



# Magnetic Cello

## Owner's Guide



Magnetic Cello V.7.2

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## Birth Certificate

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Date of Manufacture: \_\_\_\_\_

Final Inspection by: \_\_\_\_\_

## Contents of Package

**Magnetic Cello**  
**Magnetic Bow**  
**Bow Cable**  
**Ground Peg**

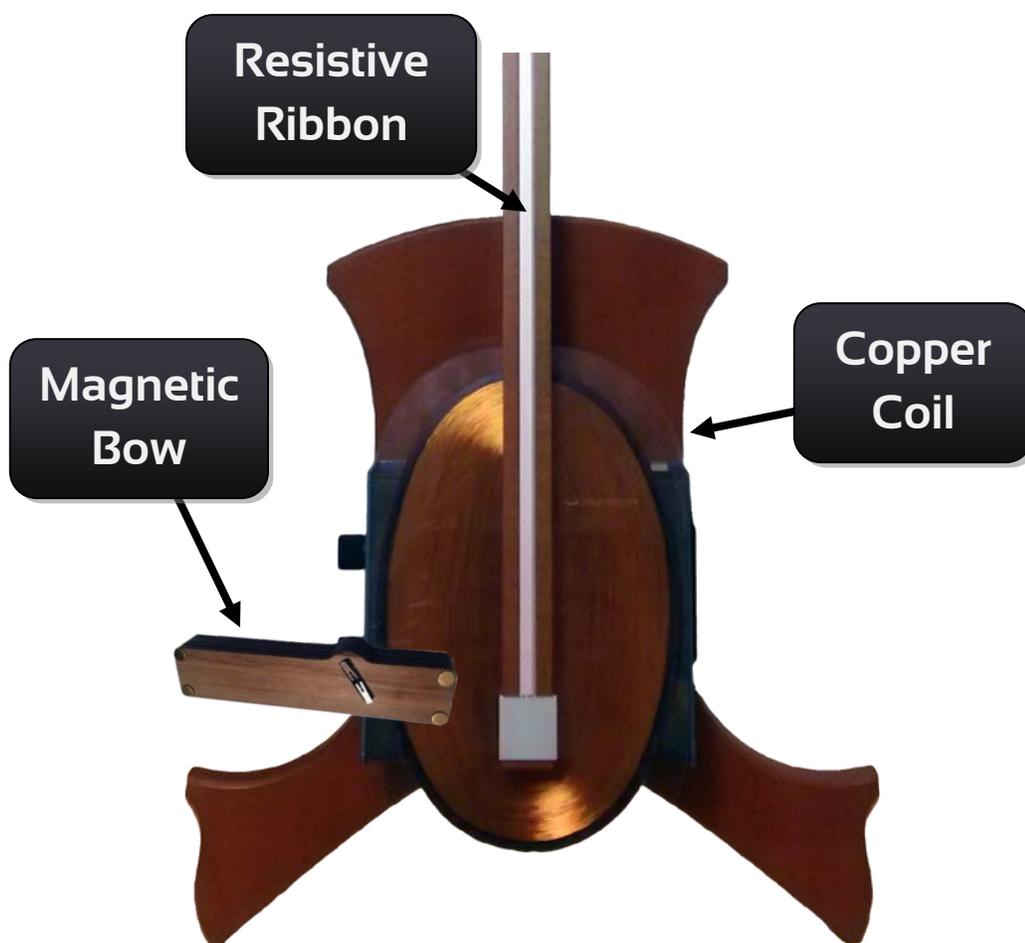
**AA Batteries x4**  
**AA Battery Charger**  
**Owner's Guide**  
**Tuner Tool**

# Section 1: Playing the Magnetic Cello

## Overview

The **Magnetic Cello** is played using three regions:

