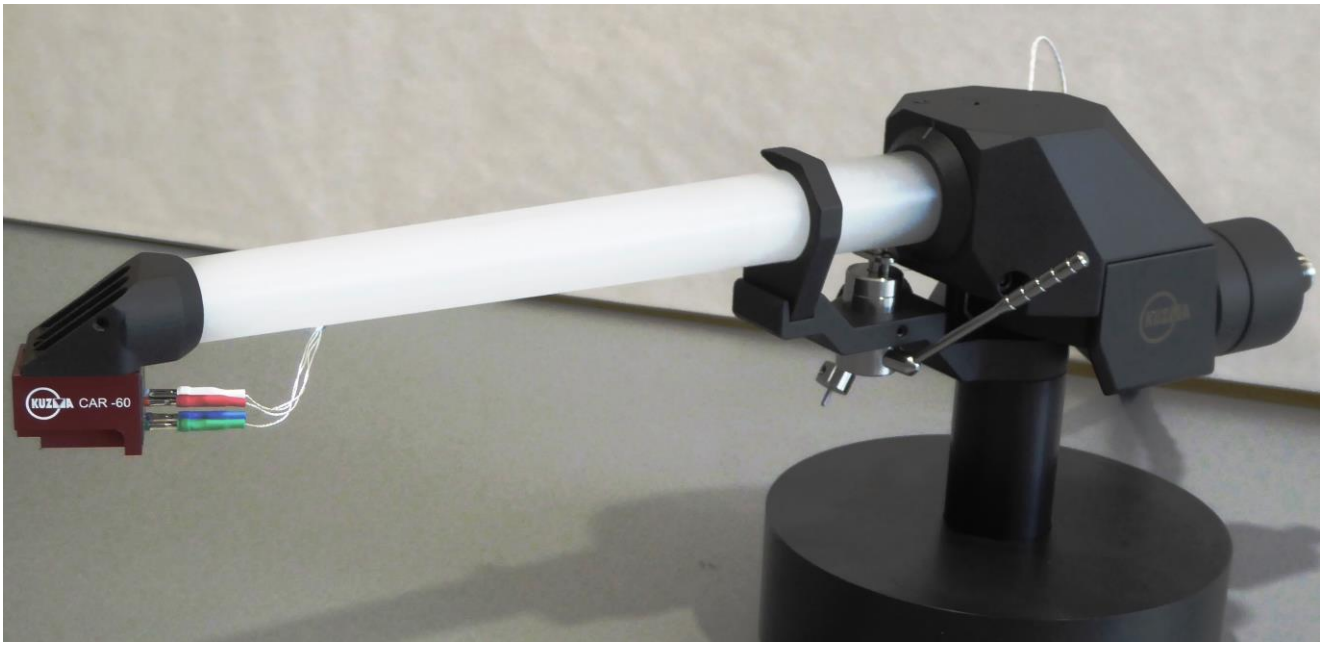

KUZMA SAFIR 9 TONEARM

Instruction manual Serial Number: ……..

2022-05-22

The **SAFIR 9** tonearm is a very precisely engineered piece of equipment, however, the construction is robust and requires minimal maintenance for optimal performance.

