

LESSON 5

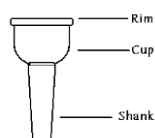
BRASS INSTRUMENTS

A brass instrument is a musical instrument in which the vibration of the player's lips against a cup- or funnel-shaped mouthpiece causes the initial vibration of an air column. A more precise term is lip-vibrated instrument.

Generic Parts of a Brass Instrument

The mouthpiece is a small metal device with a cup on one side that opens into a small tube, like a funnel. The mouthpiece directs a precise flow of air from the player into the trumpet. To produce a sound, the player creates a buzzing effect with the lips.

There are three basic parts to a mouthpiece:



Rim – This part of the mouthpiece rests against the player's lips.

Cup – This part of the mouthpiece collects the sound made by the lips and channels it into the body of the instrument.

Shank – This part of the mouthpiece is inserted into the instrument.

Pistons



The valve pistons are thin metal cylinders with holes both large and small bored through and small fingerpieces on the end. Each piston is unique to its casing, so be sure that they are each replaced in the proper casing and realigned inside properly if they are removed for cleaning or service. To keep the valve pistons moving properly in the casings, they have to be lubricated occasionally with a few drops of valve piston oil.

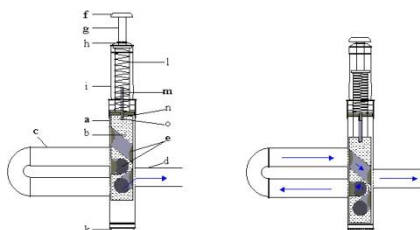
Valve Casings



The pistons are mounted into hollow cylinders called valve casings in the center of the trumpet. To keep the valve pistons moving properly in the casings we have to lubricate each casing lightly occasionally with a few drops of valve piston oil.

Valves

Valves open one passage and close another. This has the effect of changing the length of the vibrating column of air within the instrument, thereby changing the pitch.



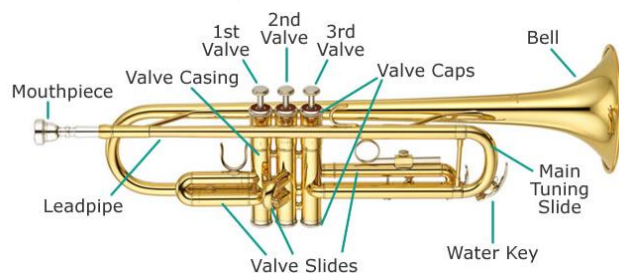
The Tuning Slide is a c-shaped metal tube which is usually located in the main tube. It can slide in and out to finely adjust the tuning of the instrument. The further out the slide is placed, the lower the tone the trumpet will produce.

The Water Key is a small metal lever on the trumpet's main tuning slide. During a playing session, it is common for small amounts of moisture to collect in the slide. This water can be removed quickly by pressing the water key, and blowing sharply into the mouthpiece.

The Bell is the end of the main tube. Different models and manufacturers of the same type of instrument have widely varying amounts of flare. Smaller bell flares sound sharper while bigger flares sound mellower.

The Finger Hook/Ring is a sturdy metal hook or ring that allows the player to hold the instrument firmly in one hand while still allowing fingering to occur.

The Trumpet



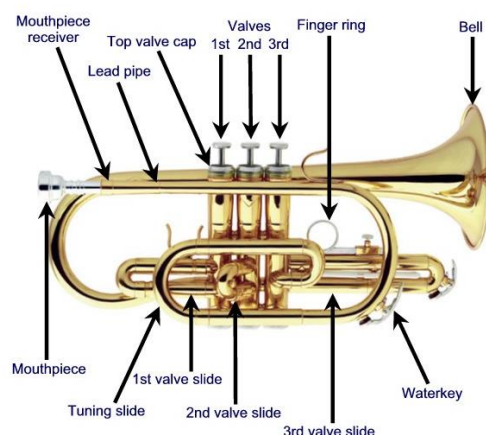
The trumpet is the smallest and highest member of the brass family. As with all brass instruments, the sound is produced by buzzing the lips into a mouthpiece. There are many distinct types of trumpet, with the most common being pitched in B $\flat$ (a transposing instrument).

