

BOW REPORT

By Jon E. Silks

Alpine Micro Elite

Alpine Archery has been in the business of making quality bows and archery accessories since 1988. According to company records they were the first to offer a machined riser bow in 1990 – the bow was the Silverado, a name that still survives in their current line. In 1991 they were the first to build a reflexed machined riser bow and in 1994 were the first to CNC machine limbs. According to advertisement they were also the first manufacturer to offer a modular multi-part riser based bow (2005). In 1992 Alpine engineered a bow just for youth archers. The Colt was a scaled down version of an adult bow designed to fit smaller archers properly and provide them with comfortable performance.

Now, in 2007, Alpine introduces the Micro Elite compound bow for youth and shorter draw archers. Built for performance and adjustability the Micro Elite features fully machined pivoting limb pockets and an eccentric system with 8 inches of draw length adjustment. A closer look at the Micro Elite...

Riser: Alpine manufactures the Micro Elite risers in two basic steps: Permanent aluminum molding and the CNC machining. Permanent molding is a process in which molten metal, in this case A356 aluminum, is poured into an iron or steel mold. Gravity pressure forces the molten metal into all of the structural features and then quickly solidifies to produce fully functional finished parts. This process is precise, repeatable and capable of producing highly complex geometries with surface finishes that can be used “as is”. Another major benefit of this process is low cost. Two of the more notable molding features on the Micro Elite’s riser include limb pocket mounting studs and a flared section where the limb bolt mounting holes are drilled. Aesthetically, the molding process yields a very nice looking raised letter “ALPINE” on one side of the riser, just below the grip. The second step in Alpine’s manufacturing, CNC machining, is used to add accessory mounting holes, etc. I suspect that the A356 aluminum is treated to produce a T6 temper, as T6 temper alloys display excellent strength characteristics while maintaining many other characteristics that make them useful for engineering applications.

The Micro Elite’s reflexed riser is also home to a two-piece injection molded ABS (Acrylonitrile Butadiene Styrene Plastic) grip and straight carbon material cable

guard. As with almost every other riser on the market, both youth and adult, the Elite riser is made with large cutouts designed to keep mass weight to a minimum. This riser has six such cutouts that contribute to an overall mass weight of 3.0 pounds. Alpine dresses up their Elite riser with a film dipped Realtree Hardwoods Green HD camo finish. The film dipping process has been described in detail in other issues of Arrow Trade. Please refer to a back issue for more information.

The Micro Elite package. You can also retail the bow alone, which has a \$229 MSRP.



So, what does all this mean to Mom, Dad and the shooter?

The permanent molding process is a low cost process that requires little additional touch-time to bring it to its final form and functionality. This savings in cost is passed on to the end-user (mom, dad and the shooter). Alpine’s Micro Elite is priced at an easy-to-take \$229.00 MSRP for the bow only and \$299.00 for a complete package.

The two-piece ABS grip is narrow making it easily handled by smaller hands.

Realtree’s HD Green camo looks good on the Micro Elite and gives it an adult bow look – ready to hunt!

Two inches of reflex in the Elite’s riser structure equals more power stroke and more speed. At the same time the Elite remains stable, as a 2 inch reflex is not radical.

Limbs/Limb Pockets: Pivoting limb pockets are

known for their superior characteristics as compared to stationary pockets that require the limbs to move independently. A pivoting limb pocket holds the relationship between the limb and pocket constant while moving the larger structure of the pocket for weight adjustment. The limb-to-pocket and pocket-to-riser interface is critical to accuracy and consistency. Most adult bows are now made with pivoting limb pockets, however, many youth bows are still outfitted with independently moving limbs. Alpine equips the Elite with their Micro Limb Pockets - pivoting pockets that rotate on two protruding studs located at the ends of the riser, which are molded directly into the structure. The split limbs are secured laterally by two slots machined into the pocket structure closest to the end of the riser and the limb butts are secured into the "cup" where the limb bolt passes between them for draw weight adjustment. The Micro's limb pockets are CNC machined 6061 aluminum anodized in a copper color.

