

Classic III arm

Mounting the arm

The arm is a direct replacement for arms using the 23mm Rega mounting hole at 222mm mounting distance.

It can also be fitted to armboards designed for the Rega 3-point mounting because the original mounting hole remains. The mounting screw holes in the arm board can be blanked off for appearance.

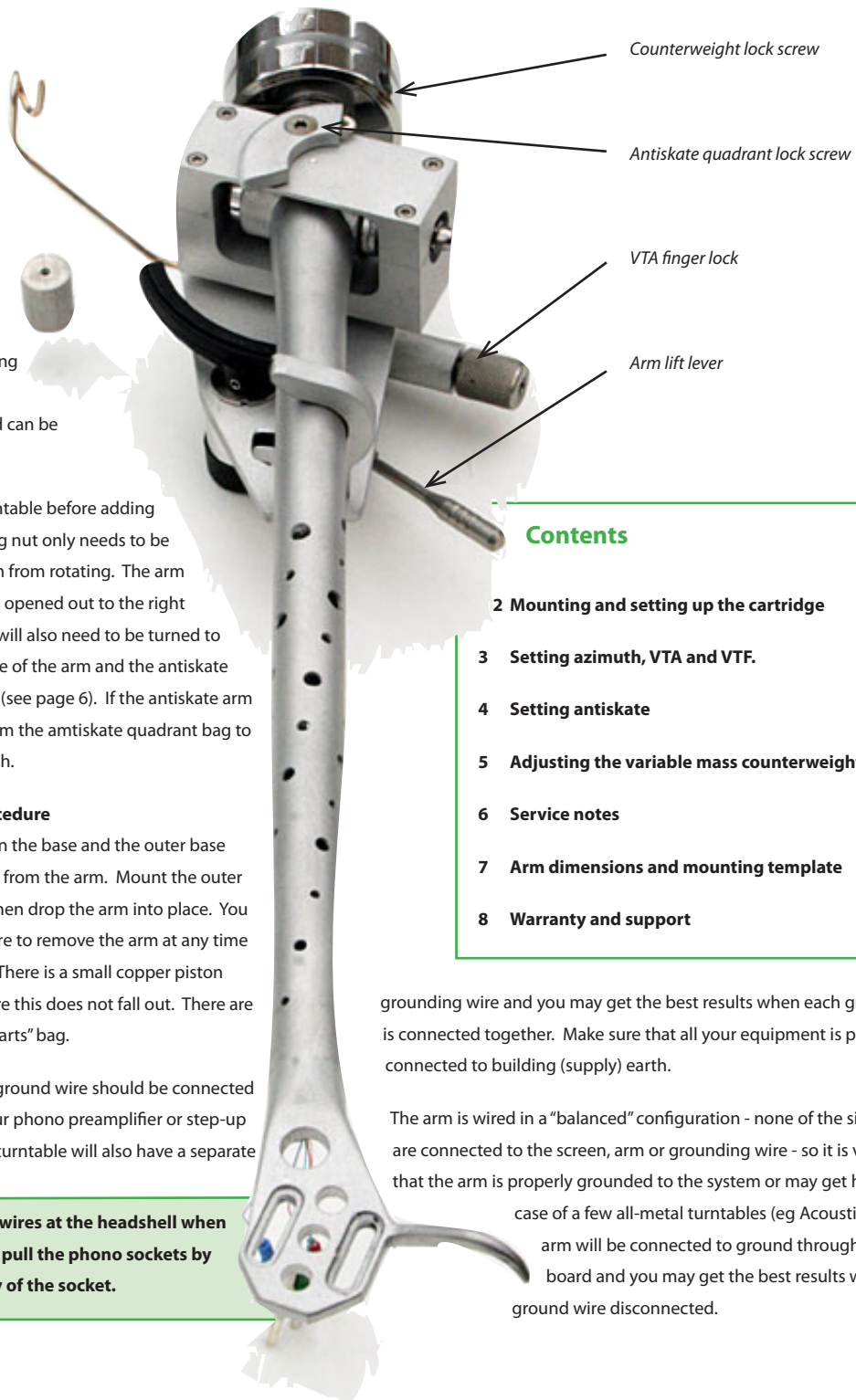
Mount the arm onto the turntable before adding the counterweight. The fixing nut only needs to be tight enough to stop the arm from rotating. The arm lift quadrant may need to be opened out to the right position. The antiskate arm will also need to be turned to its correct position at the side of the arm and the antiskate quadrant and weight added (see page 6). If the antiskate arm is loose, use the allen key from the antiskate quadrant bag to tighten the screw underneath.

