Audiomods tonearm kit II build

Your arm kit comes as a set of complete sub-units that have been carefully tested before shipping. You should be able to complete the arm build with the minimum of tools: allen keys, screwdriver and small sockets for spacers.

Tools

Arm tube preparation and polishing

Fine file (half-round is best)

Wet-and-dry abrasive paper: 400, 600, 1200 grade

For drilling: 3.5, 3. 2.5. 2. 1.5mm drills, A small bench drill and vice or "V" block is best.

For polishing, suitable buffing wheels with green and blue grade polishing compound are the best method.

Building

Allen keys, 1.3mm, 1.5mm, 2mm, 3mm

7/32" or 5.5mm socket for bearing nuts

Small sockets or tubes for use as spacers

Wiring

15-25W soldering iron

Stiff wire for guide wires

Tweezers

Fine-nosed pliers

Contents

Building the kit

Setting up the finished arm

Audiomods tonearm kit II build

Modify the arm tube

Preparing the armtube is the most time-consuming part of the build.

Polishing the arm tube

There is no sonic advantage in polishing the arm tube, it just looks nice. The other modifications to the arm tube are what affect the performance. Unless you have access to some simple power tools, polishing is a long job!

It is best to polish the arm tube before drilling to avoid rounding off the edges of the holes. You can touch up any small scratches after the tube work is finished.

To polish the arm tube:

- First file off any casting marks, particularly around the headshell and the bearing journal

- If possible, use an old counterweight stub and chuck the arm tube in lathe, supporting the headshell end with a suitable rod through the wiring hole, held in the tailstock (essential). You can turn the arm tube around by hand to work on the casting marks and then spin it to smooth the tube with wet & dry papers.

Without the help of a lathe, it is best to hold the arm tube very lightly in a vice. Use rubber jaws or wrap the arm tube to protect it. An old counterweight stub or a short piece of M12x1 threaded rod will help.

- Use 320 through 1200 grade papers to smooth off the armtube.

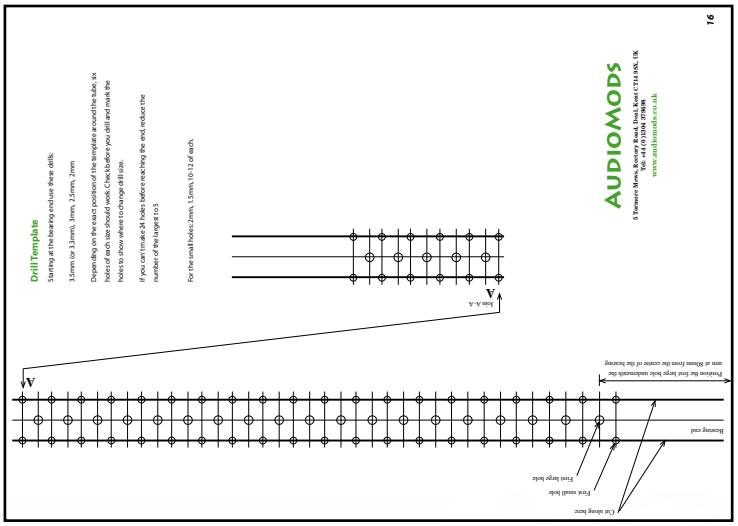
- Polish using medium and fine buffing wheels/compounds in a bench grinder (best) or a power drill. It is possible to use a dremel-type tool, but it will be a slow job!

Drilling the arm tube

The hole pattern is important because it is the one that reduces the siffness of the tube least. The hole pattern has been carefully refined for the most effect and the holes:

– reduce the arm tube mass slightly without affecting the stiffness, letting it store less energy.
– allow the arm tube to expand a little when the internal bracing discs are inserted. These put the whole arm under tension and are very important for controlling the bass resonance – measured at more than 25dB down over the RB1000 in the low bass.
– help control standing waves at high frequency by breaking up the path along the surface.
– Overcome an issue where the primary mode of the air volume inside the arm is very close to the basic frequency of the arm tube.

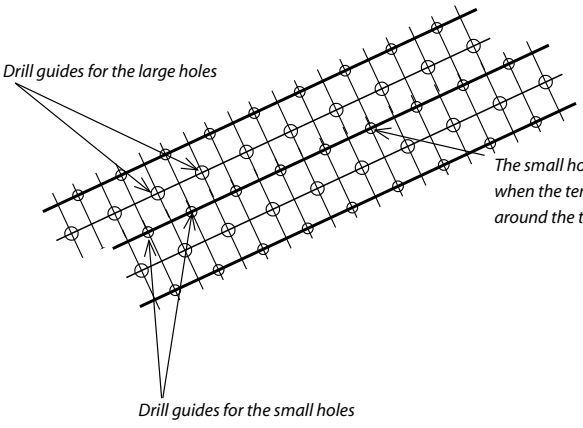
Audiomods tonearm kit II build

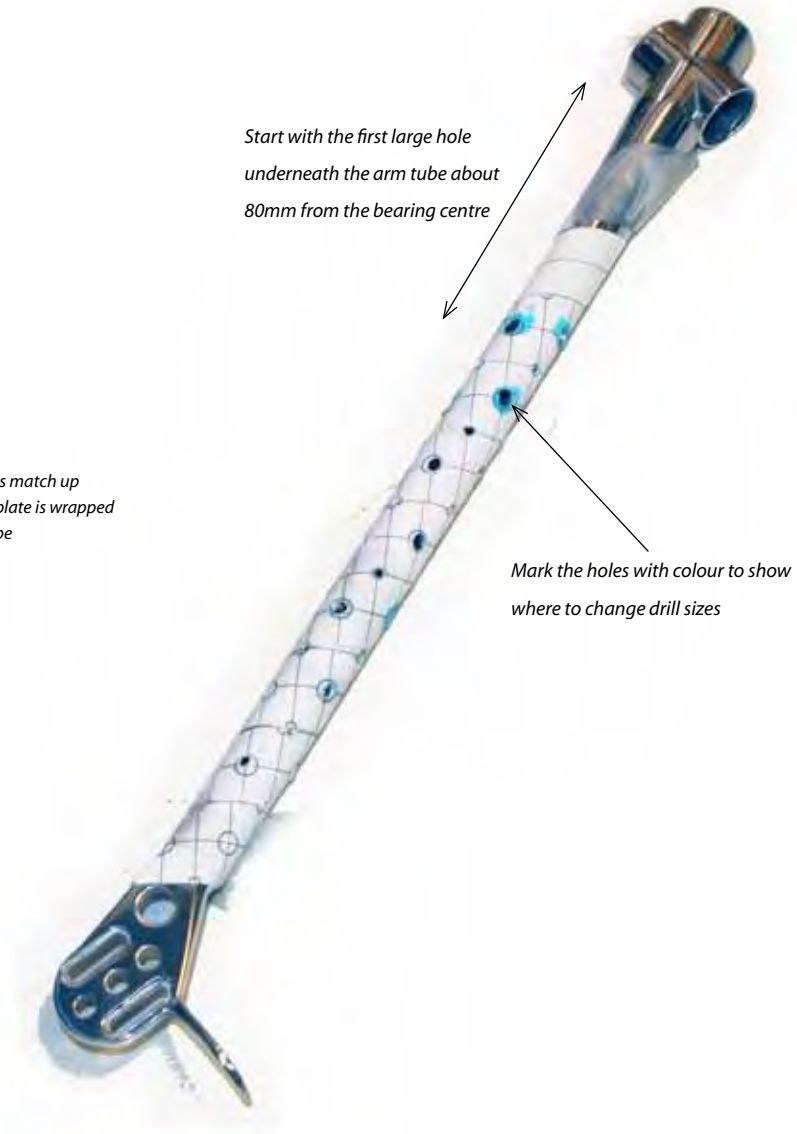


When you are happy with the polished finish, drill the tube using the drilling template from page 16 of this manual. The size and number of holes need not be exact, but both size and pattern does have a major effect on the performance in the 500-1500Hz band.

The best way to do this is with a bench drill and machine vice or "V" block, but it has been done with a hand-held Dremel.

Take the printed drilling template and cut it into two strips. Join the ends A-A to make one long strip. This is much longer than you will actually need.





