charnwood

Woodworking machinery at its best!

9” X 6” DISC & BELT SANDER
OPERATING INSTRUCTIONS

MODEL: W409

CE

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Bardon, Leicestershire, LE67 1TU

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WARRANTY

FULL ONE YEAR WARRANTY

If this product fails due to a defect in material or workmanship within one year from the date of purchase, Seller will at its option repair or replace it free of charge. Contact your nearest seller to arrange for product repair,or return this product to place of purchase for replacement.

If this product is used for commercial or rental purposes, this warranty will apply for 90 days from the date of purchase.

This warranty applies only while this product is used in the United States.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

SAFETY RULES

WARNING: For your own safety, read all of the instructions and precautions before operating tool.

CAUTION: Always follow proper operating procedures as defined in this manual even if you are familiar with use of this or similar tools. Remember that being careless for even a fraction of a second can result in severe personal injury.

BE PREPARED FOR JOB

- Wear proper apparel. Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts of machine.
- Wear protective hair covering to contain long hair.
- Wear safety shoes with non-slip soles.
- Wear safety glasses complying with instructions. Everyday glasses have only impact resistant lenses. They are **NOT** safety glasses.
- Wear face mask or dust mask if operation is dusty.
- Be alert and think clearly. Never operate power tools when tired, intoxicated or when taking medications that cause drowsiness.

PREPARE WORK AREA FOR JOB

- Keep work area clean. Cluttered work areas invite accidents.
- Do not use power tools in dangerous environments. Do not use power tools in damp or wet locations. Do not expose power tools to rain.
- Work area should be properly lighted.
- Proper electrical receptacle should be available for tool. Three-prong plug should be plugged directly into properly grounded, three-prong receptacle.
- Extension cords should have a grounding prong and the three wires of the extension cord should be of the correct gauge.
- Keep visitors at a safe distance from work area.
- Keep children out of workplace. Make workshop childproof. Use padlocks, master switches or remove switch keys to prevent any unintentional use of power tools.

TOOL SHOULD BE MAINTAINED

- Always unplug tool prior to inspection.
- Consult manual for specific maintaining and adjusting procedures.
- Keep tool lubricated and clean for safest operation.
- Remove adjusting tools. Form habit of checking to see that adjusting tools are removed before switching machine on.
- Keep all parts in working order. Check to determine that the guard or other parts will operate properly and perform their intended function.
- Check for damaged parts. Check for alignment of moving parts, binding, breakage, mounting and any other condition that may affect a tool's operation.
- A guard or other part that is damaged should be properly repaired or replaced. Do not perform makeshift repairs. (Use parts list provided to order replacement parts.)

KNOW HOW TO USE TOOL

- Use right tool for job. Do not force tool or attachment to do a job for which it was not designed.
- Disconnect tool when changing belt or abrasive disc.
- Avoid accidental start-up. Make sure that the tool is in the "OFF" position before plugging in.
- Do not force tool. It will work most efficiently at the rate for which it was designed.
- Keep hands away from moving parts and sanding surfaces.
- Never leave tool running unattended. Turn the power off and do not leave tool until it comes to a complete stop.
- Do not overreach. Keep proper footing and balance.
- Never stand on tool. Serious injury could occur if tool is tipped or if belt or disc are unintentionally contacted.
- Know your tool. Learn the tool's operation, application and specific limitations.
- Use recommended accessories (refer to page 13). Use of improper accessories may cause risk of injury to persons.
- Handle the workpiece correctly. Protect hands from possible injury.
- Turn machine off if it jams. Belt jams when it digs too deeply into workpiece. (Motor force keeps it stuck in the work.)
- Support workpiece with miter gauge, belt platen or work table.
- Maintain 1/16" maximum clearance between table and sanding belt or disc.

CAUTION: Think safety! Safety is a combination of operator common sense and alertness at all times when tool is being used.

WARNING: Do not attempt to operate tool until it is completely assembled according to the instructions.

UNPACKING

Refer to Figure 1.

Check for shipping damage. If damage has occurred, a claim must be filled with carrier. Check for completeness. Immediately report missing parts to dealer.

The sander comes assembled as one unit. Additional parts which need to be fastened to sander, should be located and accounted for before assembling.

A Sander
B Work Stop
C Table
D Dust Collection Bag
E Bag Clamp
F Miter Gauge Assembly
G Handle
Foot (4) Not Shown
Mounting Bracket (4) Not Shown

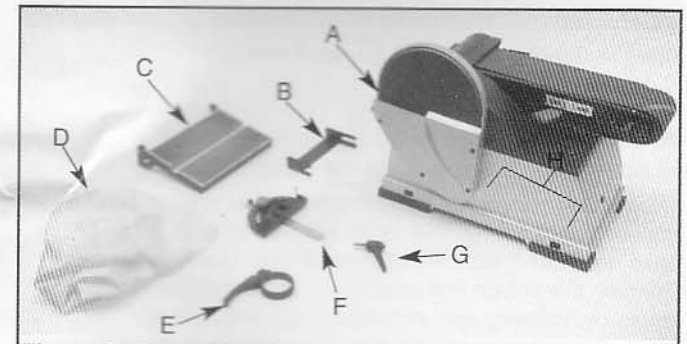


Figure 1 - Unpacking Sander

ASSEMBLY

Refer to Figures 2 - 6.

CAUTION: Do not attempt assembly if parts are missing. Use this manual to order replacement parts.