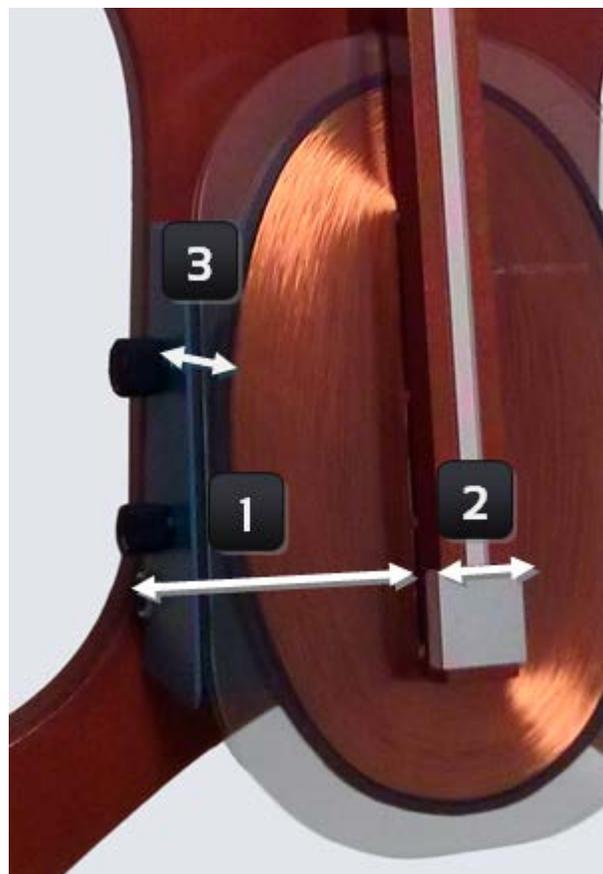
- **Magnetic Coil:** Articulate the instrument by “bowing” a magnet about the coil. Moving the magnetic bow faster or closer to the coil will increase the volume of each note.
- **Resistive Ribbon:** Pitch is controlled by pressing along an electrical membrane “string” on the instrument’s neck. Pressing lower on the ribbon creates higher pitched notes.
- **String Select:** A thumb switch mounted on the magnetic bow is used to quickly select between the four tunings of the string.



## Magnetic Articulation

The geometry of the Magnetic Cello's magnetic field and coil allows for many ways to articulate the instrument:

- Regular bowing is achieved by moving the magnetic bow across the right hand side of the coil, from about 2" away from the coil to the neck of the instrument, as shown in **Position 1** below. The magnetic bow can either float above the coil or slide along the surface of the magnetic coil.
- Quick pairs of notes can be created by moving the magnetic bow across the neck, as shown in **Position 2**. When moving the bow past the center of the coil, the magnet goes from moving towards the center of the coil, to moving away. This causes a transfer from a positive change in magnetic flux to negative, with a zero in the middle. Thus, moving the magnet past the normal bowing area and across the centerline of the coil will create a "node" or "zero" in volume.
- Short, quick movements across the outer edge of the coil as shown in **Position 3** will create staccato notes. Increasing the speed of this motion can create a continuous train of notes.
- Other ways of exploiting the magnetic field geometry for musical effect may exist—Let us know what you discover.



