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FAQ on Modifying the Toyota Supra

By Stuart B

FAQ on Modifying the Toyota Supra

by: **Stuart B**

What does BPUTM stand for? (BPUTM is a trademark of SupraStore.com)

Basic Performance Upgrades. These modifications are: A full length three inch down-pipe (with or without high flow cats), 3" (75mm) or bigger cat-back exhaust system, raised boost (18psi), and the required boost cut eliminator (GReddy BCC) needed to achieve that boost without activating the factory fuel cut-off at 14-15psi. These are the modifications that have proven to provide the best HP-to-\$\$\$ ratio.

What does the + mean when someone says BPUTM+? And what is APU?

That stands for any additional power producing modifications other than the basic BPUTM modifications. One "+" refers to Adj. Cam Gears and under-drive pulleys, the second "+" refers to a Fuel controller, ECU upgrade, etc. For instance, a Supra with the BPUTM modifications, plus a front-mount intercooler, would be called BPUTM+. If you added cam gears to that, it would be BPUTM++, and so on. The "BPUTM" term is used until you have an upgraded turbo(s). Then it is referred to as APU, advanced performance upgrades. This designation pretty much covers every modification that can be performed.

What are the first engine modifications I should perform?

I recommend starting with raising the boost of the stock turbos to roughly 18psi. This will require a quality boost gauge and a boost cut eliminator (GReddy BCC). You will achieve 15 or so PSI with the stock Down Pipe in place. This will provide an addition of approximately 30rwhp. After those modifications are completed, it would be a logical next step to install the Down Pipe and Cat-Back Exhaust at the same time. You will now be at full BPUTM.

What do all the various "Free Mods" do?

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There are many different "free mods" for the Supra TT. I will cover just a few of them here. The ones I will cover fall into three categories, boost control, EGR disabling, and TTC or True Twin Conversion.

Three of the boost control mods are: Bleeder-T Mod, Clamp Mod, and the VSV Bypass Mod. Each of these modifications raise boost levels without the use of a boost controller. But you have to keep a close eye on your boost gauge, and make sure they are not allowing the turbos to boost too high (18psi is a safe level).

The next mods, are the true twin conversion mods (or TTC). This modification disables the Sequential twin turbo operation, and causes the turbos to run constantly in parallel (both on at the same time). This is supposed to allow for slightly better mid-range power (before the secondary turbo would normally come online) and allows for a smoother power band, without the abrupt boost increase caused by the transition from primary to secondary operation. However, this does noticeably decrease

low-end power, and increases exhaust noise levels, and therefore may not be desirable on the street. Two types of the TTC mod are, the traditional TTC mod which includes 2 methods, wiring the actuators, or installing a one way valve, and the Electronic TTC mod (ETTC).

The last mod I will discuss is the EGR mod. This disables the Exhaust Gas Recirculation system, which is meant for emissions, and therefore, this modification is for off-road use only. This mod is supposed to prevent the super heating of the number 5 and 6 cylinders, which may cause burnt valves.

How much power will my car make at BPUTM?

It varies from car-to-car, and the conditions as well as tuning. Most BPUTM-only Supra Twin Turbos, dyno between 370 and 410 horsepower at the rear wheels. This is usually achieved with moderate temperatures, a reset ECU (to erase anything bad the ECU may have learned), and often a little bit of high-octane un-leaded race fuel. On the street, power will be reduced, especially in poor weather, but at least 90 percent of the power should be retained.

What kind of 1/4 mile ETs and trap speeds should I run at BPUTM-only?

It varies WIDELY depending on driver skill. As well as track conditions, elevation above sea level, ambient temperatures, humidity, and pre-race preparation. But most fall between 12.3 to 12.9 ets with 112 to 119mph trap speeds on street tires. Times can drop well into the 11s with drag radials, a good driver, and good conditions, as well as proper pre-race preparation.

What is a BPUTM'd Supra TT's top speed?

Speeds in the mid-high 180mph range should be achievable. Once the speed-limiter is disabled, by pulling the "TRAC" fuse of course.

