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PATRICK GALL (CAR)
SERGIO VAZQUEZ (MODEL)

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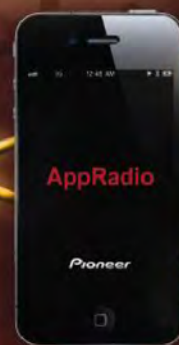
We went all over the place to put this issue together for you. With a mean, green Supra from Canada, to a rust-bucket Datsun from Japan, we've collected some of the most diverse cars from around the world. Why would you want to see just the same stuff you've seen all the time in the United States, right? Import tuning is a way of life for people worldwide. But at the same time, we never forget to rep our own U.S. homegrown cars. The Civic and STI features are just examples of what's hot on the streets these days. This is still the most popular Civic chassis to date, and likewise with the Impreza. And if you have either of these cars, you're in luck. Not only do we have features, Scott also took some time to work on both his EJ Civic and his GD Impreza. Check out his tech installs for some tips.

Keeping with the same theme, we have events like Formula D and Toyotafest from Long Beach, to the Tuner Galleria show in the Windy City, to the N.Y. Auto Show. Scion dropped the bomb on us in New York with the concept FR-S—hopefully we'll be getting a production version soon. From old JDM classics to the newest concept cars, we went coast to coast to get you the best in event coverage this month. It's a good thing I love hotel beds. It's just a shame you can't drive cool cars when you're traveling for work.

Enjoy this issue, and get ready for the next. You don't want to miss it!

Charles Trieu
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HOW GOOD IS THE SPOILER ON YOUR CAR?

Adding a spoiler is a great way to improve the appearance and aerodynamics of a vehicle, but could it do more harm than good? A spoiler is a wing or aerofoil attached to the back of a vehicle and serves to break up the airstream and increase wake turbulence which promotes downforce (or increases drag, depending on the speed the vehicle is traveling). Spoilers come in many shapes and sizes, from subtle to extravagant, and the majority are designed as bolt-on styling gimmicks that serve no aerodynamic purpose, with very few notable exceptions.

A recent study by Dr. Aonghus McNabola at Trinity College in Dublin suggests that rear spoilers of all sizes do serve a dynamic purpose—one that might induce sickness and carbon monoxide poisoning. His research found that rear spoilers set at certain angles concentrate plumes of tailpipe pollution at the head height of pedestrians, cyclists, and motorists who might follow in the car's wake.

The story, released in *The New York Times*, noted that McNabola's research was based on scientific modeling, using five different spoiler setups, while taking into consideration variable wind and vehicle speeds.

Research found that the spoiler configuration with the greatest angle of the five spoiler setups showed the largest

concentrations of benzene (harmful exhaust pollutant) of over 40 percent at human head height, while one of the flat rear spoiler designs tested actually decreased those same concentrations by 18 percent.

Research also found that any spoiler with angles greater than zero could lead to the overall exposure of someone cycling, walking, or even driving behind a car. He states that the spoiler's placement on the trunk is not as critical as its angle, and that the spoiler won't change the amount of pollution, just the concentration. McNabola's final conclusion was that automakers could use his information to design spoilers to reduce their impact on air pollution in the near future.

Until the good doctor's research prompts a worldwide ban on spoilers to create a greener earth, I urge all pedestrians and bicycle riders to wear respirators, because my pollution-inducing Voltex GT Wing isn't coming off anytime soon!

Scott Tsuneishi

SENIOR EDITOR
SCOTT TSUNEISHI
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RIDING SHOTGUN WITH THE EDITORS

'95 HONDA CIVIC

After 16 years of faithful service, my Civic's radiator decided to call it quits. My OEM radiator unexpectedly failed, as plumes of coolant and steam billowed from under the hood just as we returned from lunch one recent day. The OEM Honda Civic uses a half-width, single-core, 16mm- (5/8-inch) thick radiator, designed with plastic end tanks pressed onto an aluminum/copper/brass core. Plastic end-tank radiators are lightweight and cost-effective to manufacture, but possess a shorter lifespan due to constant heat cycling, which causes them to become brittle and degrade over time. A quick call to Koyo Radiators netted a Koyo R-Core aluminum radiator, with its 53mm (2.08-inch) dual core, allowing for better efficiency in dissipating heat along with its larger coolant capacity. The Koyo radiator's tubes, fins, end tanks, and brackets are brazed in a state-of-the-art Nocolok furnace, bonding all components to resist damage, and eliminating future end-tank leaks. A quick radiator swap in our office parking lot, and I was back on the road just in time to make it home to watch the first round of Dallas Mavericks playoff basketball. Go Mavs!

SENIOR EDITOR
SCOTT TSUNEISHI



NEW TWO-CAR GARAGE

I've been at my new pad and two-car garage for a while now, but have been waiting to make some security-deposit-threatening changes before I tear into any serious work. I took the past weekend to set up some plastic shelves, mount a wooden one (along with some pegboard), wire in an overhead light, mount a power strip, and clean up the place. First order of business: swap a Miata subframe, clutch, and brakes. More next month.

TECHNICAL EDITOR
LUKE MUNNELL

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In keeping with our pledge to reward the sender of one unusual letter each month, we're sending a box of snow chains we stole from the *Off-Road* mag guys to Tim Forsyth. Yes, we were tempted to send blank replies to our prospective model and feature car owners this month, and some welding rods to that Mirage owner, but... on second thought, we might do that, too.

SOUNDS LIKE A MODEL

I was wondering how to apply to become a model? Thank you so much!

-Cally Anne, FL

Via postal@importtuner.com

Um... Definitely don't send some pics or anything. Otherwise, how would we know if you're hot?

SOUNDS LIKE A NOOB

Hey guys! I'm sort of a noob to stuff like this, having never had a car featured before and all, but I think my S13 is definitely good enough to be in the mag. Should I send you some pics?

-Nate St. Croix

Via postal@importtuner.com

No, definitely don't do that. We'll just go ahead and take your word for it.

MONEY: WHAT'S THE SECRET?

I'm a longtime fan of your magazine and the import scene. I just recently bought my first Subaru STI—a bone-stock '05 STI, to be exact. How do the owners of the cars that are featured in your magazine find the cash to produce such beautiful machines? Every month I read the newest issue, and it's crazy to me that some of these cars are built in only three months sometimes. How do the owners do it? Do they just have deep pockets, or do they get sponsored by parts manufacturers and what not? That's pretty fast! Especially for someone like me, who's trying to build a car while going to school. What gives?

-Ryan Hockaday,

Via postal@importtuner.com

It's a two-part approach: Get a good job, and then patiently spend your money on proven parts and tuning, instead of throwing it away on parts that'll break or that you'll need to

replace/upgrade later, or stuff you don't need. School takes up a lot of time and leaves you broke (or in the hole, most likely). Buy the basics for your car now, enjoy it mildly modded, and then go all-out after you graduate and land a decent job. It's that simple.

HOOKED!

I'm contacting you to see what it takes to be in your magazine under the "Going Postal" section. All of my friends have read *Import Tuner* for years and suggested I do the same. Now, I'm hooked! I even started a new project because of your STI versus EVO issue: a '95 Mitsubishi Mirage 1.5L coupe. I've been doing small upgrades since I purchased the car. I attached a few pictures; let me know what you think. Also, if you could help me find some parts for it, like some clear tails, since I'm not having any luck (and yes, I have done a Google search, before you rag on me), it would be awesome. Thanks guys!

-Paul Bamburak

Via postal@importtuner.com

You're in luck, Paul. All it really takes is a ridiculous wing and an outspoken desire for clear taillights to land a spot in *Postal*. Seriously, we're having a hard time seeing your car at all underneath that thing. The bad news: You've got a slow, 1.5L, front-wheel-drive car with little aftermarket support (not even clear tails... hopefully).



The good news: It's a sibling to the turbo/all-wheel-drive EVO II/III of the JDM and Euro markets, and with a lot of work, you can make it sick. Like Archie Concon's 742-whp EVO-converted '00 Mirage from our Oct. '10 issue. Peep importtuner.com for guidance. And please, please, sell that wing. Or burn it.



DEFINITELY A MODEL

I'm a model, and I was wondering if I could submit any photos to you guys?

-Eve Graff, AK

Via postal@importtuner.com

[Facepalm]

RANDOM

Hey 2NR, how's it going? These are pics of my brother's '02 Nissan Xterra on the day he took it up a mountain and got stuck. It took 12 hours to get it out.

-Timothy Forsyth, Colville, WA

Via postal@importtuner.com

Hey Tim. Twelve hours? Damn! Um... Why exactly are you sending us this? Does it have a 2JZ or something in it?

-2NR

No, it's stock.

-Timothy Forsyth, Colville, WA

Via postal@importtuner.com



OK... Did you want this to be in Longshots? You know that it's more of a photography challenge, right? We're confused.

-2NR



Nope. Just thought I'd share it with you. Keep up the good work!

-Timothy Forsyth, Colville, WA

Via postal@importtuner.com

Um... yeah. Well, thanks for reading!

-2NR

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M7 JAPAN TAKES D1GP, AGAIN ... WE THINK.

You may recall the funny *English* P.R. in our Nov. '10 issue that announced the victory of our boy and M7-sponsored Nobuteru "NOB" Taniguchi in Japan's HECOMR Integra one-make race series. You might also remember a few months later, in the Feb. '11 issue, where we announced that the 2010 D1GP drifting champs was



clenched by none other than M7 RX-7 pilot Yoichi Imamura (with Masao Suenaga clenching Third in the M7 S15). Well, it seems that M7 Japan is back in the winner's circle, thanks to M7-sponsored Manabu "Max" Orido's latest D1GP victory at Japan's Autopolis, in Oita prefecture. At least that's what we think their latest JDM email says. We'll let you decide:



D1 Grand Prix Round 3 that started in bad weather in Autopolis. Defend champ Yoichi Imamura and Third Place Masao Suenaga had fought hard against the road of wet.

Did not advance to the chased run tournament by Masao Suenaga due to the machine trouble. It becomes running that waits for the recovery shrouded, and the chase run that finally restarts has been discontinued because of rain and fog. This be can start the D1 Grand Prix and the first doing within 11 years.

Tentative of Manabu Orido the top was splendidly decided to the result based on the order of a single run of second stage. It became an opening game that the activity in the future was able to be expected this year's series champion of Manabu Orido!

TRAGEDY STRIKES RALLY AMERICA



In more sobering news, 31-year-old RallyCar driver Matthew Marker, of Elk Rapids, MI, lost traction around a tight right-hander during recent Olympus Rally competition, collided his '06 Subaru STI with a tree, and ultimately was unable to recover from injuries he sustained. Co-driver Christopher Gordon, of Brooklyn Park, MN, wasn't seriously injured. The event marked the first competitor fatality suffered in the Rally America series in about eight years—a series Marker had been a part of since the Sno*Drift Rally four years prior.

About rally—a motorsport many might describe as the last pure one in existence—experienced Rally America co-driver Jake Blattner (Team 600) who reportedly knew Marker well, commented, "[Rally] is a dangerous sport, but that's what sets it apart. It's you against the wild, open road, and the clock." He continued, "[Marker was] a very passionate, energetic, hip gearhead." The Olympus Rally event was decidedly concluded following the crash, and points were awarded to drivers based on their times thus far. Future events were to go on as scheduled, as of press time.

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AMS ALPHA 9-EQUIPPED GT-R WINS 2011 ONE LAP OF AMERICA

Further driving home the point that properly tuned Japanese imports can decimate all and drive home afterward, an R35 GT-R equipped with an AMS Alpha 9 package, fielded by TopSpeed Motorsports, has not only survived the nine-race, time-attack/drag/skidpad/highway event that is Brock Yates' One Lap of America (OLOA), it outperformed over 80 other high-dollar, highly tuned, über-reliable competing cars to do it, and even broke an OLOA drag racing record in the process.

www.asmpperformance.com www.topspeedtuned.com
www.importtuner.com

SOME FUN FACTS: AMS' Alpha 9 package is good for 900 horses (800 on pump gas), and has propelled GT-Rs to 9-second quarter-miles—out-running even the mighty \$1.5 million Bugatti Veyron—with zero driveability compromises. As evidenced by this performance.



ANOTHER FUN FACT: OLOA competitors are required to drive their cars more than 3,500 miles to compete in events spread out across the eastern United States, in only eight days, on one set of tires.



EA NEED FOR SPEED: SHIFT 2 RELEASE PAR-TAY! EL SEGUNDO, CA

By now, you should've had a chance to see and become addicted to the newest release of EA's *Need For Speed* series: *Shift 2*. Well, we can brag that we got to do it first, thanks to EA throwing the official release at Source Interlink headquarters—*2NR* parent company—in nearby El Segundo, CA, and asking us to invite some of our top tuned imports out to celebrate. Peep importtuner.com and the official facebook.com/importtunermag for additional images. Pick up a copy of *NFS: Shift 2* at any local retailer.





2011 PRO CHAMPIONSHIP SCHEDULE

ROUND 5 THROWDOWN

- ROUND 1 | APRIL 8-9 | STREETS OF LONG BEACH
 - 👑 ROUND 2 | MAY 6-7 | ROAD ATLANTA
 - ROUND 3 | JUNE 3-4 | PALM BEACH INTERNATIONAL RACEWAY
 - ROUND 4 | JUNE 17-18 | WALL SPEEDWAY
 - 👑 ROUND 5 | JULY 22-23 | EVERGREEN SPEEDWAY
 - ROUND 6 | AUGUST 26-27 | LAS VEGAS MOTOR SPEEDWAY
 - 👑 ROUND 7 | OCTOBER 7-8 | TOYOTA SPEEDWAY AT IRWINDALE
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FALLOUT FROM JAPAN



Comical, sobering, entertaining, and now slightly depressing—just because we like to bring you a little bit of everything each month. Location: Japan. Seems the 10.0-magnitude quake and ensuing tsunami that ravaged much of the island nation's northeast really did dampen the auto industry like we all hoped it wouldn't. So much so that Toyota's loss of roughly half a million vehicles to the events, combined with its recent issuance of over 350,000 truck/SUV recalls (and combined 77 percent loss in Q4 profits) has handed GM the title of world's largest automaker. At least temporarily. Meanwhile, over in Tokyo, Honda reportedly warned dealers of shortages of several new models and has pushed back the release of the new CR-V, halting production at overseas plants in an attempt not to overproduce what it can't distribute. american.redcross.org



TRICKS OF THE TRADE

HELPING YOU WRENCH



You spend all night preparing for a car show, your engine and engine bay are perfectly detailed but you still have one problem: What are you going to do with that unsightly rusted exhaust manifold that sticks out like a sore thumb? We found a solution that's easy to apply, affordable, and most importantly, works with amazing results.



Calyx Manifold Dressing is a cleaner/polish that's ideal for a quick dress-up of the underhood area, requiring very little prep. Calyx maintains any cast-iron part of exhaust systems and keeps it rust-free, and isn't a high-temperature paint that can burn off or discolor over

time, or something that simply covers up dirt and rust. Calyx's special chemicals help remove unsightly rust deposits and doesn't require heat to cure, making usage ideal on just about any bare metal, including suspension and driveline components.

We spot-checked an area of the exhaust manifold using Calyx exactly five months prior to taking this photo. The dressing continued to maintain the manifold's cast-iron luster while remaining rust-free.

RUST-FREE MANIFOLD RESTORATION

BY SCOTT TSUNEISHI



To use Calyx, simply clean the manifold using a wire brush to remove as much rust and/or dirt as possible. For optimum results, the manifold should be wiped down with acetone or brake cleaner before applying. Apply Calyx using a toothbrush, rag, or glove-covered fingers and rub into the surface, making sure to work it into the pores of the metal. For hard to reach areas, we recommend using a Q-tip or small brush to apply the dressing. The paste-like consistency allows you to polish the finish like you would wax a car for a gloss finish. Check out our amazing before and after photos—the results speak for themselves. **It.**



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Some facts you might not know about our resident tech guru:

- Eric Hsu can play Xbox Live on a Motec M800.
- Every time Eric Hsu answers a stupid question, a kitten spontaneously combusts.
- When cops pull Eric Hsu over, he laughs as they try to talk their way out of it. It never works.
- Eric Hsu eats cereal bowls for breakfast. Not bowls of cereal.
- City governments pay Eric Hsu to park wherever the hell he wants.
- If Charlie Sheen is winning, it's because Eric Hsu isn't playing.

