

2010 Compound Bow Evaluation

PSE X-Force AXE 6

By Anthony Barnum



PSE X-Force AXE 6

Introduction:

The X-Force AXE 6 is PSE's flagship offering from their Pro Series lineup for the 2010 model year. This bow is built of the PSE's popular X platform that provides a high level of performance while minimizing vibration and shock. The AXE 6 maintains these characteristics while offering some additional benefits that weren't previously found in the X series of bows. Specifically, the new AXE Cam is a hybrid cam system that offers 5 inches of draw length adjustment in 1/2" increments without requiring the use of a bow press or different modules/eccentrics. This makes it easy for both the end-user and the shop owner, who won't have to stock additional hardware, to adjust the AXE 6 for proper fit. The AXE Cam achieves this adjustability by incorporating a rotating inner cam that, according to PSE, provides optimal nock travel at all draw lengths while maintaining a smooth draw throughout the cycle. Adjustments to the appropriate location are identified by matching up a groove machined into the inner came with laser etchings on the main eccentric – tune charts are readily available on the web and the user's guide that comes with each bow provides all the information you'll need to determine the appropriate setting. The AXE cam system, combined with highly preloaded 12" split limbs, provide for an exceptionally tame bow in a smooth shooting package

The X-Force AXE 6 sample that was provided for this evaluation was measured to have a brace-height of 6.015 inches, while the axle-to-axle length was measured to be 32 3/8 inches. The requested 29 inch, 60 pound model was measured straight out of the box to have a 29 1/8 inch draw length and peak draw-weight of 60.1 pounds. This is certainly noteworthy as the majority of the bows that I test are outside of specification in one or both of these categories. When shot by hand with a 300 grain arrow, the X-Force AXE 6 achieved an average speed of 326.0 fps in the out of box configuration

Subjective Test Results:

Fit & Finish:

The Fit and Finish on the X-Force AXE 6 sample provided for this evaluation was quite good, and only minimal, minor blemishes were noted. The riser, grip area, eccentrics, limb pockets and cable guard / string suppressor assemblies were void of any blemishes. The only area where blemishes were noted was on the underside of the limbs where; small "pin-prick" areas void of film dip finish were found. The contact points between the limbs and both the limb pockets and eccentrics proved to have tight tolerances.

Grip:

As in years past, PSE provides a slim grip area with synthetic sideplates on the AXE 6. This smooth and fits my hand well. It is quite difficult to place your hand in any other spot than where it is supposed to be with this grip. This, combined with a high resistance to torque, should help to keep the archery shooting consistently.

Draw Cycle:

The draw cycle on the AXE 6 is quite smooth. When drawing this bow back, you don't really get the feeling that you are drawing a bow that is capable of this type of performance. But, the 320+ fps that the AXE 6 was measured at is quite fast. The bow stacks relatively steeply to peak draw weight early in the cycle with only a slight "hump" in the middle of the holding phase before dropping smoothly into the valley. There is a little forgiveness in the valley and the wall is quite solid. On average, the X-Force AXE 6 stores 3.99 ft-lbs. of energy for each inch that you draw it back.

Sound & Vibration:

At the shot, the AXE 6 tends to jump forward just a bit and rotates counterclockwise slightly (if viewed from above). After the shot, low amplitude vibration is felt in the riser, but this residual vibration is dampened quickly. Overall, the AXE 6 is quite tame while maintaining a high level of performance.

PSE X-Force AXE 6

Contact Info: PSE Archery

www.pse-archery.com

MSRP:	\$749	Draw Length:	26"-30" *
Cams:	AXE Cam	Draw Weight:	60, 70*
Limbs:	12" Split Limbs	Brace Height:	6" *
Grip:	SLT grip	Axle to Axle:	32 1/2" *
Let-off:	75%*	Mass Weight:	4.0 ^
String:	America's Best		
Damping:	Backstop String Suppressor		*Advertised
Finish:	Mossy Oak Treestand		^ Measured

Performance at a Glance (60.1 lbs, 29 1/8"):

Arrow	Speed	K.E.	Momentum
300 Grains	323.9	69.9	13.9
360 Grains	298.3	71.1	15.3
420 Grains	278.5	72.3	16.7
540 Grains	247.7	73.6	19.1

Arrow (Grains):	300	360	420	540
Dynamic Efficiency:	81.9%	83.4%	84.8%	86.3%
Speed Per Inch of PS:	15.2	14.0	13.0	11.6
Noise Output (dBA):	91.4	88.3	86.1	85.9
Total Vibration (G):	198.3	187.1	167.5	162.3



