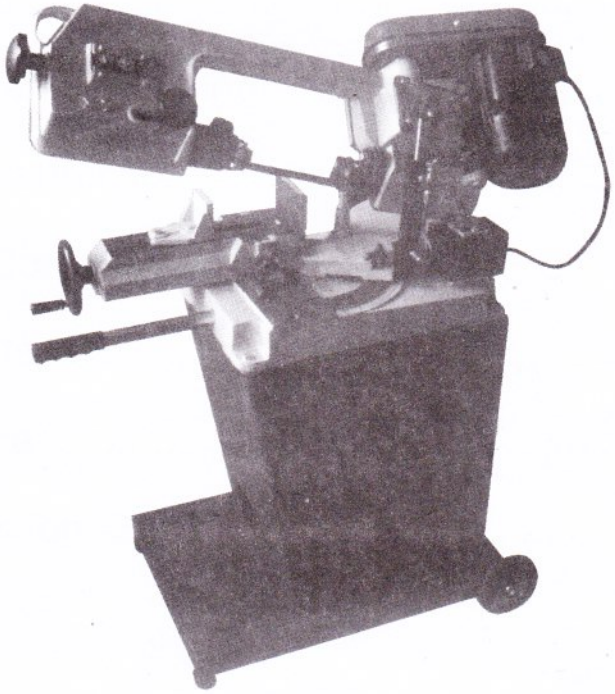
SWIVEL METAL BAND SAW



INSTRUCTION MANUAL

CAREFULLY READ THE INSTRUCITON MANUAL BEFORE YOU USE THIS SWIVEL BAND SAW, AND SAVE THIS INSTRUCTION MANUAL FOR FUTURE REFERENCE.

CONTENTS

GENERAL SAFETY RULES

IMPORTANT! When using electrical tools, the folldwing safety instructions should be observed to prevent the risk of electric shock, personal injury and fire. Read and observe these instructions carefully before using the tool.

1. For your own safety, read instruction manual before operating the tool. learn the tool's application and limitations as well as the specific hazards peculiar to it.
2. Keep guards in place and in working order.
3. Always wear eye protection. Wear safety glasses。 Everyday eyeglasses only hafety impact resistant lenses; they are not safety glasses. Also use face or dust masd if cutting operation is dusty.
4. Remove adjusting keys and wrenches. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on".
5. Keep work area clean.Cluttered areas and benches invite accidents.
6. Don't use in dangerous environment. Don't use power tools in damp or wet locations,or exqose them to rain. Keep work area well-lighted.
7. Keep children and visitors away.All chilkren and visitors should be keqt a safe distance from work area.
8. Make workshop childproof- with padlocks, master switches,or by removing starter keys.
9. Don't force tool.It will do the job better and be safer at the rate for which it was desingned.
10. Use rignt tool. Don't force tool or attachment to do a job for which it was not designed.
11. Wear proper apparel. No loose clothing, gloves,neckties,rings, bracelets, or other jewelry to get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
12. Secure work.Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.
13. Don't overreach. Keep proper footing and balance at all times.
14. Maintain tools in top condition. Keep toos sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessorids.
15. Disconnect tools before servicing and when changing accessories such as blades,bits, cutters,etc.
16. Use recommended accessories. The use of accessories and attachments which are not recommended many cause hazards or risk of injury to persons.
17. Reduce the risk of unintentional staring. Make sure switch is in"OFF"position before plugging in power cord.In the event of a power failure, move switch to the"OFF" position.
18. Never stand on tool. Serious injury coud occur if the tool is tipped or if the cutting tool is accidentally contacted.
19. Check damaged parts. Before futher use 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,b readage of parts,mounting, and any other conditions that many affect its operation.A guard or other part that is damaged should be properly ripaired or replaced.
20. Direction of feed. Feed work into a brade or cutter against the direction of rotation of the

blade or cutter only.

21. Never leave tool running unattended.Turn power off. Don't leave tool until it comes to a complete stop.
22. Stay alert, watch what you are doing.and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs,alcohol or medication. A moment of inattention while operation power tools may result in serious personal injury.
23. Make sure tool is disconnected from power supply while motor is being mounted, connected or reconnected.
24. The dust generated by certain woods and wood products can injurious to your health. Always operate machinery in well ventilated areas and provide for proper dust removal. Use wood dust collection systems whenever possible.
25. Warning: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
    - lead from lead-based paints.
    - crystalline silica from bricks and cement and other masonry products, and
    - arsenic and chromium from chemically-treated lumber.

    Your risk from these exposures vancs, 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

ADDITIONAL SAFETY RULES FOR METAL BAND SAW

WARNING: Failure to follow these rules may result in serious personal injury.

1. If you are not thoroughly familiar with the operation of metal band saws, obtain advice from your supervisor,instructor or other qualified person.
2. Make sure wiring codes and recommended electrical connection instructions are followed, and that the machine is properly grounded.
3. Make all adjustmerts with the power off.
4. Adjust and position the blade guides before starting the cut.
5. Stop the metal band saw before putting work-piece into the vise.
6. Always have the stock firmly clamped in the vise before starting the cut.
7. Make sure the blade is not contactong the work-piece before turning on the power switch.
8. Always keep hands and fingers away from the blade when the machine is running.
9. Never let the saw blade drop on the work-piece.
10. Stop the machine before rempving chips.
11. Disconnect machine from the power source when making repairs.
12. Replace all guards after servicing.

SAVE THESE INSTRUCTIONS.

REFER TO THEM OFTEN AND USE THEM TO INSTRUCT OTHERS.

UNPACKING AND CLEANING

NOTICE: THE MANUAL COVER PHOTO ILLUSTRATES THE CURRENT PRODUCTION MODEL. ALL OTHER ILLUSTRATIONS ARE REPRESENTATIVE ONLY AND MAY NOT DEPICT THE ACTUAL COLOR, LABELING OR ACCESSORIES.

Carefully unpack the machine and all loose items from the shipping container(s). Remove the protective coating from all unpainted surfaces. This coating may be removed with a soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose). After cleaning, cover the unpainted surfaces with a good quality household floor paste wax.

WARNING: If any of the parts is missing, **DO NOT** attempt to assemble, install, or use your metal band saw until the missing parts have been found or replaced and your metal band saw has been properly and correctly assembled per this instruction manual.