## Fingering Pitches with the Resistive Ribbon

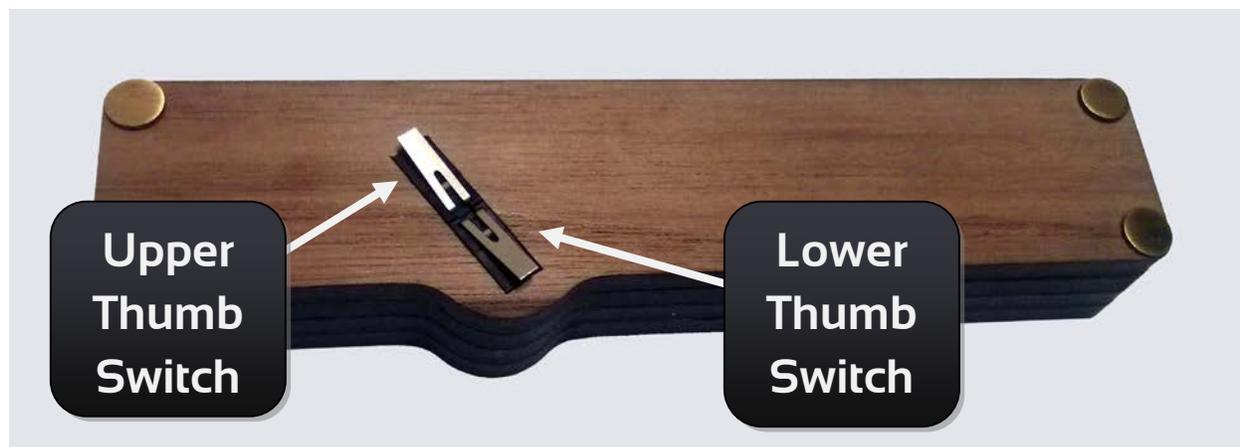


Notes are chosen by pressing along the resistive ribbon “string”. Like an acoustic string, higher notes are located further down the string, and notes become more compact going down the string. *Glissando* and *Vibrato* can be achieved by sliding or vibrating on the ribbon while bowing.

The magnetic cello lends the same neck shape as an acoustic cello, making it easier to find notes:

- The neck is slightly but noticeably thicker going down, making it easier to locate where along the neck you are without looking.
- The 5th of the open string note, or the note that plays when the string is not pressed, is located at the first large change in neck thickness, as shown in **Position 1**.
- The octave of the open string note is located 2 inches below where the neck meets the body of the instrument, as shown in **Position 2**.

## String Switching with the Magnetic Bow



The **Magnetic Bow** is not only used to articulate the instrument. On the bow is a thumb switch that is used to select which string is being played. The table below shows how different positions of the thumb switch correspond to different strings in their default tuning.



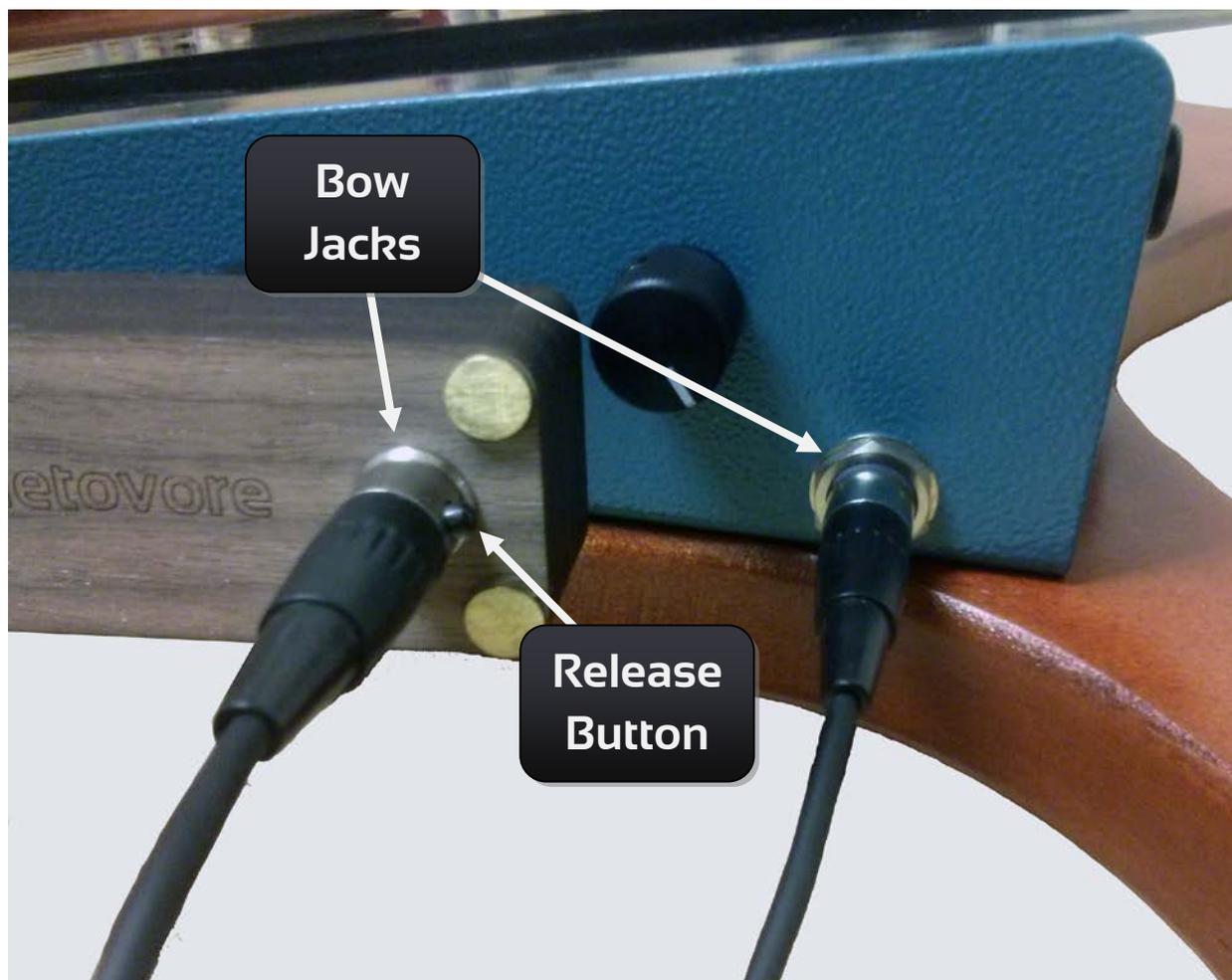
The magnetic bow is held as shown above. The right hand wraps around the body of the bow, and the thumb is placed over the switch, such that rocking the thumb left and right presses the switch.

