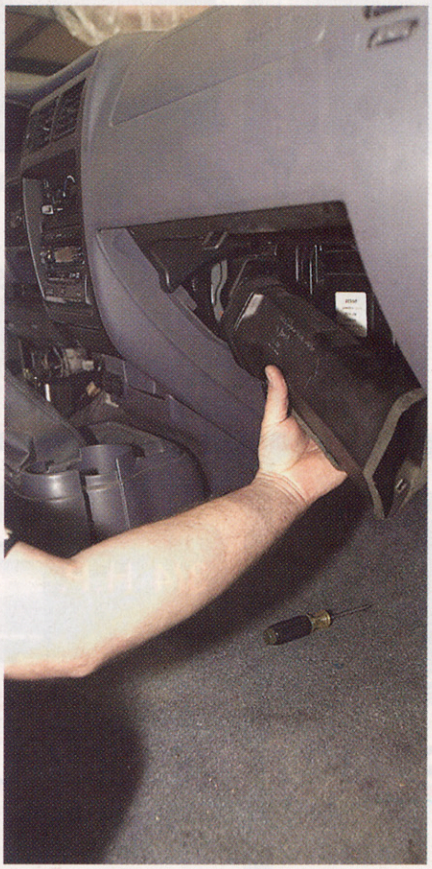
SPLIT SECOND

A TKO for Weak Performance

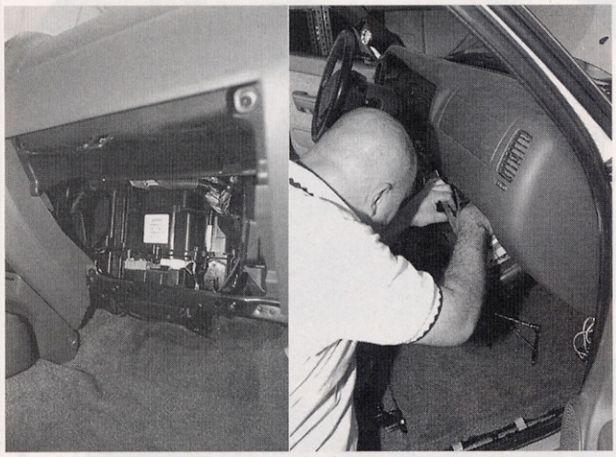
By Lance Martz • Photography: Lance Martz

About a year ago, we did an installation article on a TRD supercharger for the V-6 Tacoma. Since TRD offers this upgrade as an addition for all V-6 trucks, we figured that installing the supercharger would be a simple bolt-on deal, with no negative after effects. As it turns out, we were wrong. The truck simply wouldn't put out the kind of power we'd seen in S-Runners and other TRD-built performance trucks, and we wanted to know why. Having never really received any straight answers and running a "pinger" pulley on the supercharger to keep it from detonating, we contacted the Split Second crew to install one of its Fuel/Timing Calibrator engine management boxes. We then dyno-tested the truck to create a map for it, which would allow it to boost and actually create usable horsepower. Before tuning, the truck made 140 hp and 202 lb-ft of torque. What we ended up with were answers to some long-standing nagging questions about the supercharger and a boatload of horsepower than we hadn't previously seen. We still have some tuning to do, and there's still some untapped horsepower that we feel we can get from the truck, but the amount we picked up just by adding the box and tuning the fuel map was amazing. Follow along and contact Split Second using the information in the source section to find out how the crew can make your truck perform like you never thought possible.

