

Operator's Manual



18"
4 Speed
Metal/Wood Cutting
BAND SAW

Model No.
351.224500

CAUTION: Read and follow
all Safety Rules and Operating
Instructions before First Use
of this Product.

Sears, Roebuck and Co., Hoffman Estates, IL 60179 U.S.A.

www.sears.com/craftsman

20096.00 Draft (12/19/02)

SAFETY

ASSEMBLY

OPERATION

MAINTENANCE

PARTS LIST

ESPAÑOL

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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, Sears will at its option repair or replace it free of charge. Contact your nearest Sears Service Center (1-800-4-MY-HOME) 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.

Sears, Roebuck and Co., Dept. 817WA, Hoffman Estates, IL 60179

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 United States ANSI Z87.1. 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 blade.
- 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 cutting 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 blade is unintentionally contacted.
- Know your tool. Learn the tool's operation, application and specific limitations.
- Use recommended accessories (refer to page 15). Use of improper accessories may cause risk of injury to persons.
- Handle workpiece correctly. Protect hands from possible injury.
- Turn machine off if it jams. Blade jams when it digs too deeply into workpiece. (Motor force keeps it stuck in the work.) Do not remove summed or cut off pieces until the saw is turned off, unplugged and the blade has stopped.

WARNING: The 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 United States ANSI Z87.1 (shown on package) before commencing power tool operation. Safety goggles are available through your Sears catalog.

UNPACKING

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

The band saw comes assembled as one unit. Additional parts which need to be fastened to the saw should be located and accounted for before assembling:

- A Table Assembly
- B Rip Fence with Knob
- C Miter Gauge Assembly
- D Metal Cutting Blade, 14TPI
- E Wood Cutting Blade, 8 TPI
- F V-belt

Hardware Bag (Part No. 20097.00) includes:

- Wire Nut
- 10/12mm Open End Wrench (1)
- 12/14mm Open End Wrench (1)
- 3mm and 4mm Hex Wrench (1 each)

IMPORTANT: Table is coated with a protectant. To ensure proper fit and operation, remove coating. Coating is easily removed with mild solvents, such as mineral spirits, and a soft cloth. Avoid getting solution on paint or any of the rubber or plastic parts. Solvents may deteriorate these finishes. Use soap and water on paint, plastic or rubber components. After cleaning, cover all exposed surfaces with a light coating of oil. Paste wax is recommended for table top.

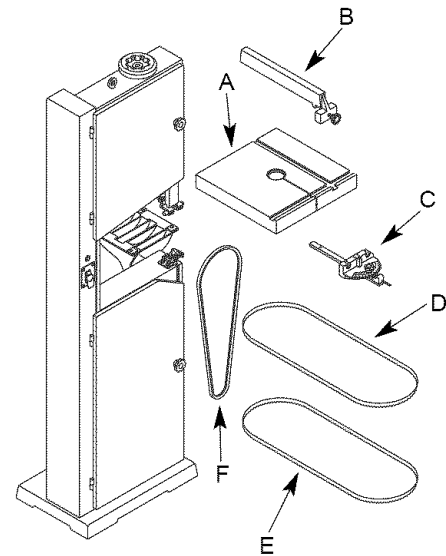


Figure 1 - Unpacking

WARNING: Never use highly volatile solvents. Non flammable solvents are recommended to avoid possible fire hazard.

ASSEMBLY

Refer to Figure 2, 6-11.

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

INSTALL METAL CUTTING BLADE

Refer to Figures 2, 8 and 9.

- Make sure blade teeth are pointing down towards table. Turn blade inside out if necessary.
- Rotate handwheel (Figure 8, Key No. 23) counter-clockwise to move blade wheels towards each other.
- Loosen handle (Figure 9, Key No. 30). Rotate knob (Figure 9, Key No. 22) to lower upper blade guide assembly as low as possible.
- Loosen two screws (Figure 9, Key No. 5). Remove blade guard (Figure 9, Key No. 4).
- Slip blade over upper and lower blade wheels, and center blade on blade wheels. Slide blade in between blade guides.
- Rotate handwheel clockwise to tension blade.
- Replace blade guard and secure in place by tightening screws. Raise upper blade guide assembly.
- Position clutch handle (Figure 8, Key No. 60) to "Metal". See Figure 2.

NOTE: The blade must be tensioned and tracked, and the blade guides must be adjusted before operation of the saw. Refer to "Tensioning Blade", "Tracking Blade" and "Blade Guides" in the OPERATION section, page 6.

INSTALL WOOD CUTTING BLADE

Refer to figures 2, 7, 8, 9 and 11.

- The V-belt (Figure. 11, Key No. 25) must be installed first when using the saw to cut wood.

- Loosen knob (Figure 7, Key No. 14). Place V-belt on motor and drive pulleys (Figure 8, Key Nos. 46 and 50).
- Tension V-belt by pushing down on motor mount plate and tightening knob. Belt is properly tensioned when light pressure applied to midpoint of the belt produces about 1/2" deflection.
- Make sure blade teeth are pointing down towards table. Turn blade inside out if necessary.
- Rotate handwheel (Figure 8, Key No. 23) counter-clockwise to move blade wheels towards each other.
- Loosen handle (Figure 9, Key No. 30). Rotate knob (Figure 9, Key No. 22) to lower upper blade guide assembly as low as possible.
- Loosen two screws (Figure 9, Key No. 5). Remove blade guard (Figure 9, Key No. 4).
- Slip blade over upper and lower blade wheels, and center blade on blade wheels. Slide blade in between blade guides.
- Replace blade guard and secure in place by tightening screws. Raise upper blade guide assembly.
- Rotate handwheel clockwise to tension blade.
- Position clutch handle (Figure 8, Key No. 60) to "Wood". See Figure 2.

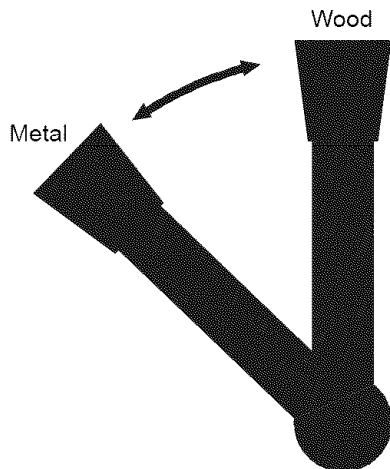


Figure 2 - Clutch Handle Position

NOTE: The blade must be tensioned and tracked, and the blade guides must be adjusted before operation of the saw. Refer to "Tensioning Blade", "Tracking Blade" and "Blade Guides" in the OPERATION section, page 6.

ATTACH TABLE

Refer to Figure 10.

- Remove the upper trunnion (Key No. 2) from the lower trunnion (Key No. 9) by removing knob (Key No. 11).
- Remove the four hex head bolts and flat washers (Key Nos. 3 and 4) from bottom of table (Key No. 1).
- Place carriage bolt and guide block (Key Nos. 7 and 8) into slot of upper trunnion.
- Carefully position upper trunnion above the four tapped holes in bottom of table and secure with four hex head bolts and flat washers. Make sure that the carriage bolt protrudes from the slot of trunnion.

- Remove table stud (Key No. 15) from the table.
- Position table assembly so that blade slides into table slot. Position upper trunnion on tip of lower trunnion, making sure that the carriage bolt goes through the slot in the lower trunnion. Tighten knob onto carriage bolt. Make sure table assembly tilts smoothly on lower trunnion and secure by tightening knob. Replace table stud.

SET HORIZONTAL STOP

Refer to Figure 10.

- When table is attached to frame, a bolt (Key No. 13) is used for a horizontal stop.
- Loosen trunnion knob and set table at 90° to blade using a square.
- Secure position of table with knob.
- Adjust bolt to contact bottom edge of table.
- Lock bolt in position with hex nut (Key No. 14).

ATTACH RIP FENCE

Refer to Figure 10.

- Rip fence (Key No. 5) rides in the slot of table (Key No. 1).
- Slide rip fence into slot.
- Hold rip fence to table and fasten by threading knob (Key No. 6) into rip fence.
- Rip fence can be repositioned by loosening knob.

