

DP-8 Anisotropic

Instructions

Contents of the packing

In the packing of the tonearm you will find the arm base in which the bearings are encapsulated in a heavy body. This is the link between the moveable part of the tonearm and its support. This support is mounted in a bush to which a black pear shaped plate is attached with just one screw. The pear shaped plate is supporting the integrated VTA device. And the said bush is holding the arm base with a big nut to the turntable chassis.

Further you will find one arm tube according to the choice that you have had from advice from your dealer. Or you have seen the Cartridge Armtube Combination List (under Instructions) in our website. There also will be 4 weights with O-rings, 4 weights with screws, finger lever with screws, knurled nut, hexagon spanner, syringe with silicone fluid, a thin Plexiglas rod and a narrow piece of thick paper.

The tonearm usually is supplied with the arm rest mounted on the pick-up lifter, but if desired a separate arm rest could be supplied instead.

Mounting the bush

First it has to be decided exactly where to place the bush with the arm base. The center of the bush should be at a distance of 212 mm (8 5/16 ") from the center of the turntable platter and there has to be room enough for the counterweight rod to move freely. The counterweight rod is having a rear overhang of 70 mm (2 3/4 ") as to the center of the said bush. If there is plenty of room for the counterweight rod consideration should be taken as to where the arm base should be positioned to give a convenient position for the armtube when resting in the arm rest. (see fig. 1)

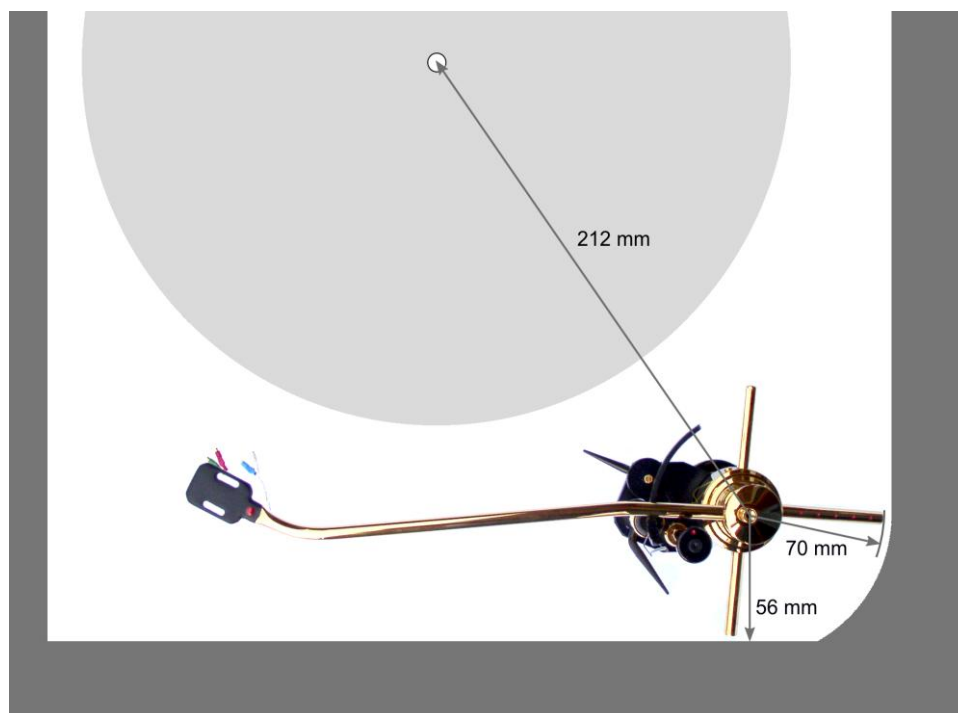


Fig. 1. The outline of the white area is indicating the room needed for the tonearm.

If separate arm rest is used, it should be placed so that the armtube when resting on it is at a suitable distance from the record.