The trumpet is played with the right hand on top of the instrument with the first three fingers resting on the valves. The left hand holds the instrument with the fingers wrapped around the middle of the valves.

Playing Range:



The Cornet



This cornet is similar to the trumpet in all respects except that its bore is slightly conical instead of cylindrical. The mouthpiece also differs from that of the trumpet in being less cup-shaped thus tapering more gradually into the main bore of the instrument.

The two features combine to render the tone of the cornet coarser and thicker than the clear brilliant tone of the trumpet.

The cornet is rare in the modern Symphony Orchestra. Their special function is to supply the chromatic tones lacking on the plain trumpet. It is made in B $\flat$ and is provided with a slide or valve mechanism which instantly transforms it into an "A" instrument.

Playing Range: 8va



The French Horn



The French Horn is a valve horn in F. Its tube is about twelve feet long, and it can produce all chromatic tones within its range of three and one-half octaves.

As in all brass instruments the tone is produced by the vibration of the lips pressed against a mouthpiece which in the case of the horn is small and funnel rather than cup shaped. The tone of the horn is, except when forced and rendered, "brassy" for the production of dramatic effects pure and noble. It's lovely, mellow tones blend as perfectly with the wood wind as with the brass choir.

The horn thus forms a connecting link between these two sections of the orchestra. The horn is of inestimable value, both as a melody and as a harmony instrument. The horn is probably the most difficult of all wind instruments and that is evidenced by the slips occasionally made by even the finest performers.

The F Horn is a "Transposing Instrument". Both the treble and bass clefs are used. F Horn parts in the treble clef sound a fifth lower; in the bass clef, a fourth higher than written.

Playing Range:**The Trombone**

The word trombone derives from Italian tromba (trumpet) and -one (a suffix meaning "large"), so the name means "large trumpet". It differs radically from the other brasses in its possession of a free riming telescopic slide instead of valves. This slide enables the performer to adjust the speaking lengths of his instrument and its consequent pitch. The precise manipulation of the slide of the trombone is analogous to the correct location of the finger on the fingerboard of stringed instruments. The tone of the trombone is less brilliant than the trumpet but richer and fuller. This difference in tonal quality is due in part to the inner formation of the mouthpiece which though cup-shaped, is less shallow than that of the trumpet. The tenor, is a non-transposing instrument pitched in B $\flat$, an octave below the B $\flat$ trumpet and an octave above the B $\flat$ tuba. All trombones are treated as "Non Transposing Instruments" and both, the tenor, and the bass clefs are used in the

notation.

Playing Range:**The Tuba**

The Tuba is the Double Bass of the Brass Section of the Orchestra. It differs essentially from the Trumpet in that its tube is conical and not cylindrical. It gradually widens from mouthpiece to bell. The tuba is usually provided with four valves which gives the instrument an extended and valuable downward range.

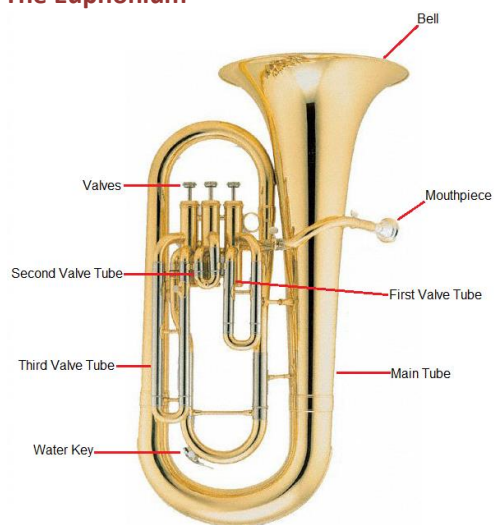
Prior to its introduction into the orchestra by Wagner the tuba was used only in military bands. It is now a recognized member of the orchestral family.

