About The Atom...

The Atom is the FIRST and ONLY broadhead engineered from the ground up specifically for killing big game animals by focusing on not one or two engineering principles, slick mechanics to work around previous patents or only one aspect of the multitude of problems associated with mechanical or fixed bladed broadheads. But EVERY factor from bow, thru the air to passing completely thru an animal's vitals to the mechanics of its construction and the materials it's made of!

We have again taken another generational leap forward in broadhead design that again has caught not only competing broadhead companies broadside looking the other way while we're at full draw...but those same outdoor writers, TV show hosts, supposed "Industry Experts"....all are again still remaining far behind the learning curve on the latest, relevant and unbiased engineering facts of broadhead design and performance criteria.

I ask you to look at our two broadheads and then look at a website or catalog where there are pictures of all the other styles and types out there. What do you notice? There are NONE that look ANYTHING like ours. That's right, two whole new and unique categories of broadheads created out of the need to solve problems folks complain about every year but never get resolved...until now.

It is because we approach engineering broadheads based on the facts before us, in ethical consideration of the animals we intend to hunt and the Laws of Physics. The foundation of my background is based on common sense, years of experience in the woods bow hunting, US Navy training in Nuclear Physics & Electronics; with Material Sciences among other skills garnered in my career earning a living in the Integrated Circuit Manufacturing facilities thru ought the world. Combine high tech problem solving experience with redneck enthusiasm for chasing animals with bow and arrow and you get a whole new approach to engineering broadheads.

I like asking questions and then seek relevant tests that produce factual results. Regardless of good or bad outcome, there is always something to learn from each of these tests.

Let's start with facts considering the principles of engineering. For every focus a broadhead company puts on one specific aspect being better than the competitions. There is typically some type of trade off in performance criteria being the result. Example? Historically, you want the most accurate broadheads from fast bows? Do you have to shoot a mechanical

engineering trade off you ask? Mechanical integrity at impact energies, prematurely opening in flight, more energy required to open at impact equals wasted energy and less penetration, enhanced opportunity at wounding and losing animals. Not good trade offs if you ask me for enhancing the sport of ethically bow hunting animals. What about fixed bladed broadheads you ask? Okay, fixed bladed broadheads. More rugged than mechanicals due to no moving parts equals more reliable. Trade off? Rigid thus inhibiting penetration thru bone with possible blade shearing or rolling over the tip, exposed blades create lift to fly or wind plane yielding inaccuracy, all problems continuously experienced each year under real world hunting conditions by bow hunters around the globe. That is why people continue to try new broadheads…to minimize their risk to these inherent and historical facts and issues. Again, problems with fixed bladed broadheads are the ONLY reason mechanical broadheads emerged as an option to consider. While both of these two categories of broadheads have killed tons of critters…They have also wounded and lost many or at a minimum been the deciding factor of a good hunt gone wrong. The need of one broadhead to have all the benefits of both with none of the problems of either hasn't been created until The Atom.

No engineering trade offs! Radical design with ALL engineering factors accounted for PLUS the new concept of FLEXIBILITY to enhance penetration thru bone thus maximizing use of available kinetic energy in effort to obtain complete pass thru.

Structural Integrity of Broadheads:

I'll start on the design of The Atom for structural integrity under the most severe of impact energy conditions in comparison to any other broadhead on the market in the world. There are a few ads in the magazines and on commercials that ask questions in attempt to denote one aspect of their broadheads performance/construction materials over others….a challenge if you will. We did all the ballistic gelatin, steel drum, plywood, cinder block challenges and figured they weren't relevant enough to provide a real answer to durability. So we engineered the Ultimate Impact Test. We beat EVERY broadhead sold on the market today! I especially enjoyed some of the magazine challenges…the one that goes something like this.. "Ever heard of the expression "Tough as Aluminum?"…nope…but I know "Steel" isn't that tough either…We use Titanium…SOLID, ONE PIECE, MACHINED TITANIUM!!!! With TITANIUM Razor Wire!! No other broadhead

survived our ultimate impact and durability test besides the Titanium Atom! DO NOT ATTEMPT THIS TEST ON YOUR OWN!!! IT IS VERY DANGEROUS! A SPECIAL SAFETY ENCLOSURE HAD TO BE BUILT DUE TO PARTS AND PIECES COMING OUT AT HIGH VELOCITY SPEEDS!! AGAIN… IT IS DANGERAOUS>>DO NOT DUPLICATE THIS TEST! An 8 pound sledge hammer on a steel block!!! WHAM!!! You couldn't even recognize any other broadhead as having ever been a broadhead! We smashed them ALL in one hit only! The ONLY one that survived this kind of torture test where all you had to do was pick it up, screw it on the end of an arrow and go ethically hunt was The Titanium Atom! ALL others simply were reduced to broken pieces and parts smashed flat in one hit! The Titanium Atom was hit 9 more times before one wire broke! The hammer simply BOUNCED off the body after the wires flexed out of the way!!!! Is that tough enough for your bow hunting needs? We warranty the Titanium Atom body for LIFE!