Mark the center of the hole for the bush and check that the distance to the center of the turntable platter is 212 mm (8 5/16 "). Then drill a 20 mm (13/16 ") hole with center in this mark. Also, if separate arm rest is used, drill a 10 mm (13/32 ") hole for the bush for the arm rest about 155 mm (6 1/8 ") in front the 20 mm hole.

Pull out the 30 mm long black rubber, which is squeezed in under the heavy central body of the tonearm. Then the bush with the arm base is accommodated in the \varnothing 20 mm hole so that the "narrow" end of the black pear shaped plate is pointing forwards.

Put the armtube on top of the arm base with the 5 pins in the flange of the armtube inserted into the 5 holes in the plexiglass. Secure the armtube with the knurled nut screwed onto the thread going through the flange of the armtube.

Then turn the black pear shaped plate so that the armtube can move in a suitable angle over the turntable platter and so that the armtube can rest in the arm rest in a suitable distance from the turntable platter. Then put the big nut onto the thread of the bush and tighten it – making sure that the bush with the pear shaped plate does not turn. In most cases the end of the girder of the pick up lifter can carry the armtube, while it is pointing towards the turntable spindle (Fig. 1).

Mounting the cable to the amplifier

Put the plug of the accompanying tonearm cord into the socket below in the arm pillar. Make sure that the big nut holding the arm base is on before pushing the connector of the tonearm cord into the arm base. Try to avoid bending the cable too sharply right next to the tonearm connector. If the turntable has a floating sub chassis, the cable should not be restricted in any way, and it should be arranged in a suitable arc, so that it can not limit the free movements of the suspension. Remember that the ground wire should always be connected to the chassis (ground terminal) of the amplifier. The chassis of the turntable may also have to be electrically connected to the arm base.

Putting on the weights

First the weights for the side rods should be put on. Take the smaller of the weights **with screws** and hang one on each side rod (without tightening the screws). Then likewise take the bigger weights with screws and hang one on each side rod (Fig. 2).



Fig. 2. All the weights with screws hanging on the side rods.

Push the armtube towards the turntable spindle and see that the weights on the side, where the weights hit the VTA device, are pushed out by the VTA device. Use the enclosed thick paper to check that the VTA device is completely free. With the hexagon key pointing backwards and about 30° down (Fig. 3) tighten the screw of the smaller weight slightly. The width of the thick paper (13.7 mm, 17/32 ") is the same as the distance from the smaller weight to the body, where the side rod is attached.



Fig. 3. Tighten the screw of the smaller weight with the paper as a spacer.

Move the weights on the other side rod so that they hang symmetrically as to the center line of the tonearm. Then with the paper check that the smaller of the weights hanging here has the same distance from the said body as the same weight on the other side (Fig. 4).



Fig. 4. The paper fits the spacing of the smaller weight adjusted at the VTA device and is used as spacing for the smaller weight on the other side.

With this distance and with the hexagon key pointing backwards and about 30° down (Fig. 5) tighten the screw slightly.



Fig. 5. Tightening the screw of the smaller weight on the other side.

In each side put the paper between the bigger weight and the smaller weight and push the bigger weight slightly towards the smaller weight. Then tighten the screws a little having the hexagon key pointing backwards and about 30° up (Fig. 6).



Fig. 6. All the side weights mounted shown with the paper as spacer between two of them and the hexagon key in one of them.

Hold the round plexiglass rod horizontally under the counterweight rod and raise the counterweight rod about 1 mm (Fig. 7). If the weights on the side rods don't come up at the same time, the larger weight on the side, that comes up first, is moved a little out by the use of the hexagon key. Then try again to raise the counterweight rod a.s.o. For fine adjustment see Lateral Balance (Fig. 12).