NOTE: Easy mounting procedure

Loosen the VTA lock screw on the base and the outer base can be completely detached from the arm. Mount the outer base onto your arm board, then drop the arm into place. You can use the reverse procedure to remove the arm at any time for cartridge mounting etc. There is a small copper piston inside the vta lock. Make sure this does not fall out. There are replacements in the "spare parts" bag.

With the arm mounted, the ground wire should be connected to the grounding post of your phono preamplifier or step-up transformer. It is likely your turntable will also have a separate

Take care not to pull the signal wires at the headshell when mounting the cartridge. Never pull the phono sockets by the cable, always hold the body of the socket.



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grounding wire and you may get the best results when each ground is connected together. Make sure that all your equipment is properly connected to building (supply) earth.

The arm is wired in a "balanced" configuration - none of the signal wires are connected to the screen, arm or grounding wire - so it is very important that the arm is properly grounded to the system or may get hum. In the case of a few all-metal turntables (eg Acoustic Solid) the arm will be connected to ground through the arm board and you may get the best results with the ground wire disconnected.

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Audiomods tonearm setup

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 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

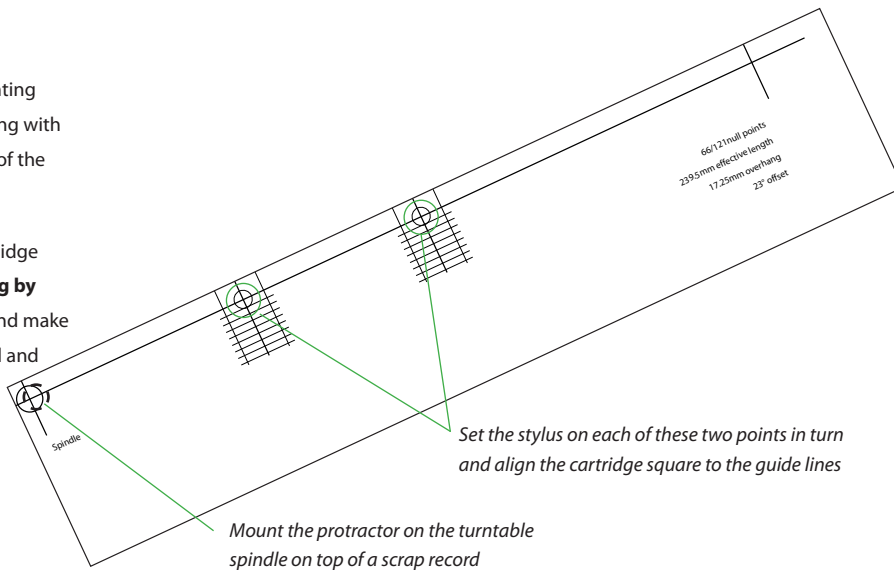
Stylus to arm pivot point (the "effective length"): 239mm

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.

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 millimetres. 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 66/121 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 commercial 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.



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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 either by aligning the body against the gauge supplied or 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 perfectly 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 want to be correct 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. Rely on the cartridge manufacturer to set the stylus correct with the cartridge level.

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 6-8mm it would be best to add a spacer beneath the base. We can supply spacers to match the base of the arm 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. Digital scales (jeweller's scales) are the best choice. 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 many times 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 tipped lock screw with the allen key supplied in the antiskate Quadrant pack. 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 effective mass of between 9 and 11 grams, depending on which counterweight you are using and its position on the stub. The effective mass goes up as the counterweight moves back. A difference of 2-3g in the total effective mass will have very little effect on the resonant frequency.

