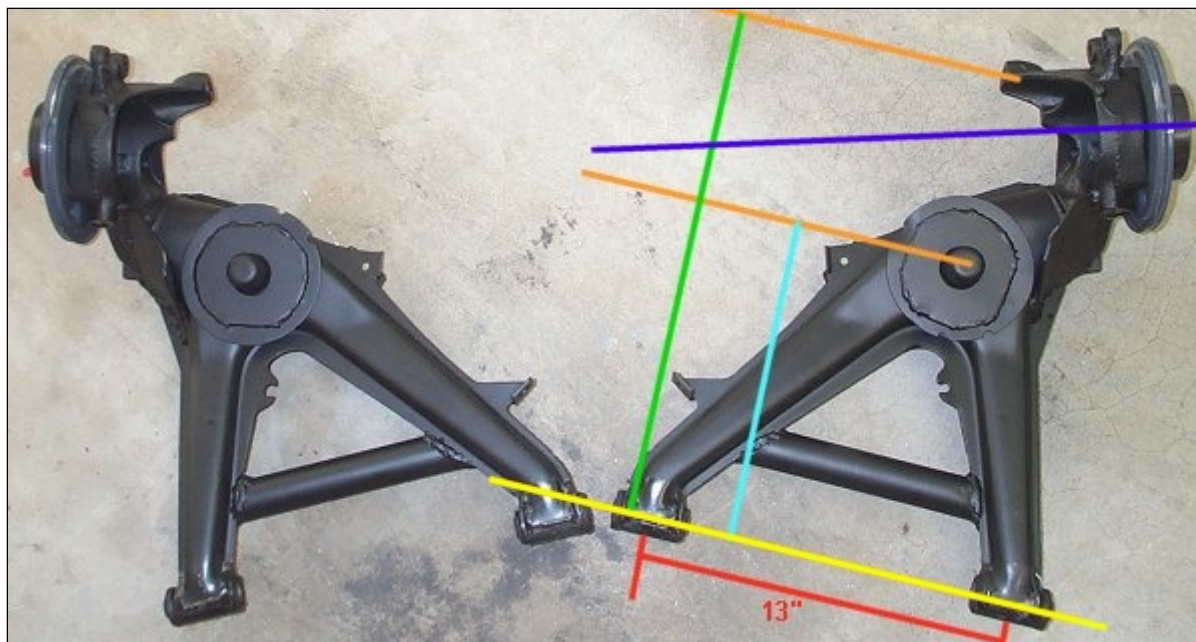


E30 Trailing Arm Leverage Ratios

Wheel ratio vs. spring rate



Often E30 owners have questions about the various leverage ratios on the rear trailing arms. How does wheel offset affect wheel rate? What spring rate should be used when going to "true" coil-over rear suspension where the springs are co-linear with the shocks? How did I arrive at the lengths in the section on this site regarding wheel rate?

The photo above can be used to answer many of these questions to first order. Just print it out and grab a ruler. There is one distance delineated on the photo, which is the distance between the rear trailing arm pickup points (13 inches, actually 13.06"). From this one can roughly scale the other dimensions in question (this photo was taken from directly above the trailing arms as they rested on the ground). The pivot axis is the yellow line. The dark blue line is the hub centerline, and since it is not parallel to the pivot axis, changing the rear wheel offset does change the effective wheel rate to some degree (mostly a second order effect).

This is only for rough estimates. It is not intended to be super accurate. But in a pinch it is better than nothing right?

http://e30m3performance.com/tech_articles/susp-tech/leverage/index.htm

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