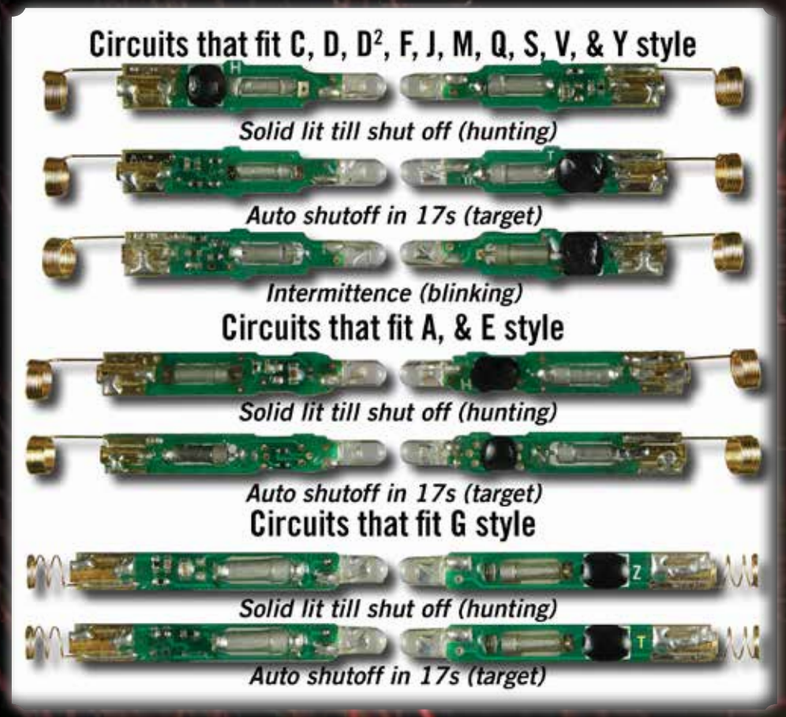

Firenock®
The Most Advanced Lighted Nock®
2017
Aerovane® 3
Aerovane® II
Your success in 2016
continues to ensure
our 2017 success

FIRENOCK PROVEN ADVANTAGE

New for 2017 in the Firenock Lighted Nock Line.

Firenock lighted nock is the most versatile and most advanced lighted nock. There are currently 13 styles of Firenock lighted nock available to fit most of the arrows and to replace most of the nocks on the market -- even the modified Easton deep 6/4mm nock. For 2017, we made some changes to the Firenock nock styles. "0" is no longer needed as the new and improved G nock now utilizes our patented oval rip compression technology -- it will fit 0.165" to 0.1665" ID shafts. The old C nock was also replaced so that nearly all Firenock Crossbow nocks can utilize the same end cap tool (besides the "Y," which is to fit 0.280-0285" ID shafts) to lessen the possible error from pro shops that handle multiple nock styles. Finally, for the target shooter, G and A styles are available in two more colors each, smoke and wood.



Field Replaceable Firenocks

The Firenock polycarbonate nocks are not only highly precise and highly light transmission-able, but also boast a patented slide and lock system. The replacement process is very simple. When a nock becomes worn, a new nock can be easily replaced by removing the circuit and reinserting it into a new one. To exemplify their great interchangeability, note this: all Firenock nock styles -- C, D, D², F, J, M, Q, S, V and Y; A & E; G -- are compatible with all Firenock circuits -- H,T and I; N & K; Z & 0 circuits respectively. Further, not only does the Firenock system allow for interchangeability in the field nock and the circuit system, but the batteries can also be changed according to your situation (i.e. your hunting system "H" can be field changed to an intermittent system "I.").

And of course, for those who don't want to shoot a lighted nock but want the advanced and extreme design of Firenock polycarbonate nocks, the nocks are available without the electronics.

EZcoil System

To go along with the Extreme Shock End Caps perfectly, the Firenock team redesigned the battery wire connector: the EZcoil. Before, there was a struggle to mate the battery to the circuit. Now, with the EZcoil system, you only need to push the battery through the coil with a counterclockwise motion. There is no need to bend, twist or thread the wire anymore.

Serious About Crossbows

As mentioned in the introduction, for 2017, a new nock, "C," has been added to the Firenock line up. Based on the J nock and with a nock throat to finally fit 0.125" servings like that present on BowTech crossbows, Firenock are now able to fit every available crossbow bolt system on the market that conform to about 0.350" OD. Firenock crossbow nocks use either the compression fit system (C, D, D², J, Q, V, & Y) or the dual O-ring system (F & M) to fit today's shafts. Both fitting systems allow you to pull the nock out of the shaft and replace the nock without gluing, allowing you to tune your bolt easily by simply turning the nock.

Ultra-Mini "G" Switch

Accidental activation is a thing of the past due to the industry's first ever commercial ultra-mini "G" switch (UMGS) developed by Firenock. Proudly made in the USA, the UMGS is ultra sonically sealed and gold plated for extra reliability. Built into our Firenock Lighted nock system to both sense the direction and the speed of your arrow, you can have better control over your arrow than ever before. Our UMGS gives the Firenock lighted system a failure rate of no less than 30,000 cycles, or in other words, truly ultimate performance.

Extreme Practice Weight

Firenock created the Extreme Practice Matched Weight Pack for practicing purposes. The Practice weight is a dupe of the Firenock Lighted nock. This means, as the name implies, the weight and distribution of that weight are identical to the Firenock Lighted nock, so you do not need to re-tune your bow. Extreme Matched Practice Weight systems also include extreme shock end caps and green Firenock self-contained nocks (for ease of identification.).

Extreme Shock End Caps

All styles of lighted Firenocks are fitted with Extreme Shock End Caps. The End Caps have become standard during use of our lighted systems. After years of testing, the Extreme Shock End Caps are truly the best insurance policy you can have for both normal arrows and crossbow arrows for any speed and for any term.

Firenock Lighted Nocks Packs:

30 ***Firenock 3 pack***
A3h-B, A3h-G, A3h-R, C3h-G, C3h-R, D3h-i, D3h-R, D²3i-R, D²3h-R, E3h-G, E3h-R, F3h-G, F3h-R, G3h-G, G3h-R, J3i-R, J3h-R, J3h-G, M3h-R, M3h-G, S3h-B, S3h-G, S3h-R, Q3i-R, Q3h-R, Q3h-G, V3h-G, V3h-R, Y3h-G, and Y3h-R

9 ***Firenock 6 pack***
A6ht-R, D6ht-R, D²6ht-R, E6ht-R, G6ht-R, J6ht-R, Q6ht-R, S6ht-R, & S6t-MC

3 ***Battery Pack***
BR, BL, & BU

42 ***Circuits Pack***
HB, HC, HG, HO, HR, HY, IB, IC, IG, IO, IR, IY, KB, KC, KG, KO, KR, KY, NB, NC, NG, NO, NR, NY, TB, TC, TG, TO, TR, TY, ZB, ZC, ZG, ZO, ZR, ZY, 0B, 0C, 0G, 0O, 0R, & 0Y

Nock Pack
AB, AC, AG, AR, AY, AS, AW, CC, CG, CR, DC, DG, DR, D²C, D²G, D²R, FC, FG, FR, GC, GG, GR, GS, GW, HC, HG, HR, JC, JG, JR, MC, MG, MR, QC, QG, QR, SB, SC, SG, SO, SP, SR, SS, SY, SW, VC, VG, VR, YC, YG, & YR

51 ***Extreme Shock End Cap Pack***
XA, XE, XF, XG, XS, & XY

7 ***Extreme Match Weight Pack***
PAx, PCx, PDx, PD²x, PEx, PFx, PGx, PJx, PMx, PQx, PSx, PVx, & PYx

13 ***End Cap O-ring Replacement Pack***
OAx, OEx, OFx, OGx, OSx, & OYx

6

Conclusion

With all of the above features, we at Firenock believe that we have the most advanced lighted nock system in the world. Our lighted nocks are the most dependable and versatile, the lightest and brightest, and we have the widest choice of colors available on the market today. If you are looking for the finest quality lighted nocks, then you can't afford not to use Firenock lighted nocks for your arrows. We are committed to develop and provide our customers with the very best equipment money can buy.

Batteries

Since the first version, field changeable batteries have been one of the most important and desirable features about Firenock lighted nocks. Our main goal about this changeability was to ensure that you could can change your battery in the field without a tool, and that has and we promise that this will stay true.

We offer three styles of batteries (BR, BL, BU). Our standard "BR" battery is the most powerful; it is second to none. However, due to that power, the BR battery has a relatively short shelf life, so we only offer BR batteries from August to December. Other alternatives to the "BR" batteries and their limited shelf life are the "BL" and "BU" batteries latter mentioned. With the BL battery boasting three years of shelf life and the BU boasting seven after the year of manufacture, there is an exchange of power. The BU is the most stable battery, but only has about 85% of the power of the BL battery, which only has about 60% of the power of the BR battery.

To summarize why we at Firenock believe that we have offered a complete power solution for archers using Firenock lighted nock, below is a list of recommended uses for each of the types of batteries available to all our customers:.

- "BR" is the ideal single fall season battery, it can handle temperatures as low as -17°F, but no higher than +80°F and with a shelf life of about 8 - 12 months.
- "BL" is the ideal all season battery that can handle reasonably low to the highest hunting temperatures in US.
- "BU" is the ultimate back up battery. You can keep it in your backpack, year after year and use it when you need it.

Again, although some of the Firenock's batteries have longer shelf life than one year, if you keep installing any battery on a Firenock circuit, the battery will be drained out in less than one year. That's why we recommend that battery should be removed and store it in its original case after one season. It is not recommended to store Firenock batteries in the refrigerator or freezer as the defrost process will cause condensation and this will damage the battery.

Product Code	BR	BL	BU
Name	Regular	Light	Ultra
Available in time of the year	Aug to Dec	year round	year round
Continuous lit time with (2014 Hunting circuit in red) Hrs at 65 F°	1008	504	240
Country of Origin	China	Korea	Japan
Failure Rate (%)	5%	2%	>0.1%
Highest Operating Temperature (F°/C°)	100/38	180/82	160/71
Initial Blast Rate (mA)	168	133	80
Initial LUX with 2012 Hunting circuits at 0" distance	4600	3220	2254
Lowest Operating Temperature (F°/C°)	-17/-27	-4/-20	-4/-20
Minimum Shelf Life (months) at 70° F with 70% humuduty	8	36	>84
O-ring Grove Location	middle	back	none
Operating Voltage (v)	3.3	3.1	3.0
Weight (grains)	9.00	8.75	9.25
Price for 3 with 3 pin O-rings	$10.95	$10.95	$15.95

WARRANTY

This service is only available in USA.

A no- hassle, no-questions-asked refresh/side-grade service is what we believe Firenock users prefer after the 30 days no-fault/unconditional exchange, refund period had ended.

LIFETIME REFRESH/UPGRADE/ SIDE-GRADE SERVICE

Firenock™ brand lighted nocks are eligible for refresh/side-grade while Firenock's Lightning Nock™ brand lighted nocks are eligible for upgrade. In other words, you can get the latest offer of Firenock circuits (any function and color) and new polycarbonate nock (any style) with a small service fee. This service is only valid when funds and a completed form (see below) are sent along with the lighted nock(s) and/or circuit(s). Note that, for this specific service, please do not send any accessories like O-rings and batteries. We cannot be responsible for anything that is not part of the refresh service. Additional accessories can be purchased along with the refresher service at list prices with no additional shipping and handling fee. For more details please visit http://www.firenock.com and click "Info Pages" then "Warranty." The Refresh/Upgrade/Side-grade Order Form can also be obtained there. This service is subject to change without notice and can be terminated at any time.

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AEROVANE® II New Spin in the Arrow Flight Revolution

Since 2008, Aerovane has become the go-to vane for target and archers hunters alike who demand ultimate quietness and ultimate wind performance. For 2017, due to multiple requests from our loyal customers, we have added two new colors to Aerovane III; Mint (a bight green) and Violet (purple).

"Aerovanes Are Not Vanes But Wings"

- Has a frontal design modeled after the only bird that flies with no sound -- the owl and its wings.
- Uses airfoil technology with continuous surface changes of both thickness and curvature to induce greater rotation than the high drag system that traditional "Helical" fletch utilizes (under Firenock testing conditions).
- Based off a true ultra-slim pyramid design, there is very little bending, flapping or fluttering due to structural integrity and material hardness.
- Using a wind channel and minimum delta wing surface vortex design, there is thus less drag and even better structural flexibility.

Note: Will function well with most rests currently on the market, but works best with worn out Whisker Biscuits arrow rest (due to a thicker frontal end to open bristles and thus allows vanes to pass with minimal drag).

Aerovane Fletching Procedure

To Fletch Aerovane, the following materials are needed:

- Aerovane(s)
- Arrow shaft(s)
- A precision index vane jig
- A bottle of 500 cP or higher viscosity super glue (e.g. Firenock Aerovane glue AG0600)
- 2 bottles, one large one small, of 100% pure Acetone
- Non-plastic or synthetic Q-tips
- A roll of paper towel

1. Thoroughly clean the surface of the shaft(s) by dipping the shaft(s) into and swirling the shaft(s) in the large bottle of 100% pure acetone. This will loosen all unwanted particles and dissolve all possible contaminates
2. Remove shaft(s) and wipe dry with clean paper towel(s). Let air dry also.
3. Insert the Aerovane into a vane clamp.
4. Dip one end of a Q-Tip into the small bottle of 100% acetone and wipe down the base of the vane from one end to the other.
5. Using the dry end of that same Q-Tip, wipe the vane from the same direction you chose above, again from one end to the other.
6. Apply a small bead of glue down the center length of the vane base.
7. Place the back end of the clamp just above the arrow, right against the inner wall of the jig.
8. Slowly lower the clamp onto the arrow until the magnets on the jig grab hold of the clamp.
9. Firmly push the clamp, holding down for no less than five seconds, and then let go to allow whatever allotted wait time to pass, depending on the type of glue you are using. (Firenock Aerovane Glue AG0600 setting time is ~9 seconds under Aerovane Jig pressure without use of any primer).
10. Open the clamp to free the vane form the clamp and rotate the vane away from the clamp while the clamp is still on the magnet.
11. With the vane away, slide the clamp away from the jig and away from the magnet at no less than 45 degree from the magnet.
12. Repeat step 5-15 for the next vane.

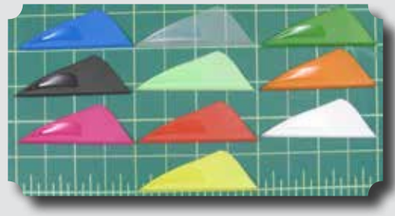
Aerovane II Specific Characteristics

- Works the best with arrow speed no less than 290 FPS when fletch straight due to a much higher down range speed than most common vanes.
- Has three different surface texturing zones for mini turbulence and for wide range of air speed.

