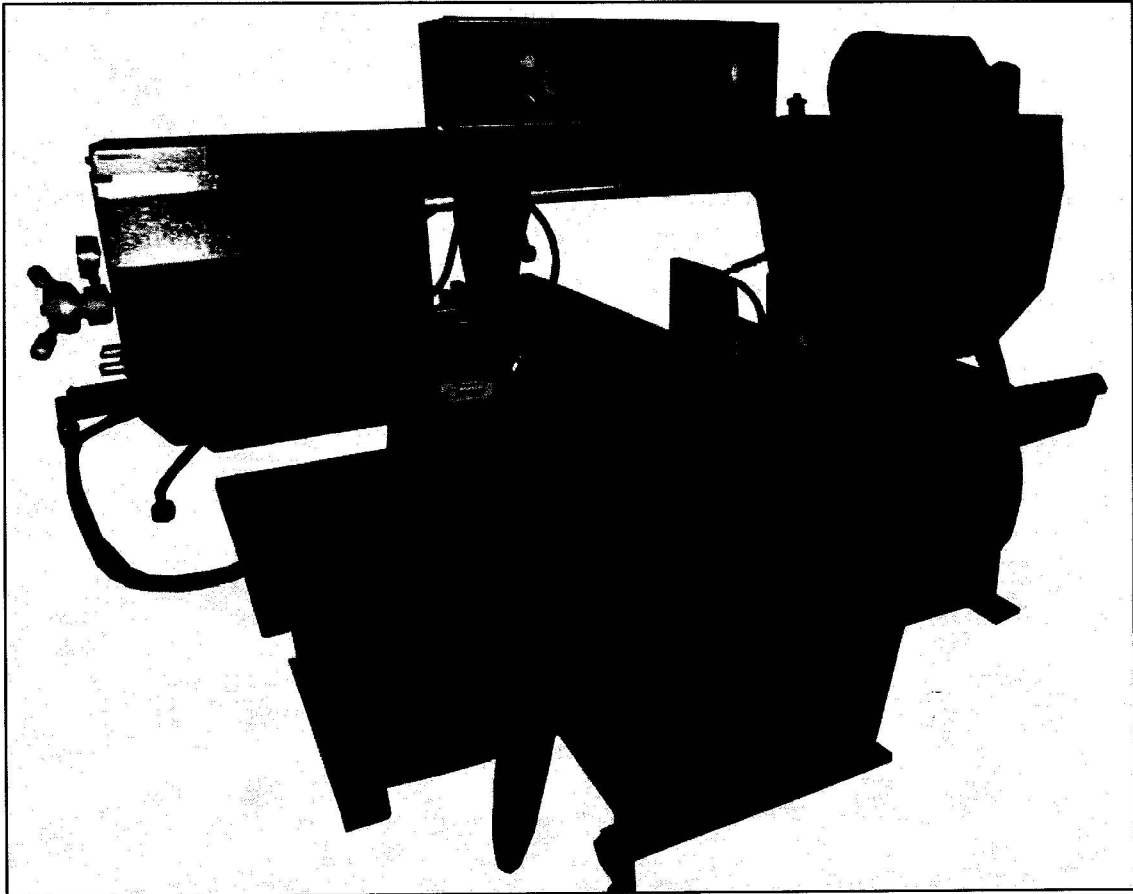


# **METAL CUTTING BAND SAW MACHINE**



**MODEL: JFC-330SVAA  
INSTRUCTION MANUAL**

330SVAA-150707-R0

**Table Of Contents**

**Page No**

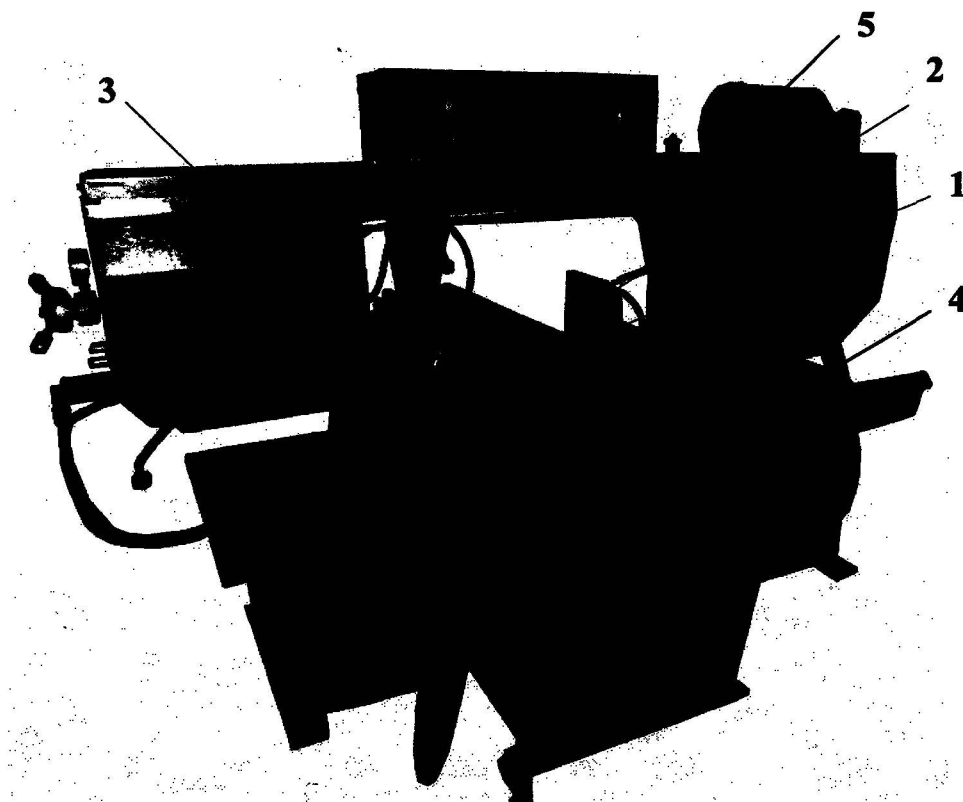
<b>1. VISUAL INSPECTION.....</b>	<b>2</b>
<b>2. SPECIFICATIONS .....</b>	<b>3</b>
<b>3. SAFETY RULES FOR ALL TOOLS.....</b>	<b>4</b>
<b>4. FEATURES: .....</b>	<b>6</b>
<b>5. TRANSPORTATION &amp; INSTALLATION:.....</b>	<b>7</b>
<b>6. OPERATING INSTRUCTIONS .....</b>	<b>9</b>
<b>7. BLADE BASICS .....</b>	<b>10</b>
<b>8. DETERMINE OPTIMUM BLADE PITCH .....</b>	<b>11</b>
<b>9. GUIDE ARM POSITIONING .....</b>	<b>12</b>
<b>10. COOLANT FLOW .....</b>	<b>12</b>
<b>11. HEAD SWING AND BREAK.....</b>	<b>13</b>
<b>12. MAINTENANCE AND TROUBLESHOOTING .....</b>	<b>13</b>
<b>13. CHANGING SPEEDS AND ADJUSTING.....</b>	<b>17</b>
<b>14. LUBRICATION .....</b>	<b>18</b>
<b>15. CIRCUIT DIAGRAM .....</b>	<b>19</b>
<b>16 PARTS LISTS.....</b>	<b>21</b>

**CAUTION**

**Install saw blade and blade guard**  
before use. Set proper blade tension  
to prevent any danger caused by  
damaged saw blade or work piece.

## 1. VISUAL INSPECTION

The operator should always make a visual inspection of the saw before operating. The following areas should be checked.



### Safety Inspection Points Operators

- |          |                                    |
|----------|------------------------------------|
| 1. BLADE | KEEP AWAY FROM MOVING BLADE        |
| 2. VISE  | NEVER LOAD STOCK WITH BLADE MOVING |
| 3. HEAD  | WATCH FOR HEAD DESCENDING TO TABLE |
| 4. PIVOT | CHECK FOR HEAD MOVEMENT BLOCKAGE   |
| 5. DRIVE | SECURE PULLEY COVER WHEN RUNNING   |

## 2. SPECIFICATIONS

( 330SVAA )

	IMPERIAL DIMENSIONS		METRIC DIMENSIONS	
Cutting Capacity				
Rectangular	13" High x 18" Wide		330mm x 457mm	
Round	12" dia @45° ; 12.6" dia @60°		300mm dia @45° ; 320mm dia @60°	
Blade				
Length	13'10"		4220mm	
Width	1" (1.075" including teeth)		25mm(27.3mm including teeth)	
thickness	.032"		0.8mm	
Blade speed				
Standard step pulley (Surface Feet/Minute)	50HZ – 82 ~ 217 Ft/min		50HZ – 25 ~ 66 M/min	
	60HZ – 98 ~ 262 Ft/min		60HZ – 30 ~ 80 M/min	
Blade guides	Carbide of tungsten			
Blade wheel diameter	16"		400mm	
Motor				
Standard	330S-2HP	330SV-3HP	330S-1.5KW	330SV-2.2KW
Coolant Pump				
60HZ	65W 7.9US Gallon Max Head:3.3M			
50HZ			51W 22L/min Max Head:2.6M	
Coolant reservoir	6 Gallons		23 Litre	
Table height	26 5/8" High		675 mm	
Machine weight	1800 pounds		818 kg	
Overall Dinensions	81 3/4" Wx75 3/16" Lx53 1/8"H		2075mmWx1910mmLx1348mmH	



**WARNING: FAILURE TO FOLLOW THESE RULES  
MAY RESULT IN SERIOUS PERSONAL INJURY**

As with all machinery there are certain hazards involved with operation and use of the machine. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

This machine was designed for certain applications only. We strongly recommend that this machine NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the machine until you contact with us and we have advised you.

