To remove the upper blade holder, remove the upper arm from the saw and locate the split roll pin that locks the top of the holder into the arm. This would be the pivot point of the holder.

Using a 1/8" diameter flat pointed punch (or take off the point of a nail with tinsnips), push the roll pin out of its socket. You may need to brace the arm and tap the punch with a hammer.

Penetrating oil may be needed to loosen the roll pin. You can extend its staying power by wrapping the area with a saturated oiled paper towel and taking a lunch break. Once the pin is out, wipe down the outer arm and position the new blade holder in place and pin in place with the enclosed roll pin.

MAINTANANCE:

FRONT CAM BLADE TENSION RELEASE ADJUSTMENT:

On the front of the upper arm of the HAWK scroll saws is the front cam release mechanism.

Function

The cam handle is pulled forward to release the blade tension and pushed back to apply the tension on the blade. The cam is shown released in figure 1. the cam is shown locked in figure 2.

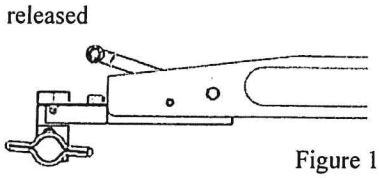


Figure 1

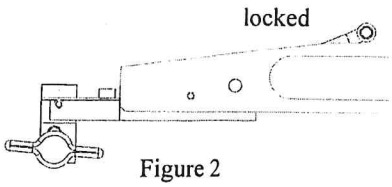


Figure 2

Adjustment

The set screw on the under side of the upper blade holder bracket as seen in figure 3 should be tightened so that without a blade in the saw the cam handle meets resistance when the cam lever is in position shown in figure 4. if this is not the case then you will need to adjust the set screw by turning it in or out until the resistance starts at that point. This needs to be check every few months of saw use. If it is not tensioned properly, the cam lever can release when you are cutting. If it is too tight then it will cause damage to the blade holder bracket. When adjusting this set screw turn it no more than 1/4 turn at a time before checking. You will need a 3/32 allen wrench to make this adjustment.

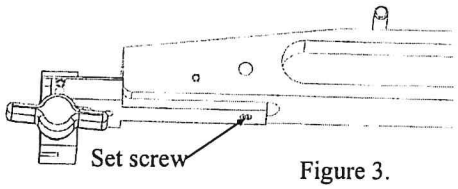


Figure 3.

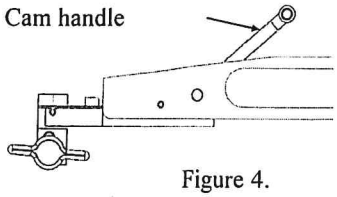


Figure 4.

Lubrication

The cam of this mechanism should be lubricated with Dri-tool lube thru the hole shown in figure 5.

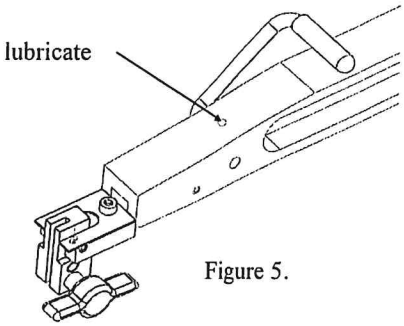
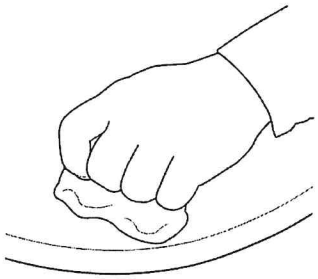


Figure 5.

TABLE

Apply a sealer/wax ,such as paste wax or Top Saver, to the surface of the cutting table twice a year or as needed. This will keep the table clean, smooth, and slick for cutting. This will make it easier to slide and turn your projects while cutting.



