The Embouchure (and Tuning)

The position of the cork affects the tuning of the flute, especially the tuning between the top, middle and bottom registers. The aim is to have a setup where you have to use the least amount of embouchure adjustment.

As a general rule, the longer the flute the closer the cork needs to be to the embouchure hole.

If the octaves are narrow, move the cork closer to the embouchure hole; if wide, do the opposite. **Find the best compromise**: something, somewhere will be out of tune.

Most modern players don't push the cork in far enough because they **uncover the embouchure more than in the 18th century** (see Quantz's instructions below). This can lead to a sharp top register and a flat low register.

Therefore push the cork in and cover more of the embouchure hole AND/OR turn in the head joint more (see PDF "Placement of the head joint"). As well as improving the tuning, the high register will be easier to play.

It is clear from what Quantz says that you need to develop control, flexibility and coordination in the use of the lips, chin and position of the flute (turning it in or out).

Quantz on the Embouchure

Excerpts from *Versuch*: Chapter IV: Of the Embouchure

§ 8: When you put the flute to your mouth, first contract your cheeks so that your lips become smooth. Then place the upper lip above the mouth hole, on its rim. Press the lower lip to the upper, and then draw it down to the mouth hole until you feel the lower rim of the mouth hole is almost in the middle of the red of the lower lip, and **the hole is half covered by the lower lip** (after the flute first has been turned a little away from the upper lip).

If the [mouth] hole remains too far open, the tone becomes strong but unpleasant and wooden; if, on the contrary, you cover it too much with the lower lip, and do not hold your head up, the tone is too weak, and is not clear enough. Pressing the lips and teeth together too tightly makes a hissing tone, while dilating the mouth and throat too much makes a dull one.

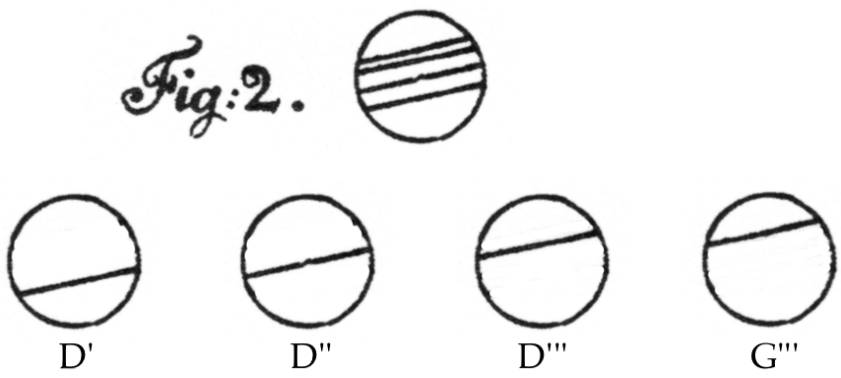
§ 9: When you play, your chin and lips must constantly move backwards or forwards, in accordance with the proportions of the ascending and descending notes. [Quantz is talking about getting the intervals—the 3rd, 4th, 5th etc—in tune by making embouchure adjustments.]

To produce a full and penetrating tone in the low register, from D'' down to D', the lips must be drawn back gradually, and the opening of the lips must be made a little longer and wider.

From D'' up to D''' the chin and both lips must gradually be pushed forwards, in such fashion that the lower lip projects a little more than the upper, and the opening of the lips becomes a little smaller and narrower. Do not press the lips together too tightly, however, lest the hiss of the air be heard.

§ 11: I wish now to give a general rule for how much you must withdraw or advance your chin and lips in each octave.

Examine the drawing of the mouth hole (embouchure) in Tab. II, Fig. 2; it represents the proper size the hole must have on the flute. In it you will discover four horizontal lines.



The second line from the bottom indicates the middle, and how much of the mouth hole must be covered with the lips for D''.

The lowest line shows how far both lips must be drawn back to produce D'.