**Your machine might not come with a power socket or plug. Before using this Machine, please do ask your local dealer to install the socket or plug on the Power cable end.**

### **3. SAFETY RULES FOR ALL TOOLS**

#### **A. USER:**

(1). **WEAR PROPER APPAREL.** No loose clothing, gloves, rings, bracelets, or other jewelry to get caught in moving parts.

Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

(2). **ALWAYS WEAR EYE PROTECTION.** Refer to ANSLZ87.1 standard for appropriate recommendations.

Also use face or dust mask if cutting operation is dusty.

(3). **DON'T OVERREACH.** Keep proper footing and balance at all times.

(4). **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.

(5). **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

(6). **DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drug, alcohol or any medication.

(7). **MAKE SURE TOOL IS DISCONNECTED FROM POWER SUPPLY.** While motor is being mounted, connected or reconnected.

(8). **ALWAYS** keep hands and fingers away from the blade.

(9). **STOP** the machine before removing chips.

(10). **SHUT- OFF** power and clean the BAND SAW and work area before leaving the machine.

(11). **DO NOT** Touch the cutting Blade while the machine is turn on.

#### **B. USE OF MACHINE:**

(1). **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on".

- (2). **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.
- (3). **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
- (4). **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand frees both hands to operate tool.
- (5). **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- (6). **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.
- (7). **AVOID ACCIDENTAL STARTING.** Make sure switch is in "OFF" position before plugging in power cord.
- (8). **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
- (9). **ADJUST AND POSITION** the blade guide arm before starting the cut.
- (10). **KEEP BLADE GUIDE ARM TIGHT,** A loose blade guide arm will affect sawing accuracy.
- (11). **MAKE SURE** blade speed is set correctly for material being cut.
- (12). **CHECK** for proper blade size and type.
- (13). **STOP** the machine before putting material in the vise.
- (14). **ALWAYS** have stock firmly clamped in vise before starting cut.
- (15). **GROUND ALL TOOLS.** If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter lug must be attached to a known ground. Never removed the third prong.

#### **C. ADJUSTMENT :**

**MAKE** all adjustments with the power off. In order to obtain the machine. precision and correct ways of adjustment while assembling, the user should read the detailed instruction in this manual.

#### **D. WORKING ENVIRONMENT:**

- (1). **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- (2). **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well-lighted.
- (3). **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.
- (4). **DON'T** install & use this machine in explosive, dangerous environment.

#### **E. MAINTENANCE:**

- (1). **DISCONNECT** machine from power source when making repairs.
- (2). **CHECK DAMAGED PARTS.** Before further using of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its

intended function. 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.

- (3). **DISCONNECT TOOLS** before servicing and when changing accessories such as blades, bits, cutters, etc.
- (4). **MAKE SURE** that blade tension and blade tacking are properly adjusted.
- (5). **RE-CHECK** blade tension after initial cut with a new blade.
- (6). **TO RPOLONG BLADE LIFE ALWAYS** release blade tension at the end of each workday.
- (7). **CHECK COOLANT DAILY** Low coolant level can cause foaming and high blade temperatures. Dirty coolant can clog pump, cause crooked. Rust, low cutting rate and permanent blade failure. Dirty coolant can cause the growth of bacteria with ensuing skin irritation.
- (8). **WHEN CUTTING MAGNESIUM NEVER** use soluble oils or emulsions(oil-water mix) as water will greatly intensify any accidental magnesium chip fire. See your industrial coolant supplier for specific coolant recommendations when cutting magnesium.
- (9). **TO PRNMT** corrosion of machined surfaces when a soluble on is used as coolant, pay particular attention to wiping dry the surfaces where fluid accumulates and does not evaporate quickly, such as between the machine bed and vise.

#### **F. SPECTIFIED USAGE:**

This machine is used only for general metals cutting within the range of cutting capacity.

#### **G. NOISE:**

A weighted sound pressure level : under80 dB.

#### **H. SAFETY DEVICE:**

Interlock switch on cutting area as soon as the cover of cutting area is open, machine will stop at once witch the function of this switch. Do not remove this switch from machine for any reason, and check its function frequently.

#### **4. FEARTURES:**

1. This machine is useful for cutting normal steel, steel pipe, and provides cutting angle at 45° & 60° by the swivel head.
2. A tooth selection label Ms provided on the machine for cutting reference.
3. Variable speed control gives convenient selection of speeds.
4. Hydraulic cylinder controls feeding volume and provides stable cutting.
5. Easy sliding the working table back and forth by loosing and fixing only two bolts.
6. Quick positioning vise for clamping all sizes of work piece.
7. Chip pan underneath the working table prevents coolant fluid leaking and keep floor dry.
8. Hydraulic unit is to rise up the saw arm automatically for easy handling.
9. Coolant for cutting: water:oil=1:40 oil specification.

## 5. TRANSPORTATION & INSTALLATION:

### 5-1. Unpacking

1. Transportation to desired location before unpacking, please use lifting jack.  
(Fig. B)
2. Transportation after unpacking, please use heavy duty fiber belt to lift up the machine.

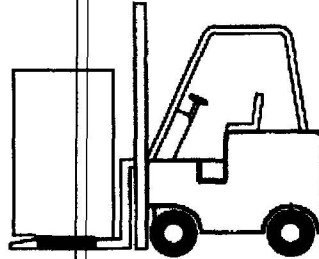
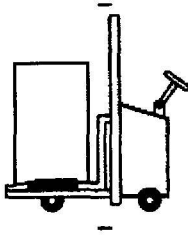


Fig. B

**ALLWAYS KEEP PROPER FOOTING & BALANCE WHILE MOVING THIS MACHINE.**

### 5-2. TRANSPORTATION OF MACHINE:

As this machine weights 810kgs(1800lbs) it is recommended that the machine be transported with help of lifting jack.

#### Transportation Recommendation:

1. **Tighten** all locks before operation.
2. **Always** keep proper footing & balance while moving this machine, and only use a heavy duty of fiber belt to lift the machine as per Fig. 1.
3. **TURN OFF** the power before wiring & be sure machine is properly grounded. Overload & circuit breaker are recommended for safety wiring.
4. **Tighten** 4 bolts to base holes after machine is balanced.
5. **Check** carefully if the saw blade is running in counter-clockwise direction if not, reverse the wiring per circuit diagram, then repeat the running test.
6. **Keep** machine always out from sun, dust, wet, or raining area.

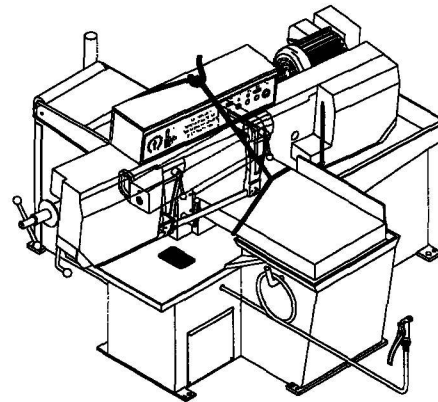


Fig. 1

### **5-3. Installation:**

- (1) **Always** Keep proper footing & balance while moving this 1800 lbs machine. And only use heavy-duty fiber belt to lift the machine as per Fig.1
- (2) **Finish** removing this wooden case/crate from the machine. Unbolt the machine from the crate bottom.
- (3) **Position** & tighten 4 bolts into base holes properly after machine in balance.
- (4) **Turn off** the power before wiring & be sure machine is in proper grounding. Overload & circuit breaker is recommended for safety wiring.
- (5) **Keep** machine always out from sun, dust, wet, raining area.

### **5-4. CLEANING & LUBRICATING**

- (1) Your machine has been coated with a heavy grease to protect it in shipping. This coating should be completely removed before operating the machine. Commercial degreaser, kerosene or similar solvent may be used to remove the grease from the machine, but avoid getting solvent on belts or other rubber parts.
- (2) After cleaning, coat all bright work with a light lubricant. Lubricate all points in Fig 1. with a medium consistency machine oil.

### **5-5. LEVELLING THE SAW**

Use a machinist's level across the vise table to level the saw. Adjust the level with the leveling bolts supplied. Consideration should be given to the flow of the coolant as it returns to the coolant trough at the vise end of the saw. Levelling to give a small incline towards this area helps to ensure the coolant supply returns to the container.



### **5-6. CUTTING FLUID**

The 330S uses a pump and reservoir to circulate the necessary cutting fluid to the blade for maximum blade life. Your saw blade supplier will be able to provide information to the cutting fluid products that are available for your needs.

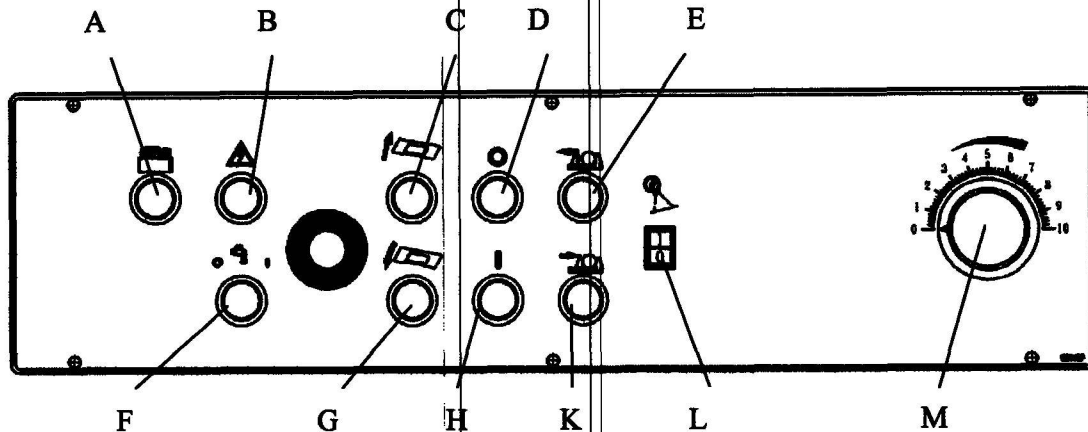
No cutting fluid (coolant) is supplied with the machine. There are two types of coolant available:

- oil based; dilute 1:10 ratio (one part concentrated coolant to 10 parts water)
- synthetic; dilute as recommended by manufacturer.

