



7" X 12" HORIZONTAL & VERTICAL BAND SAW OWNER'S MANUAL



⚠ WARNING

Read carefully and understand **RULES FOR SAFE OPERATION** and instructions before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

ITEM#155793

Thank you very much for choosing a NORTHERN TOOL + EQUIPMENT CO., INC. Product! For future reference, please complete the owner's record below:

Model: _____ 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 machine is designed for certain applications only. Northern Tool + Equipment cannot be responsible for issues arising from modification. We strongly recommend this machine is not modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted Northern Tool + Equipment to determine if it can or should be performed on the product.

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

TECHNICAL SPECIFICATIONS

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"
	Rectangular	4-3/4" x 4-7/8"
90°	Circular	7"
	Rectangular	7" x 12"

FEATURES


1. Specially designed horizontal and vertical band saw.
2. Offers four speeds for cutting metal, plastic or wood.
3. Low noise while operating.

Shipping Container Contents

Saw	1	Material stop bar	1
Wheel axis	2	Material stop	1
Wheel	4	Belt cover	1
Split pin	4	Vertical cutting plate	1

GENERAL SAFETY RULES

 **WARNING: Read and understand all instructions.** Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.


 **WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur.** It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

WORK AREA

- **Keep work area clean**, free of clutter and well lit. Cluttered and dark work areas can cause accidents.
- **Do not use your band saw where there is a risk of causing a fire or an explosion;** e.g. in the presence of flammable liquids, gasses, or dust. Power tools create sparks, which may ignite the dust or fumes.
- **Keep children and bystanders** away while operating a band saw. Distractions can cause you to lose control, so visitors should remain at a safe distance from the work area.
- **Be alert of your surroundings.** Using band saws in confined work areas may put you dangerously close to cutting tools and rotating parts.

ELECTRICAL SAFETY

-  **WARNING!** Always check to ensure the power supply corresponds to the voltage on the rating plate.
- **Do not abuse the cord.** Never pull tool cords from the receptacle. Keep power cords away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords may cause a fire and increase the risk of electric shock.
- **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. This unit is equipped with a 3-prong (grounded) plug for your protection against shock

hazards and should be plugged directly into a properly grounded 3-prong receptacle. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.

● **Extension Cord Use.**

- A. Use only 'Listed' extension cords. If used outdoors, they must be marked " For Outdoor Use." Those cords having 3-prong grounding type plugs and mating receptacles are to be used with grounded tools.
- B. Replace damaged or worn cords immediately.
- C. Check the name plate rating of your tool. Use of improper size or gauge of extension cord may cause unsafe or inefficient operation of your tool. Be sure your extension cord is rated to allow sufficient current flow to the motor. For the proper wire gauge for your tool, see chart.

CHART FOR MINIMUM WIRE SIZE OF EXTENSION CORD:

Nameplate AMPS	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)	

If in doubt, use larger cord.

Be sure to check voltage requirements of the tool to your incoming power source.

- **Do not expose** power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- **Do not let your fingers** touch the terminals of plug when installing to or removing from the outlet.
- **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 increase risk of electric shock if your body is grounded.

PERSONAL SAFETY

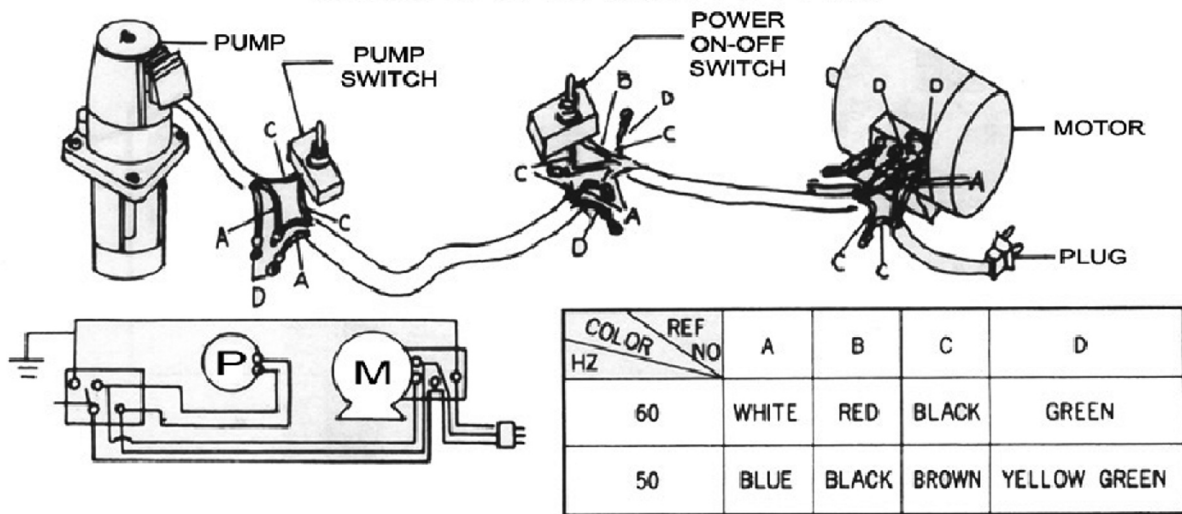
- **Stay alert,** watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- **Dress properly.** 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 often cover moving parts and should be avoided.
- **Use safety apparel and equipment.** Use safety goggles or safety glasses with side shields which comply with current national standards, or when needed, a face shield. Use as dust mask in dusty work conditions. This applies to all persons in the work area. Also use non-skid safety shoes, hardhat, gloves, dust Collection systems, and hearing protection when appropriate.
- **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 the switch off to prevent surprise starting when power is restored.
- **Do not overreach.** Keep proper footing and balance at all times.
- **Be especially careful to keep fingers and hands out of path of blade** when using band saw in a vertical position.
- **Remove adjusting keys or wrenches** before connecting to the power supply or turning on the tool. A wrench or key that is left attached to a rotating part of the tool may result in personal injury.

