



# 7"X 12" DUAL SWIVEL METAL CUTTING BANDSAW



MODEL: KC-712DS

# INSTRUCTION MANUAL

COPYRIGHT © 2004 ALL RIGHTS RESERVED BY KING CANADA TOOLS INC.



## WARRANTY INFORMATION

**2-YEAR  
LIMITED WARRANTY  
FOR THIS 7" X 12" METAL CUTTING BANDSAW**

**KING CANADA TOOLS  
OFFERS A 2-YEAR LIMITED WARRANTY  
FOR INDUSTRIAL USE.**

### **PROOF OF PURCHASE**

Please keep your dated proof of purchase for warranty and servicing purposes.

### **REPLACEMENT PARTS**

Replacement parts for this tool are available at our authorized KING CANADA service centers across Canada. For servicing, contact or return to the retailer where you purchased your product along with your proof of purchase.

### **LIMITED TOOL WARRANTY**

KING CANADA makes every effort to ensure that this product meets high quality and durability standards. KING CANADA warrants to the original retail consumer a 2-year limited warranty as of the date the product was purchased at retail and that each product is free from defects in materials. Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, repairs or alterations and lack of maintenance. KING CANADA shall in no event be liable for death, injuries to persons or property or for incidental, special or consequential damages arising from the use of our products. To take advantage of this warranty, the product or part must be returned for examination by the retailer. Shipping and handling charges may apply. If a defect is found, KING CANADA will either repair or replace the product.

# GENERAL & SPECIFIC SAFETY INSTRUCTIONS



**VOLTAGE WARNING:** Before connecting the tool to a power source (receptacle, outlet, etc.) be sure the voltage supplied is the same as that specified on the nameplate of the tool. A power source with voltage greater than that for the specified tool can result in **SERIOUS INJURY** to the user - as well as damage to the tool. If in doubt **DO NOT PLUG IN THE TOOL**. Using a power source with voltage less than the nameplate is harmful to the motor.

## 1. KNOW YOUR TOOL

Read and understand the owners manual and labels affixed to the tool. Learn its application and limitations as well as its specific potential hazards.

## 2. GROUND THE TOOL.

This tool is equipped with an approved 3-conductor cord and a 3-prong grounding type plug to fit the proper grounding type receptacle. The green conductor in the cord is the grounding wire. **NEVER** connect the green wire to a live terminal.

## 3. KEEP GUARDS IN PLACE.

Keep in good working order, properly adjusted and aligned.

## 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. Make sure the floor is clean and not slippery due to wax and sawdust build-up.

## 6. AVOID DANGEROUS ENVIRONMENT.

Don't use power tools in damp or wet locations or expose them to rain. Keep work area well lit and provide adequate surrounding work space.

## 7. KEEP CHILDREN AWAY.

All visitors should be kept a safe distance from work area.

## 8. MAKE WORKSHOP CHILD-PROOF.

Use padlocks, master switches or remove starter keys.

## 9. USE PROPER SPEED.

A tool will do a better and safer job when operated at the proper speed.

## 10. USE RIGHT TOOL.

Don't force the tool or the attachment to do a job for which it was not designed.

## 11. WEAR PROPER APPAREL.

Do not wear loose clothing, gloves, neckties or jewelry (rings, watch) because they could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to

contain long hair. Roll up long sleeves above the elbows.

## 12. ALWAYS WEAR SAFETY GLASSES.

Always wear safety glasses (ANSI Z87.1). Everyday eyeglasses only have impact resistant lenses, they are **NOT** safety glasses. Also use a face or dust mask if cutting operation is dusty.

## 13. DON'T OVERREACH.

Keep proper footing and balance at all times.

## 14. MAINTAIN TOOL WITH CARE.

Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

## 15. DISCONNECT TOOLS.

Before servicing, when changing accessories or attachments.

## 16. AVOID ACCIDENTAL STARTING.

Make sure the switch is in the "OFF" position before plugging in.