## 6. OPERATING INSTRUCTIONS

### 6-1. OPERATOR CONTROL PANEL

The operator control panel provides the operator with all the controls necessary to operate the saw after the cutting angle has been set and the stock has been loaded and secured. All of the electrical functions and the Feed Rate setting are operated from the control panel.



- A --- Hydraulic Button** – Hydraulic unit must startup before machine operating machine
- B --- Power Light** – Light shows the power is on or not.
- C --- Saw bow UP BUTTON** – Move the saw bow upward
- D --- STOP Button** - Pressing the RED mushroom button
- E --- Vise open BUTTON** – Vise open function (Vise will move by steps motion)
- F --- COOLANT Switch**
  - OFF - No coolant flow.
  - ON - Coolant flow when blade is running.
  - WASH - Constant flow
- G ---Saw bow Down BUTTON** -
- H --- START Button** -This button starts the saw blade.
  - The blade will not start with the Head in the down position.
- K --- Vise Close BUTTON** –Vise Close function (Vise will move continually until hold the work item, the holding pressure will keep by itself)
- L --- Laser Pointer SWITCH** – Blade Cutting reference path
  - I – ON The Light
  - O – Off The Light
- M --- HYDRAULIC CONTROLS**

**Feed Rate Setting:** The switch controls the speed of feeding. From 0 to 10 can be complete the setting in 180°.

- \*\*\* When vise close to hold up work item, push **START Button** the blade will starts to rotate, the saw bow will moves down to proceed with cutting action, until cutting finish, the saw bow will touches the low limit switch and then saw bow will moves upward until it touches the top limit switch and stops. This means a cutting cycle gets done.
- \*\*\* Before any material is cut, it is necessary to have good understanding of the basics of cutting metals. Damage to the blade and the saw it's self as well as injury to the operator may occur if the saw is not used properly. Refer to Section I for safety instructions. Following is the necessary information and instruction to operate this machine properly.

## 6-2. VISE OPERATION

The vise is drive by hydraulic unit, Please startup the hydraulic unit before operate the machine.

When push A BOTTON, the vise will open by steps move

When push B BOTTON, the vise will close by continually move  
(When vise hold the work item, Hydraulic pressure will keep holding to hold up the work item

Note: During vise close action, just need to push A BOTTON, it will stop

**Warning: Before Push B BOTTON, please make sure there is only work item on the table. To avoid unexpected accident happends**

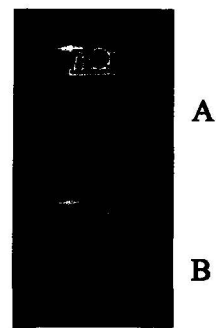


Fig - A

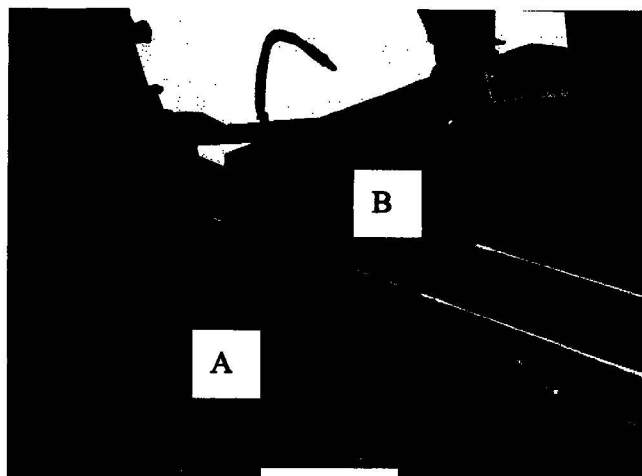


Fig - B

## 7. BLADE BASICS

Technology is rapidly changing all aspects of production machining. Metal cutoff is no exception. The advances made in the band saw blade industry have definitely brought down the cost per cut, despite the threefold higher price of the newer technology blades. Variable pitch ( see Pg2.3), bi-metal blades (like the 5/8 or 4/6 bimetal blade supplied with the 330S saws) last much longer, cut faster, and more accurately than the conventional carbon steel blades. In order to take advantage of the superiority of bi-metal blades, it is critical to property "break-in" a new blade. This is accomplished by taking two or three cuts through solid four or five inch diameter mild steel at an extremely slow feed rate. These two or three slow cuts sufficiently lap (polish) the new blade so that it does not snag the material being cut. Proper break-in will alleviate blade vibration, improve surface finish and accuracy, and improve expected blade life.

**7-1. A new blade must be properly "broken-in".** Proper break-in will alleviate blade vibration, improve surface finish and accuracy, and extend blade life. The most convenient way to do this is to cut the intended work-piece, at the standard recommended blade speed for that material, but with the feed rate reduced to about 25% of normal. Near the end of the first cut, increase the feed rate again, and once again when the blade approaches the end of the second cut. Keep increasing fed rate in this fashion, so that normal feed rate is reached after 100 to 120 sq. inches of cutting.

**7-2. Generous coolant application is essential with almost all materials.** A high quality and well mixed coolant will dramatically extend blade life, and will increase cutting rate and surface finish. On those few materials where coolant is undesirable, a slight coolant flow or periodic oiling off the blade is necessary to prevent the blade from being scored by the carbide guides.



**7-3. The stock being cut must be securely clamped in the vises.** Stock movement during cutting will strip blade teeth. Noticeable stock vibration reduces cutting performance and blade life-consideration should be given to reorientation of the stock, or additional clamping measures (e.g. wood between vise jaws and work-piece).

**7-4. The proper blade speed for the work-Piece material must be selected.**

Use the following chart as a starting point.

-Blade speeds higher than recommended will quickly dull the blade. Blue chips are evidence of excessive blade speed.

-Lower than recommended speeds will not prolong blade life, and will require reduced feed rate-but reduced speeds may be helpful in reducing vibration, and will increase blade life in that case.

BLADE BASICS CUTTING SPEEDS FOR VARIOUS MATERIALS		
	Blade Speed (in SFM)	Coolant Required
Free Cutting Steels 1100 & 1200 Series	310	YES
Low & Medium Carbon 1008 - 1045		YES
High Carbon Steels 1046 - 1095	140, 220	YES
Alloy Steels	140, 220	YES
Tool Steels	90, 140	YES
Pipe & Structural	140, 220	YES
Nickel Base Alloys	140, 220	YES
Copper Base Alloys	90, 140	YES
Stainless Steels 430F, 416, 420F, 303	140, 220	YES
Cast Iron		NO Oil Blade

Blade Speed Selection Chart

**7-5. The proper feed rate must be applied.**

Feed Rate is the speed which the head "free-falls", and is set with the feed rate control knob. The head will descend more slowly when the blade encounters the work-piece but the force of the blade on the work will not be changed unless the setting is changed. Verification of proper feed rate is provided by the appearance of the cut chips which ideally form nicely curled "clock springs."

(Note that cast irons, and interrupted cuts result in short, broken chips even at ideal feed rates).

-Excessive feed rate will result in short blade life and/or crooked cuts.

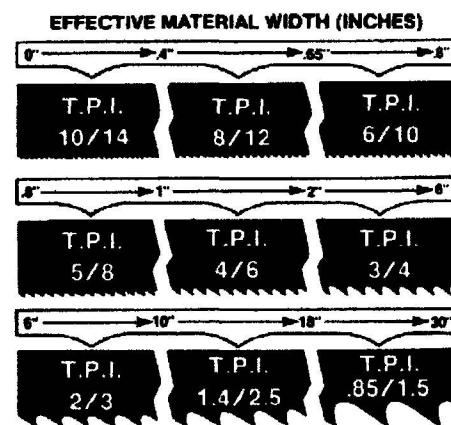
## 8. DETERMINE OPTIMUM BLADE PITCH

### TEETH PER INCH (T.P.I)

Selection a blade with proper tooth pitch is important in order to achieve optimal cutting rates and good blade life.

For cutting narrow or thin wall structural materials a fine, blade with many teeth per inch (T.P.I) is recommended. For wide materials a blade with a coarse pitch should be used. See the sketch below for the blade pitch changes for differing effective material widths.

It is impractical to change the blade to the proper pitch every time a different width of material is cut and it is not necessary, but remember that the optimum blade will cut most efficiently. Too fine a blade must be fed slower on wide material because the small gullets between the teeth will get packed with chips before they get across and out of the cut. Too coarse a blade must be fed slower because it has fewer teeth cutting and there is a limit to the depth of a cut taken by each tooth.



**Optimum Blade Pitch (T.P.I) for Material Width (Inches)**



## 9. GUIDE ARM POSITIONING

The 330SVAA guide arms are adjustable to accommodate varying material widths. The guide arms should be adjusted as close to the material width as possible while still allowing the material to pass between them. This process of matching the guide arm spacing to the material size is important to optimize blade life.

To adjust the guide arm spacing the locking lever is then moved in the counter clockwise direction so that the carbides release the blade. The guide arms will then slide on the main guide bar which supports them. To retighten the guide arm the handle is turned clockwise until the handles are in the Locked position as illustrated in the following photo. The carbide locking lever should be moved to the upright tensioned position.



**Guide Arms with Handles Locked ( 4 to 6 O'clock Position )  
Carbide Levers Tensioned Position ( Upright )**

## 10. COOLANT FLOW

The 330S band saw is equipped with two needle valves that independently control the coolant nozzles which are capable of supplying a generous flow of coolant to the blade.

