



7 x 12 Metal Band Saw With Vertical Cutting Table

OWNER'S MANUAL



⚠ WARNING:
Read carefully and understand all ASSEMBLY AND OPERATION INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item# 49465



7 x 12 Metal Band Saw With Vertical Cutting Table OWNER'S MANUAL

Thank you very much for choosing a Klutch product. For future reference, please complete the owner's record below:
Serial Number/Lot Date Code: _____ Purchase Date: _____
Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This 7 x 12 inch metal band saw is designed for certain applications only. Northern Tool and Equipment cannot be responsible for issues arising from modification or use of this product in an application for which it was not designed. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed.

For technical questions please call 1-800-222-5381.

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Intended Use

This large-capacity band saw is used to cut larger pieces of metal up to 7 x 12 inches as given in the specifications below. The saw features 115/230 dual voltage operation, a vertical cutting table, and hydraulic downfeed control. The unit rolls on casters for maneuverability.

Technical Specifications

Property	Specification
Motor	1.5HP (1100W), 115V/230V,60Hz
Blade size	3/4" x 0.032" x 93"
Blade speed	80, 130, 180, 235 FPM
Angular Cut	Maximum Capacity
45°Circular	5"
45°Rectangular	4-3/4" x 4-7/8"
90°Circular	7"
90°Rectangular	7" x 12"
Dimensions	48" L x 16" W x 37-5/8" H
Shipping Weight	423 lbs.

Important Safety Information**WARNING:**

- Read and understand all instructions. Failure to follow all instructions may result in serious injury or property damage.
- The warnings, cautions, and instructions in this manual cannot cover all possible conditions or situations that could occur. Exercise common sense and caution when using this tool. Always be aware of the environment and ensure that the tool is used in a safe and responsible manner.
- Do not allow persons to operate or assemble the product until they have read this manual and have developed a thorough understanding of how it works.
- Do not modify this product in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the product. There are specific applications for which the product was designed.
- Use the right tool for the job. DO NOT attempt to force small equipment to do the work of larger industrial equipment. There are certain applications for which this equipment was designed. It will do the job better and more safely at the capacity for which it was intended. DO NOT use this equipment for a purpose for which it was not intended.
- Industrial or commercial applications must follow OSHA requirements.

**WARNING:**

- This product may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
- Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains 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, and
 - 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, such as dust masks that are specially designed to filter out microscopic particles.
- Handling power cords on corded products may expose you to lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. Wash your hands after handling.

**WARNING:****WORK AREA SAFETY**

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well lit. Cluttered, wet, or dark work areas can result in injury. Using the tool in confined work areas may put you dangerously close to other cutting tools and rotating parts.
- Do not use the product where there is a risk of causing a fire or an explosion; e.g., in the presence of flammable liquids, gases, or dust. The product can create sparks, which may ignite the flammable liquids, gases, or dust.
- Do not allow the product to come into contact with an electrical source. The tool is not insulated and contact will cause electrical shock.
- Keep children and bystanders away from the work area while operating the tool. Do not allow children to handle the tool.
- Be aware of all power lines, electrical circuits, water pipes, and other mechanical hazards in your work area. Some of these hazards may be hidden from your view and may cause personal injury and/or property damage if contacted.

**WARNING:****PERSONAL SAFETY**

- Stay alert, watch what you are doing, and use common sense when operating the tool. Do not use the tool while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.
- Dress properly. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Wear the proper personal protective equipment when necessary. Use ANSI Z87.1 compliant safety goggles (not safety glasses) with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.
- Do not overreach. Keep proper footing and balance at all times.
- Remove keys or wrenches before connecting the tool to an air supply, power supply, or turning on the tool. A wrench or key that is left attached to a rotating part of the tool may cause personal injury.
- Secure the work with clamps or a vise instead of your hand when practical. This safety precaution allows for proper tool operation using both hands.

**WARNING:****ELECTRICAL SAFETY**

- Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
- Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
- Do not allow the product to come into contact with an electrical source. The tool is not insulated and contact will cause electrical shock.
- Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increased risk of electric shock if your body is grounded.
- Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- Do not abuse the power cord. Never use the power cord to carry the tools or pull the plug from an outlet. Keep the power cord away from heat, oil, sharp edges, or moving parts. Replace damaged power cords immediately. Damaged power cords increase the risk of electric shock.
- When operating a power tool outside, use an outdoor extension cords marked "W-A" or "W". These extension cords are rated for outdoor use, and reduce the risk of electric shock.

⚠ CAUTION: SAW USE AND CARE

- Do not force the saw. Tools do a better and safer job when used in the manner for which they are designed. Plan your work, and use the correct tool for the job.
- Check for damaged parts before each use. Carefully check that the tool will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the tool with a damaged part.
- Do not use a saw with a malfunctioning switch. Any power tool that can't be controlled is dangerous and must be repaired by an authorized service technician before using.
- Disconnect the power/air supply from the product and place the switch in the locked or off position before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
- Store the tool when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the tool for good working condition prior to storage and before re-use.
- Use only recommended accessories with your saw. Accessories that may be suitable for one tool may create a risk of injury when used with another tool.
- Keep guards in place and in working order. Never operate the saw without the guards in place.
- Do not leave the saw running unattended.