### *Selecting Strings with Thumb Switch*

Upper Switch	Down	Down	Off	Off
Lower Switch	Off	Down	Down	Off
String	A	D	G	C

## Section 2: Setting up the Magnetic Cello

### Connecting the Magnetic Bow



The Bow is connected to the body of the Magnetic Cello using a mini-XLR cable. To connect the bow, plug the cable into the jacks located on the underside of the Magnetic Bow and on the right side of the Magnetic Cello.

To release the cable from the jack, the small black release button at the end of the cable must be pressed.

If the bow is not connected, the instrument will say tuned to the C string, and pressing the thumb switch will not change strings. Magnetic Bowing will still work.

## Installing the Ground Peg



The instrument is held up during play using the included **Ground Peg**. To extend the ground peg, twist the middle grip, pull to desired length and twist again to tighten, just like a microphone stand. The peg is then threaded into the **Ground Pin Jack** located on the underside of the Magnetic Cello.

The ground peg extends to 35 inches, about high enough to stand while playing the instrument.

The ground peg Jack accepts any microphone stand with standard 5/8"-27 threads.

## Audio Out and Tuners



Also on the underside of the instrument are the **Audio Out** and the **Pitch Tuners**. The audio out jack accepts standard  $\frac{1}{4}$ " audio cable plugs (not included). We recommend connecting the output of the Magnetic Cello to a bass or piano amplifier rather than a guitar amp, to take full advantage of the instrument's low range.