The left (idler) guide arm nozzle supplies a flow of coolant that should flood the blade as it moves through the carbide pads into the material to be cut. The adjustable valve on the left guide arm should be set to a higher flow as a higher blade speed is used to provide the flow as a higher blade speed is used to provide the flood of coolant necessary.

The right (drive) guide arm provides an adjustable coolant flow through the needle valve and the flexible hose nozzle that can be pointed where necessary. This flexible hose should be used when cutting solid bars, bundles, or wide structurals. Set the flow of coolant directly into the opening in the material where the blade is cutting.

**NOTE :** When cutting materials that do not need constant coolant, such as Cast Iron, some coolant flow is required for blade lubrication to prevent blade scoring by the carbide pads as the blade moves through them.

## 11. HEAD SWING AND BREAK

An integral function of the 330S is the ability to make mitred cuts at angles between 90° and 45°. The Head swing of the 330S Series II is easily changed to set a different cutting angle by first releasing the Angle Brake lever, and then manually moving the Head to the cutting angle desired. An angle scale with a pointer in clear view of the saw operator allows for accurate setting of the cutting angle. The Angle Brake lever is then locked in position by forcing it into the down position. It should be noted that the angle brake should be locked into position whenever cutting with the saw. The photo illustrates the Angle Brake in the locked position at 65°. To set the saw to the 90° position, the Head (in the fully down position) is moved until the frame meets the 90° stop bolt which is moved until the frame meets the 90° stop bolt which is located in the coolant tray at the drive end of the head.



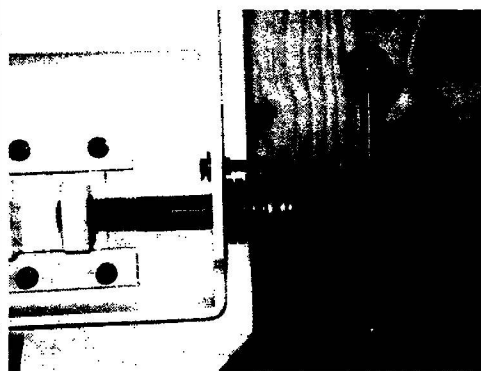
**Head Swing Scale and Angle Brake (Locked)**

## 12. MAINTENACE AND TROUBLESHOOTING

### 12-1. BLADE CHANGING PROCEDURE

**NOTE : Wear gloves for protection from the sharp Blade.**

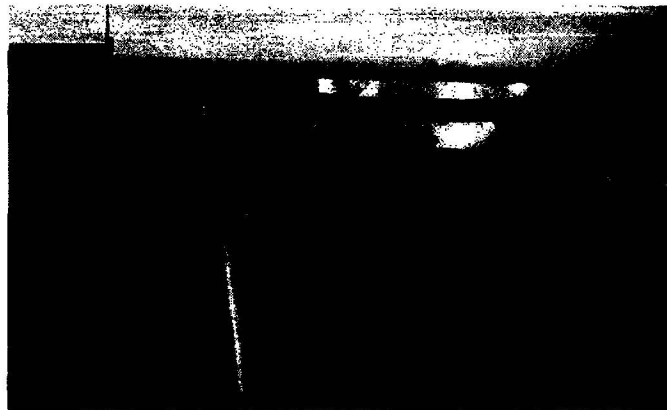
- 1, Open the Idler Wheel and Drive Wheel doors and swing the head to 45° as this will make it easier to grip the blade closer to both wheels.
- 2, Loosen the Blade Tensional by turning counter clockwise.
- 3, Loosen the carbide tension handles by turning counter clockwise 1/4 turn.



**Blade Tensional**



- 4, At the of the head, the saw blade runs in a protective channel. Grip the blade at each end of this channel and twist the blade teeth down past the channel and slide the blade forward. Let the blade rest on the out feed table, then slide the blade down and out of the carbide guides.



**Blade Removal from Top Blade Channel**

- 5, Before installing the new blade, check that it measures 1.075" wide including the teeth. Some blade manufacturers supply blades that measure 1" including the teeth. In this case you may not be able to adjust the head down limit switch to complete the cut.
- 6, Your new blade will be in a coil. While wearing gloves, hold the blade away from yourself, twist the blade to uncoil it. Do not let the blade teeth bounce on the concrete floor as some damage may be caused.
- 7, Place the new blade in the carbide guides and then slide the blade over the wheels. The teeth should be pointing towards the drive side as they pass through the carbide guides.
- 8, With the blade in place, turn the tensional handle clockwise until the large black washer contacts the stop bolt as shown on the previous page. This will set the blade tension correctly.
- 9, With the blade tension set, turn the two carbide locking handles clockwise to the locked position. Jog the blade a few rotations to check that the blade is not moving in or out on the blade wheels.

## **12-2. BLADE CHANGING PROCEDURE, CONTINUED**

As the blade tracking will stay fairly constant, it should be checked occasionally as shown on the drive wheel tracking photo below. The blade teeth should protrude from .185" to .200" from the face of the blade wheels. If the tracking requires adjustment, follow the instructions below.

## **12-3. BLADE TRACKING ADJUSTMENT**

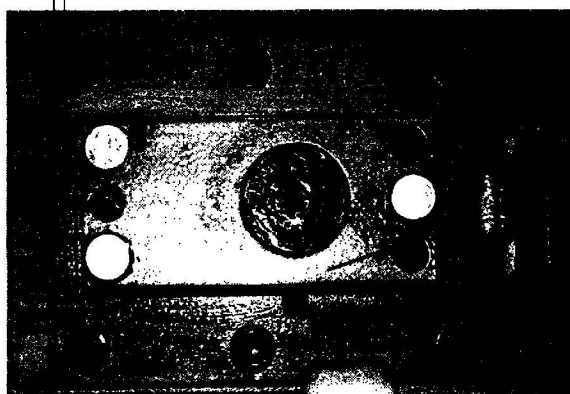
First, inspect the blade wheels for wear or damage and repair as required. Blade tracking adjustment should always begin at the wheel where the tracking is farthest out of specification. Using the instructions below, adjust the worst wheel, jog the blade and recheck both wheels. Repeat this process until both wheels are within specification.



**Checking the blade tracking with a caliper.**

#### 12-4. Idler Wheel Adjustment

On the blade tensioner slide assembly, there are three 9/16" hex head bolts. Loosen the two bolts at the left end by 1/4 turn. Loosen the single bolt at the right side of the slide assembly by 1/2 turn. In the two holes above and below this bolt are two 3/16" allen key set screws. Turn both set screws 1/4 turn and tighten the hex bolt at the right, then the two bolts at the left. Turning the set screws clockwise will pull the blade on to the wheel, and turning counter clockwise will push the blade off the wheel. Each 1/4 turn will move the blade approximately .02". There is also a single set screw at the left end of the slider. Turning it clockwise will push the blade off the wheel.



Idler wheel tracking set screws & hex bolts found on the slide assembly.

#### 12-5. Drive Wheel Adjustment

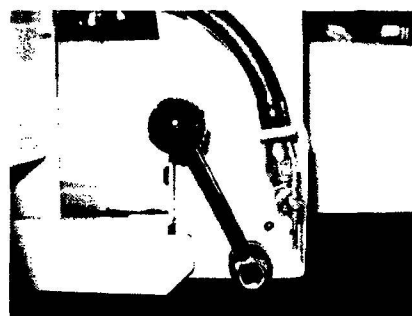
On the wall behind the drive wheel are two adjusting bolt assemblies and two hex bolts. Loosen all four of them with a 3/4" socket and turn the larger hex head bolts 1/4 turn with a 1 1/8" socket and extension and then tighten the two bolts in the assemblies, then tighten the two hex bolts at the left. Turning the 1 1/8" bolts clockwise will pull the blade on to the wheel and turning counter clockwise will push the blade off. Each 1/4 turn will move the blade approximately .02".



Check the blade brush adjustment to be sure the blade is being cleaned properly.

#### 12-6. BLADE GUIDE ADJUSTMENT

At the bottom of the guide arms are the carbide blade guide assemblies, the photo below shows the carbide locking handle. These assemblies will need to be adjusted occasionally as the carbide pads become worn. To adjust properly, follow this simple procedure. Loosen the hex nut on the locking handle with a 9/16 wrench and turn the handle clockwise until it rests against the coolant tap on the idler guide arm or the roll pin on the drive guide arm. Turn the set screw clockwise with a 3/16 allen key until tight and then loosen 1/8 of a turn and tighten the hex nut. This should put just enough pressure on the blade to permit you to push the blade down approximately 1/8".

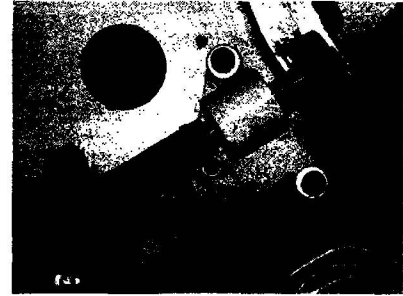


Idler guide arm carbide locking handle in the locked position

## 12-7. BLADE BRUSH ADJUSTMENT

The machine leaves the factory with the blade brush adjusted for maximum life of the brush. This setting places the ends of the blade brush wires so as to contact the blade at the bottom of the blade gullets. The plastic drive wheel that is driven by the drive wheel face should be held against the blade face with the minimum force that is necessary. As the blade brush wears it is necessary to periodically adjust it closer to the blade or if a new brush is installed, further away from the blade.

As shown, there are two springs on socket head screws holding the brush assembly against the blade. There is also an adjusting socket set screw with a hex nut on it. Loosen the hex nut with a 9/16" wrench and turn the set screw counter clockwise with a 3/16" allen key. This will move the brush closer to the blade. Adjust the set screw so that the brush cleans to the bottom of the blade gullets and tighten the hex nut.



**Blade brush adjusting  
Screw & hex nut.**

## 12-8. ANGLE BRAKE ADJUSTMENT

The clamping force on the swivel brake can be adjusted to ensure that the Head is held securely and does not move during cutting. The brake handle should be adjusted so that it does not "bottom out" or hit its movement limit, yet holds the head securely.