Specific Operation Warnings

⚠ WARNING:

- Wear the proper safety gear including ANSI Z87.1 compliant eye protection.
- Cutting Hazard. DO NOT operate with guard removed. Keep hands clear of blade.
- Be especially careful to keep fingers and hands out of path of blade when using band saw in a vertical position.
- Hold work piece firmly against table.
- Electric shock hazard. Be sure equipment is properly grounded.
- Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- Ground fault circuit interrupters. If work area is not equipped with a permanently installed Ground Fault Circuit Interrupter outlet (GFCI), use a plug-in GFCI between power tool or extension cord and power receptacle.
- Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increased risk of electric shock if your body is grounded.
- Avoid accidental starting. Ensure the switch is in the off position before plugging tool into power outlet.
- In the event of a power failure, while a tool is being used, turn both the switches off to prevent surprise starting when power is restored.
- When moving the saw, ALWAYS have the head lowered to the horizontal position.
- Turn power OFF before servicing.
- Not for use by or around children.

Grounding

⚠ WARNING:

- This saw must be grounded while in use to protect the operator from electrical shock. It is equipped with an electric cord that has an equipment-grounding conductor and a grounding plug. The plug MUST be plugged into a matching receptacle that is properly installed and grounded in accordance with ALL local codes and ordinances. Never use an adapter plug.
- DO NOT MODIFY THE PLUG PROVIDED. If it will not fit the receptacle, have the proper receptacle installed by a qualified electrician.
- CHECK with a qualified electrician or service person if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded.

Grounded Tools: Tools with 3-Prong Plugs

Tools marked with **Grounding Required** have a 3-wire cord and 3-prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. (See Figure A.)

The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically live terminal.

Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the following illustration.

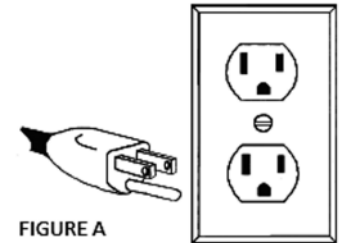


FIGURE A

Double Insulated Tools: Tools with Two-Prong Plugs

Tools marked **Double Insulated** do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code. (See Figure B.)

Double insulated tools may be used in either of the 120 volt outlets shown in the following illustration.

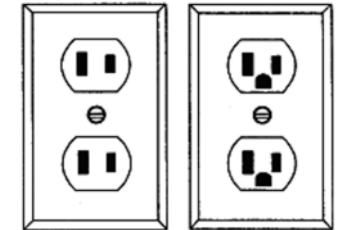


FIGURE B

Extension Cords

⚠ WARNING:

- USE A PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current the saw will draw. An undersized cord will cause a drop in line voltage, resulting in loss of power and cause overheating.
- Be sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it. Protect your extension cords from sharp objects, excessive heat and damp or wet areas.
- Grounded tools, like the saw, require a 3-wire extension cord.
- As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage.
- The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14-gauge cord can carry a higher current than a 16-gauge cord. Minimum extension cord wire size is shown in the following table:

Nameplate AMPS	Minimum Wire Size Of Extension Cords			
	Cord Length			
	25'	50'	100'	150'
0-6	18 AWG	16 AWG	16 AWG	14 AWG
6-10	18 AWG	16 AWG	14 AWG	12 AWG
10-12	16 AWG	16 AWG	14 AWG	12 AWG
12-16	14 AWG	12 AWG	NOT RECOMMENDED	

- When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required.
- If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size.
- If you are using an extension cord outdoors, make sure it is marked with the suffix W-A (W in Canada) to indicate it is acceptable for outdoor use.
- Make sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.

Assembly

Tools required for assembly are: #2 cross point screwdriver and a pliers

Unpacking and clean-up

1. Uncrate the saw and inspect it for shipping damage. If any damage has occurred, contact Northern Tool at 1-800-222-5381.
2. Unbolt the saw from the skid and place it on a level surface.
3. Clean rust protected surfaces with kerosene, diesel oil, or a mild solvent. Do not use cellulose based solvents such as paint thinner or lacquer thinner. These will damage painted surfaces.

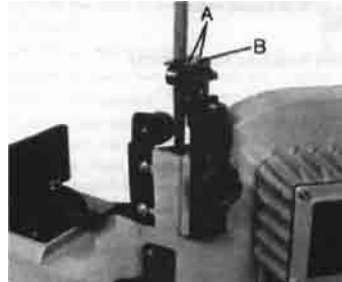
Saw Base Assembly

Note: The saw may be mounted on your own bench or stand. The rear of the saw must be mounted flush with the rear of your stand or bench to permit vertical operation of the saw.

1. Place blocking under the ends of the saw base for wheel installation.

⚠ Caution: Make sure saw is steady while temporarily supported.

