

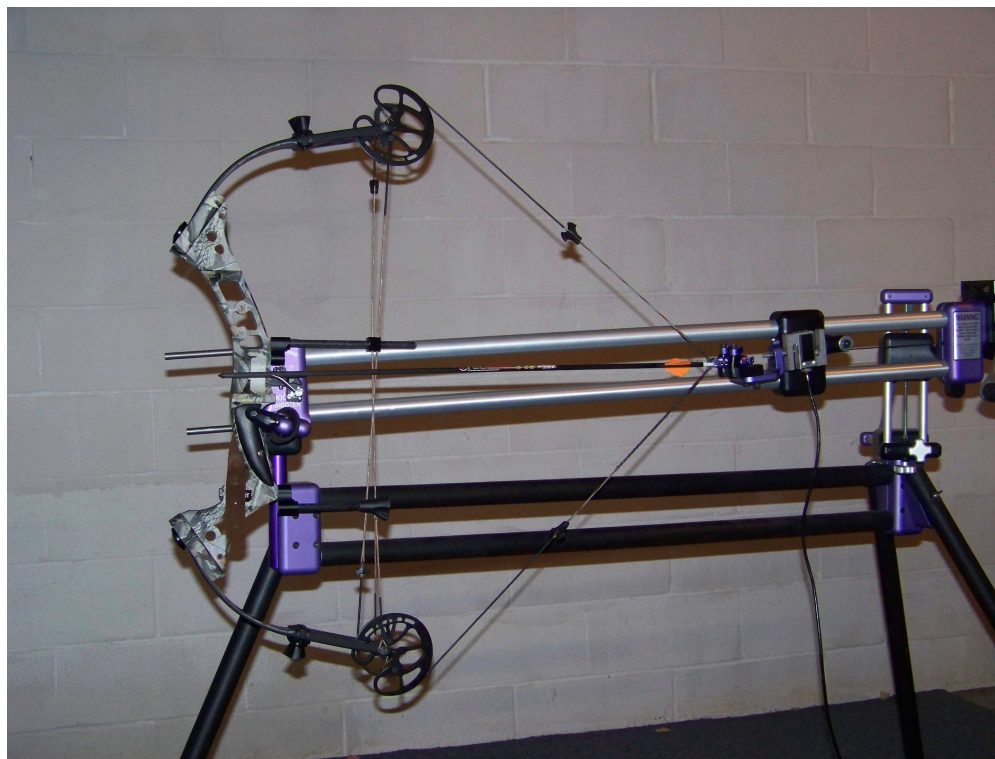
2008 Compound Hunting Bow Evaluation

Horton Vertical Ascent Test Results



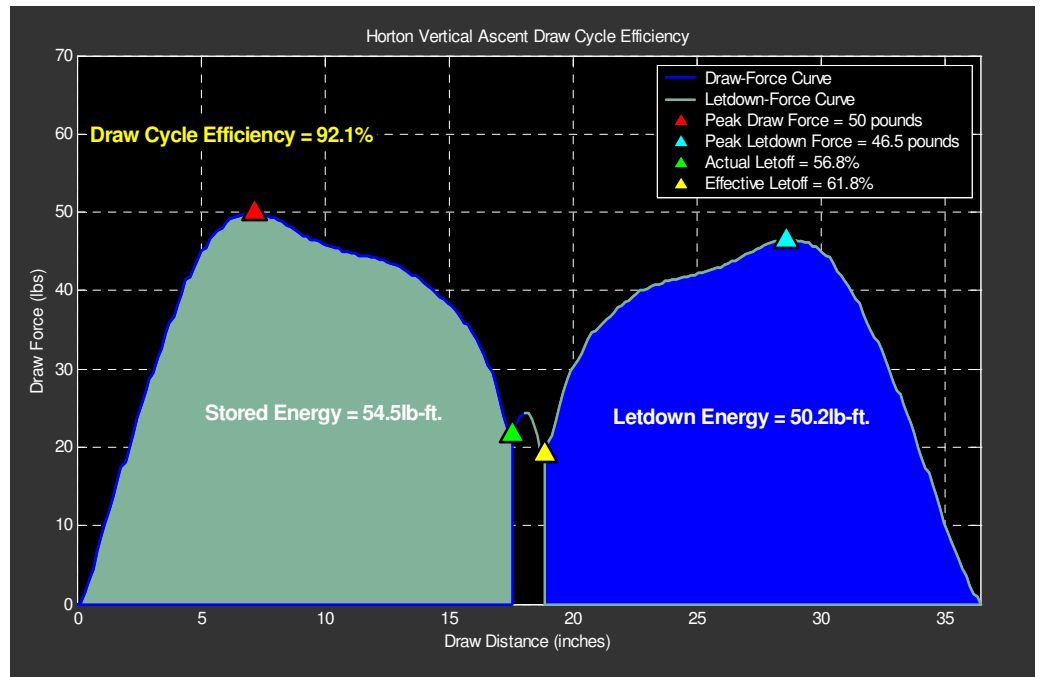
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Horton Vertical Ascent