Wrap the strips around the arm tube in a spiral with the first hole underneath the arm at about 80mm from the centre of the bearing hole. The angle of the spiral is correct when the little holes match up, though this does not need to be exact. When you're happy with the wrapping, fix the paper with tape at each end. You can now count around the arm tube to find where to change the drill size. Starting at the bearing end, five holes of 3.5 (or 3.3) mm, then six each of 3mm, 2.5mm and finally 2mm at the headshell end. It's best to mark the holes with colours to show where to change drills. The exact number is not critical and you may find your count comes out a little different, For the small holes we use 2 sizes, starting at the bearing end: 2mm, 1.5mm, twelve of each (you may only need eleven).

After drilling, insert the arm bracing discs before adding the bearing carrier. These are very important for performance in the <150Hz region.

Fitting the bracing discs

This is a very effective way of controlling resonances in the arm tube and it is critical for the low-frequency performance of the arm. The discs break up the low frequency band very effectively.

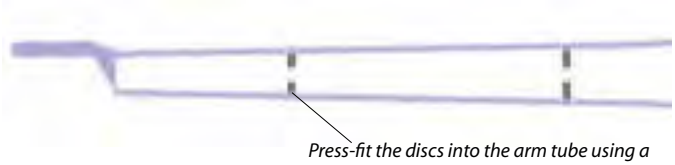
Aluminium discs are fitted into the arm tube approximately 1/3 and 2/3 along. They are of a very precise diameter, checked against the individual arm tube to fit properly. The tight fit puts the whole arm tube under tension.

Use a 4mm threaded rod and two locked nuts to fit the discs into the tube. Once the first (smallest) disc is in roughly the right place, hold the arm tube in one hand and tap the end of the fitting rod with a small hammer to firmly fix the disc in place. Repeat with the second disc. The discs should be fitted firmly so that they are an "interference fit" to strengthen up the whole arm tube.

The best place for the large (bearing end) disc is when it is far enough down the arm tube so that it clears one, or perhaps two, of the drilled holes so the the bearing end of the arm isn't a closed tube.

You should be able to place the discs within about 5mm of the ideal position, this is fine.

The discs are supplied separately in bags marked "Small" and "Large". If you should mix them up, the large one can be identified by a punched dot.



Press-fit the discs into the arm tube using a threaded rod and nuts as shown below

The best tool for fitting the bracing discs is a length of M4 (or 3/16 unf) threaded rod with two nuts locked on the end. Use this to tap the discs into place.

Audiomods tonearm kit II build

Building up the arm

Once you are satisfied with your armtube, it is time to build the arm.

Clean out the bearing journal. This should need very little work but there may be rough edges. 600 grade abrasive paper is normally all that is needed.

If there are any small bumps or pips inside the bearing hole, smooth them with a fine file. The bearing carrier is a very precise fit, so it is important that there are no high spots in the arm tube.

Don't make the hole any larger!

Install the bearing carrier.

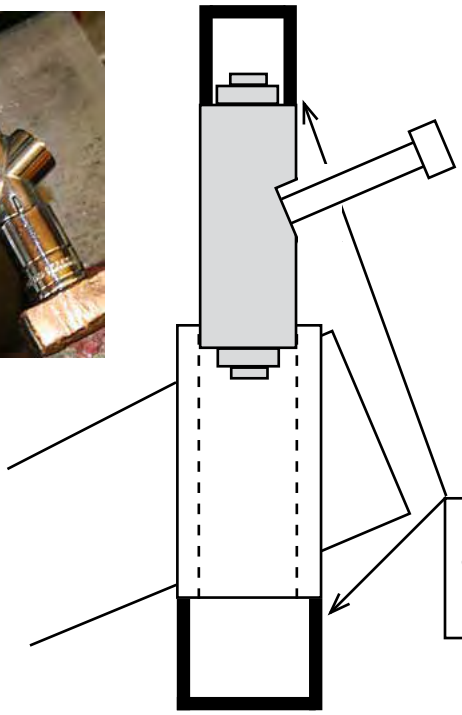
NOTE: treat the end faces of the small diameter of the bearing carrier with great care. This is the face the bearings seat on and is easily damaged, so don't press on them.

You will need a small vice or a clamp wide enough to hold the armtube and the carrier, together with spacers.

• Remove the steel bearing shaft from the bearing carrier before pressing the carrier into the arm. The shaft might be quite tight, but it does push out!

• Select two suitable spacers. Small (1/4" drive) sockets are ideal for this. One should fit over the small diameter of the carrier and rest on the shoulder. An 8mm socket should suit. The other should be large enough to allow the carrier to pass through but be small enough to rest on the rim of the armtube. Try 13mm size.

• With the armtube horizontal, the right way up and with the headshell towards the left, check that you have the bearing carrier the right way round. The easiest way to make sure is to check with the counterweight stub screw. When the screw aligns with the armtube, that's correct.



Use one spacer that fits on the shoulder of the bearing carrier and a second one that rests on the arm tube but is large enough to let the carrier fit inside

• Using your spacers, gently press the carrier into the arm tube. Stop when it is a few millimetres in to check that it is aligned properly with the armtube.

The bearing carrier has a very slight taper, so the first millimetre or two should go in with moderate pressure. If it doesn't the armtube needs cleaning out.

If you offer the counterweight stub screw up, it should make a straight line down the tube. At this point, you can twist the carrier a little if needed. Once you are sure that it's correctly aligned, press the tube home until it is centred in the arm.

Quite a lot of pressure is needed to completely install the carrier. This is normal, it is meant to be an interference fit so that the whole assembly behaves like one piece when finished.

- Now trial-fit the counterweight stub to check for fit. You may need to press the carrier very slightly in one direction or the other to centre it. If the carrier is twisted in the arm tube don't attempt to turn it! It is possible to simply press the carrier almost right out, adjust it and press it back again.

When you are happy with the fit of the carrier, fit the steel bearing shaft, the bearings and the end caps. You need to remove the counterweight stub before installing the bearing shaft. The tightness of the nuts is not critical, but they can be quite tight to soidly fix the bearings.

Fitting the counterweight stub

The counterweight stub bolts onto the thread in the bearing carrier. Armtubes have varied a little over the years so, to get a perfectly aligned fit, you may need to shorten the screw a little. The stub can move sideways a little to centre it on the arm tube.

Fit the arm lift and arm rest

Before mounting the arm tube it's best to fit the arm lift and arm rest. A spacing collar is supplied for the arm lift which fits onto the arm lift and sits underneath the arm lift plate.

To fit the arm lift: remove the plastic quadrant (1.3mm hex key). Undo the top cap of the arm lift (careful, there is a small spring inside!). Add the spacer and fit the arm lift to the plate. To avoid scratching the arm lift plate, it's best to hold the arm lift cap still and rotate the body of the arm lift until it's tight in the right position.

The bearing caps are not interchangeable so be sure not to mix them up. Mark the arm yoke and one arm cap with a small piece of tape before removing the caps.

You can identify the outside/inside edge of the caps because only the outside is polished.

Mounting the arm tube

Remove the bearing caps

Place the armtube complete with its bearings onto the arm yoke

Add the caps and screws, but don't tighten. The antiskate quadrant mounting locates under the back left-hand screw.

Gently move the armtube until it is centred across the yoke.

Tighten the caps until finger pressure doesn't move the armtube in the yoke. You shouldn't need to apply more pressure than you can with the short end of your allen key.

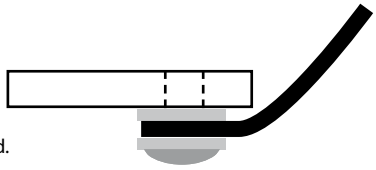
The armtube can be taken off the yoke again when you wire the arm.

NOTE: Whilst you can fit/remove the vertical bearings (the ones in the arm yoke) the horizontal bearings in the base are set up before leaving us. Don't move the screws in the bearing carrier or the three grub screws in the ring holding the top plate as these are part of the bearing adjustment.

Antiskate arm

Fit the antiskate arm to the threaded hole in the back corner of the top plate.

The arm fits underneath the plate, sandwiched between the two nylon washers. Rotate it into position when the arm is mounted.



AUDIOMODS

5 Tormore Mews, Rectory Road, Deal, Kent CT14 9SX, UK
Tel: +44 (0)1304 379698
www.audiomods.co.uk

Wiring the arm

One-piece looms

If you are using your own wiring, choose very fine. flexible wire for signal and ground. The wire should be fine enough to allow free movement of the arm. If you are using moving magnet cartridges then the total capacitance from cartridge to phono amp should be around 100 ohms.

