

CAUTION:
IMPORTANT SAFETY INFORMATION

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
- NEVER PLACE HANDS UNDER THE BRUSH OR DUST COVER.
- NEVER OPERATE SUPERBRUSH WITHOUT ITS DUST COVER OR PULLEYGUARD IN PLACE.
- KEEP HANDS AND CLOTHING AWAY FROM OPERATING BRUSH BELT AND PULLEYS.
- 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 SUPERMAX DEALER.

Keep This Manual Handy For Quick Reference

SUPERBRUSH OWNER'S MANUAL
For SUPERBRUSH 13



IMPORTANT: BEFORE OPERATING YOUR SUPERBRUSH READ THE INSTRUCTIONS IN THIS MANUAL FOR UNPACKING AND SETTING UP YOUR MACHINE.

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 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 at SuperMax Tools has been to manufacture equipment that is capable of providing you with maximum economy, maximum utility, and maximum performance.

Your SUPERBRUSH 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. All SuperMax Tools brush sanders feature 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.

SuperMax Tools 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.

CAUTION, SAFETY FIRST

When maintaining and operating this machine, always put safety first. For your own safety, read and understand this owner's manual before operating this machine. Always heed and follow all normal safety precautions, including the following:

- Always wear eye protection while operating the sander.
- Always feed stock against the brush rotation.
- Never place hands or fingers under the brush or dust cover.
- Keep hands and clothing away from operating brush.
- Never operate the sander without its dust cover or pulley guarding in place.
- Always maintain control of boards to avoid kickback; know how to prevent it.
- Always disconnect electrical power before doing any servicing or adjusting of the machine.

MODEL IDENTIFICATION

Your SUPERBRUSH sander is one of a family of machines from SuperMax Tools designed to help you achieve results comparable to industrial-size sanders at a fraction of the cost. For future reference, find the model and serial numbers on the table mount bracket (#42, page 29) and write them in below.

Model: _____

Serial Number: _____

Date Purchased: _____

Dealer: _____

IMPORTANT: KEEP THIS MANUAL HANDY

Please read this manual first. It was designed to help you get the most from your SUPERBRUSH sander. Before unpacking or using the machine, familiarize yourself with its components, features, and basic adjustments by reviewing the following pages. You

will find it an invaluable aid in setting up, operating and servicing your machine. If, after reviewing this manual, you still have a problem you can't solve, please call your SuperMax Tools dealer.

BRUSHES & SUPPLY CHECKLIST

SUPERBRUSH OPTIONS:

DESCRIPTION	QTY.
60 Grit, Nylon/Silicon Carbide bristle, Open or Close wound	
80 Grit, Nylon/Silicon Carbide bristle, Open or Close wound	
120 Grit, Nylon/Silicon Carbide bristle, Open or Close wound	
180 Grit, Nylon/Silicon Carbide bristle, Open or Close wound	
220 Grit, Nylon/Silicon Carbide bristle, Open or Close wound	
320 Grit, Nylon/Silicon Carbide bristle, Open or Close wound	
Wire, Carbon Steel, Open or Close Wound	
Wire, Stainless Steel, Fineset	
Fladder style Brush combination, (Head Assembly).	
60-320 Grit, Fladder style Brush combination (Abrasives only).	
Cloth polishing heads	

These are just a few types of the dozens of brushes available. Please contact SuperMax Tools for a complete listing of brushes and brush material available or to run test samples of your specific application.

ACCESSORIES:

ITEM #	DESCRIPTION	QTY.
98-0130	Caster Set: Heavy duty, roll & swivel lock.	
98-0025	Lowrider legs with 4 casters. Lowers machine on casters 5-1/2"	
98-0118	Pro Scale DRO (digital read out) depth gauge	

CONVEYOR BELTS:

TYPE1: 100 grit abrasive surface with reinforced backing.
 TYPE 2: Polyurethane rib-textured surface with monofilament backing.

ITEM #	DESCRIPTION	QTY.
SUPERBRUSH 13		
60-0316	Type 1: Conveyor with 1" diameter Drive Roller.	
60-0316R	Type 2: Conveyor with 1" diameter Drive Roller	

For information on the SuperBrush and supplies call SuperMax Tools (651) 454-3401 or visit www.supermaxtools.com.

2 YEAR WARRANTY

Limited warranty. We will provide all replacement parts which are found to be defective in materials or workmanship. Manufacturers' warranties on conveyor belts and brush heads.

SUPERBRUSH 13 SPECIFICATIONS

Warranty: Two years on parts and labor, limited;
 Manufacturer's warranties on conveyor belts, brush heads and abrasives.

Sanding Capacity:	
Maximum Width:	13"
Minimum Length:	9"
Maximum Thickness:	4" (varies with brush/drum style)
Minimum Thickness:	1/32" typical (varies with applications)
Dimensions:	Length – 35" Width – 42" Height – 44"
Brush:	5–8" diameter typical Typical bristle length: 1¼" – 3"
Brush Speed:	Infinitely variable 400 to 1200 RPM Brush 1700 RPM Drum
Dust Hood:	Hinged back with 4" vacuum port
Height Adjustment:	3/32" per turn, Depth Gauge included
Conveyor Motor:	43"–lb. torque Direct drive D.C. motor Infinitely variable 0–10 feet-per-minute
Drive Motor (TEFC):	1-3/4 HP 110-120V 60HZ Continuous-duty
Power Requirements:	110 Volt, 20 amp service
Shipping Weight:	300lbs. (<i>weight varies on how equipped</i>)

ABOUT THE SUPERBRUSH SYSTEM

SUPERBRUSH Nomenclature 4
 Unpacking Your SUPERBRUSH Sander..... 5

SETTING UP YOUR SUPERBRUSH

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 SUPERBRUSH

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

TIPS FOR MAXIMUM PERFORMANCE ... 12

ABRASIVE SELECTION GUIDE..... 13
 Wrapping Abrasive Strips 14

TROUBLESHOOTING YOUR SUPERBRUSH

Troubleshooting Guide: Motors 16
 Troubleshooting Guide: Conveyor 17
 Troubleshooting Guide: Machine..... 18

SERVICING YOUR SUPERBRUSH

Adjusting Height Controls 19
 Adjusting Table Support Castings..... 19
 Adjusting Brush Head 19
 Leveling Table 21
 Miter Gear Alignment..... 21
 Brush Speed Adjustment 22
 Changing Brush or Drum 22
 Replacing Conveyor Belts..... 22
 Replacing V-Belt 23
 Replacing/Rotating Bearings 24
 Replacing Brush Head..... 25
 Replacing Electrical Components..... 25
 Electrical Diagram..... 26

SUPERBRUSH TECHNICAL DATA

Parts List For Stand 28
 Parts List For Head Assembly 30
 Parts List For Conveyor
 & Motor Assembly..... 32
 SUPERBRUSH Specifications 34
 SUPERBRUSH Accessories & Supplies 35

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

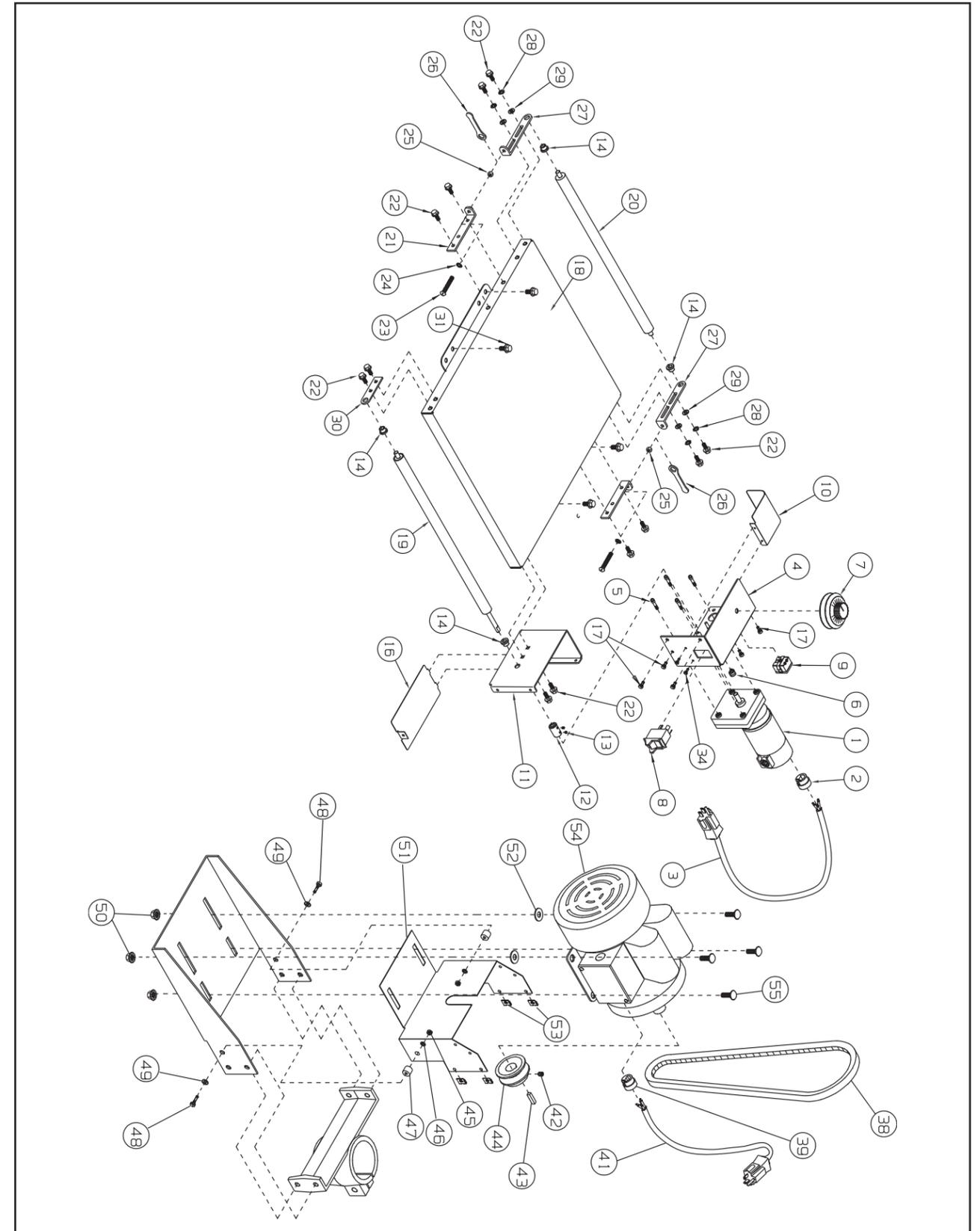
ABOUT THE SUPERBRUSH SYSTEM

This manual is designed to help familiarize you with your SUPERBRUSH 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 SUPERBRUSH system is basically made up of: 1) a height adjustment handle which raises and lowers the

conveyor table; 2) a brush speed control handle which controls brush speed from 400 to 1200 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 0-10 feet per minute.



