

Band Saw Adjustments

The following adjustment is done with the blade removed and the tension adjustment screw backed out so as to make the upper wheel and scale and spring free floating.

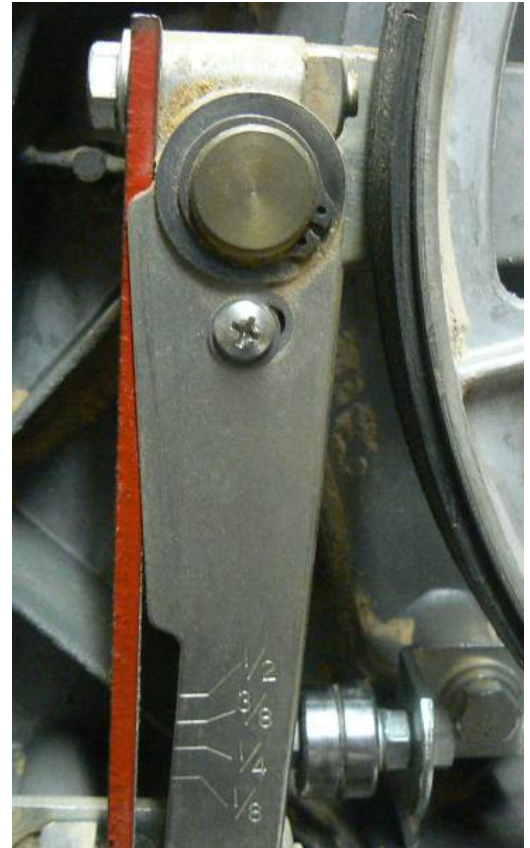
Tension Scale Slack

Note the back edge of the spring bar (red) is out from the edge of the scale.

Tension scale adjusted

The scale is moved so that that edge is along the back edge of the spring bar. I find it interesting that the bottom edge of the scale also aligns with that edge.

While holding the scale aligned with the spring bar edge, securely tighten the screw.



I consider the marks to be a recommend 'starting' point for SS blades. Cutting action and adjusting tension to improve operation always are options regardless of what brand blade is being used.

Tracking Bearing Adjustment

The tracking bearing is one of the things that makes the SS bandsaw unique. It eliminates having to tweak tracking when changing blades and is automatic once adjusted. It also means the back of **ALL** blades regardless of size will run in the same location so that the blade backup bearings do not need to be readjusted either.

Blade Slack

Notice that when the blade is not tensioned (slack) it bulges out away from the wheel.

Tracking Bearings Adjusted

In this step and all that follow, the blade is installed and properly tensioned for its size. This is to ensure that all adjustments referencing the blade are with the blade positioned in a path tangent to both upper and lower wheels(both front and back.)

There are two goals for this adjustment. The obvious one is to position the dual bearings so that the blade tracks in the groove between them. The less obvious one is to make sure the blade is parallel to the sides of the bearings. That also causes the axis of rotation of the bearings to be perpendicular to the blade path(the bearing mounting bolt).

This is accomplished by loosening the bolt that secures the bracket and moving/rotating the bracket (slightly).

Rotation is limited by a slot in the bracket that slips over a rib.

Test the centering by pulling the blade away from the bearings down near the lower wheel, then when rotating the wheels, observe the bearings moving as the blade returns to touching them. Both should start turning simultaneously.

When you get it aligned, securely tighten the bracket mounting bolt, then recheck to make sure nothing shifted while tightening it.

Make sure the bearing mounting bolt is NOT loose etc.