TOOL USE AND CARE

- **Do not force the tool.** Band saws 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.
- **Never use a tool** with a malfunctioning switch. Any band saw that cannot be controlled with the switch is dangerous and must be repaired by an authorized service representative before using.
- **Disconnect power** from band saw and place the switch in the locked or off position before servicing, adjusting, installing accessories or attachments, or storing. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Secure work** with clamps or a vise instead of your hand to hold work when practical. This safety precaution allows for proper tool operation using both hands.
- **Store idle band saw.** When not in use, store the band saw in a dry, secure place out of the reach of children. Inspect tools for good working condition prior to storage and before re-use.
- **Use only accessories that are recommended** by the manufacturer for your model. Accessories that may be suitable for one tool may create a risk of injury when used on another tool.
- **Never stand on band saw.** Serious injury could occur if the band saw is tipped or if the cutting blade is accidentally contacted.
- **Keep guards in place** and in working order.

- **Before operating the band saw EACH TIME**, check for alignment of moving parts; binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other Part that is damaged should be properly repaired or replaced.
- **Never leave saw** running unattended.
- **When moving the saw, ALWAYS** have the head lowered to the horizontal position.

WIRING DIAGRAM TOGGLE SWITCH SINGLE PHASE



IMPORTANT:

Coolant pump motor voltage must always be the same as machine motor voltage.

- **Saw Base Assembly**

- **Tools required for assembly**

1. #2 cross point screwdriver
2. Pliers

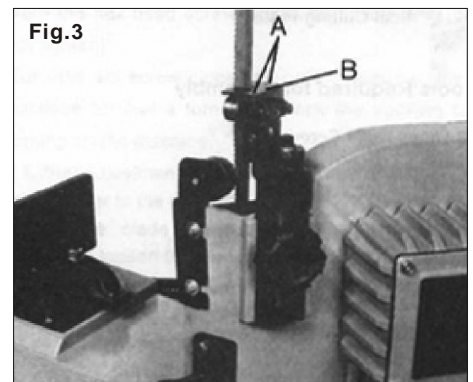
- **Unpacking and clean-up**

1. Uncrate the saw. 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.

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

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

2. Slide wheel axles through holes in base.
3. Slide wheel onto axles and fasten with pins. Bend pins to hold in place.
4. Slide material stop rod (#74) into base and secure by tightening hex. hd screw (#71). Slide material stop block (#73) onto rod and tighten thumb screw (#72).
5. Slide blade back cover (#128) over pulley assemblies and fasten with plum screw (#130) and washer (#130-1).
6. Close belt cover and secure with lock knob (#131).
7. Remove transportation strap and keep for later use should the saw be Moved any distance.

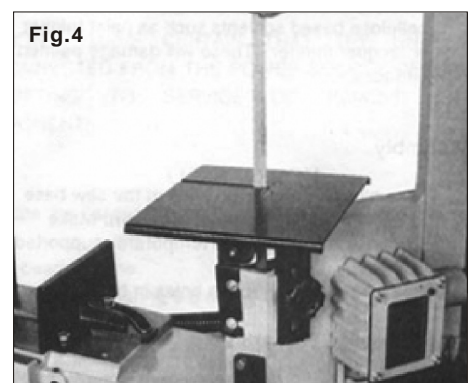


Vertical cutting plate assembly

Note: these steps are only necessary if using the band saw in the vertical Mode.

⚠ WARNING: Disconnect band saw from the power source before making any repairs or adjustments.

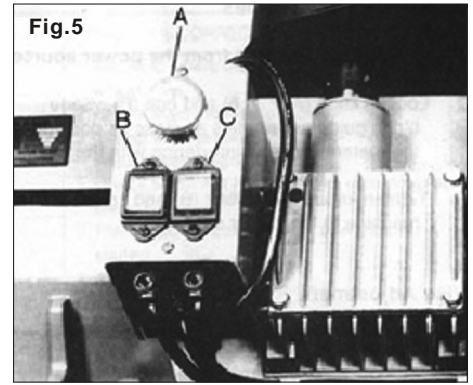
1. Raise the arm to the vertical position and lock in place by turning the hydraulic cylinder valve to the off position.
2. Remove two screws (A, Fig. 3) and the deflector plate (B).
3. Guide blade through slot in table and fasten with two screws. See Fig. 4.



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 manufacturer's instructions as to its uses and precautions.

