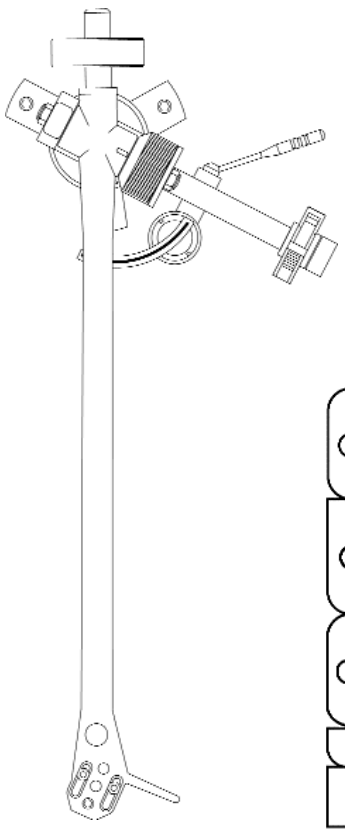

rega RB700

www.rega.co.uk
Rega Research Limited., England

Finally, we would like to thank you for purchasing our product and we wish you many happy hours of musical enjoyment.

Long live vinyl!

Mission Statement RB700

Rega's philosophy is to make high quality products at sensible prices, as a means of reproducing music as faithfully as possible. Rega is committed to the design and development of new and existing products, both in hi-fi and other areas, that will perpetuate Rega's values of quality and value for money.

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Congratulations

You have just purchased one of the highest performance tonearms produced by mankind. The Rega RB700 is a hand made instrument, designed to extract the most information from vinyl recordings as is possible. The tonearm must hold the cartridge body both accurately and rigidly. It must be in a position where the cantilever of the cartridge will reproduce all of the information in the groove of a record. To be able to do this, the friction levels of the bearings in the tonearm must be very low so that the cartridge will follow the spiral of a recording without affecting the signal. This is only achievable by using the highest quality bearings available, (ordinarily used in navigational gyroscopes), that are then graded both by hand and by aural examination. This ensures that we have the smoothest and quietest ball races ever in existence. All of the above will result in the cantilever being forced to move further and faster whilst being under complete control.

Assembly

The precision stainless steel shaft onto which these bearings fit is ground to a tolerance of within 5 microns (one micron being 1/1000 of a millimetre). The bearings are then selected and fitted onto shafts by hand. This is a highly skilled and time consuming process which results in the fit between the shaft, bearing and one piece arm tube being all interference fits with zero tolerance. The arm tube, after being cast, will be cleaned, inspected, sandblasted, inspected again, hand detailed and then given a thin coat of a very low mass lacquer to prevent surface oxidisation. The three mounting point vertical bearing housing is CNC machined from solid stainless steel into which the second set of bearings are hand fitted, and into which the vertical shaft is fitted. Again these are interference fits without the use of adhesive and so, are tolerance free. Meanwhile, the arm tube assembly will have been fitted into the carrier and then the two sub-assemblies come together with the arm lead, which become a tonearm.

Further adjustments for neurotic/paranoid enthusiast

There are many hypotheses and theories regarding the accurate setting of bias compensation, cartridge alignment and V.T.A.

All these theories exist because these adjustments are only approximations or compromises. There is no one 100% correct answer.

If the previous instructions are followed carefully, then the arm and cartridge are likely to perform at or near the optimum.

Nevertheless, other methods do exist (i.e. the use of test records for setting bias compensation and complex multiple point alignment systems for cartridge setting). If properly understood and implemented, these systems cause no harm and may be used.

However, care must be taken when using test records as these are generally designed for professional use. They are only relevant as a comparison between different products and can lead to hi-fi paranoia if used in isolation.

Likewise, more complex cartridge setting systems may be valid but are difficult to understand and if not used correctly may cause more harm than good.

So experiment if you wish, but you are likely to gain more pleasure from listening to music.

Cartridge alignment

At this stage, roughly check the cartridge alignment using the cartridge alignment protractor printed on the arm template supplied. When everything appears to be correct, the arm can be permanently fitted to the arm mounting board.

Cartridge alignment may now be more accurately checked and the cartridge permanently fitted. The cartridge fitting screws should be made as tight as possible using the Rega torque wrench or special small Allen key supplied, taking care not to damage the cartridge.

Cueing platform adjustment

The arm cueing platform will normally be set at the correct height but can be adjusted by the dealer if necessary.

Cartridge tracking force

1. Ensure that the tracking force adjustment dial is set to the zero position.

2. With the cartridge permanently fitted in the correct position, adjust the main balance weight so that the arm is "floating" with the stylus just 1mm clear of a record. (This adjustment should be made with anti-skating (bias) slider set at zero. Note: Even at zero, there will be some small residual anti-skating force. Therefore, it may also be necessary to gently touch the arm-bearing carrier to stop the arm moving outwards).