TENSION ROD

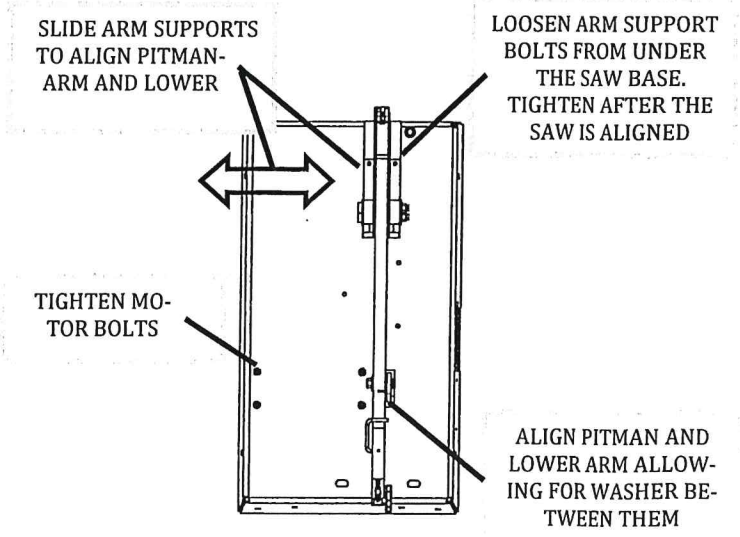
The wedge pivot on the tension rod should be lubricated on the bottom with Dri-tool lube.

Be sure not to get any lubricants on the nylon washer on top of the wedge pivot. Dirt or lubricant on the nylon washer will cause the tension rod to loosen while running.

The Wedge pivot and wedge adapter should be replaced before they are worn to the point of causing tension fluctuations in the blade. These fluctuations are a cause blade breakage and pull out.

SAW ALIGNMENTS

These alignments need to be checked from time to time specially if the saw is moved and hauled places. Adjustment of the lower arm to the pitman arm: This alignment should only have to be done if you have had the saw apart or it has been damaged such as being knocked over. To do this remove the bolt that holds the pitman arm to the lower arm. The spacer washer should fit in this gap without any play side to side. If the washer does not fit, then the lower arm is being pulled to one side or the other. To correct this, loosen the bolts that hold the arm supports to the base. Slide or twist the arm supports until the lower arm aligns with the pitman arm. Tighten up the bolts that hold the arm supports to the base.