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



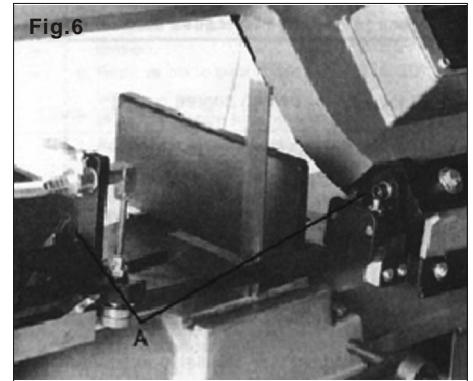
Electric Box

A. Part No. A-Emergency stop switch (EMS). It stops all electric motors, including coolant pump.

B. Part No. B-Start switch.

C. Part No. C-Stop switch.

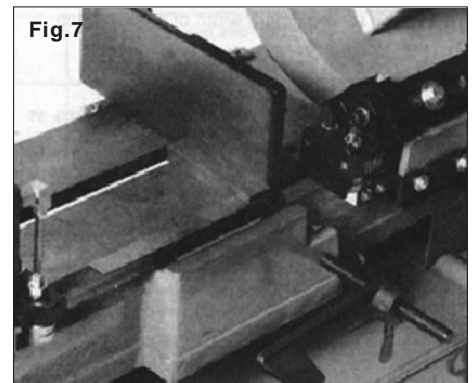
There is a relay inside the electric box. When machine is overloaded and the current is too high, the relay will switch off automatically. It cuts off all electrics and machine stops. To reset, open the electric box and find the switch (a white button). Resetting this white button will restore electrical power. If this machine overloads frequently, adjust the setting of current higher.



Adjusting blade square to table

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

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

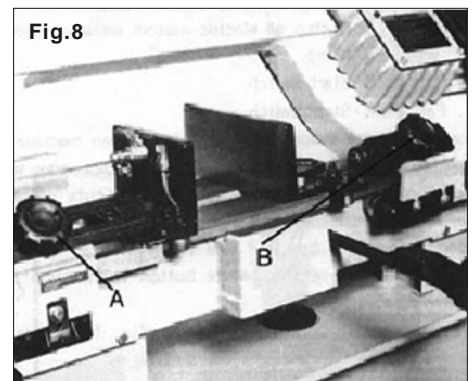


Adjusting blade square to vise

1. Disconnect machine from the power source.
2. Place a machinist's square as pictured in figure 7. Square should lie along entire length of vise and blade without a gap.
3. If adjustment is necessary, loosen bolts holding vise that square lines up properly. Tighten bolts.
4. Connect machine to the power source.

Adjusting blade guides

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



Vise adjustment

⚠ WARNING: Do not make any adjustments or load/unload material from vise while machine is running.

To set the vise for 0 to 45 degree cutting:

1. Turn off and unplug saw before adjusting.
2. Remove bolt assemblies (C. Fig. 9)
3. Position vise and re-install as pictured in Fig. 10. Pay particular attention to bolt hole location.
4. Set vise to desired angle, re-install bolts, and lighten nut and bolt Assemblies.
5. Adjust movable vise parallel to fixed vise by loosening bolt (A, Fig. 10), adjusting to parallel and tightening bolt.

To set vise for maximum width of stock cutting:

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

INSTALLATION

The saw may be mounted on your own bench or stand. The rear end of the saw must be mounted flush with the rear of the stand or bench to permit vertical operation for this band saw. This stand has punched holes for easy assembly to the base using eight standard bolts (included).

OPERATION

WORK SET UP

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

WORK STOP ADJUSTMENT

1. Loosen the thumb holding the work stop casting to the shaft.
2. Adjust the work stop casting to the desired length position.
3. Rotate the work stop to as close to the bottom of the cut as possible.
4. Tighten thumb screw.
5. Do not allow the blade to rest on the work while the motor is shut off.

CONVERTING FOR VERTICAL USE

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

1. Cut off the power
2. Rotate the head to the vertical position.
3. Assemble a 10" x 10" table (not included; must be purchased separately)

BLADE SPEEDS

When using your band saw always change the blade speed to best suit the material being cut. The material cutting chart offers suggested settings for several materials:

4 SPEED MATERIAL CUTTING CHART

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 high carbon	132	110	Medium	Large
Low to medium carbon steels soft brass		148	Large	Medium
Aluminum plastic	260	217	Largest	Small

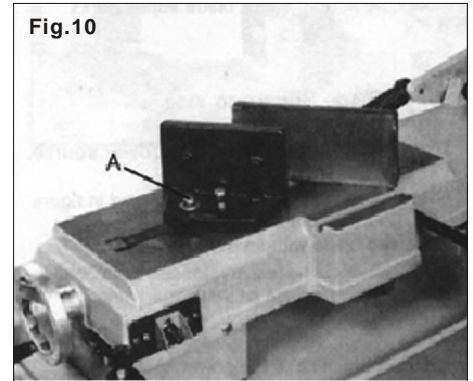
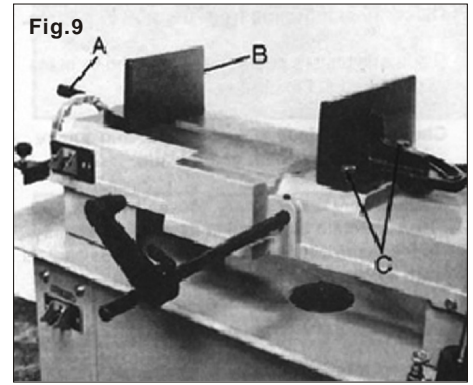
BLADE DIRECTION OF TRAVEL

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

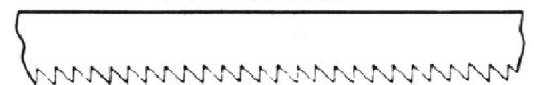
STARTING SAW

CAUTION: NEVER OPERATE 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.** Let the weight of the saw head provide the cutting force. The saw automatically shuts off at the end of the cut.



