Monaco v2.0 Turntable Documentation

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Warnings

THE PLATTER IS NOT REMOVABLE!

Attempting to remove the platter will not only void the warranty it will also damage the system which measures and maintains speed.

DO NOT LIFT UPWARD ON THE PLATTER OR SPINDLE POST.

DO NOT SPIN THE PLATTER WITHOUT THE BEARING PROPERLY FILLED WITH OIL!

Like any bearing the Monaco should never be spun or operated dry. The clearances inside the bearing are very close and spinning the bearing without oil will cause conditions which are outside the design parameters. Damage could occur. Slow partial rotation turning for inspection purposes is fine.

SHIELDED CABLES

Any tone arm cable used must have high quality ground and shielding. Unshielded cables anywhere in your system may act as antenna and add noise to playback and are functionally unacceptable for any proper playback system.

Proper ground and shield throughout your system are especially necessary with this sophisticated design.

Caution:

When you are changing arm boards care should be taken around the encoder and its mount. Do not disconnect the wiring. Do not disturb, bump or otherwise tamper with the encoder or its mount.
Disconnecting the wiring or disturbing the encoder can change the accuracy of the unit. Disturbing, removing, or in any way tampering with the encoder and its mount will void the warranty.

UNPACKING

Before unpacking we suggest you chose and prepare your set up and final usage location. We recommend that you use any well lit horizontal surface for initial installation of the tone arm and cartridge as well as initial set up. This can be done in place on the stand but you may find it much easier to work on the unit in a different location and then move it to the stand afterward. After having prepared your clean open space for set up follow the directions below to access your new turntable.

Open container lid.
Remove the Computer, and the two boxes.
Remove these components of the turntable and set them aside for future use.
Remove this layer of foam.
Remove the box containing the APEX feet and remove this layer of foam.
Remove your Monaco v2.0.
Place a soft towel or pad on the place you intend to sit the Monaco for set up.
Remove the turntable taking care not to drop or bump it and keep it reasonably level.
BE CAREFUL IT IS NOT LIGHT. WE SUGGEST YOU USE TWO HANDS. PULL UP SLIGHTLY ON THE ARMBOARD TO GET A GRIP ON ONE SIDE. USE THE ARMBOARD AS ONE HAND HOLD AND THE SIDE OR BOTTOM OF THE TABLE FOR THE OTHER.
Place the Monaco upon the cloth you pre-located. Now you can turn the entire Monaco in any direction while doing the set up and preparation. This will be the easiest turntable you have ever used. Remove the shrink wrap taking care not to mare the finish of the Monaco.

DO NOT SPIN THE PLATTER BEARING DRY!

AVOID ROTATING THE PLATTER UNTIL YOU HAVE COMPLETED ALL SET UP STEPS AND INSTALLED THE BEARING OIL. THE BEARING IS NOT PROPERLY AND FULLY LUBRICATED AND CAN BE DAMAGED IF IT IS SPUN WHILE DRY.
SEE WARNINGS SECTION.

Check your contents against the included list on the "**Contents**" page and proceed to set up.

SET UP

Pre set up Notes

Your Monaco has been broken in at the factory prior to shipment.
The computer control has no less than 48 hours burn in time with a minimum of 25 on/off cycles. After passing this burn in phase it was inspected for proper operation and performance and packaged for delivery.
Your Monaco turntable has no less than 48 hours break in time on its spindle and thrust bearing. It was run in using the computer included. The Monaco is then attached to instruments for final adjustments to and confirmation of its speed accuracy performance.
The oil is then drained from the bearing and the unit is prepared for shipment.

Tone Arm Installation

Your Monaco has been shipped with the correct mount bracket required for your choice of tone arm. You will need only to attach the tone arm and install and set up your cartridge. Grand Prix Audio can provide you technical support as needed however, any information you may require which is not contained in this manual will most likely be found in the documentation for the tone arm and or the cartridge.

The mounting bolts for the tone arm are installed into the mount. Remove these bolts and attach the tone arm. We have done all the engineering to ensure this mount is absolutely accurate to levels well beyond the standard requirements of the manufacturer or a common installation. Our installation obviates any need to inspect the mounting location or pivot point of the arm. Follow the directions for the set up of your tone arm. Having completed the basic tone arm installation steps you can move straight to cartridge installation and alignment.

The specifics for installation of your cartridge are covered in its documentation. You will require a high tolerance alignment tool of some type. Some method should have been supplied with the tone arm. Some are better than others. It is critical to get your cartridge aligned to a high level of precision.

