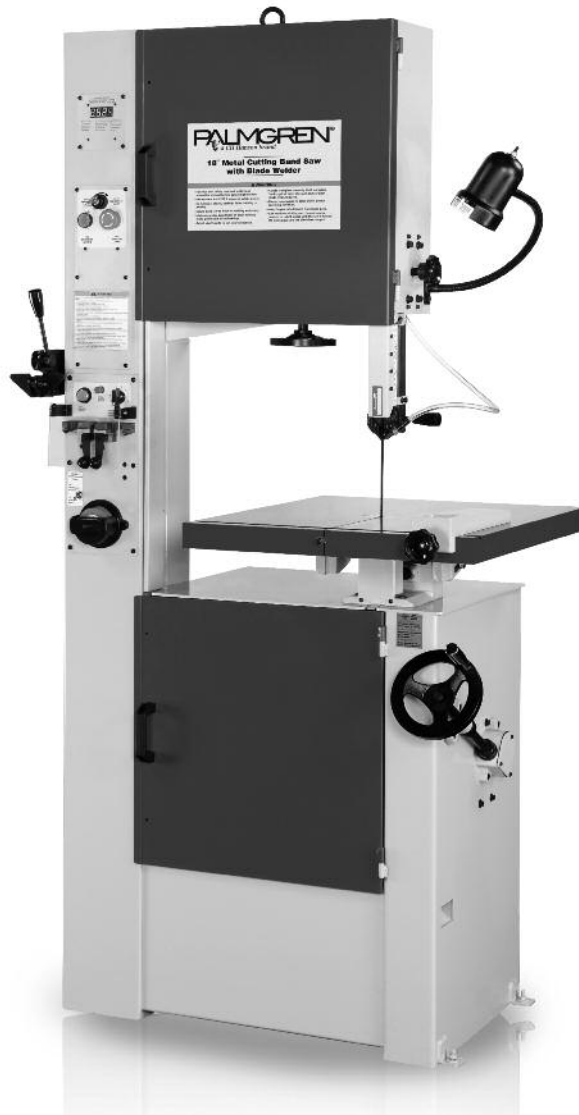


PALMGREN®

18" METAL CUTTING BAND SAW WITH BLADE WELDER



Read carefully and follow all safety rules and operating instructions before first use of this product.

Palmgren 18" metal cutting band saw with blade welder 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.

UNPACKING

Check for shipping damage. If damage has occurred, a claim must be filed with carrier.

Band Saw is shipped completely assembled. Check for completeness. Immediately report missing parts to dealer.

Carefully open crate and 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. Remove loose parts box containing rip fence with lock knob.

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

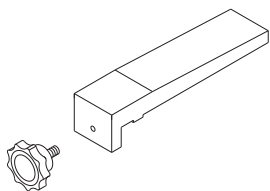


Figure 1 - Unpacking

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 cleaning 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.

SPECIFICATIONS

Depth of throat	18"
Maximum depth of cut	10 ³ / ₄ "
Table size	23 ⁵ / ₈ x 21 ⁵ / ₈ "
Table tilt:	
Right to left	-15 to +15°
Front to back	-10 to +10°
Wheel diameter	18"
Blade length	140"
Blade width	1/8 to 5/8"
Blade speed, infinitely variable from	82 to 385 FPM

Motor:	1 ¹ / ₂ HP, 115/230 V, 18/9 A, 1720 RPM
Overall dimensions	75 x 37 x 30"
Weight	1012 lbs

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.

PROPOSITION 65 WARNING: Some dust created by using power tools contain chemicals known to the state of California 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 varies, 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

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. Plug 115/230 volt, single-phase plug 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 or master switches to prevent any unintentional use of power tools.

SAFETY RULES (CONTINUED)

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 repair 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.

- Unplug 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. 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 jammed or cut off pieces until the saw is turned off, unplugged and the blade has stopped.

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

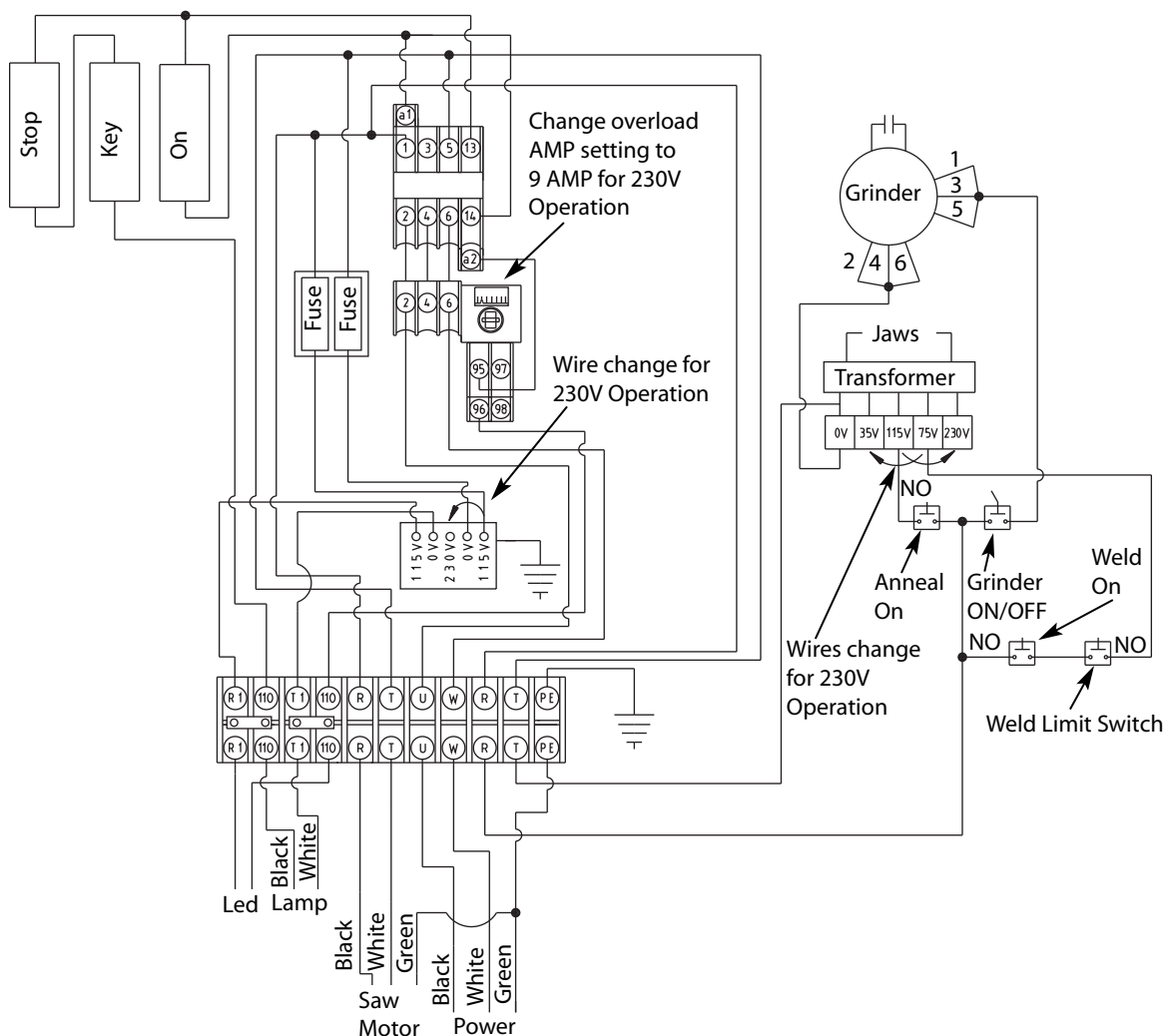


Figure 2 – Control Wiring Schematic

ASSEMBLY

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

MOUNT RIP FENCE

Refer to Figure 17.

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

INSTALLATION

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

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

- Band saw needs to be set on a flat, level surface.
- 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.
- Good lighting and correct power supply are also required for a proper work area.

POWER SOURCE

Refer to Figures 2 – 5, 15 and 18.

