

## Selecting a Mouthpiece

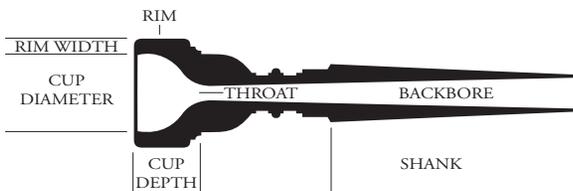
When selecting a mouthpiece, a brass instrumentalist should choose one with a solid, compact tone of large volume. A carefully selected Bach mouthpiece can help improve a player's embouchure, attack, tonguing and endurance.

Professional musicians and advanced students prefer the musical results of large mouthpieces, such as the Bach 1B, 1C, 1¼C, 1½B, 1½C, 2¼C, 3C, which provide a maximum volume of tone with the least amount of effort. By opening up the lips so that they do not touch, the larger mouthpiece produces a clearer, purer tone. The large cup diameter also allows a greater portion of the lip to vibrate, producing a larger volume of tone, and keeps a player from forcing high tones by encouraging the correct functioning of the lip muscles. However, a student may find a medium-sized mouthpiece suitable.

Do not select a certain mouthpiece because another player uses it. Because no two players have the same lip or tooth formation, what is perfect for one may be entirely unsuitable for the other. Bach produces many different models so that each player can find the best mouthpiece for their individual embouchure.

Visit your local dealer and try several genuine Bach mouthpiece models, all stamped with the Vincent Bach trademark.

## What Every Brass Instrumentalist Should Know About Mouthpieces



A mouthpiece consists of the rim, cup, throat, and backbore. Bringing these various components into proper relationship constitutes the art of superior mouthpiece production.

In choosing a special combination of rim, cup, throat and backbore designs, consider the effects of each.

### RIM

- Wide: Increases endurance.
- Narrow: Improves flexibility, range.
- Round: Improves comfort.
- Sharp: Increases brilliance, precision of attack.

### CUP

- Large: Increases volume, control.
- Small: Relieves fatigue, weakness.
- Deep: Darkens tone, especially in low register.
- Shallow: Brightens tone, improves response, especially in high register.

### THROAT

- Large: Increases blowing freedom, volume, tone; sharpens high register (largest sizes also sharpen low register).
- Small: Increases resistance, endurance, brilliance; flattens high register.

### BACKBORE

Except in general terms, it isn't possible to identify backbores by size because they also vary in shape. Various combinations of size and shape make the tone darker or more brilliant, raise or lower the pitch in one or more registers, increase or decrease volume. In each instance, the effect depends in part on the throat and cup used in combination with the backbore.

*The playing qualities mentioned on this page are discussed in greater detail in the following sections. Keep in mind that playing qualities of mouthpieces vary from person to person; therefore, descriptions of playing qualities are necessarily subjective. It is important to view all information in this manual as a general guide. For best results, use it as a starting point for testing a number of models, not as a substitution for testing.*

## The Rim

A well-constructed brass instrument mouthpiece should have a medium-wide rim with a fairly sharp inner edge. If the mouthpiece is properly placed, it will permit the lips to move slightly forward and backward. For high tones, a player will draw the lips farther back; while for low tones, the lip muscles will relax, permitting the lips to protrude.

A sharp rim will not cut the lip if the flat face of the mouthpiece rim is placed on the lips in (or slightly above) a horizontal position, with the mouthpiece at a 90 degree angle against the front teeth. A sharp inner edge against the lip will automatically remind the player that the instrument is not being held correctly.

The use of a mouthpiece without a sharp inner edge is not recommended, as it would not allow sufficient surface to distribute pressure over the lips. A too-rounded rim will dig into the lips, limiting the player's endurance.

A player with a normal embouchure and fairly muscular lips should prefer a medium-wide rim, which will allow both flexibility and endurance. A too-wide rim will clamp down lip muscles and embouchure flexibility, and the effect will be noticeable on quick tonal changes.