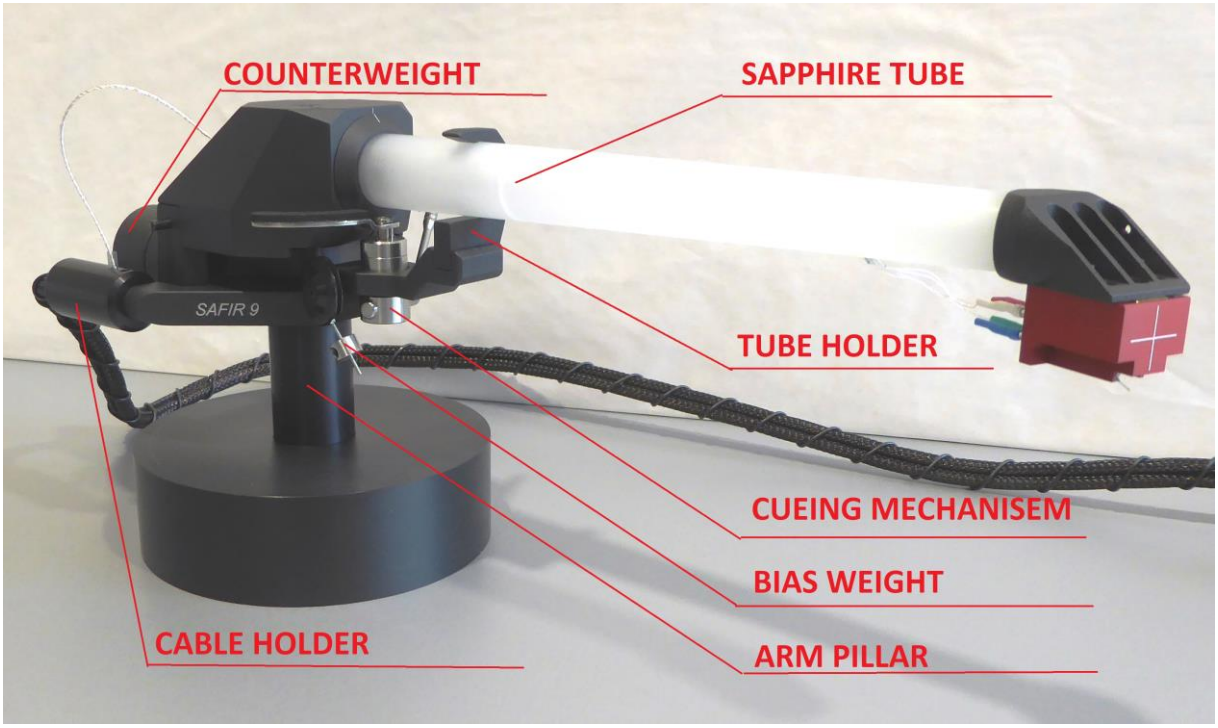

Fig. 1. General parts

CONTENTS:

General description

The Kuzma SAFIR 9 tonearm is the best result of our attempt to extract more music from vinyl records that has, unitil now, been heard.

The heart of the tonearm is a very rigid and stiff, sapphire conical tube which allows the cartridge to perform to its maximum potential. The bearings are our own unique design of 4 spikes set in cups similar to those used in 4Point tonearms. All four points have minimal starting and moving friction and zero play in all directions thus ensuring that the headshell with the cartridge moves precisely and with minimal vibration across the record.

The sapphire tube is fitted into massive block of solid aluminium and brass, giving inert support and further disspating vibrations which occur during playback and bearing motions.The counterweight with lock mechanism balances the tonearm. Azimuth and VTA can be adjusted in small repeatable increments with zero play, by means of an Allen key.

The tonearm is fixed on the turntable arm board via the Kuzma arm base. VTA is adjusted by raising or lowering the tonearm's pillar in the arm base with a VTA screw which controls its height, thus still allowing precise VTA changes when required.

Internal wiring is of superior special alloy silver wires. A set of 4 wires runs unbroken from the cartridge pins via a 1.5 m long tonearm cable with silver RCA bullet connectors.

Listening suggestions:
Play records which you though were sounding poor on your audio system!
Try to play louder than you think that your system is capable of!
L-R channel balance might be different than you are used to….

Product registration and warranty extension

Kuzma products have a non transferable 2 year limited warranty on parts and labour, which may vary in each country.
To obtain the 5 year* limited warranty from us, you need to register the product on our web site within 30 days of purchase. We suggest registration of products in any case because this will also help you to receive our technical support more easily and with resale of products.
Simply register on our web site, complete the forms and you will receive an extended five year warranty card on your email within a few days. * not valid for ex demo products.

Technical data:

Mass:	1250 gr
Effective length :	229 mm (9 inch)
Mounting distance:	212 mm
Offset angle:	23 deg
Effective mass:	60 g
VTA adjustment:	yes
Azimuth adjustment:	yes
Bias adjustment:	yes
Cables:	selected silver
Arm mount:	Kuzma arm base

Accessories:

Allen key 1,5 mm	bias, cueing device
Allen screwdriver 1,5 mm	VTA
Allen key 2,0 mm	azimuth, cartridge screws
Allen T key 2,5 mm	lock in arm base
Allen key 4,0 mm	arm base
VTA height rings	2x (5&20 mm)