Although the tubas are made in several different keys (F, Eb, C, and B $\flat$) they are invariably treated as "Non-Transposing Instruments" when used in Symphony or Grand Opera Orchestras.

Playing Range:



The Euphonium



The euphonium is a 4 valved tenor member of the brass family in the key of Bb. It is a non-transposing instrument with mainly conical tubing and is the same length as a trombone. The fourth valve of a euphonium works like the F valve on a tenor trombone.

When the fourth valve is depressed additional tubing is added to the instrument putting it in the key of F. This additional tubing increases the lower range of the instrument.

The first composer to write for a euphonium like instrument was Wagner.

Playing Range:



BRASS INSTRUMENT TEST

1. A brass instrument is a musical instrument in which the vibration of the player's _____ against a cup- or funnel-shaped mouthpiece causes the initial vibration of an air column.
2. A more precise term is _____ - _____ instrument.
3. The mouthpiece directs a precise flow of _____ from the player into the trumpet.
4. To produce a sound, the player creates a _____ effect with the lips.
5. There are three basic parts to a mouthpiece:

6. The valve pistons are thin _____ with holes both large and small bored through and small fingerpieces on the end.
7. Valves _____ one passage and _____ another.
8. This has the effect of changing the _____ of the vibrating column of air within the instrument, thereby changing the _____.
9. The trumpet is the _____ and _____ member of the brass family.
10. There are many distinct types of trumpet, with the most common being pitched in _____.
11. This cornet is similar to the trumpet in all respects except that its bore is slightly _____ instead of _____.
12. Their special function is to supply the _____ tones lacking on the plain trumpet.
13. The French Horn is a valve horn in _____.
14. The horn forms a connecting link between the _____ and the _____ section of the orchestra.
15. The word trombone derives from Italian _____ (trumpet) and -one (a suffix meaning "_____"), so the name means "_____".
16. It differs radically from the other brasses in its possession of a free riming telescopic _____ instead of _____.
17. All trombones are treated as "_____ Instruments" and both, the _____, and the _____ clefs are used in the notation.
18. The Tuba is the _____ of the Brass Section of the Orchestra.
19. The euphonium is a 4 valved _____ member of the brass family in the key of _____.

BRASS INSTRUMENT TEST

1. A brass instrument is a musical instrument in which the vibration of the player's **lips** against a cup- or funnel-shaped mouthpiece causes the initial vibration of an air column.
2. A more precise term is **lip-vibrated** instrument.
3. The mouthpiece directs a precise flow of **air** from the player into the trumpet.
4. To produce a sound, the player creates a **buzzing** effect with the lips.
5. There are three basic parts to a mouthpiece: **rim, cup, shank**.
6. The valve pistons are thin **metal cylinders** with holes both large and small bored through and small fingerpieces on the end.
7. Valves **open** one passage and **close** another.
8. This has the effect of changing the **length** of the vibrating column of air within the instrument, thereby changing the **pitch**.
9. The trumpet is the **smallest** and **highest** member of the brass family.
10. There are many distinct types of trumpet, with the most common being pitched in **B $\flat$** .
11. This cornet is similar to the trumpet in all respects except that its bore is slightly **conical** instead of **cylindrical**.
12. Their special function is to supply the **chromatic** tones lacking on the plain trumpet.
13. The French Horn is a valve horn in **F**.
14. The horn forms a connecting link between the brass and the woodwind section of the orchestra.
15. The word trombone derives from Italian **tromba** (trumpet) and -one (a suffix meaning "**large**"), so the name means "**large trumpet**".
16. It differs radically from the other brasses in its possession of a free riming telescopic **slide** instead of **valves**.
17. All trombones are treated as "**Non Transposing** Instruments" and both, the **tenor**, and the **bass clefs** are used in the notation.
18. The Tuba is the **Double Bass** of the Brass Section of the Orchestra.
19. The euphonium is a 4 valved **tenor** member of the brass family in the key of **B $\flat$** .