Note: For best result, fletch with Aerovane jig

Physical Aspect of Aerovane II

- Weight: 0.42 gram / 6.48 grains
- Length: 50mm/1.967"
- Height: 14mm/0.55"

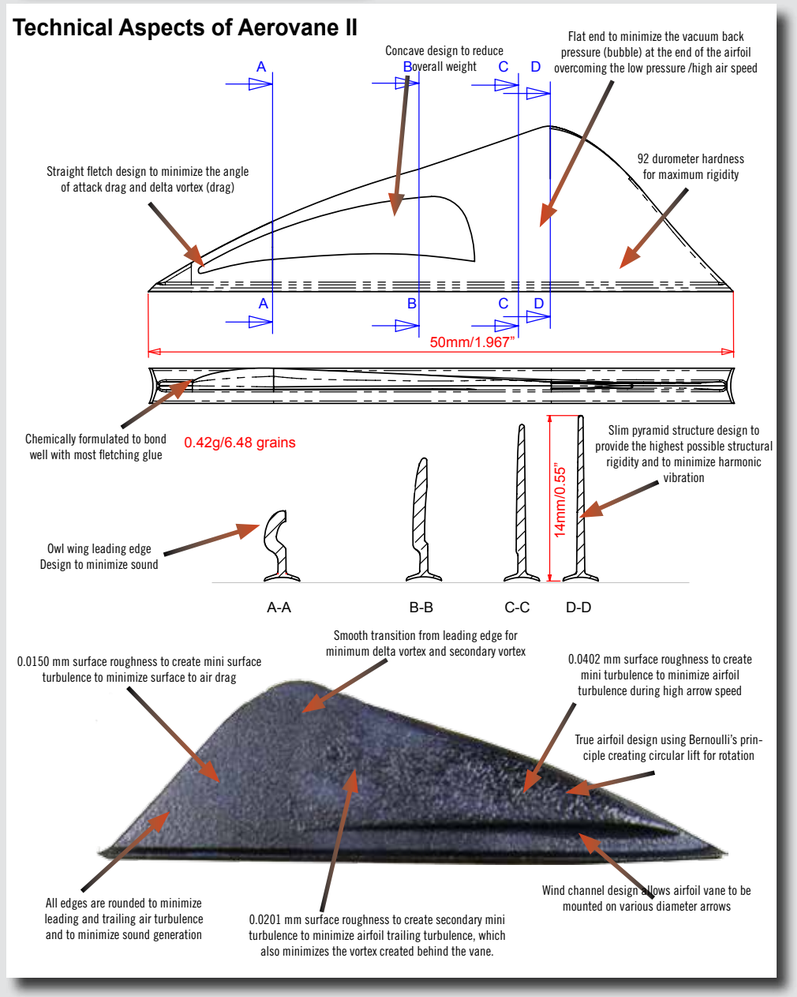


Can Aerovane II fly with broad-head?

Simply put, yes and no. Aerovane II are great for both target and broad-head flight. The inherited high spin design of Aerovane II actually stabilizes a broad-head tipped arrow faster than traditional vanes & feathers. With Aerovane II however, its ability to do that stabilizing can only be done on fixed blade broad-heads (as big as 1 3/8 inch cut) and all truly secure expandable-blade broad-heads. Any insecure expandable broad-heads are non-aerodynamic; when used with Aerovane II, these kinds of broad-heads will create drag and your arrow will fly sporadically (and in some cases the blades may even deploy due to the high speed caused by the Aerovane II).

The broad heads giving the great results are:

- Bloodsport Wraith™ Deepcut
- Hartcraft with Trophy I blade
- Muzzy Trocar
- NAP: Nightmare, Thunderhead Edge, Thunderhead Razor, Spitfire Edge, Braxe, and Spitfire Maxx
- QAD Excudo Swept blades
- Rage Extreme, hypodermic
- Slick Trick (100, 125)
- Smoke: Ramcat
- Trophy Ridge: Meat Seeker 3 blade



Flight Revolution Again AEROVANE® III

Aerovane III is designed with even more texture zones than Aerovane II and is uniquely designed to utilize the Aerodynamic Elasticity Memory (AEM) factor to overall generate sideways lift and consequently increase arrow spin.

To best explain the defining characteristics of the Aerovane III, we have organized its similarities and differences to the Aerovane II (AV2) below.

Similarities

- Both integrate the same proven vertical structure and same slim pyramid design to reduce wow and flutter when in flight.
- Both are made of 92 durometer hardness plastic.
- Both use the same aspect ratio of the delta wing frontal area to reduce sound in flight.
- Both, for the best results, should only be fletched with the Aerovane jig and Aerovane clamp due to their wide internal opening widths.
- Both, with 1.5 degree off set (which can be done with the Aerovane jig and clamp), can work on arrow as slow as 160 fps.

Differences

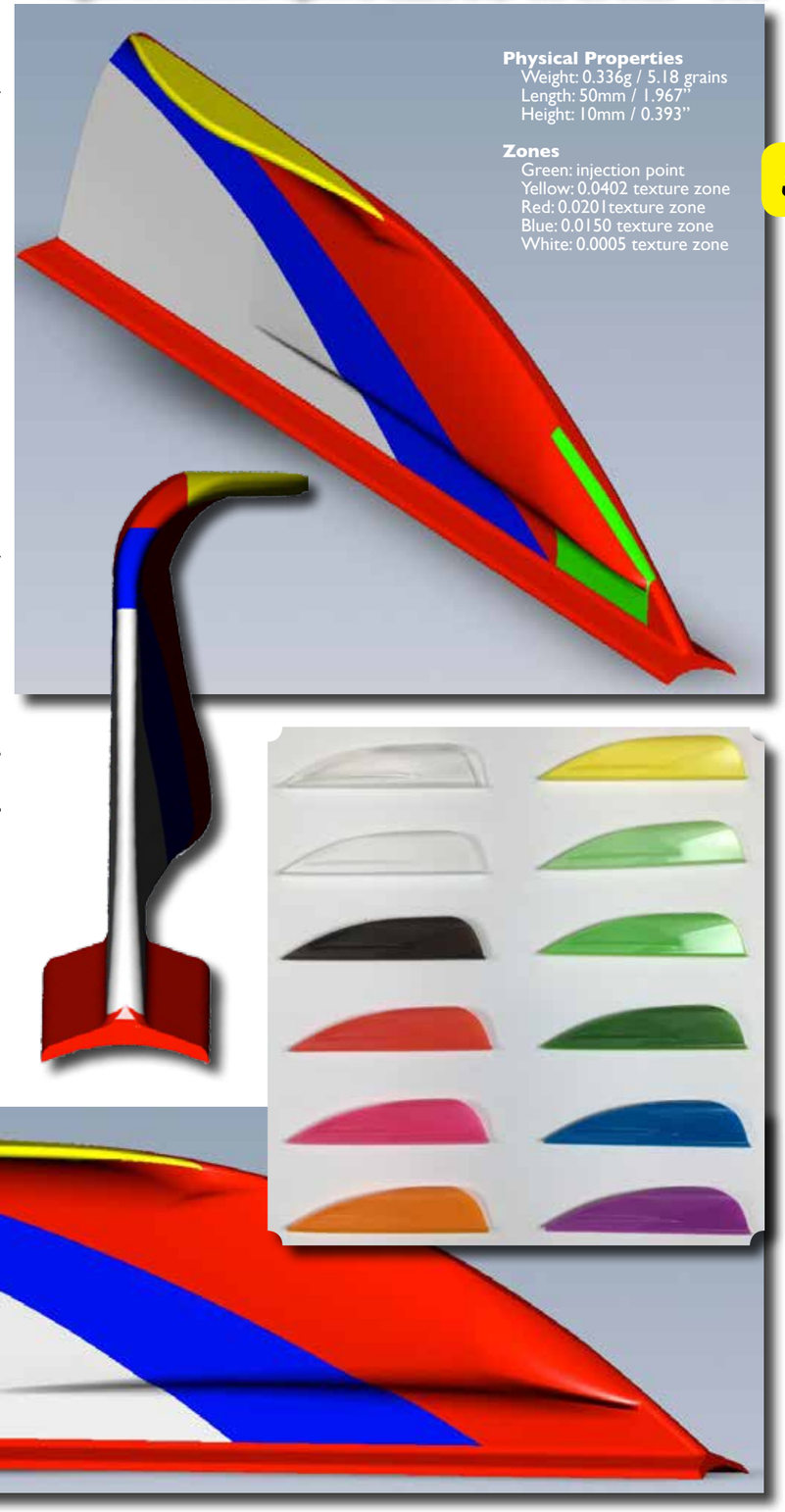
- AV3 is 29% shorter in height (10mm) than AV2.
- AV3 is 30% lighter (4.5 grains) than AV2.
- AV3 has integrates air flow base texture zoning compare to vertical texture zone.
- AV3 incorporates one more different texture zone than AV2, thus making it have a total of four texture zones.
- AV3 incorporates a special winglet to improve its aerodynamics and reduce induced drag.
- AV3 has a larger total airfoil surface area than AV2 to compensate for its shorter height and still have the same total lift and corresponding spin torque.
- AV3 has close to a 30% reduction in crosswind signature and thus has a better ability to cheat crosswinds. As a result of this ability, with AV3, one could expect to hit a target with no effect at 35 yards during a 35 mph crosswind with an archery projectile at 320fps compared to, with AV2 and with the same projectile, we can only guarantee no effect at 35 during a 25 mph crosswind.
- AV3 is available now in 12 colors versus AV2's ten.

The broad heads giving the best results are:

- Hartcraft with Trophy I blade
- Slick trick (100, 125)
- Smoke: Ramcat SBG 1"

[1]Firenock and its associates has built its own wind tunnel testing equipment for Aerovane testing.

To learn more about Aerovane III Installation, please visit http://www.Firenock.com



AEROVANE® JIG Jig, Accessories & Case

Firenock's High-Tech Aerovane Fletching Jig

The incredibly precise and accurate Aerovane Fletching Jig is a remarkable unit. It is CNC machined from high grade aluminum, brass and stainless steel, and built to the absolute closest tolerances. The Aerovane Jig is designed to work with most clamps available today and utilizes a standard magnetic holding system for both helical and straight fletching.

The accessories include: a 303 stainless steel clamp, a laser alignment module, a four-axis adjustable neck and an interchangeable chuck and hook system for all sizes of shafts. There are also many optional kits to provide even more capacity and capability to users of the Aerovane Jig. The Aerovane Jig's index is made of level two type three hard coated CNC aluminum mated with an ABEC#5 ceramic ball bearing for perfect alignment and smoothness. The matched support hook also features two ball bearings which allow the arrow to be fully supported for smooth operation. To even further secure the arrow shaft in place, the Aerovane Jig utilizes triple O-rings plus a special wedge design to ensure perfect arrow holding while fletching. The dual magnet design allows precision angle adjustment. Each magnet is supported by independent, 1mm per turn, stainless machine cup screws that can be tightened by hand for fine adjustment and then firmly locked down using an Allen key.

What's New for 2017?

We have added two new chucks to the Aerovane Jig system for 2017. The AVC315 is made specially for shafts like the Black Eagle PS23, the Challenger, and the Easton Fatboy, which have a 0.312-0.317" ID. For those shops who prefer to have only one jig to do most of their fletching (but facing arrow like the custom traditional arrow or the older glue on aluminum nock), we now offer the AVCNOC. The AVCNOC or the nock chuck has a 0.098" thick "V" grove to suite nearly any size shaft. Lastly, we have added a flange ball bearing to the base of the adjustable hook to allow for more vertical precision control and stability.

Compatibility With Most Available Clamps.

The Aerovane Jig is designed to be compatible with most magnetic base jig clamps on the market. Although Firenock does make an excellent 303 stainless precision Aerovane Clamp, we do not make any helical clamps specifically for the Aerovane Jig. Thus your investment in clamp(s) will not be wasted as they are fully compatible with the Aerovane Jig.

Laser Alignment Module

The Aerovane Laser Alignment Module was developed to make aligning and re-fletching a single vane simple and fool-proof during operation of the Aerovane Jig. The high precision lens optics system produces a fine, straight laser line of 0.25-0.55mm. To achieve perfect alignment, best precision and ease of use, the Aerovane laser module is designed to be mounted about 75 mm above the Aerovane Jig's chuck via the two holes with two screws, with which the laser line will span from the base of the clamp alignment line to the valley of the hook set at the top of the jig. With this optional laser module, perfect single vane re-fletching (at a 1/4 to a 1/16 of a degree accuracy) can be done via any vanes that is already installed on the arrow by one's eyes.

The key to precisely achieving perfect alignment is due to the perfect center line. To recognize your vane in perfect alignment, all you must be able to see is a crisp red laser line imposing on the fletched vane, passing right through the gap between the clamp and the shining on the arrow. To reiterate, this ultra thin laser will allow you to re-alignment an arrow to within a fourth of a degree (on a 360 degree scale) by copying the alignment of the next vane on the arrow to the jig's index.

As most customers may not shot Aerovane, our two by four way adjustable neck was created to adjust of angle and position of your vanes. By utilizing this adjustable neck, plus the single plane laser rotational adjustment spoken of above, we believe that our fletching jig system can and does handle any possible vane position and can and does copy it all to the index perfectly.

Index Choices

The Aerovane Jig generally comes with four indexes as its standard configuration, allowing one to fletch two and three vanes perfectly. The current four indexes provide 0°, 120°,180°, and 240°. Due to many customers inquiries about other index configurations to fletch four vanes and TAC arrows, we now offer an optional seven index system which has 0°, 60°, 90°, 120°, 180°, 240°, and 270,° allowing one to do many configurations with ease. Note that the previous configuration standard of four indexes will be phased out and the three indexes system will be the new standard configuration (at 0°, 120°, and 240°).

Interchangeable Chucks and Hooks

Our interchangeable chucks and hooks assist in obtaining the perfect arrow alignment on the Aerovane Jig. The interchangeable chuck sets are tapered to provide zero play. The ball bearing arrow support hooks,as their name indicts, ensures that "zero play" and are color-coded to match with the color-coded Firenock Extreme shock End Caps. Firenock now offers (pictures above mentioned from right to left): an adjustable chuck and adjustable hook for 0.115" to 0.667" ID shafts, and fixed chucks for 0.166", 0.204", 0.230", 0.244", 0.285", 0.300", and 0.315" ID shafts. The fixed size chucks are made of 303 stainless with 3 sets of O-rings for the perfect alignment and for the solid grabbing of arrows. With these characteristics and great speed and ease of use, our fixed chucks are perfect the production environment. Finally, for those who desire to use pin nocks or a non-removable nock chuck, Firenock fulfills your needs as well (pictured above, beginning just below the adjustable hook).

Some more about the PIN Chuck. The PIN Chuck was designed to provide a much better clamp force on pin nocks that are worn out. For those who prefer not to use an adjustable chuck and love the solid field of a fixed (specific) size insert, utilizing the PIN chuck is the best option for you.

All the hook sets have the ability to slide according to preset laser engraved markings to do offset fletching up to 1.5 degrees to the right. With this ability, you can offset without the need to adjust the magnets and be very precise (+/-1/4 of a degree due to eyeballing). It is truly a fantastic tool for those who shoot slower speed arrows and/or for those who use other vanes beside Aerovane.