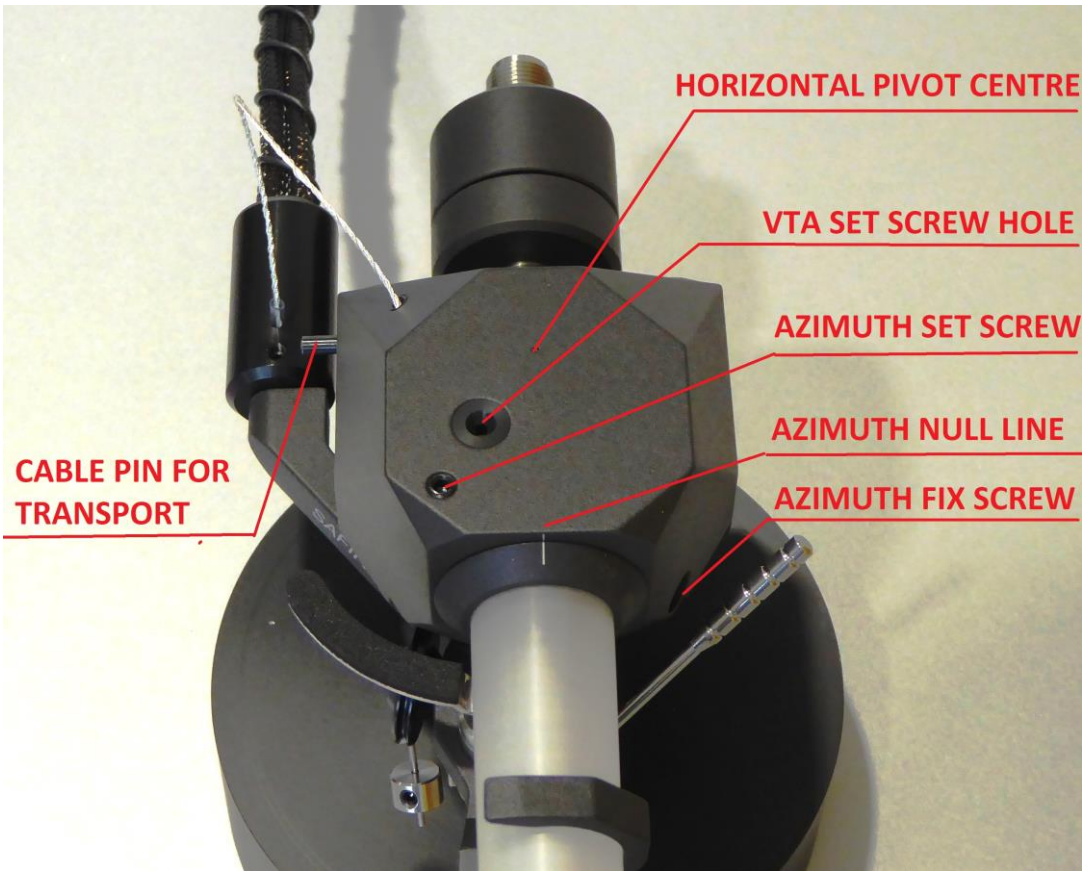

Fig. 2. Various screws for adjustments

1. Unpacking

Open the box carefully and remove top cover, top foam and instruction manual- read it all first!
Then remove the arm base and prepare it for fixing onto the turntable. Be sure that the arm board on the turntable has the correct cut-out (main central hole must be 40 mm in diameter and the pivot to spindle distance is 212 mm).

The arm tower with horizontal bearing is blocked during transport by protective foam. (See Fig. 5b)
When tonearm is transported remove tube assembly, gently lifting top of the arm tower and reinserting foam!

Handle the tube assembly with vertical bearing points with care and, when put aside, ensure that nothing is touching the bearing points. Bear in mind how you will handle it with the output cable which is fixed on the tube assembly during transport.

Fig. 3. Box with parts

2. Basic set up

Arm base:
Mount the arm base on the turntable at a distance of 212 mm from spindle! Use Allen key 4 mm. If the pre-cut arm board has a thread (M5), then use three screws and fix them from the top through the arm base into the arm board thread, or use a ring underneath and fix three screws into this ring, which will then hold the arm base very tightly. Ensure that you position the arm base so as to give access to an Allen key for fixing the arm tower into the arm base i.e. towards the rear right back corner of the turntable. Also check, when mounting the arm on turntables, that you allow enough clearance for the counterweight and correct position of the tube in relationship to the platter.
Due to the special bearing construction, there is only a limited arc in which the arm tube can travel in a horizontal way.

