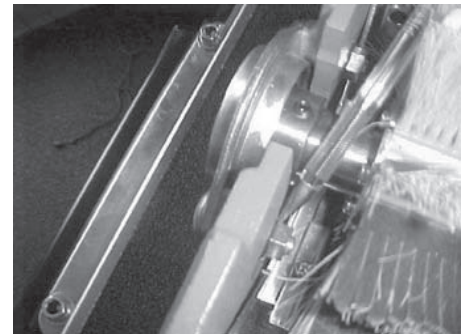


Fig. 14B



Fig. 14C



Fig. 14D

ABRASIVE SELECTION GUIDE

GRIT COMMON APPLICATION

24 Grit	Abrasive planing, surfacing rough-sawn boards, maximum stock removal, glue removal.
36 Grit	Abrasive planing, surfacing rough-sawn boards, maximum stock removal, glue removal.
50 Grit	Surfacing and dimensioning boards, trueing warped boards.
60 Grit	Surfacing and dimensioning boards, trueing warped boards.
80 Grit	Light dimensioning, removal of planer ripples.
100 Grit	Light surfacing, removal of planer ripples.
120 Grit	Light surfacing, minimal stock removal.
150 Grit	Finish sanding, minimal stock removal.
180 Grit	Finish sanding only, not for stock removal.
220 Grit	Finish sanding only, not for stock removal.

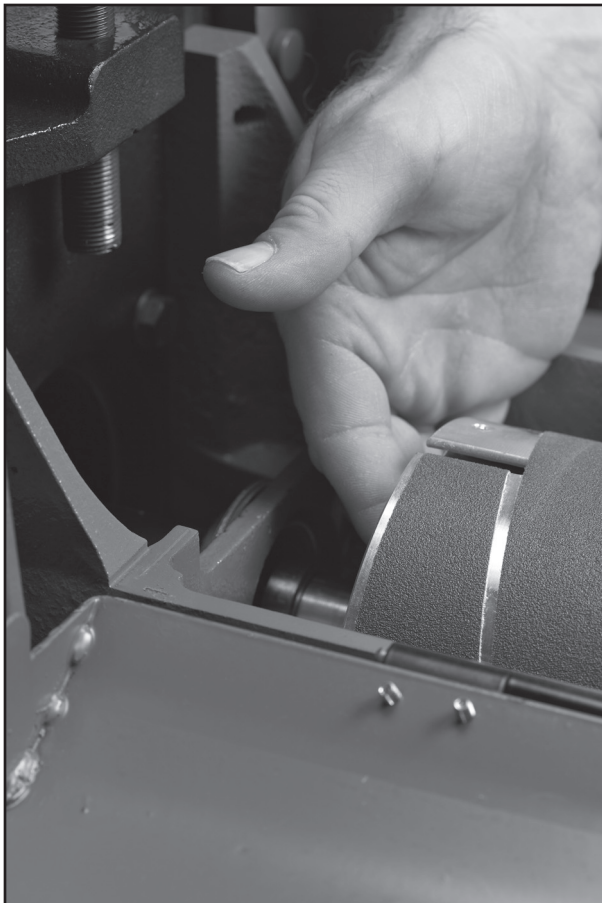


Fig. 15 Accessing inboard abrasive fastener

WRAPPING ABRASIVE STRIPS

Proper attachment of the abrasive strip to the drum is critical to achieving top performance from your 19-38 Combo drum sander. Abrasive strips do not have to be pre-measured. The end of the roll is first tapered and attached to the left (outboard) side of the drum. Then the strip is wrapped around the drum, and the second taper is made for attachment to the right (inboard) side of the drum. To attach a strip to the drum, follow the procedure below.

1. Mark and cut a taper at one end of the roll as shown in Fig. 16. Because the tapered end should use most of the left (outboard) slot width, its end must be trimmed (Fig. 16B and 16C). Raise the clip lever on the left (outboard) side of the drum (Fig. 16D). Insert the tapered end through the slot and into the fastener so that it uses most of the width of the slot. Release the clip lever to securely hold the strip end in the fastener.
2. Wrap the strip around the drum, being careful not to overlap the windings. The tapered cut of the strip end should follow the edge of the drum. Continue to wrap the abrasive in a spiral fashion by rotating the drum with your left hand and guiding the strip with your right hand (Fig 16E). Successive windings of the strip should be flush with previous windings without any overlap.
3. Mark the trailing end of the strip where it crosses the right (inboard) end of the drum (Fig. 16F). From this point, cut a taper as was done with the starting edge of the strip. (The taper on the remaining roll can be used as the taper for the starting edge of the next strip to be cut.)
4. With the trailing edge of the strip properly cut, rewrap the drum and insert the tapered end through the slot in the right (inboard) end of the drum. Insert the tapered end into the inboard take-up fastener. Pull up on the clip lever to open the clip, and pull the take-up lever to the top as shown (Fig. 16G). After inserting the strip end, release the clip lever by moving your index finger toward the drum slot. This allows the clip to retain the abrasive while holding the take-up lever in an “up” position.
5. The take-up fastener is designed to automatically take up any slack caused by stretching of the abrasive strip. *Important: Position the abrasive strip in the slot with sufficient room between the inside of the slot and the tapered end of the strip to allow it to be pulled into the drum as needed (Fig. 16H). Note that not leaving enough space between the strip and the inside of the slot will prevent the take-up fastener from operating properly.*
6. The abrasive strip may stretch enough in use to allow the take-up lever to reach its lowest position so it no longer is able to maintain tension on the strip (Fig. 16I). If this occurs, it will be necessary to reset the take-up lever by raising it, pushing the strip end into the slot, and then releasing the clip lever.

Note: A sandpaper cleaning stick may be used to remove deposits and help extend sandpaper life. To use, operate the sanding drum with the dust cover open. (**Caution:** For your own safety, always wear eye protection while performing sandpaper cleaning, and take all precautions to avoid any contact of hands or clothing with uncovered drums.) Hold the cleaning stick against the rotating drum and move it along the drum surface. It is good procedure to use a shop brush to remove any cleaning stick crumbs from the drums before resuming sanding operations.

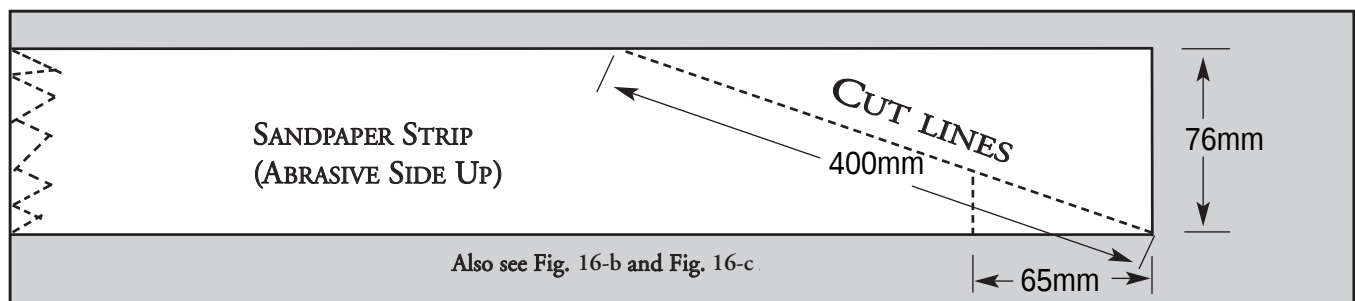


Fig. 16 Marking and cutting taper on strip.