CARTRIDGE ALIGNMENT WILL GREATLY AFFECT THE SOUND THEREFORE NO AMOUNT OF TIME IS TOO MUCH. PATIENCE AND PERFECTIONISM ARE THE ORDER OF THE DAY. IT IS NOT “OK” UNLESS IT IS PERFECT AND YOU ARE CONFIDENT OF THIS AS A FACT.

Placement and Leveling

We recommend for best final sound you use some type of well engineered isolation stand. This can be an individual stand or one for your entire system or perhaps a wall shelf. The Monaco Turntable is not designed to act as an isolation device itself but instead to be a very high frequency structure which cannot be excited when used atop of a proper isolation stand or platform. If used atop of a poorly performing stand, much like all of your gear, it will not realize its full potential.

Placement:

Place the two front feet in the approximate location for use.
Place the rear foot in the approximate location for use.
The surface must be level as measured with the level included. If it is not we have some adjustment with the turntable feet but it is best if the shelf is level.
Place the Monaco upon its feet. We recommend this is a two person operation. It is difficult to position the table and feet simultaneously without help.

Leveling:

Place the included level across the front of the platter. Note which side of the bubble is low and select the foot beneath this side. Use the supplied blue wrench to turn the adjuster on this foot anti-clockwise until the bubble centers.
Rotate the platter 90 degrees so that the level is now in a fore aft plane.
The bubble should display the front of the table as low. (This assumes the table is placed upon a flat and level surface.)
Adjust both front feet equally, anti-clockwise rotation, until the bubble centers.
Repeat both positions and adjust as needed to confirm the platter is perfectly level.

Install the platter bearing oil:

Note: The platter bearing is a very close tolerance system and debris could cause noise and bearing damage. Therefore care should be taken whenever servicing the platter bearing to avoid contamination by even the finest of dust or matter of any kind. The following steps should be conducted in a clean reasonably dust free environment.
This is a critical step and must be performed as detailed to ensure correct result. Please be patient and follow the instructions to the letter. It will be worth the wait. The Monaco must be perfectly level to begin this step.
It will be helpful to use a small flashlight for this step.

Step One: Remove the 2) oil filler plugs from the spindle and look inside the holes while slowly turning the platter. You will see a secondary hole down inside the platter bearing. There is one on each side symmetrically. **See Figure 1**

Step Two: Locate the syringe, tips, and oil bottle. Screw a tip onto the syringe.
Open the oil bottle and draw up 15 ml of oil. Reseal bottle immediately to avoid contamination or spilling.

Step Three: Insert the tip of the syringe down inside the second internal spindle passage found earlier. Either side is fine. Rotate the syringe to clearly display the ml graduation. Use the back side of the plunger as your measurement guide. Slowly and carefully install 5 ml of oil. You may notice bubbles coming from the passage on the opposite side of the bearing. This is good it means the oil is pushing the air from the bearing.

Step Four: Allow a few minutes for the oil to flow into the bearing before attempting to install any additional amount. Give the platter a gentle spin to help air evacuate from the bearing.

Step Five: Insert the syringe and slowly install 2 ml of oil. Again watch the opposing passage for air bubbles as the level rises. Do not push the oil to fast as this may trap air in the bearing. Go slow and let the air bubble out. Again gently spin the platter.

Step Six: Allow a few minutes for the oil to flow into the bearing before attempting to install any additional amount. Gently spin the platter.

Step Seven: We will now fill the bearing but before we do let's review overfilling.
*It is easy to overfill the bearing. This will not cause any harm to your Monaco. However, it can be messy. The Monaco has a series of openings located in the bottom. These are air passages to allow for motor cooling and airflow within the plinth chamber. These holes also allow any overfilled oil to escape out the bottom. Thus if you overfill your Monaco you will see a puddle of oil under it thereafter. The length of time will depend upon the degree to which you overfill it. If you flood it with excess oil it will run out within minutes, if you slightly overfill it may not come out for days. Again**, it does no harm** but should be avoided for general purposes.*

Insert the syringe into the bearing as before. Now you will need to carefully monitor the oil level in the bearing as you install the oil. We can only use a quantity installed measurement as a guide due to the variable of air entrapment thus you must monitor the level during final filling. Slowly begin pushing more oil into the bearing while monitoring the level through the opposite hole using the dip stick to gage the fill level.
See Figure 2 for details on correct oil level.
Stop occasionally to use the dipstick to check level. When you are within a hair of full it is fine at this point.

You now have the bearing adequately full to start the turntable but we are not finished yet.