Fig. 1 SUPERBRUSH nomenclature.



Ref. No.	Description	Part No.	Qty.
1	Gear Motor	71-1301	1
2	Strain Relief, large	72-6014	1
3	Cord Set	72-5336	1
4	Bracket, Control Housing	40-4017	1
5	Socket Head Cap Screw	10-2404	4
6	Strain Relief, small	72-6101	1
7	Controller, variable speed	72-1255	1
8	Switch, on/off, drum	72-2004	1
9	Receptacle, 110 Volt	72-2120	1
10	Wiring Guard	40-4018	1
11	Bracket, Controller Base	40-4018	1
12	Coupler, shaft	30-0122	1
13	Socket Head Set Screw	10-2702	2
14	Bushing	50-3105	4
16	Cover, control housing base	40-4022	1
17	Hex Head Slotted Screw	10-9002	5
18	Conveyor Bed	40-4010	1
19	Drive Roller, rubber covered	30-3050-01	1
20	Driven Roller	30-3010-01	1
21	Bracket, base take-up	40-0004	2
22	Bolt, Hex Head Washer	10-9010	12
23	Screw, slotted round head	10-3213	2
24	Lock Washer, internal tooth	11-0504	2
25	Hex Nut	12-0001	2
26	Wrench	40-0260	2
27	Bracket, take-up slide	40-0030	2
28	Wave washer	20-1161	4
29	Flat washer	11-0205	4
30	Bracket, drive roller support	40-0005	1
31	Bolt, hex washer head	10-9106	4
32	Conveyor Belt (not shown)	60-0316R	1
38	V-Belt	50-2031	1
39	Strain relief	72-6014	1
41	Cord set	72-5338	1
42	Set screw	10-8902	1
43	Key	20-0762	1
44	Pulley, variable speed	50-0705	1
45	Nut, hex	12-0001	2
46	Lock washer, internal tooth	11-0504	2
47	Spacer	30-1308	2
48	Bolt, Hex Head	10-3213	2
49	Washer, flat	11-0205	2
50	Nut, flange lock washer	12-0207	4
51	Guard, pulley, lower-inner	40-0017	1
52	Washer	11-0104	2
53	Nut, retaining	20-1157	4
54	Motor, 1-3/4 HP, 110-120 Volt	71-0152	1

UNPACKING YOUR SUPERBRUSH

Your SuperBrush sander has been shipped completely assembled from the factory in a shroud on a pallet and shrink-wrapped in plastic. 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. See enclosed Warranty Statement.

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. Unbolt the machine legs from the shipping pallet. Install the rubber-based leveling feet or optional caster set on legs (Fig. 2). The feet and mounting hardware are in the STOP bag packed with your machine.

2. Loosen the hex nuts and set screws on the table support castings (Fig. 3) and on the motor support casting (Fig. 5 - #7). The set screws on the table support castings have been tightened at the factory to eliminate free-play between the castings and the column tube during shipment. There are two table support castings on the SuperBrush, one each for the right and left column tubes, and one motor support casting, all with set screws.

Important: These set screws are tightened for shipping and must be loosened and readjusted before operating either the height adjustment mechanism or the brush speed control handle.

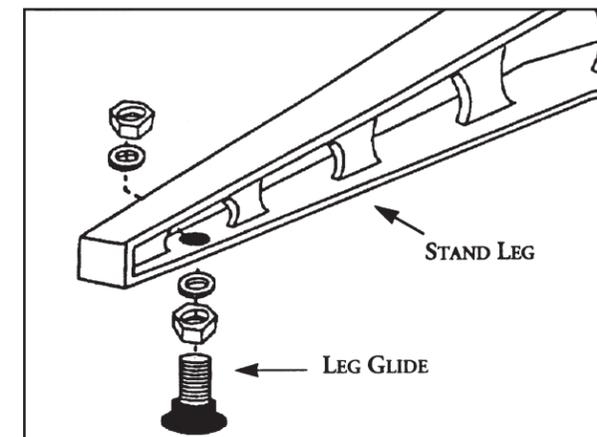


Fig. 2 Leveling foot and mounting hardware.

To properly adjust for operation, loosen each set screw by first loosening its hex nut with a wrench and then the set screw with an Allen wrench. Then retighten each set screw with your fingers so it only lightly touches the column tube. Hold each set screw in position with an Allen wrench and retighten the hex nut. Failure to follow these procedures may result in misalignment of the brush and/or the conveyor table.

Caution: Do not loosen the set screws on the (upper) brush support castings.

Note: Some machines have a block under the main motor. If so, remove at this time.

3. Install the conveyor gear motor, if applicable. Rotate the drive roller on the conveyor system so the flat part of the shaft is down. If necessary, connect the conveyor motor into an appropriate AC outlet, to rotate the motor output shaft coupling so the set screws face downward. Disconnect electrical supply. Slide the conveyor motor assembly onto the drive roller shaft, aligning the shaft coupling and four mounting holes. Start the four hex head bolts on the conveyor motor mounting bracket, but do not tighten yet.

Next, tighten the set screws in the coupling on the drive roller shaft, making sure they are on the flat of the shaft. Rock the conveyor motor while tightening the set screws to make sure they are centered properly on the flat. Install the bottom cover on the control box. Connect power to machine and turn conveyor on full speed. While it is running, tighten the four bolts to secure the conveyor motor assembly in place.

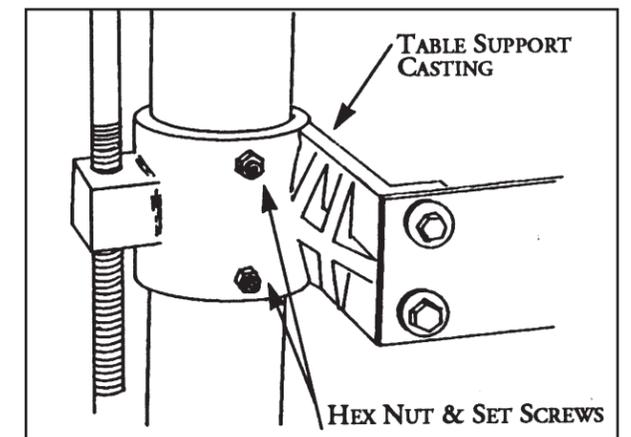


Fig. 3 Table support casting and set screws.

SETTING UP YOUR SUPERBRUSH

Your SUPERBRUSH 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 pre-operational 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 SuperBrush models. The SUPERBRUSH 13 is equipped with one 4" diameter dust exhaust port at the top of the brush cover.

To attach the SUPERBRUSH to your collection system, install 4" hose from your collector. (See Tips For Maximum Performance, page 12 of this manual.) The minimum recommended dust collector capacities is 600 cfm. For best results, follow the recommendations of the manufacturer of your dust collection equipment. **NOTE:** Some applications will require more dust collection than the recommended minimum CFM.

CHECKING MACHINE FOR LEVEL

Proper leveling of the machine is essential to achieve continued maximum performance from the SuperBrush. Before making fine adjustments, place the unit where it will be used in the shop. Then adjust the four leveling feet using a level both across the machine and in line with the machine, placing the level on the conveyor bed. If you have equipped your SuperBrush with the optional caster set, do the same after positioning the machine where it will be operated most often. Mark the position of the legs on the floor with tape so it can be returned to the same position.

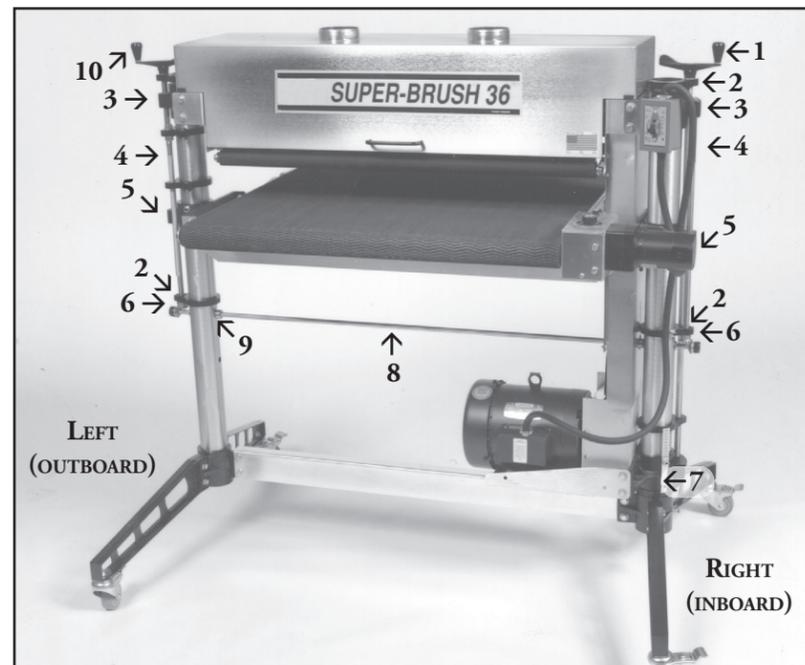


Fig. 5 SUPERBRUSH Components.

1. Brush Speed Handle (RPM).
2. Adjusting Screw Support.
3. Brush Support Casting.
4. Height Adjusting Screw.
5. Table Support Casting.
6. Miter Gear.
7. Motor Support Casting.
8. Transfer Rod.
9. Shaft Collars.
10. Height Adjustment Handle.

