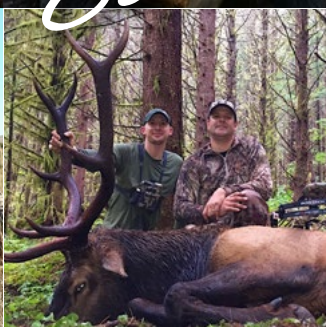
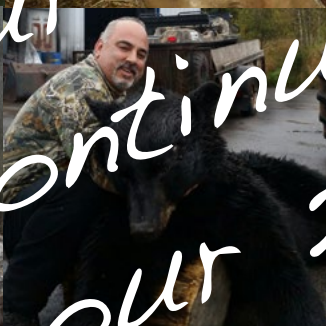
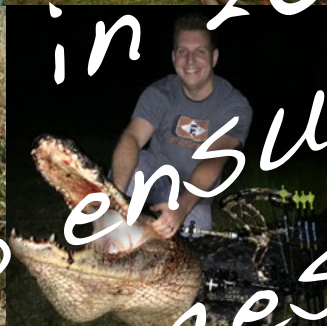
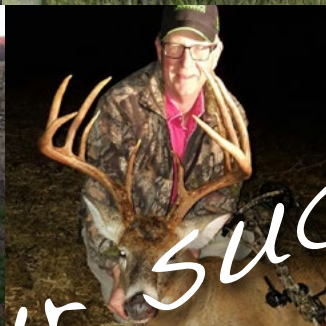


Firenock®
The Most Advanced Lighted Nock®

2016



Your success in 2015
ensures our 2016 success

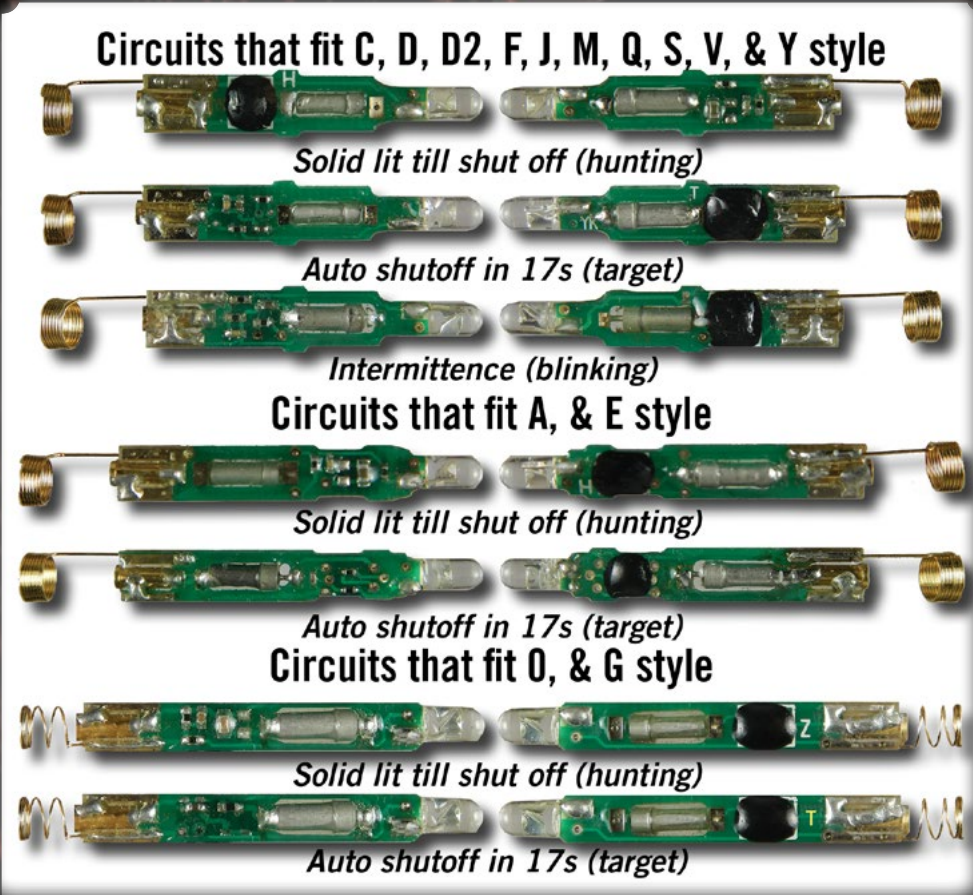
FIRENOCK PROVEN ADVANTAGE

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2 New for 2016 in the Firenock Lighted Nock Line

Firenock lighted nock is the most versatile and most advanced lighted nock. There are now 14 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 nock.

All 14 styles of Firenock lighted nock are built with missile launching technology and various US patents. All styles of Firenock lighted nock are now easy to install as EZcoil or Stack-Coil battery connection system makes battery installation a breeze, just insert, turn and the battery is installed (EZcoil must use with extreme shock end cap). To make Firenock lighted nock hitting rock, bone, concrete without failure, all Firenock lighted nock packs come standard with extreme shock end caps



Field Replaceable Firenocks

Firenock nocks are high precision and high light transmission polycarbonate nocks, with a patent-ed slide and lock system. When a nock becomes worn, a new nock can be easily replaced by removing the circuit and reinserting it into a new one. Firenock C, D, D2, F, J, M, Q, S, V and Y, A & E, O and G styles can be interchanged with the Firenock H, T and I, N & K, and Z & X circuits, respectively. Firenock is nock replaceable and the system can be changed according to your situation. For example, your hunting system can be field changed to an intermittent system by changing circuit H to I.

For those who don't want to shoot a lighted nock but want the advanced and extreme design of Firenock polycarbonate nocks, you can use them without the electronics.

Extreme Practice Weight

For practicing purpose, Firenock created Extreme Practice Matched Weight Pack. The Practice weight is a dummy of Firenock Lighted nock, so you do not need to retune your bow. All Extreme Matched Practice Weight systems include extreme shock end caps and green Firenock self-contained nocks for ease of identification. Thus there is no more hassle as to which arrow is loaded with a lighted nock or a practice nock any more as they are now color coded.

Ultra-Mini "G" Switch

Firenock developed the industry's first ever commercial ultra-mini "G" switch (UMGS). This cutting edge UMGS technology makes accidental activation a thing of the past due to its ultra-precision. The UMGS built in our Firenock Lighted nock system senses the direction and speed of your arrow in order to control the lighted nock system. The UMGS is proudly made in the USA, ultra sonic sealed and gold plated inside for extra reliability, best sensitivity and best performance. Our UMGS gives Firenock lighted system a mean time between failure rate of not less than 12,000 cycles, or in other words, ultimate reliability and performance.

Extreme Shock End Caps

All styles of lighted Firenocks are fitted with "Extreme Shock End Caps". The End Caps became standard after years of testing. We have concluded that extreme shock end caps are the best insurance policy you can have for normal arrow and crossbow speeds at over 300 fps and for long term reliable use of our lighted systems

Serious About Crossbows

For 2016, a new nock Firenock "D2" will be added to the Firenock. The new Firenock "D2" nock is made to fit perfectly in 0.300" ID shaft whilst "D" style is designed to fit 0.298" ID. With 2014 shorter "J" and improved "Y" and "F" style nocks, We are now able to fit every available crossbow bolt system on the market. Firenock crossbow nocks use either compression fit system (D, J, Q, V, & Y) or dual O-ring system to fit today's shafts (C, F & M). Both fitting systems allow you to pull the nock out of the shaft and replace the nock without gluing. With these fitting systems, you can tune your bolt easily by just turning the nock.

EZcoil System

To fit Extreme Shock End Caps perfectly, Firenock created a simple and easy to use battery wire connector known as EZcoil. With EZcoil you only need to push the battery through the coil and do a counter turn motion to lock it in. No need to twist, bend or thread the wire between the batteries any more. It's simple and easy.

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, OB, OC, OG, OO, OR, & OY
- 47 Nock Pack
AB, AC, AG, AR, AY, CC, CG, CR, DC, DG, DR, D2C, D2G, D2R, FC, FG, FR, GC, GG, GR, 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
- 7 Extreme Shock End Cap Pack
XA, XE, XF, XG, XS, & XY
- 12 Extreme Match Weight Pack
PAX, PDx, PD2x, PEx, PFx, PGx, PJx, PMx, PQx, PSx, PVx, & PYx
- 6 O-ring for End Cap Replacement Pack
OAx, OEx, OFx, OGx, OSx, & OYx

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, versatile, 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 brand 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 of Firenock, field changeable batteries are one of the most important and desirable features of Firenock. You can change your battery in field without a tool. We offer 3 styles of batteries (BL, BR, BU). Our standard "BR" battery is the most powerful and it is second to none. Because of its power, the "BR" battery has a shorter shelf life, so we only offer "BR" battery from August to December. BR batteries are manufactured in July to ensure the best possible performance. Firenock also offers the ultra-long shelf life battery "BU" since 2012. The "BU" battery is the most stable battery and has the longest shelf life among our 3 styles of batteries. BU has about 85% of the power of the "BL" battery, but with a shelf life of at least 7 years from the date it was manufactured. From our tests, "BU" battery is the only battery that can hold up to 90% of its initial power for no less than 60 months at room temperature on the shelf. While BU has a higher initial price, we still believe that our customers want the much longer shelf life as it is perfect for backup purposes.

With these 3 styles of batteries, we at Firenock believe that we have offered a complete power solution for archeries using Firenock lighted nock.

- "BL" is the ideal all season battery that can handle reasonably low to the highest hunting temperatures in US.
- "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.
- "BU" is the ultimate back up battery. You can keep it in your backpack, year after year and use it when you need it.

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% humidity	8	36	>84
O-ring Groove 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 are sent along with the lighted nock(s) and/or circuit(s). For this service, please do not send any accessories like O-rings and batteries to us. 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 warranty for more information. The refresh/upgrade PDF 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

2016 is going to mark the 8th year for the Aerovane system. Although Aerovane system is great, we have not stopped and kept making new products to make Aerovane a complete and perfect package. The precision Aerovane jig addressed the imperfections of most competitor's jigs. Custom glue bottle and formulated glue were developed so that you could apply glue precisely, have strong physically and chemically mated glue at lowest weight, but strongest bonding power to fletch Aerovanes as well as any other vanes onto whatever carbon arrow or bolt you are using. Aerovane II is now equipped with a new surface texturing which both sides of the vane have identical texturing to improve the weight distribution and to make the vane straighter even with an airfoil built into it.

Aerovanes are not vanes but wings:

- Works best with worn out Whisker Biscuits arrow rest as it has the thick frontal end to open the bristles and allows the vane to pass with minimal drag.
- Has very little bending, flapping or fluttering due to structural integrity and material hardness (true ultra slim pyramid design).
- Uses airfoil technology to induce greater rotation to the high drag system that traditional "Helical" fletch utilizes (under Firenock testing conditions).
- Has a true owl wing frontal design (Modeled after the only bird that flies with no sound).
- Formulated to easily bond with super glue. e.g. Firenock AG0600, Goat-tough, Loctite Ultra Gel Control.
- Utilizes true airfoil design (continuous change of thickness and curved surface).
- Is made of a very rigid material for structural rigidity and for maximum steering.
- Does not generate much noise when shot.
- Has higher down range speed than most common vanes.
- Has minimum drag (Must be fletched straight).
- Has concave feature to achieve minimum surface to air drag.
- Works with bow with reasonably straight nock travel.
- Has minimum delta wing surface vortex, thus less drag.
- Has a wind channel for structural flexibility.
- Will function well most rests currently on the market.
- Has minimum 1st or 2nd stage turbulence.

Aerovane Fletching Procedure

To fletch Aerovane, the following material are needed;

- Aerovane(s)
- Arrow shaft(s)
- A precision index vane jig
- A bottle of 500 centipoises (cP) or higher viscosity super glue (e.g. Firenock Aerovane glue AG0600)
- 2 bottles of 100% pure Acetone (generally available at Walmart cosmetic section); one large, one small.
- Q-tip that does not have plastic or synthetic material in it
- Tiny glass cup for the Q-tip to dip into (optional)
- A roll of paper towel

Procedure

- 1) Thoroughly clean the surface of the shaft(s) by dipping the shaft(s) into the large bottle of 100% pure acetone.
- 2) Swirl the shaft inside the large acetone bottle for a few time to loosen all particles and dissolve all possible contaminate on the shaft(s).
- 3) Wipe dry with clean paper towel.
- 4) Let air dry then surface of the shaft(s) is ready for fletching.
- 5) Insert the Aerovane in a vane clamp.
- 6) Dip one end of the Q-Tip into the small acetone and wipe down the base of the vane from one end to the other.
- 7) Take the dry end of the Q-Tip and wipe dry the vane with the same direction as above.
- 8) Apply a small bead of glue down the length of the vane base.
- 9) Place the back end of the clamp against the inner wall of the jig just above the arrow.
- 10) Slowly lower the clamp until the magnets grab hold of the clamp.
- 11) Firmly push the clamp all the way to the arrow, and hold it down for no less than 5 seconds, and allow the allotted time 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)
- 12) 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.
- 13) 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.
- 14) Repeat step 5 - 15 for the next vane.

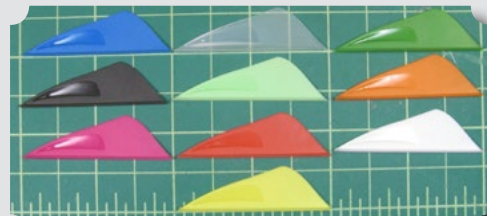
To learn more about Aerovane
Installation please visit
<http://www.Firenock.com>

Aerovane II Specific Characteristic

- Works the best with arrow speed no less than 290 FPS.
- Has 3 different surface texturing zones for mini turbulence and for wide range of air speed.
- For best result, fletch with Aerovane jig or Bitzenburger jig straight clamp with Aerovane tool installed.