Will the life of my Engine and Drivetrain be adversely affected with the BPUTM mods?

Yes, but not by a significant amount. If the car is maintained properly, and the car is treated with some

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respect for the components, you should maintain much of the power train's life. Which considering the fact that the Supra is by far one of the most reliable and durable sports cars, it will last longer than most well maintained STOCK sports cars. The only Drivetrain components that will see a significantly shortened life will be the stock clutch. It will more than likely not last much longer than 8–10k miles once at BPUTM. This especially holds true if the car is making repeated high speed runs using 5th and 6th gear at wide open throttle. If your stock clutch has high mileage on it, or is already starting to slip, you will need to plan on a new high–performance clutch. Also the stock turbos will be subject to a somewhat shortened life span (how short will depend on how you drive and maintain the car, as well as how much boost you will run)

What's the reliability of a 600hp Supra Turbo?

Chassis, electrical, and suspension components should see little effect on reliability on street driven Supras. The stock 2JZ–GTE engine should hold up pretty well to this power level. Just how long depends on maintenance, and how hard you drive it, and how often. But typically Supras can go for years at this power level. The transmission reliability will depend on whether it's an Automatic or Manual. A stock automatic will not hold this much power, a built transmission will be required, and it's

reliability will depend on it's design and construction. The 6spd Manual should hold up just fine, as well as the rear differential and axles.

The only real reliability concerns at these low power levels would surround the actual modifications you perform. Excluding installation short–comings, the components utilized, even very high quality ones, may fall short of factory component reliability, as the built in compromises that exist in everything, would lean more towards the side of ultimate performance, than of ultimate reliability (Keep in mind we are talking about a Toyota here, whose reliability standards are exceptionally high) This may include fuel system components, turbo components, and especially electronic wizardry. Basically a set–up that is either VERY well conceived, or utilizes OE components as much as possible, without over burdening them, would possess *near* stock reliability. And tuning of the components, and component selection, and matching, would play a HUGE role in this.

What are the power limits of the various factory components (Differential, Transmission, Motor, etc.)?

There have really not been enough failures to really pin point a limit for the various power–train components. The motor could fail at factory power levels if it was running dangerously lean. But when well tuned, the motors internals (Pistons, Rods, Crank, Head Gasket etc) are reliable to 700rwhp. But of course at these power levels, if the engine is not set–up and tuned properly, it is literally a bomb waiting to go off, however this would be just as true with a built motor. Some owners have pushed their stock internals to the limit and have well exceeded 800rwhp, and even approached 900rwhp. I still don't understand how such an over built motor made it past the bean counters at Toyota Corporate.

The 6–speed Getrag is ridiculously strong for an OE transmission. Its limit's will be affected greatly by driving technique, such as launching, and whether or not power shifting is used. Even driven hard, the Getrag should hold up reasonably well with 700RWHP. If you treat it with some respect, it should be able to handle around 800RWHP or more, although great care and respect will need to be practiced at

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those levels.

Differential, axle, CV Joint, and drive shaft failures are a VERY rare occurrence. So I don't have much info on their failure limits. On street tires, it would be almost impossible to break any of these components at ANY power level. The tires would spin before they would put the driveline under that kind of strain. The tires act sort of like a circuit breaker. If you run drag slicks, this does not hold true of course, yet they have proven themselves to be 10 and even 9 second capable.

Will drivability, interior noise levels, and low-end power be adversely affected with the BPUTM mods?

Drivability is not adversely affected. Interior noise level depends on the exhaust system you choose. Some will make it far louder; some will actually make it quieter. But most are just a little bit louder than stock. But the added dBs are also combined with a MUCH sweeter exhaust note, so it's definitely worth it. And the interior of the Supra is pretty quiet anyway, so on the highway, it will be VERY livable. As far as low-end power goes, the down-pipe will greatly decrease Turbo Lag. So low-end power and response is much improved over stock.

Will emissions be adversely affected by the BPUTM mods?

As long as a high-flow cat is used, emissions should not be effected, and you should still pass visual inspection. If you run without catalytic converters, you are doing so at your own risk, and you would not pass visual or emissions testing.