In construction of any broadhead, you must consider that for each and every small part you add…mechanical integrity is compromised due to this complexity. In addition, the science of the base material selected for use is important. As a result, we engineered The Titanium Atom to be three pieces that carry four exposed cutting surfaces to the animal. One body and two razor wires. No need for pins, screws, collars, set screws, compression devices like rubber bands, o-rings or friction bumps. Unlike any other broadhead, we have no need of any tools to replace a Razor Wire. In mere seconds, you can pop off both wires and replace them with no more effort than using a paper clip. Plus you don't have to worry about cutting yourself in handling it! It's that easy and that safe. Due to customer demand for cheaper broadheads yet still carrying the benefits of The Titanium Atom, we produced The Atom body being Stainless Steel Tipped and Aircraft Grade Aluminum base. The engineering of this body is significant as well with proven durability that will last animal after animal.

Dimensions of a Broadhead:

A broadhead is basically a small wood splitter….a micro-machine that accomplishes its work in a very short span of time. We are asking it to do "Work" upon contact with an animal. The broadhead will continue to "Work" until it has exhausted all the stored kinetic energy transferred into it by the bow that launched it. The dimensions of the broadhead design greatly improve or detract from how efficiently that kinetic energy is utilized and thus

how much work it can do before it just stops penetrating or more specifically, stops forward movement. Many bowhunters have heard the expression "A length to width ratio of 3 to 1 is ideal for broadheads". In comparison to designs which have ratios less than this…the statement is fact based off the Laws of Physics with the focus being penetration. For instance; how much power does it takes to push the wood splitter wedge thru the wood? If you use a short length, very wide wedge…it will take tremendous power to split a log. If you use a longer length and a narrower width wedge..it will take considerably less power to split the same log. The design of the broadhead must take into account its dimensions relevant to these concerns to maximize achieving the most efficient use of the available kinetic energy it has been given. For starters with respect to the cutting width, the Razor Wire provides the ability to reduce the length to width ratio of the "Wedge" **during** penetration of bone…couple this with our Atom broadhead body which has a very narrow cutting tip that then converts to a long tapered section and thus supporting maximizing the efficiency of penetration thru bone. Unlike any other broadhead whether fixed bladed or mechanical with blades deployed at impact. They physically remain a wide wedge of significantly less efficient length to width ratio's that has no width reduction consideration and thus compromise efficient use of kinetic energy. That simply means they take considerably more energy to penetrate to an equal distance as The Atom. The engineering facts clearly show…The Atom remains the only broadhead in the world which provides real time, in animal, "Wedge Width", length to width adjusting capability to achieve the most efficient use of that valuable kinetic energy. We simply will out penetrate any other broadhead in the world based off these Laws of Physics basic principles of fact.

Sharpness of Cutting Edge:

Let's tackle an interesting subject. Sharpness of the cutting edge…. What do they teach in any bow hunter education class? What do the "Broadhead Companies, Paid Professional Hunters/Writers or Paid Outdoor Celebrities" preach??? "The broadhead must be hair shaving sharp in order to be ethically used on any animal". Remember what I said about focusing too much on only one engineering principle? Trade offs that sacrifice something else are the result. What would that be when it comes to sharp you ask? How about this? If scalpel, scary sharp edge is "Better"…why doesn't a butcher use a replaceable bladed knife to cut meat? If sharper is better, why are we demanded to replace or re-sharpen broadhead blades after shooting them into

soft foam targets? Consider this….the facts are that an animal is made up of much harder materials than that of a foam target. An animal is a multi-densitied object. Meaning that there is hair, hide, BONE, muscle, soft tissue vitals AND more of the same of all those to get OUT of the animal thus achieving a complete pass thru! Again I'll point out the simple fact and contradictions published and promoted throughout the industry for years….If a piece of FOAM will dull a broadhead…What is the hair, hide, muscle and BONE doing to the edge BEFORE IT EVEN REACHES THE VITALS??? I can tell you what happens…the edge is dulled rendering the blade significantly less than hair shaving sharp. In a recent article by Chuck Adams in the North American Hunting Club magazine, he admitted that with perfectly placed shots, there was no critter recovered due to in his opinion…"The blades of the broadhead were dulled as it penetrated the mud on the side of the animal before it reached the vitals"!!!! How about Ted Nugent's recent article denoting this same scenario on a deer? He also admitted to shooting a razor sharp broadhead into a buck's vitals only to not recover it until weeks later when it was shot again!!!! No mud on the deer to blame the dullness on. Both Chuck and Ted offered that this phenomenon occurs often enough to warrant articles being written. Again, the explanation is simple when approached with engineering facts to explore and support them…the razor sharp edge is weaker due to less mechanical support under that edge due to a steep grind angle removing the metal which would provide that mechanical support. Sharper is Weaker! But wait!! Our razor sharp broadheads kill animals every year! You are right! It is simply a matter of the Laws of Physics.

