

Operator's Manual



18" Metal Cutting BAND SAW WITH WELDER

Model No.
351.214300

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

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SAFETY

ASSEMBLY

OPERATION

MAINTENANCE

PARTS LIST

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WARRANTY

ONE-YEAR FULL WARRANTY ON CRAFTSMAN PROFESSIONAL TOOL

If this Craftsman tool fails due to a defect in material or workmanship within one year from the date of purchase, call 1-800-4-MY-HOME® TO ARRANGE FOR FREE REPAIR (or replacement if repair proves impossible). This warranty does not include expendable parts, such as lamps, batteries, bits or blades.

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

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

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SAFETY RULES

WARNING: Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm.

Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks and cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures vary, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area and work with approved safety equipment. Always wear **OSHA/NIOSH** approved, properly fitting face mask or respirator when using such tools.

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 17). 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 Rip Fence
- B Knob

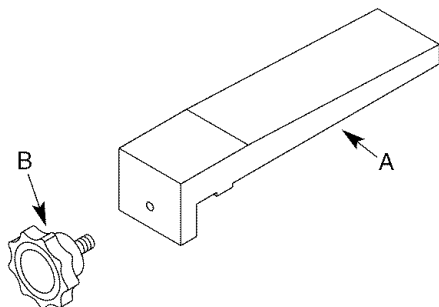


Figure 1 - Unpacking

Unbolt saw from shipping pallet and remove saw from crate using eye bolt on saw and heavy duty lifting equipment such as an overhead crane.

WARNING: Be careful not to touch overhead power lines, piping, lighting, etc., if lifting equipment is used. Band saw weighs approximately 1000 lbs. Proper tools, equipment and qualified personnel should be employed in all phases of unpacking and installation.

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.

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

ASSEMBLY

Refer to Figure 16.

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

MOUNT RIP FENCE

Refer to Figure 16.

Thread rip fence lock knob into rip fence (Key Nos. 43 and 42) and slide rip fence into groove on top of work table. Secure rip fence with lock knob.

INSTALLATION

Refer to Figures 2-5, 14 and 17.

MOTOR

The 115/230 Volt AC motor has the following specifications:

Horsepower (Continuous Duty)	1 1/2
Voltage	115/230
Amps	18/9
Hertz	60
Phase	Single
RPM	1720

Before band saw is installed, a suitable location should be chosen. Band saw weighs approximately 1000 lbs.

1. Band saw needs to be set on a flat, level surface.
2. Make sure there is ample room for moving the workpiece through the entire cut. There must be enough room that neither the operator nor bystanders will have to stand in line while using the tool.
3. Good lighting and correct power supply are also required for a proper work area.

Mount saw on level surface using mounting brackets welded to cabinet. Bolt cabinet to floor (hardware not included).

POWER SOURCE

Band saw requires a 115 or 230 volt, 60 Hz power source. Band saw is shipped with motor and controls prewired for 115 volt operation. Line cord does not have plug. A 115 volt, 20/30A three-prong plug must be attached to the line cord.

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.

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.

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.

To use the band saw with a 230V power supply:

WARNING: All electrical connections must be performed by a qualified electrician.

- Have a qualified electrician attach a 230 volt, 20/30A 3-prong plug band saw line cord.
- Open cover (Figure 17, Key No. 8) by removing eight pan head screws.
- Change wire from 115V terminal of transformer to the unused 230V terminal (See Figure 2).
- Change amperage setting on the thermal overload relay (See Figure 2).
- Replace cover.

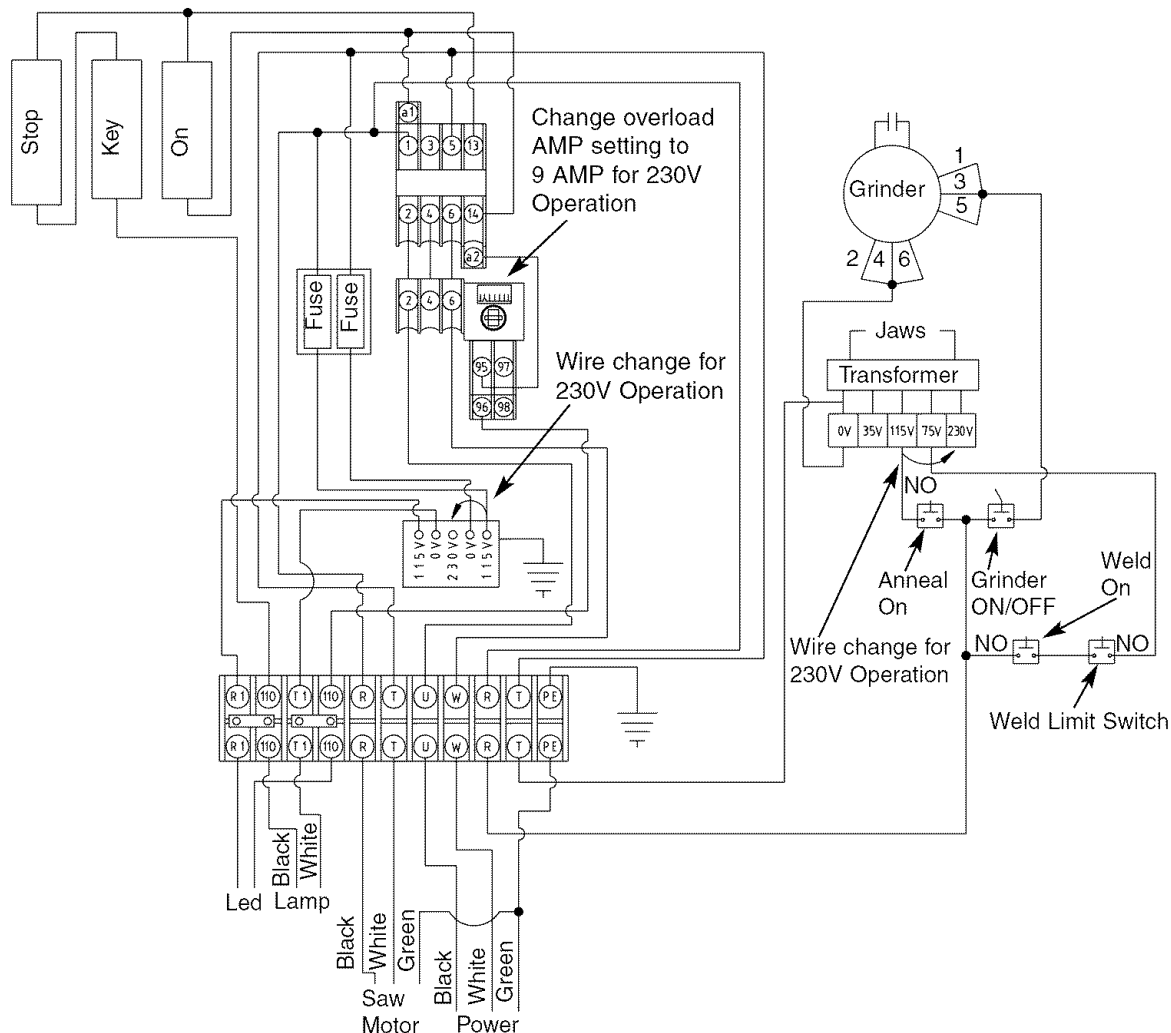


Figure 2 - Control Wiring Schematic

- Rewire saw motor to 230 volts (See Figure 3).

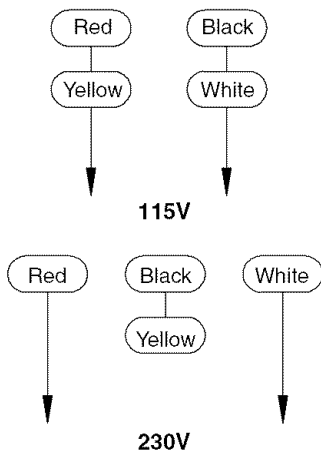


Figure 3 - Saw Motor Wiring Diagram

- Remove pan head screws from welder cover (Figure 14, Key No. 1) tilt welder outwards.
- Rewire welding transformer to 230 volts (See Figure 4).

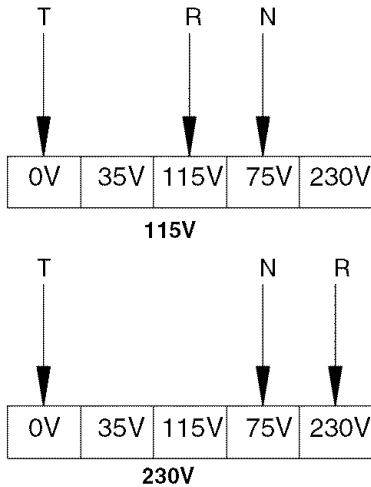


Figure 4 - Welder Transformer Wiring Diagram

- Rewire grinder motor to 230 volts (See Figure 5).

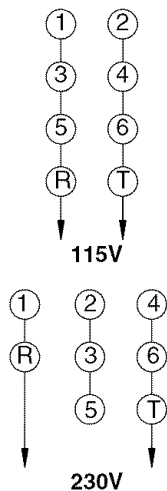


Figure 5 - Grinder Motor Wiring Diagram

- Secure welder cover to saw column using pan head screw.