Players with very thick lips, however, can use a wide rim to advantage, as a medium-wide rim might dig into the soft tissues of the lips and interfere with the blood circulation. Players who cannot overcome the habit of "forcing" high tones, or band members who occasionally smack the mouthpiece against the lips while marching may also consider it advantageous to use wide-rimmed mouthpieces. However, even very thick-lipped musicians and marching band musicians should prefer medium-wide rims if they do not feel hindered in using them, for mouthpieces with extra-wide rims encourage a player to use too much pressure for the high notes instead of relying on the lip muscles to do the work.

A narrow rim offers a trumpet or trombone player greater flexibility, but it tends to dig into the flesh of the lips, cutting off free blood circulation and decreasing endurance. Horn players often prefer a medium-narrow rim because their instrument covers so wide a range (a fourth lower than a trombone and almost as high as a trumpet). The medium-narrow rim enables the horn player to move the lips much more easily; the lips will be able to protrude for the low tones and retract for the high tones.

## The Cup: Depth

In general, a large cup diameter and/or depth lowers the pitch of an instrument, while a small cup diameter and/or shallow cup raises the pitch. Therefore, it is important to match the cup of the mouthpiece with the pitch of the instrument. Due to variations in embouchure, air support and oral cavity among musicians, individuals should select a cup which improves their overall intonation.

The correct depth of the cup depends upon the pitch and corresponding length of the instrument, and, to a certain extent, the bore. For example, achieving the brilliance of a B<sub>♭</sub> piccolo trumpet requires a shallow cup, while the dark lyrical tone quality of a fluegelhorn demands the use of a deep cup. For this reason, we do not recommend using refitted trumpet or cornet mouthpieces with the fluegelhorn.

A player using a medium-large bore B<sub>♭</sub> or C trumpet or a B<sub>♭</sub> cornet should generally use a mouthpiece no shallower than the Bach C cup and preferably, slightly deeper cups such as a B or A. One exception is for musicians who continually play in the extreme high register and desire a brighter sound. In this case, a more shallow mouthpiece such as a 3D, 3E, 3F or 5SV may be preferable.

For the Horn, a comparatively large volume of air must be used to fill the bell. A very deep cup will help to get a full low register (suitable for second and fourth horn) while a shallower cup will help produce high tones (advantageous for first and third horn players). For the small tenor trombone, a medium-deep mouthpiece cup such as the 7C, 11C or 12C is preferred. For the symphonic tenor trombone, a larger cup, such as 6½AM, 6½AL, 5G, 5GB, or 5GS may be preferable. For baritone or euphonium, it is generally best to use a medium-deep cup, preferably one with a symphonic backbore to produce a more mellow tone.

## The Cup: Diameter

We recommend that all brass instrumentalists—professional artists, beginners or advanced students; symphony, concert or jazz band—use as large a cup diameter as they can endure and a fairly deep cup. A larger mouthpiece with a fairly deep cup offers the advantages of a natural, compact, and uniform high, middle and low register, improved lip control, greater flexibility, and avoidance of missed tones. A larger-sized mouthpiece will also offer greater comfort, making it possible to secure a good tone quality even when the lips are swollen from too much playing.

Splitting tones may be an indication that the mouthpiece is too small or perhaps too shallow. A small cup diameter does not permit the lips to vibrate sufficiently, preventing the player from producing a rich, full tone. The lack of tone volume tempts a player to exert more lip pressure and to force more air through the instrument than the small mouthpiece is capable of handling, creating a shrill tone.

## The Backbone

The backbone of a mouthpiece bears a certain relationship to the rim, cup shape and throat, and to the make and bore of the instrument on which the mouthpiece is to be used.

If the backbone of a mouthpiece is too small, the high register will be stuffy and flat. If the backbone of a mouthpiece is too large, the mouthpiece will not have sufficient resistance and the player's embouchure will soon become exhausted.

The use of the general terms "large" or "small" to describe backbores must be viewed from the standpoint of playing qualities. It is not actually possible to identify backbores by size alone because they also vary in shape and rate of taper. Various combinations of size, shape, and rate of taper make the tone darker or more brilliant, raise or lower the pitch in one or more registers, increase or decrease volume.

### Standard Backbores

Standard Vincent Bach mouthpieces match the playing qualities of the backbone with the design of the other components. The following chart lists standard backbores.

