

Mounting Instructions Tone Arm EMT 997



The tone arm EMT 997 was developed initially as replacement for the Ortofon arms RF297 Mono and RMA297 Stereo on the turntable EMT 927. It is balanced statically and dynamically. - As the arm also was “discovered” by high quality music lovers, the version EMT 997/SME is available now for use with non EMT turntables. It's adjustment scale is coloured white on black.

In order to play a record best, the tone arm has not only to be well engineered but it must be carefully mounted and aligned too. One of the important set up steps is the overhang alignment. This is to ensure, that the pick-up tracks the record across the entire radius with the lowest horizontal tracking error in order to prevent distortions. This adjustment is done at two so called inner and outer null points on the record.

The EMT 997 tone arm is engineered to fulfil the most critical DIN inner radius standard requirement. This DIN standard (Deutsche Industrie Norm/German industrial standard) was often used for older records where more music is put onto a record to give longer playing times whereas the IEC standard is more appropriate to “audiophile” recordings.

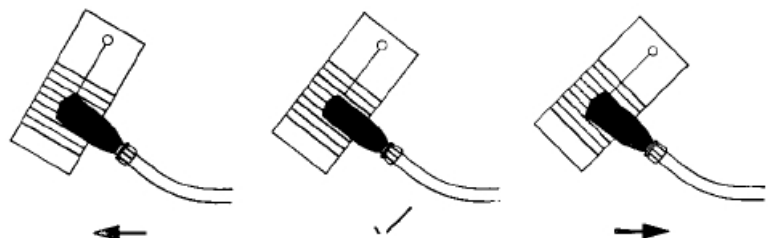
Find the correct mounting place for the arm base

As the EMT 997 was developed to be used with the EMT cartridges on an EMT 927, the distance and the overhang, respectively had been fixed. To use the EMT 997/SME on a foreign turntable you have to mount the arm base in the exact distance to the center of the turntable spindle. As user of the SME version you have the possibility to use “short” cartridges with 32mm as well as “long” ones with 50mm between the connection tube and the diamond. You will benefit most, when you decide for one length and then define the distance. This is 297mm for short cartridges and 315mm for long ones. The distance is measured between the center of the turntable spindle and center of the arm base.

To find the correct place for the arm base or for fine tuning (in case of an adjustable headshell) you may use a modified jig like shown on the last page (or any other one with marks at 57.5mm and 107mm). The lines shall be in parallel to the shell, when the diamond is placed on the center of the red mark and the black line. The image on this page shows the principle. The arrows point into the direction, in which the arm base has to be shifted. If you see image 1, enlarge the distance, for image 2, shorten the distance. However adjustment of the outer radius is less critical than the inner one.

If the correct position for the arm base is found, mount it in a way, that there is easy access to the 2 Allen screws for height adjustment (image 5, no 1).

Make use of the JIG on page 4 to find the hole positions.



