

Tracking Force and Turntables

What are the types of tonearms available?

Generally, there are 2 kind of tonearms, the adjustable tonearm counterweight and the non-adjustable type. Most of the entry-level turntables are equipped with non-adjustable counterweight. For the mid to higher-end turntables, most come with adjustable tonearm counterweight. It is why some advance customers will choose an adjustable weight turntable over an entry-level turntable with more control in tracking force adjustment.



a. Turntable with adjustable counterweight
(Example: AT-LP5)



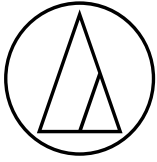
b. Turntable with non-adjustable weight
(Example: AT-LP60-USB)

How should the tracking force be set for the styli/cartridge?

The tracking force on a styli/ cartridge should be set at the recommended weight specified by the cartridge/stylus manufacturer. Although the higher tracking weight did wear out records, the records were made of a harder material like Shellac for the heavier tracking. Light tracking force will cause damage to the groove walls. Therefore, always set at the recommended weight suggested by stylus manufacturer.

How will the tracking force affect the playback of turntable?

It is important to calibrate and ensure that the tracking force are set based on the manufacturer's specification. Tracking the stylus at a lighter weight will actually do *more* harm to your vinyl records. There is really no way to track a stylus needle through a vinyl groove without wearing it. The objective is to reduce the wear/damage while getting the optimum audio playback. Assuming you have the cartridge set up correctly, you can ensure to get multiple playbacks out of your vinyl without any appreciable damage. Enjoy the music playback and don't worry about record damage. The wear usually occurs



gradually, it is a little more each time when the vinyl disc is playback. The wear produces a slight increase in the background noise and some loss of the high frequency signal.

How will low tracking force affect the vinyl records?

A low tracking force will create more harm than good for vinyl record (as it will not tracks well)

- i) This is due to stylus needle bouncing around in the grooves of the record, repeatedly chipping away back and forth.
- ii) A low tracking force will not sound good acoustically.

What is the impact to a vinyl record with a worn stylus?

It is important never to use a worn stylus as you are doing more damage to the record. When the worn stylus goes through the groove of a vinyl, the groove are permanently damaged causing an increase in distortion and loss of high frequencies. So it is important to replace the worn stylus, the recommendation to replace a stylus needle after playback of 1000 LP sides.



Recommended Tracking Force for Audio-Technica Cartridge/ Styli

Cartridge/ Styli	Tracking Force Specification	Tracking Force Range
ATN3600L	3.5g \pm 1g	2.5g - 4.5g
ATN91	2.0g \pm 0.5g	1.5g - 2.5g
ATN91R	2.0g \pm 0.5g	1.5g - 2.5g
AT95E	2.0g \pm 0.5g	1.5g - 2.5g
ATN95E	2.0g \pm 0.5g	1.5g - 2.5g
ATN95EX	2.0g \pm 0.5g	1.5g - 2.5g
VM760SLC	2.0g \pm 0.2g	1.8g - 2.2g
VM750SH	2.0g \pm 0.2g	1.8g - 2.2g
VM740ML	2.0g \pm 0.2g	1.8g - 2.2g
VM540ML	2.0g \pm 0.2g	1.8g - 2.2g
VM530EN	2.0g \pm 0.2g	1.8g - 2.2g
VM520EB	2.0g \pm 0.2g	1.8g - 2.2g
VM510CB	2.0g \pm 0.2g	1.8g - 2.2g
VM610MONO	2.0g \pm 0.2g	1.8g - 2.2g
VM670SP	2.0g \pm 0.2g	1.8g - 2.2g
AT-ART1000	N.A.	2.0g - 2.5g
AT-ART9	1.8g \pm 0.2g	1.6g - 2.0g
AT-AR7	1.8g \pm 0.2g	1.6g - 2.0g
AT33EV	2.0g \pm 0.2g	1.8g - 2.2g
AT33PTG/II	2.0g \pm 0.2g	1.8g - 2.2g
AT33MONO	2.5g \pm 0.2g	2.3g - 2.7g
ATOC9/III	2.0g \pm 0.2g	1.8g-2.2g
ATOC9ML/II	1.5g \pm 0.25g	1.25g- 1.75g
AT- MONO3/LP	2.0g \pm 0.5g	1.5g-2.5g
AT-F7	2.0g \pm 0.2g	1.8g-2.2g