2. Slide the wheel axles through the holes in the base.
3. Slide the wheels onto the axles, fasten them with the pins, then bend the pins to secure them.
4. Slide the material stop rod (#55) into the base and secure by tightening hex hd screw. Slide the material stop block (#54) onto the rod and tighten the thumb screw (#53).
5. Slide the blade back cover (#97) over the pulley assemblies and fasten them with the plum screw (#95) and washer (#96).
6. Close the belt cover and secure it with the lock knob (#140).
7. Remove the transportation strap and keep it for later use should the saw be moved any distance.



Vertical Cutting Plate Assembly

Note: These steps are only necessary if using the band saw in the vertical mode.

Disconnect the saw from the power source before making any repairs or adjustments.

1. Raise the arm to the vertical position and lock it in place by turning the hydraulic cylinder valve to the off position.
2. Remove two screws (A) and the deflector plate (B).
3. Guide the blade through the slot in the table and fasten it with two screws.



Coolant Tank Preparation

Use of a water-soluble coolant will increase cutting efficiency and prolong blade life. DO NOT use black cutting oil as a substitute. Change coolant often and follow the coolant manufacturer's instructions as to its uses and precautions.

1. Turn the saw off and disconnect it from its power source.
2. Remove the coolant return hose from the tank cover.
3. Slide the tank out of the saw base and carefully remove the lid containing the coolant pump.
4. Fill the tank to approximately 80% of capacity.
5. Place the lid back on the tank and place the tank assembly back into the base.
6. Replace the return hose back into the hole in the tank lid.

Adjusting Blade Square to Table

1. Turn the saw off and disconnect it from power.
2. Place a machinist's square on the table next to the blade as pictured (see two arrows) in Fig. 6.
3. Check to see that the blade makes contact with square along the entire width of the blade.
4. If an adjustment is necessary, loosen bolts (A) and rotate the blade guide assemblies slightly in the same direction until the blade makes contact with the square along its entire width.
5. Tighten the bolts (A).
6. Reconnect the saw to power.



Fig. 6

Note: If an adjustment of the square blade to table is necessary, check the blade adjustments again.

Adjusting Blade Square to Vise

1. Disconnect the saw from power.
2. Place a machinist's square as pictured (see the circled part) in figure 7. The square should lie along entire length of the vise and blade without a gap.
3. If an adjustment is necessary, loosen the bolts holding the vise, align it with the square, and retighten the bolts.
4. Reconnect the saw to power.



Fig. 7

Adjusting Blade Guides

1. Turn off the saw and disconnect it from power.
2. Loosen knob (A, Fig. 8) and bolt (B). Slide the blade guide assemblies as close as possible to the material without interfering with the cut.
3. Tighten knob (A) and bolt (B) and reconnect the saw to power.

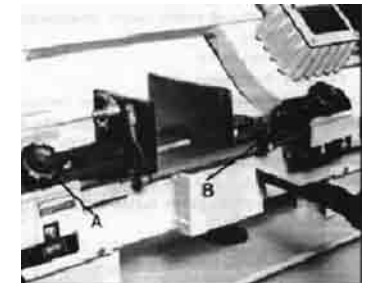


Fig. 8

Vise adjustment

Do not make any adjustments or load/unload material from the vise while the saw is running.

To Set the Vise for 0 to 45 Degree Cutting

1. Turn off the saw and disconnect it from power.
2. Remove the bolt assemblies (C, Fig. 9)
3. Position the vise and re-install it as pictured in Fig. 10. Pay particular attention to the bolt hole location.
4. Set the vise to the desired angle, re-install bolts, and tighten the nut and bolt assemblies.
5. Adjust the movable vise parallel to the fixed vise by loosening bolt (A, Fig. 10), adjusting to parallel and retightening the bolt.

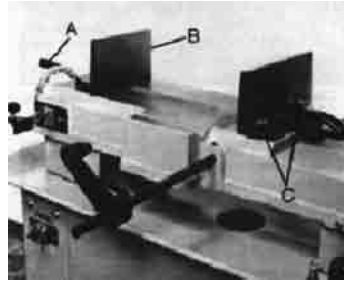


Fig. 9

To Set the Vise for Maximum Width of Stock Cutting

1. Remove the nut and bolt assemblies.
2. Position the vise and re-install the bolt assemblies as pictured in Fig 9.



Fig. 10

Before Each Use

Before EACH use, check for alignment of moving parts; binding of moving parts, broken parts, secure mounting or any other condition that may affect saw operation. Replace damaged or worn parts immediately. Never operate the saw with a damaged part.

Operating Instructions**WARNING:**

- Disconnect power from band saw and place both the switches in the locked or off position before servicing, adjusting, installing accessories or attachments, or storing. Such preventive safety measures reduce the risk of accidental starts.
- Before plugging the saw into power, always check to ensure the power supply corresponds to the voltage wired for the saw's two motors.