Physical Aspect of Aerovane II

- Weighs 0.42 gram / 6.48 grains.
- Length 50mm/1.967"
- Height 14mm/0.55"
- Comes in 10 colors: \



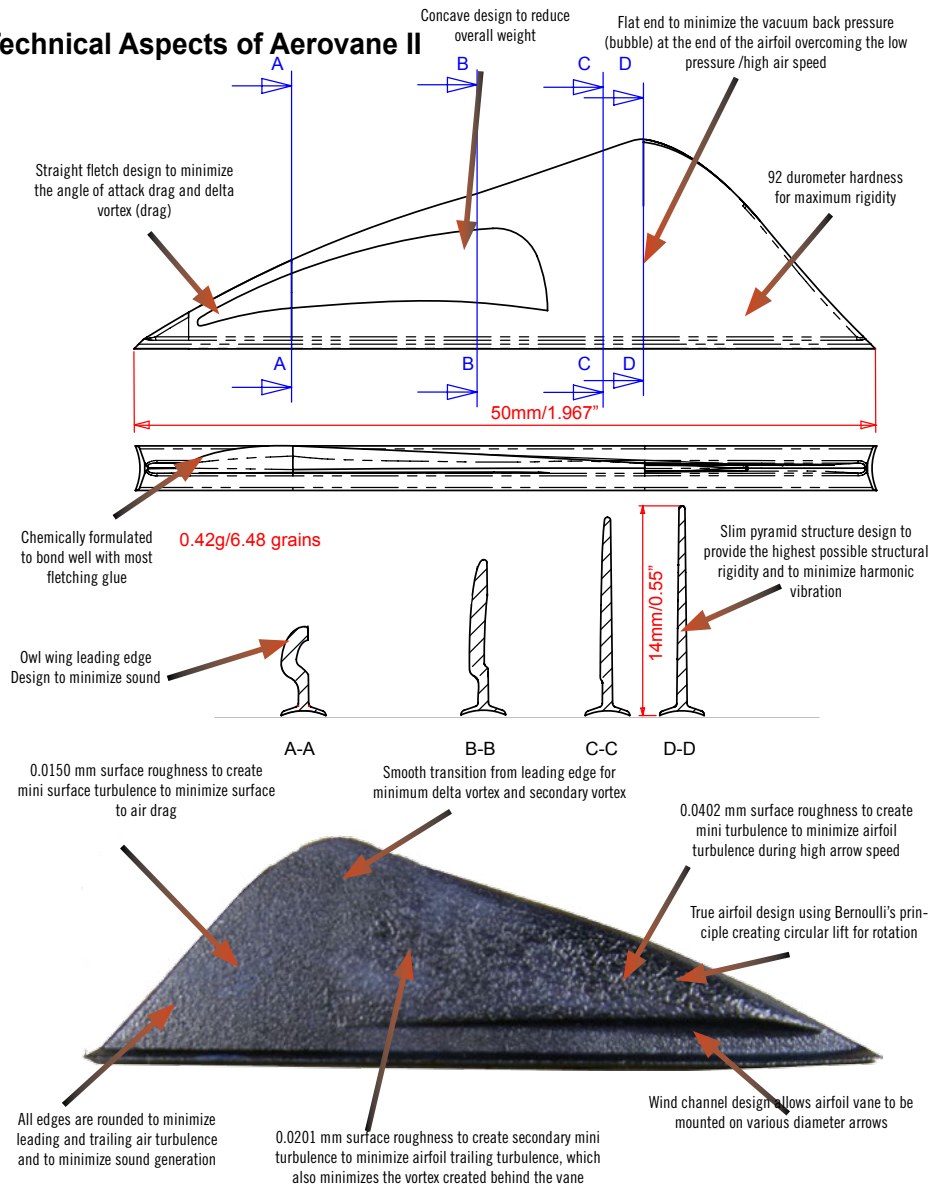
Can Aerovane II fly with broad-head?

Aerovane II are great for both target and broad-head flight. The inherited high spin design of Aerovane II would actually stabilize a broad-head tipped arrow faster than traditional vanes & feathers. With Aerovane II, fixed blade broad-heads (as big as 1 3/8 inch cut) and all truly secure expandable blade broad heads are good. But for Non Aerodynamic design expandable broad-heads, they are not suggested to use with Aerovane II and these kinds of broad-heads will create drag and your arrow will fly badly and in some cases the blades may even deploy during flight as Aerovane II spin the arrow at high speed.

The broad heads giving the great results are:

- Hartcraft with Trophy I blade
- Muzzy Trocar
- NAP: Nightmare, Thunderhead Edge, Thunderhead Razor, Spitfire Edge, Braxe, and Spitfire Maxx.
- Rage Extreme, hypodermic
- Slick trick (100, 125)
- Smoke: Ramcat
- Trophy Ridge: Meat Seeker 3 blade

Technical Aspects of Aerovane II



Flight Revolution Again AEROVANE® III

During the development of Aerovane in 2008, a lot about aerodynamics and arrow-dynamics were not fully understood. With extensive wind tunnel testing, we could now understand some of the real effects of wind on vanes. An interesting thing that we have found out is that concepts like, polished surfaces would decrease friction drag, were simply not true. What we have found out in-stead is specific rough surface can decrease friction drag when the vane is actually flying in the air. In addition to prolonged in-house wind tunnel testing and experience from making Aerovane II, we have the pleasure to consult low-speed airfoil experts like Professor Michael Selig of the University of Illinois at Urbana Champaign (UIUC) in order to make Aerovane III even better. Aerovane III is designed to have multiple texture zones. This design also takes Aerodynamic Elasticity Memory (AEM) factor to a point which makes Aerovane III generate sideways lift and consequently increasing arrow spin.

The Specifications, differences and similarities be-tween the Aerovane III and Aerovane II are:

- AV3 is 29% shorter in height (10mm) than AV2
- Weighs about 4.5 grains or just over 30% lighter than AV2
- AV3 has integrates air flow base texture zoning compare to vertical texture zone.
- AV3 incorporates four different texture zones, compare to 3 for AV2
- AV3 Incorporates a winglet to improve the aerodynamics and reduce induced drag
- AV3 has a larger total airfoil surface area to compensate shorter height so that it can have the same total lift and corresponding spin torque as AV2.
- When the arrow with Aerovane spins, the frontal section of Aerovane will bend towards the rotation while the tail section will bend away from the rotation which results in the angle of attack of the wing being at the most efficient angle base on speed. This is engineered based on the IZOD factor of the plastic to make AEM at its best.
- Both integrates the same proven vertical structure and same slim pyramid design to reduce wow and flutter when in flight, and are made of 92 durometer hardness plastic.
- Both uses the same aspect ratio of the delta wing frontal area to reduce sound in flight
- Both can be fletched with Aerovane jig and Aerovane clamp due to the wide internal opening width of Aerovane clamp
- AV3 has close to 30% reduction in crosswind signature which means better ability to cheat crosswind. With AV3, one could expect to hit a target at close to 35 mph crosswind at 35 yards with archery projectile at 320fps as compared to 25 mph crosswind at 35 yards with Aerovane II with the same projectile.
- Both works as slow as 280 fps when fletch straight
- With 1.5 degree off set, both can work on arrow as slow as 160 fps for 3D/target.
- Both available in 10 colors

The broad heads giving the great results are:

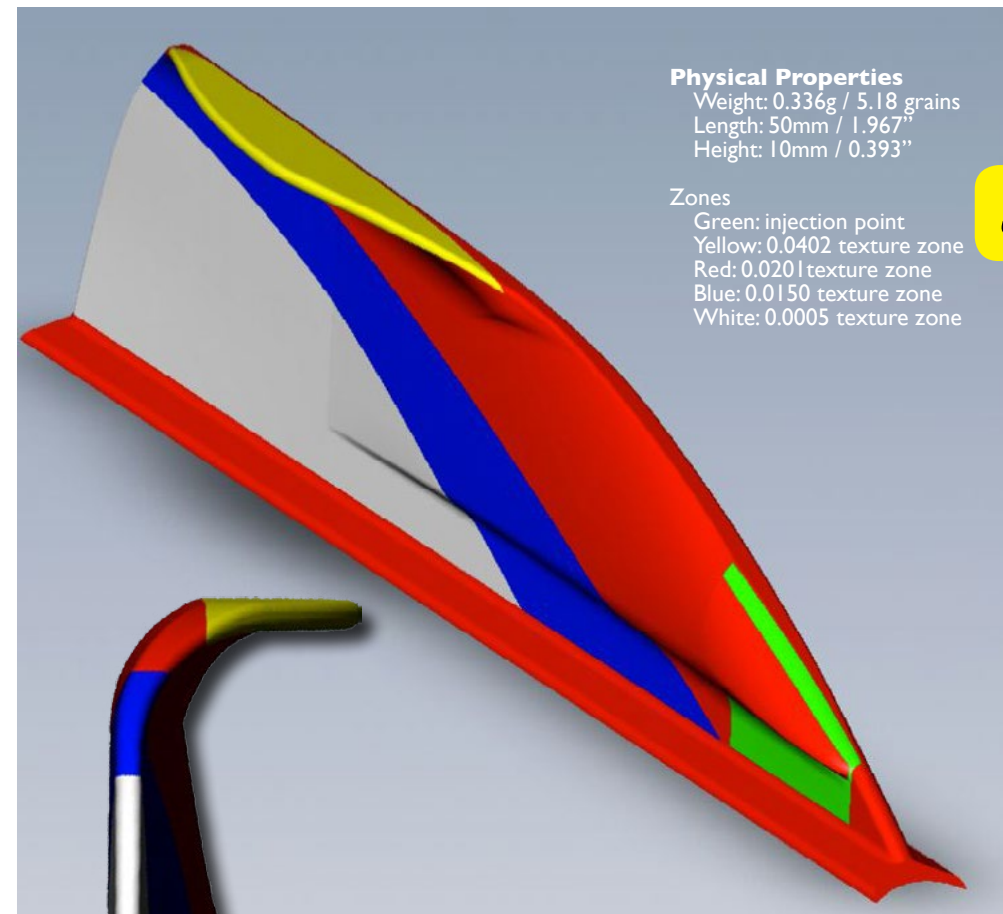
- Hartcraft with Trophy I blade
- Slick trick (100, 125)
- Smoke: Ramcat SBG 1"

Physical Properties

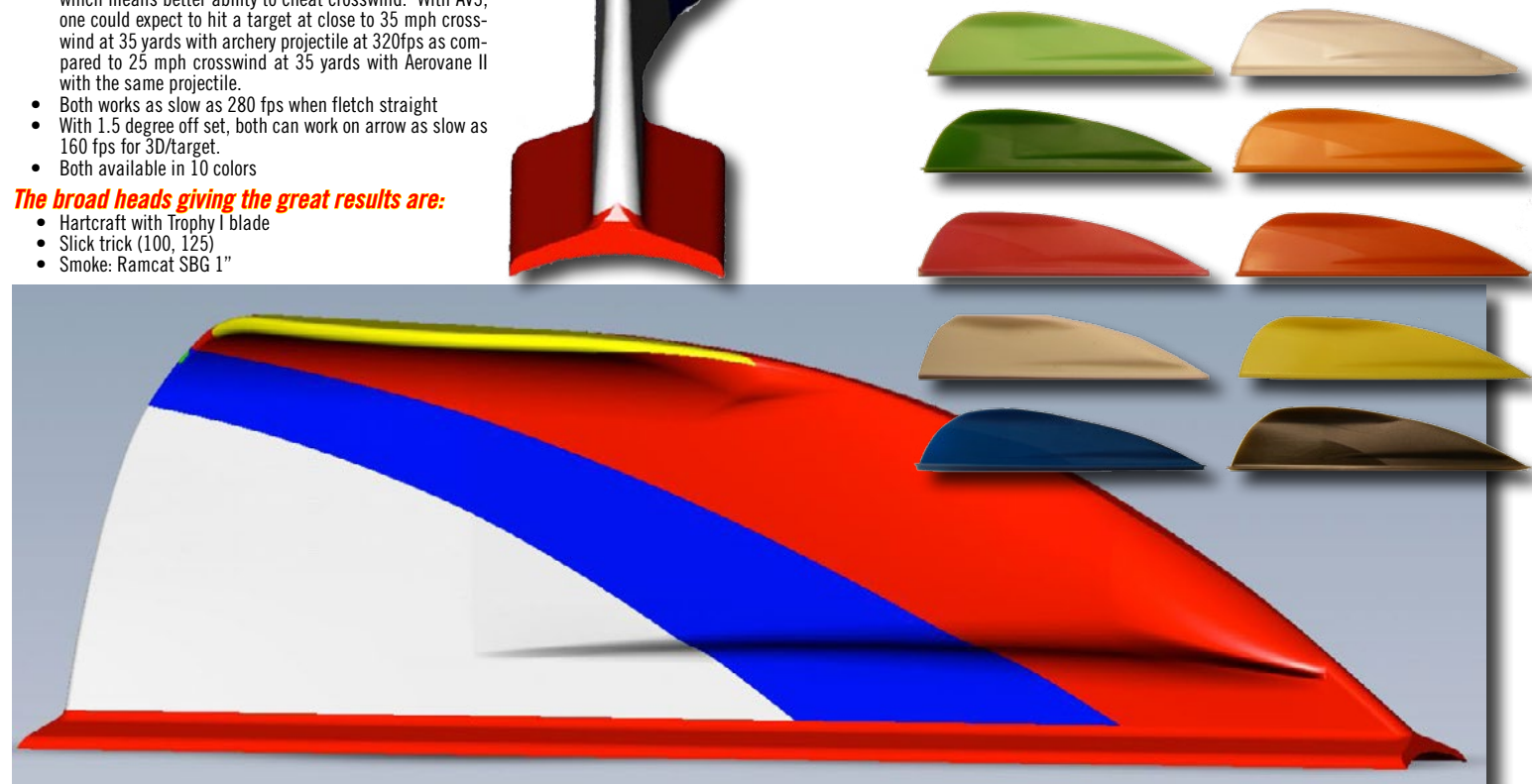
Weight: 0.336g / 5.18 grains
Length: 50mm / 1.967"
Height: 10mm / 0.393"

Zones

Green: injection point
Yellow: 0.0402 texture zone
Red: 0.0201 texture zone
Blue: 0.0150 texture zone
White: 0.0005 texture zone



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



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 helical and straight fletch.

The accessories are precision made which including a 303 stainless steel clamp, laser alignment module, 4-axis adjustable neck and interchangeable chuck and hook system for fletching all sizes of shafts. There are also optional kits to provide ever more capability for the Aerovane Jig. The Aerovane Jig's index is made of level 2 type 3 hard coated CNC aluminum mated with an ABC#5 ceramic ball bearing for perfect alignment and smoothness. The matched support hook also features 2 ball bearings which allow the arrow to be fully supported for smooth operation. To 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.

Index Choices

Aerovane Jig generally comes with 4 index as its standard configuration, this allows one to fletch 2 and 3 vanes perfectly. The current 4 index provides 0°, 120°, 180°, and 240°. As many customers have asked for an index to fletch other configurations such as 4 vanes and TAC arrows, we now offer an optional 7 index system which has 0°, 60°, 90°, 120°, 180°, 240°, and 270° which allows one to do many other configurations with ease. The 4 index will be phased out as production ran out and the 3 index will be the new standard configuration at 0°, 120°, and 240°.