Step Eight: After completing set up we need to check the oil level a couple times over the next few days until we have confirmed that the level is full and stabilized. This will indicate any air entrapped within the bearing has evacuated.
Step Nine: Once filled the spindle access can have the plugs replaced. Be sure the O-rings are slightly lubricated before replacement. Carefully clean any oil reside from the spindle surfaces and around the plugs.

DO NOT RUN THE TABLE CONTINUOSLY AS IT MAY CAUSE UNDUE WEAR TO THE THRUST BEARING. IF AIR IS ENTRAPPED (not unlikely) AND IT COMES OUT DURING EXTENDED RUNNING THIS WILL DROP THE OIL LEVEL AND MAY CAUSE THE THRUST BEARING TO BE UNLUBRICATED. THUS IF THE UNIT IS RUNNING UNDER THESE CONDITIONS THE BEARING MAY BE PERMANENTLY DAMAGED AND WILL REQUIRE REPLACEMENT WHICH IS NOT COVERED UNDER THE WARRANTY DUE TO IMPROPER RUN IN CONDITIONS. CONTINUOUS RUNNING OF THE TABLE WHEN NOT PLAYING RECORDS IS ILL ADVISED AND WILL ONLY ADD WEAR TO THE SYSTEM FOR NO VALID PURPOSE.

CHECKING OIL LEVEL

Your Monaco has been supplied with a dipstick. The dipstick has a groove machined in it on the small end. Insert the small end of the dipstick into the spindle hole until it rests upon the bottom of the oil reservoir. Remove and check for level. Proper oil level is within a 1/16" of the groove. Alternately, one can touch the dipstick upon the outer rim of the reservoir and then slowly lower it to the top of the oil watching for the surface tension of the oil to move. When the oil level is right at the top of the rim you are full.
It is critical that the bearing oil level be full or damage may result.
See Figure 2 for details on correct oil level.

Connecting the Computer

The computer does not require any specific proximity to the turntable itself except as defined by cable length. Take note of the red dot on the Lemo connector end this must match the corresponding red dot on the fitting in the table. It requires specific alignment of these red dots to allow insertion. When addressing the Monaco from its left side clock the red dot to 3 o'clock and insert into the turntable female connector. The Lemo must be fully pushed in until the locking collar clicks. Failure to fully insert the Lemo can result in improper operation such as reverse rotation or non start. If this occurs, power down the computer, unplug the Lemo and reinsert until fully engaged and locked.
A 3 point ground wire is included for your convenience. It may not be necessary in all systems. We suggest you initially connect it to the computer ground lug, your tone arm ground lug, and the phono stage ground.

Connecting the Power Supply

The power supply is a high frequency transformer which supplies low voltage DC current to the computer and thus the motor. It and the computer are not sensitive to power supply issues. You can plug this power supply into your power conditioner or your wall socket it will make no difference to the operation of the Monaco. The computer has internal self resetting fuses. It is surge protected and should the fuse break upon disconnection from power it will reset.
Plug the socket into the back of the computer and gently tighten the locking collar.
Plug the transformer into a power outlet.

Placing the Optional DIN/RCA Block

An **Optional** large stainless steel disc is available for mounting your DIN block should your tone arm use this type termination or if you prefer to use a DIN to RCA adapter from your tone arm. The block is designed to nest behind the rear foot underneath the rear of the table. The disc features multiple holes for clocking the DIN block at various angles as you may prefer. Further the entire disc can be rotated about the rear foot as needed. Of course, it can also be placed away from the table as you may prefer.

Your Monaco is now ready for operation. Proceed to the next section for guidelines in use and operation.

OPERATION

Initiating Rotation:

To power up your Monaco simply depress the power button and then select the speed desired. To start rotation of the platter select the 33 RPM or 45RPM buttons. When the platter has reached the speed selected the blue speed indicator light will come on. This light is calibrated to approximate the speed accuracy level of the design and thus will waver or go out should any speed error occur.

NOTE: The platter must be still to start the turntable initially.

Initially if the platter is moving the v2.0 turntable will not start correctly. You can simply stop the platter with your hand and the turntable will then start correctly. Once you have selected the power button and its red light is lit you need not turn it off again during a playing session. After the initial start up if you keep the power switch on the system will then tolerate DJ starts, switching speed on the fly and pretty much any other movement of the platter etc. as you may be accustom too. However, if you turn the power switch off the next initial start has to be with a still platter.

See figure 3 for details on front panel operation.

