

Instructions for MK3C - Encounter, illustrious & Conqueror

INSTRUCTIONS BY ORIGIN LIVE 10/2011 ©



PLEASE NOTE: The sound of new arms and rewires will improve significantly over the first 2 weeks as items bed down and arm wires burn in.

Introduction

Thank you for ordering from Origin Live. We trust you will enjoy getting closer to the original sound and appreciating your music in a new way.

Please give special attention to underlined text in these instructions. First of all, note that it may seem there is “play” in the bearings - this is a design feature and bearing tension should not be altered or degradation will result - The bearings on the vertical axle are high quality, however the vertical bearing house is carefully dimensioned to allow a slightly loose fit, thus “floating” the arm rather than rigidly coupling it to the deck.

Mounting the arm

If possible, refer also to the mounting instructions from your turntable manufacturer.

Arm mounting methods vary depending on the make of your turntable. This section caters for various scenarios.

Mounting hole dimensions

Some decks come with an arm hole position specifically set up for arms with “Rega” geometry. If this is not the case with your deck, then Origin Live arms require centre of platter, to centre of arm hole, to be approx 223mm (222.7 precise) plus or minus 2mm tolerance. The hole diameter for the arm is 23mm to 25 mm (23mm will accept the arm but not a threaded vta adjuster).

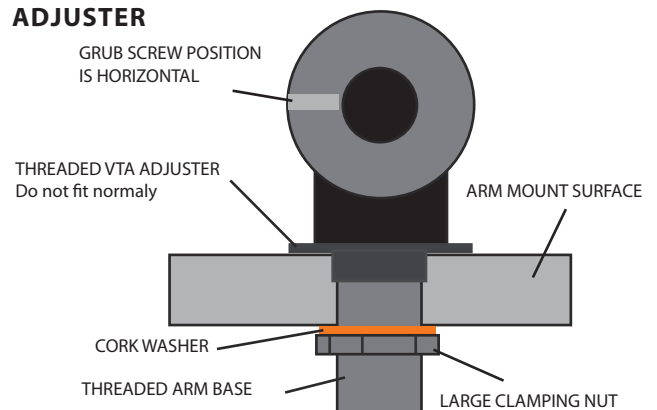
A threaded VTA adjuster should not be needed except in very rare instances where the integral VTA adjuster wheel cannot raise the arm high enough. If a threaded VTA adjuster is needed as a last resort to raise the arm then the hole must be 24 - 25mm).

If you need to modify your existing armboard to enable an

arm to fit, please refer to our web site FAQ (frequently asked questions) in the tonearm section.

Mount the arm in the armboard as shown in the illustration below. You can raise the arm height to approximately the right level using vta wheel for fine adjustment.

24 - 25mm ARMBOARD HOLE WITH VTA ADJUSTER



If you have the Origin Live threaded VTA adjuster, this should be threaded onto the tonearms base post BEFORE you fit it through armboard (VTA adjuster flange on top). You can later adjust the height of the arm by adjusting the turns of the threaded vta adjuster

As a rule of thumb you will find the best tension on the nut is just a little more than finger tight. Just tighten to finger tight and use a spanner, pliers or molegrips to “nip” the nut a tiny fraction tight. Do not overtighten the arm as it is counterproductive..

Understanding dual Pivot

Your Origin Live arm has innovative bearings. This is best explained before going any further.

Dual pivot bearing design – why?

One of the many reasons that the Origin Live arms are performance leaders is due to the dual pivot bearing, on the horizontal axle (which governs the arms vertical movement). The design is similar in many respects to uni-pivot – low friction and high decoupling which give excellent definition and transparency. However uni-pivots can be fiddly to set up and because of their relative instability exhibit a mediocre bass performance. Dual pivots have all the advantages of uni-pivots but none of the drawbacks. Vertical movement of the arm is handled by the dual pivot and horizontal movement by our usual highly specified conventional bearings.

Floating bearings for horizontal rotation

There is a certain amount of “rocking movement” on the yoke vertical axis. Some people mistake this for poor bearing fit but this is far from the case. Whilst most arms use “rigid” bearing fits, Origin Live is unique in employing a “floating” bearing design - this is actually much harder to engineer and does not cause alignment errors as the bearings are self centering and factory settings of the headshell take account of this.

Handles like a conventional gimballed arm

You should handle the arm in exactly the same way as a conventional gimballed arm. In other words you do not need to worry about setting up azimuth. The azimuth has

already been set, such that the headshell is parallel to the arm mounting surface. We strongly recommend that you never adjust the factory setting without our permission, as this will invalidate the warranty. Correct azimuth setting is tricky at the best of times and unless an extremely careful record is kept on the original factory settings the arm will probably end up not working correctly.