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 to 50 ft.	12

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

ELECTRICAL CONNECTIONS

WARNING: All electrical connections must be performed by a qualified electrician. Make sure unit is off and disconnected from power source while motor is mounted, connected, reconnected or anytime wiring is inspected.

OPERATION

Craftsman 18" Vertical Metal Cutting Band Saw provides precision metal cutting for tool and die makers, machine shops and production work. Blade speed is infinitely variable and ranges from 80 FPM to 385 FPM for cutting ferrous and non-ferrous metal. Selection guide helps determine blade type and speed for most metals. Features include industrial rated heavy duty speed reducer, heavy gauge steel construction, cast iron wheels, pulleys, table and LED blade speed indicator.

Saw is controlled by push button magnetic switch with safety off button and key lock switch. Saw comes with a 115/230 volt motor prewired for 115 volts. Saw features tilting work table for angle cuts, built-in chip chute, eye bolt for moving, chip blower, flange mounting brackets for securing saw to the floor, blade welder and work lamp. Blade widths of 1/8"-5/8" and thickness of 0.020 to 0.035" can be welded for convenient production of band saw blades. Welder features a blade shear, grinder and an anneal button.

SPECIFICATIONS

Depth of throat	18"
Maximum depth of cut	10 ³ / ₄ "
Table size	23 ⁵ / ₈ x 21 ⁵ / ₈ "
Table tilt	-15 to +15°
Wheel diameter	18"
Blade length	140"
Blade width	1/8 to 5/8"
Blade speeds	infinitely variable from 80 to 385 FPM
Overall dimensions	75 x 37 x 30"
Shipping weight	1012 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 side-ways 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.

OPERATING SAW CONTROLS

Refer to Figures 6 and 7.

Band saw control panel has three functional operations:

ON - Green color push button that energizes the magnetic contactor to start the band saw.

OFF - Red color push button that deenergizes the magnetic contactor to stop the band saw. To restart the saw, turn the knob to reset and depress the ON button.

KEY - Key switch locks machine to prevent unauthorized use.

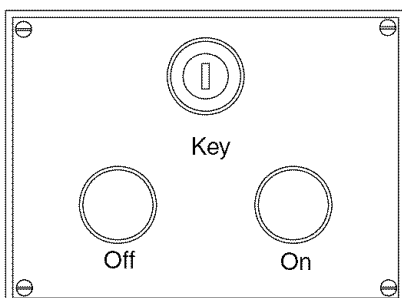


Figure 6 - Band Saw Control

The control panel for the blade welder is shown in Figure 7. The welding circuitry is energized independent of the band saw circuitry. To operate the welder, plug in the line cord to a proper power source.

CAUTION: Do not operate the band saw and the welder at the same time.

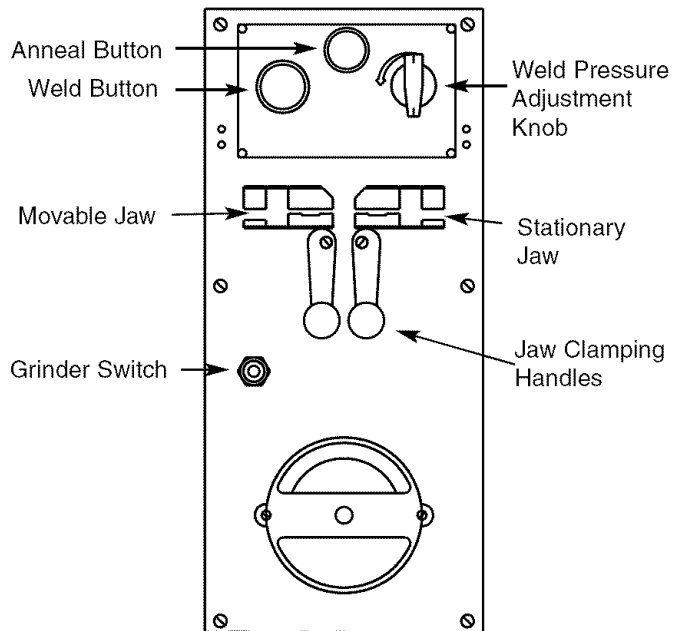


Figure 7 - Blade Welder Control

REMOVING BLADE

Refer to Figures 15 and 16.

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.

- Turn handwheel (Figure 15, Key No. 38) counter-clockwise. This lowers the idler wheel (Figure 15, Key No. 5) and relieves tension in blade.
- Remove blade guard (Figure 16, Key No. 39) by loosening screws (Figure 16, Key No. 49).
- Pull handle (Figure 15, Key No. 69) to open upper and lower doors (Figure 15, Key Nos. 36 and 67).
- Be careful, blade may spring from saw.
- Remove blade from wheels and guide it out through table slot.

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. Replace blade guards after blade guide adjustment.
- Tension and track blade as described in the following sections.

TENSIONING BLADE

Refer to Figure 15.

- Tension blade by rotating handwheel (Key No. 38). 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 15.

- Track blade after it has been tensioned. A change in blade tension will affect wheel alignment. Proper tracking is achieved when upper and lower wheels are aligned.
- Set screws (Key No. 23) are used to align the tracking bracket to the saw frame.
- Turn idler wheel (Key No. 5) by hand and observe how blade rides on the wheels.
- If blade rides away from the cabinet, tilt wheel up by turning knob (Key No. 30) clockwise.
- If blade rides into cabinet, tilt wheel down by turning knob counterclockwise.

ADJUSTING BLADE GUIDES

Refer to Figures 8 and 16.

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.
- Upper blade guides employ guide blocks for side support and a grooved bracket at rear.
- Blade guide bracket (Key No. 20) should be positioned so guide blocks (Key No. 21) on either side of blade will support as much of blade width as possible without interfering with the tooth set.
- Adjust guide bracket depth by loosening set screw (Key No. 40) and sliding bracket into position. Secure position of bracket by tightening set screw.
- Loosen bolts (Key No. 24) and adjust guide blocks (Key No. 21) to sides of blade. Use a feeler gauge to check that guide blocks are 0.002" away from blade.
- Lock adjustment by tightening bolts.
- Adjust the height of upper guide assembly to clear the workpiece by $\frac{1}{4}$ ". Loosen locking knob (Key No. 30) and use handle (Key Nos. 37 and 38) to slide guide bar down until the upper guide assembly clears workpiece by $\frac{1}{4}$ ". Tighten locking knob.
- 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.

NOTE: Lower blade guard (Key No. 56) must be removed to adjust lower blade guides.

- Loosen bolts (Key No. 26) to adjust lower guide bracket (Key No. 19) so guide blocks do not interfere with blade set. Loosen socket head bolts (Key No. 24) for guide blocks (Key No. 21) and adjust guide blocks to 0.002" from each side of blade.

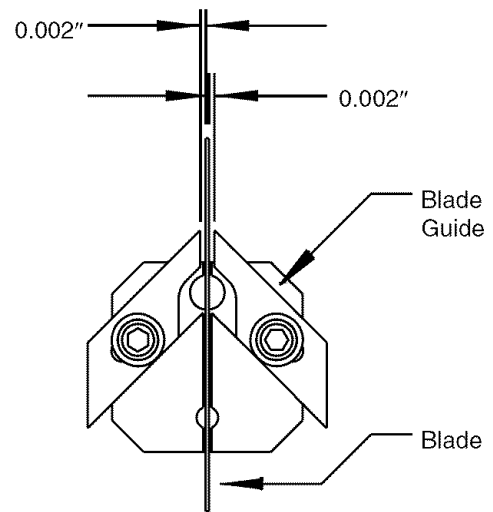


Figure 8 - Blade Guide Adjustment

NOTE: 0.002" gap between blade and both blade guides.

BLADE SPEED AND TYPE SELECTION

Refer to Blade Speed Chart.

- Consult Blade Speed Chart to determine blade speed and blade type for required cutting operation. 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, type of tooth and blade pitch.
- 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 $\frac{1}{4}$ " wide blade can cut about a $\frac{1}{2}$ " radius. 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 in piece while a wide thin blade would be used to make long, straight cuts.
- Blade manufacturers are prepared to supply information about blades for specific applications.

BLADE PITCH

Refer to Blade Speed Chart.

- Pitch describes number of teeth per inch. A blade with more teeth per inch will produce a smoother cut.
- Type of material being cut determines number of teeth in contact with work.
- There should always be at least three teeth in contact with workpiece 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.
- When pitch is too small the gullets of the teeth will fill up, leading to the creation of excess heat.