WORK SET UP

1. Raise the saw head to the vertical position.
2. Open the vise to accept the piece to be cut by rotating the wheel at the end of the base (see "Using the Quick Vise below).
3. Place the work piece on the saw bed. If the piece is long support the end.
4. Clamp the work piece securely in the vise

CONVERTING FOR VERTICAL USE

Slitting, contour work may be done with the saw in the vertical position in the following manner:

1. Cut off power to the saw.
2. Rotate the head to the vertical position.
3. Assemble a 10" x 10" table (203) (Please refer to 'Vertical Cutting Plate Assembly')

BLADE SPEEDS

When using the band saw always change the blade speed to best suit the material being cut. (Please follow the instructions on the pulley cover (195)) The material cutting chart below offers suggested settings for several materials:

Material	Speed F.P.M.		Belt Groove Used	
	60Hz	50Hz	Motor Pulley	Saw Pulley
Tool, Stainless alloy steels, bearing bronze	86	72	Small	Largest
Medium to highcarbon	132	110	Medium	Large
Low to medium carbon steels softbrass		148	Large	Medium
Aluminum Plastic	260	217	Largest	Small

STARTING THE SAW**CAUTION: NEVER OPERATE THE SAW WITHOUT BLADE GUARDS IN PLACE.**

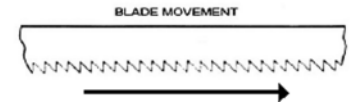
Be sure the blade is not in contact with the work when the motor is started. Start the motor, allow the saw to come to full speed, and then begin the cut by lowering the head down slowly onto the work. **DO NOT DROP OR FORCE** the blade. Let the weight of the saw head provide the cutting force. The saw automatically shuts off at the end of the cut.

BLADE SELECTION

An 8-tooth per inch, general-use blade is furnished with this band saw. Additional blades in 4-, 6-, 8- and 10-tooth sizes are available. The choice of the blade pitch is governed by the thickness of the work to be cut; the thinner the work piece, the more teeth advised. A minimum of three teeth should engage the work piece at all times for proper cutting. If the teeth of the blade are so far apart that they straddle the work, severe damage to the work piece and to the blade can result.

BLADE DIRECTION OF TRAVEL

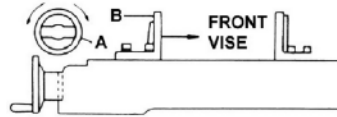
Be sure the blade is assembled to the pulleys such that the vertical edge engages the work piece first.

**CHANGING BLADE**

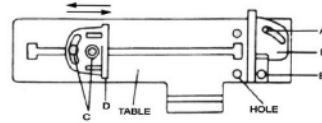
1. Ensure power is disconnected from saw. Raise the saw head to vertical position and open the blade guards (#97).
2. Remove the blade back cover (#97).
3. Loosen the tension screw knob (#107) sufficiently to allow the saw blade to slip off the wheels. Install the new blade with teeth slanting toward the motor (shown above) as follows:
 - a. Place the blade in between each of the guide bearings (#132).
 - b. Slip the blade around the motor pulley (bottom) with the left hand and hold it in position.
 - c. Hold the blade taut against the motor pulley by pulling the blade upward with the right hand placed at the top of the blade.
 - d. Remove the left hand from bottom pulley and place it at the top side of the blade to continue the upward pull on the blade.
 - e. Remove the right hand from blade and adjust the position of the top pulley to permit the left hand to slip the blade around the pulley, using the thumb, index and little finger as guides.
 - f. Adjust the blade tension knob (#107) clockwise until it is just right enough so no blade slippage occurs. Do not tighten excessively.
4. Replace the blade back cover.
5. Place 2-3 drops of oil on the blade.

USING THE QUICK VISE

The band saw machine is equipped with a quick-action vise jaw which allows you to instantly position the movable vise jaw (B). Simply turn the handwheel (A) counterclockwise 1/2 turn, move the vise jaw to the desired position, then tighten the vise jaw against the workpiece by turning hand-wheel clockwise.

**QUICK VISE ADJUSTMENT FOR ANGLE CUT**

1. Loosen screws A, C, and E.
2. Adjust the rear vise (B) to the threaded hole position.
3. Set the scale to the desired angle.
4. Adjust the front vise (D) to parallel the rear vise (B).
5. retighten screws A, C, and E.

**BLADE GUIDE BEARING ADJUSTMENT**

This is the most important adjustment on your saw. It is impossible to get satisfactory work from your saw if the blade guides are not properly adjusted. The blade guide bearings for your band saw are adjusted and power tested with several test cuts before leaving the factory to insure the proper setting.

The need for adjustment should rarely occur if the saw is used properly. If the guides become out of adjustment, it is extremely important to readjust immediately. If proper adjustment is not maintained, the blade will not cut straight and if the situation is not corrected, it will cause blade damage.

