

“DO I NEED MY KENNE BELL SUPERCHARGER KIT RE-TUNED?”

There's a lot of discussion going around about what to do regarding tuning your vehicle with the Kenne Bell supercharger kit, particularly when already furnished with a Kenne Bell factory calibrated chip or program. Many are suggesting that you go and have the vehicle “dyno tuned,” or get a tune from some chip supplier or manufacturer other than Kenne Bell. After reviewing numerous negative customer experiences about this approach to tuning, we decided it was time to respond. Kenne Bell belongs to and actively participates in quite a few performance enthusiast forums. We determined from most of the forums we visit, they could generally be summed up into five basic categories or “rules”:

- 1) There is a massive amount of great information to be had and it is a fantastic way to “mass communicate” and pass along experiences. Sifting through it all to find the right answers is the hard part, as we're sure most would agree.
- 2) There appear to be a whole lot more people trying to get real facts than those qualified to give them.
- 3) There appear to be a whole lot of people swayed into believing opinions instead of facts.
- 4) Many “opinions” and “advice” are offered by Vendors - companies who have a biased agenda and priorities of their own. In other words, they are primarily interested in selling you their products or services. So, should they be allowed to comment freely about their competition or their competitors products without a response from us? We think not.
- 5) Too often replies to posts are filled with negative comments, many are left open to misinterpretation as “flames, insults, or just plain bs”. Others are blatantly rude, crude and uncouth and should never be allowed on any forum anywhere.

We're not out to change the way the world or how the internet works, but we certainly believe we're the most qualified to give the real facts when it comes to our products. You won't very often find us commenting on anything but Kenne Bell products or the effect that other products or services may have in conjunction with the use of our products, good and bad.

At the risk of sounding “cliche”, no one is an expert at everything, and everyone makes mistakes. What we are expert at is supercharging and tuning, particularly Kenne Bell kits that were designed and tuned by Kenne Bell. Our expertise is based on many years of real world experience backed up by thousands of actual test results (Kenne Bell refers often to these as “facts” until proven otherwise). If asked about subjects “outside our area of expertise”, we say we do not know, and are reluctant to offer opinions if they cannot be backed up by facts. Kenne Bell makes mistakes too once in a while, but “It's what you do about your mistakes that count” to quote Jim Bell.

Many are being misled by posts suggesting you must have your Kenne Bell Supercharger kit “re-tuned” because the same tune can't possibly be used on the more than one vehicle (same engine, trans, supercharger), or that the “local tuner” can get more power out of their kit than Kenne Bell can. This is simply untrue and something we take issue with.

There is much discussion on the internet about tuning and how no two tunes can possibly be the same even though the vehicles they speak of have identical powertrains. The general word out is each vehicle must be tuned individually to extract every last bit of power. There are many “tuners” jumping right on in to milk this cash cow, however, we'd like to give another perspective on the subject.

When GM, Ford, Daimler-Chrysler, etc.. turn out groups of vehicles off their assembly lines with the same powertrains (engine family, transmissions, axle ratios, GVW, etc.), you can be assured of one thing: they are all programmed EXACTLY the same, because they are the same. Literally thousands roll off the line like this on a daily basis. This is not only because all the vehicles of the same type (engine family) can and should be programmed alike, but because they must be programmed alike. All vehicle manufacturers must do this because it is mandated by Federal law (EPA) so they can get their emissions certifications. If the OEMs make any gear or transmission changes, they have to notify CARB and re-certify their calibrations. And if the HP and/or tunes did vary, then how could the OEM ever rate their engines? Think about it. A 260HP Ford GT engine varies between 240 and 280HP?

To even suggest the same tunes can't be used on two vehicles with the same powertrain would be exactly like saying the same intake manifolds cannot be used or water pumps, or transmissions, etc.... this is what “assembly line manufacturing” is all about. So the very same parts; upholstery, tires, paint colors, and yes, even calibrations can and are being used on more than one vehicle.