Will fuel mileage be adversely affected by the BPUTM mods?

If driven calmly, as in light throttle, mileage should not be significantly affected. Mileage will greatly decrease during however, if you drive "vigorously", more power equals more burned fuel I am afraid.

Should I install an "Intake" (Open Element Filter)?

This is a bit of a yes and no answer. The stock filter assembly is a flow restriction, and an open element intake would increase potential flow. However, it will also draw in more heated engine compartment air, which can hurt performance. My advice is to either modify the stock filter box, or install a cool air induction box, like the Max Air. An added bonus of the open element filters, is that they allow you to easily hear the primary turbo and by-pass valve.

What about the stock intercooler?

The stock intercooler does a decent job up till about 17psi on the stock turbos, after that you would probably notice a significant gain, especially in warmer temperatures, with a nice front mount intercooler. However, keep in mind it will block some of the airflow to the radiator, as well as decreasing response slightly.

Should I replace the factory rubber Intercooler hoses with aftermarket metal hoses?

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It wouldn't hurt. But it won't help a lot either. At the most you may slightly increase throttle response, but at least it will look nicer.

What about the fuel system, are the stock injectors and fuel pump large enough for BPUTM?

Yes, the stock fuel system is very safe and reliable to 450RWHP, although I would recommend a fuel pulsation damper bypass. Anything over that, and I would highly recommend having the car dyno'd, and using a wide-band O2 sensor (not a cheap A/F gauge connected to the stock O2) to check the fuel ratio at your high boost setting. 11.5:1 would be a safe fuel ratio.

What are the stock injectors rated at?

540cc/min

Would the Supra benefit from a fuel controller?

BPUTM'd Supras run a little on the rich side as far as fuel ratios go. This hurts power. What it does do is provide a safety margin that makes engine damage through detonation unlikely. If you get a fuel controller, and tune it properly (on a dyno, with an accurate EGT gauge, and a high band O2 (The Stock O2 sensors are not accurate), then you should be able to gain a noticeable amount of power. One of the most popular electronic fuel controllers is the A'PEXi S-AFC. The Fields SFC is good too.

What should I use to increase my boost level, an Electronic Boost Controller, or a Manual BC?

Using an EBC is the safest way to raise boost, it will prevent spiking and over-boosting. But it really comes down to your budget. If you can afford an EBC, get one. If you can't, go with a MBC. And always keep an eye on that boost gauge. And whatever you are using to control boost, remember to

not get carried away, I don't recommend going regularly over 18psi.

What is the best Electronic Boost Controller?

There really is no BEST. Although the A'PEXi AVC-R is a nice unit, it provides much more control over boost than other EBCs, but it is also more complex to install, and tune. The new Blitz unit is also nice. Most of the large manufacturers make decent units. Just avoid fuzzy-logic equipped models if you still have the sequential stock turbos, they will become "confused" by the unnatural behavior of the sequential system.

When installing my EBC, do I connect it to both of the Turbo's Wastegates?

The Primary Turbo is the only one with a wastegate. When in full twin turbo mode, the boost of both Turbos is regulated by the primary turbo's wastegate. So, only connect it to the Primary's.

Some people say I need to replace my ECU with a reprogrammed one, instead of just using a boost controller. Do I?

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Reprogrammed ECUs for the Supra TT are VERY \$\$\$\$. They are in the \$1200 range. And they have not been proven to provide a significant increase in performance or safety on BPUTM level cars. Their merit shows itself on cars with upgraded Turbo(s). Just be sure you buy your ECU, or have it reprogrammed by a reputable shop that knows what they are doing. And have it tailored to your particular car (Driving habits, and Mods). And I would also recommend taking a look at the AEM Programmable system.

What is a safe boost level to run at BPUTM?

The general consensus is 17–18psi. Some people have taken it higher, but I don't recommend it if you don't have the money for a turbo replacement/upgrade.

Which Down–Pipe is recommended?