Long Vane/Feather Adapter

The Long Vane/Feather Adapter is made, as the label describes, to allow the Aerovane Jig to handle longer vanes and feathers up to 5.25" in length, adding a total of 1.5" to the standard. Made of CNC aluminum and then silver anodized, this adapter comes with an O-ring, a stainless steel hook screw, and a brass washer as a kit. This adapter is backward compatible with nearly all versions of Aerovane Jig. This adapter will also function with every single version of the hook and chuck set which makes it a perfect companion accessory for shop that uses the Aerovane Jig for every fletching they perform, for enthusiast who can now own only 1 jig which can actually handle nearly all fletching needs for an archer shop/enthusiast.

Precision Water Level

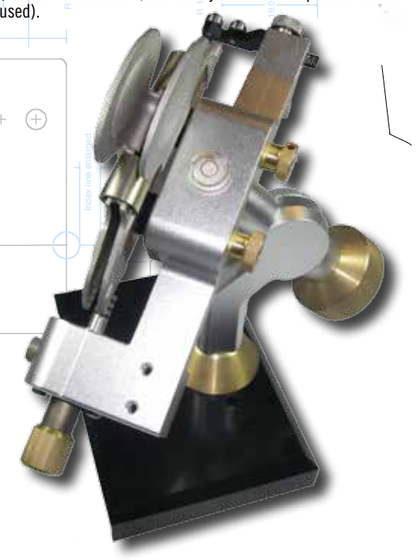
Our mission is to ensure perfect alignment in every possible way. To keep to this mission, we have added an optional precision water level to Aerovane Jig line to specifically work with the adjustable hook and chuck. It can be essential in the fletching process of arrows where uni-bushing is used as well. Extremely compact, the level is easy to use; it must simply be hooked onto the arrow from the side. Made of 6061-T6 aluminum and supported by four industrial ball bearings, it is ensured that the level will never stick to your shaft. This water level, together with the Aerovane Jig's built-in bull's-eye level makes impossible possible: perfect alignment unmatched by any on the market.

The Aerovane Clamp

There are many magnetic based clamps available for sale today, but almost none of them can satisfy today's demanding hunters like the Aerovane Clamp. Made of high precision die cast 303 stainless steel, machined for a straightness up to 0.001" the Aerovane Clamp has a 1/16" straight bar as well as an extra thick spring system built in for self-alignment capacities. For even more durable and efficient operation, we utilized zirconia ceramic ball bearings in the pivot points -- which also mean virtually rust free work. Made shorter to better fit today's popular shorter vanes, the Aerovane Clamp can still fletch vanes as long as 3.75". Perfectly straight fletching is easily and effortlessly be done with the Aerovane Clamp.

Complete Package

Firenock offers the Aerovane Jig in many packages. The ultimate set includes the Aerovane Jig itself, as well as the Aerovane Clamp, 7+1 sets of chuck and hook combinations, the four-axis fully adjustable neck, the base, Laser, precision water level, and long vane adapter. The enthusiast set (pictured below) included the body, neck, clamp and one hook and chuck set. And finally, for those on a budget and/or just want the bare essentials to, the bare body and one hook and chuck set is an under $150.00 investment (note that your own clamp must be used).



Aerovane Jig Carrying Case

To protect and keep your Aerovane Jog and all of its accessories in one place, we offer the Aerovane Jig Carrying Case. For those who want to travel light and/or are on the go, the Carrying Case can be separated into two bags to suit your needs. To carry only the most essential gear, we recommend taking the top half to ensure that, at to any destination, you are still be able to fletch their Aerovanes perfectly. Inside the case, there is also additional room for storing things such as Q-tips, extra vanes, and a small bottle of acetone (included in your purchase but can be purchased separately). For 2017, the fix chuck space now have 9 spaces to accommodate the 2 additional chuck that were newly introduced.

Aerovane Fletching Flask Set (Acetone safe)

We at Firenock believe that Acetone is the best medium to clean and prepare arrow shafts before fletching and re-fletching. Thus, for those who use Acetone as a cleaning agent, we offer the Firenock Aerovane Fletching Flask Set. Guaranteed as acetone safe, we offer flasks for purposes detailed in the list below. Furthermore, we ask you to note that AG0600 and AG0GEL are 100% acetone dis-solvable, so any arrows fletched with them can be cleaned best with Acetone.

Firenock Fletching Flask set consists of 3 flasks (1 x 125 ml and 2 x 500 ml):

- The 125 ml bottle is for dipping Q-tips in acetone to clean vane base just before applying AG0600 or AG0GEL.
- The 1st 500 ml is for dip cleaning of brand new arrow shaft before fletching.
- The 2nd 500 ml bottle is for dip cleaning of used shafts (i.e. shafts for re-fletching) which may have glue residue on them.

APS Arrow Preparation System

Development of APS

Today, in order to consistently build reliable arrow shafts, there are several preparation procedures that one must complete before continuing to installation and assembly. Usually, these preparation procedures include the use several different tools at different times -- a squaring tool for both sides of the arrow before and after fletching or a spinner to make sure your shaft is concentric, for example. With the Arrow Preparation System or APS, arrow shafts can be prepared in a both time efficient and space efficient manner. A 6-in-1 tool (nock end squaring tool, insert end squaring tool, fletched nock end squaring tool, broad-head spin check, outsert concentricity checker, and general spin checker), APS is truly engineered with our customers in mind.

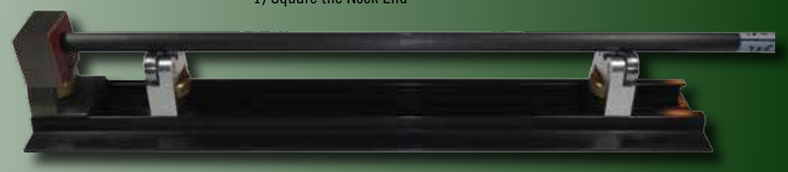
Special Features of the APS:

- *The Adjustable Roller Track Base System:* To guarantee that the APS can be used to square any length of arrow or type of fletching, a unique track base system for the APS was developed. Involving two to three rollers, the system allows the user to change their position by simply loosening their lock screws, moving left or right, and locking again.
- *Never Wear Grinding Surface:* Made out of a solid piece of aluminum that is had anodized for durability, the APS grinding block is different from any other arrow preparation tool because of its longevity. Recommended with the use of common 3M adhesive back sand paper (3-2/3" X 7-1/2" sheet is commonly available for less than $3.00 in a hardware store), once the attached piece is worn out, you can just replace it. Due to the machination of the grinding block, there is no need to ever worry about the straightness of the block, no matter after several uses.
- *Crowned Ball Bearings:* Now standard but originally designed for the PAPS (see pg. 10), crowned ball bearings provide your arrows a large surface area, allowing overall smooth operation under any type of pressure and eliminating any lateral movement such as that when squaring. For extra insurance, each ball bearing is sealed for durability and pre-fitted with mounting screws to give even more rigid support and eliminate play.

Extra Notes:

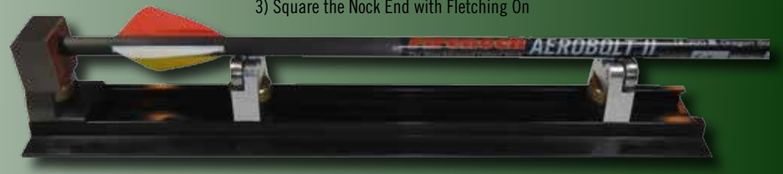
- For those who wish to mount your APS to your work bench or table, the track base has an easily identifiable center line marking for your convenience.
- We recommend 180 grid or higher adhesive back sand paper for squaring carbon and 220 grid adhesive back sand paper for inserts and/or aluminum/carbon mix shafts/arrows. Also note that due to the filing nature of some aluminum shafts, it is recommended to change the sand paper frequently.
- U.S. Patent: 8,608,531 and licensed under U.S. Patent 7,013,772

1) Square the Nock End

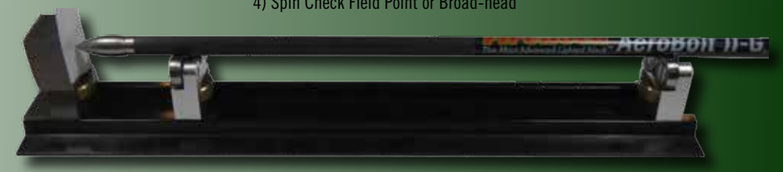


2) Square the Insert End

3) Square the Nock End with Fletching On

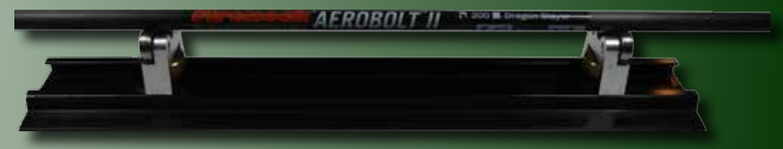


4) Spin Check Field Point or Broad-head



5) Concentricity Check for Outsert

6) Spine Check an Arrow



4 Support Option For Squaring Low Spine Arrows (< 400 spine)

AG0600, AGOGEL, AGUSSE AEROVANE® GLUE

To fletch vanes and build arrows with excellent results, Firenock offers three specially formulated adhesives (AG0600, AG0GEL and AGUSSE). As of 2017, all glue containers have its best-used date printed on the glue tube itself to ratify the age and quality of the glue within.

AG0600

Curing in nine seconds and ready for shooting in twelve, AG0600 is best used for fletching Aerovanes or other vanes with the use of the Firenock Aerovane Jig and the Aerovane Stainless Straight Clamp at room temperature. As a standard, AG0600 comes with the industrial grade, high precision Luer-Lock System, which allows you to dispense glue precisely and accurately. Custom built, the bottle is specifically designed for ease during both holding and squeezing, and the applicator (22 gauge stainless tip) is also removable and replaceable. See Notes for recommendations, tips, and warnings.

AGOGEL

AG0GEL is best for installing Firenock Extreme Shock End Caps, re-fletching Aerovanes or other vanes, and fletching offset configuration because AG0GEL is perfect for filling gaps and has a very quick dry time. AG0GEL is a single component cyanoacrylate instant super GEL glue, resulting in the bonds AGOGEL makes with most surfaces with gaps up to 0.2 mm in diameter happen in seconds. AG0GEL, like AG0600, contains no stabilizer and unlike AG0600 has a low viscosity (10,000 cP), so which its qualities allow it to be able to be applied in tricky places that require the glue not to flow (e.g. offset configuration, refletching as surface is not perfectly flat), its shelf life is only a year after manufacture. Additionally, AG0GEL requires no mixing or heating and can be used on a wide variety of materials. Each package comes with three 24-gauge plastic Lure-Lock applicator tips. See Notes for recommendations, tips, and warnings.

AGUSSE

AGUSSE is best for building Firenock AeroConcept arrows, which involve gluing AeroInserts, AeroOutserts, and Carbon Inner Tubes, as well as gluing other outserts, halfouts and carbon internal tubings. AGUSSE is a two part epoxy that will set in 90 minutes and will cure around 24-36 hours at room temperature. It can fill gaps up to 1mm and has the ability to flex even when cured. Note that AGUSSE has a long work time (~90 minutes to set at room temperature), for enough time to build your arrows. See notes for recommendations, tips, and warnings.

Notes

- AG0600 and AG0GEL have no stabilizers so they only have a shelf life of only one year after manufacture.
- All Aerovane Glue is 100% dissolvable in acetone (which is very readily available in local department stores.)
- All Aerovane Glue should be stored in their original containers, at room temperature, and out of direct sunlight.
- DO NOT use acetone to clean the Luer-Lock tip as acetone is an active debonder for the glue. Luer-Lock tips are one time use only.
- Extra Luer-Lock tips can be purchased separately in a 12 pack for US$9.95 at most authorized Firenock dealers or at http://shop.firenock.com.

PAPS Professional Arrow Preparation System

The Professional Arrow Preparation System (PAPS) by Firenock LLC is the ultimate arrow preparation tool. With PAPS, you can easily locate the initial bending point of the arrow without subjective judgment. Why is locating the bending point important to archers? If you can locate the bending point, you can use it as a reference point for your fletching so you can later know how your arrow will flex as it flies. Thus, you will be confident that your arrows will fly/behave the same, every time (as long as your set up is correct, of course). Optional accessories for the PAPS include: the vibration generating module, the digital gauge module and the laser module (see below for details). With the Professional Arrow Preparation System, which utilized US patent 9,046,452, you can easily identify the perfect location for your cock vane/feather and all your other vanes/feathers afterward.

Development of PAPS

A few years after the creation and release of the APS (see page eight), we at Firenock noticed that the requirements and specifications of arrows (e.g. AeroBolt II) have significantly increased, creating a need for an even better tool for acquiring data from each shaft quickly, accurately and effectively. As a result, the Professional Arrow Preparation System was created to not only be reliable like the APS, but also ultra-precise and able to produce ultra-high performance archery projectiles consistently. Like the Aerovane Jig, PAPS is built at the highest precision potential and offers a number of optional accessories.

Main Components of PAPS

The Tower (The First Bend Locater)

The large piece in the middle of the PAPS is the tower or First Bend/Spine Locater. To provide the perfect perpendicular contact points between this tower and your shaft, the spine locater consists of two custom ball bearings. With this design, PAPS can apply absolute pressure to the exact center of the shaft during test. The First Bend/Spine Locater also minimizes the horizontal pressure that may form when pressure is applied to the shaft while doing spine readings.

The Track

Proudly made in the USA, the APS track is a double track system, machined at 36 inches long and in a triple box design. Made of 7000 series aluminum and finished with type two level three hard anodizing, its extremely durable. And, to even further ensure its durability and stability, especially at its long length, the bottom of the track has six 3M stoppers installed. Along both sides of the track, there are easy-to-read measuring tapes (in both inches and centimeters). On one side of the track, there is a full length measurement (0-36"/0-914mm) provided while on the other side, it is center to each end measurements (18"-0-18"/457cm-0-457mm). These two different measure tapes are purposefully designed to simplify the process of measuring the length of the shaft as well as locating the middle point of the shaft. To ensure your PAPS and bench is indeed level and square, a water level is installed in the middle of the track.

The Supports With Custom Ball Bearings

In the present market, most spine locater tools use off-the-shelf ball bearings to support and to rotate the shaft. The issue however, is that the balls in the ball bearings have a straight edge, a fixed outer diameter and a fixed inner diameter (the hole). This typical design of ball bearings have two fundamental problems...

The first problem. The contact surface between off-the-shelf ball bearings and the shaft is often flat. Because of this, when the shaft bends, the shaft actually rests on that flat or straight edge, causing uneven pressure between the two. This issue worsens as the shaft is pressed harder, to the point where the ball bearings can even stop rotating -- restricting your ability to turn the shaft and overall deeming the ball bearings useless.