Velocity + Pressure + Edge = Cut

Velocity = How fast the "Edge" is moving
Pressure = Force exerted on that which we want to cut by the "Edge"
Edge = Physical surface making contact with that which we want to cut.

You need an "Edge" to do the Work. You need "Velocity" such as…How fast do you pull the steak knife over the steak?… and you need "Pressure"…How hard do you push down on that steak with the knife?…Three engineering facts for ANYTHING to CUT something. Even though scalpel sharp razor bladed broadheads are dulled as they enter the animal's chest cavity by wear forced upon that fragile sharp cutting surface by hair, hide, meat and bones before the soft tissue vitals are reached. The APPEARANCE

of a scalpel sharp cut is provided thru the vitals due to the Laws of Physics. That broadhead tipped arrow retained enough "Velocity" and "Pressure" as exerted on it by the internal vital organs it was forcing its way thru to "CUT"! No magic…No marketing trick…just Laws of Physics.

Our Titanium Razor Wire is ground, honed and stropped with the same exact machine that makes many other companies razor blades for their broadheads…. Why is this important? We have the same exact edge for the leading edge…EXCEPT for the grind angle. This is vitally important in that we are leaving more metal to structurally SUPPORT that leading, cutting edge. PLUS it's TITANIUM for durability! Thus keeping it sharp even while passing thru bone or mud packed on an animals hide from rolling in a hog or elk wallow! What does that mean? It means two important things. You will be able to RE-USE our broadhead on the next animal without worrying about the "EDGE" cutting surface! Second it is SAFE to handle! No accidental bow strings being cut, no worry about kids getting into your broadhead box and slicing their fingers open! Still not convinced??? Why does a Lansky Knife Sharpener have three holes that provide a different grind angle? If sharper is better why offer three different grind angles??? All three angles cut…But which edge will hold the edge better? How about this simple example? Ever been cut by ROUND shaped fishing line? Same laws of physics apply; same deep cuts into fingers happen when yanking on a round shaped fishing line to free that lure snagged in a bush! Cut = Velocity + Pressure + Edge…

Let's talk about another aspect of the cut used to justify their logic for mandating scalpel sharpness. You hear the expression "Capillary cutting"…meaning it makes them bleed better, less clotting action….etc, etc…. I agree…and I don't agree. If this capillary cutting is such an important component of killing an animal cause it makes them bleed better…why do we always seem to be on our hands and knees searching for that next spot of blood while attempting to trail up our animals??? Can anyone define the exact magnitude of sharpness of edge to obtain capillary cutting? Meaning is there a formula for this to determine justifying making a bold statement that the edge of a broadhead must be "X" sharp to = "Capillary Cutting" and thus be determined to be "Ethical" to use? The answer is NO! There is the OPINION of "Experts" who focus on ONE ASPECT ONLY to base their judgments on. I like facts, not marketing Garden Fertilizer. Not gut feelings, not cherry picked scenarios that assist to backup a particular stance in effort

to promote a product. Total dynamics of interactions of broadhead and animals "Facts".

The significant magnitude of kinetic energy transferred from The Atom tipped arrow via the Razor Wire edge, velocity and pressure while passing thru any animal's vitals will easily satisfy capillary cutting needs! That is REALITY, not fancy graphics, slick commercials or paid people to endorse a products cherry picked attribute...but solid FACTS. The dynamics of all factors involved are significantly greater than focusing on only "Sharp" being the deciding factor that kills an animal with a broadhead tipped arrow.

Accuracy of Broadheads:

Whether it's fixed bladed or mechanical, the claim is the same. "We are field point accurate!" Mix that claim in with the dirt in your garden and you're going to grow some REAL nice vegetables! With respect to fixed bladed broadheads...By now you should now this...What are the three words that no marketing hype can compete against? "Laws of Physics"...that's right...It is real simple. If you want an airplane to fly...give it wings. When you launch ANY fixed bladed broadhead into the air at VELOCITY, with varying degrees of ANGLE OF ATTACK such as that imparted by the arrow shaft flexing due to energies transferred to it at the moment you release the string on your bow. The arrow will FLY to some other impact point than that of your field tips!

