VPI JMW-3D Printed Tonearm Manual

THIS MANUAL IS GOOD FOR COMPLETE ARMS OR ARMTUBES ONLY

Setup and Instruction Manual

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- A NEW BASE HAS BEEN DESIGNED FOR YOUR TONEARM. IT WILL SUPPORT THE ARM AT THE VTA TOWER AND AT THE CUEING MECHANISM. THIS SUPPORT GIVES THE ARM MUCH GREATER RIGIDITY AND PROVIDES DEEPER TIGHTER BASS RESPONSE.

- THE ARMS NOW HAVE THUMBSCREWS INSTEAD OF SET SCREWS FOR EASIER SETUP AND ADJUSTMENT OF VERTICAL TRACKING ANGLE (VTA, SRA)

BEFORE YOU BEGIN

NOT FOLLOWING THIS MANUAL WILL VOID YOUR WARRANTEE. FAILURE TO SEND IN THE WARRANTEE CARD WILL VOID YOUR WARRANTEE.

- Be very careful when handling the JMW-3D tonearm. The internal arm wire is exposed at the headshell and at the rear of the arm. The wire is ***very*** delicate and physical damage to the wire is not covered by the warranty after the arm is removed from its box.

- Please do not touch the unipivot bearing parts. Finger oils on the bearing cup in the upper bearing housing or on the lower pivot point in the arm base assembly can cause blemishing of the bearing and possible corrosion. Also, the point is sharp, be careful.

- There are a number of setscrews on the JMW-3D tonearm. The Allen wrenches that come with your arm will only fit the setscrews that you will need to adjust. All oTther screws are factory set and should not be adjusted, except by our trained technicians. Resetting any of the factory settings is not covered by the warranty.

A- UNPACKING YOUR JMW-3D TONE ARM

- This instruction manual was lying on a large foam pad. Remove the pad and put it nearby on your work surface.

- You will now see a number of things in plastic bags:
    - Allen wrenches for cartridge mounting and fine VTF adjustment
    - Hex nuts, and washers (for cartridge mounting)
    - Arm mounting and alignment tool
    - Weight scale if a complete tonearm

- Take all these items out and set them aside.

- You can now see the arm tube and counterweight, with its delicate wire and Lemo connector, and the arm base assembly. If your arm is pre-mounted on a tone arm board, remove the small foam piece covering the "front" of the arm board. Set it aside with the other packing material.

B- CARTRIDGE MOUNTING:

- Remove the arm tube from the box (taking special care not to strain or damage, the delicate wire and Lemo connector) and place it right side up on the foam pad.

- **For cartridges with threaded mounting holes:** Use the screws supplied by the cartridge manufacturer to mount the cartridge. Any other screws may not fit the thread properly and may even damage the threads and cartridge. USE ONE OF THE SUPPLIED WASHERS UNDER THE SCREW HEAD.

You must use washers and you do not over tighten the screws, this is a soft material and you will damage it if you over tighten.

- **For cartridges with pass through mounting holes:** Use the hardware supplied with the arm. Remember to use the washers under the screw heads to prevent damage to the finish on the JMW-3D arm. In this step, the connectors will be attached to the cartridge's terminals.

- THE COLOR CODE OF THE **WIRES** IS AS FOLLOWS:

RED = right hot **WHITE = left hot**
GREEN = right ground **BLUE = left ground**

IF YOUR PHONO SECTION INVERTS PHASE, THE HOT BECOMES THE GROUND COLOR

- The arm tube should be on its side on the foam pad when doing this.

- Using tweezers or fine tipped pliers grip the center of the red wire's connector (do not grip the wire) and push it onto the cartridge's right hot terminal pin. In the same way, connect each of the remaining connectors to its respective cartridge terminal. Do not push the connectors all the way on, as this could damage the cartridge. Always back up the cartridge with your finger when pushing on the clips.

- The JMW-3D tone arm comes with one large dropped counterweight installed on the rear shaft of the tonearm. For most cartridges you will only need this large weight. The counterweight is held in position by a setscrew. **DO NOT OVER TIGHTEN THIS SET SCREW.**

- Pick up the arm tube, taking care not to strain or damage the fine wire and Lemo connector.

- For now, position the large counterweight as close to the bearing housing as you can (toward the front of the arm) but not touching the balance ring. The object here is to balance the arm while keeping the counterweight as close to the bearing housing as possible. This results in the least inertia for a given cartridge weight.

- In some rare cases it may be necessary to use two counterweights together or a larger counterweight. Contact your dealer if a second or larger counterweight is needed.