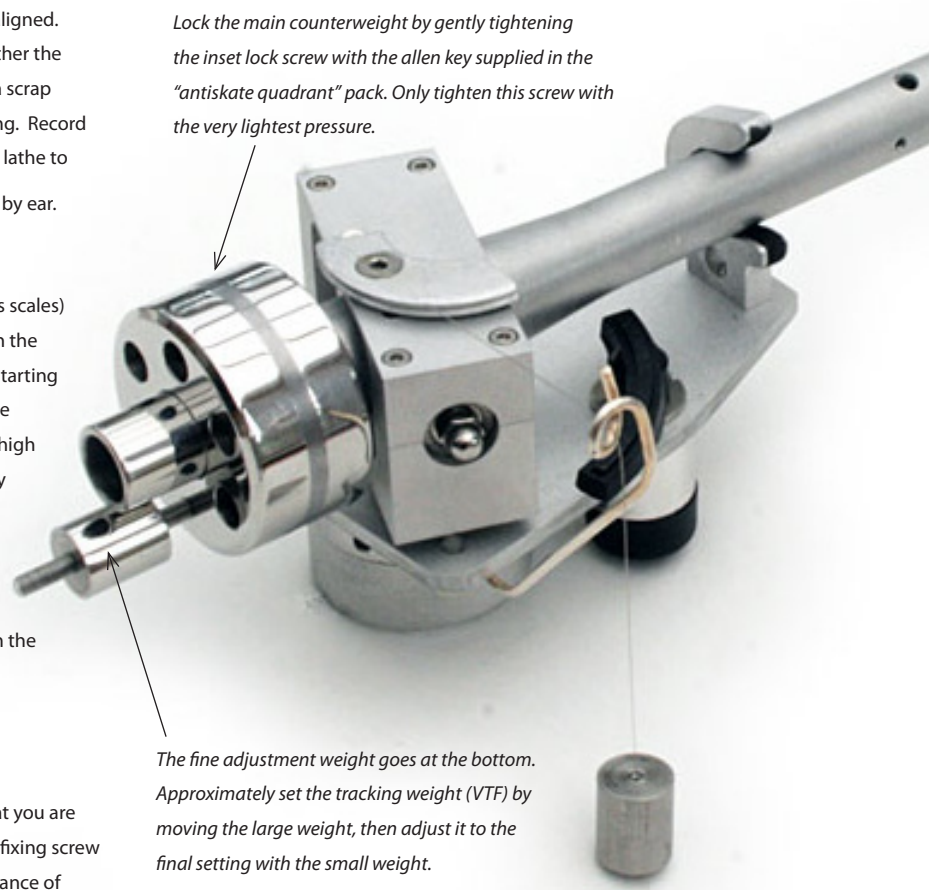
A good indicator of when extra mass is needed is the bass performance. If bass seems light, you may need to add one of the optional headshell shims.

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

If you tell us which cartridge(s) you will be using when ordering the arm, we can advise if a shim is needed to add extra mass.

**There is complex technical argument to suggest that the perfect SRA is 1-2° off vertical, but that may be designed in to your stylus profile.*



Audiomods tonearm setup

Setting antiskate

As the record rotates the arm is pulled towards the centre by groove friction. This is because the cartridge is at an offset angle and the drag pulls sideways, not straight down the arm tube. 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.