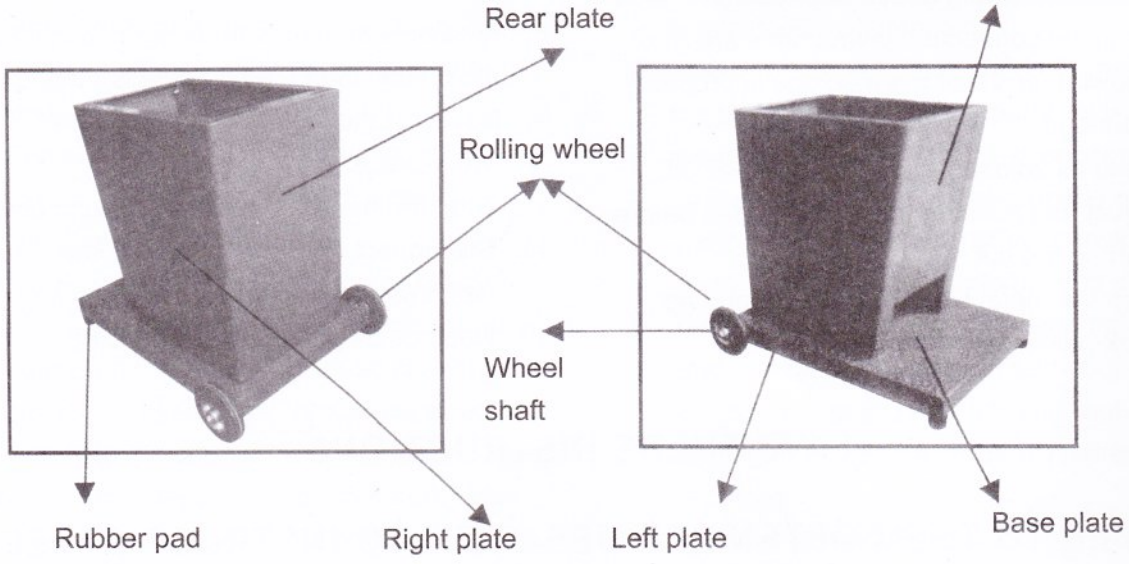
- **DO NOT** discard the packing materials until you have carefully inspected the metal band saw, identified all parts,and satisfactorily operated your new metal band saw.

NOTE: If any parts are damaged or missing, do not attempt toplug in the power cord and turn the switch on until the damage or missing parts are obtained and are installed correctly.

NOTE: This metal band saw has two shipping boxes, one is for floor stand,and the other is for saw body.

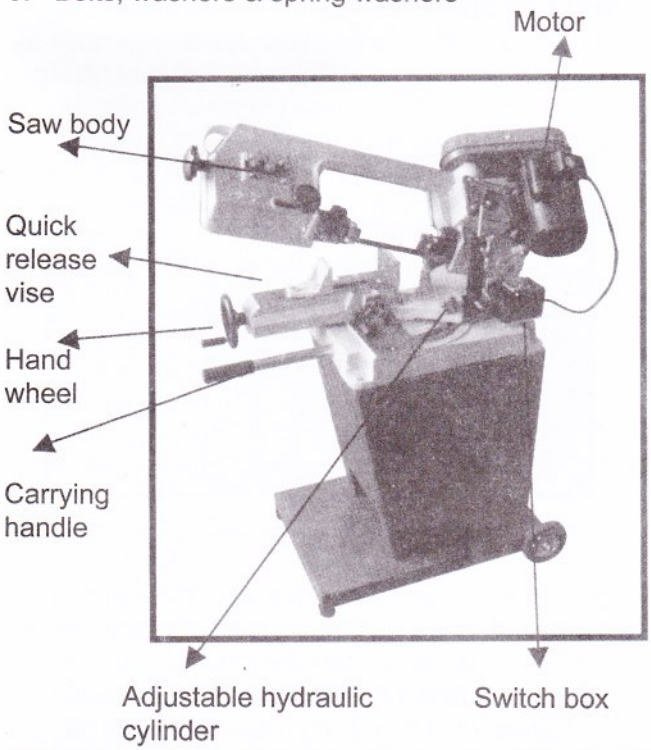
The floor stand box contains the following loose parts:

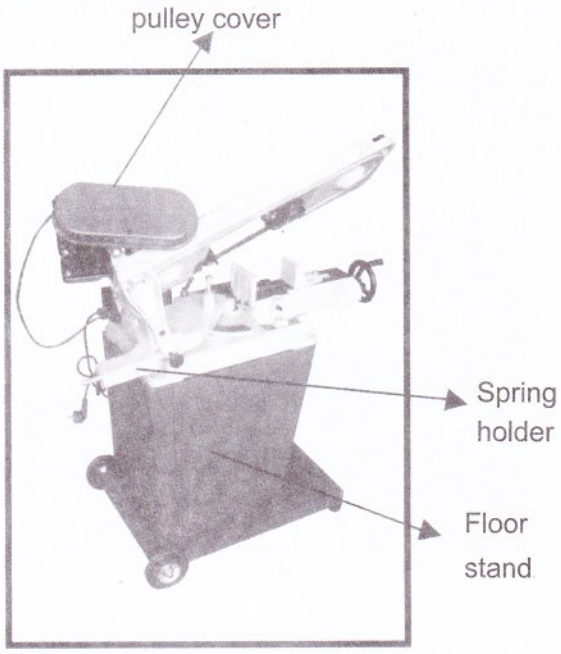
1. Base plate	1pc	6. Rolling wheel	2pcs
2. Front plate	1pc	7. Wheel shaft	1pc
3. Rear plate	1pc	8. Rubber pad	2pcs
4. Right plate	1pc	9. Bolts, washers & nuts	1set
5. Left plate	1pc		



The saw body box contains the following loose Parts:

1. Saw body assembly kit — 1 set
2. Spring holder — 1 set
3. Bolts, washers & spring washers — 1 set





ASSEMBLY INSTRUCTIONS

ASSEMBLING THE SAW BADY ON THE STAND

There are four holes on the top of the floor stand, and align the four holes in the base of the saw body, use the four bolts to fasten the saw body on the floor stand. Fig. 1.

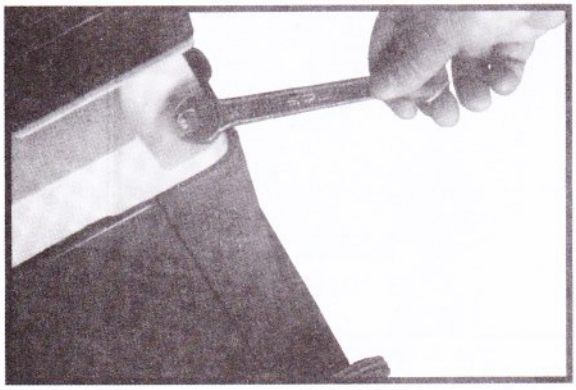


Fig. 1

ASSEMBLING THE SPRING HOLDER

Align the two holes in the spring holder to the two holes in the rear of the saw body,and use two bolts to fasten the spring holder on the saw body. Fig. 2. & Fig. 3.

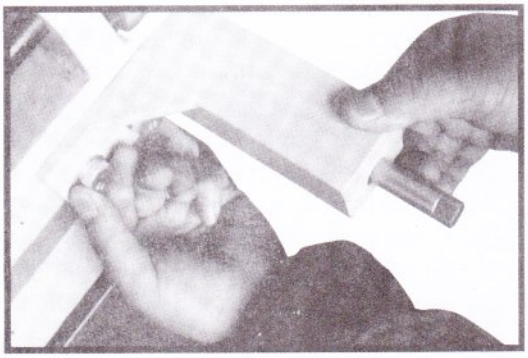


Fig. 2

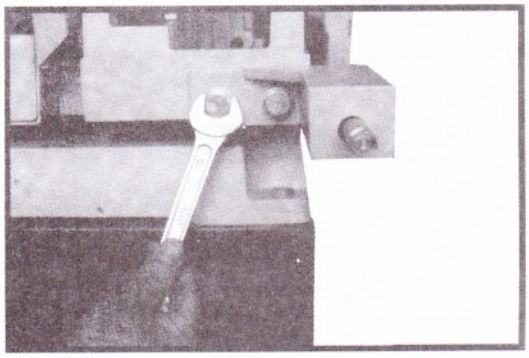


Fig. 3

OPERATING CONTROLS AND ADJUSTMENTS

STARTING AND STOPPING MACHINE

This metal band saw is equipped with a electric magnetic switch, when this machine is plug in, the switch can be work. There are two buttons, one is green button-- "ON" button (B), and the other is red button --"OFF" button (C). Fig. 4.