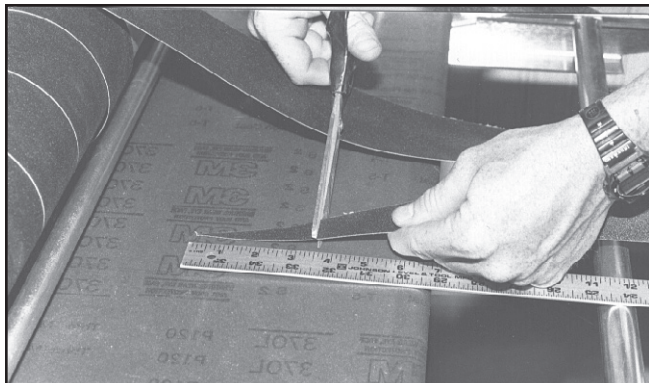


Fig. 16B Trim about 65mm from end of cut taper.

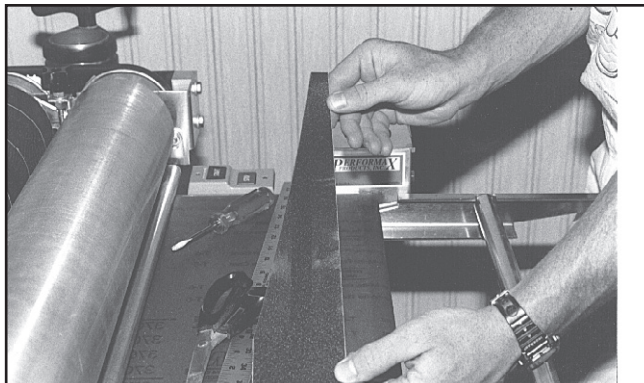


Fig. 16C Trimmed tapered end ready to install.

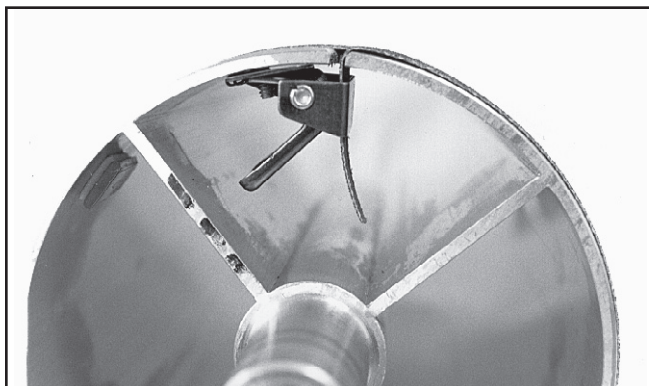


Fig. 16D Insert tapered end into outboard slot.

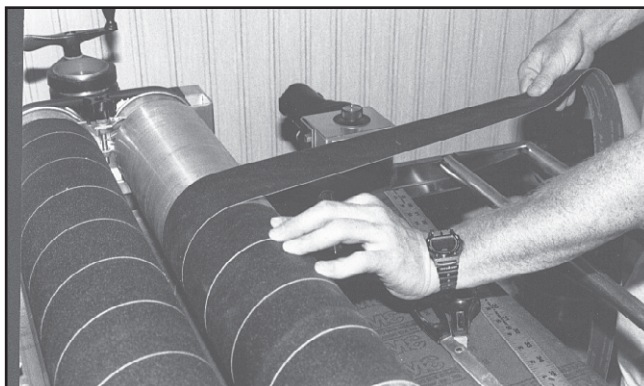


Fig. 16E Wrap strip around drum without overlap.

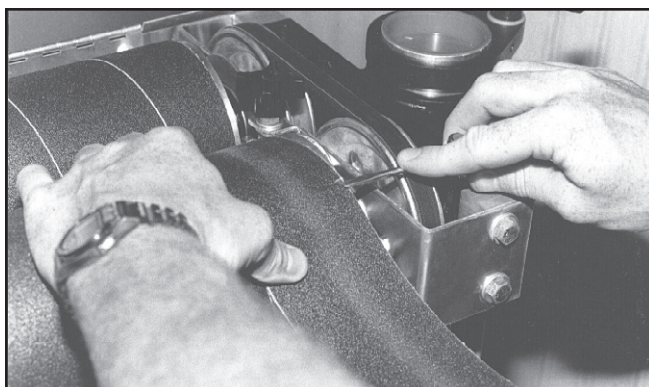


Fig. 16F Mark strip where it crosses drum edge.

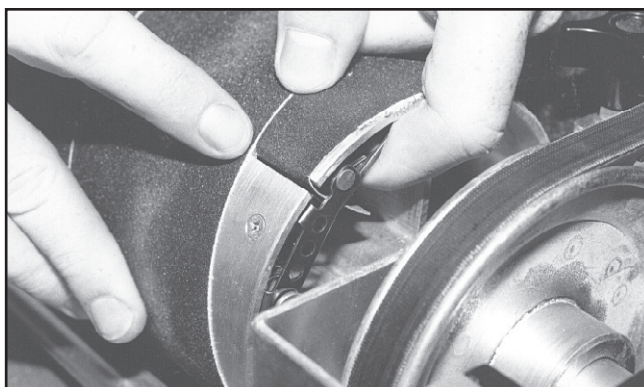


Fig. 16G Insert tapered end into inboard slot.

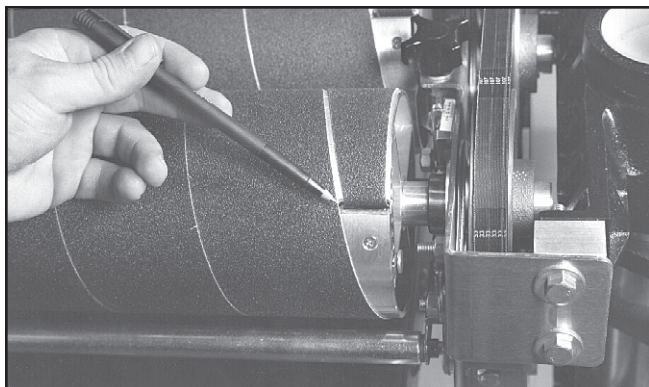


Fig. 16H Allow room inside slot for strip to move.

