

How to pick the right aluminum arrow without charts!

Here's the deal: There are only nine arrow spines you need to start off with bows from about 18# to about 100#. (Note that this is an approximation and you'll see why in a second).

IN GENERAL for 28" ARROWS +/- 1" (27 - 29") and 100 - 125gr heads:

18# - 23#	1516
24# - 27#	1616
28# - 33#	1716
34# - 42#	1816
43# - 52#	1916
53# - 60#	2016
61# - 70#	2117
71# - 80#	2216

81# - 100# 2219+ (Might want to play with 23xx, 24xx and larger shafts as it can get a little dicey at those weights, since bow efficiency starts diminishing after a certain weight.)

If you go to a 30" arrow, jump to the next stiffer spine number, if you go to a 32" arrow, then jump up two spines stiffer. Ditto for going shorter, 26" one spine number weaker, 24" two spine numbers weaker.

For example: If you have a 35# bow and use a 28" 1816, but would prefer a 30" arrow, choose a 1916; likewise going to a 26" arrow would require a 1716.

Head weight will also affect spine, however, it will require 45-50 grains to jump one spine number. For example, if you're shooting a 40# bow and using a 29" 1816 with a 100 gr head, going to a 150 grain head may require you to jump to a 1916.

This WILL NOT give you the perfect aluminum arrow for a given bow. It will give you a tunable arrow, and that's all you need for starters. Once the arrow is tuned, you'll know if you're compensating for a stiff or soft arrow by the tuning requirements. Then you can fine tune arrow choices by juggling wall thicknesses and diameters.

For example, if you have a #41 @ 28" bow and are using a 29" arrow, you'd pick an 1816, right? And that would work. If you find that you have to move the rest/strike plate out a little more than you'd like, then your NEXT set of arrows might be 1914s. They are the same weight as the 1816s, but a little stiffer.

Regarding Fastflight Fight (low mass/low stretch) strings. The difference between Dacron and FF is on the order of 5#, in a worst case scenario, so if the right arrow was chosen in the first place, it should still be within tunable parameters.

In addition, if I know a particular bow, I might suggest an arrow that's not one of the primary spine numbers. A certain #57 bow might work very well with a 2114, for example.

***Aluminum arrow nomenclature: the first two numbers denotes the shaft diameter in 1/64" and the second two are the wall thickness in 1/1000". For example, a 2016 has a 20/64" (or 5/16") diameter and a wall thickness of 16/1000".**

To convert the spine (deflection in inches) to approximate draw weight, divide 28 by the deflection.

For example, an 1816 has a deflection of 0.756 therefore : $28/0.756 = 37\#$, the midpoint of an 1816's acceptable weight range .

Shaft	Spine Size (inches)	Weight (grains)	Weight (gr/in)
1214	2.501	142 - 24"	5.92
1413	2.036	153 - 26"	5.88
1416	1.684	194 - 27"	7.19
1512	1.554	157 - 27"	5.81
1514	1.37	184 - 27"	6.81
1516	1.403	197 - 27"	7.3
1612	1.298	170 - 27"	6.3
1614	1.153	208 - 27"	7.7
1616	1.079	227 - 27"	8.41
1712	1.099	181 - 27"	6.7
1713	1.044	200 - 27"	7.41
1714	0.963	219 - 27"	8.11
1716	0.88	261 - 29"	9
1813	0.874	228	7.86
1814	0.799	249	8.57
1816	0.756	269	9.28
1912	0.776	220	7.59
1913	0.733	242	8.34
1914	0.658	269	9.28
1916	0.623	291	10.03
2012	0.68	232	8.35
2013	0.61	261	9
2014	0.579	277	9.55
2016	0.531	306	10.55
2018	0.464	356	12.28
2020	0.426	391	13.48
2112	0.59	244	8.41
2113	0.54	270	9.31
2114	0.51	286	9.86
2115	0.461	312	10.76
2117	0.4	349	12.03
2212	0.505	256	8.83
2213	0.46	285	9.93

Shaft	Spine Size (inches)	Weight (grains)	Weight (gr/in)
2214	0.43	302	10.41
2215	0.42	309	10.66
2216	0.375	349	12.03
2219	0.337	399	13.76
2311	0.45	242	8.36
2312	0.423	275	9.48
2314	0.39	309	10.66
2315	0.34	338	11.66
2317	0.297	385	13.28
2412	0.402	280	9.66
2413	0.365	302	10.41
2419	0.268	422	14.56
2511	0.348	233	8.1
2512	0.321	298	10.28
2514	0.305	329	11.34
2612	0.285	280	9.68
2613	0.265	333	11.48
2712	0.26	275	9.5