

Audio MusiKraft **Nitro** LOMC (low output moving coil) phono cartridges

## Proposed Voicing Procedure

\* Read these instructions before tuning the cartridge \*

This manual is for general information and applies to all Audio MusiKraft **Nitro** Cartridges.

*- The world's first and only "Tunable" and "Customizable" phono cartridge –*





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Audio MusiKraft would like to thank you for purchasing this fine piece of audio equipment! We took a lot of pride in manufacturing it from start to finish. Get ready for the dramatic change and to

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## General Warnings:

- Always leave the cartridge guard on when the cartridge is not in use. We suggest you use it as the MusiKraft cartridges are more manipulated than any other cartridge in relation to their tuning capability.
- The cartridge is equipped with a magnet, so always keep steel tools or parts far from it.
- The Audio MusiKraft **Nitro** cartridge generator is factory adjusted in a very accurate way so be careful not to drop it or touch its parts.
- The cartridge is delicately constructed to maintain maximum performance. When the cartridge is handled, make certain that no under force is applied to the stylus. Do not drop it or move the stylus with a finger tip.
- If there is dust on the stylus when a record is played, the stylus tip cannot accurately trace the sound groove of the record, resulting in not only poor reproduction but also premature wear of the stylus and records. Remove dust with the supplied soft brush, carefully working from the root of the cantilever toward the stylus tip ie. from back to front like the normal record rotation direction. Do not use liquid cleaners on the stylus.
- Dust on the record surface should be wiped away with a high quality cleaner. If cleaner containing moisture is used, allow the record surface to dry before playing.
- Even though our metallic shells are very rugged, on the three micro-tuning setscrews, use common sense when applying torque. So do not over tighten as a broken thread caused by over tightening isn't covered by warranty.
- Do not try to remove the wood inserts without in the first place removing the cartridge motor from the shell as you may damage the sensitive wires or cantilever (refer to our [video tutorials](#) page on how to add/remove these).
- Be careful not to dent the wood surface with finger nails when mounting or removing the inserts.
- In the event you need to clean the Audio MusiKraft shell, only clean with very soft damped cloth when the cartridge motor and the tone wood inserts are removed from its shell. Treat this piece of equipment as if it was jewelry and it will last you a lifetime.

## Index

[Motor - removal and installation](#)

[Tone wood inserts - removal and installation](#)

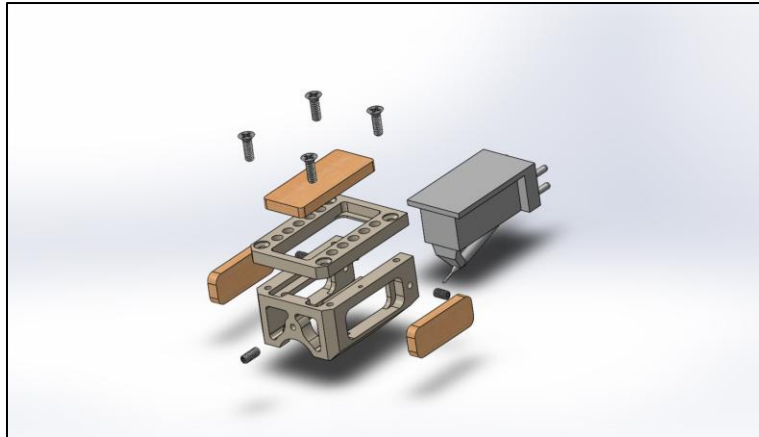
[Tuning screws](#)

[Proposed voicing procedure](#)

## How to Use:

### 1. Motor - removal and installation ([click for a short animated video of the assembly](#))

Our cartridge design was well thought out for servicing and part swapping. We suggest you to view our videos. Removing the motor from the shell is quite straightforward, installation also. Refer to [Fig. 5](#) for an exploded view.



