The Vibraphone

Welcome music lovers to a quick guide to Vibraphones. We’ll be discussing the fundamental parts and processes that make a vibraphone unique! This guide may contain some advanced music terms which will be explained in the text. Please, read on to learn more about this wonderful instrument.

The vibraphone is an aluminum-barred percussion instrument comprising of a frame, motor, tubes, a foot pedal and keys to create a “vibrating” sound most of found in jazz compositions. The vibraphone is one of the most unique instruments in music world, as it is one of the only instruments to require a motor to run correctly. Its unique sound is due to the combination of the components to play it; aluminum keys, motor, pedal, dampers and mallets. The instrument can be used in a variety of settings and can perform a vast range of pieces due to its range. It is often operated by one or two users utilizing one, two, three or four mallets or one or two bows.

Keys, Dampers & Pedal and Motor

The keys are made from brushed Aluminum, as opposed to traditional materials like wood or fiberglass, like those found on similar percussion instruments like the Marimba or the xylophone. The correct Aluminum alloy must be selected for proper tonality and sound characteristics. Each of the bars is shaped so that it creates the proper sound. The arch and length of the bars are what create the unique tone presented in each. Some manufacturers actually pay attention to what goes into different series alloys’ for a different sound in each. Each key set is crafted by a fundamental pitch, followed by two above that. Then, the rest are manufactured from those. The proper manufacture of these keys is extremely important to the sound of the instrument.

The keys are suspended by a nylon cord above the dampers. The pedal, which raises and lowers the keys as needed for sound, controls when the keys are dampened. The dampers are sets of felt under the keys that stop sound as the pedal controls. This is the basic operation of the vibraphone.

The motor adds another level of operation and is usually engaged for ‘normal operation.’ It is the motor and resonators [see below] that give the vibraphone its unique character sound. The motor is usually crafted for the vibraphone and is generally a servo-motor which can control speed and, on high-end models, can control independently the upper and lower sets
of resonators as well as rotation positions i.e. half open, quarter open etc. The motor turns and the rubber cord that runs along the motor wheel is turned. This rubber cord is also connected to the two sets of poles with the discs that spin just above the resonators.

Frame

The frame on a vibraphone is usually some painted metal, even on some of the smaller models. This is so the body can support the tubes and motor, as these components make the entire assembly heavier than usual. Some manufacturers design foldable bodies or even frames made ready for transport. The main manufacturer of Vibraphones, Musser, has several frame and body styles to choose from. There are different finishes and portability options that can create a different use for each. Most frames are only semi-portable, due to the internal component fragility and general stationary nature of the instrument. Sometimes, stripped down models do not include resonators for easy transportation; however, this can limit the richness and character tone of the sound produced from the vibraphone.

Resonators (Tubes)

The resonators are thin tubes made of aluminum that lay underneath each of the keys. The bottom end of each resonator is closed and the top, open. The paddle on the top of each resonator flips open and closed according to the motor speed settings. This will create the unique ‘wah’ sound that is associated with vibraphones. The sound will resonate in the tubes when the key is played, either struck by mallet or bowed, and the sound created is richer than most keyed instruments because of the resonators’ amplification of higher-end range sounds.

The speed of the motor can create different sounds from the discs that are located above the resonators. If moving very quickly, the sound created is a heightened vibrato. If the motor is moving slow, the sound is drawn out and can be heard as ‘slower’. The resonators maintain their functionality if the discs are fully open and the motor is not engaged, and the sound is muted if the discs are closed and the motor is not engaged.
Mallets and Bows

There are many kinds of mallets and bows with which to play the vibraphone. The mallets are usually woven yarn around a plastic core or sometimes wood. The yarn can be nylon, cotton or other synthetics as well. The harder the weave and outside mallet yarn, the generally harsher tone and sound you can get. Some of the materials used can create unique sounds and are selected for such use. Bows, like a cello or bass string bow, can be used to play the vibraphone as well. The bow is placed against the keys on the long ends and pulled up and down to create a very different sound than that of a mallet. The tones produced are drawn and sound like a bell ring without the striking sound. It could be noted that the playing style of pressing the pedal and creating chords or lengthy holds is no different.

We hope you've enjoyed this explanation of a wonderful instrument with such a unique sound. We offer you to take part in some of our other series, which can be found on our website, here.