The RMM (or Rod Millen Motorsports) Cat–less Downpipe is the most commonly used. However many other brands exist. Some down–pipes, such as the Random Technology DP, feature an emissions legal high–flow catalytic converter.

Will a high–flow cat hurt performance?

It will have some effect on power output, but not a lot. Its exact effect on HP is not clear, but it probably costs a few hp at the most, maybe 5–15hp at BPUTM power levels.

What is a Down–Pipe?

It is the section of the exhaust system that connects the outlet of the Turbocharger's Turbine section to the "Cat–Back" exhaust system. The Downpipe is also where the two catalytic converters are located, as well as the O2 sensor (or sensors in OBD–II cars).

I have an OBD2 car. Can I still install a Down–Pipe?

Yes. But unless the DP has a Catalyst and a second location for an O2 sensor, you will trip your check engine light, unless you get one of those O2 "black boxes".

Which Exhausts are the loudest?

The Tanabe Racing Medallion, and HKS Hiper Titanium seem to be the two loudest systems.

Which Exhausts are the quietest?

The Tanabe Hyper Medallion, the discontinued Tanabe G–Power Medallion and the GReddy (SP) Street Performance seem to be the quietest. At anything less than full throttle, they are no louder than stock. But at full throttle they seem to "wake up" a bit.

What are some recommended exhaust systems?

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It depends on your personal preferences. Below I will break down some of my recommendations based on certain combinations of preferences.

Subtle Styling / Very Low Cost:

–Random Technology (75mm, full stainless steel)

Subtle Styling / Low Sound Level / Moderate Cost:

–GReddy Street Performance (80mm)

–Tanabe Super Hyper Medallion (80mm, full stainless steel, 50–state legal)

Subtle Styling / Moderate Sound Level / Moderate Cost:

–ATR (75mm, full stainless steel)

Tasteful Styling / Low–Moderate Sound Level / Low Cost:

–HKS Dragger II (85mm)

Tasteful Styling / Low–Moderate Sound Level / Moderate Cost:

–GReddy Power Extreme (80–94mm)

–HKS Super Dragger (95mm)

Tasteful Appearance / Moderate Sound Level / High Cost / Super Light:

–Veilside Tear Drop Titanium (90mm, full titanium)

Tasteful–Wild Styling / Low Sound Level / Moderate Cost:

–TRD 2nd gen.

Wild Styling / Moderate Sound Level / Low Cost:

–A'PEXi N1

–HKS Hiper (75mm)

Wild Styling / Moderate Sound Level / Moderate Cost:

–A'PEXi GT Spec (95mm, full stainless steel)

–Blitz NUR Spec (80mm, full stainless steel)

–HKS Hiper Carbon/Titanium (75mm, CF wrapped muffler, titanium tip)

Wild Styling / High Sound Level / Moderate Cost:

–Tanabe Racing Medallion (80mm, 50 state legal)

Wild Styling / High Sound Level / High Cost / High Flow:

–HKS Hiper Titanium (104mm, titanium muffler)

What is the cheapest route to replacing the DP and Cat–Back?

Have a custom performance exhaust shop fabricate a complete 3" exhaust system (Turbo–to–Tip). It should cost well less than \$400. And then you can use the muffler and exhaust tip of your choice.

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Which Fuel Cut Eliminator is recommended?

The GReddy BCC (Boost Cut Controller) is highly recommended.

What does the Fuel Cut Eliminator do?

The factory ECU is programmed to activate a fuel cut if the manifold pressure exceeds 14–15psi. It does this as a safety measure to prevent what the ECU sees as over boosting. The Fuel Cut Eliminator effectively eliminates, or at least raises the cut to a higher pressure. A reprogrammed ECU can also eliminate this function.

Which boost gauge is recommended?

Any high quality boost gauge will work well. Accuracy is the important feature to look for. Autometer gauges are a good value. The Japanese gauges, A'PEXi, GReddy, HKS, etc., have more features, but at a much higher price.

Where can the boost gauge be installed in the interior?

If you want to mount it in the dash, the two most popular places are the Clock location (which holds a 52mm gauge), and the Air Vent beside it (which holds a 60mm gauge). You can also use an A-Pillar gauge pod.