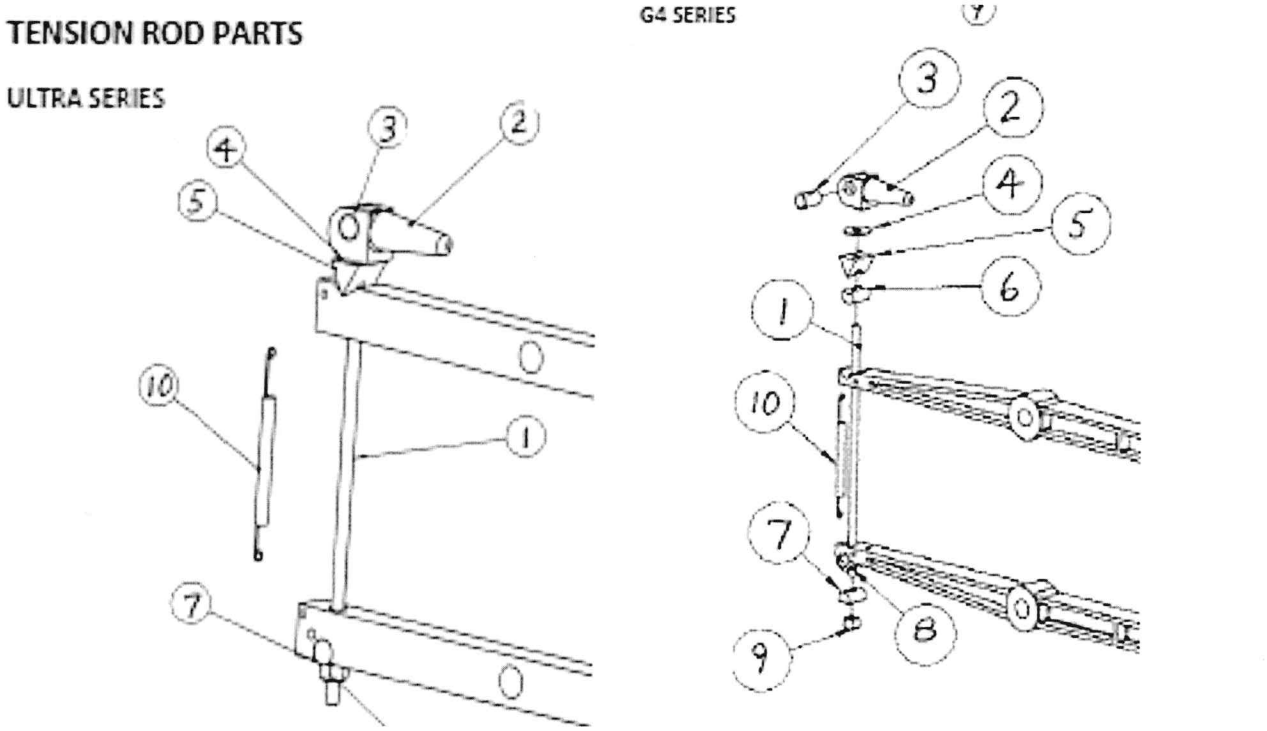


How to Reset the Tension System

Start by inserting a 5-inch-long blade into the scroll saw. Make sure to pull the front cam over handle into position like its ready to scroll. Then move to the rear of the machine to reset the tensioning system. Set the hawk rear-cam handle (2) ready to scroll and grab a pair of lock pliers.

With all parts in position on the machine; advance the tension rod (1) till a few of the threads extend up past the inside cam (3) of the handle. With the top of the tension rod now in position, move your focus to the bottom of the tension rod to the locknut at the bottom (9). Grabbing hold of the tension rod with the lock pliers and making sure all the parts are still in position and advance the locknut upward with a wrench till your scroll saw arms become parallel.

You may have to adjust the pitman arm to make the arms parallel to the floor if your saw was mid-stroke. The locknut should stretch the blade at the front of the machine ever so slightly but not scrolling tight. Then follow your tensioning chart to tension the machine as usual for the size of blade in use.



How to Align your Hawk Scrollsaw

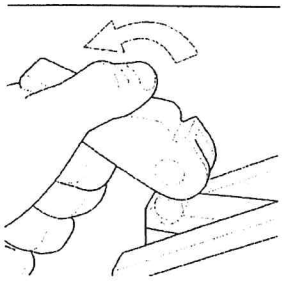
Adjustment of the lower arm to the pitman arm:
To do this remove the bolt that holds the pitman arm to the lower arm. The spacer washer should fit in this gap without any play side to side. If the washer does not fit, then the lower arm is being pulled to one side or the other. To correct this, loosen the bolts that hold the arm supports to the base. Slide or twist the arm supports until the lower arm aligns with the pitman arm. Tighten up the bolts that hold the arm supports to the base.

Adjustment of the table to arms:
Next loosen the bolts that hold the table miter gauge to the base. Slide the table so that the blade is centered in the hole. Tighten the table miter gauge to the base.

Adjustment of blade in holder:
Then place a piece of paper or the flat of a business card on the table beside the blade. Move the arms so that the blade thru an entire stroke. If the gap between the blade and the paper on the side differs, then adjust the blade holders to push the blade to the side. This is done by loosening the thumbscrew and adjusting the setscrew on the opposite side, in or out, to move the blade to the side.

Happy Scrolling!

BLADE TENSIONING:

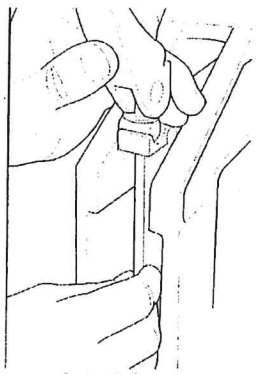


- Release the back tension adjustment cam.
- Lock the front tension quick release cam.

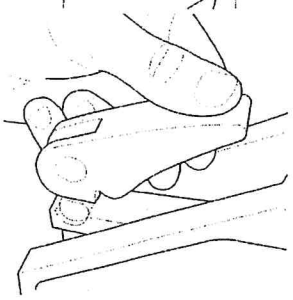
- cam lock, move the cam into position until it just starts to have tension on the rod.
- Compare this to the clock value on your saw and blade size.