BLADE SPEED AND BLADE PITCH CHART (FEET PER MINUTE/TEETH PER INCH)

MATERIAL	THICKNESS:				
	1/4"	1/4-1"	1-3"	3-6"	6-10"
High carbon steel	230/18	200/14	200/10	150/6	150/4
Free cutting steel	200/18	150/14	130/12	100/6	100/4
Ferro-manganese	200/18	156/14	130/12	100/8	100/4
Ferro-nickel	165/18	130/14	100/12	75/8	75/4
Ferro-nickel-chrome	130/24	100/18	75/14	66/8	66/6
Ferro-molybdenum	150/18	130/14	100/12	75/8	75/6
Ferro-chrome (med.)	165/18	100/14	75/12	66/8	66/6
Ferro-chrome (high)	100/24	75/14	66/10	66/8	66/6
Manganese steel	180/18	150/14	115/12	100/8	66/4
Ferro-tungsten	150/18	100/14	75/12	66/8	66/4
Ferro-chrome-vanadium	165/18	100/14	75/12	66/8	66/4
Ferro-silicon-manganese	150/18	130/14	100/10	75/6	75/4
Machinery steel	180/18	130/14	115/12	100/6	66/4
Ordinary tool steel	130/24	100/18	100/14	80/8	75/4
High speed steel	100/24	75/14	66/12	66/8	66/4
Stainless steel	130/18	100/14	75/10	66/8	66/4
Thick iron plate	165/18	130/12	75/10	66/8	66/4
Cast iron	200/18	200/14	150/12	75/8	75/4
Nickel cast iron	200/18	150/12	100/8	66/6	66/4
Forgeable cast iron	200/18	165/14	150/10	130/6	130/4
High grade cast iron	150/18	130/14	100/10	75/6	66/4
Coarse cast iron	200/18	165/14	130/10	75/6	75/4
Tombac	1480/18	1000/12	750/8	95/6	295/4
Bronze	245/18	245/12	225/10	200/6	150/4
Phosphorus-bronze	490/18	295/14	200/10	150/6	150/4
Nickel aluminum bronze	490/18	295/12	225/10	150/6	150/4
Magnesium-bronze	295/18	245/12	225/10	150/6	150/4
Hard aluminum	2000/18	2000/10	2000/8	2000/6	1480/4
Aluminum	2000/18	1650/10	1300/6	820/4	490/3
Copper	395/18	295/12	245/8	150/6	150/3
Fibers	1480/24	1300/18	1000/6	750/4	750/3
Asbestos	1300/24	1000/18	660/14	490/10	330/6

TYPE OF TOOTH

- The shape of teeth are varied to achieve specific cutting results. A blade cuts work by removing material. Blade teeth must scrape a chip of workpiece away on each cut.
- The shape of gullet between teeth determines how much material can be taken out with each blade tooth.
- There should always be at least three teeth in contact with workpiece 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.
- When pitch is too small, gullets of teeth will fill up leading to creation of excess heat.
- Rake angle is the angle which the cutting face of tooth makes with a line perpendicular to the back of blade. A 0° rake angle is used to cut hard materials.

- Positive rake angle blades are used to cut softer materials. Softer materials require more aggressive chip removal.
- Larger gullets provide for faster removal but have to be limited in size because they make blade teeth weaker.
- Blade teeth will also vary in the way that teeth have been set from one side to the other. A wider set is used for contour work because wider kerf allows operator to cut tighter curves.

CHANGING BLADE SPEED

Refer to Figure 15.

WARNING: Never adjust blade speed unless machine is running or damage to saw may result.

- Blade speed is adjusted by rotating handwheel (Key No. 50) while machine is running. Rotate handwheel clockwise to increase blade speed. Rotate handwheel counterclockwise to decrease blade speed. The blade speed is shown on LED display located above switches.

ADJUSTING TABLE ANGLE

Refer to Figure 16.

Angle cuts can be made by tilting table left to right. Loosen socket head bolts (Key No. 12) to tilt table up to 15° right or left. Use angle scale to set table angle (Key No. 18).

TYPE OF CUT

- Band saw can be used to perform a variety of cuts. Cutting procedure used depends on size and desired shape of cut.
- The rip fence is used to guide workpiece to produce straight cuts on longer pieces.
- Contour cutting is done by guiding workpiece free-hand to produce curved shapes.
- Beveled cutting can be done with any proper work guide method by tilting table.
- Regardless of which method is used, a workpiece which overhangs table by more than 10" should be properly supported by free standing material stands. See "Recommended Accessories," page 17.

USING RIP FENCE

Refer to Figure 16.

- Rip fence is used to guide workpiece straight into blade producing a desired width of cut. Set rip fence to desired width of cut on either side of blade. Kerf of the blade must be considered when setting up.
- Lock rip fence securely with rip fence lock knob (Key No. 43). The portion of material between blade and rip fence is considered the workpiece. Material outside of blade is considered scrap to be cut off.
- Guide workpiece into blade but do not push on scrap side of material. Avoid passing hands beyond blade. Use push sticks to finish cuts and pass workpiece away from blade.

CONTOUR CUTTING

- When contour cutting, both hands must be used to keep workpiece flat against table and guided along path.
- Avoid placing hands in line of blade. If hands contact blade it may cause injury.
- Stand in front of saw and use both hands over portion of table to right of blade and before cut. Do not attempt to cut sharp corners.
- Cut small corners by sawing around them and removing scrap until shape is produced.

CHIP BLOWER

Refer to Figure 16.

- Band saw is equipped with chip blower used to remove chips to make contour cutting easier.
- Adjust air nozzle (Key No. 31) so that pump air blows chips away from blade and workpiece.

MITER GAUGE

- Use miter gauge (not provided) for securing and holding workpiece at desired angle to produce angled cuts. Use scale to adjust gauge to desired angle.
- Never use miter gauge (not provided) and rip fence at the same time. The blade might bind in the workpiece. Operator could be injured and/or workpiece could be damaged.

PREPARING BLADE FOR WELDING

- A properly prepared blade is essential in producing a high-quality, long lasting band saw blade.
- The blade must be cut to proper length.
- Blade ends should be cut and ground square.
- Any rust, oil or dirt must be removed.
- Some teeth must be ground off blade ends depending upon the pitch of the blade.

BLADE CUTTING

Refer to Figure 9.

- Cut the blade ends flat, square and smooth using the blade shear.
- Lean the back of blade against the shear blade guide when cutting blade ends (See Figure 9).
- Use grinder, as needed, to make blade ends flat, square and smooth.

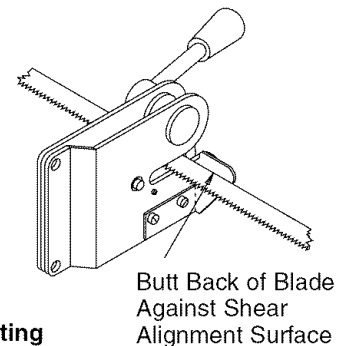


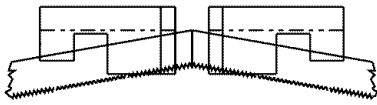
Figure 9 - Blade Cutting

BLADE MOUNTING

Refer to Figure 10, page 10.

- Clean welder jaw of any scale, oil, rust or dirt. Clean blade ends which contact welder jaws to provide proper electrical contact.
- Set weld pressure adjustment knob to "0" (released).
- Insert one end of blade into stationary jaw with teeth facing out and blade end centered between jaws.
- Firmly set back of blade against back alignment surface of welder jaw and clamp blade tight with the jaw clamping handle (See Figure 10, page 10).
- Insert other end of blade into movable jaw; butt the blade ends together and clamp tight.

IMPORTANT: The blade ends should butt against each other over the full width of the blade and should not overlap (See Figure 10, page 10).



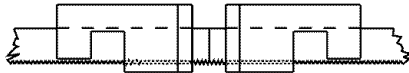
Incorrect - Blades Clamped At Angle



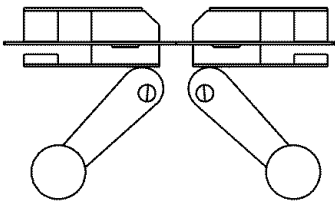
Incorrect - Blades Not Ground Square



Incorrect - Blades Overlap



Correct - Grind Blades Square and Clamp Straight



Correct - Clamp Blades Flat with no Overlap

Figure 10 - Blade Mounting and Clamping

TOOTH SPACING

Refer to Figure 11.

- Approximately $\frac{1}{8}$ " of blade will be consumed during the welding process. This blade loss must be taken into account.
- All blades must have some of the teeth ground off so that the tooth spacing will be uniform after welding.

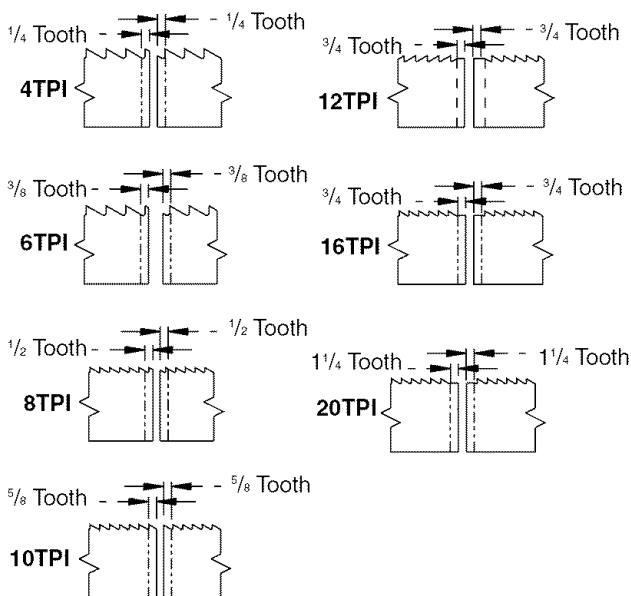


Figure 11 - Tooth Spacing (TPI = Teeth per Inch)

- Tooth grinding procedure must be done carefully in order to grind the proper number of teeth and not to grind below gullet which would weaken the blade.