#### TRUMPET AND CORNET

Models without letters-No. 10 backbone

- "A" Cup Models-No. 24 backbone
- "B" Cup Models-No. 7 backbone
- "C" Cup Models-No. 10 backbone
- "D" Cup Models-No. 76 backbone
- "E" Cup Models-No. 117 backbone
- "F" Cup Models-No. 76 backbone
- "V" Cup Models-No. 25 backbone

#### FLUEGELHORN

No. 112

#### HORN

No. 602

#### TENOR TROMBONE (SMALL SHANK)

- No. 402 most models
- No. 413 6 1/2AM
- No. 420 6 1/2AL • 5G

#### BASS TROMBONE • LARGE SHANK TENOR

- No. 429 most models
- No. 800S 1G • 1 1/4GM • 1 1/2GM
- No. 413 6 1/2AM
- No. 420 6 1/2AL • 5GS

#### TUBA

- No. 801 most models
- No. 810 24W • 24AW • 7 • 18

*NOTE: Numbers are factory part numbers for tools. There is no numerical relationship to the size and shape of the backbone.*

### Special Backbores

Players may request special backbores when they are comfortable with the cup and rim design, but desire a slightly different tone quality. Special backbores are available on any Bach mouthpiece. The following is a list of available backbores and the general playing qualities of each:

#### TRUMPET

- |         |  |
|---------|--|
| No. 24  | bigger, darker, symphonic                                    |
| No. 7   | dark, Schmitt-style  |
| No. 3   | dark   |
| No. 117 | favors the upper register, standard piccolo trumpet backbone |
| No. 87  | big, free blowing  |
| No. 76  | bright edgy sound; helps upper register                      |
| No. 41  | bright, more resistant                                       |
| No. 57  | lively, helps raise pitch on some notes, good high register  |
| No. 25  | big, free blowing, good commercial sound                     |

#### FLUEGELHORN

- |         |                          |
|---------|--------------------------|
| No. 119 | more resistant, brighter |
|---------|--------------------------|

#### HORN

- |         |            |
|---------|------------|
| No. 614 | free highs |
| No. 613 | big, open  |

#### TENOR TROMBONE (SMALL SHANK)

- |         |                  |
|---------|------------------|
| No. 413 | symphonic        |
| No. 420 | dark, euphonium  |
| No. 411 | warm, lyric tone |

#### BASS TROMBONE • LARGE SHANK TENOR

- |          |                                   |
|----------|-----------------------------------|
| No. 428  | slightly larger, darker           |
| No. 800S | larger, darker, more free blowing |
| No. 420  | dark, euphonium/tenor backbone    |
| No. 413  | symphonic tenor backbone          |

# The Throat

All standard Bach mouthpieces are made with medium-sized throats which produce an even register, good intonation, and sufficient endurance for strenuous, all-around work. A small throat does not produce an easier high register; on the contrary, it not only chokes the tone but contracts the entire register, making high tones flat or the low tones sharp. A mouthpiece with an excessively large throat will make playing softly difficult, however, a large throat may help to produce a bigger tone.

Throats (with specifications) available from Vincent Bach:

## TRUMPET AND CORNET

|           |  |
|-----------|--|
| Special:  | No. 28, 3.57mm (.141")                         |
| Standard: | No. 27, 3.66mm (.144")                         |
| Special:  | No. 26, 3.73mm (.147")<br>(Standard Mega Tone) |
| Special:  | No. 25, 3.81mm (.150")                         |
| Special:  | No. 24, 3.86mm (.152")                         |
| Special:  | No. 22, 3.99mm (.157")                         |
| Special:  | No. 21, 4.04mm (.159")                         |
| Special:  | No. 20, 4.09mm (.161")                         |

## FLUEGELHORN

|           |  |
|-----------|--|
| Standard: | No. 22, 3.99mm (.157")                         |
| Special:  | No. 21, 4.04mm (.159")<br>(Standard Mega Tone) |

## HORN

|           |  |
|-----------|--|
| Standard: | No. 16, 4.50mm (.177")                     |
| Special:  | No. 14, 4.62mm (.182")<br>(Standard on 7S) |