Changing Speed:

Pressing either the 33rpm or 45rpm buttons will select and reset the system to this speed. You do not have to stop the platter when changing between speeds. The lock light will appear when the selected speed has been achieved.

Adjusting Speed:

The Monaco v2.0 does not feature speed adjustment. This feature has been deemed unnecessary. We have retained the LED's and switches in case we decide to use these in some other way in the future.

True Pressure Clamp System:

The Monaco v2.0 comes with a first of its kind record clamping sensor system we call the "True Pressure Clamp System". This system provides you with visual indication via an LED indicator of the record having correctly contacted the inner edge of the platter.
This system is tunable to your specific usage. It comes adjusted for nominal use.
The Monaco v2.0 comes with a new version record clamp and several different durometer record dampers. These dampers allow us to utilize an effective type of clamping method.
By placing a record damper beneath the records prior to clamping we can achieve significant clamping force to the outside diameter of the record.
The different compression dampers are for use with difference thickness records or records that have deformity which must be removed during clamping. You can experiment for best result beyond our recommendations. **See damper usage details below.**

True Pressure Clamp System adjustment and tuning:

The sensor in the platter is adjustable. This will allow you to fine tune the system for your specific usage. It comes adjusted to give indication when the inner edge of the record is firmly against the platter. This should give ideal clamping pressure for the record overall.
If during use you note the outer edge of the record is lifting or you feel the inner edge of the record is not fully against the platter the sensor can be adjusted.

Adjusting the sensor:

Using the sensor adjustment tool included with your turntable insert it around the sensor and into the hole in the platter.
Turning clockwise will cause the sensor to be activated when the record is closer to the platter.
Turning too far can cause the sensor to become inactive.
Turning counter clockwise will cause the sensor to activate sooner.
This system is very sensitive, adjustments of as little as one flat of rotation will be noted. A full rotation is a huge adjustment.

Battery Life:

The battery is designed to last at least one year with 4 hours usage every day. We predict it will be more likely that the battery will last two years plus. The battery specification is CR 1/3N.

Battery Replacement:

Battery replacement is simple and easy. Remove the battery hatch with the plastic straight blade tool provided. You will see the battery and its contact ring above it. Using the blunt ended wood stick affix a sticky dot to the end of the stick. Insert the stick adhesive side down in battery compartment and onto the top of the battery and pull upward to remove the battery and the ring. The battery will easily come out. Be careful not to lose the ring. Replace the battery and replace the contact ring atop of it. Reinstall the battery hatch.

Clamp Usage:

Install the correct rating record damper around the spindle prior to placing a record upon the platter.
Twist the clamp into place until the record is pushed fully onto the platter. Continue turning the clamp until you see the LED light in the center of the clamp. Proper clamping will be achieved when the center of the record near the label is firmly against the platter the LED will indicate this, and the outside has positive pressure when flicked upward with the finger. Excessive clamping will lift the outer edge of the record.

Damper Usage:

Dampers are color coded each color representing the durometer or hardness of the material. Simply slide the damper over the spindle with the flat side down.

The **Low Compression Damper** ***GRAY*** is for use with flat standard thickness records. This will create the lowest amount of deformation in the record. If used with thicker records it will result in less deformation or clamping force at the outer edge.

The **Medium Compression Damper** ***BLACK*** is for use with standard records which are warped enough to not achieve full clamping with a Low compression damper. It will generate more deformation and thus clamping force.

The **Medium Compression Damper** ***BLACK*** is also for use with 180 gram records.

The **High Compression Damper** ***BLUE*** is for use with 180 gram records which are warped enough to not fully clamp with a Medium compression damper.

The **High Compression Damper** ***BLUE*** is for use with 200 and 220 gram records.

This damper usage is a guideline and we encourage experimentation. Understand that the principle being employed involves deforming the record to achieve pressure at its outer edge while damping the energy in the record. The record can withstand this without yielding or permanently changing shape. However if you use the higher rate compression dampers on thinner records you may cause stress cracks to occur about the center spindle hole. This will be noted by a ticking or popping when clamping the record. These cracks are harmless and do not propagate. If you are concerned about this be careful when using the dampers to not combine a high compression damper with a standard record as cracking may occur.
Records should not be left clamped for any period beyond actual playback.

Cleaning and Maintenance

The Monaco turntable can be treated as a fine automobile. Its carbon fiber plinth is coated with a PPG Industries automotive clear coat.

The plinth and feet can be cleaned with gentle soap and water, Enddust etc. they can also be waxed occasionally but this is not necessary. If you live in a tropical environment or near the ocean you may want to wax your Monaco and the feet annually.