Band saw requires a 115/230 volt, 60 Hz power source. Band saw is shipped with a three-prong 115V plug on the line cord and prewired to operate at 115 volts.

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

1. Have a qualified electrician attach a 230 volt, 20/30A 3-prong plug band saw line cord.
2. Open cover (See Figure 18, Ref. No. 8) by removing eight pan head screws.
3. Change wire from 115 V terminal of transformer to the unused 230V terminal (See Figure 2).
4. Change amperage setting on the thermal overload relay (See Figure 2).
5. Replace cover.
6. Rewire saw motor to 230 volts (See Figure 3).
7. Remove pan head screws from welder cover (See Figure 15, Ref. No. 1) tilt welder outwards.
8. Rewire welding transformer to 230 volts (See Figure 4).
9. Rewire grinder motor to 230 volts (See Figure 5).
10. Secure welder cover to saw column using pan head screw.

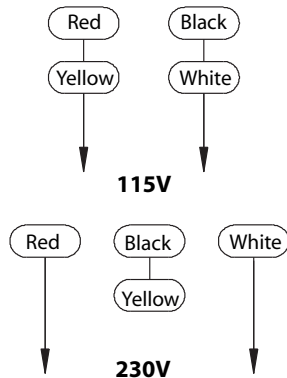


Figure 3 – Saw Motor Wiring Diagram

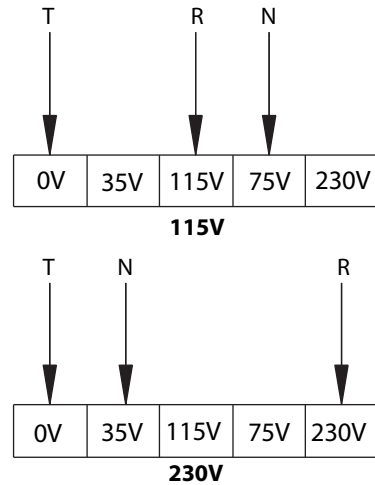


Figure 4 – Welder Transformer Wiring Diagram

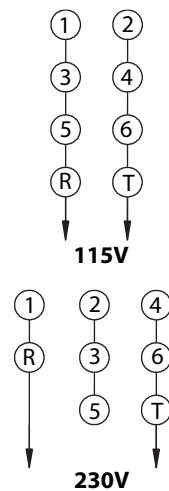


Figure 5 – Grinder Motor Wiring Diagram

MOTOR

Band saw is supplied with motor and wiring installed, and prewired for 115 volts. 115/230 volt AC induction motor has following specifications:

Horsepower.....	1½ HP
Voltage	115/230
Amperes	18/9
Frequency.....	60 Hz
Phase.....	Single
RPM	1720

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

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

The motor is designed for operation on the voltage and frequency specified. Normal loads will be handled safely on voltages not more than 10% above or below 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.

INSTALLATION (CONTINUED)

GROUNDING INSTRUCTIONS

Refer to Figures 6 and 7.

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 you do not understand grounding instructions or if in doubt as to whether the tool is properly grounded.

This tool is equipped with an approved cord rated at 250V and a 3-prong grounding type plug rated at 125V (See Figure 6) for your protection against shock hazards.

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

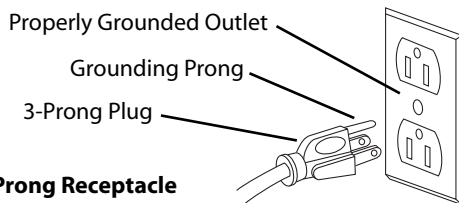


Figure 6 – 3-Prong Receptacle

shown (See Figure 6).

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 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 7) is available for connecting plugs to a two pole outlet if it is properly grounded.

Do not use a 3-prong to 2-prong grounding adapter unless permit-

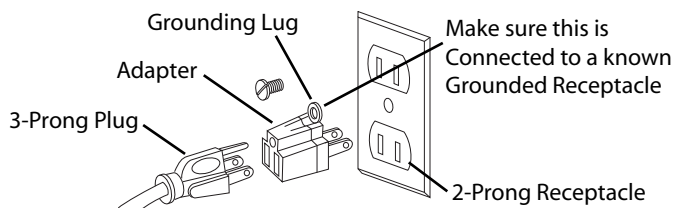


Figure 7 – 2-Prong Receptacle with Adapter

ted 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.

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.

OPERATION

Refer to Figures 6 and 7.

Palmgren 18" metal cutting band saw with blade welder is designed to cut ferrous and non-ferrous metals with infinitely variable blade speeds from 80 to 385 FPM.

WARNING: Always observe the following safety precautions.

- Make sure that blade guides and supports 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.

OPERATING SAW CONTROLS

Refer to Figures 8 and 9.

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.

OPERATION (CONTINUED)

The control panel for the blade welder is shown in Figure 9. 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.

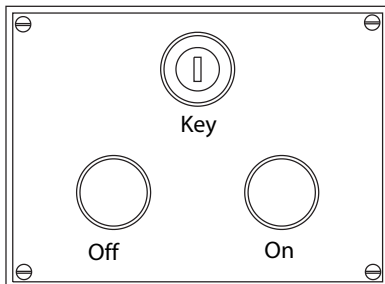


Figure 8 - Band Saw Control

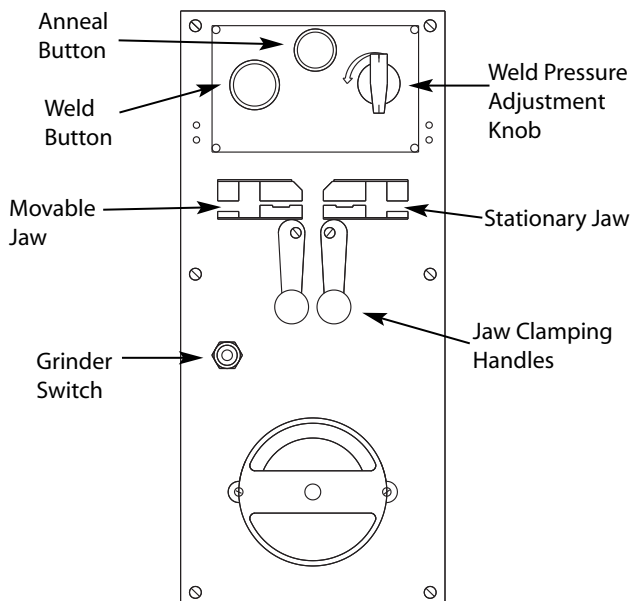


Figure 9 - Blade Welder Control

REMOVING BLADE

Refer to Figures 16 and 17.

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.

1. Turn handwheel (Figure 16, Ref. No. 38) counterclockwise. This lowers the idler wheel (Figure 16, Ref. No. 5) and relieves tension in blade.
2. Remove blade guard (Figure 17, Ref. No. 39) by loosening screws (Figure 17, Ref. No. 49).
3. Pull handle (Figure 16, Ref. No. 69) to open upper and lower doors (Figure 16, Ref. Nos. 36 and 67).
4. Be careful, blade may spring from saw.
5. Remove blade from wheels and guide it out through table slot.

INSTALLING BLADE

1. 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.

2. Follow safety precautions before saw is operated every time.
3. Make sure blade teeth are pointing down towards table. Turn blade inside out if necessary.
4. Slip new blade into table slot and over upper and lower blade wheels and center blade on blade wheels. Slide blade between blade guides.
5. Tension and track blade as described in the following sections.

TENSIONING BLADE

Refer to Figure 16.

1. Tension blade by rotating handwheel (Ref. No. 38) clockwise. Be sure blade guides do not interfere with blade path.
2. Tighten blade until it is properly tensioned.
3. 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 16.

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

BLADE GUIDES

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

1. Blade guides support blade at sides and rear of blade, and prevent twisting or deflection.
2. 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 17.