Wanna know what's up?
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ERIC HSU
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THIS MONTH'S WINNING LETTER

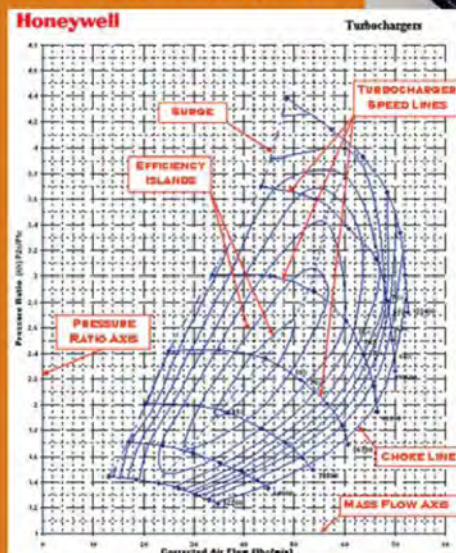
COMPRESSOR SURGE

I'm trying to understand compressor surge. My basic understanding is that when the pressure behind the compressor drops to below the outside pressure, it will cause air to travel the opposite direction. Most examples involve airplanes dropping out of the sky, but other than engine performance dropping off, can either the engine or the turbo be damaged by this phenomenon? I want to ensure I don't cause damage to my 300ZX TT's GT-675RS turbos.

-John Tacchi
via importtuner.com

I'm not quite sure what you mean by "behind the compressor", but compressor surge occurs when it is beyond the compressor's ability to deliver airflow stably. Flow becomes unstable when a compressor is run to the left or above the surge line on a compressor map. When flow becomes unstable, you can hear the audible flutter or "barking" from the inlet of the turbo. Surge can occur in one of

two situations: 1) under load, when the compressor is being run at a high shaft speed and the compressor cannot deliver stable flow to the engine because that point is to the left or above the surge line,



and; 2) when the throttle is quickly closed in boost which momentarily drives the compressor way to the



Santa Monica, CA, versus the Rocky Mountains in Denver. Wheel/blade shape and housing design are factors that can affect where a surge line is on a compressor. A compressor section

left of the surge line. The first situation can also vary significantly depending on how efficiently your engine breathes, so it isn't going to be the same point from car to car. Atmospheric pressure at the inlet of the compressor affects when a compressor surges. With more pressure, the surge line moves to the left and vice versa. In other words, your compressor will work much better in lower elevations, such as

that is optimized for flow at high shaft speeds might have the surge line toward the right of the map. A compressor section optimized for a wide operating range may have its surge line moved over to the left, but it might also have lower overall airflow at any shaft speed. Compressor housings with ported shrouds can help to move the surge line to the left, but do so at the sacrifice of peak compressor efficiency. As with anything else, it's difficult to have your cake and eat it too. Newer turbo models like the BorgWarner EFR and Garrett GTX offer "wider" compressor maps that give you the best of both worlds.

MONSTER MACHINE

Due to some unforeseen spending, I was unable to afford the Nismo Z I was saving for. I recently purchased an '11 Scion tC as a more affordable daily driver. I want to modify it, but am not sure which parts menu will equal the 300 hp I want out of it. I have looked online for parts, but I would hate to spend money on components that won't play nice with each other. Is the tC capable of 300 horses without nitrous, turbo, or other engine mods?

-Yonierikz
Fort Drum, NY



Getting 300 hp is probable out of a modern, normally aspirated 2.5L engine, but unless somebody's done the development already, you'll be on your own path of trial and error, which can be costly and disappointing. If a company has already developed the engine to 300 hp, then all you have to do is buy the parts and have the engine tuned accordingly. Your '11 Scion tC puts out 180 bhp from the factory, so you're looking for almost a 67 percent increase in power without a turbo, which means you'll need to do a full build: pistons to raise compression, rods for greater strength, a ported head for greater airflow, big cams for airflow, a 4-1 header and open exhaust to improve exhaust flow, and more. Full builds are never cheap. With the amount of money you'll need to spend, you could have bought a Nismo 370Z. I'm not sure how much you care about comfort, driveability, and legality, but a normally aspirated build will result in an engine that



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is probably loud (both exhaust note and mechanical noise), smelly due to fuel and blow-by fumes, and will not pass an emissions test of any kind due to valve overlap from the large cams. On top of all these negatives, a normally aspirated engine won't live as long because you'd be revving the shit out of it to get into the sweet spot of the powerband. A turbo can provide the additional airflow for 300 hp without all the bullshit and cost, which is why it is such a popular modification for smaller-displacement engines. There's a reason why everybody does it. On top of that, an engine with a turbo sized for the street generates substantially more torque than a normally aspirated engine almost anywhere in the powerband. Turbo system legality will depend on your particular state's laws, but a turbo will have a greater chance of passing a tailpipe sniffer than a high-strung normally aspirated build any day. You'll want to contact Descendant Racing (aka Chris Rado's toy shop) in Torrance, CA, for an update on their new tC turbo kit for the '11 cars.

INTERNET HYPE?

I was raised around muscle cars and own a fully restored '66 Mustang V-8. I love import cars as well, but unfortunately have no experience in tuning them. I bought a '93 240SX with the KA24DE and have plans on keeping it naturally aspirated, since it's my daily driver/mess-around car. I've started upgrading the engine with a K&N air intake, header, and aftermarket pulleys. My friends recommended I get a performance chip. Are those reliable, or is a professional tune better?

-Abel Garcia

via importtuner.com

A professional tune is always going to be better, assuming the tuner is a genuine professional. Beware of generic "performance chips" from some of the domestic car chip companies. Oftentimes they ask \$300 for a just sticker. The domestic chip tuners simply don't have the experience with Japanese engines. For the 240SX, I would suggest you go straight to Jim Wolf Technologies in El Cajon, CA. Clark at JWT has been programming Nissan ECUs for almost 20 years now. They're going to have exactly what you need, plus you can be sure you're getting what you pay for.

ERRATIC IDLE

I've been having problems lately with keeping my '93 Civic EX idling. On the initial crank, it will rev really high then suddenly make a *glug glug* sound before completely dying out. A buddy I work with said it sounds like the fuel filter or pump has gone out, but I wanted to ask you before going out and spending money on parts that are not needed.

-Joseph

Brandon, MS

It's virtually impossible for me to diagnose anything over email since there are many potential causes to the problem. Do you ever call the doctor and tell him what's wrong without going to the doctor's office? In many ways an engine is similar to the human body; it has many interconnected systems that rely on each other for proper functioning. So when you can call a doctor and he can give you a diagnosis over the phone, let me know and I'll do the same. Just like your doctor, I'm going to be bullshitting you to get you off the phone, too.

SUPERIOR CHASSIS

I've been looking into building a drift car, and noticed that the S-chassis Nissans are popular. I know that they are good platforms, but I don't know why they are good for drifting. I'm currently rocking an '85 Celica Supra with the stock 5M-GE engine, but it has some problems going sideways, resulting in awful snap oversteer. What exactly makes the S13 to S15 chassis so popular for drifting?

-Dylan Miller

N.E. Oklahoma

What makes the S-chassis Nissans good drift cars? 1) They are cheap; 2) They handle well; 3) Drop in an SR20 or turbo the KA, and they offer plenty of power; 4) They greatly popularized the American JDM wannabe culture due to their popularity in Japanese videos and magazines.

Back in the '90s, the S13, S14, and S15s were basically the equivalent of Japanese V-6 Camaros and Mustangs. The equivalent of the V-8 Camaros and Mustangs would have been the Skyline GT-R, Supra TT, and 3000GT. Domestic manufacturers didn't believe in compact RWD sports cars in the '90s, so I really have no domestic comparison for the S-chassis Nissans.

Anyhow, the suspension geometry is pretty straightforward on the S-chassis, and with the addition of a limited-slip differential, the car's weight balance lends itself well to drifting. An LSD allows power to go to both wheels mid-turn when throttle is applied. This gives the driver double the patch of rubber to power through. An open diff will only apply power to one tire and once that tire is overwhelmed (i.e. it starts to spin and lose traction), the car will tend to snap away and the driver loses control. The MA60 Celica Supra is a considerably heavier car than an S-chassis and there was no limited slip factory option, so I assume you're on the stock open differential. The MA60 uses a smaller 7.5-inch Toyota rear end that is no longer in production, but I would give the guys at OS Giken in Torrance, CA, a call to see if they have anything in Japan for the MA60. Otherwise, you might be able to fit an American positraction limited-slip or locker (e.g. Truetrac or Detroit Locker) since the Toyota 7.5-inch was widely used in the Toyota trucks, which have massive aftermarket support in the U.S. All of this doesn't mean jack shit if your alignment is all over the place, though. A standard alignment shop will get you halfway there, but most of them just match the factory specs. I recommend you have the alignment done at a race shop that understands what you are trying to do with the car. They can also suggest suspension modifications to help you get and keep the car sideways, too. I'm almost certain they'll tell you that you need to replace a bunch of bushings, too. Remember that an MA60 can be almost 30 years old now.

MUY CALIENTE

First off, I thought the King Taco reference in the Nov. '10 issue was cool. I literally live four blocks from there and have spent quite a few nights killing tacos after some late-night drinking. Anyhow, I own an EK Civic with a stock B18C1, Jackson Racing Supercharger and tuned Hondata S300. It makes decent horsepower, but I want more. Aside from a port 'n polish and some upgraded valvetrain bits, I want to upgrade the factory cams, but considering the limited number of supercharged cars, finding good info is rather difficult. Do you suggest staying with stock cams, or should I go with Skunk2 Stage 2 cams?

-Steven Aranda

via importtuner.com

King Taco has the best al pastor in town hands down. I have yet to find anywhere tastier in SoCal and Tijuana. Anyhow, if you're looking for more power with a blower, I'd definitely recommend some cams, a good 4-1 header, a smaller supercharger pulley, and some more tuning. In my experience, I've found that any mild cam that works well in a normally aspirated application works even better in a supercharged application. The same goes for headers. With some good cams, a good header, and a good exhaust system, you might find the boost will go down a tick since the engine is breathing better. Remember that if the engine is breathing better, the blower (essentially an air pump, filling the engine with air) will need to spin faster to keep the pressure where it was before. A smaller supercharger pulley will help get the boost back up to previous levels.



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In keeping with last month's theme of testing multiple products rumored to have the same effect on vehicle performance, we've got our sights set on emissions this time around.

HOW TO CHEAT AN EMISSIONS TEST

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Vehicles in most of the country are mandated by law to periodically undergo testing that ensures their output of harmful emissions is below a threshold some bureaucrat deems safe for an area. Those of you in less densely populated areas usually have more lenient emissions requirements. Some have none at all. Those of us in Cali have "Smog". Not only do modified vehicles here have to prove that all their aftermarket parts are CARB-exempt (status manufacturers gain only by forking over shitloads of cash to some other government bureau), but they must meet the world's most stringent set of emissions requirements to be driven on public roads.

We all know that "smog" is a portmanteau for the toxic smoke/fog mix plaguing densely populated areas like greater Los Angeles. What you might not know is that the bulk of it is formed when certain chemical byproducts of internal combustion rise into the atmosphere and combine with sunlight. Ever see a photo of the L.A. skyline surrounded by a brown haze? That's smog, and it gets its color from nitrogen oxides (or NOx) predominantly produced by motor vehicles. Cali's smog testing sets minimum part-per-million levels of four smog-attributing chemicals emitted by motor vehicles: NOx, carbon dioxide (CO₂), carbon monoxide (CO), and hydrocarbons (HC—simply, unburned fuel). Testing this month commenced in a top-secret smog facility in Orange County, CA, and involved monitoring the emissions output of our DC2 while it underwent the following changes, all rumored to impact results.

Before diving into testing, there are two points to mind. First, that the levels of the above four chemicals a car outputs is one huge balancing act. HCs increase in rich conditions, or conditions so lean that an incomplete combustion occurs. Since CO rises when there's not enough O₂ to



convert carbon to CO₂, CO levels will seemingly rise alongside HCs in times of rich A/F ratios or incomplete burn. NOx rises when temperatures do, so expect these numbers to go up with compression, overly advanced ignition timing, temperature, or lean A/F ratios. Lowering emissions of all four chemicals requires a near-perfect tune and lots of specialized equipment to recirculate exhaust gas, inject clean air into catalytic converters to speed light-off, and all sorts of other wacky stuff. You'll also see O₂ listed. It should always be low. Increases in O₂ usually signify an exhaust leak.

The second point to mind is that all of our DC2's OBD-1 emissions equipment (catalytic converter, charcoal canister, PCV valve, and more) was installed and operational throughout testing, but its ECU had been Crome tuned for leaner air/fuel ratios to save fuel during the daily commute—sending its NOx emissions through the roof. California state smog testing outlines emissions thresholds for each of the above four gasses at varying vehicle wheel speeds: 0 mph (idle), 15 mph, and 25 mph. For brevity's sake, we tested only at 25 mph.

TEST 1: COOL

HC	133 ppm
CO	0.4%
CO2	14.3%
O2	0.6%
NO	2,015 ppm

The first test commenced after the car had been sitting, parked with its engine off, for about 15 minutes—or the amount of time you could wait for another customer to finish testing before you got your turn. We've heard one forum poster reason that "since cooler engines make more power, they should burn more efficiently, which would decrease emissions," or something like that. Wrong. Our tester, Thomas (who will otherwise remain anonymous), suggests "always testing a car after letting it idle to its full temperature. If a smog certifier tests your car cool or cold, it will probably fail."

TEST 2: HOT

HC	82 ppm
CO	0.1%
CO2	14.2%
O2	0.0%
NO	249 ppm



Testing recommenced after we employed an old trick: "heat the hell out of the cat," by driving the car on the dyno for a few minutes at an elevated RPM and heavy throttle (simultaneously gassing and braking to keep speed constant), to heat up its catalytic converter for the best possible emissions-burning performance. The result? Emissions decreased all around. Even our O2 output decreased—we think because a small exhaust leak closed up once exhaust gaskets/components heated and swelled.



TEST 4: RETARDED IGNITION TIMING

HC	68 ppm
CO	0.8%
CO2	12.4%
O2	0.0%
NO	169 ppm

Finally, with the Heet still in the tank, we closed out testing with one method of improving emissions most everyone agrees on: retarding ignition timing. Some will argue that by doing so, and giving an engine less time to effectively burn its air/fuel mixture, one risks increasing HC and CO. Going from 19 degrees before top dead center (BTDC) to 9 degrees BTDC for our final test, we saw improvements across the board.



TEST 3: HEET

HC	76 ppm
CO	0.9%
CO2	14.3%
O2	0.0%
NO	211 ppm



Another old "trick" to passing emissions: Add two bottles of ISO Heet to a quarter-tank of gas for a "big" improvement. Very little more than straight rubbing alcohol, ISO Heet is sold as a fuel-line freeze inhibitor, and the theory is that since alcohol burns cleaner, mixing it with gas should have the same effect. It worked marginally in our testing, with the exception of our CO output—our cat might've cooled a bit from our previous run.

THE VERDICT: While the methods listed above did decrease emissions, they brought numbers down nowhere near as low as swapping out our chipped ECU for a stock one (those numbers are available on importtuner.com). As Thomas advises, "The easiest way to deal with smog is to make sure all of your car's smog equipment is in place and operational, and that your engine is in a good state of tune." But, owning a modded EVO IX and B-swapped Civic hatch, he knows it's not always that easy. "E85-converted cars can be tuned to run way cleaner," he assures, "and they can make way more power than they can on pump gas." Going for mild power increases? Play by the rules. Large increases? Take advantage of what you can, before some bureaucrat outlaws it. **12**

TEST 1:

FICTION

TEST 2:

FACT

TEST 3:

FACT

TEST 4:

FACT

TEXT BY PATRICK GALL AND LUKE MUNNELL
PHOTOS BY PATRICK GALL

'95 TOYOTA SUPRA

MR. COOLICE

THE HOTTEST SUPRA FROM THE
LAST PLACE YOU'D EXPECT.



If you've never had the unpleasant circumstance of visiting North Dakota most of the year, allow us to describe it for you:

All that white space? That's supposed to represent snow, because for most of the year (except, of course, for the two months of searing summer heat), freezing, cold snow spans as far as the eye can see in one of the country's northernmost continental states—one with a landscape almost as flat as a sheet of plain, white paper, too. It's average year-round temperature is only 40 degrees F. It's cold. Imagine trying to build and enjoy cars in that climate.

Now imagine doing the same in a climate about 400 miles farther north, in an area where summer temperatures last only about two weeks and rarely eclipse

80 degrees. Ladies and gentlemen, welcome to Edmonton, Alberta, Canada.

Edmonton is sort of an enigma in the tuning community. Because of its very Northern climate (cold starting conditions, pothole-ridden roadways), sports cars are usually seen as impractical and unnecessary. And yet, this Supra—with its twin HKS GT2835 turbos pushing near 600 whp, Hipermass suspension, endlessly clean Top Secret exterior styling, and giant 19-inch Work Meisters—blends quite nicely into the Edmonton tuning landscape. We could practically see its owner smiling in disbelief over the phone the first time we talked about a feature. "Are you sure you want it? There are a ton of good cars up here," he asked.





A little history: Rob Blackmore cut his tuning teeth at an early age, modifying older Toyota MR2s (also popular in the Canadian north). After a few stints at the Northern Alberta Institute of Technology, where he received a certificate in both business and digital/interactive media design, he decided the idea of sitting in front of a desk 9 to 5 wasn't for him. This led him in 2006 to open a tuning shop called Project Omega. "I just wanted to get back to working on cars," he says.