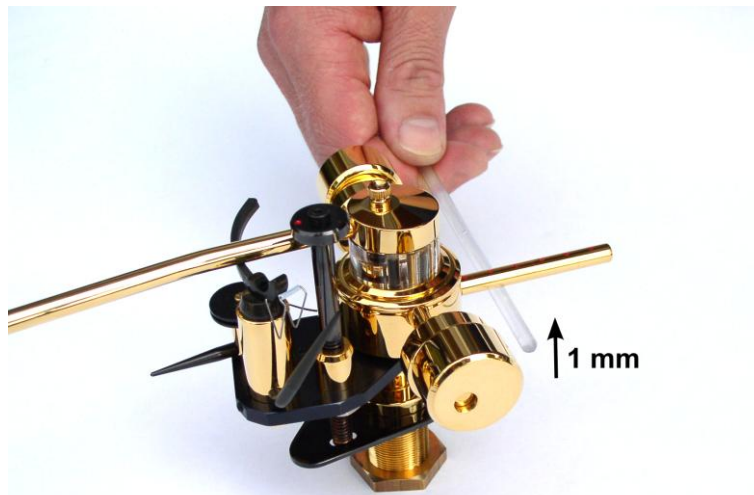


Fig. 7. By raising the counterweight rod 1 mm the weights in both sides must come up simultaneously.

Then the weights with O-rings for the counterweight rod should be put on. In order to make it possible to balance all phono cartridges the tonearm is supplied with three counterweights - large, medium, and small - having the hole eccentrically positioned and with a tracking force weight having a centrally positioned hole.

The weights that are to be chosen for balancing a cartridge depend on which arm tube that is to be used and on the weight of the cartridge.

Start putting onto the counterweight rod the largest counterweight you are going to use. Then the the smaller one etc. and last the tracking force weight. **To put on the counterweight/s and to displace them along the counterweight rod they have to simultaneously be revolved to and fro.**

The large counterweight gives 2 g, the medium counterweight gives 1.2 g, the small counterweight gives ½ g and the tracking force weight gives ½ g when slid 1 indentation forwards.

Thus a certain tracking force can be obtained by sliding more than one weight adding up their shares of tracking force.

Refilling the silicone fluid

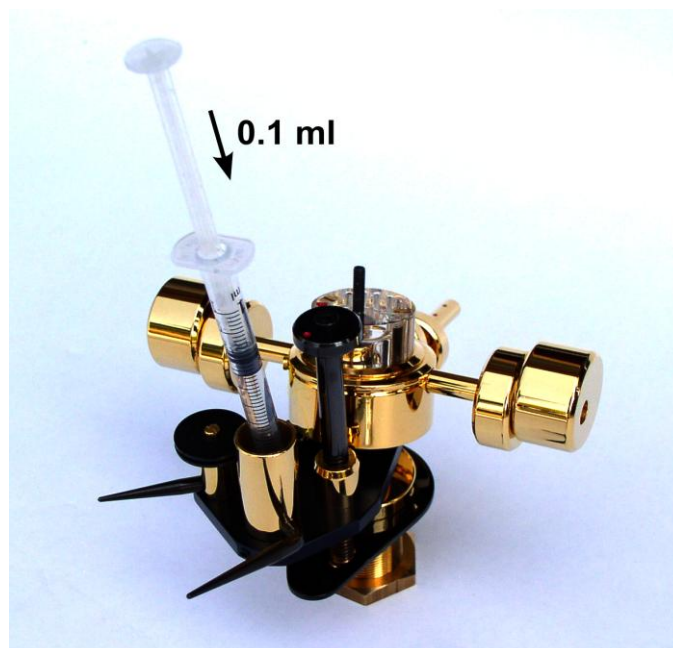


Fig. 8. Injecting silicone into the lifter cylinder.

Take off the armtube. The accompanying syringe contains about 0.6 ml of silicone fluid. **At first** the pick-up lifter should be filled in. Pull the black piston out of the lifter cylinder and place it in a

completely clean place. Then inject 0.1 ml of the fluid **behind** the shaft inside the lifter cylinder. When doing this the lifter handle must be in "lowered" position (Fig. 8).