BLADE TENSION CHART		
	CLOCK POSITION	
BLADE SIZE	BM-20	BM-26
2/0	12:00	11:30
1	12:00	11:30
2	11:30	11:00
3	11:30	11:00
5	11:00	10:30
7	10:30	10:00
9	10:00	9:30
12	10:00	9:00

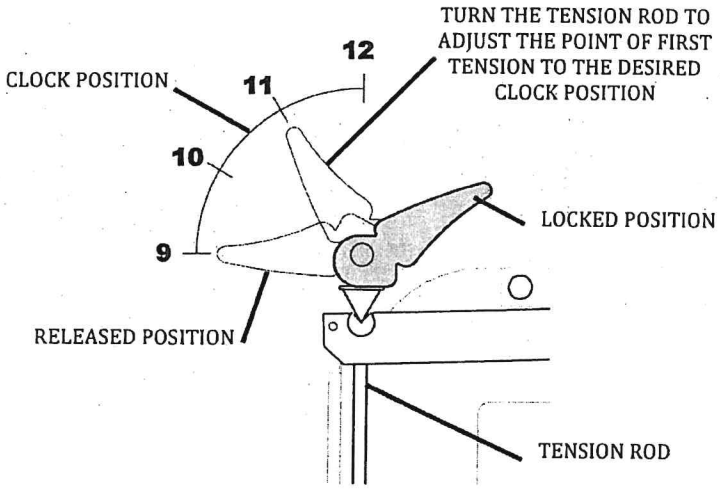
- Turn the tension rod with your finger while holding the cam from turning until it is just starting to have tension on the rod in the desired clock location.



- Cam on over.

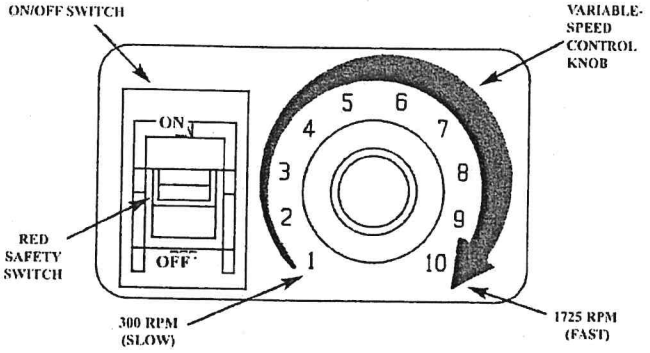


This yields the proper tension for the selected blade size. Keep in mind that this is just the starting point for tensioning your blade. You might need to have a little more or less tension on your blades depending on you, what you are cutting and type of blade used. You will quickly learn to set the blade tension for your needs.



VARIABLE SPEED CONTROL

SPEED CORRELATION CHART			
NO.	SPEED	NO.	SPEED
#1	300 RPM	#6	1200 RPM
#2	500 RPM	#7	1325 RPM
#3	725 RPM	#8	1500 RPM
#4	850 RPM	#9	1650 RPM
#5	1025 RPM	#10	1725 RPM



VIBRATION TROUBLESHOOTING:

There are several areas to check out to see what the cause of the vibration is:

The first thing to check is that the tension rod is assembled correctly. The biggest culprit of misalignment in the tension rod area is the wedge pivot. Make sure that as you sit at the scroll saw and look back at the tension area you do not see a triangle in the wedge.

The triangle will be visible from the side of the saw as it sits in the arm but looks like a rectangle from the front. Some saws have enough of a slot in the arm to be inserted incorrectly. If the wedge pivot sits in the arm correctly, check to see that the tension is set correctly for the size of blade you are using.

Check with the troubleshooting pages to be sure the issue with blade breakage is not addressed there. Also make sure that the saw is level using a bubble level sitting on the red platform. Make sure the legs have a wide stance and don't need kicked outwards.

If the legs are bolted tight you might loosen the bolts to reset the leg positions. If the saw is not level adjust the glide feet to adjust the saw so that it is level. Check your surroundings.

If you are not on a concrete floor, look to see if the floor that your saw sits on does not flex or bounce. The biggest offender on this subject are prefab sheds and outbuildings. Perhaps you need to add stability with bracings under the floor (most commonly concrete blocks for support) or compensate with sandbags at the base of the machine legs if the underflooring is impossible to shore up.

If all these are correct, we delve into a deeper level of repair:

To check the bearing in the arms: take the tension rod system out of the machine, keeping track of all the pieces. Once you remove the blade from the front of the arm, the upper arm can be moved freely. Move the arm up and down feeling the action of the arm.