The platter of your Monaco should be cleaned with clean water or gentle soap (Dawn) and water. It can be cleaned during usage with a carbon fiber record brush same as a record.

If the platter becomes heavily covered with dust it should be gently wiped with a soft cloth (as supplied) or dusting accessory. Then wipe with a damp cloth and dry with a soft cloth.

There is no required maintenance to the Monaco unless the unit is moved or tipped. If so the bearing is likely to spill over and hence require replenishment of the lost oil. Follow the final steps of the bearing filling instructions to properly refill the bearing.

Moving the Monaco

If the need arises to relocate the Monaco you will need to follow the steps below.
Most importantly we will need to drain the bearing. This can be done two ways depending upon the type of move.

Minor relocation is without shipping or transport for example from one room of your home to another.
This will only require a slight removal of oil from the bearing and then re-leveling and refilling the bearing.
Locate the oil filling syringe and tip used to fill the bearing.
Insert the syringe into the inner bearing passage and draw out as much oil as you can until you draw bubbles.
This should have lowered the oil level below the bottom of the reservoir. Inspection with a light will confirm this.
You can now pick up the Monaco and carry it to its new location being careful to maintain it in a level plane as much as possible.
Upon placement in its new location follow the set up instructions from leveling your Monaco onward.

Major relocation is involving repacking in the crate and shipping.

This will require complete draining of the bearing and rewrapping of the turntable.
Locate the syringe and tip used to fill the bearing.
Insert the syringe into the bearing access hole and into the inner passage.
Draw out as much oil as you can until you see bubbles.
Move the Monaco to a flat counter or desk top; place it on a soft cloth.
Locate the 3/32" Allen Key supplied.
THIS STEP WILL REQUIRE A HELPER.
The Monaco will need to be balanced on the edge of the surface to allow access to the drain plug in the bottom of the bearing.
Use the supplied Allen key to remove the socket head bolt in the bottom of the thrust bearing.
Place the Monaco atop its feet with a paper towel or cloth underneath to catch the oil and allow it to drain overnight. The bottom of the table must have clearance to allow the oil to drain properly. The cloth should not be touching the bottom of the turntable.
The Monaco must be rewrapped in shrink wrap prior to placement in the packaging. This is critical to ensure the platter will not bounce up and down on the thrust bearing.
It also provides the Monaco the necessary protection from abrasion in transit.
Repack as the reverse of the unpacking instructions.

Changing the Tone Arm Mount Bracket

You will need to move the Monaco to an appropriate work surface. Follow the portion of these instructions “Moving the Monaco”.
Use the supplied 1/16” Allen key to remove the (2) button head bolts retaining the encoder cover.
Remove the encoder cover. Be very careful of the encoder and its mount. Do not remove the wire connection or hit the encoder. This could change the speed accuracy of the Monaco.
THIS STEP WILL REQUIRE A HELPER.
The Monaco will need to be placed near the edge of the work surface to allow access to the bolts retaining the bracket.
Use the supplied 1/8” Allen key to remove the (6) button head bolts in the bottom of the plinth. These are in two rows of (3) holes running from the rear of the bracket to near the center of the plinth. Be careful to note the different lengths and respective location. Installing a long bolt in the wrong hole will lock the platter.
It is helpful to support the outer end of the bracket during removal of the final bolts.
Gently slide the bracket out the rear of the plinth.
Install the new bracket and follow the steps above in reverse.
Note; the side of the mount with chamfers on its outer edge is the bottom.

TROUBLESHOOTING

There are not many things that can go wrong with the Monaco but here are some notes regarding what we have learned thus far. This section will be updated over time and updates issued as technical bulletins. Your Monaco's warranty registration form provides the mechanism to send these technical bulletins as they become available. Thus please properly follow the warranty registration of the product to ensure receipt of all technical bulletins and update notices.

Most any problem will likely be due to the connection of the Lemo to the turntable.

Symptom	Solution
The platter is rotating in reverse.	Power down the computer. Disconnect the Lemo cable. Reinsert the Lemo connector taking care to ensure full insertion until a click is heard and the cable cannot be pulled out. Restart the turntable as normal.
The platter does not rotate.	Be sure the platter is not in motion when trying to start the unit. OR Repeat procedure above.
The red power light is not lit.	Check connection of power supply. Do not over tighten. Check connection to power source.
Oil Residue around oil plugs or spindle	Carefully clean and remove the oil until this stops. Its residue coming from the plug holes. See step nine on page seven.