When the fluid is injected, the tip of the syringe is "wiped off" on the shaft, and the syringe is pulled up with a little jerk thereby preventing the fluid from getting in touch with the walls of the lifter cylinder. Do not put the piston back into the lifter cylinder until the silicone fluid has merged down to the bottom of the cylinder, and hereafter the piston must **not** be pulled up again, as the silicone fluid would then easily stick to the walls of the lifter cylinder. If this happens the piston will "go down" much too slow.

The horizontal mode of motion is damped by the factory. Damping of the vertical mode of motion is **not always** an advantage. If damping for the vertical mode of motion is desired, silicone fluid is filled into the well of the tonearm base. This is done through the hole, which is seen in the plexiglas on top of the arm base, when the arm tube is not on (Fig. 9).



Fig. 9. Damping of the vertical mode of motion. Inject max. 0.2 ml. Not always an advantage.

Resting like this the tip of the syringe can just reach the well through this hole. Inject 0.15 - 0.2 ml of the silicone fluid into the well, and carefully "wipe off" the tip of the syringe on the edge of the well, before pulling the syringe up with a little jerk. The Plexiglas over the well must **not** be unscrewed.

It is the screw, to which the arm tube is attached, that provides for the vertical damping. It goes all the way down into the silicone fluid. When the tonearm is supplied this screw is in its lower position, and if 0.2 ml silicone fluid is injected, it will give maximum damping. The damping is reduced as the said screw is turned some revolutions up with the hexagon spanner. For further adjustment it should be noted, that the screw should not be forced down into the bottom of the well. This will make the tonearm rock in its bearings. Be careful if you want to increase damping again. The screw must be at least one revolution above the bottom of the well. (If measured the screw must protude minimum 11.5 - 12 mm (about 15/32") above the surface of the plexiglass).

Mounting the cartridge

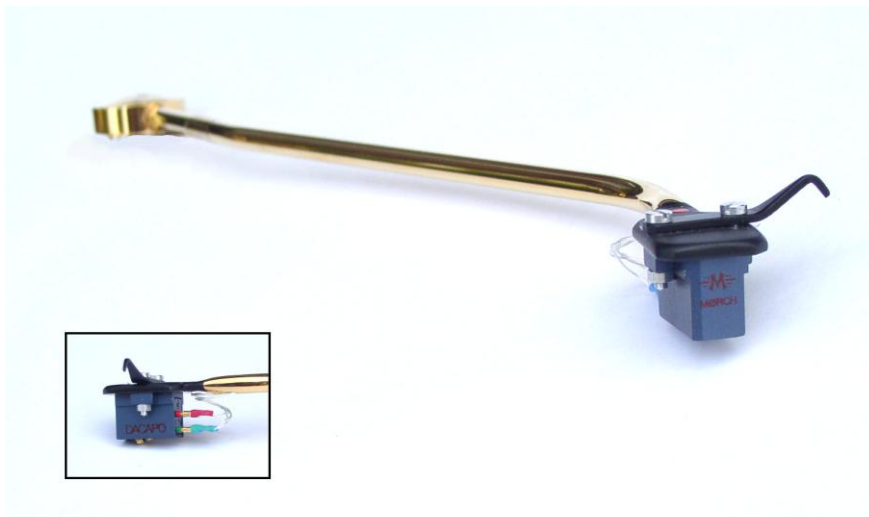


Fig. 10. A cartridge mounted by using the finger lever and screws.

Using the accompanying finger lever the cartridge can now be mounted on the armtube (Fig. 10). If possible, use the accompanying aluminum screws. Provided that the tonearm is mounted, so that the distance from the pivot to the center of the turntable is as indicated on the mounting template, the position of the stylus - to obtain correct overhang - should be: with standard armtubes right under the front edge of the black plane of the armtube - with PRECISION armtubes 4 mm (5/32") behind the front edge. Also the cartridge should be in parallel to the said black plane. Carefully push the terminal jacks of the wires unto the pins of the cartridge with a pair of tweezers. Do not force them too much and **also see that you are not squeezing the thin wiring too hard**. Red and green are signal and ground of right channel. White and blue are signal and ground of left channel.

