

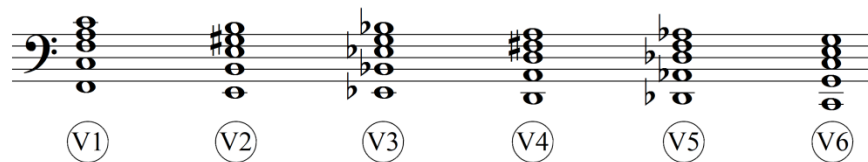
## The Trombone Valve (or F-attachment)

The F-attachment on the trombone has two main purposes:

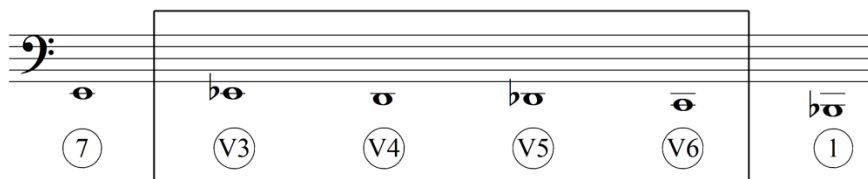
- It provides alternate slide positions for some notes.
- It provides a few lower notes.
- (It can also allow certain trills, but this is an advanced concept).

On a trombone with a valve, the air goes through the main tubing exactly as it does for a regular (or straight) tenor trombone. When the valve trigger (or thumb lever) is engaged, the rotor rotates and directs the air through the extra tubing connected to the valve. This lengthens the trombone, lowering the pitch a perfect 4<sup>th</sup>, from B $\flat$  to F. Because only the valve section is lengthened, the slide length is now disproportionate, so each slide position has to be extended a little more than usual, and successively more as the slide gets longer, leaving only 6 positions with the valve in use. In other words, 2<sup>nd</sup> position is only slightly further out than normal, 3<sup>rd</sup> a little more so, etc., until 6<sup>th</sup> position is played where 7<sup>th</sup> would ordinarily be.

The following shows the first five notes of the harmonic series for each slide position (indicated as V1, etc – V for “valve” – to distinguish them from regular slide positions):



The valve adds the following four notes (inside the rectangle) to the trombone’s low range, between the low E in 7<sup>th</sup> position, and the Pedal B $\flat$  in 1<sup>st</sup> position. Notice that the low B $\sharp$  is not available because there are only 6 positions with the valve:



The following notes are the most commonly used alternate positions with the valve, and are used when needed to shorten the slide distance between intervals, and to avoid having to go to 6<sup>th</sup> and 7<sup>th</sup> positions:

