

ADVANCED ARROW SPINE SELECTOR

ALR-BASED RECOMMENDATION · MODERATE CAM · 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
Applied Force ÷ Buckling Force



ALR BAND →	< 1.2 Very stiff	1.2-1.3 Physics Optimum / Stiff	1.3-1.5 Competition ✓	1.5-1.8 High FOC / Forgiving	1.8-2.2 Underspined	2.2+ Dangerous
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Cell **SPINE** → ALR / max GPI for ±11% FOC

75 gr Point										
Light / speed setup										
lb / inches →	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"
40 lb	1000 1.07/7.0	1000 1.26/6.2	1000 1.40/6.5	900 1.37/6.2	800 1.37/6.0	800 1.47/5.7	700 1.57/5.2	600 1.25/5.3	600 1.47/5.2	600 1.47/5.3
45 lb	1000 1.17/7.0	900 1.31/6.7	900 1.41/6.5	800 1.37/6.3	700 1.40/6.0	600 1.47/5.7	600 1.50/5.5	500 1.50/5.3	500 1.45/5.5	500 1.41/5.0
50 lb	900 1.37/7.0	800 1.26/6.7	800 1.40/6.5	700 1.34/6.2	700 1.40/6.0	600 1.47/5.7	600 1.50/5.5	500 1.30/5.3	500 1.30/5.5	500 1.40/5.0
55 lb	800 1.40/7.0	800 1.40/6.7	700 1.37/6.5	600 1.40/6.2	600 1.40/6.0	500 1.47/5.7	500 1.50/5.5	500 1.30/5.3	400 1.40/5.2	400 1.31/5.0
60 lb	800 1.40/7.0	700 1.31/6.7	600 1.30/6.5	600 1.37/6.2	500 1.40/6.0	500 1.47/5.7	500 1.50/5.5	400 1.30/5.3	400 1.30/5.2	400 1.31/5.0
65 lb	700 1.37/7.0	600 1.25/6.7	600 1.37/6.5	500 1.24/6.2	500 1.30/6.0	500 1.40/5.7	400 1.30/5.3	400 1.45/5.2	340 1.32/5.0	340 1.32/5.0
70 lb	700 1.37/7.0	600 1.25/6.7	600 1.37/6.5	500 1.24/6.2	500 1.30/6.0	400 1.40/5.7	400 1.30/5.3	340 1.45/5.2	340 1.32/5.0	340 1.32/5.0
75 lb	600 1.31/7.0	600 1.41/6.7	500 1.30/6.5	500 1.41/6.2	400 1.24/6.0	400 1.40/5.7	340 1.32/5.3	340 1.45/5.2	300 1.34/5.0	300 1.34/5.0
80 lb	600 1.40/7.0	500 1.26/6.7	500 1.40/6.5	400 1.22/6.2	400 1.23/6.0	400 1.47/5.7	340 1.31/5.5	300 1.41/5.3	300 1.34/5.2	300 1.43/5.0

125 gr Point										
Heavy field / light broadhead										
lb / inches →	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"
40 lb	800 1.39/7.0	800 1.32/7.0	700 1.27/6.8	700 1.31/6.3	600 1.30/6.8	600 1.39/6.2	500 1.47/5.9	500 1.34/6.5	500 1.41/6.1	400 1.23/6.2
45 lb	800 1.38/7.0	700 1.30/7.0	700 1.43/6.8	600 1.37/6.3	600 1.44/6.2	500 1.50/5.8	500 1.40/5.8	400 1.27/6.1	400 1.29/6.1	400 1.39/6.0
50 lb	700 1.37/6.0	700 1.40/6.7	600 1.40/6.5	500 1.33/6.2	500 1.40/6.0	400 1.47/5.7	400 1.27/6.1	400 1.29/6.1	340 1.40/5.5	340 1.40/5.5
55 lb	700 1.40/6.0	600 1.30/6.7	500 1.40/6.5	500 1.33/6.2	500 1.40/6.0	400 1.47/5.7	400 1.27/6.1	340 1.40/5.5	340 1.40/5.5	300 1.27/6.0
60 lb	600 1.39/7.0	500 1.24/7.0	500 1.30/6.8	500 1.41/6.3	400 1.28/6.8	400 1.39/6.2	340 1.37/6.5	300 1.29/6.1	300 1.39/6.1	250 1.39/6.0
65 lb	600 1.47/6.0	500 1.31/6.7	500 1.40/6.5	400 1.30/6.2	400 1.40/6.0	340 1.40/5.8	300 1.31/6.5	300 1.40/5.5	250 1.40/5.5	250 1.40/5.5
70 lb	500 1.32/7.0	500 1.40/6.7	400 1.27/6.8	400 1.38/6.3	340 1.38/6.2	300 1.40/5.8	300 1.41/6.5	250 1.26/6.1	250 1.35/6.1	250 1.44/6.0
75 lb	500 1.40/7.0	400 1.24/7.0	400 1.30/6.8	340 1.26/6.3	340 1.38/6.2	300 1.40/5.8	250 1.35/6.5	250 1.40/5.5	250 1.40/5.5	250 1.44/6.0
80 lb	400 1.27/6.0	400 1.32/6.7	340 1.31/6.5	340 1.43/6.2	300 1.38/6.2	250 1.30/6.5	250 1.34/6.5	250 1.41/6.1	200 1.23/6.0	200 1.23/6.0

- 1** Find your draw weight row — left column in pounds. Use your peak draw weight as set on the bow.
- 2** Follow across to your arrow length — carbon shaft only,nock groove to end of shaft. Does not include the protruding point.
- 3** Read the spine number. Green outline = Axial recommended band (ALR 1.2-1.5). Blue cells have the option to step to a weaker (higher number) spine. Small number is actual ALR. For custom setups: axialbowstrings.com/tools/spine-calculator.html