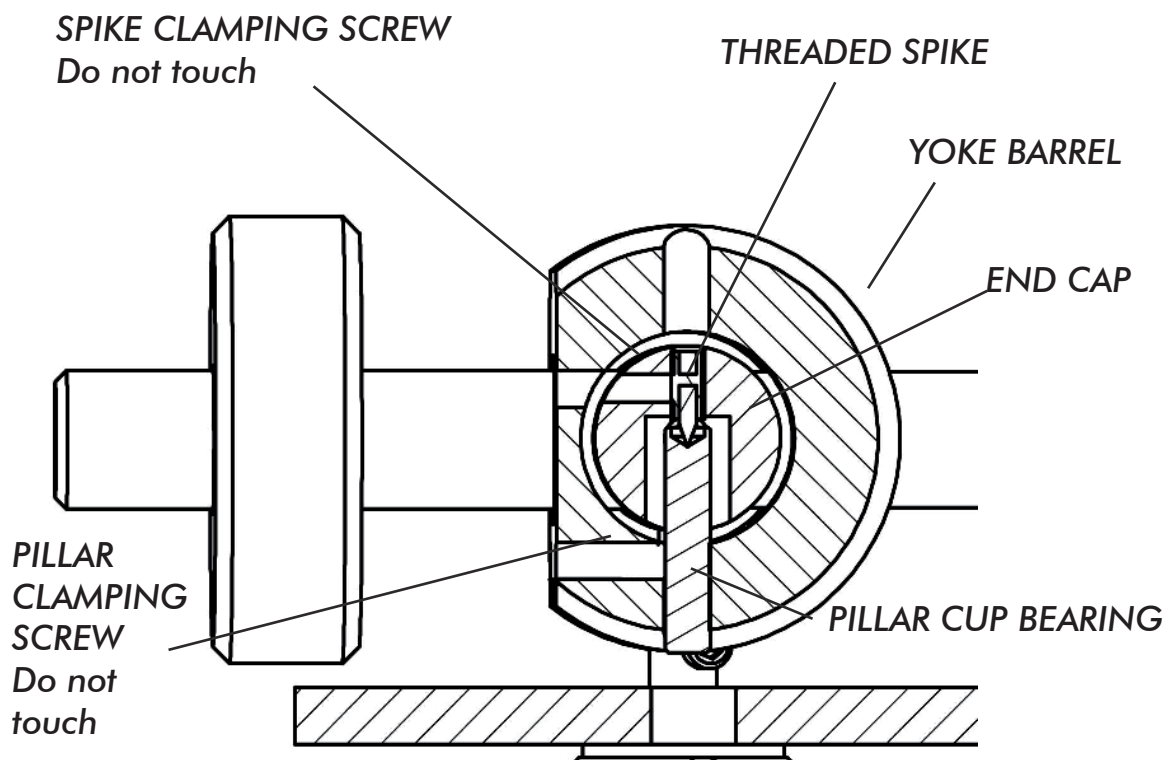
How dual pivot works

The below illustration of the dual pivot bearing shows how the horizontal axle is free to move a little in all directions except downwards. This may be a little disconcerting until you become confident of the inherent performance virtues delivered by this approach. It is also reassuring to know that the arm cannot be knocked off it's bearings or come loose in any way. You can turn the arm upside down and nothing will fall off as it would in the case of a uni-pivot!

The pivot bearings are designed to reduce friction to an absolute minimum. In doing this there is a fine balance to achieve both a robust design whilst maintaining extremely low friction. In practice, the arm must have a slight degree of movement due to a sharp tungsten point in a shallow radiused bearing cup. The alternative to this is a very sharp point in a deep v shaped cup – this would certainly restrain the movement of the point but would also increase friction and potential fracture of the tips.

The pivot points will “self centre” by sliding into the bottom of the bearing cup. However the final resting place of the point may vary by 0.01mm or so. This would not be noticed without the use of a very accurate digital stylus force gauge.

As the pivot position shifts fractionally it can cause the tracking force to vary slightly, by around ± 0.06 grams



from an average reading. In practice this has no effect on performance and is also common among certain unipivot designs with very low friction bearings.

Connecting the arm

FIT THE ARM CABLE CLIP

For best performance the arm cable should be supported by a cable clip screwed into position underneath the plinth - leave a slight droop on it so that it isn't "tight". Clipping the arm helps prevent vibration feeding into the arm.

CONNECT THE ARM TO YOUR PHONO STAGE / AMPLIFIER

The bullet phono plugs are usually a very tight fit to your phono stage sockets. To avoid possible damage to your amplifier sockets, the manufacturers advise that you should heat the bullet plugs with a hair dryer (or similar) to soften them slightly till they fit easily onto your phono stage / amplifier phono sockets. Once fitted, you do not need to reheat the plugs in future as they will maintain the correct tightness.