Alpine uses four individual split limbs measuring 13 inches in length on the Elite. Many of today's top manufacturers look to industry standard Gordon Composites, Inc. to supply the materials for their adult bow limbs. Gordon has had their materials proven on high draw weight bows countless times so it should be reassuring that Alpine also uses this mate-

Alpine Micro Elite

Draw weights: 30, 40, 50 peak
Draw Lengths: 21 to 28 inch single module
Axle-to-axle length: 32 inch advertised – 31.75 measured at 23 inch draw length
Brace Height: 5.5 inches advertised – 5.875 measured at 23 inch draw length
Mass Weight: 3 pounds
Let-off option: 65 percent (Appeared to change significantly through draw length adjustment range)
Eccentrics: Dual, Stalker II
Available finish: Realtree Hardwoods Green HD
Cable: 33.5 inch
String: 50 inch
Grip: Two-piece ABS plastic
Riser: A356 Aluminum
Limbs: Split, Gordon glass
Cable Guard: Carbon - straight
Warranty: Lifetime on all machined aluminum components – 5 years on the limbs
MSRP: \$229.00, bow only or \$299.00 for package

rial for their Micro Elite bow limbs. The limbs are CNC machined from a blank of Gordon's epoxy matrix glass and are available in 30, 40 or 50 pound peak draw weights. Again, Alpine uses a film dipping process to finish the limbs in Realtree's Hardwoods HD Green camo. Each limb also has the words "Alpine Archery" on its face and one of the bottom limbs has a sticker on it with the bow's serial number, draw weight, draw length range, string length and buss cable length.

So, what does all this mean to Mom, Dad and the shooter?

Alpine's use of pivoting limb pockets on a youth bow is an indication that they are in the business of creating a quality bow with performance features for the young and short-draw archer.

Parents are concerned with durability in a youth bow – rest assured the Micro Elite's limbs, made with Gordon materials, fit the bill.

Eccentrics: Adjustability,

range, variability are all words that you will hear from parents who do not want to invest money in a bow if it is just going to be too small for their child in less than a year. When it comes to the eccentrics the adjustability we are concerned with is draw length. The Micro Elite is outfitted with the Stalker II Dual Cam system, which is adjustable over an 8-inch range, 21 – 28 inches, through the use of a rotating module. To adjust the draw length you simply remove a single screw, rotate the module to the desired position and then re-insert the screw. While no bow press is required the 27 and 28-inch holes are partially blocked by the limb so you will have to either put some tension on the string to get to

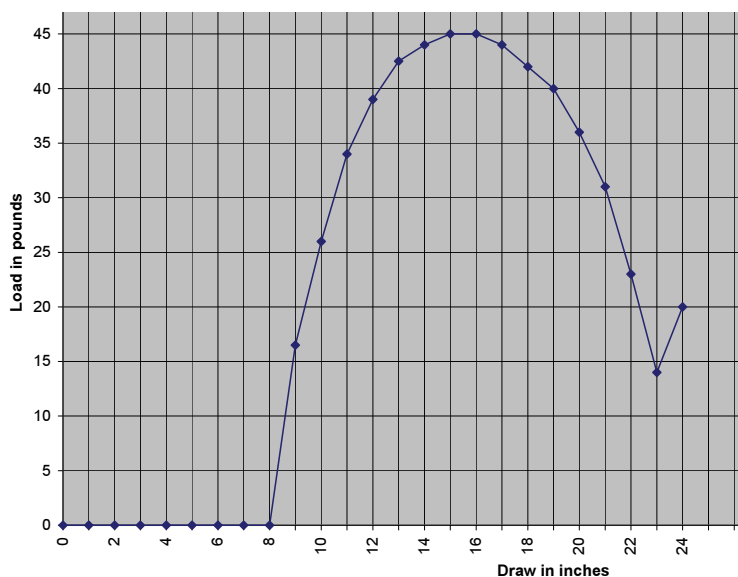
the 26-inch hole or the cables for the 27-inch hole. There are "+" and "-" symbols engraved/stamped right into the cams to let you know which way to rotate the modules. Both cams ride on Oillite bushings for friction free performance. Alpine Micro Elite eccentrics are CNC machined 6061-aluminum and are anodized in the same copper color as the limb pockets. Advertised let-off for the Stalker II system is 65 percent.

So, what does all this mean to Mom, Dad and the shooter?

As already mentioned, adjustability is a critical characteristic for a youth bow. Kids grow fast and parents do not want to buy a new bow every six months! An eight-inch draw length adjustment range is a fantastic selling point – use it!