Rob also felt that the area's shops were behind the times on offering the more popular JDM goods so many enthusiasts were looking for. He'd made those connections with his past projects, but something was missing—something to let his future customers know just how in the loop he was. "Every great tuning shop has a great car to showcase what they can do," he says. "I didn't have that when I started Project Omega, so I decided to build the Supra."

OK, so maybe the Supra "blending into" the Edmonton scene is kind of a stretch—they are quite rare. Canada's importation laws allow vehicles 15 years or older to be brought into the country and licensed for road use, but back in 2007, the latest model Supras coming in were MKIIIs; MKIVs were hard to come by.

But Rob got lucky. A friend of his had purchased a naturally aspirated five-speed MKIV Supra from the States a few years back, but due to some cash problems the car sat in an empty field for over a year. Bad for Rob's friend; good for Rob. He picked up the car for a steal, along with a 2JZ-GTE engine from an imported Toyota Aristo that had been neglected nearly as long.

As soon as Rob got the car to his shop, he started stripping it down. The engine bay was shaved and prepped to have all the wiring hidden and the fuse box relocated to the trunk. He added a Top Secret Aero kit and a carbon diffuser and hood. He decided on Lexus IS350 green for the interior, engine bay, and exterior. Then, he stuffed a set of 19-inch gold Work Meisters (the style of wheel he'd fallen in love with back in his MR2 days) aggressively under the car's fenders—not a move most Supra owners make, especially not those who traverse frigid Northern roadways.

Under the hood, it's all HKS: the aforementioned GT2835 slugs, along with 264/264 cams, adjustable cam gears, twin 200mm intakes, a timing belt, a DLI



ignition amplifier, an SSQ racing blow-off valve, and a carbon/titanium exhaust. "I've built enough cars to know which companies can build a quality part," Rob says. "So, I tried to stick with top-quality parts when reliability/performance was of the utmost importance. HKS gets a lot of love from me."

Watchful eyes will also spot some purple pulleys in there. Those are from Greddy, custom anodized to match the HKS swag, just like the fuel fittings feeding the 1,000cc/min injectors from the twin Walbro 255s in the tank through the Powerhouse Racing twin-feed fuel rail and Aeromotive regulator. It seems like Rob wanted to make sure the fuel system had room to grow—just in case he ever decided to ditch the twins for an HKS T51R SPL or something a little heavier in the top end . . . not that he hinted on this three times throughout our interview, or anything. "I'd probably never give up the smooth power and great streetability the twins offer," he says, before, "but building for overkill isn't a bad thing, either." Rob is our kind of guy.

Following the logic of that overbuilt fuel system is an overbuilt driveline, consisting of an RPS carbon/carbon twin-disc clutch, TRD differential, and Boost Logic driveshaft. That last one was added after he launched hard enough at his local dragstrip to twist the stock part completely in half. Sub-zero temperatures: awesome for bragging rights.

If you saw Rob's latest MR2 before it was retired, the interior of his Supra will look familiar; his leather Bride Ergo seats, Takata harnesses, Veilside steering wheel/hub combo, and head unit descended directly from it. The interchangeability of Toyota parts: awesome for the bank account. Plus, it allowed Rob to afford some bigger subs for the Supra's bigger trunk. "Nothing beats pounding some

heavy bass when you're rolling street bikes on the highway." We did mention Rob's our kind of guy, right?

Rob's a firm believer that you get what you pay for. "If you can't afford what you really want, just keep saving," he says. "Most good things in life are worth waiting for." He's happy with how everything turned out on the Supra, and while it unarguably sports a unique style, its balance between performance and driveability could heat up any spot in the world. Even a really, really cold one. **it**

BEHIND THE BUILD

NAME.
ROB BLACKMORE

AGE.
26

LOCATION.
EDMONTON, ALBERTA,
CANADA

OCCUPATION.
PROJECT OMEGA
SHOP OWNER

BUILD TIME.
ONE YEAR

FEEDBACK.
HKSW20@GMAIL.COM

HOBBIES.
CARS, TRAVELING,
SNOWBOARDING

MOTIVATION.
TO EXPERIENCE NEW THINGS
AND GET THE MOST OUT
OF LIFE

'95 TOYOTA SUPRA OUTPUT: 520 WHP AT 7,200 RPM

ENGINE 2JZ-GTE engine; Aquamist HFS-6 meth kit (direct port); HKS 264/264 cams, adjustable cam gears, GT2835 twin-turbo upgrade, 200mm intake (x2), timing belt, DLI ignition amplifier, SSQ Racing blow-off valve, Carbon Ti exhaust, Type S boost controller, Type 1 turbo timer; Greddy 4-row intercooler, intake manifold, TPS adapter, lightweight pulleys; Q45 throttle body; ATI crank pulley; Powerhouse Racing fuel rails (x2); Precision 1,000cc/min fuel injectors; Aeromotive fuel pressure regulator; Walbro 255-lph fuel pumps (x2); NGK BKR8EIX plugs; custom clear valley cover; ARC oil cap, radiator cap; Koyo radiator; TRD thermostat, engine mounts; AAP Motorsports polished dual fan shroud; Samco Sport radiator hoses, couplers; Innovative XD-16 wideband; Vipec V88 ECU

DRIVELINE Getrag six-speed transmission; TRD transmission mount, 1.5-way limited-slip differential; Boost Logic driveshaft; Supra Twin Turbo rear end, axles; RPS carbon-fiber twin-disc clutch; stainless clutch line

SUSPENSION HKS Hipermass RS coilovers; Tein rear strut bar; custom Targa chassis braces

WHEELS/TIRES Work Meister three-piece wheels (19x9.5 front, 19x11 rear); BFG KDW G-Force tires (235/35-19 front, 275/35-19 rear)

BRAKES Supra Twin Turbo brake conversion, Goodridge stainless lines; Rotor slotted rotors; EBC Greenstuff pads; ABS delete

EXTERIOR Lexus Desert Sage metallic paint; shaved antenna, rear wiper, rear side markers, emblems; Shine Top Secret-style diffuser; Top Secret sides and front bumper; Seibon TS carbon-fiber hood; Top Secret hoodpins; '98 Supra headlights, taillights

INTERIOR TRD tachometer, speedometer; DEFI BF-series gauges (boost, EGT, water temperature, oil temperature, oil pressure, fuel pressure); red LED cluster conversion; battery relocation to trunk; billet battery tie-downs; fuse box relocation to trunk; Titan carbon-fiber fuse box cover; Bride Ergo leather/gradation seats; custom harness bar; Takata harnesses; Veilside steering wheel, shift knob; Works Bell snap-off hub; Boss slim hub adapter; leather rear seats

ELECTRONICS Sony head unit; Alpine amplifier; JL 10W3 subs; custom stereo enclosure

GRATITUDE Thanks to my project crew: Paul, Justin, and Jeff; Jeff, Jack, Sneaky Petes, Frenchy, and Kiel for the late-night help; Doug, Mark, and everyone at Doug's place; Greg, Jon, Sam, and everyone who has supported me and my shop over the years.

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FLIP

Ever have that one disastrous project that makes you want to forget cars altogether?

This is what could happen should you stay the course.



It's amazing how many haters are among us. Facebook and forums bring out the worst. Post a shot of a stanced-out ride, and you'll hear about it from the self-proclaimed "racer" community (many of whom don't, mind you). Post one of a track-prepped EVO and hoards of anonymous fanboys will promise that their Supra or Mustang (or their buddy's, if they're more honest) will walk all over it. Post a picture of a modified Civic—any modified Civic—outside a Honda forum, and you're sure to draw 10 times the *ricial* slurs. But Jimmy Uy, the owner of this Civic, doesn't care. Yes, everyone likes to shrug off public disapproval by claiming they don't care, but Jimmy really doesn't give a f*ck. His car sits exactly how he hoped it would when he started its build over four years ago, and he's overcome far bigger obstacles along the way to consider anyone's disapproval. But let's hear it from him:

THIS



“

I purchased the car in 2007 just to use as a commuter. At the time, I thought I was over cars because I had a lot of failed projects in the past, and never really wanted to modify another car. Then one day I saw a set of Sportmax wheels on a slammed CL. The car was otherwise stock from what I could tell, but the flush-fitting stance really transformed it—in a great way. I thought about my Civic, and figured, ‘Why not? It would just be a set of wheels and a suspension. Nothing major...’

I bought a set of Sportmax XXR 501s, rolled the fenders, slammed it, and really liked the way it looked, so I started doing other little things here and there. Then one day I met the guys from Vision Performance, who helped me do a little more. They introduced me to Memoryfab, where I met Dave and Daniel, who had a set of 15x8.5 +7mm Chevon wheels for sale—legit, Japanese wheels with unique designs in the

size I was looking for. I bought them on the spot. As soon as I was able to get the wheels to fit the way I wanted and still drive every day on San Francisco roads, everything started feeling ‘right’ again. My car was transforming for the better. I decided to build it, only this time to have it exactly the way I wanted, regardless of who liked it or not. Dave invited me to bring my car to Wekfest 2009, where I got my first experience with a big show. I was hooked all over again.

But then things started to go downhill. I was driving home one night, dozed off at the wheel, and swiped a center divider, damaging two of my wheels. Every wheel repair shop



I contacted said it would be impossible to repair them, except my friend and forum buddy Michael “Heymikeyyy” Cristi, who brought them back from the dead after a few weeks. But once I got the wheels back and mounted on the car, I messed up one of its fenders the first time on the road. I guess I hit the divider hard enough to knock the alignment out. Searching for a shop to correct the suspension and handle the bodywork led me to Franklin Auto Body, and Sunny and Albert, who helped in that department.

Then things straight fell apart. On a random Friday night in 2009, a Hummer H2, driven by a relative of mine who I’d never met in my entire life (long story) hit my car. It was declared a total loss. Up until this point I’d met a lot of good shops and cool people. We all became friends and while cars were our common ground, our friendship became about more than just cars. We chilled together, shared other non-car interests, hung out at the same places, etc. I started feeling like I didn’t need the car. I was about to give up on it altogether. But then I sat down with Sunny and Albert and hatched a plan for a complete makeover.

While they worked their magic to the car, I rounded up some new parts. Dave at Memoryfab set me up with new, even more aggressive Chevylons—16x9s and 16x10s—which The Shop San Bruno somehow stretched 215/40 rubber around without even a scratch. Rywire kicked in a complete harness, and the guys at Vision Performance and I handled the engine work, replacing all engine and transmission bearings, seals, gaskets, and belts; rebuilding the head; and replacing synchros.

When Sunny and Albert were finished with the car, all the damage was fixed, the front strut towers had been extended, the engine bay welded/shaved, the fenders rolled and pulled, and the entire shell painted Apex Blue Pearl—a genuine Honda color I decided on after my girlfriend suggested I paint it like the Japanese anime character *Doraemon*.

I’ve learned that it’s always good to have a deadline with a project like this, otherwise the work seems too intimidating and it’s easy to keep putting it off. I made mine the 2010 Wekfest meet. Six days before then, the car still had no suspension, no

glass, no interior, no wiring harness, no doors, and the engine and trans were still out of it. It was pretty much a painted shell. This time I couldn’t give up. I was determined to see it through. In six days, with help from the guys at Franklin, Memoryfab, The Shop San Bruno, Vision Performance, and all the homies, we were able to get the car reassembled and running seven hours before roll-in for Wekfest. After everything was said and done, the car turned out exactly how I wanted it.

I’ve changed a few things on the car since then, but the original concept is still the same: a unique car that I could drive and enjoy everyday. Rain or shine. I ran into a ton of legal issues after the car was done; I got a state referee ticket, CHP VIN verification, brake and lamp inspection, had to pass smog, had my registration held up because of it—all—pretty much every inch of red tape they could throw at me, they did. But with luck and the help of friends and sponsors, we troubleshooted problems as they came up, stayed patient throughout the legal process, and got the car completely road worthy.

I’ve showed the car, tracked the car, and I drive it daily. Some may say it’s too trendy, or might not like the fact that the engine is nearly stock and doesn’t make 1,000 hp, but I can honestly say that I do not care. I enjoy this car and all it’s taught me too much to even think about all that. It’s my only car. I guess you could say I put all my eggs into one blue basket, but with friends like this car has helped me make—who wouldn’t let me quit when things got tough—it proved to be a safe bet. ”



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BEHIND THE BUILD

NAME.
JIMMY UY

AGE.
30

LOCATION.
SAN FRANCISCO, CA

OCCUPATION.
IT ADMINISTRATOR

BUILD TIME.
93 DAYS

FEEDBACK.
JMYUYEH2@GMAIL.COM

HOBBIES.
FRIENDS AND FAMILY

MOTIVATION.
"UM... I'LL NEED A SEPARATE
SHEET FOR THIS ONE."

'95 HONDA CIVIC DX OUTPUT: NO CLUE; DOESN'T CARE

ENGINE '95 B18C1; Skunk2 Pro intake manifold; Avid motor mounts; Fujita cold-air intake; Vortech fuel rail; Mugen 4-to-1 header; MagnaFlow high-flow catalyst; Greddy SP1 cat-back exhaust; NGK plugs, wires; Interstate battery; Mishimoto radiator; Rywire engine harness; custom polishing; Bolt Boys V2 hardware

DRIVETRAIN '95 S80 transmission, factory LSD, 4.7:1 final drive; Avid mount; Exedy Stage 1 clutch

SUSPENSION Stance GR+ coilovers, 12 kg/mm front springs, 10kg/mm rear springs; KSport camber-adjustable front control arms, rear camber links; Acura Integra GS-R 21mm front sway bar; Carbing three-point front shock tower bar; Miracle X-brace, option bars; Function/Form rear lower control arms; Auto Power four-point rollbar; Prothane bushings; ASR subframe brace; custom raised front shock towers, shaved bay

WHEELS/TIRES Chevon Racing Super Mesh wheels (16x9 +13mm offset front, 16x10 +13mm offset rear); Falken Ziex 912 tires (205/40-16 front, 215/40-16 rear); Muteki Racing lug nuts

BRAKES Acura Integra GS-R front and rear calipers and rotors; Hawk HP front and rear pads; ATE Super Gold brake fluid

EXTERIOR Seibon carbon-fiber front lip spoiler; APR carbon-fiber side mirrors; Franklin Auto carbon-fiber roof; Spoon duckbill rear spoiler; Honda Apex Blue Pearl paint; custom fender flaring/pulling; JDM headlights, taillights, thin side moldings; Vision Lighting HIDs

INTERIOR Memoryfab color-matched carbon composite R98 seats, low rails; ATC International Rallye Deep steering wheel; NRG quick-release hub; Seiwa shift knob; Civic Si gauge cluster, EX power door panels; custom relocated battery; Sony Pioneer speakers

GRATITUDE First and foremost: my girlfriend, Alice; my family; Sunny and Albert from Franklin Auto Body; Dave, Wing, Daniel, and Rich from Memoryfab; Crosby, Kevin, and Mike from Vision Performance; Joey Kwan and the lanks; JDM Drew; Kenneth from Weksos; Ryan from Rywire; Patrick and Josh for the shots; Fred Tizon, Simon Chu, Mikeyyyy, Arnel, Steven, Gaw, Kelvin, Ryan Der, Jay Nugui, Ryan Ogi, Toma, Howard, BLM, Brian Lee, Yentos the Freshmaker, Shane, Brandon Wong, and all the homies!



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TEXT BY VANESSA LAM
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NISSAN S30 FAIRLADY Z



THE UNCOMMON

COMMON SNAPPER'S NOT SO
WIDELY KNOWN FAIRLADY Z

It was 1969 when Mr. K—the man responsible for shifting Nissan from its traditional common-car focus to one of performance—released the first Fairlady Z to the public and revolutionized the motoring world. It was designed to be the perfect blend of Jaguar E-Type styling and brute Porsche performance. Specifically calibrated with near-perfect weight distribution, the short-deck styling of the car was given a long hood, under which the original inline, six-cylinder, SOHC L20 engine produced 130 hp from far back in the bay. In the decades that followed, Nissan's inline-sixes evolved to become lighter, more efficient, and vastly more powerful—nothing short of legendary. So, what's a four-cylinder SR20DET doing under the hood of this Z?





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BEHIND THE BUILD

NAME.

NORIAKI MIYAMOTO

AGE.

36

LOCATION.

IGA, MEI PREFECTURE, JAPAN

OCCUPATION.

PERFORMANCE TUNING,
FABRICATION, BODYWORK

HOBBIES.

OCEAN DIVING, CARS, GOLDFISH
BREEDING, DEEP-SEA FISHING

QUOTE.

"EVERYONE LOVES AN
OLD MAN'S CAR!"

FEEDBACK.

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NISSAN S30 FAIRLADY Z OUTPUT: 280 WHP (EST.)