## 17. USE RECOMMENDED ACCESSORIES.

Consult the manual for recommended accessories. Follow the instructions that accompany the accessories. The use of improper accessories may cause hazards.

## 18. NEVER STAND ON TOOL.

Serious injury could occur if the tool tips over. Do not store materials such that it is necessary to stand on the tool to reach them.

## 19. CHECK DAMAGED PARTS.

Before further use of the tool, a guard or other parts that are damaged should be carefully checked to ensure that they will operate properly and perform their intended function. Check for alignment of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other parts that are damaged should be properly repaired or replaced.

## 20. NEVER LEAVE MACHINE RUNNING

### UNATTENDED.

Turn power "OFF". Don't leave any tool running until it comes to a complete stop.

---

## SPECIFIC SAFETY INSTRUCTIONS

1. **If you are not thoroughly familiar** with the operation of Band saws, obtain advice from your supervisor, instructor or other qualified person.

2. **Adjust and position** the blade guide arm before starting the cut.

3. **Keep blade guide arm tight.** A loose blade guide arm will affect sawing accuracy.

4. **Make sure** that blade tension and blade tracking are properly adjusted.

5. **To prolong blade life** always release blade tension at the end of each work day.

6. **Make sure** blade speed is set correctly for material being cut.

7. **Always have stock firmly clamped** in vise before starting cut.

8. **Check coolant daily:** Low coolant level can cause foaming and high blade temperatures. Dirty or weak coolant can clog pump, cause crooked cuts, low cutting rate and permanent blade failure. Dirty coolant can cause the growth of bacteria with ensuing skin irritation.



# ELECTRICAL CONNECTIONS SPECIFICATIONS & STARTING

## WARNING!

ALL ELECTRICAL CONNECTIONS MUST BE DONE BY A QUALIFIED ELECTRICIAN. ALL ADJUSTMENTS OR REPAIRS MUST BE DONE WITH THE MACHINE DISCONNECTED FROM THE POWER SOURCE. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY!

### 220V POWER SUPPLY & OPERATION

**WARNING:** YOUR BAND SAW MUST BE CONNECTED TO A 220V, 20 AMP. BRANCH CIRCUIT.

### GROUNDING

This band saw must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current, to reduce the risk of electric shock. This band saw is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Your band saw is ready to operate on 220V circuit. This band saw is intended for use on a circuit that has an outlet and a plug which looks like the one illustrated in Fig.1.

**WARNING:** DO NOT USE A TWO-PRONG ADAPTOR FOR THEY ARE NOT IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES. NEVER USE IN CANADA.

### EXTENSION CORDS

The use of any extension cord will cause some loss of power. Use the table Fig.2 to determine the minimum wire size (A.W.G-American Wire Gauge) extension cord. Use only 3-wire extension cords which have 3-prong grounding type plugs and 3-hole receptacles which accept the

tool's plug. For circuits that are further away from the electrical circuit box, the wire size must be increased proportionately in order to deliver ample voltage to the motor.

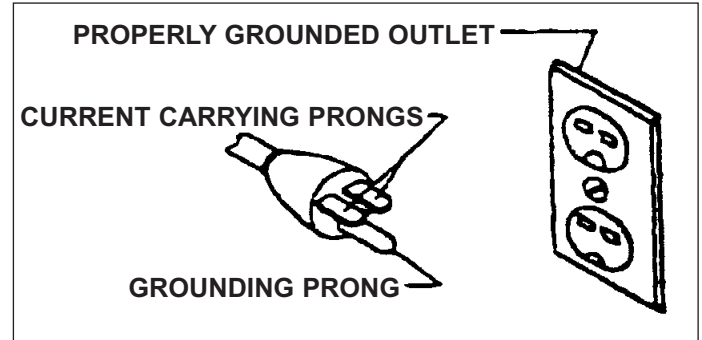


FIGURE 1

LENGTH OF CONDUCTOR	WIRE SIZES REQUIRED (AMERICAN WIRE GAUGE)
	220V LINES
0-25 FEET	NO.14
26-50 FEET	NO.12
51-100 FEET	NO.10