What is the stock boost pressure?

11–12psi

Are Cam Gears a good modification for the Supra TT?

Yes, they have been shown to provide a 5–15rwhp gain on a BPUTM'd car. But to extract their potential, you must have them tuned, by a knowledgeable tuner, on a dyno. And most of the power gains will be seen on the exhaust side. I also recommend buying cam gears which feature 5-bolts.

Are Under Drive Pulley(s) a good modification for the Supra TT?

Most of the crank–shaft under–drive pulleys require the removal of the factory torsional damper.

This is from MKIV.com : "this is NOT an external (harmonic) balancer, as the crankshaft is fully

balanced, rather it dampens both the axial twisting couples produced by the firing pulses, and the radial bending moment from the accessory drive belt."

Basically this device provides crucial isolation between the engine driven accessories, and the crankshaft. However, removal of this can provide a 10–15rwhp gain, but at a cost for long term use.

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Do I need to upgrade the ignition when upgrading to BPUTM?

The stock ignition system is VERY capable of supplying enough fire for a BPUTM'd car. The stock ignition system uses 6 large coils, one for each cylinder. So the system is capable of supporting VERY impressive HP levels. You may need to change to a colder range plug with a tighter gap (see below).

What about the spark plugs, which are recommended at BPUTM or higher level?

Basically you want similar plugs as stock, but a cooler heat range and a smaller gap. The stock plugs are NGK BKR6EP-11 (2978) and are platinum tipped and have a .044 (1.1mm) gap. The ideal NGK replacement for a modified Supra would be the BKR7E (6097). It is one range cooler (the '7'), is non-platinum tipped (the lack of the 'p') and has a smaller .0315 gap (lack of the '-11'). This plug is also called the NGK 6097 and they are fairly inexpensive. Platinum tipped plugs are not desired for high power applications, Iridium plugs are more preferred. Unfortunately their doesn't seem to be a BKR8E which might be better for high-HP Supras.

Another good plug to try is the Denso Iridium IK22 or IK24. These plugs may last longer than the above mentioned NGKs, but are also 6 times as expensive. The stock replacement plug would be the IK20, the IK22 is one step cooler, and the IK24 is two steps cooler than stock. The IK22 would be good for ~400rwhp to ~600rwhp. The IK24 would probably be a good choice above that. Two other plugs commonly used are the NGK 3330 (BCPR7ES) which differ much more from the specifications of the stock plugs than NGK 6097. Also the Rapid Fire #5 used to be very popular, but are more expensive, don't last as long, and have fallen out of favor. Both of those plugs have been known to cause slight stumbling at idle. Plugs on Supras do not live long, usually around 5,000-10,000 miles. So I recommend replacing them with every other oil change.

What is the HKS VPC and GCC?

It is an electronic device, which electronically and physically removes the highly restrictive mass airflow sensor from the intake tract. VPC stands for Vein Pressure Converter. The HKS GCC is a device that allows further fine-tuning of the VPC.

Do I need an after-market Blow off Valve?

It is not absolutely required, but it is a good idea. The factory by-pass valve is prone to failure, and an aftermarket BOV is probably a wise investment for preventing turbo damaging compressor surge. And it sounds cool too. However, it must be noted that if you still have the factory mass-air flow sensor, a blow-off valve, which is vented to the atmosphere, may cause stumbling between shifts.

Can I run Nitrous Oxide on the Supra TT, even if I am already at BPUTM power levels?

Yes. Most people run 50-75 shot wet manifold systems. If you want to run a higher shot than this, you might want to consider a well-designed direct port system. I have seen as much as a 200-shot used on

one of these systems, and an upgraded fuel system would be a must.

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450hp just isn't enough, what can I do?

Ah the possibilities Basically you are only limited by your imagination, and your wallet. You know what they say, speed costs money, how fast do you want to go?

The real power lies in Single and Twin turbo upgrades, and the options are limitless. You can either build a mild motor that puts out 450 RWHP all day long with instant boost response, or a 1000+ RWHP monster.