The earth lead should be connected to the earth of your phono stage, pre-amplifier or amplifier. This earth lead is best separated slightly from the arm signal leads so do not wind it around them for best performance. Avoid pulling the external wires at the base of the arm as they are not indestructible and can become detached if excessive force is used to manipulate them.

If you have XLR plugs, you will not get both plugs through the mounting hole for the arm. The hole is too small to allow the 2nd plug to go through as the 1st cable wire takes up space.

For this reason we normally fit only one XLR plug and leave you to fit the other. Full instructions on how to fit the other XLR are available on our web site - see top navigation bar, click "general information" then "technical support" on the drop down list.

Making the dual points operational

The transit bolts shown in illustration are critical, to prevent damage to the bearing points in transit. Gently remove these to make the arm operational. Keep the bolts and nylon washers in a safe place. These **MUST** be replaced whenever you send the arm by post or courier as the boxes can get severely thrown around. Damage to the points occurs, unless the transit bolts are in place.

CHECK THAT ALL IS WELL - The stylus down

force should be consistently accurate to within plus or minus 0.06 grams from the **average** (i.e = 0.12 gram total variation). Higher deviations indicate that the bearing might be damaged or incorrectly adjusted.

The bearing freedom of movement should be checked by measuring the stylus down force over a succession of 10 or so movements of the arm into the arm clip and then onto a stylus force gauge. The force gauge should read consistently to within plus or minus 0.06 grams from an **average** over the 10 measurements if all is well.

It is best to use a digital force gauge for this as a "balance" type can give inconsistent readings with errors of up to 0.5 grams .

TRANSIT BOLTS WITH NYLON WASHERS UNDERNEATH

Remove and keep for future use



DO NOT TAMPER WITH ANY OF THE GRUB SCREWS IN THE YOKE - These are precisely set up at factory and any interference will probably end up with damage to the pivot points or bearings that don't work properly.

Fitting the counterweight

It is best to fit the counterweight at this stage. The downforce on the cartridge is set by clamping the large counterweight to approximately the correct position on the rear stub. The trick here is to lightly nip the grub screw when it gets close to giving your desired tracking force setting. You can then gently twist it slightly while pushing it in the desired direction till it gives the correct reading. Once this is achieved, clamp up firmly and recheck the reading.

The fine adjuster is not supplied unless specifically ordered - it can be ordered at a later date but is not generally used as it degrades performance slightly. If you have the fine adjuster, then once the counterweight is firmly clamped in approx the right position, final adjustment is carried out using the fine adjuster on the rear of the counterweight - see illustration below.



Allen grub screw to clamp large weight

Fine adjuster weight to give 0.35grams adjustment.

Cartridge set up

If you are not familiar with fitting cartridges then please read the detailed section “Hi-Fi Cartridges explained” found towards the end of this manual.

MOUNTING

Mount the cartridge in the headshell of the arm. Cartridge mounting screws (usually 2.5mm allen bolts) should be tight. Stainless steel allen bolts are the best for mounting hi-fi cartridges - aluminum or brass are OK but difficult to tighten in comparison to allen heads. Avoid steel bolts as they are magnetic and degrade your cartridge magnets.

This is best done with the stylus guard in place but it may be necessary to remove it during at least one phase of the installation. If you do, replace it as soon as possible. Be especially careful when the stylus guard is off, as many MC cartridges have a strong magnetic field at the base of the cantilever. If this attracts the tip of a steel-bladed screwdriver, it can destroy the stylus - there is no hope of resisting it. The best precaution is to keep the screwdriver well away from the cantilever, use a nonferrous screwdriver, or keep the stylus guard on when you're using the screwdriver near it. The headshell screws should be

finger-tightened just enough that the cartridge cannot fall off but is still loose enough that the cartridge is easily moved around. Work whenever possible with the stylus's guard in place. Now carry out the set up procedures outlined below. Do not deviate from this sequence as each step affects the subsequent one — change the order and the setup will be wrong.

SET TRACKING FORCE

Set the tracking force to the cartridge manufacturer's recommendations using a stylus force gauge (stylus balance). This will need to be re-set later on so do not worry about getting it too exact at this stage - within 0.3 grams of recommended tracking force is fine.

First screw in the fine adjuster on the rear of the counterweight as far as possible. Now set the tracking force to within 0 to 0.35 grams OVER the correct reading using the grub screw in the side of the major counterweight. Do this, by sliding the counterweight along the rear stub until the required tracking force is attained, then clamp up the grub screw so that it locates in the groove in the side of the rear stub. i.e When adjusting the counterweight, set it so that the Allen bolt is at the side of the arm (not at the top) see figure “Rear end view of counterweight”. You will need a stylus force gauge to measure the force underneath the cartridge tip.

