

Complete Tuning Process for APA Dual Cam Bows

Updated 2024



Check the Specifications of the Bow

Make Sure the Bow is set to Maximum Poundage first. If not, tighten the limb bolts all the way in and back them out one quarter turn! Then take a tape measure and measure the axle to axle length of the bow and the brace height. This will give you a preliminary indication to the tuning and condition of the bow.

The Axle to Axle is the most important measurement as it will indicate whether or not your:

- Draw Length is within spec
- The Bow poundage is too high or low
- The Cams are not Positioned Properly.

This preliminary check is important, especially if this purchased bow has been pre owned! APA bows are true dual cam bows and their tuning is different than all the other binary cam bows.

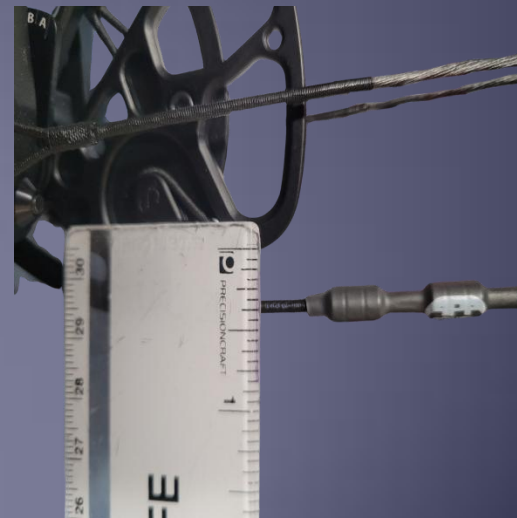
Proper Cam Positions at Rest

First thing is to check the position of the cables relative to the cam.

There are 2 ways to check if your cams are positioned correctly when the bow is at rest:

- The cable should run between the silver reference marks or the machined hole in the cam.
- If the cam does not have a cable indicator, **the measurement from the lobe of the cam to the string should be $\frac{3}{8}$."** That would position the cam correctly!

To correct your cam position you need to adjust the out of spec cam by either putting a twist or removing a twist from that cable.



Use the APA Cam Lock Pin to Adjust Cables

APA's innovative Cam Lock allows the archer to replace the cables or string, make adjustments, install accessories and tune their bow without the need of a standard bow press. To use, simply apply a little pressure to the string or cables to slightly rotate the cam, insert the pin into one of the multiple cam lock holes located on the perimeter of the cam. No extra tools required, a stainless steel pin conveniently stored on the bow for easy access. You Can recheck timing and make adjustments until you get the timing correct.

. **Bows with Variable Yolk Technology should be adjusted from the "Yolk Cable End"** instead of the "Single Loop End," to prevent the cable from knotting up as shown in the lower picture. If your bow has the Micro tune, you can fine tune the cam timing using that feature.



APA Bows with Served Yolk Cables

The older APA Bows that have Served or Static Yolk Cables require the Cam Lean to be corrected first before further tuning is done to the bow. The 2022 models and newer, have the "Variable Yolk Technology" which means the yolks automatically settle exactly where the bow needs them to be to eliminate any "Cam Lean." Therefore, adjustment for Cam Lean on both the Top and Bottom Cams are not necessary.

If your bow has the newer Cable Technology, you can skip the section "Removing Cam Lean" and move on to the next step describing your arrow rest set up.

Otherwise, follow the procedure for correcting Cam Lean.



Variable Yolk
Technology

Correcting Cam Lean with Static Yolk Cables – Top Cam

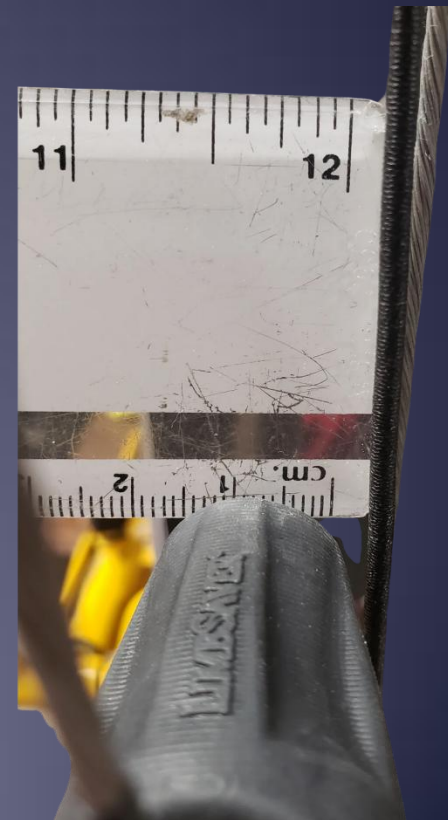
To correct top cam lean on a right hand bow, use a straight edge against the Cam Module. The straight edge should run parallel to the bowstring. If the Straight edge is pointing away from the string (the gap getting wider), your cam is leaning to the left and you need to twist the left side yolk cable (ie. the side the ruler is on) or untwist the other side, depending on the number of twists in those cables. It would be the Right Side Yolk Cable from the Shooters Perspective. You would do the opposite for a left hand bow. Note: When twisting or untwisting the yolk cables, look at the cables first to see how many twists they have. You do not want to over twist a cable or untwist a cable so there are little to no twists left.