It should pivot smoothly throughout the motion without any click or gritty feeling. Any catch in the motion will only be magnified as the machine strokes. The same process can be repeated with the lower arm by removing the bolts attaching the bellows and pitman arm and moving it manually.

Again, you will feel for any catch or grit in the bearings. If the bearings need replaced you may either look locally for replacement bearings or call to order them from us. Once you have checked out all the above and you haven't located any problems go through the realignment instructions to make sure the whole saw is square and true.

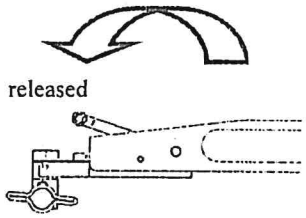
Good luck and let us know how we can help further.

HOW TO CHANGE OR INSTALL A BLADE:

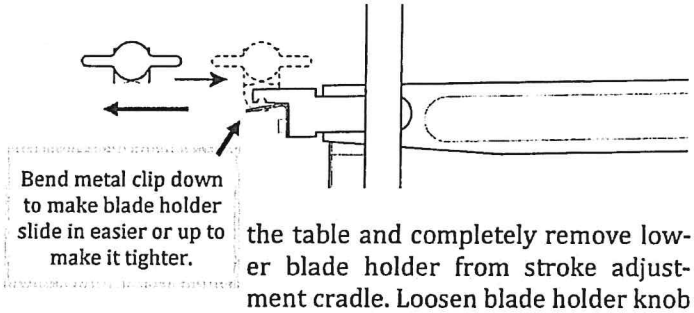
The Hawk Precision Scroll Saw offers a unique feature to scrollers; the ability to feed your blade either from the top to the table down **OR** from the bottom of the table up. Both have their own benefits. Feeding from the bottom of the table up enables you to set the blade tighter. Feeding your blade from top to bottom allows easier feed through your work piece if you were making an inside cut. No more fumbling around under the table! We will now look at both ways to install and feed your blade.

A. **BOTTOM FEEDING:** Feeding Your Blade from the Bottom Up:

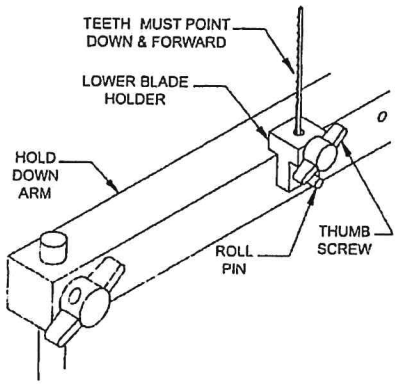
1. **Pull Quick-Release Blade Tensioner Forward.** Before you can change blades or replace a broken one, you need to release the tension to the blade. **Always pull the Quick Release Blade Tensioner forward before changing or installing a new blade.**



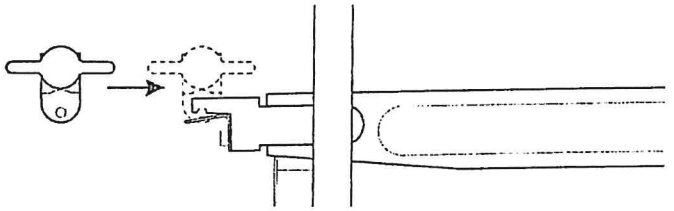
2. **Loosen Upper Blade Holder.** Turn the knob on the side of the upper blade holder to loosen clamps that hold the blade. Ensure there is no part of blade still inside blade holder if a blade was broken during operation.
3. **Remove Lower Blade Holder.** Reach down under the table and completely remove lower blade holder from stroke adjustment cradle. Loosen blade holder knob and remove any used or broken blades.

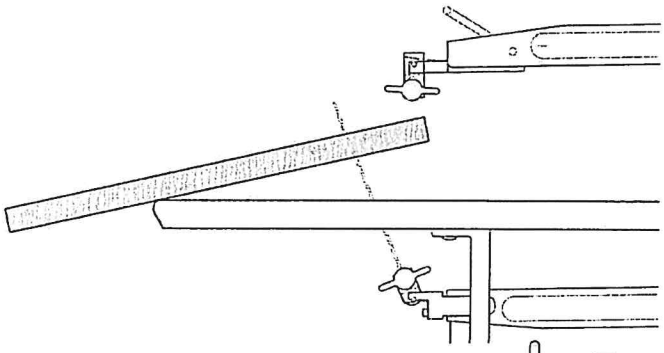


4. **Insert New Blade.** Hold the lower blade holder and insert new blade into the open jaws, ensuring it sits all the way to bottom of holder. Teeth of blade should face forward or down. Hand tighten knob to hold blade, ensuring blade is at 90 degrees to holder.