1. Upper blade guides employ guide blocks for side support and a grooved bracket at rear.
2. Blade guide bracket (Ref. No. 20) should be positioned so guide blocks (Ref. No. 21) on either side of blade will support as much of blade width as possible without interfering with the tooth set.
3. Adjust guide bracket depth by loosening set screw (Ref. No. 40) and sliding bracket into position. Secure position of bracket by tightening set screw.
4. Loosen bolts (Ref. No. 24) and adjust guide blocks (Ref. No. 21) to sides of blade. Use a feeler gauge to check that guide blocks are .002" away from blade.
5. Lock adjustment by tightening bolts.
6. Adjust the height of upper guide assembly to clear the workpiece by 1/4". Loosen locking knob (Ref. No. 30) and use handle (Ref. Nos. 37 and 38) to slide guide bar down until the upper guide assembly clears workpiece by 1/4". Tighten locking knob.

OPERATION (CONTINUED)

LOWER BLADE GUIDES

Refer to Figure 17.

1. 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 (Ref. No. 56) must be removed to adjust lower blade guides.

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

BLADE SPEED

Refer to Figure 16.

1. The amount of force with which the blade cuts is determined by speed.
2. High cutting speeds are used on soft materials where less force is needed and a high rate of material removal is desired.
3. Low cutting speeds are used on hard materials when more force is required.

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-molybdenm	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
Copper395/18	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

4. Adjust blade speed by rotating hand wheel (Ref.No.50) while machine is running.

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

5. Rotate handwheel clockwise to increase blade speed.
6. Rotate handwheel counterclockwise to decrease blade speed.
7. Consult Blade Speed Chart to determine blade speed and blade type for required cutting operation.

BLADE SELECTION

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

BLADE WIDTH

1. Width of blade describes distance from tip of a tooth to back of blade.
2. Width of blade will affect rigidity of blade. A wider blade will wander less and produce a straighter cut.
3. Width of blade also limits the smallest radius which can be cut. A 1/4" wide blade can cut about a 1/2" radius.

OPERATION (CONTINUED)

BLADE THICKNESS

1. Blade thickness describes the distance between sides of the blade. A thicker blade has more rigidity and stronger teeth.
2. A narrow thick blade would be used to cut curves, while a wide thin blade would be used to make long, straight cuts.
3. 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.
4. When pitch is too small the gullets of the teeth will fill up leading to the creation of excess heat.

BLADE PITCH

1. Pitch describes number of teeth per inch. A blade with more teeth per inch will produce a smoother cut.
2. Type of material being cut determines number of teeth in contact with work.

TYPE OF TOOTH

1. 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.
2. The shape of gullet between teeth determines how much material can be taken out with each blade tooth.
3. Rake angle is 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.
4. Positive rake angle blades are used to cut softer materials. Softer materials require more aggressive chip removal.
5. Larger gullets provide for faster removal but have to be limited in size because they make blade teeth weaker.
6. 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.

ADJUSTING TABLE ANGLE

Refer to Figure 17.

1. Angle cuts can be made by tilting table left to right and/or front to back.
2. Loosen socket head bolts (Ref. No. 12) to tilt table up to 15° right or left.
3. Use angle scale to set table angle.
4. Loosen bolts (Ref. No. 10) on both brackets (Ref. Nos. 3 and 4) to tilt table up to 10° front or back.
5. Use angle scale to set table angle.
6. Secure all fasteners after adjusting table.

TYPE OF CUT

1. Band saw can be used to perform a variety of cuts. Cutting procedure used depends on size and desired shape of cut.
2. Contour cutting is done by guiding workpiece freehand to produce curved shapes.
3. Beveled cutting can be done with any proper work guide method by tilting table.
4. 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 15.

BEVEL CUTTING

1. Perform a bevel operation by tilting table. See "Adjusting Table Angle" and tilt table to desired position.
2. Use a square or protractor to set angle and lock table in position. Use caution when supporting work while bevel cutting. Do not allow work to hang on blade.

CONTOUR CUTTING

1. When contour cutting, both hands must be used to keep workpiece flat against table and guided along path.
2. Avoid placing hands in line of blade. If hands contact blade it may cause injury.
3. 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.
4. Cut small corners by sawing around them and removing scrap until shape is produced.

MITER GAUGE

1. 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.
2. 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.

CHIP BLOWER

Band saw is equipped with chip blower used to remove chips to make contour cutting easier.

Adjust air nozzle (Figure 17, Ref. No. 31) so that air blows chips away from blade and workpiece.

PREPARING BLADE FOR WELDING

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

BLADE CUTTING

Refer to Figure 10.

1. Cut the blade ends flat, square and smooth using the blade shear.
2. Lean the back of blade against the shear blade guide when cutting blade ends (See Figure 10).
3. Use grinder, as needed, to make blade ends flat, square and smooth.

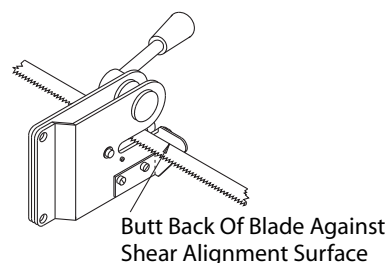


Figure 10 – Blade Cutting

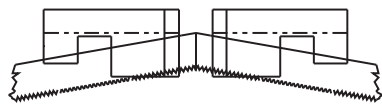
OPERATION (CONTINUED)

BLADE MOUNTING

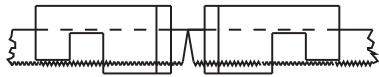
Refer to Figure 11.

1. Clean welder jaw of any scale, oil, rust or dirt. Clean blade ends which contact welder jaws to provide proper electrical contact.
2. Set weld pressure adjustment knob to "0" (released).
3. Insert one end of blade into stationary jaw with teeth facing out and blade end centered between jaws.
4. Firmly set back of blade against back alignment surface of welder jaw and clamp blade tight with the jaw clamping handle (See Figure 11).
5. Insert other end of blade into movable jaw; butt the blade ends together and clamp tight.

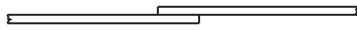
IMPORTANT: The blade ends should butt against each other over the full width of the blade and should not overlap (See Figure 11).



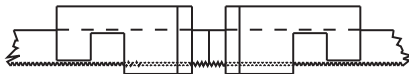
Incorrect - Blades Clamped At Angle



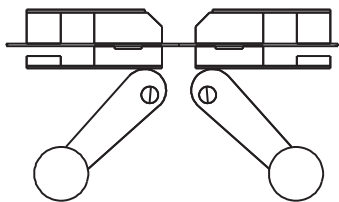
Incorrect - Blades Not Ground Square



Incorrect - Blades Overlap



Correct - Grind Blades Square and Clamp Straight



Correct - Clamp Blades Flat with no Overlap

Figure 11 – Blade Mounting and Clamping

TOOTH SPACING

Refer to Figure 12.

1. Approximately 1/8" of blade will be consumed during the welding process. This blade loss must be taken into account.
2. All blades must have some of the teeth ground off so that the tooth spacing will be uniform after welding.
3. 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.

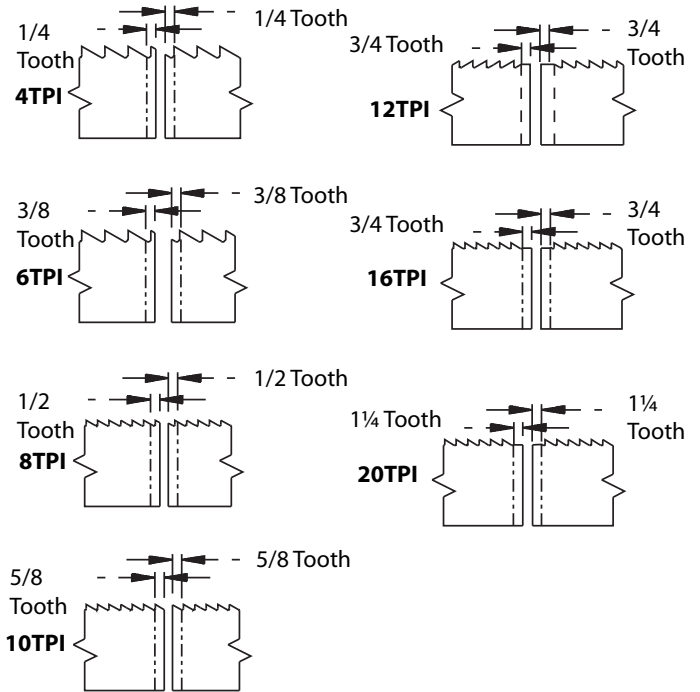


Figure 12 – Tooth Spacing (TPI = Teeth per inch)

BLADE WELDING

Refer to Figures 9 and 13.

