VICKERS RACING PRODUCTS ©
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VRP HO Dynamometer 2.0 ® Instructions

Description

The dynamometer is able to test all HO type DC cars. It measures the voltage generated by the internal motor that has been calibrated to create approximately the same amount of drag it takes to propel most HO cars down the track. The higher the meter reading the faster the car is going.
The dynamometer operates between 8 to 22volts DC. A 1 to 3 amp power supply should be adequate to run most HO cars on the dyno. A break-in switch at the rear of the dynamometer is provided to switch the power to the car from 5 volts back to the input voltage. Switching to the 5 volts position is typically used for breaking in a motor. Typically the idler gear is removed on a T-Jet and the rear axel is removed on the inline cars. Reversing the DC power input leads will not damage the dynamometer. It will work either way with the same results, Positive to negative or negative to positive.

Caution A

The 5 volt (bottom switch position) has a maximum current rating output of 1 amp. Therefore, VRP recommends reducing the input voltage to 8 volts when breaking in a restricted open (RO) or an open class or neo car, otherwise it could result in damaging the electronics in the dyno. However, if the dyno gets over heated in this position, it will temporarily shut itself off until it gets cool again.

Caution B

Remove any type of metal pan or plate from the cars before placing it on the dynamometer.
Shorting out the power tabs on the dynamometer while power is applied will temporarily disable the dynometer. To restore, disconnect the input power and reconnect in 3-10 seconds to allow the resettable fuse to reset and restore power to the dynamometer.

Caution C

Do not rest any heavy objects on the top surface of the dyno. Damage to roller shaft and the internal motor next to the roller could result. Always keep power contacts clean. Use an eraser to remove ant debris.

Dyno 2.0

1- The Dyno 2.0 incorporates all the features of the original dynamometer plus a few new innovations.
2- It come comes with a 3-Digit meter instead of the older 2 digit meter for better speed accuracy.
3- It utilizes a roller versus two separate wheels. This enables better wheel alignment between the car tires and the roller.
4- It comes with adjustable screws for variable down force for both traction and motor magnets. They are calibrated to exhibit the same amount of down force the track rails would have on the car.
5- A brand new top place with VRP information and logo for a more finished look.
6- Updated surface mount electronics.

Down Force screws adjustment

(**Note**: There is no need to change the screw settings before using the dyno)

1- Turning the screws counter clockwise will increase the down force and cause the car to run slower because it increases the load on the roller and the motor of the car. Same effect as using a more powerful traction magnet. For Neo and Unlimited cars you may need to remove the two (rear) traction screws and use a power supply that supplies more than the 3-4 amps that is used to power the slower cars.

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Using the Dynamometer

Note: The voltage to the car will always be about 1.6 volts below the input voltage. For example, when the switch is set to the 18 volts (top Position). E.g. 20 volts input will yield 18.4 volts at the dyno's power tabs.

1- Connect the power to the dynometer. (**8 to 22 volts**). Or **14 volts** for G-Jet cars.
2- Check that the digital meter resets to zero
3- Check that the rear slider switch is set to 18 volt. (Top Position)
4- Place the car to be tested on the dynometer placing the guide pin in one of the two slots. Depending on the type of car, See step 5 Optimum positioning below.
   A- For T-jet cars, place the guide pin in the first long slot of the dynamometer.
   B- For In-line cars place the guide pin front slot.

5- **Optimum Positioning** - This occurs when the rear wheels of the car is slightly forward below top dead center of the dynamometer roller. Note: Holding the car steady on the dyno may cause it to run faster especially if the rear tires are not perfectly round, or if they were improperly mounted on the axel.

6 - **To break in a motor**

   A- Move slider switch to the 5 volt (Lower) position.
   B- For pancake motors remove the idler gear.
   C- For In-line cars remove rear axel.

   For more details read Caution A above on Page 1, when using the break in switch position.

7- **Maintaining the Dynamometer.**

   1- Always keep the Dyno wheel and top surface clean. This will prevent dirt from getting inside the box.
   2- After prolong use the power tabs may become dirty and will need to be cleaned with an eraser.
   3- Oil the motor and dyno wheel bearings every three to six months for prolong usage.
   4- Once per year remove the bottom plate to clean out any debris that may have falling inside from the Dyno roller.

   Enjoy and tell a friend about the VRP Dyno.

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