Unfortunately, things start getting more difficult after simple BPUTM modifications. Modification becomes more than "bolt on Downpipe, gain 50hp". Things like tuning, parts selection, and matching combinations of parts become much more important. However, this is the case with ANY high HP car. Actually, even at exceptionally high power levels, the Supra TT is still easier to extract power from than almost any other performance car. But it should be kept in mind, that it wouldn't be as simple as the BPUTM bolt-ons.

If you just want something that will toast that pesky Viper GTS. Then focus on a mild single turbo upgrade (T04S04, T60-1, SP57-SP61). Along with this, you should install a front mount intercooler, a fuel controller, fuel pulsation damper bypass and EGT gauge. This is assuming you have done all the BPUTM mods, plus BOV, EBC, Cam Gears. With tuning, and a few odds and ends, you should be able to pull 450-500 RWHP (490-580 crank HP) numbers while on a stock fuel system (assuming it is in great condition). This would be a total investment of approximately \$6,700-\$11,500 in engine/electronic components (also includes the proper gauges). If you already have the BPUTM mods or FMIC, etc., you will spend less than this. The difference in prices reflects the cost of higher end parts and addition of a HKS VPC to replace the restrictive stock MAF.

The next level would require a completely upgraded fuel system, and performance cams would be recommended, as well as further electronics (programmable engine management such as the AEM, or VPC/GCC/ECU combo, etc.). This would allow you to run much larger turbos and injectors. You can make it past the 700RWHP range without needing to replace the internals of the motor with stronger components, even at these power levels, if properly tuned and maintained you should retain a fair amount of reliability while still on the stock internals, as some people have eclipsed the 800RWHP level while still running stock bottom ends in their Supras. If you choose to go ahead and build up the bottom end, then the skies are the limit as far as power goes. Just make sure to have part selection, installation, and tuning done by competent and experienced persons. Although this should hold true at ANY level of modification.

Should I install a Turbo Timer?

Absolutely. Unless you don't mind sitting in your car while it idles down every single time you need to turn the car off. A Turbo timer keeps the engine running for a preset time once you turn off the ignition. So you can remove your keys, and lock up the car and not have to worry about it, it will shut off on it's own. This is important for the life of the turbos. If the turbos are not given time to cool down, it can overheat the oil and cause coking which will block oil flow to the turbos and damage bearings and cook seals.

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How much is the Supra's power output affected by changes in ambient temperatures?

Very noticeably, just as with most turbo cars, the Supra Twin Turbo can be very temperature sensitive. Especially with the stock turbos and intercooler. On a BPUTM car, I would not be surprised to see a 10 percent reduction between 50–60deg temperatures, and 90deg plus temperatures

Will the stock clutch hold the power levels of a BPUTM car?

It depends on the condition and wear on the stock clutch. If it is in good condition, yes, it will hold the power, pretty well in fact, although you may experience clutch slip while at full boost in high gears such as 5th and 6th. If you drive vigorously, meaning you run at high boost frequently, then the life of the stocker will be GREATLY shortened. Be surprised if you see an extra 10,000 miles after BPUTM.

Can I resurface my flywheel when replacing the clutch?

It is not recommended. Buy a new Toyota Flywheel.

Can I install a lightweight flywheel?

Yes, but be aware that they can create a lot of noise at idle, and can transmit more vibrations and shock to the expensive Getrag transmission.

Why is pulling the TRAC fuse beneficial over just turning it off with the switch on the center console?

Just pushing the "Trac Off" button only partially disables the Trac system. It disables the Trac throttle body and TRAC function through the ABS System (on 93.5–96 only), but not the Trac system's ignition timing retard function. Unplugging the Trac fuse eliminates both functions, as well as the 155mph speed limiter, which works through the trac system. The fuse can be found in the main fuse box on the driver's side of the engine compartment. It must be noted that removing the fuse will cause the TRAC light to stay on, but you'll get used to it.

Will the TRAC system improve the cars performance?