### 12-9. ANGLE BRAKE ADJUSTMENT PROCEDURE

**STEP 1** Loosen locking cap screws "B" with a 1/4 allen key.

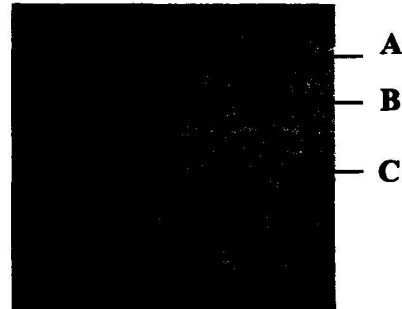
**STEP 2** Tighten all 4 set screws "A" until snug with a 5/32" allen key.

**STEP 3** Back out the "A" screws 1/4 of a turn.

**STEP 4** Tighten the locking cap screws "B".

**STEP 5** Swing the head to 45° and back to ensure that the head moves freely and does not bind on the pivot surfaces. Continue to step 6 if necessary.

**STEP 6** Adjust the clamping force bolt "C" with a 3/4 wrench. If not tightened enough, the locking handle will "bottom out" and not hold the head firmly.



**Angle Brake  
Adjustment Screws.**

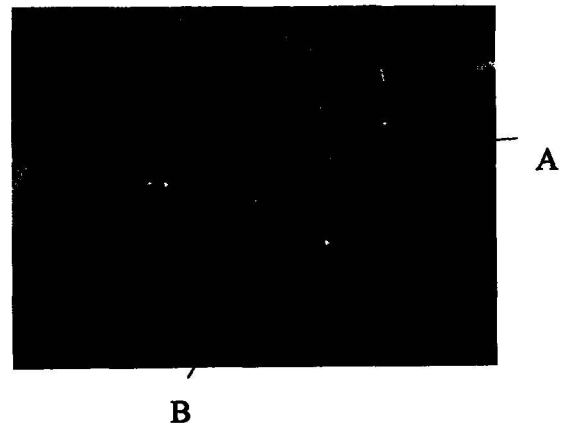
### 12-10. Saw bow Up/Down limit switch Adjustment

\*\* The saw bow is driven by hydraulic unit

1, Bottom limit switch adjuster : As photo shows A  
The saw bow lowest position can be adjusted, it means after cutting off the work item, the blade stop position.

2, Bottom limit screw and stop screw needs adjust together to get the best position. (This position will be adjusted before machine ship out)

3, Top limit screw adjust: As photo B shown The position of saw bow at top stop point can be adjusted, operator can adjust this position depends on the height of work item to match the operation demand.



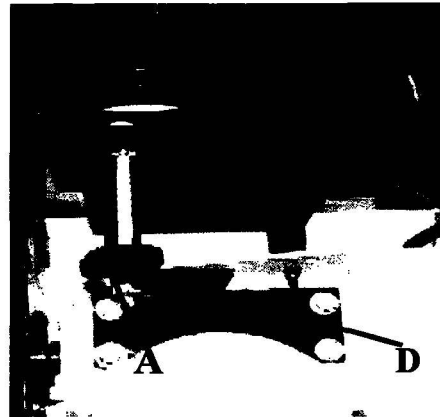
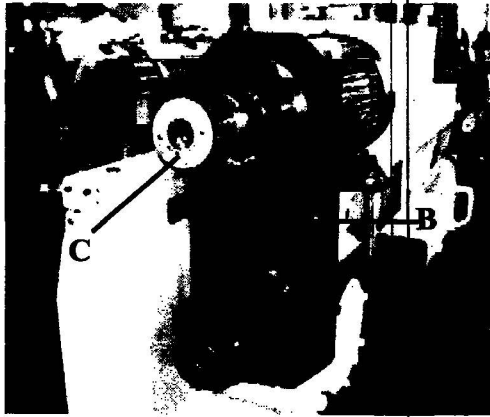
### 13. CHANGING SPEEDS AND ADJUSTING

#### 13-1. BELT TENSION ( 330SVAA)

If the belt (B) is too loose, Loosen screw nut (A) adjust the screw to proper tension and lock the screw nut. (D) is adjust bracket.

The cutting speed is controlled by speed change(C). Turn it clockwise to decrease the cutting speed and increase the cutting speed by turning counter-clockwise.

Change speed always when motor is running, and be sure the belt cover is always in locked position.



#### 13-2. BLADE SPEED SELECTION (330SVAA)

The blade speed of the 330SVAA can be changed between different speeds. The speed is determined by the ratio of the variable speed control that drive the V belt. The variable speed control sets give the optional speeds of 30-80 Surface Feet Per Minute.

Blade Speed

MPM

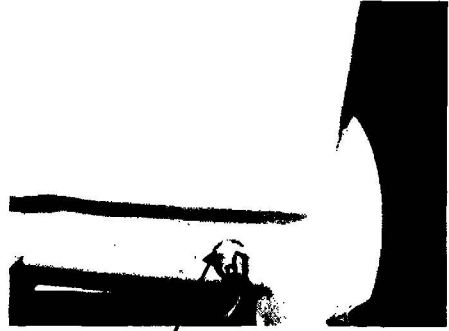
70 50 30 80 60 40

WARNING  
CHANGE SPEED ONLY WHEN MOTOR IS RUNNING/DO NOT CHANGE SPEED WHEN MOTOR IS STOPPED

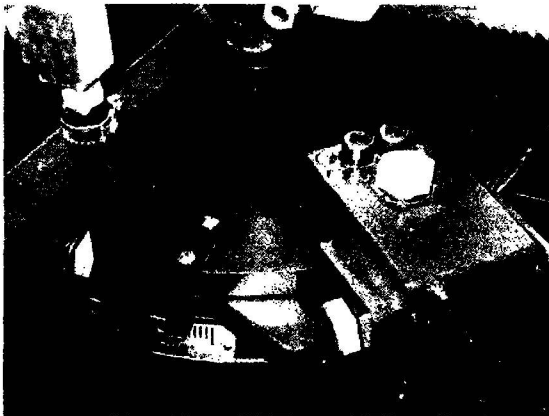
## 14. LUBRICATION

The 330SVAA was designed to minimize the maintenance requirements. Moving assemblies and contact faces need lubrication on a regular schedule whether they are in heavy use not. The lubrication requirements of the 330SVAA are primarily the saw pivot points which are equipped with grease fittings (circled), and metal to metal surfaces (S) that require lubrication to prevent wear and seizure.

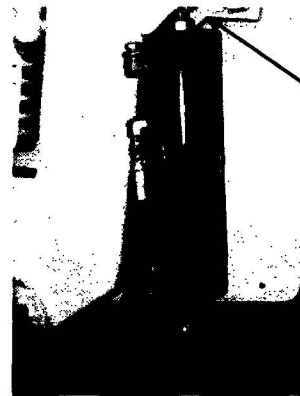
NOTE: Hyd-Mech recommends Monthly lubrication.