## TENOR TROMBONE (SMALL SHANK)

|           |   |
|-----------|---|
| Standard: | 5.85mm (.230")  |
| Special:  | 5.94mm (.234")<br>(Standard Mega Tone)                                    |
| Special:  | E, 6.35mm (.250")   |
| Special:  | F, 6.53mm (.257")<br>"symphonic"<br>(Standard 6 1/2AM)                    |
| Special:  | G, 6.63mm (.261")<br>euphonium or large tenor<br>(Standard 6 1/2AL • 5GS) |
| Special:  | 17/64", 6.73mm (.265")<br>(Standard Mega Tone<br>6 1/2AL • 5GS)           |

## BASS TROMBONE • LARGE SHANK TENOR TROMBONE

|           |   |
|-----------|---|
| Standard: | 7.00mm (.276")  |
| Special:  | J, 7.04mm (.277")   |
| Special:  | 7.53mm (.296")<br>(Standard 1 1/4GM • 1 1/2GM)                  |
| Special:  | N, 7.67mm (.302")   |
| Special:  | 8.10mm (.319")<br>(Standard 1G)                                 |
| Special:  | F, 6.53mm (.257")<br>(Standard 6 1/2AM)                         |
| Special:  | G, 6.63mm (.261")<br>(Standard 6 1/2AL • 5GS)                   |
| Special:  | 17/64", 6.73mm (.265")<br>(Standard Mega Tone<br>6 1/2AL • 5GS) |

## TUBA

|           |  |
|-----------|--|
| Standard: | 8.33mm (.328")   |
| Special:  | S, 8.84mm (.348")<br>(Standard 24W • 24AW • 7 • 18)<br>9.00mm (.354")<br>(Standard Mega Tone 7 •<br>18 • 24AW)<br>R 8.62mm (.339")<br>(Standard Mega Tone 12 • 22) |

*NOTE: Numbers and letters are drill bit sizes. The smaller the number, the larger the throat. Generally, the larger the throat, the freer blowing the mouthpiece and the more volume possible. However, as the throat size increases, the upper register tends to sharpen and the player tends to tire more quickly.*

## Small Shank Tenor Trombone, Baritone & Euphonium Mouthpieces, continued

| Model No. | Depth of Cup              | Approx. Cup Dia. | Rim Shape                      | Description   |
|-----------|---------------------------|------------------|--------------------------------|---|
| 17        | Medium                    | 24.20 mm         | Medium wide.                   | A rather small mouthpiece for all-around work by players with a small mouth or weak lips. Produces a mellow tone.                             |
| 17C       | Medium shallow            | 24.20 mm         | Medium wide.                   | Produces a clear, brilliant tone; requires little effort to play. Good for players with a small mouth and weak lips.                          |
| 17D       | Shallow                   | 24.20 mm         | Medium wide.                   | For trombone players who play continually in the high register and need a brilliant tone with much resistance.                                |
| 18        | Medium                    | 24.20 mm         | Fairly wide, flat.             | Same cup as No. 17 but with a wider, flatter rim.   |
| 18C       | Medium shallow            | 24.20 mm         | Fairly wide, flat.             | The same cup diameter as No. 18 but slightly shallower, producing a brighter, crisper tone.   |
| 18D       | Shallow                   | 24.20 mm         | Fairly wide, well rounded.     | Playing results are similar to No. 17D but with a wider, more rounded rim.  |
| 19        | Medium deep, V-shaped cup | 24.00 mm         | Medium wide, fairly flat.      | Primarily designed for a rather mellow, velvety tone.   |
| 22        | Medium                    | 23.92 mm         | Medium wide.                   | This small mouthpiece is used by players of the English or Italian school, and for tenor horn and very small bore trombones.                  |
| 22C       | Medium shallow            | 23.92 mm         | Medium wide.                   | The small and shallow cup is well suited for bass trumpet but is also used on the small bore valve trombones popular in some Latin countries. |
| 22D       | Shallow                   | 23.92 mm         | Medium wide, slightly rounded. | This model was originally designed for bass trumpet which requires a brilliant, penetrating tone of martial character.                        |