ENGINE S13 SR20DET; S15 T28 turbocharger, custom Greddy V-mount intercooler and radiator setup; custom coolant overflow tank, tubular stainless manifold, painted valve cover, relocated battery tray

DRIVETRAIN Five-speed SR20DET transmission; custom Common Snapper driveshaft

SUSPENSION Custom Common Snapper coilovers

WHEELS/TIRES SSR MS1 wheels (18x8.5 front, 18x10.5 rear, -17mm offset); Nankang Ultra Sport NS II tires (225/40-18 front, 255/40-18 rear)

INTERIOR TND Motor Sport Rapido steering wheel; bucket seat; custom rust anti-carpeting.

EXTERIOR ZG-style FRP fender flares; sportbike carbon-fiber side mirrors; BRE front air dam; shaved rear corner marker, badging; rear hatch and hoodpins



Laid out before you is Noriaki Miyamoto's S30 Fairlady Z. If the mention of Noriaki-san's name—or the look of this particular S30 Z—didn't ring a bell, refer back to our October '10 issue where we featured his more widely known Super Pearl White '74 Z, powered by a now 600-whp RB26DET. Why wasn't the same treatment given here? After all, replacing an inline-six with a more modern and powerful inline-six just seems to be common sense... but is it really so simple? With two turbos, the DOHC RB26 significantly outweighs either of the Z's original L-series powerplants. Surprisingly, the turbo-four SR20DET also outweighs either L, but only slightly, and its smaller dimensions allowed Noriaki-san to position one lower and farther back in his Z's bay, preserving—if not improving—Mr. K's sought-after ideal weight balance. Factor in the SR's huge

power-producing potential and aftermarket support, and in the end, the decision was just as easy as it seems.

Another bonus to the SR's space-saving size: using one here afforded Noriaki-san more than enough room to incorporate a custom V-mount intercooler and radiator system for improved cooling. Like his über-powerful RB26 car, this Z also sports sportbike carbon-fiber side mirrors, FRP ZG-style flares, SSR MS1 wheels, and a BRE front lip. However, unlike the white car, this one retains much of its original interior, with the addition of a matching leather bucket seat for the driver, and rusty floorpans for all to enjoy.

Click through the photos on Common Snapper's website and you'll see that their focus is very wide, ranging from "domestic" JDM cars, to "import" U.S.D.M. hot rods and lowriders, to trucks. When it comes to this S30 though, it's clear that Noriaki-san's intent with modifying it held true to the spirit of balanced, exciting, dependable motoring Mr. K had in mind when he famously exclaimed, "Love cars, love people, love life!" **TC**

TSW



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CROFT

INDY 500

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VAIRANO

MALLORY

MALLORY

VALENCIA

VALENCIA



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PHOTOS BY JOSH MACKEY

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A CUT ABOVE THE
REST, FOR ALL THE
RIGHT REASONS

It seems like every time we turn around there's a newer, cleaner-than-the-last, modified WRX coming out of the Northeast. We should know—we've had most of them on our pages. But where one became a race-prepped breath of fresh air among a sea of custom audio/bodyworked show cars (Feb. '11), and the other a quarter-million-dollar culmination of the most expensive, most exotic schwag most can only dream of owning (Sept. '10), William Bakajin's STI is different. It's got all the parts, with none of the reservation. It's an STI built by a guy like the rest of us, with all of the street- and track-driving scars to prove it.

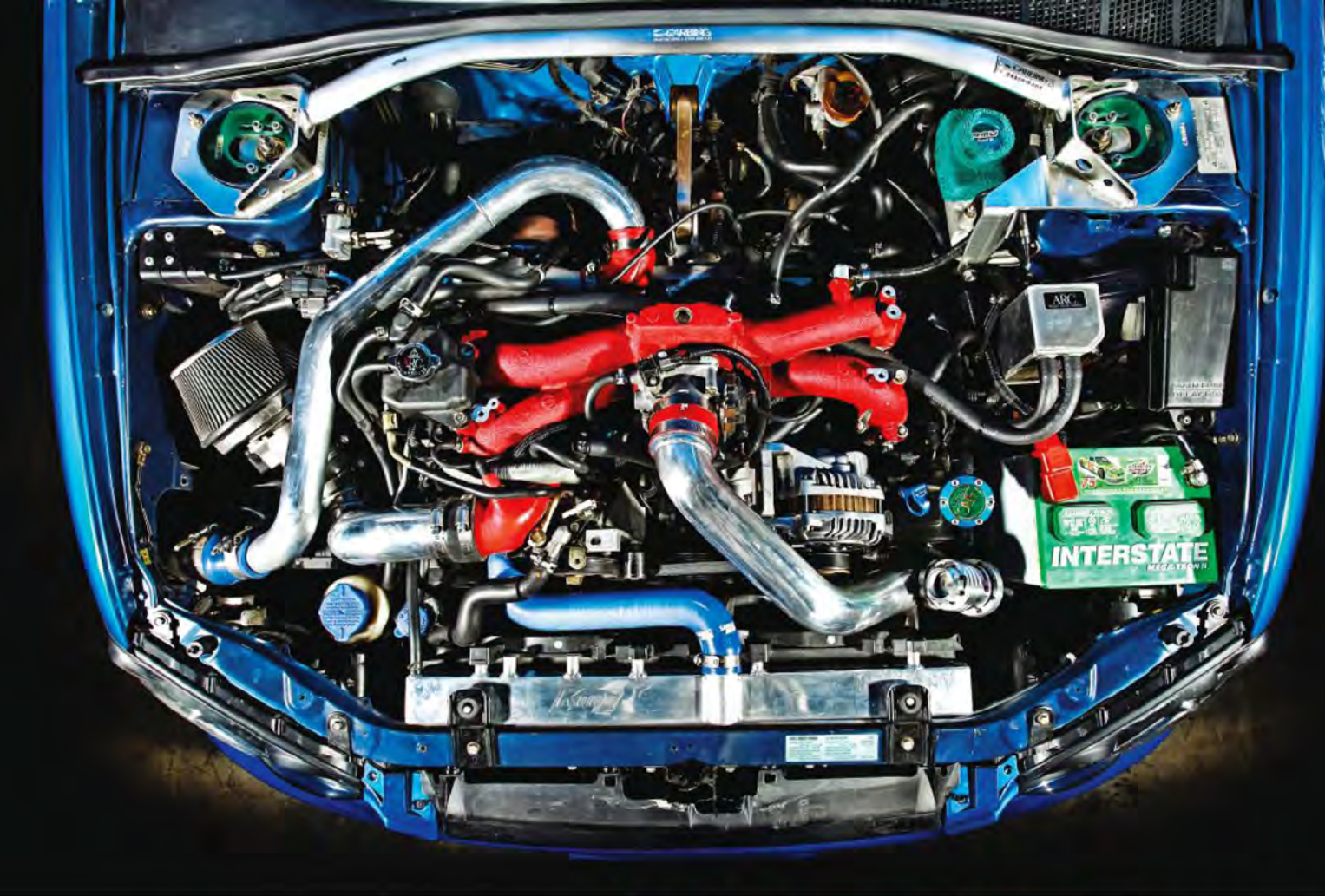


William is a bit different, too. Where most cars as clean and highly modified as his were assembled in only a few months, with old money or extensive corporate sponsorship connections, William's been chipping away at his since he scraped together enough cash from his boba-tea job to afford its down payment. And unlike others who sought to build their STIs into flawless, Best-of-Show-winning machines to unseat current Best-of-Show winners, William just wanted to have fun. "I had the ECU reflashed on the way back from the dealership," he comments, about his first few hours with the car back in 2005. "It had six miles on the odometer. I took it to the track that weekend and from there just got hooked."

Modifications were added bit by bit, and the car was enjoyed on the streets to and from school, at the track on weekends, and anywhere else William needed to get from point A to point B—the STI was his only car. And then it blew up in 2007, the result of a faulty aftermarket injector.

Another reason William's different: He's a self-made businessman. Originally from Indonesia, his past was in show cars. After relocating to Washington for school and buying/beatng the Subie, he had a moment of enlightenment: use his overseas connections to produce carbon-fiber components for race and show crowds alike, and sell them globally. For Stateside enthusiasts, 2008 and 2009 might have been hard years, but those living in booming economies in China, Southeast Asia, and parts of Eastern Europe poured their increasingly valuable currencies into their cars at much the pace as we did a decade earlier. William took full advantage, and



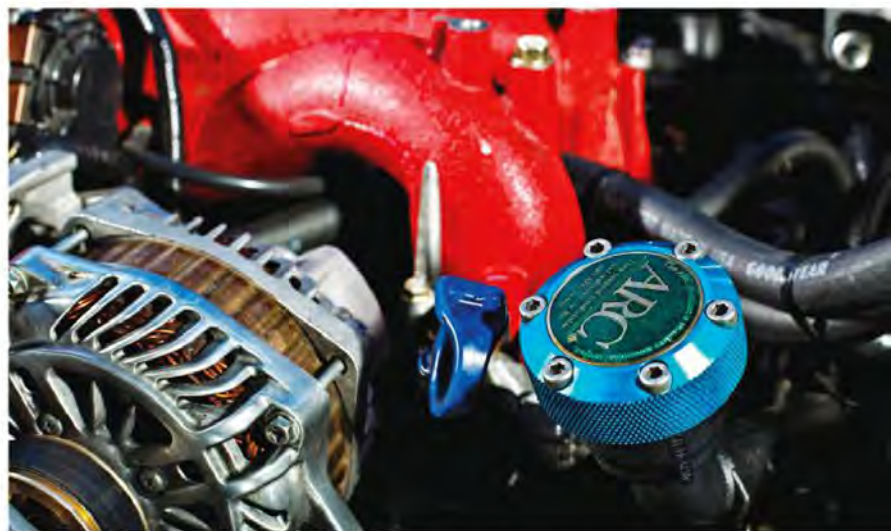


grew his newly founded Speed Architech into a self-sustaining, profitable company—one that, in turn, let him dump money into his own car.

When he decided to kick his project into high gear, William made his first stop Garage Autohero in Woodinville, WA. Over the next few months, William and owner Ray Stonehocker (badass name) tore the STI apart and got to work fabricating a 10-point 'cage, assembling the JDM EJ257 engine, rotating its intake manifold, bolting on a Blouch Dominator turbo and 1,000cc/min injectors, and fabricating intercooler and exhaust piping. The result? Over 470 awhp and 450 lb-ft of torque from 21 psi, on a stock ECU tuned by Dominic Acia of Maxwell Power Service in Marysville, WA.

You'll also notice the suspension—it's hard not to with a spec sheet about as long as the engine's. William added most of that himself, and don't think his goal was to set it up with the freshest ish. It was, but insofar as it brought genuine track-worthy benefit, hence the Do-Luck eight-point subframe brace, Whiteline anti-lift kit and rear subframe lock kit, urethane replacing every stock rubber bushing imaginable, and, of course, Tein Flex coilovers at the corners. You won't see any special brake love in the pics, since William upgraded them the week after we shot (good lookin', holmes!), but his STI now flexes Brembo eight-piston forged aluminum calipers biting giant 380mm rotors.

The STI's exterior is all business, starting with William's business—you'll see his Speed Architech offerings in the carbon-fiber grille, side mirrors, door handles, GT wing, and exhaust heat shield, surrounded by Do-Luck, Zero Sports, Cosco, and APR goodness, with a custom-fitted RE-Amemiya carbon rear diffuser originally intended for an FD3S RX-7. "All the ones I've seen for the STI weren't aggressive enough," William says. Sounds like a good enough excuse to us. The inside follows suit, with a Speed Architech carbon-fiber trunk cover, center console, steering column cover, door panels, and interior panels, race-elite Bride Dinos and Takata harnesses, and a quick-releasing



Nardi wheel. You'll even find some audio hidden in the mix. It is a street car, after all.

Remember when we told you William was a little different? For all the impressive power, handling, and stopping power his STI boasts—and its ultra-aggressive, ultra-functional interior and exterior modification—William cites his wheels as his favorite mods. "As far as I know," he says, "no one else has fit wheels as aggressive as these." A feat he accomplished with lots of measuring and test-fitting. But we secretly think he likes their finish the best. "Everyone was doing crazy color combinations or polished lips," he says. "But I've never seen fully polished TEs." He's actually never seen his wheels in their native finish; they were drop-shipped directly to Ketchum Polishing Company in Arlington, WA, for the treatment. "Everyone freaks when they see them," William says. We believe him—we did.

William put the car through its paces nearly the moment it was finished. "We put the tools away the day before SubieFest in Cali," he says. "The drive down and the show went great. The weather was sunny and warm when I left, so I wore shorts and flip flops." Big mistake. "By the time I hit Mt. Shasta around midnight it started snowing hard enough to make me pull over and wait it out—and I had no heater, stereo, or wipers!" Here's hoping for a warmer future. **12**

BEHIND THE BUILD

'04 SUBARU WRX STI

OUTPUT: 470 WHP / 450 LB-FT OF TORQUE AT 21 PSI OF BOOST

NAME.
WILLIAM BAKAJIN

AGE.
24

LOCATION.
SEATTLE, WA

OCCUPATION.
CARBON-FIBER PARTS
MANUFACTURER, BUBBLE TEA MAKER

BUILD TIME.
5.5 YEARS

HOBBIES.
PHOTOGRAPHY, FISHING

MOTIVATION.
"BE CREATIVE AND INNOVATIVE
WITHOUT BEING RETARDED."

FEEDBACK.
FACEBOOK.COM/WILLIAM.BAKAJIN

ENGINE EJ257; Maxwell Power Service balancing and blueprinting, fuel rails; Wiseco 100mm pistons; ACL Race bearings; Blouch Dominator 3 turbocharger; Tial 44mm external wastegate; Invidia V2 racing downpipe; Grimmspeed up-pipe; Amuse Powerhouse R1 Titan exhaust; Garage Autohero intake tubing; custom intercooler tubing, reversed intake manifold; ARC front-mount intercooler, oil cap, radiator cap; HKS Version II blow-off valve; Koyo aluminum radiator; Zero Sports turbo manifold, lightweight crank pulley, Super Direct Flow intake element, Cool Action thermostat; Beatrush alternator pulley, forged pitch stopper; Samco silicone turbo inlet, radiator hoses, throttle body hose; Injector Dynamics 1,000cc/min injectors; A'pexi AVC-R; Hot Inazuma voltage stabilizer; Walbro 255-lph in-tank fuel pump; NGK plugs

DRIVETRAIN Cosco twin-plate carbon-fiber clutch, flywheel, engine and transmission mounts; Eifel/Prova clutch master cylinder cap; Techna-Fit stainless clutch line; Beatrush differential support brace; Perrin rear differential cover; Kartboy short shifter, urethane shift bushings

SUSPENSION Tein Flex coilovers; Cosco front and rear sway bars; Garage Autohero custom 10-point rollcage, rear strut tower bar; Carbing front strut tower bar with brake master cylinder brace; Whiteline anti-lift kit, front endlinks, rear subframe lock kit, steering rack bushings; Do-Luck floor support brace, eight-point subframe brace; Happi Motoring fender support braces; Perrin rear endlinks; Turn In Concepts full suspension bushing kit

WHEELS/TIRES Volk Racing TE37 wheels (18x10.5 +22mm offset); Falken ZE-512 tires (245/40-18)

BRAKES Brembo 380mm front rotors, eight-piston calipers; Techna-Fit stainless brake lines; Project Mu Level 900 rear brake pads, Competition front brake pads, brake master cylinder cap and cover

EXTERIOR Cosco GT front lip spoiler; custom TSX-retrofit projector headlights; Eifel/Prova hood dampers; Speed Architech carbon-fiber grille, side mirrors, door handles, GT wing, exhaust heat shield; Zero Sports side skirts; Do-Luck carbon-fiber trunk; RE-Amemiya carbon-fiber diffuser; APR carbon-fiber license plate cover; JDM rain guards

INTERIOR Speed Architech carbon-fiber door panels, interior panels, trunk cover, carbon-Kevlar center console, steering column cover; Bride Dinos II carbon-Kevlar racing seats; Takata four-point harnesses; Nardi Classic steering wheel, Works Bell short steering hub, RAPFIX II quick-release system/flipper kit; custom suede headliner; Subaru aluminum doorsills

ELECTRONICS Sony WX-770 head unit; Phase Linear 6-inch three-way front speakers; Soundstream Tarantula rear speakers

GRATITUDE Team STFU Crews; Christian Coujin of Speed Architech; Jeff Miller of JMI Motoring; Dominic Acia and Maxwell Power Service; Ray Stonehocker of Garage Autohero; Chris "Tex" Walker of Graphixbytex.com; Wayne Cuddy and VTR Tint Audio Performance; Vince Lee and David Kang of Discount Tire

HOTBOX

DOMINIC ACIA TUNING /
MAXWELL POWER SERVICE
WWW.GETADOMTUNE.COM

GARAGE AUTOHERO
WWW.GARAGEAUTOHERO.COM

GRAPHIX BY TEX
WWW.GRAPHIXBYTEX.COM

VTR PERFORMANCE
WWW.VTRPERFORMANCE.COM



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to comment about this feature vehicle



PROJECT *IMPORT TUNER*: PART 1



RED BULL SOAPBOX CHALLENGE

TEXT AND PHOTOS BY STAFF

If you were like us, growing up consisted of going fast—whether it was racing your friends downhill on a Tonka toy, skateboard, or BMX bike—and it was done with reckless abandon. Fast-forward to the present day. Sure, we're a bit older, questionably wiser, but one thing for sure is that we're still as passionate about going fast as we were 20 years ago.

