



13-stringed koto

The koto is a string instrument that originated in China and came to Japan in the 7th-8th century. The Japanese koto is a large instrument, about six feet long, consisting of a hollow body made from Paulownia wood (*kiri*). Underneath the body are two sound holes, one at each end. There are 13 strings which are tied over stationary bridges at each end of the body. The strings are the same size and same tension. A movable bridge, called a *ji*, is placed somewhere along the length of each string. The *ji* lift the strings off of the body so that they will resonate when plucked. The strings are tuned by sliding the movable bridges back and forth.

The koto player sits at the top end of the instrument and plucks the strings in the area just to the left of the top bridge. The strings are plucked with three picks, called *plectrums*, which are attached to the thumb and first two fingers. The player can use their left hand to bend the strings in the area to the left of the *ji*. Pressing the strings toward the koto body causes them to go sharp (as much as 1 note), and pulling them towards the *ji* causes them to go slightly flat.

Koto music has evolved for centuries, and continues to change to this day. Originally koto scores were not written down. Many koto players were blind (koto playing was, for a time, an occupation reserved for blind people), and so writing down scores made no sense. As with many other crafts, the repertoire was maintained entirely by memory and passed down through apprenticeship.

How do you tune a Koto?

All of the strings of the koto are stretched to the same tension. Koto tuning is accomplished by sliding the bridges on which the strings are suspended. Sliding toward the koto "tail" lengthens the playing area of a string and hence lowers its tone. Sliding toward the koto "head" shortens the playing area of a string and hence raises its tone.

The image at the right shows a koto from above with the tail end at the top of the image and the head end at the bottom. The player is shown on the left side of the image. Note that the strings are named by the numbers 1-10, and then with the Japanese words *to*, *i*, and *kin*, starting from the edge farthest from the player. The white spots along the strings are the locations of the bridges. An arrow is pointing at each bridge which is holding each particular string. The player's right hand is in the playing area and it is used to pluck the strings. The player's left hand presses and pulls on strings in order to provide articulations which give each string a range of about 2 and a half steps. Moving the bridges tunes the strings.

There are many tuning schemes for the koto. Each koto piece will have the appropriate tuning marked on the score (and master players know them all). The positions of the bridges and the particular notes are determined by the key, or starting note on string one (*ichi*), and the name of the tuning.

Although a piece might be marked for a particular tuning, this is only the starting tuning. During playing the musician may need to raise or lower bridges to create new tunings for various parts of the piece.

Notice that the scales are "pentatonic," which means that they use 5 notes. The string patterns are repeated every five strings starting with string 2 (*ni*). This physical distance for an octave is about the span at which a koto player becomes accustomed to holding their thumb and middle finger.

Don't forget that even though each string is tuned to a particular note, they can all achieve several notes around their tuned position by manipulations using the left hand in the non-playing area. Pulling on a string from the left toward the head of the koto loosens the string in the playing area and brings its tone down about a half step. Pushing on a string toward the body of the koto tightens the string in the playing area and can raise the string's note by two whole steps. So, a string tuned to C has a range from B to E.

On this page are four primary tunings. The first one, called *hira joshi*, is the most important. Good koto players will learn how to tune quickly by ear to *hira joshi* after only getting the starting tone. Many other tunings are achieved by starting from *hira joshi* and then moving a few bridges.

Hira Joshi

The basic tuning of the koto is called *hira joshi*, and it is most often in the key of D:

In *hira joshi* in the key of D, the strings 1-13 are tuned as follows:

D - G - A - A# - D - D# - G - A - A# - D - D# - G - A
with ascending pitch, except:

- String 1 is in unison with string 5 in classical pieces.
- String 1 is usually an octave below string 5 in modern pieces.

You can tune *hira joshi* in any key (subject to the physical limitations of the instrument). The idea is just to keep the same intervals between notes. Here is *hira joshi* in G:

In *hira joshi* in the key of G, the strings 1-13 are tuned as follows:

G - C - D - D# - G - G# - C - D - D# - G - G# - C - D
with ascending pitch, except:

- String 1 is in unison with string 5 in classical pieces.
- String 1 is usually an octave below string 5 in modern pieces.

***Hira joshi* tuning is used for classical pieces such as ‘Midare’ by Yatsuhachi Kengyo, & ‘Rokudan.’**

Kokin Joshi

Another classical tuning for the koto is called *kokin joshi*, and it is also most often in the key of D:

In *kokin joshi* in the key of D, the strings 1-13 are tuned as follows:

D - G - A - C - D - D# - G - A - C - D - D# - G - A
with ascending pitch, except:

- String 1 is in unison with string 5.
- String 2 is in unison with string 7.

Notice that you can achieve *kokin joshi* by starting with *hira joshi* and moving string 2 (*ni*) up one octave, and moving strings 4 and 9 (*shi* and *kyu*) up a whole step. *Kokin joshi* is never played with string 1 (*ichi*) in the lower position.

Kumoi Joshi

Another classical tuning for the koto is called *kumoi joshi*, and it is also most often in the key of D:

In *kumoi joshi* in the key of D, the strings 1-13 are tuned as follows:

D - G - G# - C - D - D# - G - G# - C - D - D# - G - A
with ascending pitch.

Notice that you can achieve *kumoi joshi* by starting with *hira joshi* and moving strings 3 and 8 (*san* and *hachi*) down a half step, and strings 4 and 9 (*shi* and *kyu*) up a whole step.

The original version of this tuning, called *hon kumoi joshi*, has string 13 (*kin*) lowered a half step.

Gaku Joshi

Another classical tuning for the koto is called *gaku joshi*, and it is also most often in the key of D:

In *gaku joshi* in the key of D, the strings 1-13 are tuned as follows:

D - G - A - C - D - E - G - A - C - D - E - G - A
with ascending pitch.

- String 1 is in unison with string 5 in classical pieces.
- String 1 is usually an octave below string 5 in modern pieces.

Notice that you can achieve *gaku joshi* by starting with *hira joshi* and moving strings 4 and 9 (*shi* and *kyu*) up a whole step, and strings 6 and 11 (*roku* and *to*) up a half step.

Summary

There are several other possible tunings for the koto, but the four on this page are the most common. It is often the case that a piece is started in one tuning and then changed to another during playing. This involves sliding a bridge up or down a whole or half step.

Here is a summary table of the four common tunings all in the key of D:

Tuning	String													Comments
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Hira Joshi	D	G	A	A#	D	D#	G	A	A#	D	D#	G	A	1=5 in classical
Kokin Joshi	D	G	A	C	D	D#	G	A	C	D	D#	G	A	1=5 and 2=7
Kumoi Joshi	D	G	G#	C	D	D#	G	G#	C	D	D#	G	A	all ascending
Gaku Joshi	D	G	A	C	D	E	G	A	C	D	E	G	A	1=5 in classical

