ENTERPRISE

Specific instructions - ***essential reading***

Dual pivot bearing design – why?

The Enterprise arm is a performance leader by virtue of it's innovative dual pivot bearing on the horizontal axle (which governs the arms vertical movement). 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 an extremely careful record is kept on the original factory settings the arm will probably end up not working correctly. If in trouble see technical support on our web site www.originlive.com/troubleshooting_tonearms.htm

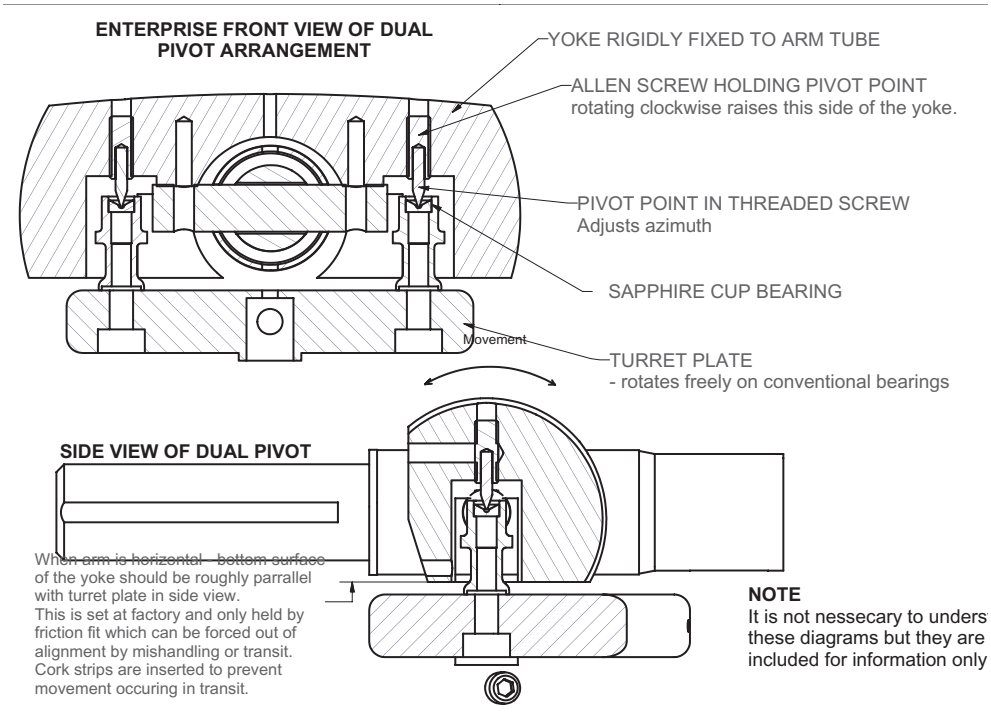
Having said this it is recommended to slacken off the azimuth clamping screws NOT the azimuth adjuster screws. Slackening the clamping screws has the effect of increasing the performance significantly.

Understanding dual pivot

The below illustration shows the dual pivot bearing 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 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 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) sapphire jewelled 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 0.02 grams. In practice this has no effect on performance and is also common among certain unipivot designs with very low friction bearings.



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.