If you decide to use a single tonearm wire/interconnect loom of the Incognito type, follow the manufacturer's instructions and wire the arm from the base up. You will still need to run a separate ground wire from the arm tube as described above because the ceramic bearings don't conduct and will isolate the arm tube.

You can adopt a slightly different technique which makes the wiring easier than with a regular arm: Take off the arm tube and fit guide wires for signal and ground wires to it. Feed the wires up through the base and install the base plug. Now solder the wires to your arm tube guide wire and lower the arm onto the yoke as you pull the wires through. Finish by adding the cartridge tags.

Ground wire

On kits with the 303 arm tubes, take the ground wire through back of the arm tube, in the gap between tube and bearing carrier, and fix it under the counterweight stub. Leave enough slack wire for easy movement.

Soldering cartridge tags

Before soldering the tags, test for free movement as shown on page 8

The best way to deal with cartridge tags is to mount the tag onto a cocktail stick held to the bench with blu-tac. Tin the cartridge tag and the wire first, then heat the tag and apply the wire.

NOTE: When you test the grounding for continuity you should find that the base, arm lift plate and arm tube are grounded. The arm yoke will not be grounded. This is correct.

Third party looms - base plug

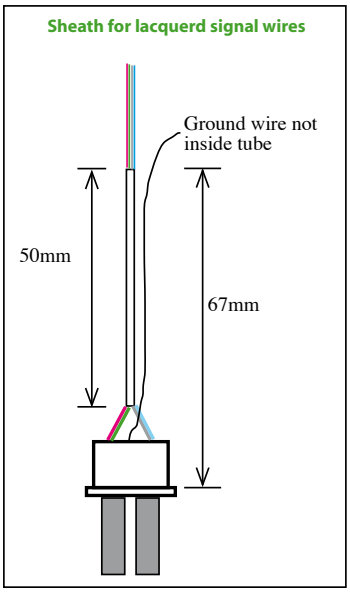
If you are fitting a commercial loom kit or a five-pin plug you will need to drill the wiring base plug to fit the locking screw.

With the loom fitted, either drill though the screw hole to a total depth of 4.5mm and tap M3 or, if you don't have the right sized tap, drill through the screw hole with a small pilot drill, then withdraw the plug enough to drill a 3mm clearance hole. When the lock screw is fitted it must go flush so that the arm can slide up and down in the mounting.

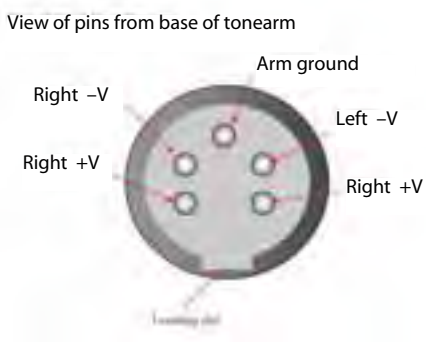
Lacquer-insulated wiring

If you are using a varnished litz wire like the Audio Note or Van den Hul, run it inside a section of 1mm clear heatshrink where it goes through the bearing shaft, also through short sections where the wire crosses the bracing discs inside the arm tube. Keep the ground wire separate. The measurements shown are important for free

It is not necessary to do this with sheathed wiring like the Cardas 33g copper.



Five-pin tonearm connection - male plug in base



Complete loom wiring.

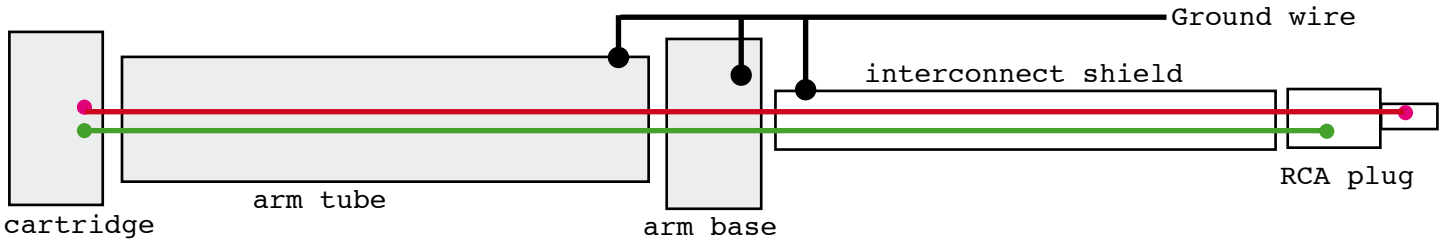
Use an interconnect section with two signal wires and a separate ground lead. The loom can be made from a single run from headshell to RCAs, or solder different tonearm and interconnect wire together in the base.

Connect the metal of the armtube, the arm base and the screen of the interconnect to the ground wire but not to the -ve wire of the signal path at all.

This gives you a complete "pseudo-balanced" system, the best for performance and hum supression.

Don't connect the interconnect shield to the signal -ve at the RCA end or the screen will be connected to the signal path

With a single wire run, this is the method used for our silver and Cardas complete looms.



Audiomods tonearm kit II build

Test free movement

After wiring the arm, test that the wiring allows the arm to swing free horizontally: Add the counterweight and weight the headshell for zero VTF. With the arm base level the arm should stay at rest when left over any part of the record area. if it swings in either direction, the wire is twisting and pulling the arm. You need to correct this or it won't be possible to set the correct antiskate.

Vertical bearing adjustment

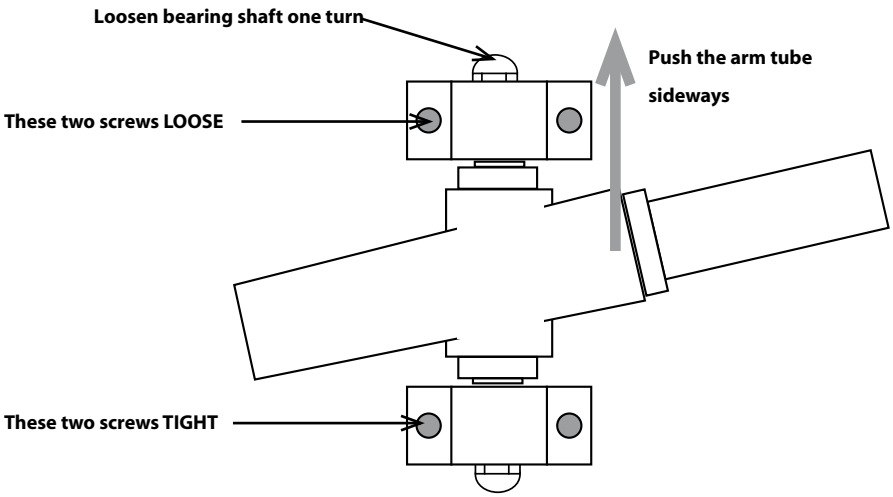
After the final assembly, check to see if there is any movement in the vertical bearings - the ones in the arm yoke. You only need to adjust them if you can detect any slack.

Follow the procedure below to pre-load the bearings.

Stage 1

Loosen one pair of bearing cap screws by about 1/2 turn, then loosen the bearing shaft nut by one turn.

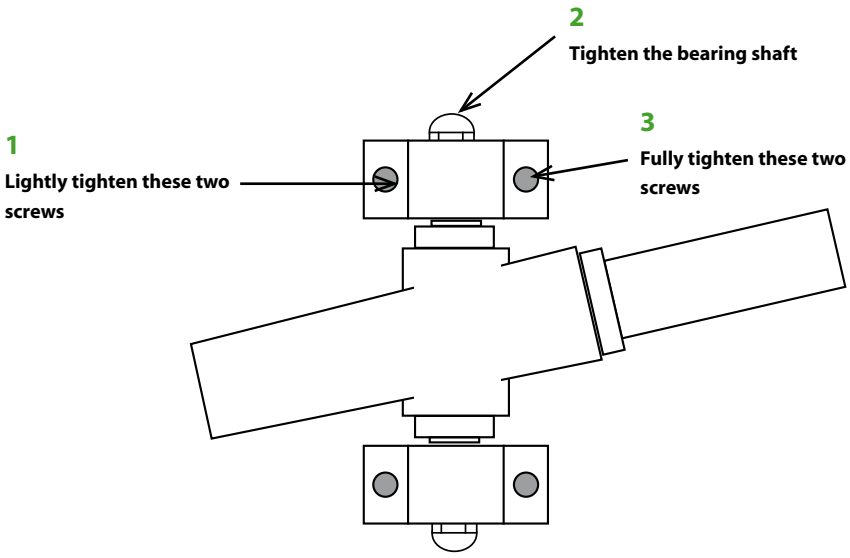
You can now push the whole arm tube to the side, moving the bearing outward.