## Large Shank Tenor & Bass Trombone Mouthpieces

Catalog No. 341

| Model No. | Depth of Cup | Approx. Cup Dia. | Rim Shape                  | Throat | Backbore | Description   |
|-----------|--------------|------------------|----------------------------|--------|----------|---|
| 1G        | Deep         | 28.00 mm         | Medium thin, well rounded. | .319"  | 800S     | Extra large and deep for extraordinary power and depth of tone. Among the largest and most powerful bass trombone mouthpieces produced today.                     |
| 1¼G       | Deep         | 27.50 mm         | Medium thin, well rounded. | .276"  | 429      | Cup diameter is smaller than No. 1G, but still very large and deep, with the sonority preferred by the modern American school.                                    |
| 1¼GM      | Deep         | 27.50 mm         | Medium thin, well rounded. | .319"  | 800S     | Same rim and cup as No. 1¼G, but with a larger throat and backbore for large, powerful sound, well in tune.   |
| 1½G       | Deep         | 27.00 mm         | Medium wide, well rounded. | .276"  | 429      | A large mouthpiece with powerful tone in the low register and great carrying power. For many years, the standard mouthpiece for the serious bass trombone player. |

## Large Shank Tenor & Bass Trombone Mouthpieces, continued

| Model No. | Depth of Cup | Approx. Cup Dia. | Rim Shape                       | Throat    | Backbore       | Description  |
|-----------|--------------|------------------|---------------------------------|-----------|----------------|--|
| 1½GM      | Deep         | 27.00 mm         | Medium wide, well rounded.      | .319"     | 800S           | Larger throat and backbore than the No. 1½G results in less resistance, larger dynamic range, deeper, warmer sound.  |
| 2G        | Deep         | 26.75 mm         | Medium narrow.                  | .276"     | 429            | Deep, full, resonant tone. Big low register even through the pedal tones.  |
| 3G        | Deep         | 26.26 mm         | Medium wide, well rounded.      | .276"     | 429            | Same rim shape and diameter as No. 3 small shank tenor trombone, but with a deep bass trombone cup, throat, and backbore to facilitate pedal tones.  |
| 4G        | Deep         | 26.00 mm         | Medium wide, slightly rounded.  | .276"     | 429            | Same rim shape and diameter as No. 4 small shank tenor trombone. A versatile, large diameter mouthpiece especially useful when only one trombone is used for both the upper and very low register. |
| 4GB       | Deep         | 26.00 mm         | Medium thin, very well rounded. | .276"     | 429            | Same cup, throat and backbore as the No. 4G with a more rounded rim.   |
| 5G        | Deep         | 25.50 mm         | Medium wide, semi-flat.         | .276"     | 429            | Same rim shape and diameter as No. 5 small shank tenor trombone. Similar playing characteristics to No. 4G with a slightly smaller cup diameter.   |
| 5GL       | Medium deep  | 25.50 mm         | Medium wide, semi-flat.         | .276"     | 429            | Old style, shallower model than No. 5G, facilitates upper range.   |
| 5GB       | Deep         | 25.50 mm         | Medium thin, very well rounded. | .276"     | 429            | Same cup, throat and backbore as the No. 5G with a more rounded rim.   |
| 5GS       | Medium deep  | 25.50 mm         | Medium wide, semi-flat.         | .261" "G" | 420 (modified) | Shallower "G"-style cup with smaller throat and backbore than No. 5G produces easy high register, slightly brighter sound.   |
| 6½A       | Medium deep  | 25.40 mm         | Medium wide, well rounded.      | .276"     | 429            | Same rim and cup as No. 6½A small shank tenor trombone, but with full bass trombone throat and backbore for a rich, compact sound of large volume.   |
| 6½AL      | Medium deep  | 25.40 mm         | Medium wide, well rounded.      | .261" "G" | 420            | The same cup, throat, and backbore as No. 6½AL small shank tenor trombone but with bass shank. It requires a well developed embouchure.  |
| 6½AM      | Medium deep  | 25.40 mm         | Medium wide, well rounded.      | .257" "F" | 413            | The same rim, cup, throat, and backbore as No. 6½AM small shank tenor trombone mouthpiece, but with bass shank.  |