FIGURE 2

### SPECIFICATIONS

MODEL	KC-712DS
Cutting capacity at 90°	Rect. 7" x 12" ● Diam. 7"
Cutting capacity at 45°	Rect. 3 1/2" x 5 1/2" ● Diam. 5"
Speeds	4 (98, 164, 246, 328) FPM
Blade	0,75" x .032" x 93"
Motor	6.25 Amp.
Voltage	220V, 1 phase, 60 Hz
Table height from floor	28"
Dimensions (LxWxH)	50" x 26" x 44"

Your band saw comes almost completely assembled. Handwheels need to be installed to the band saw along with the work stop (#'s 38, 39, 40 & 41. See instructions below). The vise extension base (#468) can also be installed if a capacity of 12" is required.

When this band saw comes out of its wooden crate, the head (A) Fig.3 is bolted to the base, undo bolt (B) to unlock and to raise head.

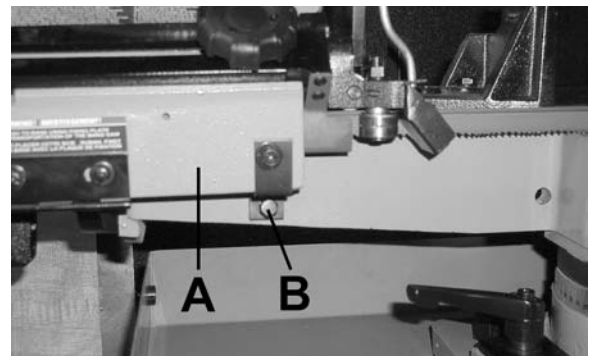


FIGURE 3

# ASSEMBLY & 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 workpiece on saw bed. If the piece is long, support the end.
4. Clamp workpiece securely in vise.

## STARTING AND STOPPING MACHINE

- 1) Raise the saw frame to the up position.
- 2) The machine is started by pushing the start button (A) Fig.4, and it will continue to run until the emergency stop button (B) is pushed.

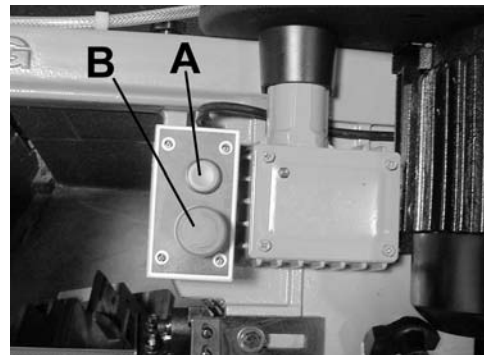


FIGURE 4

## WORK STOP ADJUSTMENT

1. Loosen the thumb screw 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.

## BLADE SPEEDS

When using your band saw, always change the blade speed to best suit the material being cut. The speed and material cutting chart below gives suggested settings for several materials using a bi-metal blade.

SPEED & MATERIAL SELECTION CHART			
Material	Speed	Belt Positioning	
		Blade Wheel Pulley	Motor Pulley
Tool, Stainless, Alloy Steels, Bearing Bronze	98		
Medium to High Carbon Steels, Hard Brass or Bronze	164		
Low to Medium Carbon Steels, Soft brass	246		
Aluminum, Plastic	328		

## ADJUSTING SPEED/ CHANGING BELT CONFIGURATION/ TENSIONING BELT

Disconnect the machine from the power source.

To adjust blade speed, the belt configuration on the pulleys must be changed. Open pulley cover (A) Fig.5 by removing lock knob.

The motor fixing bolts (B) must be loosened in order to slide motor in and release belt tension. Remove belt from pulleys (C) and reposition in the desired speed/belt configuration. See Fig.4.