BLADE MOVEMENT



BLADE SELECTION

An 8-tooth per inch, general-use blade is furnished with this metal cutting 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.

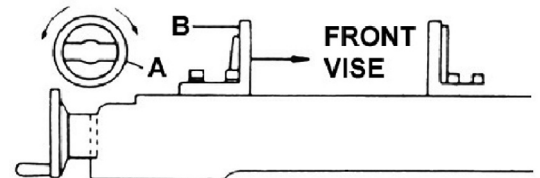
CHANGING BLADE

Ensure power is disconnected from saw. Raise saw head to vertical position and open the blade guards. Loosen tension screw knob sufficiently to allow the saw blade to slip off the wheels. Install the new blade with teeth slanting toward the motor as follows:

1. Place the blade in between each of the guide bearings.
2. Slip the blade around the motor pulley (bottom) with the left hand and hold in position.
3. Hold the blade taut against the motor pulley by pulling the blade upward with the right hand, which is placed at the top of the blade.
4. Remove left hand from bottom pulley and place it at the top side of the blade to continue the application on the upward pull on the blade.
5. Remove right hand from blade and adjust the position of the top pulley to permit left hand to slip the blade around the pulley, using the thumb, index and little finger as guides.
6. Adjust the blade tension knob clockwise until it is just right enough so no blade slippage occurs. Do not tighten excessively.
7. Replace the blade guards.
8. Place 2-3 drops of oil on the blade.

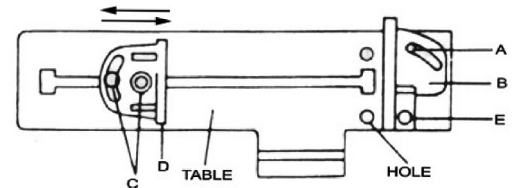
USAGE OF THE QUICK VISE

Your machine is equipped with a quick-action vise jaw which allows you to instantly position the movable vise jaw (B). Simply turn hand wheel (A) counterclockwise 1/2 turn and move the vise jaw (B) to the desired position. Then tighten the vise jaw (B) against the work piece by turning hand-wheel clockwise.



QUICK VISE ADJUSTMENT FOR ANGLE CUT

1. Loosen the A, C, E screws.
2. Adjust 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. Tighten the A, C, E screws.



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 bearing 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. To obtain this clearance, adjust as follows:

1. The inner guide bearing is fixed and cannot be adjusted.
2. The outer guide bearing is mounted to an eccentric bolt and can be adjusted.
3. Loosen the nut while holding the bolt with a wrench.
4. Position the eccentric by turning the bolt to the desired position of clearance.
5. Tighten the nut.
6. Adjust the second blade guide bearing in the same manner.
7. The back edge of the blade should just touch the lip of the blade guide bearing.

BLADE TRACK ADJUSTMENT

1. Open the blade guard.
2. Remove the blade guide assemblies (top and bottom)
3. Loosen the hex head screw in the tilting mechanism to a point where it is loose but snug.
4. With the machine running, adjust both the set screw and blade tension knob simultaneously to keep constant tension on the blade. The set screw and blade tension knob 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 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 life of the blade.
5. Tighten the hex head screw in 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, proceed as follows:
 - a. Loosen the set screw and back it out as far as it can go and still remain in the threaded hold.
 - b. Turn the hex head screw clockwise until it stop (do not tighten).
 - c. Turn the set screw clockwise until it bottoms, 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 machine.
7. Replace the blade guide assemblies it may be necessary to loosen the blade tension a lightly.
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.

MAINTENANCE



CAUTION: MAKE CERTAIN THAT THE UNIT IS DISCONNECTED FROM THE POWER SOURCE BEFORE ATTEMPTING TO SERVICE OR REMOVE ANY COMPONENT!

LUBRICATION

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

1. Driven pulley bearing: 6-8 drops a week.
2. Vise lead screw: as needed.
3. The drive gears run in an oil bath and will 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: Item# 155793 is prewired for 110V operation. If you plan to operate your machine at 220V, the motor & pump must be rewired by a qualified electrician.



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 setup process. DO NOT connect the machine to the power until instructed in this manual.

Full Load Amperage Draw

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

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

Power Supply Circuit Requirements

You **MUST** connect your machine to a grounded circuit that is rated for the amperage given below. Never replace a circuit breaker on an existing circuit with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. **If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, consult a qualified electrician.**

Minimum Circuit Size (110V).....20 Amps

Minimum Circuit Size (220V).....15 Amps

Extension Cords

Using extension cords may reduce the life of the motor. Instead, place the machine near a power source. If you must use an extension cord:

For 110V, use at least a 12 gauge cord that does not exceed 32.8 feet in length.

