

# MODIFICATIONS TO YOUR MOUTHPIECE



**First warning!** Modifying a mouthpiece could ruin it. With that note of assurance, let's see what can be done to a mouthpiece to change its playing characteristics.

Parts of a trumpet/cornet/flugelhorn mouthpiece-

- Rim- contoured section which comes in contact with the players lips
- Bite- Inner edge of rim
- Cup- Largest section of mouthpiece
- Second cup- First area of increased air resistance
- Throat- Most narrow path of the air stream
- Back bore- Gradual tapering outward from the mouthpiece into the instrument
- Shank- Area inserted into mouthpiece receiver

Rim alterations- none can be done without permanent damage to the mouthpiece

Shoulder- none can be done without permanent damage to the mouthpiece

Cup- none can be done without permanent damage to the mouthpiece

Second cup- Alterations to the second cup will automatically alter the length of the throat

Throat- Increasing the width of the throat will automatically increase the length of the throat

Backbore- Changes to the backbore may alter the length of the throat

Shank- Altering the outside of the shank will affect the distance from the end of the shank to the beginning of the lead pipe

### **Alterations and their effect on the mouthpieces characteristics-**

**Changing the shoulder or second cup** can be done easily with a drill bit larger than the diameter of the throat. I do not recommend it unless you have this uncontrollable desire to ruin a perfectly good mouth piece. If on the other hand you have an old mouthpiece lying around that you will never play on, you might find the experiment entertaining. Whether you ever plan on playing on the mouthpiece would be something to mull over before you dig into it. By changing the second cup through enlargement and consequently reformation of the area, you should expect a substantial change in your resistance of air as you play. The shoulder is the first area of resistance when you blow into the mouthpiece and by smoothing or flattening out the slope at the bottom of the cup you will notice the air flows through much easier. Other affects you should recognize would be that your upper register will suffer. Tone quality will also darken from this modification.

**The Throat of your mouthpiece** can easily be altered and this is probably the most often changed area in a mouthpieces. When the diameter of the throat is increased, the usual characteristic change to the player is the feeling of less resistance and a bigger sound. The player may also feel that each note locks in more. This change will generally decrease your flexibility and make slurs a little more difficult. If you can visualize the change your wider throat *diameter* has made, you should understand when I say that the throat length has been dramatically lengthened also. Your throat is longer and at the same time you have shortened the length of your backbore. Change in one area will affect change in other areas. Players usually bore out their throats in order to decrease back pleasure and try to increase their sound. In some cases, they eventually get just the opposite effect for the increase in the length of the throat will sometimes increase resistance and defiantly will lessen your flexibility between notes. To open the diameter of the throat, all that is requires is a drill and bit. **Second Warning!** If you intend to open the throat, go easy. A very small amount removed will change your mouthpiece drastically. If you are still set on doing the change, start with a drill which is only slightly larger than the existing hole. In some cases, I suggest that instead of drilling, you might want to polish instead. If you wrap a small amount of cloth around your smallest drill bit, coat it with silver polish and then rotate it in the throat area for a couple of seconds, you may find that this amount of change is all

you need. If you want more, coat the cloth with a small amount of rubbing compound which is available at your local auto supply store. A little of this goes a long way so work with it carefully. Another compound you can use is tooth paste. Make sure that you clean the mouthpiece out thoroughly before you place it in the horn to test. You don't want the rubbing compound or tooth paste getting into your valves. Remember. You can't replace what you just took out.

**The Backbore of your mouthpiece** should only be altered with the appropriate tool which is called a Morris bit and this modification is most often done by a professional who has access to an industrial lathe. Some modifications can be made to the inner edge of the backbore and I have found this work done on some mouthpieces which I purchased from the Schilke company. I'm not sure what the effect is on the tone or resistance but it was done at the company and the widening occurs only on the last quarter of an inch of the backbore which leaves only a paper thin edge to the shank.

Adjustments can be made to the fit of the shank as it enters the mouthpiece receiver. The Bach mouthpiece company insists that there should be approximately a one quarter inch gap between the end of the mouthpiece and the beginning of the lead pipe. On the other hand, the Schilke Company insists that there should be no gap between the two; they should be as close to touching as is practical. The effect on this disagreement can be easily heard and felt for the gap produces a more defined center to the trumpets tone and the lack of gap produces a broader sound as illustrated by the Bach sound and the Schilke sound. To experiment with this change in gap and the corresponding change in sound, all you need to do is gradually sand down the area which enters the mouthpiece receiver. As you work the silver plating down, the mouthpiece will extend further into the mouthpiece receiver until it butts against the lead pipe. At that point you will have to cut a little off the end of the mouthpiece in order for it to fit securely in the mouthpiece receiver. That is how you get the "no gap" position. Now if you don't like what you have done, you have two options. 1. Buy a new mouthpiece or 2. Wrap some tape around the shank. If you are dead set on trying this modification, please try it on an old, never used mouthpiece for I'm not going to buy you a new mouthpiece if you don't like what you did.

The best suggestion I can give you is to read all you can on this subject and download the mouthpiece brochures from the leading mouthpiece manufacturers listed below. Then, before you do anything drastic to your favorite, one of a kind mouthpiece, try scrubbing it out with your mouthpiece cleaning brush with a little tooth paste and you might find that your old mouthpiece plays better than you thought.

Schilke trumpet mouthpieces

Bach trumpet mouthpieces

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Warburton