

# DUAL PIVOT MK3 TONEARMS

Specific instructions - essential reading

Upward points - Encounter, Illustrious, Conqueror



**First of all please note that if you ever send the arm anywhere via post or courier it must be packed according to the instructions at the end of this leaflet or damage will occur to the bearings - For this reason keep all the packing and these instructions in a safe place.**

## Dual pivot bearing design – why?

The Mk 3 Illustrious arm is a significant performance upgrade over the Mk2 versions by virtue of its innovative dual pivot bearing on the horizontal axle. This design is similar in many respects to uni-pivot designs – 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 pivot design has 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.

## Handles like a conventional gimballed arms

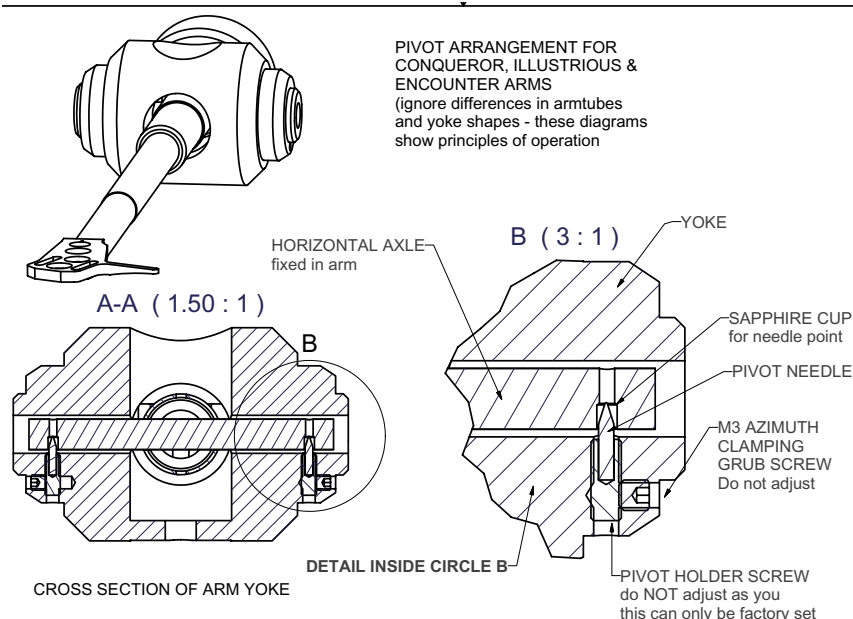
You should handle the arm in exactly the same way as a conventional gimballed arm. In other words you do not need to worry about setting up azimuth and balancing the arm. The azimuth has already been set, such that the headshell is parallel to the arm mounting surface. We strongly recommend that you never adjust the factory setting even though it is possible via the pivot screws. Correct azimuth setting is tricky at the best of times and unless careful record is kept on the original factory settings, one can end up in difficulty. If in trouble see technical support on our web site [www.originlive.com/troubleshooting\\_tonearms.htm](http://www.originlive.com/troubleshooting_tonearms.htm)

## Understanding dual pivot

The below diagram showing an illustration of the dual pivot bearing is shown to give an understanding of why 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 virtues delivered in performance. It is also reassuring to know that the arm cannot be knocked off its 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 the absolute minimum practical level. In doing this there is a fine balance to achieve both a long lasting, robust design and realizing the potential of extremely low friction. In practice this means that the arm must have a slight degree of movement due to a rounded tungsten point in a shallow radiused (nearly flat) bearing cup. The alternative to this is a very sharp, potentially fragile point in a deep v shaped cup – this would certainly restrain the movement of the point but would also increase friction.

The pivot points will “self centre” by sliding into the bottom of the shallow low friction cup. However the final resting place of the point in the cup 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 changes fractionally so can the tracking force by up to plus or minus 0.05grams. In practice this has no effect on performance and is also common among certain unipivot designs with very low friction bearings.



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# Making the dual points operational

*The cork packing peices shown below are critical, to prevent damage to the bearing points in transit. Gently remove these to make the arm operational and keep the cork in a safe place. This **MUST** be replaced whenever you send the arm by post or any form of courier as they throw boxes around severely and damage to the points and cups occures unless the cork is in place.*

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



**CORK PACKING PEICE  
WEDGING ARM TUBE  
TIGHTLY INTO TOP OF YOKE  
AND TAPED ON**



**2 PEICES OF CORK PACKING EITHER  
SIDE OF ARM TUBE AND THEN  
WEDGED INTO THE YOKE HOLE TO  
ENSURE THE ARM REMAINS CENTRAL  
IN THE YOKE**

**CHECK THAT ALL IS WELL** - Once you have installed the arm as per the general instruction sheet, check the arm for accuracy - The stylus down force should be consistently accurate to within plus or minus 0.1 grams. Higher deviations indicate that the bearing has been damaged or incorrectly adjusted.

To check consistency measure 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. 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.

## VTA (vertical tracking angle) adjuster wheel

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.