The flange of the armtube having 5 contact pins now is pushed down on the threaded rod on top of the arm base. It is fastened with the accompanying knurled nut, which should be tightened well with two fingers. Check that the overhang is correct - 18 mm (23/32") - and adjust if necessary. The easiest way to see that the overhang is correct is to put a ruler on the turntable platter, so that it touches the turntable spindle, and this side of the ruler also points to the fulcrum of the tonearm. Then the armtube is moved so that the stylus is brought on line (next to the ruler) with the direction from the fulcrum to the center of the turntable spindle. The distance from the center of the turntable spindle to the stylus (overhang) can be accurately watched from at right angles to the ruler, where the turntable spindle is.

Adjusting the tonearm

Adjust the VTA so that the height of the arm base is so that the antiskating spring is at level with the record.

Put the tracking force weight near the end of the counterweight rod. Move the counterweight/s backwards or forwards until the arm tube is balancing in about horizontal position. When doing this see that there is space to move a weight forwards to apply tracking force. The large counterweight gives 2 g when moved 1 indentation forwards. The medium counterweight gives 1,2 g when moved 1 indentation forwards and the small counterweight gives ½ g when moved 1 indentation forwards. Rotate the counterweight/s so that the center of gravity is pointing upwards. It also could point downwards. The two settings influence the room of the stereo image.

Apply tracking force by moving a counterweight and/or the tracking force weight forwards. If not all the tracking force is applied by moving a counterweight forwards, then also slide the tracking force weight forwards. Moving the tracking force weight forwards 1 indentation will give ½ g tracking force.

It is an advantage to use as large or as many counterweights as possible.

If it appears that one counterweight can not get far enough forwards to obtain the correct tracking

force, then also – if more than one counterweight is used - move another counterweight and/or the tracking force weight. If there is not enough space to move the weights forwards to give the correct tracking force a counterweight should be replaced by a smaller one..

The height of the tonearm now should be fine adjusted. With the stylus resting on a record the arm base is moved downwards or upwards with the VTA device, until the arm tube is in parallel to the record, and it is checked, that the arm base is turned so that the pick-up lifter can always support the arm tube. If necessary loosen the big nut and adjust.

The height of the pick-up lifter is adjusted so that the stylus is about 4 mm (5/32") above the record, when the pick-up lifter is in "raised" position.

If separate arm rest is used, it is adjusted in a height, so that the arm tube rests on it, when the pick-up lifter is in "raised" position.

Cartridge azimuth

Azimuth (inclination of stylus as seen from the front) may have to be adjusted. When the stylus is resting on a record, the stylus - and so the cartridge - should stand at a right angle as to the record. If it does not, note the direction in which the cartridge should be tilted, and take off the arm tube.

On top of the arm base in the left side there is a red dot. In the right side - opposite to the red dot - there is a sunk screw in which the hexagon spanner will fit (Fig. 11). By turning the hexagon spanner clockwise the arm - and so the cartridge - will be tilted to the left. Opposite by turning counter clockwise. 1/4 - 1/2 turn may be enough.