HINT - The counterweight is deliberately a very loose fit on the stub for best performance. Because of this, it helps to just lightly “nip” the allen bolt in the side of the counterweight onto the stub — this way the counterweight has a little friction to hold it in position as you slide it backwards and forwards. Once you have set the tracking force correctly you can tighten the allen bolt in the counterweight as firmly as possible to secure it tightly to the rear stub. Re-check that the tracking force is still 0.3 to 0.35 grams over the manufacturers recommendation.

USE OF STYLUS FORCE GAUGE

Most stylus force gauges work on the same principle as a set of scales or balances. For example with the Ortofon Stylus Force Gauge, first place the stylus on the inscribed or graduated portion of the scales. Then try the stylus at different points until you find the point where the beam “balances” freely in a roughly level position. You then read the force that is being exerted — (1gram = 10 mN if the scale is in mN). From this number you can assess whether you need to increase the tracking force or vice-versa. Move the tonearm counterweight accordingly and re-measure the tracking force. Repeat this procedure until the correct tracking force is obtained. A digital force gauge works slightly differently so follow the manufacturer's instructions.

SET TANGENCY ALIGNMENT (LATERAL TRACKING ANGLE)

First of all **set the cartridge overhang**, which is 17mm for all Origin Live and Rega arms. The overhang of the cartridge

is the measurement from the centre of the spindle to the tip of the cartridge stylus when the armtube is positioned such that its centre line is directly over the centre of the spindle. Whenever you rotate the cartridge to align it, the overhang position must be maintained and checked at the end of the whole procedure. Follow the manufacturer's literature and the dictates of your alignment gauge - different gauges use slightly different methods.

Square up the hi-fi cartridge body with the gauge's markings, be sure that the cartridge sides are square or your alignment will be wrong. When all adjustments are correct, carefully tighten down the hi-fi cartridge mounting screws. Keeping a firm grip on hi-fi cartridge and headshell together so nothing shifts, delicately tighten each screw down a turn or so, then repeat until tight. Tightening down one screw all the way before tightening the others is almost certain to twist the cartridge out of alignment. However careful you've been, always check the alignment again after tightening.

Ensure the headshell wires are bent so that they are clear of the record surface.

VTA Adjustment

To allow the cartridge needle to track at the correct VTA (vertical tracking angle) it is important that the base of the arm is the correct height in relation to the platter.

The top or bottom edge of the tube should be roughly parallel with the surface of a *FLAT* record. You can use the template card supplied to help judge this.

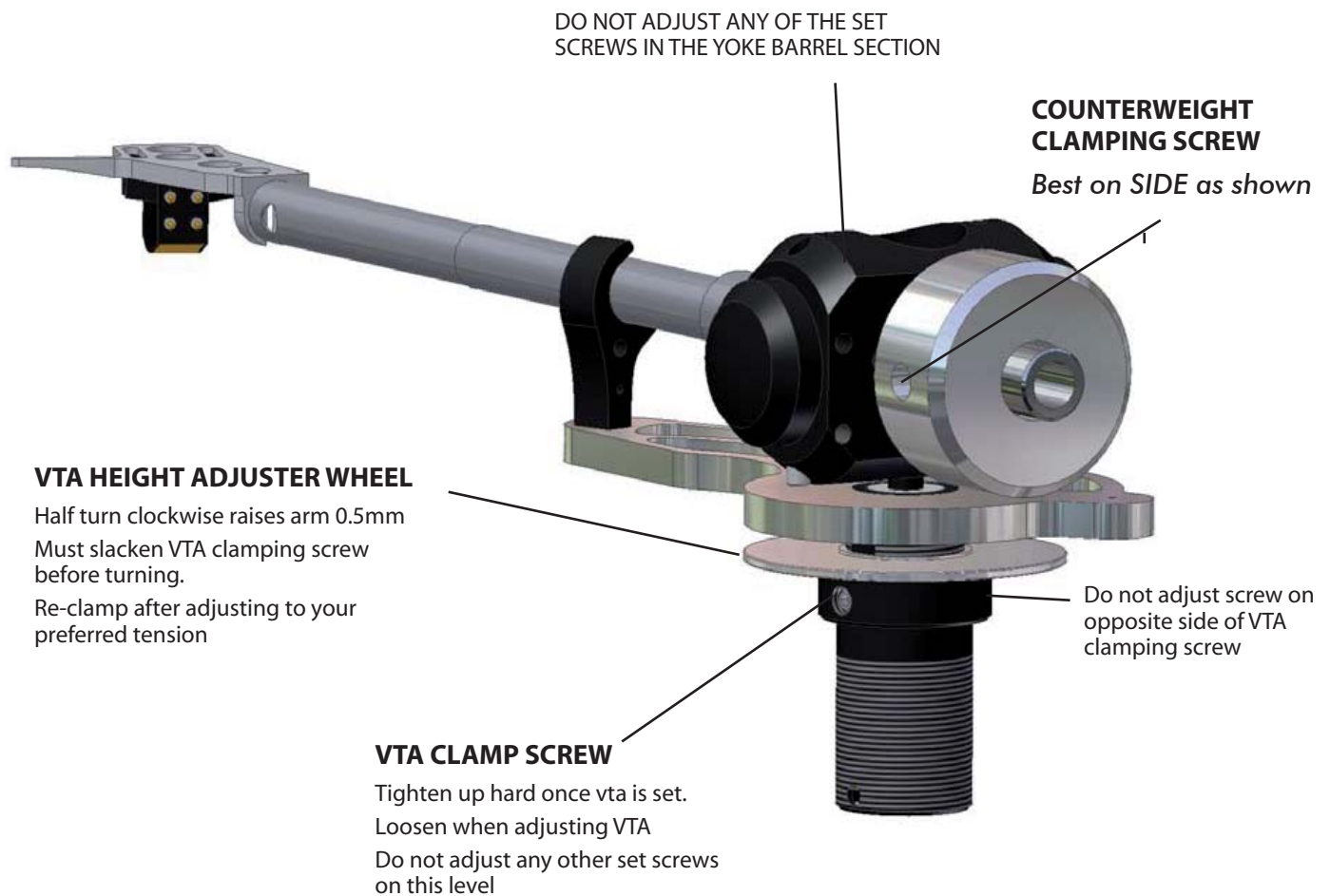
It is always best to experiment with vta height by varying it and listening to the results till you have found the optimum position. This is necessary because of manufacturing variations in stylus angle tolerances.