[Fig. 5 Exploded view of cartridge](#)

**Caution:** Be careful not to lay your fingers on the side of motor when retrieving it out of the shell or during manipulations as the very fine wires are exposed.

Removing the motor: ([video supported help](#))

- a) Lay a white paper sheet on your flat working area (this serves as a clean and bright work surface)
- b) To free up the motor, first remove the tension on the lateral tuning-screws which could later block the motor from being pulled out.
- c) Unscrew and remove the four (4) flat headed Philips cover screws
- d) By hand, remove the cover by pulling it upwards. The cover tongue and groove securely holds it in place.
- e) Flip the cartridge upside down on a flat surface (keep a finger on the motor's back while doing this so it doesn't fall out of the shell)
- f) Slide out the motor from the shell

Installing the motor: ([video supported help](#))

- a) Motor installation is the reversed procedure

### 2. Tone wood inserts - removal and installation

The modular Audio MusiKraft design renders the inserts interchangeable within all the **Nitro** cartridge models. Each insert set contains (3) three pieces; one (1) piece for the cover and two (2) for the sides.

Our cartridge design was well thought out for servicing and part swapping. We strongly suggest you to [view our particular videos about this section](#) as to familiarize yourself with our good practices.



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Removing the inserts from the shell is quite straightforward, as is for their installation. They are mechanically held in place by friction and are tight fitted from factory. The insert's edges are taper profiled so to eliminate the risk of chipping and for the ease of installation and removal.

To cover a wide range sonic spectrum we have chosen and included in your kit three (3) tone wood species with a desired finish which we found over the years perform very well and are versatile in many situations. In the event that you would like to go deeper into your tonal explorations we offer many more insert options as aftermarket parts which you can find in our [web store](#). Or on special order if you require more exotic woods or finish. If in need, we can guide you to make wise choices.

#### Wood species and their finish:

First of all, on all three (3) sets we have protected the external wood surfaces to help preserve the wood

- The Beeswax patina on the torrefied pine is used as surface preservation and to give color richness to the appearance. Our beeswax treatment is insignificant to changing the sound. We have chosen this wood so it slightly absorbs resonance feedback to the sensitive cartridge generator. This is the most transparent sounding set in your kit. Pine is among the smoothest woods which exist. To give you an idea, its density corresponds to 400kg/m<sup>3</sup> on a scale which span approximately between 300 to 1150kg/m<sup>3</sup> of all existing woods.
- Maple is considered a hard wood and widely used in musical instruments. Our numerous listening tests showed us that its mechanical properties mixed with our lacquer coating are more than favorable when the time comes to add a tad bit more edge, dryness and impact to sound. Its density is 705kg/m<sup>3</sup>. Note: For sonic exploration, one can try the oil treatment on any internal surface of the three (3) included sets but note that this test is irreversible. The provided 1ml oil vial is to refresh the Ipe set factory treatment (recommended once per year).
- The thorough natural oil treatment on the Ipe tone woods serves as a wood resonance dampener and adds a bit of tone in the sound. It also slightly darkens the background and softens the Ipe top end. Ipe wood is very hard and is a proven species that works very well when matched to our cartridges. Its corresponding density equals 1,100kg/m<sup>3</sup>

**Caution:** 1. - The motor must always be removed from the shell when doing such change. 2. - Be careful not to lay your fingers on the side of motor when retrieving it out of the shell or during manipulations as very fine wires are exposed. 3. - Be careful not to dent the external wood surface with your finger nail.

#### Removing the wood inserts: ([video supported help](#))

- a) To free up the motor, first remove the tension on the lateral tuning-screws which could later block the motor from being pulled out.
- b) Unscrew and remove the four (4) flat headed Philips cover screws
- c) By hand, remove the cover by pulling it upwards. The cover tongue and groove securely holds it in place.
- d) Flip the cartridge upside down on a flat surface (keep a finger on the motor's back while doing this so it doesn't fall out of the shell)
- e) Slip out the motor
- f) With the help of the wooden pushrod, apply pressure on the edge of the internal surface of the top insert so it comes out.
- g) Proceed with the sides.