WARNING: Do not operate machine until completely assembled. Do not operate machine until you have completely read and understood this manual.

TOOLS NEEDED

While assembling or adjusting your belt and disc sander, you will need the following tools:

- 3 and 5mm Hex Wrenches
- Combination Square
- Phillips Screwdriver

MOUNT SANDER

Refer to Figures 2 and 3.

Choose a suitable location to mount the sander. The sander must be installed in a place with ample lighting and correct power supply. To install sander:

- The sander must be bolted to a firm, level surface.
- Make sure there is plenty of room for moving the workpiece. There must be enough room that neither operators nor bystanders will have to stand in line with the wood while using the tool. Allow room so that belt assembly can be positioned horizontally.
- Press one foot onto each corner of the base of the sander.

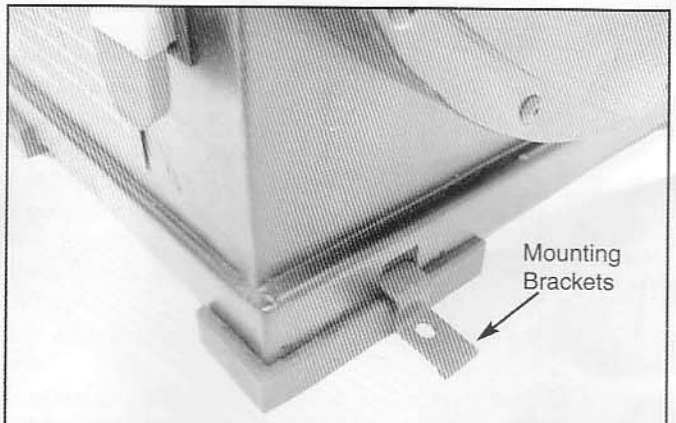


Figure 2 - Insert Mounting Brackets into Slots of Sander Base

- Sander can be installed on a workbench or a tool stand (see Recommended Accessories, page 13) using bolts, lock washers and hex nuts (not supplied) and mounting brackets (included).
- Figure 3 shows the base dimensions, mounting holes and required space to allow for table assembly and belt assembly in horizontal position.

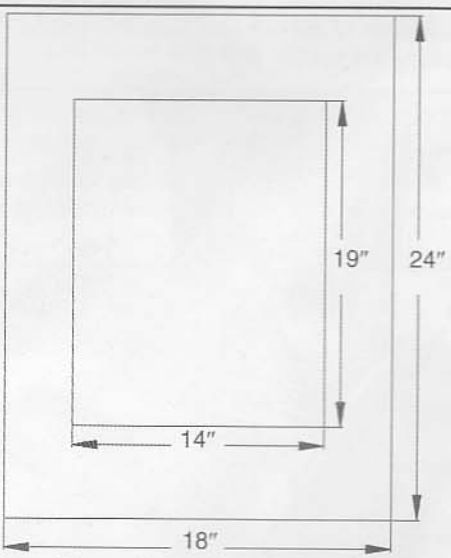


Figure 3 - Base Dimension and Required Space

ATTACH TABLE

Refer to Figures 4 and 5, page 4.

The included table is used with both the disc and belt.

To use the table with the disc:

- Remove knobs from the disc guard, position table on disc guard and attach using bolts.
- Thread locking handle through table and into disc guard.
- Loosen handle. Using a combination square, set the table perpendicular to the disc, and secure in position. If necessary, set pointer at 0°.

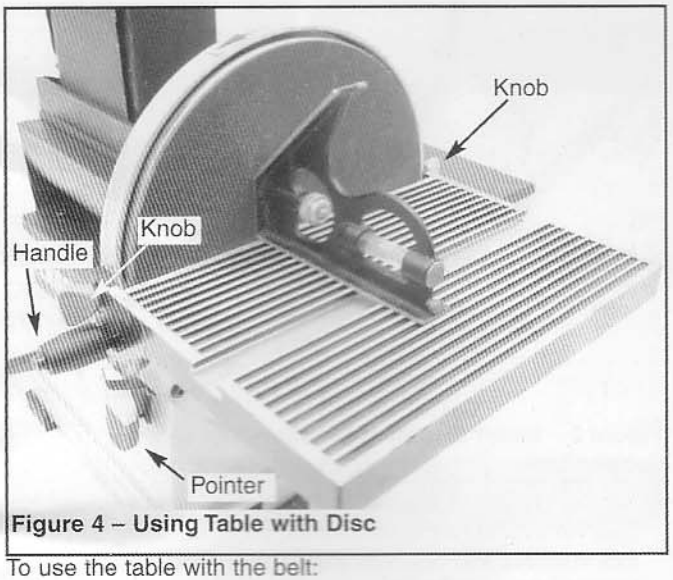


Figure 4 – Using Table with Disc

To use the table with the belt:

- Position table between belt housing and disc guard. Secure table using two knobs.
- Thread locking handle through table into bracket.
- Loosen handle. Using a combination square, set the table perpendicular to the belt and secure in position. If necessary, set pointer at 0°.