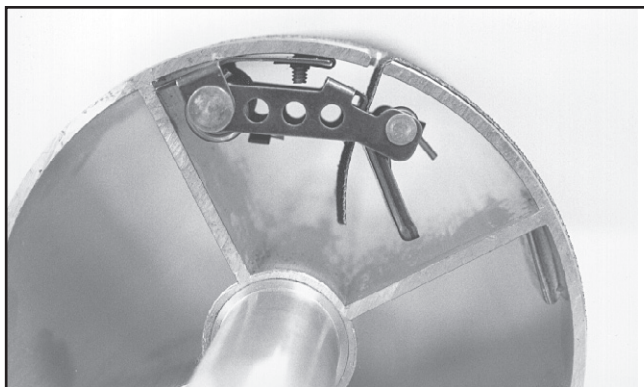


Fig. 16I Reset take-up as needed as strip stretches.

REPLACING CONVEYOR BELTS

To replace the conveyor belt, the conveyor assembly must be removed from the machine. Raise the drum/brush carriage to its highest position using the height adjustment handle. Turn off power source to machine. Unplug main drive motor and inverter from receptacle (in gear motor assembly). Loosen the conveyor take-up screws (Fig. 9) to relieve belt tension and slide the driven roller fully inward. Remove the two bolts (inboard side) that attach the conveyor assembly to the base (see A, Fig. 17). Remove the two nuts and washers (outboard side) (B, Fig. 18). Lift the conveyor and remove it from the sander. Stand conveyor on motor side. Avoid tearing the belt on any edges underneath the conveyor bed during removal. Reverse the procedure for re-installation. Re-install the conveyor bed to sander.

Conveyor Belt Tension: To adjust the tension of the conveyor belt, first adjust the take-up screw nut (Fig. 9) on both sides of the conveyor to obtain approximately equal tension on both sides of the belt when taut. Insufficient belt tension will cause slippage of conveyor belt on the drive roller during sanding operation. The conveyor belt is too loose if it can be stopped by hand pressure applied directly to the top of the conveyor belt. Excessive belt tension can result in bent rollers, premature wearing of the bronze bushings or conveyor belt

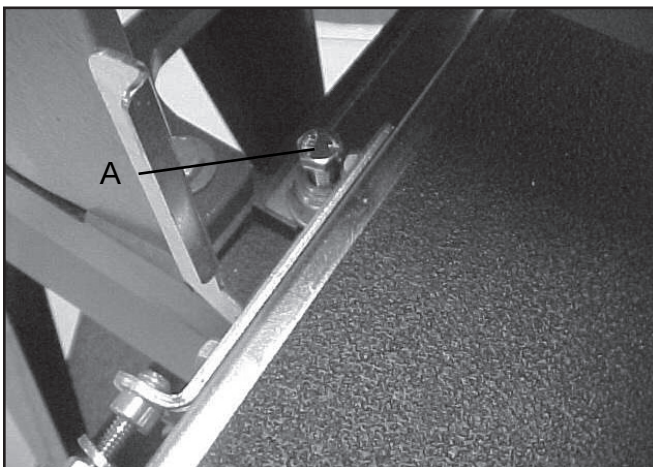


Fig. 17 Inboard conveyor attachment bolts.

Conveyor Belt Tracking: Belt tracking adjustments are made while the conveyor belt is running. After the proper belt tension is obtained (see above), turn the conveyor unit on and set it at the fastest speed setting. Watch for a tendency of the conveyor belt to drift to one side of the conveyor. To adjust the belt tracking, tighten the take-up screw nut (Fig. 9) on the side the belt is drifting toward, and loosen the take-up screw nut on the opposite side. Adjusting the take-up screw nuts on either side of the conveyor allows belt tracking adjustments to be made without affecting belt tension. Note: Adjust the take-up screw nuts only 1/4 turn at a time. Then allow time for the belt to react to the adjustments before proceeding further. Avoid over-adjustments.



Fig. 18

TROUBLESHOOTING

Any operating problems with the sander will likely occur most often during the period that you are becoming familiar with its components and their adjustments. If you are experiencing a problem affecting the machine's brushing performance,

check the following listings for potential causes and solutions; it may also pay to review the previous sections in this manual on setting up and operating your machine.

TROUBLESHOOTING GUIDE: MOTORS

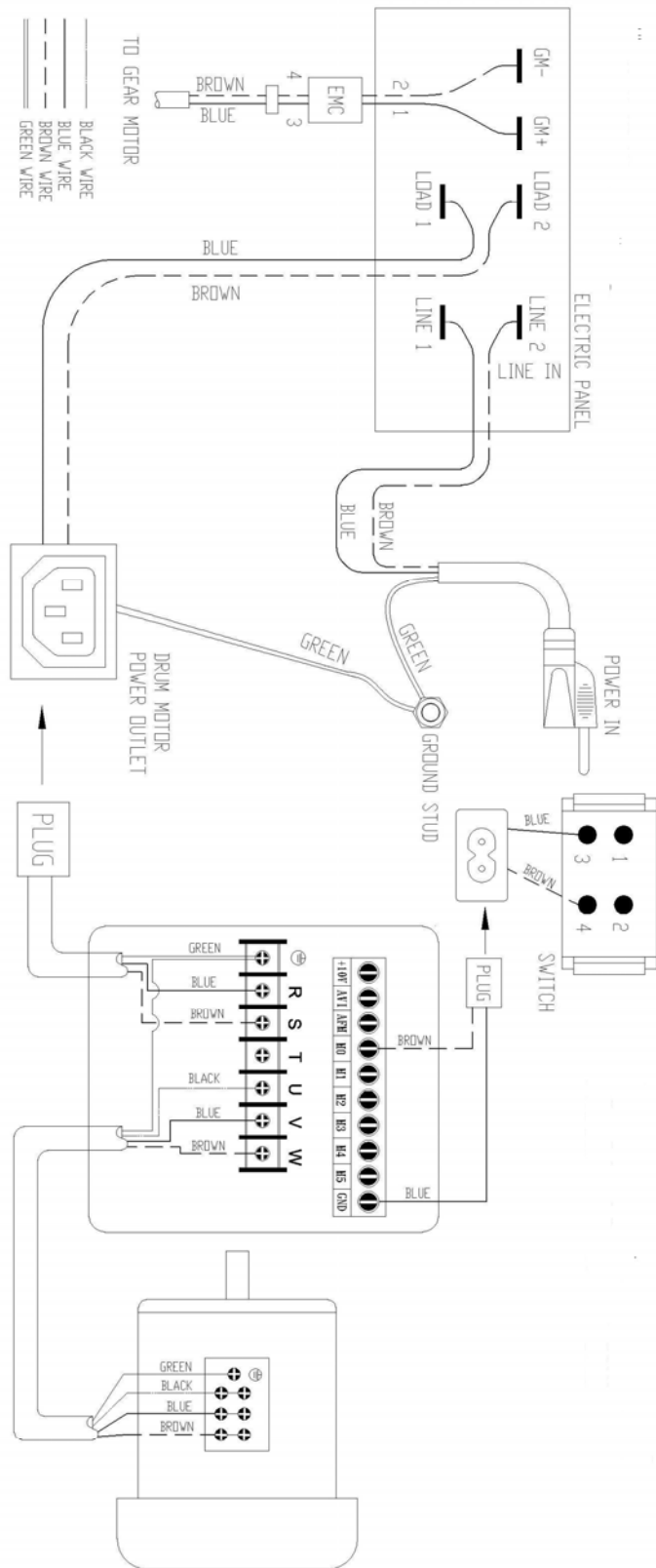
PROBLEM	POSSIBLE CAUSE	SOLUTION
Motors do not start.	1. Main power cord unplugged from receptacle.	Plug in primary power cord.
	2. Brush motor cord unplugged from receptacle near power-feed motor.	Plug in brush motor and inverter cord at receptacle on machine if so equipped (Fig. 5).
	3. Circuit fuse blown or circuit breaker tripped.	Replace fuse or retrip breaker (after determining cause).
Brush motor overloads.	1. Inadequate circuit.	Check electrical requirements
	2. Machine overloaded.	Use slower feed rate; slower brush RPM; reduce depth of cut.
Conveyor motor oscillates.	1. Motor not properly aligned.	Loosen housing bolts, run motor, retighten bolts.
	2. Shaft collar or bushing worn.	Replace shaft collar or bushing
	3. Drive roller bent.	Replace drive roller
Brush motor or conveyor gear motor stalls.	1. Excessive depth of cut.	Reduce depth of cut; decrease brush speed; reduce feed rate.