The fact that people are all individuals and like to accessorize their vehicles differently to distinguish themselves from the “crowd” would be a correct statement, and one we agree with. Kenne Bell also totally agrees that people have different driving habits. What we do not agree with is that one vehicle is so different from one next door of same make, model, year, powertrain etc. they must be individually “tuned to get the most out of them”, even if the two have been slightly “performance modified” from each other. This is a myth, a farce and quite often a “pitch”. It takes a substantial horsepower modification like a supercharger, turbo, nitrous, stroking the engine, high compression pistons and/or heads for example before a new tune need even be considered. Your vehicle's mass air flow sensor (if equipped) takes care of a number of variations in horsepower from installing things like filters, mild cams and

headwork, headers, and exhaust systems. The mass air meter “corrects” and adds additional fuel if the mass flow increases (hp increase). It is designed to do this. The vehicle’s computer does not require another “tune” when bolting on anything as simple as a cat-back exhaust system! Since many performance bolt-ons amount to very little, if any gains at all (we’re using test results here), your MAF meter will easily handle it. Just don’t install an aftermarket mass air meter if your vehicle is supercharged (more on this later)! For speed density applications, the MAP sensor also compensates for slight hp adders and will not require re-tuning.

Contrary to popular belief, *“The advertised hp of each add-on will virtually never equal the sum of them all”*.

THE EXCEPTION

So far, it appears we have been negative about re-tuners, and justifiably so. We’ve seen plenty of bogus dyno runs, blocks under gas pedals, wrong AF ratio info and skewed tests. See Kenne Bell’s list of “Variables in Dyno Testing” at the following link: <http://www.kennebell.net/techinfo/techinfo-general.htm>

However, there are legitimate reputable tuners who perform an invaluable service. We keep a current list of references. For example: Kenne Bell offers special “tuner kits” wherein we leave all the tuning to them. These kits are basically racing applications that require custom tunes to bring together various components by other vendors such as injectors, mass air meters, inlet systems, fuel systems, modified O₂ and other sensors, exhaust, headers (leaks are always a tuning issue), etc., etc. There are simply far too many combinations of untested products and variables for Kenne Bell to test, evaluate, offer specific tunes for - and then support via the phone or internet. It’s just not feasible.

Again, these are complex selectively pieced together systems that our supercharger is only one part of. That doesn’t mean that these custom kits are not powerful great performers.

Finally, some supercharger companies choose to not develop or even be involved in the complex arena of tuning and therefore do not offer chips (tunes) for their kits, even though the kits/application requires custom tuning. An example is the ‘03-’04 kits that cover a range of 400-700RWHP. Kenne Bell offers tested and proven chips/calibrations for 42, 55 and 60 lb injectors with the stock 90mm and new 2400kg meters and 4” cool air kits. We’ve sold hundreds with virtually zero reported problems.

THINK ABOUT IT

Many suggest you go and have your vehicle “dyno tuned”, or get a tune from someone other than Kenne Bell. This does not make a lot of sense to us since we supply tunes with virtually every kit we sell (GM, Ford, DC, etc). All our tunes are performed in-house; optimized for power and emissions (our kits must be 50 state legal in order to sell them in the state of California). Would it be fair to say that with 94 octane, there is a potential of making about 20 more horsepower than with 91 octane? Yes. Did we tune for 91 octane? Yes. Do you need to go to a tuner to extract another 20 hp from your Kenne Bell kit when you can get 94 octane all the time? No. absolutely not. There’s a heck of a lot cheaper way to make 20 more hp than paying for a re-tune. More boost! A simple pulley change! 2 minutes and \$75 (\$49 for the pulley, \$25 for the special wrench to change it with). It works out to about 1.5 octane per pound of boost over 91. So with 3 more octane, it could be possible to run as much as 7-8 psi boost, instead of 5-6. Not only that, a pulley can be changed BACK again in case you run into trouble (2 minutes). What if you have to travel and can’t get 94 octane? Are you going to have to go back to your tuner again before your trip for a 91 octane tune (oops, the one you had in the first place from Kenne Bell)?

To say we are heavily involved in the supercharger kit manufacturing business would be an understatement. Our definition of a kit means supplying the customer with everything they need. No going to outside sources for any more parts or work to be done other than possibly installation of the kit itself. We believe there is no other way to offer a supercharger kit. To us, a “kit” is not a true kit unless everything you need is supplied. Virtually every kit we manufacture is supplied with all the tuning included. We even supply special or non-ordinary tools often in many kits if we feel it may burden our customers to obtain them in order to do the installation. Although we do sell “tuner kits” that require some added tuning and/or parts, this is for ultra high HP applications and is the “exception” rather than the “rule.”