The third line indicates how far the lips must be pushed forwards for D'''.

And the fourth line, only half as far away, shows how much further the lips must be pushed forwards for G''' than is necessary for D'''. The opening of the mouth hole then remains no larger than the space here between the fourth line and rim of the circle.

Since the movement of the lips through an octave covers no greater distance than the space here between the lines, it is not possible to mark the six intervening tones with individual lines. To locate them you must use your judgement and your ear.

§ 15: It is true that there are many flute players who transgress against these rules. Bad embouchure is the cause. Instead of covering half of the mouth hole with their lips, these players leave it open too far, so that they are prevented from withdrawing the lips sufficiently in the low notes, and from advancing them sufficiently in the high notes.

Thus, because the mouth hole is open too far, they must necessarily force out the high notes with stronger blowing. They know nothing of the **necessary movement of the chin and lips**, and allow them to remain constantly fixed, although **playing in tune on the flute mainly depends upon movement of this kind**.

With a larger or smaller opening of the mouth hole, you can play the flute a quarter, half, or even a whole tone higher or lower; and in the flute itself the inner bore must be constructed so that the octaves are a little sharp, so that if you wish to play them as truly as the ear demands you are forced to blow the low notes more strongly and the high ones more weakly to correct the intonation of these sharp octaves.

To do this you must move your chin and lips. If the lower lip covers the mouth hole as much as is necessary for the high notes, the low ones cannot be played strongly or truly. If, however, the lip is drawn back as far as the low notes require, and you play in the upper register without moving your chin and lips, you lapse into the error indicated above, that is, you make your tone quality hissing and dull, and generally too strong and unpleasant for the instrument.

§ 18: Just as the larynx becomes narrower in the falsetto notes, advancing the chin and lips makes the mouth hole narrower on the flute; in this fashion, having previously sounded a low note, you can make its upper octave speak without tipping it with the tongue.

The low octave of the flute could be compared with the chest voice, and the high one with the falsetto. Hence in general the flute corresponds with the human voice in that in the latter the larynx must be contracted or expanded in accordance with the proportion of the interval when you sing ascending or descending notes, while in the former the opening of the mouth hole must be made narrower for the ascending notes by advancing and compressing the lips and chin, and wider for descending notes by withdrawing and separating the lips. For without this movement the high notes become too strong, the low ones too weak, and the octaves untrue.

§ 21: It is self-evident, therefore, that the lips must move gradually for notes which ascend or descend by step, while in leaps they must vary their movements in accordance with the size of the leaps if the appointed place on the mouth hole is always to be hit with certainty.

Note especially that the notes in the low octave must always be played more strongly than those in the high octave. This is particularly important in passage-work in leaps.

§ 23: The flute has the innate defect that some of its notes when sharpened are not quite true, some being a little too low, some a little too high. For in tuning the flute you must first see to it that the natural notes are tuned truly in accordance with their proportions.

The faulty ones you must, as much as possible, seek to play in tune with the help of your embouchure and your ear. A little has been said of this matter in the previous chapter, but in order that you may know to which notes you must give the most attention, I will specify them here.

E sharp' and **E sharp"**, **F sharp'** and **F sharp"** stopped in the exceptional way [i.e. using the Gb fingering], and G sharp" and A sharp" are too high. **Hence you must moderate your wind, and turn the flute inwards**.

The **regular F sharp'** and **F sharp"** are too low, and hence **must be raised by rotating the flute outwards, or by strengthening your wind**.

D flat" and **C flat"** are too low. For them you must **rotate the flute perceptibly outwards**.

For the **low F**, which is the weakest note on the flute, and which is too high on the majority of flutes because of an unavoidable flaw in their inner structure, you must **rotate the flute inwards, and advance your upper lip a little**.

If in a piece you play softly and loudly by turns, in the first case you must rotate the flute as much outwards, in the second case as much inwards, as weak blowing lowers the notes, and strong blowing raises them.