Slide motor away from pulleys to retension belt until you obtain a 1/2" depression of the belt at the center, then retighten fixing bolts (B).

Close pulley cover (A) and lock with lock knob.

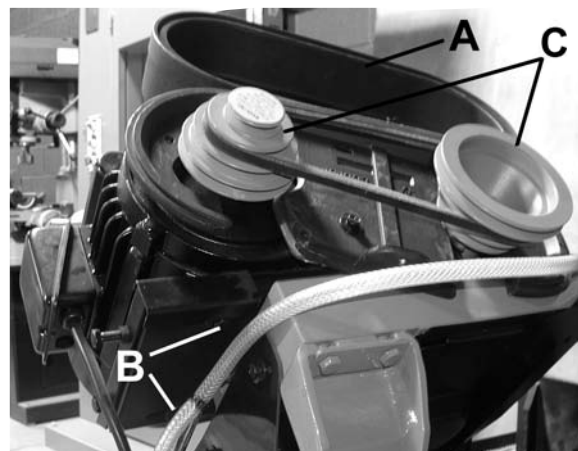


FIGURE 5

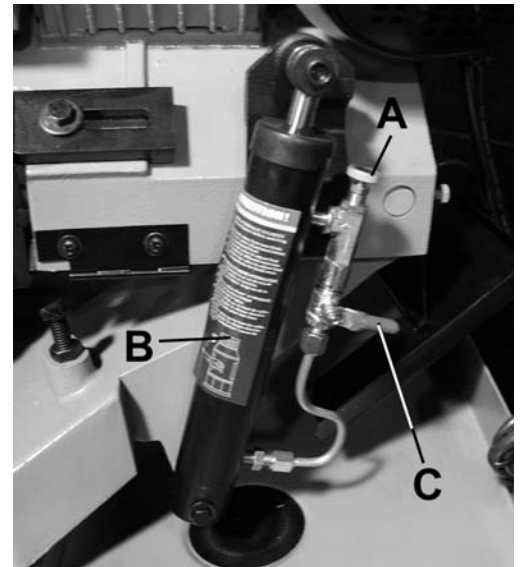
## STARTING SAW

**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, then begin the cut by letting the head down slowly onto the work. **DO NOT DROP OR FORCE.** Let the weight of the saw head provide the cutting force.

## FEED RATE CONTROL

When the feed rate control knob (A) Fig.6 on the hydraulic cylinder (B) is turned clockwise as far as it will go, the saw frame will not move down. It can be raised to the up position, turn the feed rate control knob (A) counterclockwise, the flow of oil from the cylinder is regulated and determines the speed at which the saw frame will lower and the blade will feed through the work. There are two methods to lock the cylinder in place, either by closing the feed rate control knob (A) or by using the cylinder lock lever (C). Too many factors are involved to make tabulated data practical on feed rates. As a general rule, an even downward pressure without forcing the blade gives best results. Burned chips indicate excessive feed, which causes the teeth to break off as the blade overheats. The ideal feed rate is indicated by chips that have a free curl and this will give the fastest cutting time and longest blade life.



**FIGURE 6**

## BLADE SELECTION

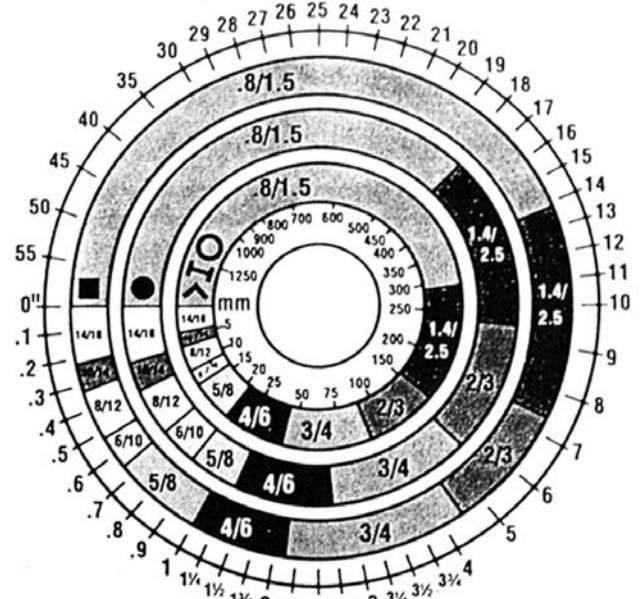
A general-use blade is furnished with this Metal Cutting Band Saw (usually an 8 TPI blade). Additional blades of various sizes are available. The choice of blade pitch is governed by the thickness of the work to be cut: the thinner the workpiece, the more teeth advised. A minimum of three (3) teeth should engage the workpiece 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 workpiece and to the blade can result.

## MAKE PROPER TOOTH SELECTION

For maximum cutting efficiency and lowest cost per cut, it is important to select the blade with the right number of teeth per inch (TPI) for the material being cut. The material size and shape dictate tooth selection.

You need to consider:

- 1. THE WIDTH OF CUT.** That is, the distance in the cut that each tooth must travel from the point it enters the workpiece until it leaves the workpiece.
- 2. THE SHAPE OF THE WORKPIECE**
  - **Squares, rectangles, flats** (Solid square symbol). Locate the width of cut on the chart. Select the tooth pitch on the ring marked with the square shape which aligns with the width of cut.  
EX.: 6" (150mm) Square, use a 2/3 Vari-Tooth.
  - **Round solids** (Solid circle symbol). Locate the diameter of your workpiece on the chart. Select the tooth pitch on the ring marked with the round shape which aligns with the size of stock you are cutting.  
EX.: 4" (100mm) round, use a 3/4 Vari-Tooth.
  - **Tubing, pipe, angles & structurals** (O H V symbol). Determine the average width of cut by dividing the area of the workpiece by the distance the saw blade must travel to finish the cut. Locate the average width or cut on the chart. Select the tooth pitch on the ring marked with the tubing and structural shape which aligns with the average width you are cutting.



Inches on exterior/  
Millimeters on inside of circle

# OPERATION



## BI-METAL SPEEDS AND FEEDS

The chart Fig.7 is a guide to cutting 4" (100mm) material (with a 3/4 Vari-Tooth) when using a cutting fluid.

Increase band speed:

- 15% When cutting 1/4" (6.4mm) (10/14 Vari-Tooth)
- 12% When cutting 3/4" (19mm) (6/10 Vari-Tooth)
- 10% When cutting 1-1/4" (32mm) (5/8 Vari-Tooth)
- 5% When cutting 2-1/2" (64mm) (4/6 Vari-Tooth)

Decrease band speed:

- 12% When cutting 8" (200mm) (2/3 Vari-Tooth)

## METAL CHIPS TELL ALL

Chips are the best indicator of correct feed force. Monitor chip information and adjust the feed accordingly.

Thin or powdered chips - increase feed rate or reduce band speed.

Burned heavy chips - reduce feed rate and/or band speed.

Curly silvery and warm chips - optimum feed rate and band speed.

## COOLANT

The use of proper cutting fluid is essential to obtain maximum efficiency from a band saw blade. The main cause of tooth failure is excessive heat build-up. This is the reason that correct cutting fluid is necessary for long blade life and high cutting rates.

Place coolant inside coolant tank in base. The rate of coolant flow is controlled by the stop valve lever (A) Fig.8, which directs the coolant onto the blade.