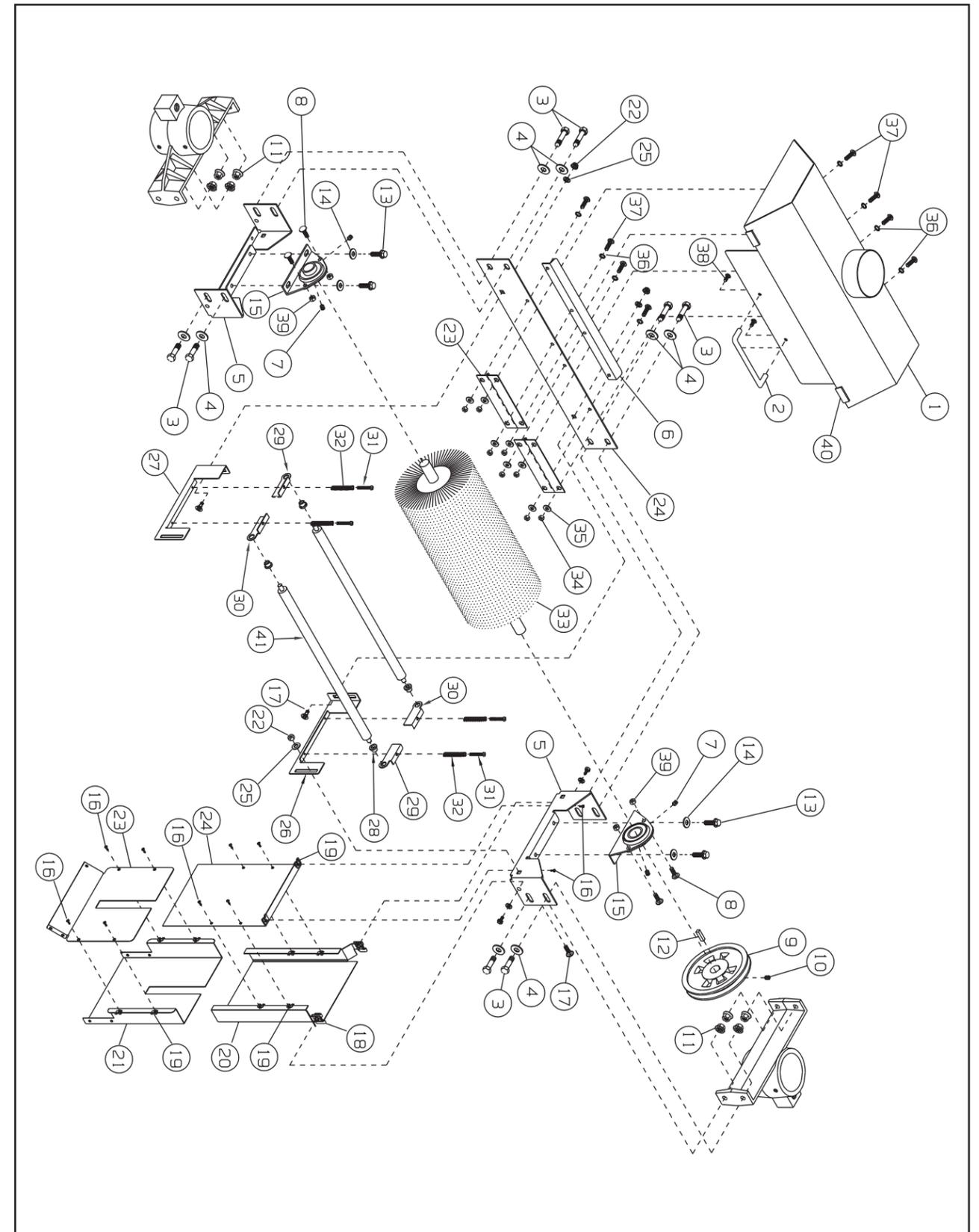


Fig. 5

IMPORTANT! When using the sanding drum accessory, adjust RPM Gauge to 1200.

RPM GAUGE

The RPM gauge (Fig. 8) displays the brush speed and is read where the scale intersects the top of the screw support casting. To calibrate the gauge, lower the motor to the lowest position. Loosen both hex nuts while holding set screws. Position the RPM scale so that "400" RPM intersects the top of the screw support casting (Fig. 8). Tighten hex nuts to hold gauge in this position.

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 belt 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 (see 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. 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. Try to avoid over-adjustments.

NOTE: Make sure wrench is below surface when brushing.

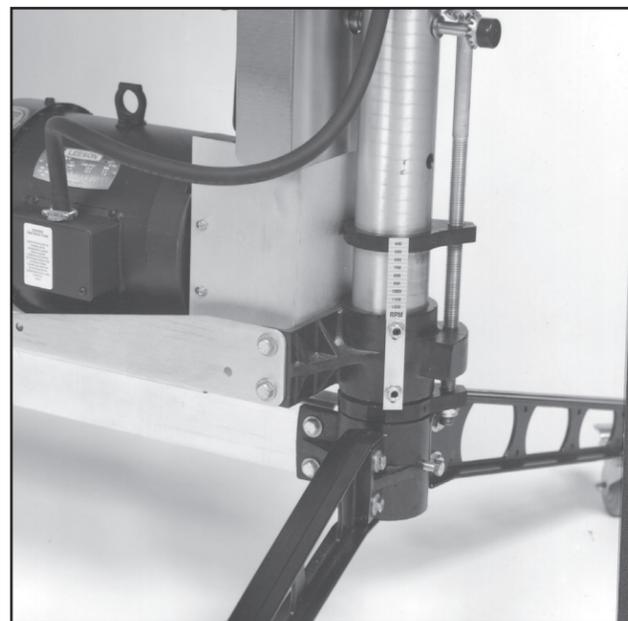


Fig. 8 Brush RPM gauge.

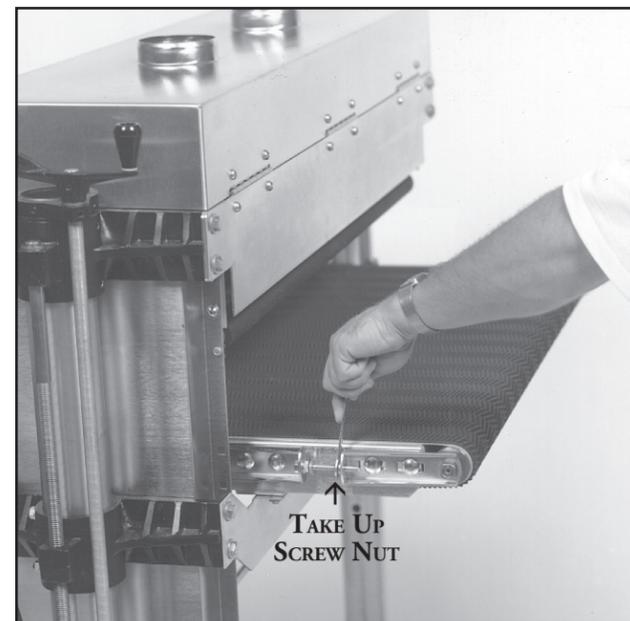
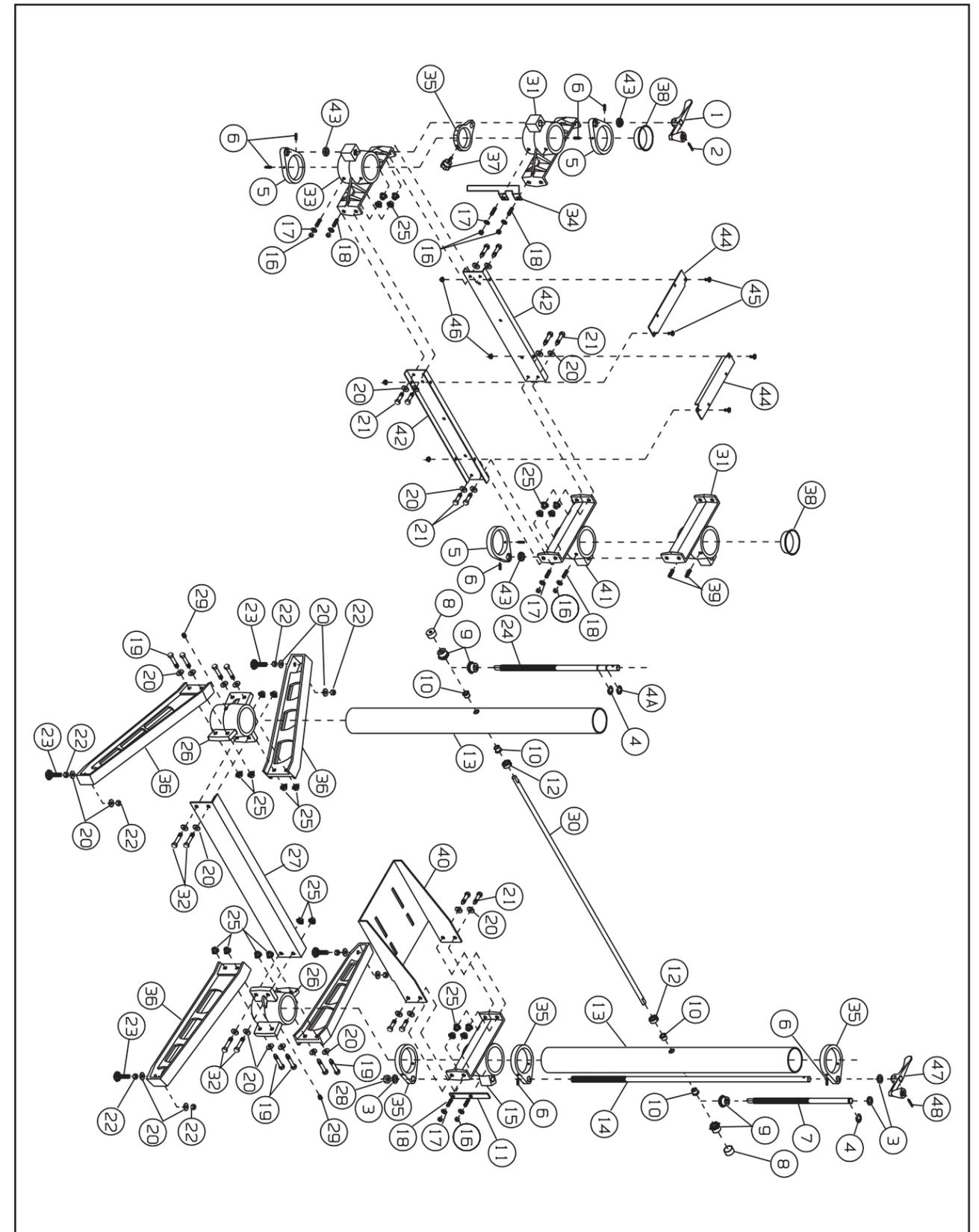


Fig. 9 Adjusting conveyor belt tracking.