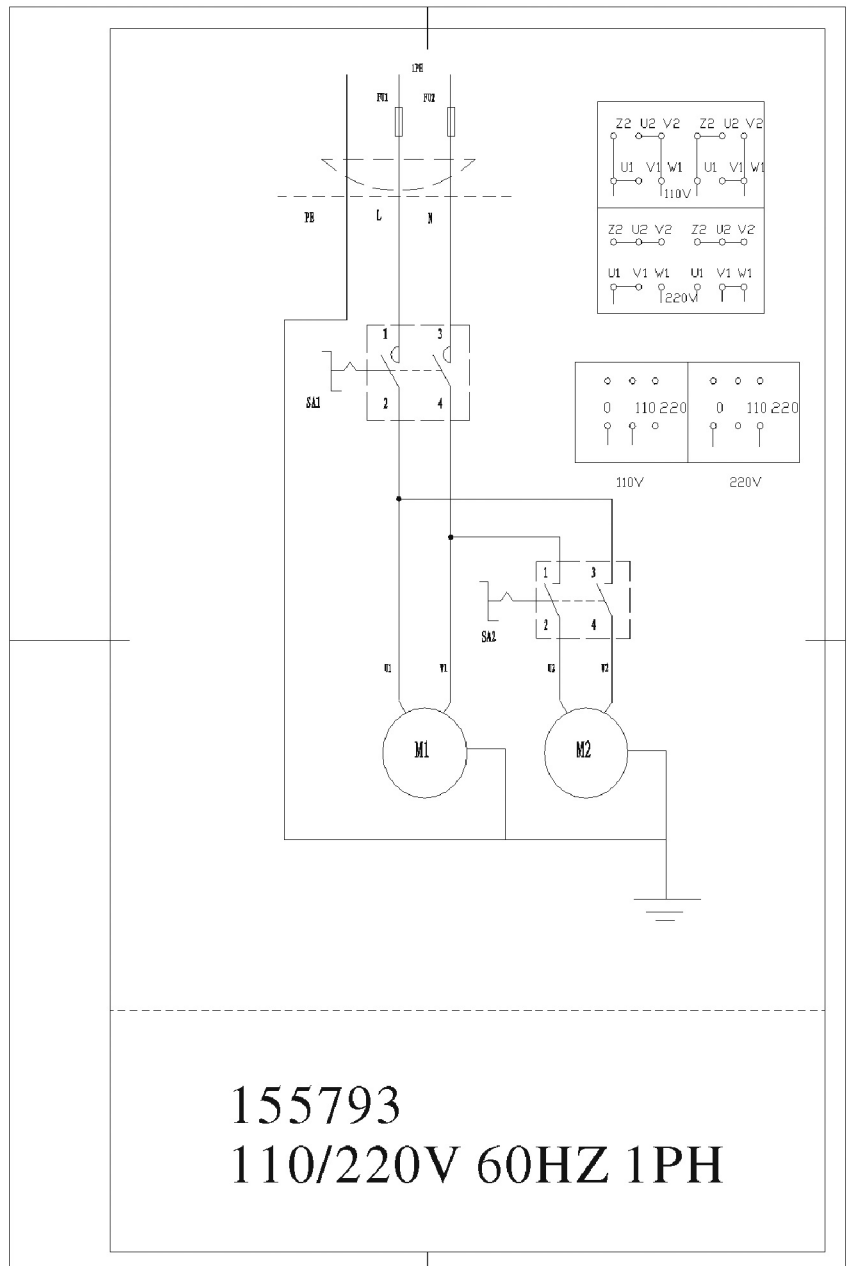
For 220V, use at least a 16 gauge cord that does not exceed 32.8 feet in length.

The extension cord must have a ground wire and plug pin.

ELECTRIC PARTS LIST

SERIAL NO.	NAME	TYPE AND SPECIFICATION	QUANTITY	CODE
1	CONTACTOR	CN-6 3A1A AC24V	2	KM
2	HEATRELAY	RHN-5 2.4-3.6A	1	FR
3	TRANSFORMER	JBK5-40VA 400/24V	1	TC
4	BREAKER	DZ47-63 1P 1A	1	QF
5	LIMIT SWITCH	QKS7 6070202202	1	SQ
6	START	XB2-BA31	1	SB1
7	STOP	XB2-BA41	1	SB2
8	COOLANT ON/OFF	XB2-BD21	1	SA
9	E.S.P.	XB2-BX42	1	TA
TA10	MAIN MOTOR	400V 50HZ 3PH 0.75KW 1420R/MIN	1	M1
1M11	COOLANT PUMP		1	M2