FIGURE 8

MATERIAL	ALLOY ASTM NO.	BAND SPEED	
		FT./MIN.	M/MIN.
Copper Alloy	173, 932	314	96
	330, 365	284	87
	623, 624	264	81
	230, 260, 272	844	74
	280, 464, 632, 655	244	74
	101, 102, 110, 122, 172	234	71
	1751, 182, 220, 510	234	71
	625, 706, 715, 934	234	71
	630	229	70
	811	214	65
Carbon Steel	1117	339	103
	1137	289	88
	1141, 1144	279	85
	1144 HI STRESS	279	85
	1030	329	100
	1008, 1015, 1020, 1025	319	97
	1035	309	94
	1018, 1021, 1022	299	91
	1026, 1513	299	91
	A36 (SHAPES), 1040	269	82
	1042, 1541	249	76
	1044, 1045	219	67
	1060	199	61
1095	184	56	
Ni-Cr-Mo Alloy Steel	8615, 8620, 8622	239	73
	4340, E4340, 8630	219	67
	8640	199	61
	E9310	174	53
Tool Steel	A-6	199	61
	A-2	179	55
	A-10	159	49
	D-2	90	27
	H-11, H-12, H-13	189	58
Stainless Steel	420	189	58
	430	149	46
	410, 502	140	43
	414	115	35
	431	95	29
	440C	80	24
	304, 324	120	36
	304 L	115	35
	347	110	33
	316, 316 L	100	30
	416	189	58

FIGURE 7



# OPERATION

## CHANGING BLADE

Raise Saw head to vertical position, lock cylinder and open the blade guards. Loosen tension screw knob sufficiently to allow 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 bottom blade wheel with the left hand and hold in position.
3. Hold the blade taut against the blade wheel by pulling the blade upward with the right hand which is placed at the top of the blade.
4. Remove left hand from bottom blade wheel and place it at the top aide 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 blade wheel to permit left hand to slip the blade around the blade wheel using the thumb, index and little finger as guides.
6. Adjust the blade tension knob clockwise until it is just 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.

## BLADE GUIDE BEARING ADJUSTMENT

**ATTENTION:** This is the most important adjustment on your saw. It is impossible to get satisfactory work from your saw if the blade guides are not properly adjusted. The blade guide bearings on your metal Cutting Band Saw are adjusted and powertested with several test cuts before leaving the factory to ensure proper setting. The need for adjustment should rarely occur when the saw is used properly. If the guides do get out of adjustment, it is extremely important to readjust immediately. If improper adjustment is maintained, the blade will not cut straight, and it will cause serious 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. If a blade becomes dull on one side sooner than the other, for example, it will begin cutting crooked. A blade change will correct this problem; the guide adjustment will not. If a new blade does not correct the problem, check the blade guides for proper spacing. **NOTE:** There should be from .000 (just touching) 0.3mm clearance between the blade and guide bearings. 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 bushing and can be adjusted.
3. Adjust the tension of the blade until the back of the blade is against the blade wheel (front) lightly.
4. Loosen blade guide shaft nut (A) Fig.9.
5. Turn the eccentric shaft (B) counterclockwise. When the bearing (C) touches the saw blade properly, tighten the nut (A).
6. To adjust height of bearing guides, loosen cap screw (D) and move the bearing (C) up or down until it lightly touches the back of the blade.
7. Repeat steps 4, 5, and 6 to adjust the other side's blade guide.

It is important that the blade guide assemblies be placed as closely as possible to the material being cut before starting a cut. To move blade guide assemblies, undo hex. bolt (E) and slide blade guide bracket close to workpiece in vise. Retighten hex. bolt (E). Do the same adjustment to the other blade guide assembly.