1. 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.

2. 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 1/2" wide blades, turn the pressure adjustment knob counterclockwise until the pointer is at 6 (See Figure 13).

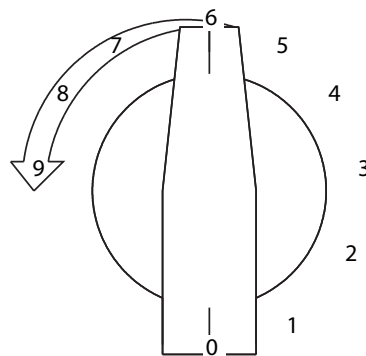


Figure 13 – Weld Pressure Adjustment

3. If blade melts, increase pressure. If there are "blow holes" in the weld, increase pressure.
4. If blade overlaps, decrease pressure.
5. 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.

OPERATION (CONTINUED)

6. 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.
7. Release weld button and wait 10 seconds to allow blade to cool.
8. Reset weld pressure adjustment to "0".
9. 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

1. 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.
2. 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.

3. 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.

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

GRINDING BLADE

1. After annealing the blade, the metal buildup or flash must be ground from the blade.
2. Toggle grinder switch to the ON position.
3. Flip the grinder guard open, exposing the top of the grinding wheel.
4. Weld should be ground to same thickness as blade.
5. Grind flash off under-side of blade taking care not to grind into blade.
6. 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).
7. Take care not to grind into blade.
8. Turn blade inside out again (to original shape).
9. Turn grinder off when grinding is completed. The blade must be annealed again.

ANNEAL BLADE AFTER GRINDING

1. 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.
2. After second blade annealing operation, the blade is ready for installation onto band saw. Follow band saw instruction when installing and adjusting blade.

MAINTENANCE

Refer to Figures 16, 17 and 18.

WARNING: Make certain unit is disconnected from power source before attempting to service or remove any component. If power cord is worn, cut, or damaged in any way, have it replaced immediately by a qualified electrician.

LUBRICATION

Upper and lower blade wheels spin on sealed ball bearings and require no lubrication.

Grease tension screw (Figure 16, Ref. No. 16) and shaft (Figure 18, Ref. No. 9) every 100 hours using grease gun and grease fitting (Figure 18, Ref. No. 10).

Grease trunnion and table support (Figure 17, Ref. Nos. 1 and 2) every three months.

Add light machine oil or air tool oil to air pump (Figure 18, Ref. No. 49) when pump loses power or fails to pump air.

CLEANING

Keep band saw and work area clear of scraps and chips.

Do not allow metal chips to accumulate in upper or lower cabinets.

Keep wheels and blade guides clean of oil and/or chips.

KEEP BAND SAW IN REPAIR

Replace power cord if worn or cut.

Only a qualified electrician should perform electrical work on saw.

Replace V-belts and blade when worn. Replace any damaged or missing parts. Use parts list to order parts from your Palmgren dealer.

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
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
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 Chart 3. Check Blade Pitch 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

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
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 9. Blade guide bracket not adjusted properly 	<ol style="list-style-type: none"> 1. 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 Chart 8. Tighten blade guide properly 9. Move blade guide bracket 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 bearings 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 (e.g. pipe) 3. Blade too fine for work (e.g. soft metals) 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. OFF button on motor not reset 2. Loose electrical connections 	<ol style="list-style-type: none"> 1. Reset OFF button 2. Have qualified electrician check electrical connections
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"