Laser Alignment Module

The Aerovane Laser Alignment Module was developed to make aligning and re-fletching a single vane simple and fool-proof on 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 right above the Aerovane Jig's chuck via the 2 holes with 2 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 (1/4 to 1/16 of a degree accurate) can be done via any vanes that is already installed on the arrow by eyes.

With this laser line alignment tool, one can precisely achieve perfect alignment from a perfect center line. When the vane is in perfect alignment, one can see a crisp red laser line imposing on the fletched vane as the laser line passing through the gap between clamp and shining on the arrow on the jig. After years of struggling by finding the right suppliers while listening to our customers, we have come up with the best and with no compromise on the Laser Alignment system. This ultra thin laser will allow you to re-alignment an arrow to within 1/4 of a degree by copying the alignment of the next vane on the arrow to the jig's index. As most customers may not shot Aerovane, our 2 x 4 way adjustable neck is required to adjust of angle and position of vane. By utilizing 2 X 4 way adjustable neck, plus a single plane laser rotational adjustment, it is believed that our fletching jig system can handle any possible vane position and copy it to the index.

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 clamp specific to the Aerovane Jig. Thus your investment in clamp(s) will not be wasted as they are fully compatible with the Aerovane Jig.



Interchangeable Chucks and Hooks

Interchangeable chucks and hooks assist in obtaining perfect arrow alignment on the jig. The interchangeable chuck sets are tapered to provide zero play. The ball bearing arrow support hooks are color-coded to match with color-coded Firenock Extreme shock end caps for ease of size identification. Firenock now offers (Pictures above shown from right to left): an adjustable chuck, an adjustable hook, fixed chuck for 0.166", PIN, 0.204", 0.230", 0.244", 0.285", and 0.300" sizes to cover every shafts available. The fixed size chucks are made of 303 stainless with 3 sets of O-rings for perfect alignment and solid grabbing of arrows. Fixed size chuck is great for production environment as it is made for speed and ease of use. For those who want maximum flexibility and ease of re-fletching; the adjustable chuck and hook system is what one wants to use to cover 0.115" to 0.667" shaft sizes.

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. As nearly every styles of arrows have a pinnock adapter option, and with each new pinnock bushing pushed on top of the pinnock adapter, it is like having a brand new chuck.

All the hook sets have the slide ability with laser engraved markings to do offset up to 1.5 degree to the right. This allows one to set offset without the need to adjust the magnets and be quite precise (+/-0.25 degree due to eyeballing). It is a fantastic addition for those who shoot slower speed arrow and/or use other vanes besides Aerovane.

Long Vane / Feather Adapter

Aerovane Jig Long Vane/Feather Adapter is made from CNC Aluminum then silver anodized. This adapter comes with O-ring, a stainless hook screw and a brass washer as a kit. This kit added 1.5" length to what is able to be done to the standard Aerovane Jig. This adapter makes Aerovane Jig able to handle longer vane and feather up to 5.25". 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.

Precision Water Level

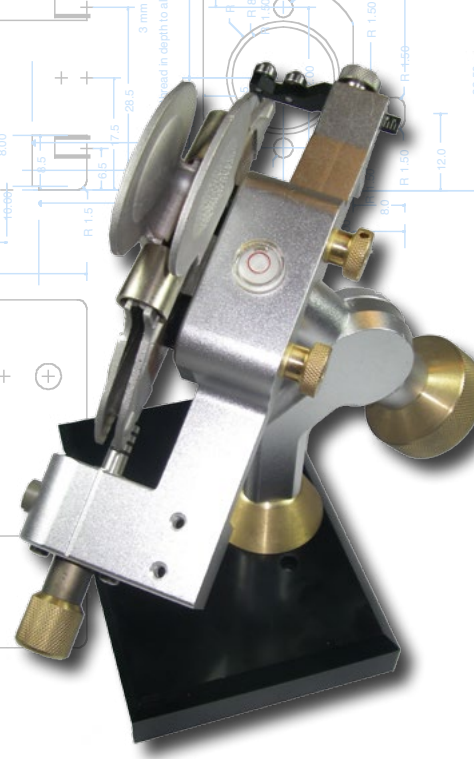
To ensure perfect alignment of the adjustable hook to the chuck, an optional precision water level is added to Aerovane Jig line. It is needed with arrow where a uni-bushing is used or when is used with an adjustable chuck. The level can be hooked on the arrow from the side and is extremely compact. It is made of 6061-T6 AL and supported via 4 ball bearings to ensure no sticking to the shaft. This together with the jig built in bull-eye level makes impossible to be possible as perfect alignment of an arrow on a jig is now possible.

The Aerovane Clamp

There are many magnetic based clamps available for sale; however almost none of them could satisfy today's demanding hunters. Firenock has developed Aerovane clamp. It is made of high precision die cast 303 stainless steel, precision machined for a straightness up to 0.001" and has a 1/16" straight bar built in as part of the clamp. For the pivot point, we utilized zirconia ceramic ball bearings for extra smooth, durable and virtually rust free operation. The extra thick spring system with self-alignment capabilities provides a good hold on any vanes. The clamp is also made shorter to better fit today's popular shorter vanes, but can still fletch vanes as long as 3.75". Perfectly straight fletching can easily be done with the Aerovane Clamp.

Complete Package

Firenock offers the Aerovane Jig in many packages. For The ultimate set, it includes the Aerovane Jig, Aerovane Clamp, 7+1 sets of chuck and hook combinations, 4-axis fully adjustable neck, base, Laser, water level, long vane adapter. While the enthusiast set (as pictured below) only have the body, neck, clamp and one set of hook and chuck which has been our number seller. For those who just are on a budget and/or want the bare essential to start, one can purchase the bare jig body, one set of chuck & hook set and use their own vane clamp and be under \$150.00 investment.



Aerovane Jig Carrying Case

This carrying case not only offers protection to your Aerovane Jig, but it can be separated into 2 bags to suit your requirement. For those who want to travel light, you only take the upper half only. This design allows archers only carry the most essential gear with them to any destination and still be able to fletch their Aerovanes perfectly. Inside the case, there are even room for storing, Q-tips, extra vanes, and a small bottle of acetone. The small acetone bottle is part of the carrying case and can also be purchased separately.

Aerovane Fletching Flask Set (Acetone safe)

Firenock Aerovane Fletching Flask Set is the best companion for you to fletch Aerovane on your arrows while using Acetone as a cleaning agent. Acetone is found by Firenock to be the best medium to clean and prepare arrow shaft before fletching / re-fletching. Furthermore, Acetone will clean arrows fletched with AG0600 and AG0GEL effectively as AG0600 and AG0GEL are 100% acetone dissolvable.

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

- 1) The 125 ml bottle is for dipping Q-tips in acetone to clean vane base just before applying AG0600 or AG0GEL.
- 2) The 1st 500 ml is for dip cleaning of brand new arrow shaft before fletching.
- 3) 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.



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 know how the arrow flexes while the arrow is flying and you can use the bending point as reference point for your fletching. Thus you will be confident that your arrows will fly/behave the same as long as your set up is correct, or in other words your accuracy will be enhanced. Optional accessories are available for PAPS such as vibration generating module, digital gauge module and laser module (see below for details). With PAPS, you can easily locate the point for your cock feather fletching etc.

Development of PAPS

During the development of AeroBolt we learned that arrow shafts are needed to be spine measured, spine indexed, spine matched, chamfered (a procedure to unleash the full potential of AeroInsert-A), squared, cut, marked etc. Without these arrow preparation procedures, shafts will not be good enough for further preparation such as installing insert, nock, or vane. In other words, without the above mentioned arrow preparation procedures, it is technically impossible to build ultra-high precision, high performance archery projectile consistently. In order to make these arrow preparation procedures easy to do in a perfect way, Firenock took the first simple step and introduced the APS (Arrow Preparation System) in 2011. APS is a compact, high precision 3-in-1 tool and it is user friendly. But we didn't stop there. The requirement and specification of arrows (e.g. AeroBolt II) have significantly increased, creating a need of a new tool to perform higher specification requirements and to make acquiring data of each shafts quickly, accurately and effectively. The PAPS (Professional Arrow Preparation System) was built and we believed PAPS will satisfy the most discrete archery arrow builders. Like the Aerovane Jig, PAPS is built to the highest precision and a number of optional accessories for PAPS are available to fulfill archery's need. Main Components of PAPS.

The Tower(The spine locator)

The big piece in the middle of APS is the tower or spine locator. The spine locator consists of 2 custom ball bearings in order to provide perfect perpendicular contact points between the tower and shaft. With this design, PAPS can apply absolute pressure to the exact center of the shaft to be tested. This also minimizes the horizontal pressure that may form when pressure is applied to the shaft while doing spine readings.

The Track

PAPS track is 36 inch long with a double track system and machined in a triple box design. The track is proudly made in USA. It is extremely durable as it is made of 7000 series Aluminum and finished with type 2 level 3 hard anodizing. To ensure stability even with this length, the bottom of the track has six 3M ultra-stable stoppers installed so there is no worry for stability of PAPS. Along both sides of the track, they are equipped with an easy to read measure tape (in inch). On the side of the track, it provides full length measurement (0-36"/0-914mm) while on the other side it is center to the ends measurement (18"-0-18"/457cm-0-457mm). With 2 different measure tapes, you can easily measure the length of the shaft as well as locate the middle point of the shaft. To ensure your PAPS and bench is indeed level, a water level is installed right in the middle of the track to ensure your setting is square and plumb.

The Supports with custom ball bearings

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



As the contact surface of ball bearings with the shaft is flat, when a shaft bends, the shaft actually is resting on the edge of the ball bearings and thus the shaft as well as the center of ball bearings are under uneven pressure. This issue is even worst when the shaft is pressed harder and the ball bearings can even stop rotating and the rotation of the shaft can become very hard.

The typical hole in the middle of the ball bearings means it is required to be fastened via a screw in order to fit the ball bearings to the mount/jig. As the screws are typically not specifically designed and built for the system, the available tolerance of the screw will not provide a perfect fit to the ball bearings.

Due to the above problems, Firenock custom made new ball bearings for PAPS. The PAPS custom ball bearings have a unique angle variable crown outer edge (i.e. no uneven pressure issue) and pre-built ready to mount stud center system (i.e. no screw tolerance issue). With the angle variable crown outer edge, there is less pinch pressure on the shaft. In other words, the shaft can ride on the custom ball bearings 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. The pre-built ready to mount stud center system eliminates the tolerance between the screw and the inner hole of the ball bearings as it is now an all-in-one stud ball bearings system.

PAPS comes with 2 supports which have 2 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 4 hooks only, PAPS is using 2 custom ball bearings per support. With 2 ball bearings supports, you can feel how smooth and how sensitive the PAPS can achieve while bending the shaft to locate the spine of the 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 with ease. In the past, fishing rod makers or experienced archers use their hands to rotate the shaft on a jig and then feel the highest and lowest spine of the shaft. Now with vibration module, there is no more subjective feeling to locate the highest and lowest spine of the shaft. This accessory will significant improve the precision 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 operation time 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 one push of the button, a short burst of wave energy will be added to the system according to the pre-set time and power. With the help of vibration wave, one just rolls the arrow shaft with fingers and can locate the highest spine (usually at the bottom) and the lowest spine (usually on the top) easily. With 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 shafts. The vibration module can also be used as the weight for locating the first bend deflection finding.

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 4 components: mounting arm, digital gauge, zero reference support, and brass weight.

Digital Gauge: You just need to insert the gauge tip through the top of the tower and it can measure the deflection of your arrow easily and reliably. One can zero reference the Gauge by using the zero reference support. Other features of the Digital Gauge include:

- Versatile reading in inch (.0005") / metric (0.1 MM) / 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 resistant)
 - Hold function to memorize a measurement
 - Zero function that allow zeroing the display at any point
 - Powered by long lasting common 3V CR2032 batteries
 - Auto shut off after 5 minutes inactive operation
- Mounting Arm: It is made of CNC machined Aluminum. It is securely mounted on the tower with 2 mounting screws equipped with O-ring retainers, while the Digital Gauge is mounted on the arm by a stainless tightening nut.

Zero Reference Support: To provide a reliable zero reference point before measurement, the Zero Reference support is used. It is an accurately CNC machined piece of Aluminum and equipped with our custom angled ball bearings in order to support the shaft perfectly flat and to ensure zero deflection.

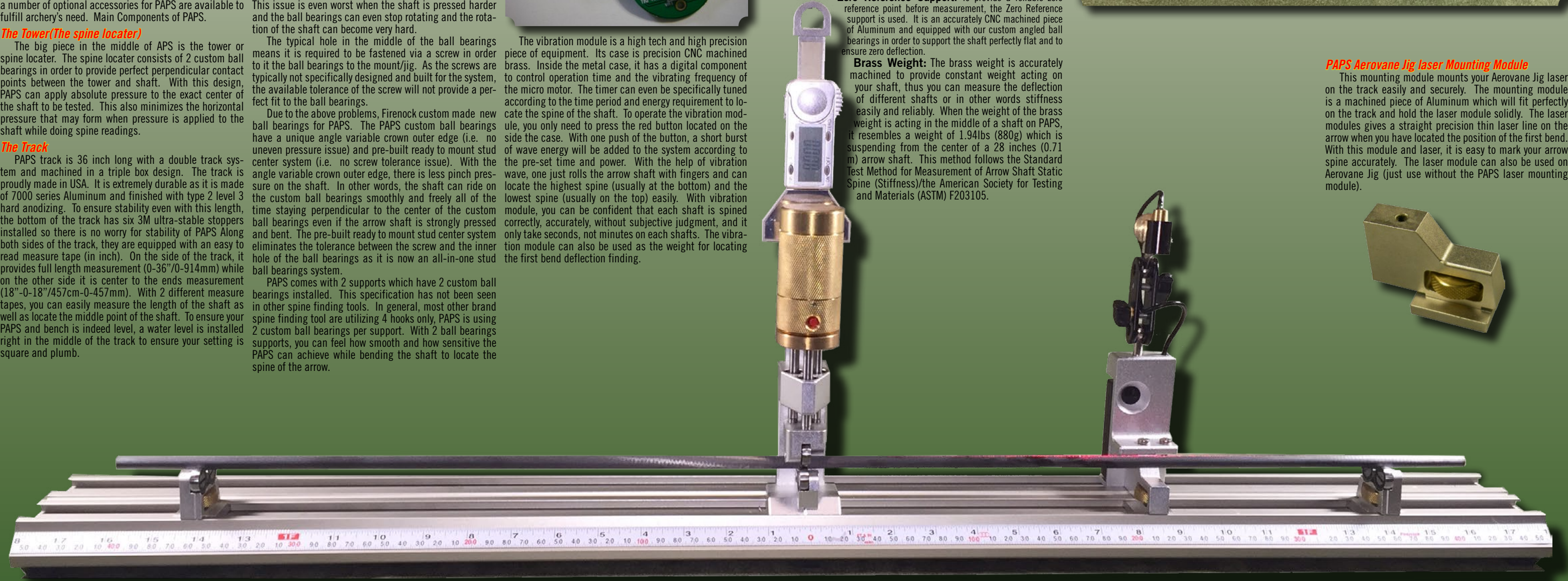
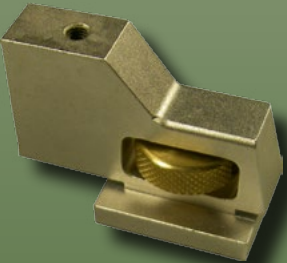
Brass Weight: The brass weight is accurately machined to provide constant weight acting on your shaft, thus you can measure the deflection of different shafts or in other words stiffness easily and reliably. When the weight of the brass weight is acting in the middle of a shaft on PAPS, it resembles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

Accessories for PAPS



PAPS Aerovane Jig laser Mounting Module

This mounting module mounts your Aerovane Jig laser on the track easily and securely. The mounting module is a machined piece of Aluminum which will fit perfectly on the track and hold the laser module solidly. The laser modules gives a straight precision thin laser line on the arrow when you have located the position of the first bend. With this module and laser, it is easy to mark your arrow spine accurately. The laser module can also be used on Aerovane Jig (just use without the PAPS laser mounting module).