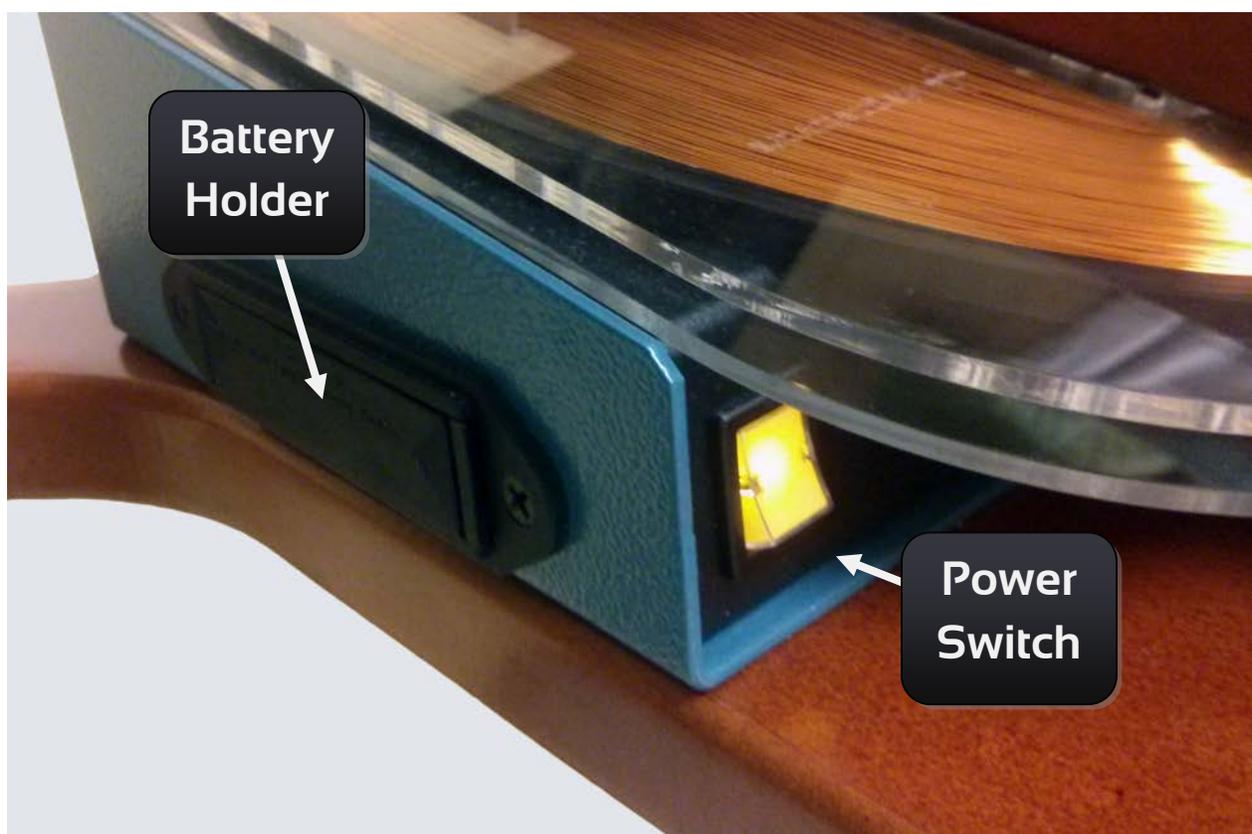
Because the Magnetic Cello creates sound electronically, it seldom needs tuning and is resistant to changes in temperature and humidity. The instrument comes pre-tuned to the strings of the acoustic cello: A, D, G, and C, where A is the highest pitched and C the lowest.



However, each string can be individually fine-tuned as needed with the included tuner tool. To tune each string, insert the **Tuner Tool** into a tuner and turn. A clockwise turn will increase the pitch of the corresponding string as shown above, and a counter clockwise turn will lower the pitch.

Each string can be individually tuned from E1 to C4, allowing for experimentation with playing in different ranges or string intervals.