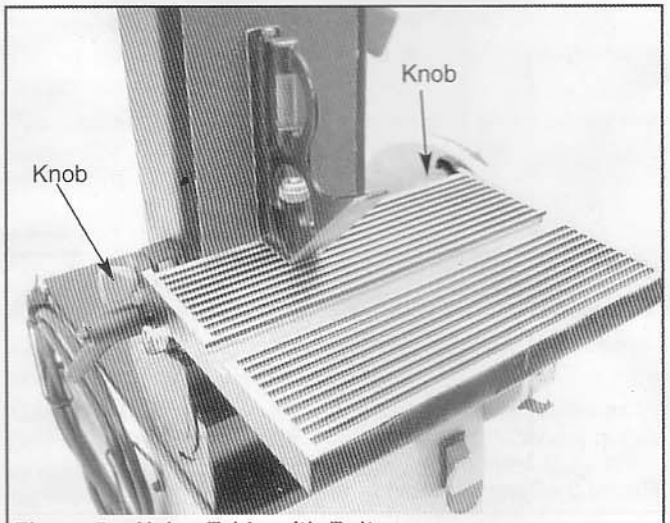


Figure 5 – Using Table with Belt

ATTACH DUST COLLECTION BAG

Refer to Figure 6.

- Place clamp over bag sleeve.
- Slide sleeve with clamp over the dust port.
- Secure in position by tightening clamp handle. **Do not force** handle. Rotate the handle to increase the clamp size.

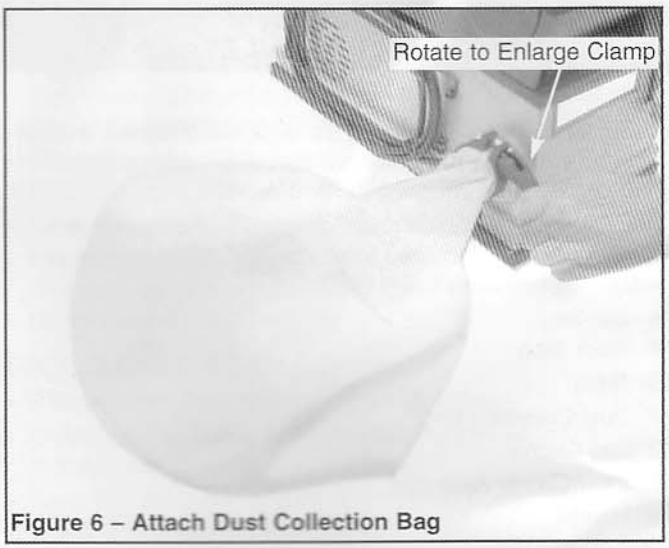


Figure 6 – Attach Dust Collection Bag

INSTALLATION

Refer to Figures 7, 8 and 9, pages 4 and 5.

POWER SOURCE

WARNING: Do not connect sander to the power source until all assembly steps have been completed.

The motor is designed for operation on the voltage and frequency specified. Normal loads will be handled safely on voltages not more than 10% above or below specified voltage. Running the unit on voltages which are not within range may cause overheating and motor burn-out. Heavy loads require that voltage at motor terminals be no less than the voltage specified on nameplate.

- Power supply to the motor is controlled by a single pole locking rocker switch. Remove the key to prevent unauthorized use.

OPERATION

Refer to Figures 10 - 17.

DESCRIPTION

This Belt and Disc Sander is constructed of rugged die cast aluminum and cast iron providing stability and vibration-free operation. The belt and disc are used to sand,deburr,bevel and grind workpieces of wood and plastic.

The belt housing can be pivoted from vertical to horizontal for sanding large, straight workpieces. The idler drum permits the sanding of contoured shapes and finishes. The disc can be used to sand or bevel surfaces.

Built in dust collection system collects dust from the belt and disc and exhausts the dust into an included 30-micron collection bag.

The adjustable miter gauge is used on the work table for guiding the workpiece at a desired angle while sanding. Work stop included for sanding long pieces on the belt.

MOTOR 750W

SPECIFICATIONS

Belt size	6 x 48"
Belt platen area	6 x 9"
Belt speed	1658 FPM
Disc diameter	9"
Disc speed	2200 RPM
Table dimensions	6.7 x 10"
Table tilts	0 to 45°
Dust port diameter	2"
Base dimensions	14 x 19"
Switch	SP, Locking rocker
Weight	77 lbs

WARNING: Operation of any power tool can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety goggles complying with instructions (shown on package) before commencing power tool operation. Safety goggles are available at seller's stores or catalog.

CAUTION: Always observe following safety precautions.

SAFETY PRECAUTIONS

- Whenever adjusting or replacing any parts on the tool, turn switch OFF and remove the plug from power source.
- Recheck table handle and bolts. They must be tightened securely.
- Make sure all guards are properly attached. All guards should be securely fastened.
- Make sure all moving parts are free and clear of any interference.
- Make sure all fasteners are tight and have not vibrated loose.
- With power disconnected, test operation by hand for clearance and adjust if necessary.
- Always wear eye protection or face shield.
- Make sure abrasive belt always tracks properly. Correct tracking gives optimum performance.
- After turning switch on, always allow belt and disc to come up to full speed before sanding or grinding.
- Be sure disc turns counterclockwise. Abrasive belt must travel downward.
- Avoid kickback by sanding in accordance with the directional arrows.
- Keep your hands clear of abrasive belt, disc and all moving parts.
- For optimum performance, do not stall motor or reduce speed. Do not force the work into the abrasive.
- Always support workpiece with table or work stop when sanding with belt and with table when sanding with disc.
- Never push a sharp corner of the workpiece rapidly against the belt or disc. Abrasive backing may tear.
- Replace abrasives when they become loaded (glazed) or frayed.

ADJUSTING BELT TRACKING

Refer to Figure 11.