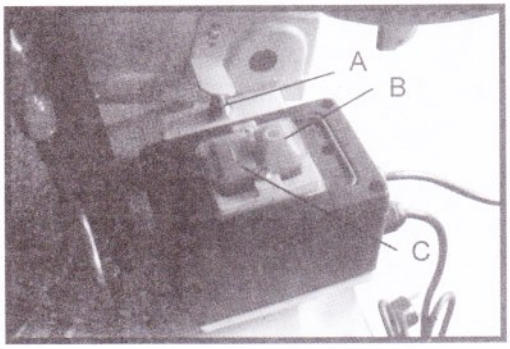


Fig. 4

AUTOMATIC SHUT-OFF

When the metal band saw is in the horizontal position, the saw should shut itself automatically. After a completed cut has been made, and the saw is in the down or horizontal position,the shut-off bracdet (A)will contact the "OFF" button (C),turning off the power. **IMPORTANT: THE SHUT-OFF BRACKET (A)SHOULD NOT REST ON OR BE SUPPORTED BY THE"OFF" BUTTON(C).**

ADJUSTING BLADE TENSION

1. Disconnect machine from the power source.
2. Turn blade tension hand-wheel(A). clockwise to increase or counterclockwise to decrease blade tension. Correct tension is obtained when the blade is just tight enough that no slippage occurs between the blade and the wheels. Fig.5

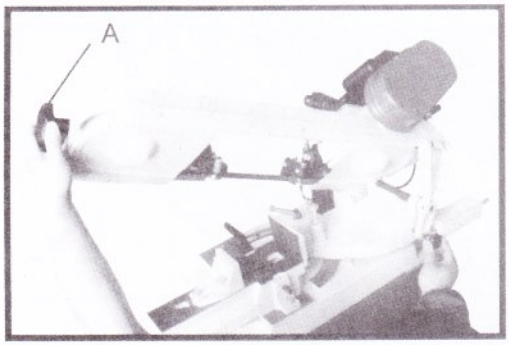


Fig. 5

3. When the machine is not in use, release the blade tension.

ADJUSTING BLADE TRACKING

1. Place the saw arm in the opening position as you can, and open the wheel cover (A). Fig. 6.

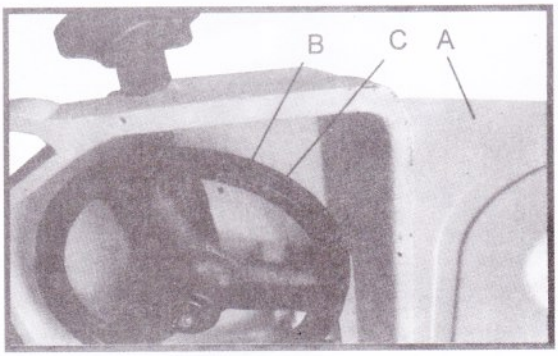


Fig. 6

2. Turn on the metal band saw. The blade is tracking properly when the back of the blade (B) Fig.6, is just touching the edge of the wheel flange (C). The back of the blade should not be rubbing against the flange.
3. If an adjustment is necessary the blade guide bearings and blade support bearing(E) Fig.7 (two of which are shown)should be clear of the blade.

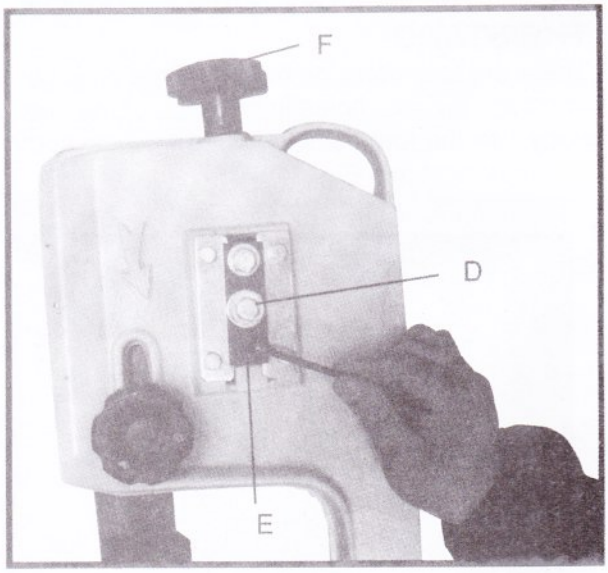


Fig. 7

4. Loosen screw (D) Fig.7.
5. With the metal band saw running, turn adjusting screw (E) until the blade is tracking properly making certain blade tension is maintained by turning bsade tension knob(F) The blade is tracking properly when the back side of the saw blade just touches the flange on the wheel.

6. Tighten screw (D) Fig. 7, when adjustment is complete.
7. **IMPORTANT: IT IS POSSIBLE WHEN MAKING THIS ADJUSTMENT TO OVER TIGHTEN THE ADJUSTING SCREW (E) FIG. 7, AND CAUSE THE BLADE TO BE MIS-ALIGNED.** If this happens, loosen the adjusting screw (E) several turns but do not remove it from its threaded hole and loosen screw (D). Turn screw (D) clock-wise until it stops but do not tighten. Then turn the adjusting screw(E) clockwise until it bottoms. Turn on the machine and turn adjusting screw (E) clockwise a small amount at a time until the blade is tracking correctly and tighten screw (D)Fig. 7.
   After the blade is tracking properly make sure to adjust the blade guide bearings and blade support bearings.

ADJUSTING BLADE SUPPORT BEARINGS

1. Disconnect machine from power source.
2. The blade support bearing (A) Fig. 8, should be adjusted so it just touches the back of the saw blade after the blade is tracking properly. To adjust, loosen screw (C) and move the bracket (D) up or down until the support bearing (A) just touches the back of the blade (B). Then tighten screw (C).

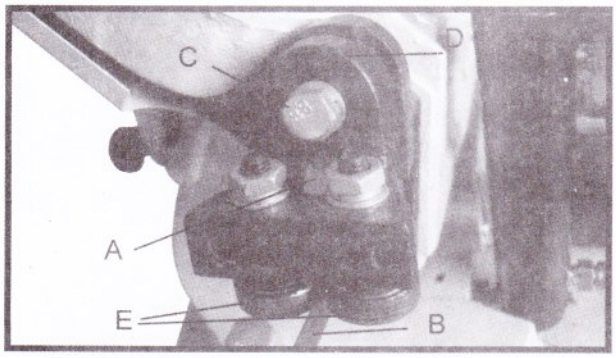


Fig.8

3. Adjust the other blade support bearing in the same manner.

ADJUSTING BLADE GUIDE BEARINGS

1. Disconnect machine from power source.
2. The blade guide bearings (A) and (B) Fig. 9 should be adjusted so they just touch the sides of the blade (C) after the blade is tracking properly and the blade support bearing has been adjusted. To adjust, proceed as follows:
3. Remove the cover plate that is attached to the face of the right guide bracket (D) Fig.9.