Ref. No.	Description	Part No.	Qty.
1	Handle, height adjustment	31-0030	1
2	Set screw	10-2903	1
3	Washer, bronze	50-3080	2
4	Clip, retaining, large	20-0752	2
4A	Clip, retaining, small	20-0750	1
5	Support, adjusting screw w/BB	30-1112-0	3
6	Set screw	10-2804	14
7	Screw, inboard height adj, follow	30-1251	1
8	Cap	80-4013	2
9	Miter gear	20-1101	4
10	Bushing	50-3107	4
11	Gauge, RPM, assembly	41-0670	1
12	Collar	20-1103	2
13	Column Tube	30-1236	2
14	Screw, RPM	30-1220	1
15	Support, motor casting	30-5103	1
16	Nut, hex	12-0003	6
17	Washer, flat	11-0206	6
18	Set screw, brass tipped	10-9906	6
19	Bolt, Hex head	10-9207	8
20	Washer, flat	11-9103	32
21	Bolt, hex head	10-9205	12
22	Nut, hex head	12-0005	8
23	Leveling foot	20-0655	4
24	Screw, height adj. (RH threads)	30-1252	1
25	Nut, flange lock	12-0209	24
26	Column base casting	30-1101	2
27	Bracket, base support	40-0130	1
28	Nut, Heavy lock hex	12-8015	1
29	Set screw, pointed	10-8905	2
30	Transfer rod	30-3033-06	1
31	Support casting brush head	30-5106	2
32	Bolt, hex head	10-9206	4
33	Support casting table (RH thread)	30-5104	1
34	Depth Gauge	41-0131	1
35	Support, adj screw, elongated	30-1112	4
36	Leg	30-1102	4
37	Knob w/set screw	81-3132	1
38	Cap, column tube	80-4015	2
39	Set screw	10-2903	4
40	Bracket, motor mount	40-0106	1
41	Support casting table (LH thread)	30-5105	1
42	Bracket, table mounted	40-0112	2
43	Ball bearing	R8ZZ	3
44	Bracket, vert. bed support	40-0135	2
45	Bolt, carriage	10-1203	4
46	Nut	12-0207	4
47	Handle, RPM adj.	31-0020	1
48	Roll Pin	20-0772	1

OPERATING YOUR SUPERBRUSH

Before using your SUPERBRUSH, 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 SUPERBRUSH offers considerable control and versatility through infinitely 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 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 SUPERBRUSH. The basic operating procedure for the SUPERBRUSH models is as follows (Fig. 10):

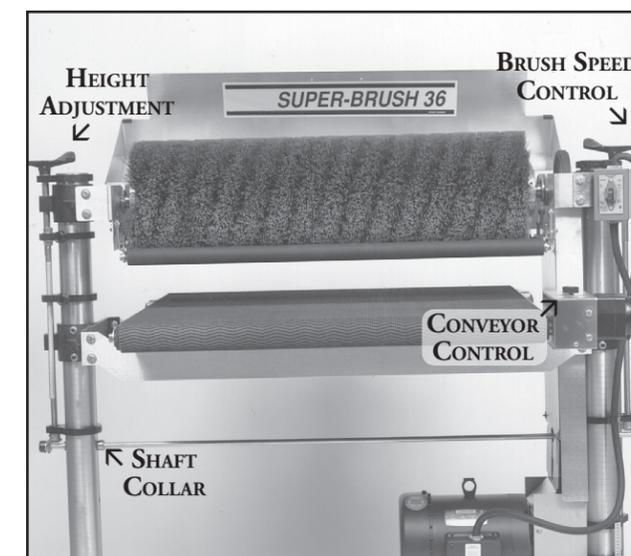


Fig. 10 Operating controls.

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).
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 until the desired finish is achieved (Fig. 8).

To feed stock through the SUPERBRUSH, 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 (Fig. 11 & 23) are provided to maintain downward pressure on stock being sanded and to prevent slippage of the stock on the feed conveyor. When properly set, the Tension Rollers should engage or raise up about 1/8" to accommodate the stock being brushed.

The Tension Rollers can and must be adjusted to accommodate flat surfaced stock vs highly contoured surface stock. If the Depth Gauge is properly calibrated (page 11), Tension Roller height is adjusted as follows: Note: Make sure brush head is appropriate for application and contact.

Flat Surfed Stock: Set the bottom of the tension rollers even with the bottom of the brush. Loosen the four Tension Roller locking knobs (Fig. 11). Raise the table to the "0" mark on the Depth Gauge. At this position, the brush and Tension Rollers are resting on the table surface. Lock all four Tension Roller knobs. For example, to brush a 3/4" thick flat board, lower the table to 5/8" on the Depth Gauge. This allows 1/8" for Tension Roller engagement and 1/8" brush penetration.

Contoured Surface Stock: (Example: A 3/4" thick piece of molding with 3/8" of molding relief.) Loosen

all four tension roller locking bolts (Fig. 11). Adjust the conveyor table 1/4" into the bristle tips (measure with a ruler from "0" mark on depth gauge.). At this position, the tension rollers are resting on the table surface and are positioned 1/4" above the bottom of the brush. Lock all four Tension Roller locking bolts. To brush the piece, lower the table to the 3/8" position on the Depth Gauge. This allows for 1/8" of tension roller engagement and 3/8" of brush penetration.

SELECTING BRUSH STOCK FEED RATES

Selecting the proper feed rate is essential to proper brushing. Feed rate controls the duration of brushing on a particular spot. 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 performance. A faster feed rate allows faster brushing but fewer revolutions of the brush per inch of sanding. A slower feed rate provides more revolutions of the brush per inch of sanding (Fig. 10).

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 using a wire brush for "distressing" wood, a brush speed of 400-600 RPM with light contact of bristles and a moderate feed rate generally leaves the best finish.

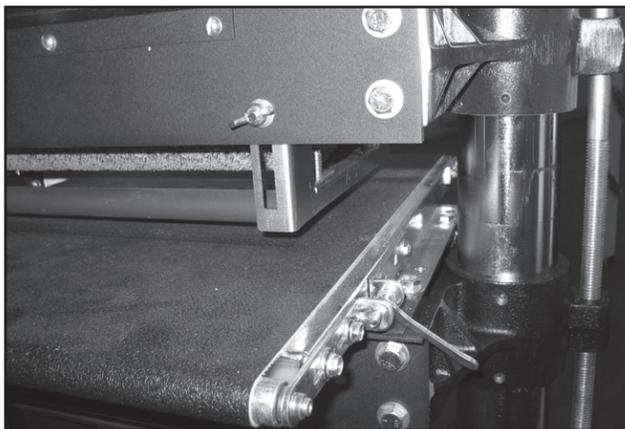


Fig. 11

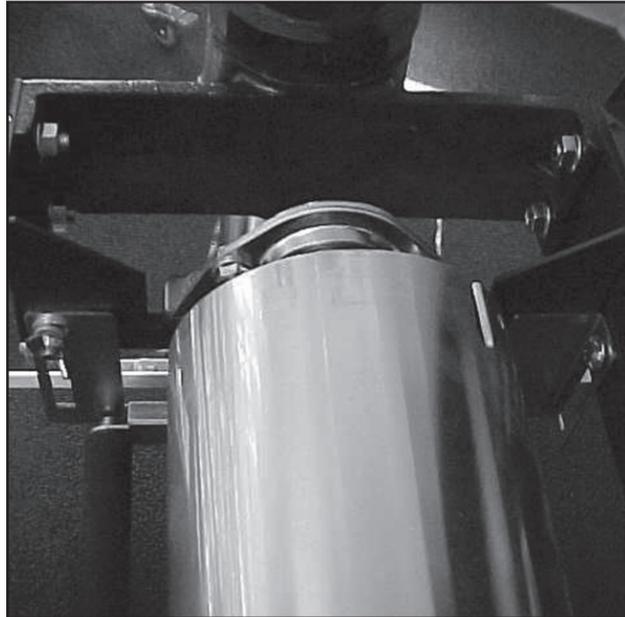


Fig. 11A Tension roller and depth gauge adjustment.

DRUM

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 inch of sanding. When abrasive planing, faster feed rates can be used as long as the machine is not overstressed. 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.

SETTING BRUSH DEPTH OF CUT/CONTACT

SuperMax Tools offers and encourages sample testing for all customers before selling a SUPERBRUSH. We recommend following the suggested RPM, contact and conveyor settings outlined in the sample letter. If you have questions about your application(s) or your needs change, please contact SuperMax Tools for updated information or new sample testing, as brush types, materials, etc. may have changed.

The information and suggestions listed below are not specific to any application and may have changed since printing. Please call SuperMax Tools if you have questions.

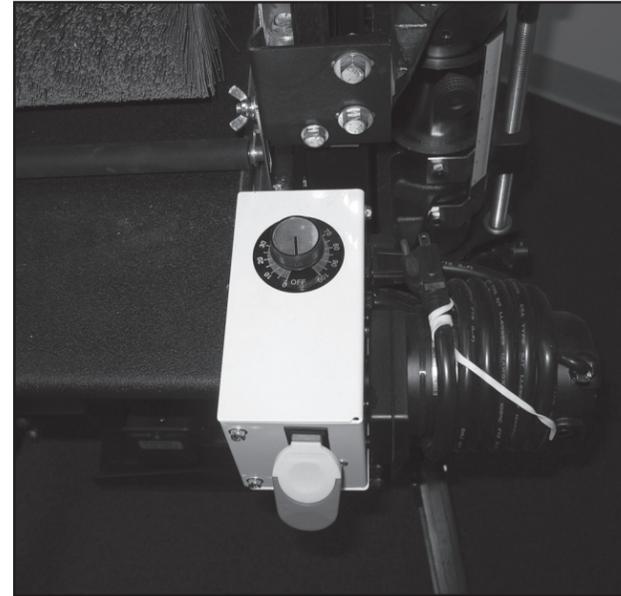


Fig. 24 Conveyor motor control box and brush on/off switch

the electrical diagram to the right, wire accordingly. Reverse the disassembly procedure.

To replace the gear motor, disconnect the two wire leads from the controller. Disconnect the plastic grommet protecting the wires passing through the sheetmetal. Remove the four set screws that hold the motor to the sheetmetal bracket. Remove the old motor and install the new motor. Referring to the electrical diagram below, wire accordingly. Reverse the disassembly procedure.