ALIGN TABLE

Refer to Figure 10.

- The table must be aligned properly so that the blade is at a right angle to the table and that the rip fence is aligned with the blade.
- Lock the table in the horizontal position. Mount the rip fence on the table. Slide the rip fence next to, but not touching, the blade. Lock the rip fence.
- Check that the blade is aligned parallel with the rip fence. If the blade and fence are not parallel, loosen the four hex head bolts (Key No. 3) that secure the upper trunnion (Key No. 2) on the table. Adjust the table position so that the blade and rip fence are parallel. Secure the table position by tightening the four hex head bolts.
- After assembly, the table has to be aligned in order to have the blade running through the center of the slot in the table insert.
- To move table sideways, loosen four hex nuts (Key No. 14) on the lower trunnion (Key No. 2). Move lower trunnion to left or right until blade runs through the center of slot. Tighten hex nuts and make sure that table stays in position while nuts are being tightened.

INSTALL V-BELT (METAL CUTTING)

Refer to Figures 6, 7 and 11.

- Band saw uses a step-pulley drive system to provide a selection of blade speeds for metal cutting.
- Loosen knob (Figure 7, Key No. 14). Place V-belt (Figure 11, Key No. 25) on idler pulley and motor pulley (Figure 11, Key Nos. 23 and 26) with V-belt in desired location on pulleys. (See Figure 6, Blade Speeds, page 8.)
- Do not over tighten V-belts. Excessive tension on V-belt will reduce life of belt. Belt is properly tensioned when light pressure applied to midpoint of the belt produces about 1/2" deflection.
- Tension V-belt by pushing down on motor mount plate and tightening hex head bolt and hex nut.

MOUNT SAW TO FLOOR

- If saw is not properly positioned on a flat surface, it may develop excessive vibration.
- Mount to a flat, level surface through holes on top of base.

INSTALLATION

Refer to Figures 3, 4 and 5.

MOTOR

The 115 Volt AC motor has the following specifications:

Horsepower (Maximum Developed).....	2
Voltage	115/230
Amps.....	14/7
Hertz	60
Phase.....	Single
RPM.....	1720

POWER SOURCE

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 the specified voltage.

Running the unit on voltages which are not within the range may cause overheating and motor burn-out. Heavy loads require that the voltage at motor terminals be no less than the voltage specified. Power supply to the motor is controlled by a double pole locking rocker switch. Remove the key to prevent unauthorized use.

GROUNDING INSTRUCTIONS

WARNING: Improper connection of equipment grounding conductor can result in the risk of electrical shock. Equipment should be grounded while in use to protect operator from electrical shock.

Check with a qualified electrician if grounding instructions are not understood or if in doubt as to whether the tool is properly grounded.

This tool is equipped with an approved 3 conductor cord rated at 150V and a three prong grounding type plug for your protection against shock hazards.

Grounding plug should be plugged directly into a properly installed and grounded 3-prong grounding-type receptacle, as shown (Figure 3).

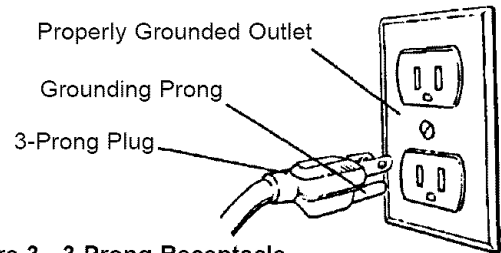


Figure 3 - 3-Prong Receptacle

Do not remove or alter grounding prong in any manner. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electrical shock.

WARNING: Do not permit fingers to touch the terminals of plug when installing or removing from outlet.

Plug must be plugged into matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify plug provided. If it will not fit in outlet, have proper outlet installed by a qualified electrician.

Inspect tool cords periodically, and if damaged, have them repaired by an authorized service facility.

Green (or green and yellow) conductor in cord is the grounding wire. If repair or replacement of the electric cord or plug is necessary, do not connect the green (or green and yellow) wire to a live terminal.

Where a 2-prong wall receptacle is encountered, it must be replaced with a properly grounded 3-prong receptacle installed in accordance with National Electric Code and local codes and ordinances.

WARNING: This work should be performed by a qualified electrician.

A temporary 3-prong to 2-prong grounding adapter (see Figure 4) is available for connecting plugs to a two pole outlet if it is properly grounded.

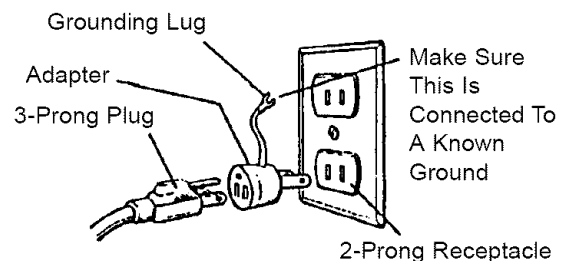


Figure 4 - 2-Prong Receptacle with Adapter

Do not use a 3-prong to 2-prong grounding adapter unless permitted by local and national codes and ordinances. (A 3-prong to 2-prong grounding adapter is not permitted in Canada.) Where permitted, the rigid green tab or terminal on the side of the adapter must be securely connected to a permanent electrical ground such as a properly grounded water pipe, a properly grounded outlet box or a properly grounded wire system.

OPERATION

Refer to Figures 6 - 11.

The Craftsman 18" Metal/Wood Cutting Band Saw is for cutting ferrous and non-ferrous metals and also hard and soft woods. The band saw features a unitized frame of welded steel construction and a solid cast iron work surface to ensure durability. Table tilts 45° and has a miter gauge and precision machined rip fence for performing many different operations. Eighteen inch balanced cast iron wheels with ball bearings and rubber treads accommodate blade widths up to 1". A convenient tensioning and tracking mechanism makes blade changing quick and easy.

SPECIFICATIONS

Depth of throat	17 ³ / ₄ "
Maximum depth of cut	10 ³ / ₄ "
Table size	18 x 19"
Table tilt	0 to 45°
Wheel diameter	18"
Blade length	133"
Blade range	132-134"
Blade width	³ / ₁₆ to 1"
Blade speeds	80, 150, 200 and 2,800 FPM
Overall dimensions	75 x 33 x 24"
Shipping weight	280 lbs
Dust collection port	4"

CAUTION: Always observe the following safety precautions:

- Make sure that blade guides and thrust bearings are positioned and adjusted correctly to prevent sideways and rearward movement of the blade. Adjust upper guide to just clear workpiece.
- Check to make sure blade is tensioned and tracking properly. Do not over tension the blade in order to prevent premature blade wear and breakage. Avoid under tensioning to eliminate back and forth, side to side blade movement as it cuts.
- Use proper blade and speed for the cutting operation.
- After turning saw on, allow blade to come to full speed before attempting any cutting operation.
- Support workpiece properly and use a smooth steady feed to guide work through the cut. Use push sticks or push blocks when required.
- Keep hands away and out of line with moving parts.
- Always wear eye protection.

Many cover plate screws, water pipes and outlet boxes are not properly grounded. To ensure proper ground, grounding means must be tested by a qualified electrician.

EXTENSION CORDS

- The use of any extension cord will cause some drop in voltage and loss of power.
- Wires of the extension cord must be of sufficient size to carry the current and maintain adequate voltage.
- Use the table to determine the minimum wire size (A.W.G.) extension cord.
- Use only 3-wire extension cords having 3-prong grounding type plugs and 3-pole receptacles which accept the tool plug.
- If the extension cord is worn, cut or damaged in any way, replace it immediately.

EXTENSION CORD LENGTH

Wire Size	A.W.G.
Up to 25 ft.	14
25-50 ft.	12

NOTE: Using extension cords over 50 ft. long is not recommended.