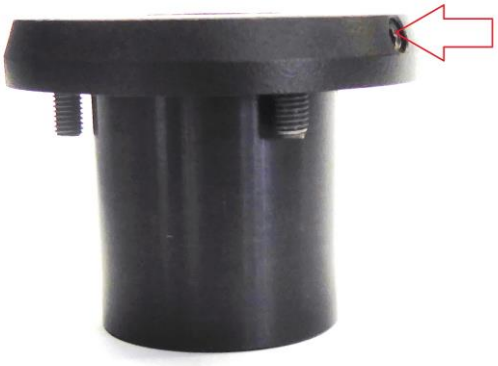
Fig. 4. Kuzma arm base

Arm tower:
Carefully handle and insert the arm tower into the arm base. Ensure that the height is such, that the top surface of the platform holding the cueing device is at a similar height to the record. Fix it with an Allen key 2,5 mm in the arm base. Also check that the VTA screw allows you to keep the tower at the chosen height. Position the tube holder as if tube is in the rest position, the gap between platter and tube being about 25 mm(two fingers). (Fig. 5&5a)

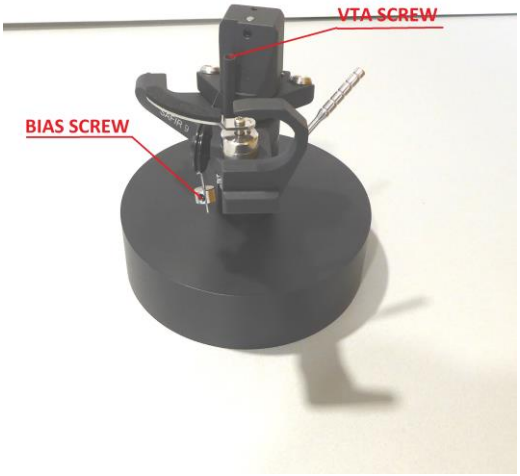

Fig. 5. Arm tower- various adjustments

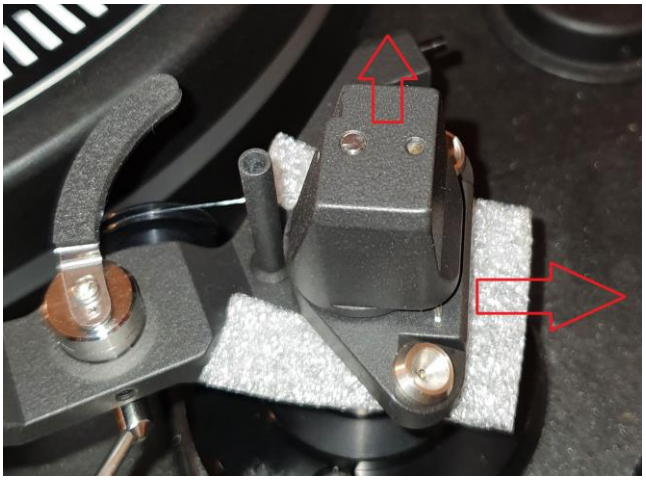
Fig. 6. Arm tower-removing transport foam

Remove the fixing foam on the horizontal bearing assembly (Fig. 6). Check that the bias thread is fixed and gently rotate the horizontal bearing assembly from one to another extreme. It is only possible to make approximately ¼ of a turn and it is normal to feel slack in the bearings.

Tube assembly:
Carefully take the tube assembly with the cable and gently position the square opening over the square top tower and lower it gently down so that both vertical spikes will fit into the appropriate vertical bearing cups. You might gently rotate the top tower to align the square hole in the tube over the square top of arm tower. Then position the tube into the armrest. (Fig. 7-8b.)