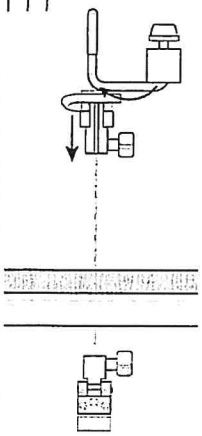


5. **Re-install Lower Blade Holder.** Replace lower blade holder into stroke adjustment cradle, while feeding blade through hole in table. Also feed blade through work piece if making inside cuts. **Ensure blade teeth are facing forward.**

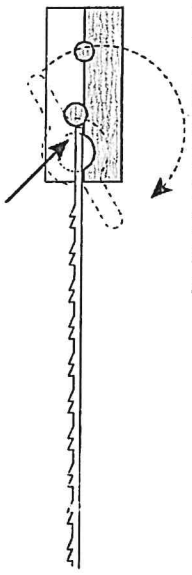




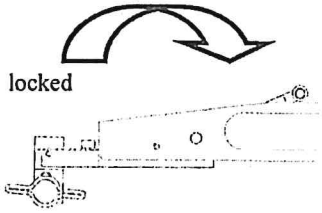
6. **Flip Across Upper Arm Retainer.** You can flip across the upper arm retainer while you insert blade into upper blade holder. This ensures arms will not move while inserting blade it is not necessary to use the upper arm retainer to perform this operation. Do what you are most comfortable with.



7. **Insert Blade Into Upper Blade Holder.** Insert blade all the way into upper blade holder jaws and hand tighten knob on side of holder.

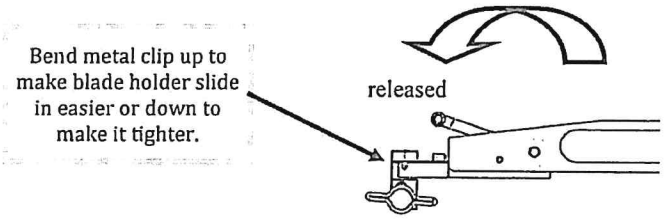


8. **Flip Back Quick-Release Blade Tensioner. ALWAYS flip back Quick Release Blade Tensioner before using saw.** This will tension blade correctly.
9. **Check Blade Tension.** If you are using the same type blade, the blade tension is set. If not then adjust blade tension as necessary. Refer to blade tensioning instructions on page 12, or use chart on saw.



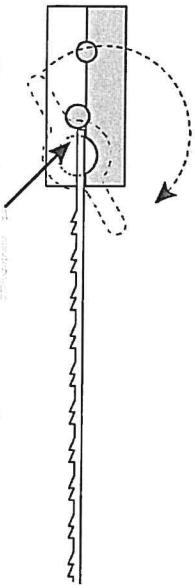
B. TOP FEEDING: Feeding Your Blade from Top to Bottom:

1. **Pull Quick-Release Blade Tensioner Forward.** Before you can change a blade or replace a broken one, you need to release the tension on the blade. Always pull the Quick Release Blade Tensioner forward before changing or installing a new blade. Just like the lower