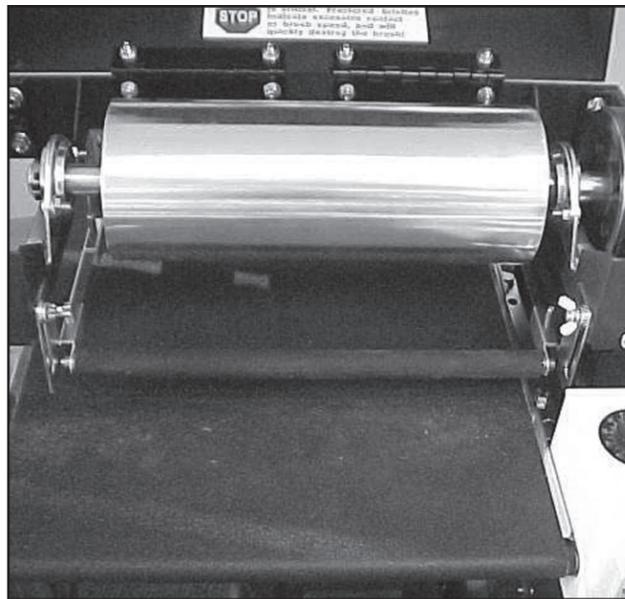
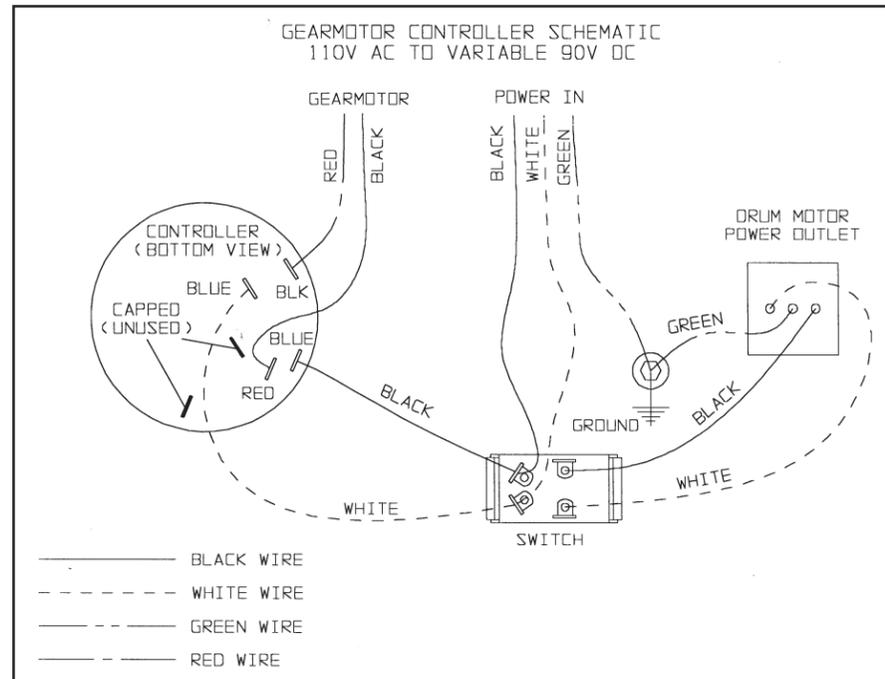


Fig. 22 Sanding Drum

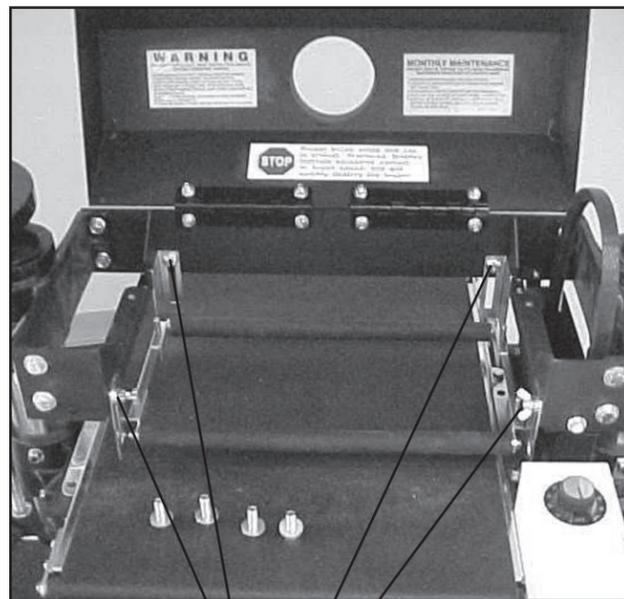


Fig. 23 Tension Roller Adj. Bolts

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. Cloth brush heads may only need cleaning to rejuvenate the cloth. Please call SuperMax Tools if you have any questions. Brush life can vary considerably, due to RPM, contact, type of brush, and material being brushed.

Many types of brush heads may be rewound with new bristles or re-equipped with new brush material. Please contact SuperMax Tools if you have questions about a new or re-wrapped brush head.

Some types of brush heads, some fladder brushes, for example, will allow changing of the brush material by the operator, thus eliminating the need to send the brush head out for re-wrapping. Please call SuperMax Tools if you have any questions about re-wrapping a brush.

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.

Wire brushes frequently flipped end for end, to keep the wire from bending in one direction, will extend brush life. **Caution**, if you choose not to flip the brush frequently, it is better not to flip the brush at all.

Nylon Brushes. “Dress” tips of bristle brush periodically to maintain uniform brush wear and to expose new grit on the ends of the fiber.

Dressing Instructions:

Staple or glue a wide sheet of 60 grit sandpaper to a 1/2” thick flat wood surface. Strips of narrow sandpaper can also be used. Raise the brush so the tips of the bristles contact the sandpaper by 1/32”. 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 raise the conveyor table so the workpiece contacts the drum but the drum can still be rotated by hand. When making successive passes, raise the conveyor 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 table 3/32”.

DEPTH GAUGE OPERATION

The depth gauge (see Fig. 11) measures the distance between the conveyor table and the bottom of the sanding brush. The sanding brush must be parallel to the conveyor bed surface. To calibrate the depth gauge, loosen the locking knob of the lower depth gauge casting so it rests on top of the table support casting. Raise the conveyor table until it touches the sanding brush. Then loosen the locking knob of the upper depth gauge casting and position the “0” mark of the scale even with the top of the lower depth gauge casting. Lock the upper depth gauge casting in position.

Once calibrated, the locking knob of the lower depth gauge casting can be loosened, allowing the lower depth gauge casting to ride on top of the table support casting. The depth can then be read where the scale enters the lower depth gauge casting. The depth gauge can also be used as a stop gauge as follows: Position the lower depth gauge casting along the scale to a desired finish thickness. Then lock the lower depth gauge casting with the locking knob to prevent the conveyor table from being raised above that point.

MONTHLY MAINTENANCE

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

- Lubricate conveyor bushings and check for wear.
- Lubricate all moving parts, such as threaded rods, washers, and column tubes.
- Clean dust from the conveyor belt.
- Blow dust from the motors.
- Check all set screws for tightness on parts such as brush support castings, bearings, conveyor coupler, castings, pulleys, and miter gears.
- Clean brush or drum and abrasives, if applicable.

TIPS FOR MAXIMUM PERFORMANCE

The versatility designed into the SUPERBRUSH 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.

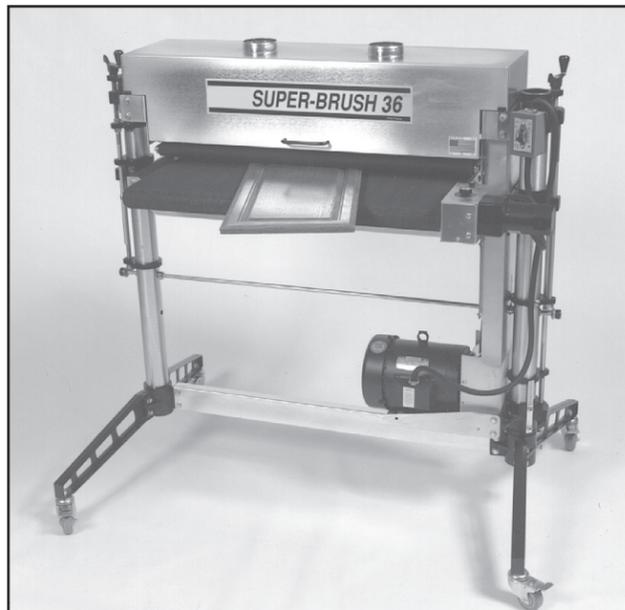


Fig. 12 Offset stock feeding angle.

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 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 brushing on some stock (Fig. 12).

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 brush. Also brush the conveyor belt after cleaning operations. If not cleaned, the conveyor belt could allow stock to slip during brushing operations.

bed and spinning the brush by hand. This will help determine if the inboard bearing needs to be changed to eliminate noise or excessive play in the brush.

Replacing Right (Inboard) Bearing:

Disconnect power source to brush.

1. Lower motor to its lowest position using the RPM adjustment handle. Then raise motor to its highest position using the RPM adjustment handle. This loosens the V-belt tension so the V-belt can be lifted off the driven pulley.
2. Raise conveyor table so brush rests on conveyor.
3. Remove left (outboard) bearing by removing the two carriage bolts from bearing.
4. Remove the right (inboard) bearing by removing the two carriage bolts from bearing.
5. Remove V-belt from driven pulley.
6. Lift brush head out from machine.
7. Loosen set screws in bearing collar and driven pulley and remove from brush shaft.
8. Install new bearing and driven pulley. Do not tighten set screws at this time.
9. Install brush in machine and center before tightening bolts. Tighten bearing bolts and then set screws in bearings.
10. Install V-belt on driven pulley and adjust pulley for proper V-belt alignment before tightening pulley set screw.
11. Check the alignment of the brush to the conveyor system.

REPLACING BRUSH HEAD

1. Lower motor to its lowest position using the RPM adjustment handle. Then raise motor to its highest position using the RPM adjustment handle. This loosens the V-belt tension so the V-belt can be lifted off the driven pulley.
2. Remove the bearing bolts (Fig. 19) and lift brush out of machine.
3. Loosen set screws in bearing collars and driven pulley and remove from brush shaft.
4. Install new bearings and driven pulley. Do not tighten set screws at this time.

5. Install brush in machine and center before tightening bearing bolts. Tighten bearing bolts and then set screws in bearings.
6. Install V-belt on driven pulley and adjust pulley for proper V-belt alignment before tightening pulley set screw.
7. Check the alignment of the brush to the conveyor system. (For instructions on this procedure, see page 7 of this manual).
8. Lower the conveyor and spin the brush by hand to make sure the brush shaft is not binding in the bearing. If the bearings bind, loosen the set screws and the bearing flange for one bearing at a time. Spin the brush within the collar, then tighten the bolts in the bearing flange and then the set screws.
9. Test-run the SuperBrush before brushing stock to check that all is operating properly and is aligned before brushing good stock. Also, stop the SuperBrush after a couple hours of use and check the bolts and set screws to make sure they are seated properly.

REPLACING ELECTRICAL COMPONENTS

WARNING: Do Not Re-wire machine to 220 volt

To replace either the variable-speed controller, the on/off switch, or the conveyor motor, use the following disassembly procedure:

Disconnect the power supply from the machine. Remove the bottom plate from the control box. Loosen the set screw in the shaft coupler, and remove the four bolts that hold the power feed motor assembly in place. Remove the assembly from the machine, then turn it upside down to disconnect the leads from the components to be removed.

To replace the controller, remove the knob, then remove the nut which holds the controller and the dial plate in place. Remove the controller out of the panel. Install the new controller, referring to the electrical diagram below. Reverse the disassembly procedure.