NO. The Trac system was calibrated to improve traction in slippery conditions. It was not calibrated with performance in mind. When the Trac system senses a loss of traction, it comes on hard, cutting power drastically; this will do nothing but hurt performance. I also would not rely on the Trac system for providing stability at high speeds, if you were to loose control, it would be too slow and clumsy, and would more than likely hamper your efforts to regain control.

How can I remove the factory 155mph speed limiter?

Remove the fuse for the Trac system. The speed limiter works through the Trac throttle body.

What is the Supra TT's top speed with the Trac fuse removed?

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There is some debate on this subject. There are rumors that 180 can be achieved. But by going with the numbers, 168–172mph in stock form seems possible.

What is the Supra TT's maximum theoretical top speed? Can it exceed 200mph with enough power?

Lets find out.

The Supra TT with the 6–speed has a stock engine redline of 6800rpm, and a 6th gear ratio of .79:1, with a rear axle ratio of 3.13:1. Now we multiply our 6th gear ratio times our rear axle ratio, and we find out our final gear ratio is 2.472:1. Now we divide 6800rpm by our total gear reduction of 2.472:1 and we find out our rear axles, and therefore wheels are spinning at 2751rpm at 6800 engine rpms.

Now we need to calculate our tire circumference. The rear tires section width is 255mm, and the sidewall's aspect ratio is .40, so our sidewalls are 102mm. Now, to convert this to inches, we divide this by 25.4, which equal's 4.015 inches. Now multiply this by two, since we have two sidewalls making up the total diameter, and add the wheel diameter of 17", and we see a total diameter of 25.031 inches. Now to find out our circumference, we multiply that number times pi (3.14), and we find out the circumference is 78.59 inches, now divide that by 12 to convert to feet. And we get 6.549 feet total circumference.

Now multiply our tire's revolving speed, by the tire's outside circumference, and we find that the tire is covering 18,016 feet per minute, divide that by the 5280 feet in a mile, and we find we are covering 3.412 miles per minute, now multiply that by the 60 minutes in an hour, and we find we are traveling 204.7miles per hour @ 6800rpm in 6th gear. If the engines redline is increased to 7500rpm, which it often is, because of a higher flowing turbo. Then our maximum speed would be 225.8mph, given enough power of course.

For more go to

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Toyota Is Hot In Us And Japan

By Jonathon Hardcastle

Major car manufacturer Toyota has produced car models that have consistently ranked high in both the US and Japan market, specifically with regard to the Toyota Camry and the remodeled Toyota Corolla.

While the Toyota Camry has been the best–selling car in the United States for the past four years (2002–2005), back in Japan where Toyota is based, it is the Toyota Corolla that has been the best selling vehicle. Reports say there were 70,675 units of the Toyota Corolla sold from January to June this year. That total is actually a decrease of 11.7% from their total sales during the same period a year ago.

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According to figures from the Japan Automobile Dealers Association, the Toyota Corolla has actually been the best-selling car in Japan for the last four six-month periods. Toyota actually released a fully remodeled Corolla in August 2000 and its impressive sales performance since that time attests to its immense popularity.

The performance of the Toyota Camry in the United States has been simply amazing. Not only has it been the best-selling car for four straight years now, it has also been the country's best seller in eight of the last nine years. It has consistently topped its mid-size competitors such as the Honda Accord and the Chevrolet Impala in that period.

Reports say that plans are currently afoot to launch a hybrid Camry later this year as well a fully redesigned version of the Camry in 2007. The general expectation is that Toyota Camry set to be unveiled Monday at the North American International Auto Show in Detroit, the sedan likely will set the bar high for its competitors.

Understandably, Toyota has been mum about the new Camry, hardly releasing any details. However, according to Jim Press, president and chief operating officer of Toyota Motor Sales USA Inc., it will offer better style, technology and drivability. And it will build on the reputation the nameplate has established in previous incarnations.

Press said he expects the company this year to sell about the nearly the same as the 432,000 Camrys it sold in 2005, but may lose some sales as it switches from offering the old model. He said Toyota strives to keep Camry's style timeless while keeping in mind the goal of a well-balanced car that satisfies drivers' needs.

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