155793 110 & 220 V Wiring Diagram



TROUBLE SHOOTING CHART

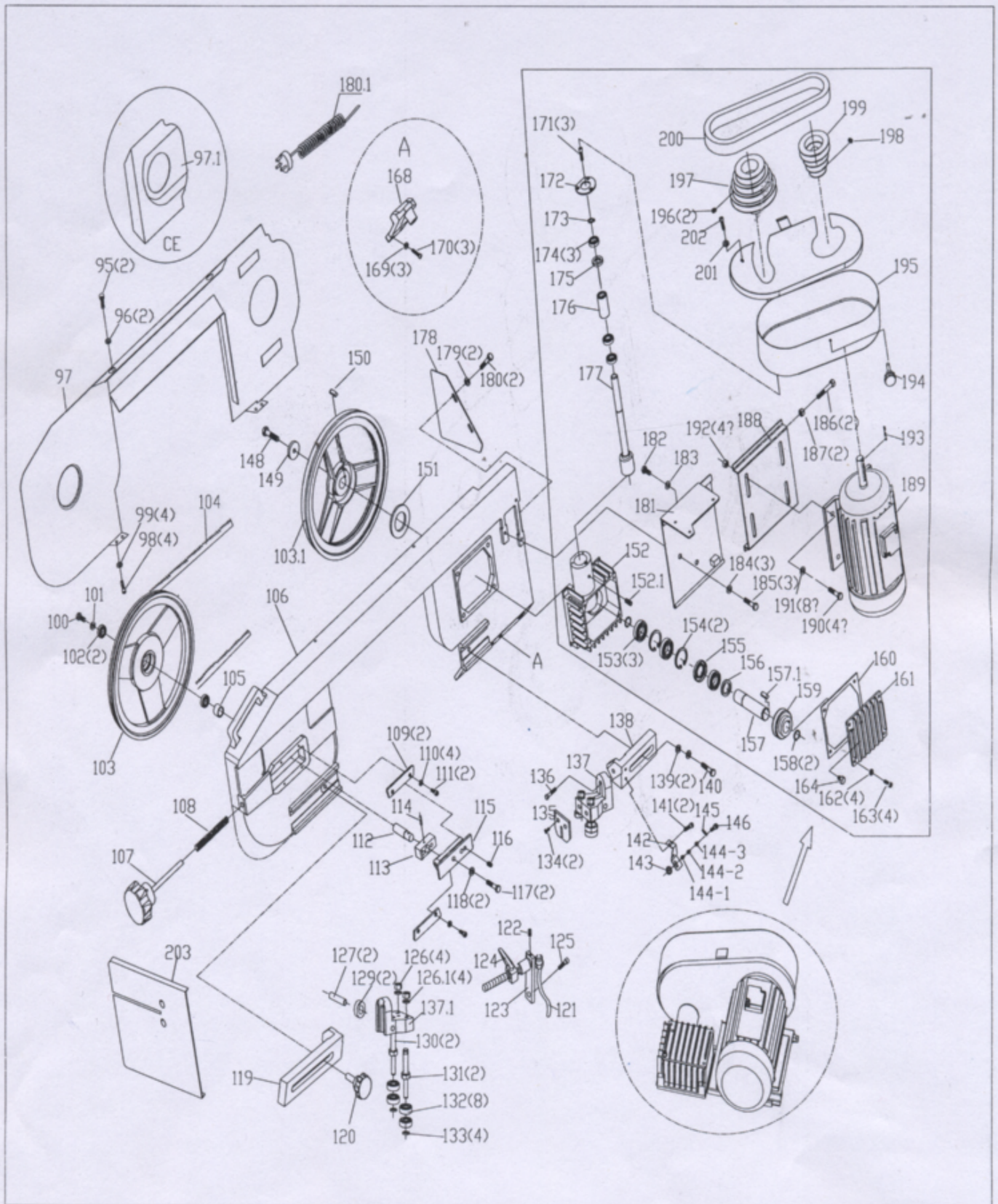
Symptom	Possible Cause (s)	Corrective Action
Excessive Blade Breakage	<ol style="list-style-type: none"> 1. Material loose in vise 2. Incorrect speed or feed 3. Blade teeth spacing too large 4. Material too coarse 5. Incorrect blade tension 6. Teeth in contact with material before saw is started 7. Blade rubs on wheel flange 8. Misaligned 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 smaller teeth spacing blade 4. Use a blade of slow speed and small teeth spacing 5. Adjust so blade 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 adjusting knob
Unusual Wear on Side/Back of Blade	<ol style="list-style-type: none"> 1. Blade guides worn 2. Blade guide bearings not adjusted properly 3. Blade guide bearing bracket is loose 	<ol style="list-style-type: none"> 1. Replace 2. Adjust as per operator's 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 workpiece 4. Gullets loading 	<ol style="list-style-type: none"> 1. Use finer tooth blade 2. Decrease pressure, increase speed 3. Clamp workpiece securely 4. Use coarse tooth blade or brush to remove chips
Motor running too hot	<ol style="list-style-type: none"> 1. Blade tension too high 2. Drive belt tension too high 3. Gears need lubrication 4. Cut is binding blade 5. Gears aligned improperly 	<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
Bad Cuts	<ol style="list-style-type: none"> 1. Feed pressure too great 2. Guide bearing not adjusted properly 3. Inadequate blade tension 4. Dull blade 5. Speed incorrect 6. Blade guide 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 can not be greater than 0.2mm. 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 feed pressure 2. Decrease blade tension