TROUBLESHOOTING GUIDE: CONVEYOR

PROBLEM	POSSIBLE CAUSE	SOLUTION
Conveyor rollers run intermittently.	1. Shaft coupling loose.	Align shaft flats of gear motor and drive roller; tighten shaft coupling set screws.
Conveyor belt slips on drive roller.	1. Improper conveyor belt tension. 2. Excessive depth of cut.	Adjust belt tension (page 8). Reduce depth of cut; reduce feed rate.
Stock slips on conveyor belt.	1. Excessive depth of cut. 2. Tension rollers too high. 3. Excessive feed rate. 4. Dirty or worn conveyor belt.	Reduce depth of cut. Lower tension rollers (page 9). Reduce feed rate. Clean or replace conveyor belt.
Conveyor belt tracks to one side, or oscillates from side to side.	1. Belt out of adjustment. 2. Drive or driven conveyor belt rollers misaligned. 3. Conveyor table not flat and square. 4. Conveyor belt worn. 5. Drive roller worn or damaged. 6. Roller bushings elongated due to excessive wear.	Readjust belt; (page 8). Readjust Readjust by leveling machine Replace conveyor belt (page 19). Replace drive roller. Replace bushings.

TROUBLESHOOTING GUIDE: MACHINE

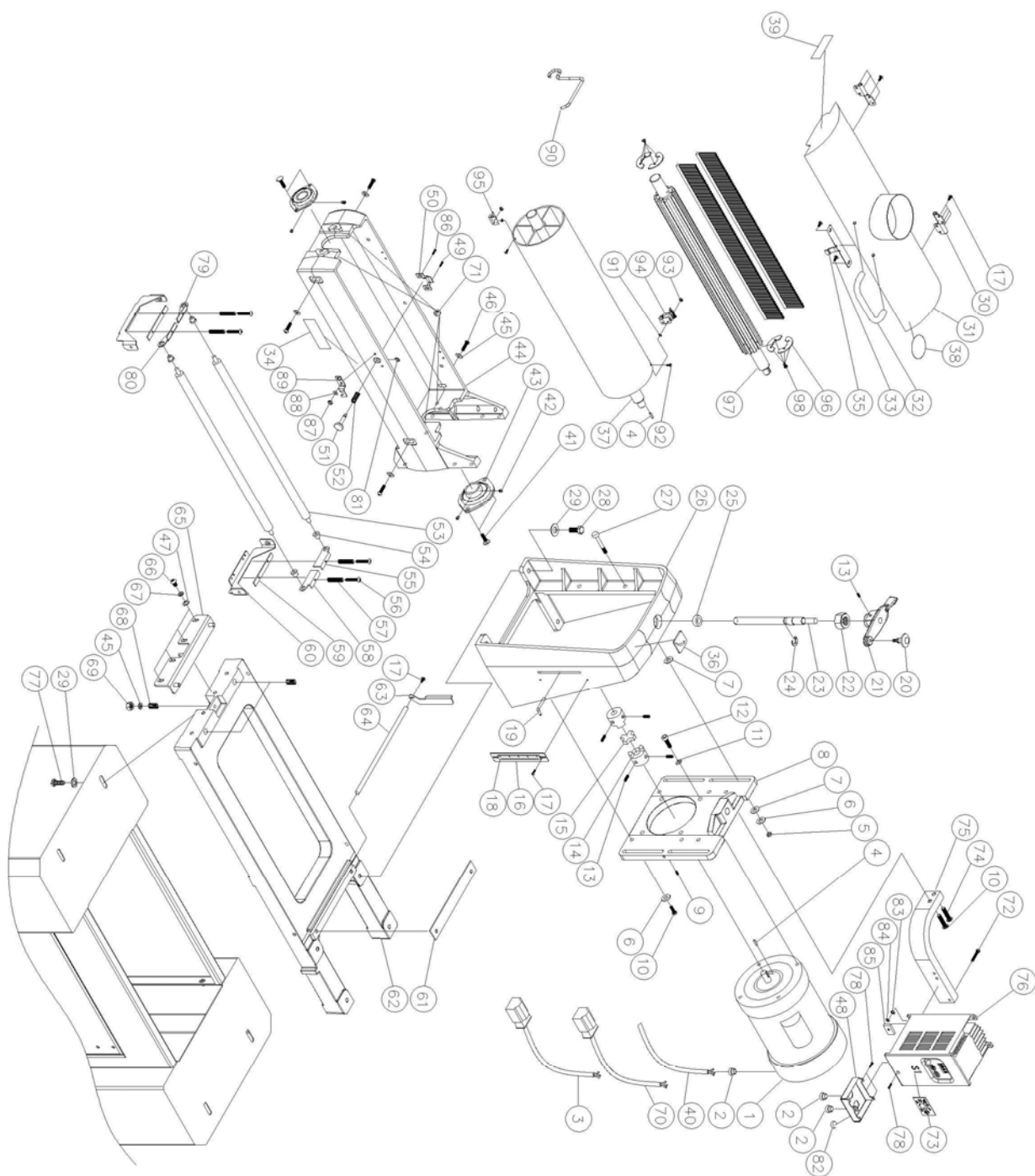
PROBLEM	POSSIBLE CAUSE	SOLUTION
Brush height adjustment works improperly.	1. Improper adjustment of height control.	Readjust height control
Knocking sound while running.	1. Bearing worn.	Replace bearing
Sniping of wood (gouging near end of board).	1. Inadequate support of stock.	Use roller stands to support stock.
	2. Conveyor drive or driven rollers higher than conveyor bed.	Readjust rollers
Burning of wood. or melting of finish	1. Feed rate too slow.	Increase feed rate.
	2. Excessive depth of cut	Reduce depth of cut, decrease brush RPM.
Gouging of wood.	1. Conveyor belt is too loose.	Adjust belt tension.
	2. Excessive depth of cut.	Reduce depth of cut, decrease brush RPM.
	3. Wood slipping on conveyor due to lack of contact.	Use alternate feeding procedure