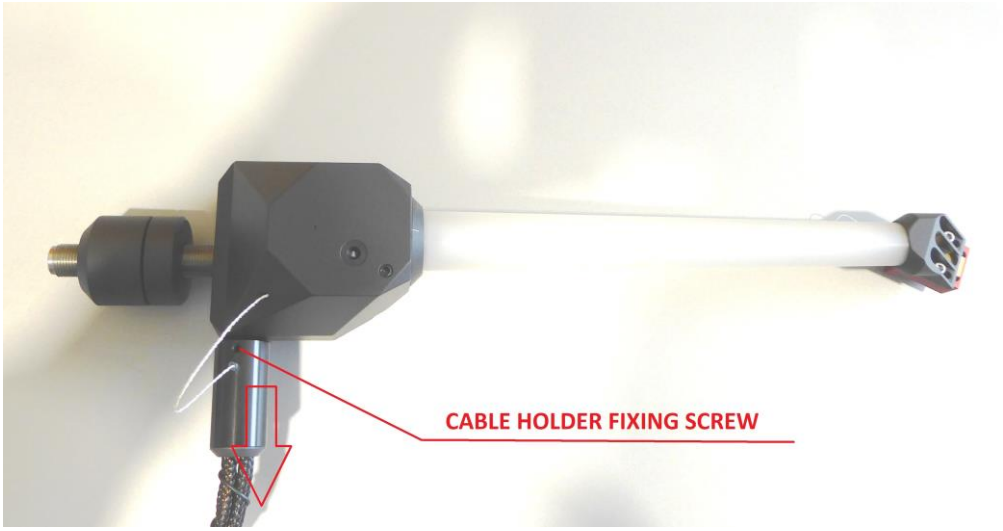

Fig. 7. Tube with cable holder in transport position

Fig. 8a. Arm tower with square top

Fig. 8b. tube assembly with square opening

Cable assembly:

Remove cable from the tube assembly by releasing the black cable holder from the transport position with the 1.5 mm Allen key. Fix it to the empty pin at the back of the arm tower into play position. Fix it in such a way, that the wires will go upwards towards the tube in a loop . Ensure, that the arm tower is fixed in the arm base, because the weight of the cable might otherwise rotate it. (Fig. 9)

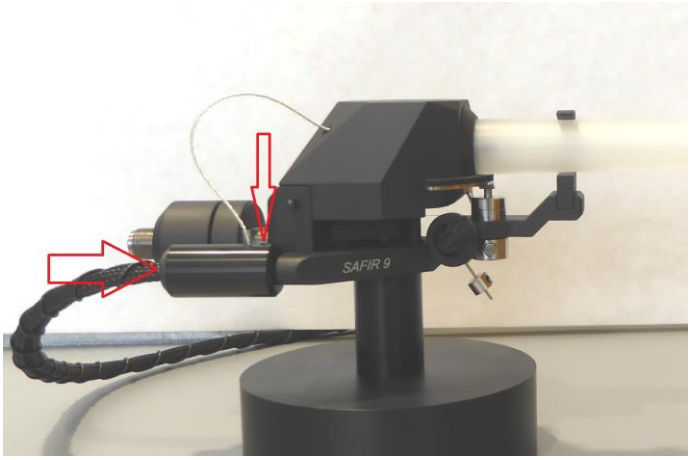

Fig. 9. Cable holder in play position

3. Setting up the tonearm:

Remark:

On our web site look for KAA 2016 download (Kuzma Analogue Academy 2016) where you will find theoretical and practical information how to optimally set up tonearm and cartridge!

Connecting tonearm:

Check the horizontal movement of the tube to ensure that the headshell reaches the inner grooves (approximately to the edge of record label), but it will not travel further to the centre of the record. Connect the tonearm cable and ground wire into the phono preamp.

Due to the added mass of the tonearm, turntable levelling and suspension should be checked and adjusted according to the turntable manual.

Cartridge mounting:

Mount the cartridge with the appropriate set of M 2.5 mm screws. When fixing cartridge clips be sure not to damage the wires under the insulation tubes! Use tweezers not pliers. If you wish you can fix the fingerlift on the side of the headshell- no key required.(Fig. 10)

Fig. 10. Headshell's fingerlift

Balancing of the tonearm:

Rotate the counterweight and aim for roughly zero balance.

The tonearm's centre of gravity is chosen to be around the height of vertical rotation, therefore balancing the tonearm to zero is very difficult. Adjust it to be roughly balanced and increase tracking force by counterweight rotation.

If the counterweight is too loose, hold the front part of the counterweight and rotate the rear part until there is a tighter fit, or lock it into position on the threaded carrier. Opposite rotation will make the counterweight looser. (Fig. 11)