BLADE WELDING

Refer to Figures 7 and 12.

- To set weld pressure adjustment knob, turn the knob counterclockwise to increase the pressure. The pressure adjustment knob controls force applied to the movable jaw.

NOTE: Weld pressure adjustment knob must be reset to "0" after each welding.

- Wider blades and thicker blades need more weld pressure to force the blade ends together during welding. If too little pressure is applied, the blade ends will melt. Too much pressure may cause the blades to overlap.

For example, for $\frac{1}{2}$ " wide blades, turn the pressure adjustment knob counterclockwise until the pointer is at 6 (See Figure 12).

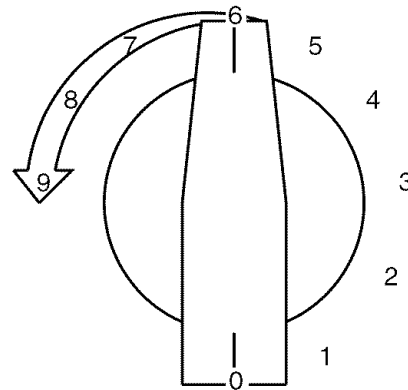


Figure 12 - Weld Pressure Adjustment

- If blade melts, increase pressure. If there are "blow holes" in the weld, increase pressure.
- If blade overlaps, decrease pressure.
- Wider blades need more pressure and thinner blades need less pressure. Weld pressure is also affected by blade material.

WARNING: Welding operation produces sparks at blade intersection. Step away to left side of welder during welding operation.

WARNING: Always wear ANSI approved safety glasses during welding. Sparks from welder can cause serious injury to eyes.

- Press weld button and hold down. The blade ends will become red hot and soft. The movable jaw will force the blade ends together creating a bead of metal and the limit switch will automatically cut power to jaws.
- Release weld button and wait 10 seconds to allow blade to cool.
- Reset weld pressure adjustment to "0".

- Heat build-up in the tool can cause serious damage to the tool. Allow transformer to cool down to room temperature between each welding or each annealing operation. It is a safe procedure to let the transformer be idle for at least 3 minutes between successive welding/annealing operations.

BLADE ANNEALING

- After the blade has been welded, the weld area will be very hard and brittle. Before the blade can be used, it must be annealed and the flash removed.
- The blade weld is annealed by heating the blade just under the melting temperature and then slowly cooling the weld.

NOTE: Reset weld pressure adjustment knob to “0” prior to annealing. Failure to do so can cause damage to transformer.

- Press the anneal button until the weld area glows a cherry red and then release the anneal button.

CAUTION: The blade weld will melt, destroying the weld, if the anneal button is not released as soon as the weld glows cherry red.

- Let the blade cool for several seconds.
- Press the anneal button again, but release the button before the weld glows as brightly as the first time.
- Wait several seconds until the blade cools further.
- Repeat the anneal process 6 or 7 times, decreasing the anneal temperature each time.
- The weld flash must be ground from the blade. See “Grinding Blade”.

GRINDING BLADE

- After annealing the blade, the metal buildup or flash must be ground from the blade.
- Toggle grinder switch to the ON position.
- Flip the grinder guard open, exposing the top of the grinding wheel.
- Weld should be ground to same thickness as blade.
- Grind flash off underside of blade taking care not to grind into blade.
- Turn blade inside out and grind other side of blade same as first side (or, flip the grinder guard to the closed position and use the bottom of the wheel).
- Take care not to grind into blade.
- Turn blade inside out again (to original shape).
- Turn grinder off when grinding is completed. The blade must be annealed again.

ANNEAL BLADE AFTER GRINDING

- After flash has been removed, anneal the blade a second time. The weld may have been hardened by heat created during grinding. Repeat “Blade Annealing” step.
- After second blade annealing operation, the blade is ready for installation onto band saw. Follow band saw instruction when installing and adjusting blade.

MAINTENANCE

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

CLEANING

Refer to Figure 15.

- 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.
- Make sure that brush (Key No. 63) is in contact with blade to properly remove foreign particles from drive wheel.

LUBRICATION

Refer to Figures 15-17.

- The shielded ball bearings are permanently lubricated and require no further lubrication.
- Grease guide post (Figure 16, Key No. 36) once a week. Grease speed operator shaft in gearbox housing (Figure 15, Key No. 28 and 45) and blade tension lead screw (Figure 15, Key No. 16) every 100 hours. Use grease gun on grease fitting every 100 hours (Figure 17, Key No. 10). Grease table support brackets every three months.
- Add light machine oil or air tool oil to air pump (Figure 17, Key No. 49) when pump loses power or fails to pump air.
- Occasionally apply a coat of paste 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.

CLEAN WELDER JAWS

After each welding operation, wipe welder jaws clean of any oil, dirt or rust and scrape any flash deposited on welder jaws.

Welder jaws must be kept clean at all times. The jaws must be wiped clean of any dirt or oil and scraped clean of flash after each weld.

The shear blades should be wiped with an oily cloth to remove any dirt or rust.

To replace grinding wheel, remove two screws holding grinder guard and remove guard. Hold grinding wheel stationary and remove nut and washer. Install new wheel on grinder motor shaft and fasten with washer and nut. Make sure nut is tight. Attach grinder guard with two screws.

TROUBLESHOOTING

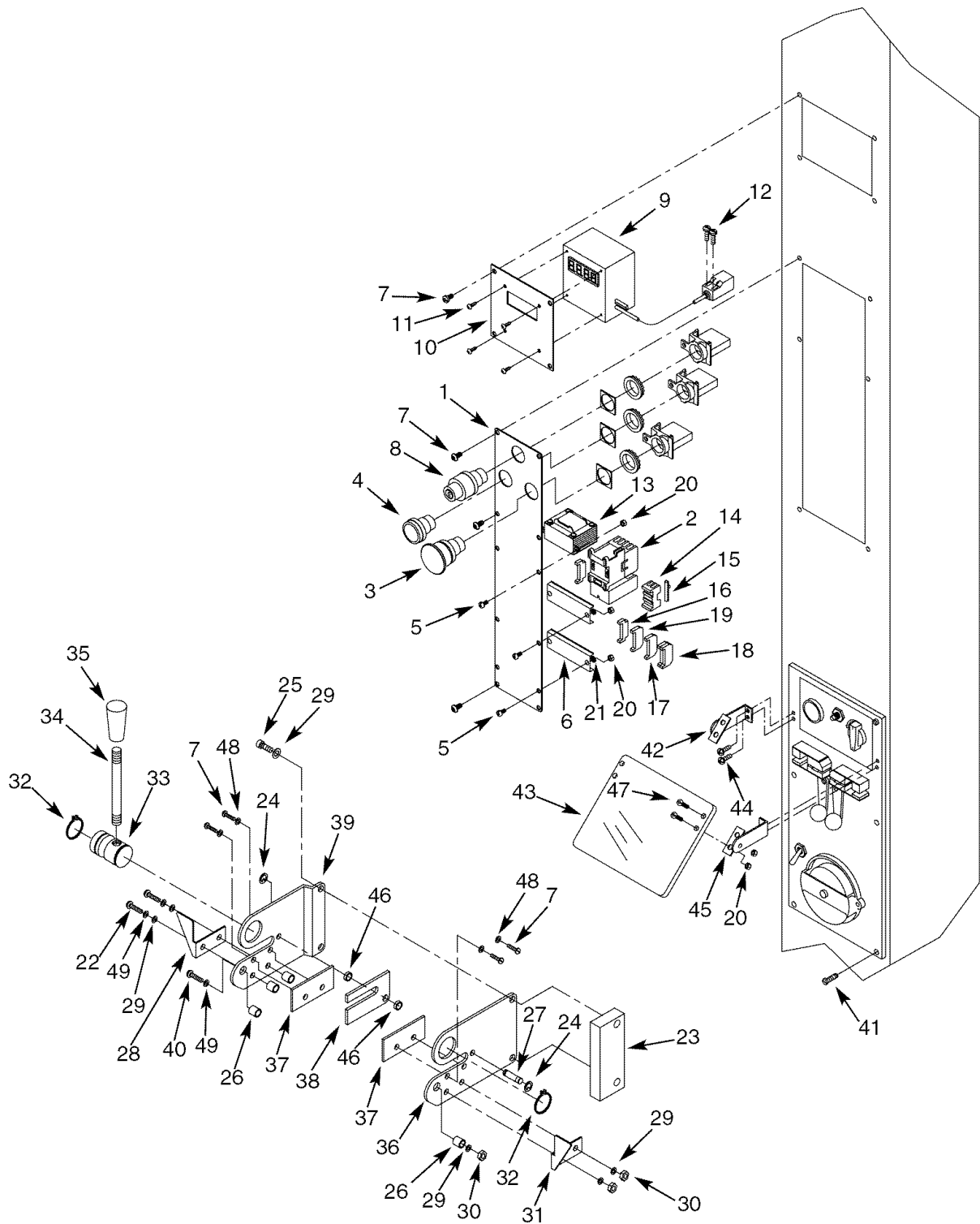
SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Excessive blade breakage	<ol style="list-style-type: none"> 1. Material not secure on table 2. Incorrect speed or feed 3. Blade too coarse for material 4. Incorrect blade tension 5. Teeth in contact with work before sawing 6. Blade rubs on wheel flange 7. Misaligned 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 (page 7) 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 0.002" from blade (use gauge) 4. Tension blade properly; see "Operation" 5. Adjust upper guide to just clear workpiece by ¼" 6. Replace blade 7. Check Blade Speed; see page 7 for recommended speeds 8. Tighten blade thrust bearing within 0.002" 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