Stage 2

Tighten the two bearing cap screws **VERY LIGHTLY** so that they just begin to hold the bearing.

Tighten the bearing shaft nuts then, without moving the arm, fully tighten the two cap screws.



Stage 3 - test

Hang the arm vertically and check that the arm tube swings freely without any tightness.

If the bearings appear tight, set the arm in the arm rest and, without allowing it to move at all, loosen the two bearing cap screws a turn and then tighten them. This should relieve the excess side load.

If the bearings still show some play, repeat the whole procedure but make the cap a little tighter at stage 2 so that the bearings get more side load.

You should be able to achieve a freely-swinging arm without any movement.

Audiomods tonearm kit II build

Mounting the arm

The arm needs to be mounted at the correct distance from the turntable spindle. If you already have a turntable with the armboard set up for a Rega arm, the existing mounting should be correct and the arm will be a simple drop-in replacement. If you are mounting a Rega-geometry arm for the first time, refer to the mounting template on page 13 or download one here: http://www.audiomods.co.uk/mountingTemplate.pdf

Mounting the cartridge

Follow the instructions that came with your cartridge for suitable mounting screws etc. The headshell takes the standard 12.7mm (1/2 inch) mounting with screws of M2.5 size. Some cartridges may be sensitive to the tightness of the mounting screws.

Treat the signal wires carefully, they are easily damaged. Hold the cartridge tag lightly with tweezers by the coloured insulation. NEVER pull the tag by the wire. The cartridge tags should slide easily onto the contact pins and make a firm contact. A few cartridges use pins of smaller diameter than normal and in that case it might be necessary to squeeze the contacts of the tags together slightly before fitting them to the cartridge.

If you are replacing an arm with Rega geometry then the mounting distance should already be correct and you only need to set up the cartridge.

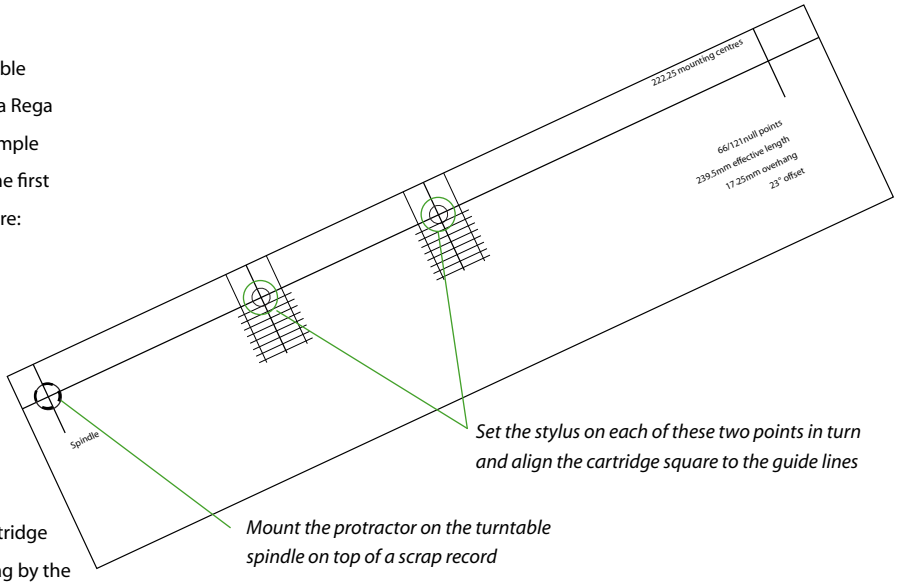
If you have an old cartridge, use it for a first setup and test. Cartridges are expensive and very easily damaged!

Pivoted arms don't hold a cartridge tangentially to the record. By setting up the arm to a calculated set of measurements we can reduce the geometrical errors to a minimum to extract the best performance. Accurate setup will make a very big difference to the results from your turntable.

The measurements we want are:
Arm Mounting (pivot to spindle) distance: 222mm
Stylus to arm pivot point (the "effective length"): 239mm

And the following settings which it is not normally necessary to measure. They should be right when the setup is complete:

Overhang: 17.25mm When the arm is over the record spindle, this is the distance from the spindle centre to the stylus tip.
Cartridge offset angle: 23° The angle of the cartridge in the headshell.



Set the stylus on each of these two points in turn and align the cartridge square to the guide lines

Mount the protractor on the turntable spindle on top of a scrap record

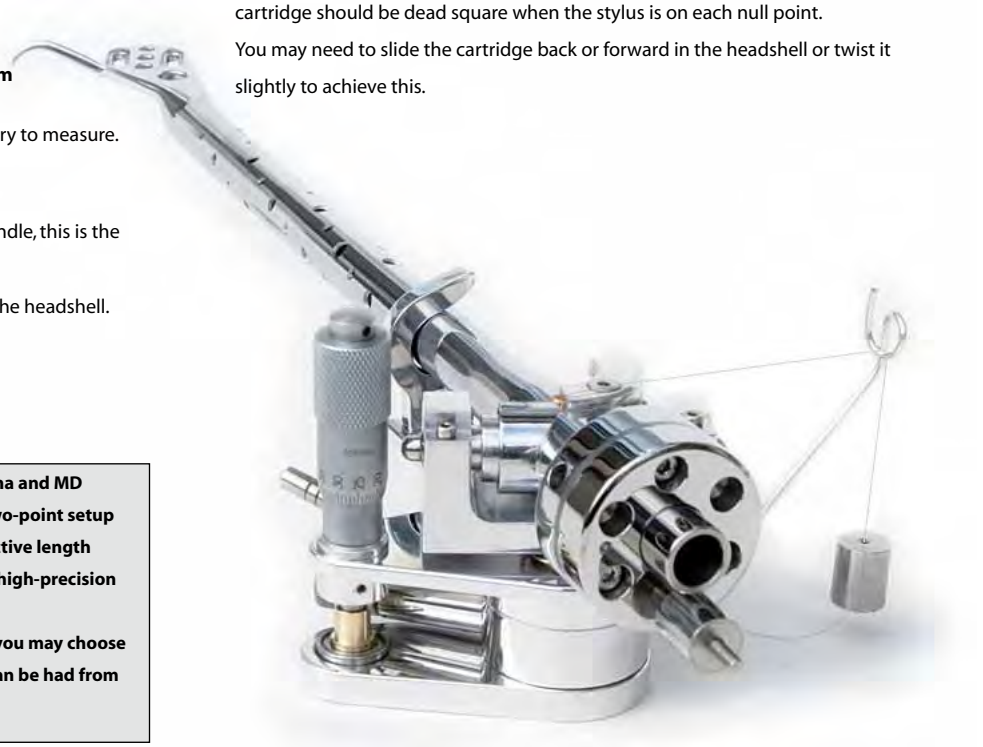
If you can't achieve the exact mounting distance, don't despair! There is a good range of adjustment available in the headshell and it can accommodate a variation of a couple of mm. If you can get the cartridge properly square at the two null points, the setup isn't far wrong!

Cartridge setup

1 Mount the cartridge. It should look nicely square in the headshell and the stylus tip should be vertically below the front end of the headshell as a starting point

2 Set a light tracking force to stabilise the arm when the cartridge is resting on the gauge. Adjust the VTA to an approximate setting.

3 Test the cartridge setup using the 66/221 null template on top of a scrap record. Rotate the platter so that the stylus can be lowered onto each null point in turn. (Don't move the platter with the stylus touching the paper) The cartridge should be dead square when the stylus is on each null point.
You may need to slide the cartridge back or forward in the headshell or twist it slightly to achieve this.



Our setup procedure is based on measurements by BV Pisha and MD Kessler and will produce very reliable results. Using the two-point setup gauge compensates for small errors in mounting and effective length but there are many setup systems available that can offer high-precision alignment to achieve the ultimate performance.
If you are happy with the technicalities of tonearm setup, you may choose to use different settings. For example, very good results can be had from Stevenson Geometry.

Audiomods tonearm kit II build

Cartridge vertical (azimuth) alignment.

The cartridge should be aligned so that the stylus is vertical in the groove looking from the front. You can check this by aligning the body against the gauge supplied with micrometer arms or by using a small piece of mirror under it.