## Installing the wood inserts:

- a) Work with an empty shell (without the motor in place)
- b) Lay the wood insert flat and parallel to the shell pocket
- c) Apply even pressure with your thumb until the insert is all the way in and flush to the outer surface (**caution** with your finger nails). Confirm that it is well seated on both its internal beds.
- d) Proceed as well with the following two inserts.
- e) To free up the motor, first remove the tension on the lateral tuning-screws which could later block the motor from being pulled out.

### 3. Tuning screws ([video supported help](#))

There are three (3) strategically positioned micro-setscrews; two (2) laterals and one (1) frontal control mechanical resonances by linking the shell at key areas on the motor. These allow delicate fine-tuning of the cartridges interpretation of certain sonic parameters. The sonic footprint is different between the laterals and the front screw as for the applied torque. One can activate the screws independently or vary the torque upon each. **Caution:** 1. - the purpose of these screws is not meant for maintaining the motor in place. 2. - Observe maximum recommended torque below. 3. - Only adjust the setscrews while your tonearm is in its rest position.

We suggest you to try three settings; no contact on motor, slightly in contact, and the suggested 1/8 turn (front) or 1/4 turn (lateral) depending on the setscrew. Use the provided M0.7mm Allen hex key (the small one) for adjusting.

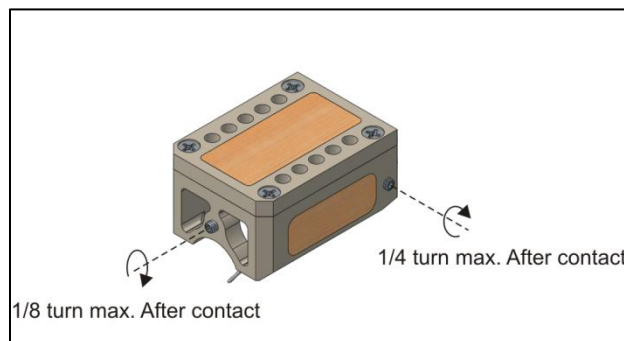


Fig. 4 Tuning Screws max. settings

### 4. Proposed voicing procedure

Here is a simple four (4) step procedure on how we suggest you to proceed on finding the best performance out of your cartridge. You are free to use it, i.e. it is not an absolute way to work.

Be rigorous, this is fine-tuning at its best. You will notice that the fine cartridge generator is very sensitive to its surrounding Audio MusiKraft shell tuning combinations. During your A/B comparisons, do not change the volume position, find a comfortable level from start and leave it as is. Changing it will impact your perception. Try different records before assuming the change will mirror itself in every type of music and recording. Use the same records for reliable conclusions. A good advice is to take notes while doing each listening steps as many sonic changes will occur. It may be long, but very rewarding at the end.



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- 1) Listen to the cartridge with the shell in a nude state:
  - a) Without wood inserts, nor tuning screws engaged
  
- 2) Listen to the cartridge in a nude state (without wood inserts, with screws engaged):
  - a) Engage rear screws with very slight contact with cartridge
  - b) Engage rear screws with slight pressure on the cartridge (1/4 turn max., once in slight contact)
  - c) Disengage rear screws
  - d) Engage front screw with very slight contact on pole piece
  - e) Engage front screw with slight pressure on the pole piece (1/8 turn max., once in slight contact)
  
- 3) Listen to the cartridge with wood inserts (without any screws engaged):
  - a) Switch between the different wood species. (**Caution:** at each wood change (swap), the cartridge must be removed from the shell).