VTA (VERTICAL TRACKING ANGLE) ADJUSTER WHEEL

VTA Calibration: The arm must be "unclamped" for the vta wheel to work – see diagram for "vta clamping grub screw"

Adjustments for vta & tracking force

Ignore minor differences in your arm to below drawing which is for illustration only



and slacken it half a turn or so.

Just under the arm plate is the thin silver vta height adjuster wheel – To raise the arm, turn the wheel clockwise (anti-clockwise to lower it). The wheel has a dimple so that you can see how far you turn it - each half revolution of the wheel is equivalent to a 0.5mm change in height.

Clamping: For the sake of speed in vta setting, we recommend that you leave the arm unclamped during the comparisons. However it will sound FAR better clamped, once you have arrived at the vta “sweet spot”. An Allen key is provided for this purpose and the position of the clamping grub screw is shown in the relevant diagram.

The wheel is capable of raising the arm around 30mm but not more than 20mm is recommended for optimum performance.

Experiment with vta: It is important to experimentally set the optimum arm height by listening to different vta settings. If the arm base is too high, the sound is usually slightly on the bright side and lacking body in the bass – too low and it veers on the dull side. To enable precise and repeatable vta setting, your Origin Live arm has an integral vta adjuster wheel. This method of height adjustment is extremely accurate, with obvious benefits in terms of speed of adjustment. This means better listening comparisons between different vta settings.

Do not adjust Azimuth or any of the point settings in the yoke

The adjuster points are set up very accurately in the factory for correct azimuth. This is a very fine adjustment and one that needs specialist knowledge of the arm. For this reason if any of the grub screws are adjusted in the yoke other than by an authorised dealer it will invalidate the warranty.

Counterweight position too near the end of the stub? (optional read)

A common idea propagated in Hi Fi circles is that the counterweight should be as close as possible to the yoke to minimize inertia and reduce “see / saw” effects over record warps. We believe this idea is based on certain observations on particular arms that have then led to a totally incorrect diagnosis of the real causes of any performance changes perceived. Although intuitively the theory of decreasing the inertia of the counterweight seems very plausible, there is another more proven explanation. The reason this is helpful to realise is that it gives peace of mind that when the counterweight is positioned at the end of the stub on an Origin Live arm, you are NOT losing performance.

The notion that counterweight position affects performance has much more to do with vibration and lack of structural rigidity than inertia effects - in other words on some arms it pays to keep the counterweight close to the yoke as it decreases resonance effects from counterweight “waggle”. On these arms the counterweight causes an increasing vibrational whiplash effect as it gets further from the pivot.

Origin Live have gone over and over this with their arms and established conclusively that the counterweight position simply does not affect performance very significantly on a properly designed arm. The idea that inertia is an enemy is also based on pure ideology - the fact is that without inertia the stylus could not read the record groove at all!