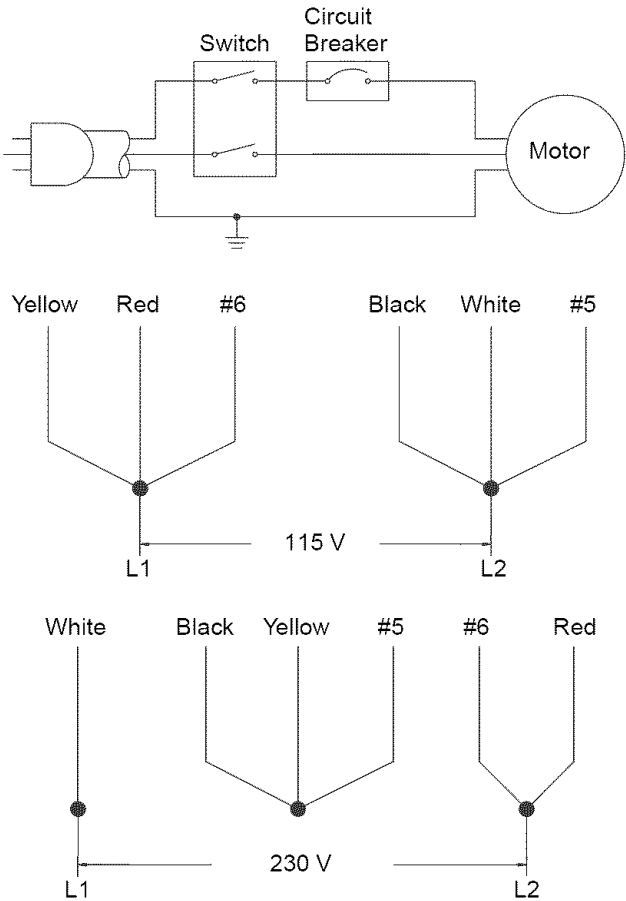


Figure 5 - Wiring Diagram

REMOVING BLADE

Refer to Figures 8 and 10.

WARNING: Disconnect band saw from power source when changing or adjusting blades. Wear leather gloves when handling band saw blades. Never wear gloves when operating saw.

- Loosen hex nuts (Figure 8, Key No. 30) and rotate handwheel (Figure 8, Key No. 23) to release blade tension. Be careful; blade may spring from saw when tension is released. Remove table stud (Figure 10, Key No. 15), take out the released blade and replace with another blade.

INSTALLING BLADE

- Although many of the adjustments may not be altered when blade is removed, every adjustment should be checked prior to using a newly installed blade.
- Follow safety precautions every time saw is operated.
- Make sure blade teeth are pointing down towards table. Turn blade inside out if necessary.
- Slip new blade into table slot and over upper and lower blade wheels and center blade on blade wheels. Slide blade in between blade guides. Replace table stud.
- Tension and track blade as described in the following sections.

TENSIONING BLADE

Refer to Figure 8.

- Tension blade by rotating handwheel (Key No. 23). Be sure blade guides do not interfere with blade path.
- Tighten blade until it is properly tensioned.
- A properly tensioned blade will ring slightly when back of blade is plucked (like a string on an instrument).

NOTE: Check tension of new blade. Additional tension may be required after a few minutes of operation.

TRACKING BLADE

Refer To Figure 8.

- Track blade after it has been tensioned. A change in blade tension will affect wheel alignment.
- Proper tracking is achieved when drive and idler wheels are aligned. Knob (Key No. 29) is used to tilt tracking bar (Key No. 13) and align blade wheels.
- Loosen hex nut (Key No. 30) which locks tracking knob (Key No. 29). Turn idler wheel (Key No. 7) by hand and observe how blade rides on wheels.
- If blade rides away from cabinet, turn knob clockwise to tilt idler wheel up.
- If blade rides into cabinet, turn tracking knob counterclockwise.
- When blade is tracking properly, lock position by holding knob and tightening hex nuts (Key No. 30) against the cabinet.

ALIGNMENT OF DRIVE WHEEL

Refer to Figure 11.

NOTE: Only attempt adjusting drive wheel alignment if blade cannot be properly tracked with tracking adjustment alone.

- A blade under high tension may also pull drive wheel out of alignment.
- Adjust alignment of drive wheel using hex head bolts (Key Nos. 8 and 30).

BLADE GUIDES

NOTE: Adjust blade guides only after blade has been properly tensioned and tracked.

- Blade guides support blade at sides and rear of blade, and prevent twisting or deflection.
- Blade guides should not touch blade when no workpiece is in contact with blade. Adjust guides as described in following sections.

UPPER BLADE GUIDES

Refer to Figure 9.

- Upper blade guides employ guide pins for side support and a ball bearing on an adjusting pin at rear.
- Upper guide bracket (Key No. 13) should be positioned so guide on either side of blade will support as much of blade width as possible without interfering with the tooth set.
- Adjust bracket depth by loosening bolts (Key Nos. 9 and 12) and sliding brackets into position. Secure position of upper guide casting by tightening bolts.
- Loosen set screws (Key No. 15) and adjust guide pins (Key No. 14) to side of blade. Use a feeler gauge to check that guide pins are .002" away from blade.
- Lock adjustment by tightening set screws.
- Adjust thrust bearing (Key No. 17) at rear of blade by loosening set screw (Key No. 15).
- Position thrust bearing .002" away from back of blade.
- Secure position of thrust bearing by tightening set screw.
- Adjust the height of upper guide casting to clear the workpiece by 1/4". Loosen knob (Key No. 30) and rotate height adjustment knob (Key No. 22) until upper blade guide bracket clears workpiece by 1/4". Tighten knob.

LOWER BLADE GUIDES

Refer to Figure 9.

- Lower blade guides employ two guide blocks for side support. Lower guide bracket is spaced close to table surface to minimize unsupported length of blade.
- Loosen bolt (Key No. 19) to position lower guide bracket on alignment block (Key No. 31). Adjust lower guide bracket so guide blocks do not interfere with blade set. Loosen set screws (Key No. 23) for guide blocks (Key Nos. 21 and 34) and adjust guide blocks to .002" from each side of blade.

- Adjust thrust bearing (Key No. 36) at rear of blade by loosening set screw (Key No. 23). Position thrust bearing .002" away from back of blade. Secure position of thrust bearing by tightening set screw.

BLADE SELECTION

- Blades vary depending on type of material, size of workpiece and type of cut that is being performed.
- Characteristics which make blades different are width, thickness and pitch.

BLADE WIDTH

- Width of blade describes distance from tip of a tooth to back of blade.
- Width of blade will affect rigidity of blade. A wider blade will wander less and produce a straighter cut.
- Width of blade also limits the smallest radius which can be cut. A ¼" wide blade can cut about a ½" radius.

BLADE THICKNESS

- Blade thickness describes the distance between sides of blade. A thicker blade has more rigidity and stronger teeth.
- A narrow thick blade would be used to cut curves while a wide thin blade would be used to make long, straight cuts.

BLADE PITCH

- Pitch describes number of teeth per inch or tooth size. A blade with more teeth per inch will produce a smoother cut.
- The type of material being cut determines number of teeth which should be in contact with work.
- For soft metals, the proper blade has between 6 to 12 teeth per inch.
- When cutting hard metals, where shocking is more detrimental, use a blade with 12 to 24 teeth per inch.
- For softwoods, the proper blade has 4 to 8 teeth per inch.
- For hardwoods, the proper blade has 8 to 12 teeth per inch.
- There should always be at least three teeth in contact with cut to avoid shocking blade.
- Blade shocking occurs when pitch is too large and blade tooth encounters too much material. This can strip teeth from blade.
- Blade manufacturers are prepared to supply information about blades for specific applications.

BLADE SPEED

Refer to Figure 6.

- The amount of force with which the blade cuts is determined by speed.
- High cutting speeds are used on soft materials where less force is needed and a high rate of material removal is desired.

- Low cutting speeds are used on hard materials when more force is required.
- To change blade speed, position V-belt in proper configuration (see Figure 6). Reposition and tension V-belt as described in the next section.

