How a Dyno Works

We're going to quote DynoJet directly to explain how the machine works, since paraphrasing would only do you an injustice. "Power, in mechanical terms, is the ability to accomplish a specified amount of work in a given amount of time. By definition, one horsepower is equal to applying a 550-pound force through a distance of one foot in one second. In everyday terms, it would take one HP to raise a 550-pound weight up one foot in one second. So to measure horsepower, we need to know force (in pounds) and velocity (in feet per second). DynoJet's inertia dynamometer measures power just in this way. The dyno calculates velocity by measuring the time it takes to rotate the heavy steel drum one turn. The dyno measures force at the surface of the drum by indirectly measuring the drum's acceleration. Acceleration is simply the difference in velocity at the surface of the drum from one revolution to the next. The force applied to the drum is calculated from acceleration using Newton's 2nd law, F=MA, (F)orce equals (M)ass times (A)cceleration. Power is coupled to the drum by friction developed between the driving tire of the vehicle and the knurled steel surface on the drum of the dynamometer."

Calculating Torque

"When an object rotates around a point, the object's speed of rotation depends on both an applied force and the moment arm. The moment arm is the distance from the point of rotation to where the force is being applied. Torque is the product of the force and the moment arm. For example, think about trying to spin a drum by wrapping a rope around the drum and then pulling on the rope. If the rope is wrapped around a drum of one-foot radius and pulled with 550 pounds of force, the resulting torque is 550 foot-pounds. The torque on the dyno's drum can be calculated by multiplying the force applied by the drum's radius. However, engine torque is not equal to the dyno's drum torque because the gearing through the drivetrain changes the moment arm. The change in the moment arm is proportional to the ratio of engine speed to drum speed. Therefore, tachometer readings are necessary to calculate and display engine torque."

•The data below reflects a combined Mufflers and Header installation.

RPM	Stock Horsepower	BBE Horsepower	Gains
4200	208	**223**	+15
4600	225	**238**	+13
5000	245	**255**	+10
5400	248	**268**	+16
5800	257	**275**	+18
6200	249	**266**	+17

RPM	Stock Torque	BBE Torque	Gains
4200	261	**279**	+18
4600	257	**272**	+15
5000	257	**268**	+11
5400	241	**260**	+19
5800	233	**249**	+16
6200	211	**225**	+15

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