- Quickly turn the switch ON and OFF to check the tracking. Belt should ride centered on idler and drive drums. Adjust tracking nut as needed to center belt on drums.
- If belt moves to the left, turn tracking nut to the right. If belt moves to the right, turn tracking nut to the left.
- Quickly turn switch ON and OFF again. If belt moves to one side, continue adjusting tracking nut as needed to center belt on drums.

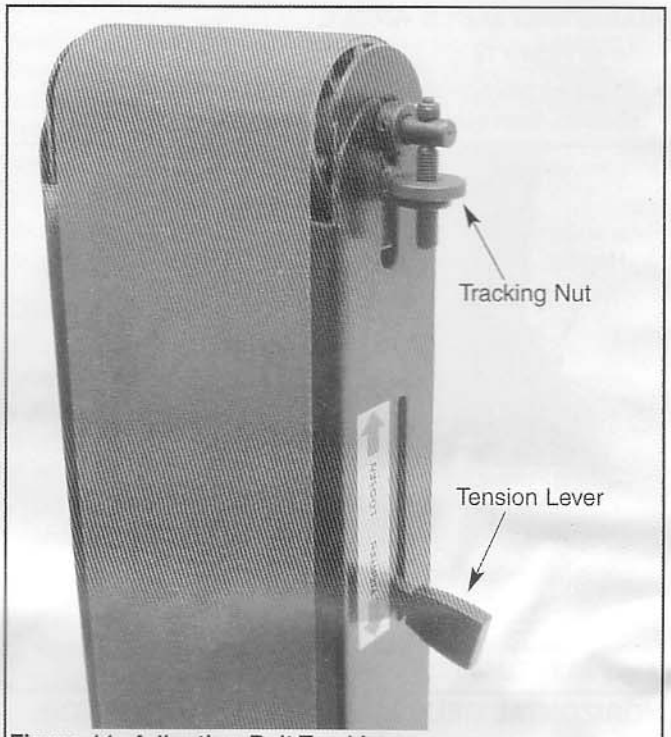


Figure 11- Adjusting Belt Tracking

ADJUSTING BELT ASSEMBLY POSITION

Refer to Figure 12.

Sanding belt assembly can be adjusted from vertical to horizontal position, or any angle in between.

- Loosen socket head bolt that is threaded into pivot bracket. Bolt is accessed through belt cover (see Figure 12).
- Tilt belt assembly to desired position. Secure belt assembly position by tightening socket head bolt in pivot bracket.
- Adjustable positive stops are provided for both horizontal and vertical positions.

NOTE: The horizontal limit stop is located on top of the base and the vertical limit stop is located beneath belt cover.

Figure 12 - Loosen Bolt to Tilt Belt Assembly

ADJUSTING TABLE ANGLE

Refer to Figure 13.

- To adjust table angle, loosen handle, tilt table to desired position, then secure by tightening handle.

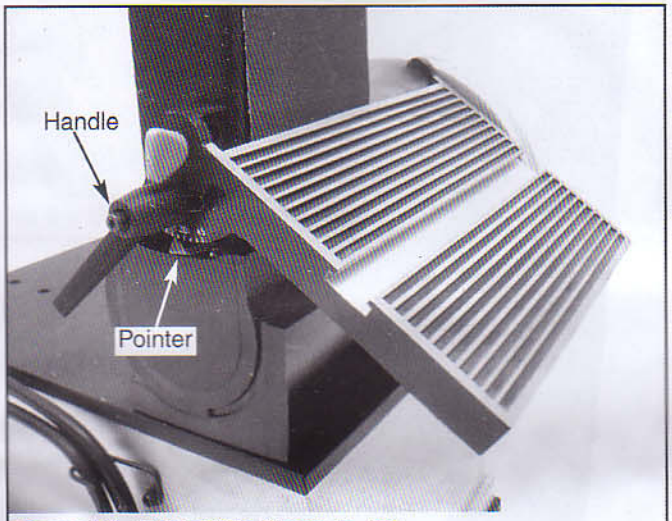


Figure 13 - Table Tilts Down to 45°

HORIZONTAL BELT SANDING WITH WORK STOP

Refer to Figure 14.

- Remove table from belt assembly.
- Tilt belt assembly from vertical to horizontal position and secure in position.
- Mount work stop to belt assembly using the two bolts.
- Idler drum can be used as a contact drum to sand surfaces.

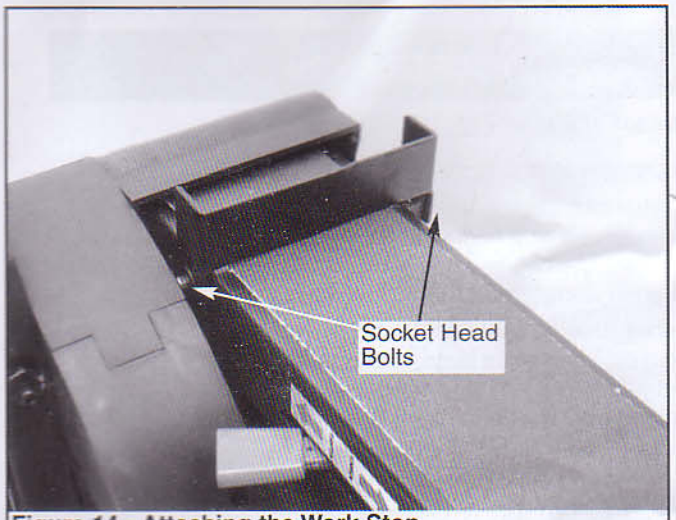


Figure 14 - Attaching the Work Stop

ABRASIVE BELT SANDING

- Finishing flat surfaces: Hold workpiece firmly with both hands; keep fingers away from abrasive belt.