80 FPM	Steel and Steel Alloys
150 FPM	Cast Iron and Bronze
200 FPM	Aluminum, Brass and Copper

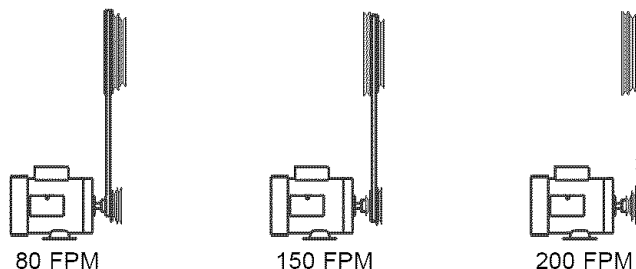


Figure 6 - Blade Speeds

REPOSITIONING V-BELT (METAL CUTTING)

Refer to Figures 6, 7 and 11.

- Blade speed is determined by the position of the V-belt on the idler and motor pulleys (Figure 11, Key Nos. 23 and 26). Blade speed is changed by changing pulley position of V-belt.
- Be sure to disconnect saw from power and turn saw OFF before attempting to change blade speed.
- To change blade speed loosen motor mount plate (Figure 7, Key No. 9) by loosening knob (Figure 7, Key No. 14). Position V-belt on motor and idler pulleys as required. See Figure 6, Blade Speeds, for recommended pulley and belt settings.
- Tension V-belt by pushing down on motor mount plate and tightening knob. Belt is properly tensioned when light pressure applied to midpoint of the belt produces about ½" deflection. Do not over tighten V-belt.

CHANGING THE SAW OPERATION FROM METAL TO WOOD CUTTING

Refer to Figures 2, 7, 8 and 11.

- Remove metal cutting blade. See "Removing Blade" above.
- Remove shroud (Figure 11, Key No. 28).
- Loosen knob (Figure 7, Key No. 14). Remove V-belt from motor and idler pulleys (Figure 11, Key Nos. 23 and 26).
- Place V-belt on motor and drive pulleys (Figure 8, Key Nos. 46 and 50).
- Tension V-belt by pushing down on motor mount plate and tightening knob. Belt is properly tensioned when light pressure applied to midpoint of the belt produces about ½" deflection.
- Change clutch handle from "metal" to "wood". (Refer to Figure 2)
- Replace shroud.

- Install wood cutting blade. See “Installing Blade”, page 7. Properly tension, track and adjust blade guides before operation.

CHANGING THE SAW OPERATION FROM WOOD TO METAL CUTTING

Refer to Figures 2, 7, 8 and 11.

- Remove wood cutting blade. See “Removing Blade” above.
- Loosen knob (Figure 7, Key No. 14). Remove V-belt from motor and drive pulleys (Figure 8, Key Nos. 46 and 50).
- Remove shroud (Figure 11, Key No. 28).
- Place V-belt on motor and idler pulleys (Figure 11, Key Nos. 23 and 26).
- Tension V-belt by pushing down on motor mount plate and tightening knob. Belt is properly tensioned when light pressure applied to midpoint of the belt produces about $\frac{1}{2}$ " deflection.
- Change clutch handle from “wood” to “metal”. (Refer to Figure 2)
- Replace shroud.
- Install metal cutting blade. See “Installing Blade”, page 7. Properly tension, track and adjust blade guides before operation.

TYPE OF CUT

- Rip fence guides workpiece to produce straight cuts on longer pieces.
- Contour cutting is done by guiding workpiece free-handed to produce curved shapes.
- Beveled cutting can be done by tilting table and using proper work guide method.
- Regardless of which work guiding method is used, a workpiece which overhangs table by more than 7" should be properly supported by support stands. (See Recommended Accessories, page 15.)

RIP FENCE OPERATION

Refer to Figure 10.

- Rip fence can be used to guide boards with one square edge past blade when table is aligned properly.
- Set rip fence to desired width of cut on inside of throat. Remember to include the thickness of material that will be removed by blade.
- Use a square to measure from tip of a tooth to fence. Lock fence securely with knob (Key No. 6).
- The portion of material between blade and fence is considered the workpiece. Material on outside and behind cut is the scrap material which is being cut off. Use the right hand to keep work against fence.
- Do not push on scrap portion of the work. This could pinch or bind blade.

- Avoid passing hands beyond the cut. Use push sticks or push blocks to finish cuts and pass workpiece away from blade.

CONTOUR SAWING

- When contour sawing, use both hands to keep workpiece flat against table and guided along desired path.
- Avoid positioning hands in line with blade. If hands slip they could contact blade.
- Try to stand to front of the saw and use hands over the portion of table which is to right of blade and before cut.
- Cut small corners by sawing around them. Saw to remove scrap until desired shape is obtained.

BEVEL CUTTING

Refer to Figure 10.

- Perform a bevel operation by tilting table. Loosen knob (Key No. 11) and tilt table to desired position.
- Use a square or protractor to set angle and lock table in position with knob. Use caution when supporting work while bevel cutting. Do not allow work to hang on blade.

MITER GAUGE

- Use miter gauge for securing and holding workpiece at desired angle to produce angled cuts. Use scale to adjust gauge to desired angle.
- Never use miter gauge and rip fence at the same time. The blade might bind in the workpiece. Operator could be injured and/or workpiece could be damaged.

BLADE CLEANING BRUSH

Refer to Figure 8.

- Make sure that brush (Key No. 36) is in contact with blade to properly remove foreign particles from drive wheel.

MAINTENANCE

WARNING: Make certain that 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 band saw.
- Keep wheels clean. Debris on wheels will cause poor tracking and blade slippage.
- Keep mechanisms and threaded or sliding surfaces clean and free of foreign particles.
- Operate band saw with a dust collector to minimize clean up.

LUBRICATION

- The shielded ball bearings are permanently lubricated and require no further lubrication.
- Small amounts of machine oil can be applied to belt tension mechanisms and threaded or sliding surfaces.
- Occasionally apply a coat of automobile type wax to table top to keep it slick and corrosion free.