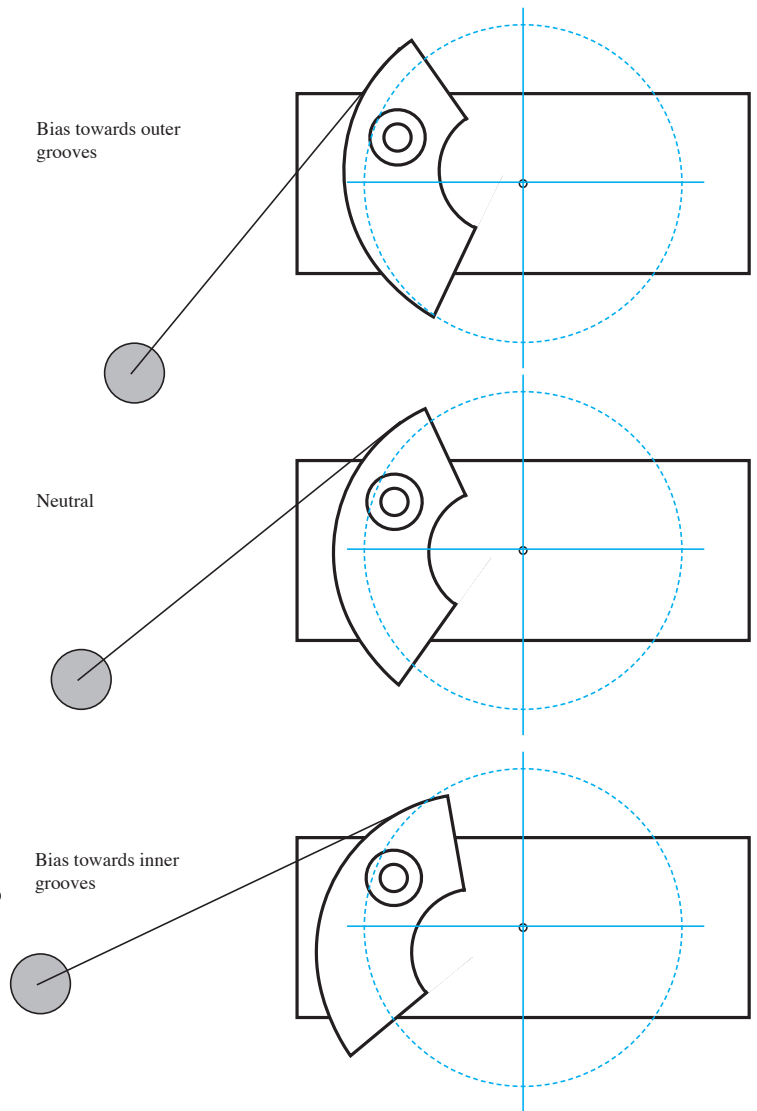
Depending upon the stylus profile, simple acoustic music will probably be more neutrally biased, whilst orchestral or opera that tends towards crescendo on the inner grooves might need a bias weighted towards the record's centre. A high-compliance cartridge might need a bias slightly weighted towards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

Setting up the antiskate weight

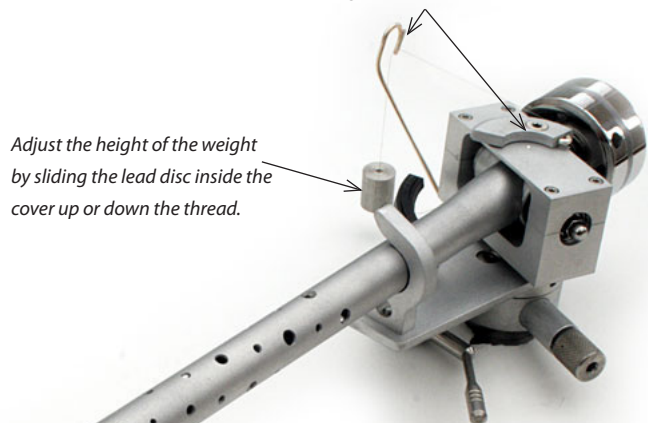
The weight and quadrant are supplied separately together with the quadrant mounting screw. Add the quadrant and hook the thread through the eye of the antiskate arm. Turn the antiskate arm so that the thread sits in the groove of the quadrant. If the antiskate weight appears too high or low the position can be adjusted by sliding the little lead disc 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. If you need more bias, add an extra lead disc from the "Spare parts" pack

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.



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Variable mass counterweight

The arms are supplied with a variable mass counterweight that can be configured from about 110 to 145g to achieve the optimum performance from a very wide range of cartridges.