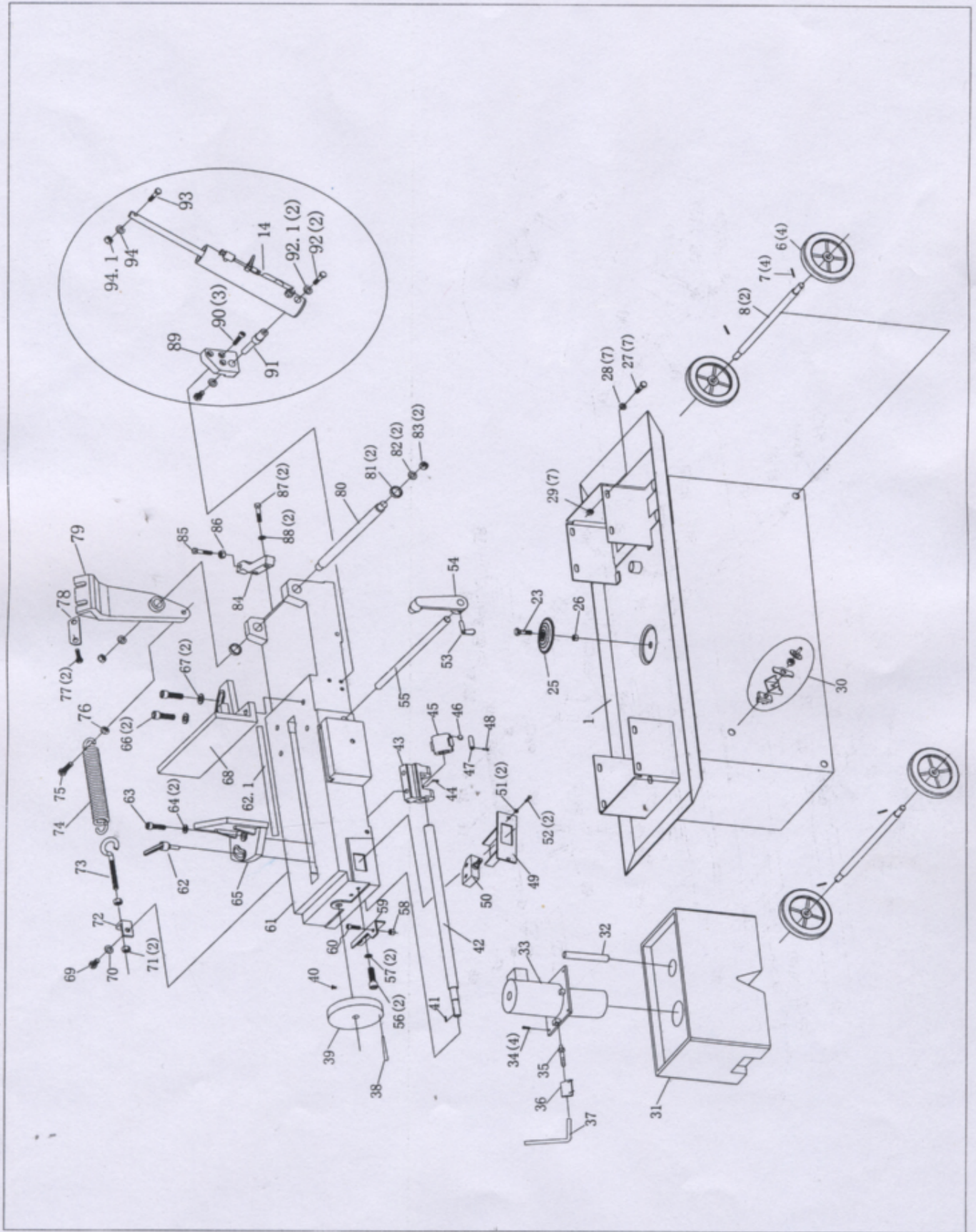
PARTS LIST

Part No.	Description	Q'ty	Part No.	Description	Q'ty
1	Base support	1	85	Hex. Hd. Screw	1
6	Wheel	4	86	Nut	1
7	Cutter pin	4	87	Hex. Hd. Screw	2
8	Wheel shaft	2	88	Spring washer	2
14	Cylinder	1	89	Bottom support	1
23	Hex. Hd. Screw	1	90	Set screw	3
25	Filter	1	91	Support rod	1
26	Nut	1	92	Hex. Hd. Screw	2
27	Hex. Hd. Screw	7	92.1	Spring washer	2
28	Spring washer	7	93	Hex. Hd. Screw	1
29	Nut	7	94	Spring washer	1
30	Toggle switch assembly	1	94.1	Nut	1
31	Coolant tank	1	95	Plum screw	2
32	Screw	1	96	Washer	2
33	Mitering vise plate	1	97	Blade back cover	1
34	Hexagon head screw	4	97.1	Wheel cover	1
35	Hose fitting	1	98	Round hd. screw	4
36	Hose clamp	1	99	Washer	4
37	Hose	1	100	Hex. Hd. screw	1
39	Handle wheel	1	101	Spring washer	1
40	Set screw	1	102	Ball bearing	2
41	Key	1	103	Blade wheel (front)	1
42	Lead screw	1	103.1	Blade wheel (rear)	1
43	Nut seat	1	104	Blade	1
44	Set screw	1	105	Bearing bushing (front)	1
45	Acme nut	1	106	Saw bow	1
46	Button	1	107	Blade adjustable handle	1
47	Retainer	1	108	Washer	1
48	Set screw	1	109	Sliding guide plate	2
49	Electric box assembly	1	110	Spring washer	4
50	Toggle switch	1	111	Hex. Hd. screw	2
51	Spring washer	2	113	Sliding draw block	1
52	Round hd. Screw	2	115	Blade tension sliding block	1
53	Thumb screw	1	116	Set screw	1
54	Stop block	1	117	Hex. Hd. screw	2
55	Work stop rod	1	118	Spring washer	2
56	Hex. Hd. Screw	2	119	Adjustable bracket (front)	1
57	Spring washer	2	120	Adjustable handle	1
58	Nut	1	121	Nozzle	1
59	Support plate	1	122	Set screw	1
60	Stop screw	1	123	Nozzle support	1
61	Table	1	124	Valve	1
62	Vise thrust shaft	1	125	Hex. Soc. Screw	1
62.1	Dividing rule	1	126	Nut	4
63	Hex. Hd. Screw	1	126.1	Spring washer	4
64	Spring washer	2	127	Bearing pin	2
65	Front vise	1	129	Ball bearing	2
66	Electric cord cover	2	130	Eccentric shaft assembly	2
67	Spring washer	2	131	Center shaft assembly	2
68	Rear vise	1	134	Hd. screw	2
69	Hex. Hd. Screw	1	135	Vertical cutting plate	1
70	Spring washer	1	136	Hex. Soc. Screw	1
71	Nut	2	137	Adjustable blade seat (rear)	1
72	Spring bracket	1	137.1	Adjustable blade seat	1
73	Adjustable spring rod	1	138	Adjustable bracket (rear)	1
74	Spring	1	139	Spring washer	2
75	Hex. Hd. Screw	1	140	Hex. Hd. screw	1
76	Spring washer	1	141	Hex. Hd. screw	2
77	Hex. Hd. Screw	2	142	Fixed frame	1
78	Plate	1	143	Brush	1
79	Pivot arm	1	144-1	Shaft sleeve 1	1
80	Support shaft	1	144-2	Shaft sleeve 2	1
81	Washer	2	144-3	Shaft sleeve 3	1
82	Spring washer	1	145	Spring	1
83	Fiber hex. Nut	2	146	Hex. Hd. screw	1
84	90° position support	1	148	Hex. Hd. screw	1

Part No.	Description	Q'ty	Part No.	Description	Q'ty
149	Washer	1	178	Support plate	1
150	Key	1	179	Washer	2
151	Bearing bushing (rear)	1	180	Hex. Hd. screw	2