We’ve been tuning our own kits for over 13 years since the very beginning when we decided to get into the twin screw supercharger business. We spend a lot of time at it and possess the ability and capability in-house to do anything we want with virtually all ECU’s for Ford, GM and Chrysler all the way up to the very latest in technology. We spend a tremendous amount of time on each and every tune to provide the “Best of All Worlds” because 1) we have to make 50 state emissions, and 2) we want to make the vehicle behave as if the supercharger was installed by the factory - cold starts, hot starts, idle quality, and driveability all are of paramount concern to us - and 3) extract every bit of power we can on the available gas at the pump. This is no quick and easy task. This cannot all be done in an hour, a few hours, or even a day on a dyno by a “chip maker”. It takes weeks, sometimes months to adjust PCM stock parameters and determine everything that must be altered and refined or remapped in order to provide the best of all worlds in a supercharger tune. We find it quite humorous that anyone could think all this can be accomplished on a dyno in an hour, day or two, or even a week.

To suggest we are the greatest tuners of all time is a misnomer. We rarely if ever offer tuning for stock vehicles. That’s “child’s play” i.e. advancing spark and/or leaning AF ratio, adjusting rev and speed limiters, shift points, shift firmness or adjustments for gear

and tire size changes. Let the “tuners” do those, and leave the ultra complex task of supercharger tuning and calibration to us. For us to say we are the best at tuning and calibrating our own supercharger kits is correct and serious business to us, so we will defend this to the bitter end.

If anyone wants to re-tune your Kenne Bell supercharger, you may want to ask if they have over 45 years collective experience at it and invested over \$225,000 on a dyno, state-of-the-art scantools and high speed mass storage datalogging and OEM air/fuel monitoring equipment (not just some “wide band” sensor) and just how much time they plan on spending on your “individual tune” (surely they will be starting completely from scratch every time, right)? If they are true “tuners”, they will start from scratch each time, otherwise they are just “tweakers” using a copied tune from another tuner or a copied tune from someone else’s vehicle using “Joe’s tune from the last time”. Give them this basic “checklist” and see if they plan on actually testing and recalibrating:

- ACT SPARK
- ECT SPARK
- ECONOMY MODE MAIN SPARK TABLE
- PERFORMANCE MODE MAIN SPARK TABLE
- ETC AIRFLOW CORRECTION
- NORMAL SHIFT MODES
- HOT SHIFT MODES
- PERFORMANCE SHIFT MODES
- SHIFT TORQUE CONTROL
- TV LINE PRESSURE RECALIBRATION - ALL GEARS
- TORQUE REDUCTION TABLES AND FUNCTIONS
- TIP-IN TORQUE CONTROL
- TORQUE CONVERTER LOCKUP / UNLOCK SCHEDULES
- KNOCK RETARD RAMP RATES - UP/DOWN
- KNOCK SENSOR GAIN REMAPPING & CORRECTION
- TIP-IN KNOCK CONTROL
- ADJUSTMENT OF REV LIMITERS FOR DETONATION CONTROL
- INJECTOR FLOW RATE / VOLTAGE COMPENSATION / CRANK FUEL
- P/T AND WOT FUEL MAPPING
- OPEN LOOP vs WOT FUEL CONTROL
- REV AND MPH LIMITERS BY GEAR / ETC
- REMAPPING TO PREVENT “REDUCED POWER MODES”
- MAKE IT LEGAL TO PASS 50 STATE EMISSIONS

These are only a few of a huge list of parameters we adjust (some apply to different manufacturers and others proprietary), but you may want to use it as your “minimum changes check list” for your tuner if considering having it done. As you can see, “total calibrating” involves more than “tweaking” or a power tune (advancing spark and leaning out the fuel). Hopefully, your tuner will make your new calibration both safe and 50 State legal for emissions. You will no longer be able to use a Kenne Bell CARB Exemption Order number for your emissions test because the Kenne Bell kit has been “altered by others” and is no longer approved.

It’s a bad idea in order to “get more power” out of the Kenne Bell supercharger for any tuner to attempt to make him/herself look like “they know more than we do” by advancing the timing and / or leaning the engine out. This can easily push the engine into the “red zone” for detonation and engine damage. BTW: surely the tuner realizes that we too know how to advance spark timing and lean the fuel out to gain power? Of course we do - this is the oldest and easiest trick in the book. Just beware of the consequences of doing this. If we could have advanced the spark more and leaned it out more, we would have, but that would not be safe for today’s low octanes and winter vs. summer “blended and oxygenated” fuels. If all a tuner plans on doing to your Kenne Bell tune is to go into the Kenne Bell calibration and simply advance WOT timing and lean out WOTAF ratio, then he should tell you so.