TROUBLESHOOTING (CONTINUED)

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
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	<ol style="list-style-type: none"> 1. Key switch not on 2. Not plugged in 3. Loose electrical connections 4. Thermal overload relay tripped 5. Fuse blown 	<ol style="list-style-type: none"> 1. Turn key to on 2. Plug into supply 3. Have qualified electrician check electrical connections 4. Reset relay, see "Grounding Instructions" 5. Check and replace fuse
Speed difficult adjust	<ol style="list-style-type: none"> 1. Motor not running 2. Worn/Broken V-belt(s) 	<ol style="list-style-type: none"> 1. Turn saw on 2. Check/Replace V-belts for Repair Part, See Figure 17.
Blade does not heat up when weld button is pressed	<ol style="list-style-type: none"> 1. No power to welder 2. Weld pressure adjustment not reset 3. Weld pressure adjustment set to "0" 4. Blade or jaws dirty, rusty or oily 5. Loose connection to weld switch, limit switch, transformer, or welder jaws 6. Burnt transformer 	<ol style="list-style-type: none"> 1. Check power at receptacle 2. Adjust weld pressure properly 3. Adjust weld pressure properly 4. Clean blade and jaws 5. Check; tighten if necessary 6. Replace
Misaligned weld	<ol style="list-style-type: none"> 1. Dirt or scale on jaws or blades 2. Blade ends not cut square 3. Blade ends not correctly aligned when clamped in jaws 4. Worn jaws 	<ol style="list-style-type: none"> 1. Clean jaws and blades 2. Cut ends square 3. Clamp blades against jaw alignment surface 4. Replace
Blade ends overlap	<ol style="list-style-type: none"> 1. Improper weld pressure 2. Blade ends aligned incorrectly 	<ol style="list-style-type: none"> 1. Reduce weld pressure 2. Align blades properly
Incomplete weld	<ol style="list-style-type: none"> 1. Weld pressure adjusted incorrectly 2. Improper clamping 3. Defective limit switch 4. Movable jaw sticking 	<ol style="list-style-type: none"> 1. See "Blade Welding" 2. See "Mounting Blade" 3. Replace 4. Clean and oil jaw dovetails on inside of cabinet
Weld breaks when used	<ol style="list-style-type: none"> 1. Weld not annealed correctly 2. Weld ground too thin 3. Incomplete weld 	<ol style="list-style-type: none"> 1. See "Blade Annealing" 2. Grind weld to thickness of blade 3. See Incomplete Weld section (above)
Blade melts when welding	<ol style="list-style-type: none"> 1. Weld pressure adjusted incorrectly 2. Inaccurate moveable jaw retraction 3. Movable jaw sticking 	<ol style="list-style-type: none"> 1. Increase weld pressure 2. Allow sufficient time for tool to cool down; see "Blade Welding" 3. Clean and oil jaw dovetails on inside of cabinet
Brittle welds	<ol style="list-style-type: none"> 1. Weld not annealed correctly 2. Dirt, oil or flash on blade or jaws 	<ol style="list-style-type: none"> 1. See "Blade Annealing" 2. Clean blade and jaws

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Figure 13 - Replacement Parts Illustration for Switch, Shear and Deflector



REPLACEMENT PARTS LIST FOR SWITCH, SHEAR AND DEFLECTOR

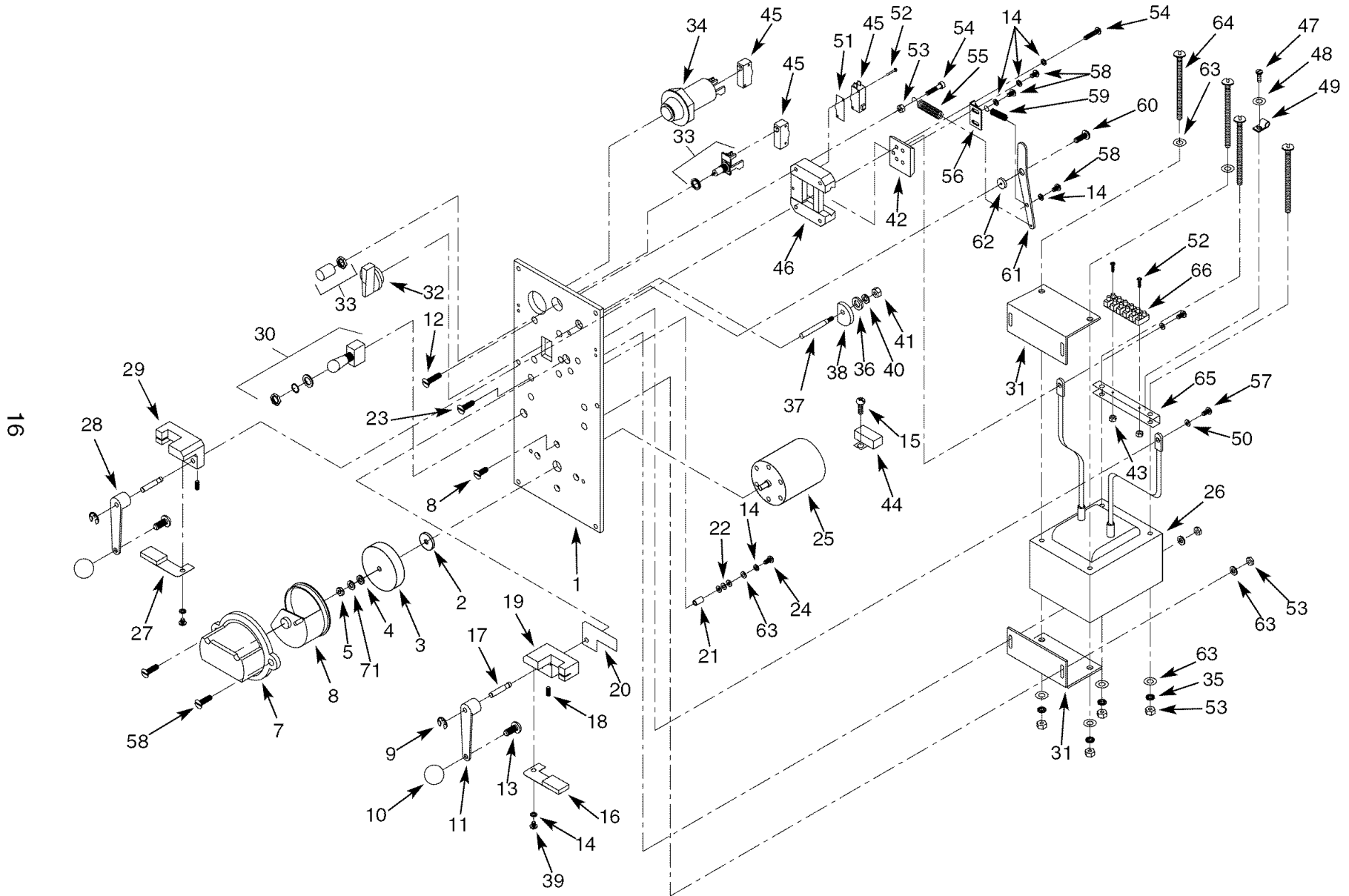
KEY NO.	PART NO.	DESCRIPTION	QTY.
1	20258.00	Switch Plate	1
2	18637.00	Magnetic Starter	1
3	17737.00	Stop Switch Assembly	1
4	17738.00	Start Switch Assembly	1
5	STD863408	4-0.7 x 8mm Pan Head Screw*	6
6	15561.00	Bracket	2
7	STD863508	5-0.8 x 8mm Pan Head Screw*	14
8	17739.00	Key Switch with Two Keys	1
9	16934.00	LED Readout with Sensor	1
10	16935.00	Legend Plate	1
11	17740.00	2.9-1.0 x 6mm Thread Forming Screw	4
12	04493.00	3-0.5 x 20mm Pan Head Screw	2
13	18638.00	Transformer	1
14	16760.00	Fuse Holder	1
15	16761.00	Fuse	2
16	17400.00	Stop Block	3
17	17401.00	Terminal Block	6
18	18006.00	Double Terminal Block	2
19	17501.00	Ground Block	1
20	STD840409	4-0.7mm Hex Nut*	10
21	05156.00	4mm Serrated Washer	2
22	STD863635	6-1.0 x 35mm Pan Head Screw	2
23	20257.00	Spacer	1
24	09845.00	3CMI-6 E-ring	2