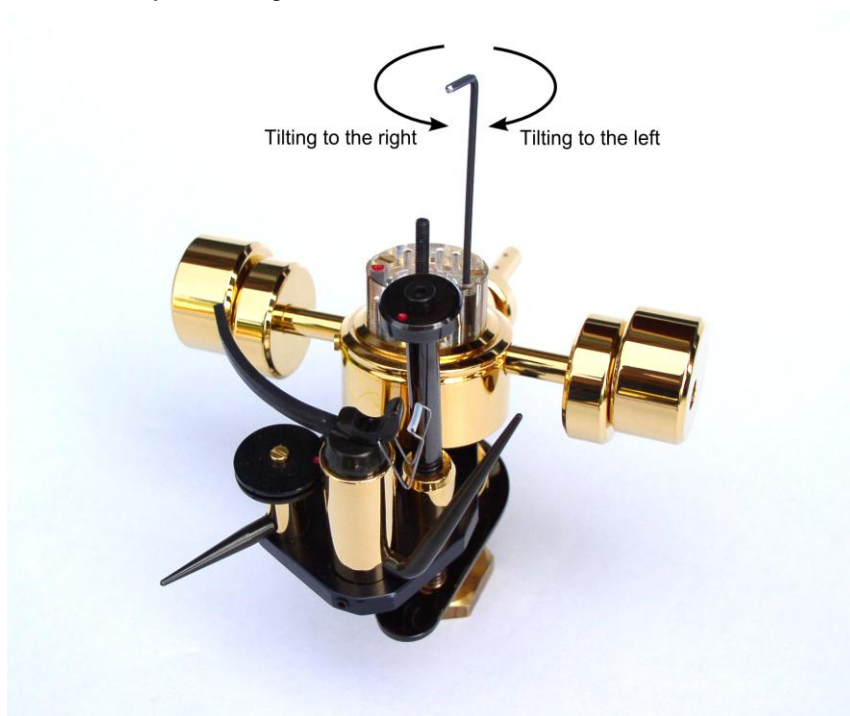


Fig. 11. Armtube is off and the hexagon key is ready to turn the pivot up or down.

Put back the arm tube and check if further adjustment is necessary.

Lateral balance

The direction of the counterweight rod extended to the stylus is the line of lateral balance. The lateral balance was coarse adjusted after mounting the weights on the side rods (see Fig. 7).

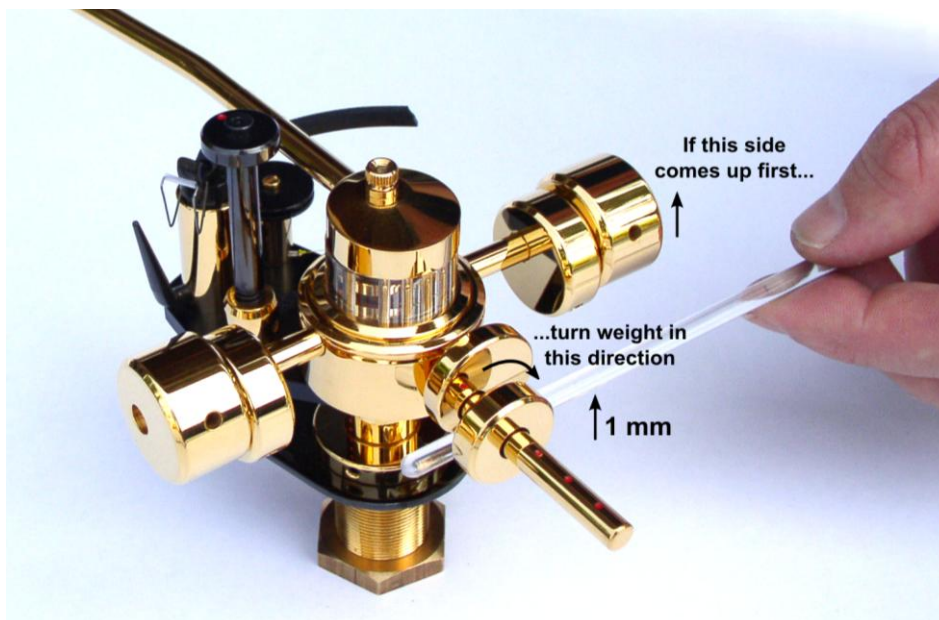


Fig. 12. Fine adjustment by turning the heavy end of any counterweight to the side that comes up first.