C- ALIGNMENT

- Place the arm tube assembly on the lower bearing, taking care not to strain or damage the wire and Lemo connector. Make sure the unipivot is centered in the female bearing, the arm should feel free in all directions. Place the arm in its rest.

- At the rear of the arm base assembly is the connector block. Plug the Lemo connector into its receptacle on top of the block. Notice that the connector can plug in only one way. Align the red dots on the arms plug with the red dot on the receptacle. Push gently, do not force the plug.

- Do not attach the anti-skate filament at this time if at all.

- Make sure the turntable is level. Refer to your turntable instructions and use a bubble level to check level. In most cases, the best place to put the level is on the platter.

With a unipivot arm it is particularly important to level the turntable.

- Move the counterweight until the arm has a very slight downward tracking force, just enough to keep it on the supplied alignment jig and not move.

- This alignment will yield the lowest distortion in the last third of the record, the hardest to track, when playing a typical 12" record. Do not go crazy over this adjustment. You do not know if the stylus is aligned properly on the cantilever. You are also facing a constantly moving target

when playing a record. The arm is moving in 3-dimensions and will only approximate the accuracy you have built into your alignment.

- Slightly loosen the screws in the alignment jig and place into position by sliding the narrow end with the "V" cutout against the base of the male bearing uni-pivot.

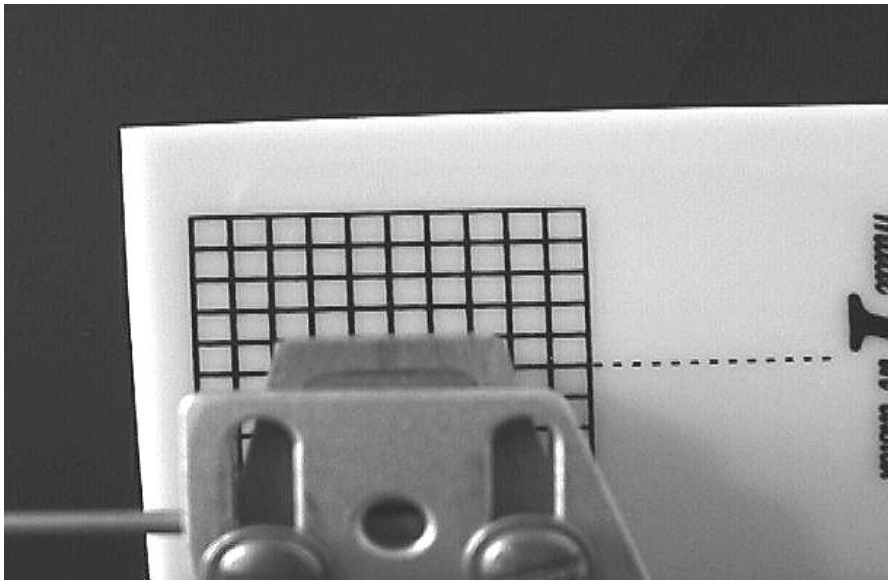
- While holding the "V" against the bearing well, swing the other end (with the hole) over the turntables spindle so that the spindle holds the jig in place. Lightly re-tighten the screws.

- While the arm is in its rest, loosen the screws that hold the cartridge just enough so the cartridge can be moved back and forth.

- Carefully swing the arm over the grid at the far end of the jig and place the stylus as close to the dot in the center of the grid as possible. Using a lighted magnifier will make this job very easy.

BE VERY CAREFUL NOT TO DAMAGE THE CARTRIDGE STYLUS:

- Move the cartridge so that the stylus rests on the dot. Now, viewing the cartridge from above, line it up so that its sides are symmetrically positioned between the lines of the grid. If the cartridge has parallel sides, these should be made parallel to the grid lines. Also make sure that the cartridge is centered between the sets of lines. Follow picture below. If you can see the cantilever clearly you can align the cantilever to the alignment grid. This is difficult and may produce no increase in sound quality.



REMEMBER: YOU ARE ALIGNING THE CARTRIDGE NOT THE HEADSHELL

- Double check the adjustments made above. The cartridge needs to be both centered and "square" between the gird lines and have the stylus resting on the dot or very close to it.

- The alignment gauge does not have a hole or dimple to hold the stylus. While the printed dot makes it harder to keep the stylus in place, this method was chosen to avoid the possibility of damaging the stylus cantilever or the diamond tip as the cartridge is positioned.

- Place the arm back in its rest.

- Without letting the cartridge move, tighten the screws holding the cartridge to the arm head. Do not over do it as you will damage the JMW-3D arm headshell.

D- TRACKING FORCE (VTF):

- Tracking force is adjusted by moving the counterweight forward and back just a bit at a time. A little light oil on the counterweight shaft will let you move the counterweight easier and you can wipe it up when done.