Part List: Drum Head Assembly

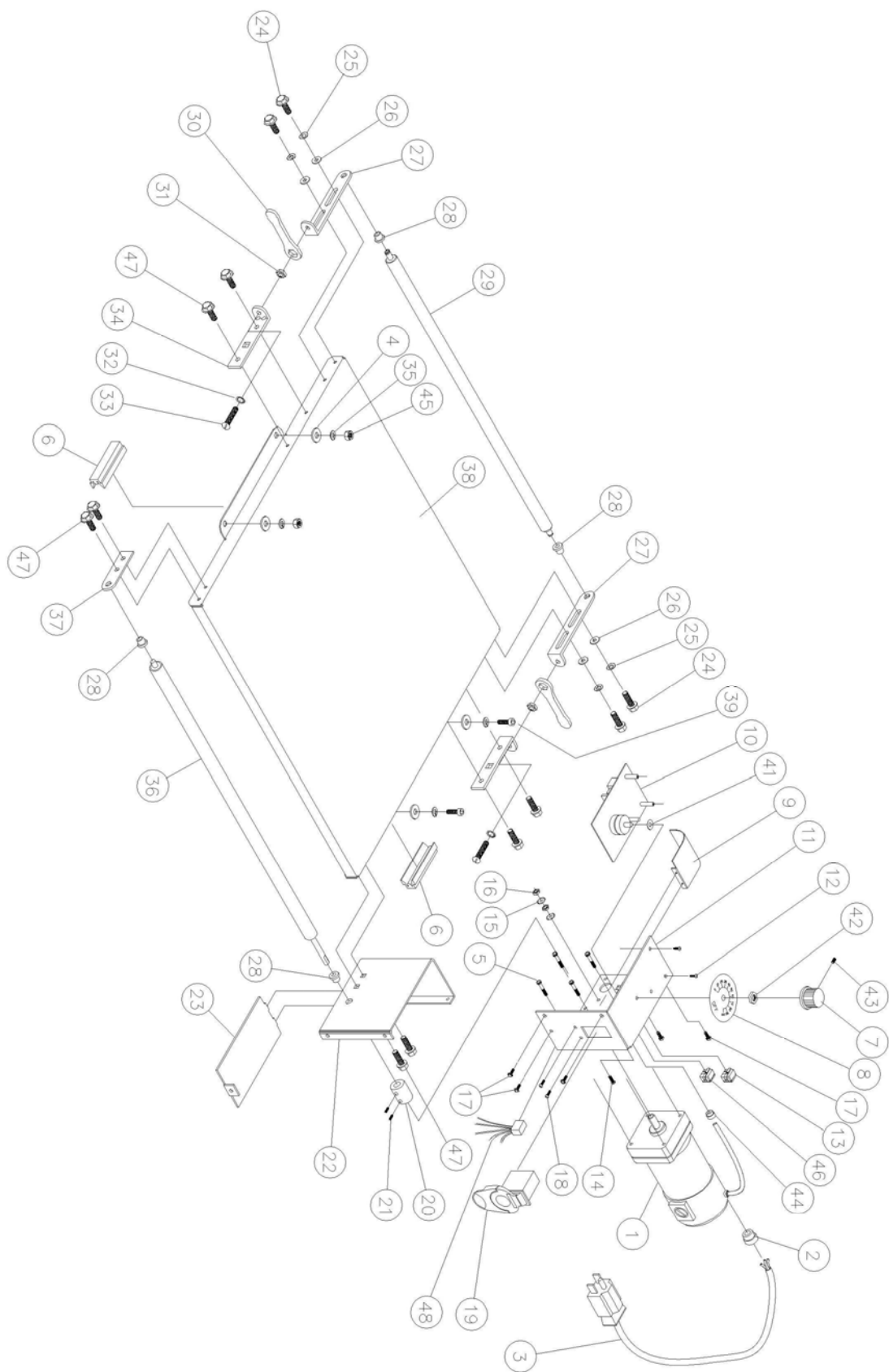
Index No.	Part No.	Description	Size	Qty.
1.....	480BS-101.....	Motor.....	1.5HP,4P, 230V,60HZ,3PH.....	1
.....	480BS-101MF.....	Motor Fan (not shown)		1
.....	480BS-101MFC.....	Motor Fan Cover (not shown).....		1
.....	480BS-101JB.....	Junction Box (not shown)		1
.....	480BS-101JBC.....	Junction Box Cover (not shown)		1
2.....	480BS-194.....	Strain Relief, Signal Cord	PG-11	3
3.....	480BS-103.....	Main Cord, Inverter to Control Box		1
4.....	480BS-104.....	Key.....	3/16"SQx3/4"	2
5.....	480BS-105.....	Nylon Insert Lock Nut	5/16"-24	4
6.....	480BS-106.....	Flat Washer	5/16"	9
7.....	480BS-107.....	Oilite Washer		8
8.....	480BS-108.....	Motor Plate		1
9.....	480BS-109.....	Set Screw	#8-32x1/4"	1
10.....	480BS-110.....	Hex Cap Screw.....	5/16"-18x1-1/4"	6
11.....	480BS-111.....	Lock Washer.....	3/8"	4
12.....	480BS-112.....	Socket Head Cap Screw	3/8"-16x1-1/2"	4
13.....	480BS-113.....	Set Screw	1/4"-20x1/4"	5
14.....	480BS-114.....	Couping		2
15.....	480BS-115.....	Couping Spider		1
16.....	480BS-116.....	Height Plate		1
17.....	480BS-117.....	Screw, Phil Pan Head.....	M4x0.7x6	11
18.....	480BS-118A	Label, Depth Gauge (mm)		1
19.....	480BS-119.....	Depth Gauge Pointer.....		1
20.....	480BS-120.....	Knob		1
21.....	480BS-121.....	Height Adjustment Handle		1
22.....	480BS-122.....	Nylon Insert Lock Nut	5/8"-11	1
23.....	480BS-123.....	Height Adjustment Screw		1
24.....	480BS-124.....	E-Ring.....	E12	1
25.....	480BS-125.....	Thrust Bearing	51103.....	1
26.....	480BS-126.....	Shroud		1
27.....	480BS-127.....	Stud		4
28.....	480BS-128.....	Hex Cap Screw.....	3/8"-16x1-1/4"	4
29.....	480BS-129.....	Flat Washer	3/8"	8
30.....	480BS-130.....	Hinge		2
31.....	480BS-131A	Dust Cover.....		1
32.....	480BS-132.....	Handle		1
33.....	480BS-133.....	Pan Head Machine Screw	#8x1/2"	2
34.....	480BS-195.....	Warning Label, Finger		2
35.....	480BS-135.....	Dust Cover Latch.....		1
36.....	480BS-196.....	Height Direction Label		1
37.....	480DS-137.....	Sanding Drum.....		1
38.....	480BS-198.....	Warning Label, Power		1
39.....	480BS-199.....	Rotating Direction Label		1
40.....	480BS-183.....	Motor Cord, Motor to Inverter		1
41.....	480BS-141.....	Carriage Bolt.....	M8x1.25x30	4
42.....	480BS-142.....	Set Screw	1/4"-28x1/4"	4
43.....	480BS-143.....	Bearing Set.....		2
44.....	480BS-144.....	Drum Carriage		1
45.....	480BS-145.....	Flat Washer	1/4"	5