Because guide adjustment is a critical factor in the performance of your saw, it is always best to try a new blade to see if this will correct poor cutting before beginning to adjust the bearings. If a blade becomes dull on one side sooner than the other, for example, it will not cut straight. A simple blade change should correct this problem, the more difficult guide adjustment will not. If a new blade does not correct the problem, check the blade guides for proper spacing. There should be 0.001" clearance between the 0.025" thickness blade and guide bearing. The inner guide bearing is fixed and cannot be adjusted. The outer guide bearing is mounted to an eccentric bolt and can be adjusted. To obtain this clearance, adjust as follows:

1. Loosen the nut (#126) while holding the eccentric bolt with a wrench.
2. Position the eccentric bolt (#130) by turning the bolt (#131) to the desired position of clearance.
3. Tighten the nut (#126).
4. Adjust the second blade guide bearing in the same manner.
5. The back edge of the blade should just touch the lip of the blade guide bearing.

BLADE TRACK ADJUSTMENT

1. Open the blade guard (#97).
2. Remove the blade guide assemblies (top and bottom)
3. Loosen the hex head screw (#98) in the tilting mechanism to a point where it is loose but snug.
4. With the machine running, adjust both the set screw (#117) and blade tension knob (#107) simultaneously to keep constant tension on the blade. The set screw (#117) and blade tension knob (#107) are always turned in opposite directions, when one is turned clockwise the other is turned counterclockwise. The blade is tracking properly when the back side just touches the shoulder of the pulley or a slight gap appears near the center line of the pulley. Care should be taken not to over tighten the saw blade since this will give a false adjustment and limit the life of the blade.
5. Tighten the hex head screw (#111) in the tilting mechanism. **IMPORTANT:** Sometimes in trying to make this critical adjustment it is possible to cause the basic setting to be misaligned. Should this occur, proceeds as follows:
 - a. Loosen the set screw (#117) and back it out as far as it can go but still remain in the threaded hole.
 - b. Turn the hex head screw (#111) clockwise until it stops (do not tighten).

- c. Turn the set screw (#117) clockwise until it bottoms out, then continue for half a turn and check the tracking by turning on the machine.
 - d. If further adjustment is required, go back to step 4.
6. Turn off power to the saw.
 7. Replace the blade guide assemblies; it may be necessary to loosen the blade tension slightly.
 8. Adjust the vertical position of blade guide bearing assemblies so that the back side of the blade just touches the ball bearings.
 9. Make a final run to check tracking. If required, touch up adjustment (See step 4)
 10. Replace the blade guards.

After Each Use

When you finished your work, clean the saw of debris and scrap of metal and spread a thin coat of oil on the surfaces thatnot painted to prevent rust.

Store the saw when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the saw for good working condition prior to storage and again before re-use.

Maintenance

Maintain your tool. It is recommended that the general condition of any tool be examined before it is used. Keep your tool in good repair by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual.

Keep all cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control. Keep handles dry, clean, and free from oil and grease.

⚠ WARNING:

Put both the power switches in the locked or off position before making any adjustments or changing parts. Such preventive safety measures reduce the risk of starting the saw accidentally.

LUBRICATION

Lubricate the following components using SAE-30 oil as noted.

1. The driven pulley bearing: 6-8 drops a week.
2. The vise lead screw: as needed.
3. The drive gears run in an oil bath and do not require a lubricant change more often than once a year, unless the lubricant is accidentally contaminated or a leak occurs because of improper replacement of the gear box cover. During the first few days of operation, the worm gear drive will run hot. Unless the temperature exceeds 200°F, there is no cause for alarm.
4. The following lubricants may be used for the gear box:
 - a) Atlantic Refinery Co., Mogul Cyl. Oil
 - b) Cities Service Optimus No.6
 - c) Gulf Refinery Co Medium Gear Oil
 - d) Pure Oil co. Park Clipper

CIRCUIT REQUIREMENTS

NOTE:This machine is prewired for 110V operation. If you plan to operate your machine at 220V, both the motor and pump must be rewired by a qualified electrician according to the wiring diagram below. Both the motor and pump must be set for the same voltage.

⚠ WARNING: Electrocutation or fire could result if machine is not grounded and installed in compliance with electrical codes. Compliance **MUST** be verified by a qualified electrician!

⚠ CAUTION: Serious personal injury could occur if you connect the machine to power before completing the assembly/setup process. **DO NOT** connect the machine to the power until it is fully assembled.