When Red Bull announced their second annual Los Angeles Soapbox Race, we quickly sprang into action and submitted our application. Within a week, we received the news we had been patiently awaiting: We were one of 40 teams selected to compete in this year's race.

Although soapbox racing sounds like a kiddy sport, it has progressed to a whole new level, thanks to events like the Red Bull Soapbox Race. While the underlying goal of this event is to have fun while building the craziest contraptions known to man, competitors have continually pushed the envelope, bringing new and exciting soapbox racers year after year. Representing *Import Tuner* and the community of sport compact enthusiasts, we had a ton of pressure hanging on our shoulders.

TEAM IMPORT TUNER



Fabricator

Gary Castillo, of Design Craft Fabrication, is best known for building a variety of race cars, from drift and time attack to his involvement with the Scion xD rally car. Gary's creative ingenuity and fabrication skills are an asset to the team. Although, he has a tendency to over-engineer anything he touches—our soapbox included!



Concept Designer

Troy Sumitomo, of Five Axis in Huntington Beach, is the man when it comes to building concept vehicles, including the infamous Scion xB DJ car and the recently debuted Scion FR-S concept car. Luckily for us, Troy was all too familiar with the Red Bull Soapbox race, as he told us, "I wanted to be part of the Red Bull Soapbox Derby after attending the L.A. event last year. I promised myself I would do this once in my lifetime and the opportunity finally came! Besides, I want to smoke Geoff, my employee competing this year and his Wayne's World team!"



Suspension Specialist

Philip Chase, the man behind Tein USA, offered his assistance in helping to build our soapbox from the ground up. Phil's vast knowledge of suspension played a major part in bringing our soapbox to reality.



Driver

Just when we had given up finding someone crazy enough to fly down a hill in our creation, Gary came up with the ingenious idea to call Dai. Who better to pilot this engine-less drift car than Formula D competitor Daijiro Yoshihara, fresh-off a First Place podium finish at Round 2 of Formula D at Atlanta. If any individual were qualified to handle this beast, hands down, it would have to be Dai.

RED BULL SOAPBOX CAR COMPETITION RULES:

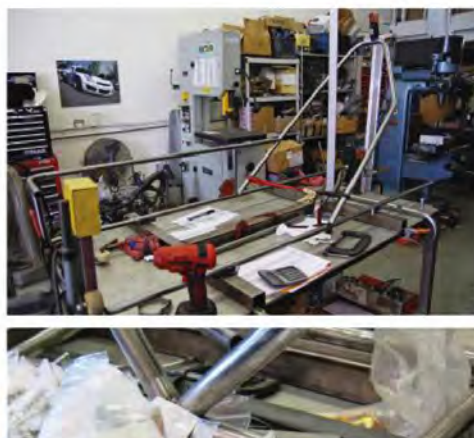
- The craft must be entirely human powered and cannot use any stored energy (no external energy sources). Forget about slingshots, catapults, or anything besides your own burliness and gravity.
- The craft must have operational brakes, steering, and a horn.
- The craft must weigh less than 176 pounds (not including the driver).
- The driver must be at least 18 years old.
- The craft can be a maximum of 20 feet long by 6 feet wide by 7 feet tall, and no more than 7 inches from the ground.

With the groundwork laid, we knew the upcoming weeks would be quite busy as we put together this car. Look for recaps in the weeks to come on our Facebook at www.facebook.com/importtunermag, as we divulge our progress, and be sure to check out the next issue as we wrap up our build and bring you exclusive event coverage of our soapbox competing for the win. **IT**



The concept of our soapbox was to build a shrunken-down version of a real car, similar to a ChoroQ (Japan) or Penny Racer ... but bigger.

Summit Racing rod ends, tube inserts, and mild-steel tubing of various sizes, supplied for our chassis.



The initial chassis design, laid down at Design Craft Fabrication.



Gary, behind the drill press as he preps the tube end for the chassis. Look at that determined face!

PROJECT IMPORT TUNER: PART 1



Control arms welded up and ready for fitment.



Our fearless driver, Dai Yoshihara, paying a visit to the shop to spec the chassis according to his body dimensions.



What keeps us working through the late nights.

The set of Jr. Dragster brake calipers, pads, and a universal master cylinder kit Wilwood sent us for our brake setup.



Check out the size of those brake pads!



Five Axis shaping the body, using the five-axis mill.



The fiberglass mold of the rearend and roofline of the soapbox.

Scooter wheels to help propel our soapbox through the competition.



We leave you with a rearview shot of our soapbox shell. Care to take a guess on which vehicle we based our designs?

HOTBOX

RED BULL USA
WWW.REDBULLUSA.COM

DESIGN CRAFT FABRICATION
WWW.DESIGNCRAFTFAB.COM

FIVE AXIS
WWW.FIVEAXIS.NET

SUMMIT RACING
WWW.SUMMITRACING.COM

WILWOOD
WWW.WILWOOD.COM

DAI YOSHIHARA
WWW.DAIYOSHIHARA.COM

TENZO^R

Concept-10¹⁷₁₈₁₉



Concept-10Bronze



TracerBlack+Polished



Type-MBlack+Red



Concept-9Charcoal



MeisterMatteBlack

FORMULA DRIFT

ROUND

1

STREETS OF LONG BEACH

TEXT BY SCOTT TSUNEISHI
PHOTOS BY HENRY Z. DEKUYPER

Round 1 of Formula D in Long Beach debuted new vehicles and drivers. There was plenty of hype and anticipation for the new season with a growing cast of V-8-powered drift machines entering this year's championship chase. Regardless of whether you love 'em or hate 'em, V-8 power has taken over the sport and is here to stay. Formula D made history during their first event of this eighth season of competition, as this year's Long

Beach opener became the most attended drift competition ever for the series. Over 16,000 fans came to the near-capacity event, outdrawing the previous '10 Formula Drift season finale, Red Bull Drifting World Championship, and even the original D1 Exhibition Match held back in February of 2004.

As drift competition progressed throughout the day, many of the top 32 competitors—well-known drivers and manufacturer-sponsored cars—were eliminated from competition, including Rhys Millen, Sam Hubinette, Tyler McQuarrie, and Ken Gushi. **It.**

A crowd favorite and top contender in previous years' Formula D events, Tanner Foust has officially retired his drift suit to focus on his rally and television careers. Replacing Foust was the 2010 FD Rookie of the Year Fredric Aasbo of Norway, taking the wheel of the Papadakis Racing-built Scion Racing/Team Need For Speed/Hankook Tire '11 tC. Aasbo showed tremendous poise in his new car as he drifted his way to the Great Eight before falling victim to Chris Forsberg in the '11 NOS Energy Drink Nissan 370Z.

Team Need For Speed driver Matt Powers entered the Long Beach competition with his signature S14, only this year powered by a V-8. His decision to go with a 600-whp Chevy LS7 powerplant for 2011 paid big dividends as he muscled his way through the competitors.





Rhys Millen, in his Hyundai Genesis Coupe, managed to make it into the quarterfinals before he was dispatched by Dean Kearney in the Sam Hubinette Racing/VLEDS/Federal Tire Dodge Viper SRT10. Coincidentally, Kearney's boss and teammate, Sam Hubinette with his new Dodge Challenger, was eliminated due to engine failure. But the surprise of the day was the Monster Energy/Falken/Ford Racing Mustang, driven by Vaughn Gittin Jr. Last year's champion, J.R. failed to qualify for Saturday's eliminations, scoring only 41 out of 100 points. His second run resulted in an uncharacteristic spin through the Turn 11 hairpin, which abruptly ended his day. In the pits, a disappointed J.R. said he had no one to blame but himself for the mishap, and promised to redeem himself in the next round.



In a nail-biting Final Four showdown, Chris Forsberg, Daijiro Yoshihara, Justin Pawlak, and Matt Powers battled for a podium. Pawlak, in the Falken Tire Ford Mustang, fought a hard battle against Powers to take First after a One More Time rematch in the semis. Powers, in the Need for Speed Nissan S14, took Second Place, with Yoshihara in the Discount Tire/Falken/Nissan S13 rounding out the podium in Third. This was Yoshihara's first Long Beach podium.



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CONCEPTUAL SKILLS

NEW CONCEPT AND PRODUCTION CARS: 2011 N.Y. AUTO SHOW

TEXT BY CHARLES TRIEU
PHOTOS BY CHARLES TRIEU AND THE MANUFACTURERS



At this year's New York International Auto Show, everyone was expecting to see Toyota's new rear-wheel-drive sport compact FT-86. Instead, Toyota rebranded it as a Scion and updated the body to what is now called the FR-S—a great move on Toyota's part. Scion is a big part of the modified world but hasn't ever had a rear-wheel-drive car. Having this as the brand's halo car will help give Scion a new image in the performance world, much like how the LF-A serves as a halo car for Lexus.

The FR-S (front-engine, rear-wheel drive, sport) is based mainly on the FT-86 with a mix of styling from the Lexus LF-A and Toyota 2000GT. Its streamline body with sharp lines and accentuated panels

illustrates how a true sports car should look. If you didn't notice the LED Scion logo on the rear, the aerodynamic roof and distinct rear glass will remind you what car it is when it's pulling away from you. Headlights and taillights both boast LED illumination. True to the AE86 heritage, the FR-S will stay a naturally aspirated, lightweight, four-cylinder, rear-wheel-drive coupe. With the 20-inch staggered Five Axis wheels, the car screams rear-wheel drive. And just behind those center-locking monoblock wheels are 18-inch carbon brake rotors attached to wheels like on various motorcycles.

Like any concept car, we can't tell just yet what the production model will look like or even be called—but it will definitely be a Scion.





2012 HONDA CIVIC

New for this year is the ninth-generation Civic. Man, it's been a long time since we've owned our fourth-gen Civics. The new car will be offered as an Si, HF, and hybrid. This new Si is still getting the ever-so-popular K-series engine, but in a buff form; it's now getting a K24 engine. Yes, 2.4 liters of iVTEC fun—no need to look for a CR-V or TSX donor block anymore.



LEXUS LF-GH

The new hybrid concept from the big Toyota family is the Lexus LF-Gh. This car was the designers' way of going wild on a blank canvas. These ideas and styles will eventually filter down to different Lexus cars in the family.



NISSAN LEAF RC

Just when we got tired of seeing raced-out hybrids, Nissan enters the circle with its hybrid Nismo RC-edition Leaf. We're sure almost no one in the world will transform their Nissan Leaf hybrid into this rear-wheel-drive, two-door, carbon-fiber widebody track car, but it's cool as hell to see a hybrid do all this. Definitely one of the coolest cars at the show.

2012 SUBARU IMPREZA

Here's a glimpse at everyone's favorite all-wheel-drive hatchback/sedan—2012 means a new generation of the cult classic Impreza. We can't wait to see what the turbo WRX and STI versions will look like later.



TUNER GALLERIA

IMPORT CAR SHOW AND AFTER-PARTY CHICAGO, IL

TEXT BY CHARLES TRIEU
PHOTOS BY CHARLES TRIEU AND RANDY LY OF MODELSINTHETRUNK.COM

With over 700,000 square feet, 700-plus cars, booths, and vendors, World of Wheels throws one of the largest car shows in the country. At the end of winter there really isn't much else to do in Chi-Town but shovel snow, so over the course of the three-day event over 80,000 people were in attendance. The show featured everything from lowriders to monster trucks, with different halls dividing the many categories. Everything—and we do mean everything—under the automotive umbrella was showcased at this event.

On Saturday of the three-day weekend event, World of Wheels Chicago gave its showgoers something a little extra: Tuner Galleria. In a separate arena upstairs, the guys from Tuner Galleria hosted the all-import, European, and modern muscle segment, delivering a complete package with a fleet from Prestigious Models (including several past *IT* cover models), *Jersey Shore*'s Sammi "Sweetheart" Giancola, DJ Miki Taka, Poreotics' Justin Valles from ABDC, and hype-girl Melyssa Grace. It was a great show for people like me who like to see imports, domestics, lowriders, and rat rods. Ending the show, TG and PM hosted an after-party that was outright ridiculous. We can't print all the incriminating pictures, but we can upload a few on our site. We don't plan to ever miss another Tuner Galleria event and neither should you! For more coverage, check out www.importtuner.com and www.facebook.com/importtunermag. **IT**



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AND NITROUS INJECTION



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DON'T F AROUND.



TEAM CHII REPRESENTING THEIR TOWN



FIZZ AUTO SITTING SIDEWAYS



TUNER GALLERIA
PUTTIN' IN WORK



JUST SOME OF THE GIRLS FROM
PRESTIGIOUS MODELS



MELYSA GRACE AND
DJ MIKI TAKA



JUST ORANGE JUICE, KIDS



MITT RANDY



WE'RE COMING
BACK FOR
MING'S \$15.



SUPERCLEAN EF WITH ORIGINAL PAINT



THE ADVAN AVS MODEL 7
NEVER LOOKED SO GOOD.

TUNER GALLERIA



Best of Show:
Anthony Shockwave
Porsche Boxster GT2

Best Team Overall:
Shockwave
Best Team Representation:
Team EST

Best Overall Domestic:
Anthony Shockwave
Chevrolet Corvette Z06

Best Overall Euro:
Matthew Kaiser
Volvo S60

Best Overall Import:
Paul Tolson
Lexus RX400H

Best Rising Star Domestic:
Bobby Novak
Eagle Talon

Best Rising Star Euro:
Andre DeVera
BMW M5

Best Rising Star Import:
Chris Ocampo
Toyota Supra

BEST SPECIALTY AWARDS

Best Bike:
Tommy Cucinotta
Honda CBR

Best Engine Performance:
Mike Reichen
Mitsubishi EVO II

Best Female Ride:
Dominica DeDemonico
Hyundai Genesis

Best Individual Display:
Matthew Kaiser
Volvo S60

Best Interior:
Matthew Kaiser
Volvo S60

Best JDM:
Joey Feng
Nissan Skyline GTR R34

Best Luxury and Exotic:
Anthony Shockwave
Porsche Boxster GT2

Best Mobile Entertainment:
Sixto Robles
Hummer H2

Best Paint and Finish:
Paul Tolson
Lexus RX400H

Best Stance:
Ming Ng
Nissan S15 Silvia

Best Undercarriage:
Bobby Novak
Eagle Talon

Best Vinyl Graphics:
BeBe Sfetcu
BMW 330

BEST VEHICLE MANUFACTURER AWARDS

Best Acura:
Russel Christopher
Acura Integra Type R

Best Audi/VW:
Joey Limoncielli
Audi A4

Best BMW:
Michael Plante
BMW M3

Best Chrysler/Dodge/Jeep:
Devin from Benchmark
Dodge Neon SRT4

Best Euro Other:
Anthony Shockwave
Porsche Boxster GT2

Best Ford:
Kali Griffen
Ford Mustang GT500

Best GM:
Anthony Shockwave
Chevrolet Corvette Z06

Best Honda:
Efrain Ramirez
Honda Z600

Best Hyundai:
Dominica DeDemonico
Hyundai Genesis

Best Infiniti:
Ming Ng
Infiniti M35

Best Lexus:
Paul Tolson
Lexus RX400H

Best Mazda:
Mike Diehl
Mazda Mazdaspeed3

Best Mercedes-Benz:
Jake Pedersen
Mercedes-Benz E55 AMG

Best Mitsubishi:
Steve Douglas
Mitsubishi EVO VIII

Best Nissan:
Ming Ng
Nissan S15 Silvia

Best Scion:
Ben Causby
Scion xB

Best Subaru:
Mike Cerra
2008 Subaru STI

Best Toyota:
Pras Kroun
Toyota Supra

Car Competitor Apple iPad
Raffle Winner:
Chii Racing Culture

Tuner Galleria Chicago
Dance Crew Winner:
Design Dance Company

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1JZ-powered Celica.



TOYS TOYS TOYS



TOYOTAFEST 2011: STRONG BEACH, CA TEXT AND PHOTOS BY CHARLES TRIEU

For the last 16 years, TORC (Toyota Owner's and Restorer's Club) has been nice enough to host their Toyotafest show completely free to the public. Yes, that's right. Come one, come all. See every type of Toyota you could ever want to see. From old classics, to restored compacts, to high-tech Scions, to raised off-road trucks, to slammed Bippu Lexus cars. There's no other single-manufacturer show with as much diversity as this. We couldn't help but issue our own special awards for all the different types of car-loving enthusiasts. **IT**



We need more nice SW20 cars like this one.

New Lexus CT, murdered out.