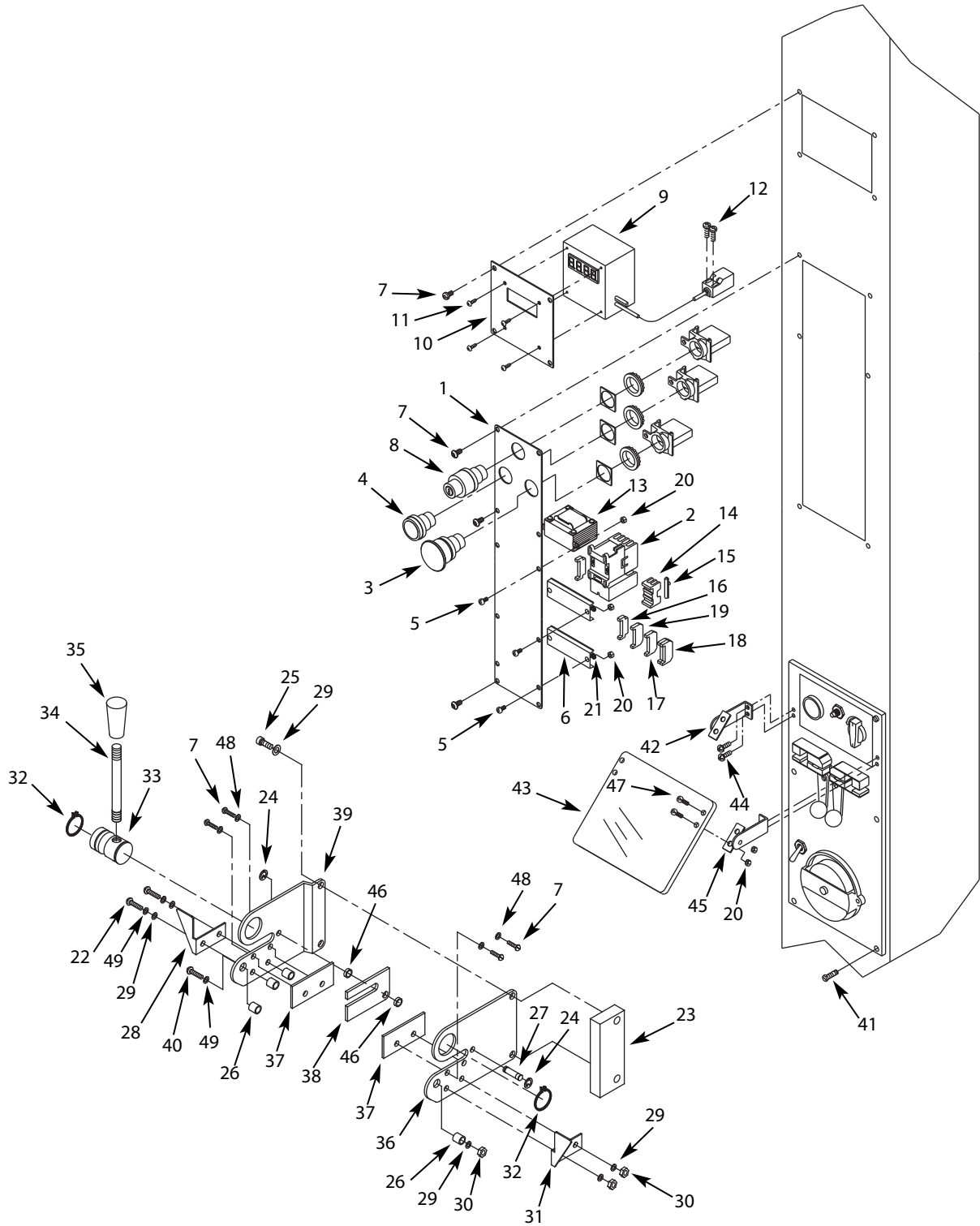


Figure 14 – Repair Parts Illustration for Switch, Shear and Deflector

REPLACEMENT PARTS LIST FOR SWITCH, SHEAR AND DEFLECTOR

Ref. No.	Description	Part No.	Qty.	Ref. No.	Description	Part No.	Qty.
1	Switch plate	9620258.00	1	28	Left alignment bracket	9623928.00	1
2	Magnetic starter	9618637.00	1	29	6mm Flat washer	*	7
3	Stop switch assembly	9617737.00	1	30	6-1.0mm Hex nut	*	3
4	Start switch assembly	9617738.00	1	31	Right alignment bracket	9623930.00	1
5	4-0.7 x 8mm Pan head screw	*	6	32	3AMI-25 Retaining ring	9601900.00	2
6	Bracket	9615561.00	2	33	Blade cam	9605255.00	1
7	5-0.8 x 8mm Pan head screw	*	14	34	Shear handle	9620262.00	1
8	Key switch with two keys	9617739.00	1	35	Knob	9617711.00	1
9	LED readout with sensor	9616934.00	1	36	Right bracket	9605252.00	1
10	Legend plate	9616935.00	1	37	Lower blade	9620263.00	2
11	2.9-1.0 x 6mm Thread forming screw	9617740.00	4	38	Upper blade	9605254.00	1
12	3-0.5 x 20mm Pan head screw	*	2	39	Left bracket	9605251.00	1
13	Transformer	9618638.00	1	40	6-1.0 x 40mm Pan head screw	*	1
14	Fuse holder	9616760.00	1	41	6-1.0 x 15mm Pan head screw	*	6
15	Fuse	9616761.00	2	42	Left deflector bracket	9620267.00	1
16	Stop block	9617400.00	3	43	Spark deflector	9620264.00	1
17	Terminal block	9617401.00	6	44	#10-32 x 5/16" Pan head screw	*	4
18	Double terminal block	9618006.00	2	45	Right deflector bracket	9620268.00	1
19	Ground block	9617501.00	1	46	Spacer	9620266.00	2
20	4-0.7mm Hex nut	*	10	47	4-0.7 x 12mm Pan head screw	*	4
21	4mm Serrated washer	*	2	48	5mm Lock washer	*	4
22	6-1.0 x 35mm Pan head screw	*	2	49	6mm Lock washer	*	3
23	Spacer	9620257.00	1	Recommended Accessories			
24	3CMI-6 E-ring	9609845.00	2		Horizontal Support Stand	9670141	
25	6-1.0 x 25mm Socket head bolt	*	2		Material Support Stand	9670181	
26	Spacer	9620260.00	4		14" Horizontal Roller Head	9670182	
27	Pin	9620261.00	1		Blade 140' x 1/2" x 0.025" x 10 TPI	9683330	

△ Not Shown.

* Standard hardware item available locally.

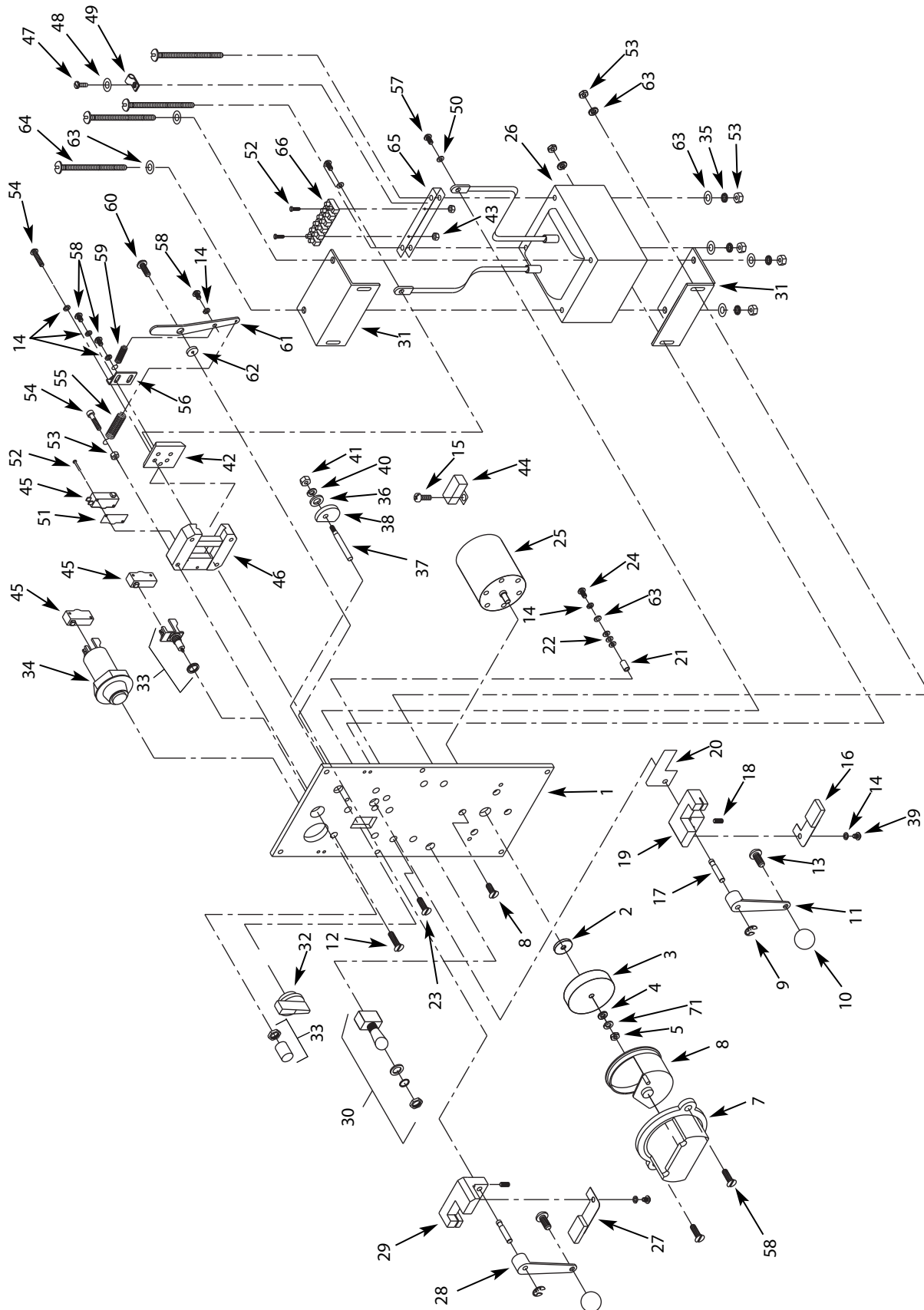


Figure 15 – Repair Parts Illustration for Welder

REPAIR PARTS LIST FOR WELDER

Ref. No.	Description	Part No.	Qty.	Ref. No.	Description	Part No.	Qty.
1	Welder cover	9618640.00	1	34	Weld button assembly	9618646.00	1
2	Spacer	9620229.00	1	35	5mm Serrated washer	*	4
3	Grinding wheel	9620230.00	1	36	6mm Lock washer	*	2
4	6mm Flat washer	*	1	37	Shaft	9620238.00	1
5	6-1.0mm Hex nut	*	1	38	Cam	9620239.00	1
6	Grinder cover	9620231.00	1	39	5-0.8 x 6mm Pan head screw	*	2
7	Grinder guard	9618641.00	1	40	6mm Flat washer	*	1
8	#10-24 x 1/2" Flat head screw	*	4	41	6-1.0mm Hex nut	*	1
9	3CMl-6 E-ring	9609845.00	2	42	Guide block	9618647.00	1
10	Knob	9609442.00	2	43	3-0.5mm Hex nut	*	2
11	Right clamping lever	9620232.00	1	44	Capacitor	9618648.00	1
12	5-0.8 x 8 mm Flat head screw	*	4	45	Limit switch	9605278.00	3
13	6-1.0 x 15mm Pan head screw	*	2	46	Guide casting	9618649.00	1
14	5mm Lock washer	*	11	47	4-0.7 x 8mm Pan head screw	*	1
15	#10-24 x 1/4" Pan head screw	*	1	48	4mm Flat washer	*	1
16	Right clamp	9605297.01	1	49	Cord clamp	9602702.00	1
17	Eccentric shaft	9620234.00	2	50	5mm Brass flat washer	9605332.00	2
18	6-1.0 x 6mm Set screw	*	2	51	Switch insulator	9605279.00	1
19	Stationary jaw	9620235.00	1	52	3-0.5 x 20mm Pan head screw	*	4
20	Jaw insulator	9605324.00	1	53	5-0.8mm Hex nut	*	5
21	Insulating tube	9618642.00	3	54	5-0.8 x 15mm Socket head bolt	*	3
22	Insulating washer	9604696.00	9	55	Long spring	9620240.00	1
23	5-0.8 x 12mm Flat head screw	*	4	56	Spring bracket	9605283.00	1
24	5-0.8 x 15mm Socket head bolt	*	3	57	5-0.8 x 10mm Brass pan head screw	9603463.00	2
25	Motor	9618643.00	1	58	5-0.8 x 8mm Pan head screw	*	6
26	Transformer	9618653.00	1	59	Short spring	9618650.00	1
27	Left clamp	9605330.01	1	60	1/4-20 x 5/8" Pan head screw	*	1
28	Left clamping lever	9620233.00	1	61	Tension arm	9620241.00	1
29	Movable jaw	9618644.00	1	62	Bushing	9620242.00	1
30	Grinder switch assembly	9618645.00	1	63	5mm Flat washer	*	17
31	Bracket	9618652.00	2	64	5-0.8 x 65mm Pan head screw	*	4
32	Pressure adjustment knob	9620236.00	1	65	Bracket	9618651.00	1
33	Anneal button assembly	9620237.00	1	66	Terminal block	9620243.00	1