Some systems add weight at the headshell to INCREASE inertia as it is proven to be beneficial. 12 inch arms have much higher inertia than 9 inch ones but nobody seems to bat an eyelid!

The following calculations are given to try and give a sense of proportion to a rather intuitive but incorrect notion.

Inertia differences are relatively insignificant. To get the weight closer to the pivot, the counterweight has to be heavier and this adds inertia - all in all a difference of 20mm or so is not a big deal.

To illustrate this using laws of physics - the moment of inertia is $m \times r^2$ where m is the mass and r is the distance to its centre of rotation

Say that a 130gram counterweight is 45mm away from the pivot - moment of inertia is $0.13 \times 0.045^2 = 0.26 \times 10^{-3}$ to the minus 3

Equivalent downforce can be achieved with a 235g weight at 25mm from pivot so - moment of inertia is $0.235 \times 0.025^2 = 0.146 \times 10^{-3}$ to the minus 3

This is a difference of 0.000114

Now compare this with the MUCH HIGHER increase in moment of inertia caused by a 16gram cartridge in comparison to the average 8grams

16 gram cartridge inertia is $0.016 \times 0.220^2 = 0.774 \times 10^{-3}$ to the minus 3 (0.220 is pivot to cartridge distance in m)

8 gram cartridge is $0.008 \times 0.220^2 = 0.387 \times 10^{-3}$ to the minus 3

This is a difference of 0.000387 - nearly 4 times higher than the inertia saving of moving the counterweight in.

Another case of observations drawing the wrong conclusions is the case of low slung counterweights. Low centre of gravity IS important for unipivot arms but dual pivots and gimbal arms do not “sway about” and it makes no difference in practice to sling the weight low. As previously outlined, any beneficial observations are down to a heavier weight or different method of attachment reducing resonance effects on certain arms but not Origin Live arms. This is something we have tried and tested repeatedly.

ANTISKATE FORCE (SIDE BIAS)

This applies an opposing, balancing force to the natural **inward** drag of a pivoting arm while playing. Left uncontrolled, the stylus would push up against the groove inner wall, causing distortion both from mistracking and a cantilever skewed in relation to the cartridge generator.

Carefully twist the wire loop to the correct angle relative to the arm base – you can use the enclosed paper template, showing a plan view of the arm to do this – the angle only needs to be approximate – the wire loop is held in place by a set screw at its base – this can be retightened if necessary using the allen key supplied.

Carefully unpack the 2 balls and joining thread. Set up the 2 balls and thread as shown in photo . The side bias force is set using the ball which slides along the silver shaft protruding from the rear of the arm yoke (beside the counterweight). This ball is clamped in position using a set screw in the ball and 1.5mm allen key. Thread the thin nylon filament line through the small gap of the wire “eye” to allow the ball weight to hang freely. The adjustment ball is initially best positioned about 5mm away from the yoke – this is approx the correct position for most cartridges. If you wish to increase the side bias force then unclamp the ball using the 1.5mm Allen key and move the ball further outwards. To decrease the side force move the ball inwards. Once you have finalised the correct position re-clamp the ball in position. To be on the safe side against excessive side force it is safest not to set the position of the clamped ball any further out than half way out along the rod as shown below.

Checking side bias

Ideally you need a test record with a track for checking side bias (not all do so check before you buy - The Ultimate Analogue Test LP is one that we can recommend as it has an Anti-skating test; 315Hz amplitude sweep to +12dbu (Lateral). Also the Hi Fi News test record has an Anti-skate/bias setting track.

In the absence of a side bias test track then the following method is better than nothing. Find a test record or a record with approx 10mm of blank vinyl between the end of the lead out groove and the record label. Lower the stylus needle on the blank uncut vinyl and observe whether the needle skates inwards towards the centre of the record or outwards. Increase antiskate until the arm starts to slowly drift inward towards the label. Also, watch the stylus when you set it into a groove. Does it move to the right or left relative to the cartridge body? This indicates too much or too little anti-skating.

FINE TUNING

You now have three adjustments approximated. Tracking force, VTA, and azimuth. It's a matter of reiteration to optimize the sound. The change in sound with each of these individual adjustments can be similar. It's therefore necessary, in optimizing all three, to experimentally move from one type of adjustments to the next, then to the next, in order to balance the optimization for all three. It's helpful to listen to female vocals as you proceed. Firstly try deviating from the cartridge's recommended tracking force by small increments - about 0.2 of a gram deviation above and below the manufacturer's basic recommendations. Don't worry about record damage from heavy tracking as most record damage is actually caused by mistracking in the middle-to-high

frequencies with too little tracking force rather than with too heavy. If you're getting mistracking at the low (lightest) end of the range and yet the low range is generally sounding the best (and on moderate signals, not heavy passages), then chances are you have either a dirty stylus, a bad record, an accumulation of crud in your cartridge, or a cartridge that's getting old. Changes in tracking force can change how you want VTA adjusted.