Cartridge mounting surfaces – especially plastic or wooden ones – sometimes aren't perfect and generators and cantilevers aren't always exactly aligned within the cartridge body, so using a mirror to set up to the cantilever, rather than the cartridge body, is the best method. Adjust the setting with tiny paper slips under one mounting screw.

VTA adjustment

Though normally referred to as "vertical tracking angle" what we really set is the "stylus rake angle", or when the diamond is vertical in the groove. To make sure you are setting this correctly, set the tracking force first, adjust the VTA, then re-check the tracking force. You should make a final adjustment to the VTA by listening tests, but the best starting point and in most cases the correct setting, is when the top of the cartridge is parallel to the record surface.

Non-micrometer arms:

Loosen the VTA lock in the base and slide the arm up/down to get the required height. **Gently** tighten the screw.

If you find that you are playing the arm raised by more than 6-7mm it would be best to add a spacer beneath the base. We can supply spacers to match the base of both arm types or custom mounting plates to match your turntable.

There should be plenty of vertical adjustment to get the cartridge aligned. Depending on your cartridge, it should be set up correctly when either the front face is vertical or the underside of the headshell is parallel to a scrap record. Both tone and stereo imaging are affected by the VTA setting. Record thicknesses vary and the cutting angle changed from label to label, lathe to lathe, so it may never be perfect. You can do a final fine adjustment by ear.

Tracking weight (VTF)

Use stylus scales to set the tracking weight. You should always aim to measure the VTF with the stylus at the same height as when it is playing a record. The safest starting point is to set VTF at the manufacturer's highest setting. Records are much more likely to be damaged by too low rather than too high a force. For critical setups, the VTF can be reduced by 5-10% in very warm conditions.

To move the counterweight, loosen the inset nylon lock screw with a small, flat blade screwdriver. Roughly set the tracking force with the main weight, lightly tighten the lock screw, then adjust to the final setting by rotating the small fine adjustment weight.

Mass loading

You should match the effective mass of the arm to the cartridge that you are using. This is calculated as bare arm effective mass + cartridge and fixing screw weight. The mass you want to achieve is determined by the compliance of your cartridge. There are a number of online calculators that will give you the right figure if you input your cartridge compliance and the desired resonant frequency (usually about 10Hz). A resonant frequency of between 9 and 12Hz should work in almost all applications.

The bare Audiomods arm will have an effectve mass of between 9 and 11 grams, depending on the counterweight and its position on the stub. The effective mass goes up as the counterweight moves back. A difference of 1-2g in the total effective mass will have very little effect on the resonant frequency.

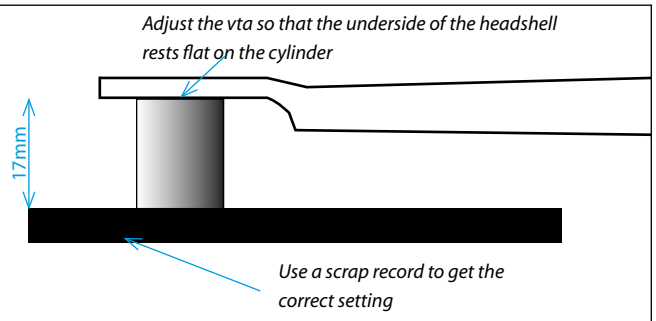
A good indicator of when extra mass is needed is the bass performance. If bass seems light, you may need to add one of the optional headshell shims.

With most cartridges you will achieve a correct effective mass without any adjustment because cartridge bodies tend to be heavier as the compliance goes down, so a high-compliance Grado at 6g and a medium-compliance Ortofon with a 10g body can both be fitted without any adjustment.

Headshell shims

A set of headshell shims can be oredered as an option to add mass when using cartridges of low compliance. These fit between cartridge and headshell.

To make a small adjustment for cartridges such as the Lyra Argo, add the aluminium shims. Moving coil cartridges with a light body like the ZYX, or ones where the maker's advice is for a medium to high mass arm, eg Benz, will benefit from the thinner copper shim. For more extreme examples (standard-bodied Denon 103, Shelter etc) the heavy shim may work best. You should not need the shims for moving magnet cartridges.



Setting the arm height - micrometer arms

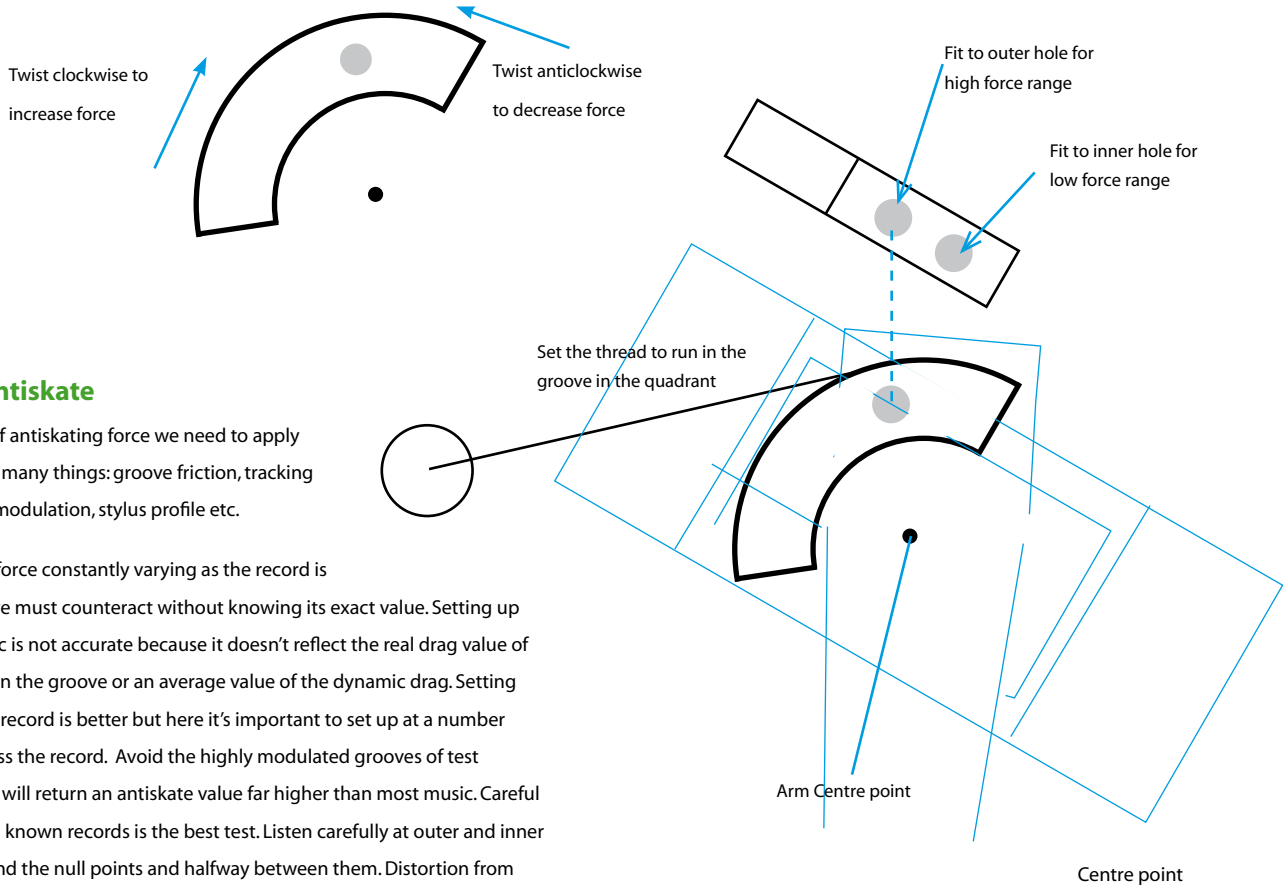
A vta setting gauge is supplied with theoptional micrometer arms to help with the initial setup.

The white plastic cylinder is 17mm high, a common measurement for many cartridges so, before you mount a cartridge, place vta cylinder on top of a scrap record and adjust the arm vta so that the underside of the headshell rests flat on the top of the cylinder. Make a note of the micrometer setting and it will give you accurate alignment with the headshell parallel for a cartridge 17mm high.

If you are using a cartridge of different height or using headshell shims, add or take off the difference on the micrometer, it is 0.5mm per complete turn.