(* Standard hardware item, available locally.

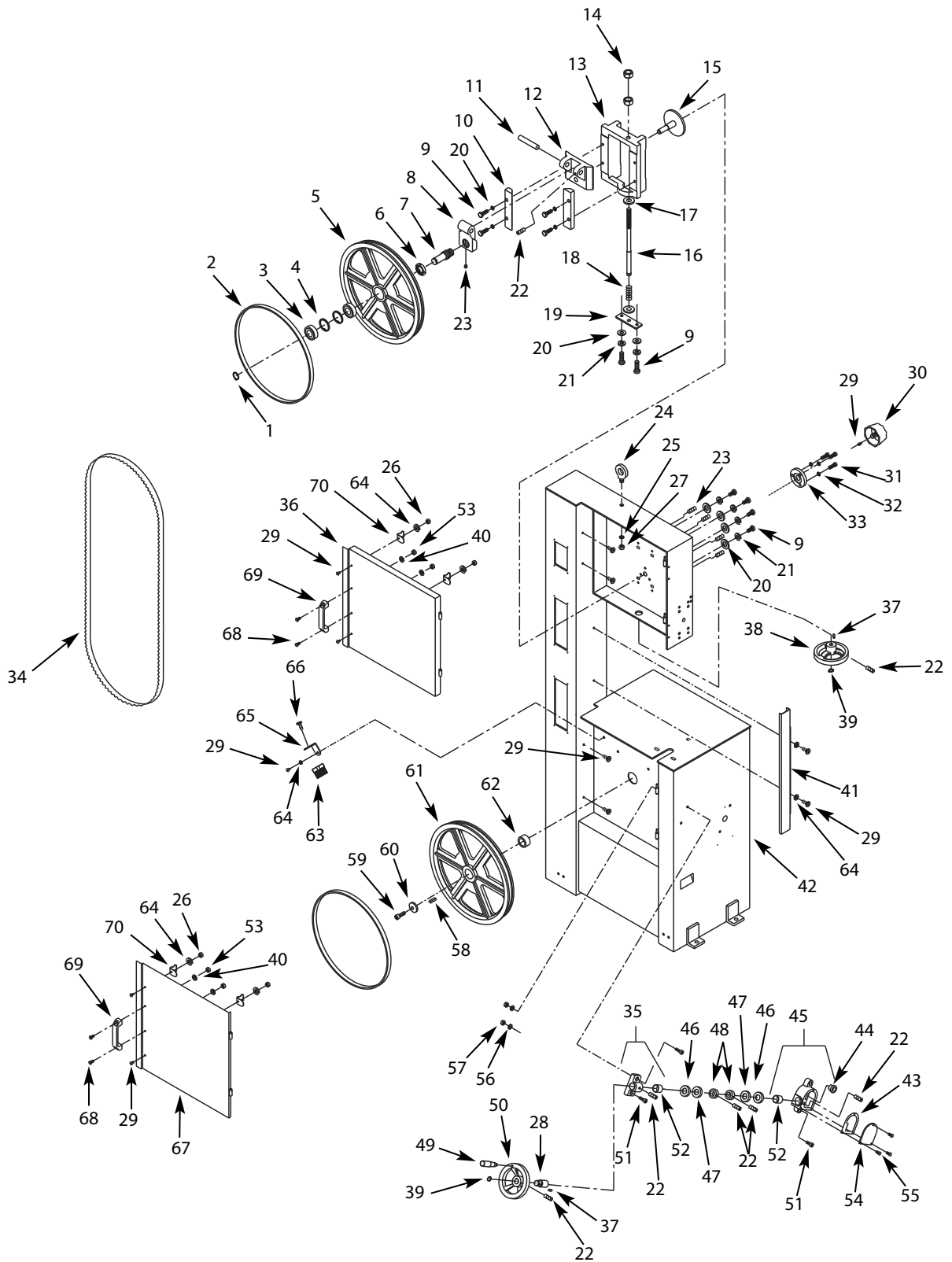


Figure 16 – Repair Parts Illustration for Wheels and Speed Handle

REPLACEMENT PARTS LIST FOR WHEELS AND SPEED HANDLE

Ref. No.	Description	Part No.	Qty.	Ref. No.	Description	Part No.	Qty.
1	3AMI-25 Retaining ring	9601900.00	1	37	5 x 5 x 16mm Key	9616992.00	2
2	Tread	9618660.00	2	38	Handwheel	9616947.00	1
3	6005ZZ Bearing	*	2	39	3AMI-18 Retaining ring	9606169.00	2
4	3BMI-47 Retaining ring	9604790.00	2	40	6mm Flat washer	*	4
5	Upper wheel	9618662.00	1	41	Blade guard	9625404.00	1
6	Nut	9616949.00	1	42	Cabinet	†	1
7	Stud	9616954.00	1	43	Gasket	9617694.00	1
8	Pivot	9616955.00	1	44	Flange bushing	9618707.00	1
9	10-1.5 x 30mm Hex head bolt	*	10	45	Gearbox housing (includes Ref. Nos. 44 and one 52)	9618658.00	1
10	Guide	9616943.00	2	46	Thrust bearing	9616979.00	2
11	Shaft	9616957.00	1	47	Dust deflector	9617693.00	2
12	Slide block	9616948.00	1	48	Collar	9616981.00	2
13	Housing	9616942.00	1	49	Handle	9607305.00	1
14	5/8"-11 Hex nut (LH thread)	9600088.00	2	50	Handwheel	9616974.00	1
15	Tilt actuator	9616956.00	1	51	8-1.25 x 25mm Socket head bolt	*	4
16	Lead screw	9618663.00	1	52	Bushing	9618708.00	2
17	Spacer	9617727.00	2	53	6-1.0mm Hex nut	*	4
18	Spring	9616946.00	1	54	Cover	9618659.00	1
19	Plate	9616944.00	1	55	5-0.8 x 10mm Hex head bolt	*	3
20	10mm Flat washer	*	10	56	8mm Flat washer	*	2
21	10mm Lock washer	*	6	57	8-1.25mm Hex nut	*	2
22	6-1.0 x 6mm Set screw	*	7	58	7 x 7 x 30mm Key	9616995.00	1
23	8-1.25 x 8mm Set screw	*	5	59	10-1.5 x 25mm Socket head bolt (LH)	9618007.00	1
24	Eye bolt	9616951.00	1	60	Spacer	9617728.00	1
25	12mm Flat washer	*	1	61	Lower wheel	9618664.00	1
26	5-0.8mm Hex nut	*	4	62	Ring	9617696.00	1
27	12-1.75mm Hex nut	*	1	63	Chip brush	9617689.00	1
28	Speed operator shaft	9616984.00	1	64	5mm Flat washer	*	8
29	5-0.8 x 8mm Pan head screw	*	12	65	Bracket	9617690.00	1
30	Knob	9616959.00	1	66	4.8-2.1 x 8mm Thread forming screw	9617741.00	2
31	8.1.25 x 25mm Hex head bolt	*	3	67	Lower door	9618657.01	1
32	8mm Lock washer	*	3	68	6-1.0 x 16mm Hex head bolt	*	4
33	Housing	9616958.00	1	69	Door handle	9617692.00	2
34	140 x 1/2 x .025" Blade, 14 rake	9620259.00	1	70	Spring latch	9617691.00	4
35	Pillow block (includes one Ref. No. 52)	9616985.00	1				
36	Upper door	9618656.01	1				

△ Not Shown.