WARRANTY

We guarantee arms to be free from fault for 2 years and will undertake remedial work, providing the arm has not been modified by any party other than ourselves and has not received maltreatment of any kind.

NOTES

Please note that the arm can make a slight “**rustling**” noise through the speakers when it is lifted across the record. This should not be a cause for concern as it is only caused by microphony of the internal litz cable - under normal playing conditions this is inaudible.

If Arm lift is at wrong height - You are able to raise the curved arm rest piece by undoing the tiny M2.5 allen bolt in its side - Use the 1.27mm size A/F Allen key provided. If you then re tighten this with the arm rest slightly higher up on its shaft, you should be able to raise the arm off the record. If you do not have the correct size allen key or it's lost then try filing down a slightly oversize one to a “wedge” shape thus guaranteeing a tight fit.

If the arm “sticks” in playing a record, then it is almost certain that the curved arm rest is fouling on the yoke. To check if this is the case, hold the arm finger lift and check that the arm can traversed by hand above the surface of the whole record. This will identify the position of the “stick” – simply rotate the arm rest till it no longer fouls – this can usually be carried out without loosening the arm rest grub screw.

The sound of new arms and rewires will improve significantly over the first 2 weeks as items “bed in” and arm wires **burn in**.

Now that all the hard work is over you can settle back and hear the results - we wish you many hours of enjoyable music and rediscovering your record collection.

Hi-Fi cartridges explained

optional reading for less experienced users

GENERAL NOTES

As Origin Live supply most makes of hi-fi cartridge we get asked questions from time to time about various issues regarding set up and care. To help newcomers to this area we have published the following notes. These guidelines are of a general nature - we publish them only to be of help and although widely accepted they are not formally authoritative - we cannot accept liability if you choose to use them and neither do we encourage the time consuming occupation of answering queries surrounding the procedures outlined - these are best referred to the manufacturer of your specific hi-fi cartridge.

For those new or inexperienced to fitting hi-fi cartridges we would state that this is NOT difficult and much of the detail and perfectionism outlined below is for those who like to experiment. We ourselves do not normally check azimuth, or

vary tracking forces from the manufacturers recommendations - neither would we worry if the arm was up to 2mm away from the recommended distance from the spindle - although all these details are audible they are generally of a relatively low order, however tracking force and VTA in particular are worth fine tuning should you feel anything is lacking. If things seem complicated we would encourage you not to be put off as it all becomes clear once you get started.

Before fine tuning the set up as described below you should allow the cartridge to "run in" properly - at least 40 hours for some cartridges.

IMPORTANCE OF SET UP

Hi-Fi cartridges travel like a bobsleigh through the grooves of a record only a few thousandths of an inch wide. You hear groove displacements of the order of a few millionths of an inch. (That's like splitting a hair into one thousand pieces.) Every bit of motion or vibration allowed at this level can be heard enormously amplified through your speakers. For this reason it is good to set up the turntable and arm correctly so that the audio cartridge can do its job properly. For instance a turntable out of level can produce side forces on the pickup cartridge tip that will wear it more on one side than the other as well as have a slightly degrading effect on the wear of your records.

LEVELNESS

When a turntable goes out of level, the platter bearing performance and the arm's dynamics, specifically anti-skate, are negatively affected. So be sure your turntable platter and tonearm mounting board are level - use a spirit level. If the platter is out of level, first adjust the surface that the deck stands on. The suspension (in the case of a suspended sub-chassis design) may also need levelling if it has subsided over time. If the arm board is not level (which means the arm pivot is not vertical), either return it to your dealer for repair or re-level it yourself by shimming between the mounting board and it's support.

HI-FI CARTRIDGES ALIGNMENT

Alignment for hi-fi cartridges needs to be optimised in three different planes. However, it cannot be perfect in all three planes, so it must be optimised for an overall best balance or compromise. The final authority should always be your ears and preferably over an extended period of listening. Bear in mind that each record is cut slightly differently. Here again, optimise for an overall balance of good sound over a wide range of records. The three alignment planes are as follows. (Please note that it is the stylus, not the cartridge that is being aligned.)

Lateral tracking angle

Viewed from above, the hi-fi cartridges arcing movement across the record must maintain the stylus in the same relation to the groove as that of the cutting stylus's straight-line tracking; this is Lateral Tracking Angle, or Tangency. Apart from linear tracking arms this is always a matter of the best compromise.