Once the cartridge is mounted, you can do the final adjustment by ear, but you will have a reference setting to come back to.

Audiomods tonearm kit II build



Setting antiskate

The amount of antiskating force we need to apply is affected by many things: groove friction, tracking error, groove modulation, stylus profile etc.

So we have a force constantly varying as the record is played that we must counteract without knowing its exact value. Setting up on a blank disc is not accurate because it doesn't reflect the real drag value of the cartridge in the groove or an average value of the dynamic drag. Setting up with a test record is better but here it's important to set up at a number of points across the record. Avoid the highly modulated grooves of test records, these will return an antiskate value far higher than most music. Careful listening with known records is the best test. Listen carefully at outer and inner grooves, around the null points and halfway between them. Distortion from bias setup can be identified because it appears on one channel: right channel, underbiased, left channel, overbiased. A slight mismatch might be heard by the stereo image moving to left (under) or right (over).

Our quadrant antiskate does help you to optimise the force across the record, weighting it at the outer and/or inner grooves. The setting arrived at will be influenced by your cartridge and the kind of music you play.

Depending upon the stylus profile, simple acoustic music will probably be more neutrally biased, whilst orchestral or opera that tends towards crescendo on the inner grooves might need a bias weighted towards the record's centre. A high-compliance cartridge might need a bias slightly weighted towards the outer grooves. Only listening will tell.

Setting up the antiskate weight

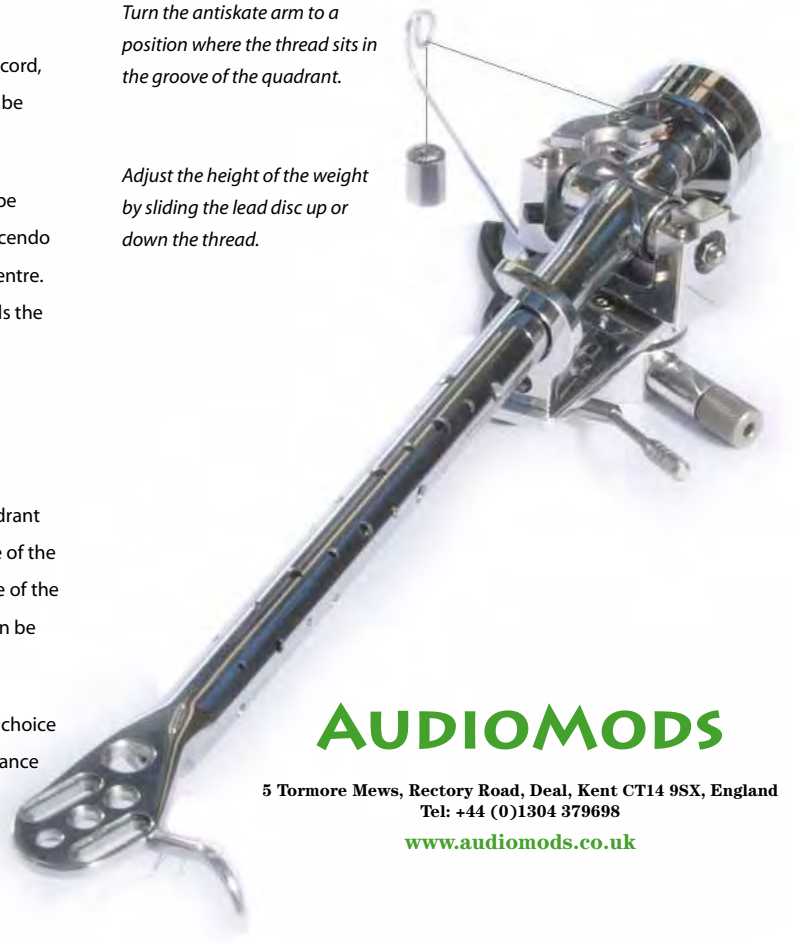
The weight and quadrant are supplied separately together with the quadrant mounting screw. Add the quadrant and hook the thread through the eye of the antiskate arm. Turn the antiskate arm so that the thread sits in the groove of the quadrant. If the antiskate weight appears too high or low the position can be adjusted by sliding the little lead disk inside it up or down the thread.

There are two mounting holes for the antiskate quadrant which allows a choice of ranges of force. As a general rule, choose the outer one for low-compliance cartridges and the inner one for high compliance ones.

The best starting point for fine-tuning the antiskate is to set the quadrant centred on the centre point of the arm tube. To increase the force, rotate it clockwise, rotate anticlockwise to decrease it.

Turn the antiskate arm to a position where the thread sits in the groove of the quadrant.

Adjust the height of the weight by sliding the lead disc up or down the thread.



Matching the counterweight to your arm

NOTE:
Depending on the cartridge(s) you are using, your counterweight may have been delivered with one or more of the lead infill discs already removed and supplied separately, along with alternative long and short screws.
Follow these instructions in reverse to add extra disks if necessary.

The kit is supplied with the heavy version of the counterweight, which has four lead fill disks and should balance cartridges of 8g or more. It is normally shipped with two disks fitted and two supplied separately, together with extra long and short screws. For very heavy or light cartridges you can add or remove one or more of the discs to match up your arm.

Changing the cartridge mass

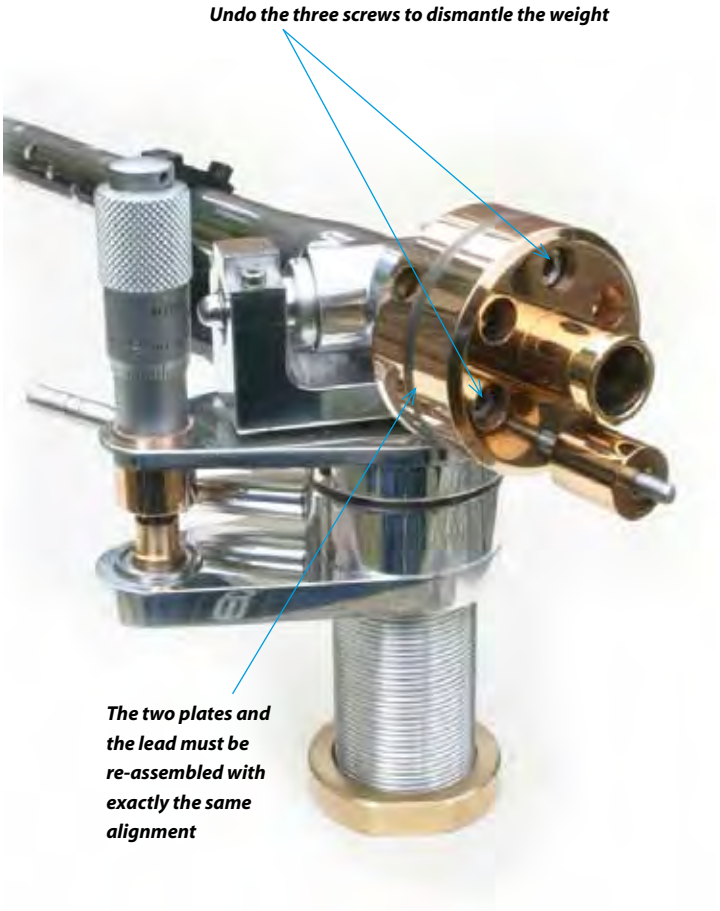
- Remove the counterweight from the arm.
- Undo the three screws holding the counterweight together.
- If you lightly tap the weight on your work surface one of the end plates should separate from the lead fill discs.

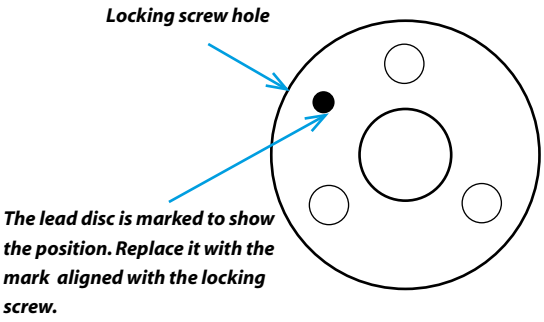
Each disc has a punch mark on it to show the alignment for re-assembly.

To remove a disc use a very sharp, fine blade like a scalpel or an instrument screwdriver to separate a disk. Do this from the centre or from the screw holes to avoid marking the outside of the discs.