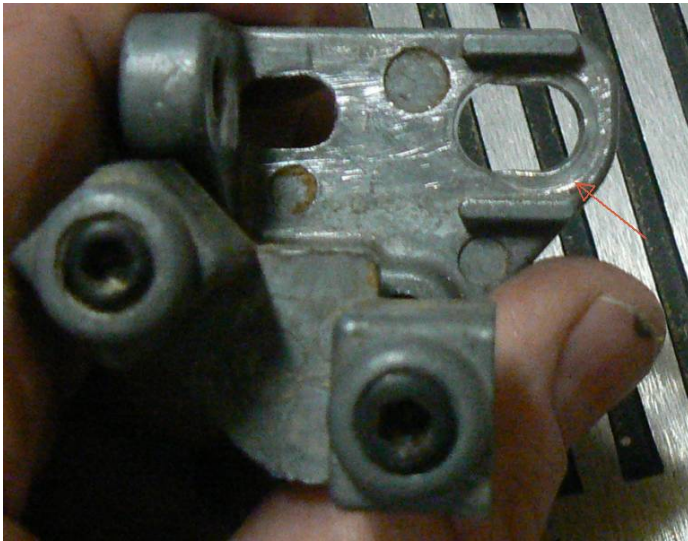


Lower Blade Backup Bearing(s) Adjustment

The lower backup bearing is located below the table behind the blade.

Lower Bearing Bracket Mounting Screw

This screw secures the bracket that must be positioned so that the blade rides in the center of the bearing.



Lower Bearing Bracket Slots

The screw passes through the slot indicated. The elongated slot allows positioning the bracket towards and away from the throat of the bandsaw. Notice the second slot.

The arrow also points to a deformation of the bracket caused by really tightening the bracket mounting screw. The resulting depression makes sliding the bracket difficult.

Lower Bearing Bracket Stud

That second slot rides over the fixed stud.

Backup Bearings

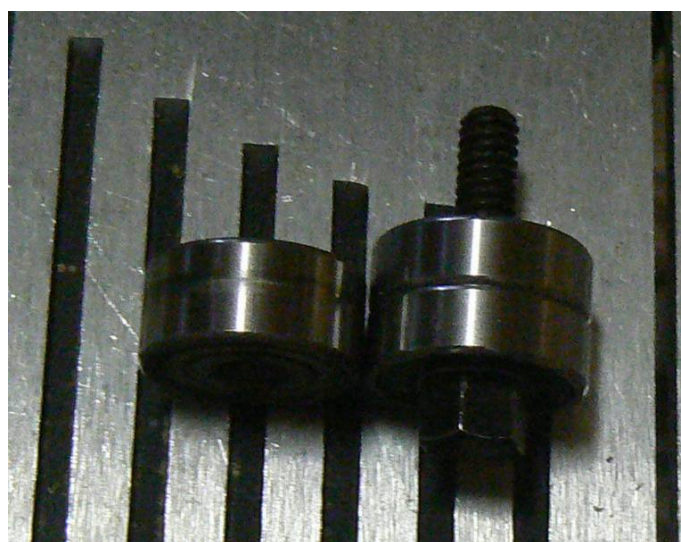
The single OEM bearing is 7mm x 22mm x 10mm. The modified two bearing set is two 7mm x 22mm x 7mm. The original bearing mounting screw has an unthreaded shoulder that is 7mm od. A different scheme used by others uses 1/4" shouldered screws and bushings with 8mm id bearings (8mm x 22mm x 7mm). The intended result is to center the blade on the bearing(s). The double bearing sets provide a groove for the back of the blade to ride in (just like the guide bearings). A better choice would be 7 x 22 x 5mm bearings, but they do not exist!

This procedure will be demonstrated using the dual bearing set shown, but if the OEM single bearing were being used, the procedure would simply be to center the blade on it.

Since the dual bearing set is wider (14mm) than the OEM one (10mm) the bearings must be mounted differently. The lock washer normally between the single bearing and the tapped hole in the bracket must be left out so as to position the bearings towards the outside of the bandsaw. A jam nut (added) on the end of the screw serves to lock the screw in place.