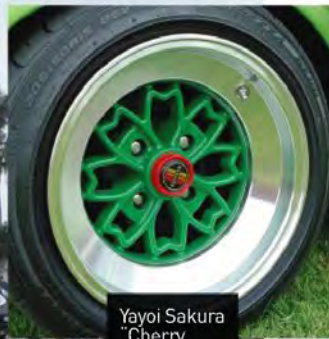
COOLEST WHEELS AWARD
Techno Racing Phantom (three-piece version)

RAREST WHEELS AWARD
So rare, even I can't name these Watanabes.





JDM clear windows
are so much nicer.



Yayoi Sakura
"Cherry Blossom"



CST Precedo
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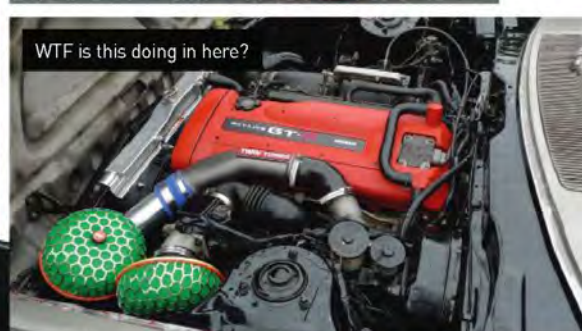
Is that an F20C or F22C?



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TOUGH LOVE

CATHERINE SIERA

INTERVIEW BY LUKE MUNNELL
PHOTOS BY SERGIO VAZQUEZ
MAKEUP BY STARR NICOLE

It's true that we're all unique in our own ways.

We can even be unique in the same ways. But every now and then we meet someone who's unique in ways most of us aren't; someone who shatters our preconceptions, in good ways. Like that hot girl you know who's even hotter in the way she can talk sports with your bros. Or the one who can drink them under the table. Or the one who actually has a chance of kicking their asses in a fight. Don't know that girl? Meet Catherine Siera.

You're from Vegas but live in Orlando, and we shot you in Chicago while you were in town for an event in Detroit. WTF was going on then?

[laughs] I was actually in Chicago for the Tuner Galleria show, which went on right after the Sno*Drift rally in Detroit. I consider myself from Vegas, but I was born and raised in Kansas.

Wait—what?

[laughs] OK, here's the story: My dad's from Pittsburgh. He met my mom and they had me in Kansas, where I lived until I was about 16, before I moved with my dad to Vegas to finish up school . . . after a few months living with my mom where she moved in Georgia. And I just recently moved out to Orlando on my own.

Any particular reason?

To play professional football

Wait—what?

[laughs] For the Lingerie Football League. It's an all-girl football league where we play with each other in lingerie and sexy clothes.

Can you repeat those last 10 words again?

[laughs] It's sexy and all, especially to watch, but it's hard-core!

Sorry, did you say "hard-core"?

Oh yea! Wait . . . not like that!

Kidding. Kind of.

It's full contact, so we're all padded up with helmets and the whole nine. The girls get vicious in the pileups. You don't want to know what goes on in there.

. . . Or do we? [winks]

[glares back, unimpressed]

OK, um . . . What's the worst injury you've seen in the game?

I played for a league while I was in Vegas and saw a girl dislocate her shoulder in our Lingerie Bowl—like the NFL's Super Bowl. It was all nasty, just hanging there, completely out of the socket. She popped it back in on the sidelines and finished the game.

Note to self: Don't piss off an LFL chick. How do you like playing for Orlando?

I don't anymore. I quit.

Wait—What?!

I was playing for the league in Vegas and loving it, but they cut me from the team once I started traveling more for modeling. I heard about an opening on the Orlando team and moved out here, but realized it's just not right for me now. The pay sucks and I was constantly getting injured. It was holding me back from modeling and working a steady job.





Understandable. Does that mean we get to see more of you?

You'll see me in Cali for SpoCom, then probably again in Vegas for SEMA, like last year. I also work for a Fiat dealership down here. Fiat's only been in the U.S. for a few months and we've only been open a few weeks, so it's very new and interesting.

Do you like the cars?

They're great, but no. They're too "Italian" for me. I like German cars like the Audi R8 or anything Porsche.

What about Lamborghini, like an LP640 roadster?

Lambos are junk. And I don't really like convertibles. The Ferrari F430 Scuderia pwns anything Lambo makes.

You do know we're tuners of Japanese cars, right?

Does that mean I have to lie and say I love them? I do like the Skyline GT-R...

As long as you know it's one of the best cars ever made in the whole wide world.

Well I...

Good! Give us a crazy Orlando story:

I don't have one. Nothing crazy happens here.

Crazy Vegas story?

OMG, where to begin! I guess my last night there is a good one. It was my going away party and all I remember is drinking champagne, dancing, drinking Patron shots, dancing, and then starting a fight with a girl, in a wheelchair. In that order.

You were picking on a girl in a wheelchair?!

No! I was in the wheelchair! I guess I got so shitty that I couldn't walk and they had to wheel me out of the club. Then apparently some chick was talking shit and I took a swing at her on the way out. [laughs]

That. Is. Awesome. Are you always a fighter, or just when you're blackout drunk?

I fought more when I was younger. But I like it—gonna lie. I'm a big boxing fan. Huge Pacquiao fan. And I used to practice Muay Thai. I still do it, but just for fitness.



You worked on the strip in Vegas; ever see those guys in town for a fight?

I saw Mike Tyson at Caesar's one night.

Punching photographers?

[laughs] No, but he was walking around with this tall, blonde girl. What's his wife look like again?

Pass. We like having unbroken jaws.

[laughs] And I saw Hulk Hogan at a steakhouse at Caesar's with his family. His son, Nick, is super nice.

What is with "Vegas shrimp" and why does it give everyone food poisoning?

[laughs] I never eat it.

Orlando versus Vegas: Who wins?

Vegas for sure! Orlando is boring—no beach, it's humid, it rains all the time, no mountains, and it's just too kickback for me. Vegas is Vegas, but just outside the city you have Red Rock for hiking and rock climbing, Mt. Charleston for snow, Lake Mead for water, and Cali's close. Plus, the money's much better out there.

Horatio versus Grissom?

Wait—what?

CSI, duh. Miami versus Vegas?

Oh! [laughs] You're a dork. It's OK, because I'm a nerd.

Do tell:

I wanted to go to school for biochemistry and nutrition, and I love studying history, religion, and lost civilizations. And I'm a huge grammar nazi! Wait . . . is Horatio the guy with the glasses and the one-liners? He wins.

Pacquiao versus Marquez?

Really? [sarcasm]

You versus the world?

What do you think?

You know where we're puttin' our chips. ♣



CATHERINE SIERA

Height: 5'5"

Measurements: 34C-26-36

Ethnicity: Laotian, Irish, Polish

Birthday: December 13

Age: 22

Sign: Sagittarius

Location: Orlando, FL

Websites: www.prestigiousmodels.com
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Thank you list: Prestigious Models, my family and friends, Chuck T, Kim Loan, Sergio and Patty, God.



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GEARBOX BEATDOWN

SYNCHROMESH VERSUS DOG BOX: MYTH BUSTING AND EXPLAINING MANUAL GEARBOXES



Before decoding synchromesh and dog gearboxes, it is critical to understand the beast. It's all about engagement; how the gearsets are selected within the transmission is the difference between synchromesh and a dog box.

SYNCHROMESH TRANSMISSIONS

Most modern cars are fitted with a synchronized engagement gearbox from the factory to deliver smooth, reliable, and quiet operation, which is paramount for a daily driven vehicle. Synchromesh transmissions operate using a collar that applies force to a cone-shaped clutch attached to the gear. The collar allows the shaft speed of the gearset and the input shaft to be matched or "synched" to the output shaft prior to the collar locking into place and initiating a shift.

Synchromesh gear engagement is best at lower engine speeds and requires a bit more time compared to a dog box, to facilitate shifts. Limitations of synchromesh gearboxes in high-performance applications include slow upshifting at very high engine speeds—e.g. 9,000 rpm—and slow downshifting, as well as the need to fully use the clutch.

DOG BOX TRANSMISSIONS

Dog engagement is normally used in racing applications where fast, precise shifting is needed. Dog gear



engagement is facilitated by numerous large teeth (dogs) that mate into matching openings machined into the opposite surface of the drive gear. Unlike the synchro engagement, there is no synchronizing mechanism to assist in equalizing speed. Ideal gear selection—e.g. minimal clashing and wear of the dog rings—is achieved by quick shifts; the motto here is "the quicker the better", so bang away.

There is no depressing the clutch in the conventional sense like with the synchromesh transmission. A momentary break in engine load until the shift is achieved by a quick throttle blip or clutch depression. The driver will then experience the dog ring engaging with the next gear and the throttle can be reapplied. With practice this can be done in milliseconds. In fact, a driver can preload the stick shift in the direction of the next shift, and then when he either blips the throttle or clutch the shifter will quickly click in the desired gear.

With all else equal, dog-engagement gears are much stronger than synchro-engagement gears because without needing to make space for synchro rings, the gears themselves can be made thicker. The number of dogs (teeth) and the size of the openings determine the window of opportunity that the dogs have to engage during the shift event. Rings with a smaller number of teeth provide a more efficient, smoother shift quality. The downsides to this easier engagement are increased noise and abruptness on the shift.

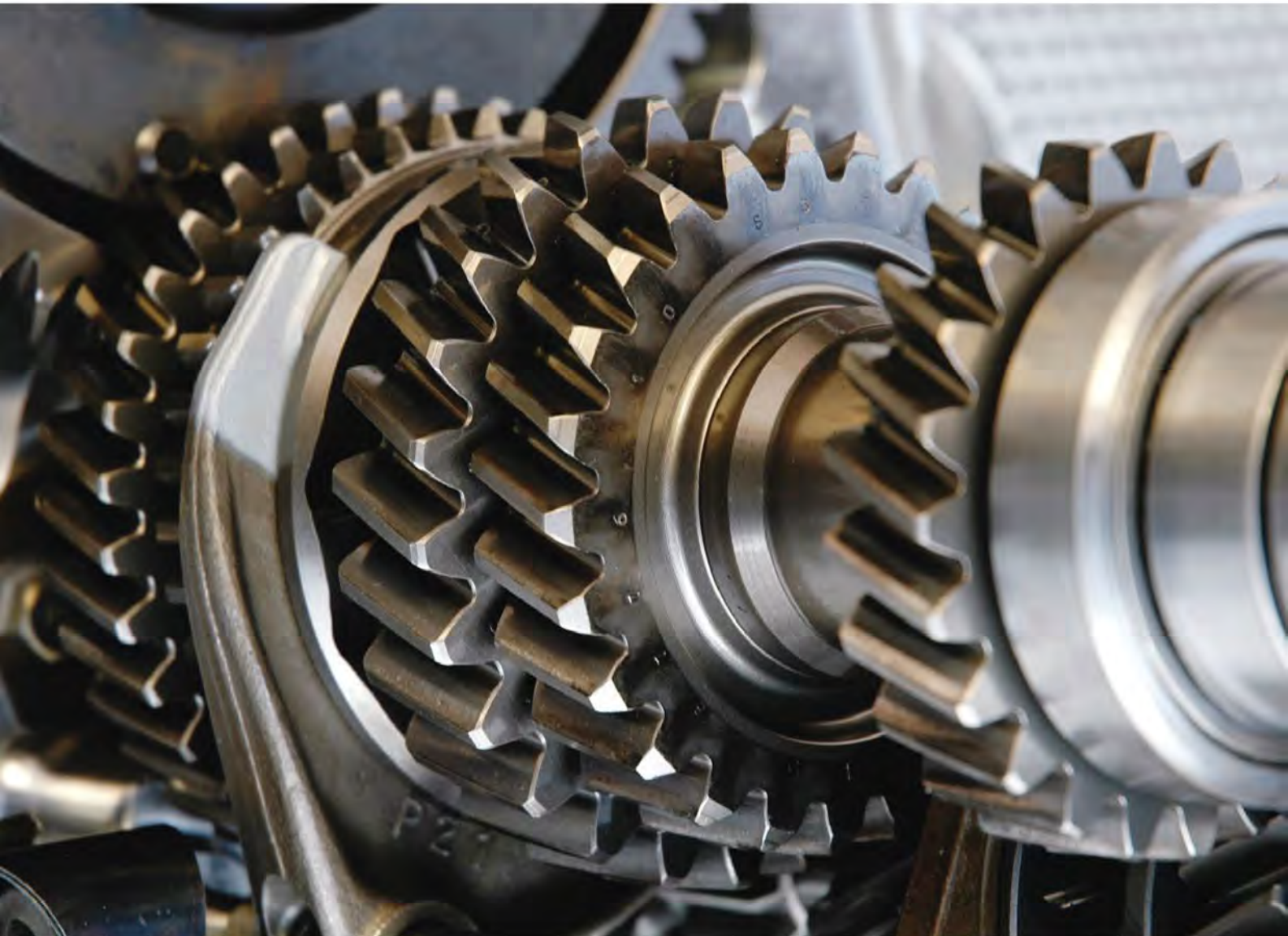
DOG GEAR DON'TS

The most destructive method of shifting dog gears is attempting to change gears in a "passenger car" or "synchromesh" manner. This involves slow shifting and use of the clutch—i.e. lifting off the throttle, depressing the clutch, moving the gear lever slowly, releasing the clutch, and applying the throttle—a scenario typically found in stop-and-go traffic.



STRAIGHT-CUT MYTH

The belief that dog boxes inherently feature straight-cut gears is a long-standing misconception. In fact, either type of gearset can be fitted with straight cut—also known as spur-gears as well as conventional helical-cut gears. The cut of the drive gear is a separate characteristic of the gearbox and does not affect the engagement of the gears.



THE DOG POUND

Dog engagement can be introduced to a stock gearbox by swapping gearsets. Aftermarket dog sets are usually made of higher-grade material and feature bigger, stronger teeth, and better profiles. Albins Gear, located in Australia, has moved to the forefront of the dog-box revolution, offering a wide range of dog-engagement gearsets as well as fortified synchro sets for Honda, Porsche, Nissan, Subaru, Mazda, VW, and Mitsubishi applications.

All Albins dogs feature a CAD "pent-roof" pentagon-shaped surface that deflects the dogs apart on a mis-shift, drastically extending the life of the gear. Albins dog gears are verified using a robotic CMM (coordinate measuring machine) to assure perfection with tolerances better than 0.015 mm on each and every part. Furthermore, Albins has been able to produce its own proprietary steel alloy with a consistency far superior to mass-produced, low-cost sets.

RACE PROVEN

Tacoma, Washington's SpeedFactory started testing the Albins gearsets in late 2009. A pair of SpeedFactory's turbo drag Civics were torture tested: a red 900-whp EK hatch that tipped the scales at 2,700 pounds with a driver, and a white Outlaw-class EG weighing in at 2,450 pounds and producing 1,100 whp.

SpeedFactory reports that the synchro set ran a best e.t. of 9.6 seconds at 158 mph in the red Civic and 9.4 at 164 in the Outlaw car, whereas switching to a dog-engagement setup ran a best e.t. of 8.8 at 172, and 8.9 at 179 in the white Outlaw car. "It's tough to attribute new best e.t.'s to any one thing due to constantly changing tracks, track prep, atmospheric conditions, tunes in the cars, and other parts on the cars," SpeedFactory's James Kempf says. "What we have gained



with the Albins gearsets is reliability and peace of mind that we didn't have with other gearsets we've used. The Albins have performed flawlessly and incorporate unique design features that we have found to be superior to other gearsets."

While a dog box can be street driven with some practice, it is far from ideal for a primarily street driven vehicle. But if you need to pound the gears at the strip or time-attack road circuit there is no better way to go.

Synchromesh Versus Dog Box Gearset Comparison

Notice the thicker gears and teeth of the Albins unit (below) and the cuff that replaces Fifth gear (unnneeded in the quarter-mile) and ties the two shafts together for added strength. The Albins gears and teeth are not only thicker, but they are also made from the company's proprietary steel alloy for superior metallurgical strength.



Cone and Dog Rings

Here is the big difference between synchro and dog boxes. The synchromesh ring (left) uses a cone that a brass clutch ring pushes against to equalize the speed between the gear and the input shaft to ease gear engagement. Once this happens, the small pointed teeth around the perimeter deflect off the engagement ring and allow the slider to engage the gear. The dogs have four large engagement teeth that drop into large windows in the slider, and can engage the gear even when spinning at a different speed than the input shaft.