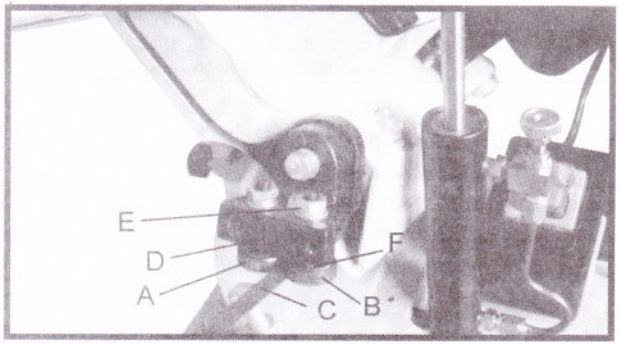


Fig.9

4. The inside guide bearing (A) Fig. 9, is mounted to a fixed shaft and cannot be adjusted. The outside guide bearing (B) is mounted on an eccentric shaft and should be adjusted so that the sides of the blade (C) just contact the guide bearing (A) and (B).To adjust, loosen nut (E) and turn adjusting nut (F) until proper adjustment is made. Then tighten nut (E).
5. Adjust the other blade guide bearings in the same manner.

ADJUSTING BLADE 90 DEGREES TO THE TABLE SURFACE

in order for accurate work to be accomplished on your saw the blade must be at 90 degrees to the table surface. To check and adjust,proceed as follows:

1. Disconnect machine from power surface.
2. Lower the saw arm to the horizontal position. Place a square (A) Fig. 10, on the table with one end of the spuare against the blade, as shown.

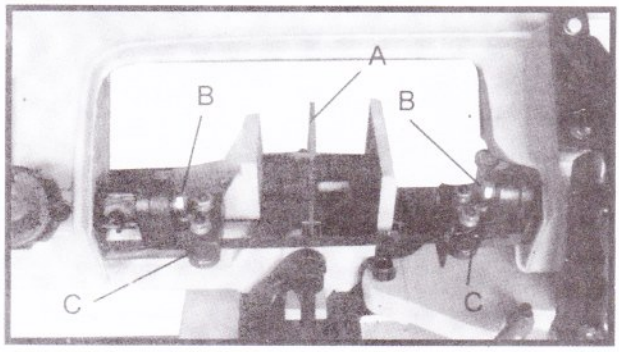


Fig.10

3. If the blade is not at 90 degrees to the table, loosen the two screws (B) Fig. 10, that attach the blade guide brackets to the guide arms and rotate both guide brackets (C) until the blade is at 90 degrees to the table. Then tighten the two screws (B). **NOTE:** Care should be taken not to disturb the blade guide support bearings when making this adjustment.

ADJUSTING BLADE GUIDE BRACKETS

1. Disconnect machine from power source.
2. The left and right blade guide brackets (A) and (B) Fig. 11, are adjustable by loosening the two lock knobs (C) and sliding the brackets to accommodate the width of the work piece. The guide brackets (A) and (B) should be set as close as possible to the work piece, without interfering or touching the work piece, or contacting the table.Once the adjustment is made, tighten the lock knobs (C).

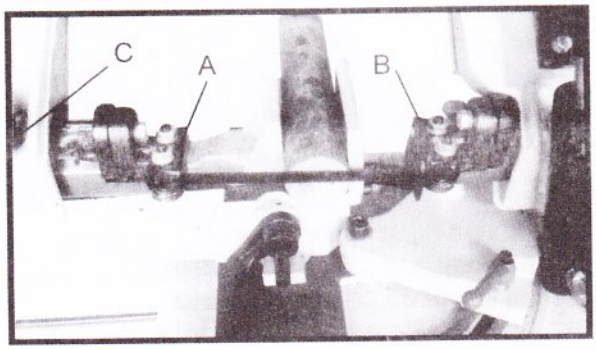


Fig.11

ADJUSTING FEED RATE

1. Disconnect machine from power source.

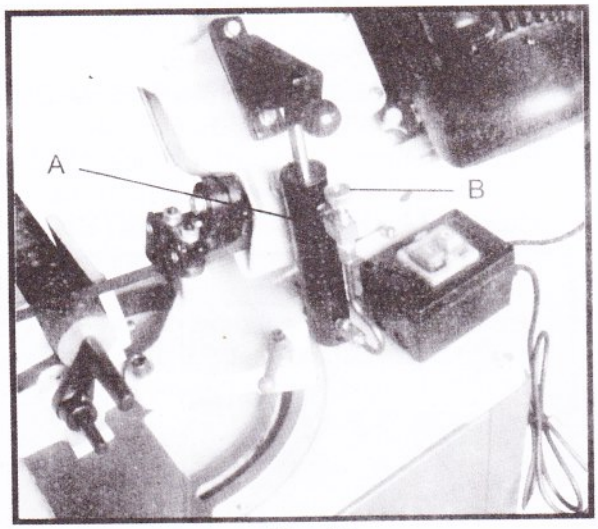


Fig.12

2. There is an adjustable hydraulic cylinder (A) Fig. 12, connected to the saw arm regulates the rate at which the blade is lowered into the work piece.
3. There is a turning valve (B) Fig. 12, on the top of the hydraulic cylinder which is preset at the factory. This turning valve allows the pressure to be relieved if for some reason the saw arm is forced downward. Do not attempt to adjust the turning valve setting.

OPERATING AND ADJUST THE VISE

The work piece (A) is placed between the vise jaws with the required amount to be cut-off extending out past the blade, as shown in Fig. 13. To tighten the work piece in the vise,turn hand-wheel (B).

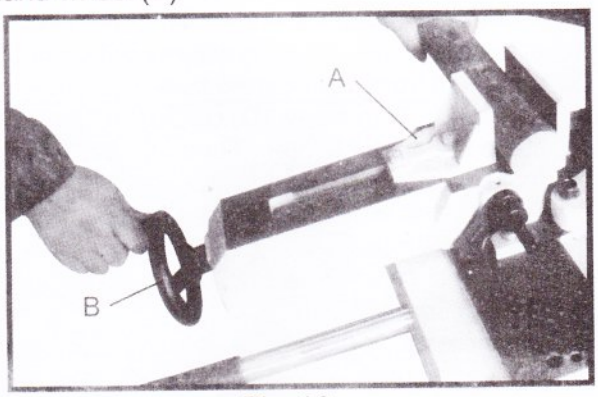


Fig.13

ADJUSTING STOCK STOP

The stock stop is used when more than one piece is to be cut to the same length. Position the stock stop block (A) Fig. 14, the desired distance away from the blade. It is good practice to have the work contact the stop at the bottom of the work, as shown. The stop may be repositioned in or out by loosening set screw (B) and moving the stop accordingly. When not using the stock stop, rotate the stop below the table surface.

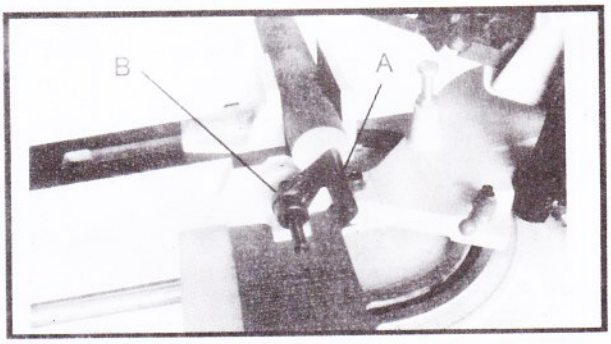


Fig.14

For cuts when the work will not extend beyond the table, the stop (C) Fig. 15, can be turned around, as shown, to contact the work piece.