152	Bear box	1	181	Motor frame	1
152.1	Hex. Hd. screw	1	182	Hex. Hd. screw	1
153	Ball bearing	3	183	Nut	1
154	C-ring	2	184	Spring washer	3
155	Oil seal	1	185	Hex. Hd. screw	3
156	Bearing bushing	1	186	Hex. Hd. screw	2
157.1	Key	1	187	Nut	2
158	Block plate	2	188	Motor mount plate	1
159	Worm gear	1	189	Motor	1
160	Gear box gasket	1	190	Hex. Hd. screw	4
161	Gear box cover	1	191	Washer	8
162	Spring washer	4	192	Nut	4
163	Tapping screw	4	193	Key	1
164	Vent plug	1	194	Plum screw	1
168	Top support	1	195	Pulley cover	1
169	Spring washer	3	196	Set screw	2
170	Hex. Soc. Screw	3	197	Worm pulley	1
171	Hex. Soc. Screw	3	198	Set screw	1
172	Block plate	1	199	Motor pulley	1
173	C-ring	1	200	Belt	1
174	Ball bearing	3	201	Washer	2
175	Oil seal	1	202	Hex. Hd. screw	2
176	Bearing bushing	1	203	Vertical cutting plat	1
177	Worm shaft	1			

DIAGRAM





MANUFACTURER'S LIMITED WARRANTY

The limited warranty set forth below is given by Northern Tool + Equipment Company Inc., (NTE) with respect to new merchandise purchased and used in the United States, its possessions and territories.

NTE warrants this product against defects in material and workmanship for a period of one (1) year commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster. Damage resulting from the installation or use of any accessory or attachment not approved by NTE for use with the products(s) covered by this manual will void your warranty as to any resulting damage. This warranty is limited to ninety (90) days from the date of original retail purchase for any NTE product that is used for rental or commercial purposes, or any other income-producing purposes.

NTE reserves the right to change or improve the design of any NTE product without assuming any obligation to modify any product previously manufactured.

No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product shall bind NTE during the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

The provisions as set forth in this warranty provide the sole and exclusive remedy arising from the sales. NTE shall not be liable for incidental or consequential loss or damages including, without limitation, expenses incurred for substitute or related expenses, or for rental expenses to temporarily replace a warranted product. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser, original lessee or the person for whom it was purchased as a gift.

How State Law Relates to this Warranty: This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For questions about your warranty, please call 1-800-222-5381.



WARNING

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 those dust masks that are specially designed to filter out microscopic particles.



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