* Standard hardware item available locally.

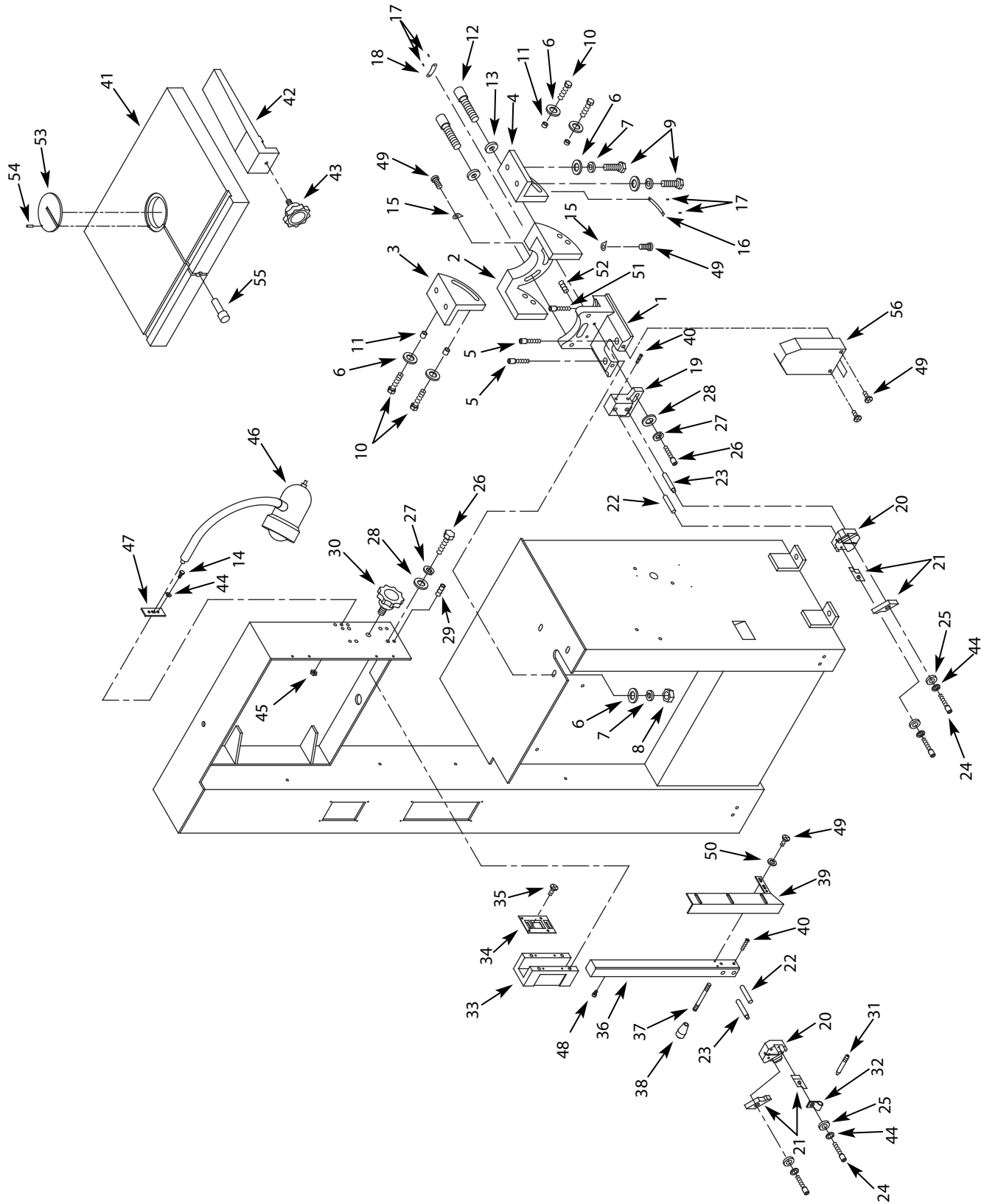


Figure 17 – Repair Parts Illustration for Table

REPAIR PARTS LIST FOR TABLE

Ref. No.	Description	Part No.	Qty.	Ref. No.	Description	Part No.	Qty.
1	Table support	9617697.00	1	29	8-1.25 x 15mm Set screw	*	4
2	Frame	9617698.00	1	30	Knob	9616962.00	1
3	Left table bracket	9617699.00	1	31	Air nozzle	9618665.00	1
4	Right table bracket	9617700.00	1	32	Clamp	9602702.00	1
5	10-1.5 x 25mm Socket head bolt	*	2	33	Housing	9617707.00	1
6	10mm Flat washer	*	11	34	Spring	9617708.00	1
7	10mm Lock washer	*	7	35	5-0.8 x 8mm Flat head screw	*	4
8	10-1.5mm Hex nut	*	3	36	Guide post	9617709.00	1
9	10-1.5 x 30mm Hex head bolt	*	4	37	Rod	9617710.00	1
10	10-1.5 x 45mm Hex head bolt	*	4	38	Handle	9617711.00	1
11	Roller	9617729.00	4	39	Blade guard	9625404.00	1
12	12-1.75 x 55mm Socket head bolt	*	2	40	6-1.0 x 6mm Set screw	*	4
13	12mm Flat washer	*	2	41	Work table	9625406.00	1
14	6-1.0 x 12mm Hex head bolt	*	2	42	Rip fence	9617714.00	1
15	Pointer	9617730.00	2	43	Knob	9617715.00	1
16	Scale	9617731.00	1	44	6mm Lock washer	*	6
17	Rivet	9601286.00	4	45	1/2"-20 Hex jam nut	*	1
18	Scale	9617732.00	1	46	Lamp	9620011.00	1
19	Blade guide support	9617701.00	1	47	Bracket	9620012.00	1
20	Blade guide bracket	9617702.00	2	48	6-1.0 x 12mm Socket head bolt	*	1
21	Blade guide	9617703.00	4	49	5-0.8 x 8mm Pan head screw	*	6
22	Blade thrust guide	9617704.00	2	50	5mm Flat washer	*	2
23	Pin	9617705.00	2	51	10-1.5 x 45mm Socket head bolt	*	1
24	6-1.0 x 25mm Socket head bolt	*	4	52	6-1.0 x 10mm Set screw	*	1
25	6mm Flat washer	*	4	53	Table insert	9608609.00	1
26	8-1.25 x 30mm Hex head bolt	*	6	54	4 x 12mm Spring pin	9608634.00	1
27	8mm Lock washer	*	6	55	Table stud	9608331.00	1
28	8mm Flat washer	*	6	56	Lower blade guard	9625305.00	1

(* Standard hardware item, available locally.