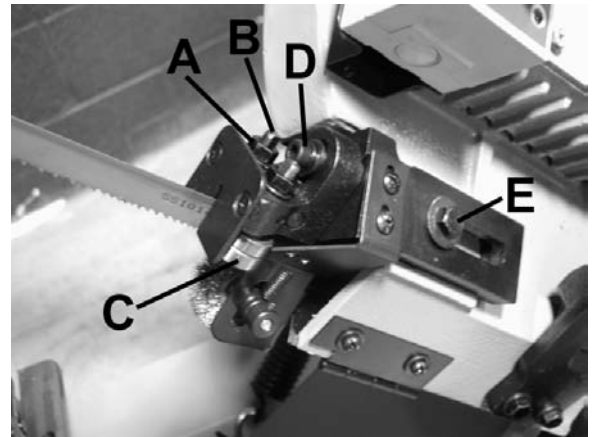


FIGURE 9



## BLADE TRACKING ADJUSTMENT

1. Open the blade guard.
2. Remove the blade guide assemblies (top and bottom).
3. Loosen the hex bolts (A) Fig.10 in the tilting mechanism to a point where it is loose but snug.
4. With the machine running, adjust both the set screw (B) and blade tension knob (C) simultaneously to keep constant tension on the blade. The set screw and blade tension knob are always turned in opposite directions, ie. when one is turned clockwise, the other is turned counterclockwise. The blade is tracking properly when the back side just touches the shoulder of blade wheel or a slight gap appears near the center line of the blade wheel. Care should be taken not to overtighten the saw blade since this will give a false adjustment and limit life of the blade.
5. Tighten the hex bolts (A) 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 (B) and back it out as far as it can go and still remain in the threaded hole.
  - b. Turn the hex bolts (A) clockwise until they stop (do not tighten).
  - c. Turn the set screw (B) 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 slightly.
8. Adjust the vertical position of the blade guide bearing assemblies so that the back side of the blade just touches the ball bearing.
9. Make a final run to check tracking. If required, touch up adjustment (See step 4).
10. Replace the blade guards.

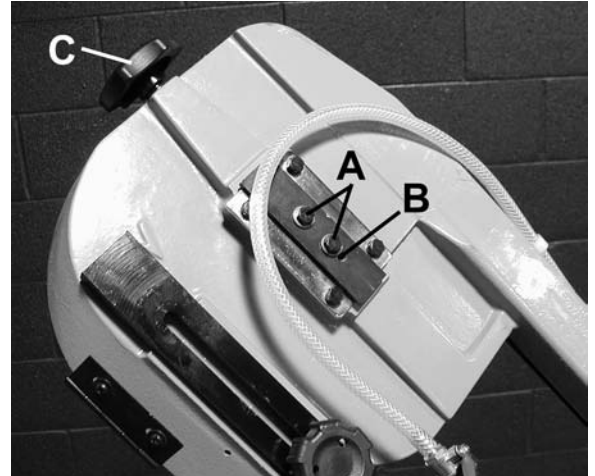


FIGURE 10

## TRU-LOCK VISE SYSTEM

To operate, proceed as follows:

- 1) Raise the arm 2" above the workpiece, close the hydraulic cylinder valve to maintain the arm 2" above the workpiece.
- 2) Put your workpiece on the table. Move the vice handle (A) Fig.11 upwards to an angle of 45 degrees (A-Half opened) to loosen the vise. Move the jaw vise bracket against the workpiece by turning the rectangular handwheel (B). Push down on the vise handle (A) to a 90 degree position.
- 3) To loosen the workpiece from the vise, hold the workpiece and lift the vise handle (A) to a 90 degree position (completely opened). Remove workpiece.

When you need to cut a workpiece many times, just raise the vise handle (A) to loosen and adjust workpiece position. Then push down on the same handle to retighten. You can also push the vise handle (A) down first, then tightening the vise by turning the rectangular handle (B) clockwise. After finishing the cut, you can loosen the workpiece by turning rectangular handle only.