- The JMW-3D tonearm does not have a built-in tracking force gauge, but a Stylus Force Gauge is supplied with your complete arm on a new unit.

- **A stylus force gauge does not come with the purchase of just an armtube**.

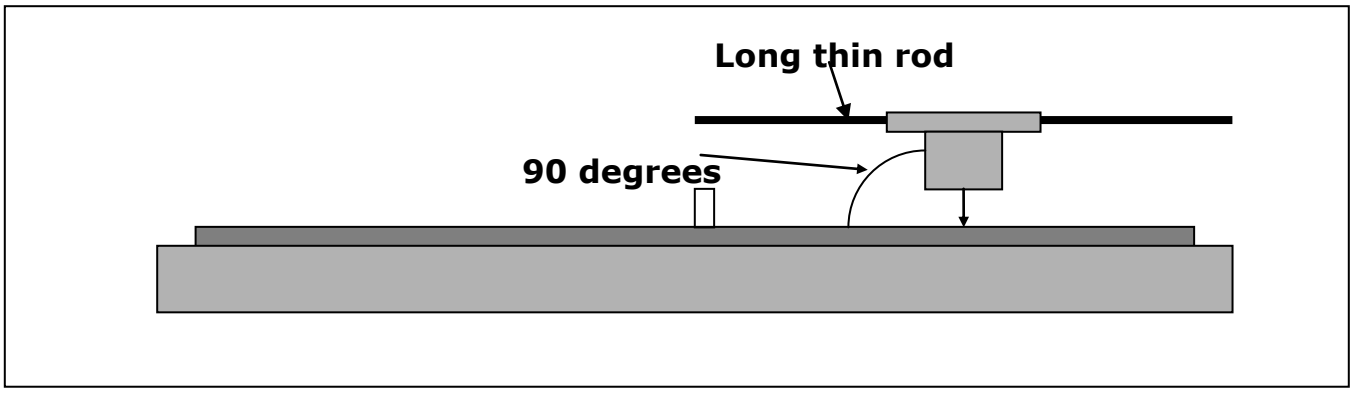
- Following the gauge instructions set the tracking force to the cartridge manufacturer recommendation plus 1/10 of a gram more. We always recommend going to the high side when it comes to tracking force. High frequency vibrations can cause a light-tracking cartridge to cause more damage to the grooves than running a cartridge at a heavy setting.

VERY IMPORTANT: MAKE SURE THE HEADHSELL IS PARALLEL TO THE PLATTER WHEN SETTING THE TRACKING FORCE. IF IT IS NOT THE END RESULT WILL BE HIGHER OR LOWER VTF THAN YOU WANTED.

E- AZIMUTH ADJUSTMENT

- Next, the lateral balance or azimuth must be set. Because the phono cartridge is offset, there is an unbalancing force that tilts the arm to one side. For the cartridge to properly track the record groove, the stylus must be ninety degrees to the record surface. Move the counterweight so a slight tracking force is applied and the stylus just sits on the record surface.

- Rotate the counterweight as needed to bring the arm into correct lateral balance to set azimuth. When the azimuth has been set, you can lightly tighten the setscrew located on the top of the counterweight. Lay the long thin rod supplied behind the cartridge mounting screws into the V groove and use it as a guide for setting azimuth.



- Unlike other unipivot arms, the JMW-3D lateral balance weight does not hang off to the side of the arm. Instead, its position around the bottom of the upper bearing housing places the weight below the pivot point. This increases mass below the pivot and increases arm stability.

F- ANTI-SKATING:

REMEMBER: THE JMW-3D ARM NEEDS VERY LITTLE ANTI-SKATING FORCE IF ANY AT ALL!