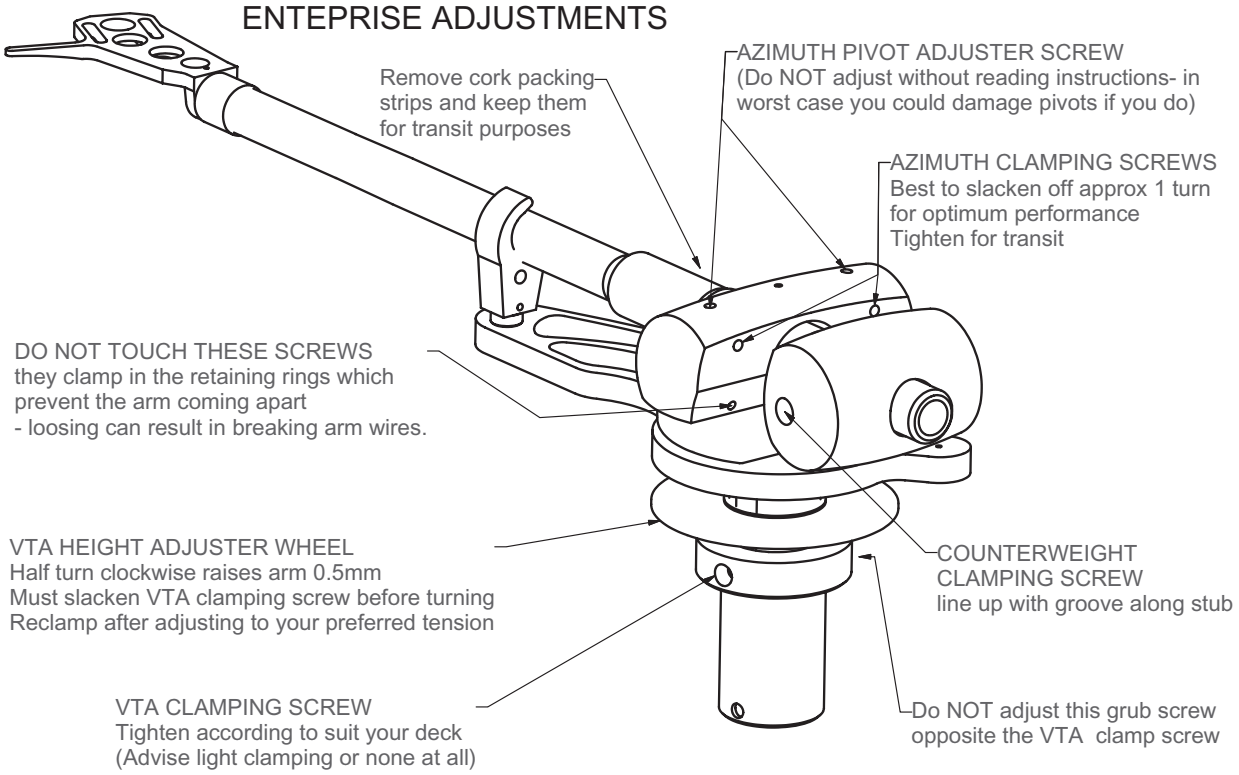
VTA Calibration: The arm must be "unclamped" for the vta wheel to work – see diagram for clamping grub screw position. Just under the arm plate is the thin knurled vta height adjuster wheel – The wheel has silver markings on the edge so that you to see how far you turn it. There are actually only 2 silver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

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.

Transit and unpacking: You will notice 2 cork strip wedges in the space between the top of the arm tube and the yoke. This is to prevent any movement out of parallel between the yoke base and the turret plate whilst in transit. Remove the cork strip and keep in a safe place as it should be replaced for arm transit. Now go tho the next page for making the dual pivots operational.

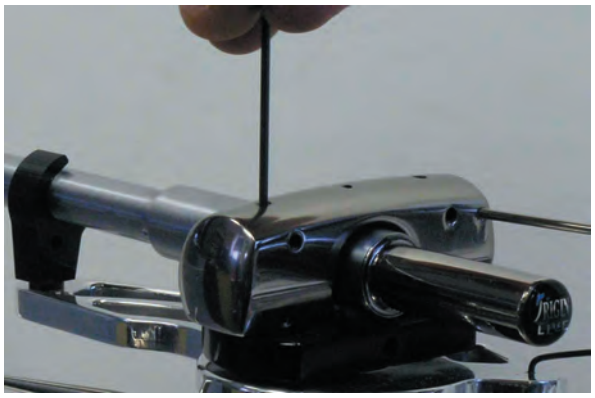
Thank you for purchasing an Origin Live arm. Enjoy getting closer to the original sound and enter the heart of your music. We hope to serve you in the future.



Setting up the dual points - mandatory or arm will not work

Setting up from new

Ensure that the 2 Azimuth clamping screws are slack by winding them anti-clockwise by approx 1 turn



Turn the 2 azimuth pivot adjuster screws exactly 4 turns clockwise (winding clockwise when looking down at the yoke).