The weight is supplied set to an average mass to suit many cartridges and cartridge plate combinations. If you can't achieve the correct tracking force with the weight as supplied, the mass can be increased/decreased by adding or removing the copper and lead discs.

Changing the mass

With the counterweight off the arm, remove the three screws using the allen key supplied (2.5mm hex). The weight will now come apart and one or both of the copper/lead disc pairs can be removed or added. For very light cartridge (around 5g) both copper discs might need to be removed. To "unstick" one of these, gently prise it off using a small screwdriver or sharp point inserted into the edge of one of the screw holes. Don't prise it from the outside edge of the counterweight to avoid marking the weight and discs.

To test the mass before finally re-assembling the weight, fit the loose components onto the shaft without screwing them together and you will be able to test for balance and weight position.



Use the allen key supplied to remove/replace the three counterweight screws

To re-assemble the weight

Slide each of the parts onto the assembly stub supplied and rotate them into the right position so that the holes align. Add the rear disc of the weight so that the small fine adjustment weight is at the bottom when the lock screw hole of the front disc is at the 10 o'clock position.

Five different lengths of screw are supplied for the different configurations:

The right choice is to insert a screw and check that, before it engages the thread, it is at or just below the level of the hole. **If the screwhead is higher than the hole it might bottom in the thread and not tighten properly.**

With the counterweight on the assembly stub, add the screws and tighten each in turn. Check that the weight will slide on the stub. If it is tight, loosen the screws half a turn and adjust the position of the elements until the screws can be tightened with the counterweight a sliding fit on the assembly stub.

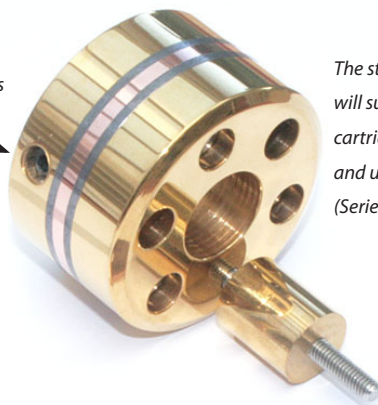
You can now fit the weight to the arm.

The weight is locked with the inset allen-head screw. The medium size allen key fits this (2mm hex key). **Only tighten the screw with the lightest pressure**, just enough to hold the weight in place.

Never force the counterweight on or off the arm, loosen the three screws to centre the elements until the weight slides easily on/off the arm.

The position of the counterweight on the stub will have an effect on the effective mass of the arm. A light weight set right back will raise the effective mass compared to a heavier weight close to the pivot, even though they can identically balance the cartridge. If you have a choice, using a heavier weight close to the pivot will suit moving magnet cartridges best, for moving coil cartridges, choose a mass that sets the counterweight towards the middle or rear of the shaft.

Make sure the locking screw is in the right position

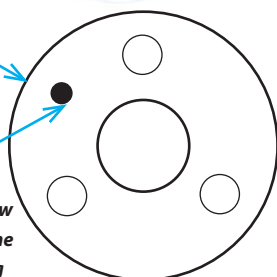


The standard configuration with three discs will suit most Moving coil cartridges, for cartridges less than 8g, remove the one disc and use the short screws (Series Six weight shown)

Put the counterweight parts on the assembly stub to add or remove discs



Locking screw hole position



The lead disc is marked to show the position. Replace it with the mark aligned with the locking screw.

Select the correct length of screw for your configuration



Audiomods tonearm setup

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.

Δ8

Arm mounting

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

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 copy of the latest version is available for download at
www.audiomods.co.uk