KEEP BAND SAW IN REPAIR

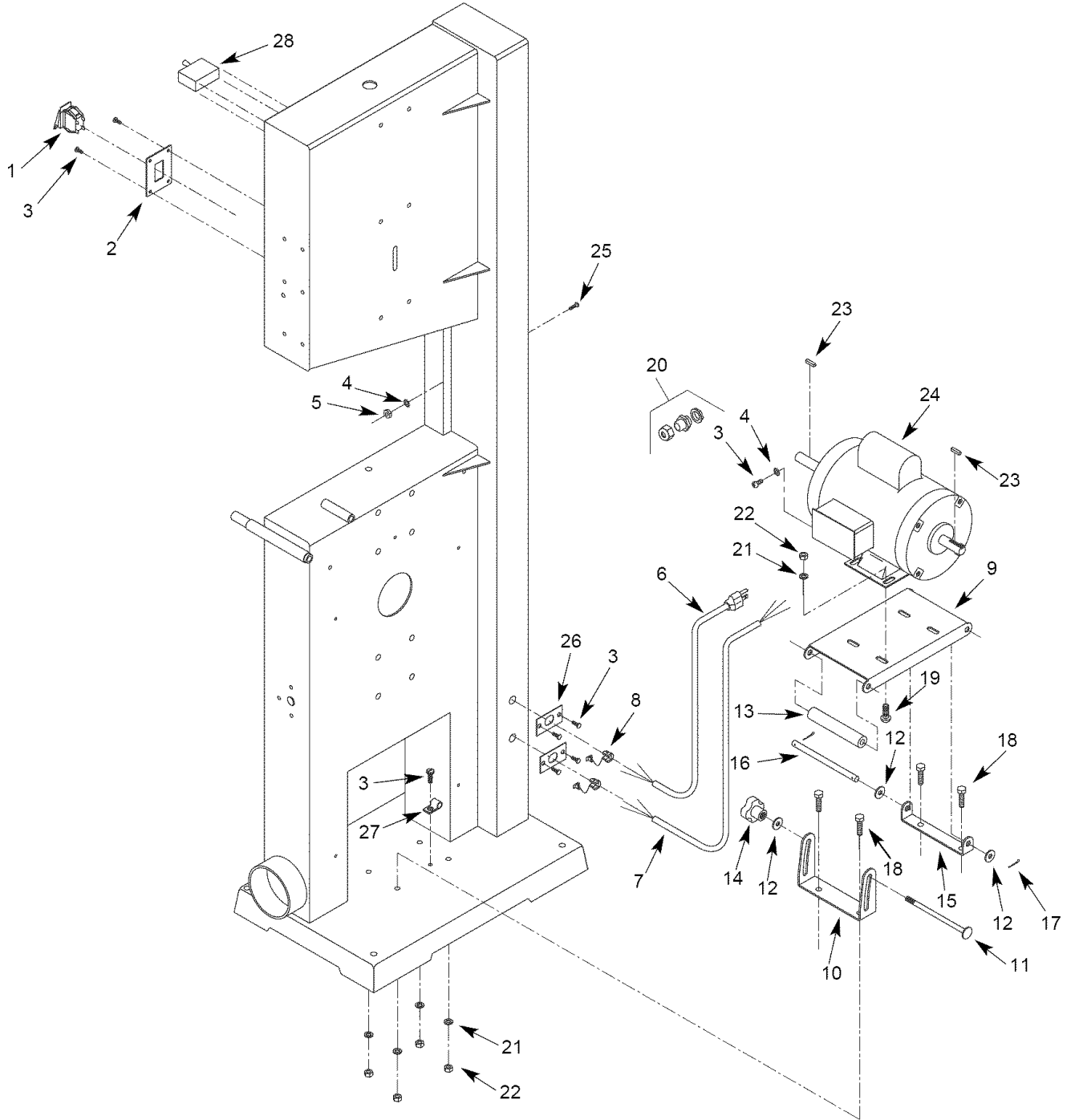
- If power cord is worn or cut in any way, have it replaced.
- Replace V-belt and blade when they are worn. Replace any damaged or missing part.
- Use parts list to order parts.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Excessive blade breakage	<ol style="list-style-type: none"> 1. Material not secure on table 2. Incorrect speed or feed 3. Blade too coarse for material 4. Incorrect blade tension 5. Teeth in contact with work before sawing 6. Blade rubs on wheel flange 7. Misaligned guides 8. Blade too thick for wheel diameter 9. Cracking at weld 	<ol style="list-style-type: none"> 1. Squarely place work on table 2. Check Blade Speed (Figure 6, page 8) 3. Use finer pitch blade 4. Tension blade properly; see "Operation" 5. Place blade in contact with work after saw is started and has reached full speed 6. Adjust wheel alignment properly 7. Adjust blade guides properly 8. Use thinner blade 9. Replace blade
Premature blade dulling	<ol style="list-style-type: none"> 1. Blade too coarse 2. Excessive blade speed 3. Inadequate feed pressure 4. Hard spots or scale in or on material 5. Work hardening of workpiece 6. Blade installed backwards 7. Insufficient blade tension 	<ol style="list-style-type: none"> 1. Use finer tooth blade 2. Try lower speed 3. Gently increase pressure 4. Reduce speed; increase rate of feed for scale and change blades for hard spots 5. Increase rate of feed 6. Remove blade, twist inside out and reinstall blade 7. Tension blade properly; see "Operation"
Crooked cuts	<ol style="list-style-type: none"> 1. Work not square 2. Rate of feed too great 3. Blade guides not adjusted properly 4. Insufficient blade tension 5. Upper blade guide too far from workpiece 6. Dull blade 7. Incorrect speed 8. Blade guide assembly loose or blade thrust bearing loose 	<ol style="list-style-type: none"> 1. Use rip fence; adjust tilt of table at 90° to blade 2. Reduce rate of feed 3. Move both guide blocks within .002" from blade (use gauge) 4. Tension blade properly; see "Operation" 5. Adjust upper guide to just clear workpiece by 1/4" 6. Replace blade 7. Check Blade Speed; see Figure 6, page 8 for recommended speeds 8. Tighten blade thrust bearing within .002" behind blade back
Rough cuts	<ol style="list-style-type: none"> 1. Too much speed or feed 2. Blade too coarse 	<ol style="list-style-type: none"> 1. Reduce speed or feed 2. Replace with finer blade
Blade is twisting or unusual wear on side/back of blade	<ol style="list-style-type: none"> 1. Cut is binding blade 2. Blade guides or bearing worn 3. Blade guides or bearings not adjusted properly 4. Blade guide brackets loose 	<ol style="list-style-type: none"> 1. Decrease feed pressure 2. Replace 3. Adjust blade guides; see "Operation" 4. Tighten properly
Teeth ripping from blade	<ol style="list-style-type: none"> 1. Teeth too coarse for work 2. Rate of feed too great 3. Vibrating workpiece 4. Teeth filling with material 	<ol style="list-style-type: none"> 1. Use blade with finer teeth 2. Decrease feed rate 3. Hold workpiece firmly 4. Use blade with coarser teeth
Motor running too hot	<ol style="list-style-type: none"> 1. Blade tension too great 2. Blade too coarse for work (typical when cutting pipe) 3. Blade too fine for work (typical when cutting slick or soft material) 4. Excessive dirt and chips 	<ol style="list-style-type: none"> 1. Reduce tension on blade 2. Use blade with finer teeth 3. Use blade with coarser teeth 4. Clean thoroughly; vacuum motor and speed change mechanism
Saw will not start	Loose electrical connections	Have qualified electrician check electrical connections

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Figure 7 - Replacement Parts Illustration for Motor