  Use table to position and secure work being sanded. Keep end butted against table and move work evenly across abrasive belt.
- Finishing long pieces: Use belt in horizontal position with work stop. Apply only enough pressure to allow abrasive belt to remove material.

  Use work stop to position and secure work being sanded. Keep end butted against work stop and move work evenly across abrasive belt. Use extra caution when finishing very thin pieces.
- Finishing curved edges: Finish outside curves on flat portion of abrasive belt. Finish inside curves on idler drum portion of abrasive belt.
- Finishing end grain: It is more convenient to finish ends of long workpieces with the abrasive belt in a vertical position.

  Position table on belt side of sander. Move work evenly across abrasive belt. For accuracy, use miter gauge. Table may be tilted for beveled work.

ABRASIVE DISC SANDING

- Abrasive disc sanding is well suited for finishing small flat surfaces and convex edges.
- Move workpiece across down side (left) of abrasive disc. Hold workpiece firmly with both hands; keep fingers away from abrasive disc.
- Abrasive disc moves fastest and removes more material at outer edge.
- For accuracy, use miter gauge.

USING MITER GAUGE

Refer to Figure 15, page 8.

- Use the miter gauge for securing the work and holding the proper angle while sanding.
- Use a combination square to adjust miter gauge square to belt (disc). Pointer should be at zero. Loosen screw and reposition pointer if necessary.
- After setting miter gauge square to belt (disc), adjust to desired angle by repositioning the miter gauge scale and locking it into place with knob.

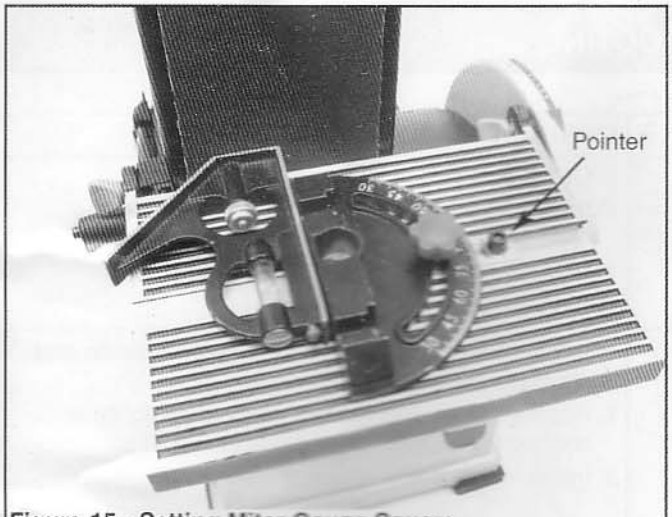


Figure 15 - Setting Miter Gauge Square

REPLACING ABRASIVE BELT

Refer to Figure 16.

- Sanding belt should be replaced when worn, torn, or glazed.
- Remove table assembly.
- Remove pointer, then slide cover up and out from dust deflector.
- Release belt tension by pushing tension lever toward idler drum. Slide old belt off the drive and idler drums.

NOTE: There may be an arrow on the inside of the belt. The arrow should point in the direction of belt travel to ensure that the splice in the belt will not come apart.

- Slide new belt over the drive and idler drums; center belt on drums.
- Additional abrasive belts are available (See Recommended Accessories, page 13).
- Push tension lever towards drive drum to tension belt.
- Check tracking. See "Adjusting Belt Tracking", page 6.
- Assemble in reverse order.

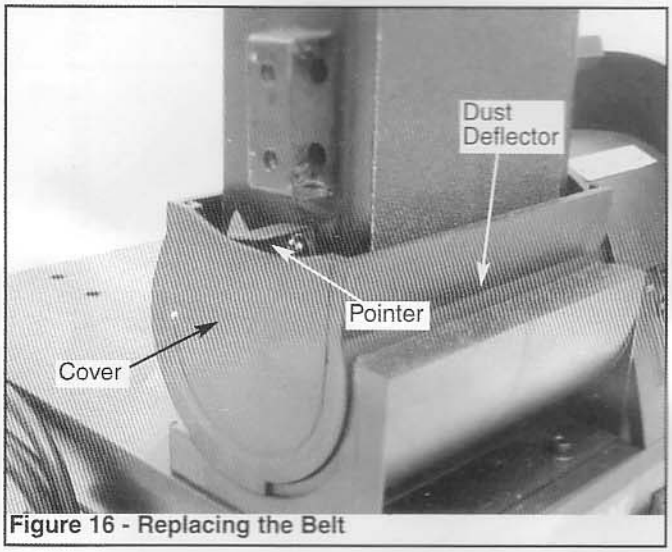


Figure 16 - Replacing the Belt

REPLACING ABRASIVE DISC

Refer to Figure 17.

- Remove table assembly.
- Remove disc cover by loosening and removing four screws.
- Remove old abrasive disc by peeling it from the aluminum disc. Removing aluminum disc is not necessary.
- Clean aluminum disc if necessary. Select the desired abrasive disc and apply to aluminum disc.
- Additional abrasive discs are available (See Recommended Accessories, page 13).
- Replace disc cover.