The 2 pivot points are factory set so that they are exactly 4 turns up from their operating position. This is so that there is no possibility of damage in transit - in other words the points are clear of the jewelled cups in transit.

To lower the points into the cups so that the arm can operate correctly, follow the proceedure below.

Slacken the Azimuth clamping screws approx 1 turn

Turn the 2 azimuth pivot adjuster screws exactly 4 turns clockwise (winding clockwise when looking down at the yoke). To ensure 4 exact turns simply insert the allen key and make a note of the orientation of the "handle" - then wind the 4 turns till the handle ends up in the same orientation.

WARNING - do not wind further than 4 turns or to a point where you meet resistance. If the points are wound in too far they are forced hard against the jewelled cup and can easliy splinter the hardened points or fracture the sapphire jewelled cups. The screws can be a little "notchy" due to the clamping screws temporarily deforming the threads but this is not a hard resistance.

IF YOU LOSE TRACK OF SETTINGS JUST GO TO PAGE 4

CHECK THAT ALL IS WELL - The stylus down force should be consistently accurate to within plus or minus 0.06 grams. Higher deviations indicate that the bearing has been damaged or incorrectly adjusted.

The bearing operation and well being 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. 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

Re-setting the dual points if original settings are lost

SUMMARY OF PROCEEDURE The headshell is factory set to be perfectly parrallel to the bottom face of the yoke in terms of rotation (azimuth). We therefore use the bottom face of the Yoke as one key reference - i.e. if the yoke is level then we know the headshell azimuth is correct (azimuth is the rotation of the headshell relative to vertical). The aim of the adjustment described below is to end up with the **bottom face of the yoke level and 1.5mm above the top surface of the semi-circular yoke plate** directly underneath it. Note: The yoke plate is perfectly level.

A summary of the proceedure described below is firstly to lower the yoke so that its bottom face (protrusions) nearly rests on the turret plate. This gives a rough reference point to start from. Next, raise the yoke exactly 1.5 mm by turning the azimuth adjuster screws 3 turns. Check yoke is level and if not then fine adjust it, using the cork strip till exactly level on both sides of the yoke.

DETAILS FOR SETTING UP BEARING POINTS

Ensure that the 2 Azimuth clamping screws are slack by winding them anti-clockwise approx 1 turn

Place the arm in the arm clip to ensure the arm is roughly level along its length.

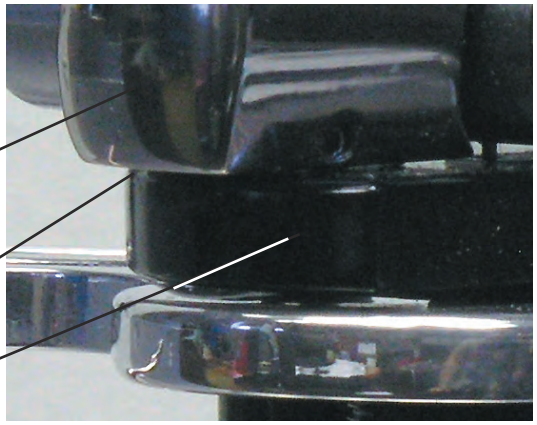
Now turn the 2 azimuth pivot adjuster screws anti-clockwise to lower the yoke till it touches the turret plate and then unwind the screw a further turn.

Next wind in each adjuster screw (clockwise) to the stage where it *just* starts to lift the yoke off the turrret plate. This is what will be referred to as the "ground datum position" .

NOTE: There are thin protrusions on the underside of the yoke under the pivot screw positions - The underside of these protrusions are considered to be the underside of the yoke.

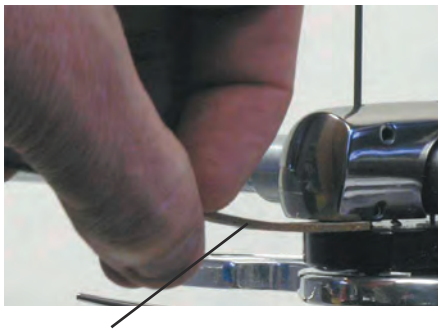
There are two methods of achieving this "ground datum position". The first is to push down on the yoke hard with the thumb of one hand. At the same time wind a pivot adjuster screw clockwise. At first the screw will be relatively free but when it meets the jewelled cup and starts lifting the yoke against the force of your thumb the resistance to turning will increase significantly. The point where resistance **starts** is the ground datum.