## Powering On

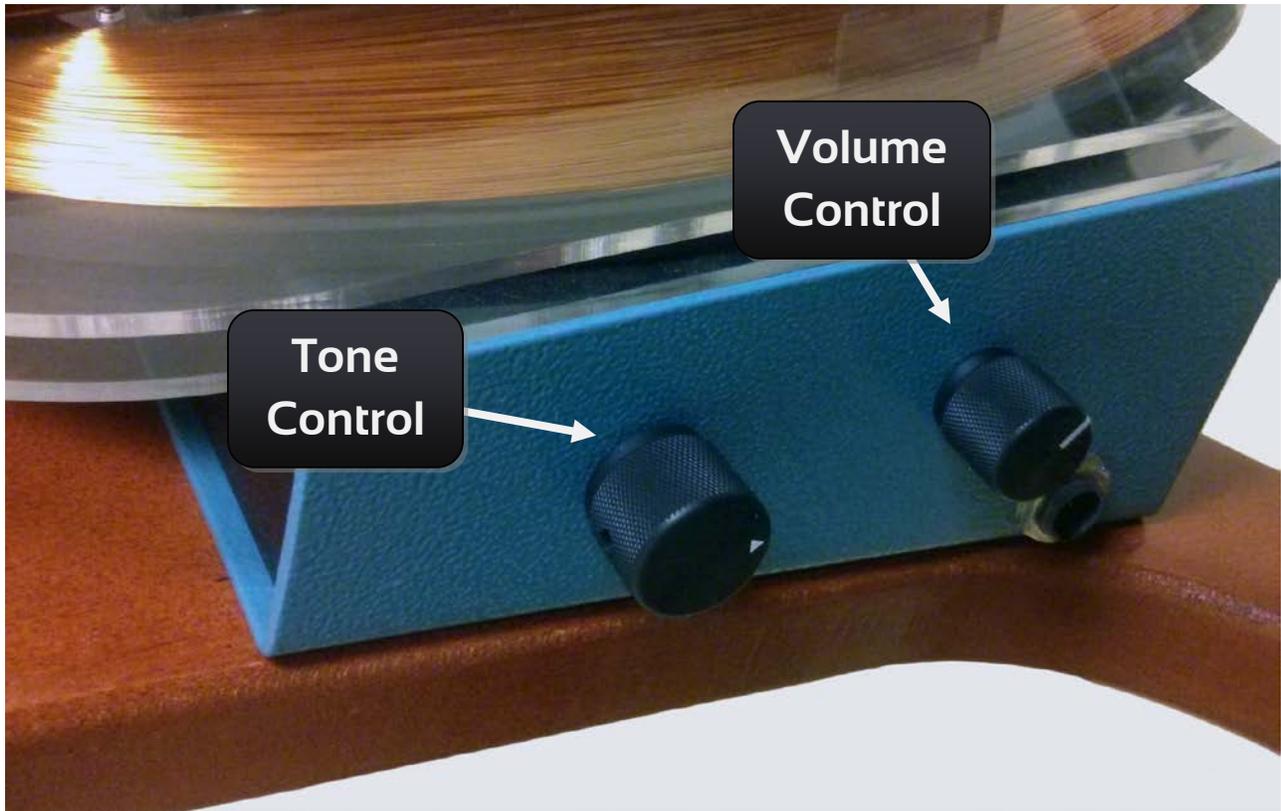


The Magnetic Cello is powered by **4 Rechargeable AA Batteries**. These batteries come already installed and charged. To turn on the instrument, flip the **Power Switch**. The switch will light up when the instrument is powered.

To remove the batteries, squeeze both ends of the **Battery Holder**. The batteries can then be recharged with the included **Battery Charger**. When reinstalling the batteries, be sure both ends of the holder are completely pressed in.

The instrument will last about 24 hours of playtime on a single charge of new rechargeable batteries. Any AA batteries can be used to power the instrument, whether rechargeable or single-use.

## Tone and Volume Control



The **Tone** and **Volume Controls** of the instrument are controlled on the right side of the box. Turning the volume knob will control volume from full to no volume. The Tone Control Knob has four options, as summarized in the table below.

### *Tone Options and Descriptions*

Tone Option Name	Position	Sounds Like
Square	Most Clockwise	Reed
Sawtooth	Middle Right	String
Triangle	Middle Left	Flute
Overdrive	Most Counterclockwise	<i>Dubstep</i>

## **Warranty**

Magnetovore guarantees all instruments built after January 1, 2014 to the original owner for a period of 1 year from date of purchase. During the first year of normal use, Magnetovore will repair or replace, at its option, any instrument having faulty materials or workmanship. Magnetovore must be notified in advance to return the instrument. Shipping charges to Magnetovore are the sole responsibility of owner.

This warranty does not cover repair or parts replacement needed due to misuse, tampering, accidental damage, wear and tear resulting from normal use, or modifications not done by Magnetovore.

## **Contact**

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