

RECURVE ARROW SPINE SELECTOR

ALR-BASED RECOMMENDATION · FINGER RELEASE · 1" INSERT DEPTH · NEAREST STANDARD SPINE

Physics-based selection — applicable to all manufacturers. Spine is determined by draw weight, arrow length, and point weight.

METHOD

Axial Load Ratio

Target ALR 1.9 — Archer's Paradox



ALR BAND →	< 1.3 Very stiff	1.3-1.85 Stiff	1.85-1.95 Paradox target ✓	1.95-2.5 Undersplined	2.5+ Dangerous
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Cell: **SPINE** — ALR · Fit

70 gr Point											
Light / speed setup											
lb / inches →	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	
30 lb	1600 1.82 Stiff	1500 1.87 Weak	1400 1.87 Ideal	1300 1.83 Ideal	1200 1.83 Ideal	1100 1.82 Ideal	1000 1.85 Weak	900 1.82 Stiff	900 1.90 Weak	800 1.88 Ideal	
32 lb	1600 1.82 Stiff	1400 1.86 Weak	1300 1.86 Ideal	1200 1.80 Ideal	1100 1.80 Ideal	1000 1.80 Ideal	900 1.81 Stiff	900 1.84 Ideal	800 1.85 Ideal	800 1.86 Weak	
34 lb	1500 1.84 Weak	1300 1.83 Weak	1200 1.80 Ideal	1100 1.80 Ideal	1000 1.83 Ideal	1000 1.83 Ideal	900 1.83 Weak	800 1.83 Weak	800 1.87 Weak	700 1.85 Stiff	
36 lb	1400 1.91 Ideal	1300 1.85 Ideal	1200 1.87 Weak	1100 1.84 Weak	1000 1.83 Ideal	900 1.80 Ideal	800 1.81 Stiff	800 1.84 Ideal	700 1.82 Stiff	700 1.85 Weak	
38 lb	1300 1.87 Weak	1200 1.86 Ideal	1100 1.80 Ideal	1000 1.84 Weak	900 1.80 Ideal	800 1.80 Ideal	700 1.81 Stiff	700 1.82 Stiff	600 1.80 Stiff	600 1.80 Stiff	
40 lb	1300 1.87 Weak	1100 1.83 Weak	1000 1.80 Ideal	1000 1.80 Ideal	900 1.83 Ideal	800 1.80 Ideal	800 1.80 Ideal	700 1.82 Stiff	700 1.82 Weak	600 1.80 Stiff	
42 lb	1200 1.91 Ideal	1100 1.82 Ideal	1000 1.87 Ideal	900 1.83 Ideal	800 1.80 Ideal	800 1.80 Ideal	700 1.84 Weak	700 1.84 Weak	600 1.82 Stiff	600 1.85 Weak	
44 lb	1100 1.91 Ideal	1000 1.83 Ideal	900 1.87 Ideal	800 1.83 Ideal	800 1.80 Ideal	700 1.80 Ideal	700 1.84 Weak	600 1.82 Stiff	600 1.82 Weak	600 1.85 Weak	
46 lb	1100 1.91 Ideal	1000 1.83 Ideal	900 1.88 Weak	800 1.85 Weak	800 1.85 Weak	700 1.82 Weak	700 1.82 Weak	600 1.85 Weak	600 1.85 Weak	500 1.85 Stiff	

100 gr Point											
Standard field point											
lb / inches →	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	
30 lb	1400 1.82 Weak	1300 1.82 Weak	1200 1.80 Weak	1100 1.80 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	
32 lb	1300 1.85 Stiff	1200 1.83 Weak	1100 1.83 Weak	1000 1.80 Weak	900 1.80 Weak	900 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	
34 lb	1200 1.85 Stiff	1100 1.83 Weak	1000 1.83 Weak	900 1.80 Weak	900 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	
36 lb	1200 1.85 Stiff	1100 1.83 Weak	1000 1.83 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	
38 lb	1100 1.87 Weak	1000 1.85 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	
40 lb	1000 1.91 Stiff	1000 1.89 Weak	900 1.86 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	
42 lb	1000 1.91 Stiff	900 1.85 Weak	800 1.87 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	
44 lb	1000 1.89 Weak	900 1.87 Weak	800 1.87 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	500 1.80 Weak	
46 lb	900 1.85 Weak	800 1.83 Weak	800 1.85 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	400 1.80 Weak	400 1.80 Weak	