There are quite a few things “not to do” when supercharging. We arranged a few things here in a “Question and Answer” format to make it easier to pick out specific responses to common questions you may have. These are real questions from real customer experiences:

Q: Why after I had my shift points increased by my tuner does my engine ping at the shifts and the engine “lay down”?

A: Of course it does. A truck / SUV engine’s VE (Volumetric Efficiency) typically drops off rapidly as rpm increases, causing boost to rise beyond the designed Kenne Bell boost pressure - up to a totally unacceptable and dangerous boost level. That is not good for any engine, intercooled or non-intercooled on pump gas. We recommend leaving our calibrated shift points alone. If your engine “lays down” after a “re-tune”, it is because it is pinging (detonating) and the PCM is attempting to reduce the spark because it detects knock from the knock sensor if equipped. This reduces the engine’s output by about 4 hp per degree of ignition timing

retard. You lose in this game, not gain.

Q: What would cause my engine to surge and ping? It didn't ping before. All I changed was to add an aftermarket mass air flow (MAF) meter and cat-back exhaust - I think I need someone to re-tune it. I think it's too lean.

A: Good question, but..... No! No! If you have the Kenne Bell tune, DO NOT have it "re-tuned". The aftermarket meter is the problem. While these may be fine for use on non-supercharged vehicles, they are NOT fine on ones that are Kenne Bell supercharged. These meters produce a "lower than factory" signal output to the PCM essentially fooling it into thinking the load is less than it really is, so the PCM advances the timing, and in most cases lean the fuel at WOT and part throttle. This can make some power on a non-supercharged vehicle, but will cause pinging on the supercharged one. You DO NOT want to advance timing beyond the Kenne Bell cal with a supercharger - this is BAD. The timing must actually be retarded in some parts of the timing tables and functions. Did you know that even rotating or slightly re-locating a stock MAF can result in major changes in AF ratio - up to 2 full points depending on application.

Regarding the cat-back exhaust, if it makes any hp at all (we know many of you do not want to hear this, but most make very little if any from tests we've performed), then the stock MAF will compensate for any added power that is gained. The mixture will not lean out. Again, that is part of what a factory MAF is for. We aren't dealing with carburetors here, the MAF will compensate for slight hp gains and the motor will not lean out. So, why pay a tuner to do what the stock MAF will already do? Richening the air/fuel ratio is not the answer for the aftermarket MAF or the cat-back exhaust. Remove the aftermarket MAF and your pinging will go away.

Q: I bought a Kenne Bell kit but didn't use the Kenne Bell calibration (tune). I chose a local tuner to calibrate it. Now the tuner claims there is a problem with the Kenne Bell kit. Boost is 12 psi instead of 6 psi and it pings like crazy. What is wrong with your kit?

A: The exhaust may be restricted, so the engine can't expel or "exhaust" enough air, so the boost builds up in the engine. Our guess is your tuner did not recalibrate the larger injectors that came in our kit or you installed a stock PCM and tried to run it without the new larger injector calibration in it. This can cause the catalytic converters to melt and plug within less than 5 minutes, because the stock PCM tells the new larger injectors to run way too much pulsewidth (opening time - almost double). Your computer thinks you have the factory small injectors, so the pulsewidth is way too much. Too much fuel flows into the cylinders, is unburned, then exhausted into the cats causing the catalysts to overheat and melt down into blobs inside your exhaust system, plugging it up almost instantaneously. That is a \$1000 bill just for the new cats, plus labor to R&R them. Don't believe the cats are plugged? Check the back pressure right before them. Normal back pressure under boost here is about the same as the 6 psi boost the kit develops. Instead of 6 psi, it will be double that, even as high as 30 psi. We've seen this happen more than once.

Q: My tuner installed an underhood K&N filter, now my engine pings. He thinks the supercharger has gone bad. What do you think?

A: Don't think "the supercharger went bad" at exactly the same time he installed the K&N open element filter under the hood. Your underhood temperatures can exceed 200° F. Compare that to your Kenne Bell filter that is pulling in all that cool 70° outside air. The 130° difference is the equivalent to the heat generated by an additional 13 psi of boost! Also, every 10° F increase in inlet temperature reduces power 1% or 13% for 130° air. When will some of the aftermarket suppliers of filters ever get this right? Why do you suppose every OEM for about the last 30 years spent all that money on canisters and ductwork to isolate the engine compartment heat from the inlet?