Full Load Amperage Draw

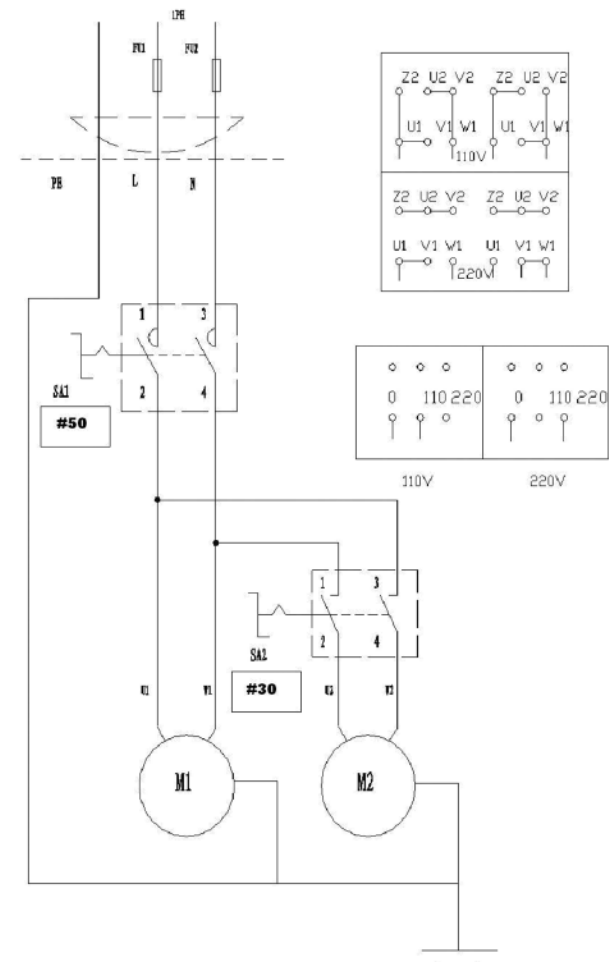
Amp Draw at 110V (prewired).....16 Amps

Amp Draw at 220V.....8 Amps

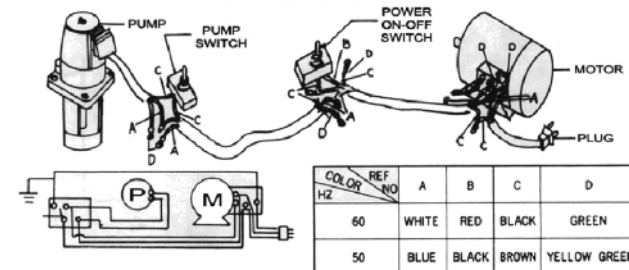
Electric Parts List

Serial No.	Name	Type and Specification	Quantity	Code
1	Contactator	CN-6 3A1AAC24V	2	KM
2	Heatrelay	RHN-5 2.4-3.6A	1	FR
3	Transformer	JBK5-40VA400/24V	1	TC
4	Breaker	DZ47-63 19 1A	1	QF
5	Limit Switch	QKS7 6070202202	1	SQ
6	Start	XB2-BA31	1	SB1
7	Stop	XB2-BA41	1	SB2
8	Conlant ON/OFF	XB2-BD21	1	SA
9	E.S.P.	XB2-BX42	1	TA
TA10	Main Motor	400V 500HZ 3PH0.75KW 1420R/MIN	1	M1
1M11	Coolant Pump		1	M2

Wiring Diagram



WIRING DIAGRAM
TOGGLE SWITCH SINGLE PHASE





**7 x 12 Metal Band Saw With Vertical Cutting Table
OWNER'S MANUAL**

Parts List

Part No.	Description	Q'ty	Part No.	Description	Q'ty
1	Base support	1	61	Table	1
6	Wheel	4	62	Vise thrust shaft	1
7	Cutter pin	4	62.1	Dividing rule	1
8	Wheel shaft	2	63	Hex. Hd. Screw	1
14	Cylinder	1	64	Spring washer	2
23	Hex. Hd. Screw	1	65	Front vise	1
25	Filter	1	66	Electric cord cover	2
26	Nut	1	67	Spring washer	2
27	Hex. Hd. Screw	7	68	Rear vise	1
28	Spring washer	7	69	Hex. Hd. Screw	1
29	Nut	7	70	Spring washer	1
30	Toggle switch assembly	1	71	Nut	2
31	Coolant tank	1	72	Spring bracket	1
32	Screw	1	73	Adjustable spring rod	1
33	Coolant pump	1	74	Spring	1
34	Hexagon head screw	4	75	Hex. Hd. Screw	1
35	Hose fitting	1	76	Nut	1
36	Hose clamp	1	77	Hex. Hd. Screw	2
37	Hose	1	78	Plate	1
39	Handle wheel	1	79	Pivot arm	1
40	Set screw	1	80	Support shaft	1
41	Key	1	81	Washer	2
42	Lead screw	1	82	Spring washer	1
43	Nut seat	1	83	Fiber hex. Nut	2
44	Set screw	1	84	90°position support	1
45	Acme nut	1	85	Hex. Hd. Screw	1
46	Button	1	86	Nut	1
47	Retainer	1	87	Hex. Hd. Screw	2
48	Set screw	1	88	Spring washer	2
49	Electric box assembly	1	89	Bottom support	1
50	Toggle switch	1	90	Set screw	3
51	Spring washer	2	91	Support rod	1
52	Round hd. Screw	2	92	Hex. Hd. Screw	2
53	Thumb screw	1	92.1	Spring washer	2
54	Stop block	1	93	Hex. Hd. Screw	1
55	Work stop rod	1	94	Spring washer	1
56	Hex. Hd. Screw	2	94.1	Nut	1
57	Spring washer	2	95	Plum screw	2
58	Nut	1	96	Washer	2
59	Support plate	1	97	Blade back cover	1
60	Stop screw	1	97.1	Wheel cover	1