Another selling point is that no bow press is needed to adjust the draw length. This is an easy task that can be performed at home.

Other Features: Alpine offers the Micro Elite as a package, which includes an Alpine Whisperflite Fall Away rest, 3-Arrow Bear Claw Quiver and a Truglo sight. Also offered is a replacement set of limbs for when the young archer reaches the limit on his/her current limbs. These replacement limbs sell for \$45.00 retail.



The Micro Elite package makes getting your customer and their child outfitted even easier. The main components for shooting are already taken care of. Now all that may be needed is a stabilizer and a few vibration dampeners for the limbs, string and cables.

When selling this bow point out the benefit of a complete draw weight upgrade that costs only \$45.00.

Testing

My initial inspection of the Alpine Micro Elite focused on the finish, machining and basic functionality. The finish on the riser and limbs was uniform and had no apparent flaws or blemishes; however, the limb pockets had obvious discontinuities in the thinner section that cups the limbs near the end of the riser. I have two Micro Elite bows in my shop at present and both display the same type of flaw. I removed the pockets from the bow and did a quick inspection under a microscope, which proved the discontinuities to be nothing more than a feathered edge that had been laid back over onto the base material where it remained through the anodizing process. Basically, the parts were not cleaned up or deburred after the final machining step. This type of discontinuity, of course, has no effect on the usefulness or durability of the part.

The Micro Elite was set to a 23" draw length and equipped with a single brass nock and N.A.P. QuikTune 3000 arrow rest – nothing else was added to the bow. With the exception of these two items, every bow is tested unchanged - as it would be shipped to

the dealer or customer.

Speed was measured with the chronographs listed above. Normally I test each bow at three different draw weights, however, the Micro Elite will not achieve 50 pounds of pull at the 23" draw length setting. Two different draw weights, 40 and 45 pounds were tested with two arrows of different weights, 260 and 328 grains. This should give a moderate picture of what can be expected from this bow in terms of speed generated by various set-ups. Following are the resulting speed ratings for each in feet per second:

260-grain arrow: 40 pound draw
210, 210, 209, 210, 209, 209, 209,
Average: 209.43

260-grain arrow: 45 pound draw
220, 221, 221, 220, 220, 221, 221
Average: 220.57

328-grain arrow: 40 pound draw
194, 194, 194, 194, 193, 194, 194
Average: 193.86 fps

328-grain arrow: 45 pound draw
204, 204, 205, 204, 204, 204, 204
Average: 204.14 fps

These represent good speeds for a youth bow.

One of the things I noticed about the Elite was how the draw weight would change when the draw length was adjusted. The test bow is marked as a 50-pound peak bow, which I believe they rate at the 26" draw length setting. To see what the weight range was I maxed the bow's weight adjustment bolts and tested the resulting draw weight at each draw length setting. Here are the results:

Draw Length/Max Draw Weight:

21"/40 lbs
22"/42 lbs
23"/45 lbs
24"/47 lbs
25"/49 lbs
26"/53 lbs
27"/56 lbs
28"/59 lbs

A force draw curve plotted for the Micro Elite curve shows an incredibly smooth draw with a gentle rounded top and easy climbs and descents. This is of course important, as a young archer will undoubtedly enjoy a smooth draw bow over one that is harsh.

When shot, the Micro Elite had a small jump that could be felt in my hand along with a small amount of vibration. The noise at the shot was somewhat louder than I had expected and appeared to primarily originate from the strings and cables. Since the Micro Elite is shipped with no noise/vibration reducing accessories I decked out the test bow with Sims Limb Savers, several do-it-yourself string and cable silencers and a quality stabilizer. Working together these improvements made a significant difference in the noise and vibration characteristics of the Elite.

Two of my own young archers, Tyler and Michael, liked the Micro Elite overall and both pointed out the light mass weight. The younger of the two, Michael, really liked the grip while Tyler gave it an "average" rating. Shooting the bow at different times, both noted the shot noise. Both liked the look of the bow and thought the copper color limb pockets and eccentrics looked great against the camo finish.

Alpine points out that a significant portion of the sales for the Micro Elite goes to lady archers. With that in mind I asked my wife to handle and shoot the bow for her opinion. She liked the Micro Elite and thought it handled very well. She seemed particularly impressed with the low mass weight. She answered positively when asked if this would be a bow she might consider for a new purchase.

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