Correcting Cam Lean with Static Yolk Cables – Bottom Cam

IMPORTANT! When looking up from the bottom cam, make sure you have clearance between the lower cable and the rubber stopper. "On a Right Hand Bow", if it looks like the bottom cable is going to touch the rubber stopper when you draw the bow, then put twists on the right hand bottom yolk cable or take twists out of the left hand side. That again is looking from the shooters perspective. You just have to make sure that the cable just clears the Stopper. Do the opposite on a Left Hand Bow. You then check it with a straight edge like you did with the top cam.

This adjustment should be enough to remove any cam lean from the bottom cam.



Rest Installation - Nock Point Alignment Zone

The newer APA Bows that have their “Variable Yolk Technology” (floating yolk cables), do not require cam lean correction. Once the cam lean is checked and corrected, you need to install and set up your arrow rest. APA’s Nock Point Alignment Zone allows you to correctly align the vertical positioning of the arrow’s nock point. Simply look at the bow from a side view and adjust your arrow rest/nock in parallel to the machined lines on the riser and your nock point is set, no bow square required.

The APA Twister rest has been designed so the launcher cradle is correctly positioned with the “Nock Alignment Zone”. It is not vertically adjustable. All you have to do is make sure the arrow is level and the nocking point is 90 degrees to the string.



CENTRE SHOT INDICATOR

APA's new Center Shot Indicator makes setting up a bow easier than ever. Simply remove your cam lock pin from the tool center, insert into the precision drilled hole on the riser above the arrow, adjust your arrow rest left or right to align your arrow with the laser etched indicator line and you are set. **The centre shot indicator is directional and has to be positioned the correct way to the riser (painted end or etched arrow)**



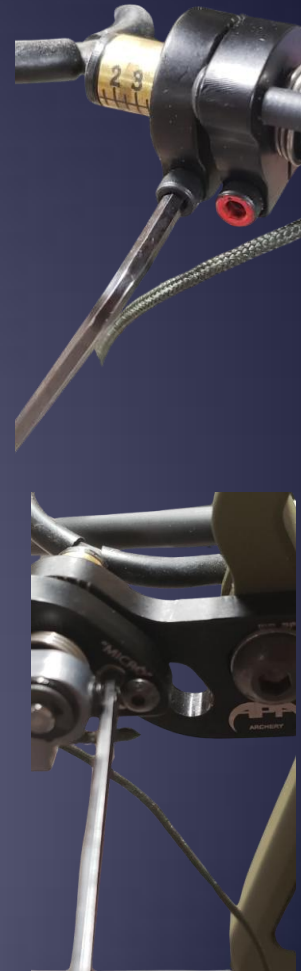
Older APA Dual Cam Bows having the MX Cam (no RDS) have a centre shot approximately 13/16" away from the vertical riser. You can use a tape measure to set the centre shot. Simply put the tape against the vertical riser and measure out to the centre of the arrow shaft. Adjust the arrow rest accordingly. **The Centre Shot on APA Bows w/static yolks can be 5/8" to 11/16" away from the vertical riser.** You should always check for fletching clearance with your roller guard and buss cable. **The newer bows with the "floating yolk cables" have a centre shot at about 3/4."**



Adjusting APA Twister 360 Rest to get Centre Shot

This procedure is for the APA Twister Drop Away Rests. For all other rests, refer to the Manufacturer's instructions! First, loosen the black hex screw on the main bracket of the arrow rest. **Do not touch the Red Screw!** Adjust the windage of the rest by turning the "Silver Adjustment Screw" on the side of the rest, until Centre Shot is achieved. You may have to press down on the spring in order to reach the screw head.

IMPORTANT: Remember to retighten the "main bracket screw" when finished.