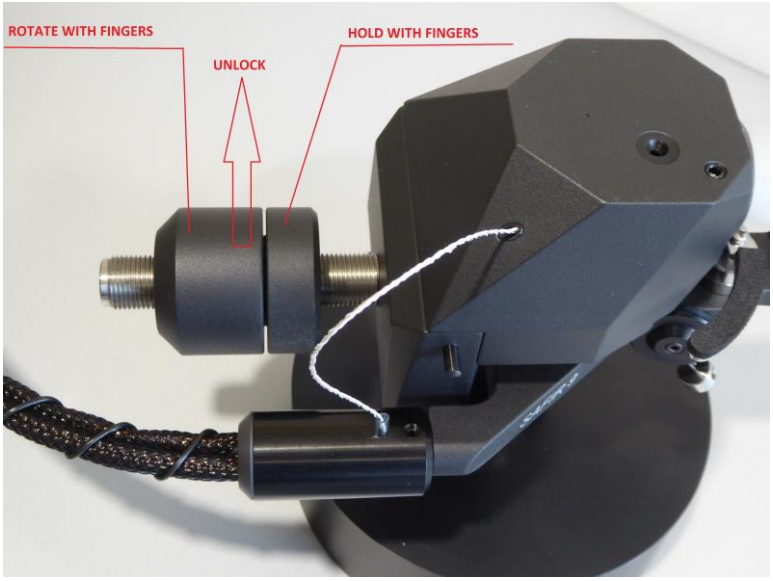

Fig. 11. Counterweight- lock-unlock

4. Tracking force (VTF)

Set tracking force by using a balancing scale, which must be at record height. Rotate the counterweight towards the tube. One rotation will change tracking force by approximately 0.80 g. Set the tracking force suggested to that by the cartridge data but towards max. If you change VTA, reset VTF

Check that the cueing device is at the correct height (See Paragraph 9?).

5. Tangential geometry set up

Put a record on the platter, cue the cartridge, lift up the cartridge from the record and adjust height of the arm tower in such a way, that the central axis of the tube will be parallel to the record. If you cannot move the arm tower down, check VTA screw. (See Fig. 13a.)

Using the protractor, adjust geometry at two null points. Rough guidance is given by the edges of the cartridge body, but accurate adjustment is by observing whether the cantilever and lines are parallel at the two null (zero) points or by special single null point protractors. See position of horizontal pivot centre. (Fig. 12.)

See KAA 2016.

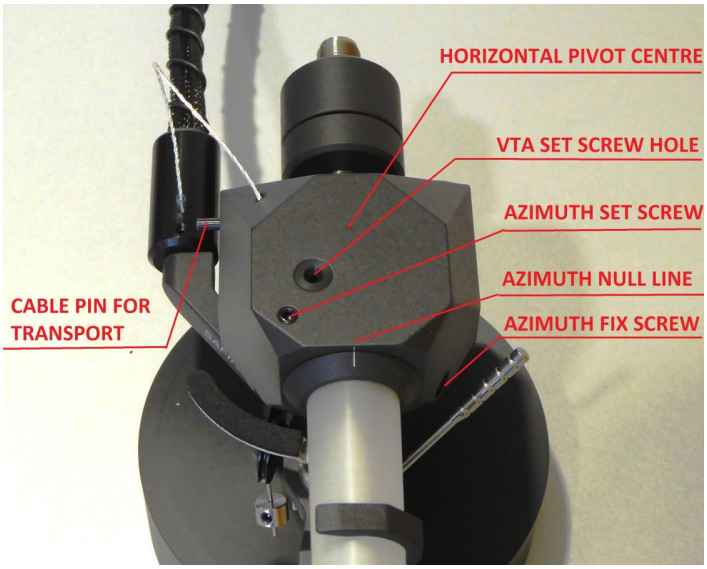

Fig. 12. Pivot point- for measuring record centre distance

6. VTA adjustment (height)

Set up VTA on this tonearm by releasing the screw in arm base. The VTA screw will prevent the tonearm dropping down after the locking screw in the arm base is released (Fig. 13a.).

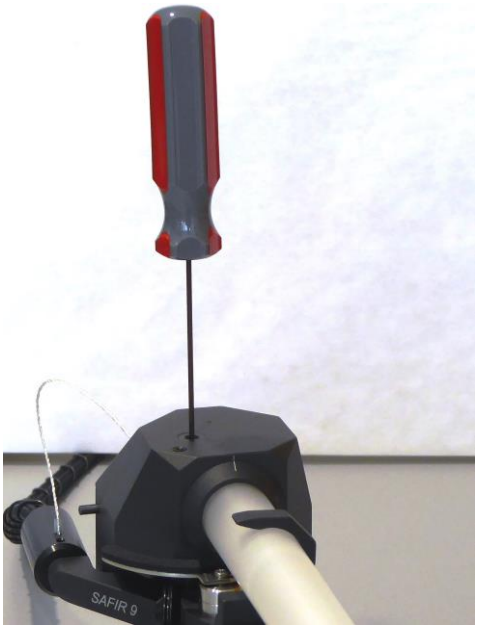

Fig. 13. Adjusting VTA screw

Fig. 13a. VTA screw on VTA height ring-5mm

One screw rotation changes VTA for 0.5 mm. The VTA screw range is in the range of 30 mm. If you need to have tonearm VTA adjustment higher, then add the black 5mm thick VTA height ring between the arm base and VTA screw. This will give you an extra 5 mm. (Fig. 13a&b.) 5 mm high VTA ring do not fix on the pillar.