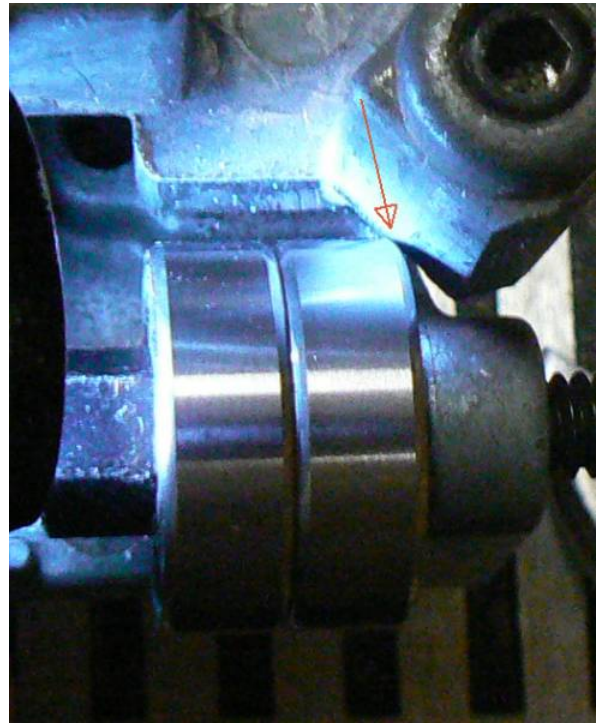
Bracket Mounting Slots

The file marks shown here and elsewhere are the result of filing those surfaces flat (free of burrs etc.).



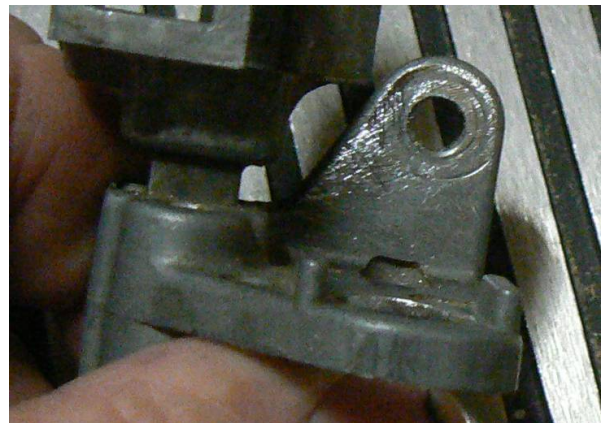
Interference Potential

With the wider dual bearing bearings that mount closer to the bracket (no lock washer) the bearings may butt up against the bracket. This area of the bracket is usually not close to the single (narrower) bearing. There is considerable flash on the corners that must be removed to increase the clearance. The dual bearing set requires the bracket be positioned 2mm further in. This also places the bracket near the limit of the adjustment range (slot end).



Bearing Screw Mounting Surface

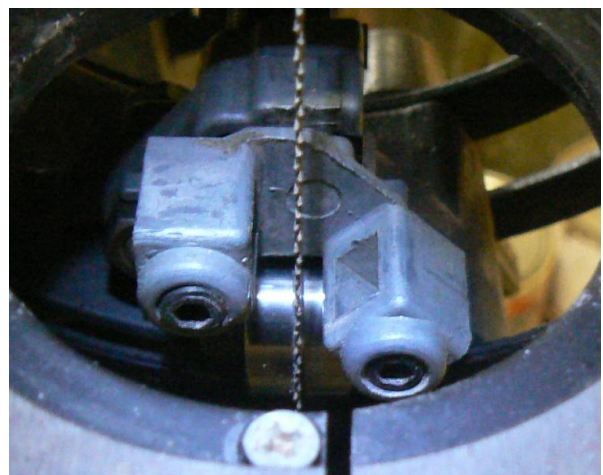
Here also the bracket surface needs to be flat.



Adjustment Done

After all this parts description, the actual adjustment is simple. Merely position the bracket so the blade is centered (groove on dual bearing or center of single bearing).

Again, centering on the dual bearings is tested by pulling the blade out and rotating the wheels until the blade once again contacts the bearings. The blade should contact both bearings simultaneously (that implies the blade does not snap into the groove from either side). I recommend temporarily increasing the blade tension while checking this to ensure the blade is straight between the two wheels.



Upper Blade Post

First let's take a look at the post up/down lock.

