

# TA-110

## TA-110 9 inch Static Balance type Tonearm User Guide

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## Specifications

|   |              |
|---|--------------|
| Mounting distance<br>(Distance between the pivot point and turntable center)                    | 213.0 mm     |
| Effective armlength<br>(Distance between the stylus and pivot point)                            | 231.0 mm     |
| Effective mass without headshell  | 3.5 g        |
| Weight of supplied headshell LH-2000E   | 15.5 g       |
| Overhang<br>(Distance from the platter spindle center to the stylus point)                      | 18.0 mm      |
| Offset angle<br>(Angle between the cartridge/cantilever axis and the line from pivot to stylus) | 23.9 degrees |
| Tracking force adjusting range  | 0-3 g        |
| Tracking force adjusting range (with extra mass ring mounted)                                   | 0-4 g        |
| Height adjustment range   | 35 - 55 mm   |
| Diameter of the armbase mounting hole   | 19 - 20 mm   |
| Diameter of the center shaft of tonearm   | 18 mm        |
| Null points: Inner null point   | 66 mm        |
| Outer null point  | 120.9 mm     |
| Counterweight for cartridge + headshell mass between 21 and 28 g included                       |              |
| Extra mass ring for heavier cartridges included   |              |
| Extra mass ring weight  | 45 g         |



## Horizontal tracking error

The path of the stylus follows an arc across the record. Therefore the stylus can not be tangential to the groove in more than 2 points.

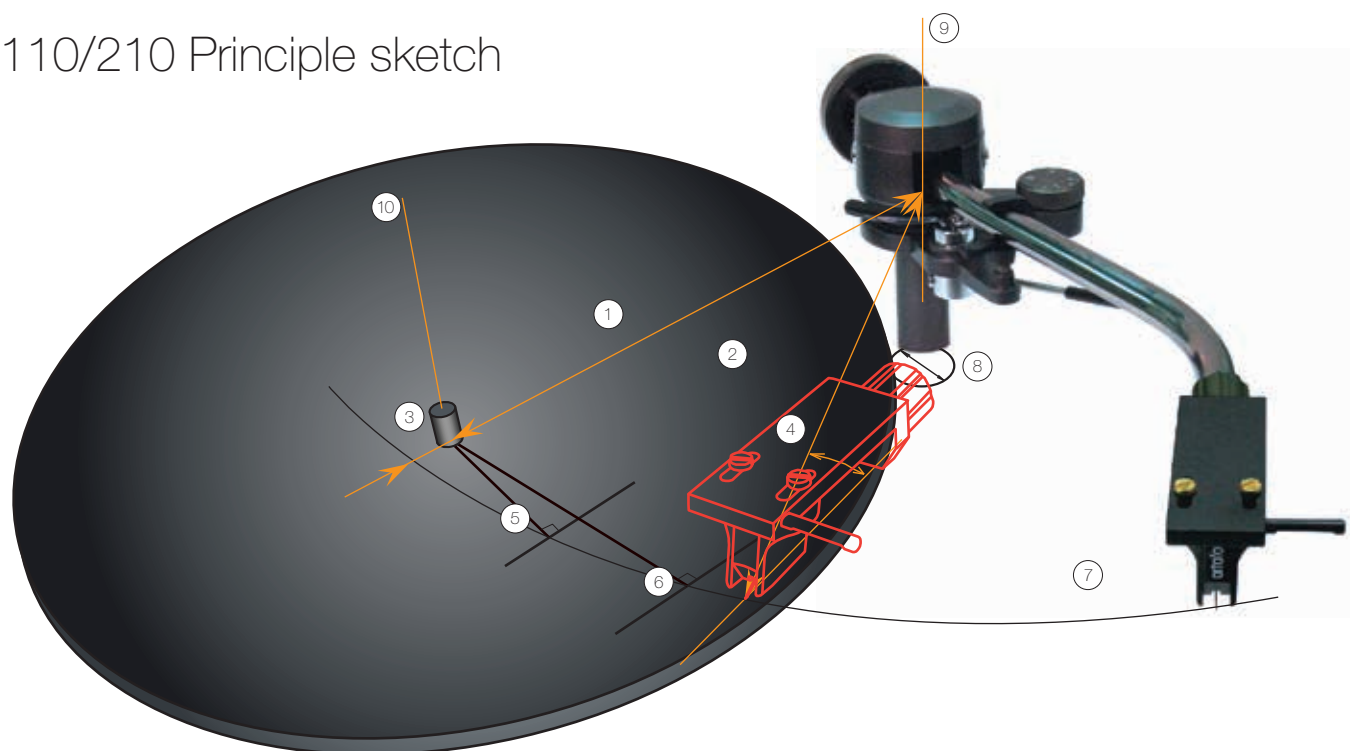
These two points with zero horizontal tracking error are according to Baerwald, inner null point 66.0 mm and outer null point 120.9 mm (measured from the center of the record).