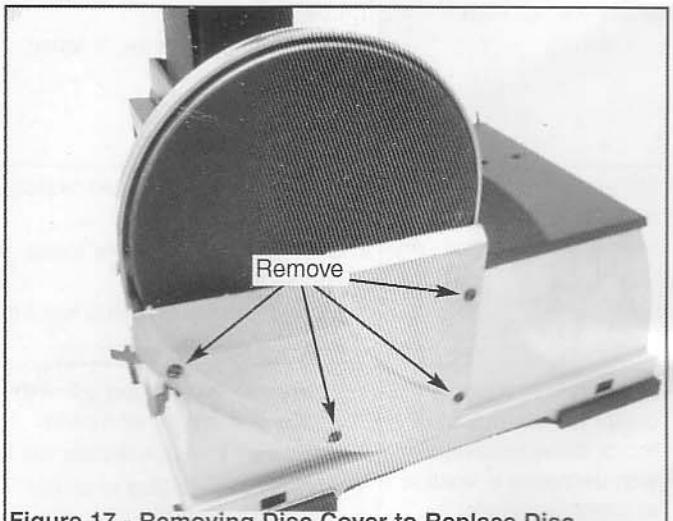


Figure 17 - Removing Disc Cover to Replace Disc

MAINTENANCE

WARNING: Make certain that the unit is disconnected from power source before attempting to service or remove any component.

CLEANING

Keep machine and workshop clean. Do not allow sawdust to accumulate on the tool. Keep the drums clean. Dirt on drums will cause poor tracking and belt slippage. Periodically empty the dust collection bag.

Be certain motor is kept clean and is frequently vacuumed free of dust.

Use soap and water to clean painted parts, rubber parts and plastic guards.

LUBRICATION

The shielded ball bearings in this tool are permanently lubricated at the factory. They require no further lubrication.

- When operation seems stiff, a light coat of paste wax applied to the table will make it easier to feed the work while finishing.
- Do not apply wax to the belt platen. Belt could pick up wax and deposit it on wheels causing belt to slip.

KEEP TOOL IN REPAIR

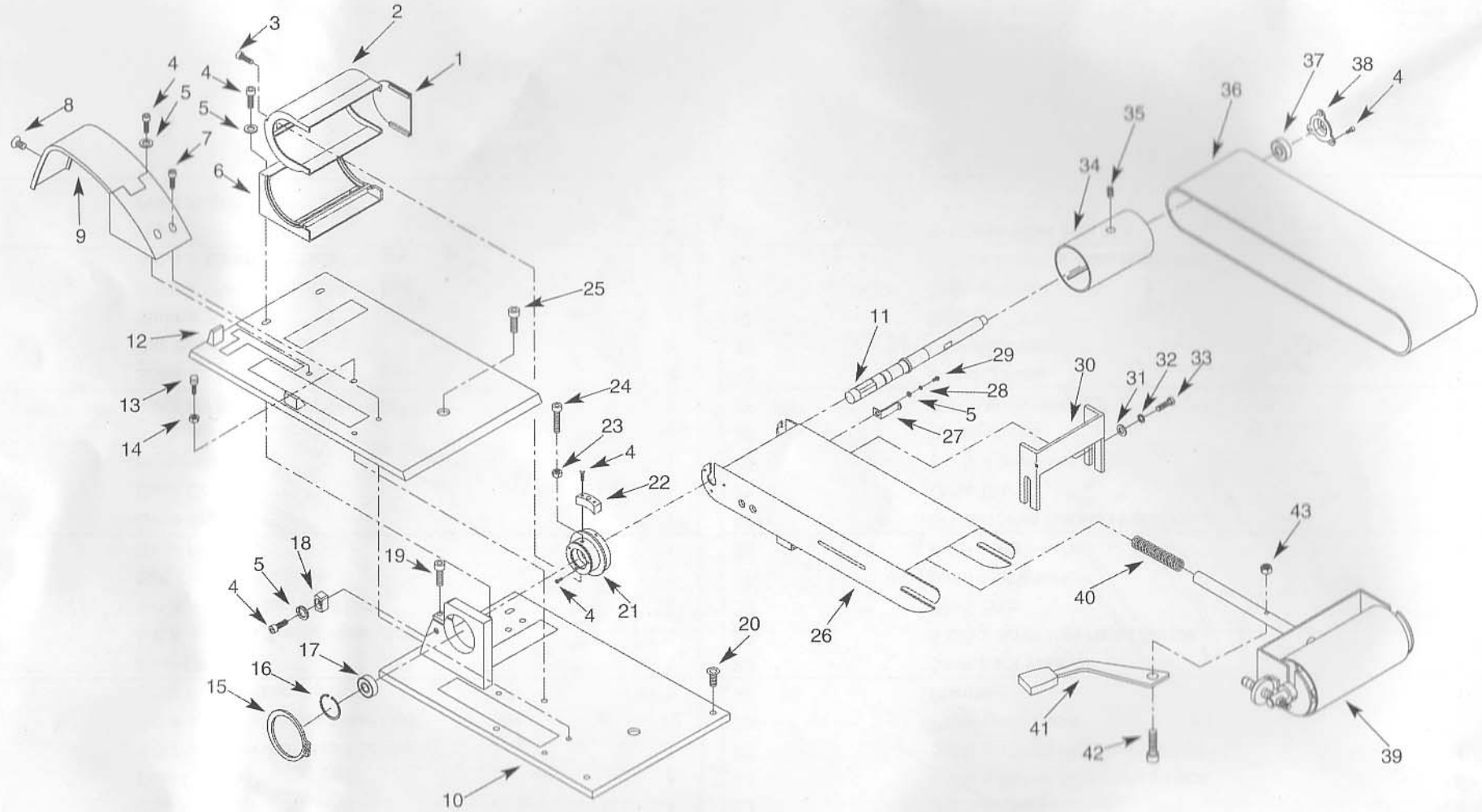
- If power cord is worn, cut, or damaged in any way, have it replaced immediately.
- Replace worn abrasives when needed.
- Replace any damaged or missing parts. Use parts list to order parts.