Q: I'm adding headers, exhaust, cat back, throttle body, and even a larger mass air meter. Do I need a re-tune?

A: Unfortunately, many owners are duped into believing they will achieve big power gains with these components. They add up all the advertised gains and get scared of the tune because of all the power they assume will be surging through their engine. Let's take the popular '03-'04 Cobra, for example. At Kenne Bell, we test a lot of bolt on products besides our superchargers and our competitions superchargers. We take pride in our tests and sincerely believe we are performing a service to our customers. For example: We state in our '03-'04 Cobra Tech Tips "that we have never seen any big gains with cat back exhaust (claims of 25-35HP) and headers (claims up to 50HP). Our tests indicated the following: Headers 9RWHP, Exhaust 0-10RWHP depending on HP tested at.

Q: I haven't seen anything here that pertains to me, yet for some reason, my engine is still pinging with your supercharger kit. It did not do this when it was first installed. Has it gone bad?

A: One thing you can be sure of. The supercharger itself has not "gone bad", nor does it cause pinging by itself. We've been selling supercharger kits since 1991 and have never seen one "go bad" and suddenly start mysteriously making the engine ping. In the simplest of form, the Twin Screw is merely a couple of rotors that spin and pump air. If they quit spinning, you'll know it. Here are a few things to consider and check when an engine pings, and we've never seen an OEM PCM "go bad" or fail. Also, chips rarely, if

ever, “go bad,” so let’s look at the most common causes of pinging.

- **Vacuum / Inlet Leaks** - this is by far, the most common problem that causes pinging. Loose clamps on inlet hoses, cracked hoses, unsealed inlet mating surfaces or open valve cover breathers can allow unmetered air to enter the engine and lean the air/fuel mixture out. This is the **FIRST** place to check if you experience any pinging.
- **Aftermarket Mass Air Flow Meters** - changes (lowers) signal to PCM than factory to place the PCM code in a lower cell - thereby advancing timing - very bad for a supercharged engine. MAF “Tweakers” fall into this same category - do not use them on our kits!
- **Insufficient Fuel Octane or “Oxygenated” (blended) Winter Fuels** - be sure your “tune” is safe for both types of fuels, because a tune done on summer fuel for the max power will very likely ping in the winter. Never run mid or low-grade fuel in your supercharged vehicle. Always run with the highest octane you can find from reputable service stations. If your vehicle sits for extended periods without driving it, the fuel can actually degrade (lose octane). This will absolutely cause ping and knock.
- **Excess Boost** - never change the pulley that drives your supercharger to a smaller diameter or the crank pulley to a larger diameter than came with the kit. To do so will change the ratio at which the supercharger spins, increasing boost and this will cause the engine to ping. If anyone tells you to do this, then they’ll also want to get you to buy a special “tune” with their pulley set-up. Why? Because they will have to retard (less hp - every 1 deg ~ 4 hp) the ignition timing to run more boost, thereby nulling the effect of more boost. Octane is octane folks. It will only support so much boost (hp) without retarding the timing to prevent knock (see, this is a losing proposition for the customer, but not the tuner). Here’s an old dyno trick. *“I can run 14 psi with the Kenne Bell 9 psi kit and pick up 65HP (5 psi x 13 = 65HP).”* The customer gets charged for the magic tune but later determines that the car makes the *same HP* because the timing was also retarded 16° (16° x 4HP/degrees = 64HP). This tactic reduces power by 64HP - and the retarded timing is now burning up exhaust valves along with your hard earned tune up money.
- **Kenne Bell Calibration was Changed / Altered / Redone** - everyone already knows how we feel about this. Do not do it. Contact us with any PCM related issues.
- **Spark Plugs Left Stock or Replaced with Incorrect Type** - this is a very common mistake. People think their stock plugs will be OK - “They hardly have any miles on them”. They are not OK - change them! Go to at least one heat range colder plug. Factory stock spark plugs are designed to run hotter - this is not good when supercharging.
- **Underhood Exposed Air Filters / Clogged Air Filters** - Never run an open, exposed under hood filter (can you say 200 degrees inlet temperature?). Service your Kenne Bell filter regularly - it is washable and can be re-oiled. We include a full 3 page warning about these things in all our instructions.
- **Excessive Engine RPM** - No raising of engine rev limiters that Kenne Bell has lowered for your protection. The engine will ping. More rpm is not always better. Actually, the factory shift points are usually ideal for acceleration - or they would have raised them.
- **Insufficient Fuel Pressure / Clogged Fuel Filter** - Make **SURE** the fuel pressure regulator (if equipped) has a boost reference. The fuel pressure must go up equally as boost increases or the engine will lean out and ping. Check and replace your fuel filter on a regular scheduled basis. This is a common mistake - people tend to forget fuel filters, then they clog, fuel pressure drops, and the engine leans out. We recommend fuel pressure gauges on all supercharged vehicles.
- **Clogged or Incorrect Fuel Injectors** - Never go with any fuel injectors other than the ones we recommend. Contrary to what many lead you to believe that more fuel equals more horsepower, it is the “ideal” air/fuel ratio that makes the most horsepower. Injectors can also clog with varnish from fuel after many miles (50,000 + miles), especially if the vehicle sits for long periods of time between driving. Also note when a vehicle sits for a long time, the octane can be reduced. This is bad.
- **Wrong Fuel Pump or Non-functional Boost-A-Pump™** - never change your fuel pump unless it’s back to the factory pump. That is what the kit was designed for. Don’t let someone talk you into some “High Output” pump. It may turn out to flow **LESS** than the pump you had to begin with and it may surge or create excess noise and heat. Always make sure the Boost-A-Pump™ (if supplied) is functional. Bigger fuel pumps are like bigger injectors - more fuel does not make more horsepower. Only if the horsepower level exceeds what the system can deliver at the correct air/fuel ratio should dictate increasing a pump’s size.
- **Excessive Oil in the Combustion Chamber** - incorrect routing of PCV hoses, wrong PCV type or missing PCV will cause excess oil to be drawn into the air/fuel mixture. This will cause detonation / ping / knock as engines don’t like burning oil instead of gas. Do not assume the supercharger is doing this. It is normal to see some oil from the PCV in the inlet manifold or supercharger.
- **High Coolant Temperature** - was the thermostat changed to the lower temperature one we recommended or included in the kit? Is the engine running at about 160-180 deg F? Anything higher can cause ping. Make sure this was changed when the kit was installed. The factory gauge is a joke if you are looking at it for the correct temperature. If you are having pinging issues, get a scantool or SCT Raptor (highly recommended) and get the real temperature.

