

Inde Motorsports Ranch Official Dyno Certification Form



Dyno Testing Procedures:

- / All Dyno tests must be performed in a commercial facility or on a portable Dyno that offers chassis dynamometer testing as part of their business and is open to the public. The Dyno operator cannot be the vehicle owner, the competitor, or a crew member, and must work for the business.
- / All Front Wheel Drive (FWD) and Rear Wheel Drive (RWD) vehicles must be tested on a Dynojet model dynamometer.
- / All Wheel Drive (AWD) vehicles may be tested on a Dynojet, Mustang, Dyno Dynamics, or Dynapack dynamometer. Mustang and Dyno Dynamics results will have 10% added for classing calculations.
- / An inductive pickup or other direct sensor shall be used to measure engine RPM, not via the ECU/OBD port or from calibration from the vehicle's tachometer. (If it is physically impossible to obtain RPM data from an inductive pickup or direct sensor due to vehicle configuration, the Dyno operator must note on the Dyno sheet the method used for obtaining RPM data, and the reason for not using an inductive pickup or direct sensor, and the competitor must notify the National ST Director and/or National TT Director before competition).
- / At least three (3) separate, reproducible tests shall be made for each permitted power configuration, with graphs printed together on the same sheet, with horsepower and torque on the Y-axis and RPM on the X-axis. SAE J1349 Rev JUN 90 correction shall be used, along with a smoothing factor of five (5).
- / The numerical table of horsepower and RPM for the run with the highest Max HP shall be printed out in 50 RPM increments (unless the competitor elects to simply use Max HP for all classing calculations).
- / The Dyno graph printout and numerical table must identify the date/time, car owner's name, car number, car year/make/model, shop name and phone number, and Dyno operator's name.
- / The vehicle must be tested at normal operating temperature (as when on track).
- / The tires must be inflated to at least 28 psi (but should be at normal operating track tire pressure if higher to obtain results that will correlate as closely as possible with post-competition Dyno testing.)
- / The hood shall be open, with a cooling fan placed in front of the engine/radiator during testing.
- / The vehicle must be tested in the gear producing the highest horsepower readings, which is typically the gear closest to a 1:1 ratio—commonly 5th gear for BMW M3's, Honda S2000's, Mazda RX-8's, Nissan 350/370Z's. (Note that it is the competitor's responsibility to ensure that the vehicle is compliant in all gears).
- / All Dyno graphs must show decreasing power for 1500 RPM from the Maximum horsepower level, or the car must reach the physical rev-limiter during the Dyno testing.
- / Engine, ECU, boost controller, restrictor plate, etc. adjustments shall only be made between Dyno runs in order to obtain the required additional sets of three Dyno tests for each configuration. Any restriction device placed in the air intake system must be clearly identified and marked to indicate its dimensions.
- / All horsepower measurements shall be rounded to the nearest whole number before calculations.

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Instructions to Competitors:

Submit completed page 2 with your Car Classification Form and Dyno printouts. If you will be using the Avg HP calculation, either complete and submit page 3 (repeat page 3 if needed for additional power configurations), or perform the Avg HP calculations on the actual 50 RPM vs HP data output table printout, or use the online Avg HP calculator tool and print out results. Regardless of the method, you must circle or highlight each of the 250 RPM data points above and below Max HP on the entire 50 RPM v HP data output table printout and submit those pages.

Avg HP Calculation:

Max HP _____ RPM at Max HP _____ Highest RPM on Dyno Graph _____

Horsepower at 250 rpm increments above/below Max HP from the 50 RPM increment table (Round all horsepower numbers to the nearest whole number, and if AWD on Mustang or Dyno Dynamics model, multiply results x 1.1)

Highest seven (7) HP data points:

_____ @ _____ RPM _____ @ _____ RPM _____ @ _____ RPM _____ @ _____ RPM
 _____ @ _____ RPM _____ @ _____ RPM _____ @ _____ RPM

If the vehicle has forced induction or the maximum RPM is less than 6000 RPM or,

use the highest three (3) data points above along with Max HP to calculate the Avg HP:

$$\text{Avg HP} = \text{Max HP} \text{ _____ } + (\text{ _____ } + \text{ _____ } + \text{ _____ }) = \text{ _____ } / 4 = \text{ _____ }$$

If the vehicle maximum RPM is between 6000 and 7000 RPM,

use the highest five (5) data points above along with Max HP to calculate the Avg HP:

$$\text{Avg HP} = \text{Max HP} \text{ _____ } + (\text{ _____ } + \text{ _____ } + \text{ _____ } + \text{ _____ } + \text{ _____ }) = \text{ _____ } / 6 = \text{ _____ }$$

If the vehicle maximum RPM is greater than 7000 RPM,

use the highest seven (7) data points above along with Max HP to calculate the Avg HP:

$$\text{Avg HP} = \text{Max HP} \text{ _____ } + (\text{ _____ } + \text{ _____ }) = \text{ _____ } / 8 = \text{ _____ }$$