APS Arrow Preparation System

APS (Arrow Preparation System)

APS resolved all the imperfections and the shortcomings found in arrow preparation tools available on the present market. In the past to prepare an arrow for assembly, you usually use an arrow squaring tool, then another tool to square the other end after the arrow had been fletched, then a spinner to make sure it is concentric. With APS, a single piece of tool, you can assemble arrows easily and accurately as APS is a 6 in 1 tool (arrow squaring tool, insert squaring tool, arrow spin check, and outsert concentric check tool). APS is designed and engineered with hunters' mind. Once you try APS, you will discover how essential a tool it is for precision arrow building.

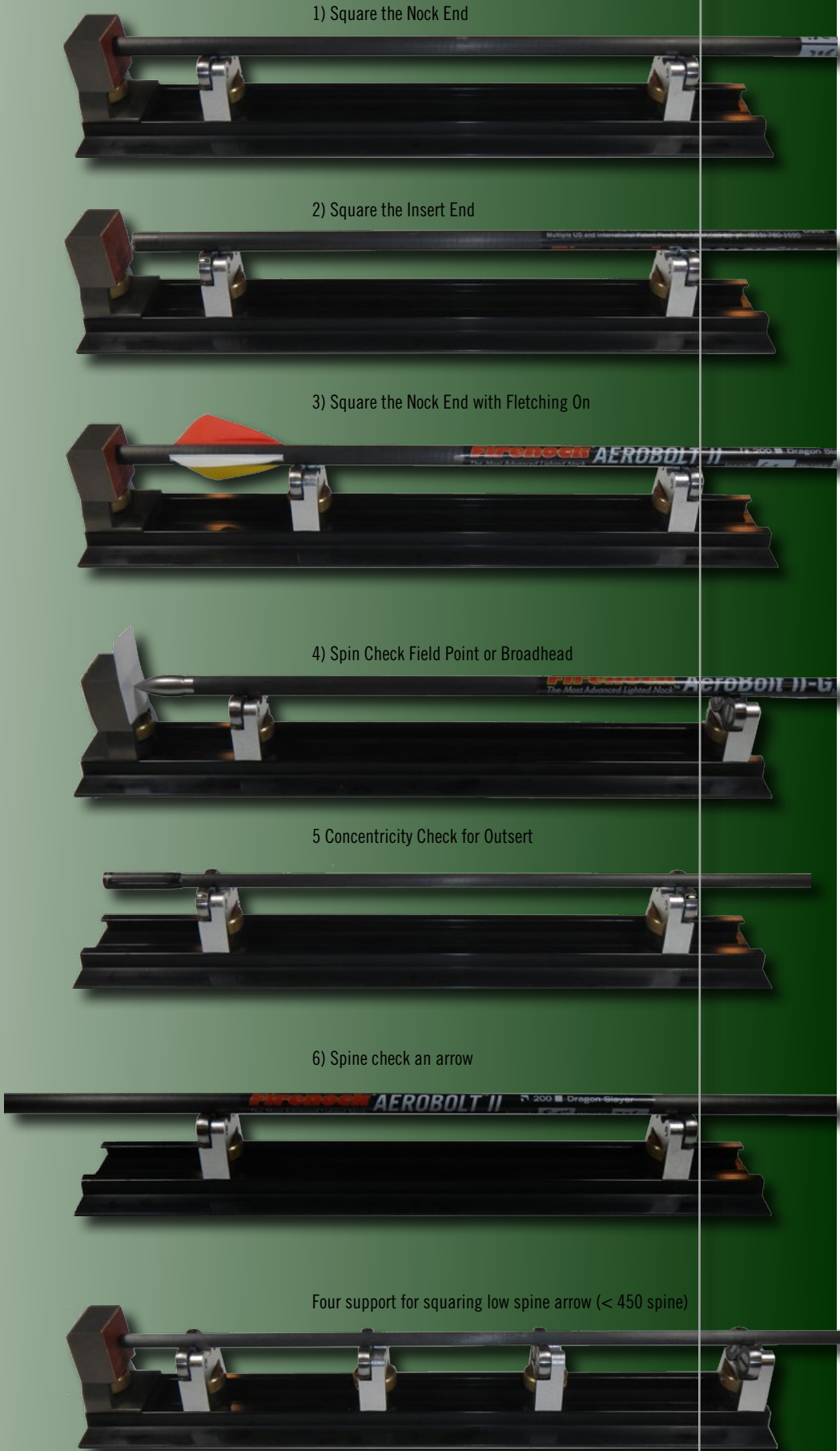
Features of APS

- 6 in 1 Tools - APS is an arrow squaring tool for arrow with or without fletching. APS is also a squaring tool for insert. With the removal of Grinding block, APS is arrow spinner, outsert and concentricity checker.
- Crowned ball bearing - APS roller is equipped with crowned ball bearing which this unique ball bearing is initially used on PAPS (Professional Arrow Preparation System). This crowned ball provided a large surface to support the arrow and to allow smooth operation even under high pressure. The large size crowned ball bearing also eliminate lateral movement of arrow especially while doing squaring. The crowned ball bearings is sealed for durability and it is pre-fitted with mounting screws to give more rigid support and to eliminate play.
- Adjustable Roller Track Base System - APS is a unique track base system with 2 rollers (3 supports as an option). Upon loosen the roller lock screw, roller position can be moved left or right to the desired position and then lock again, thus APS can square any fletched arrows.
- Never Wear Grinding Surface - APS grinding block is different from other arrow preparation tool which APS grinding block does not have pre built grinding. You just stick common 3M adhesive back sand paper (3-2/3" X 7-1/2" sheet is commonly available for less than \$3.00 in hardware store) on the APS grinding block and it is done. If the sand paper worn out, just replace it and you have a fresh grinding surface again. APS grinding block is made from a solid piece of Aluminum and then hard anodized for durability, so there is no worry about the straightness of the block even after repeating sticking and removing sand paper from the block.
- U.S. Patent: 8,608,531 and licensed under U.S. Patent 7,013,772

Note:

- For those who prefer a table / bench mounting system, APS has a center line indicator on the track base so you can drill and mount APS on your work bench.
- 180 grid or higher adhesive back sand paper is recommended for squaring carbon while 220 grid is recommended for inserts and/or aluminum/carbon mix shafts/arrows. Due to the nature of some aluminum shaft, it is recommended to change the sand paper frequently due to the filling characteristics of aluminum when grinding.

(U.S. Patent: 8,608,531 Licensed under U.S. Patent No.7,013,772)



AG0600

There are thousands of glues on the market and many are specially made for fletching. Firenock, however, could not find a perfect glue to match with the fletching of Aerovanes. In order to address this, Firenock formulated a glue and put it in a just right, squeezable bottle with a luer-lock system to achieve micro gluing successfully. This new glue will set Aerovanes on an arrow in just 9 seconds and allow the arrow to be ready to shoot in 12 seconds - if the Aerovane Fletching System (Aerovane Jig and Aerovane Clamp) is used. In short, the high performance of the glue is not only about the glue itself, but also the tools which are used to fletch the Aerovanes. Nevertheless, this specially formulated glue will still work great on other vanes and with other jigs. This product from Firenock is called AG0600.



AG0600 is a type of cyanoacrylate (CA) glue which will set in 9 seconds and be ready to shoot in 12 seconds with the help of the high powered magnet (constant pressure) of the Aerovane fletching system. The glue comes in a 20 gram (1oz) squeezable bottle with a luer-lock system which allows the precise amount and application of glue to be used. The luer-lock system also eliminates contamination of the glue from repeated use of the glue, as the tips are replaceable for AG0600 and also maintains the condition of the glue as a cap can be put on to make the bottle almost air tight while the glue is not being used.

While 20 grams seems like a small amount, in fact, due to the micro gluing ability, you should be able to fletch about 50 dozen arrows per bottle when you use it as part of the Aerovane fletching system. This is an increase of about 60% over our old glue bottles. The luer-lock system used is a high-end industrial system which allows you to utilize an ultra-precise glue application system. The luer-lock system comes standard since 2013 on the AG0600 bottles of glue. A 12 piece replaceable 28 gage stainless steel tip pack is also available for \$9.95 on our website <http://shop.firenock.com> or at any of our authorized dealers. Note: It will only take 6 ppb (parts per billion) of acetone to make AG0600 glue lose over 50% of its glue holding ability, so don't try to clean the gluing tip with acetone and reuse the tip. This is also why AG0600 only comes in a small bottle, if acetone is accidentally introduced; only a small bottle is contaminated and rendered useless.

AG0600 & AGOGEL AEROVANE® GLUE

The secret of high performance of AG0600 glue isn't magical, it is purely chemical as it's a CA glue with no preservatives. Due to this reason, Firenock Aerovane has significantly stronger bonding power than any other glue available on the market according to our test. In return of stronger bonding power, Firenock Aerovane Glue has a defined shelf life of 1 year which is unlike other glues that may have a 2 to 3 years shelf life. To ensure you get the Firenock glue fresh and usable, an expiration date is clearly stated on the packaging so you know how good and fresh your glue is. AG0600 glue thrill you, but AG0600 is 100% dissolvable in acetone which makes cleanup of your arrows after fletching or re-fletching your arrow much easier. Just dip the arrow into acetone for a while after removing the vanes and then wipe the arrow with a tissue. Your shaft is now ready to be re-fletched without damage to the arrow. We recommend you get the 100% acetone in places like Wal-Mart's cosmetic section as the acetone there will generally be fresh. The bottle of acetone used to dip an arrow in to dissolve the glue will be contaminated, so we recommend that you have 2 bottles of acetone. One for dip cleaning and one for fine cleaning. It will only take 6 ppb (parts per billion) of acetone to make AG0600 glue lose over 50% of its glue holding ability, so don't try to clean the gluing tip with acetone and reuse the tip.

AGOGEL

In addition to AG0600 have we developed a super glue gel to address the issue of gluing end caps for Firenocks and for fletching helical vanes. Similar to AG0600, AGOGEL is a single component CA, but in GEL form with low viscosity. AGOGEL technology bonds most surfaces with gaps up to 0.2 mm in seconds. AGOGEL contains no solvent and has low viscosity, which makes it very thick and easy to apply in tricky places that require the glue not to flow. Additionally, this glue requires no mixing or heating and can be used on a wide variety of material.

Like AG0600, AGOGEL is a CA with no preservatives, so it has a shelf life of 1 year and has an expiry date on the packaging as well. Also like AG0600, it is 100% acetone dissolvable so cleanup is quick and easy.

To make AGOGEL as effective and high performing as AG0600, a special syringe is used. The syringe is fitted with an industrial grade luer-lock system which allows the GEL to be almost air tight with the cap on. It also allows the GEL to be precisely applied while fitted with the tip. Each package comes with 3 24 gage plastic luer-lock application tips. The luer-lock tip is meant for a single time use, so please use a new tip each time. For extra tips you can purchase a package of 12 of them for \$9.95 on-line at <http://shop.firenock.com> or at one of our authorized dealers. Note: It will only take 6 ppb (parts per billion) of acetone to make

AGOGEL glue lose over 50% of its glue holding ability, so don't try to clean the gluing tip with acetone and reuse the tip. This is also why AGOGEL only comes in a small bottle, if acetone is accidentally introduced; only a small bottle is contaminated and rendered to be useless.



AERO SYSTEMS AeroInsert A, D, &H, Chamfering tool

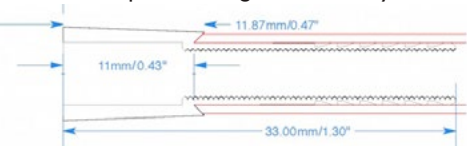


AeroInsert-A

Features of AeroInsert-A

- Self Concentric Technology System
- Reverse tapered end design to prevent mushrooming effect
- Aeroinsert A is available in 3 materials: aluminum, stainless steel, and titanium.
- Aeroinsert A has a significantly larger adhesive surface
- Available in 6 sizes
- US Patent 8,403,777

AeroInsert-A are featured with Self Concentric Technology and Reverse Tapered End Collar Technology which these technologies take arrow performance to a new level. The beauty of Reverse Tapered End Collar (i.e. angled collar on the back of the insert) is that it forces the arrow to mate with AIA and instantly self concentric itself to the arrow. Furthermore, Reverse Tapered End Collar can protect and strengthen the arrow front to prevent mushrooming effect. The insert end of AIA is purposely indented to provide large gluing surface to improve strength and stability.