KEY NO.	PART NO.	DESCRIPTION	QTY.
25	STD870625	6-1.0 x 25mm Socket Head Bolt*	2
26	20260.00	Spacer	4
27	20261.00	Pin	1
28	23928.00	Left Alignment Bracket	1
29	STD851006	6mm Flat Washer*	7
30	STD840610	6-1.0mm Hex Nut*	3
31	23930.00	Right Alignment Bracket	1
32	01900.00	3AMI-25 Retaining Ring	2
33	05255.00	Blade Cam	1
34	20262.00	Shear Handle	1
35	17711.00	Knob	1
36	05252.00	Right Bracket	1
37	20263.00	Lower Blade	2
38	05254.00	Upper Blade	1
39	05251.00	Left Bracket	1
40	STD863640	6-1.0 x 40mm Pan Head Screw*	1
41	05790.00	6-1.0 x 15mm Pan Head Screw	6
42	20267.00	Left Deflector Bracket	1
43	20264.00	Spark Deflector	1
44	01316.00	#10-32 x 5/16" Pan Head Screw	4
45	20268.00	Right Deflector Bracket	1
46	20266.00	Spacer	2
47	STD863412	4-0.7 x 12mm Pan Head Screw	4
48	STD852005	5mm Lock Washer*	4
49	STD852006	6mm Lock Washer*	3

* Standard hardware item available locally.

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Figure 14 - Replacement Parts Illustration for Welder



REPLACEMENT PARTS LIST FOR WELDER

KEY NO.	PART NO.	DESCRIPTION	QTY.	KEY NO.	PART NO.	DESCRIPTION	QTY.
1	18640.00	Welder Cover	1	34	18646.00	Weld Button Assembly	1
2	20229.00	Spacer	1	35	01474.00	5mm Serrated Washer	4
3	20230.00	Grinding Wheel	1	36	STD852006	6mm Lock Washer*	2
4	STD851006	6mm Flat Washer*	1	37	20238.00	Shaft	1
5	STD840610	6-1.0mm Hex Nut*	1	38	20239.00	Cam	1
6	20231.00	Grinder Cover	1	39	STD863506	5-0.8 x 6mm Pan Head Screw*	2
7	18641.00	Grinder Guard	1	40	STD851006	6mm Flat Washer*	1
8	05991.00	#10-24 x 1/2" Flat Head Screw	4	41	STD840610	6-1.0mm Hex Nut*	1
9	09845.00	3CMI-6 E-Ring	2	42	18647.00	Guide Block	1
10	09442.00	Knob	2	43	06946.00	3-0.5mm Hex Nut	2
11	20232.00	Right Clamping Lever	1	44	18648.00	Capacitor	1
12	01833.00	5-0.8 x 8mm Flat Head Screw	4	45	05278.00	Limit Switch	3
13	05790.00	6-1.0 x 15mm Pan Head Screw	2	46	18649.00	Guide Casting	1
14	STD852005	5mm Lock Washer*	11	47	STD863408	4-0.7 x 8mm Pan Head Screw*	1
15	STD511002	#10-24 x 1/4" Pan Head Screw*	1	48	STD851004	4mm Flat Washer*	1
16	05297.01	Right Clamp	1	49	02702.00	Cord Clamp	1
17	20234.00	Eccentric Shaft	2	50	05332.00	5mm Brass Flat Washer	2
18	00964.00	6-1.0 x 6mm Set Screw	2	51	05279.00	Switch Insulator	1
19	20235.00	Stationary Jaw	1	52	STD863220	3-0.5 x 20mm Pan Head Screw*	4
20	05324.00	Jaw Insulator	1	53	STD840508	5-0.8mm Hex Nut*	5
21	18642.00	Insulating Tube	3	54	05374.00	5-0.8 x 15mm Socket Head Bolt	3
22	04696.00	Insulating Washer	9	55	20240.00	Long Spring	1
23	05318.00	5-0.8 x 12mm Flat Head Screw	4	56	05283.00	Spring Bracket	1
24	05374.00	5-0.8 x 15mm Socket Head Bolt	3	57	03463.00	5-0.8 x 10mm Brass Pan Head Screw	2
25	18643.00	Motor	1	58	STD863508	5-0.8 x 8mm Pan Head Screw*	6
26	18653.00	Transformer	1	59	18650.00	Short Spring	1
27	05330.01	Left Clamp	1	60	20271.00	1/4-20 x 5/8" Pan Head Screw	1
28	20233.00	Left Clamping Lever	1	61	20241.00	Tension Arm	1
29	18644.00	Movable Jaw	1	62	20242.00	Bushing	1
30	18645.00	Grinder Switch Assembly	1	63	STD851005	5mm Flat Washer*	17
31	18652.00	Bracket	2	64	20270.00	5-0.8 x 65mm Pan Head Screw	4
32	20236.00	Pressure Adjustment Knob	1	65	18651.00	Bracket	1
33	20237.00	Anneal Button Assembly	1	66	20243.00	Terminal Block	1

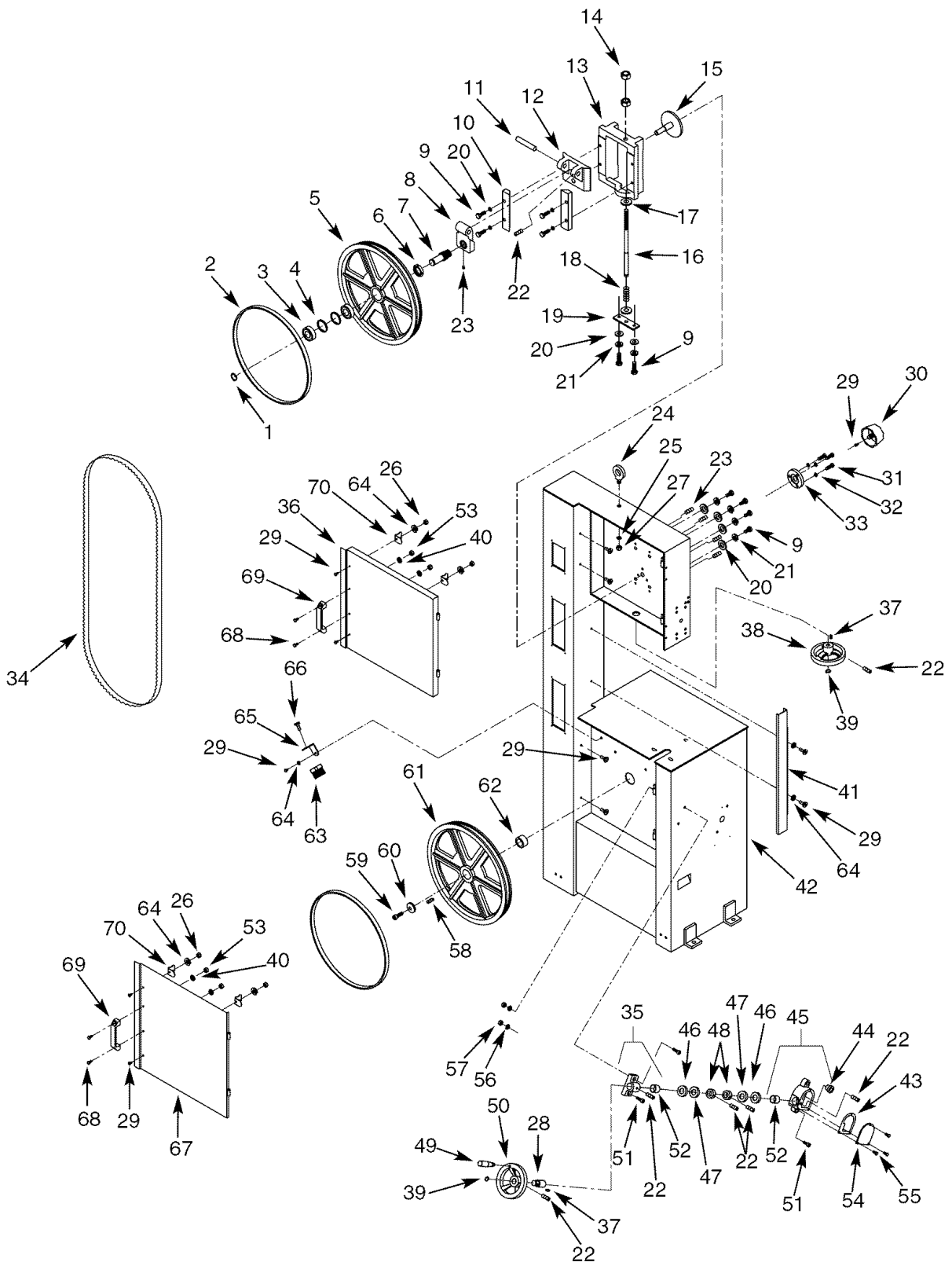
* Standard hardware item available locally.