Fine adjustment can be done in the same way but with the armtube resting on the raised pick-up lifter, and the anti skating handle should be turned as far counter clockwise as possible. Usually for fine adjustment it will be enough to turn the “heavy end” of any counterweight on the counterweight rod in the direction of where the side weights are coming up first (Fig. 12). Then try again to raise the counterweight rod with the plexiglass rod, a.s.o. until both sides come up simultaneously. When adjusting, make sure that the stylus doesn't touch anything.

Antiskating (see fig. 13)

The antiskating force is adjusted with the little black handle A next to the pick-up lifter. The amount of antiskating force required depends on the tracking force and the shape of the stylus. Thus no calibration is possible.

Coarse adjustment can be done with the stylus running between the grooves next to the label of the record. Correctly adjusted, the stylus should move slowly towards the center of the record.

Fine adjustment could be done by reducing the tracking force a little whilst listening to a critical passage. If for instance distortion occurs in the right speaker, the handle should be turned clockwise. (The best result is obtained with a test record). The adjustment is not critical. It is better giving too little than too much antiskating force.

The range that the antiskating handle A can move, will cover most cartridges.

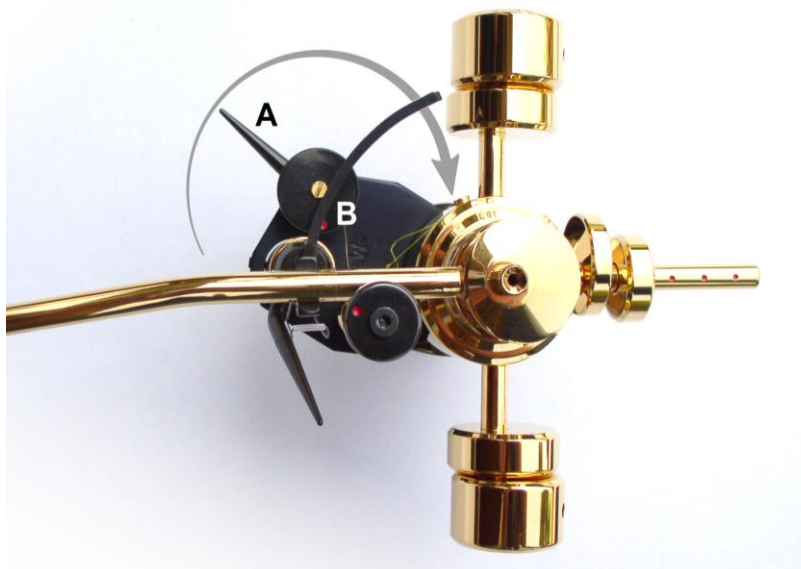


Fig. 13. Adjustment of antiskating

If the handle A is turned in the direction of the arrow the antiskating will increase - and decrease if it is turned the opposite way. If the handle can't be turned enough to get more antiskating, the screw B could be loosened and the disc under the letter B should be turned $\frac{1}{2}$ revolution or more in the direction of the arrow, and then the screw should be tightened again. The antiskating then can be adjusted with the handle A in a range with more antiskating than before.

Special about PRECISION arm tubes

PRECISION arm tubes are supplied in "red" and "blue" versions only. They have a wide and very precisely ground mounting plane to assure a good mechanical contact to cartridges that have a similar large and accurate mounting plane. The PRECISION armtubes are 4 mm ($\frac{5}{32}$ ") longer than the standard ones in the forward direction.

Special about 12" armtubes

In the section *Mounting the bush* it is described how the position of the 20 mm ($\frac{13}{16}$ ") hole is found. For 12" armtubes the distance from the center of the hole to the center of the turntable patten should be **294.1 mm** ($11 \frac{9}{16}$ ").

If the bush is mounted exactly at above distance from the center of the turntable platter, the stylus should be positioned just under the front edge of the black plane of the arm tube. After mounting check that the overhang - **13.3 mm** ($\frac{17}{32}$ ") - is correct and adjust if necessary.

The sound image most likely will be the best, if the counterweights are adjusted with the center of gravity above the counterweight rod.