If you opted for the oil treatment, here are two recommendations on how we proceed. In an increasing order, step b) then c) can be considered as two tuning settings:

- b) Slight oil test: In the bundle of wood insert sets you have tested; choose one that you found the most desirable. (A double of the wood set is advised as you won't be able to roll-back once the treatment has been done). Spread one pass of oil on the inside portion of the three (3) inserts covering the whole surface. Wait 1 hour. With a clean cotton rag, remove excess oil. Let sit for 24 hours in ventilated area so the small portion of natural solvent evaporates. Remove the remaining oil right before installation. Install the wood inserts on the shell and then the cartridge motor. Listen. If you tend to like the oil effect, proceed with step
- c) Saturated oil test: Still using this particular wood set, spread oil on all sides; immerse oil by repeating three times the process during 2 hours. Again, with a cotton rag remove excess oil. Let sit for 24 hours in ventilated area so the natural solvent evaporates. Remove the remaining oil right before installation. Install the wood inserts on the shell and then the nude Denon cart. Listen. Repeat if necessary to explore with other wood types.

**Note:** If you choose the oil treated version, we recommend refreshing the treatment **each (1) year** by adding a small drop on each wood insert (inside face). Once again, do this process with the cartridge motor removed from the shell.


- 4) Listen now to the cartridge with your preferred wood inserts (natural or with treatment / finish):
  - a) Choose preferred wood set and dial-in your preferred screw setting
  - b) Fine-tune screws to your sonic preference




## Options:

Additional wood inserts or other accessories.

## Wood Species Selection Chart (name/density/hardness):



<p>1.- Birdseye Maple/Érable piqué 705-6450</p> <p>2.- Pignut Hickory (pale)/Caryer glabre (pâle) 835-9520</p> <p>3.- Pignut Hickory (dark)/Caryer glabre (foncé) 835-9520</p> <p>4.- Curly Maple/Érable ondulé 705-6450</p> <p>5.- Black Walnut/Noyer noir 610-4490</p> <p>6.- Black Cherry/Cerisier 560-4230</p>	<p>7.- Cumaru 1085-14800</p> <p>8.- Shagbark Hickory/Noyer blanc 800-8360</p> <p>9.- Ipe 1100-15620</p> <p>10.- Jatoba 910-11950</p> <p>11.- Lime/Tilleul 415-1824</p> <p>12.- Maple/Érable 705-6450</p>
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<p>13.- Mahogany/Acajou 640-4760</p> <p>14.- Northern White Cedar/Cèdre 350-1420</p> <p>15.- White Pine/Pin blanc 400-1690</p> <p>16.- Poplar (green &amp; yellow avail.)/Peuplier 455-2400</p> <p>17.- Red Alder/Aulne 450-2620</p> <p>18.- Red Cedar/Cèdre de l'Ouest 370-1560</p>	<p>19.- Torrefied Ash/Frêne torréfié 675-5870</p> <p>20.- Torrefied Birch/Merisier torréfié 690-5610</p> <p>21.- Teak/Teck 655-4740</p> <p>22.- Torrefied Pine/Pin torréfié 400-1690</p> <p>23.- Claro Walnut/Noyer de Californie 640-5030</p> <p>24.- White Oak/Chêne blanc 755-5990</p>
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**Notes:**

1.- Shown stock samples are slightly oiled

2.- density (kg/m3) - Janka hardness (N)

3.- Due to the natural variations in wood grain, their aspect may vary

4.- Overall colors may vary depending on your screen settings

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\*Take in consideration:

Due to the natural variations in wood grain, its aspect may vary and overall colors may vary depending on your screen settings.

For best fitment, we suggest buying your extra wood sets at cartridge or shell's date of purchase.

## Downloads:

[Common Wood Inserts List and Pictures \(24 species\)](#) (PDF)

[Complete Wood Inserts Pricelist and Density Chart \(100 species\)](#) (PDF)



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## Our Word:

In the event you have a question, we invite you to consult our [FAQ's page](#), or to [contact us](#) for more specific questions.

We hope these instructions will help you get the best out of your cartridge.

We would greatly appreciate receiving your feedback and thanks in advance for sharing your experience with other enthusiasts.

All the Best,

Audio MusiKraft