To replace the on-off switch, squeeze the plastic springs at the bottom of the switch while simultaneously pushing up on the switch to pop it out. To install the new switch, press it in place, making sure it seats tightly against the sheetmetal bracket. Referring to

the shaft collar on the left (outboard) side of the rod, and pull the rod back enough so the V-belt can be removed.

- Remove the inner half of the pulley guard by removing the screws holding the inner half to the outer half. Remove the inner half of the pulley guard.
- Remove the top two bolts holding the top of the outer pulley guard. The outer half of the pulley guard can be removed by pulling it up and out through the head assembly.
- Remove V-belt from drive pulley. If there is not enough clearance to remove V-belt loosen the four bolts securing the main motor to bracket. Note location of motor before sliding motor out of the way for ease of reassembly. Note the routing of the old V-belt: now remove the old V-belt and replace it with the new V-belt (Fig. 23 and 24).

NOTE: If the V-belt will not fit between the drive pulley and the brush support casting, loosen or remove the bolts holding the bearings. Lift brush enough to allow V-belt to be removed. After installing new V-belt, retighten bolts.

Machine Reassembly

- To reassemble the unit after replacing the V-belt, first reassemble the pulley guards.
- Place the transfer rod back through the machine and reinstall the nylon washer. Tighten the shaft collar (install both of the E clips if so equipped). Reinstall the miter gear on the transfer rod, making sure the set screw is centered on the flat of the rod.
- Adjust the tension on the V-belt by lowering the motor using the brush speed control handle.
- Make sure that the V-belt is in alignment. Also check that all belts are tight before using the SUPERBRUSH.

REPLACING BRUSH BEARINGS

Replacing the permanently lubricated bearings on the SUPERBRUSH is a relatively straight-forward procedure. Bearings should be replaced when they allow excessive play of the brush, make excessive noise, or otherwise indicate failure.

Note that if clicking noises in the bearings are a problem, rotating may be a solution instead of replacement, as follows:

BEARING ROTATING

Step 1. Loosen the set screws in the bearing collar. Leave the set screw wrench in one of the set screws. Then rotate the brush within the bearing and tighten the set screws (Fig. 19 and 20).

Step 2. If the clicking persists, or if the brush shaft is tight in the bearing and cannot rotate, then loosen the two bolts holding the bearing and the flange for the bearing. Now repeat Step 1. After the brush is rotated within the bearing, tighten the flanges first and then the set screws. After the machine has run for a half hour, stop to check that the set screws and bearing bolts are tight.

Bearing Replacement:

- Disconnect power source to the machine.
 - Lower motor to its lowest position using the RPM adjustment handle. Then raise motor to its highest position using the RPM adjustment handle. This loosens the V-belt tension so the V-belt can be lifted off the driven pulley.
 - Raise conveyor bed until the brush rests on bed.
- If replacing both bearings, begin with bearing on the left (outboard) side.

Replacing Left (Outboard) Bearing:

Make sure power is disconnected to the machine.

- Remove the outer half of the bearing flange. Loosen the set screws in the bearing collars and remove the bearing.
- If the shaft of the brush is rough from the set screws, use emery cloth or sandpaper to smooth down any raised edges. Slide the new bearing on the shaft, but do not tighten the set screws yet.
- Install the outer half of the original bearing flange and tighten the bolts. Then tighten the set screw in the bearing collar.

If the left (outboard) bearing is the only one that needs changing, proceed to reassemble the unit. You can check the brush at this point by lowering the conveyor

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.

WRAPPING ABRASIVE STRIPS

Note: When using Pre-Marked™ or Pre-Cut™ abrasives, not all of the steps below are necessary.

Proper attachment of the abrasive strip to the drum is critical to achieving top performance from your SuperMax Tools 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. 12a. Because the tapered end should use most of the left (outboard) slot width, its end must be trimmed (Fig. 12-b and 12-c). Raise the clip lever on the left (outboard) side of the drum (Fig. 12-d). 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 12-e). 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. 12-f). 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. 12-g). 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. 12-h).* **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. 12-i). 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.

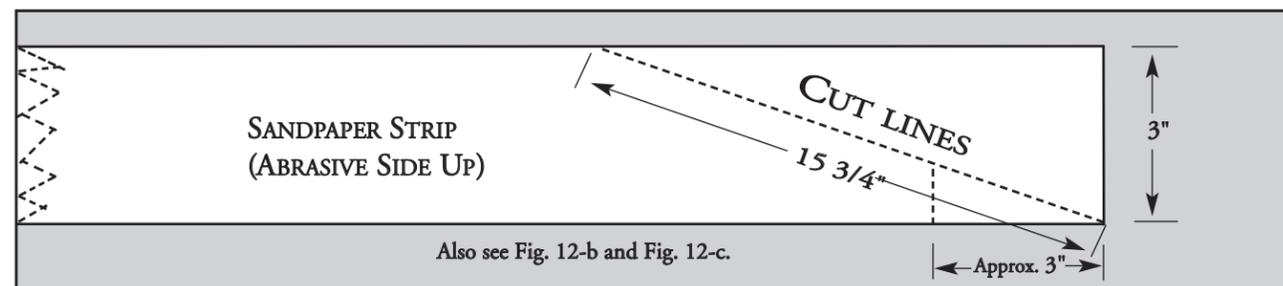


Fig. 12a Marking and cutting taper on strip.

Step 1. Check the conveyor drive and driven roller to make sure it is parallel to the surface of the conveyor bed. To do this, first center the conveyor belt on the bed. Then lay a straight-edge on the exposed edge of the conveyor table on the left (outboard) side, extending it over the drive or driven roller. Note the distance between the drive or driven roller and the straight-edge.

Step 2. Now repeat Step 1 on the right (inboard) side of the conveyor. Compare the measurements from side to side. If they are not equal, loosen one of the brackets that hold the drive or driven roller in place. Tip this bracket until the distance between the drive roller and the straight-edge are equal from side to side, then tighten the bracket.

Conveyor Belt Tension: To adjust the tension of the conveyor belt, first adjust the take-up screw nut (Fig. 21) 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

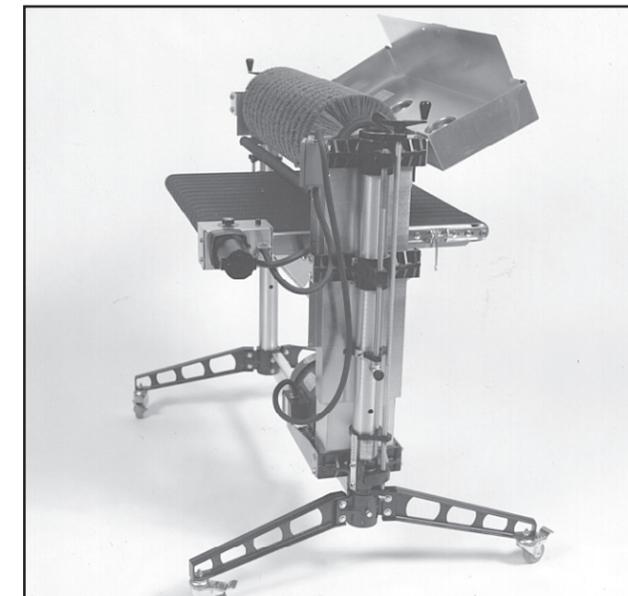


Fig. 20 Conveyor belt replacement.

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. 21) 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. Try to avoid over-adjustments.

REPLACING V-BELT

To change the V-belt on the SUPERBRUSH, first disconnect power source to machine.

1. Lower the main motor to its lowest position using the brush speed control handle. Raise the motor to its highest position. This will loosen the V-belt in the drive pulley so the V-belt can be lifted off the driven pulley.
2. Remove the miter gear from the right (inboard) side of the transfer rod (Fig. 14). (If E clips are attached to the rod, remove both at this time.) Now loosen



Fig. 21 Tensioning and tracking conveyor belt.

4. Check and adjust for misalignment of adjusting screw supports (Fig. 5) and brush support castings which could cause binding on the adjusting screw. These castings can be slightly rotated by loosening the set screws which secure it to the inside of the column tubes. **NOTE:** The adjusting screw support (Fig. 5) located immediately below the height adjusting handle and the outboard brush support casting, must be set at the proper height along the column tubes to position the adjusting screws so that there is proper miter gear alignment. Before adjusting these parts, tighten one set screw of table support castings to maintain adjusting screw position during adjustment.

BRUSH SPEED ADJUSTMENT

If the brush speed adjustment does not operate easily, perform the following check or adjustments:

1. Loosen set screws located on front of motor support casting (Fig. 3).
2. Lubricate thoroughly!! Apply penetrating lubricant to motor support casting where it contacts the column tubes and to all contact points between adjusting screw and adjusting screw supports (Fig. 5).
3. Improper alignment of adjusting screw supports may cause binding on the adjusting screw. Loosen both set screws on each adjusting screw support to rotate or adjust screw supports. Note that adjusting screw supports control both lateral and vertical movement of the adjusting screw mechanism and must be adjusted accordingly.

CHANGING BRUSH OR DRUM

Changing the brush on the SUPERBRUSH is relatively simple. To begin, first disconnect power source to the machine. Lower the motor to its lowest position using the brush speed control handle. Raise the motor to its highest position. This loosens the V-belt tension so the V-belt can be lifted off the driven pulley. Loosen and remove bearing bolts (Fig. 19 & 22) Lift brush out of machine. Loosen set screws of bearing collars and pulley. Remove bearings and pulley and install on replacement brush, if needed.

Install replacement brush in machine and center brush

before tightening bearing bolts. Tighten bearing set screws after bearing bolts are tightened. Install V-belt on driven pulley and adjust pulley for proper V-belt alignment before tightening pulley set screw.

REPLACING CONVEYOR BELTS

To replace the conveyor belt, the conveyor assembly must be removed from the machine. Lower the conveyor table to its lowest position with the height adjustment handle. Turn off power source to machine. Unplug main drive motor from receptacle (in gear motor assembly). Loosen the conveyor take-up screws (Fig. 21) to relieve belt tension and slide the driven roller fully inward. Remove the four bolts that attach the conveyor assembly to the table mount brackets (see Fig. 21). Lift the conveyor and remove it from the machine by sliding the conveyor out of the machine. Avoid tearing the belt on any edges underneath the conveyor bed during removal. Reverse the procedure for re-installation.