Any attempt to repair motor may create a hazard unless repair is done by a qualified service technician. Repair service is available at your nearest seller's store.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Motor will not start	1. Low voltage 2. Open circuit in motor or loose connections 3. Defective switch 4. Defective capacitor	1. Check power line for proper voltage 2. Inspect all lead connections on motor for loose or open connection 3. Replace switch 4. Replace capacitor
Motor will not start; fuses blown or circuit breakers are tripped	1. Short circuit in line cord or plug 2. Short circuit in motor or loose connections 3. Incorrect fuses or circuit breakers in power line	1. Inspect line cord or plug for damaged insulation and shorted wires 2. Inspect all lead connections on motor for loose or shorted terminals or worn insulation on wires 3. Install correct fuses or circuit breakers
Motor fails to develop full power (power output of motor decreases rapidly with decrease in voltage at motor terminals)	1. Power line overloaded with lights, appliances and other motors 2. Undersize wires or circuits too long 3. General overloading of power company's facilities	1. Reduce the load on the power line 2. Increase wire sizes, or reduce length of wiring 3. Request a voltage check from the power company
Motor overheats	Motor overloaded	Reduce load on motor
Motor stalls (resulting in blown fuses or tripped circuit breakers)	1. Short circuit in motor or loose connections 2. Low voltage 3. Incorrect fuses or circuit breakers in power line 4. Motor overload	1. Inspect connections in motor for loose or shorted terminals or worn insulation on lead wires 2. Correct the low line voltage conditions 3. Install correct fuses or circuit breakers 4. Reduce load on motor
Machine slows down while operating	Applying too much pressure to workpiece	Ease up on pressure
Abrasive belt runs off top wheel	Not tracking properly	See operation "Adjusting Belt Tracking"
Dust collection not working	1. Dust collection bag full 2. Belt loose or broken 3. Impeller loose or broken	1. Empty dust collection bag 2. Replace belt 3. Replace impeller