Δ Not Shown.

Recommended Accessories		
Δ	Support Stand	9-21417

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Figure 15 - Replacement Parts Illustration for Wheels and Speed Handle



REPLACEMENT PARTS LIST FOR WHEELS AND SPEED HANDLE

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	01900.00	3AMI-25 Retaining Ring	1
2	18660.00	Tread	2
3	STD315555	6005ZZ Bearing*	2
4	04790.00	3BMI-47 Retaining Ring	2
5	18662.00	Upper Wheel	1
6	16949.00	Nut	1
7	16954.00	Stud	1
8	16955.00	Pivot	1
9	STD852010	10-1.5 x 30mm Hex Head Bolt*	10
10	16943.00	Guide	2
11	16957.00	Shaft	1
12	16948.00	Slide Block	1
13	16942.00	Housing	1
14	00088.00	5/8"-11 Hex Nut (LH Thread)	2
15	16956.00	Tilt Actuator	1
16	18663.00	Lead Screw	1
17	17727.00	Spacer	2
18	16946.00	Spring	1
19	16944.00	Plate	1
20	STD851010	10mm Flat Washer*	10
21	STD852010	10mm Lock Washer*	6
22	00964.00	6-1.0 x 6mm Set Screw	7
23	00958.00	8-1.25 x 8mm Set Screw	5
24	16951.00	Eye Bolt	1
25	STD851012	12mm Flat Washer*	1
26	STD840508	5-0.8mm Hex Nut*	4
27	STD841217	12-1.75mm Hex Nut*	1
28	16984.00	Speed Operator Shaft	1
29	STD863508	5-0.8 x 8mm Pan Head Screw*	12
30	16959.00	Knob	1
31	STD835025	8-1.25 x 25mm Hex Head Bolt*	3
32	STD852008	8mm Lock Washer*	3
33	16958.00	Housing	1
34	20259.00	140 x 1/2 x .025" Blade, 14 Rake	1
35	16985.00	Pillow Block (Includes One Key No. 52)	1
36	18656.00	Upper Door	1

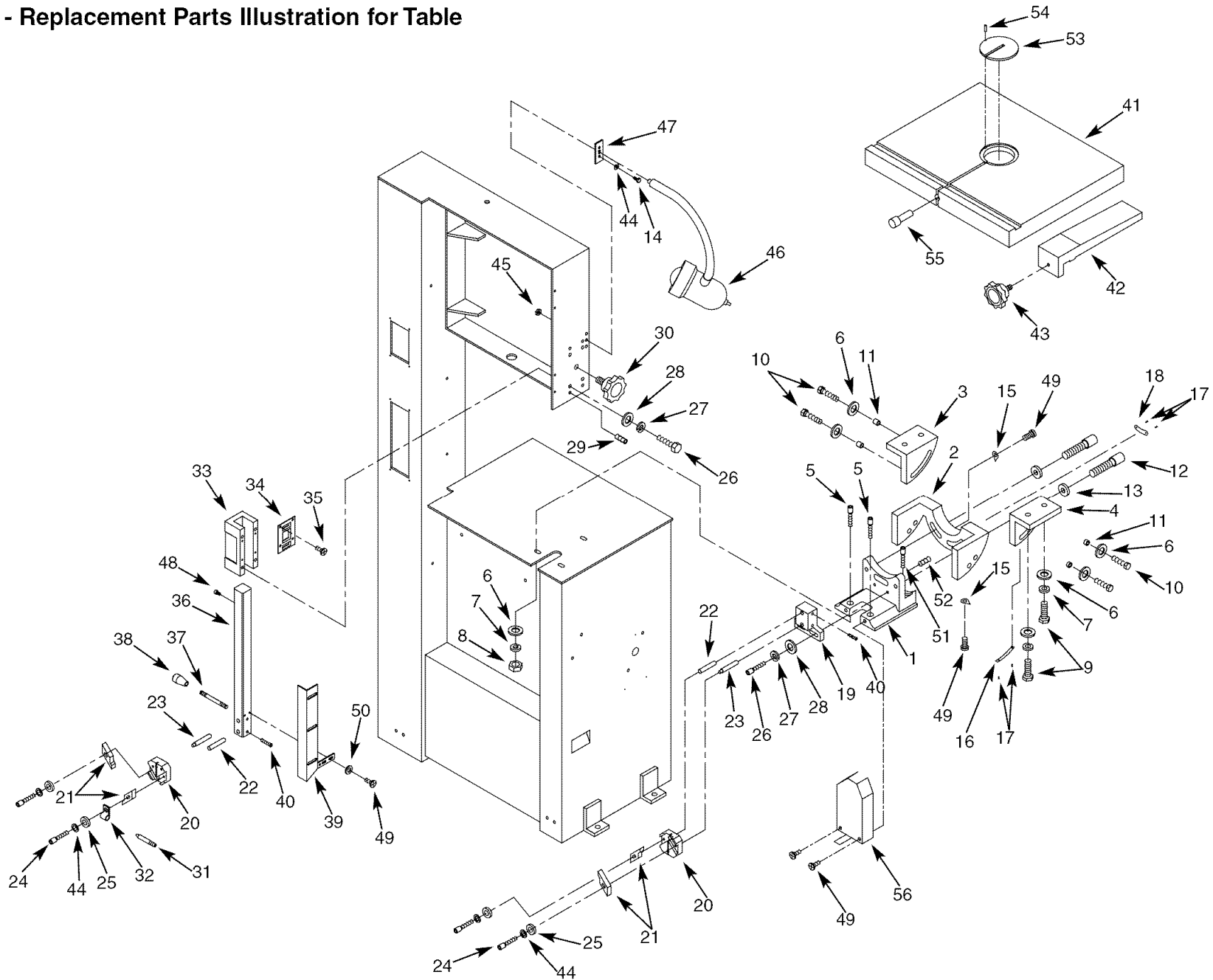
KEY NO.	PART NO.	DESCRIPTION	QTY.
37	16992.00	5 x 5 x 16mm Key	2
38	16947.00	Handwheel	1
39	06169.00	3AMI-18 Retaining Ring	2
40	STD851006	6mm Flat Washer*	4
41	25404.00	Blade Guard	1
42	N/A	Cabinet	1
43	17694.00	Gasket	1
44	18707.00	Flange Bushing	1
45	18658.00	Gearbox Housing (Includes Key Nos. 44 and One 52)	1
46	16979.00	Thrust Bearing	2
47	17693.00	Dust Deflector	2
48	16981.00	Collar	2
49	07305.00	Handle	1
50	16974.00	Handwheel	1
51	STD870825	8-1.25 x 25mm Socket Head Bolt*	4
52	18708.00	Bushing	2
53	STD840610	6-1.0mm Hex Nut*	4
54	18659.00	Cover	1
55	09720.00	5-0.8 x 10mm Hex Head Bolt	3
56	STD851008	8mm Flat Washer*	2
57	STD840812	8-1.25mm Hex Nut*	2
58	16995.00	7 x 7 x 30mm Key	1
59	18007.00	10-1.5 x 25mm Socket Head Bolt (LH)	1
60	17728.00	Spacer	1
61	18664.00	Lower Wheel	1
62	17696.00	Ring	1
63	17689.00	Chip Brush	1
64	STD851005	5mm Flat Washer*	8
65	17690.00	Bracket	1
66	17741.00	4.8-2.1 x 8mm Thread Forming Screw	2
67	18657.00	Lower Door	1
68	STD833016	6-1.0 x 16mm Hex Head Bolt*	4
69	17692.00	Door Handle	2
70	17691.00	Spring Latch	4

* Standard hardware item available locally.

N/A Not available as repair part.

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Figure 16 - Replacement Parts Illustration for Table