**7 x 12 Metal Band Saw With Vertical Cutting Table
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Parts List

Part No.	Description	Q'ty	Part No.	Description	Q'ty
98	Round hd. screw	4	141	Hex. Hd. screw	2
99	Washer	4	142	Fixed frame	1
100	Hex. Hd. screw	1	143	Brush	1
101	Spring washer	1	144-1	Shaft sleeve 1	1
102	Ball bearing	2	144-2	Shaft sleeve 2	1
103	Blade wheel (front)	1	144-3	Shaft sleeve 3	1
103.1	Blade wheel (rear)	1	145	Spring	1
104	Blade	1	146	Hex. Hd. screw	1
105	Bearing bushing (front)	1	148	Hex. Hd. screw	1
106	Saw bow	1	149	Washer	1
107	Blade adjustable handle	1	150	Key	1
108	Washer	1	151	Bearing bushing (rear)	1
109	Sliding guide plate	2	152	Bear box	1
110	Spring washer	4	152.1	Hex. Hd. screw	1
111	Hex. Hd. screw	2	153	Ball bearing	3
113	Sliding draw block	1	154	C-ring	2
115	Blade tension sliding block	1	155	Oil seal	1
116	Set screw	1	156	Bearing bushing	1
117	Hex. Hd. screw	2	157.1	Key	1
118	Spring washer	2	158	Block plate	2
119	Adjustable bracket (front)	1	159	Worm gear	1
120	Adjustable handle	1	160	Gear box gasket	1
121	Nozzle	1	161	Gear box cover	1
122	Set screw	1	162	Spring washer	4
123	Nozzle support	1	163	Tapping screw	4
124	Valve	1	164	Vent plug	1
125	Hex. Soc. Screw	1	168	Top support	1
126	Nut	4	169	Spring washer	3
126.1	Spring washer	4	170	Hex. Soc. Screw	3
127	Bearing pin	2	171	Hex. Soc. Screw	3
129	Ball bearing	2	172	Block plate	1
130	Eccentric shaft assembly	2	173	C-ring	1
131	Center shaft assembly	2	174	Ball bearing	3
134	Hd. screw	2	175	Oil seal	1
135	Vertical cutting plate	1	176	Bearing bushing	1
136	Hex. Soc. Screw	1	177	Worm shaft	1
137	Adjustable blade seat (rear)	1	178	Support plate	1
137.1	Adjustable blade seat	1	179	Washer	2
138	Adjustable bracket (rear)	1	180	Hex. Hd. screw	2
139	Spring washer	2	181	Motor frame	1
140	Hex. Hd. screw	1	182	Hex. Hd. screw	1



Parts List

Part No.	Description	Q'ty	Part No.	Description	Q'ty
183	Nut	1	194	Plum screw	1
184	Spring washer	3	195	Pulley cover	1
185	Hex. Hd. screw	3	196	Set screw	2
186	Hex. Hd. screw	2	197	Worm pulley	1
187	Nut	2	198	Set screw	1
188	Motor mount plate	1	199	Motor pulley	1
189	Motor	1	200	Belt	1
190	Hex. Hd. screw	4	201	Washer	2
191	Washer	8	202	Hex. Hd. screw	2
192	Nut	4	203	Vertical cutting plate	1
193	Key	1			



Troubleshooting

Failure	Possible Cause(s)	Corrective Action
Excessive Blade Breakage	<ol style="list-style-type: none"> 1. Materials loosen in vise. 2. Incorrect speed or feed 3. Blade teeth spacing too large 4. Material too coarse 5. Incorrect blade tension 6. Teeth in contact with material before saw is started 7. Blade rubs on wheel flange 8. Miss-aligned guide bearings 9. Cracking at weld 	<ol style="list-style-type: none"> 1. Clamp work securely 2. Adjust speed or feed 3. Replace with a small teeth spacing blade 4. Use a blade of slow speed and small teeth spacing 5. Adjust to where blade just does not slip on wheel 6. Place blade correctly in relation with workpiece 7. Adjust wheel alignment 8. Adjust guide bearings 9. Weld again
Premature Blade Dulling	<ol style="list-style-type: none"> 1. Teeth too coarse 2. Too much speed 3. Inadequate feed pressure 4. Hard spots or scale on material 5. Work hardening of material. 6. Blade twist 7. Insufficient blade 	<ol style="list-style-type: none"> 1. Use finer teeth 2. Decrease speed 3. Decrease spring tension on side of saw 4. Reduce speed, increase feed pressure 5. Increase feed pressure by reducing spring tension 6. Replace with a new blade, and adjust blade tension 7. Tighten blade tension adjustable knob
Unusual Wear on Side/Back of Blade	<ol style="list-style-type: none"> 1. Blade guides worn. 2. Blade guide bearings not adjust properly 3. Blade guide bearing bracket is loose 	<ol style="list-style-type: none"> 1. Replace. 2. Adjust as per operators manual 3. Tighten.
Teeth Ripping from Blade.	<ol style="list-style-type: none"> 1. Tooth too coarse for work 2. Too heavy pressure; too slow speed. 3. Vibrating work-piece. 4. Gullets loading 	<ol style="list-style-type: none"> 1. Use finer tooth blade. 2. Decrease pressure, increase speed 3. Clamp work piece securely 4. Use coarser tooth blade or brush to remove chips.