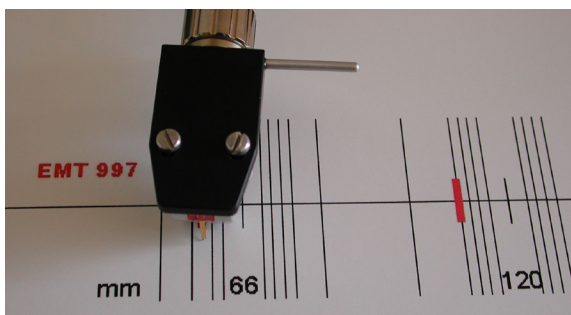


Image 1: Distance too short

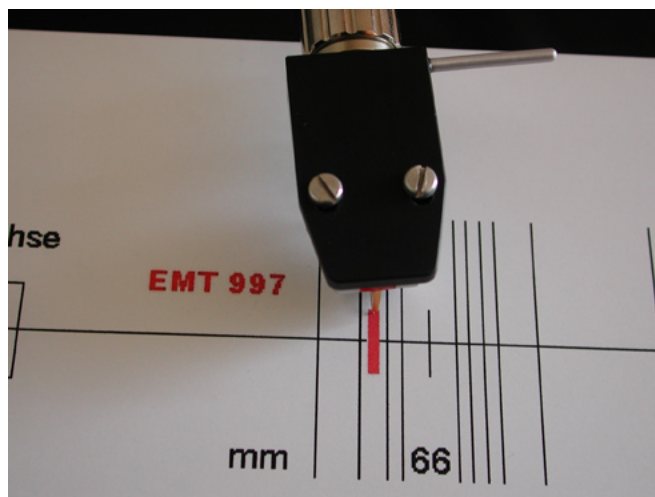


Image 2: Distance too far

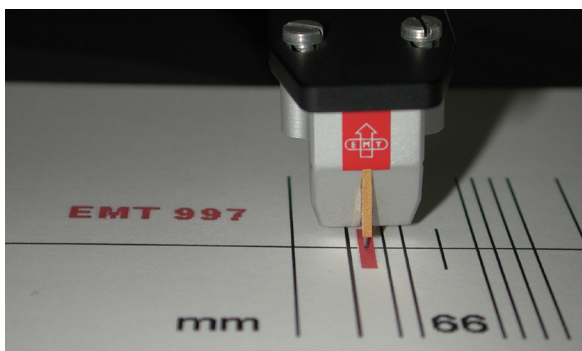


Image 3: Distance ok, the shell's edges are in parallel with the lines on the jig

Height adjustment

After installing the arm base you may insert the arm carefully. Move it to a height, that the upper surface of the shell is in parallel with the surface of the record while in play position. Tighten the Allen screws carefully (image 5, no 1).

Electrical connection

Solder the connecting wires to your desired connection sockets

white:	left+	red:	right+	transparent:	Shield
blue:	left-	green:	right-		

Balance adjustment and setting the tracking force

The counter weight is mounted on the tube section at the rear end of the tone arm and is secured by means of the center screw; the end having the felt ring must be towards the front. Install the cartridge in the tone arm. Set the lever for adjusting (image 4, no 1) the tracking weight to "0" position (image 4, no 2). Displace the counter-weight by turning it on the tube end of the tone arm (image 5, no 3) so that the stylus tip balances exactly in the plane of the record when the tone arm support is lowered. Additionally, one of the small counter-weights may be screwed into the counter weight holder (image 4, no 3). Fix counterweight in this position by gently tightening the Allen screw (image 4, no 4).

Set the lever (image 4, no 1) at the side of the pick-up arm bearing cover to the appropriate nominal value of tracking force.

Anti-skating device:

With any tone arm a certain undesirable force, known as skating force is produced due to the tracking angle and the friction between stylus and disk. The magnitude of this force is about 1/10 of the tracking force in use and causes the pick-up stylus to be pressed somewhat more against the inner (left hand) groove wall. The tracking force on the right hand groove wall is therefore a little less than on the left hand groove wall.

For a high-class tone arm, like the EMT 997 which means, with low friction of the bearings and a negligible torsional force of the leads, it is feasible and desirable to neutralize the skating force particularly. First of all if heavily modulated grooves are to be traced (e.g. mid and low frequencies) with a stereo pick-up system using the nominal tracking force. The anti-skating device for the EMT 997 consists of a small weight fixed to a nylon thread which reacts, via a lever, on the pick-up arm; thus producing the required counter-force.

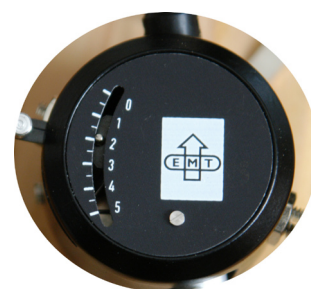
Attaching the anti-skating weight:

Below the wire eyelet on the vertical bearing has to be either enough space or a hole, where the anti-skating weight with the nylon thread has to be fed through. In case of a hole the little plexiglass disk will prevent the weight from falling through. Thread the nylon thread into the wire eyelet (on request a longer eyelet is available), and hang the noose at the end onto the notch on the lever, according to the tracking force. The inner one corresponds to 2p, the middle to 2.5p (image 5, no 2) and the outer one to 3p tracking force.