Head horizontal pivot fitting



Swivel Pivot pin fitting under dome cap

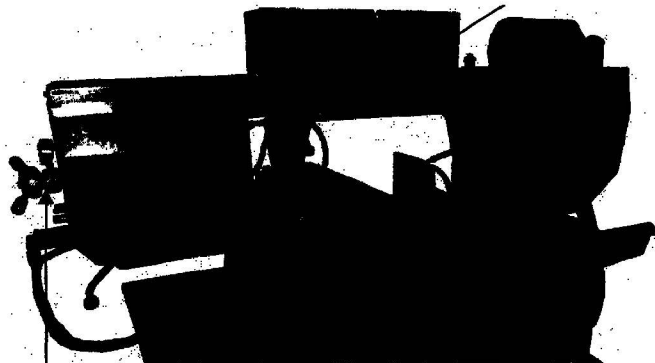


Spring Post & Cylinder

Axis slide surface greasing



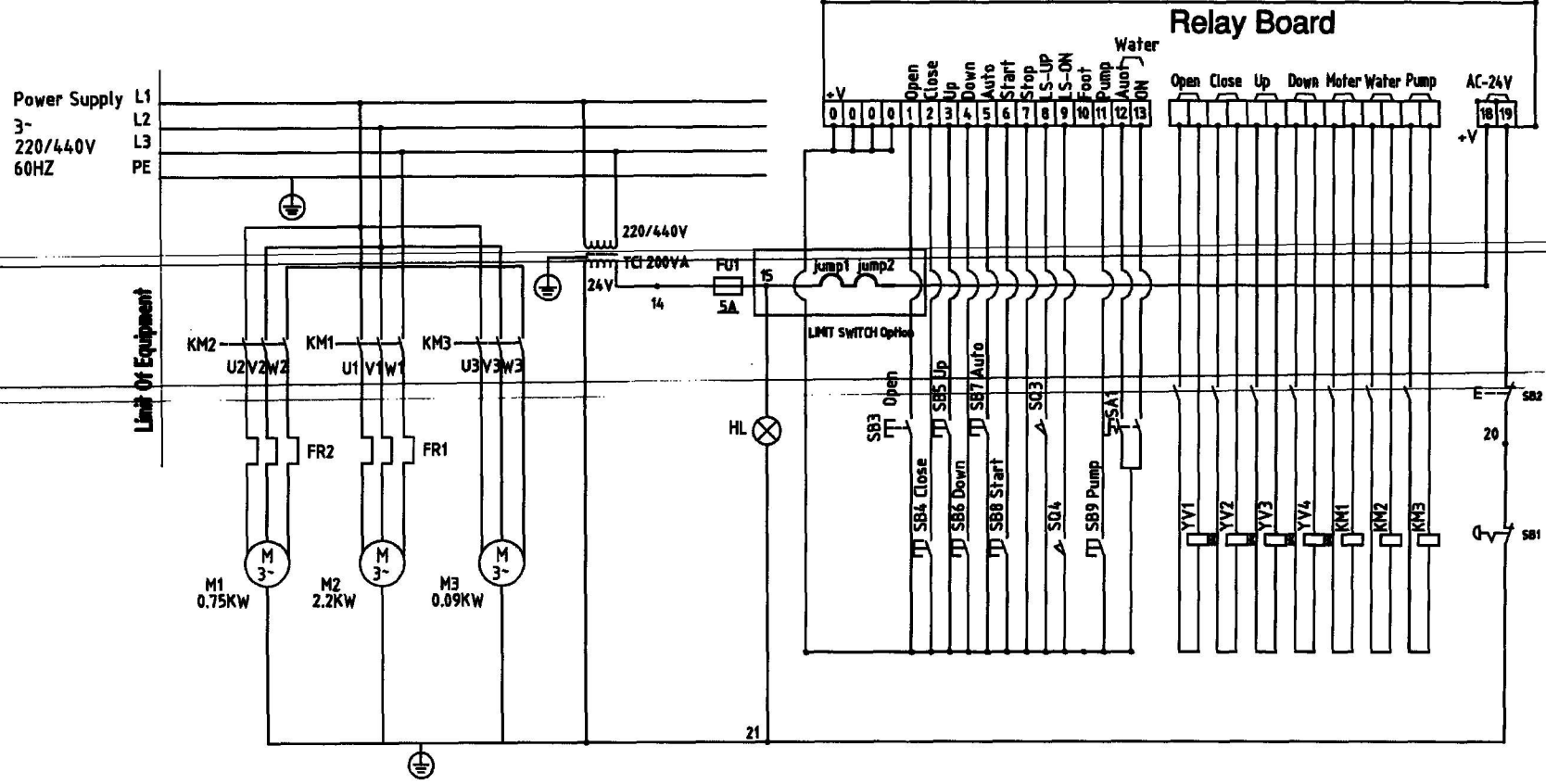
Guide Arm Rail



Blade Tensional Assembly

3 In feed Rollers

# 15. CIRCUIT DIAGRAM



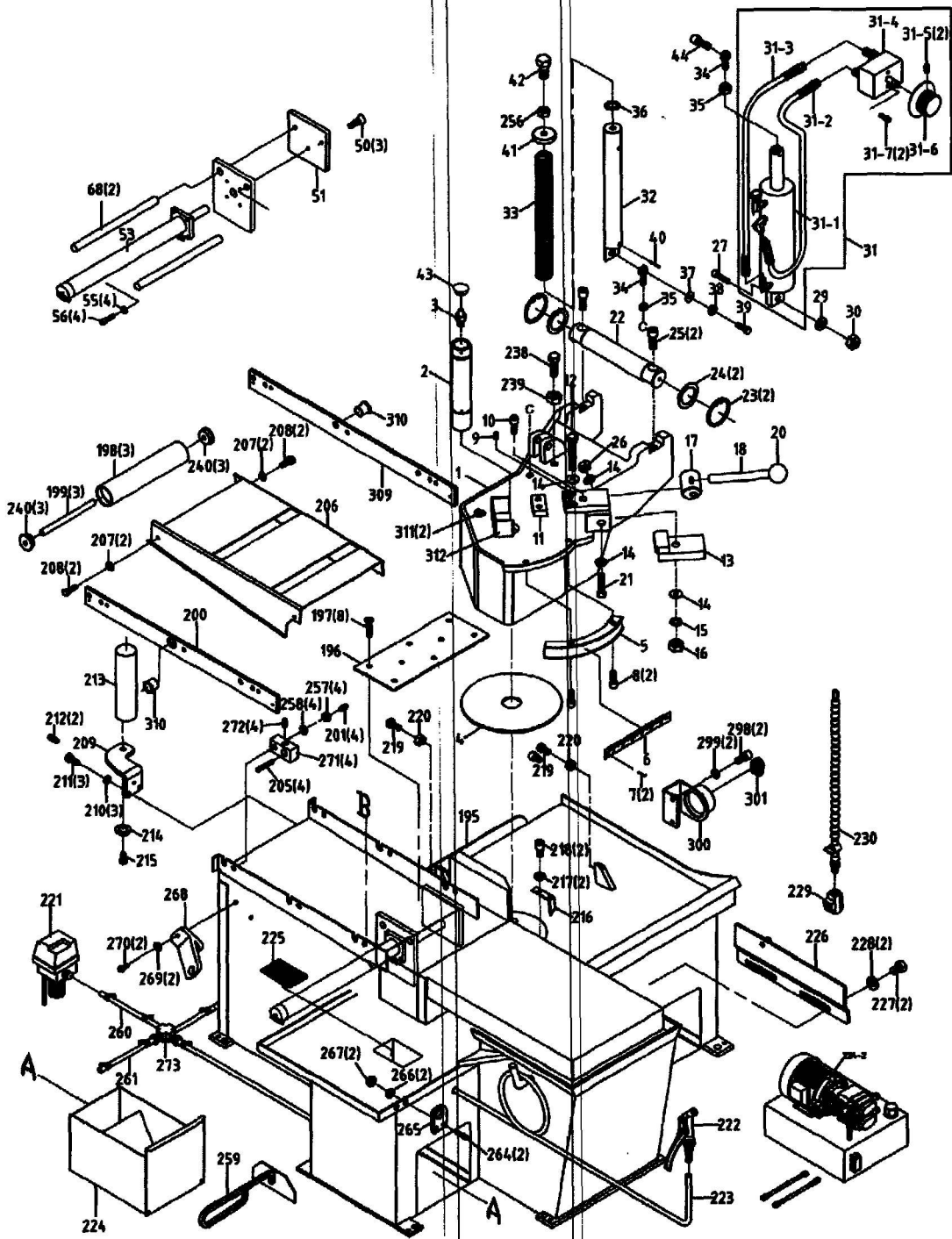


## 330SVAA

## SCHEDULE OF ELECTRICAL EQUIPMENT

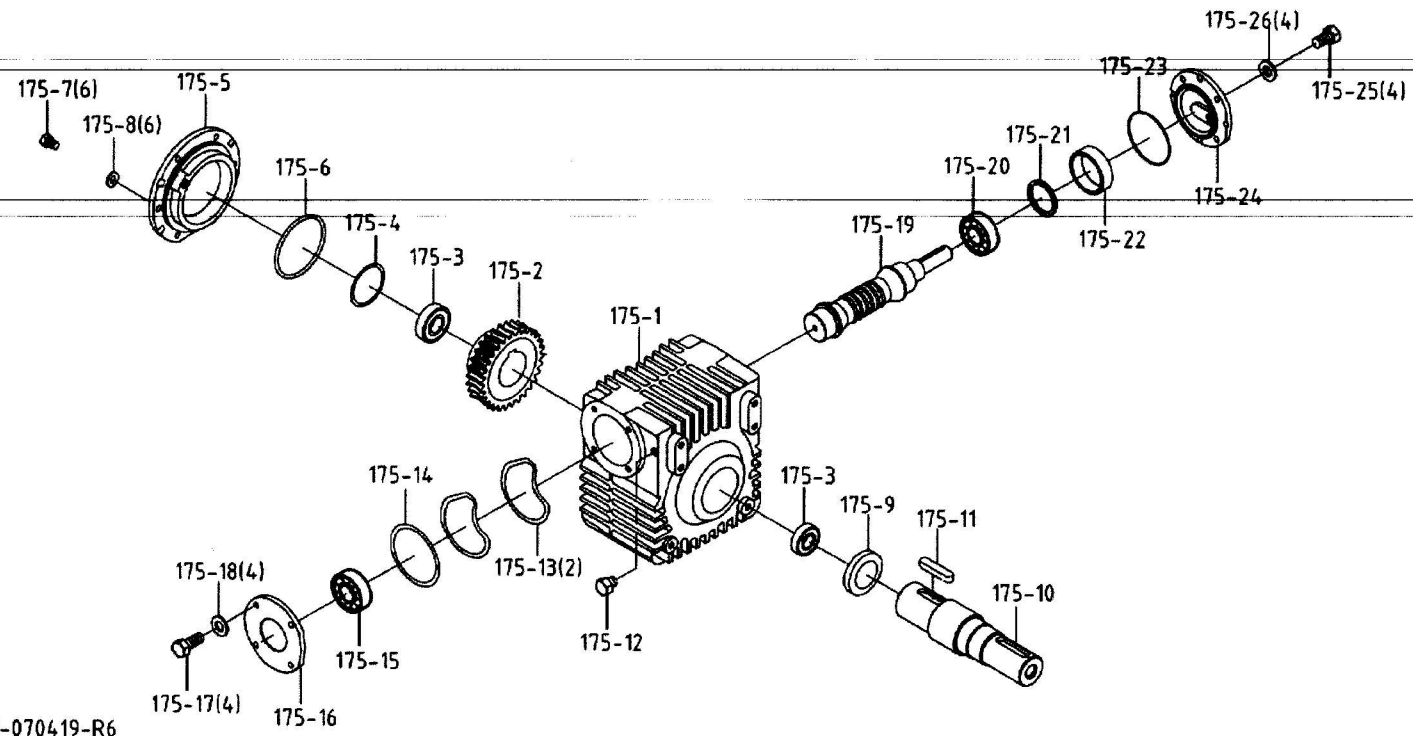
Item.	Designation and function	Technical data	QTY	Supplier reference	Remark
SA1	Water-Auto-SemiAuto Switch	NSS22-S-2A	1	NHD	
KM1	Main Motor Contactor		1		
KM2	Oil Motor Contactor		1		
KM3	Pump Contactor		1		
FR1	MOTOR OVERLOAD		1		
FU1	Fuse 5A		1		
TCI	Transformer	0.220.440/24	1	LCE	
YV1	Vice Valve ON		1		
YV2	Vice Valve OFF		1		
YV3	Up Valve		1		
YV4	Down Valve		1		
HL	Singal	NLD-22	1	NHD	
SB1	Emergency Stop Switch		1	KD	
SB2	OFF Switch	HY57B E195428	1	NHD	
SB3	Vice ON Switch	NPB22-F10G	1	NHD	
SB4	Vice OFF Switch	NPB22-F10R	1	NHD	
SB5	UP Switch	NPB22-F10G	1	NHD	
SB6	Down Switch	NPB22-F10G	1	NHD	
SB7	Auto Mode	NSS22-S-1A	1	NHD	
SB8	Motor Start Switch	NPB22-F10G	1	NHD	
SB9	Oil Pump Switch	NPB22-F10G	1	NHD	
SQ3	Lower Limit Switch	AZD-1112	1	Shinozaki	
SQ4	Upper Limit Switch	AZD-1112	1	Shinozaki	
M1	Motor	3/220/440/4P/3PH	1	JIUH DAH	
M2	Oil Motor	1/220/440/4P/3PH	1		
M3	Water Motor	1/8/220/440/3PH	1	JIUH DAH	
M3	Water Motor	1/8/220/440/3PH	1		
FR2	OIL PUMP OVERLOAD		1		