46.....	480BS-146.....	Round Socket Head Cap Screw.....	1/4"-20x1"	4
47.....	480BS-147.....	Flat Washer	5/16"	4
48.....	480BS-148.....	Junction Box		1
49.....	480BS-149.....	Hex Cap Screw w/ Washer.....	#10-24x3/8"	2
50.....	480BS-150.....	Dust Cover Catch		1
51.....	480BS-151.....	Stud		1
52.....	480BS-152.....	Spring		1
53.....	480BS-153.....	Tension Roller		2
54.....	480BS-154.....	Bushing, Oilite		4
55.....	480BS-155.....	Tension Roller Bracket, Inner Left.....		1
56.....	480BS-156.....	Screw.....	#8-32x1"	4
57.....	480BS-157.....	Spring, Tension Roller		4
58.....	480BS-158.....	Tension Roller Bracket, Inner Right		1
59.....	480BS-159.....	Pad, Bracket-Tension Roller		2
60.....	480BS-160.....	Bracket.....		2
61.....	480BS-161.....	Plate.....		1
62.....	480BS-162.....	Base.....		1
63.....	480BS-163.....	Adjusting Plate.....		1
64.....	480BS-164.....	Adjusting Rod		1
65.....	480BS-165.....	Height Adjusting Plate		1
66.....	480BS-166.....	Round Socket Head Cap Screw.....	5/16"-18x1/2"	4
67.....	480BS-167.....	Lock Washer.....	5/16"	4
68.....	480BS-168.....	Spring		3
69.....	480BS-169.....	Nylon Insert Lock Nut.....	1/4"-20	1
70.....	480BS-170.....	Signal Cord, Inverter to Control Box.....		1
71.....	480BS-171.....	Hex Nut w/ Washer.....	M8x1.25.....	4
72.....	480BS-172.....	Screw, Phil Pan Head.....	M5x30.....	2
73.....	480BS-173.....	Speed Label		1
74.....	480BS-174.....	Hex Cap Screw.....	5/16"-18x1-1/2"	1
75.....	480BS-175.....	Mounting Bracket.....		1
76.....	480BS-176.....	Inverter.....		1
77.....	480BS-177.....	Hex Cap Screw.....	3/8"-16x3/4"	4
78.....	480BS-178.....	Screw.....	M3x10.....	3
79.....	480BS-179.....	Tension Roller Bracket, Outer Right.....		1
80.....	480BS-180.....	Tension Roller Bracket, Outer Left		1
81.....	480BS-181.....	E-Ring.....	E5	1
82.....	480BS-182.....	Strain Relief, Signal Cord		1
83.....	480BS-188.....	Flat Washer	M5.....	1
84.....	480BS-189.....	Hex Nut.....	M5x0.8.....	1
85.....	480BS-190.....	Fixed Plate.....		1
86.....	480BS-1103.....	Hex Cap Screw w/ Washer.....	#10-24x1"	1
87.....	480BS-1104.....	Hex Nut.....	#10-24	1
88.....	480BS-1105.....	Lock Washer.....	#10.....	1
89.....	480BS-1106.....	Lock Plate		1
90.....	635DS-280.....	Fastener Tool		1
91.....	480DS-134.....	Lock Washer.....	#10.....	2
92.....	480DS-136.....	Phillips Flat Head Screw.....	M3x0.5x10.....	2
93.....	480DS-138.....	Hex Nut.....	M3x0.5.....	2
94.....	480DS-139.....	Inboard Abrasive Fastener		1
95.....	480DS-140.....	Outboard Abrasive Fastener		1
96.....	480BS-136.....	End Cover.....		4
97.....	480BS-137.....	Flatter Head.....		1
98.....	480BS-138.....	Screw.....	M4x0.7x6.....	8