Consider this also...why is it that there is a radical trend for kickers on plastic fletchings, or higher profile vanes that brag to significantly "Shrink" your broadhead groups???? The fact is that more resistance or drag forces at the BACK of an arrow shaft dampen oscillations thus limiting angle of attack of the razor blades up front, thus minimizing magnitude of lift created, in addition to the drag forces simply causing more resistance and thus a greater magnitude of lift necessary to fly off the intended flight path. I mention "Angle of Attack"...Consider the Law of Physics which denotes that for every factor of "1" you change the angle of attack of an airplane wing...You exponentially create More or Less lift! This applies to broadheads equally as well as airplanes! I'm sure you have heard that if you can't get your broadhead to be accurate..use a stiffer arrow shaft? This will cause less flexing thus less change in the angle of attack which equals less lift and more accuracy plus a stiffer shaft is typically heavier providing more mass to inhibit flying off target as that would require more lift force necessary to move it off course.

Mechanicals? Yep..they are accurate..to a point. Problems start to occur when shot over 350 feet per second due to that magnitude of energy

transferred causing the blades to pop open prematurely. NOT GOOD! Guess that means you need more rubber bands on the broadhead to keep the blades shut…Only thing I want a rubber band on is a toy airplane! Not the business end of my arrow during a hard earned shot opportunity at a critter! That's just considering the accuracy of flight of a mechanical…at impact; we get into other negative issues for mechanicals. Again, that is why the vast majority of outfitters won't let you use mechanicals PLUS they are still illegal in many states. Bottom line…With all razor bladed broadheads having planar surfaces exposed from bow to target…they create lift. The Atom using Titanium Razor Wire provides the lowest cross sectional surface area exposed to the air. Thus at any speed, we have no lift creating surfaces and are therefore FIELD POINT ACCURATE or more specifically we retain the identical impact point in direct comparison to that of your field point to the farthest distance ever yet achieved! Consider this…at fourty yards measured to the THOUSANDTHS of an inch shot from a crossbow over three hundred feet per second that was clamped to a steel table to eliminate the human element. We go in the same hole as a field point! We not only ENGINEERED the broadhead to be field point accurate. But back it up with the first warranty that states… "We will have the IDENTICAL IMPACT POINT as your field tip or your money back!"

Flexibility of Broadheads:

The Atom is the ONLY broadhead in the world which engineered in its design FLEXIBILITY. Meaning whether you are a fixed bladed or mechanical broadhead which opens on contact…They both have RIGID, Full cutting width when contacting BONE. Meaning there is full resistance to forward momentum from a dense matter which does nothing but impede penetration before it even gets to the vitals! There IS NO BENEFIT to cutting full width thru bone! All it does is stop the arrow from penetrating! Should only one or two blades contact bone, this throws a huge lateral load upon the arrow which transfers forward momentum into a lateral load being placed on the shaft of the arrow which significantly reduces penetration due to this frictional force. The Atom's Titanium Razor Wire when in contact with dense bone will COMPRESS the cutting width as it penetrates to get thru the bone with minimal kinetic energy lost. Upon passing the bone and pressure is relieved from the Razor Wire. The memory shaped Razor Wire immediately pops back to its original cutting width shape to cut the soft tissue vitals where you need the full cutting width!!! We EXIT the animal in the

same manner! Should only one side of the wire strike a rib, there is side to side movement of the Razor Wire allowed such that the broadhead does not place a lateral load on the arrow shaft as it passes the bone obstruction. Combine this engineered compression flexibility plus the side to side flexibility and you get a SIGNIFICANT improvement in obtaining a complete pass thru in comparison to ANY OTHER broadhead in the world due to more available retained kinetic energy to warrant continued forward momentum! Forward momentum = deeper penetration.

The Atom has been used all over North America and in Africa successfully killing any critter it hit! The pass thru performance, good entrance AND exit wounds and short, bloody trails have taken very vocal and skeptical hunters/guides/outfitters when first showed The Atom broadhead and turned them into true believers.

A common expression when a hunter first sees the results of an Atom on an animal goes like this…"It looks like I shot it with a 30-06"! Or.."I could never find my arrow as it just kept going after going thru the animal!!!". Put The Atom to a test on the animals you hunt anywhere in the world and you'll see what others have discovered. Sometimes a radical change is the answer to fixing age old problems. You want to shoot a Boone and Crockett animal? What do you have to do typically? You have to walk a different path and hunt where nobody else hunts to reach that goal. This same effort is exactly what we do here at Arrowdynamic Solutions in our engineering efforts. We push them to the limit! Any questions? Give us a call and we will be glad to answer them!

Release the power of The Atom and witness the broadhead revolution for yourself!