Introduction:

A newcomer to compound bows but a veteran in the crossbow market, Horton's Ascent is the short-draw model of the "Vertical" line for 2008. At just under 30 inches axle-to-axle, the Ascent is a relatively compact bow that seems to balance well in the hand. The numerous Tunerz® products that are installed on the bow help to combat shock and vibration. The Tunerz® are installed on the string, cable and limbs and an adjustable string suppressor is also provided. The riser appears to be overbuilt, which helps to eliminate torque.

The Ascent sample that was provided to Archery Evolution was measured to have a brace-height of 6 11/16 inches, while the axle-to-axle length was measured to be 29 11/16 inches. The requested 26 inch, 50 pound model was measured straight out of the box to have a 26 3/4 inch draw length and peak draw-weight of 51.9 pounds. At these settings, The Ascent achieved an average speed of 272.2 fps with a 250 grain arrow. A slight adjustment to the integrated draw stop and limb bolts brought the bow into exact specifications in short order.

A thorough examination of the finish quality showed only minor imperfections. A small scratch in the film-dip finish was noticed on the top limb pocket, while there were also a few machining marks on the interchangeable modules. Some fraying in the serving material was also noticed on the loop end of the control cable. Other than that, the fit and finish on this bow was just about flawless.

The Ascent features the OS3 hybrid cam, which offers modular draw-length adjustment as well as an adjustable draw-stop for fine-tuning purposes. Convenient "tuning" marks are also provided on the eccentrics to ensure that cam orientation is optimized. This cam system employs a unique floating yoke system with the split in the yoke being attached at the bottom limb. Overall, this bow seems to be a well-built, rugged product and is a good short-draw offering for a Freshman in the compound bow market.

Horton Vertical Ascent

Contact Info: Horton Vertical

www.crossbow.com

MSRP:	\$495	Draw Length:	23"-31" *
Cams:	OS-3 hybrid cam	Draw Weight:	50,60,70*
Limbs:	Composite	Brace Height:	7" *
Grip:	Laminate two piece	Axle to Axle:	30" *
Let-off:	65%-80%*	Mass Weight:	4.0
String:	BCY 452X		
Damping:	TunerZ™		*Advertised
Finish:	Realtree HD™		

Performance at a Glance (50 lbs, 26"):

Arrow	Speed	K.E.	Momentum
250 Grains	266.2	39.3	9.5
300 Grains	248.7	41.2	10.7
350 Grains	233.7	42.4	11.7
450 Grains	209.2	43.7	13.5

Arrow (Grains):	250	300	350	450
Dynamic Efficiency:	72.2%	75.6%	77.8%	80.2%
Speed Per Inch of PS:	15.2	14.2	13.3	11.9
Noise Output (dBA):	89.5	84.0	82.3	84.7
Total Vibration (G):	361.7	326.1	289.8	253.4



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Detailed Test Results:

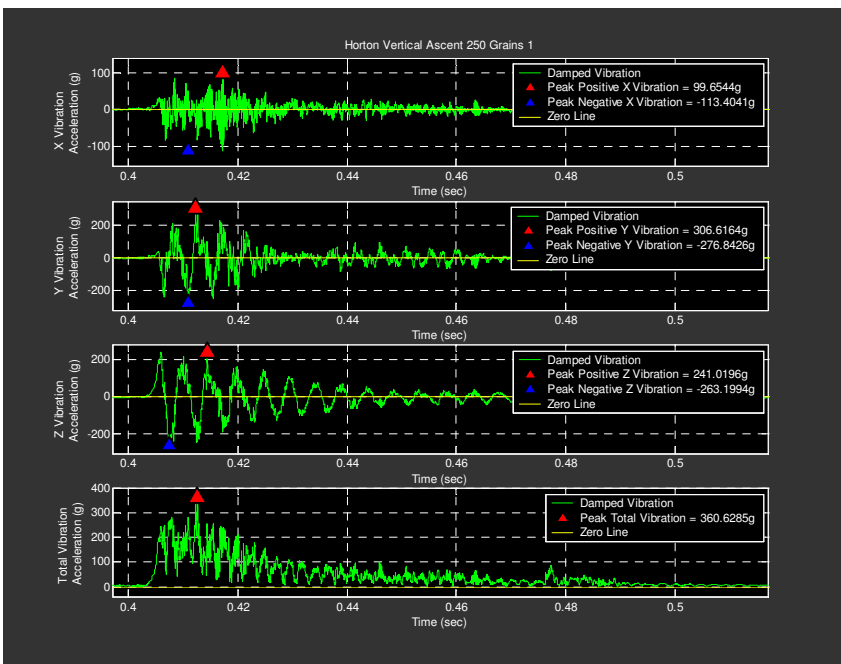
Speed / Performance Measurements:

Speed measurements were made with 4 different arrow weights to determine the average speed of the bow per inch of Power Stroke. Utilizing the stored energy obtained from the Force-Draw curve, average dynamic efficiency was calculated.

Speed per inch of Power Stroke: 13.6

Dynamic Efficiency: 76.5%

Speed Point Blank - Tuned 26", 50#	Horton Vertical Ascent							
	Brace Height = 6 11/16		Draw Weight = 50.0		Draw Length = 26		Axle-to-Axle = 29 11/16	
	250 Grains		300 Grains		350 Grains		450 Grains	
Chronograph	BFM	Pro-Chrono	BFM	Pro-Chrono	BFM	Pro-Chrono	BFM	Pro-Chrono
1	266.3	265	248.7	248	233.7	232	209.4	209
2	266.0	265	248.8	248	233.2	232	209.3	208
3	265.8	265	248.6	248	233.6	232	209.0	208
4	266.3	265	248.1	247	233.7	232	209.1	208
5	266.5	265	248.9	248	233.8	233	209.3	208
Avg. Speed	266.2	265	248.7	248	233.7	232	209.2	208
Kinetic Energy	39.3	39.0	41.2	41.0	42.4	41.8	43.7	43.2
Momentum	9.5	9.5	10.7	10.6	11.7	11.6	13.5	13.4
Power Stroke	17 9/16							
Speed per inch of Power Stroke	15.2	15.1	14.2	14.1	13.3	13.2	11.9	11.8
Avg. Speed per inch of PS (BFM)	13.6							
Stored Energy	54.5							
Dynamic Efficiency	72.2%	71.5%	75.6%	75.2%	77.8%	76.7%	80.2%	79.3%
Avg. Dynamic Efficiency (BFM)	76.5%							



Vibration Measurements:

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

Positive X-Vibration: 85.4 g

Negative X-Vibration: -93.8 g

Positive Y-Vibration: 260.1 g

Negative Y-Vibration: -228.0 g

Positive Z-Vibration: 231.1 g

Negative Z-Vibration: -243.8 g

Total Vibration: 307.8 g

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: 103.3 dB

A-Weighted Sound Output: 85.1 dBA

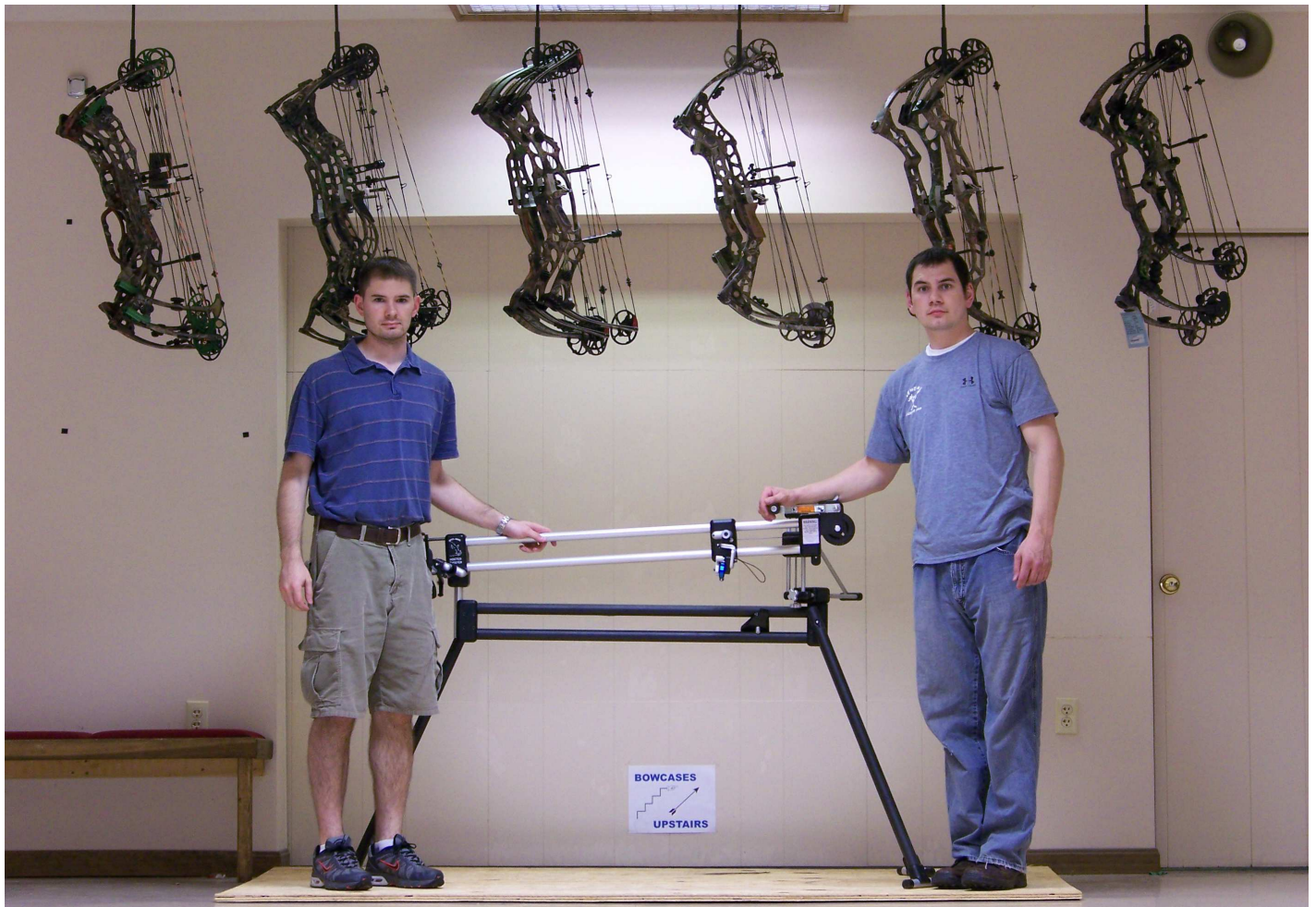
C-Weighted Sound Output: 94.8 dBC

Noise & Vibration	Horton Vertical Ascent											
	Brace Height = 6 11/16			Draw Weight = 50			Draw Length = 26			Axle to Axle = 29 11/16		
	Peak Noise Output (dB)			Peak A-Weighted Noise Output (dBA)			Peak C-Weighted Noise Output (dBC)					
Parameter	250 Grains	300 Grains	350 Grains	450 Grains	250 Grains	300 Grains	350 Grains	450 Grains	250 Grains	300 Grains	350 Grains	450 Grains
Grains	Max			Max			Max					
1	106.0	103.6	103.0	102.2	90.6	83.9	83.2	85.2	97.8	95.4	93.4	93.5
2	105.4	103.5	100.7	102.0	88.8	83.7	82.7	84.7	97.1	95.4	92.3	93.8
3	106.5	103.7	100.8	100.9	89.9	83.1	82.4	82.9	98.0	95.6	91.9	92.8
4	105.3	104.3	102.1	101.7	89.2	84.4	81.7	84.2	96.7	96.1	92.6	93.6
5	106.4	103.1	103.1	101.6	89.3	85.5	81.6	86.3	98.6	95.0	93.3	93.2
Average	105.9	103.6	102.0	101.8	89.5	84.0	82.3	84.7	97.7	95.4	92.7	93.4
Total Average Max	103.3			85.1			94.8					



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