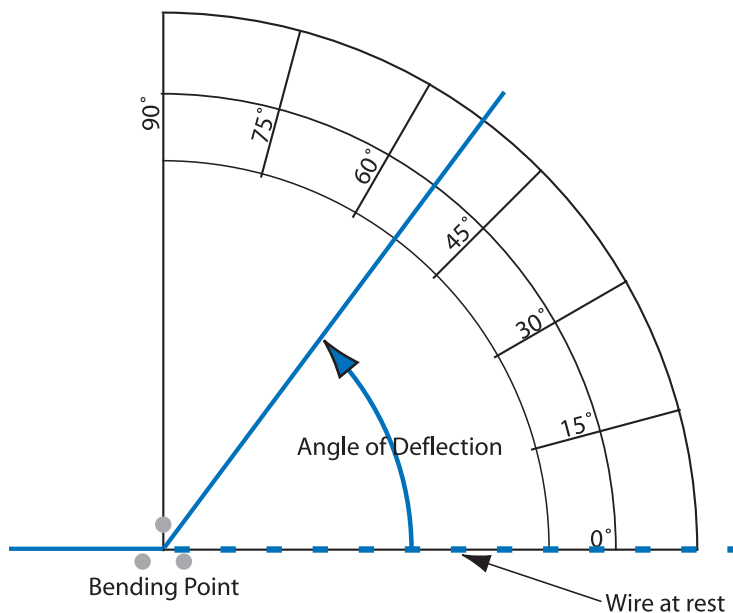


Nickel Titanium Maximum Bend Angles

Ultimate Wireforms will bend over backwards for you, but Nickel Titanium does have its limits!

NiTi is so resilient that it is tempting to bend it just a little more; but, how far can it go without being over-stressed and permanent deformation is introduced? The **Maximum Bend Angle Guide** was developed by Ultimate's in-house engineers to indicate the maximum bend angle that Superelastic (SE1) force NiTi archwires are capable of sustaining **without taking a permanent bend set**. Similar bend angle results can be expected for other Superelastic and Heat-activated (Thermal) wires.



We used a three prong (.020" radius) bending plier (jaws depicted as gray circles in diagram above) to replicate the bend angle of a wire exiting a bracket. The maximum bend angle was determined by measuring, on a degree wheel, the angle of deflection prior to permanent deformation.

Maximum Bend Angle Guide

75°	.012 wire
70°	.013 wire
60°	.014 and .014 x .025 wire
50°	.016 and .018 wire
45°	.020 , .016 x .016 , .016 x .022 , .016 x .025 , and .017 x .025 wire
43°	.018 x .018 , .018 x .025 , and .019 x .025 wire
40°	.021 x .025 wire

NOTE: This data is for approximate reference only. Actual bend angles will be dependent upon specifics of a particular case. Actual wire dimensions, bracket position, slot edge radii, wire span, and ligating techniques, etc. will all affect maximum bend angle.

Wire dimensions are in inches unless otherwise noted. Metric conversions may be found in the Reference section.