



Problems with balancing 19.5 & 22.5 tires on pickups

It is becoming more common to convert $\frac{3}{4}$ Ton and 1 Ton pickups to larger wheel/tire sizes of 19.5" & 22.5". Presumably, this is to increase fuel mileage and tire mileage.

With these conversions comes a nice alloy wheel that owners want to keep clean and unadorned with ugly wheel weights.

In an effort to avoid conventional rim weights, owners are going the Dynamic Balancing routes of either internal media, such as Dyna Beads, Equal, etc. or external mechanical balancers, such as Balance Masters or Centramatic. Either of these choices involves the implementation of the same physics principle. In basic terms, a very minute amount of tire oscillation up and down force the counterbalancing media into position until the tire imbalance is zero.

When a vehicles suspension is designed at the factory, various factors come into play, such as front end loading, frame thickness, designed load capacity, vehicle weight, to name a few. The tire is selected that will accommodate the intended load of the vehicle with a certain additional margin of safety included. The tires load rating, sidewall thickness, ply rating, tire pressures and even physical size are all included in the engineering to work and play well together.

When you alter this carefully engineered combination of components, unanticipated problems can come into play, and the one we are concerned with here, is the effect on Dynamic Balancing methods.

19.5" and 22.5" tires are designed to work under large Commercial trucks, Tractor Trailers, and Class A & B Motor Homes.

Size	Load Range	Max.Load per tire - Single	Max.Load per tire - Dual	Tire weight
LT235/85 R16	E	3042	2778	53
225/70 R19.5	F & G	3970	3750	63+
235/80 R22.5	G & H	4675	4410	83+

The purpose of the chart is to visually show how much more heavy duty (and heavy) these 19.5" & 22.5" tires are than stock Load Range "E" tires (10 ply rating). Now add in the **additional** weight of the much heavier wheel to carry these tires, plus the special adaptor required to bolt it up to your axle. Very easily you can **double** your wheel/tire weight.

In a normal tire imbalance situation in a stock truck, a tire that bounces up will behave similarly going back down due to the weight of the truck acting on the tire/wheel assembly. In a converted truck, the relatively light weight of the vehicle does not apply enough downward force to the larger, and much heavier, wheel and tire. Because it's much stiffer than the regular tire, it bounces more quickly, but returns more slowly due to the additional mass.

The bottom line? Whether it's internal or external, Dynamic Balancing methods do not perform well, if at all, in pickups with these conversions due to the altered dynamics of the much heavier, and much stiffer, wheel and tire assembly on the suspension.

We recommend conventional balancing methods using clip on or stick on weights as the only 100% reliable solution to balancing these 19.5" and 22.5" tires on converted pickups.

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