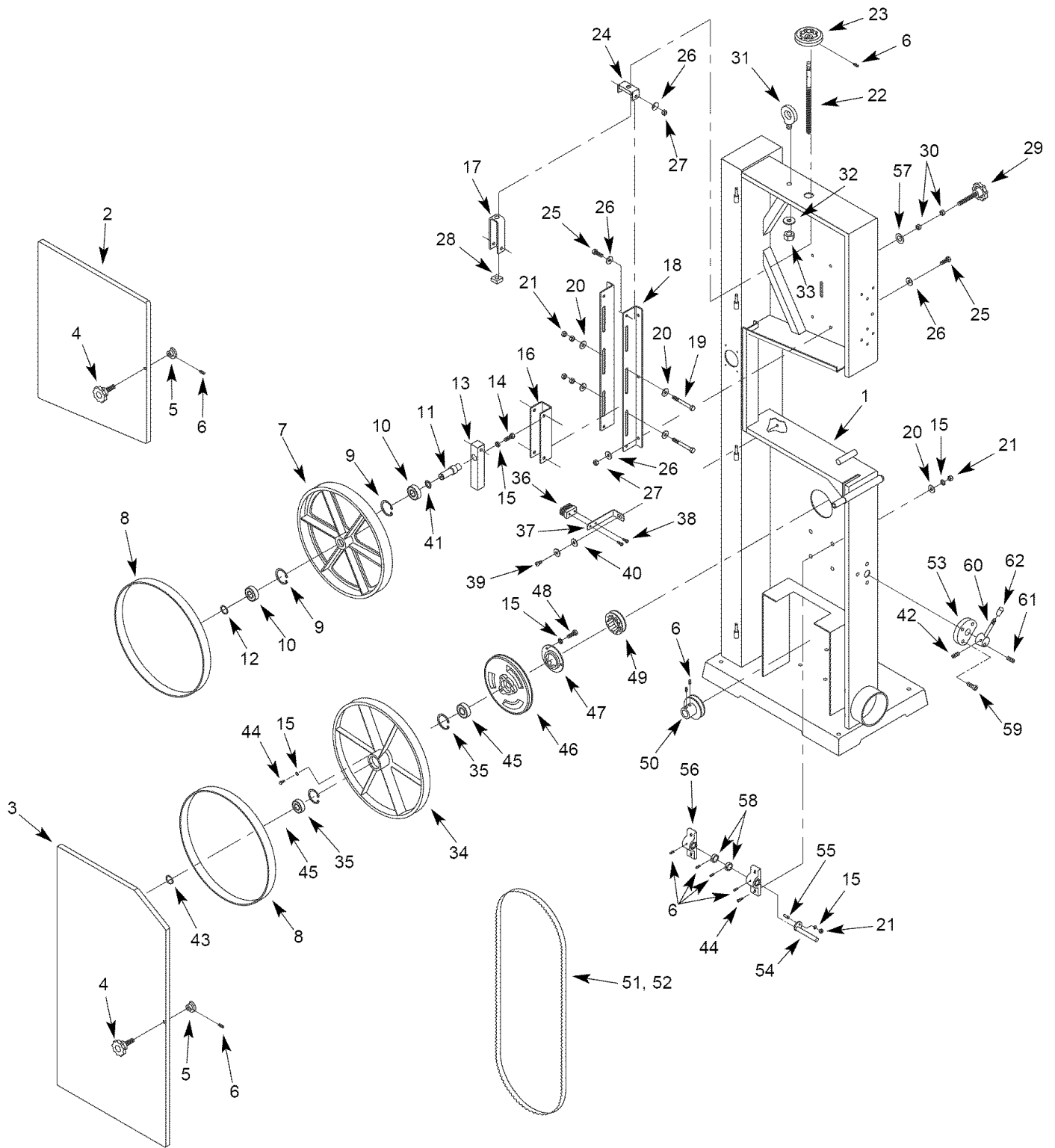
REPLACEMENT PARTS LIST FOR MOTOR

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	16080.00	Switch	1
2	03668.01	Switch Plate	1
3	00361.00	5-0.8 x 8mm Pan Head Screw	9
4	01474.00	5mm Serrated Washer	2
5	STD840508	5-0.8mm Hex Nut*	1
6	18970.00	Line Cord	1
7	18971.00	Motor Cord	1
8	02434.00	Strain Relief	2
9	08589.00	Motor Mount Plate	1
10	08590.00	Slide Bracket	1
11	18986.00	3/8-16 x 8" Carriage Bolt	1
12	STD551037	3/8" Flat Washer*	3
13	08592.00	Spacer	1
14	18953.00	Knob	1
15	08593.00	Pivot Bracket	1
16	18985.00	Clevis Pin	1
17	STD561210	1/8 x 1" Cotter Pin*	2
18	STD835020	8-1.25 x 20mm Hex Head Bolt*	4
19	05188.00	8-1.25 x 20mm Carriage Bolt	4
20	01634.00	Strain Relief	1
21	STD852008	8mm Lock Washer*	8
22	STD840812	8-1.25mm Hex Nut*	8
23	02813.00	3/16 x 3/16 x 1 1/2" Key	2
24	18972.00	Motor	1
25	01090.00	5-0.8 x 15mm Pan Head Screw	1
26	08677.00	Strain Relief Plate	2
27	03981.00	Cord Clamp	1
28	04287.00	Circuit Breaker	1

* Standard hardware item available locally.

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Figure 8 - Replacement Parts Illustration for Front



REPLACEMENT PARTS LIST FOR FRONT

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	N/A	Frame	1
2	08596.01	Upper Cabinet Door	1
3	08597.01	Lower Cabinet Door	1
4	03663.00	Knob (External Threads)	2
5	08304.00	Latch	2
6	00964.00	6-1.0 x 6mm Set Screw	9
7	08598.00	Idler Wheel	1
8	08599.00	Rubber Tread	2
9	03838.00	3BMI-40 Retaining Ring	2
10	STD315235	6203ZZ Bearing*	2
11	08600.00	Idler Shaft	1
12	00341.00	3AMI-17 Retaining Ring	1
13	03605.01	Tracking Bar	1
14	STD835025	8-1.25 x 25mm Hex Head Bolt*	1
15	STD852008	8mm Lock Washer*	12
16	03608.00	Tracking Adjustment Bracket	1
17	03606.00	Tension Bracket	1
18	03609.00	Upper Cabinet Support	2
19	STD835070	8-1.25 x 70mm Hex Head Bolt*	2
20	STD851008	8mm Flat Washer*	8
21	STD840812	8-1.25mm Hex Nut*	9
22	08601.01	Threaded Shaft	1
23	05598.01	Handwheel	1
24	03610.00	Tension Support	1
25	STD833016	6-1.0 x 16mm Hex Head Bolt*	8
26	STD851006	6mm Flat Washer*	16
27	STD840610	6-1.0mm Hex Nut*	8
28	03607.00	Tension Nut	1
29	08307.00	Tracking Knob	1
30	STD541031	5/16"-18 Hex Nut*	2
31	08308.00	10-1.5mm Eye Bolt	1
32	STD851010	10mm Flat Washer*	1

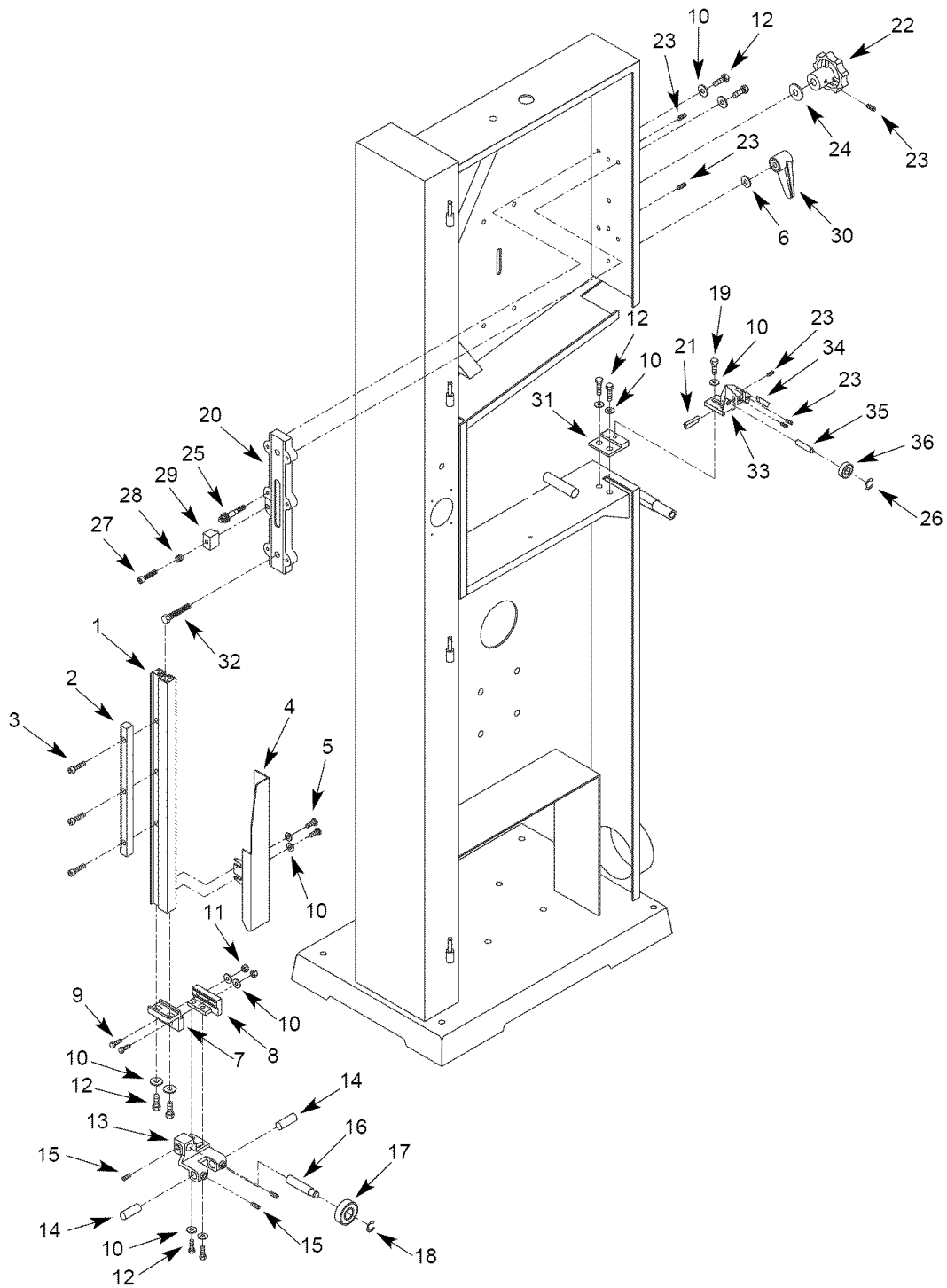
KEY NO.	PART NO.	DESCRIPTION	QTY.
33	STD841015	10-1.5mm Hex Nut*	1
34	18973.00	Drive Wheel	1
35	07904.00	3BMI-42 Retaining Ring	2
36	20071.00	Brush	1
37	03620.00	Bracket	1
38	17741.00	4.8-2.1 x 8mm Thread	2
39	00361.00	Forming Screw 5-0.8 x 8mm Pan Head Screw	1
40	STD851005	5mm Flat Washer*	2
41	08439.00	17mm Wavy Washer	1
42	00958.00	8-1.25 x 8mm Set Screw	1
43	00256.00	3AMI-20 Retaining Ring	1
44	00483.00	8-1.25 x 25mm Socket Head Bolt*	7
45	STD315545	6004ZZ Bearing*	2
46	18975.00	Drive Pulley	1
47	18927.00	Drive Clutch	1
48	STD835020	8-1.25 x 20mm Hex Head Bolt*	3
49	18928.00	Movable Clutch	1
50	18976.00	Motor Pulley	1
51	18977.00	Metal Cutting Blade, 14 TPI	1
52	20098.00	Wood Cutting Blade, 8 TPI	1
53	18934.00	Cam	1
54	18979.00	Shift Bar	1
55	18931.00	Stud	1
56	16895.00	Pillow Block with Bushing	2
57	STD551031	5/16" Flat Washer*	1
58	16981.00	Collar	2
59	02681.00	8-1.25 x 12mm Socket Head Bolt	3
60	18933.00	Clutch Handle	1
61	20073.00	1/2"-12 x 13/16 Ball Plunger	1
62	18942.00	Knob	1