Note: If the conveyor belt continually tracks to one side of the machine, first try reversing the belt on the conveyor bed. If this doesn't remedy the problem, place a level on the conveyor bed to make sure the conveyor bed is not twisted. If it is twisted, see page 7 for instructions on squaring up the bed. If squaring up the bed does not remedy the problem, proceed with the steps below:

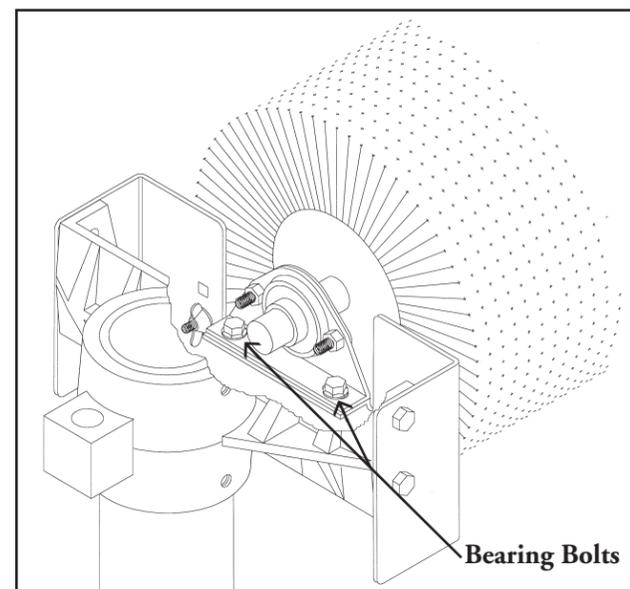


Fig. 19 Removing brush head.

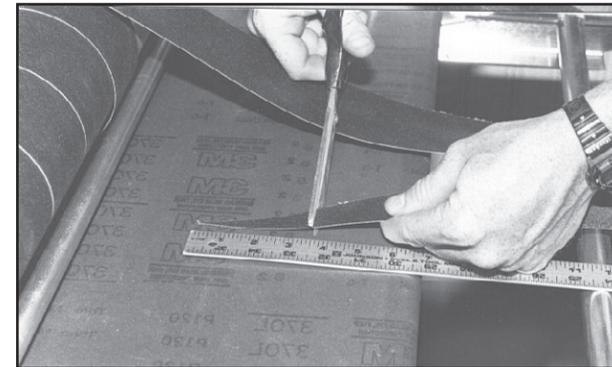


Fig. 12-b Trim about 3" from end of cut taper.

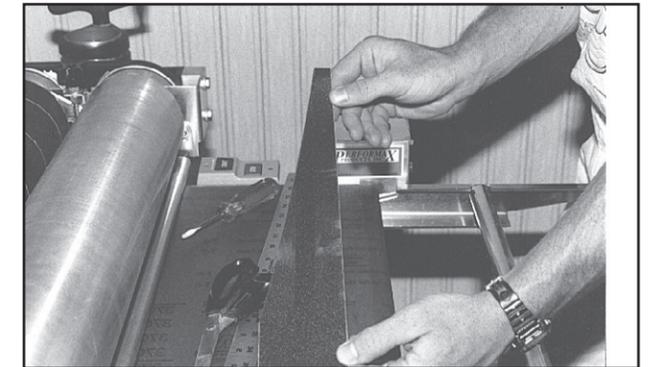


Fig. 12-c Trimmed tapered end ready to install.

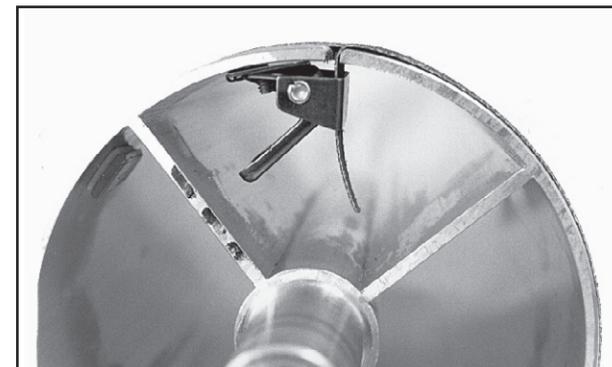


Fig. 12-d Insert tapered end into outboard slot.

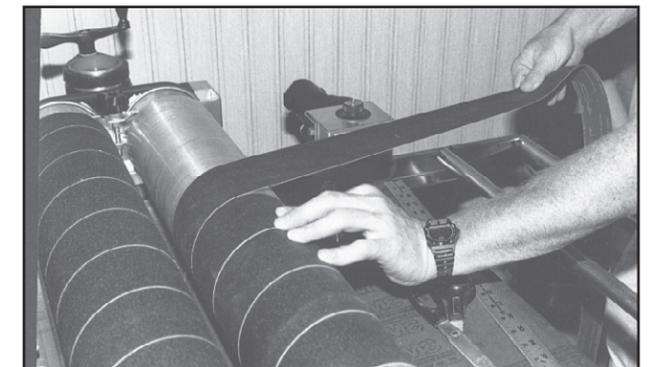


Fig. 12-e Wrap strip around drum without overlap.

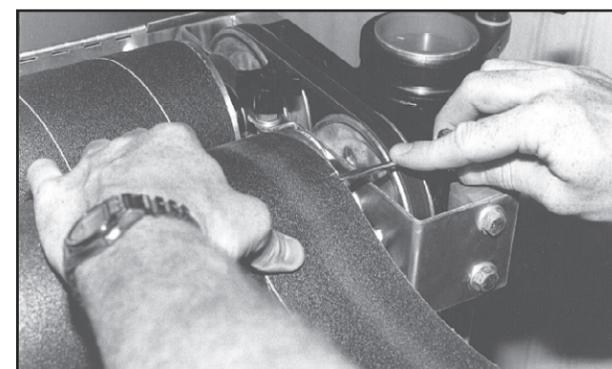


Fig. 12-f Mark strip where it crosses drum edge.

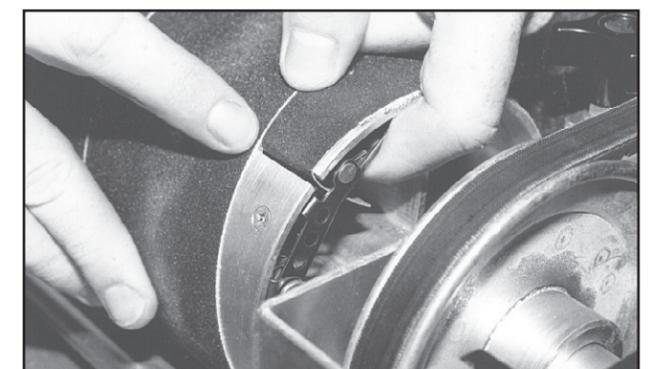


Fig. 12-g Insert tapered end into inboard slot.

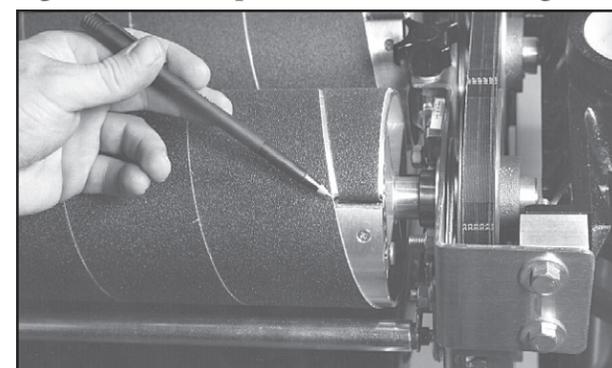


Fig. 12-h Allow room inside slot for strip to move.

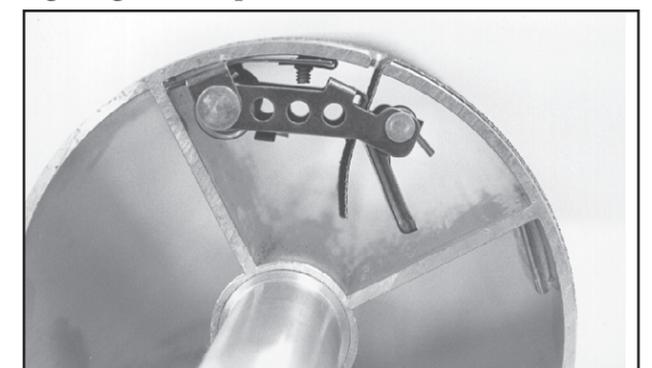


Fig. 12-i Reset take-up as needed as strip stretches.

TROUBLESHOOTING YOUR SUPERBRUSH

Any operating problems with the SUPERBRUSH 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 cord at receptacle on machine if so equipped (Fig. 4).
	3. Circuit fuse blown or circuit breaker tripped.	Replace fuse or retrip breaker (after determining cause).
	4. Brush motor overload tripped, if so equipped	Reset after allowing to cool; or slow feed rate (Fig. 1)
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.



Fig. 17 Adjusting table support castings.

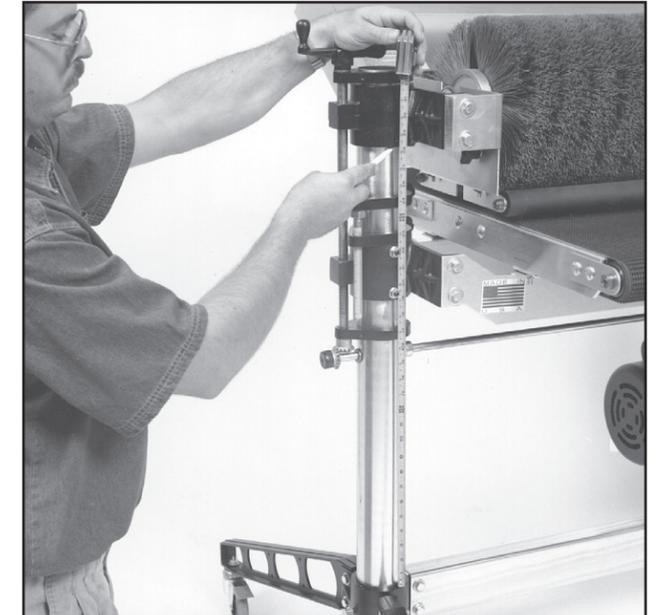


Fig. 18 Comparing brush support casting heights.

LEVELING TABLE

To measure levelness of table, measure the distance between the top of the base casting (Fig. 17) and the bottom of the table support castings. This measurement should be the same for both sides. If it is not the same, adjust as follows:

Remove the plastic cap from the miter gear (Fig. 14) on the outboard side of the machine. Loosen the set screw of the miter gear and slide it back to disengage it from the miter gear of the adjusting screw. Turn the adjusting screw handle to raise or lower the outboard side of the table so that the measurement taken above equals the inboard side of the table. After adjusting is complete, re-engage miter gear making sure that miter gear set screw is aligned with flat on cross bar shaft.