Enlargement photo of "gap" area



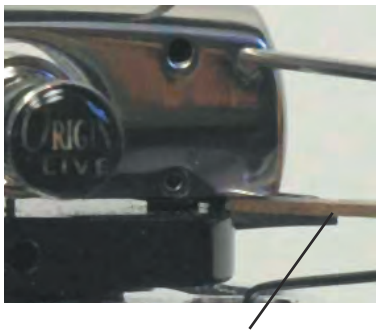
1 TURN ON THE AZIMUTH ADJUSTER SCREW = 0.5MM INCREASE RISE OF YOKE

PHOTO 4



CORK STRIP INSERTED ON LEFT SIDE IN 1.5MM GAP BETWEEN YOKE AND TURRET PLATE

PHOTO 5



CORK STRIP INSERTED ON RIGHT SIDE IN 1.5MM GAP BETWEEN YOKE AND TURRET PLATE

CARRY OUT A VISUAL CHECK on the position of the yoke as you turn the adjuster screw, to see when it starts lifting the yoke - never just keep turning the screw more than 2 turns at this stage once you have seen the yoke lift off the turret plate.

The second way of adjusting to ground datum AND checking that it is correct is to insert a peice of thin paper between the underside protrusion and the turret plate. Adjust the screw anticlockwise very slightly so that when the paper is inserted between the protrusion and the turret plate it is held there while you press down on the turret with your thumb. Keep the pressure on with your thumb and at the same time very gently pull on the paper to give it a bit of tension. Now turn the adjuster screw clockwise to raise the yoke - the point at which the paper becomes free is the "ground datum position".

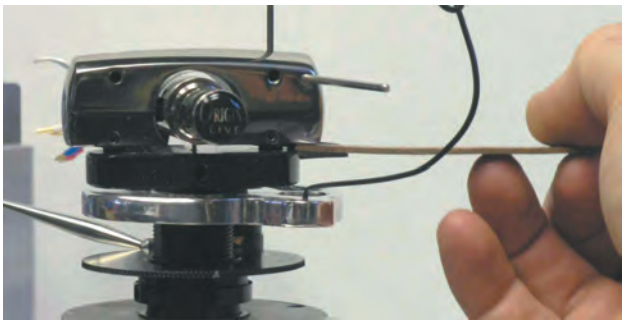
Do the same for the other adjuster screw and use your "paper feeler gauge" to check that both sides are the same (i.e both protrusions sit **just** clear of the turret plate by the thickness of a paper sheet).

Once both adjuster screws are at the ground datum simply wind them both in exactly 3 turns each in a clockwise direction.

A final check is to confirm that you can just insert the cork strip marked "gauge" into the gaps as shown on photo 4 & photo 5. The cork strip is 1.5mm thick.

Note: there are minor protrusions from underside of the yoke - the cork strip should be between the protrusion and the turret plate when measuring the 1.5mm gap.

WARNING - do not wind to a point where you meet resistance. If the points are wound in too far (clockwise) they are forced hard against the jewelled cup and can easliy splinter the hardened points or fracture the sapphire jewelled cups.



CHECK THAT ALL IS WELL - The stylus down force should be consistently accurate to within plus or minus 0.05 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

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.

Packing 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 for various reasons the following proceedure must be followed carefully.

Remove the counterweight and wind the vta adjuster wheel up as high as possible.

Unwind the Azimuth adjustment screws by 4 turns exactly

Tighten the azimuth clamping screws lightly onto the azimuth adjustment screws to ensure that they don't move in transit.

Insert the two cork peices into the top of the yoke as shown in the photo. NOTE - the cork strips are tapered and will only fit in with the narrow end first. These strips are not absolutely essential but do act as a safeguard against the arm being forced out of parrallel with the base of the yoke.

Tightly tape the arm tube to the arm rest plate - cellotape or masking tape is fine.

Place the arm in it's aluminium flight case and then enclose this in a card box to ensure that it does not open in transit.