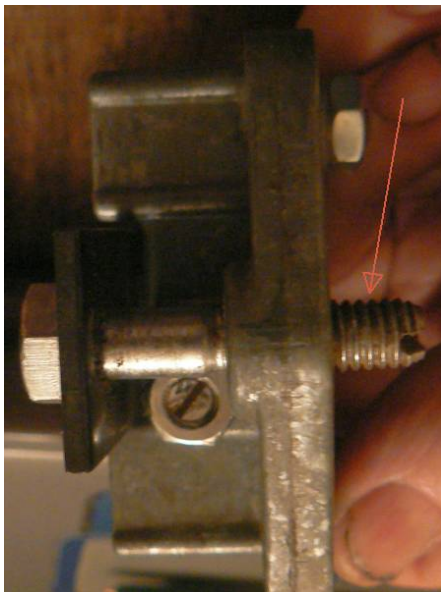
Post Locking Rod

The flattened lock shaft rides on several ribs inside the backside of the post. When the red handle is rotated, the shaft moves from the round side pressing against the lock spring to the flat side just clearing the spring.

Rod In Unlocked Position



Rod In Locked Position



This screw has a slot in the end opposite to the head. The head presses against the spring on one end, and the other end of the spring presses against a rib in the base casting. Rotating the screw clockwise **decreases** tension. As the post front/back parallel to blade screws are adjusted(see next post), the tension may need to be readjusted. Those two screws press against the side of the post opposite to the spring.

I recommend waxing the lock rod.

Post Parallel to Blade Adjustments

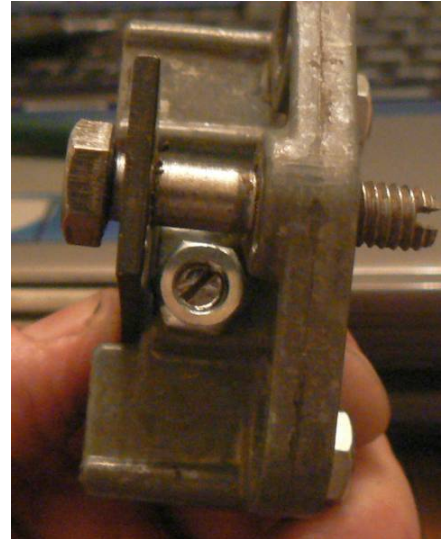
The first adjustment is to align the upper backup bearing(s) to the blade and simultaneously position the post parallel to the blade from top to bottom of the post.

Remove the upper wheel retaining clip and washer so that you can easily remove and replace the wheel to eliminate it getting in the way. It will ride on the back side due to the cant, so it is not necessary to replace the clip and washer until you are completely finished (tensioning and rotation are not affected by the 'missing' clip and washer).

Anti Slop Screw

Notice the screw with a jam nut. This screw is adjusted to allow the post to move up/down in the bracket with no slop, but also without dragging. Your bandsaw may not have this or the screw may vary. After adjusting, tighten the jam nut and recheck the post for binding.

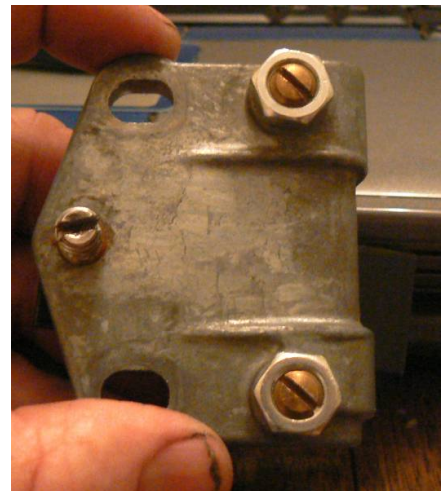
This is more easily done with the post and bracket out of the bandsaw and in your hands.



Post Mounting Bracket Adjustment Slots.

The bracket mounting screws are inserted through the slots and are threaded into the base casting. The slots allow left/right movement of the bracket, but also allow the bracket to rotate. Therefore two things must be observed when adjusting the bracket.