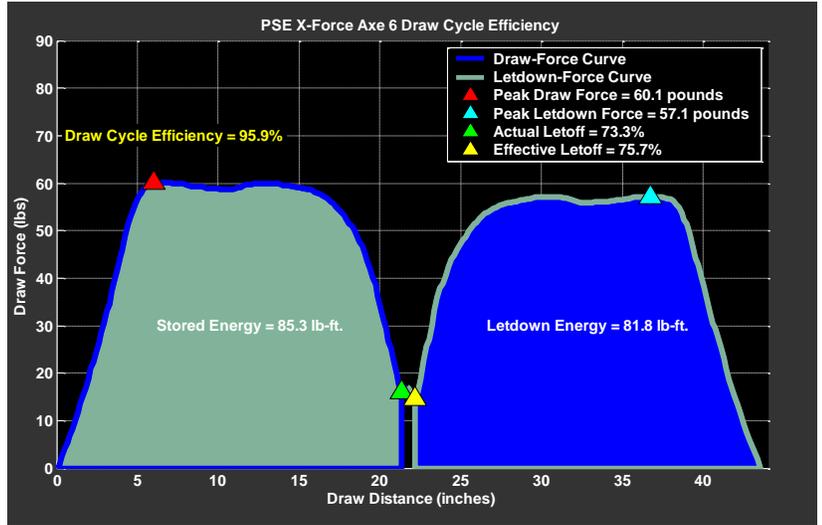
PSE X-Force AXE 6

Objective Test Results:

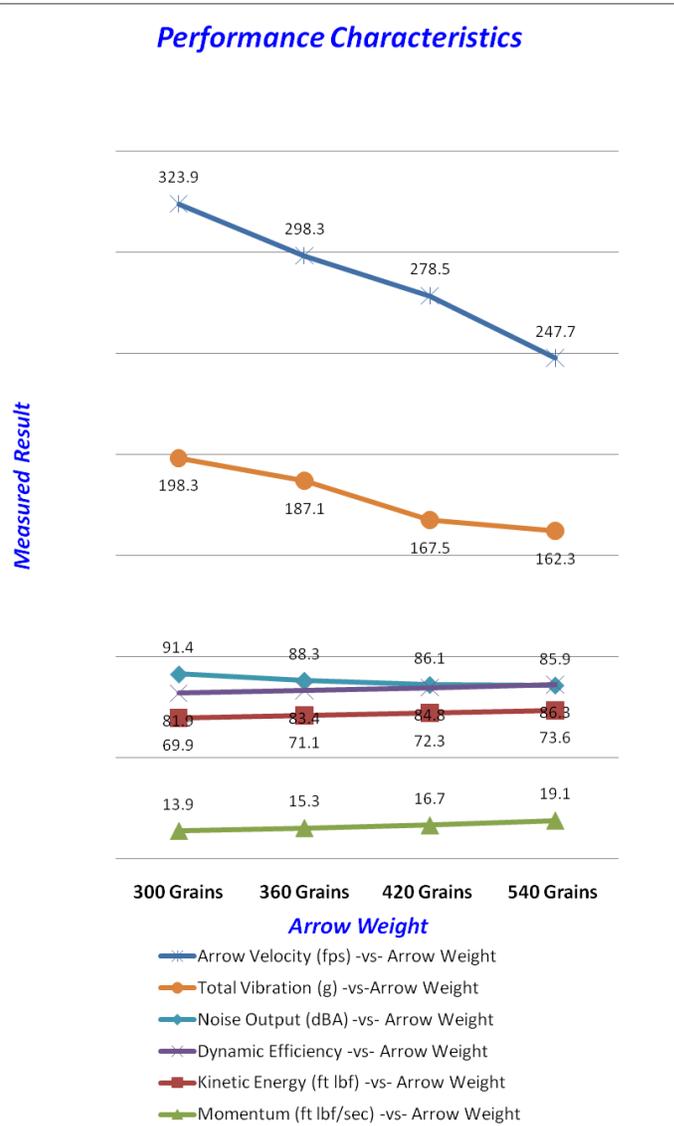
Speed / Performance Measurements:

Speed measurements are made with 4 different arrow weights to determine the average speed of the bow per inch of Power Stroke. Draw Cycle Efficiency is calculated using the stored energy and the let-down energy captured in the Force-Draw curve. The stored energy is used further to determine the average dynamic efficiency of the bow.

Speed per inch of Power Stroke: 13.4
Dynamic Efficiency: 84.1%
Draw Cycle Efficiency: 95.9%



Performance Characteristics



Vibration Measurements:

Vibration measurements are made with 4 different arrow weights to determine the average vibration in 3 dimensions as well as the total average vibration.

Positive X-Vibration: 65.3 g
Negative X-Vibration: -59.0 g
Positive Y-Vibration: 143.6 g
Negative Y-Vibration: -142.2 g
Positive Z-Vibration: 145.9 g
Negative Z-Vibration: -75.1 g
Total Vibration: 178.8 g

The addition of a 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a significant reduction of peak total vibration when measured with a 360 grain arrow.

B-Stinger Reduction: 5.8%

Sound Measurements:

Sound measurements were made with 4 different arrow weights to determine the average sound output, the average A-Weighted sound output (mimicking the human ear) and the average C-Weighted sound output.

Unweighted Sound Output: 103.6 dB
A-Weighted Sound Output: 87.9 dBA
C-Weighted Sound Output: 95.2 dBC

The addition of the 12 inch B-Stinger Pro Stabilizer with a 14 ounce weight yielded a reduction of peak A-weighted sound Output when measured with a 360 grain arrow.

B-Stinger Reduction: 0.7%