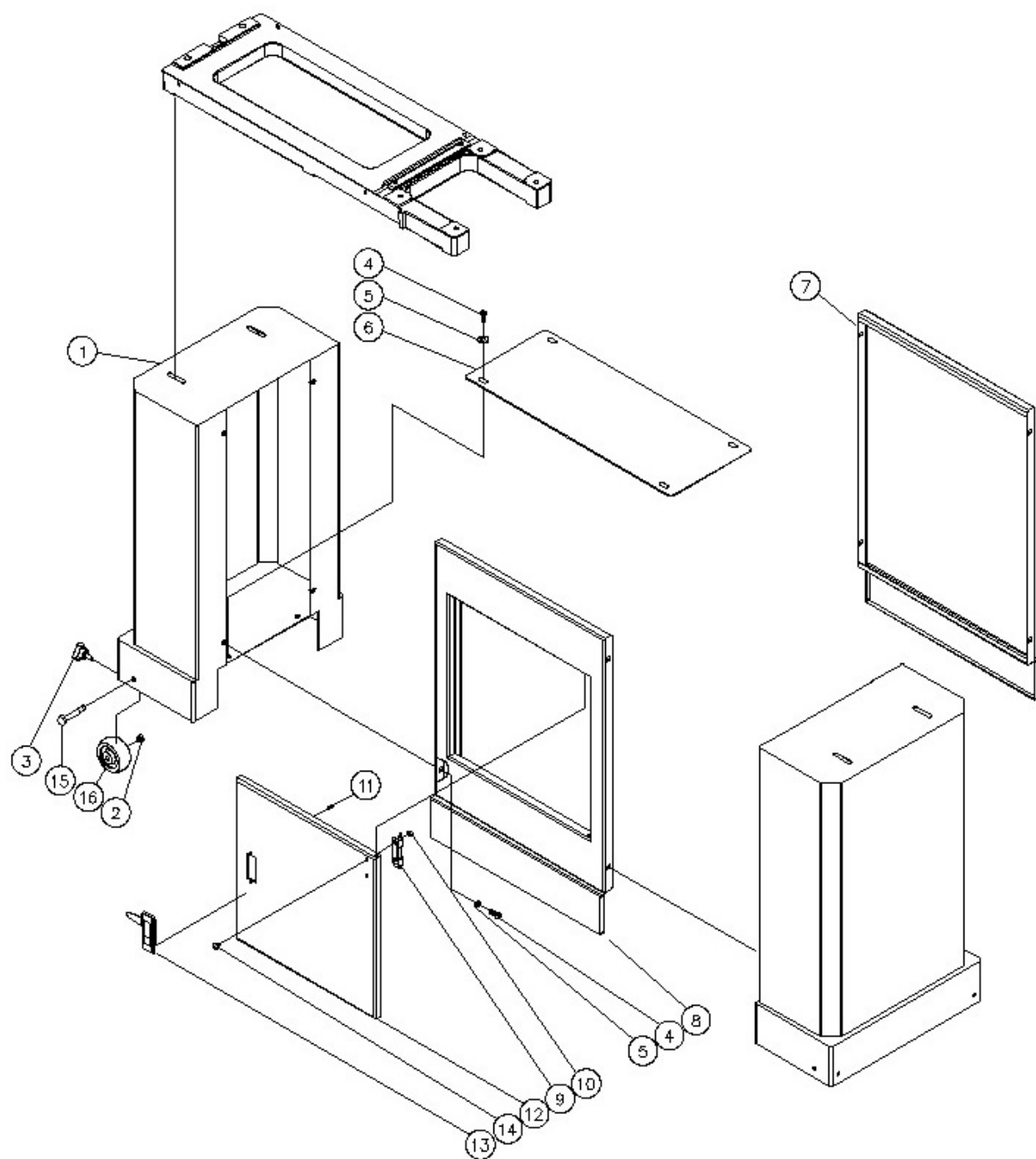
Part List: Conveyor And Motor Assembly

Index No.	Part No.	Description	Size	Qty.
1.....	480BS-201A	Gear Motor	180 VDC	1
2.....	480BS-194	Strain Relief, Signal Cord	PG-11	1
3.....	480BS-203	Power Cord		1
4.....	480BS-204	Flat Washer	5/16"	4
5.....	480BS-205	Socket Head Cap Screw	#10-32x1/2"	4
6.....	480BS-206	Tracker Kit		2
7.....	480BS-207	Knob		1
8.....	480BS-208	Speed Adjustment Label		1
9.....	480BS-209	Wiring Guard		1
10.....	480BS-210A	Controller		1
11.....	480BS-211A	Control Housing Bracket		1
12.....	480BS-212	Pan Head Self-Tapping Screw	5/32"x1/2"	2
13.....	480BS-213	Receptacle, Main Cord		1
14.....	480BS-214	Screw	#10-32x1/2"	1
15.....	480BS-215	Washer, Lock-Int. Tooth	#10	2
16.....	480BS-216	Hex Nut	#10-32	2
17.....	480BS-217	Screw, Hex Head-Slotted	#10-32x3/8"	5
18.....	480BS-218	Screw, Phil Pan Head	#6-32x1/2"	2
19.....	480BS-219	Switch, ON/OFF		1
20.....	480BS-220	Coupler, Shaft		1
21.....	480BS-113	Set Screw	1/4"-20x1/4"	2
22.....	480BS-222	Bracket, Base- Controller		1
23.....	480BS-223	Cover, Base-Control Housing		1
24.....	480BS-224	Hex Cap Screw	1/4"-20x3/4"	4
25.....	480BS-225	Washer, Wave	1/4"	4
26.....	480BS-145	Flat Washer	1/4"	4
27.....	480BS-227	Bracket, Take Up-Slide		2
28.....	480BS-154	Bushing, Oilite		4
29.....	480BS-229	Roller, Driven		1
30.....	480BS-230	Wrench		2
31.....	480BS-231	Hex Nut	1/4"-20	2
32.....	480BS-232	Washer, Lock-Int. Tooth	1/4"	2
33.....	480BS-233	Screw, Round Head- Slotted	1/4"-20x1-3/4"	2
34.....	480BS-234	Bracket, Take Up-Base		2
35.....	480BS-167	Lock Washer	5/16"	4
36.....	480BS-236	Roller, Drive		1
37.....	480BS-237	Bracket, Support-Drive Roller		1
38.....	480BS-238	Bed, Conveyor		1
39.....	635DS-132	Round Socket Head Cap Screw	5/16"-18x3/4"	2
40.....	480BS-240	Belt Conveyor, Rubber (Not Shown)		1
41.....	480BS-204	Flat Washer	5/16"	1
42.....	480BS-242	Hex Nut	5/16"-24	1
43.....	480BS-243	Slotted Set Screw	#8-36x5/16"	1
44.....	480BS-249	Strain Relief, Signal Cord	PG-9	1
45.....	480BS-245	Hex Nut	5/16"-18	2
46.....	480BS-246	Receptacle, Signal Cord		1
47.....	480BS-247	Hex Cap Screw	1/4"-20x1/2"	8
48.....	480BS-248	EMC Filter		1



