



D y n o T u n i n g





725 SOUTH LA CADENA DRIVE COLTON CA 92324
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CBMmotorsports.com

Pre Dyno Tuning Checklist

We have created this dyno tuning checklist as a guide for you to follow to ensure your engine and vehicle are in proper condition prior to your tuning session. The most common cause of unsatisfactory tuning results stem from mechanical issues that could have easily been found and corrected prior to the tune.

You can go through each of the steps in this Dyno Tuning Checklist to identify and resolve common problem areas that can effect the tuning of your car. You need to make sure you are tuning a healthy engine. We suggest you complete a compression test prior to your tuning appointment (and a Cylinder Leakdown Test [CLT]).

STREET LEGAL: If part of the tuning process requires your vehicle to be street driven it **MUST** be street legal.

I.E. Current registration and proof of insurance. Mufflers, fenders, windshields and body panels are in their factory location, plus all head lights, tail lights and turn signals must be working and in their proper location.

OFF ROAD: Tuning process does not require vehicle to be driven on the street.

I.E. Competition race trucks, drift cars, drag cars, sand rails, dune buggies and rock crawlers.

Note: If your vehicle is equipped with a FAST truck style intake manifold, we can not guarantee idle quality due to flexing of manifold material.

Do you have all fluid levels where they need be? Make sure all fluid levels are up to par; this includes :

- engine oil
- anti-freeze
- transmission fluid
- differential/transfer case fluid
- brake fluid
- clutch hydraulic fluid

Replace the filter and your engine oil. Bleed the coolant system before you come for the appointment. If your engine has an overheating problem, DO NOT come for the appointment. Because we cannot tune a car that is overheating. *Service available at CBM Motorsports™.*

Do you have a sufficient amount of the proper quality fuel in your tank? Make sure that you have the proper fuel octane and enough fuel to complete the tune. The vehicle must also have at least a half tank of gas for the dyno tuning appointment. If you want calibrations for additional fuel qualities, please be sure to properly prepare to safely evacuate the existing fuel and to provide sufficient quantities of the new fuel for the tuning session. If you want a tune for race gas, it may be necessary for you to schedule two different sessions because the engine will most likely be heat soaked after the pump gas tune and will need significant time to cool off before a more aggressive race gas tune should take place. *Service available at CBM Motorsports™.*

Do you have any Check Engine Lights (CEL), Codes, or Malfunction Indicator Lamps (MIL) on?

Do not schedule an appointment if you have a check engine light that is on due to something that is mechanically wrong with the vehicle. Please have this problem diagnosed and fixed prior to your appointment. *Service available at CBM Motorsports™.*

When was the last time your fuel injectors were cleaned and checked for a system balance? IF YOUR VEHICLE (OR INJECTORS) ARE OVER 5 YEARS OLD, we highly suggest you remove your fuel injectors and have them cleaned and calibrated. Since the tuner/calibrator is only metering the Lambda (Air/Fuel Ratio) from one location the assumption is that all fuel injectors are flowing the same rate. If you have one poorly flowing fuel injector, then it is possible to further damage your engine by completing a dyno tune. *Service available at CBM Motorsports™.*



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Pre Dyno Tuning Checklist cont.

Do you have sufficient electrical grounding? If your vehicle is over 5 years old or is driven in a humid oceanic environment, we suggest you clean your engine grounds and grounding attachment points. A vehicles electrical signals need to be as clean as possible so the ECM has good signals coming in and going out. The engine harness should have no exposed wires. Also, do no twist and tape wires together. Take the time to properly crimp or solder them together! *Service available at CBM Motorsports™.*

How old is your fuel filter? Stock fuel filters usually work well, but when you are flowing much more fuel through them, they can clog much faster. Please inspect and replace your fuel filter (if need be), any blockage in fuel flow to the engine will cause pre-mature fuel pump wear and can lead to engine damage if the fuel filter is clog, causing a lean burn condition. You should not have installed aftermarket (higher flowing) fuel pump(s) if you see dirt, debris, or rust in the tank. If there is rust in the tank, replace the fuel tank. You can destroy your new fuel pump if you leave junk in the fuel tank. *Service available at CBM Motorsports™.*

How old are your spark plugs? If your spark plugs (& wires, if equipped) have more than 5,000 miles on them (if they are copper plugs) or 15,000 miles on them (if they are iridium/platinum), please replace them with new ones. Be sure to gap them appropriately and to use a small amount of anti-seize when installing the new spark plugs. Bring extra spark plugs, during tuning it is possible to foul the plugs to a point where they will need to be replaced. New spark plugs are NOT included in the tuning rate. Please be sure to consult with your calibrator/tuner about the proper temperature range spark plugs that should be run in your vehicle. *Service available at CBM Motorsports™.*

Can your vehicle drive straight? Vehicle alignment and wheel balancing, the vehicle must be able to drive straight if it is to be tuned on a chassis dyno.

Can your vehicle drive onto the dyno safely under its own power? The vehicle must be streetable and the driveline and drivetrain systems must be in tact and safe, if you have any clicking CV joints then repair them prior to the tuning appointment. Be sure to inspect your wheel bearings as well. The same stresses that your vehicles sees on the street are seen on the chassis dyno, although a failure on the chassis dyno puts your vehicle and the tuner/calibrator in a very unsafe environment until the vehicle and chassis dyno come to a complete stop. *Service available at CBM Motorsports™.*

Can your vehicle stop properly in an emergency situation? Make sure you have appropriately functioning brakes on the vehicle that are suited for your power level, and that your tires have sufficient tread. We drive each vehicle we tune on the street after the dyno tune to verify proper operation. We should feel safe riding in your car after the tune.