# 16. PARTS LISTS



330SVAA-150325-R0





330S-SV-070419-R6

# PARTS LIST

## MODEL NO. 330SVAA

CODE_NO	PART_NO	SPECIFICATION	DESCRIPTION	QTY	NOTE
1	133062A		Swivel Arm	1	
2	133063		Swing Spindle	1	
3	HB501	PT1/8	Oil Nozzle	1	
4	133064		Pad	1	
5	133065		Rear Sight Base	1	
6A	133066		Degree-Meter	1	
7	HH001	Ø2	Rivet	2	
8	S483	1/4"X1-3/16"L	Hex. Socket Head Screw	2	
9	S608	5/16"X3/4"L	Hex.Socket Headless Sc:	1	
10	S414	5/16"X1"L	Hex. Socket Head Screw	1	
11	133067		Chunk	1	
12	S084	1/2"X3-1/2"L	Hex. Head Screw	1	
13	133068		Press Board	1	
14	W002	1/2"X27.5Xt2.2	Washer	4	
15	W201	1/2"	Spring Washer	1	
16	HB811	1/2"	Net	1	
17	133069		Cam	1	
18A	133070		Knob W/Shaft	1	
20	133072		Plastic Round Knob	1	
21	S076	1/2"X4"L	Hex. Head Screw	1	
22	133073		Shaft	1	
23	HCS22	S38	C-Retaniner Ring	2	
24	133074		Washer	2	
25	S481	1/2"X1-1/4"L (20NUF)	Hex. Socket Head Screw	2	
26	N001	1/2"	Hex. Nut	1	
27	S485	1/2"X2-1/2L"	Hex. Socket Head Screw	1	
29	W046	1/2"X28Xt3	Washer	1	
30	HB811	1/2"	Hex. Nut	1	
31	133060S		Cylinder Assembly	1	
31-6	133173		Throttle Handle	1	
32	133051		Spring Support	1	
33	133052		Spring	1	
34	133175	1/2"X1-1/2 (20NUF)	Cardan Shaft	2	
35	N002	1/2"	Hex. Nut	2	
36	133053		Washer	1	
37	W002	Ø1/2XØ27Xt2	Washer	1	
38	W201	Ø1/2	Spring Washer	1	
39	S002	1/2"X1-1/2L(20NUF)	Hex. Head Screw	1	
40	HP042	Ø6X1-3/4"L	Pin	1	
41	133056		Bushing	1	
42	S016	3/8"X3/4"L	Hex. Head Screw	1	
43	HD107	Ø28	Plug	1	
44	S484	1/2"X2"L	Hex. Socket Head Screw	1	
50	HD505	3/4"X1-1/2"L	Hex. Socket Flat Head S	1	
50	HS244	M8*30L	Hex. Socket Head Screw	3	
51	132019		Vise	1	
53	132020		Cylinder	1	

**PARTS LIST**

**MODEL NO. 330SVAA**

CODE_NO	PART_NO	SPECIFICATION	DESCRIPTION	QTY	NOTE
55	HW106	M10	Spring Washer	4	
56	HS261	M10*35L	Hex. Socket Head Screw	4	
68	132022		Shaft	2	
75A	133021A		Column	1	
76	S479	3/8"X3/4"L	Hex. Socket Head Screw	5	
77	HP039	Ø6X25L	Pin	1	
78	133022		Left Pivot Bracket	1	
79	133023		Fixed Handle	2	
80	133024		Tight Chunk	2	
81	133025		Plate	1	
82	HT009	3/16"X3/8"L	Cross Round Head Screw	2	
83	133026		Fixed Handle	2	
84	133120	φ 9.7X φ 19Xt1	Tray Type Spring	6	
85	133027		Location Screw	2	
86	N006	3/8"-24UNF	Hex. Nut	2	
87	133028		Steel Guide Base	2	
88	133105		Plastic Round Knob	2	
89	133030		Carbide Guide	2	
90	HD506	5/16"X1/2"L	Hex. Socket Flat Head S	2	
91	133031		Right Pivot Bracket	1	
92	W038	1/4"X3/4"X1.5t	Washer	1	
93	S402	1/4"X1/2"L	Hex. Socket Head Screw	1	
94	133090		Idler Wheel Cover	1	
95	133089		Wheel Cover	1	
96A	133088A		Body Frame	1	
97	133091C		Control Box	1	
99	133014		Drive Wheel	1	
100	133015		Interval Ring	1	
101	133016		Block Cover	1	
102	W206	5/8"	Spring Washer	1	
103	S077	5/8"X1-1/2"L	Hex. Head Screw	1	
104	HD803	1/8"X5/16"L		1	
104-1	HD817	1/8"(CU SL)		1	
104-2	HD816	1/8"		1	
105	HP043	Ø3X35L	Pin	4	
106	HP046	Ø4X35L	Pin	2	
109	133104		Blade Guard	1	
110	133179	Ø8X480MM	Hose	1	
111	133045		Brush Shaft	1	
112	133046		Bearing Shaft	1	
113	133047		Drive Wheel	1	
114	133048		Brush	1	
115	W002	1/2"X27Xt2.5	Washer	2	
116	N001	1/2"	Hex. Nut	1	
117	S602	1/4"X1/4"L	Hex.Socket Headless Sc:	1	
118	133049		Spring	2	
119	W013	3/8"X20.5Xt1.8	Washer	4	

**PARTS LIST**

**MODEL NO. 330SVAA**

CODE_NO	PART_NO	SPECIFICATION	DESCRIPTION	QTY	NOTE
120	S486	3/8"X4-5/16"L	Hex. Socket Head Screw	2	
121	S633	3/8"X3-1/2L	Hex.Socket Headless Sc:	1	
122	N005	3/8"	Hex. Nut	1	
123	133050		Brush Shaft Base	1	
124	HK103	10x14x2-1/2	Key	1	
128	198170		Scale	1	
129	HP232	ø6*40L	Pin	1	
130	131072		Blade Tension Bar	1	
131	131070		Tray Type Spring	5	
132	132035		Sleeve	1	
134	CA51230	51230	Bearing	1	
135	198051A		Blade Tension Handle	1	
136	198086		Knob	2	
137	133038		Press Board	2	
138	S409	3/8"X1"L	Hex. Socket Head Screw	8	
139	W204	3/8"	Spring Washer	8	
140	133039		Sliding Plate Draw Bloc.	1	
141	133040		Shaft	1	
142	S078	3/8"X2" 24UNF	Hex. Head Screw	3	
143	S626	3/8"X3/8"L-24UNF	Hex.Socket Headless Sc:	4	
144	W204	3/8"	Spring Washer	3	
145	133041A		Anchor Block	1	
146	133042		Idler Wheel	1	
147	CA63072RS	63072RS	Ball Bearing	2	
148	133043		Interval Ring	1	
149	HCR12	R80	C-Retaniner Ring	1	
150	133044		Washer	1	
151	W201	1/2"	Spring Washer	1	
152	S002	1/2"X1-1/2"L	Hex. Head Screw	1	
153-1	189074		Bracket	1	
153-2	189072		Infrared	1	
153-3	HS558	M5-0.8P*8L	Cross Round Head Screw	3	
153-4	HW004	6.5*13-0.8t	Washer	2	
153-5	HS032	M6x10L	Hex. Head Screw	2	
153-6	189073		Bracket	1	
154	132037		Bracket	1	
155	S016	3/8"X3/4"L	Hex. Head Screw	1	
156	S016	3/8"X3/4"L	Hex. Head Screw	1	
157	N005	3/8"-16	Hex. Nut	1	
159	W205	5/16"	Spring Washer	4	
160	133010		Motor Plate	1	
161	MFH205I	3HP / 220/440V	Motor	1	
162	S022	5/16"X3/4"L	Hex. Head Screw	4	
163	W040	5/16"XØ18Xt2	Washer	2	
164	133017		Packing	2	
164-1	133019		Chunk	2	
165A	N012	5/16"	Nut	2	