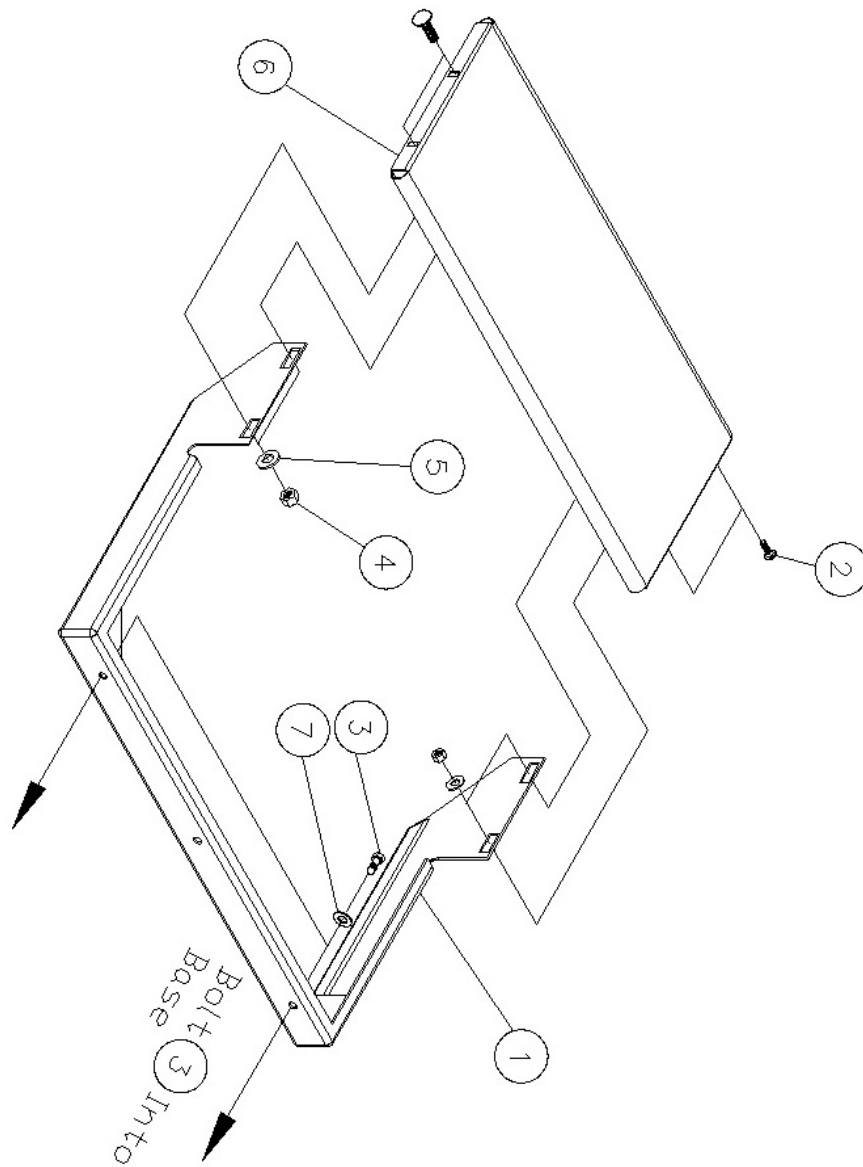
Part List: Closed Stand Assembly

Index No.	Part No.	Description	Size	Qty.
1.....	480BS-301.....	Stand		2
2.....	480BS-302.....	Nylon Insert Lock Nut	3/8"-16	4
3.....	480BS-303.....	Knob		4
4.....	480BS-304.....	Hex Cap Screw.....	5/16"-18x1/2"	12
5.....	480BS-204.....	Flat Washer	5/16"	12
6.....	480BS-306.....	Bottom Plate		1
7.....	480BS-307.....	Rear Panel.....		1
8.....	480BS-308.....	Front Panel		1
9.....	480BS-309.....	Door Hinge		1
10.....	480BS-231.....	Hex Nut.....	1/4"-20	2
11.....	480BS-311.....	Screw.....	M3x4.....	2
12.....	480BS-312.....	Door		1
13.....	480BS-313.....	Latch.....		1
14.....	480BS-314.....	Screw.....	1/4"-20x1/2"	2
15.....	480BS-315.....	Hex Head Bolt	3/8"-16x2-1/2"	4
16.....	480BS-316.....	Castor		4



Part List: Infeed and Outfeed Tables Assembly (Optional)

Index No.	Part No.	Description	Size	Qty.
1.....	480BS-401.....	Base Bracket		2
2.....	480BS-402.....	Carriage Bolt.....	1/4"-20x3/4"	8
3.....	480BS-403.....	Hex Cap Screw.....	3/8"-16x1"	4
4.....	480BS-231.....	Hex Nut.....	1/4"-20	8
5.....	480BS-145.....	Flat Washer	1/4"	8
6.....	480BS-406.....	Table.....		2
7.....	480BS-129.....	Flat Washer	3/8"	4



19-38 Combo Sander Specifications

Sanding Capacity:	
Maximum Width:	960mm (two passes)
Minimum Length:	60 to 90mm (varies with application)
Maximum Thickness:	100mm typical (varies with brush style & application)
Minimum Thickness:	0.8mm typical (varies with applications)
Dimensions:	1070 mm L x 635 mm W x 1320 mm H
Brush:	127mm diameter typical
	Typical bristle length: 38mm (varies)
Brush Speed:	Infinitely variable
	200 to 1000 RPM Brush
	1750 RPM Drum
Dust Hood:	Hinged back with 100mm vacuum port
Height Adjustment:	1.6mm per revolution, Depth Gauge included
Conveyor Motor:	50 kg-cm torque, Direct drive D.C. motor
	Infinitely variable 0–3 m/min.
Drive Motor:	1.1kW(1.5HP), S1 100%
Power Requirements:	230V ~1/N/PE, 50Hz
Reference Current:	4.2 A
Extension Cord (H07RN-F):	3x1.5mm ²
Installation Fuse Protection:	10 A
Net Weight:	155 kg

Noise Emission

Acoustic pressure level (EN 11202):

Idling	69.7 dB (A)
In operation	84.4 dB (A)

The specified values are emission levels and are not necessarily to be seen as safe operating levels. As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

CAUTION: IMPORTANT SAFETY INFORMATION

KEEP THIS MANUAL HANDY FOR QUICK REFERENCE

FOR SAFE SANDING OPERATION, FOLLOW THESE GUIDELINES:

- BECOME FAMILIAR WITH THE PROPER OPERATIONAL PROCEDURES FOR USING THIS MACHINE.
- ALWAYS BE SAFETY CONSCIOUS WHEN OPERATING THE MACHINE.
- ALWAYS WEAR EYE PROTECTION WHILE OPERATING THE SANDER.
- ALWAYS FEED STOCK AGAINST THE ROTATION OF THE BRUSH OR DRUM
- NEVER PLACE HANDS UNDER THE BRUSH, DRUM OR DUST COVER.
- NEVER OPERATE WITHOUT ITS DUST COVER OR GUARDS IN PLACE.
- KEEP HANDS AND CLOTHING AWAY FROM OPERATING BRUSH DRUM AND COUPLER.
- ALWAYS MAINTAIN CONTROL OF STOCK TO AVOID KICKBACK; KNOW HOW TO PREVENT IT.
- ALWAYS DISCONNECT ELECTRICAL POWER BEFORE PERFORMING ANY SERVICING OR ADJUSTMENT OF THE MACHINE.
- DO NOT MODIFY THIS MACHINE: MODIFICATIONS ARE DONE AT THE OWNER'S RISK AND ALSO WILL VOID THE MANUFACTURER'S WARRANTY.
- FOR CUSTOMER SERVICE AND QUESTIONS ABOUT THE OPERATION OR MAINTENANCE OF THIS MACHINE, PLEASE CALL YOUR AUTHORIZED DEALER.
- IMPORTANT: BEFORE OPERATING YOUR COMBO SANDER READ THE INSTRUCTIONS IN THIS MANUAL FOR UNPACKING AND SETTING UP YOUR MACHINE.