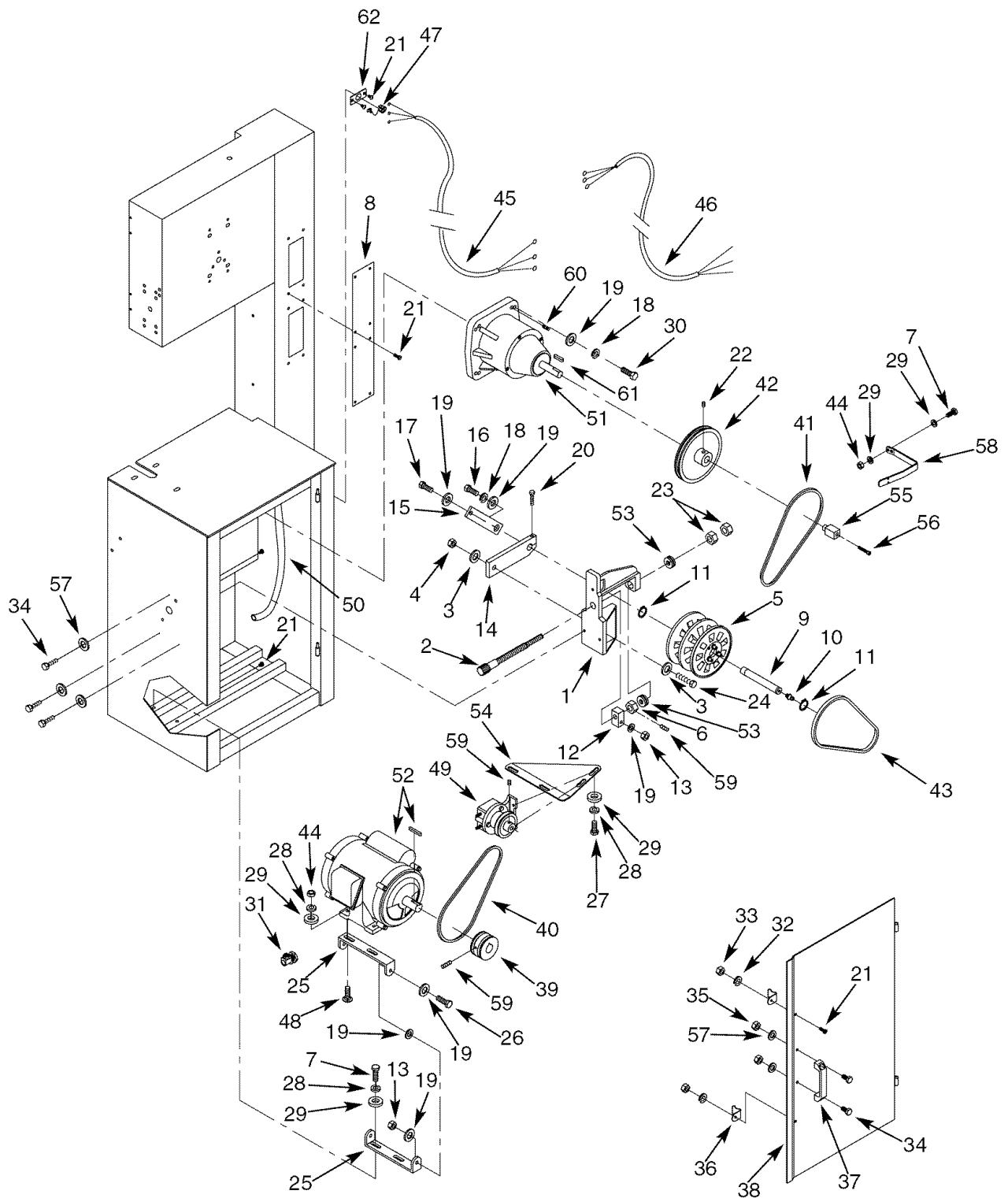
REPLACEMENT PARTS LIST FOR TABLE

KEY NO.	PART NO.	DESCRIPTION	QTY.	KEY NO.	PART NO.	DESCRIPTION	QTY.
1	17697.00	Table Support	1	29	08560.00	8-1.25 x 15mm Set Screw	4
2	17698.00	Frame	1	30	16962.00	Knob	1
3	17699.00	Left Table Bracket	1	31	18665.00	Air Nozzle	1
4	17700.00	Right Table Bracket	1	32	02702.00	Clamp	1
5	01002.00	10-1.5 x 25mm Socket Head Bolt	2	33	17707.00	Housing	1
6	STD851010	10mm Flat Washer*	11	34	17708.00	Spring	1
7	STD852010	10mm Lock Washer*	7	35	02614.00	5-0.8 x 10mm Flat Head Screw	4
8	STD841015	10-1.5mm Hex Nut*	3	36	17709.00	Guide Post	1
9	STD836030	10-1.5 x 30mm Hex Head Bolt*	4	37	17710.00	Rod	1
10	STD836045	10-1.5 x 45mm Hex Head Bolt*	4	38	17711.00	Handle	1
11	17729.00	Roller	4	39	25405.00	Blade Guard	1
12	20028.00	12-1.75 x 55mm Socket Head Bolt	2	40	00964.00	6-1.0 x 6mm Set Screw	4
13	STD851012	12mm Flat Washer*	2	41	25406.00	Work Table	1
14	STD833012	6-1.0 x 12mm Hex Head bolt*	2	42	17714.00	Rip Fence	1
15	17730.00	Pointer	2	43	17715.00	Knob	1
16	17731.00	Scale	1	44	STD852006	6mm Lock Washer*	6
17	01286.00	Rivet	4	45	STD541350	1/2"-20 Hex Jam Nut*	1
18	17732.00	Scale	1	46	20011.00	Lamp	1
19	17701.00	Blade Guide Support	1	47	20012.00	Bracket	1
20	17702.00	Blade Guide Bracket	2	48	STD870612	6-1.0 x 12mm Socket Head Bolt*	1
21	17703.00	Blade Guide	4	49	STD863508	5-0.8 x 8mm Pan Head Screw*	6
22	17704.00	Blade Thrust Guide	2	50	STD851005	5mm Flat Washer*	2
23	17705.00	Pin	2	51	08089.00	10-1.5 x 45mm Socket Head Bolt	1
24	STD833025	6-1.0 x 25mm Socket Head Bolt*	4	52	00351.00	6-1.0 x 10mm Set Screw	1
25	STD851006	6mm Flat Washer*	4	53	08609.00	Table Insert	1
26	STD835030	8-1.25 x 30mm Hex Head Bolt*	6	54	08634.00	4 x 12mm Spring Pin	1
27	STD852008	8mm Lock Washer*	6	55	08331.00	Table Stud	1
28	STD851008	8mm Flat Washer*	6	56	25305.00	Lower Blade Guard	1

* Standard hardware item available locally.

Model 351.214300

Figure 17 - Replacement Parts Illustration for Motor and Blade Drive



REPLACEMENT PARTS LIST FOR MOTOR AND BLADE DRIVE

KEY NO.	PART NO.	DESCRIPTION	QTY.
1	17716.00	Speed Change Shaft Housing	1
2	16966.00	Speed Change Shaft	1
3	09849.00	1/2" Flat Washer	2
4	15128.00	1/2"-12 Fiber Hex Nut	1
5	20069.00	Variable Pulley Assembly	1
6	20256.00	Hex Nut	1
7	STD835020	8-1.25 x 20mm Hex Head Bolt*	4
8	20255.00	Reset Cover	1
9	16968.00	Pulley Shaft	1
10	17733.00	Grease Fitting	1
11	00256.00	3AMI-20 Retaining Ring	2
12	16969.00	Shaft Block	1
13	STD843015	10-1.5mm Fiber Hex Nut*	3
14	16970.00	Pulley Shaft Arm	1
15	18667.00	Gear Shaft Arm	1
16	STD836020	10-1.5 x 20mm Hex Head Bolt*	1
17	STD836045	10-1.5 x 45mm Hex Head Bolt*	1
18	STD852010	10mm Lock Washer*	5
19	STD851010	10mm Flat Washer*	13
20	STD835035	8-1.25 x 35mm Hex Head Bolt*	1
21	STD863508	5-0.8 x 8mm Pan Head Screw*	14
22	00958.00	8-1.25 x 8mm Set Screw	1
23	STD841217	12-1.75mm Hex Nut*	2
24	03914.00	1/2-12 x 2" Hex Head Bolt	1
25	16972.00	Bracket	2
26	STD836035	10-1.5 x 35mm Hex Head Bolt*	2
27	STD835015	8-1.25 x 15mm Hex Head Bolt*	6
28	STD852008	8mm Lock Washer*	8
29	STD851008	8mm Flat Washer*	12
30	STD836040	10-1.5 x 40mm Hex Head Bolt*	4
31	00582.00	Strain Relief	1
32	STD851005	5mm Flat Washer*	2

KEY NO.	PART NO.	DESCRIPTION	QTY.
33	STD840508	5-0.8mm Hex Nut*	2
34	STD833016	6-1.0 x 16mm Hex Head Bolt*	5
35	STD840610	6-1.0mm Hex Nut*	2
36	17691.00	Latch	2
37	17692.00	Handle	1
38	18668.01	Door	1
39	18669.00	Motor Pulley	1
40	20014.00	M-19 V-Belt	1
41	17723.00	17-360 V-Belt	1
42	18670.00	Speed Reducer Pulley	1
43	17724.00	17-320 V-belt	1
44	STD840812	8-1.25mm Hex Nut*	6
45	16975.00	Line Cord	1
46	17734.00	Motor Cord	1
47	07346.00	Strain Relief	1
48	05188.00	8-1.25 x 20mm Carriage Bolt	4
49	20015.00	Air Pump	1
50	18675.00	Air Hose	1
51	20253.00	Gear Reducer	1
52	22489.00	Motor with Key	1
53	20254.00	Thrust Bearing	2
54	16680.00	Plate	1
55	16977.00	Sensor Target	1
56	STD833035	6-1.0 x 35mm Socket Head Bolt*	1
57	STD851006	6mm Flat Washer*	5
58	18673.00	Bracket	1
59	00964.00	6-1.0 x 6mm Set Screw	5
60	06635.00	8-1.25 x 20mm Set Screw	4
61	18674.00	7 x 7 x 38mm Key	1
62	16982.00	Strain Relief Plate	1
Δ	25173.01	Operator's Manual	1

* Standard hardware item available locally.

Δ Not Shown.

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