How strong is your battery/alternator? Please make sure these items are strong and operating properly. *Service available at CBM Motorsports™.*



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Pre Dyno Tuning Checklist cont.

What would you like to accomplish with your dyno tuning session? One of the best ways to have a good dyno tuning experience is to openly communicate with your calibrator/tuner about what you would like to accomplish with the tuning sessions. Doing this several days prior to your tuning appointment is usually beneficial. Some tuning goals may not be capable of being accomplished with the current hardware on your vehicle and speaking with your calibrator/tuner will help you better understand what to expect given your hardware/fuel quality combination is a good idea.

If your vehicle can not meet any of the requirements as stated on the check list, you must have them resolved prior to making a Dyno Tuning appointment. Contact CBM Motorsports™ service department if you would like CBM to diagnose and repair any issues prior to tuning. If you have any questions regarding parts replacement, fluid types or general specifications ie. spark plug type/gap, fuel octane please contact our tech department. 909.291.7550



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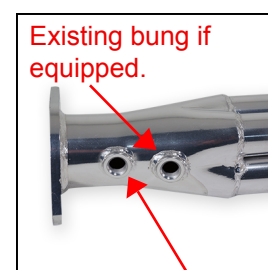
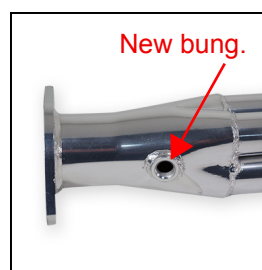
Pre Dyno Tuning Customer Checklist

IMPORTANT

You must have one oxygen sensor bung per header located approximately no more than 3ft from exhaust to cylinder head flange (*bungs are in addition to existing ones if equipped*). If equipped with oxygen sensor bungs, the bung plugs must be able to be removed easily or dyno can not be performed. If headers do not have oxygen sensor bungs installed you can schedule a service appointment to have them installed before you schedule a dyno tuning session.

All fluids changed and topped off:

- Engine oil.
- Anti-Freeze.
- Transmission fluid.
- Differential / transfer case fluid.
- Brake fluid.
- Clutch hydraulic fluid.



Fuel:

- Fuel gauge works.
- Fuel tank has at least 1/2 tank with 91 octane or race fuel (which ever fuel you are running).
- Fuel pressure is at 58 psi. for a fuel injected system or 6-9 psi. for a carb system.
- Fuel filters need to be new or in new condition.

Computer Type - _____

Note - CBM Does not tune every type of computer system, please call to verify.

Gauges:

- Voltage** - installed and reads properly. - make sure it reads at least 13.5 volts.
- Water Temp** - installed and reads properly.
- Oil Pressure** - installed and reads properly.

Driver's Seat:

Must be installed, functioning properly and safely.

Brakes:

Must be installed, working properly and safely.

Tires:

- Must be in good condition with proper air pressure (NO CRACKS IN TIRES).
- All lug nuts installed and torque to proper specification (None Missing).

Spark plugs:

Need to be new or in new condition and gaped for your engine type.

Air Filters:

Need to be new or in new condition.

Belts:

Make sure all belts are in good condition with no cuts or tears.

Clutch:

- Make sure properly adjusted.
- Can the vehicle be driven ?
- Does the vehicle have reverse ?

Note: Vehicle must be able to start on its own.



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– Pre Dyno Tuning Vehicle & Customer Information –

Please fill out this form to the best of your knowledge and submit prior to making a Dyno Tuning appointment.

Customer Info.

Name: _____

Address: _____

City: _____ State: _____

Zip: _____ Phone: _____

Email: _____

Modifications.

Camshaft: _____ duration ____ lift ____ lobe ____

Cylinder Heads: stock aftermarket CNC

Fuel Injector Size: _____ Fuel Octane: _____

Mass Air Flow sensor: no yes Part #: _____

Intake Manifold: stock aftermarket Part #: _____

Exhaust: diameter ____ headers mufflers

Reluctor Wheel: x24. x58.

Comments: _____

Vehicle Info.

ECM Brand/Type: _____

Year & Mileage: _____

Make/Model: _____

Engine: _____

Transmission: _____

VIN: _____

Compression Ratio: _____

TQ Converter: _____

Throttle Body Size: _____

Thermostat: _____

Fan Temp: _____

Rev Limiter: _____

Gear Ratio: _____

Tire Size: _____

Rear O2 Delete. Air Delete. _____ Delete. _____ Delete. _____ Delete.

Dyno Tuning sessions start at (if a CBM engine) \$600.00, (if a current CBM customer) \$800.00 and (new CBM customer) \$1000.00. A non refundable deposit of \$100.00 is required at time of making appointment.



Disclaimer:

All tuning performed on the said car above is for "Off Road Use Only". By making any changes to the PCM/ECM, your cars emissions output will most likely be much greater than stock levels. Testing and tuning on & off the dyno will push your vehicle to its mechanical limits. It is the car owner's responsibility to ensure that the car above is in good working order and capable of handling the stresses incurred when your car limits are reached. The under signed agrees to forever hold CBM Motorsports™ harmless & indemnify against and from all claims, demands, losses, costs, damages, suits, judgments, penalties, expenses, or liability of any kind, or nature what so ever arising directly, or indirectly out of, or in connection with any custom PCM/ECM programming requested.

I hereby acknowledge and understand that I am aware of the potential risks involved with tuning on & off the dyno and the I waive any and all claims against CBM Motorsports™ for ANY damages to my vehicle as a result thereof.

I have read the Pre Dyno Tuning Information and Checklist.

My vehicle meets the requirements of the checklist and is ready to be dyno tuned.

Vehicle Owners Signature

Date