APA Twister 360 Rest – Attaching Rest Cord and Timing the Rest

APA's all new Torque-Free Limb Anchor gives you the perfect place to securely tie in your limb driven drop away rest, to eliminate side to side torque on your limb forks for increased accuracy. When installing the Twister 360 rest cord, **the supplied spring should be positioned approximately 2 inches below the limb**. The timing of the rest should be adjusted so **the tension of the rest cord should just stretch the spring so there is a slight gap between the coils**. If the cord should stretch, the spring would compress, keeping the rest in time. **Do not over tighten the screw at the rest body!** Premature wear on the cord will result. The coil spring is there to reduce the stress on the cord.

Note: If you begin to notice wear on your fletching or marks on your rest, check the rest cord first. The cord needs to be re adjusted. It is unlikely that your bow has gone out of tune.



Some Manufacturers Rests are not ideal for APA Bows

Choose your arrow rest wisely!

The APA Bow Riser is Narrow from Front to Back. Some Rests have a longer attachment arm and when set so the launcher is close to the back of the riser shelf (where it should be), the rest bracket extends in front of the riser, as shown in this picture. The tiny set screw that bites down on the riser to secure the rest and keep it level and not allowing it to pivot cannot be used. With a Limb Driven or Cable Driven Rest, this becomes a problem because repetitive tension that is applied to the rest cord will eventually tug on the back of the rest and it will usually work its way from level over time. The rest will have to be continuously readjusted.



Problem with Arrow Rest Sitting too far Back

When these, rests are mounted according to the manufacturers instructions, as shown in this picture, the rest will sit too far back from the riser.

Two problems will arise:

- Firstly, when your bow holding hand is ahead of the arrow launcher, any slight bow hand torque will be magnified and accuracy and arrow grouping will suffer!
- Secondly, if your bow has a shorter brace height, like the King Cobra DG, the arrow fletching will get caught up in the vertical arrow launcher.

It is Highly Recommended that you use the APA Designed Arrow Rests or search one with a Short Mounting Arm Bracket. ie (no longer than 1½”).



Preliminary Tuning Check List Review

Lets take a look at what you have done so far!

1. Check and correct the specifications of the bow
2. Check and correct Cam Positioning while the bow is at rest
3. Checking and correcting cam lean on both cams
4. Installing and adjusting the arrow rest according to APA 's requirements

The next Step in the Process is to check and adjust the cam timing.

Checking and Correcting Cam Timing

A Draw Board cannot be used to check and correct the Cam Timing on an APA Dual Cam Bow. The dual cams are the same size and are mirror images of each other. The grip isn't centered, so when you use a draw board, the timing cannot be accurately set, because the bottom cam is closer to the centre of the grip than the top cam. You have to draw your bow back with a release and an arrow nocked, or alternatively, a safe drawing device. The Binary or Hybrid Cam Systems are different because they have two different diameter cams that are slaved together that allow a Draw Board to be used for accurately timing their cams.

Top Cam Timing – APA Bows without RDS Cams

First, set the draw length to the shooter. Reduce the draw weight of the bow 4 full turns. This will make it easier to draw the bow back, since a draw board will not give you a true indication!

IMPORTANT: Draw the bow back with an arrow and release, or a safe drawing device. If it is difficult to see the cable, relative to the draw module groove, You should be able to see or feel whether or not your cams are out of time. The both cams should drop into the draw valley at the same time.

The top picture is of the top cam at full draw. See how the cable is lying flat in the module groove. Both cams should be the same in order for the bow to be properly in time.



APA Micro Tune

APA's patented adjustable Micro Tune Cable Guide allows for precise tuning / cam timing of your bow right at your fingertips.

Remember, the Micro Tune has to be set to its neutral position as shown in the picture.

That means it is pre-set so there is equal adjustment in both directions, depending on which way you have to adjust it.

Important: The Micro Tune must be checked and positioned correctly before you proceed in timing the cams on your bow.



Bottom Cam Timing – APA Bows without RDS Cams

This picture is of the bottom cam at full draw. Notice the gap between the module groove and the buss cable. In order to correct the problem, the buss cable that attaches to the top cam is shorter than the bottom cable, (ie: it has more twists in it). You have to remove twists from this cable or add twists to the opposite buss cable.

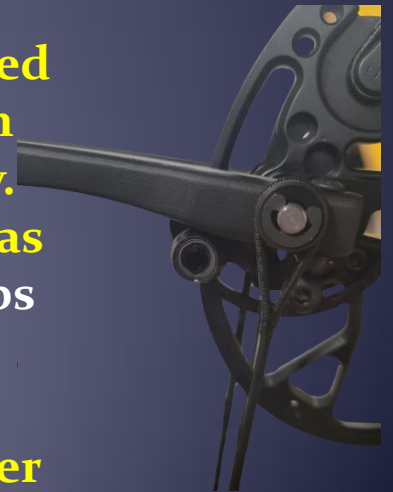
Note: When twisting or untwisting the cables, look at the cables first to see how many twists they have. **You do not want to over twist a cable or remove twists from a cable that is not twisted equally to the other.** Also, remember that the cables are mostly served and a **1/2 twist or so may be all you would need to get it close.**

Sometimes you may have to twist the yolk cables to fine tune the cam timing. Make sure you twist each side equally, as this process is on a bow without an RDS and has Static Yolk Cables.