* Standard hardware item available locally.
 Δ Not Shown.

Recommended Accessories		
Δ	Support Stand	9-21417
Δ	3-Roller Support Stand	9-22265
Δ	3/4" Carbon Blade, 4 TPI	9-26656
Δ	3/4" Carbon Blade, 6 TPI	9-26631
Δ	3/4" Carbon Blade, 10 TPI	9-26657
Δ	3/4" Carbon Blade, 12 TPI	9-26635
Δ	3/4" Carbon Blade, 14 TPI	9-26658

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Figure 9 - Replacement Parts Illustration for Blade Guides



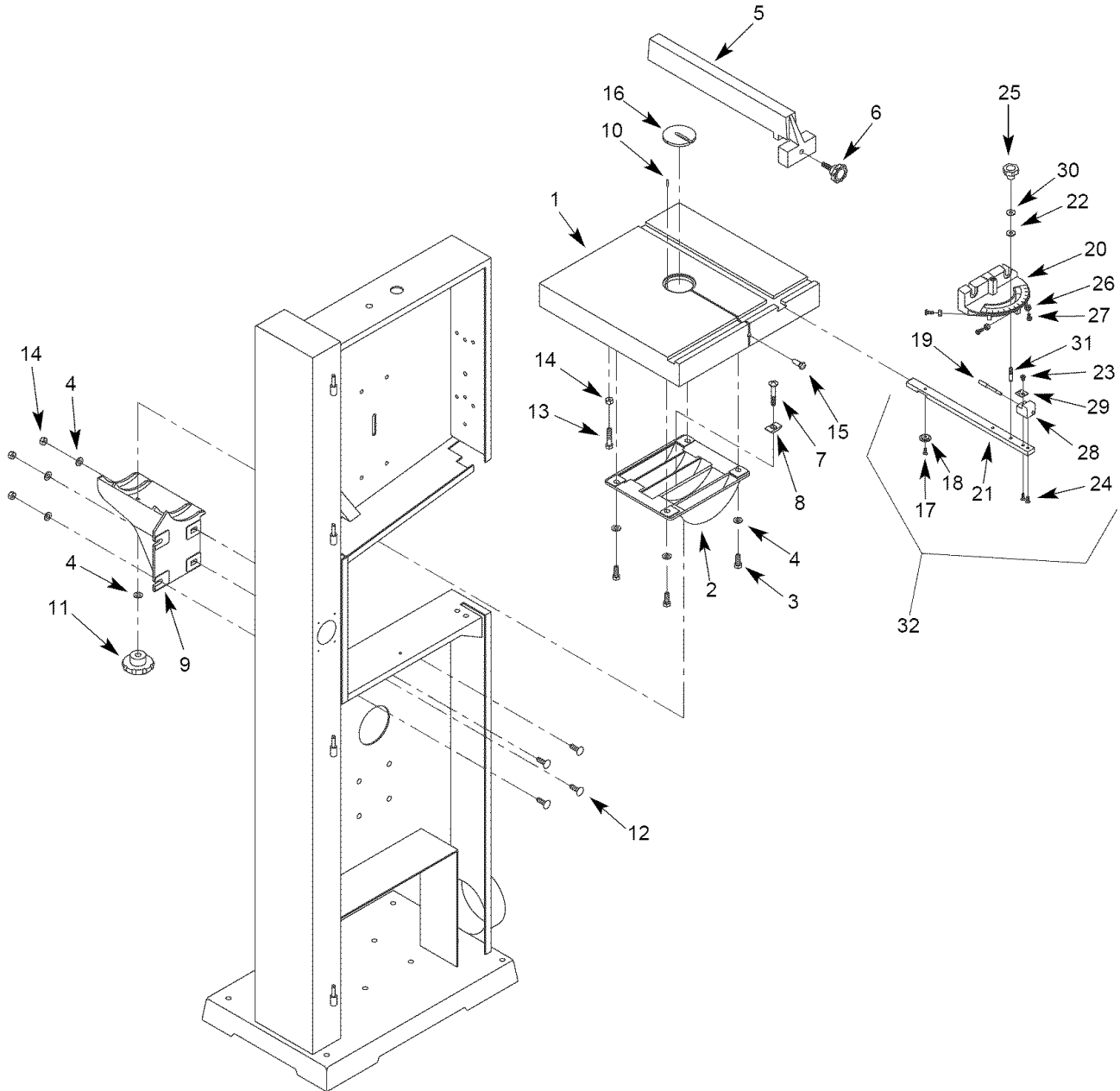
REPLACEMENT PARTS LIST FOR BLADE GUIDES

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	09562.00	Guide Bar	1
2	08605.00	Rack	1
3	06045.00	5-0.8 x 20mm Socket Head Bolt	3
4	09563.00	Blade Guard	1
5	03619.01	Thread Forming Screw	2
6	STD551031	5/16" Flat Washer*	1
7	08314.00	Guide Attaching Bracket	1
8	08607.00	Guide Depth Bracket	1
9	STD833025	6-1.0 x 25mm Hex Head Bolt*	2
10	STD851006	6mm Flat Washer*	15
11	STD840610	6-1.0mm Hex Nut*	2
12	STD833016	6-1.0 x 16mm Hex Head Bolt*	10
13	08316.00	Upper Guide Bracket	1
14	08317.00	Guide Pin	2
15	00958.00	8-1.25 x 8mm Set Screw	3
16	08318.00	Bearing Pin	1
17	STD315205	6200ZZ Bearing*	1
18	01434.00	3CMI-10 E-Ring	1
19	STD833012	6-1.0 x 12mm Hex Head Bolt*	1
20	08617.00	Guide Casting	1
21	08298.00	Guide Block	1
22	08320.00	Knob (Internal Threads)	1
23	00964.00	6-1.0 x 6mm Set Screw	6
24	STD851010	10mm Flat Washer*	1
25	08322.00	Pinion Shaft Assembly	1
26	08323.00	3CMI-8 E-Ring	1
27	01097.00	6-1.0 x 35mm Socket Head Bolt	1
28	09564.00	Spring	1
29	08324.00	Positioning Block	1
30	08352.00	Handle	1
31	06376.00	Alignment Block	1
32	08325.15	5/16"-18 x 1 1/4" Hex Low Head Bolt	1
33	08353.00	Lower Guide Bracket	1
34	08354.00	Guide Block	1
35	08355.00	Bearing pin	1
36	STD315485	608ZZ Bearing*	1

* Standard hardware item available locally.