The mounting distance, the effective armlength and the overhang must be set as specified in the User Guide in order to achieve this alignment.

### CAUTION:

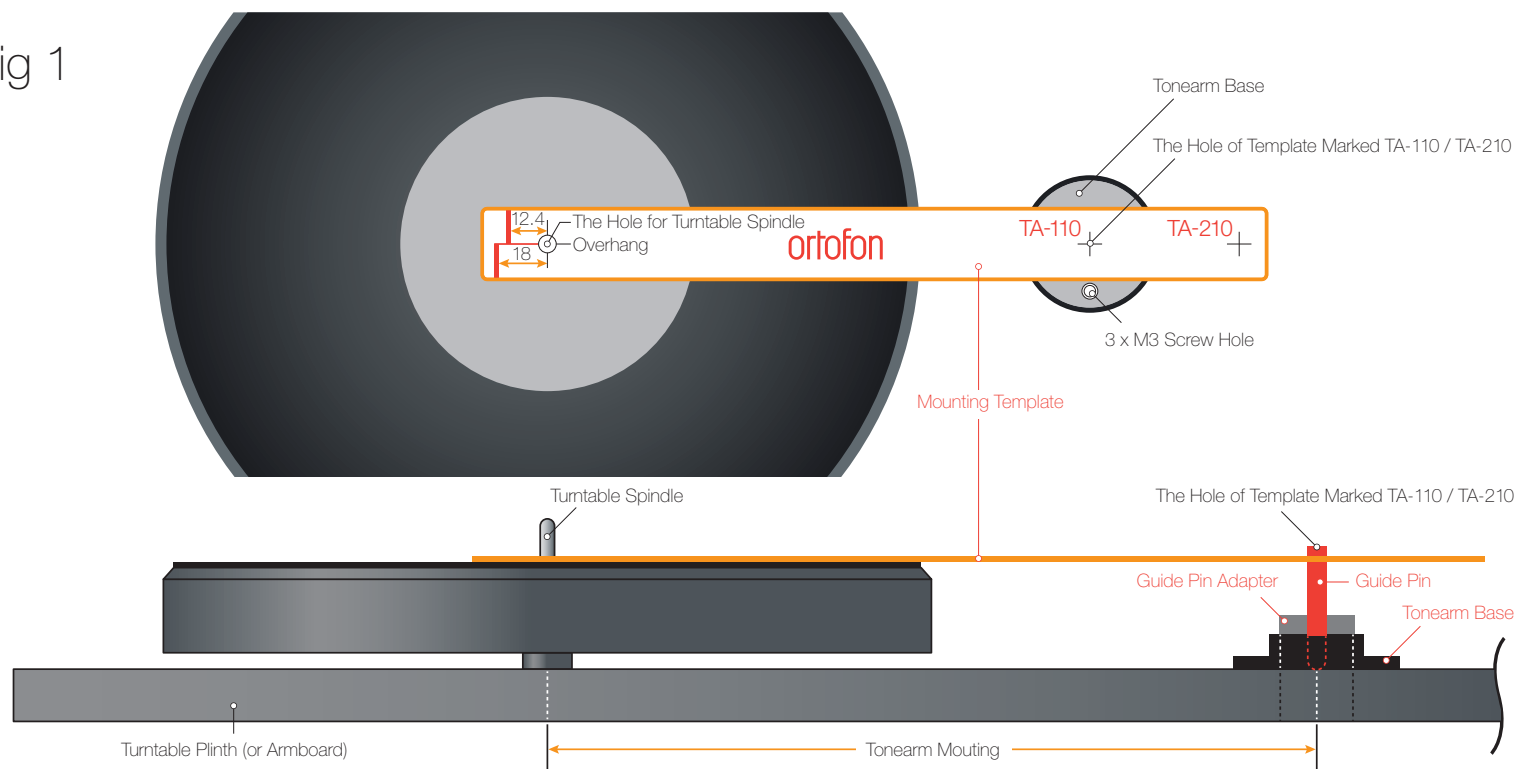
Do NOT remove or adjust any screw on the tonearm assembly. They are factory assembled to the exact specifications. Any changes could result in malfunctioning of the arm.