● **Clogged / Restricted Exhaust** - do yourself a favor - before you change to a new "High Dollar High Performance Exhaust System", check the back pressure before the cats, then after the cats between the cats and mufflers. Record the pressures at WOT. An exhaust system cannot suck horsepower out of the engine if there is no exhaust pressure (restriction) to begin with.

Q: What is the difference between a "Piggy Back System" and "flashing" or reprogramming the stock PCM as Kenne Bell does? (GM Kits)

A: Just that. We reprogram the code and reflash the PCM just like the GM calibration engineers. There are numerous disadvantages to a "Piggy Back":

1) Any modifications must be made by tricking or fooling the stock PCM. This has to be done by hacking into your sensitive PCM wiring harness and interrupting / shorting / deviating the input and output signals of the PCM. Remember what we said about the aftermarket MAF meters and what happens when you try to "trick" the PCM?

2) Typically, auxiliary injectors are used to spray the additional fuel required into a "dry manifold design" not set-up for this purpose. This is done because imagine if you had to tap into all eight injectors so their signals could also be modified like so many others with the "Piggy Back" computer approach! Unfortunately, spraying fuel into a dry design manifold results in uneven fuel distribution, puddling of fuel in the manifold (bad for emissions) and less desirable performance and mileage. Since some cylinders also end up rich and others lean from this type of system, there is a tendency for the engine to detonate or ping more easily. All GM Kenne Bell kits include 8 new hi flow injectors and add the extra fuel into the ports where it belongs.

3) The "Piggy Back" can't modify the torque management tables so you will feel it "bog" off the line.

4) The "Piggy Back" can't modify the spark tables, only "trick" the PCM into reducing spark

5) The "Piggy Back" can't modify the fuel tables, this must be done via auxiliary injectors.

6) The "Piggy Back" can't modify the knock tables and functions, no extra protection here.