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Figure 10 - Replacement Parts Illustration for Table



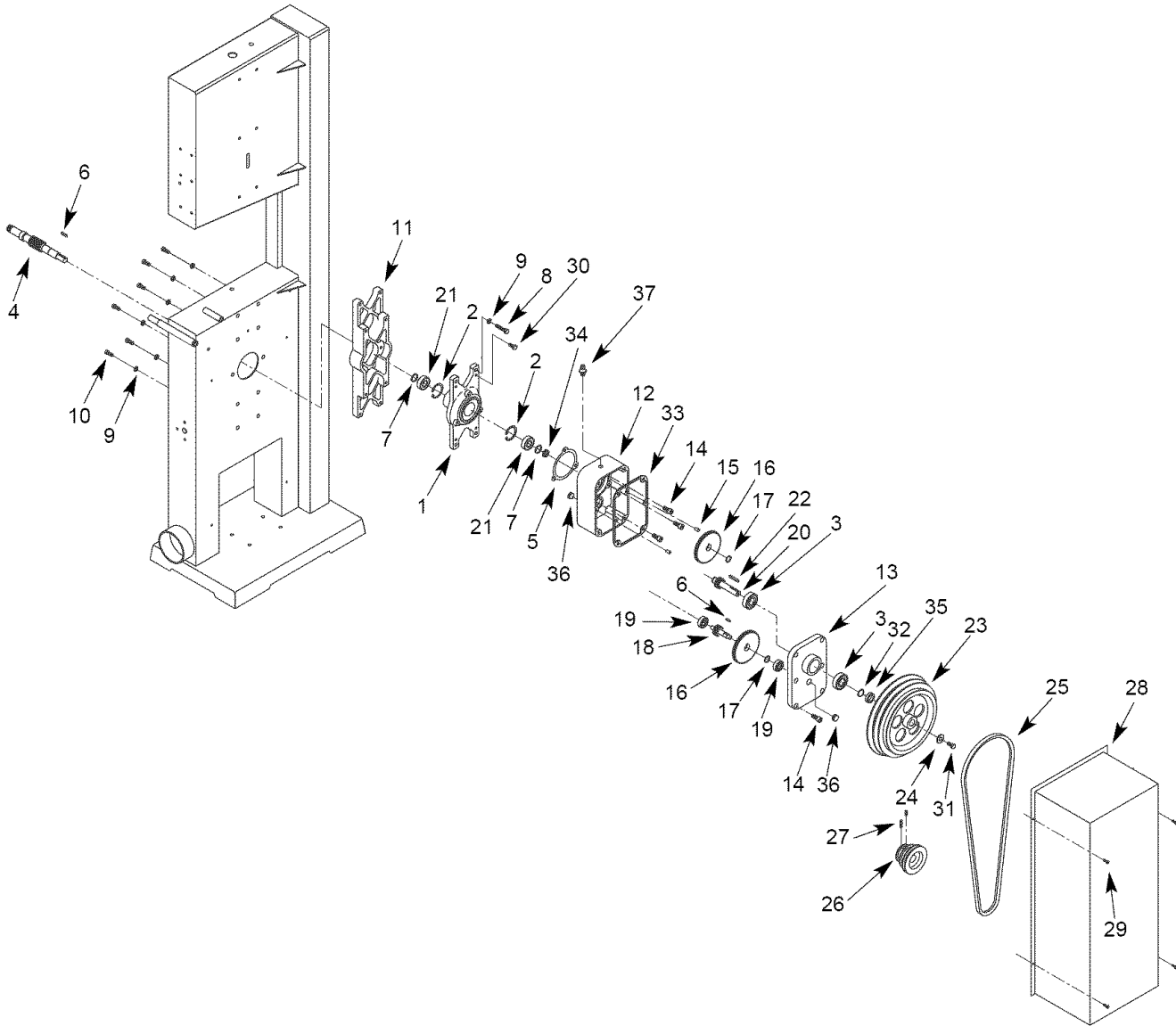
REPLACEMENT PARTS LIST FOR TABLE

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	18980.00	Table	1
2	05185.02	Upper Trunnion	1
3	STD523107	$\frac{5}{16}$ "-18 x $\frac{3}{4}$ " Hex Head Bolt*	4
4	STD551031	$\frac{5}{16}$ " Flat Washer*	9
5	05351.00	Rip Fence	1
6	00010.00	Knob (External Threads)	1
7	STD533120	$\frac{5}{16}$ "-18 x 2" Carriage Bolt*	1
8	05186.00	Guide Block	1
9	05187.00	Lower Trunnion	1
10	08634.00	4 x 12mm Spring Pin	1
11	03659.00	Knob (Internal Threads)	1
12	STD523110	$\frac{5}{16}$ "-18 x 1" Carriage Bolt*	4
13	STD523117	$\frac{5}{16}$ "-18 x $1\frac{3}{4}$ " Hex Head Bolt*	1
14	STD541031	$\frac{5}{16}$ "-18 Hex Nut*	5
15	08331.00	Table Stud	1
16	08609.00	Table Insert	1
17	01883.00	5-0.8 x 8mm Flat Head Screw	1
18	01093.00	Guide	1
19	08256.00	Indexing Pin	1
20	08251.00	Miter Gauge	1
21	08250.00	Miter Gauge Bar	1
22	08049.00	#10 Fiber Washer	1
23	01605.00	#10-24 x $\frac{1}{4}$ " Washer Head Screw	1
24	05991.00	#10-24 x $\frac{1}{2}$ " Flat Head Screw	2
25	08252.00	Knob (Internal Threads)	1
26	STD541010	#10-24 Hex Nut*	3
27	STD511007	#10-24 x $\frac{3}{4}$ " Pan Head Screw*	3
28	08253.00	Indicator	1
29	08254.00	Scale	1
30	STD551010	#10 Flat Washer*	1
31	08255.00	Threaded Pin	1
32	08257.00	Miter Gauge Assembly (Key Nos. 17 - 31)	1

* Standard hardware item available locally.

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Figure 11 - Replacement Parts Illustration for Gear Box



REPLACEMENT PARTS LIST FOR GEAR BOX

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	08332.00	Shaft Support	1
2	07904.00	3BMI-42 Retaining Ring	2
3	STD315545	6004ZZ Bearing*	2
4	18982.00	Wheel Drive Shaft	1
5	18938.00	Seal	1
6	08661.00	7 x7 x 15mm Key	2
7	01900.00	3AMI-25 Retaining Ring	2
8	STD835030	8-1.25 x 30mm Hex Head Bolt*	4
9	STD852008	8mm Lock Washer*	10
10	STD835020	8-1.25 x 20mm Hex Head Bolt*	6
11	08611.00	Lower Cabinet Support	1
12	17586.00	Gear Box	1
13	17587.00	Gear Box Cover	1
14	01822.00	8-1.25 x 20mm Socket Head Bolt	9
15	08338.00	6 x 20mm Dowel Pin	2
16	08496.00	Gear	2
17	01861.00	3AMI-22 Retaining Ring	2
18	08500.00	Gear Shaft	1
19	STD315205	6200ZZ Bearing*	2
20	08497.00	Pulley Drive Shaft	1
21	08498.00	6905ZZ Bearing	2
22	08438.00	5 x5 x 30mm Key	1
23	08344.00	Idler Pulley	1
24	STD851010	10mm Flat Washer*	1
25	STD304470	V-Belt*	1
26	08615.00	Motor Pulley	1
27	00964.00	6-1.0 x 6mm Set Screw*	2
28	18983.01	Shroud	1
29	00361.00	5-0.8 x 8mm Pan Head Screw	4
30	STD835025	8-1.25 x 25mm Hex Head Bolt*	4
31	STD836020	10-1.5 x 20mm Hex Head Bolt*	1
32	00256.00	3AMI-20 Retaining Ring	2
33	17588.00	Seal	1
34	18968.00	25 x 42 x 7mm Oil Seal	1
35	17590.00	20 x 36 x 7mm Oil Seal	1
36	17591.00	Plug	2
37	20078.00	Grease Fitting	1
Δ	18984.00	Gearbox Assembly	1
Δ	20097.00	Hardware Bag	1
Δ	20096.00	Operator's Manual	1

* Standard hardware item available locally.

Δ Not Shown.

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