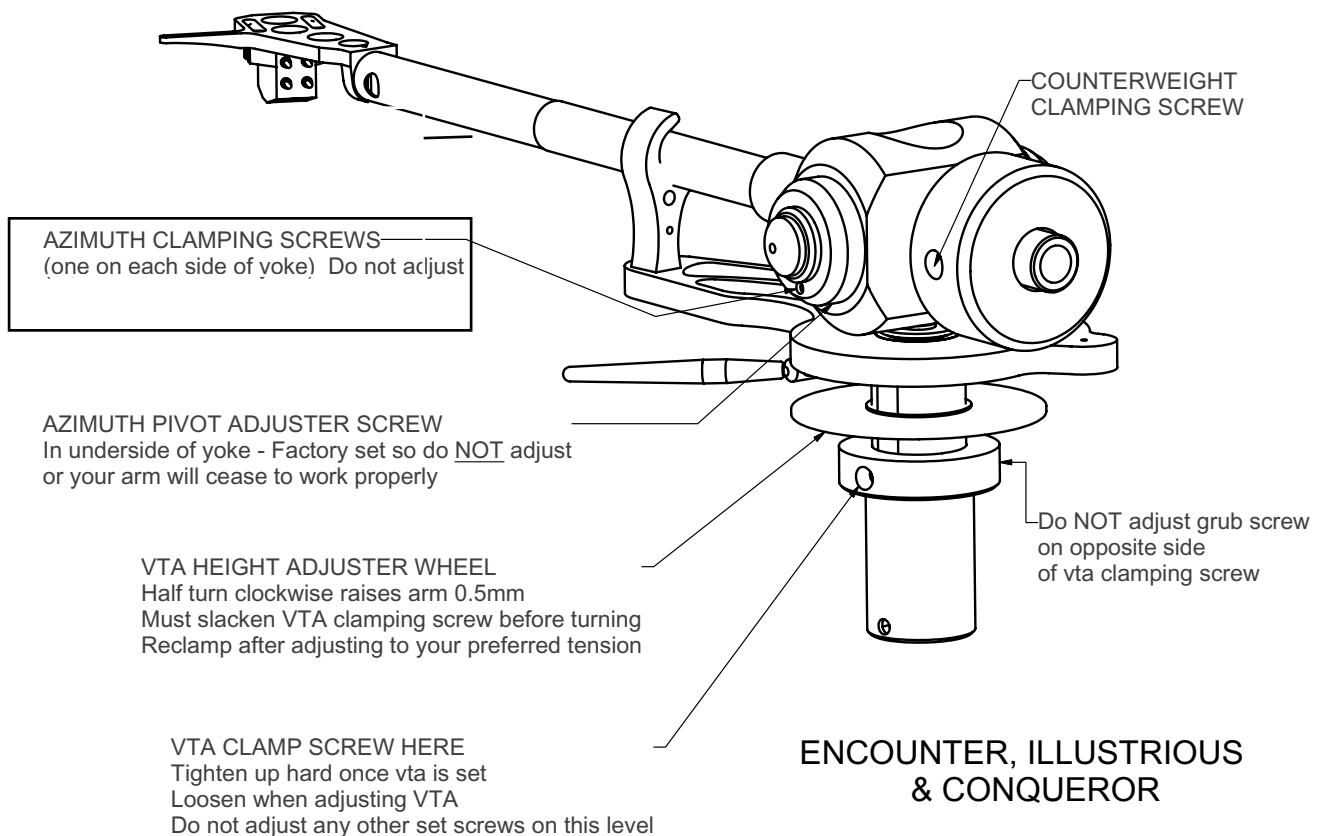
**VTA Calibration:** The arm must be “unclamped” for the vta wheel to work – see diagram for clamping grub screw position. Just under the arm plate is the thin knurled vta height adjuster wheel – The wheel has silver markings on the edge so that you can see how far you turn it. There are actually only 2 silver marks to allow you to count each half revolution of the wheel. Every half revolution is equivalent to a 0.5mm increase in height. Rotating the wheel clockwise (looking down on the wheel) raises the arm and lowering is the opposite.

**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 tight, 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.

Thank you for purchasing an Origin Live arm. Enjoy getting closer to the original sound and enter the heart of your music. We hope to serve you in the future.



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# Repacking the arm for transit

The dual pivot bearing is a very precise and in some ways delicate mechanism. Every care has been taken to ensure that the arm reaches you in perfect condition such that the bearings are accurate and very low in friction. If you need to send the arm anywhere, the following procedure must be followed carefully.

Remove the counterweight and turn the vta adjuster wheel up as high as possible (i.e anti-clockwise when looking down on the arm ) - this enables the arm to sit in the box at the correct height.

**Fit and nip tight the transit bolts and nylon washers** - the nylon washers are critical to avoid damaging the paint. If you have carried this out successfully the arm is clamped such that the end caps are above the horizontal centre line of the yoke.

Only now can you place the arm in the arm clip and tape it down to the arm plate as shown on page 3 - this operation must **not** be carried out before inserting the transit bolts.

**Pack the arm into it's wooden box using the foam packing peices**

**Pack the arm into it's wooden box using the foam packing peices.**



**CORK PACKING PEICES WEDGING ARM TUBE TIGHTLY INTO TOP OF YOKE AND TAPED ON - (use double thickness of 1.5mm thick cork folded over)**



**2 PEICES OF CORK PACKING EITHER SIDE OF ARM TUBE AND THEN WEDGED INTO THE YOKE HOLE TO ENSURE THE ARM REMAINS CENTRAL IN THE YOKE**