

Fuel Injector Dyno Test

Test Vehicle: 2007 LX470

Fuel: 91 octane pump gasoline 10% ethanol

Data Logging: Dyno report and Toque OBD-II monitor logging

Test #1 - Baseline Max Power

3 dyno runs with OEM 4-hole fuel injectors to establish a baseline dyno. Test will be conducted at full-throttle. This test will determine maximum HP and Torque of the engine and power band in standard configuration.

Test #2 - Baseline Part Throttle Accel

3 dyno runs with OEM 4-hole fuel injectors to establish a baseline part-throttle dyno run. Test will be conducted at partial-throttle by placing a wooden block under the gas pedal. This way multiple runs can be conducted with the exact same amount of throttle. This will test real-world acceleration and any power, MPG, or efficiency differences should be measurable.

At this point the team will change the fuel injectors from the OEM 4-hole to the new Denso 12-hole while still strapped onto the dyno. Battery terminal will be disconnected while working. After completed the vehicle will be started and allowed to idle for 15 minutes for the ECU to calibrate itself to the new injectors.

Test #3 - 12-hole Injector Max Power

3 dyno runs with Denso 12-hole fuel injectors to establish a modified configuration dyno. Test will be conducted at full-throttle. This test will determine maximum HP and Torque of the engine and power band with the 12-hole injectors.

Test #4 - 12-hole Injector Part Throttle Accel

3 dyno runs with Denso 12-hole fuel injectors to establish a modified configuration part-throttle dyno run. Test will be conducted at partial-throttle by placing a wooden block under the gas pedal. This way multiple runs can be conducted with the exact same amount of throttle. This will test real-world acceleration and any power, MPG, or other differences should be measurable.

The next tests will only be conducted if there is still time remaining on the dyno. Fuel will be drained from the tank by disconnecting the fuel line and letting the fuel pump empty the tank into a fuel jug. Then E85 will be poured into the tank.

Test #5 - E85 Max Power

3 dyno runs with Denso 12-hole fuel injectors running on E85 fuel to establish an E85 dyno. Test will be conducted at full-throttle. This test will determine maximum HP and Torque of the engine and power band with E85 and 12-hole injectors.

Test #6 - E85 Part Throttle Accel

3 dyno runs with Denso 12-hole fuel injectors running on E85 fuel to establish a modified configuration part-throttle dyno run. Test will be conducted at partial-throttle by placing a wooden block under the gas pedal. This way multiple runs can be conducted with the exact same amount of throttle. This will test real-world acceleration and any power, MPG, or other differences should be measurable.