

JMW 10 AND 12 Tonearms

Setup and Instruction Manual



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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 tone arm. The internal arm wire is exposed at the headshell and at the rear of the arm. This wire is **very** delicate and contains 64 strands of very pure copper. Physical damage to the wire is not covered by the warranty after the arm is removed from its box.

The bearing point is very sharp, be careful.

There are a number of setscrews on the JMW Memorial Tone Arm. The Allen wrenches that come with your arm will only fit the setscrews that you will need to adjust. All other 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.

**DO NOT PUT THE DAMPING FLUID IN THE ARM UNTIL YOU
ARE FINISHED WITH ALL THE ADJUSTMENTS**

CARTRIDGE MOUNTING:

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.**

FOR ALL 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 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
GREEN = right ground

WHITE = left hot
BLUE = left ground

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

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 COUNTERWEIGHT:

The JMW tone arm comes with one large counterweight installed on the rear shaft of the tonearm. For most cartridges you will only need this large weight. The rear shaft is very finely threaded, and the counterweight mates to the thread by two rubber "O" rings.

For now, position the large counterweight as close to the bearing housing as possible (toward the front of the arm) but not touching the azimuth 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. Contact your dealer if a second counterweight is needed.

BALANCING ARM: TRACKING FORCE AND AZIMUTH

Place the arm tube assembly on the lower bearing, taking care not to strain or damage the 4-color wire and Lemo connector. 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.

Depending on the twist given to the wire when the plug was inserted into the box, the arm will have a tendency to swing inward or outward when it is in neutral horizontal balance. Later on, you will adjust the wire's twist to provide slight anti-skating compensation.

Make sure the turntable is level. Refer to your turntables 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. This insures that the damping fluid will not even come close to overflowing its well.

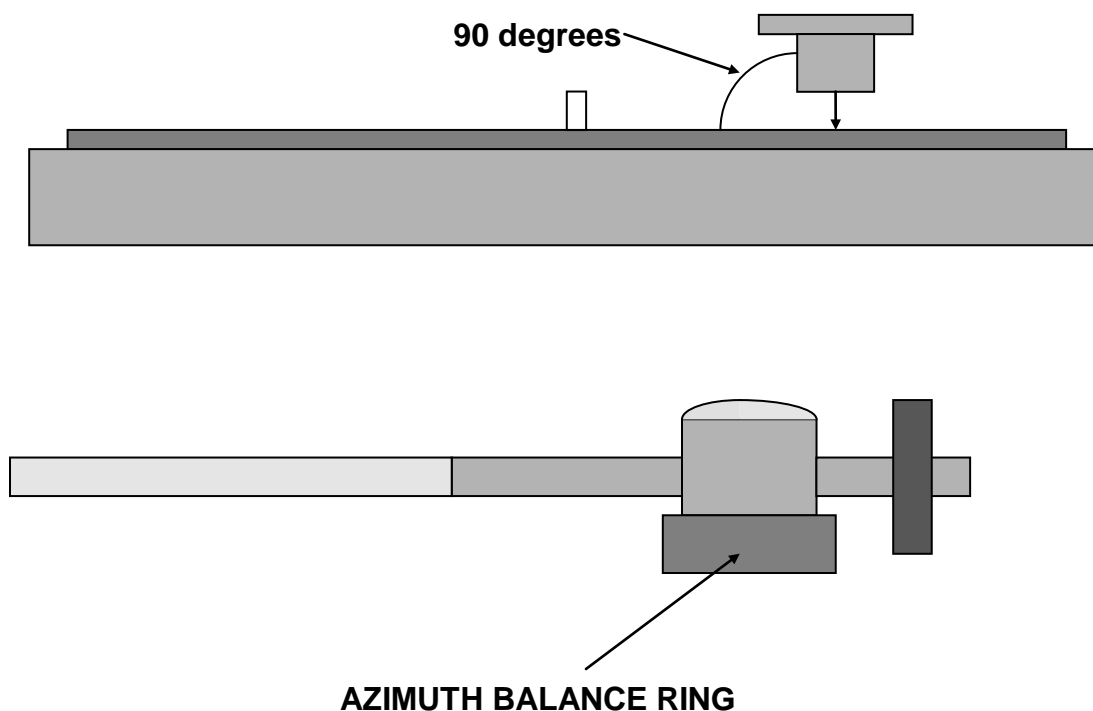
Tracking force is adjusted by moving the counterweight forward and back just a bit at a time on its thread. At least initially, you will be setting the tracking force twice. The first time will be before the cartridge's overhang is set. After this is done, you will need to double check the tracking force and adjust it as needed.

The JMW Memorial Tone Arm does not have a built-in tracking force gauge. You can use any of the after market gauges available. Following the gauges instructions set the tracking force to the cartridge manufacturers recommendation. 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. Make sure the damping fluid is not installed when setting this force.

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. Rotate the counterweight so a slight tracking force is applied and the stylus just sits on the record surface.

At the bottom of the arm tube (upper) bearing housing is a ring with one flat section. Rotate this ring (see figure below) as needed to bring the arm into correct lateral balance. When the azimuth has been set, you can lightly tighten the set screw located on the side of the ring. To make this task easier make sure the arm tube is parallel to the record surface.



TIP! The arm will tilt away from the flat portion of the ring. Turn the flat towards the side of the arm that is hanging down.

Unlike other unipivot arms, the JMW's 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.