- 1) Centering the blade on either the center of a single bearing or the groove between a dual bearing setup.(actually we are centering the bearing to the blade).
- 2) The post (installed in the bracket) being parallel to the back of the blade. This parallelism is verified by checking for the blade centered(to the bearing(s) with the post moved both at a low position and near the top. The backup bearing should not touch the blade, but needs to be close to enable seeing this. The next adjustment will set the blade clearance of the bearing at both top and bottom, but if clearance is excessive at either the top or bottom position, you may need to adjust that then come back and complete this adjustment.



- 3) The next adjustment is where difficulty ensues! The next two pix illustrate what is inside the bracket, and how the adjustments position the sliding position of the post as it is raised/lowered.

Outer Side Of Post Slot

Notice the two raised surfaces indicated by the two arrows. The post slides on these two surfaces.

Inner Side Of Post Slot

Notice the double arrows again. The post would slide on those two surfaces, but if the anti-slop screw is present (see the single arrow), the post rides against it.

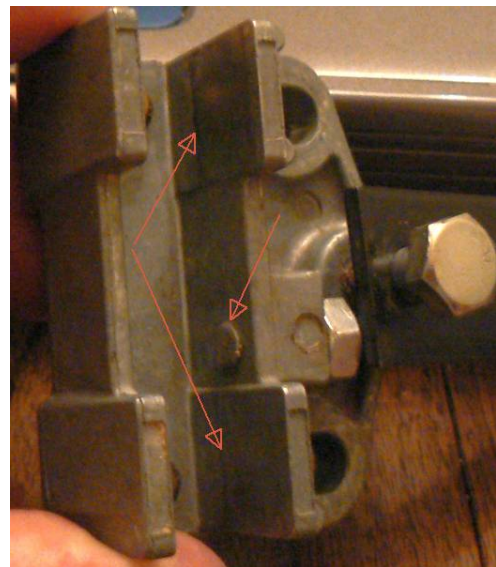
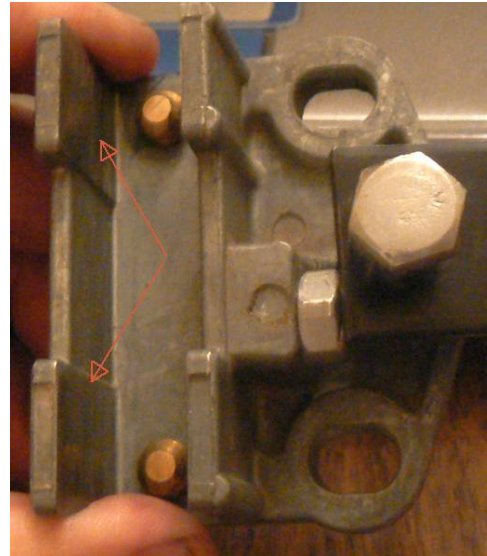
Notice the two brass colored screws. They are to be adjusted next. The tension spring is rotated away from the slot in these pix, but normally it is positioned across the post slot. The two brass screws are adjusted to position the post in the slot so that when the post is raised or lowered, the post (and attached backup bearing) remain the same distance from the backside of the blade. Thus the backside of the post presses against the lock spring, and the front surface of the post rests on the two brass screws.

The tricky part is to maintain no front to rear slop when adjusting the brass screws. If one is backed out 1/4 turn, the other must also be turned in 1/4 turn.

The adjustments are checked by observing the same distance from the back of the blade to the backup bearing(s). This should be checked with the lock set. It may become necessary to readjust the tension on the spring during this.

All adjustments should be made very gradually (no more than 1/4 turn). The jam nuts must be loosened and snugged as each adjustment is made(loosen nut, adjust screw, snug nut).

To increase the clearance at the top, back the lower screw out, and run the top screw in.