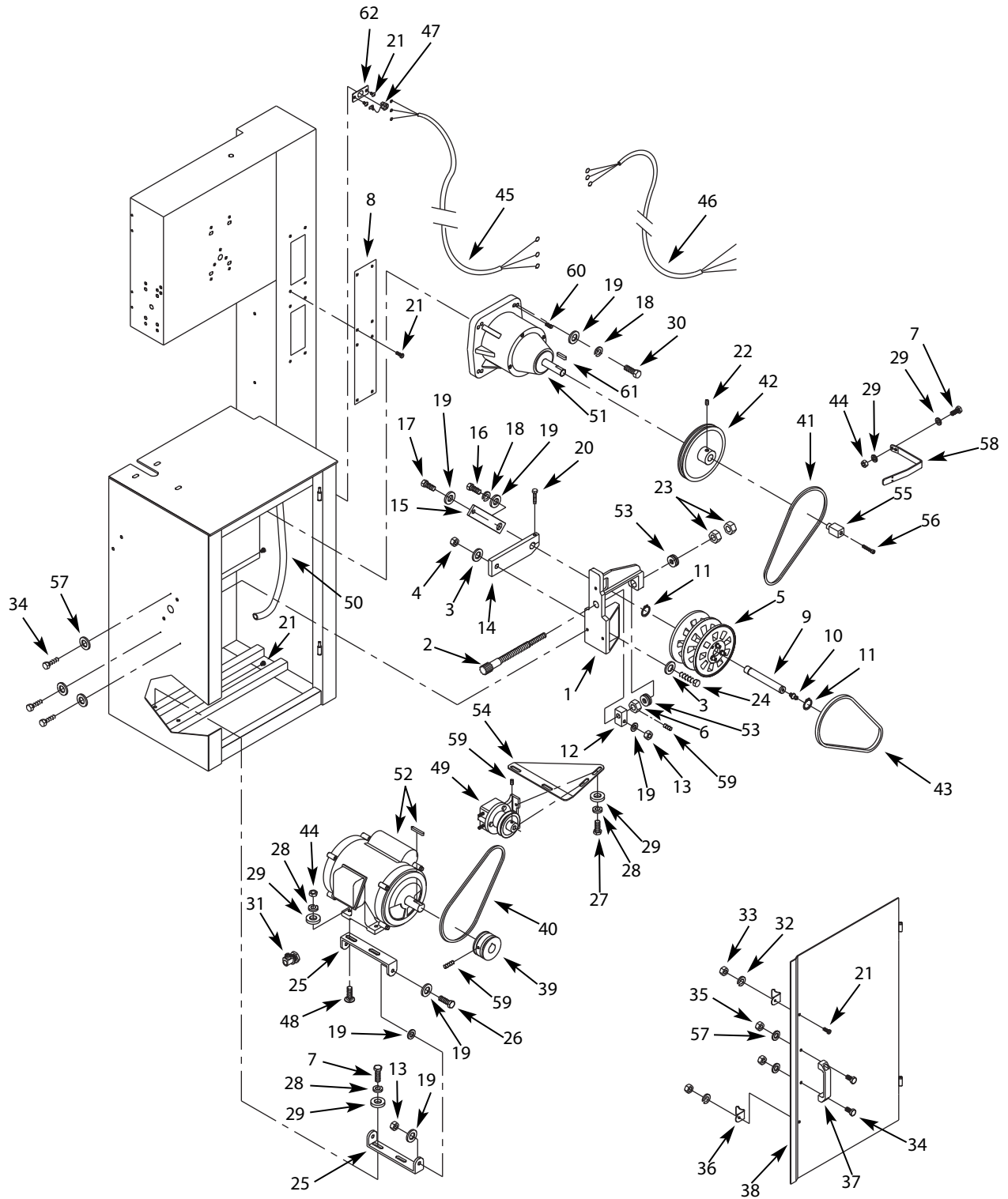


Figure 18 – Repair Parts Illustration for Motor and Blade Drive

REPLACEMENT PARTS LIST FOR MOTOR AND BLADE DRIVE

Ref. No.	Description	Part No.	Qty.	Ref. No.	Description	Part No.	Qty.
1	Speed change shaft housing	9617716.00	1	32	5mm Flat washer	*	2
2	Speed change shaft	9616966.00	1	33	5-0.8mm Hex nut	*	2
3	1/2" Flat washer	*	2	34	6-1.0 x 16mm Hex head bolt	*	5
4	1/2"-12 Fiber hex nut	*	1	35	6-1.0mm Hex nut	*	2
5	Variable pulley assembly	9620069.00	1	36	Latch	9617691.00	2
6	Hex nut	9620256.00	1	37	Handle	9617692.00	1
7	8-1.25 x 20mm Hex head bolt	*	4	38	Door	9618668.01	1
8	Reset cover	9620255.00	1	39	Motor pulley	9618669.00	1
9	Pulley shaft	9616968.00	1	40	M-19 V-belt	9642286.01	1
10	Grease fitting	9617733.00	1	41	17-360 V-belt	9642287.01	1
11	3AMI-20 Retaining ring	9600256.00	2	42	Speed reducer pulley	9618670.00	1
12	Shaft block	9616969.00	1	43	17-320 V-belt	9617724.00	1
13	10-1.5mm Fiber hex nut	*	3	44	8-1.25mm Hex nut	*	6
14	Pulley shaft arm	9616970.00	1	45	Line cord	9616975.00	1
15	Gear shaft arm	9618667.00	1	46	Motor cord	9617734.00	1
16	10-1.5 x 20mm Hex head bolt	*	1	47	Strain relief	9607346.00	1
17	10-1.5 x 45mm Hex head bolt	*	1	48	8-1.25 x 20mm Carriage bolt	*	4
18	10mm Lock washer	*	5	49	Air pump	9620015.00	1
19	10mm Flat washer	*	13	50	Air hose	9618675.00	1
20	8-1.25 x 35mm Hex head bolt	*	1	51	Gear reducer	9620253.00	1
21	5-0.8 x 8mm Pan head screw	*	14	52	Motor with key	9622489.00	1
22	8-1.25 x 8mm Set screw	*	1	53	Thrust bearing	9620254.00	2
23	12-1.75mm Hex nut	*	2	54	Plate	9616680.00	1
24	1/2-12 x 2" Hex head bolt	*	1	55	Sensor target	9616977.00	1
25	Bracket	9616972.00	2	56	6-1.0 x 35mm Socket head bolt	*	1
26	10-1.5 x 35mm Hex head bolt	*	2	57	6mm Flat washer	*	5
27	8-1.25 x 15mm Hex head bolt	*	2	58	Bracket	9618673.00	1
28	8mm Lock washer	*	8	59	6-1.0 x 6mm Set screw	*	3
29	8mm Flat washer	*	12	60	8-1.25 x 20mm Set screw	*	4
30	10-1.5 x 40mm Hex head bolt	*	4	61	7 x 7 x 38mm Key	9618674.00	1
31	Strain relief	9600582.00	1	62	Strain relief plate	9616982.00	1

△ Not Shown.

* Standard hardware item available locally.

WARRANTY

Palmgren warrants their products to be free of defects in material or workmanship. This warranty does not cover defects due directly or indirectly to misuse, abuse, normal wear and tear, failure to properly maintain the product, heated, ground or otherwise altered, or used for a purpose other than that for which it was intended. The warranty does not cover expendable and/or wear parts (i.e. v-belts, coated screws, abrasives), damage to tools arising from alteration, abuse or use other than their intended purpose, packing and freight. The duration of this warranty is expressly limited to one year parts and labor, unless otherwise noted below beginning from the date of delivery to the original user. The Palmgren products carry the following warranties on parts with a 1 year warranty on labor:

- USA Machine vises – Lifetime
- IQ Machine vises – Lifetime
- Bench vises – Lifetime
- Positioning tables – Lifetime
- Bench grinders & buffers – 3 years
- Tapping machines – 2 years
- Drilling machines – 2 years
- Finishing machines – 2 years
- Band saws – 2 years
- Work stands – 2 years
- Arbor presses – 2 years
- Metal forming equipment – 2 years
- Accessories – 1 year

The obligation of Palmgren is limited solely to the repair or replacement, at our option, at its factory or authorized repair agent of any part that should prove deficient. Purchaser must lubricate and maintain the product under normal operating conditions at all times. Prior to operation become familiar with product and the included materials, i.e. warnings, cautions and manuals. **Failure to follow these instructions will void the warranty.**

This warranty is the purchaser's exclusive remedy against Palmgren for any deficiency in its products. Under no circumstances is Palmgren liable for any direct, indirect, incidental, special or consequential damages including lost profits in any way related to the use or inability to use our products. This warranty gives you specific legal rights which may vary from state to state.

SERVICE & REPAIR

1. If a Palmgren product requires a repair or warranty service **DO NOT** return the product to the place of purchase.
2. All warranty related work must be evaluated and approved by Palmgren.
3. Prior to returning any item the user must obtain factory approval and a valid RGA number.
4. For instructions and RGA number call toll free (800) 827-3398.