1. The glovebox was first removed to gain access to the truck's ECM.

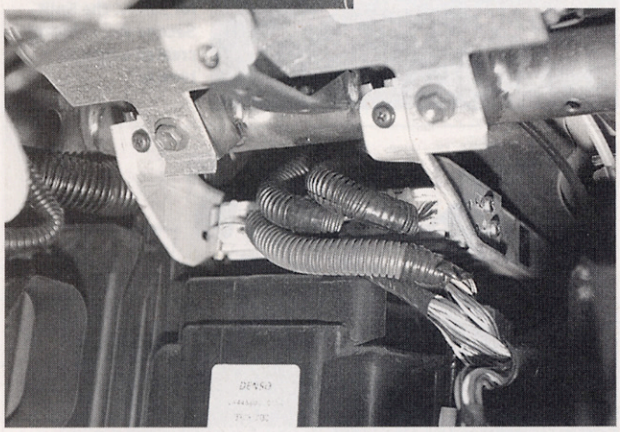


2. Next, the A/C ducting running across the back of the glovebox was removed to reach the ECM wiring harness.

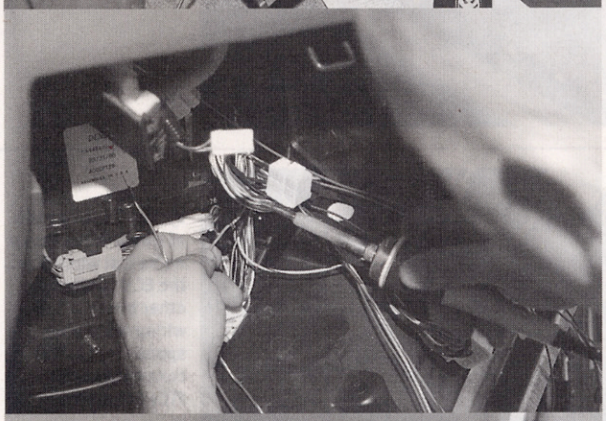


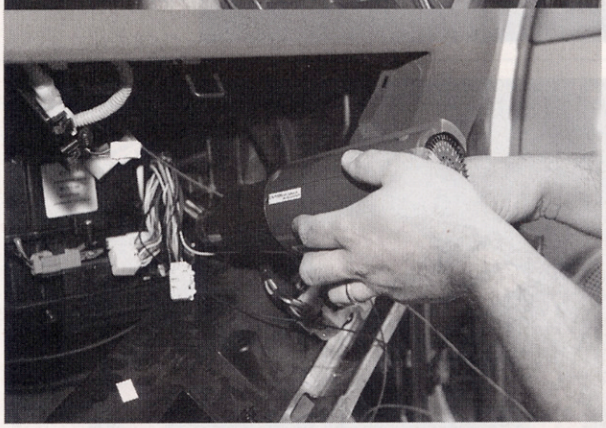
3. & 4. With the truck almost disassembled enough to begin installing the FTC1 Fuel/Timing Calibrator, the panel just above the glovebox also needed to come off.

5. & 6. After locating and unplugging the main harness in the truck's ECM, we'll be tapping into the ECM in several places to properly tune the truck using the FTC1.

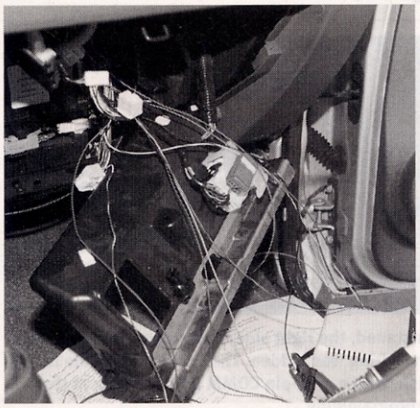


7. Once the wiring harness was unplugged, we used the instructions provided to locate which wires would be cut and spliced in for properly wiring the FTC1 Calibrator.



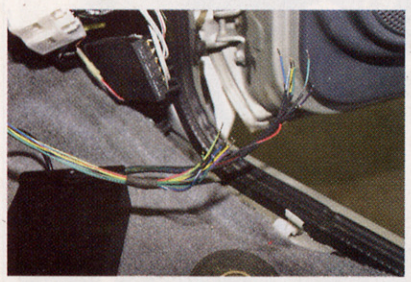


8., 9. & 10. Each connection was made at the ECM first, then soldered together before being heat shrink-wrapped to ensure a permanent and weatherproof connection.