Azimuth

Viewed from head on, the stylus must be perpendicular in the groove so as not to favour one groove wall, and therefore one channel, over the other wall/channel; this is Azimuth.

Vertical tracking angle (VTA)

Viewed from the side, the stylus must sit correctly in the groove, at

the same angle as the original cutter; this is Vertical Tracking/Stylus Rake Angle. (VTA, however, varies from record to record due to their varying thicknesses. Therefore, this alignment must be set by ear, even more than is the case with the other adjustments).

HI-FI CARTRIDGE ALIGNING TOOLS

Tools required are an alignment gauge, a ruler, a tracking force gauge, a FLAT record, a screwdriver or Allen keys of the right size (usually 2mm), a good light may also be helpful. Small needle-nose pliers and a magnifying glass all help. It also helps to have the hi-fi news test record. Treat the arm with care as some parts are fragile. To this end ensure that tightening of any bolts is carried out gently and without causing undue strain.

Tonearm wiring uses a standard color code for channel and polarity identification: White = L Hot, Blue = L Ground, Red = R Hot, and Green = R Ground. If the cartridge pins aren't color-coded the same way, they will have letter identifications next to them. Make sure that the arm's wires, wire clips, and solder joints are in very good condition. At minimum, clean the contact between cartridge pins and wire clips by removing and replacing each clip. Holding the clips with needle-nose pliers can make this easier, but be careful that you don't strain the wires where they join the clip. Check the clips for a proper fit on the cartridge pins, and adjust them if necessary. "Proper" means snug but not tight. To check clip size, hold the cartridge tail-up close to the head wires, grasp a clip firmly right behind its tubular part with the tweezers, line it up with the cartridge pin, and press. If it does not slide on with moderate force, the clip needs opening-up. If it slides on easily but flops around when attached, it needs tightening. Re-sizing is the operation most likely to detach a clip. The trick is to avoid bending the wire at its attachment point or putting too much tension on it. To avoid either, always hold the clip with its wire slightly slack-looped behind it while adjusting. For opening a clip, hold it firmly with the tweezers or needle-noses, right behind its tubular section, and press the tip of the jeweler's screwdriver into the open end of its longitudinal slot until you see this widen very slightly. (Here's where you'll probably need the headband magnifier or reading glasses.) You're dealing with thousandths of an inch here, so a barely visible spreading may be all that's needed. Try it for fit, and repeat until it does. For tightening a clip, press a toothpick inside it as far as it will go, then use the needle-nose pliers to gently squeeze together the sides of the clip near its free end, while watching the slot for any change. (Attempting to squeeze a clip without the toothpick inside it will flatten its sides.) Try it for size, and resqueeze if necessary until the fit is correct. When it is, close up the middle section of the tube to match the end

Proper care and maintenance of Hi-Fi cartridges & records

CARE OF CARTRIDGES

Replace your cartridge when due - hi-fi cartridges have a lifespan for their cantilever suspensions and stylus needles. This will vary from manufacturer and type of cartridge as well as other factors like the cleanliness of your record and the care you take of the cartridge. It is wise to enquire on the expected life of your cartridge to the manufacturer so that when the time comes it is replaced accordingly - most importantly this will preserve your records as well as enable you to enjoy the best performance.

Repacking the arm for transit

If you ever lose these instructions they can be downloaded from our web site under technical support.

Wrap the small polythene bag round the arm tube (in the position shown in photo) before clipping the tube in the arm clip.

Wrap elastic bands in the positions shown. The band

over the arm tube holds the arm tube in the clip and must have sufficient tension on it. If you double up the band by putting a twist in it before placing it over the end of the arm you can get the band tight enough.

Do the same for the cork packing peice.

If you have lost the elastic bands you can use masking tape or similar instead.

Place the arm in it's packing box.

TRANSIT BOLTS WITH NYLON WASHERS UNDERNEATH

BEFORE applying tape or placing arm in arm clip - Nip transit bolts tight (not too tight as you can damage the finish on the yoke). From this reference point, slacken the transit bolts no more than 1 turn to allow enough slack for the arm tube to fit into arm clip. Do not force into the clip without polythene wrapped round arm tube or the finish can get marked.

Once transit bolts are correctly set, wrap polythene around arm tube in clip position (as shown in photo) and reclip the arm in arm clip.

The polythene is essential to protect the arm tube from the edges of the clip which can cause marking of the tube coating.

Polythene (bag) wrapped round arm before placing it in clip. This is to protect the tube from getting marked in transit on the edges of the clip



ARM CLIP

ARM TAPED DOWN HERE

The arm must be taped or rubber banded securely into the arm clip in both positions shown.



Origin Live Ltd, Unit 5, 362b Spring Road, Sholing, Southampton, SO19 2PB

www.originlive.com originlive@originlive.com