To perfectly install AIA is simple, you just need to square the arrow front or just bevel a perfect 45 degree arrow front end using Firenock Chamfering Tool. Before installation, please make sure the Reverse Tapered End Collar will cover the outside diameter of the arrow front end. Then glue AIA into the arrow with a 2 part slow set epoxy (24 hrs cure, 1 hr work time type). Suggested slow set epoxies are Loctite 1405603, Devcon 2-ton Slow curing Epoxy, Henkel 1147735, PC products PC-7 two-part Heavy Duty Epoxy, and Permatex 84107. Continuous shooting of the arrow will further improve the Aeroinsert concentricity to the arrow and further lock itself tightly to the arrow as a result of Firenock Self Concentric Technology and Reverse Tapered End Collar Technology. AeroInsert-A/H Arrow Chamfering Tool

AeroInsert-H

AeroInsert-H (H=hybrid) is new for 2016 and is designed to fit shafts with ID from 0.022" to 0.300". AeroInsert-H is design with both our patented Double shoulder and Reverse Angle Tapered End. With these, your thinner size arrow shafts can also benefit from these combined patented designs.

AeroInsert-D

Features of AeroInsert-D

- Self Concentric System
- Dual step design for stability
- Extra large adhesive surface for strength and stability
- Hybrid Insert System ready (Dual step insert with an extension)
- Reverse tapered end to prevent mushrooming effect
- CNC machined 7075-T5 Aluminum for extra hardness and accuracy
- Also available in Stainless Steel for toughness and heavier weight
- Available to fit 0.300", and 0.310" ID class shaft
- US Patent 8,337,342

AeroInsert-D is designed to fit most arrow sizes. Similar to Aeroinsert-AS/AA, Aeroinsert-D is featured with Self Concentric Technology and Reverse Tapered End Collar Technology. In addition to these technologies, AeroInsert-D insert has dual step design to provide extra large adhesive area and is ready for Hybrid Insert System. Extra large adhesive area is important as common insert only has small adhesive surface which causing the insert easy to dislodge from the arrow and consequently forcing the insert and arrow tip to move rearward into the arrow shaft and finally causing the front end of the arrow shaft to mushroom.

The insert dislodgement and mushing effect issues are intensified especially while you are using 0.300" ID weak spine crossbow bolts. To solve this issue, Double Shoulder Insert System was developed (i.e. AeroInsert-D installed with carbon extension). AeroInsert-D Systems can strengthen the arrow as adhesive surface is increased and the wall thickness of arrow front end is increased without adding much weight. Furthermore, precise adjustment of arrow weight can be done via adjusting the length of the carbon extension (i.e. a longer extension gives greater weight, and a shorter extension gives lighter weight).

weight). However, in order to make Hybrid Insert System works as described, the use of right glue is important. Thus Firenock has formulated a 2 part slow set epoxy, Aerovane Epoxy.

An example to explain the advantage of AID and AeroConcept System: An arrow installed with a 45 grain field point in Stainless, an AeroInsert AID31A (22 grain) with a 6 inch of CTI310 (6 x 5.92 grain per inch =35.52 grain) can make your arrow fly like an arrow with a 100 grain glue in point! What more can you ask for?

As AeroInsert-D has a number of model, they are coded as follows: the first 3 characters "AID" stands for AeroInsert-D, the next 2 number stands for the class size of the arrow it will fit (e.g. 30 = 0.300"), the last character stands for material it is made of (A=Aluminum, S=Stainless).

AeroInsert Arrow Chamfering Tool

This tool helps you to quickly prepare a perfect 45 degree chamfered arrow end to perfectly mate with the Reverse Tapered End Collar of AeroInsert-A or H. Chamfering Tool is made of steel and the grinding surface is diamond electroplated. With these high specifications, it is only US\$29.95 per pc. Chamfering Tool is extremely easy to use and easy to clean. Just attach it to any drill, insert and align your arrow into the center of the tool and run the drill (~1500 rpm) for approximately 3 seconds and your perfect 45 degree chamfer is prepared and you are ready to glue your arrow insert into the arrow. The tool is dishwasher safe, so just wash, dry, and it is ready to be used again.

Arrow chamfering tool comes in 2 grinding grade surface, 100 and 180. The 180 is made for those who use the tool to do a dozen or so arrow as the grinding grit is relatively small. While the 100 grit surface is a lot more aggressive and can significantly take away material very quickly. For dealers who need do a lot of arrows and have a real understanding and need to do a lot of arrows at a time, 100 grit is the right choice.



AeroInsert-D, AeroBushing AERO SYSTEMS



AeroPoint™ (FACT)

Features of AeroPoint

- Self Concentric System
- Perfect match with Firenock Arrow Concentric Technology (FACT) broadheads
- CNC machined 45HRC hardened Stainless Steel for toughness and accuracy
- Double O-rings system prevents loosening of points
- Available in 85, 100, 125 grain with 8 mm and 9mm diameter
- Available in 45 grain with 9mm diameter in Stainless and GR5Titanium
- Available in 175, 250 grain for 9mm diameter shaft in Stainless
- US Patent 8,337,341

AeroPoint™ (US Pat.) takes arrow performance to an all new level as the AeroPoint will align itself concentrically to one's arrow once it is assembled. AeroPoint is also virtually effortless to install as a result of our patented Double O-rings System / FACT Technology.

Most archers know that it is difficult to align the field point/broadhead to the arrow perfectly as the neck and threads of the field point could not be concentrically aligned with the arrow insert as well as the arrow. What archers could expect was that the field point would hopefully align well enough to make the arrow fly with acceptable accuracy. AeroPoint™ (US Pat.) solved the above problem as AeroPoint will align itself concentrically to your arrow once it is assembled and takes your arrow performance to an all new level. Furthermore, AeroPoint is virtually effortless to install and will lock tight on your arrow even after continuous shooting as a result of our patented Double O-rings System / FACT Technology.

AeroPoint patented Double O-rings / FACT Technology made the loosening of target points / broadheads a thing of the past. The double O-rings are specifically positioned, one is on the neck of the arrow point and the other one is just above the thread. In this way, AeroPoint can align itself concentrically to the insert once it is screwed into the arrow insert. Double O-rings system ensures perfect fit and tight lock of AeroPoint to the insert, thus AeroPoint will not loosen even after being repeatedly shot.

Special sizes of AeroPoint were made for specific purpose and arrow. AeroPoint in 250 grain, 9 mm diameter in Stainless was specifically made to fit most 23/64" AeroTarget Concept arrows. AeroPoint in 175 grain, 9mm diameter in Stainless is the same weight as Firenock Tramahawk, thus you can use it as a practice broadhead of Tramahawk.

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
ABU26S	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™

Features of AeroBushing

- Self Concentric System
- Super light weight (~8 grains for 23/64" size)
- Perfect fit square in a circle technology
- CNC machined 7075-T5 Aluminum for extra hardness and accuracy
- Firenock "A" style nock ready
- Compatible with Firenock lighted nock system
- Available in 5+1 size/color
- US Patent 8,951,152, & other Pat. P.

AeroBushing™ is loaded with the Self Concentric System, Square in a Circle Fitting Technology, and Reverse Tapered End Collar Technology to address the need for ultra lightweight and consistent archery projectiles on the nock side. Traditionally uni-bushings are made from bar stock and manufactured on screw machines which will only provide approximate fit. Commonly, target archer will use material like a plastic bag to shim fit the bushing and insert a nock in it to provide a good fit, however this approach cannot ensure accuracy and consistence. Not to mention the standard weight of the uni-bushing and nock system usually weighs between 20-25 grain. The AeroBushing utilizes the same approach of the Firenock compression fit system but does it in a reverse way. Instead of a round collar, AeroBushing is actually square in shape. The square shape will force the arrow to be concentric with the bushing. Re accuracy, AeroBushing is CNC machined, thus ensuring nock and arrow will be concentric with the AeroBushing. The square shape also resulted in lighter weight; a normal bushing of 23/64" size is about 12 grain vs AeroBushing is just about 8 grain. AeroBushing is not using standard uni-bushing nocks for 23/64 size.

AeroBushing utilizes the Firenock A style nock which is 0.204" ID as Firenock believes that the A style nock is the most ideal nock for target archery. FYI, the Firenock A style nock is only 4.85 grain, which it is lighter than most 0.166" ID nocks and it has the most advanced nock throat designed by Firenock. Firenock A style nock is accurately made, can self concentric itself once installed (no glue is needed), and made of German material. Finally, the weight of entire AeroBushing with the Firenock A style nock is only about 13 grain. Starting from 2015, the AeroBushing is also equipped with our US Patent Umbrella-Cap design. This new design 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. AeroInsert-D (U.S. Pat.) is a hybrid/dual insert for 11/32" and 23/64" Arrow sizes and also crossbow bolts. AeroInsert-D concentrically aligns the arrow insert to the arrow while strengthening the arrow shaft without adding extra weight.





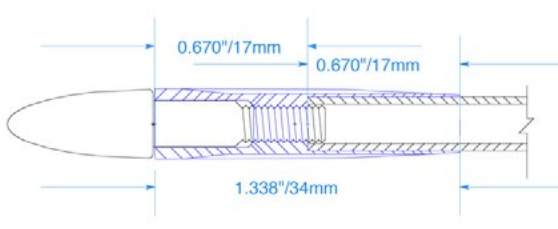
AeroOutsert™ (for slim arrows)

Features of AeroOutsert

- Self Concentric System
- Blood Channels to prevent wedging effect
- 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™ is specifically made for ultra thin arrow and made of high quality forged 7075-T7 Aluminum and equipped with US Patented Blood Channels to achieve perfect concentricity and minimum wedging effect. AeroOutsert was proven to outperform common 0.165"-0.166" size arrow insert/half-out inserts as neck point and threads of common outserts are mostly likely to be off concentric. This is due to the fact that Internal Diameter (ID) based components are likely not be concentric with the arrow as the wall thickness of the arrow is not always perfectly equal due to the center-less grind process which is commonly used to make this class of arrow (0.166" ID in general). Thus arrows installed with common insert/half-outs cannot achieve perfect concentricity while AeroOutsert can as the AeroOutsert is using the outer diameter instead of the inner diameter of the arrow for installation.

Another issue for common inserts is that they suffered from a perimeter wedging effect (i.e. hard to pull the arrow out from the target). The AeroOutsert Blood Channel was designed to minimize this effect which this feature again outperformed common inserts. The Blood Channel is a plurality of axial slots which are machined over the outer perimeter of the AeroOutsert and these axial slots gradually taper inward towards the center line of the AeroOutsert. The Blood Channel can relieve the pressure built up over the outer perimeter of the arrow, thus reducing wedging effect. In other words, Blood Channel allows you to pull the arrow out from a penetrated object easily and Blood Channel not only reduces weight but increases strength and improves ease of use. Below is the technical drawing of an AeroOutsert, front end of arrow shaft, and a field point in exposed view with exact dimensions (Outlined in blue is the AeroOutsert).



AeroOutsert Installation Tips

Experience with installing AeroOutserts on various arrows confirmed that some of the manufacturer's published arrow OD (outside diameter) sizes are only base line references, which can vary as much as 0.004" or 0.11mm. Case in point, the Victory VAP is published as 0.245" OD but actually measures as 0.248" which actually fit the 6.31mm AeroOutsert best, but not the 0.245" (6.22mm) AeroOutsert as published. In the case of the Easton Injexion 480, within a dozen shafts that we tested and measured, they can vary from 5.836mm to as large as 5.864mm OD; which makes 5.83mm the correct ordering size as you can always make the shaft smaller by lightly sanding it.

Based on tests that were done, we feel the best way to install an outsert system is to first get the closest AeroOutsert towards the outside diameter of the arrow. Then try to dry fit 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 (220grit 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. For ultra-tight fitting ones, 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 keep turning it while standing the arrow on end to help to keep the arrow and the AeroOutsert concentric. You should stand the arrow upright after you have made sure that the AeroOutsert is concentric with the shaft by spinning it and then let the glue cure. If you just lay the arrow on its side while using slow set epoxy with a loose fit, the shaft will fall towards one side inside the AeroOutsert after it was glued and it will no longer be concentric.

Below table shown what size of AeroOutsert will fit common shaft. Please note that listed sizes are for reference only, actual size of shaft's OD could vary from different production batches and even among a single dozen of shaft

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	0.165	9.50
Black Eagle	Deep Impact	300	0.248	6.30	6.33		07/03/13	0.165	11.00
Black Eagle	Deep Impact	350	0.240	6.10	6.12		08/06/15	0.165	9.60
Black Eagle	Deep Impact	400	0.233	5.96	5.97		11/30/15	0.165	8.60
Black Eagle	Deep Impact	450	0.236	5.99	5.97		12/14/15	0.165	8.60
Black Eagle	Deep Impact	500	0.228	5.79	5.77		07/03/13	0.165	7.60
Black Eagle	Deep Impact	600	0.223	5.66	5.68		07/03/13	0.165	7.00
Black Eagle	Deep Impact	700	0.219	5.56	N/A		12/14/15	0.165	6.30
Black Eagle	X-Impact/LD	250	0.240	6.10	6.12		12/15/15	0.165	9.50
Black Eagle	X-Impact/LD	300	0.231	5.87	5.89		08/13/13	0.165	8.10
Black Eagle	X-Impact/LD	350	0.228	5.79	5.77		08/13/13	0.165	7.40
Black Eagle	X-Impact/LD	400	0.221	5.61	5.68		03/04/14	0.165	6.70
Black Eagle	X-Impact	500	0.214	5.44	N/A		08/13/13	0.165	5.80
Black Eagle	X-Impact	600	0.210	5.33	N/A		12/14/15	0.165	5.30
Bloodsport	HT1/Evidence/Onyx	300	0.255	6.48	6.50		01/09/16	0.165	11.70
Bloodsport	HT1/Evidence/Onyx	350	0.246	6.25	6.31		01/09/16	0.165	10.20
Bloodsport	HT1/Evidence/Onyx	400	0.238	6.05	6.06		01/09/16	0.165	9.80
Bloodsport	HT1/Evidence/Onyx	500	0.231	5.87	5.89		01/09/16	0.165	8.20
Bloodsport	HT1	600	0.223	5.66	5.68		05/02/12	0.165	7.10
Bloodsport	HT1	700	0.220	5.59	N/A		05/02/12	0.165	6.50
Bloodsport	HT1	800	0.215	5.46	N/A		05/02/12	0.165	6.00
Bloodsport	HT1	900	0.211	5.36	N/A		05/02/12	0.165	5.30
Bloodsport	HT1	1000	0.209	5.31	N/A		05/02/12	0.165	5.10
Deer Crossing	SD Hunter	300	0.251	6.49	6.50		03/04/14	0.165	N/A
Deer Crossing	SD Hunter	350	0.245	6.23	6.26		12/28/14	0.165	10.10
Deer Crossing	SD Hunter	400	0.237	6.07	6.06		03/17/14	0.165	9.43
Deer Crossing	SD Hunter	500	0.231	5.89	5.89		03/17/14	0.165	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	5.97		02/03/13	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	0.226	5.75	5.77		01/09/16	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	5.77		06/23/14	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	5.97		02/03/13	0.1665	8.90
Easton	Injexion	480	0.230	5.83	5.83		02/03/13	0.1665	8.30
Gold Tip	Pierce Platinum	250	0.245	6.22	6.22		09/30/15	0.166	9.80
Gold Tip	Pierce Platinum	300	0.240	6.10	6.12		09/30/15	0.166	9.10
Gold Tip	Pierce Platinum	340	0.234	5.94	5.97		09/30/15	0.166	8.30
Gold Tip	Pierce Platinum	400	0.229	5.82	5.83		09/30/15	0.166	7.60
Gold Tip	Pierce Platinum	500	0.222	5.64	5.68		09/30/15	0.166	6.60
OK Archery	Absolute.15	600	0.223	5.66	5.67		04/27/16	0.166	6.40
OK Archery	Absolute.15	500	0.227	5.77	5.77		04/27/16	0.166	7.10
OK Archery	Absolute.15	400	0.231	5.87	5.89		04/27/16	0.166	8.00
OK Archery	Absolute.15	350	0.234	5.94	5.97		04/27/16	0.166	9.00
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	5.77		02/03/13	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
Window Maker	Smash	250		No data			02/21/16	0.1654	13.30
Window Maker	Smash	300		No data			02/21/16	0.1654	12.20
Window Maker	Smash	350		No data			02/21/16	0.1654	10.40
Zelcor	Z250	250	0.267	6.78	N/A		01/04/16	0.165	12.50
Zelcor	Z300	300	0.253	6.43	6.50		01/04/16	0.165	11.50
Zelcor	Z350	350	0.250	6.35	6.33		01/04/16	0.165	10.40
Zelcor	Z400	400	0.245	6.22	6.22		01/04/16	0.165	9.30
Zelcor	Z500	500	0.234	5.94	5.97		01/04/16	0.165	8.14