Figure 18 - Replacement Parts Illustration for Belt Housing

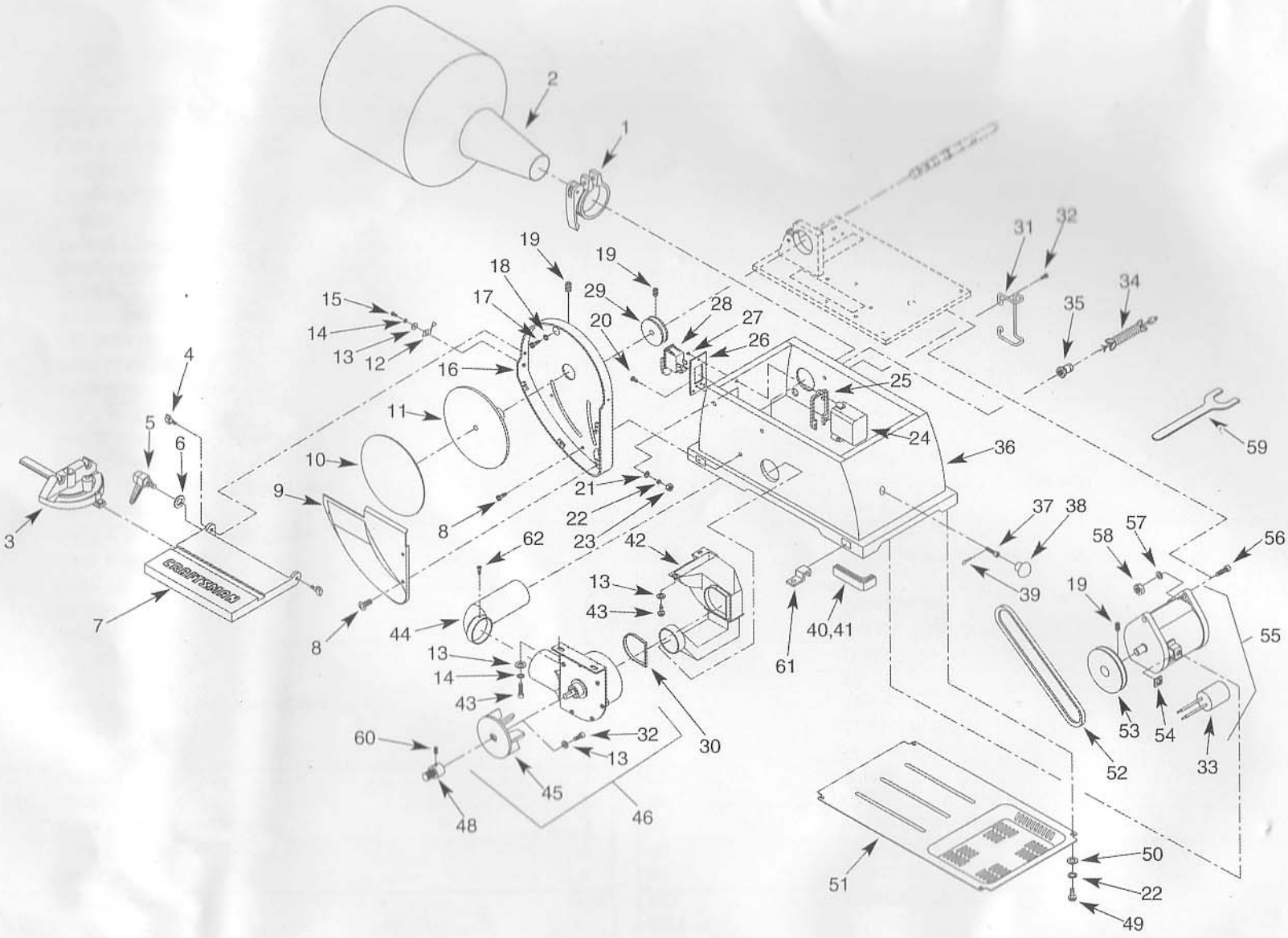


REPLACEMENT PARTS LIST FOR BELT HOUSING

KEY NO.	DESCRIPTION	QTY.
1	Side Cover	1
2	Dust Deflector	1
3	4-0.7 x 15mm Pan Head Screw	1
4	5-0.8 x 10mm Socket Head Bolt	12
5	5mm Flat Washer	5
6	Dust Cover	1
7	5-0.8 x 15mm Socket Head Bolt	2
8	5-0.8 x 8mm Flat Head Bolt	1
9	Belt Cover with Labels	1
10	Base Plate	1
11	Drive Shaft	1
12	Base Cover	1
13	Horizontal Stop	1
14	8-1.0mm Hex Nut	1
15	3AMI-50 Retaining Ring	1
16	3BMI-32 Retaining Ring	2
17	Ball Bearing 6002ZZ	2
18	Vertical Stop	1
19	6-1.0 x 25mm Socket Head Bolt	1
20	5-0.8 x 12mm Flat Head Screw	8
21	Pivot	1
22	Pivot Stop	2

KEY NO.	DESCRIPTION	QTY.
23	5-0.8mm Hex Nut	1
24	5-0.8 x 16mm Socket Head Bolt	2
25	5-0.8 x 10mm Pan Head Screw	1
26	Platen with Label	1
27	Pointer	1
28	5mm Lock Washer	1
29	5-0.8 x 8mm Pan Head Screw	1
30	Work Stop	1
31	6mm Flat Washer	2
32	6mm Lock Washer	2
33	6-1.0x15mm Socket Head Bolt	2
34	Drive Drum	1
35	6-1.0 x 8mm Set Screw	2
36	Abrasive belt	1
37	Ball Bearing 6000ZZ	1
38	Bearing Plate	1
39	Idler Assembly	1
40	Spring	1
41	Tension Lever	1
42	6-1.0 x 20mm Socket Head Bolt	1
43	6-1.0mm Fiber Hex Nut	1

Figure 19 - Replacement Parts Illustration for Motor and Disc



REPLACEMENT PARTS LIST FOR MOTOR AND DISC

KEY NO.	DESCRIPTION	QTY.
1	Bag Clamp	1
2	Dust Collection Bag	1
3	Miter Gauge Assembly	1
4	Knob	2
5	Locking Handle	1
6	6mm Flat Washer	1
7	Table	1
8	5-0.8 × 12mm Pan Head Screw	7
9	Disc Cover	1
10	Abrasive Disc	1
11	Aluminum Disc	1
12	Pointer	1
13	5mm Flat Washer	7
14	5mm Lock Washer	3
15	5-0.8 x 8mm Pan Head Screw	1
16	Disc Guard	1
17	6-1.0×15mm Socket Head Bolt	1
18	6mm Lock Washer	1
19	8-1.25 × 10mm Set Screw	5
20	4-0.7 × 15mm Pan Head Screw	2
21	4mm Serrated Washer	2
22	4mm Lock Washer	8
23	4-0.7mm Hex Nut	2
24	Switch Box	1
25	Gasket	1
26	Switch Plate	1
27	Thread Forming Screw	3
28	Switch	1
29	Driven Pulley	1
30	Gasket	1
31	Line Cord Hook	2
32	5-0.8 x 10mm Socket Head Bolt	4

KEY NO.	DESCRIPTION	QTY.
33	Capacitor	1
34	Line Cord	1
35	Strain Relief	1
36	Body	1
37	Bolt	1
38	Rubber Pad	1
39	2.5mm Split Pin	1
40	Foot A	2
41	Foot B	2
42	Dust Chute Assembly	1
43	5-0.8 × 8mm Socket Head Bolt	5
44	Dust Chute	1
45	Fan	1
46	Dust Collector Assembly (incl. Key Nos. 13, 32 and 45)	1
47	3BMI-26 Retaining Ring	1
48	Fan Pulley	1
49	4-0.7 x 10mm Pan Head Bolt	6
50	4mm Flat Washer	6
51	Base Plate	1
52	V-Belt	1
53	Motor Pulley	1
54	Nut	1
55	Motor (incl. Key No. 33)	1
56	10-1.5 x 25mm Hex Head Bolt	2
57	10mm Flat Washer	2
58	10-1.5mm Hex Nut	2
59	Wrench	1
60	6-1.0 x 8mm Set Screw	1
61	Mounting Bracket (Set of 4)	1
62	Thread Forming Screw	1
	Operator's Manual	1