Re-assemble the counterweight, making sure that the lead disks are in the same position as before. Only fit the screws very loosely so that all the parts can move a little. Don't tighten them. For one disc, use the shortest screws, 2-3 discs medium screws, all 4 discs, the long screws. Slide the counterweight over the stub and tighten the screws. If the weight doesn't line up properly then a disc is rotated or flipped out of its original position.

Keep the spare discs carefully and they can be added again if needed.





AUDIOMODS
5 Tormore Mews, Rectory Road, Deal, Kent CT14 9SX, UK
Tel: +44 (0)1304 379698
www.audiomods.co.uk

Service notes

Cleaning

Finger marks can be cleaned using liquid lighter fluid (note: inflammable). Brass and stainless steel counterweights can be polished using commercial metal polish. Don't use abrasives on gold plated counterweights.

Counterweights

The counterweight is secured by the inset nylon-tipped screw. Use the allen key supplied with the antiskate quadrant to tighten it. Only tighten the screw very gently. Very little pressure is needed to hold the counterweight in place.

Counterweight won't fit onto shaft.

NEVER force the counterweight if it is not free on the shaft.
NEVER twist the counterweight on the shaft.

1 Check that the locking screw is loosened.

2 The counterweight is made up of several layers. If the weight has been dropped or knocked they may be out of alignment.

To rectify, loosen the three cap head screws holding the counterweight together by 2-3 turns (2.5mm allen key), then slide the counterweight onto the shaft to align the elements and tighten the screws.

Arm lift

The height of the arm lift can be adjusted by loosening the grub screw inset into the black plastic lift platform. (1.3mm allen key). Check the vta setting carefully before adjusting the arm lift, it is set correctly when the vta is right.

Wiring

NEVER twist the signal wires together at the headshell.
Only add/remove the tags from the cartridge by holding the tags, never pull the wires.
NEVER pull the interconnect cable, only the plugs. If the plug moves on the cable, the loom will fail.

Silver looms

NEVER attempt to disturb or change the RCA plugs. The signal wires are in one run from the cartridge tags and the wire dressing is critical to within 1-2mm. Any attempt to disturb the plugs will result in a failed loom inside the arm.

Arm mounting

Tightness of the securing nut is not critical. It is generally only necessary to tighten it enough to stop the am from turning.

Threaded arm mountings

Some turntable mountings (usually with built-in vtas) have a threaded collar to match the arm base. Take extreme care with threaded aluminium or anodised bases. **You MUST lubricate the threads** of these before mounting the arm or the two may lock solidly together. Test-assemble and if the thread appears tight, stop immediately.

VTA locks

The stainless steel vta locks have a small copper piston inside. This can drop out if the arm is removed from the base, or can be crushed if the lock is tightened too much. There is a spare in the "spare parts" kit included with the arm. **Only use the lightest pressure to lock the vta.**

To remove a crushed vta lock piston:

Standard arms: slide the arm out of the base and push the lock out using a pin 3mm or smaller. This can be done with the arm in place on the arm board.

Micrometer arms: Remove the arm from the arm board. Remove the screw from the tip of the micrometer (the 2mm allen key in the antiskate arm pack). The arm can now be slid out of the base and the piston removed as above.

Antiskate weight

The weight is secured by a small, split lead disc inside. Slide the disc up or down the thread to adjust the height of the weight. If the disc slips on the thread, squeeze it gently with small pliers to tighten it. There are extra discs in the "spare parts" pack.

It is not necessary to cut the thread short, having it touch the arm board will stop it swinging.

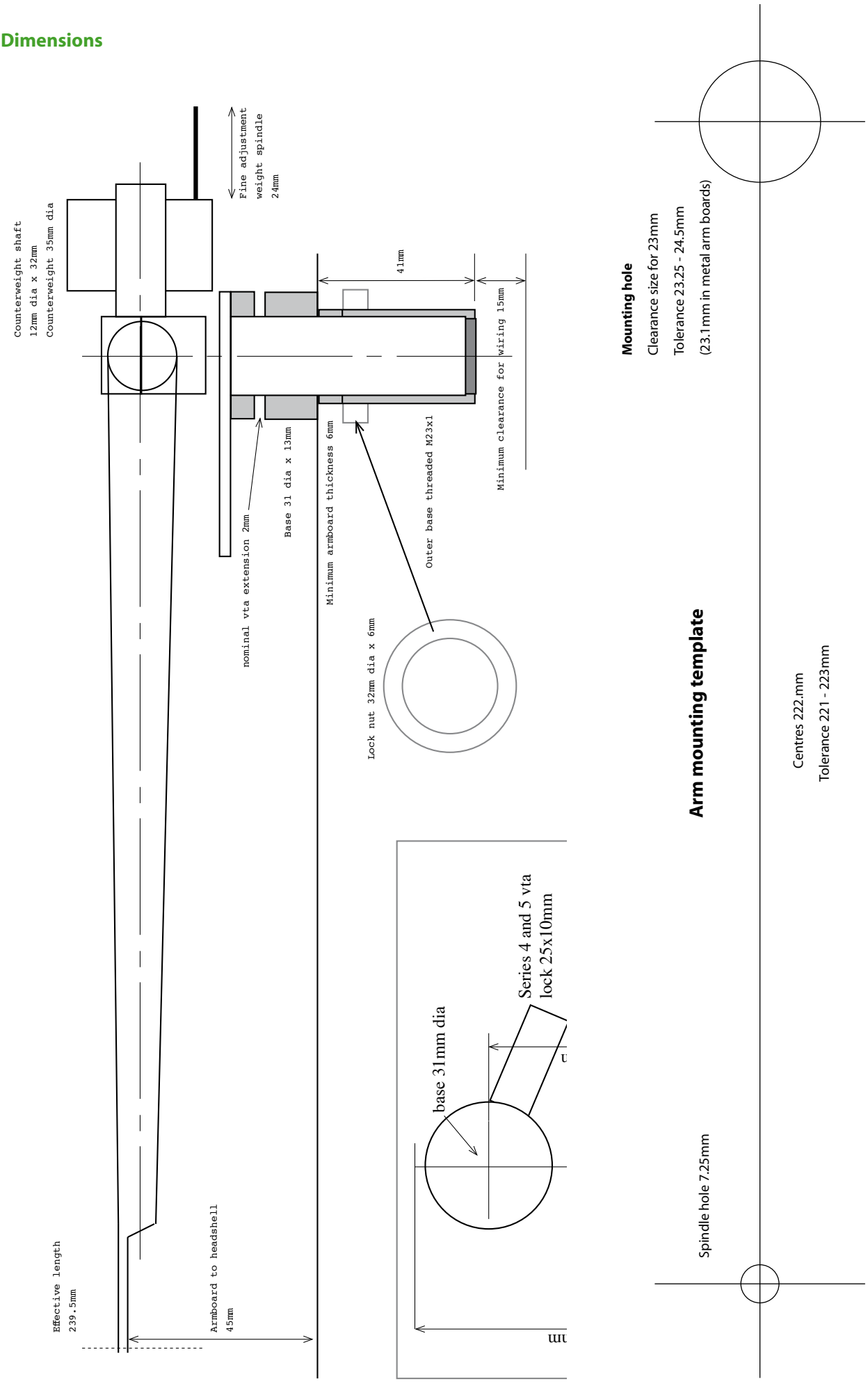
Headshell shims

To test the effect of a headshell shim, attach it temporarily to the top of the headshell with a spot of "Blu-Tak" (reset the tracking force) to do quick A/B comparisons. When the correct shim is found, fit it permanently between headshell and cartridge.