If you find out that VTA of tonearm is positioned too low below the platter you can use plastic VTA height ring- 20 mm.

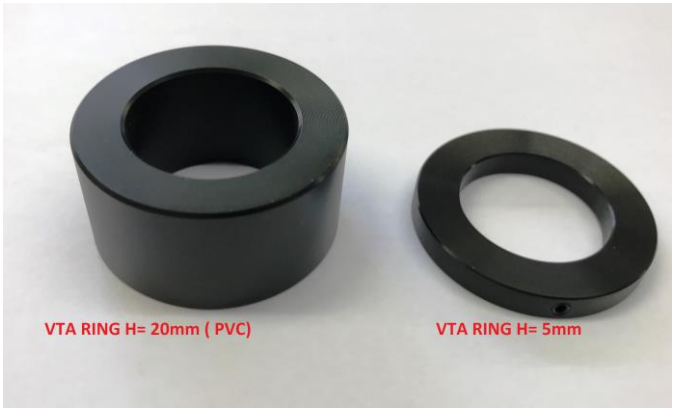

Fig. 13b. VTA height rings 20&5 mm

You might find that extreme VTA height cause problems with the cueing device height. (See Fig. 16.)

7. Azimuth adjustment

To make azimuth adjustments, release the screw locking the mechanism on the side of the tube assembly with Allen key 2,5mm. Insert the Allen key 2 mm into the screw (it may feel loose), rotate it slightly and it will alter the azimuth. (Fig. 14.)

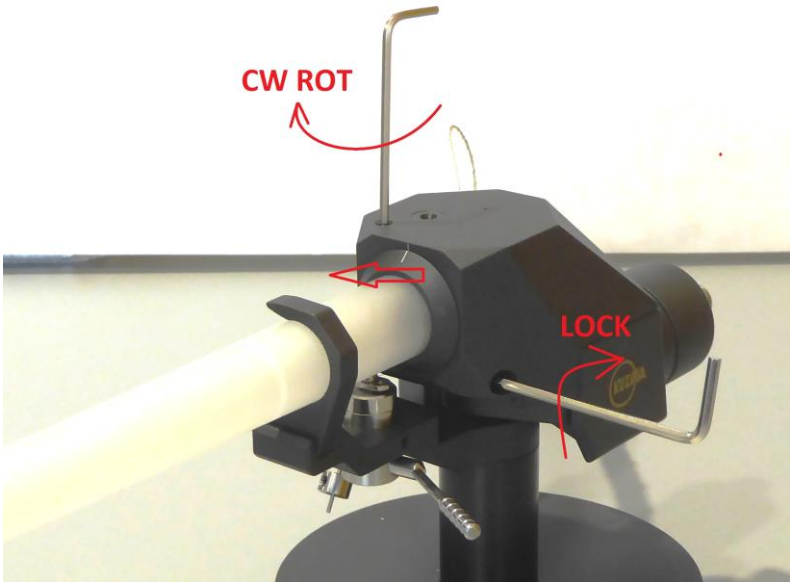

Fig. 14. Azimuth adjustment-unlocking

Rotating Allen key back will return azimuth to its previous position. Changes can be seen by misalignment of the white lines on the top of the centre of the tube assembly. Rotation of Allen key 2mm into CW(clock wise direction) will move azimuth line ACW(anti clock wise)

8. Bias adjustment:

The bias should be rougly adjusted according to the tracking force. Using Allen key 1.5 mm, unlock the screw on the bias weight and position it per your chosen tracking force. Lock the screw back, when in position. (Fig. 5&15)

0,0-1,0 gr	no bias weight (be sure the nylon thred stays in the bias wheel V groove)
0,8-1,6 gr	min (3 mm)
1,4-2,6 gr	middle (6-10 mm)
Above 2,5 gr	max (13 mm)

Fig. 15. Bias adjustment distance: minimum-middle-maximum

For maximum tracking, it is advisable to set the bias by use of an appropriate test record, ie. those with tracking bands and then lower it for about 20%. Do not use test records with blank space where the tip of the needle sits on the surface rather than in the groove. Our suggested settings are adequate- see more about it in **KAA 2016!**

9. Cueing device adjustment

Should you find that in the ‘up’ position the cartridge tip is too high or too low above the record then the cueing device can be raised or lowered. This can be done simply by using Allen key 1.5 mm:
-Insert key into screw on side of arm rest.
-Release screw, raise or lower device and retighten.
-Rotation of the cueing device may affect the drift of the cartridge while travel vertically down.