Second problem. The typical hole in the middle of a ball bearing means a screw is required to fasten it to a mount and/or jig. Because screws are typically not specifically designed and built for the system, the available tolerance of those screw will not provide and are not providing a perfect fit to the ball bearings.

Due to the above problems, Firenock custom-made new ball bearings. To solve the uneven pressure problem, our new ball bearings have a unique-angle-variable-crown outer edge. This also decreases overall pinch pressure on the shaft, or, in other words, the shaft can ride smoothly and freely all of the time, staying perpendicular to the center of the custom ball bearings even if the arrow shaft is strongly pressed and bent. To solve the second problem, the one about lack of screw tolerance, our bearings have a pre-built, ready to mount stud center system.

PAPS comes with two supports which have two custom ball bearings installed. This specification has not been seen in other spine finding tools. In general, most other brand spine finding tool are utilizing four hooks only, PAPS uses two custom ball bearings per support. With two ball bearing supports, you can feel how smooth and how sensitive the PAPS can really become while bending the shaft to locate the spine of your arrow.

Vibration Generator Module for PAPS

The vibration module is the first companion accessory for PAPS. With this accessory, your PAPS should be able to find the dynamic spine of the shaft automatically. In the past, fishing rod makers and experienced archers could use just their hands to find the highest and lowest spine of their shafts by simply rotating it. Now, with the vibration module, there is no more subjective feeling; this accessory will significantly improve one's accuracy in locating the dynamic spine of the arrow.

The vibration module is a high tech and high precision piece of equipment. Its case is precision CNC machined brass. Inside the metal case, it has a digital component to control the operation timer and the vibrating frequency of the micro-motor. The timer can even be specifically tuned according to the time period and energy requirement to locate the spine of the shaft. To operate the vibration module, you only need to press the red button located on the side the case. With that one push, a short burst of wave energy will be added to the system according to the pre-set time and power. With the help of that vibration burst, you can just roll the arrow shaft with your fingers and locate the highest spine (usually at the bottom) and the lowest spine (usually on the top) effortlessly. With the vibration module, you can be confident that each shaft is spined correctly, accurately, without subjective judgment, and it only take seconds, not minutes on each shaft. Lastly, the vibration module can also be used as the perfect weight for locating the first bend deflection finding.

Optional Accessories for PAPS

The Digital Gauge Module

The Digital Gauge Module gives you an accurate and reliable spine deflection reading of your shaft. The Digital Gauge Module consists of four components: the mounting arm, the digital gauge, the zero reference support, and brass weight.

Mounting Arm: Made of CNC machined Aluminum, it is securely mounted on the tower with two mounting screws equipped with O-ring retainers, while the Digital Gauge (see below) is mounted on the arm itself by a stainless tightening nut.

Digital Gauge: Inserted by the gauge tip through the top of the tower, it can measure the deflection of your arrow easily and reliably. One can also zero reference the Gauge by using the zero reference support (see below). Other details include:

- Versatile reading in inch (.0005") / metric (0.1mm) / fractions (1/64").
- Large digital LCD.
- Spring loaded plunger with up to 1" of travel.
- Standard plunger length of 1" with a 40mm GR5 titanium extension (permanently glue in for vibration resistance).
- Hold function to memorize a measurement and function that allow zeroing the display at any point.
- Powered by long lasting common 3V CR2032 batteries.
- Auto shut off after five minutes inactive operation

Zero Reference Support: To provide a reliable zero reference point before measurement, the Zero Reference Support is available. Accurately CNC machined Aluminum equipped with our custom angled ball bearings, your shaft is ensured to be perfectly flat and with zero deflection.

Brass Weight: The brass weight is accurately machined to provide constant weight to act on your shaft, thus allowing you to measure the deflection (stiffness) of different shafts easily and reliably. When the weight of the brass weight is acting on the middle of a shaft on the PAPS, it resembles a weight of 1.94lbs (880g) which is suspending from the center of a 28 in. (0.71 m) arrow shaft. This method follows the Standard Test Method for Measurement of Arrow Shaft Static Spine (Stiffness) of the American Society for Testing and Materials (ASTM) F203105.

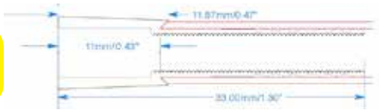
PAPS Aerovane Jig Laser Mounting Module

For even more precision, we have created the PAPS Aerovane Jog Laser Mounting Module. As the name implies, it is possible, with this module, to affix any Aerovane Jig users' laser alignment module the PAPS track easily and securely. The mounting module is a machined piece of Aluminum to fit perfectly on the track and to hold the laser module solidly. With this module and its laser, after you have located the position of the first bend, you will be given a straight precision-thin laser line on the arrow, making it is even easier to mark your arrow spine accurately.

AIA20A AIA20S AIA20T — fit 0.202" - 0.204" ID AIH20A AIH20S AIH20T — AIH2LA AIH2LS AIH2LT — fit 0.235-0.237" ID AIA23S — fit 0.244" - 0.246" ID AIA24A AIA24S AIH24A AIH24S — AID30A AID30S AIA30S AIH3GS — fit 0.300" ID — fit 0.310" ID AID31A

AeroInsert-A (AIA)

Featured with Self Concentric Technology and Reverse Tapered End Collar Technology (or angled; "A"), AeroInsert-A takes arrow performance to an entirely new level. The beauty of the combination system of both such technologies is that, by just angling the collar on the back of the insert, the arrow is forces to instantly mate with the AIA perfectly,every single time. With continuous shooting of the arrow with the AeroInsert installed, continuous concentricity and locking will occur. Furthermore, the Reverse Tapered End Collar itself can protect and strengthen the arrow front to prevent any mushrooming effect(s). Finally, purposefully indented, the insert end of the AIA provides a large gluing surface for improved strength and stability.



Installation of AeroInsert-A

The installation is simple. First, before doing anything, check that the Reverse Tapered End Collar can and will cover the outside diameter of the arrow front end by eyeballing it. Next, square the arrow front end or bevel (at a perfect 45 degree) it using the AeroInsert Arrow Chamfering Tool. Then, with a two part slow set epoxy (we highly recommend one that has minimum 24 hour cure and a minimum one hour work time type, such as the Firenock Aerovane Glue AGUSSE,) to glue in the insert. Other suggested slow-set epoxies include Loctite 1405603, Devcon 2-ton Slow curing Epoxy, Henkel 1147735, PC products PC-7 two-part Heavy Duty Epoxy, and Permatex 84107.

As AeroInsert-A has a number of models, they are coded as follows: the first three characters "AIA" stands for AeroInsert-A, while the next two number stands for the class size of the arrow it will fit (e.g. 30 = 0.300"). The last character stands for what material the AeroInsert is made of; "A" for aluminum and "S" for stainless steel, and "T" for titanium.

Features Summary for AIA

- Self Concentric Technology System
- Reverse Tapered End Collar Technology
- Available in seven variations
- US Patent 8,403,777

AeroInsert-D (AID)

Designed after the AeroInsert-A, the AeroInsert-D is designed to fit most arrow sizes and uses a patented dual-step design ("D" for dual) to provide an extra large adhesive area. An extra large adhesive area is essential because most common inserts only provide a small adhesive surface area, resulting a dislodging of the insert itself to be more likely. This dislodging from the arrow, no matter how partial, can consequently forces the insert and arrow tip to move rearward into the shaft, which can ultimately cause destructive effects like mushrooming.

That insert dislodgement and mushing effect are intensified especially during use of 0.300" ID weak spine crossbow bolts. Besides its extra large adhesive area, the dual or Double Shoulder Insert System is installed with carbon extension to solve such issues. AeroInsert-D Systems can strengthen the arrow with its thicker wall at the arrow's front end while not adding too much weight. Furthermore, precise adjustment of arrow weight can be done via adjustment of the length of the carbon extension itself; a longer extension gives greater weight and a shorter extension gives lighter weight.

As AeroInsert-D has a number of models, they are coded as follows: the first three characters "AID" stand for AeroInsert-D, while the next two number stands for the class size of the arrow it will fit (e.g. 30 = 0.300"). The last character stands for what material the AeroInsert is made of; "A" for aluminum and "S" for stainless steel.

Features Summary for AID

- Self Concentric Technology System
- Dual-step design for stability and minimization of mushrooming effect
- Has a significantly larger adhesive surface area
- Available in three variations
- US Patent 8,337,342

AeroInsert-H (AIH)

AeroInsert-H is new as of 2016 and compiles or hybridizes ("H" for hybrid) the best technology of both the AeroInsert-A and the AeroInsert-D and is designed to fit the most shafts of all; any shafts with an ID from 0.202" to 0.300". From AeroInsert-A, the Reverse Tapered End Collar Technology (see AIA). From AeroInsert-D, the dual-step design technology (see AID). Thus letting you benefit from the great qualities of both Firenock patented designs.

As AeroInsert-H has a number of models, they are coded as follows: the first three characters "AIH" stand for AeroInsert-H, while the next two number stands for the class size of the arrow it will fit (e.g. 30 = 0.300"). The last character stands for what material the AeroInsert is made of; "A" for aluminum and "S" for stainless steel, and "T" for titanium.

Features Summary for AIH

- Self Concentric Technology System
- Dual-step design for stability and minimization of mushrooming effect
- Reverse Tapered End Collar Technology
- Has a significantly larger adhesive surface area
- Available in nine variations
- US Patents 8,403,777 & 8,337,342

AeroInsert Arrow Chamfering Tool

To quickly create the perfect 45 degree chamfered arrow end to perfectly mate with the Reverse Tapered End Collar for the AeroInsert-A and AeroInsert-H, we recommend the use of AeroInsert Arrow Chamfering Tool. Made of steel, the grounding surface is diamond electroplated.

The Chamfering Tool is extremely easy to use and easy to clean. For use, just attach it to any drill, then insert into and align your arrow with the center of the tool and run the drill (~1500 rpm) for approximately three seconds. For clean-up, the tool is dishwasher safe, so just wash and dry, and it is ready to be used again.

As of 2017, The Chamfering Tool's already great price is now dropped to US$19.95 per piece. The tool is available in two grinding grade surface types: 100 grit and 180 grit. The 100 grit surface is very aggressive and can take away material very quickly. For dealers who need to do a multitude of arrows at a time, 100 grit is the right choice. On the other hand, for the independent user, 180 has a much less aggressive grinding ability and is best for just a dozen or so arrows at a time.

To learn more about the installation of either AeroInsert-D or AeroInsert-H, refer to "Installation of AeroInsert-A" or visit http://www.Firenock.com

Name	Arrow(s) that should fit	Weight	Color
ABU23A	Carbon Express CXL, Easton Fat boy	~8.5 grain / 0.55 gram	Silver
ABU23B	Black Eagle Challenger, PS23	~8.0 grain / 0.52 gram	Black
ABU24A	Gold Tip X Cutter	~9.4 grain / 0.61 gram	Silver
ABU26A	Gold Tip 30X	~14.0 grain / 0.91 gram	Silver
ABU265	Gold Tip XXX	~15.5 grain / 1.00 gram	Black
ABU27A	Black Eagle Magnum, Easton Full Bore	~15.75 grain / 1.02 gram	Silver

AeroBushing™

Traditionally, uni-bushings are made from bar stock and manufactured on screw machines which only provide approximate fit. To solve this, target archers have commonly been known to use materials like a plastic bag to better the fit, but this approach does not ensure any kind of true accuracy or consistency. Also, the standard weight of uni-bushing and nock systems on the market usually weigh between 20-25 grains. In response, we at Firenock developed the AeroBushing™, which utilizes the Self Concentric Technology System (see previous page), the Reverse Tapered End Collar Technology (see previous page), and its unique Square in a Circle Fitting Technology all to address the need for consistent and ultra-lightweight archery projectiles on the nock side.

The AeroBushing Square in a Circle Fitting Technology utilizes the same approach as the Firenock compression fit system but does it in a reverse way. Instead of a round collar, the AeroBushing is actually, as its name proclaims, square in shape. With this square shape, the arrow is forced to be concentric with the bushing. The square shape also results in lighter weight; a normal bushing of 23/64" size is about twelve grains vs AeroBushing is just about eight grains.

Firenock believes that the A style nock is the most ideal nock for target archery and thus the AeroBushing utilizes the Firenock A style nock with a 0.204" ID -- which, at only 4.85 grains, makes the entire system only about 13 grains!

Starting from 2015, the AeroBushing is also equipped with our US Patent Umbrella-Cap design, which virtually eliminates the possibility of carbon fiber to fray, even if the back of an arrow is being hit by another arrow. The details of this design can be seen in the technical illustration of ABU23A (in the background).

Features Summary for AeroBushing

- Self Concentric Technology System
- Reverse Tapered End Collar Technology
- Square in a Circle Fitting Technology
- CNC machined 7075-T5 Aluminum for extra hardness and accuracy
- Super light weight (~8 grains for 23/64" size)
- Compatible with Firenock "A" style nock
- Compatible with Firenock lighted nock system
- Available in six sizes
- Umbrella Cap design for even better protection
- US Patent 8,951,152, 9,212,875 & other Pat. Pending

AeroPoint™ & FACT

AeroPoint™, like many Firenock arrow accessories, are virtually effortless to assemble and once assembled, self-concentric and perfectly secure, all as a result of our US patented Double O-rings System/FACT Technology.

Most archers know that it is difficult to align the field point/broad-head to the arrow perfectly, as the neck and threads of the field point must align with the arrow insert and the arrow itself -- creating several variables. AeroPoint™'s FACT technology solves this problem by eliminating all variables caused by manual alignment and self-concentrates immediately after installation.

Another attribute of this technology is that is makes the loosening of target points and broadheads a thing of the past. The double O-rings are specifically positioned; one at the neck of the arrow point and the other just above the thread. In this way, once screwed into the arrow insert, there is no space for give, even after being repeatedly shot.

Special sizes of AeroPoint were made for specific purposes and specific arrow types. For example, the AeroPoint in 250 grain with a 9mm diameter in stainless steel is specifically made to fit most 23/64" Aero Target Concept arrows. On the other hand, an AeroPoint of 175 grain, but still with that 9mm diameter in stainless steel, is made instead to be the same weight as the Firenock Traumahawk, thus can use it as a practice broadhead for the Traumahawk.

Features Summary for AeroPoint

- Self Concentric Technology System
- Perfectly match-weighted with Firenock Arrow Concentric Technology (FACT) broadheads
- CNC machined 45HRC hardened stainless steel for toughness and accuracy
- US Patent 8,337,341

8mm (Stainless Steel) — 45gn 55gn 65gn 85gn 100gn 125gn 175gn

Titanium — 45gn 45gn 85gn 100gn 125gn

9mm (Stainless Steel) — 175gn 250gn

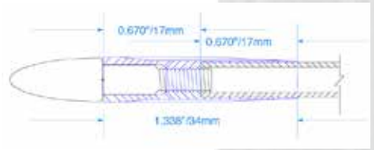
AEROOUTSERT™ (for slimmer arrows)

AeroOutsert™

Specially made for ultra-thin arrows, AeroOutsert™ is made of high quality forged 7075-T7 Aluminum and equipped with US Patented Blood Channels to achieve perfect concentricity and minimum wedging effect(s). Proven to outperform the common 0.165"-0.1665" size arrow insert/half-out inserts, AeroOutsert uses the outer diameter of the arrow shaft instead of the inner diameter. This is crucial because Internal Diameter (ID) based components are unlikely to not be concentric because the entire circumference wall thickness is not always perfectly equal all the way around due to the inaccuracies that happen during center-less grind process commonly used to make this class of arrow (generally 0.166" ID). Thus, with arrows installed with the AeroOutsert which is Outer Diameter (OD) based, your arrow can perform better with self-aligning outserts.