**PARTS LIST**

**MODEL NO. 330SVAA**

CODE_NO	PART_NO	SPECIFICATION	DESCRIPTION	QTY	NOTE
166	S079	5/16"X3"L	Hex. Head Screw	2	
167	133171		Warning mark	2	
168	HD610	Ø8	Binder	1	
169	S706	3/16"X1/2"L	Cross Round Head Screw	1	
170S	133186S		Variable Speed Pulley S	1	
170-1	1965032A	Ø24key=8X7	Variable Speed Pulley	1	
170-2	133186	Ø22.22	Spindle Pulley	1	
170-3	HK100	3/16"X3/16"X50L	Key	1	
170-4	133118D	FPM	Speed Indicator Dial	1	
170-4	133118E	MPM	Speed Indicator Dial	1	
170-5	1965045	1422/V330/22x22	Belt	1	
170-6	1965030		Motor Pulley Cover	1	
170-7	133011D		Motor Pulley Cover	1	
170-8	1966018		Stopper	1	
170-9	HS812	M5x8L	Cross Tablet Head Screw	2	
170-10	HS812	M5x8L	Cross Tablet Head Screw	4	
172	HK101	3/16"X3/16X30	Key	1	
175	133001S		Gear Box Set	1	
175-1	133001		Gear Box	1	
175-2	133007		Worm Gear	1	
175-3	CA3211A	3211	Bearing	2	
175-4	133102	Ø84.7XØ72Xt0.1	Washer	1	
175-5	133006		Cover	1	
175-6	HO039	Ø135XØ140X2.5	O-Retainer Ring	1	
175-7	HS047	M8X25L	Hex. Head Screw	6	
175-8	HW005	M8	Washer	6	
175-9	HG025	Ø52XØ72X8	Oil Seal	1	
175-10	133008		Drive Gear Shaft	1	
175-11	HK102	15X10X50	Key	1	
175-12	HD103	1/4"NPT	Plug	1	
175-13	133182	Ø66.12XØ84.53X0.91	Corrugated Washer	2	
175-14	133101	Ø86.5XØ99.7Xt0.1	Washer	1	
175-15	CA6209	6209	Bearing	1	
175-16	133002		Cover	1	
175-17	HS047	M8X25L	Hex. Head Screw	4	
175-18	HW005	M8	Washer	4	
175-19	133005		Worm Shaft	1	
175-20	CA7209B	7209B	Bearing	1	
175-21	133004		Washer	1	
175-22	HG026	Ø30XØ50X7	Oil Seal	1	
175-23	HO038	Ø80XØ85X2.5	O-Retainer Ring	1	
175-24	133003		Cover	1	
175-25	HS047	M8X25L	Hex. Head Screw	4	
175-26	HW005	M8	Washer	4	
176	133009B		Adjust Holder	1	
176-1	189032		Knob	1	
176-2	HI002	M12-1.75P*150mm	Screw Stick	1	



**PARTS LIST**

**MODEL NO. 330SVAA**

CODE_NO	PART_NO	SPECIFICATION	DESCRIPTION	QTY	NOTE
176-3	HN007	M12-1.75P	Hex. Nut	3	
177	HK100	3/16"X3/16"X50L	Key	1	
181A	133100	4-6TX4220mmX27mmX0.	Blade	1	
182	S013	3/8"X1-1/4"L	Hex. Head Screw	4	
185	W041	3/8"XØ20Xt2	Washer	4	
186	HB501	90°	Oil Nozzle	1	
188	HP039	Ø6X2"	Pin	4	
189	S732	3/16"X3/4"L	Cross Round Head Screw	12	
190	W045	3/16"	Plastics Washer	12	
191	S601	1/4"X1/2"L	Hex.Socket Headless Sc:	2	
192	S081	3/8"X.3"L	Hex. Head Screw	1	
193	N005	3/8"	Hex. Nut	2	
194	W042	3/8"XØ25Xt2	Washer	2	
195A	133061N		Stand Complete Assemb	1	
195-1	133020A		Vise Base	1	
196	133113		Pad Board	1	
197	HD506	5/16"X1/2"L	Hex. Socket Flat Head S	8	
198	133111		Roller	3	
199	133110		Roller Arbor	3	
200A	133115B		Bracket	1	
201	S638	1/2"X1-1/2"L 20UNF	Hex.Socket Headless Sc:	4	
202	132036		Bracket	1	
203	121068M		Knob	2	
204	HP032	§ 6x25L	Pin	1	
205	133189	Ø10X1"	Shaft Pin	4	
206A	133112A		Roller Cover	1	
207	W038	Ø1/4"X3/4"Xt1.5	Washer	4	
208	S006	1/4"X1/2"L	Hex. Head Screw	4	
209	133124		Guide Holder	1	
210	W041	3/8"XØ20Xt2	Washer	3	
211	S016	3/8"X3/4L	Hex. Head Screw	3	
212	S639	1/4"X1/4"-28UNF	Hex.Socket Headless Sc:	2	
213	133106		Guide Shaft	1	
214	W206	5/8"	Spring Washer	1	
215	S077	5/8"x1-1/2"L	Hex. Head Screw	1	
216	133117		Scale Index	1	
217	W044	3/16"XØ12Xt0.8	Washer	2	
218	S407	3/16"X3/8"L	Hex. Socket Head Screw	2	
219	S082	1/2"X1-3/4"L	Hex. Head Screw	2	
220	N001	1/2"	Hex. Nut	2	
221	MB110W		Cooling Pump	1	
222	1031285-8		Spray	1	
223A	133178	Ø10X26000MM	Hose	1	
224	133125		Coolant Tank	1	
224-2	133190	330SVAA	Hydraulic Unit	1	
226	133107		Block Board	1	

**PARTS LIST**

**MODEL NO. 330SVAA**

CODE_NO	PART_NO	SPECIFICATION	DESCRIPTION	QTY	NOTE
227	S010	3/8"X1"L	Hex. Head Screw	6	
228	W041	3/8"XØ20Xt2	Washer	6	
229	133108		Coupler	1	
229	HD664	PT1/4"X3		1	
230	181857A	PT1/4"X12"	Nozzle	1	
236	133037		Plastic Round Knob	1	
237	133118		Speed plate	1	
238	S002	1/2"X1-1/2"L	Hex. Head Screw	2	
239	N001	1/2"	Hex. Nut	2	
240	133109		Bearing Base	6	
242	133093F		Control Plate	1	
243	133127		Plastic Round Knob	2	
247	S086	1/2"X2-3/16"L	Hex. Head Screw	1	
249	133131	Ø28XØ14.2X0.8t	Tray Type Spring	2	
250	133054		Screw	4	
251	S068	3/8"X2-1/2	Hex. Head Screw	4	
252	W008	3/8"	Washer	4	
254	S708	3/16"X3/8"L	Cross Round Head Screw	4	
255	133133		Plug	4	
257	N001	1/2"	Hex. Nut	4	
258	W043	Ø1/2XØ35Xt3	Washer	4	
259	133116		Harrow	1	
260	133176	600X10mm	Hose	1	
261	133177	600X8mm	Hose	1	
264	S420	5/16"X5/8"L	Hex. Socket Head Screw	2	
265	103003		Hanger Plate	1	
266	W205	5/16"	Spring Washer	2	
267	N007	5/16"	Hex. Nut	2	
268	133150		Hanger Plate	1	
269	W204	3/8"	Spring Washer	2	
270	S016	3/8X3/4"L	Hex. Head Screw	2	
271	133141		Bracket	4	
272	S640	3/8"X1"L	Hex.Socket Headless Sc:	4	
273	133154		4 way valve	1	
273	HD666	PT1/4"X4	4 way valve	1	
275	133183		Pin	1	
276	133146		Shaft	2	
277	133148		Spring	2	
278	133147		Shaft	2	
279	133145		Plate	2	
280A	S706	3/16"X1/2"L	Cross Round Head Screw	4	
281	133143		Support Lump(Right)	1	
282	W007	3/16"x12xt0.8mm	Washer	2	
283	S902	3/16"X3/8"L	Hex. Socket Head Screw	2	
284	133144		Support Lump(Left)	1	
285	S735	1/8"X5/16"L	Cross Round Head Screw	2	

**PARTS LIST****MODEL NO. 330SVAA**

<b>CODE_NO</b>	<b>PART_NO</b>	<b>SPECIFICATION</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>NOTE</b>
286	133136		Scale	1	
287	133135		Scale Base	1	
288	W047	1/4"x5/8"x1.5t	Washer	2	
289A	S423	1/4"X5/8"L	Hex. Socket Head Screw	2	
290	S737	3/16"X3/16"L	Cross Round Head Screw	8	
291	103213		Bracket	2	
292	133181		Ring	2	
293A	133142A		Blade Cover	2	
294	W047	1/4"x5/8"x1.5t	Washer	4	
295	S901	1/4"X3/8L	Round Head Screw	4	
296	N003	1/4"	Hex. Nut	8	
297	S632	1/4"X5/8"L	Hex.Socket Headless Sc:	8	
298	S402	1/4"X1/2"L	Hex. Socket Head Screw	2	
299	W202	1/4"	Spring Washer	2	
300	133153		Fixed Block	1	
301	HD613	2"	Hose Clamp	1	
302	133152		Fixed Block	2	
303	W202	1/4"	Spring Washer	2	
304	S402	1/4"X1/2"L	Hex. Socket Head Screw	2	
305	HD613	2"	Hose Clamp	1	
306	133180		Cover	1	
307	133029	Carbide Guide Base	Carbide Guide	2	
309	133167		Bracket	1	
310	133163		Ring	2	
311	S734	3/16"X5/16"L	Cross Round Head Screw	2	
312	133172		Chip Tray	1	
313	CA3830NK	NK38/30	Needle Bearing	2	
314-28	E150431C	2.0x4Cx1.3M		1	
315	133138		Sleeve	1	
316	133139		Bushing	1	
317	133149		Bracket	1	
318	133128		Vise Base	1	
322	HS561	M4x12L	Cross Round Head Screw	4	
323	198158T		Bracket	2	
324	HS034	M6x20L	Hex. Head Screw	4	
325	HW004	6.5*13-0.8t	Washer	4	

**MANUFACTURER:**

**ADDRESS:**

**SERIAL No.:**

PLEASE WRITE DOWN THE SERIAL NO. ON THIS BLOCK FROM THE NAME  
PLATE AFTER YOU RECEIVE THIS MACHINE.