* Indicated it should be measured first as none has been physically measured

Aero Concept System

Aero Concept System is initially developed for Firenock AeroBolt™ product line due to the need for a much stronger spine and better frontal protection for high power crossbow like the Scopyd and PSE Tac crossbows. In case of Aerobolt II Dragon Slayer, it has an extreme high weight of 1200 grain and spine rating 0.020". Even with this heavy weight, Aerobolt II Dragon Slayer can still have higher impact point, better penetration power and relatively higher speed comparing with other bolts and it will not break even hitting concrete after 50 yards?!. Due to the supreme performance of Aerobolt and as many archers have asked for it, Aero Concept System is now available for standard hunting shafts.

So what is Aero Concept System and what are its benefits? Aero Concept System is a multiple layer shaft design with re-enforced arrow front end via Firenock AeroInsert A / H. Thus arrow with Aero Concept System is not a single shaft arrow, it is composed of 2 layers of carbon shaft with the front end protected by Firenock AeroInsert featuring US patent reverse tapering collar. The result of multiple layer shaft design and AeroInsert makes the arrow to have amazing strong spine and null point and thus the arrow with Aero Concept System will oscillate less (i.e. less archer paradox), will stop oscillation and fly straight (i.e. stabilized) soon after launch. In other words, Aero Concept System reduces loss of energy via ceasing undesired arrow oscillation and make use of energy efficient.

The issue of arrow oscillation not only decrease speed, accuracy, and penetration power of arrow, it will not cease until the arrow hit the target. The issue of arrow oscillation is even magnified when an arrow is fitted with a broadhead or field point as the added weight induces a flipping motion and results in a even worse flight. Aero Concept System is the only system on the present market which allows arrow to have virtually no oscillation even fitted with broadhead or field point and this is why arrows with Aero Concept System can have higher impact point, better penetration power and relatively higher speed even after long distance comparing with other arrows.



Code	Fit Shaft ID	Inner Shaft	Weight	Material	Finish
AIH20A	0.202" to 0.204"	CTI200	~15 gn	7075-T5	Natural
AIH20S	0.202" to 0.204"	CTI200	~50 gn	303 Stainless	Natural
AIH20T	0.202" to 0.204"	CTI200	~26 gn	GR5 Titanium	Natural
AIH24A	0.244" to 0.246"	CTI240	~ 9 gn	7075-T5	Natural
AIH24S	0.244" to 0.246"	CTI240	~ 25 gn	303 Stainless	Natural
AID30A	0.299" to 0.301"	CTI300	~ 17 gn	7075-T5	Natural
AID30S	0.299" to 0.301"	CTI300	~ 55 gn	303 Stainless	Natural
AIH30S	0.299" to 0.301"	CTI30G	~ 100 gn	303 Stainless	Natural
AID31A	0.314" to 0.316"	CTI310	~ 22 gn	303 Stainless	Natural

AEROBOLT The Ultimate Crossbow Arrow

Why AEROBOLT™ II is This Price & Built This Way?

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 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.

Back in 2009 Jim Kempf of Scorpion crossbows requested a heavier spine crossbow bolt due to the introduction of the RDT165 Crossbow, the concept of AeroBolt was born and built. AeroBolt I was based on the Gold Tip Laser II, Laser III, and other Gold Tip shafts and we utilized a Gold Tip Series 22 insert.

At the time, the AeroBolt I was nothing more than gluing a piece of Gold Tip 0.298" shaft into a Laser II or Laser III with a Gold Tip Series 22 insert. This process gave Jim the bolt he needed at the time as this process gave the crossbow bolt a much heavier spine, and it lessened the issue of not locating the spine due to dual shaft construction. During the testing of this arrow, quite a few interesting observations and results were discovered. This led us to develop new concepts, break through manufacturing processes, improvements in design, and we were granted at least 4 U. S. patents which were utilized in the current AeroBolt II series of crossbow bolts.

Never Harden 2 Part Epoxy

When the first AeroBolt was made, the use of ULTRA low viscosity CA glue was the original idea. It was because so little glue was needed to be applied, so there was no way for it to break. But after a few shots, the CA based glue just cracked and caused layer separation of the carbon. This was observed by the inconsistency of a single arrow at point of impact. The more that the arrow was shot, the worse it became. After dissecting the shaft, it was found that the CA was indeed cracked leading to not only layer separation, but the CA glue became powder and made the situation even worse as the arrow flexed more due to the cracks.

A variety of glues were tested ranging from Super Glue, CA GEL, 5, 10 and even 30 minute epoxy, but they all failed with time. Through the tests, we did discover that the longer the glue time, the better the results. These results coincided with the theory of glue failure due to fracture from the flex of an arrow during launch; which leads to carbon layer separation; which caused inconsistent spine; and finally ended up with inconsistent flight.

After discussing this with our glue supplier; a rarely used, super expensive 2-part epoxy was suggested and tried. This epoxy is exactly what is needed as it will be flexible even when it is totally cured. Furthermore, it allows us to have close to 2 hours of work time. We then discovered an issue in assembling the AeroBolt with this glue; this epoxy has high cP (i.e. does not flow and spread well). To assemble with an inner shaft as long as 13", the usual apply and spread method doesn't work. A vacuum assisted vertical gluing process was developed. This approach allows us to apply the glue perfectly and evenly between the 2 shafts even at long spread distance.

Use of Professional Arrow Preparation System

To locate the spine of an arrow, most use the RAM Spine Finder machine. The unfortunate fact is that it takes too long to spine an arrow and it 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 it. By the beginning of 2014, we will be offering the PAPS (Professional Arrow Preparation System). PAPS will be a very sophisticated machine with many add-ons. One of the add-ons, which we believe is what most want, is our vibration induced auto spine finder/indexer. Unlike typical machines, the auto spine finder/indexer is meant to find the softest side of an arrow automatically within 5 seconds.

We believe that locating the softest side is more important than the hardest side as an arrow will flex towards its softest side when it is launched. This is because an arrow will flex toward the lowest resistance side. The hardest side only shows the hardest spine rating which IMHO is not critical for arrow accuracy. The average spine is what indicates how an arrow will flex and dictates the arrow in flight oscillation, but the initial launch is always based on the softest side of an arrow.

FACT (Firenock Arrow Concentric Technology)

From long discussion with archery arrow experts like Randy White and Tim Gillingham, one issue became obvious - the degree of concentricity. In other words, concentricity of arrow, concentricity of bow and concentricity between arrow and bow. In the present market, according to Firenock research, there isn't a crossbow bolt or arrow rest that can provide enough concentricity to ensure the accuracy of an arrow. With the AeroInsert-D, 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 be concentric to the entire arrow in order to improve accuracy. This importance of concentricity led Firenock to develop a U. S. patent for AeroPoint, which is known in the industry as FACT.

Use of AeroInsert-D

The inherent issue of using a Gold Tip Series 22 insert was observed when we started to build AeroBolts. The Gold Tip insert is short and does not have a lot of gluing surface. A result of the small gluing surface was that cracks developed in the shaft right behind the insert when the bolt was shot at an extreme angle. With the understanding of this issue, Firenock made AeroInsert-D in order to solve this issue. AeroInsert is not just a metal insert, it's a hybrid insert, which is a metal insert that is inserted into a carbon tube. This hybrid insert is then inserted into the crossbow shaft. Below are the features of Firenock AeroInsert-D:

- Large gluing surface. As AeroInsert-D is long, it can provide a larger gluing surface than conventional inserts. As the gluing surface is larger, force can be distributed more evenly and less stress will be asserted on the carbon shaft.
- Small run out. As AeroInsert-D has a long carbon shaft, its run out is virtually zero. It is simple to understand, as when longer surfaces are slid over each other, the less run out it would have. In the case of the TAC 15's 26" long bolt, the carbon shaft of the AeroInsert-D can be as long as 13.5".

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.

Gluing instead of mechanical fastening

This is because the front end of the arrow will encounter an extreme amount of force and vibration in an unpredictable direction upon impact. With material like a carbon tube, which has high modular strength, low weight, low loop strength and low surface puncture resistance characteristics; mechanical inserts will actually help to focus the force and vibration upon impact and can cause damage to the shaft's inner surface. In many cases, catastrophic failure of an arrow using mechanical inserts is often seen. For safety and reliability, spreading the force over a large surface is the best way to resolve this problem, thus Firenock developed the hybrid insert system. Our hybrid insert is long, made of carbon and Firenock glued the hybrid insert system into the arrow to make a perfect fit in order to spread the force and vibration upon impact.

Harmonic Dampening Aerobolt

Harmonic Dampening is the sole reason why AeroBolt is so superior in performance and so deadly accurate. Harmonic Dampening was observed when the first AeroBolt was shot. The oscillation of the AeroBolt stopped after only about 5 to 10 feet rather than the standard 60 feet (approximately) when other arrows and bolts are shot. Why this happens was discussed by many archery experts, but no one could provide a definite answer. The answer was found out when material science experts were consulted.

How they explained it was that when an arrow is shot out of a bow, oscillation would 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.

AeroConcept approach of Building Arrow

Since AeroBolt uses 2 different types of carbon tubing to form the arrow, the arrow will fly better (the more different the 2 carbon tubes are, the better). AeroBolts also have a higher spine and oscillate less. The result of gluing 2 different tubing together makes the magic; the oscillation cycles of the dominant shaft are shortened by the inner shaft.

Conclusion

From the above, we have established that AeroBolt II or AeroBolt II with the hybrid insert system can make the arrow oscillate less. With Aerovane, AeroBolt II can use less FOC and uses lift instead of drag to spin an arrow. The combination of a hybrid insert system and Aerovanes means AeroBolt II during flight will oscillate less and stabilize faster and achieve gyro spin faster. Achieving gyro spin means less energy is lost from oscillation and the energy is stored in the arrow to make for a flatter flight and a more accurate arrow.

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. It has an amazing 0.001" shaft straightness. The front is about 0.060" and the back is 0.200".



AeroBolt™ II-Dragon Slayer

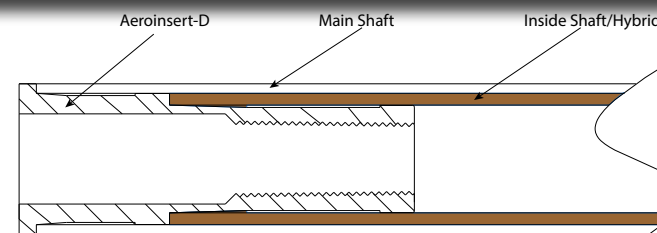
The AeroBolt II Dragon Slayer crossbow arrow (U.S. Pat.) is the big brother of the AeroBolt II. It is offered in any length from 16" to 32". It is designed and engineered for maximum momentum and penetration.

Unlike any other crossbow bolt, it has a 0.092" thickness of carbon throughout its entire length. Instead of one inner and partial shaft configuration, it has 2 inner shafts that run most of the length of the bolt. The inner 2 shafts are engineered to support the insert and Firenock AeroInsert-DS 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 2 shafts, and in some cases all 3 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 (Gyro)

AeroBolt II-G (AB2G)

AB2G crossbow arrow is also designed for big game but with a medium weight specification (380 - 400 grain) and is designed to fit Firenock Aerodynamics Traumahawk broadhead. The AeroBolt II-G design is different from AeroBolt II-200. AeroBolt II-G is designed to have maximum front end mass in order to provide maximum to penetrate deep or pass through the big game animal. Among the AeroBolts, AB2G can give you the flattest trajectory flight and a much longer distance with power.



TRAUMAHAWK

Traumahawk Broadhead

Traumahawk is the first Blunt Force Trauma based broadhead available on the present market. Traumahawk is not meant to pass through the animal, but to transfer maximum kinetic energy and to knock down the game instantly. This unique broadhead works just like a North American Indian's lethal weapon, the "Traumahawk" with a twist and thus it is named as Traumahawk.



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

- 1) The arrow must spin over 2500 rpm
- 2) The frontal focus mass should be more than 200 grains (225 is found to be ideal)
- 3) The arrow cannot oscillate at all
- 4) There need be as close to Zero drag as possible for this arrow to work
- 5) Length of arrow should be at least 3" longer than the power stroke
- 6) The straightness of the arrow is recommended to be 0.006" or better

- 7) Concentricity of every components are extremely critical due to the nature of high speed spin
- 8) Vane position, vane weight, and glue weight are very critical due to the nature of spin

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

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

From our test 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.