The Firenock developed AeroOutserts were designed to combat another issue: the perimeter wedging effect (i.e. hard to pull the arrow out from the target). With the AeroOutsert Blood Channels, this issue is significantly minimized. Put simply, the Blood Channels are a plurality of axial slots machined over the outer perimeter that gradually taper inward and towards the center. With such a design, the Blood Channels can relieve the pressure built up over the outer perimeter of the arrow and thus reduce that wedging effect. All in all, the Blood Channels allow you to pull your arrow out of a penetrated object easily, reduce weight, increase strength, and improve ease of use.

Below is a technical 2D, exposed diagram of the front end of arrow shaft with the AeroOutsert (outlined in blue) and a field point installed with exact dimensions and proportions.



Features Summary for AeroOutsert

- Self Concentric Technology System
- Blood Channels for wedging effect prevention
- CNC machined 7075-T7 Aluminum for extra hardness and accuracy
- Black hard anodized with laser marking
- Available in many sizes (5.68 to 6.50 mm)
- Weight 30.5 to 33 grain (+/- 1 grain)
- US Patent 8,668,605

AeroOutsert Installation Tips

As touched on to the left, experience with installing AeroOutserts on various arrows have confirmed that some of the manufacturer's published arrow OD (outside diameter) sizes are only base line references, varying as much as 0.004" or 0.11mm. The Victory VAP, for example, is published as 0.245" OD, but actually measures at 0.248" which would actually fit the 6.31mm AeroOutsert best, but not the 0.245" (6.22mm) AeroOutsert as published. One of the most extreme cases of the expectation and reality conflict we found reside in the Easton Injexion 480. Within a test with just a dozen of such shafts, we found a variation of 5.836mm OD to as large as an 5.864mm OD, making ones ability to fit only one AeroInsert impossible without manually sanding the shaft smaller (and thus making 95.83mm the correct ordering size). The chart to the right shows some of our current results so far on different brands and their products' published -- and thus expected -- ODs and their differing OD realities. Please note, however, that the listed sizes are for reference only; not for use for true ODs as more and more variances have and still occur/ed.

Due to all these variances, we at Firenock feel that the best way to install an outsert system is to first get the AeroOutsert that has the closed true outside diameter of the arrow and then alter to your needs. To do this yourself, try to dry fit each AeroOutsert with every shaft to find the best fit of each shaft with each AeroOutsert. For the really tight fitting ones, lightly sand the outside diameter of the shaft until it barely fits. As long as you do the sanding by turning the shaft and holding ultra-fine (220 grit or finer) sand paper over it, the shaft's concentricity should not be off after sanding. After sanding, dip the sanded end of the shaft in pure acetone. Cleaning the inside of the AeroOutsert with a Q-tip dipped in acetone is found to be the best starting point with any AeroOutsert gluing installation process. Also, AG0600 glue works best, however any fresh CA type of glue (super glue) should work. For looser fitting AeroOutserts, use a slow set (24 hour) epoxy and, while standing it on its end, keep turning it to help keep the arrow and the AeroOutsert concentric. Leave the arrow standing upright as it cures. To doubly ensure concentricity, spin each for the CA glue to equitably 2nd Aero surround the arrow.

Brand	Name	Spine	OD (in)	OD (mm)	AOA	Note	Update on	ID (in)	gn/inch
Black Eagle	Deep Impact	250	0.241	6.12	6.15		07/03/13	0.155	9.50
Black Eagle	Deep Impact	300	0.248	6.30	6.33		07/03/13	0.155	11.00
Black Eagle	Deep Impact	350	0.240	6.10	6.12		08/06/15	0.155	9.60
Black Eagle	Deep Impact	400	0.233	5.96	5.97		11/30/15	0.155	8.60
Black Eagle	Deep Impact	450	0.236	5.99	6.02		10/17/16	0.155	8.60
Black Eagle	Deep Impact	500	0.228	5.79	5.79		06/04/16	0.155	7.60
Black Eagle	Deep Impact	600	0.223	5.66	5.68		07/03/13	0.155	7.00
Black Eagle	Deep Impact	700	0.219	5.56		N/A	12/14/15	0.155	6.30
Black Eagle	X-Impact	500	0.214	5.44		N/A	08/13/13	0.155	5.80
Black Eagle	X-Impact	600	0.210	5.33		N/A	12/14/15	0.155	5.30
Black Eagle	X-Impact/LD	250	0.240	6.10	6.12		12/15/15	0.155	9.50
Black Eagle	X-Impact/LD	300	0.231	5.87	5.89		08/13/13	0.155	8.10
Black Eagle	X-Impact/LD	350	0.228	5.79	5.79		06/04/16	0.155	7.40
Black Eagle	X-Impact/LD	400	0.221	5.61	5.68		03/04/14	0.155	6.70
Bloodsport	HT1	600	0.223	5.66	5.68		05/02/12	0.155	7.10
Bloodsport	HT1	700	0.220	5.59		N/A	05/02/12	0.155	6.50
Bloodsport	HT1	800	0.215	5.46		N/A	05/02/12	0.155	6.00
Bloodsport	HT1	900	0.211	5.36		N/A	05/02/12	0.155	5.30
Bloodsport	HT1	1000	0.209	5.31		N/A	05/02/12	0.155	5.10
Bloodsport	HT1/Evidence/Onyx	300	0.255	6.48	6.50		01/09/16	0.155	11.70
Bloodsport	HT1/Evidence/Onyx	350	0.246	6.25	6.31		01/09/16	0.155	10.20
Bloodsport	HT1/Evidence/Onyx	400	0.238	6.05	6.06		01/09/16	0.155	9.80
Bloodsport	HT1/Evidence/Onyx	500	0.231	5.87	5.89		01/09/16	0.155	8.20
Deer Crossing	SD Hunter	300	0.251	6.49	6.50		03/04/14	0.155	N/A
Deer Crossing	SD Hunter	350	0.245	6.23	6.26		12/28/14	0.155	10.10
Deer Crossing	SD Hunter	400	0.237	6.07	6.06		03/17/14	0.155	9.43
Deer Crossing	SD Hunter	500	0.231	5.89	5.89		03/17/14	0.155	8.27
Easton	AC Injexion	330	0.242	6.15	6.15		02/03/13	0.1665	10.50
Easton	AC Injexion	390	0.235	5.98	6.02		10/17/16	0.1665	9.50
Easton	AC Injexion	450	0.230	5.84	5.83		02/03/13	0.1665	8.60
Easton	Carbon ONE	410		No data			01/09/16	0.166	8.50
Easton	Carbon ONE	450		No data			01/09/16	0.166	8.10
Easton	Carbon ONE	500	0.225	5.75	5.79		06/04/16	0.166	7.40
Easton	Carbon ONE	550	0.222	5.64	5.68		01/09/16	0.166	6.90
Easton	Deep Six FMJ	280	0.244	6.18	6.22		01/09/16	0.1665	12.00
Easton	Deep Six FMJ	330	0.240	6.10	6.12		07/20/15	0.1665	11.00
Easton	Deep Six FMJ	400	0.233	5.92	5.97		06/23/14	0.1665	9.80
Easton	Deep Six FMJ	460	0.227	5.77	5.79		06/04/16	0.1665	9.00
Easton	Injexion	330	0.244	6.19	6.22		07/14/15	0.1665	10.10
Easton	Injexion	400	0.236	5.98	6.02		10/17/16	0.1665	8.90
Easton	Injexion	480	0.230	5.83	5.83		02/03/13	0.1665	8.30
Element	The Rock	300	0.230	5.83	5.83		03/12/17	0.166	8.00
Element	The Rock	350	0.225	5.74	5.79		03/12/17	0.166	7.50
Element	The Rock	400	0.224	5.69	5.68		03/12/17	0.166	6.60
Gold Tip	Pierce Platium	250	0.245	6.22	6.22		09/30/15	0.166	9.80
Gold Tip	Pierce Platium	300	0.240	6.10	6.12		09/30/15	0.166	9.10
Gold Tip	Pierce Platium	340	0.234	5.94	5.97		09/30/15	0.166	8.30
Gold Tip	Pierce Platium	400	0.229	5.82	5.83		09/30/15	0.166	7.60
Gold Tip	Pierce Platium	500	0.222	5.64	5.68		09/30/15	0.166	6.60
HVA	Ballistic X SD	300	0.255	6.47	6.50		03/06/17	0.1654	10.90
HVA	Ballistic X SD	350	0.246	6.24	6.26		03/06/17	0.1654	10.30
HVA	Ballistic X SD	400	0.244	6.21	6.22		03/06/17	0.1654	9.50
OK Archery	Absolute.15	350	0.234	5.94	5.97		04/27/16	0.166	9.00
OK Archery	Absolute.15	400	0.231	5.87	5.89		04/27/16	0.166	8.00
OK Archery	Absolute.15	500	0.227	5.77	5.79		06/04/16	0.166	7.10
OK Archery	Absolute.15	600	0.223	5.66	5.67		04/27/16	0.166	6.40
Victory	VAP	250	0.247	6.27	6.31		02/04/16	0.1655	9.70
Victory	VAP	300	0.239	6.07	6.06		07/02/13	0.1655	8.90
Victory	VAP	350	0.232	5.89	5.89		11/13/12	0.1655	8.10
Victory	VAP	400	0.227	5.77	5.79		06/04/16	0.1655	7.10
Victory	VAP	450	0.224	5.69	5.68		03/04/14	0.1655	6.80
Victory	VAP	500	0.218	5.54		N/A	11/13/12	0.1655	6.10
Victory	VAP	600	0.213	5.41		N/A	11/13/12	0.1655	5.40
Victory	VAP	700	0.215	5.46		N/A	11/13/12	0.1655	5.70
Victory	VAP	800	0.213	5.41		N/A	11/13/12	0.1655	5.10
Victory	VAP	900	0.213	5.41		N/A	11/13/12	0.1655	5.60
Victory	VAP	1000	0.210	5.33		N/A	11/13/12	0.1655	5.20
Victory	VAP camo	250		No data			06/12/16	0.1655	10.20
Victory	VAP camo	300		No data			06/12/16	0.1655	9.40
Victory	VAP camo	350		No data			06/12/16	0.1655	8.60
Victory	VAP camo	400		No data			06/12/16	0.1655	7.60
Victory	VAP camo	450		No data			06/12/16	0.1655	7.30
Victory	VAP camo	500		No data			06/12/16	0.1655	6.60
Victory	VAP Low Torque TKO	300		No data			06/12/16	0.1655	9.50
Victory	VAP Low Torque TKO	350	0.238	6.05	6.06		06/12/16	0.1655	9.10
Victory	VAP Low Torque TKO	400	0.234	5.95	5.97		10/21/16	0.1655	8.40
Victory	VAP Pink	350		No data			06/12/16	0.1655	8.80
Victory	VAP Pink	400		No data			06/12/16	0.1655	7.80
Victory	VAP Pink	500		No data			06/12/16	0.1655	6.80
Victory	VAP Pink	600		No data			06/12/16	0.1655	6.20
Widow Maker	Smash	250		No data			02/21/16	0.1654	13.30
Widow Maker	Smash	300		No data			02/21/16	0.1654	12.20
Widow Maker	Smash	350		No data			02/21/16	0.1654	10.40

AERO CONCEPT™ SYSTEMS

Aero Concept System

Initially developed for the Firenock AeroBolt™ (see next page) product line due to its need for a much stronger spine and better frontal protection for high power crossbow like the Scorpyd and PSE Tac crossbows, this system now stands alone due to customer demand. But what exactly is the Aero Concept System and what are its benefits? Put simply, the Aero Concept System is a multiple layer shaft design that re-enforces the arrow front end via the Firenock AeroInsert-A or AeroInsert-H. Composed of two layers of carbon shaft, the Aero Concept System adds another mini carbon tube within the shaft front end itself to have an amazingly strong spine and null point. With such a spine and null point, the arrow will oscillate less (i.e. less archer paradox) and fly straight (i.e. stabilized) soon after launch. The effect of these actions are great because not only does the Aero Concept System cease undesired arrow oscillation, but saves energy, overall sustaining flight and increasing the distance your arrow can fly.

There are many why that arrow oscillation is "undesired": it decreases speed, accuracy, and the penetration power of arrow, but, most significantly, it almost always will not cease until your arrow has the target. With each oscillation, the just mentioned issues continue to grow exponentially. Furthermore, when an arrow is fitted with a broad-head or field point, thus adding weight, those issues magnify even more exponentially, inducing a flipping motion and an even worse flight.

In summary, the Aero Concept System is the only system on the present market that allows your arrows to have virtually no oscillation with even fitted broad-heads or field points, which grants a higher impact point, a better penetration power and a relatively higher speed, even after long distance.

What's New for 2017?

As of 2017, the AeroConcept System was officially awarded US patent 9,395,166 and the AeroConcept Points (ACP) was officially awarded US patent 9,441,927.T

The first ACP is here. Unlike our AeroPoint, the ACP -- AC509S -- is a glue in point and has a hollow structure for strength and lightness. A fusion of AeroPoint and AeroInsert, ACP can mate directly with the AeroConcept Carbon Inner Tube to form an alternate AeroConcept System (fitting most 23/64" shafts, its total weight with a 6" Carbon Inner Tube (CTI310) is only 80 grains). From the AeroInsert, ACP utilizes Firenock Reverse Tapered Shoulder Technology for perfect alignment and concentricity and is Double Shoulder Technology for AeroConcept System ready. Also, as ACP has Reverse Tapered Shoulder Technology, the Aero Chamfering Tool (see pg. 12) is recommended to chamfer the shaft first before gluing for guaranteed alignment and concentricity. Finally, just like the original AeroConcept System, it is recommended to use Firenock Aerovane Ultra Slow Set Epoxy (AGUSSE) to install ACP and the AeroConcept Carbon Inner Tube successfully.

More Areo Concept System

Now, after a full year after the release of the original 0.202" ID concept system, we now added a second AeroConcept System for the 0.202" shaft due to popularity of that shaft and people who want a lighter system. Thus the AIH2Lx and CTI20L have been added to provide a lighter system for those who are concerned about the heavy weight of the original heavy duty AIA20x and CTI200's eight grains per inch mass.