APA Bows w/RDS -Timing Cams Made Easy

If your Bow has an RDS system on the cams, timing even becomes easier. **With the RDS backed all the way off, draw the bowstring to full draw using a draw board until one of the buss cables is laying flat in the module groove as shown in the top Picture. I prefer to set the top cam first. While the bow is still drawn, adjust the RDS, so the limb stop just touches the underside of the limb as seen in the lower picture. Tighten the RDS screw and take the bow out from the draw board. There are hatch marks (tic marks) machined into the RDS. Count the number of these tic marks, starting from the “Long End” backwards to the centre of the RDS locking screw. Then adjust the other (bottom) RDS to the same reference mark as the first one. Providing all other settings are correct and the limbs are turned out equally, the timing should be very close. You can fine tune the cam timing by cable twists or by using the micro tune . You can adjust the RDS of each cam either a tic mark shorter or longer, depending upon which feels better to you at full draw.**



APA Draw Length Module & Corresponding RDS Limb Stop Setting

New for 2024! The current Model Bows have a new RDS, which has letters marked from “A to S,” instead of the hatch or “tic marks.” This makes it much easier when setting your draw length and matching the position of the cams to significantly reduce the effort required in order to time the cams. **Each new bow has a Sticker on the Bottom Limb which shows the Draw Module and corresponding RDS setting.** Position the RDS so the letter is centred with the centre of the screw head of the RDS.

Again, this is a good starting point and you can adjust this slightly to your feel and liking.



Paper Test your Bow

• **Note:** When you shoot your bow through paper and you get a right or left tear that is one inch or more, or the tear does not improve with adjustments, it is likely you are:

- torquing the bow when you shoot,
- you have arrow fletching contact with the arrow rest or the buss cables
- Your arrow spine may also be incorrect.

Make sure you are shooting correctly spined arrows, do not have any fletching contact and shoot with a relaxed bow hand. Do not punch the trigger. Correct these flaws before you begin tuning your bow!

Correcting a Nock Left Tear from a Right Hand Bow

This picture shows a |”nock left” tear which means there is some fishtailing of the arrow and the fletching is tearing to the left of the point. **In order to correct this we have to move the arrow rest to the right (for a right hand bow). A very small adjustment (ie: 1/16”)** should eliminate this. On a bow with static yolk cables, you could also put a twist or so to the upper Left Hand Side Yolk cable. However, It is better to move the rest slightly than trying to yolk tune, since this may put the cams out of time again!

The bows that have the variable yolk technology cannot be yolk tuned! In my experience, these tears should be minimal to non-existent, especially if your bow has the “Centre Shot Indicator” feature as well!”.

Note: for a nock right tear you would do the opposite!



Correcting a Nock Low Tear from a Right Hand Bow

This picture represents a nock low tear. The arrow is porpoising out of the bow. The point is entering the paper and the fletching is tearing the paper underneath or below the point. This tear is caused when your bottom cam is slightly “slow” or if the spine of your arrow is too weak for the bow. This tear can be corrected by:

- ensuring you are shooting a correctly spined arrow
- tighten the tension on the microtune
- add a twist to the bottom buss cable or taking a twist from the top



For a nock high tear you would do the exact opposite!

A vertical tear should be fairly minimal on bows when the RDS on each cam is pre set equally. If you have a “nock high or low tear that doesn’t want to correct itself, you must check the Nocking Point and arrow for level. **Do not raise or lower the rest! You must adjust the nocking point by twisting it the right way along the centre serving.**

Bow is Paper Tuned

When all is adjusted, the bow will be tuned and you should have a perfect paper tear, as shown in this picture.

Remember:

- Make sure you do not have any fletching contact.
- Shoot with a relaxed bow hand. Do not punch the Trigger.

You should correct these flaws before you begin tuning!

With regard to Fixed Blade Broadheads, my experience has proven many times over that you do not have to do any further tuning!

In this picture, a broadhead was shot at 20 yards. We also got the same results at 30 and 40 yards. The closer you can get the broadheads to your field points is based upon your shooting ability!

