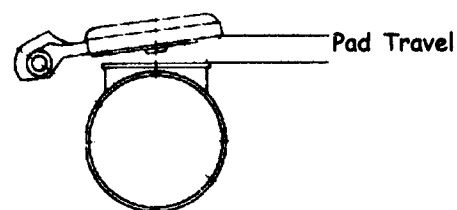


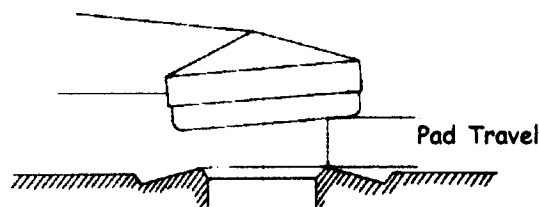
WOODWIND PAD / KEY TRAVEL CHART

Instrument Type	Reference Keys	Travel Distance
Piccolo	Trill Keys - F Key	1.5mm - 2mm
E ^b Soprano Flute	Trills - F Key - D# / C# / C Keys	2mm - 2.5mm - 3mm
C Soprano Flute	Trills - F Key - Foot Joint	2.5mm - 3mm - 3.5mm
G Alto Flute	Trills - F Key - Foot Joint	3mm - 3.5mm - 4mm
C Bass Flute	Trills - F Key - Foot Joint	3.5mm - 4.5mm - 5.5mm
E ^b Soprano Clarinet	Upper Keys - B/F# Key - Low E/B	2mm - 2.5mm - 3mm
B ^b / A Soprano Clarinet	Upper Keys - B/F# Key - Low E/B	2.5mm - 3mm - 3.5mm
E ^b Alto Clarinet	Uppers - B ^b /F Key - Low E/B & Bell	3mm - 3.5mm - 4mm
B ^b Bass Clarinet	Uppers - B ^b /F Key - Low E/B & Bell	4mm - 5mm - 6mm
B ^b Soprano Saxophone	High D/E/F Keys - F Key - Bell Keys	3mm - 6mm - 7.5mm
E ^b Alto Saxophone	High D/E/F Keys - F Key - Bell Keys	3.5mm - 8mm - 9mm
B ^b Tenor Saxophone	High D/E/F Keys - F Key - Bell Keys	4mm - 9mm - 10mm
E ^b Baritone Saxophone	High D/E/F Keys - F Key - Bell Keys	4.5mm - 10mm - 11.5mm
Oboe (Conservatory)	Left Hand - Right Hand - Low Keys	2.5mm - 3mm - 3.5mm
English Horn	Left Hand - Right Hand - Low Keys	3mm - 3.5mm - 4mm
Bassoon	Wing - Boot - Bass - Bell Sections	3mm - 4mm - 5mm - 5mm

The distance between the pad's surface and the tone hole rim will be crucial to the overall performance of the woodwind instrument. Ideally, the pad surface will be as close to the tone hole as possible without affecting the intonation adversely. In vibrating air columns we experience what is known as *end correction*. In effect, the actual vibrating air column extends slightly beyond the open end(s); physicists have determined this to be approximately 1/3 the diameter of the opening (tone hole). Therefore, we may use this relationship to help determine the ideal pad travel for each tone hole. As it turns out, the actual distance a pad may be located above a tone hole will be slightly less than 1/3 the diameter of the tone hole because adjacent tone holes (open and closed) will reduce this end correction slightly. To open the pad travel beyond this ideal distance merely affects the overall flexibility of the instrument without affecting overall intonation. Use this chart only as a guideline.



Metal-bodied Woodwinds



Plastic and Wood-bodied Woodwinds