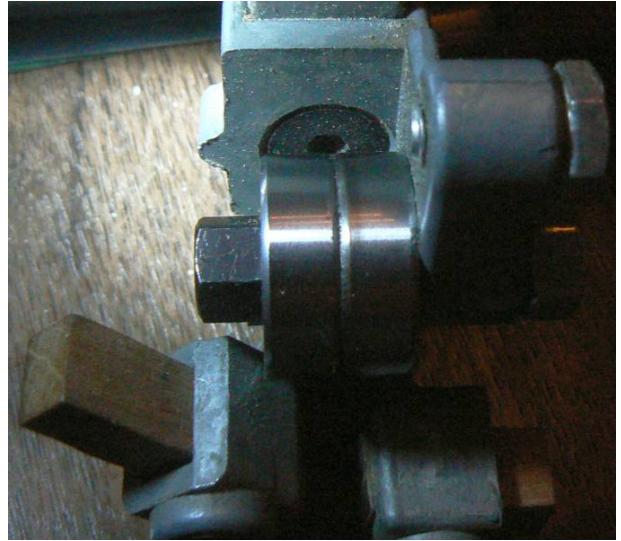


Realize all the movement of the two screws affects the blade to bearing clearance at both the top and bottom positions of the post. You are 'tilting' the post.

As a side note, this picture shows the screw that attaches the two parts of the post to each other.

I would be a good idea to go back to the beginning and verify all adjustments are still correct. As with the lower bearing adjustments, I recommend more than 'normal' tension on the blade to again ensure the blade is tangent between both the upper and the lower wheel.

Table to blade and guide to blade adjustments are beyond the intended scope of this thread, but are no less important nor less necessary than those included.



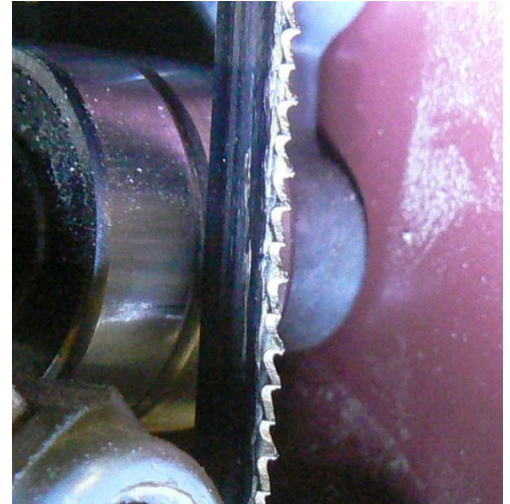
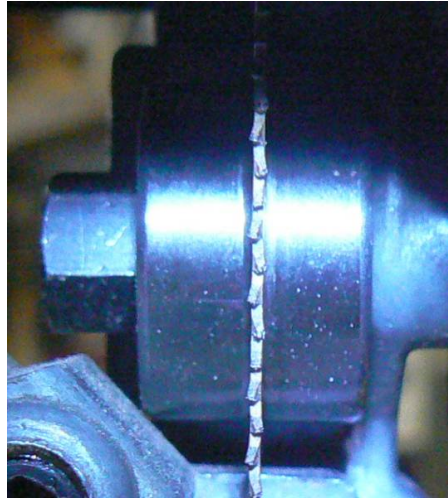
The bearing adjustment is difficult to get right. Tension is affected. Post angle is affected, bearing clearance is affected. All screw adjustments interact. Careful thought re what to tweak and in what combination and in what amount and on and on. To get the bearing to move away from the back of the blade, requires adjusting the upper and lower screws the **same** amount and direction and readjusting the anti-slop screw the opposing direction. Then locking them with the lock nut without disturbing the setting just made. If the blade just kisses (does not deflect the blade) the bearing at top and bottom and in between, you got it pretty good and probably is best left alone. Keep in mind a very small adjustment is needed to create a very small clearance.

Upper Backup Bearing After Adjustments

These pictures show the position of the backup bearings relative to the back of the blade when adjustments are completed.

The first two show the bearing with the post raised almost to the top limit.

*Upper Position Blade
Centered And
Clearance*



These two show the bearing with the post lowered almost to the table.

*Lower Position Blade
Centered And
Clearance*

The back of the blades are not perfectly straight. This one brushes against the bearings a couple of places around the blade.