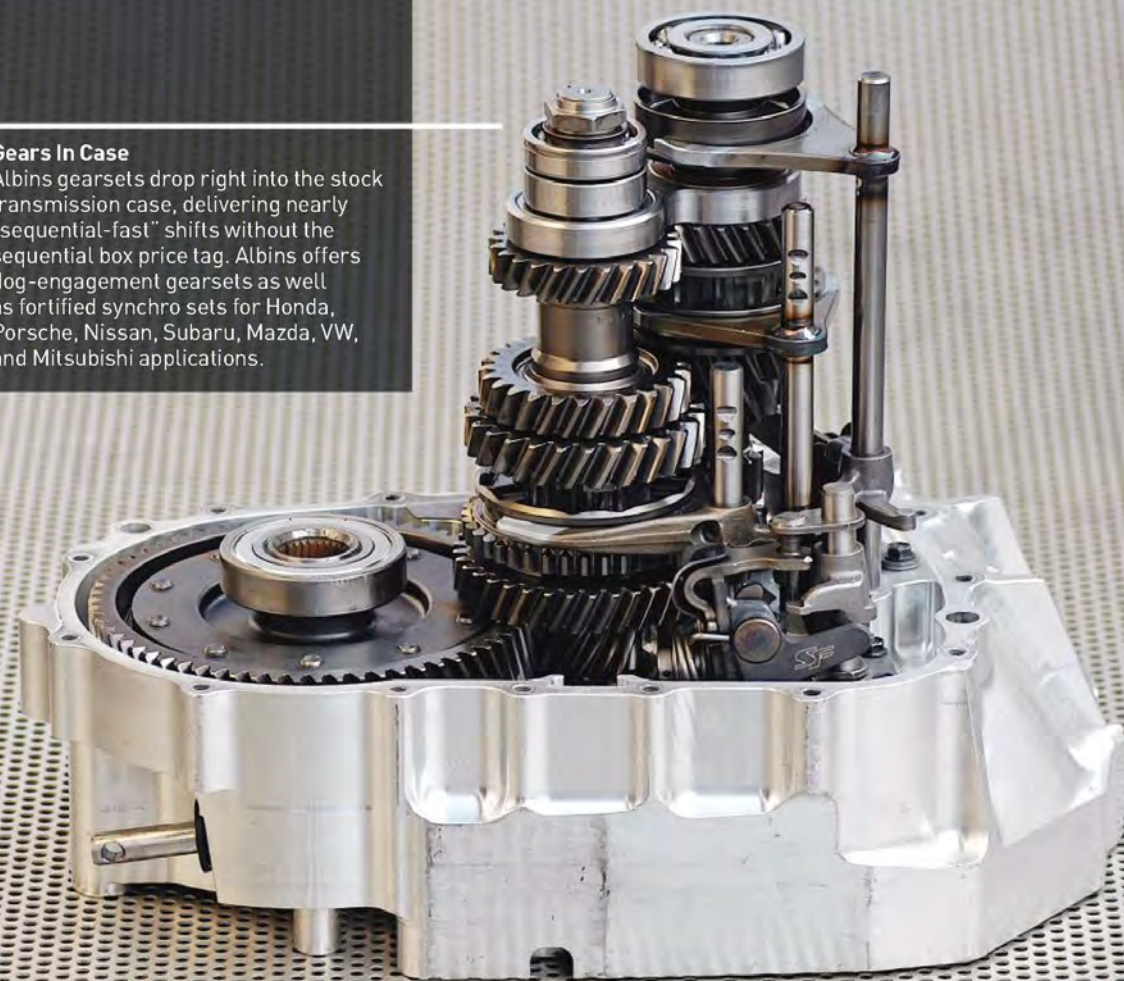
Rings and Gears

Here we see the rings on their appropriate gear. This is how they would be installed in the transmission.



Gears In Case

Albins gearsets drop right into the stock transmission case, delivering nearly “sequential-fast” shifts without the sequential box price tag. Albins offers dog-engagement gearsets as well as fortified synchro sets for Honda, Porsche, Nissan, Subaru, Mazda, VW, and Mitsubishi applications.



SpeedFactory's Outlaw-class Civic has been a rolling 1,100-whp gearset cruncher. It has competed up and down the West Coast and as far east as Englishtown. Its best efforts to date are 8.89 at 172 mph and 8.92 topping out at 179 mph, and Albins gearsets have contributed greatly to its reliability and consistency.



GEARSET SAVIOR

SPEEDFACTORY BULLETPROOFS THE B-SERIES TRANSMISSION

SpeedFactory Racing has developed an innovative modification for B-series hydraulic transmissions that eliminates inherent problems in the mechanism, avoiding the "speed shift blues" in street cars and race cars alike.



The SpeedFactory modified SCHA (left) has a CNC'd tool steel shift change arm (with SF logo). Also, note the beefier return spring of the SpeedFactory piece at the far left.



SpeedFactory also welds the baseplate in several places for added strength and rigidity, and to prevent stress fractures. The custom SCHA will save transmissions by ensuring proper engagement in less than ideal shift scenarios.

SCHA Rear Buttress

Note the buttressing between the baseplate and the spring pad. This is just one of the seven different modifications SpeedFactory makes to the SCHA to ensure happy gear slamming.



The Shift Change Holder Assembly (SCHA) is the problem child. Located inside the transmission case, the SCHA is the mechanism that actually moves the shift forks into position, engaging each gear as it's selected via the stick shift. SpeedFactory modifies the SCHA in seven different areas to withstand the rigors of hard shifting in standard synchromesh or dog-engaged transmissions.

The stock shift change arm is the weakest link of the SCHA. The stock arm is made of low-quality stamped steel and over time is susceptible to stress cracks or bending when speed shifted. SpeedFactory replaces the stock arm with a heavy-duty, heat-treated arm CNC-machined from tool steel that will not bend or break.

The interlock piece is also a potential problem. SpeedFactory installs a brand-new OEM interlock, braces it, and performs some polishing/profile mods to endure the abuse of repeated power shifts, be it on the street or at the track in a drag racing application.

Finally, the shift select return spring has been upgraded with a much stronger unit. This gives the shifter a more positive feel, and returns the shifter to the center position with authority.

Beyond fortifying the transmission against breakage, the SpeedFactory SCHA also adds efficiency to the shifting process, especially the 2-3 shifts. Just push the shifter forward, and it will automatically drop into Third gear. It pulls the shifter to the center position with speed and precision to help eliminate the dreaded 1-2-1 or 2-3-2 gear mis-shifts.

The SpeedFactory improvements have been thrash tested on the company's wicked 1,100-whp, 8.89-second Outlaw Civic with great success, ensuring more consistent shifts, lower e.t.'s, and saved transmissions for weekend warriors and hard-shifting, real-world street drivers alike. 



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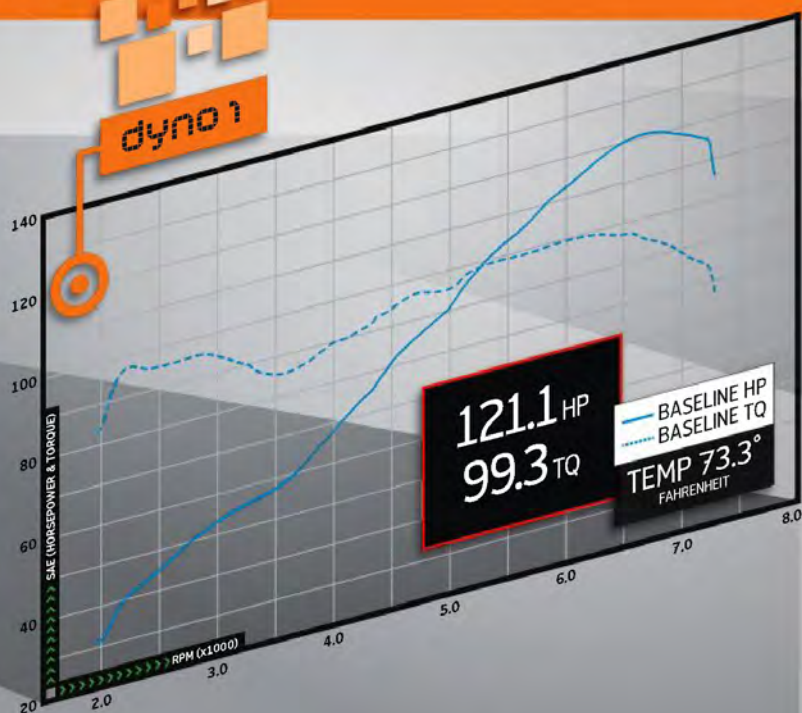


PROS

Honda's dominance in the subcompact market has been accredited to the simple ideology that an economical vehicle doesn't have to be just another boring commuter car. The fifth-generation Civic's lightweight, nimble, and affordable platform has been considered for many years the ultimate blank canvas for enthusiasts in building a competitive vehicle.

CONS

Unfortunately, all '92-95 Si and EX models possess an inherent weakness under the hood, namely their 1.6L VTEC engine (D16Z6 engine code), pushing a meager 125 hp.



NOTES

Prior to testing this month, we should note that our 1.6L engine was equipped with a DC Sports 4-2-1 header, RSR cat-back exhaust, Random Technology high-flow cat, K&N short-ram intake, and Hondadata S300 ECU. With those modifications, the D16Z6 engine netted baseline power figures of 121.1 hp and 99.3 lb-ft of torque.

dyno 2

- HORSEPOWER GAIN**
- 2,000 to 3,500 rpm range: 0 to 3
 - 3,500 to 5,500 rpm range: 2 to 3
 - 5,500 to redline rpm range: 3 to 2

- TORQUE GAIN**
- 2,000 to 3,500 rpm range: 0 to 5
 - 3,500 to 5,500 rpm range: 2 to 2
 - 5,500 to redline rpm range: 2 to 1



BLOX RACING

66MM BILLET THROTTLE BODY (TUNED)

PARTS

Blox throttle body, gasket, TPS sensor, installation hardware, stickers

TOOLS

10 and 12mm sockets, ratchet, extension, screwdriver, 8, 10, and 12mm Allen wrenches, pliers, Teflon tape, vacuum cap

INSTALLATION TIME

55 minutes

PROS

Blox Racing billet throttle bodies are available in sizes ranging from 66mm to 76mm for the Honda and Acura D-, B-, and H-series engines. The billet throttle bodies feature brass throttle plates, stiffer throttle springs, and a pulley designed with sealed bearings that allows for smooth pedal modulation.

CONS

With the OEM throttle body measuring 55mm in diameter, using the Blox 66mm throttle body requires port matching of the OEM intake manifold for best results. Installing the Blox throttle body requires repositioning the factory throttle cable bracket closer to the throttle body in order to reduce cable tension and high-rpm idle, along with sourcing a rubber cap to seal off a vacuum port on the manifold.

NOTES

The Blox Racing throttle body was tuned with our Hondadata S300, delivering an increase in horsepower and torque across the board, with a gain of 3 hp and 3 lb-ft of torque through the low to mid range and at 6,500 rpm. Many consider the throttle body excessive in size, but more extensive engine work, such as larger cams and higher-compression pistons, demand increases in airflow, thus justifying a larger throttle body.





HONDA OEM D16Y8 INTAKE MANIFOLD (UNTUNED)

PARTS

Intake manifold, fuel rail, throttle-body gasket (dealership part), silicone

TOOLS

10, 12, and 14mm sockets, 10, 12, and 14mm open-end wrenches, ratchet, extension, crescent wrench, pliers

INSTALLATION TIME

80 minutes

PROS

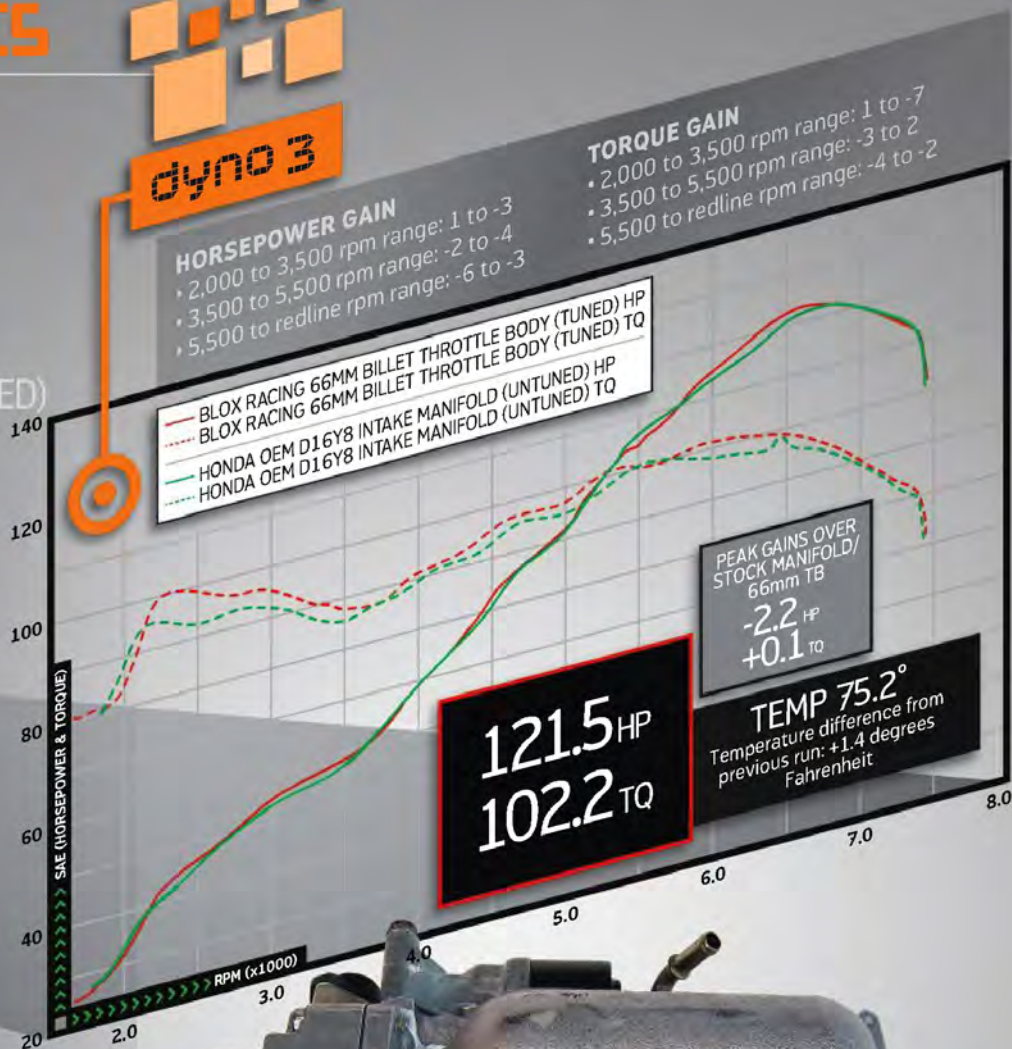
It was clear that Honda engineers intended the D16Z6 engine to be an economical powerplant—not a fire-breathing monster. Why come to that conclusion? A good reason is found when looking at the intake manifold, and then comparing it to the D16Y8 manifold found on all '96-00 Civic Si and EX models. When comparing both units side by side, the D16Z6's smaller intake runners and more compact intake plenum were designed for better low-end acceleration. The D16Y8 manifold we sourced from local junkyard features shorter, fatter runners with less curvature, along with a larger plenum, which—in theory—should be more efficient at producing high-rpm horsepower.

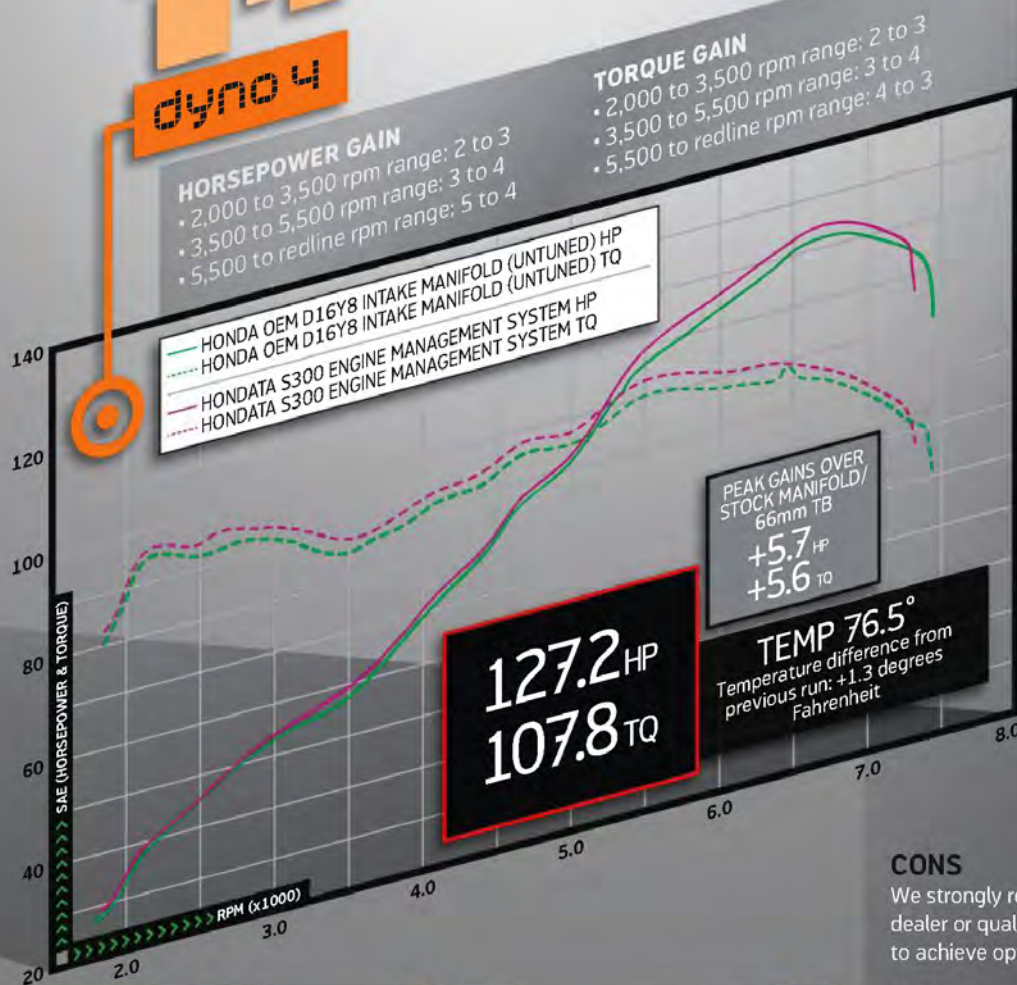
CONS

Installing the manifold requires transferring a number of parts, including the fuel injectors, EGR control solenoid valve, PCV valve, as well as purchasing a new throttle-body gasket and intake manifold gasket. We discourage anyone from reusing gaskets, to ensure a leak-free seal.