Insert/Point	Compatible shaft ID	Weight (gn)	Material	CTI used	Weight per inch (gn)
AIH20A	0.202"-0.204"	15	7075 AL	CTI200	7.8
AIH20S	0.202"-0.204"	55	303 SS	CTI200	7.8
AIH20T	0.202"-0.204"	28	GR5 Ti	CTI200	7.8
AIH2LA	0.202"-0.204"	23	7075 AL	CTI20L	4.2
AIH2LS	0.202"-0.204"	64	303 SS	CTI20L	4.2
AIH2LT	0.202"-0.204"	30	GR5 Ti	CTI20L	4.2
AIH24A	0.244-0.246"	9	7075 AL	CTI240	5.2
AIH24S	0.244-0.246"	25	303 SS	CTI240	5.2
AIH30A	0.300"	18	7075 AL	CTI300	8.7
AIH30S	0.300"	54	303 SS	CTI300	8.7
AIH3GS	0.300"	100	303 SS	CTI30G	6.4
AIH31A	0.310-0.315"	18	7075 AL	CTI310	5.3
AC509S	0.310-0.315"	50	156 SS	CTI310	5.3

AEROBOLT The Ultimate Crossbow Arrow

Most people will find that many crossbow bolts perform well. But why is AeroBolt II better than the competitor's bolts? Why is the price of AeroBolt II significantly higher? Why did Firenock build the AeroBolt II like this? To provide these answers, a short review of the research and development of AeroBolts is needed. Then, we will discuss the design approach and review the technologies that have been employed in the development of AeroBolts. With this information, we believe you will be convinced that AeroBolts are unique and the outstanding performance of the AeroBolt II is worth the price. Also, with a better understanding of AeroBolt II technologies, you should understand what you can expect and what the most you can achieve from shooting AeroBolt II.

AEROBOLT™ II History

Back in 2009, Jim Kempf of Scorpyd crossbows requested a heavier spine crossbow bolt due to the introduction of the RDT165 Crossbow. Our answer was the AeroBolt I, based on the Gold Tip Laser II, Laser III, and other Gold Tip shafts and utilizing a Gold Tip Series 22 insert.

At the time, the AeroBolt I was nothing more than gluing a section of a Gold Tip 0.298" shaft into a Laser II or Laser III with that Gold Tip Series 22 insert, but it severed its purpose. It gave Jim the bolt he needed at the time: a the crossbow bolt with a much heavier spine and a much easier to find spine due to its dual-shaft construction. During the testing of this arrow however, quite a few interesting observations and results were discovered. This led us to develop new concepts, break-through manufacturing processes, and improvements in design that all result in at least four U. S. patents used today in what we call the AeroBolt II.

Spine Indexing & Matching

The Firenock AeroBolt II was designed based on the concept of multiple shaft construction with the effect of spine cancellation. Spine cancellation minimizes the effect of the dominant arrow shaft's spine effect. As spine effect seems to be eliminated due to the two shaft construction, spine indexing seems not to be important. We have offered spine indexing since 2011 as part of our standard manufacturing process. Firenock feels that AeroBolt II is the ultimate crossbow bolt and spine indexing has proven to be important, so it is still a part of our standard process.

Harmonic Dampening

If asked for the main reason why Aerobolt Technology is so superior in performance and accuracy to any other crossbow bolt, our answer would be because of its Harmonic Dampening ability. Harmonic Dampening was observed when the first AeroBolt was shot. After only about five to ten feet, the oscillation of the AeroBolt stopped, which contrasted then and still contrasts with the standard 60 feet (approximately) of other arrows and bolts. How could that be? No archery experts could provide a definite answer. We finally received an answer after consulting material science experts. Evidently, after an arrow is released from a bow, oscillation occur for its initial 20 yards of flight, based on the physical characteristics (lighter/heavier spine, longer/shorter arrow) and at about 20 yards, oscillation stops and full gyro spin occurs.

Use of Professional Arrow Preparation System

Today, most use the RAM Spine Finder machine. The issue with the at machine, however, is that it takes too long and is not reliable. Most shaft spine-indexing machines are not meant for production use, thus Firenock believed that a more specific machine should be built. So we did: the APS (Arrow Preparation System; page 8) and the PAPS (Professional APS; page 10 & 11). One of the add-ons, which we believe is what most want, is our vibration module. With it, the softest side of an arrow presents itself within five seconds, removing both those time and reliability issues altogether. Note that it finds the 'softest side', not necessarily the spine most look for. This is because we at Firenock believe that locating the softest side is more important because we have found that, after launch, an arrow will flex toward it, as it is subsequently also the side with the lowest resistance.

For those who still desire to find the spine, or the hardest side, the PAPS vibration module can help you locate it as well (though we regard IMHO not critical for arrow accuracy.) In sum, while we agree that the average spine is indeed what indicates how an arrow will flex and dictates the arrow-in-flight oscillation, we still emphasize that the softest side is most crucial as initial launch depends on it solely.

Gluing Instead of Mechanical Fastening

With arrows made of carbon, characterized by high modular strength, low weight, low loop strength and low surface puncture resistance characteristics, most use mechanical inserts. We at Firenock have found that such inserts actually do not focus the force and vibration upon impact and can cause damage to the shaft's inner surface. For safety and reliability, we believe that instead spreading that force over a large surface area is the best way to resolve this problem; gluing instead of mechanical inserts and fastening is the answer.

Use of AeroInsert-D (AID)

As aforementioned in the introduction, we originally used a Gold Tip Series 22 insert to build AeroBolts. Because of its short length however, there was not a lot of gluing surface and cracks again developed right behind the insert when the bolt was shot at an extreme angle. AeroInsert-D was our solution. As a unit, the AID and the carbon tube is long, and thus provides a much larger gluing surface area than conventional inserts. With such, more even force and less stress will be distributed to the carbon shaft.

Firenock Arrow Concentric Technology

After long discussions with archery arrow ex-perts like Randy White and Tim Gillingham, another issue became obvious: the degree of concentricity -- for the arrow, bow, and arrow and bow respectively. With the AeroInsert-D and the carbon inner tubing, we believe that the insert-to-shaft concentricity has been addressed, but the concentricity of the point/broad-head has not been addressed. For a vertical bow, broad-head tuning and using glue in points can improve concentricity and accuracy due to the effort made to ensure that the highest focused mass is concentric to the entire arrow. Simply put, you need to ensure that the point/broad-head is concentric to the entire arrow in order to improve accuracy.

Use of Flexible Two-Part Epoxy

After deciding to glue, our original idea for the glue for the inner tube in the first AeroBolt was ultra-low viscosity CA glue. This was because with super glue, very little glue is needed to be applied, so we assumed that there was thus little to no way for it to break. But, after a few test shots, the CA based glue cracked and caused layer separation in the carbon. Further, the more that that arrow was shot, the worse the cracking became. After dissection, we also discovered that not only was there layer separation, but the CA glue became powder! We knew that another adhesive had to be selected. A variety of other glues were tested, ranging from Super Glue, CA GEL, five, ten, and even 30 minute epoxy, but they all failed. We finally concluded that the longer the glue time, the better the results. After some research, we learned that this correlation coincided with the theory of glue failure due to fracture from the flex of an arrow during launch, which leads to carbon layer separation, inconsistent spine, finally with inconsistent flight.

We kept looking for a solution, and then, during a discussion with our glue supplier, a rarely used, super expensive two-part epoxy was suggested, so we tried it. The epoxy was exactly what we needed, flexible even when totally cured. Furthermore, it allowed and allows us to have close to 90 minutes of work time. But one last problem arose; we discovered that during the assembly of the AeroBolt with this glue, the epoxy had a high cP, meaning it does not flow and spread well. The usual apply and spread method failed and caused inconsistency. Thus, a vacuum-assisted vertical gluing process was developed, finally This approach allows us to finally apply our flexible glue perfectly between the two shafts.

(Crossbow Broadhead) TRAUMAHAWK

Firenock™ AEROBOLT™ II ☐ 200 ☐ Dragon Slayer
The Most Advanced Lighted Nock™ Insert: Weight:
Firenock AeroInsert, AeroPoint Technology, with unique Multi-Spine/Zone design
FLEX IT FIRST for safety, visit http://www.firenock.com contact@Firenock.com Date: Length:
Multiple US and International Patent Pend, Pat: 7,837,580 B2 ph: (815) 780-1695

AeroBolt™ II-200

The Aerobolt II-200 crossbow arrow (U.S. Pat.) is offered from 16" to 32" and is designed and engineered for maximum flight stability and maximum speed just like the AeroBolt I, but with a stiffer primary shaft that has a spine of 0.200" and an inner spine of 0.350". The 26" AB2-200, without any metal part of the hybrid insert, weighs about 300 grains and boasts an amazing 0.001" shaft straightness (the front is about 0.060" and the back is 0.200").

AeroBolt™ II-Dragon Slayer

The AeroBolt II Dragon Slayer crossbow arrow (U.S. Pat.) is the big brother of the AeroBolt II. Offered in any length from 16" to 32", it is designed and engineered for maximum momentum and penetration.

Unlike any other crossbow bolt on the present market, it has a 0.092" thickness of carbon throughout its entire length. Instead of one inner and partial shaft configuration, it has two. These two inner shafts are engineered to support the insert and Firenock AeroInsert-D and Firenock's 0.246" profile extreme shock end cap to fit the Firenock F, Q, D, and J nocks. With this design, every single component on the arrow is supported by no less than two shafts, and in some cases all three shafts.

With a 26" shaft, the expected total weight (excluding point/broad-head and nock) is going to be about 750 grains with 3 Aerovane II. This configuration makes this arrow the ultimate African big game crossbow shaft, as many African range game laws have stated that no less than 1,000 grain archery arrows for taking the African big 5 are permitted. From our field staff report, it is also found that it is the best shaft for the huge wild boars that roam the lower states, like the 700 lb plus hogs in Georgia and Texas.

AeroBolt II-G (AB2G)

AB2G crossbow arrow is also designed for big game but with a medium weight specification (380-400 grains; thus able to fit the Firenock Traumahawk Crossbow Broad-head). Designed to have maximum front end mass, the AB2G thus provides maximum penetration and, among the Aerobolts, AB2G, the flattest trajectory flight.

In order to make Aerobolt II-G works, these criteria are needed:

1) The arrow must spin over 2500 rpm.
2) The arrow's frontal focus mass should be more than 200 grains (225 is found to be ideal).
3) The arrow cannot oscillate at all.
4) The arrow-in-flight must have close to zero drag.
5) The arrow's length should be at least 3" longer than the power stroke.
6) The arrow's straightness should be 0.006" or better.
7) The arrow's every components must be extremely concentric.

To achieve the above criteria, the following parts are required:

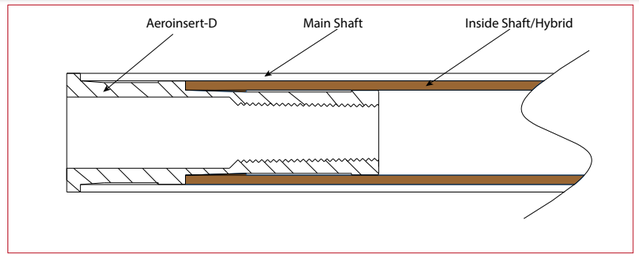
1) 110 grains, stainless steel double shouldered insert.
2) Ultra high modular, but light weight inner tube.
3) Aerovane III.
4) A broad-head with weight at the parameter.
5) A durable outer shaft (at least 200 spine).

Extra Notes:

From our tests of super heavy FOC bolts with Aerovane III, the bolt is found to refuse to drop even at great distance. The speed of the arrow indeed dropped when it reached the first 30 yards, but it dropped less as distance increased. The dial gauge gap between the 40-80 yard mark shrank significantly.

The magic of Aerobolt II-G is that its double shoulder insert and light weight higher modular carbon insert forced the oscillation cycle of the arrow to shorten significantly. Also the bolt very soon behaved like a gyro due to the effect of Aerovane III and the large frontal focus mass. Although the bolt slowly decelerated as distance increased, most of the energy could still retained due to gyro effect. In short, Aerobolt II-G does not perform a general archery projectile, but is a gyro projectile. These explained why Aerobolt has wind defying and gravity defying characteristics.

Firenock® AeroBolt® II-G™ ☐ SG ☐ SS ☐ AL
The Most Advanced Lighted Nock™ Insert: Weight:
Firenock AeroInsert, AeroPoint Technology, with unique Multi-Spine/Zone design
FLEX IT FIRST for safety, visit http://www.firenock.com contact@Firenock.com Date: Length:
Multiple US and International Patent Pend, Pat: 7,837,580 8,105,189 8,337,341 8,337,342 8,403,777...
ph: (815) 780-1695



Traumahawk Crossbow Broad-head

Traumahawk is the first blunt-force-trauma based broad-head available on the present market. Working like a Native American's lethal weapon, the tomahawk, but with a twist, our Traumahawk is not meant to pass through the animal, but instead meant to transfer the maximum kinetic energy from the arrow to the game, knocking it down instantly.

Traumahawk weighs 175 grains and is made out of solid stainless steel, machined through a high-pressure precision, die-cast process. This process results in a much stronger and tougher steel than that goes through the more common MIM (Metal Injection Molding process).

Besides its phenomenal strength and stiffness, Traumahawk is equipped with 40 degree, single-bevel-grind edges on both sides to maximize its self-propel effect and spinning speed. Thus,, with Aerovane III, the Traumahawk will even further enhance the gyro effect of the Aerobolt.

Note: To ensure concentricity when you are installing Traumahawk on your crossbow bolt, Traumahawk is equipped with our US patented Firenock Arrow Concentric Technology (FACT™ ; US Patent 8,337,341; see page 13 &/or 16).

AeroRest™ Full Containment Rest Without the Wear

AeroRest is the most advanced and most accurate rest on the present market. AeroRest is unique in its design; 3 supports using ceramic ball bearings as arrow contacting points for frictionless shooting. AeroRest is built to the highest tolerance, owns 3 US patents and is built with the highest grade materials including Titanium, aircraft grade Aluminum, Ceramic and Beryllium copper. You will be excited while shooting your arrows with AeroRest.