7) The "Piggy Back" can't modify the trans shift points.

8) The "Piggy Back" can't modify the trans shift firmness and shift speed.

9) The "Piggy Back" can't modify the torque converter lockup schedules.

10) The "Piggy Back" can't modify the tire and gear types, or raise limiters.

There's so much the "Piggy Back" can't modify, but you get the idea. Yes, it's true, we've seen where you can buy an extra PCM programmer to go "Piggyback on the Piggyback" so to speak. That sounds a little ridiculous to us but it does give you the ability to get rid of some of the torque management, but what about all the other disadvantages? What about the extra cost? Again, we prefer to recalibrate the stock PCM that operates the vehicle, just like GM does.

Q: Why doesn't Kenne Bell just let the "Chip Companies" tune their kits for them, like some of the others?

A: Because we can tune them ourselves. Chip companies don't have a fleet of new supercharged test vehicles at their disposal at all times to further develop calibrations, update, test and troubleshoot potential customer problems. Chip companies don't design supercharger kits. That's what Kenne Bell does.

Q: Why does Kenne Bell have to request the PCM be returned to them for re-calibration rather than offering a hand held?

A: Whenever possible, we lock all our calibrations so no tuners can get in and "hack around". If they want to truly "re-tune" a vehicle, let them start from scratch like we do, and make sure it still passes all the emissions standards and provide safe performance and reliability - and paste a disclaimer on it with their phone number so when there are problems or the vehicle is sold this tune doesn't become our problem. While it is somewhat inconvenient to have to send a PCM to us, it is the best way to keep your kit 100% "connected" to Kenne Bell for warranty and support. When our kits are re-tuned by others, it results in way too many problems for us to support.

Another Jim Bell quote: "Re-tunes are like ex-wives. They always return to haunt you."

We've seen cases where simple vacuum leaks or some failed OEM part or header leak, aftermarket MAF or other defective aftermarket product resulted in customers wrongly being talked into re-tuning because there's "obviously something wrong with that Kenne Bell tune". This has happened too often to be left unsaid. Example: The tuner starts from scratch, burns up a set of cats, the engine knocked and melted a piston from excessive boost and rpm and being too lean. He was "gonna tune 'er for high rpm". \$4500 and 3 months later, the customer calls complaining to us about all the money he had to spend to have our calibration "fixed" by his local tuner. We then asked the customer "It's been almost 2 years since you bought the kit from us. You never called us once. Did it run good for the past 1-1/2 years?" "Yes", he replies. Isn't it interesting how a vacuum leak, failed sensor, "another aftermarket product" or trans rebuild, etc.. can end up being the fault of the original Kenne Bell calibration that worked so great for 1-1/2 years? Rest assured calibrations don't "go bad" like milk and meat. Neither do superchargers or ECM's.

These are some of the reasons you may want to stay with your Kenne Bell tune and contact us if you have any issues. We purposely “lock” our calibrations whenever possible so the local tuners can’t get in and “tweak” them. Nor, do we want any “chip companies” playing with our calibrations or “re-tuning” our kits. We prefer that they stick to the relatively easy task of working on non-supercharged vehicles, advancing timing, leaning them out, removing speed limiters and raising rev limiters and changing shift points. This pales in comparison to the complex task of engine and transmission calibration for a supercharger kit. Now, if a tuner decides to start from scratch and modify all that is required to accomplish this - GOOD LUCK! Just don’t call us.

It has been at our experience if we allow tuners to modify our calcs or kits in any way, it inevitably results in more serious time consuming problems and expense for our customers and us. When those problems arise, it turns into a finger pointing contest as to who’s problem it is, all at the customer’s expense. In the end, it’s only too often perceived as a “Kenne Bell kit problem” and we’re the bad guys if we don’t analyze and fix it over the phone. Our #1 priority at Kenne Bell is our customers and if we decide locking our tunes is in our best interest, then so be it. We have some excellent Kenne Bell Installers who do a great job of installing our products, so we are not anti-tuner - anti-dyno testing. Again, we are merely pro anti-tampering. As the old saying goes, “If it ain’t broke, don’t fix it.”

“The easiest thing to do is to work on the wrong part of the car”.

This is our take on tuners. We’ve said everything we wanted to say here. We know there will still be some who do not agree, but we’re not going to debate it anymore. Let the tuners do anything they want, just leave the Kenne Bell supercharger calibrations to us.