NOTES

We began phase three of testing upon installing our new intake manifold this time without altering our previous Hondadata map, to better expose the importance of tuning. The Civic idled rough, struggled on the dyno, and surprisingly made only 121.5 hp and 102.2 lb-ft of torque—a loss of 2.2 hp and 0.1 lb-ft of torque over our previous run. A quick analysis showed changes to our previous air/fuel ratio, as the engine was running rich (12.8:1 A/F ratio) from idle to 5,000 rpm, and lean from 5,100 rpm to redline in VTEC. Although we suffered significant horsepower and torque losses throughout the powerband, we were confident that with proper tuning of our Hondadata S300, we could recoup the power losses during our final stages of tuning.





HONDATA

S300 ENGINE MANAGEMENT SYSTEM

PARTS

Hondata S300, USB cable, stickers, instructions, CD-ROM

TOOLS

Laptop, tuning skills

INSTALLATION TIME

Full day process

PROS

Adding bolt-on components like a header, exhaust, and intake, as well as making various modifications to an engine without proper engine management tuning is a guarantee that horsepower gains will be minimal at best, as proven by our intake manifold test. The Hondata S300 uses a high-speed USB connection for both programming calibrations and data logging, which allows the tuner to fine-tune all upgrades to achieve maximum gains throughout the powerband. Real-time tuning, data logging, expanded fuel and ignition tables, and launch control with anti-lag are many of the features that accompany the Hondata S300 unit.

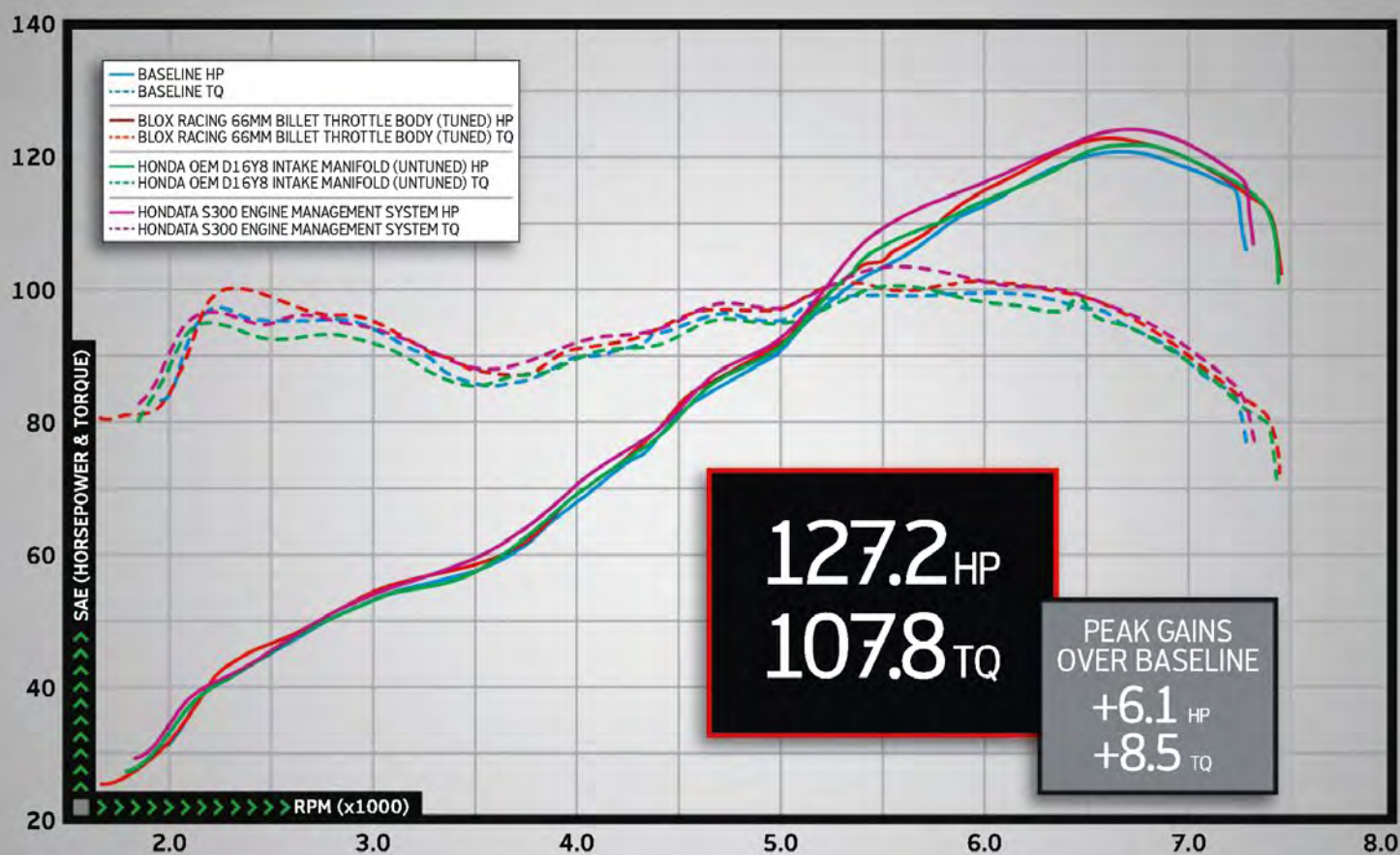
CONS

We strongly recommend you have an authorized Hondata dealer or qualified technician install and tune your S300 to achieve optimal power gains and driveability.

NOTES

Elton Lo, of Raceline Development, carefully remapped the Hondata fuel and ignition tables by adding additional fuel at higher rpm to compensate for the increased airflow of the throttle body and manifold. The Civic responded with 127.2 hp and 107.8 lb-ft of torque—a peak gain of 5.7 hp and 5.6 lb-ft. A 5 hp and 4 lb-ft of torque gain was made from 5,700 to 7,000 rpm over our original D16Z6 intake manifold. Higher rpm benefited from the improved design of the intake's larger-sized plenum and throttle body, with 5 hp and 4 lb-ft of torque, with a sacrifice of low- to mid-range horsepower over our previous D16Z6 intake manifold and Blox throttle-body dyno run.





CONCLUSION

	HP	+HP	TQ	+TQ
BASLINE	121.1	—	99.3	—
BLOX RACING 66MM THROTTLE BODY	123.7	2.6	102.1	2.8
HONDA D16Y8 INTAKE MANIFOLD	121.5	-2.2	102.2	0.1
HONDATA S300	127.2	5.7	107.8	5.6
FINAL	127.2	6.1	107.8	8.5

BANKROLL

BLOX RACING 66MM THROTTLE BODY	\$350
HONDA D16Y8 INTAKE MANIFOLD (USED)	\$70
HONDATA S300 ENGINE MANAGEMENT SYSTEM	\$495
TOTAL:	\$915



CONCLUSION

Testing our Civic with a throttle body, intake manifold, and fuel management tuning netted us a gain of 4 hp and 3 lb-ft of torque in the low end, and 5 hp and 4 lb-ft of torque up top over our baseline run. It might not seem like much, but these modifications serve more to pave the way for future mods like headwork, an aggressive cam, or turbo, and more, which would help this engine deliver performance numbers on par with many of the popular B-series engines. **it**

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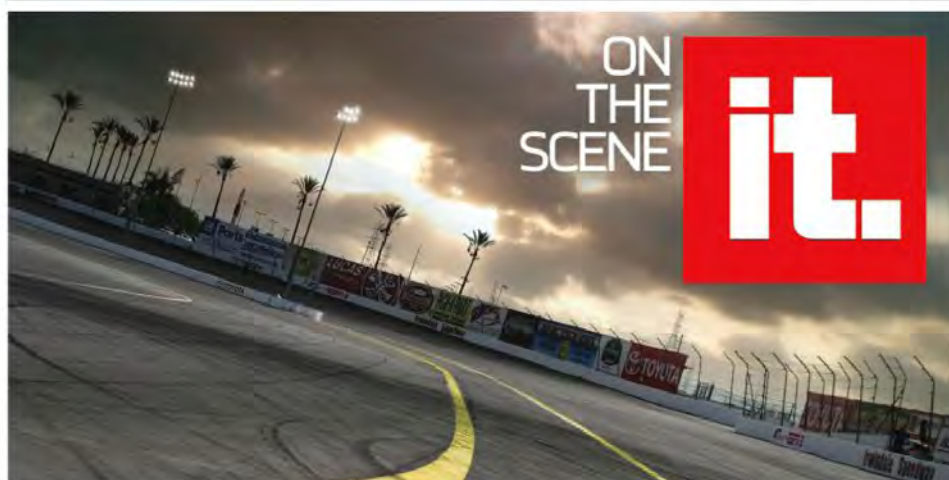
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- Mitsubishi 4G63 2.0L DOHC, EV08
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Chassis flex is the nemesis of any good handling car. It's no secret that race cars rely on rollcages and/or stitch welding to stiffen the chassis, but the question remains, how rigid should your car's chassis be?

Generally speaking, you would want the chassis to be as rigid as it can be for handling reasons. The more rigid, the less chassis flex. Ultra Racing of Malaysia offers chassis bracing for numerous vehicles as an alternative to rollbars/cages, which are dangerous when used inside a

street-driven car without the safety of a helmet.

Chassis bracing helps stabilize the chassis and suspension mounting points to minimize flex during hard driving. In fact, it helps every component in the suspension system do its job properly, and you can feel the difference through improved turn-in and sharper steering response, along with greater steering feedback.

Ultra Racing chassis bars were installed on our Subaru Impreza WRX using a service lift and air tools, but can also be installed using basic handtools, a jack, jackstands, and some assistance from a friend to aid in bolting on the braces.



Strut Bars

Strut bars prevent chassis flex caused from horizontal movement in the strut towers. Strengthening the strut towers allows the chassis to stabilize under hard cornering with increased road.

Ultra Racing strut bars are constructed using high-strength steel tubing that is reinforced with laser-cut steel endplates to eliminate movement in the bar. The non-adjustable strut bar design is more rigid than adjustable bars, which flex at the hinge joints under extreme loads.



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Side Lower Bars/Floor Bars

Ultra Racing side lower bars/floor bars attach to the underside of the vehicle body, and their triangulated design ties together the inner/outer framersails and the rear lower control arm mounts. The one-piece lower floor bars mount using four anchor points for increased rigidity and are recommended by Ultra Racing for any car with upgraded springs, shocks, or sway bars.



Fender Braces

The Ultra Racing fender braces replace the flimsy stamped-steel OEM fender braces on the WRX to limit deflection of the chassis under cornering and braking loads. The Ultra Racing three-point fender braces (also called "K" braces) stiffen the front by providing a strong link between the bulkhead and the area just beyond the firewall. Much like a strut tower bar helps eliminate side-to-side forces, the fender brace works to eliminate vertical movements and improve steering response.



Front Four-Point Ladder Braces

The ladder brace bridges the left and right suspension arms' mounting points together to reduce flex and twisting of the chassis. While many of their competitors' braces require the removal of the factory subframe support, which affects the integrity of the chassis, the Ultra Racing brace retains usage of the WRX OEM subframe for additional chassis strengthening. The brace is also designed to accommodate exhaust clearance by $\frac{3}{8}$ inch for fitment of larger-diameter downpipes.



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01 JE PISTONS FOR HONDA B-SERIES VTEC ENGINES

JE Pistons announces the expansion of their Honda product line to include purpose-built drag racing pistons for all Honda B-Series VTEC engines. The new pistons are forged from high-strength 2618 alloy and feature an E85 and race-gas-friendly 10.0:1 compression ratio. The overall design includes a flat-top piston crown that's ideal for optimal flame travel, larger-sized top ring land, and a shorter, stiffer wristpin to meet the needs of today's high-horsepower Honda drag race engines.

JE Pistons / 714.898.9233 / www.jepistons.com



02 GOPRO BATTERY BACPAC

GoPro, the company that revolutionized wearable and gear-mountable HD cameras, announces the release of their removable expansion Battery Bacpac. The Battery Bacpac is a standalone GoPro battery charger that attaches to the back of the 1080p HD Hero, increasing video and time-lapse photo recording times to over five hours on a single charge.

GoPro / www.gopro.com

03 SSR WHEELS SPECTRUM SILVER

SSR Wheels' spring 2011 lineup offers a limited-edition Spectrum Silver color option for all Professor, Werfen, and Vienna wheels. This special-order color is applied by SSR to the face/discs only (not applicable on barrels/lips) for an additional fee to exhibit a "rainbow" effect on the wheel, giving a vibrant look, never before offered on SSR wheels.

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04 DASHCOMMAND VIRTUAL GAUGE DISPLAY

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Palmer Performance Engineering
www.palmerperformance.com

05 KICKER SUBARU IMPREZA SUBWOOFER ENCLOSURE

Kicker announces their partnership with Subaru of America as exclusive OE suppliers of subwoofer enclosures for all '08-11 WRX/STI sedans and five-door models. The enclosure includes a 10-inch subwoofer powered by an integrated 100-watt, high-efficiency digital amplifier, and comes in a molded enclosure that's made to fit in the trunk, leaving plenty of cargo space available. The amplifier connects into the existing Subaru audio system using a true plug-and-play wire harness.

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06 P2R 350Z THERMAL THROTTLE-BODY GASKET

P2R Power Rev Racing's throttle-body gasket helps reduce intake air temps by isolating direct contact of the throttle body to the intake manifold. Placing this thermal gasket between the throttle body and the intake manifold reduces the amount of heat soak the intake manifold normally absorbs, to promote a cooler charge for additional horsepower.

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They say a talented amateur can make a difficult task possible, but it takes a master to make a difficult task seem easy. Garland, Texas' Sy Pham—this month's Longshots contributor—might not yet consider himself a master, but his shot of this Drift-prepped S13 240SX fits the qualifications. Let's let him explain:

S13 NISSAN 240SX

PHOTOGRAPHER: SY PHAM

LOCATION: ADDISON, TX

SHOT LOCATION: ADDISON, TX

EQUIPMENT: CANON EOS 5D MKII, 50MM F/1.8 LENS, 580EX II FLASH; ADOBE LIGHTROOM 3, PHOTOSHOP CS5

SHUTTER: 20 SECONDS

APERTURE: F/22

ISO: 400

FOCAL LENGTH: 50MM

SUBJECT-CAMERA DISTANCE: 17 FEET

CAMERA HEIGHT: 2 FEET

CONNECT: WWW.FLICKR.COM/SHORYUUU

FROM THE ARTIST

"This shot was created using an unusual method, but one that's a lot easier than it might seem. With my camera secured on a tripod, the car positioned where I wanted it, and the image framed, I made one 20-second exposure that would be enough to expose the background, but not fully expose the car. Then, during those 20 seconds, I manually fired my 580EX, aiming it at areas of the car that weren't covered by the ambient light like I wanted. I made sure to make a few different exposures—better to have ones I didn't like than not have one I did.

"The image I liked best was then opened in Lightroom 3 to adjust exposure, contrast, and color temperature (white balance), before it was exported to Photoshop for fine-tuning: more specific color balance, exposure adjustment, slight desaturation, cloning/cleaning, and some sharpening. It may look like the entire scene is lit by just that one overhead street light, but there's really a lot more into it—just how I wanted it to look." 



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Concept G is a lightweight, motorsports exhaust system featuring high power benefits while maintaining responsible sound levels with Advantex packing material. This system features SUS304 stainless steel, 1.2mm wall piping, hollow hangers and still operates under 93db.



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