Features of AeroRest:

- FRICTIONLESS SHOOTING: Ceramic contact surface eliminates almost all friction between the rest and the arrow.
- FULL CONTAINMENT SYSTEM: Three " arrow supports provide the most stable containment system and ensure your arrow is always in the center.
- NO WEAR CERAMIC CONTACT SURFACE: Industrial grade ABEC#5 ceramic ball bearings mean perfect roundness, smoothness and virtually no wear.
- QUIET DESIGN: Each arrow support loaded with 2 ceramic ball bearings supporting by a beryllium copper spring to provide smooth and quiet operation.
- SUPER LITE: AeroRest is under 1.2 oz as a result of usage of new generation of materials (Si3N4 ceramic, Aircraft Grade Aluminum, GR2 Titanium, GR5 Titanium).
- ULTRA HARD TYPE III ANODIZED FINISH: AeroRest is finished with Type II level 3 Anodized Finish (3 MIL Military Grade) for extreme durability and this finish gives AeroRest a natural Camo gun gray / olive green color.
- RUST PROOF GR2 Titanium FASTENERS/ SPACERS: Fasteners and spacers are made of rust proof super light GR2 Titanium (75% lighter than ordinary materials).
- FITS MOST ARROW SIZE INCLUDING NANO: AeroRest can accept arrow shaft sizes from 0.25" to as small as 0.156" (optional spacer pack required) and as large as 0.45" (removal of top support required).
- LEFT OR RIGHT HAND SHOOTERS FRIENDLY: AeroRest has a mirror image design which allows AeroRest to be used by right or left handed shooters.
- MICRO ADJUSTABLE DESIGN (Micro-adjust Ver only): Built in Micrometer to allow fine adjustment (0.1 mm) for accurate target shooting as well as hunting in field.
- US Patents: Tangent point arrow rest 8,875,687, and Two axis micro-adjusting device with a single locking mechanism 8,967,133The unique design and material usage makes AeroRest virtually frictionless and always guide the arrow in the center and on the same plane all the time, thus your arrow can shoot faster, straighter and more accurately.

AeroRest Technical Tour

AeroRest is a full containment arrow rest, but unlike other rest which will slow down your arrow speed due to friction or hit your arrow when you release. AeroRest unique 3 supports with dual ceramic ball bearings spring support design eliminate friction and undesired hit between your arrow and rest, meanwhile always guide your arrow in the center and even suspend your arrow while launching.

Unique Design of AeroRest:

1. 3 Supports with Ceramic Ball Bearings Design achieve minimum contacting surface / virtually frictionless shooting as the contact points between the arrow and AeroRest are the tangents of the arrow to the ceramic ball bearings which the contacting surfaces are so tiny. Plus Ceramic ball bearings is one of the hardest material in the world and perfectly round which these characteristics mean no friction can be formed between your arrow and AeroRest (as friction cannot be formed on extreme hard and smooth surface). Thus AeroRest is virtually a zero friction rest.
2. Inside each support, it is loaded with 2 Ceramic ball bearings supported by a spring. This dual ball bearings spring support design allows easy loading / unloading of your arrow, meanwhile keeps your arrow always in the center. AeroRest is your arrow suspension system as you can fine tune the spring tension of each support to match the flex of your arrow. Thus with AeroRest, your arrow will shoot faster, straighter and more accurate.
3. AeroRest Magic 96-degree design (96-degree separation between the 2 lower supports) allows Aerorest to shoot ultra slim, slim and standard arrows (i.e. from 4mm to 12mm Outside Diameter (OD)) with only 3 simple set up steps. Stacking of Titanium spacer under support is no more required unless for ultra fine tune.

Note: Nylon balls are no longer included for AeroRest since 2015 as they were found to be unreliable; and in many cases unnecessary.

Standard vs Micro-Adjust AeroRest	Standard	Micro Adjust
Aluminum "C" frame and supports		
Latest cup design (no failure even at high temperatures)	Yes	Yes
Type 2 Level 3 hard anodized MIL-A-8625 finish	Yes (Natural olive green)	Yes (Natural olive green)
Magic 96 degree design	Yes	Yes
Side Bar Support design	Round	Square (2 lengths included to fit thinner risers like the PSE Money Maker / most of the Hoyt bows that use TAC risers.)
High Pressure Torx Screws	Yes	Yes
Titanium Arrow Rest Bow Mount Torx Screws	Yes	Yes
Laser Markings on supports	Yes, Mini meter (for Aluminum side bar)	Yes, Micro meter (0.1 mm fine adjustment)
Direct frame vertical Adjustment	No (need to loosen main screws)	Yes (adjustable by knob)
Direct frame horizontal Adjustment	No (need to loosen main screws)	Yes (adjustable by knob)
Ultra lite Weight	< 1.5 oz	< 2.25 oz
For left / right handed users	Yes	Yes
Price	$89.95	$189.95 - $199.95

Standard AeroRest

MIL SPEC.
GR5 Titanium &
Level II Type 3
AL w Laser Marking

Micro Adjust AeroRest

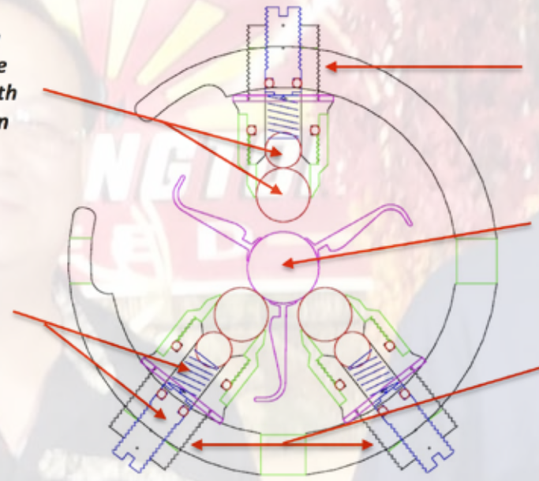
MIL SPEC
Level II Type 3

MIL SPEC
w/ Optional Dual
Bearing Bow Mount

NEW for 2017, Longer Bow Mount Bracket for Standard AeroRest

Dual Ceramic Ball Spring Support Design to achieve supreme durability, smooth operation and fine tension adjustment

Micro Spring with Micro Thread Plug Design to allow micro fine tension adjustment and easy arrow loading and unloading

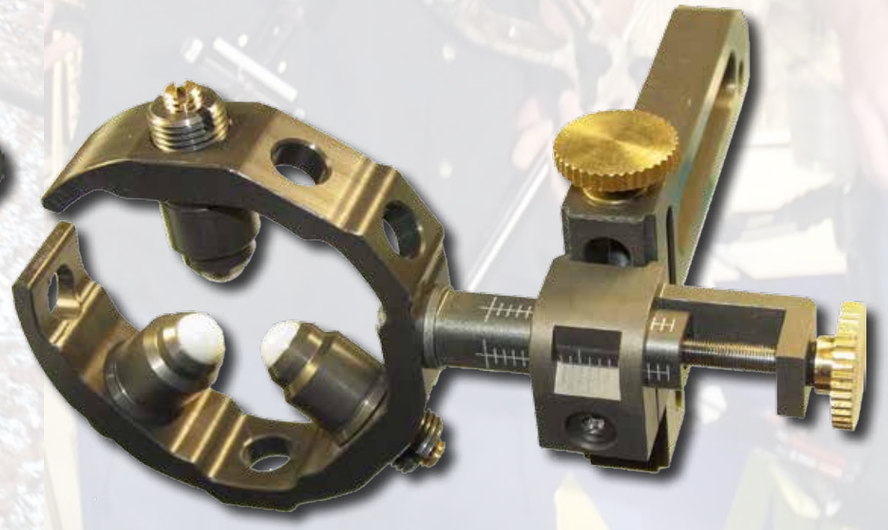


Removable Top Finger for target shooters and to accept arrow as large as 0.45"

Three Supports Design to accept and hold arrow with Aerovane 3 or other common vanes

Magic 96 degree for easy set up for ultra thin to standard size shafts. Stacking of Titanium spacer under support is required only for ultra fine tune

Anatomy of Firenock AeroRest
Unique 3 Supports Arrow Containment System



TAC AeroRest

1. The frame was redesigned to fit every generation of TAC crossbows.
2. The supporting tower is now taller to make adjustments easier on the TAC AeroRest.
3. It is pre-set to shoot factory TAC arrows.
4. It is equipped with the new improved cup for better support and operation while still able to set arrow from the top.

Titanium Fasteners Upgrade Kits for Bows (multiple US Pat and Pat Pending)

New for 2017, Improved and more advanced use of Titanium in Firenock archery specific Components

2017 is our fifth year of designing and selling multiple patented and patent pending titanium components, and, this year, we are featuring several hollow titanium fasteners. The advantages to the use of titanium components involve: weight saving, as well as vibration control, better hold balance, and harmonic dampening. Titanium components are not a magic bullet, but, we at Firenock believe that, if applied correctly, they can significantly improve the performance of your archery equipment. Finally, please note that we are still trying to create titanium faster upgrade kits for every bow on the market, so please contact us if one for your bow is not yet available.

Why Titanium Fasteners?

Titanium can be alloyed with other metals such as aluminum, manganese, molybdenum and steel. The most commonly-used alloys in today's industries are GR2 and GR5. These are the alloys that Firenock LLC use for our Titanium Fastener Upgrade Kits. But why? Well, one of the interesting properties of theses titanium alloys are the oxide layer that forms after titanium is combined with other metals. This oxide layer not only protects the alloy itself from corrosion, but also improves its overall already impressive durability and strength as well. This is the main reason why our bolts and fasteners are made of GR2 and GR5 titanium allows, but another reason for our choice is its light weight. At 45% of the weight of the metals most commonly used within marketed bows today (steel), you can't go wrong. Then, as we started last year and are fully launching this year, when one goes one step further and hollows that titanium, that mass to weight ratio becomes very close to that of aluminum! We now are able to minimize the fundamental resonance generated by fasteners due to focus mass to weight difference, making your arrow leave your arrow faster and with more energy than before.

Firenock Offers

Firenock Titanium bolt upgrade kits offer 2 grades of Titanium alloy, GR2 and GR5. GR5 is the most commonly used alloy and is also called as Ti6Al4V, Ti-6Al-4V or Ti 6-4. These chemical names mean that it has a chemical composition of 6% aluminum and 4% vanadium.

For Firenock Titanium bolt upgrade kits, non-structural bolts such as limb bolts, mod screws, limb pocket supports, etc are made of GR5. While GR2 has similar strength of brass, but its weight is only 45% of 303 stainless steel. For maximum torque possible, all Firenock Fasteners uses only Torx drive.

For 2017 many of the bow/crossbow upgrade kits have option(s) of hollow fasteners and specialty components to further improve on what we have improved upon and have learned.

With Firenock Titanium bolt upgrade kits, your bow will be lighter and has no heavy focus points for resonance. Thus your bow as well as arrow will spend less time to shake off (or clean up) and non-functional directional vector forces are reduced. In short, your bow becomes more stable and your arrow will gain more energy, your bow will become weather proof, your arrow will hit higher, and in most cases have a higher arrow launch speed with the installation of Firenock Titanium bolt upgrade kit.

Ultra High Performance Archery Parts

Due to its light weight, extra strong in tensile strength, and total corrosion resistance, many commonly used archery parts can be significantly improved with the correct use of Titanium components.

In 2017, Firenock will introduce more special titanium parts beside custom bow parts for specific bows like Bowtech, PSE, Mathews, etc. High precision and engineered part will be what is going to be the offering form Firenock.

Last year we start offering the hollow arrow rest bolt as an upgrade parts. This common button head is usually part of the package from any arrow rest which is made of black steel with the dimension size of 3/8"-24 x 3/4" button head screw. Firenock will take this usual 180 grains screw and make it out of GR5 titanium, with this material alone, the weight is reduce by 45%, or ~80 grains. We then hollow the entire screw, shrink the head width to 0.5" in diameter, use Torx 40 as the driver, and add a 0.5mm thick GR2 titanium press in spacer. These changes make the final product just about 45 grains. Which is about 25% of the original weight. This design also prevent any future scratching on the arrow rest when tightening as GR2 is only as hard as brass, which is very soft, but still about 45% weight of steel.

For comparison purpose, we have the 2 most common use limb bolt on the lower right hands corner of page 21. In some design we can achieve a 70% reduction in weight. Or use it in more strength and better user experience like the new PSE crowned flat head hollow limb bolt as shown.

Titanium Special Parts (US Pat 9,11,953)

In order to perfect the complete bow upgrade kit, Firenock custom made special parts of specific bows. For examples, FIrenock made Titanium special shoulder bolts for bows like the Hoyt which has bearing screw, Bowtech RPM which has limb pocket pivot hold screws, PSE DNA which has cable stop screws etc. All these special parts are made of GR5 Titanium as GR5 Titanium has the required strength, meanwhile has the lightest weight.

Titanium Cam Stop (US Pat 9,097,486)

Firenock has no less than 5 different designs of cam stop, each specific design exploit the ability of GR5 Titanium alloy by increasing the diameter of the cam stop, but decreased the wall thickness to ultra-thin without sacrificing the rigidity of the stop. Due to this special design, the cam stop weight was reduced as much as 80%+ as compared to original cam stop. This special design also increased the contact surface of the cam stop to the cam, thus minimized the effect of deforming the cam due to high pressure which this commonly happened when tightening the cam stop.

With the installation of Firenock Titanium alloy cam stop bolts, cam becomes lighter which this not only increases the rotational speed of the cam, but it also decreases the torque stress that is applied to the cam at each launch cycle. In short, your bow becomes more stable and balance and energy transfer is being more efficient and thus your arrow normally will achieve a higher launch speed and point of Impact (POI). Due to bow and cam design your result may vary.

What are available from Firenock (2017)

On page 21 we have listed some of the parts that were available as of 12/31/2016. More will come. Starting form top left.

- Flat 5/16"-18 x 2" Hollow Bolt
- PSE Cam Stop w/Screw
- Mid Width Sam Stop
- Expedition/Obsession Cam Stop
- PSE Old Style Quiver Hollow Screw
- Hollow Stabilizer Stud
- PSE Tac 15i Hollow Cable Guard
- Dom-Top Flat 3/8"-24 x 2" Hollow Bolt
- Bowtech Mating Limb Pocket Hold Set
- PSE Tac 15 Elite Cable Guard
- PSE LAS™ Barrel
- Stabilizer Nut
- 2" Hollow Stabilizer Stud
- Bowtech Hollow 3/8"-24 x 2 1/4" Bolt
- 3/8"-24 Barrel
- PSE LAS™ Side Control Nut
- Hollow 3/8"-24 x 3/4" Stabilizer Nut
- Hollow 3/8"-24 x 1/2" Stabilizer Nut
- Bowtech 5/16"-18 x 2" Bolt
- Slim Cam Stop w/Screw
- Large Hollow Cam Stop
- Extra Heavy Duty Cam Stop w/Screw
- PSE 2.78" Hollow Limb Pocket Bar
- Hollow Socket 5/16"-18 x 2 1/4" Bolt
- PSE 3.08" Hollow Limb Pocket Bar
- Cable Guard Bearing Short Shoulder Screw
- Cable Guard Bearing Long Shoulder Screw
- Bowtech Carbon Riser Limb Bolt

Titanium Bolt Upgrade Kits

Like before, the upgrade kit come in 2 levels. The Basic Level includes the 2 limb bolts, an arrow rest bolts and 2 sight screws.

Advanced Level includes all/most of the bolts, screws, cam stops, and other specialty parts. Please note that some bows non-typical size or shape fasteners, may not be included in the upgrade kits. See listing of what is included with each package. Case in point, for Mathews, bow that has the limb tip plate, our counter sinked 7075 AL limb tip plate is now standard for any bows that uses this part and the OEM socket head screws are also replace with flat head. You can see the latest list of bow kits we have set at http://shop.firenock.com/Titanium-Parts-for-Bow_c22.htm. If your bow is not on the list, please contact us and we shall try our best to get a Ti Upgrade Kit for your favorite bow.