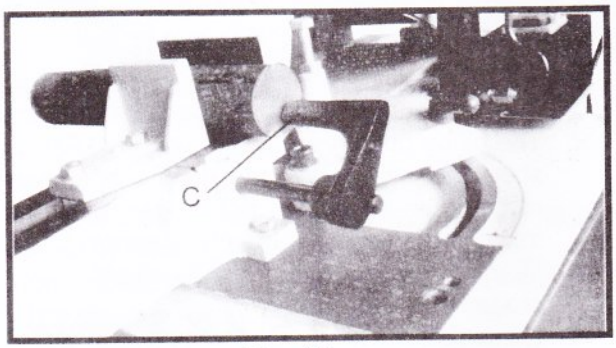


Fig.15

POSITIONING KNOB

An arm positioning knob (A) Fig. 16, is supplied on the rear of the base and oan be set into one of the three holes (B) depending on the size of the work piece.

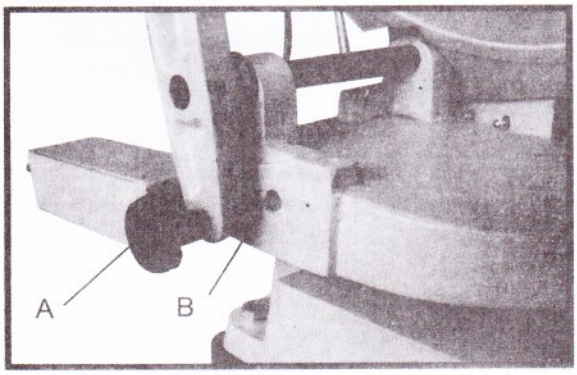


Fig. 16

CHANGING CUTTING ANGLE OF SAW ARM

This saw arm can be adjusted to left 0^0-60^0, and to right 0^0-45^0. If you want to make an angel cut, loosen the lock knob (A) Fig. 17, after you turn the saw arm to your desired angel, then fasten the lock knob (A). And if you want to make a left angle cut than 30^0, it had better to move the vise to the right side, there is a pre-drilled hole for mounting the vise.

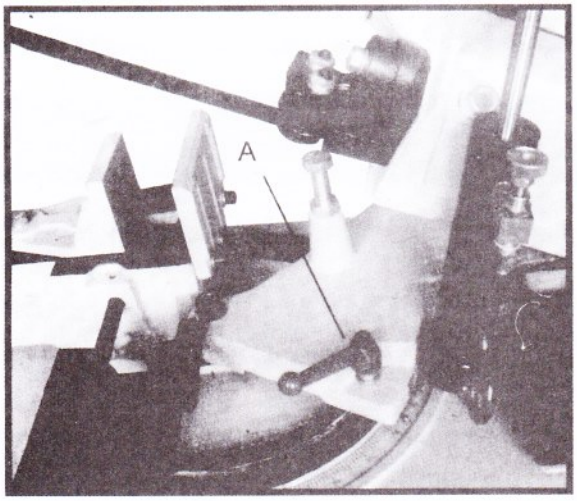


Fig. 17

CHANGING SPEEDS AND ADJUSTING BELT TENSION

1. Disconnect machine from power source before changing speeds and adjusting belt tension.
2. Proper belt tension is obtained when there is approximately 1/4" deflection of the belt using light finger pressure at the center span of the pulleys. To adjust belt tension, use a wrench to loosen the belt tension set bolt and locknut Fig. 18, and turn it clockwise to increase tension and counterclockwiste to decrease tension. Tighten the locknut, after belt tension is obtained. **IMPORTANT: The belt tension has been preset in the factory.**

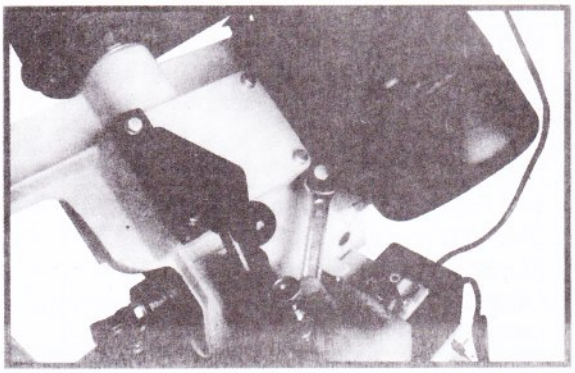


Fig. 18

When changing speeds, release belt tension and open belt and pulley guard cover (C) Fig. 19. Speed rates of 23, 34 and 54 meter per minute are available with your metal band saw. When the belt is on the largest step of the motor pulley (A) Fig. 19, and the smallest step of the gear box pulley (B) the blade speed will be 54 meter per minute. When the belt is on the smallest step of the motor pulley (A) and the largest step of the gear box pulley (B) the blade speed will be 23 meter per minute. When changing speeds, first release belt tension. After the desired speed is obtained, adjust belt tension and close belt and pulley guard cover (C).

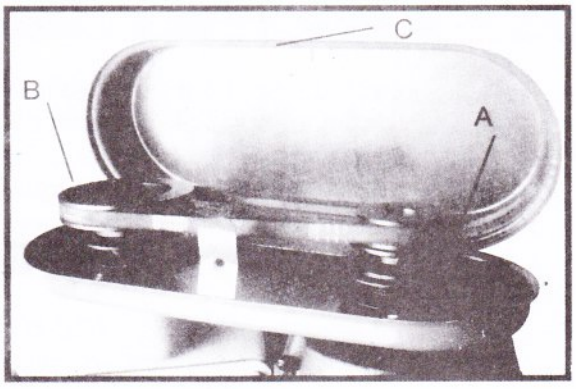


Fig. 19

SPEED AND MATERIAL CHART

Fig. 20 illustrates the correct speeds and the position of the belt on the motor and gear box pulley for most common materials cut on the metal band saw.

Material to be cut	Speed	Belt Position	
		Motor Pulley	Gear Box Pulley
Tool Steel Stainless Steel Alloy Steel Hard Bronze	23 m/min	Small	Large
Mild Steel Medium Hard Brass Medium Hard Bronze	34 m/min	Middle	Middle
Soft Brass Aluminum Plastic Other Light Materials	54m/min	Large	Small

Fig.20

MAINTENANCE

The vise lead screw should be lubricated using light machine oil as needed.