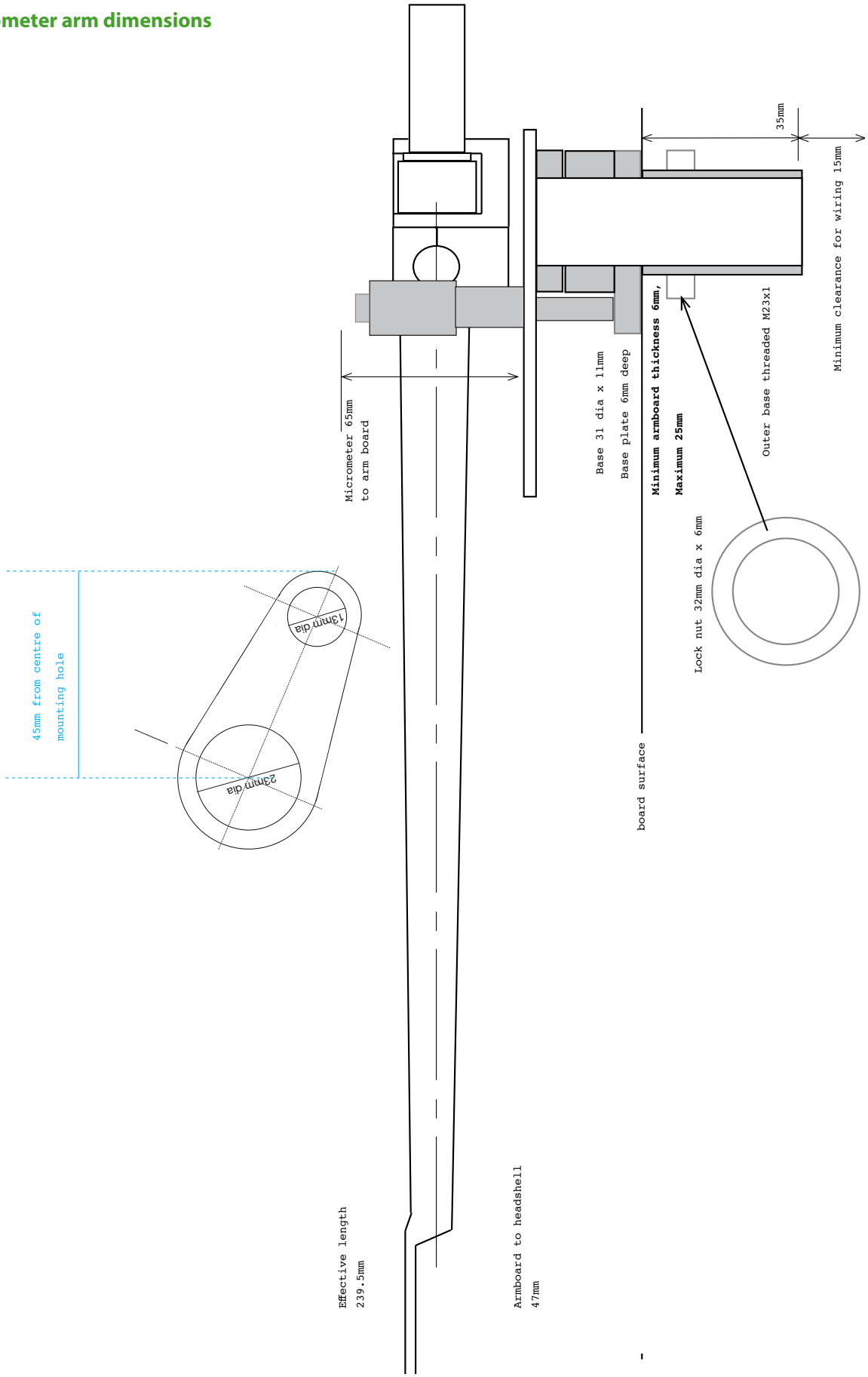
The owner manual is updated from time to time.
A PDF copty of the latest version is available for download at
www.audiomods.co.uk

AUDIOMODS
5 Tormore Mews, Rectory Road, Deal, Kent CT14 9SX, UK
Tel: +44 (0)1304 379698
www.audiomods.co.uk

Dimensions


Counterweight shaft
12mm dia x 32mm
Counterweight 35mm dia
Fine adjustment
weight spindle
24mm
41mm
Minimum clearance for wiring 15mm
nominal vta extension 2mm
Base 31 dia x 13mm
Minimum armboard thickness 6mm
Outer base threaded M23x1
Lock nut 32mm dia x 6mm
Effective length
239.5mm
Armboard to headshell
45mm
Series 4 and 5 vta
lock 25x10mm
base 31mm dia
Mounting hole
Clearance size for 23mm
Tolerance 23.25 - 24.5mm
(23.1mm in metal arm boards)
Arm mounting template
Centres 222.mm
Tolerance 221 - 223mm
Spindle hole 7.25mm

Micrometer arm dimensions



Audiomods tonearm kit II build

Warranty and servicing

Your Audiomods arm kit is supported for the life of the product. If repair or service is needed, return it to the address below.

Because we have no control over the finishing and wiring of an arm kit, the warranty is not transferrable.

Support and advice

jeff@audiomods.co.uk

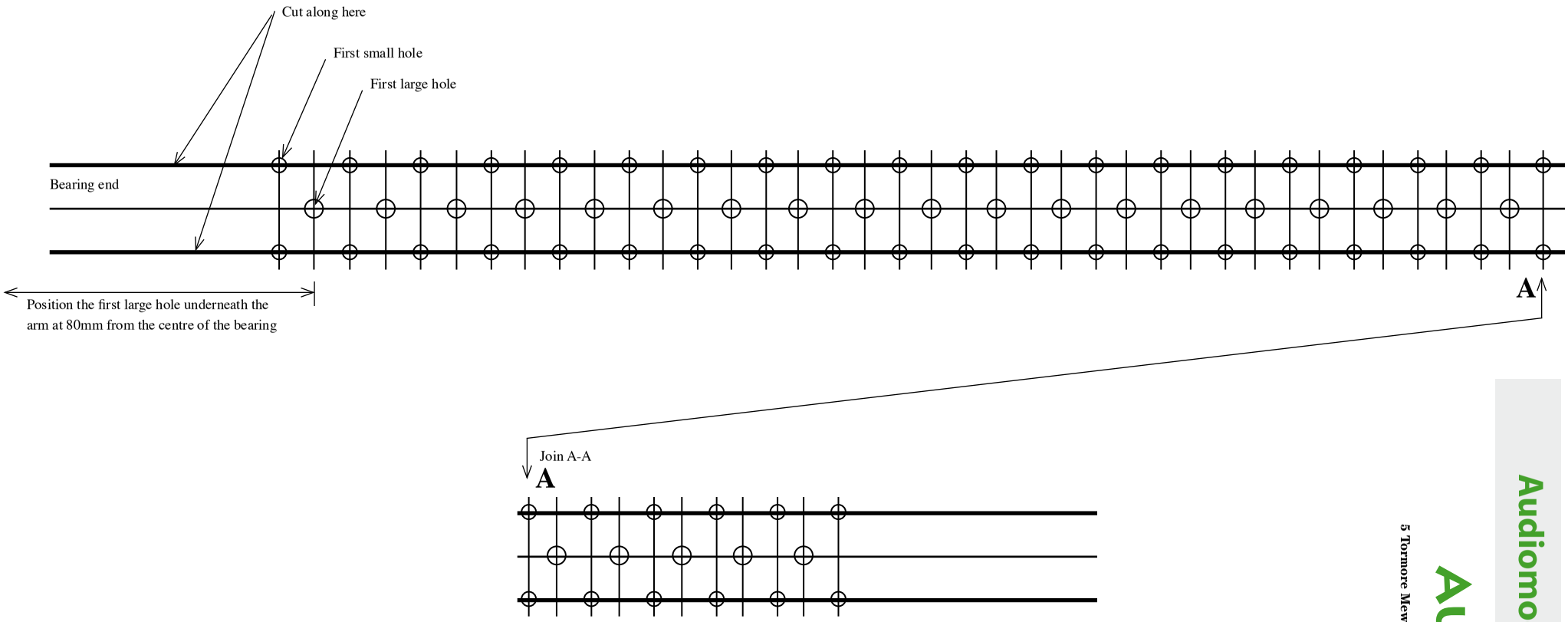
or call +44 (0)1304 379698

Returns outside the EC

If you are returning an arm for service from outside the EC you must ensure that the documentation is correct for an inbound customs clearance. Please contact us before sending as we cannot take responsibility for customs duty or clearance charges.

AUDIOMODS

5 Tormore Mews, Rectory Road, Deal, Kent CT14 9SX, UK
Tel: +44 (0)1304 379698
www.audiomods.co.uk



Drill Template for 303 series arm tubes

Starting at the bearing end use these drills:
3.5mm (or 3.3mm), 3mm, 2.5mm, 2mm
Depending on the exact position of the template around the tube, six holes of each size should work.
Check before you drill and mark the holes to show where to change drill size

For the small holes: 2mm and 1.5mm, 10-12 of each.

for full instructions, see arm build manual p3

AUDIOMODS
5 Tormore Mews, Rectory Road, Deal, Kent CT14 9SX, England
Tel: +44 (0)1304 379698
www.audiomods.co.uk