Specialty Crossbow/Compound Bow Parts in GR5 Titanium

3/8"-24 x 2" Flat (442 vs 204 gn)

5/16"-28 x 2 1/4" Flat (318 vs 136 gn)

AeroBowString Serving Jig

Why AeroBowString Serving Jig (ABSSJ)?

Firenock, as a premium nock company, has always felt like a tire company. To fit every customer's needs, we must create "tires", or products, to fit their "rims" of unknown shapes and sizes. Over the years, many of our customers have told us that our nock to string fit is not ideal. This lead us to delve deeper and to do some research. As a result of our research, we decided that there is nothing wrong with our nocks, but with the string itself. Issues like inconsistency after spool change or server changes due to color preferences were also discovered. Further and more specifically, we concluded that the true problem lied in the fact that, today, there is a lack of a string standard due to the lack of one tool that can handle a high volume, high demand, and high tension string building process (involving the need to constantly hold pressure up to five lbF for an extended period of time.) So we designed one ourselves.

Key Features of ABSSJ

- Detachable thread spool with drag system for easy drag pressure setup, even after removal
- Compatible with most current serving thread spools and market available spools (e.g. Specialty Archery)
- Shaft-less spool is supported by two ball bearings for smooth operation .
- Hollowed titanium rollers for strength and light weight
- Flange ball bearings-supported rollers for ultimate smoothness, minimum tolerance and ultimate control
- 7075 Aluminum main body secured by two GR5 Titanium 1" thread pin-neck screws for rigidity and perfect alignment
- Both spool lock and drag lock knobs are dual O-ring fitted to allow stable operation and fine adjustment
- Rounded main body to prevent thread damage, especially while nicking the thread at high pressure

The 9 Element Drag System

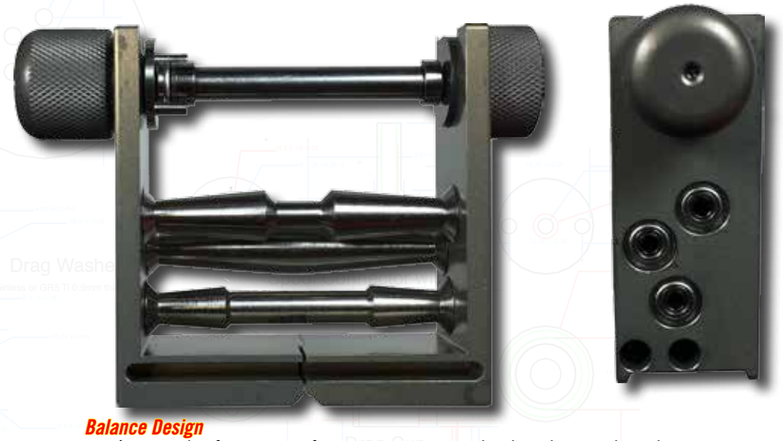
ABSSJ utilizes a true drag system for tension control. Just like most ultra high performance fishing reels, it has a nine-element drag system which consist of five graphite-weaved drag washers and four titanium drag washers. This design allows the serving tension to be up to 400% higher than what most string serves can create today. The drag system is pre-lubed with Teflon/PTFE drag grease, but is also designed to be oil filled and liquid tight with the dual O-rings groves under the Drag Knob for those who prefer wet lubrication. .

The drag system also provides extremely accurate and consistent thread pressure, able to be used without pressure fading or component failure using a computer-controlled, brush-less motor-serving machine with a 15,000 RPM in a professional production string building environment.

Light Weight Key Components

After staring our journey developing the design for the ABSSJ and reaching to many seasoned commercial string builders, we have learned that they wanted a jig with size, but not heft, as well as ultra-durability (since it would used in a production environment.) That is why the ABSSJ is both light weight and engineered with especially strong components including:

- A GR5 titanium main shaft
- 7075-T5 aluminum with type 2 level 3, natural gray-finish main-body halves, drag cup, spool lock, and spool knob
- Three GR5 titanium hollowed thread rollers
- A 303 stainless spool catch
- GR5 titanium main body shoulder pin screws
- Dual flange ball bearings for each thread roller
- Spool catch supported by two trust bearings
- Dual ball bearings supported spool on a motionless shaft



Balance Design

As a result of comments from our testers, we developed two enlarged compression drag knobs for easy control during operation. This improved design allows the string builder a better grip to swing the jig around easily.

(303 Stainless & GR5 Titanium) Dagger

Spare Spool

A 7075-T5 type 2 level 3 spool is available as an add-on accessory for those who prefer to spool thread from a bulkier spool.

Spool hold and drag unit

The entire spool hold, center shaft, and drag unit is available as additional add on option for those who like to able to quickly swap the entire spool/drag unit without changing the spool.

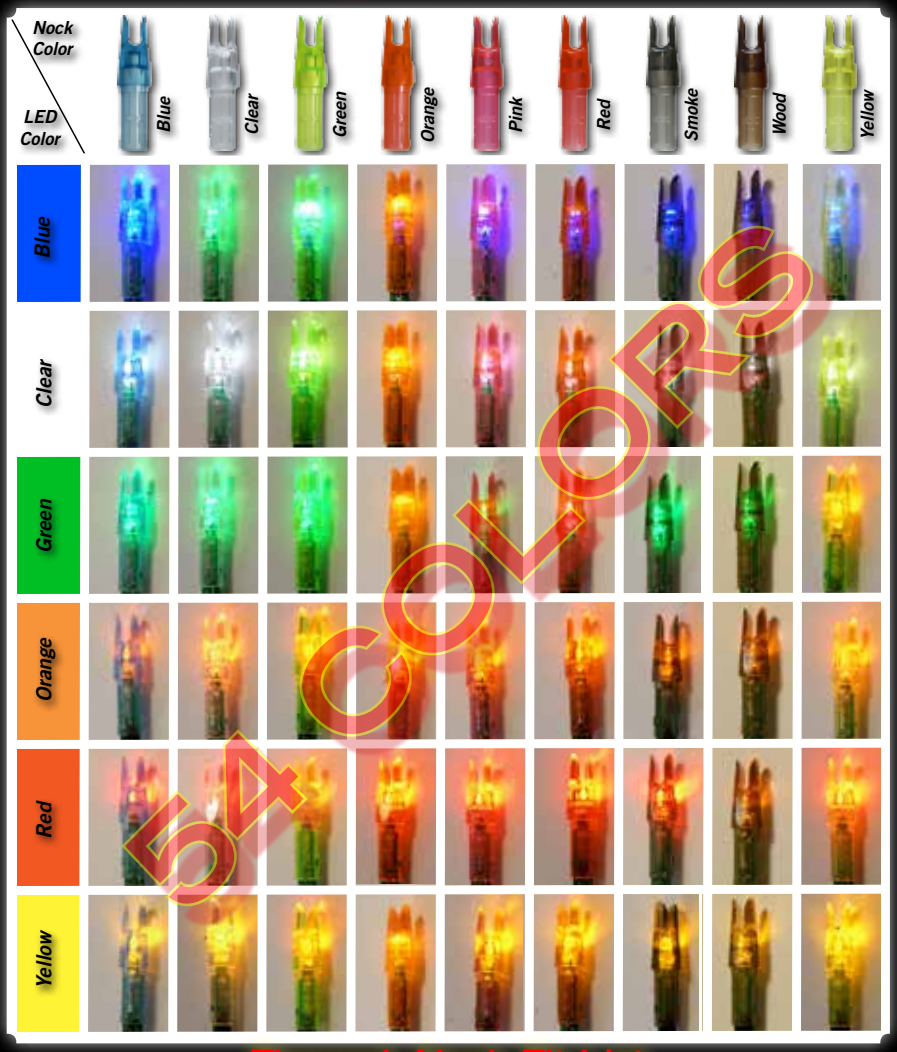
Many have asked if we can make a vertical bow version of the Traumahawk Broad-head. After one whole year of research and testing, we come out with the Dagger. Designed with the same bevel edges as the Traumahawk, the Dagger has two instead of one bevel edge on each side.

Dagger is be available in 303 Stainless Steel with a weight of 125 grains, as well as in GR5 Titanium with weight of only about 70 grains.

One may ask who needs a broadhead at such a light weight of only 70 grains? Many archery hunters have noticed and informed us that complete arrow weight plays a significant role when utilizing the AeroConcept System. Thus, for those who want a fool proof, no gimmick broadhead to fit perfectly with AeroConcept System arrows, a lightweight broad-head such as the Dagger is fantastic.

To ensure concentricity when one is installing Dagger, just like Traumahawk, Dagger is also equipped with our US Patented Firenock Arrow Concentric Technology (FACT™, US Patent 8,337,341). The Double O-rings System on the neck of the Dagger will give you near to perfect concentricity once screwed in.

The only lighted nock system that let you field-change Battery, Nock, LED Color, and Circuit function



Firenock Nock Fit List

Firenock "A" will fit slim graphite shafts with ID of 0.202" - 0.204":
Beman: Team RealTree MFX™, Classic MFX™, BLACK MAX™, MAX-4™
Black Eagle: Rampage, Renegade **Carbon Tech**: Lynx.
Carbon Express: Edge, Piledriver™ Extreme
Easton: 5mm Axis, Hunter A/C Super Slim, ST Axis Full Metal Jacket, ST Axis Full Metal Jacket Camo, ST Axis Full Metal Jacket Dangerous Game, ST Axis Realtree APG, ST Axis Mossy Oak Obsession, ST Axis, ST Axis Junior, A/C/C 3-28/390 (ID: 0.205")*
Element: Typhoon **Gold Tip:** Kinetic Hunter, Kinetic Pro, Kinetic XT
Trophy Ridge: Blast, Crush, Hailfire, Wrath

Firenock "C, D, D², J, & Q" will fit 0.298"-0.301" inside diameter crossbow arrow that need/prefer a full containment nock and a specific throat size to nock onto the serving:
Serving size: 0.155"-0.165" Carbon Force: Tac 10, Tac 15, Mission MXB360
Serving size: 0.145"-0.155" Mission MSXB320, Barnett, Darton, BowTech
Serving size: 0.135"-0.145" Scorpyd, Parker
Serving size: 0.125"-0.135" Bowtech

Firenock "E" will fit medium arrow shafts with an ID of 0.229" - 0.232":
Alaska Bowhunting: GrizzlyStik (ID 0.212")* **Black Eagle:** Spartan*
Arrow Dynamic: Nitro Stinger (ID 0.211")*
Easton: 6mm FMJ, ACC Pro Hunter, A/C/C 3-49/390, Aftermath, ION, Pink ION, Da'Tourch, Hexx, ST Epic Realtree HD Green, Nemesis ST Epic, ST Carbon Excel, Bloodline, Wildthing, Traditional Only, A/C/C 3-39/440*

Firenock "F, & M" fit crossbow arrows with an ID of 0.297" - 0.304":
Barnett: same as Easton **Black Eagle:** Executioner, Zombie Slayer
Bowtech: Striker Bolt **Beman:** ICS Thunderbolt®
Camx: Accuspine **Carbon Impact:** Ultra Bolt XLT 22
Easton: Carbon Realtree Power Bolt, Carbon Power Bolt, Flatline™,2219
Firenock: AeroBolt II-200, AeroBolt-Dragon Slayer
Gold Tip: Laser II, Pro Laser II, Laser III, Laser III Pro
TenPoint: Pro Elite **Victory:** Crossbow Bolt

Firenock "G" will fit slim arrow shafts with an ID of 0.165" - 0.1665":
Black Eagle: Deep Impact, X- Impact **Deer Crossing**: SD
Forge: Slip Stream **Gold Tip**: Pierce Platinum
Harvest Time/Blood Spot: HT-1 **Victory:** VAP
Easton: 4mm, AC Injexion, Carbon One, FMJ Injexion, Injexion

Firenock "S" style nock fits standard arrow shafts with ID of 0.242" - 0.246":
Arrow Dynamic: .395 Mag
Beman (ICS)**:** Bowhunter, Hunter Elite, Hunter, Camo Hunter, Hunter Junior, Venture
Black Eagle: Carnivore, Zombie Slayer, Outlaw
Cabela's: Carbon Hunter, Stalker Extreme Carbon, Outfitter Series
Carbon Xpress: AMPED-XS 30, Aramid KV, Carbon Rebel, Carbon Rebel Hunter, Heritage, MACH 5™, Maxima™, Maxima™ 3D Select, Maxima™ Blue Streak, Maxima™ Blue Streak Select, Maxima™ Hunter, Maxima™ Hunter KV, Mayhem™, Mayhem™ Hot Pursuit, Mayhem™ Hunter, Mutiny, Piledriver™, Piledriver™ Hunter, Predator II, Terminator Hunter, Terminator Lite, Terminator Lite Hunter, Terminator Lite Select, Terminator Select Hunter, Terminator XP, Thunderstorm, Thunderstorm SE, Whitetail
Carbon Impact: Stealth XLT, Trophy Hunter, Carbon youth
Carbon Tech: Cheetah, Panther, Rhino, Whitetail **Deer Crossing**: Hunter
Easton: Bowfire™, Carbon Storm, Flatline Surgical, Flatline, LightSpeed, Lightspeed 3D, PowerFlight, Excel & Epic pre-2008, *A/C/C 3-60/340[1], 3-71/300[2]*
Forge: Extreme Kevlon
Gold Tip: Pro Hunter, XT Hunter, Expedition Hunter, Falcon, Traditional XT, Traditional Hunter, Big Game 100+, Ted Nugent Signature, Velocity, Worrier
Harvest time Archery/Blood Spot: HT-2 **High Country:** Speed Pro
PSE: Carbon Force, X-Weave, X-Weave Pro
Red Head (Bass Pro Shop)**:** Carbon Fury, Carbon MAX2, Carbon Maxx, Carbon Hunter, Carbon Supreme, Carbon Supreme Lite
Vapor: Predator, Predator Pro, Hunter, Hunter Pro, Pro Black, Pro Whitetail, Whitetail, *Carbon Aluminum .400**, Carbonwood, Wayne Carlton Signature, Vapor Jets
Victory: V-Force, V-Force HV **30.06 Archery:** Tom Nelson Signature Arrow

Firenock "V" will fit 22-Series graphite shaft with ID of 0.299" - 0.301":
Gold Tip: Ultralight Series-22, Ultralight Series-22 Pro
Victory: VX-22, VX-22HV

Firenock "Y" will fit crossbow arrows with ID of 0.284" - 0.286"
Carbon Express: Aramid KV®, Maxima® KV Hunter, Hunter, Maxima® Mayhem, Pile Driver, Surge, CX™
Easton: FMJ Crossbow Arrow
Gold Tip: Laser II Kinetic, Laser IV (shave off all ridges to fit)
Parker: Redhot™ by Carbon Express

WWW.FIRENOCK.COM

* Visit www.firenock.com for details on specific nock modification. Specifications subject to change without notice. Editor:Shannon Huang

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