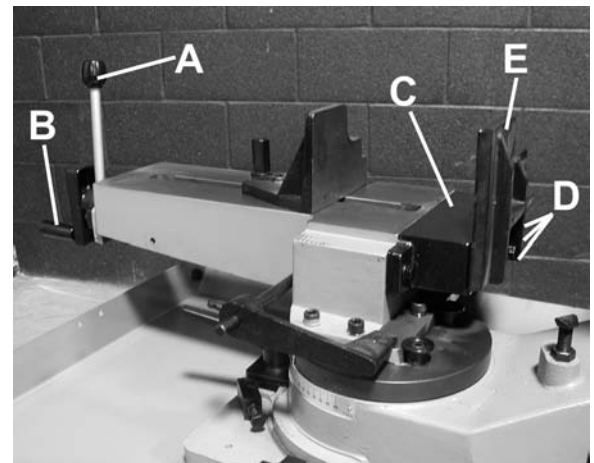


FIGURE 11

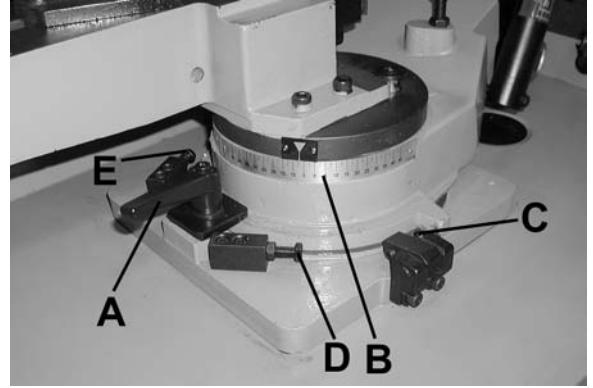
When straight cutting 12" width is required, the Vise Base Extension (C) **MUST** be installed to the vise base, by following these steps:

1. Remove hex. bolts (D), and remove the Rear Vise Jaw Bracket (E).
2. Link the Vise Base Extension (C) to the end of the Vise Base. Fix it using extra hex. bolts supplied as shown in Fig.11.
3. Replace the Vise Bracket (E).

**Vise Base Extension is only good for straight cutting, not for angle cutting.**

**ADJUSTING HEAD PIVOT ANGLE**

The main head assembly can be pivoted in both directions (clockwise and counterclockwise) up to 45 degrees. To pivot head, first loosen pivot lock handle (A) Fig.12. Move head to the desired pivot angle using the angle scale (B) on the base. There are three degree positive stops which allow you to quickly set the head to predetermined angles. Positive stop (C) sets the head at a 90 degree angle. Positive stop (D) sets the head at a 45 degree angle, it is necessary to flip the 90 degree positive stop (C) out of the way to reach the 45 degree positive stop (D). If a counterclock pivot direction at a 45 degree angle is desired, pivot head until it comes in contact with 45 degree positive stop (E). Retighten pivot lock handle (A) after setting pivot angle.

**FIGURE 12****MAINTENANCE**

**CAUTION:** MAKE CERTAIN THAT THE UNIT IS DISCONNECTED FROM THE POWER SOURCE BEFORE ATTEMPTING TO SERVICE OR REMOVE ANY COMPONENT. It's easier to keep machine in good condition or best performance by maintaining it than remedy it after it is out of order.

**(1) Daily Maintenance (by operator)**

- (a) Fill the coolant tank with cutting lubricant before starting machine.
- (b) If the temperature of spindle caused over-heating or strange noise, stop machine immediately to check it.
- (c) Keep work area clean; release vise, cutter, work-piece from table; switch off power source; take chips or dust away from machine and lubricate surface to prevent rusting.

**(2) Weekly Maintenance**

- (a) Clean and coat lead screw with oil.
- (b) Check to see if sliding surface and turning parts lack lubricant. Lubricate as necessary.

**(3) Monthly Maintenance**

- (a) Lubricate bearing, work, and work shaft with light machine oil to avoid wearing.

**(4) Yearly Maintenance**

- (a) Adjust table to horizontal position for maintenance of accuracy.
- (b) Check electric cord, plugs, switches.

**PARTS DIAGRAM & PARTS LISTS**

Refer to the Parts section of the King Canada web site for the most updated parts diagram and parts list.