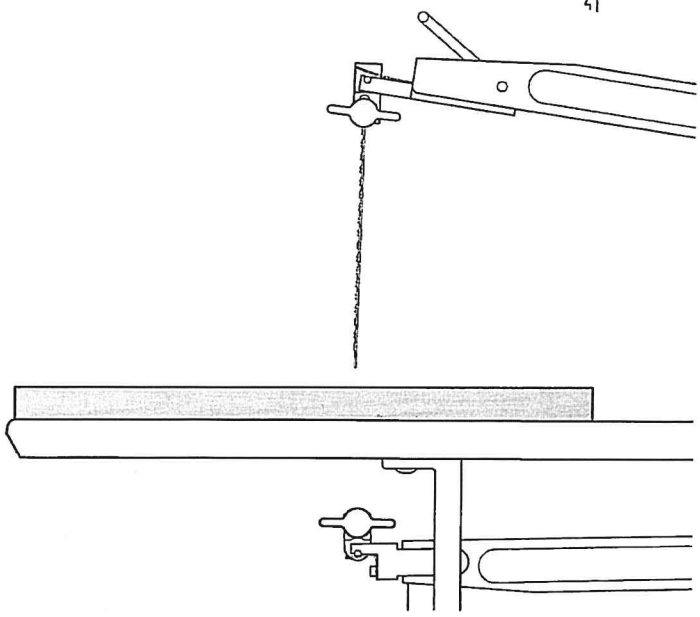


blade holders the upper blade hold just clips into place. You will need to adjust (bend) the clip to fit your needs as to how easy the blade holder clips into place.

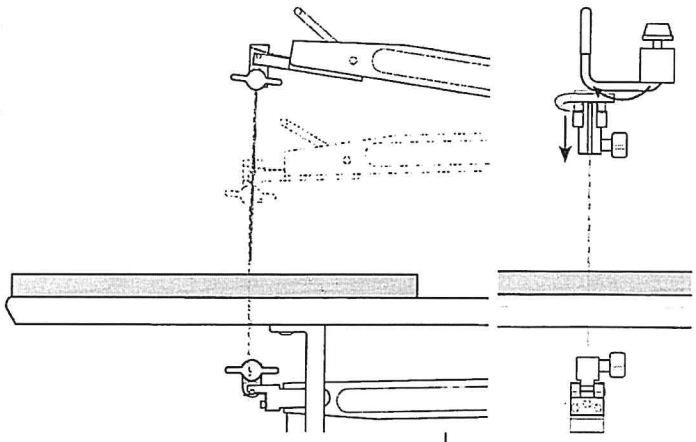
2. **Leave both Top and Bottom Blade Holder in Place.** Remove any broken blades from both the top and bottom Blade Holders. Loosen knobs on both to ensure new blade will feed into each holder.



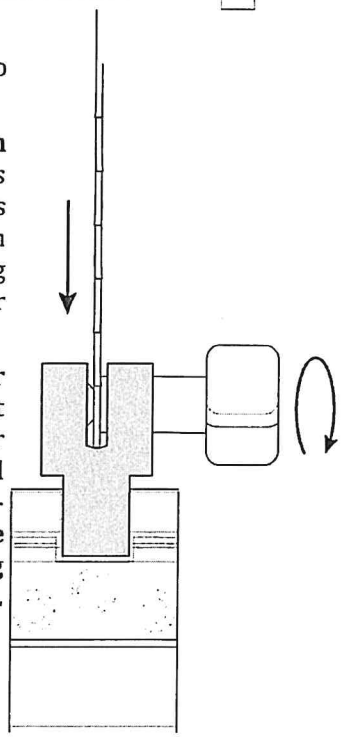
3. **Insert New Blade into Top Blade Holder.** Select and install new blade into Upper Blade Holder. The holder will tilt upwards to ease in this operation. Ensure teeth of blade are facing down and forward and at 90 degrees to holder. Hand tighten knob.



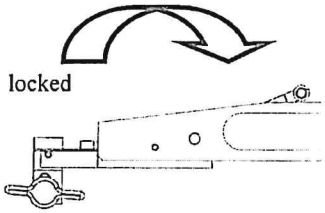
4. **Feed Blade Through Work piece and/or Hole in Table.** Feed your blade through your work piece if you are making inside cuts, and then through hole in table, being careful not to bend the blades..



5. **Flip Across Upper Arm Retainer.** Flip across Upper Arm Retainer. This will stop the arms from moving while attaching the blade to the Lower Blade Holder.



6. **Insert Blade Into Lower Blade Holder.** Insert your blade into the Lower Blade Holder with it still installed in the Stroke Adjustment Cradle. **Ensure blade teeth are facing forward and down.**



Tighten knob on side of Lower Blade Holder.

7. **Flip Back Release Blade Tensioner. ALWAYS flip back Quick Release Blade Tensioner before using saw.** This will tension blade.

8. **Check Blade Tension.** If you are using the same type blade, the blade tension is set. If not then adjust blade tension as necessary. Refer to blade tensioning instructions on page 12, or use chart on saw.