The drive gears run in an oil bath gear box and it should not be necessary to change this oil more than once a year unless the oil becomes contaminated or a leak occurs due to improper replacement of the gear box cover. To change oil in the gear box, proceed as follows:

1. Disconnect machine from power source.
2. Position cutting arm in the horizontal position.

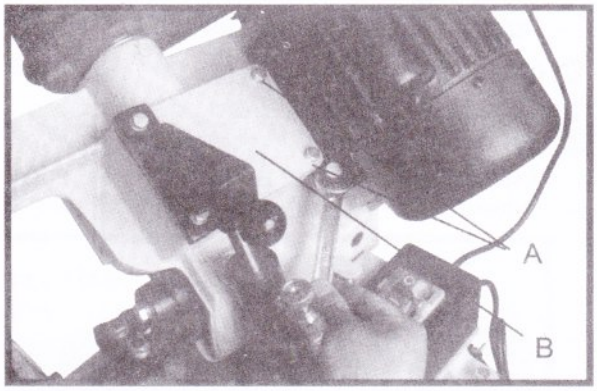


Fig. 20

3. Remove the four screws (A) Fig.20, and the gear box cover (B) and gasket.
4. Remove the old oil from inside the gear box and replace the oil using 140 weight gear oil, available from your local market. The new oil should just come to the edge (C) Fig. 21, of the gear box. Do not overflow. Replace the gasket, cover and four screws that were removed in **STEP** 3.

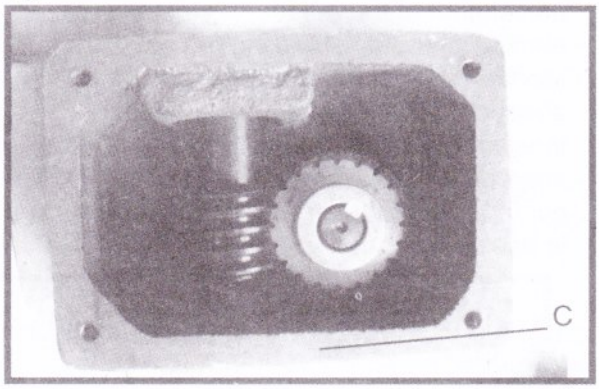


Fig. 21

BLADE SELECTION

A metal band saw blade is a ribbon of steel subject to tremendous strain. Be sure you use quality blades for the various type of cutting operations. This metal band saw acciepts 1/2" width X64-1/2" length blades. Band saw blades can be purchased welded, set ,and sharpened ready-for-use from most saw shops.

There are several key factors to consider in choosing a blade:

TOOTH PITCH--The number of teeth per inch (TPI) on the blade, also known as tooth pitch. Select a pitch which will assure that at least three teeth are contacting the work piece while cutting. This helps to distribute the cutting forces and avoids tooth breakage.

TOOTH FORM--There are four common forms of teeth on the blade: buttress, claw-tooth, precision and tungsten carbide. Precision is the most common and is the type supplied with this saw. **See Fig. 22.**It is the most versatile and it provides a good surface finish.

TOOTH SET-- Set is the degree to which the teeth are bent away from the blade. Typical tooth set styles are raker, wave and straight set. Raker set is the most common with one tooth offset to the right, the next one to the left, and the third is straight. A wave set will have 3-4 teeth bent progressively one direction, then to the other in a wave-like pattern. A straight set is alternating teeth set right, the left.

Always select and use good-quality saw blades and choose the right blade for the job. Discuss your cutting requirements with your

saw blade dealer to make sure you are getting the type of blade which best suits your need. Poor quality blades and improper use are often the cause of premature blade failure.

Many conditions can lead to breakage. Blade breakage is, in some cases, unavoidable, since it is the natural result of the peculiar stresses that band saw blades are subjected to. Blade breakage is aldo due to avoidabte causes. Avoidable breadage is most often the result of poor care or judgement on the part of the operator when mounting or adjusting the blade or support guides. The most common causes of blade breakage are: (1) faulty alignment and adjustment of the guides; (2) Insufficient number of teeth contacting the cut; (3) feeding too fast;(4) tooth dullness or absence of sufficient set;(5) excessive tension; (6) using a blade with a lumpy or improperly finished weld; and (7), continuously running the band saw when not in use.

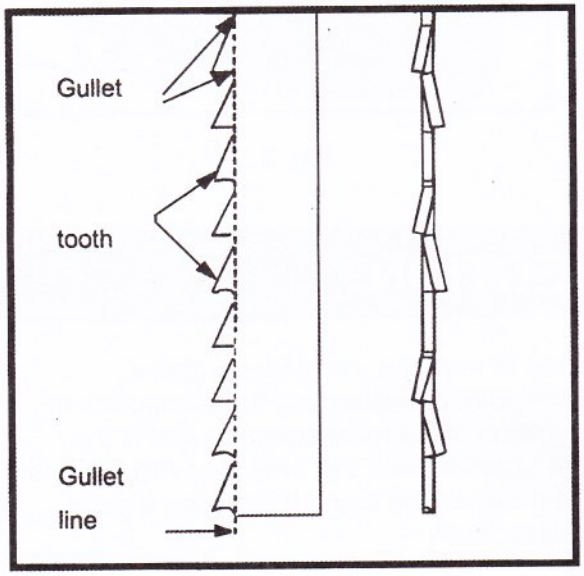


Fig.22

1. Never use a blade so coarse that less than three consecutive teeth are engaged in the work picec at one time. (Too few teeth will cause the teeth to strip out).
2. Never use a blade finer than repuired to obtain a satisfactory surface finish or satisfactory flatness (Too many teeth engaged in the work piece will prevent attainment of a satisfactory sawing rate; frequently produce "dished" cuts or cuts which are nether square or parallel).
3. When thin rectangular solid bar is to be sawed, the work should, whenever possible, be loaded with the thinndst cross section exposed to the blade teeth. The pitch (number of teeth per inch of the blade) selected must provide engagement of at least three consecutive teeth in the work piece. Should application of this rule not be possible because the thinnest cross section is too thin, the piece must be loaded with the wider dimension exposed to the saw teeth and a coarser blade selected.
4. When thin wall pipe or tubing or channel iron are cut, a 14 pitch (number of teeth per inch) blade is used, Fewer than 14 teeth per inch will almost never be satisfactory.For standard wall pipe or tubing 10 teeth per inch is satisfactory.

CHANGING BLADES

1. Disconnect machine from power source.
2. Raise the saw arm to the opening position as you can, and open the blade wheel cover (A) as shown in Fig. 23.

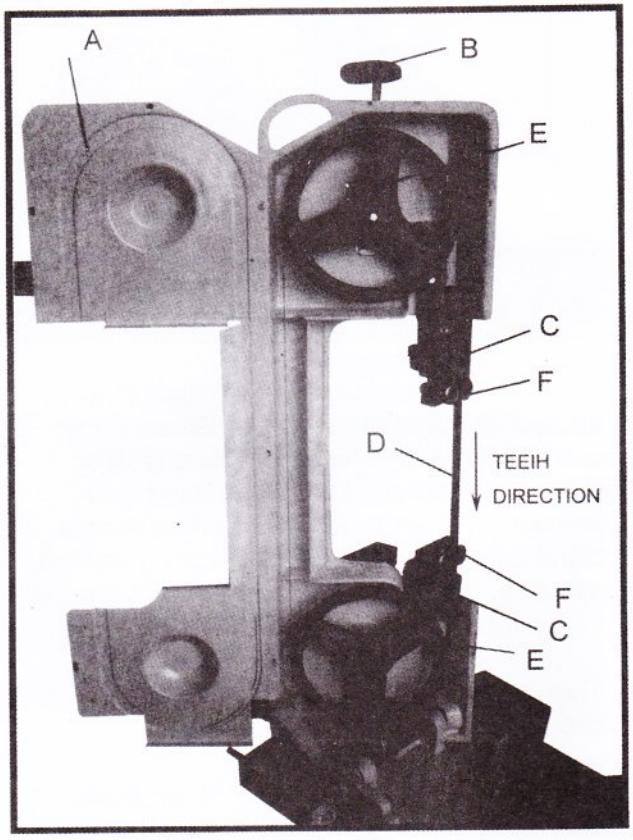


Fig.23

3. Release blade tension by turning blade tension hand knob (B) Fig. 23.
4. Remove the two finger guards (C) Fig. 23.
5. Slip blade (D) off both wheels (E)Fig. 23, and guide assemblies (F).