Traumahawk weighs 175 grain and is made of solid Stainless steel. Traumahawk is extremely hard as a result of high pressure precision die-cast process. This process results in much stronger and tougher MIM (Metal Injection Molding process) or machine from a typical piece of typical bar stock.

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

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). The Double O-rings System on the neck of the Traumahawk will give you near to perfect concentricity once screwed in.

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 only 1.5 oz as a result of usage of new generation of materials (Si3N4 ceramic, Aircraft Grade Aluminum, GR2 Titanium).
- **ULTRA HARD TYPE III ANODIZED FINISH:** AeroRest is finished with Type III 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 unnecessary.

Standard AeroRest



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

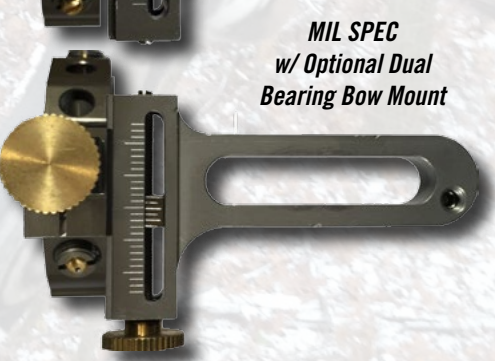


MIL SPEC
w/Camo Bow Mount

Micro Adjust AeroRest



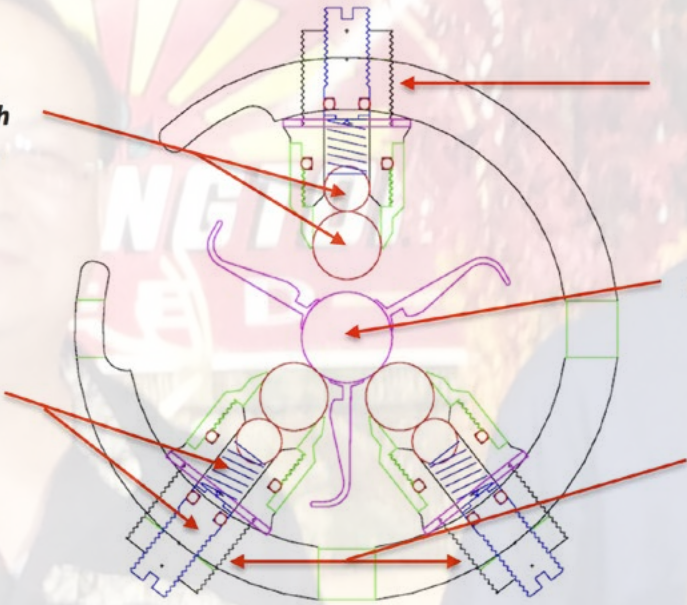
MIL SPEC
Level II Type 3



MIL SPEC
w/ Optional Dual
Bearing Bow Mount

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”

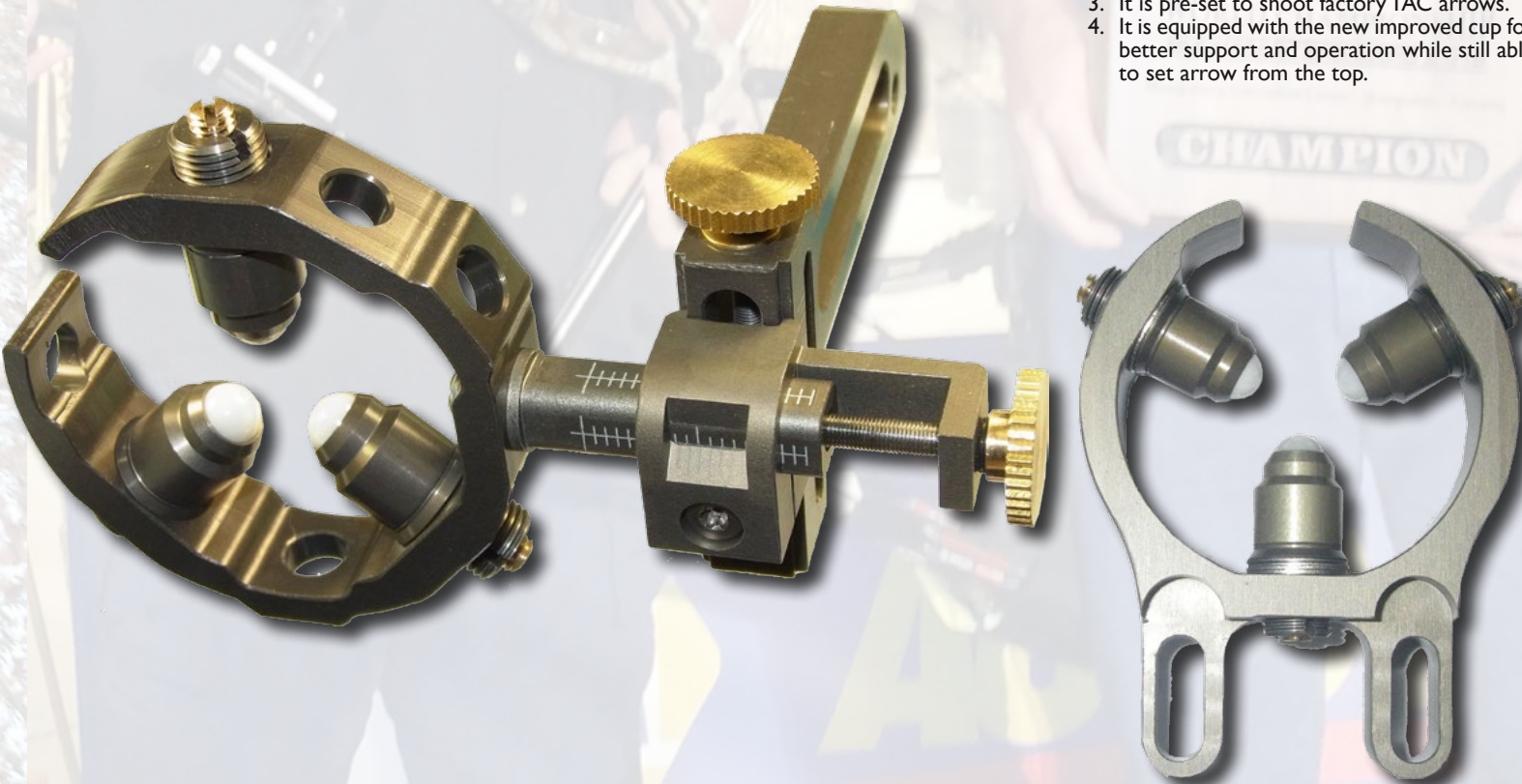
Three Supports Design to accept and hold arrow with Aerovane 3 or other common vanes

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.



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

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

Firenock Titanium Bolt upgrade kit for bow provides you the lightest, strongest, and rustproof bolt set to fit on most bows (vertical / crossbow) available on the market. All bolts in the upgrade kits are made of high-grade Titanium with the highest desired accuracy. With the installation of the upgrade kit, you can feel the weight difference significantly while holding the bow with your arm straight. This weight difference may help to increase your target accuracy, ease of bow tuning and even performance of your bow limbs thus your arrow speed

Why titanium?

Titanium is a natural element with excellent properties which makes it a perfect material to make bolts, pipes, sheet, bolts, fasteners and other products. It is symbolized by Ti in chemistry and has atomic weight of 22. It is as stronger as steel and twice as aluminum but half in weight. It is physically available in silvery gray white metallic in color and chemically it is excellent resistant to corrosion just like platinum. Its excellent properties makes it widely used in various industries such as aerospace, automobile, medical appliance, architectural and marine products etc.

Titanium can be alloyed with other metals like Aluminum, Manganese, Molybdenum and steel. GR2 and GR5 are widely used Titanium alloy in today's industries. One of the interesting properties of Titanium alloy is the oxide layer that forms after Titanium mixed with other metals. This oxide layer not only protects the alloy from corrosion, but also improves its durability and strength as well. This is the reason why bolts and fasteners are made of Titanium Alloy due to its light weight, corrosion resistance and its improved strength. For your information, Titanium alloy bolts, screws, nuts and fasteners are widely used in sport equipment, oil industries and petrochemical industries, but not commonly used in archery industry especially bow. Thus Firenock makes Titanium bolt upgrade kits in order to set the standard of bow one step further.

In short, advantages of Titanium alloy are maintenance free, stronger strength, highly corrosive resistance and lighter in weight than steel. But its down side is price, the reason why Titanium is expensive is due to its extraction process as well as casting process are expensive. If you want your bow to be long lasting, stable and durable, Titanium alloy is the best option to consider.

Why Titanium Fasteners?

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.

With Titanium bolts, the bow will feel significantly balanced due to all the individual "FOCUS MASS" is no longer there. With steel bolts, shock resonance is obvious to be felt on your bow. This is due to the fact that the main frame of the bow is made of light weight material; but the bolts are made of heavy material such as steel. Thus when energy is introduced into the bow, particularly at the end point of shooting, energy is not 100% directly transfer to the shaft, but to the bow. In case of beyond parallel bow like the newer compound bow design, this shock resonance is even more obvious. Fur-

thermore, we knew that the upper and lower limbs were not 100% oppose and identical in weight which these created more off axle focus mass driven resonance.

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 2016, Firenock will introduce 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 from Firenock.

The first part of this upgrade parts will be the arrow rest bolt. 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.

Firenock Titanium Bolt Upgrade Kits

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 sunk 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. For PSE bows that utilize the steel limb pocket, now includes our single pc hollow titanium mating screws.

The list of bows that we provide a Firenock Titanium Fasteners Upgrade Kit are constantly being updated and posted on our web site. 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 bow.

Titanium Bow Fasteners Upgrade Kit

Our list for Titanium fasteners upgrade kit has grown significantly. More fastener upgrade kits are going to be added to meet archers' demand. Below is a partial list of what is available as of 12/20/2015.

AT5ALL: Athens 15 Universal fit 26p
BE5ARE: Bear 15 Arena/Agenda 24p
BE4AGE: Bear 14 Agenda 23pc (2014/05/14)
BP5MX2: Ben Pearson 15 MX2 25p
BT5PRO: Bowtech 15 Prodigy/BOSS 29 pc
BT4RPM: Bowtech 14-5 360 RPM 29p
BT3CAR: Bowtech 13-5 carbon-riser 28pc
BT3SPE: Bowtech 13 Specialist 23pc
BTEXP: Bowtech 13 Experience 21pc
BT2INV: Bowtech 12 Invasion 23pc
BT1DES: Bowtech 11 Destroyer 29pc
DA1DSU: Darton 11-3 DS Series Bows 23pc
EL5SYN: Elite 15-6 Synergy, Impulse 23pc
EL4ENG: Elite 14 Energy 23pc
HO5STZ: Hoyt 15 Spyder Turbo ZT 22pc
HO5NIT: Hoyt 15 Nitrum 24pc
HO5POD: Hoyt 15 Podium 22pc
HO4FAK: Hoyt 14 Faktor 20pc
HO4CAS: Hoyt 14 Carbon Spyder 18pc
HO4PEE: Hoyt 14 Pro Edge Elite 14pc
MT5HAW: Martin 15 Hawk, 19 pc
MA6HAL: Mathews 16 Halon 35pc
MA5TRG: Mathews 15 TRG 33pc
MA5WAK: Mathews 15 Wake 31pc
MA5HTR: Mathews 15 HTR 29pc
MA5SDX: Mathews 15 Chill SDX 27pc
MA5Z20: Mathews 15 Z2 20pc
MA4CRE: Mathews 14 Creed 23p
MA4CHI: Mathews 14 Chill R/X 23pc
MA1Z70: Mathews 10/1 Z7, Z7 Magnum 20pc
MA2HEL: Mathews 12 Heli-m 19 pc
MA8SBX: Mathews 2008 Switch Back XT 13pc
MI4BLA: Mission 14 Blaze 21 pc
NB4GEN: New Breed 14 GenetiX 26 pc
OB6K3X: Obsession 16 K3x/Def-con 31pc
OB5DEF: Obsession 15 Delta 6/Fusion 6/7 25pc
OB5EVP: Obsession 15 Evolution/Phoenix 31pc
OB4EVP: Obsession 14 Evolution/Phoenix 29pc
OB3NIM: Obsession 13 Nightmare 32pc
PE5MX2: Ben Pearson 15 MX2 17pc
PR5OST: Prime 15 ONE STX/MX 30pc
PR5RIO: Prime 15 Rival/Ion 26pc
PR4ALO: Prime 14-5 Alloy 26pc
PR4IMP: Prime 14 Impact 25pc
PS5DEC: PSE 15 Decree 22pc
PS5DSF: PSE 15 DNA SP/Freak 26pc
PS5FUT: PSE 15 Full Throttle 18pc
PS5SPE: PSE 15 Source/Premonition HD 19pc
PS3PRO: PSE 13/4 Pro kit (DNA, DNA SP, Full Throttle, verge, premonition, Source, Dominator, etc.) 29pc
PS2TAC: PSE 12/4 Tac Front End 14pc
ST4VIT: Strother 14 Vital 31pc
XP5XCX: Xpedition 15 Xcentric/X-ring 33p
XP4XCX: Xpedition 14 Xcentric/X-ring 25pc
XP4SRS: Xpedition 14 SR6S/7S 22pc

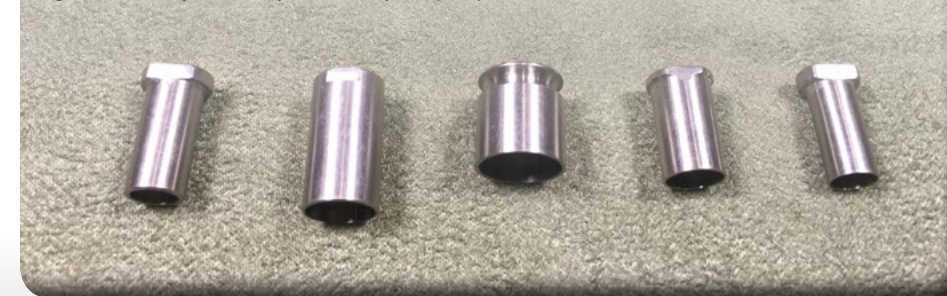
Cam Stops & Special Parts Titanium

Titanium Cam Stops (Pat. 9,097,486)

Most customers may not recognize that the Titanium bolt upgrade kit includes special design parts like the cam stops and accessories. This special design Titanium parts and accessories could significantly improve your bow performance.