Do not over-tighten as this may cause the cueing device to stick in the ‘up’ position. Should this occur, slightly release the screw. (Fig. 16)

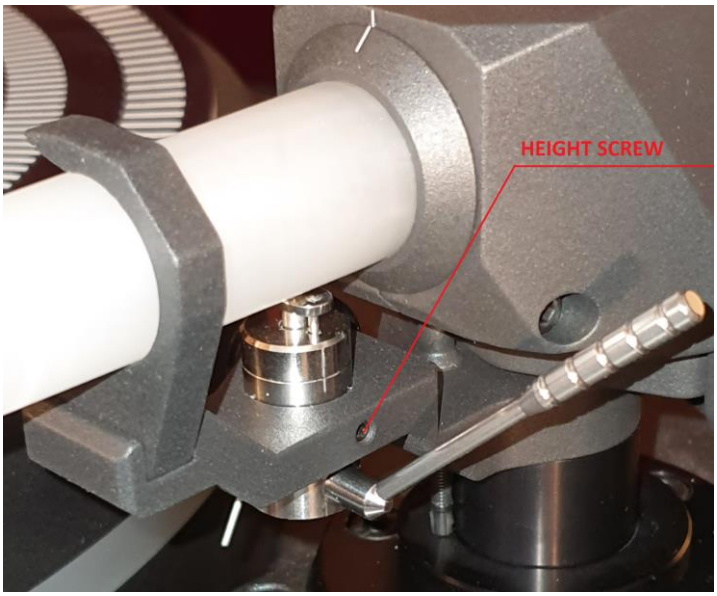

Fig.16. Cueing device height adjustment

10. Maintenance

The bearing does not need maintenance. Clean dust from the tonearm with a dry soft cloth or brush.

11. Transport

During transport the tube assembly must be removed from the arm tower and the cable holder on the tube assembly repositioned.(Fig. 7&16.)
Remark: Return fixing foam below the horizontal bearing tower assembly prior to transport!

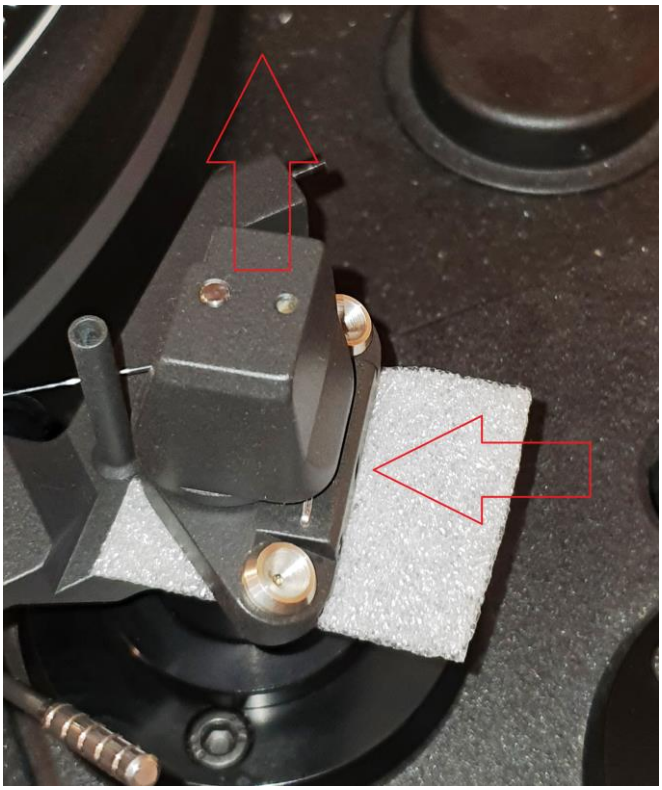
Fig. 16. Blocking arm tower with foam for transport

If you transport a turntable with the tonearm in place, ensure that hard vibration from the car does not transmit directly to the tonearm. Ensure that blocking foam is inserted(Fig. 16.) Placing soft material such as rubber, foam or a thick blanket below the turntable is helpful in filtering rough vibrations.

12. Troubleshooting

The cartridge is not reaching inner grooves: check that the position of the tonearm is correct and that the spindle to arm base distance is 212 mm. Also you might need to rotate the arm tower in such a way that the arm tube is nearer to the platter.

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