ANTI-SKATING:

One of the least understood forces acting on a tonearm is anti-skating. Skating force is created by friction between the stylus and the record creating a force vector in a direction towards the center of the record. Putting a stylus down on a flat grooveless record will cause the arm to shoot in toward the center of the record. For years arm manufacturers have been trying to compensate for this force knowing full well that it is impossible. The force is constantly changing as the music and the velocity changes.

After very careful listening tests we have determined that **every tonearm we tried sounded better with their mechanical anti-skating disabled and the tracking force very slightly increased.** All mechanical anti-skate devices add a negative sound to the music because they are made of parts that can vibrate. We solve the problem in a unique way:

As mentioned earlier, the arm wire applies the anti-skating force. The degree of force applied can be adjusted, to increase anti-skating force give the connector a counterclockwise twist, unwinding the wires natural twist. Likewise, to decrease the force, give the connector a clockwise twist, winding the wires natural twist. Remember, the Lemo connector can only be "adjusted" in increments of whole turns. If it is not, its key will not line up with the groove in the receptacle.

If you try adjusting the anti-skate with a grooveless record you will ruin the twist in the wire and void your warrantee

This is all you need for anti-skating.

OVERHANG ADJUSTMENT:

This adjustment will yield the lowest overall distortion 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.

Loosen the two screws in the jig and place into position by sliding the "V" cutout between the arms lateral balance weight and the platform that supports the armrest. Put the hole over the center spindle of the turntable. Make sure that the jig's cutout fits against and around the bottom of the bearing well. Retighten the screws.

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's 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.

Double check the adjustments made above. The cartridge needs to be both centered and "square" between the grid lines and have the stylus resting on the dot.

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 and without letting the cartridge move, tighten the screws holding cartridge to the headshell. Make it tight, but don't over do it and strip the threads or distort the cartridge body.

Double check the horizontal balance, lateral balance, and tracking force and adjust as needed. Increase the tracking force by 1/10 of a gram above the cartridge manufacturer's highest recommended force. See Sections D and F above.

ARM HEIGHT:

Unlike many tone arms, the JMW's 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:

Start the turntable and place a record on it. Lower the arm onto the record and make the arm tube parallel to the record surface 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.

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 the changes in distortion that results. 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.

On the platter side of the adjustment knob's housing is a thumbscrew. When finished with adjustments tighten this thumbscrew as much as possible by hand.

ADDING DAMPING OIL:

Among the things you unpacked earlier was a "Q" tip. Take this and sweep out the well around the pivot in the arm base assembly. After this is done, throw out the swab.

Find the bottle of special damping fluid. Remove its cap and put in enough damping fluid to fill the cup 3/4 full. (Do not add more fluid than called for. If the well is overfilled, fluid will overflow when the arm tube is set in place.)

The amount of fluid damping needed is very dependent on the amount of damping that the cartridge cantilever has. A heavily damped cartridge needs less damping fluid than a cartridge with only minimum or no damping. Try experimenting with fluid levels if you feel the sound to be constricted (overly damped), remove some of the fluid. If the opposite applies, add some fluid for greater damping.

MISTRACKING IS USUALLY CAUSED BY FLUID THAT IS TOO THICK. DURING COLDER MONTHS YOU WILL GET MORE CONSISTENT SOUND IF YOU THIN OUT THE FLUID IN THE DAMPING WELL. ADD TWO DROPS OF 40 WEIGHT MOTOR OIL TO THE FLUID AND MIX THEM TOGETHER.

CONNECTING TO THE PREAMPLIFIER/AMPLIFIER

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

The connector block at the rear of the arm base has, in addition to the Lemo receptacles two phono receptacles and a ground connector.

Plug one end of the output cable into the phono jacks. The jack with the red ring is the right channel and the jack with the black or white ring is the left.

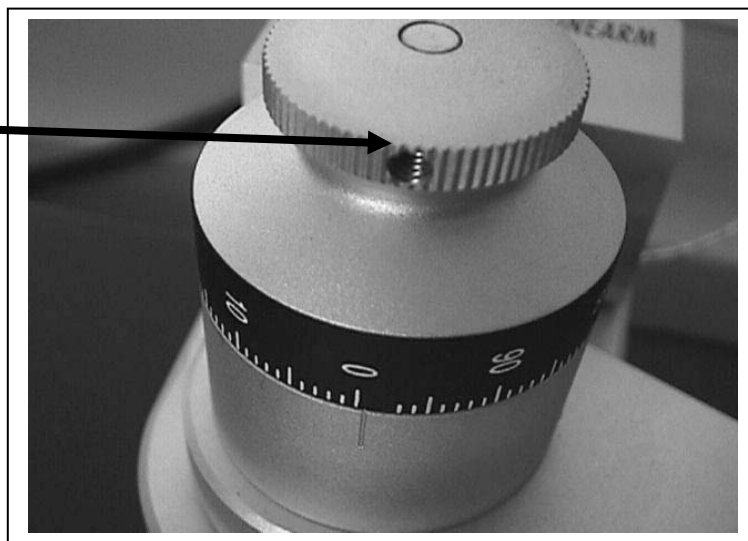
Plug the other end of the cable into the turntable inputs on your pre-preamplifier, preamplifier, or integrated amplifier as appropriate.

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 PROPER WAY TO ALIGN A CARTRIDGE WITH THE GRID OF THE JMW ALIGNMENT JIG. ALIGN THE CARTRIDGE, NOT THE TONEARM HEADSHELL!

SET SCREW



IF THE VTA KNOB SHOULD EVER LOOSEN UP, BACK OFF THE SET SCREW SHOWN, PUSH DOWN ON THE KNOB AND RETIGHTEN THE SET SCREW.