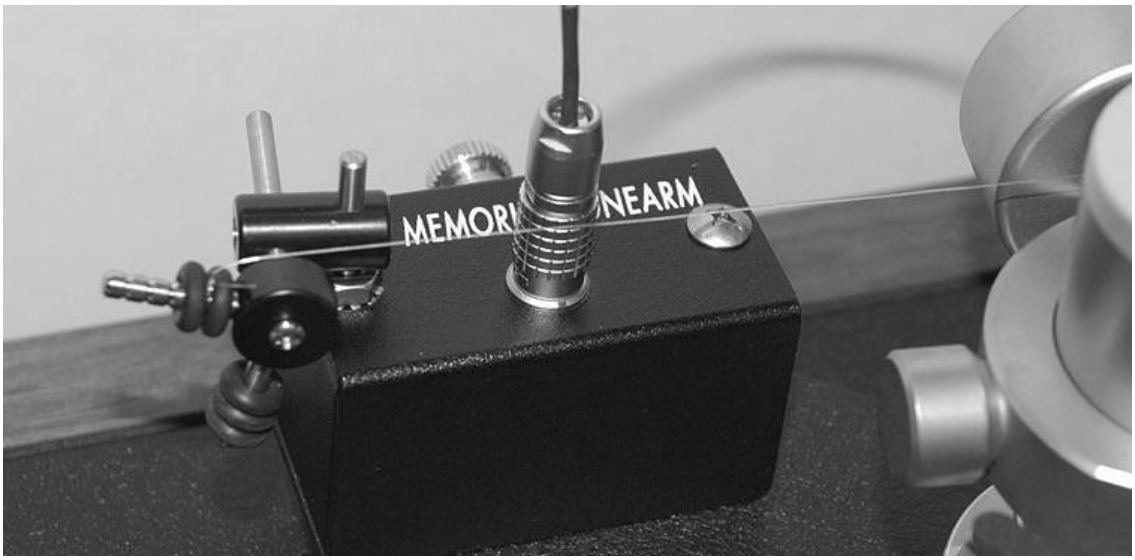
- VPI has conducted careful listening tests over the last 20 years manufacturing tonearms and determined that every tonearm we tried sounded better with its mechanical anti-skating disabled and the tracking force very slightly increased.

VPI has a unique solution to anti-skating: the coiled wire of the JMW-3D tonearm acts as a spring and pushes the arm back without affecting the sound quality.

- Adjust the counterweight so there is no down force on the cartridge.
- Swing the tonearm toward the spindle and release it. The arm should swing out toward the outer edge of the turntable.

⚠ If you try adjusting the anti-skate with a groove less record, you will ruin the twist in the tonearm wire and void your warranty. Do this with the mechanical anti-skate if you want that much anti-skate.

- **IF ADDITIONAL ANTI-SKATE IS NEEDED FOR WORKING WITH TEST RECORDS YOU CAN GO TO THE MECHANICAL ANTI-SKATE SUPPLIED BUT WE DO NOT RECOMMEND IT FOR LISTENING!!**



G- ARM HEIGHT:

Unlike many tone arms, the JMW-3D height is both easy and repeatable to vary. The knob next to the bearing housing bears a scale numbered from zero to ninety-nine. Below the knob there is an index mark engraved on the front of the support pillar.

Rotating the knob clockwise lowers the arm and rotating it counterclockwise raises it.

Set the arm height as follows:

- First take a 3X5 lined index card, bend it on the long side, stand it up on the record so the lines are parallel to the record surface. Loosen the two thumbscrews on the arm base, lower the arm onto the record and make the headshell parallel to the lines on the index card by rotating the arm-height knob as needed.

- This is a good initial setting. You may wish to vary it depending on the cartridge you are using and or the particular record being played. The knob's scale makes it easy to return to a previous setting by making a note of the number above the index mark and the number of complete turns taken.

- The old wisdom, which had the arm tube parallel to the record surface, assumed not only that all cartridges had the same internal geometry and stylus rake angle but also that all records were cut with the same equipment set the same way. The idea was that everything would line up properly with the arm parallel to the record.

- If you have a gentle touch (so as not to bounce the turntable) you can simply vary the arm height while listening to the record and catalog the changes in sound you get while doing this. There is one perfect spot for each record and cartridge combination. Depending upon your patience and other mental factors, you could go through this process for every record you own. Or, as most of us do, you can find a setting that works for most records and sit back and listen to the music.

THE ARM HAS TWO BLACK THUMBSCREWS FOR LOCKING THE VTA SETTING ONCE YOU ARE DONE ADJUSTING. LOCKING THE ARM WILL GIVE THE BEST SOUND WITH THE TIGHTEST CLEANEST BASS. REMEMBER, WHEN MOVING THE VTA UP OR DOWN YOU MUST LOOSEN BOTH THUMBSCREWS.

H- CONNECTING TO THE PREAMPLIFIER/AMPLIFIER

- ONLY USE INTERCONNECTS THAT ARE SHIELDED AND PROPERLY GROUNDED. NON-SHIELDED INTERCONNECTS CAN HUM AND PICK UP RF.

- The ground connection is available to eliminate hum if necessary. If hum is present, first connect a ground lead from the connector block to the preamplifier or amplifier to which the output cable is connected. If this does not eliminate the hum, run a ground wire from the turntable chassis to the connector block as well. The block's connector will accept bare wires, spade lugs, or ring tongue connectors.

THE WARRANTEE ON THE JMW-3D ARM IS FIVE YEARS PARTS AND LABOR. MISHANDLING OR MODIFICATIONS VOIDS THE WARRANTEE.