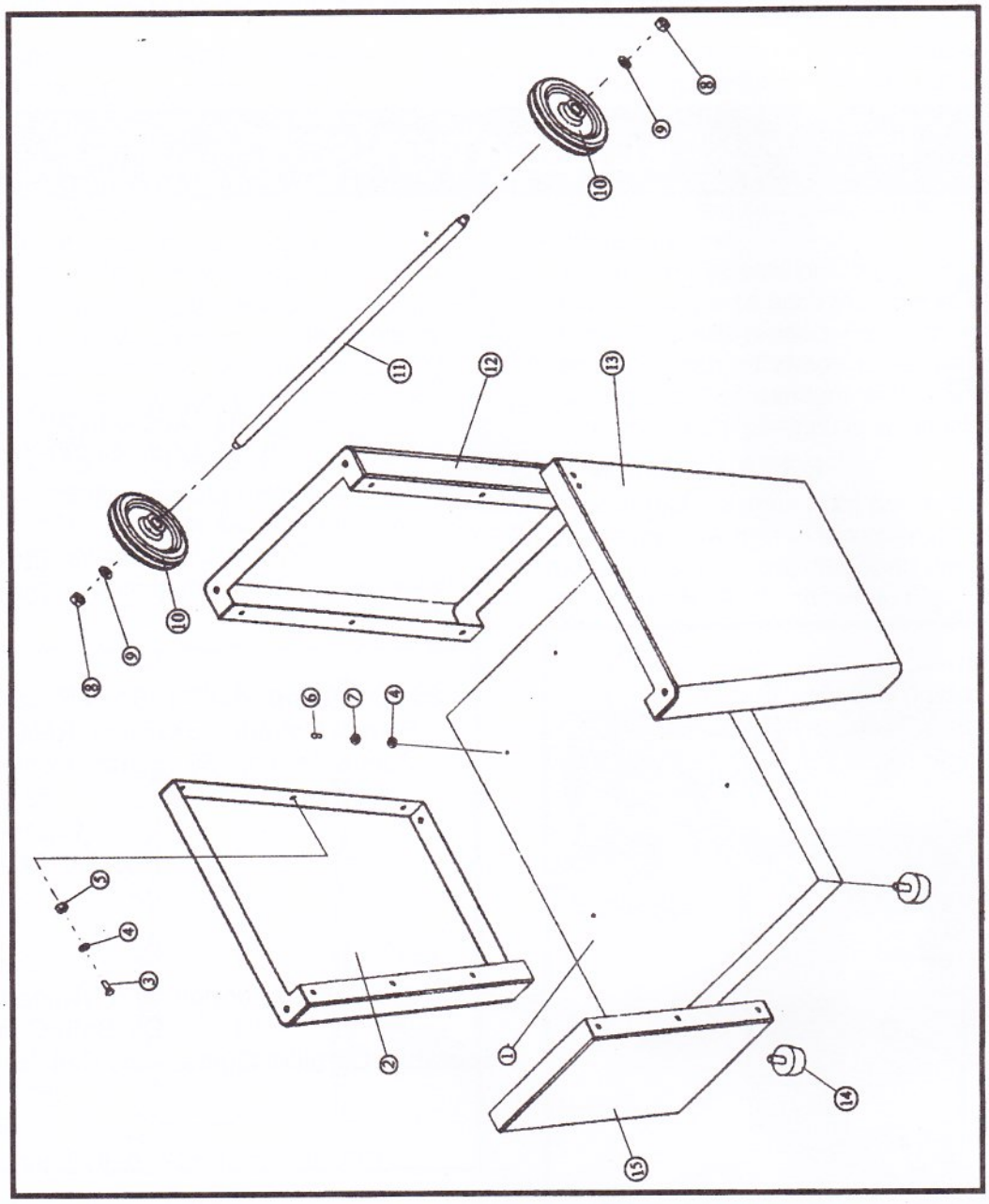
6. Place the blade between each of the blade guide bearings (F) and around both wheels (E). NOTE: The teeth must be pointing down on the right hand side as shown by the direction arrow in Fig. 23
7. Replace finger guards (C) Fig. 23, and adjust blade tension by turning hand knob (B).
8. Close the blade wheel cover (A) Fig. 23.

SPECIFICATIONS

Design Type	Floor Mode
Pacding size:	
Saw body	(L)94.2X(W)44.2X(H)54.8cm
Floor stand	(L)64.2X(W)44.2X(H)24.5cm
G.W./N.W.:	
Saw body	68kg/65kg
Floor stand	18kg/16kg
Capacities:	
Maximum cutting capacity @ 0^0	125mm Round, 100X150mm Rectangular
Maximum cutting capacity @ 45^0 R	95mm Round, 95X76mm Rectangular:
Maximum cutting capacity @ 60^0 L	50mm Round, 50X56mm Rectangular
Angle cuts	45^0 R-60^0 L
Blade size	13X1640mm
Blade speeds	23, 34, 54 m/min
Construction:	
Main body	Cast Iron
Stand	Formed and Welded Steel
Gear box	Oil Bath Gear Box
Blade guide	Adjustable Carbide Guides and Ball Bearings
Motor:	
Type	TEFC Capacitor Start Induction Run
Horsepower	Output 1/3Hp
Phase/Cycle	Single Phase/50Hz
Voltage	230V
Amps	2.5
RPM	1440 RPM
Bearings	Shielded and Lubricated Ball Bearings
Switch	Automatic Shut Off
Features:	
	Adjustable Hydraulic Down-Feed
	Quick Release Vise for Rapid Change out of Work piece
	Blade Included