3. Rotate the tracking force adjustment dial to the required tracking force. If in doubt, it is usually advisable to use a tracking force that corresponds with the upper limits of the cartridge manufacturer's range.

Anti-Skating (bias adjustment)

Set the bias adjustment slider to the same number as the tracking force. Note: This setting is not critical and a figure of 1-1.5g will normally be suitable for moving magnet cartridges and 1.5 - 2g for most moving coil cartridges.

Testing

The testing of the completed product consists of five separate stages. Firstly there is a horizontal bearing test, (also at this stage, headshell azimuth is checked) this is in two parts, the first of which involves a test of the action. This can only be done by hand/eye by highly skilled and trained staff as a machine cannot do it.

If this is acceptable, the second part may proceed; this is the friction level test. This consists of a 20mg weight placed on the headshell of the balanced out arm to see how fast it falls. Following this, vertical bearings undergo exactly the same test as the horizontal components, after which the tracking pressure assembly is tested for accuracy by using an extremely sensitive stylus pressure gauge.
The fourth test is to access the magnetic bias assembly; this is done on a purpose built jig using a test recording we have pressed exclusively for us. The arm is then tested to see that, at the correct bias setting for the cartridge, the output from both channels is identical. Then, by adjusting the bias slider, the change in output levels can be observed visually on a twin needle moving coil meter.

Assuming all is well, the arm will go onto its final test, which is the electrical continuity testing to make sure there is no crosstalk, and the earthing is present and correct. At any one of the previous stages, the whole assembly can (and are actively encouraged to) be rejected by any member of staff involved. The entire process of producing this arm is "time is no object", where perfection is of the utmost importance!

Fitting your RB700

The Rega RB700 tonearm is a precision crafted product. To create the low friction levels and meet the minimum mass requirements, many parts of the arm are delicate and require careful handling. The arm should always be treated with respect and under no circumstances should any part be removed or tampered with.

In most cases, it is advisable that the dealer fits this arm to your turntable. If the user fits the arm and causes any damage to the arm, cartridge or turntable, then it is their responsibility. The dealer should also be able to advise should there be any subsequent problems with the rest of the system.

The following instructions are for the dealer.

Preparing the turntable

Before attempting to fit the Rega arm to a turntable, it is important to ensure there is sufficient clearance beneath the turntable and that the arm does not hit the lid top or sides. The arm requires a minimum clearance of 70mm from the top of the record to the bottom of the arm assembly.

Having checked that there is sufficient clearance in all directions, the next step is to find the position of the centre of the arm-mounting hole. The easiest way to do this is to use the arm-mounting template supplied.

1. The template should be kept flat and not bent.

2. Fit the hole over the record centre spindle of the turntable.

3. Position the other end of the template so that the clearance arc is within the rear and side edges of the turntable base (and the lid when closed). Also check that there is at least 250mm clearance from the arm hole centre to the inside front edge of the turntable lid.

4. Use a long pointed probe such as a needle and push it through the "arm hole centre" on the template. Keep the needle perpendicular to the template and mark the position of the arm hole centre and the three mounting screw pilot holes on the turntable.

5. Having marked the centre, check again that if the arm is placed in this position, it will clear the underside of the turntable lid. Also, check that the arm is in a satisfactory position to ensure easy operation and that the position is pleasing aesthetically. When you are one hundred percent certain that the arm hole centre is in its correct position (exactly 222 mm from the record centre), you can then drill the arm hole and surrounding fixing holes.

6. The arm-mounting pillar is 23mm diameter and a hole of this size will provide a tight, snug fit. The pilot holes should be 3mm to accommodate the fixing screws supplied.

7. With the four holes drilled, all is ready to fit the arm to the turntable. Ensure that you also follow instructions regarding arm fitting from the turntable manufacturer. Each individual turntable manufacturer may have different requirements regarding positioning of the arm signal lead, etc.

Arm height adjustment

The arm is not adjustable for height except by the use of a stainless steel spacer. A dealer should have some of these spacers in stock.

The arm is designed so that the rear of the arm should be as close to the arm mounting board as possible. On Rega turntables, no spacers should be necessary and none should be fitted. On some other models of turntable, it may be necessary to use a spacer to achieve the correct height. If more than two spacers are necessary, then it is a better solution that the turntable manufacturer or the dealer makes up one single spacer of the correct height. This should be made from stainless steel and the faces touching the arm and the arm board should be accurately machined flat.

The arm height is correct when the arm appears to be parallel to the record or appears to slope downwards slightly away from the cartridge. The only limit to the arm sloping backwards is if the cartridge body tends to touch warped records.
Under no circumstances adjust the arm to achieve a hypothetically correct V.T.A (vertical tracking angle) for the cartridge.