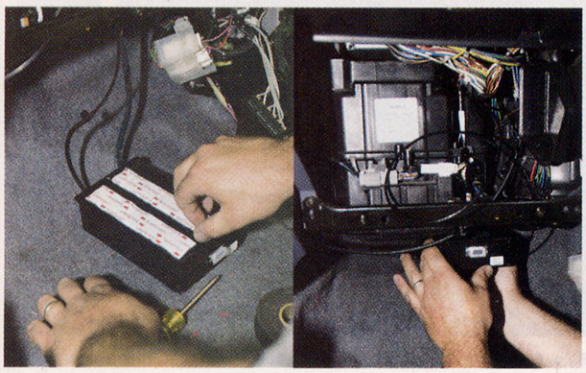


11. At this point, things looked rather messy, but it was controlled chaos — we promise. As soon as all the wires are tapped into the ECM, things will look a lot cleaner.

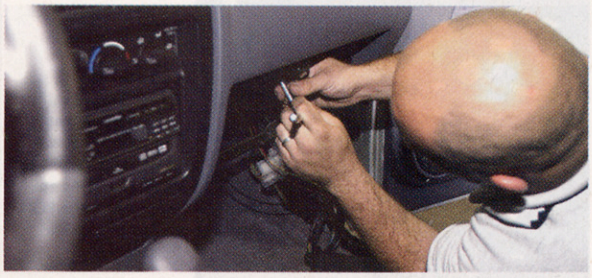
12. With all the wiring connected, soldered, and heat-shrunk at the ECM, the wires were bundled. The correct length needed for installation was then determined so the wires could be cut to the desired length.



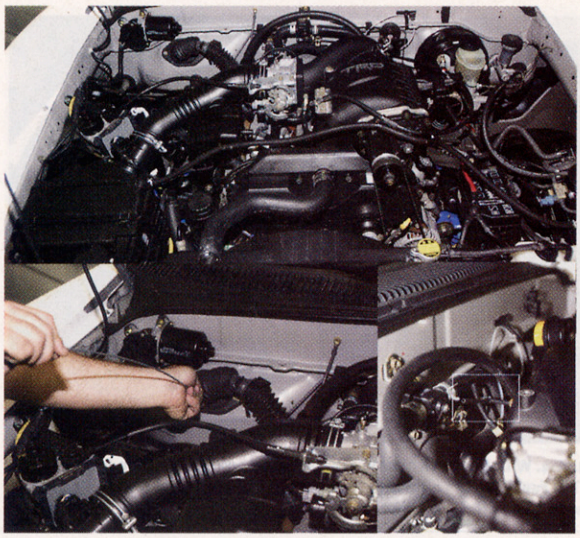
13. The frayed bundle of wiring is the bunch we've just wired into the ECM, while the other bunch is the wiring that corresponds to it and is connected to the FTC1 Calibrator.



14. & 15. Once all the wires from the ECM and FTC1 were soldered and shrink-wrapped, double-sided tape was used to mount the FTC1 box under the dash on the passenger side.



16. With the calibrator installed, the right side of the lower dash was put back together, and all the wiring was hidden. The only thing visible is the box sitting under the dash, with a nine-pin COMM port pointing at the passenger seat to allow programming.



17., 18 & 19. We popped the hood of the truck only once to run a section of vacuum/boost line from the calibrator box to the supercharger to determine the truck's state of boost. This allows the box to be programmed for corrections in timing and fuel for any rpm range.

20. Next, we took the truck to a dyno to have it tested and tuned. With the truck strapped down for safety, the Split Second R-4 software created a map to tune it.

21. After tuning, we came up with an increase of 66 hp and 40 lb-ft of torque. We realized something was still wrong with the truck since we weren't able to get the amount of fuel we wanted no matter what we did with the tuning software. Next, we'll attempt to track the fuel problem down. We could find as much as 220 total horsepower under the hood. We'll clue you in when we find the answers.

Source

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