Failure	Possible Cause(s)	Corrective Action
Motor Running Too Hot	<ol style="list-style-type: none"> 1. Blade tension too high. 2. Drive belt tension too high. 3. Grease need lubricaton 4. Cut is binding blade 5. Gears aligned improperly 6. Gears need lubrication 7. Cut is binding blade 	<ol style="list-style-type: none"> 1. Reduce tension on blade. 2. Reduce tension on drive belt. 3. Check oil bath 4. Decrease feed and speed 5. Adjust gears so that worm is in center of gear. 6. Check oil path. 7. Decrease reed anti speed
Bad Cuts (Crooked)	<ol style="list-style-type: none"> 1. Feed pressure too great. 2. Guide bearings not adjusted properly 3. Inadequate blade tension. 4. Dull blade. 5. Speed incorrect. 6. Blade guides spaced out too much 7. Blade guide assembly loose 8. Blade truck too far away from wheel flanges 	<ol style="list-style-type: none"> 1. Reduce pressure by increasing spring tension on side of saw 2. Adjust guide bearing, the clearance cannot be greater than . 3. Increase blade tension by adjust blade tension 4. Replace blade 5. Adjust speed 6. Adjust guides space. 7. Tighten 8. Re-track blade according to operating instructions.
Bad Cuts (Rough)	<ol style="list-style-type: none"> 1. Too much speed or feed 2. Blade is too coarse 3. Blade tension loose 	<ol style="list-style-type: none"> 1. Decrease speed or feed. 2. Replace with finer blade. 3. Adjust blade tension.
Blade is Twisting	<ol style="list-style-type: none"> 1. Cut is binding blade. 2. Too much blade tension. 	<ol style="list-style-type: none"> 1. Decrease reed pressure. 2. Decrease blade tension.

Replacement Parts

- For replacement parts and technical questions, please call Customer Service at 1-800-222-5381.
- Not all product components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts in the assembly sequence.
- When ordering parts, the following will be required: Model Number, Serial Number/Lot Date Code, and Description.
- The distributor reserves the rights to make design changes and or improvements to product lines and manuals without notice.

Limited Warranty

Northern Tool and Equipment Company, Inc. ("We" or "Us") warrants to the original purchaser only ("You" or "Your") that the Ironton Air Tool product purchased will be free from material defects in both materials and workmanship, normal wear and tear excepted, for a period of one year from date of purchase. The foregoing warranty is valid only if the installation and use of the product is strictly in accordance with product instructions. There are no other warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose. If the product does not comply with this limited warranty, Your sole and exclusive remedy is that We will, at our sole option and within a commercially reasonable time, either replace the product without charge to You or refund the purchase price (less shipping). This limited warranty is not transferable.

Limitations on the Warranty

This limited warranty does not cover: (a) normal wear and tear; (b) accessories both consumable and durable; (c) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (d) damage from misapplication, overloading, or improper installation; (e) improper maintenance and repair; and (f) product alteration in any manner by anyone other than Us, with the sole exception of alterations made pursuant to product instructions and in a workmanlike manner.

Obligations of Purchaser

You must retain Your product purchase receipt to verify date of purchase and that You are the original purchaser. To make a warranty claim, contact Us at 1-800-222-5381, identify the product by make and model number, and follow the claim instructions that will be provided. The product and the purchase receipt must be provided to Us in order to process Your warranty claim. Any returned product that is replaced or refunded by Us becomes our property. You will be responsible for return shipping costs or costs related to Your return visit to a retail store.

Remedy Limits

Product replacement or a refund of the purchase price is Your sole remedy under this limited warranty or any other warranty related to the product. We shall not be liable for: service or labor charges or damage to Your property incurred in removing or replacing the product; any damages, including, without limitation, damages to tangible personal property or personal injury, related to Your improper use, installation, or maintenance of the product; or any indirect, incidental or consequential damages of any kind for any reason.

Assumption of Risk

You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at Your own risk.

Governing Law

This limited warranty gives You specific legal rights, and You also may have other rights which vary from state to state. Some states do not allow limitations or exclusions on implied warranties or incidental or consequential damages, so the above limitations may not apply to You. This limited warranty is governed by the laws of the State of Minnesota, without regard to rules pertaining to conflicts of law. The state courts located in Dakota County, Minnesota shall have exclusive jurisdiction for any disputes relating to this warranty.



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Burnsville, Minnesota 55306
NorthernTool.com
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