FYI, Firenock has no less than 5 different designs of cam stop, each specific design exploit the ability of GR5 Titanium alloy to its full extent. For an example, as a result of extreme rigidity of GR5 Titanium alloy (880 MPa) vs normal 303 stainless steels (410 MPa), Firenock increased the diameter of the Titanium 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.

Furthermore, as we all know that cam stops need to handle great force when the bow is at full draw, thus cam stop bolts are usually big in size and thick in material. As a result of heavy weight and the cam stop bolts are usually located at the outer parameter of the cam, the effect of these heavy rotational masses (original cam steel bolts) on bow and arrow is significant while the bow is released. 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).



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. Although custom made cost more and higher grade material (GR5) costs more, Firenock does not compromise as Firenock wants to make the best stuff for serious archers.



Parts shown above, (left upper, clockwise)

- 1) Elite Cam Stop screw
- 2) Bowtech RMP limb pocket hold screw 1
- 3) Hoyt cable bearing shoulder screw
- 4) Bowtech RMP limb pocket hold screw 2
- 5) PSE DNA SE cable stop shoulder screw



2016 Obsession K32 OEM



2016 Obsession K32 Titanium

AeroStab (Dual Opposite Gyro Stabilizer)

AeroStab is new for 2016 and it is the first electronic stabilizer designed to stabilize vertical or horizontal bow. AeroStab can stabilize your bow within seconds and your shot will become more accurate as it can cancel the undesired hand shake and bow shake especially during release. AeroStab can operate under temperature as low as -4°F/- 20°C, and it is compact (10"/25 cm long) and light (~23 oz / 660 gram).

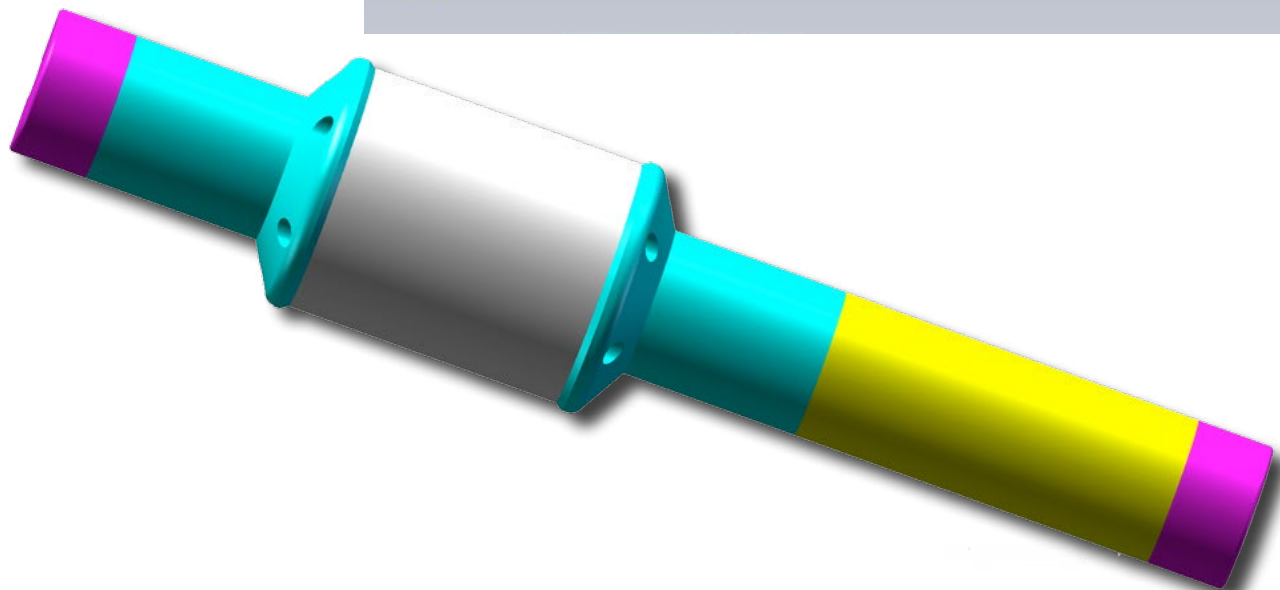
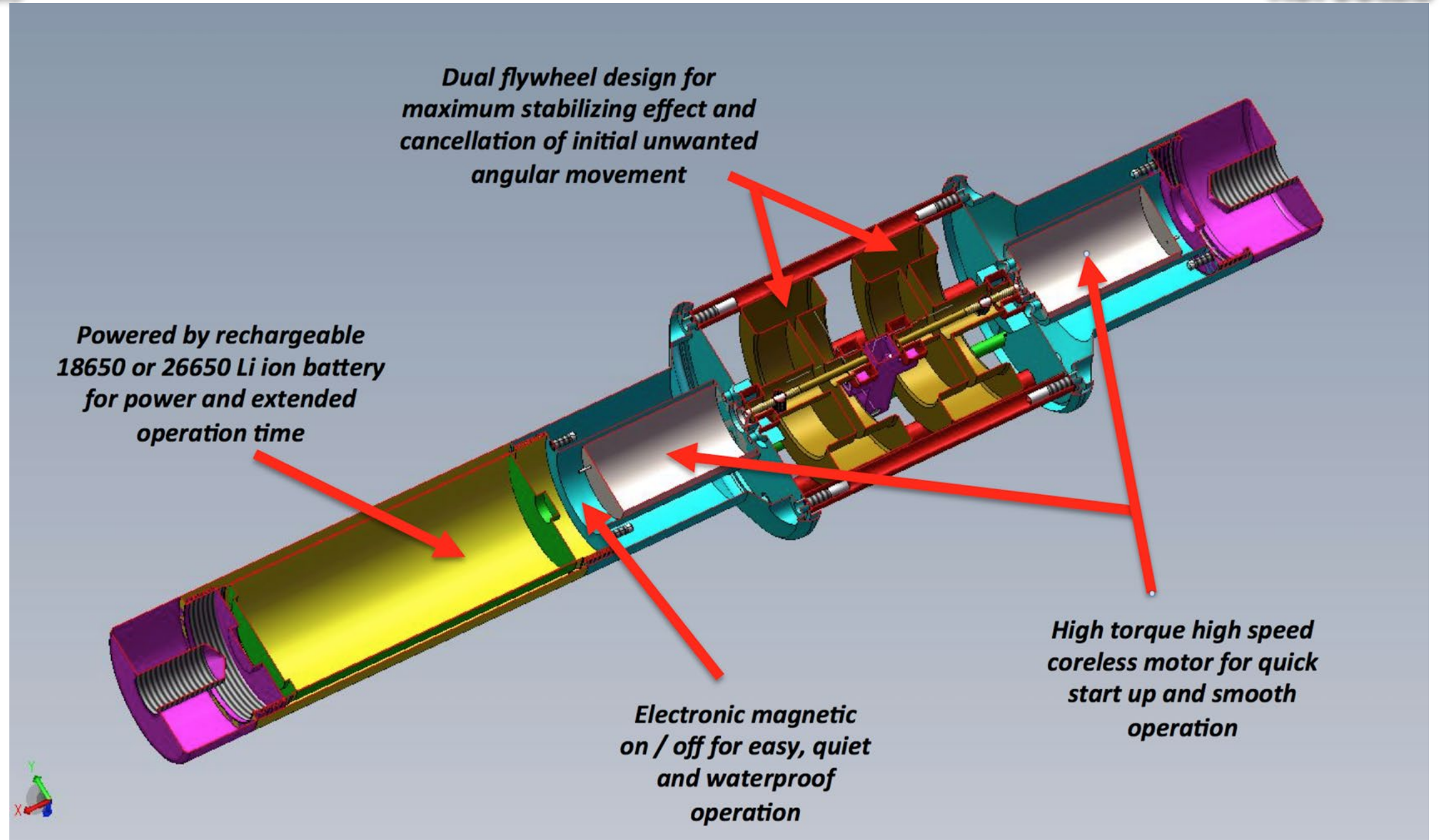
Inside AeroStab, it has 2 large size flywheels and 2 motors to generate massive angular momentum to stabilize your bow. The high speed core-less/brush-less motors are custom made in order to start AeroStab within seconds and is controlled by a custom designed digital control board. AeroStab is different from traditional gyro based stabilizer; it is equipped with 2 flywheels instead of a single flywheel. These 2 flywheels will operate in opposite direction initially to cancel the undesired directional angular momentum.

To switch on / off AeroStab, just place your magnetic actuator onto the AeroStab magnetic sensor region for no less than 3 seconds. This timed process ensure AeroStab can be controlled reliably and there is no worry about switching noise, water, snow, dust and mud etc as there is no open physical switch.

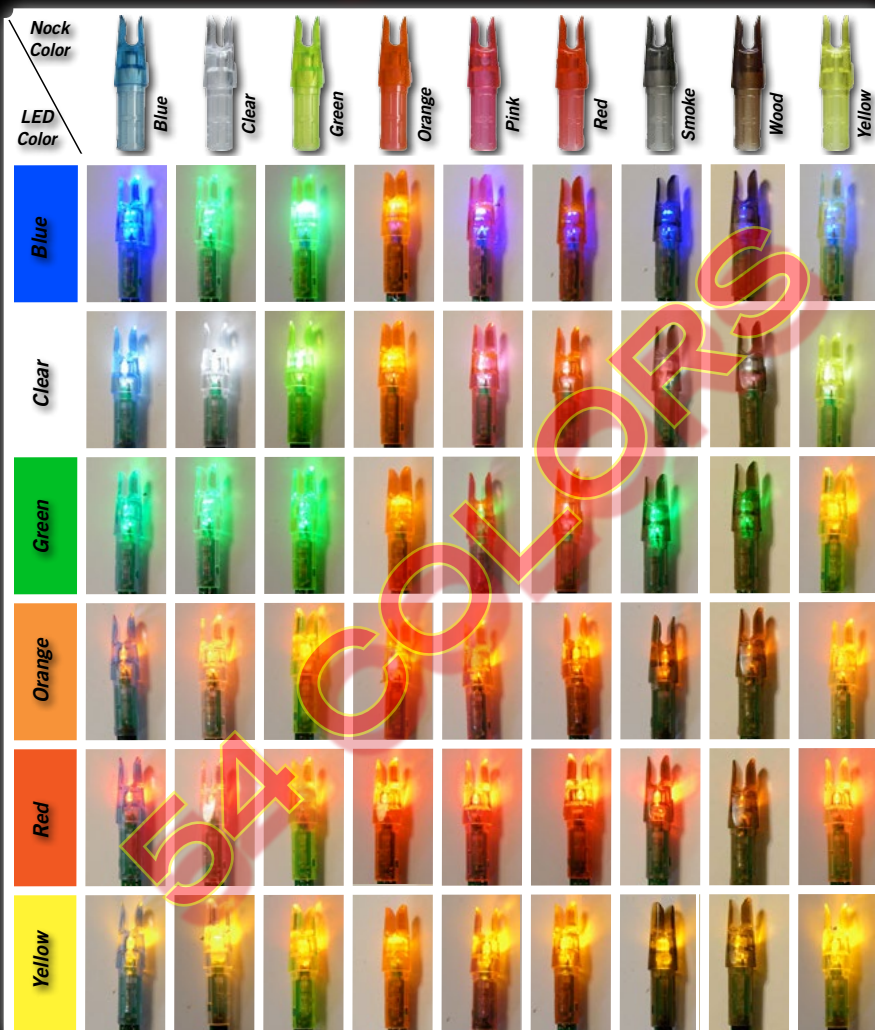
AeroStab is IPX7 compliant which means it can be submerged into 3ft/1 meter of water for up to 30 minutes. Most parts of AeroStab are CNC machined and anodized for tight tolerance and durability. The middle flywheel section is covered with aerospace grade graphite 50mm tube with stainless steel support frame inside for strength and lightness. All mating parts are weather sealed with O-rings.

With a full charge of Li ion 26650 battery, the operation time can be up to 10 hrs. If you prefer a lighter package, Li-ion 18650 battery fitted with the included adapter can drive the system up to 5 hrs. To install AeroStab is easy, just install it like a normal stabilizer as its front and back ends have standard thread 3/8"-24 3/4" deep threaded holes for you to attach AeroStab onto your bow. AeroStab comes with Firenock Titanium bow screw and spacer so there is no more rust and your set up will be light.

AeroStab



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



Firenock Nock Fit List

Firenock "G" will fit slim arrow shafts with an ID of 0.165" - 0.1665":

Black Eagle: Deep Impact, X- Impact
Forge: Slip Stream
Harvest Time/Blood Spot: HT-1
Easton: AC Injexion, Carbon One, FMJ Injexion, Injexion

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 Express: Edge, Piledriver™ Extreme
Easton: 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
Trophy Ridge: Blast, Crush, Hailfire, Wrath

Firenock "F, & M" fit crossbow arrows with an ID of 0.297" - 0.304":

Barnett: same as Easton
Bowtech: Striker Bolt
Camx: Accuspine
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
Black Eagle: Executioner, Zombie Slayer
Beman: ICS Thunderbolt®
Carbon Impact: Ultra Bolt XLT 22
Victory: Crossbow Bolt

Firenock "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 StrikeZone
Serving size: 0.135"-0.145" Scorpyd, Parker

Firenock "E" will fit medium arrow shafts with an ID of 0.229" - 0.232":

Alaska Bowhunting: GrizzlyStik (ID 0.212")*
Arrow Dynamic: Nitro Stinger (ID 0.211")*
Easton: 6mm FMJ, ACC Pro Hunter, A/C/C 3-49/390, Aftermath, ION, Pink ION, Da'Touch, Hexx, ST Epic Realtree HD Green, Nemesis ST Epic, ST Carbon Excel, Bloodline, Wildthing, Traditional Only, A/C/C 3-39/440*

Firenock S



Firenock F



Firenock M



Firenock Y



Firenock V (0.115" - 0.125")



Firenock D (0.160" - 0.170")



Firenock D2 (0.300" ID)



Firenock J (0.150" - 0.160")



Firenock Q (0.140" - 0.150")



Firenock A



Firenock E



Firenock G



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
Easton: Bowfire™, Carbon Storm, Flatline Surgical, Flatline, LightSpeed, Lightspeed 3D, PowerFlight, Excel & Epic pre-2008, A/C/C 3-60/340¹, 3-71/300²
Forge: Extreme Kevlon
Gold Tip: Pro Hunter, XT Hunter, Expedition Hunter, Falcon, Traditional XT, Traditional Hunter, Big Game 100+, Ted Nugent Signature, Velocity, Warrior

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