80 gr Point											
Light field point											
lb / inches →	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	
30 lb	1600 1.85 Weak	1400 1.87 Weak	1300 1.80 Weak	1200 1.81 Weak	1100 1.80 Weak	1000 1.85 Weak	900 1.81 Stiff	900 1.85 Weak	800 1.85 Weak	800 1.88 Ideal	
32 lb	1500 1.85 Weak	1300 1.85 Weak	1200 1.80 Weak	1100 1.80 Weak	1000 1.80 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	
34 lb	1400 1.85 Weak	1300 1.85 Weak	1100 1.80 Weak	1100 1.80 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	
36 lb	1300 1.90 Ideal	1200 1.82 Ideal	1100 1.81 Ideal	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	
38 lb	1200 1.90 Ideal	1100 1.80 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	
40 lb	1200 1.89 Weak	1100 1.80 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	
42 lb	1100 1.97 Weak	1000 1.86 Weak	900 1.87 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	500 1.80 Weak	
44 lb	1100 1.89 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	
46 lb	1000 1.94 Weak	900 1.84 Stiff	800 1.85 Weak	800 1.85 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	

110 gr Point											
Heavy field point											
lb / inches →	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"	
30 lb	1300 1.82 Weak	1200 1.82 Weak	1100 1.80 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	700 1.80 Weak	700 1.80 Weak	
32 lb	1200 1.87 Weak	1100 1.83 Weak	1000 1.80 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	
34 lb	1200 1.84 Weak	1100 1.85 Weak	1000 1.84 Weak	900 1.80 Weak	800 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	
36 lb	1100 1.85 Weak	1000 1.82 Weak	900 1.80 Weak	900 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	
38 lb	1100 1.85 Weak	1000 1.80 Weak	900 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	
40 lb	1000 1.90 Weak	900 1.86 Weak	800 1.82 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	
42 lb	1000 1.85 Weak	900 1.80 Weak	800 1.80 Weak	700 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	500 1.80 Weak	
44 lb	900 1.89 Weak	800 1.84 Weak	800 1.80 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	500 1.80 Weak	400 1.80 Weak	
46 lb	900 1.87 Weak	800 1.82 Weak	700 1.84 Weak	700 1.80 Weak	600 1.80 Weak	600 1.80 Weak	500 1.80 Weak	500 1.80 Weak	400 1.80 Weak	400 1.80 Weak	

- 1** Find your draw weight row — left column in pounds, measured at your full draw length with your recurve.
- 2** Follow across to your arrow length — carbon shaft only, nock groove to end of shaft. Does not include the protruding point.
- 3** This chart shows ideal values for a perfectly tuned setup. Axial recommends starting slightly weak — ALR 1.95-2.0 — then bare shaft tuning stiffer by cutting shorter or reducing point weight until flight cleans up. **Orange = tunable to ideal.** Blue = too stiff in this combination. Start with a different combination — often a longer arrow.

ALR formula: Applied force ÷ draw weight × 0.90 (finger release factor) × V(point ÷ 100). Bucking force = 8,757,000 ÷ (spine × eff. length²). Effective length = shaft length + 1" insert depth. Each cell shows the nearest standard spine to ALR 1.9. Color reflects the actual ALR that spine produces. **Non-green = no standard spine hits the 1.85-1.95 Paradox window for that combo. Adjust arrow length or point weight.** Fit label: Stiff / Ideal / Weak.

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