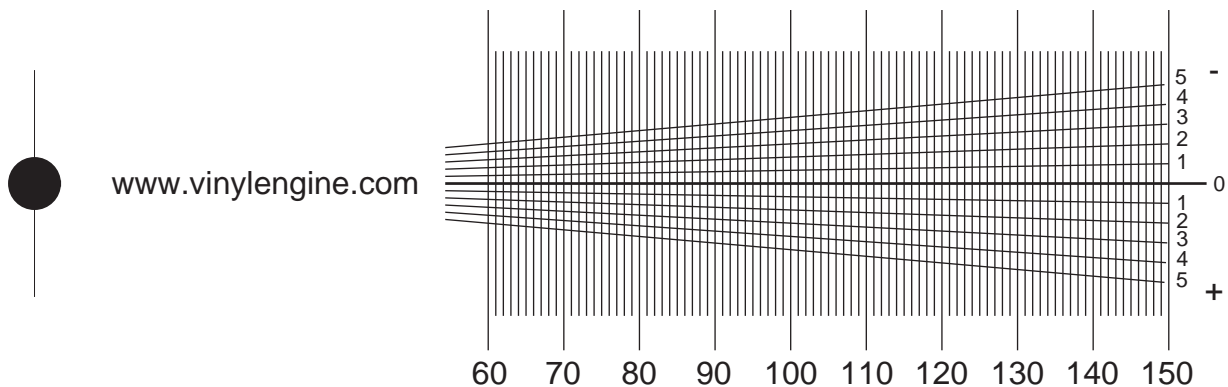


Download for free this protractor : [www.vinylengine.com](http://www.vinylengine.com)

as usual, I need to find a name for this protractor...  
let me think about that..... "stuff" is taken, "stupid" too

I've got it : the "Chpratz protractor"



Check that the distance between the line passing through the black circle and the 150 line is exactly 150mm

What to do with that piece of paper ?

1- you aligned your cartridge (whatever the method) - you then can check your misalignment in degrees at some certain points (for instance, at the beginning of the record, at the end, and somewhere in the middle) - if the value you're reading is superior to  $\pm 2.5^\circ$ , you're having a problem... simply chose a point (say 110 mm), put the stylus on the 110 ligne and rotate the protractor (DON'T LET THE STYLUS ON THE PAPER WHEN YOU'RE ROTATING IT) in order to see the vertical lines around the line you're using, parallel to the cartridge body. Once the vertical lines are parallel to the cartridge body, check where the stylus is and by using the lines measuring the angles, see the missalignment in degrees.

2- You would like to align your cartridge at a certain pair of null points. Choose them by yourself or use known pairs as the baerwald pair (66 mm - 120,9 mm), the loefgren pair (70.2 & 116.6 mm)... Be aware that if you're choosing null points too far from each other, Distortion will be very high somewhere between the null points, if they are too close from each other, the distortion will be very high at the beginning and/or at the end of the record.

The cartridge body must be parallel to the lines when the the stylus is the  $0^\circ$  line at both null points. Align first at the inner nul point. If, at the outer null point, you feel that the cartridge should be moved clockwise (anticlockwise), move front (back) the cartridge and align again at the inner null point.

seb did that draw

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