MITER GEAR ALIGNMENT

If height adjustment mechanism does not operate easily, perform the following checks or adjustments:

1. Loosen set screws located on table support castings. (Fig. 3).
2. Lubricate thoroughly! Apply penetrating lubricant to table support castings where it contacts the column tubes, and to all contact points of adjusting screws and cross bar. Apply grease/oil to miter gears.
3. Check miter gear alignment. Check and adjust gears so that gear mesh is not too tight nor too loose and that gear teeth align with opposing gear. The miter gears can be adjusted on their shafts by loosening the set screws on the gears. Note that set screws MUST align with flat of shaft.

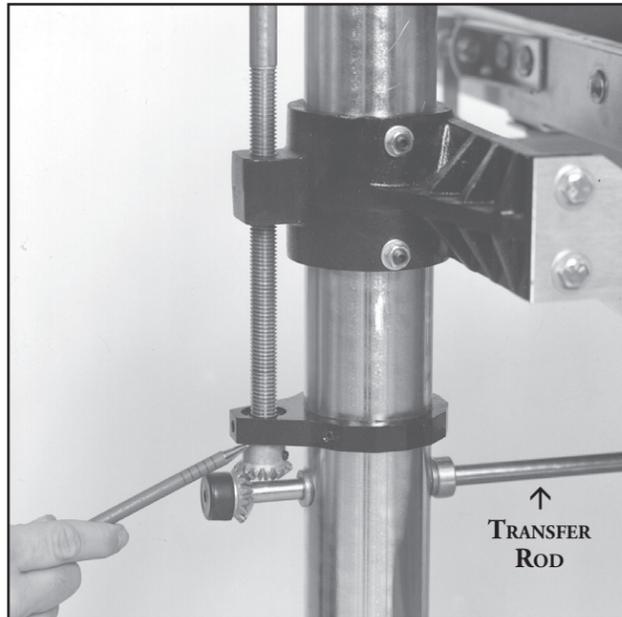


Fig. 15 Miter gear below adjusting screw support.

proper miter gear alignment. Before adjusting these parts, tighten one set screw in the table support castings (Fig. 5) to hold the height adjusting screw in position during adjustment.

Also check to see that the column tubes are centered inside the bore of the table support castings (Fig. 5). If not, loosen the casting bolts and tighten the set screws at the front of table support casting to center the tube. Retighten the bolts and loosen the set screws.

5. If the height adjustment mechanism feels rough, check the miter gear (Fig. 14) alignment. The miter gears can be adjusted on their shafts by loosening the set screws on the gears. Check and adjust so that the gear mesh is not too tight or too loose, and that the gear teeth align with the opposing gear. Note that the shaft collars located on the transfer rod should be adjusted to control the lateral movement of the transfer rod to maintain accurate miter gear alignment and mesh.

The mesh of the miter gears should be smooth and even. If not, adjust the gears for good mesh.

6. Next, check the position of the height adjusting screw. First raise the conveyor table. Then check the retaining-clip and washer at the top of the

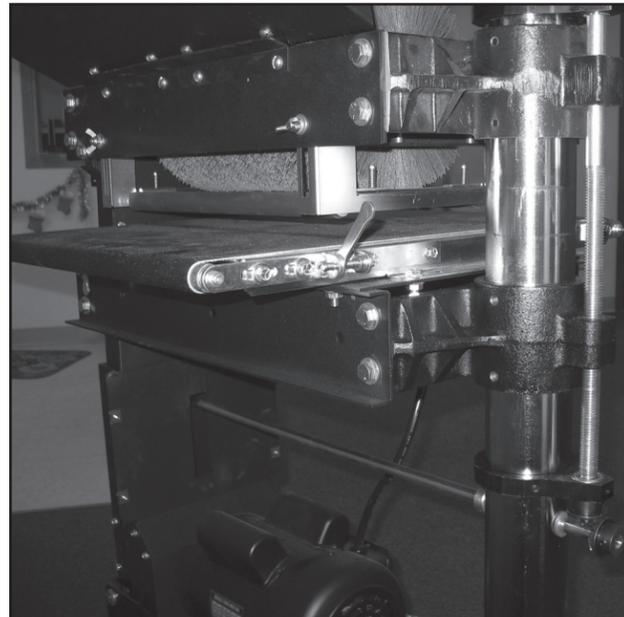


Fig. 16 Height controls on outboard side.

height adjusting screw on the right (inboard) side, and under the height adjustment handle on the left (outboard) side of the machine (Fig. 5). On both sides, the washer and handle should be snug on the casting and retaining the washer. If there is a space between the washer and the casting, tighten one set screw in each of the table support castings. If one height adjusting screw is loose, remove the miter gear from the transfer rod on that side. Turn down the threaded height adjusting screw rod until it is snug on the washer. Make sure both sides are snug on top. Reinstall the miter gear and tighten. Loosen the set screws in the table support castings and test for smooth operation.

TROUBLESHOOTING GUIDE: CONVEYOR

PROBLEM	POSSIBLE CAUSE	SOLUTION
Conveyor rollers run intermittently.	1. Shaft coupling loose.	Align shaft flats of gear motor and drive roller; (page 5) 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 (page 8). Readjust by leveling machine (page 6). Replace conveyor belt (page 22). 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 (pages 7 and 19).
Knocking sound while running.	1. Bearing out of alignment. 2. V-belt worn. 3. Pulleys wobbling or out of round. 4. Set screws loose in pulley or bearing. 5. Bearing worn.	Rotate bearing (page 24) Replace V-belt (page 24). Tighten set screws or replace pulley (page 24). Retighten set screws. Replace bearing (page 24).
Sniping of wood (gouging near end of board).	1. Inadequate support of stock. 2. Conveyor drive or driven rollers higher than conveyor bed.	Use roller stands to support stock. Readjust rollers (page 23).
Burning of wood, or melting of finish	1. Feed rate too slow. 2. Excessive depth of cut	Increase feed rate. Reduce depth of cut, decrease brush RPM.
Gouging of wood.	1. Conveyor belt is too loose. 2. Excessive depth of cut. 3. Wood slipping on conveyor due to lack of contact.	Adjust belt tension. Reduce depth of cut, decrease brush RPM. Use alternate feeding procedure (page 12).

SERVICING YOUR SUPERBRUSH

The basic adjustment procedures for your machine are covered under Setting Up Your SUPERBRUSH, page 6. Review that section first. If following the general instructions does not solve a specific problem or result in smooth operation, also check Troubleshooting Your SUPERBRUSH, page 13. Below are suggested procedures to follow when more thorough readjustment or replacement is necessary.

ADJUSTING HEIGHT CONTROLS

Height adjustment problems may be the result of not loosening the set screws in the table support castings before attempting operation. (This is covered on page 5 of this manual, and also on the separate unpacking sheet which was shipped with your machine.) If the set screws were not loosened as instructed, do so now before proceeding further. Also make sure all moving parts of the height adjusting mechanism are well lubricated, including the miter gears, column tubes, and threaded height adjusting screws.

When troubleshooting the height adjustment mechanism, first check the conveyor table for level (see page 7). Then test the height adjustment mechanism (See Fig. 13). If it does not operate easily, further adjustments may be necessary, as outlined

below. Following these steps should result in smooth operation.

Readjustment Procedure

1. Loosen the set screws located at the front of the table support castings (Fig. 3).
2. Lubricate thoroughly by applying penetrating lubricant to the table support castings where they contact the column tubes, and to all contact points of adjusting screws and transfer rod (Fig. 15). Also apply grease or oil to the miter gears.
3. If the height adjustment feels stiff, check for misalignment of adjusting screw supports and the brush support castings which could cause binding on the adjusting screw (Fig. 5). These castings can be adjusted by loosening the set screws which secure them to the column tubes. Realign the adjusting screw supports by loosening the two set screws that hold them to the column tubes and rotate to the proper position.
4. The adjusting screw supports located immediately below the height adjustment handle and the left (outboard) brush support casting (Fig. 15) must both be set at the proper height along the column tubes so the height adjusting screws provide for

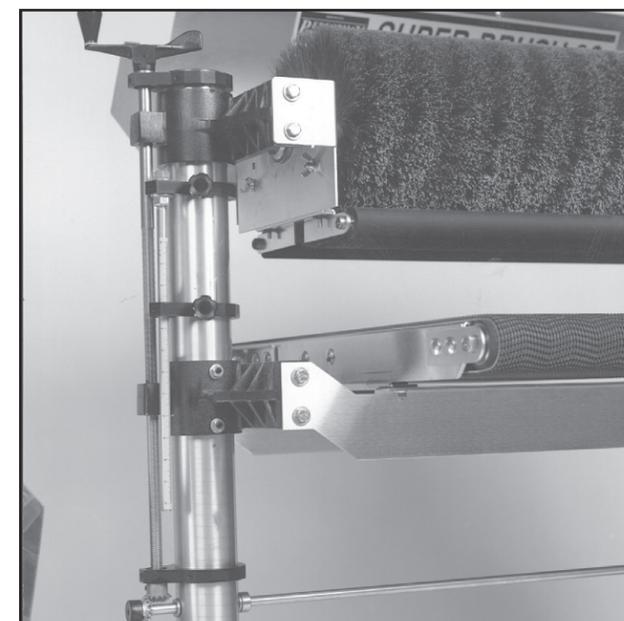


Fig. 13 Table support casting set screws.

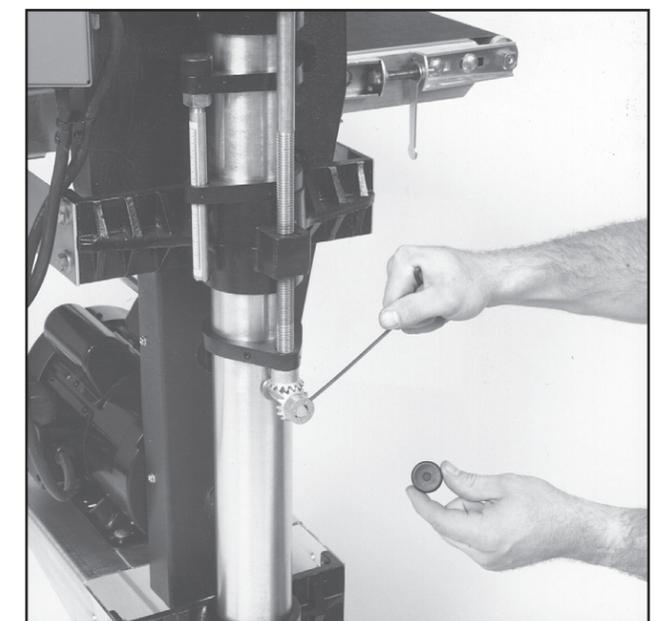


Fig. 14 Adjusting miter gears for proper mesh.