## TA-110/210 Principle sketch



- ① Mounting distance
- ② Effective armlength
- ③ Overhang
- ④ Offset angle
- ⑤ Inner null point
- ⑥ Outer null point
- ⑦ Stylus path
- ⑧ Diameter of the armbase mounting hole
- ⑨ Center of pivot
- ⑩ Center of spindle

Ref.: Fig 1



## Contents

- 1 x Tonearm
- 1 x Tonearm Base
- 1 x Tonearm Cable
- 1 x User Guide
- 1 x Hexagonal M4 Wrench (for height adjustment)
- 1 x Guide Pin Adaptor
- 1 x Guide Pin
- 1 x Plastic Mounting Template
- 3 x M3 Screws
- 3 x Washer
- 3 x M3 Nuts
- 1 x Hexagonal Wrench for M3 Screws & Armlift
- 3 x Wood Screws

## How to mount Tonearm (Ref.: Fig 1)

1. Place the plastic template onto the turntable spindle and determine the position of the tonearm base as shown in Fig.1.
2. Place the tonearm base under template hole marked TA-110. Insert the guide pin adaptor in the hole for the tonearm shaft and secure with screw.
3. Insert the guide pin through the template hole marked TA-110 and guide pin adaptor. Use the pin to make a mark on the arm board. This is the center of the TA-110 pivot.
4. Hold the armbase in this position, and make marks on the armboard/plinth for the three mounting screws. The guide pin can also be used for this.
5. Drill a hole for the arm shaft (19 mm - 20 mm diameter) and 3 holes for the base mounting screws (3.5 mm for short M3 screws, 2 mm for wood screws). Screw hole size might need adjustment due to different hardness of boards.
6. Mount the arm base with 3 mounting screws onto the board.
7. Place the tonearm shaft into the tonearm base hole. Hold the shaft at the desired height, and tighten the M4 set screw with the included Allen (Hexagonal) wrench.

## Adjustment of tonearm (Ref.: Fig 2)

### Horizontal balance

1. Mount the shell/cartridge onto tonearm. The headshell+cartridge with the total weight in the range 18 g - 28 g can be used for TA-110. For heavier cartridge and headshell combinations, the extra mass ring may need to be attached to achieve proper tracking force.
2. Adjust the rear tonearm counter weight by turning it until the tonearm floats approximately parallel/horizontal to the platter.
3. For maintaining of counterweight Inner/Outer scales to be applied: Inner scale to be applied with main counterweight. Outer scale to be applied with extra mass ring mounted onto the end of counterweight.
4. The counterweight should be attached onto the rear of the tonearm with the inner number scale facing forward. If the extra mass ring is needed, it must be installed prior to attaching the counterweight to the tonearm. The extra mass ring should be installed on the back of the counterweight and may need to be twisted slightly to facilitate the installation. Ensure the extra mass ring fits tightly to the thick part of the counterweight.



## Anti Skating Force

When a vinyl record spins, the stylus riding in the groove is pulled inwards toward the center of the vinyl, causing a greater stylus pressure against the inside wall of the groove than against the outside wall. The anti-skating mechanism incorporated in the tonearm will neutralize this. It is calibrated from 0 to 3 g in 0.5 g increments corresponding to the same calibration of the stylus pressure.

### Vertical tracking force

1. Turn the tracking force adjustment ring to "0".
2. Move the counter weight forward by turning it until its indicator points to the recommended tracking force.

### Height of stylus tip

1. Set height of armlift so that the tip of the stylus is 5-10 mm above the vinyl record surface when the tonearm is lifted via the armlift lever.

Ref.: Fig 2