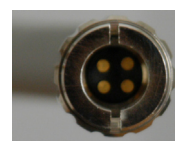
Technical Data:

- Effective length: 307mm with short body cartridge
- Overhang: 10mm
- Effective mass: approx. 35g
- Tracking force: 0-5p
- Possible weights of cartridges: 17-32g
- Available tone arm bases: Height 14mm or 25mm
- Available counter weights: Own weight 207p or 260p
underlined means standard accesories

Additional counterweights "T" and "OF" available only on request



Scale for tracking force



Cartridge connection

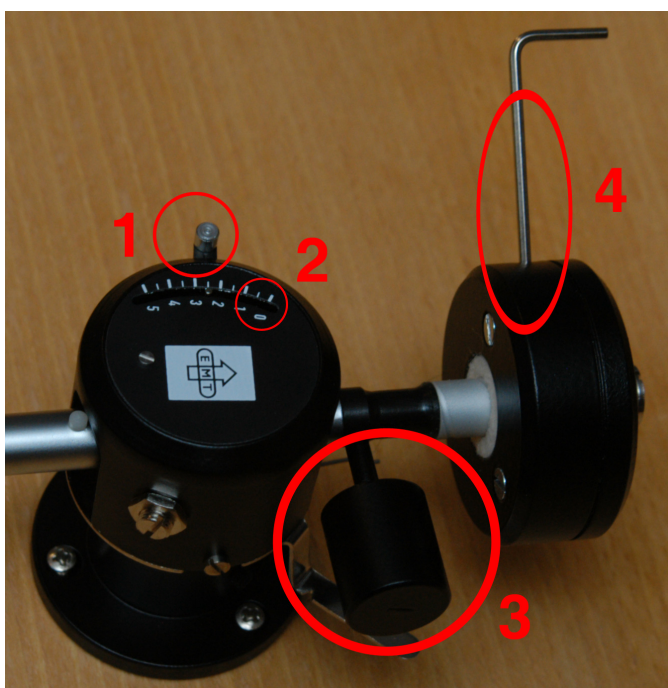


Image 4

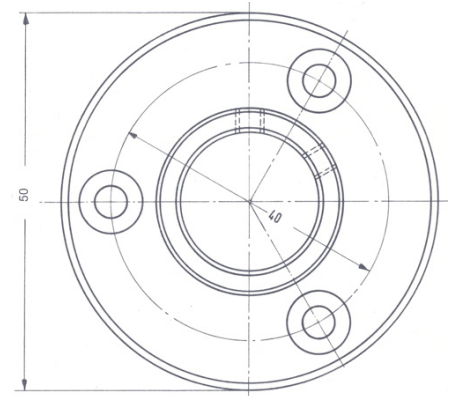
Image 5

EMT 997 Tone arm mounting aid

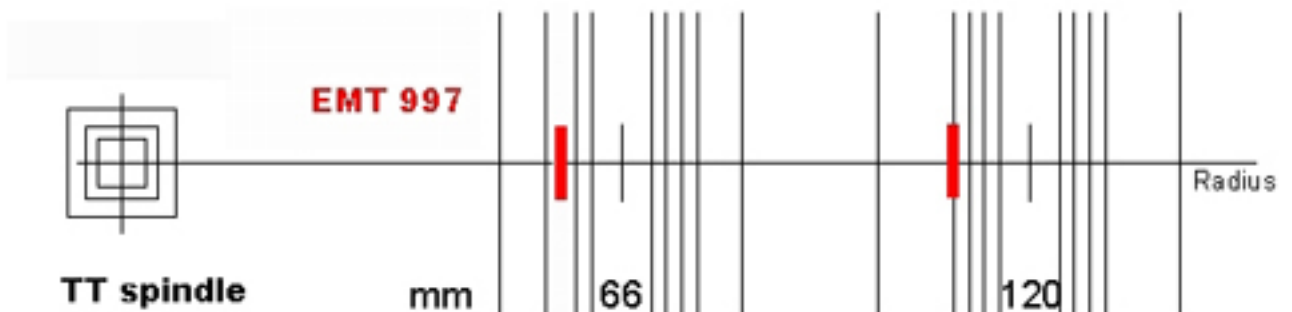
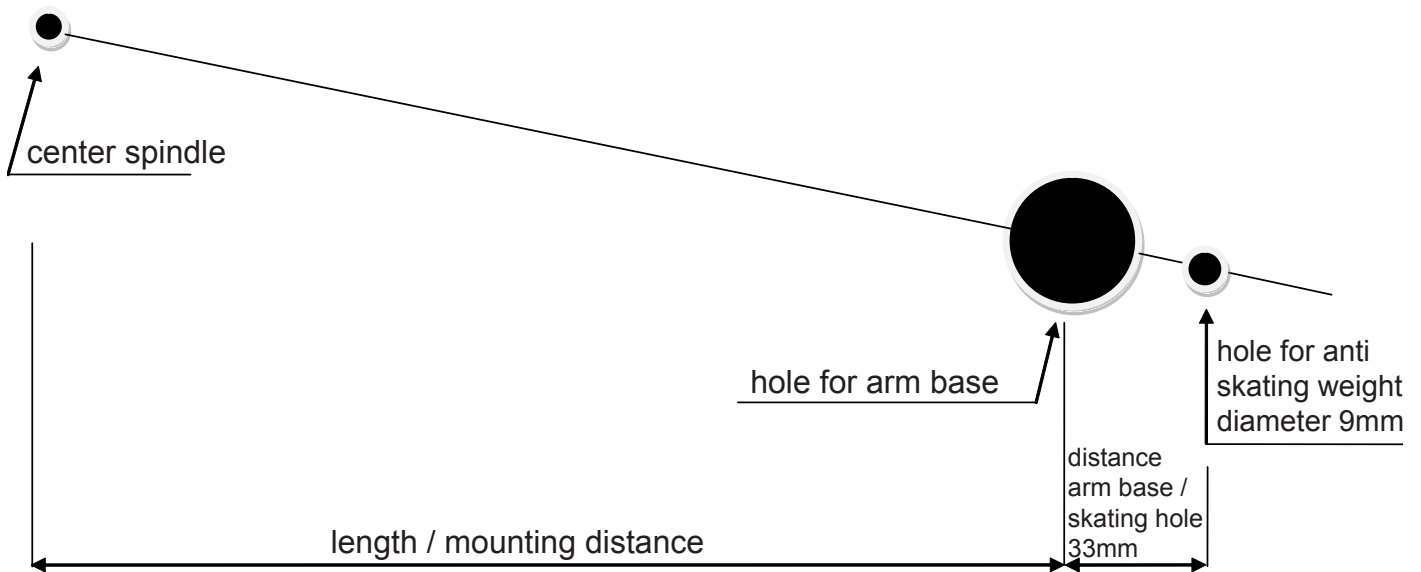
Before mounting the arm base on non EMT turntable you have several holes to drill:

- 1) 3 holes to fasten the arm base (diameter depends on the screws to be used)
- 2) 1 hole for the vertical bearing of the tone arm (diameter = 22mm)
- 3) 1 hole for the antiskating weight (diameter = 9mm)

The outer diameter of the base is 50mm. The diameter of the circle with the 3 fixing screws is 40mm. You can cut out the gauge and use it to determine the fixation holes. Please take care to position the base in a way that you have always access to the hex screws to fix the vertical bearing in the arm base. Before fixing the vertical bearing make sure the arm can be moved without any limits across the record. Now you can also drill the hole for the antiskating weight directly below the eye of the guiding spring.



JIG for tone arm base



JIG for overhang adjustment

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