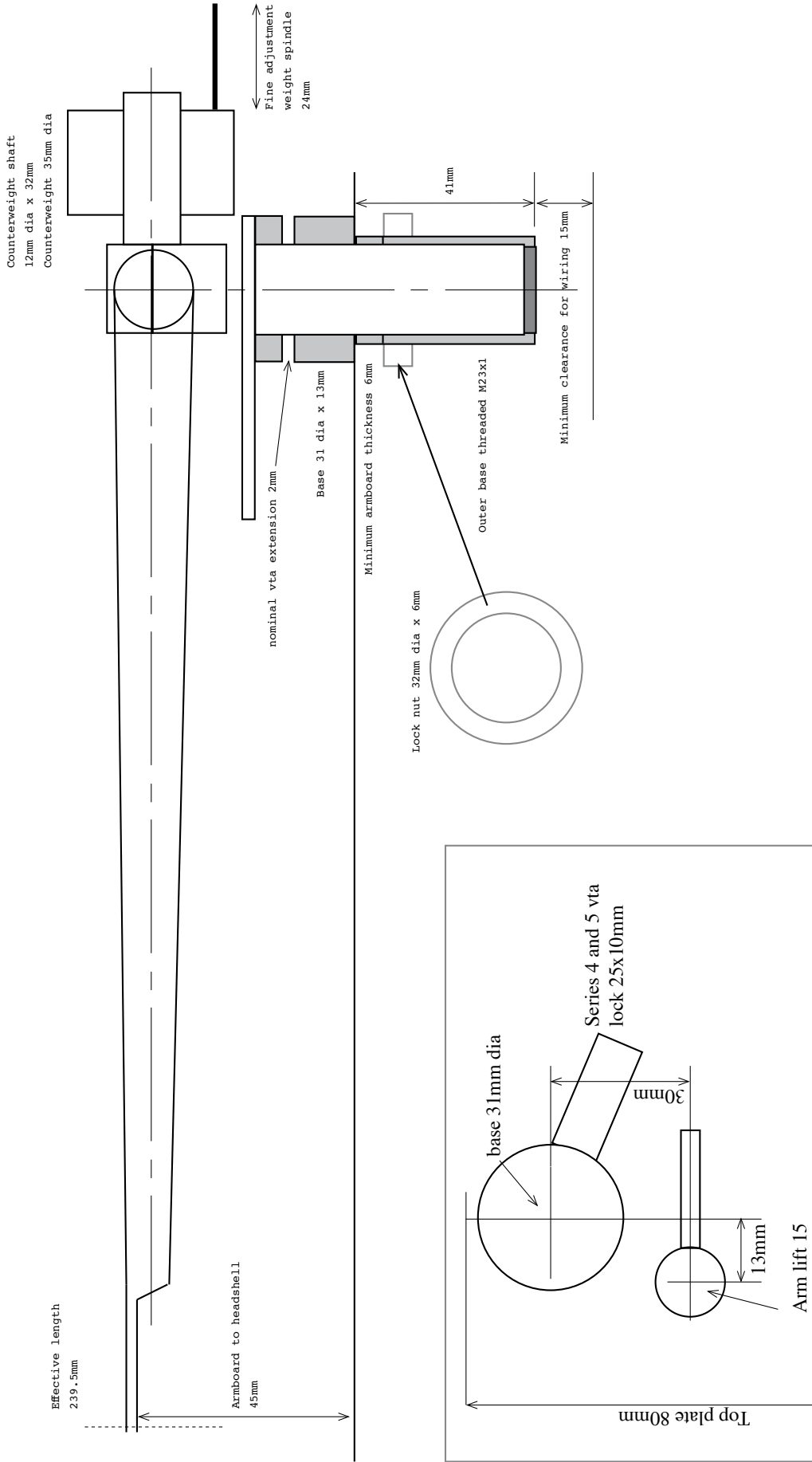
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Dimensions



Mounting hole

Clearance size for 23mm
Tolerance 23.25 - 24.5mm
(23.1mm in metal arm boards)

Arm mounting template

Centres 222mm
Tolerance 221 - 223mm

Spindle hole 7.25mm

Audiomods tonearm setup

Warranty and servicing

Your Audiomods arm is supported for the life of the product and warranty can be transferred between owners.

If repair or service is needed, return it in the original box, to:

Audiomods, 5 Tormore mews, Rectory Road, Deal, Kent CT14 9SX, UK

Support and advice

jeff@audiomods.co.uk

or call +44 (0)1304 379698

Returns outside the UK

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.



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