100 gr Point										
Standard field point										
lb / inches →	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"
40 lb	1000 1.38/7.0	900 1.40/6.8	800 1.40/6.2	800 1.47/6.7	700 1.40/6.4	700 1.40/6.0	600 1.47/6.7	600 1.41/6.2	500 1.29/6.1	500 1.40/7.0
45 lb	900 1.37/7.0	800 1.31/6.8	700 1.30/6.5	700 1.30/6.7	600 1.30/6.4	600 1.30/6.0	500 1.29/6.7	500 1.30/6.4	500 1.30/6.1	400 1.24/7.0
50 lb	800 1.37/6.0	700 1.30/6.8	700 1.47/6.2	600 1.37/6.7	600 1.30/6.4	600 1.30/6.0	500 1.29/6.0	500 1.30/6.7	500 1.29/6.1	400 1.30/7.0
55 lb	700 1.30/7.0	700 1.40/6.8	600 1.30/6.2	600 1.37/6.7	500 1.30/6.4	500 1.30/6.0	400 1.29/6.0	400 1.30/6.7	400 1.30/6.1	340 1.29/7.0
60 lb	700 1.47/6.0	600 1.31/6.8	600 1.30/6.2	500 1.37/6.7	500 1.30/6.4	500 1.30/6.0	400 1.29/6.0	400 1.30/6.7	340 1.30/6.1	340 1.40/7.0
65 lb	600 1.37/6.0	600 1.44/6.8	500 1.37/6.2	500 1.40/6.7	400 1.34/6.4	400 1.30/6.0	400 1.40/6.7	340 1.31/6.4	340 1.40/6.1	300 1.34/7.0
70 lb	600 1.40/7.0	500 1.30/6.8	500 1.30/6.2	400 1.30/6.7	400 1.30/6.4	400 1.30/6.0	340 1.29/6.0	340 1.30/6.7	300 1.30/6.1	300 1.40/7.0
75 lb	500 1.27/6.0	500 1.30/6.8	400 1.27/6.2	400 1.30/6.7	400 1.30/6.4	340 1.30/6.0	340 1.40/6.7	300 1.30/6.1	300 1.40/6.1	250 1.29/7.0
80 lb	500 1.30/7.0	500 1.40/6.8	340 1.30/6.2	340 1.40/6.7	340 1.30/6.4	340 1.30/6.0	300 1.34/6.7	300 1.40/6.1	250 1.29/6.1	250 1.30/7.0

150 gr Point										
Hunting broadhead weight										
lb / inches →	22"	23"	24"	25"	26"	27"	28"	29"	30"	31"
40 lb	800 1.31/6.0	700 1.27/6.8	700 1.30/6.8	600 1.30/6.8	600 1.40/6.2	500 1.27/6.8	500 1.37/6.5	500 1.40/6.1	400 1.28/6.0	400 1.38/6.0
45 lb	700 1.30/7.0	700 1.43/6.8	600 1.44/6.8	600 1.30/6.2	500 1.47/6.6	500 1.23/6.0	400 1.37/6.5	400 1.37/6.1	400 1.42/6.0	340 1.29/6.0
50 lb	700 1.40/6.0	600 1.30/6.8	500 1.40/6.2	500 1.30/6.0	500 1.40/6.4	400 1.29/6.0	400 1.37/6.5	340 1.30/6.1	340 1.40/6.1	340 1.40/6.0
55 lb	600 1.39/6.0	500 1.29/6.8	500 1.40/6.2	500 1.30/6.0	400 1.29/6.4	340 1.29/6.0	340 1.37/6.5	300 1.30/6.1	300 1.40/6.1	250 1.30/6.0
60 lb	500 1.24/7.0	500 1.30/6.8	400 1.49/6.5	400 1.30/6.2	400 1.29/6.0	340 1.30/6.0	340 1.37/6.5	300 1.30/6.1	300 1.40/6.1	250 1.27/6.0
65 lb	500 1.34/6.0	400 1.31/6.8	400 1.29/6.2	400 1.30/6.0	340 1.29/6.4	300 1.31/6.5	300 1.37/6.5	250 1.30/6.1	250 1.40/6.1	250 1.40/6.0
70 lb	500 1.40/6.0	400 1.27/6.8	340 1.39/6.5	340 1.29/6.2	300 1.30/6.0	300 1.40/6.4	250 1.31/6.5	250 1.29/6.1	250 1.40/6.1	250 1.40/6.0
75 lb	400 1.24/7.0	400 1.30/6.8	340 1.29/6.5	300 1.27/6.2	300 1.30/6.0	250 1.30/6.4	250 1.37/6.5	250 1.30/6.1	250 1.40/6.1	200 1.27/6.0
80 lb	400 1.32/6.0	400 1.40/6.8	300 1.31/6.2	300 1.30/6.0	250 1.41/6.2	250 1.27/6.5	250 1.37/6.5	200 1.25/6.1	200 1.40/6.1	200 1.30/6.0

ALR formula: Applied force = draw weight × 0.87 (moderate cam) × vl(point ÷ 100). Buckling force = 8.757,000 ÷ (spine × eff. length³). Effective length = shaft length + 1" insert depth. Each cell shows the nearest standard spine to ALR 1.35 for that combination. Color reflects the actual ALR that spine produces — variation is real. Fit: Very Stiff / Stiff / Ideal / Forgiving / Weak / Avoid. For aggressive or mild cams, non-standard insert depths, or custom point weights, use the online calculator.

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Full calculator & ALR methodology online