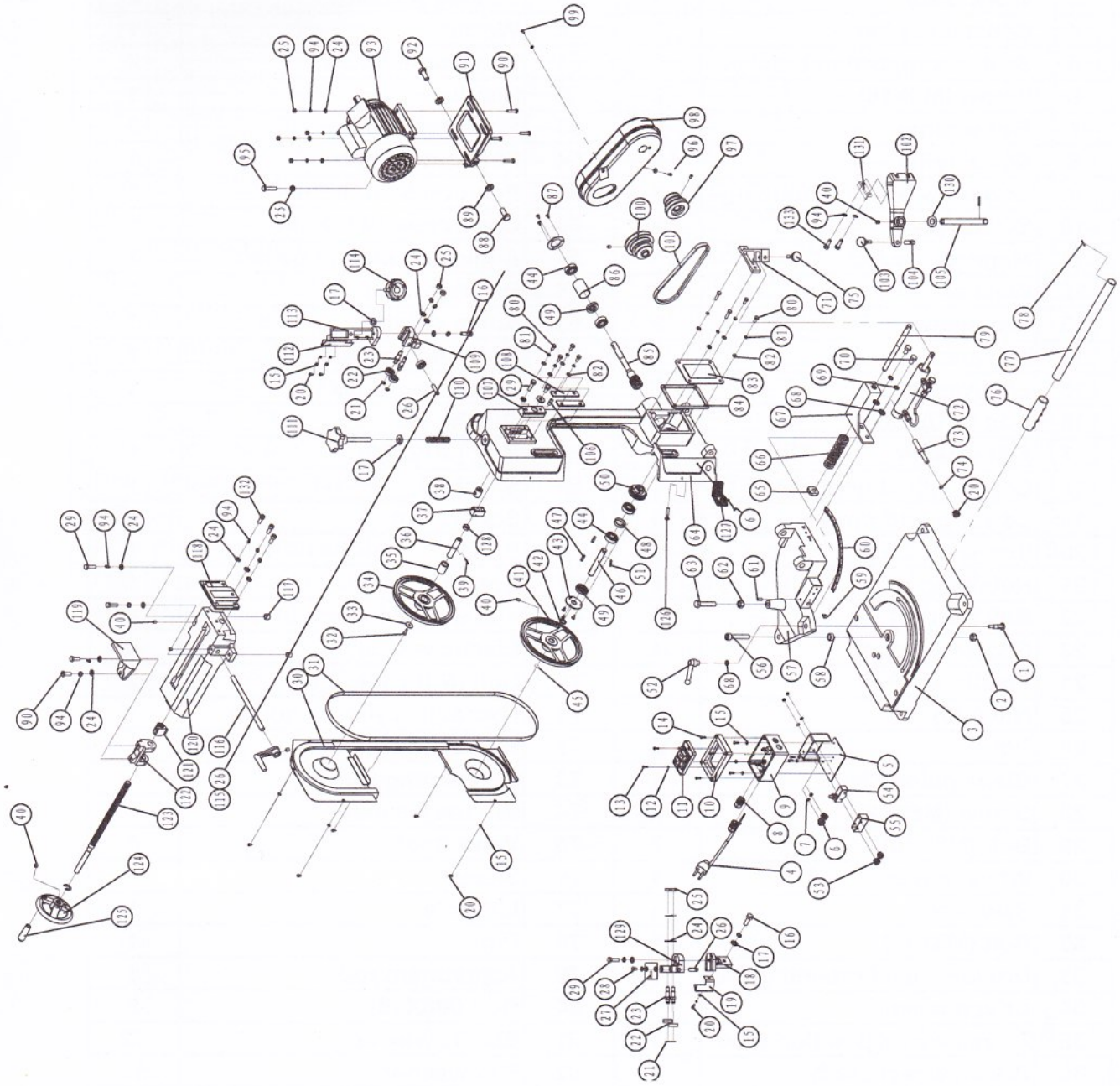
EXPLODED VIEW & PARTS LIST

1. FLOOR STAND



No.	Description	Quantity	No.	Description	Quantity
1	Base plate	1	9	Flat washer	2
2	Left plate	1	10	Rolling wheel	2
3	Coach bolt	12	11	Wheel shaft	1
4	Flat washer	16	12	Rear plate	1
5	Nut (M6)	12	13	Rinht plate	1
6	Bolt (M6X12)	4	14	Rubber pad	2
7	Elastic washer	4	15	Front plate	1
8	Lock nut (M10)	2			

2. SAW BODY



PARTS LIST

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
1	Coach bolt	1	47	Spuare key	2
2	Lock nut	1	48	Worm shaft tube	1
3	Work table	1	49	Sealing gasket	2
4	Cable and plug	1	50	Worm	1
5	Switch supporting bracket	1	51	Elastic pin (4X24)	2
6	Screw (M5X10)	2	52	Handle	1
7	Flat washer	3	53	Phillips Head Screw	2
8	Strain relief	2	54	Position Switch	1
9	Lower switch box housing	1	55	Position Switch Box	1
10	Switch plate	1	56	Cap Screw (M12X65)	1
11	Magnetic switch	1	57	Angle adjustment base	1
12	Washer	18	58	Position tube	1
13	Tap screw	2	59	Angle pointer	1
14	Tap screw	4	60	Angle scale label	1
15	Flat washer	15	61	Cap Screw (M6X16)	1
16	Bolt (M10X30)	1	62	Nut (M12)	1
17	Flat washer	4	63	Bolt (M12X60)	1
18	Lower adjustment guide	1	64	Saw bed	1
19	Lower guard cover	1	65	Square nut	1
20	Screw (M4X10)	3	66	Spring	1
21	Retaining ring	4	67	Spring holder	1
22	Ball bearing	6	68	Flat washer	4
23	Eccentric shaft	4	69	Elastic washer	4
24	Elastic washer	16	70	Bolt (M10x18)	2
25	Nut (M8)	5	71	Hydraulic cylinder holder	1
26	Pin	2	72	Hydraulic cylinder	1
27	Blade guide plate	1	73	Connecting rod	1
28	Screw (M6X12)	2	74	Big flat washer	1
29	Bolt (M8X30)	7	75	Valve knob	1
30	Wheel cover	1	76	Sleeve	1
31	Saw blade	1	77	Lift pole	1
32	Bolt (M5X16)	1	78	Pin	1
33	Droven wheel retaining ring	1	79	Adjustment rod	1
34	Driven wheel	1	80	Bolt (M6X16)	6
35	Driven wheel position tube	1	81	Elastic washer	12
36	Driven wheel shaft	1	82	Flat washer	13
37	Adjustment block	1	83	Gear box cober	1
38	Elevating block	1	84	Sealing gasket	1
39	Elastic pin (3X20)	1	85	Worm shaft	1
40	Screw (M6X12)	6	86	Worm shaft tube	1
41	Drive wheel	1	87	Screw (M4X10)	6
42	Drive wheel positiontube	1	88	Bolt (M12X30)	1
43	Drive wheel flange	2	89	Flat washer	2
44	Ball bearing	4	90	Bolt	8
45	Retaining ring	1	91	Motor base	1
46	Drive wheel shaft	1	92	Bolt	1

PARTS LIST

NO.	DESCRIPTION	QTY	NO.	DESCRIPTION	QTY
93	Motor	1	114	Lock knob	1
94	Flat washer	13	115	Stock stop	1
95	Bolt (M8X40)	1	116	Stock stop rod	1
96	Knob	1	117	Vise position tube	2
97	Motor pulley	1	118	Rear vise jaw	1
98	Pulley cover	1	119	Front vise jaw	1
99	Bolt (M4X10)	2	120	Vise bed	1
100	Gear box pulley	1	121	Threaded rod nut	1
101	V-Belt	1	122	Front jaw holder	1
102	Connecting block	1	123	Threaded rod	1
103	Position knob	1	124	Hand wheel	1
104	Position pin	1	125	Turning handle	1
105	Turning shaft	1	126	Bolt	1
106	Screw (M8X20)	1	127	Stop Block	1
107	Sliding block	1	128	Position tube	1
108	Pressing plate	2	129	Guard holder	1
109	Upper guard holder	1	130	Flat Washer	1
110	Spring	1	131	Plate	1
111	Blade tebsion knob	1	132	Cap Screw	3
112	Upper guard cover	1	133	Cap Screw	2
113	Upper guard cover holder	1			