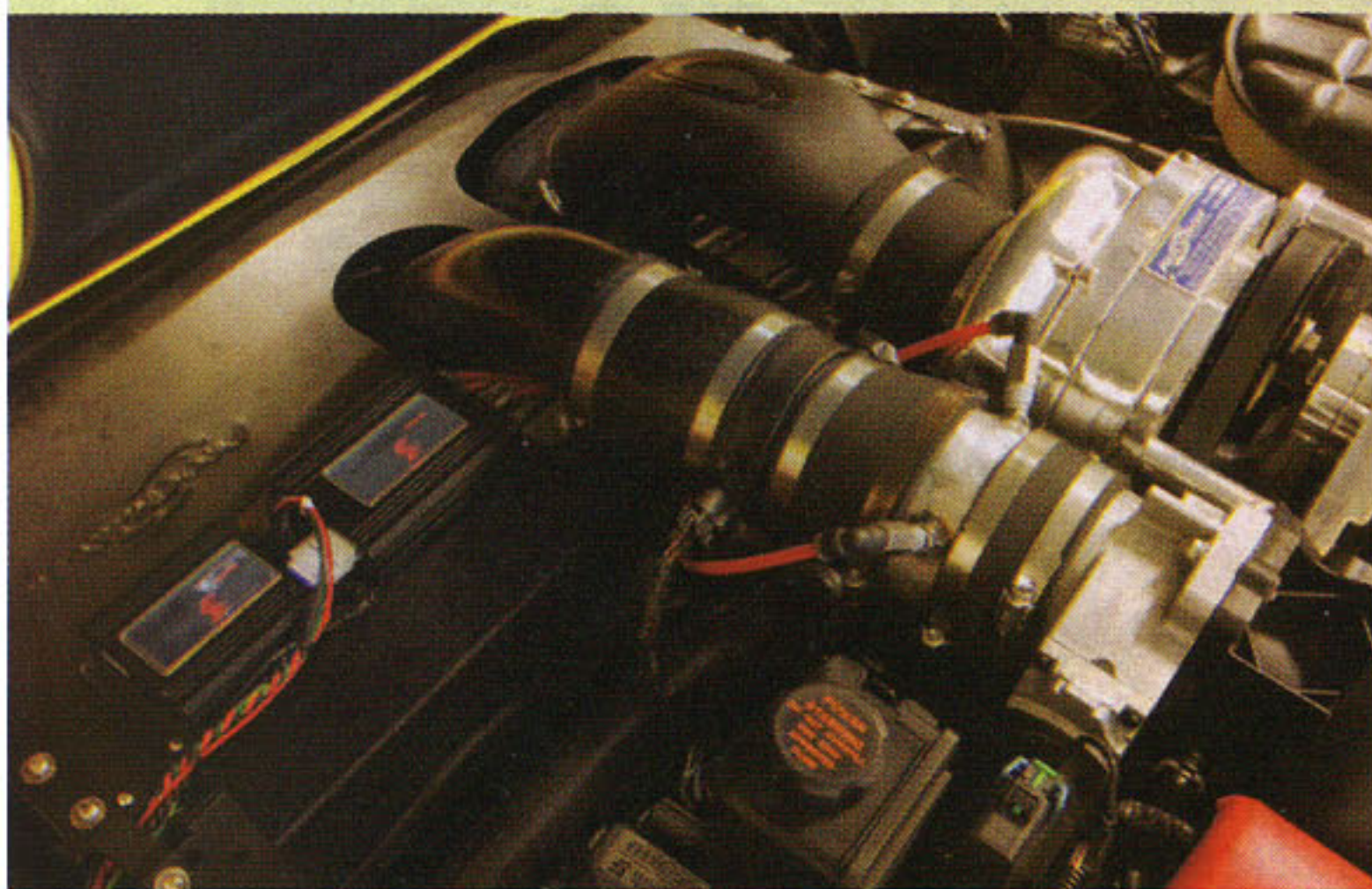


QUICK TEST



> **Above left:** The kit we used is the Stage-2 Boost Cooler (PN 20010), which is recommended for all centrifugal superchargers. > **Above right:** We also added the optional SafelInjection (PN 30010) with a blow-off valve upgrade (PN 30030), which includes a solenoid to open the blow-off valve to release boost and protect the engine if the flow of Boost Juice should be too low.



> We used a piece of 4-inch-od exhaust pipe and two hex nuts to fabricate the adapter for the Boost Cooler nozzles. In any installation, be careful to keep the nozzles several inches away from the mass air meter.

> The now double-intercooled Vette laid down an impressive 639.5 hp at 6,364 rpm and 553.8 lb-ft of torque at 5,388 rpm with 91-octane and a safe air/fuel ratio.

SNOW PERFORMANCE BOOST COOLER

Boost is your friend, but detonation is your worst enemy. Unfortunately, the two often go hand-in-hand in forced-induction engines, and it's a fine line between fine-tuning to get those last few numbers out of the engine and crossing over into potentially disastrous territory. Intercooling goes a long way toward helping the situation, but oftentimes packaging can be a concern on street cars. Such was the case with our '04 Z06 Corvette test subject. The ProCharger kit for this car actually uses two intercoolers behind the vents in the front fascia, but because of space and airflow limitations on the stock Vette, they were roughly the size of a heater core. Water/methanol injection, essentially a chemical intercooler, is supposedly more effective than standard air-to-air intercoolers at less than 20 psi of boost, so we spoke with Matt Snow of Snow Performance to put together a water/methanol injection kit to see what we could safely squeeze out of the Z06.

With 91-octane in the tank, even 14 degrees of timing was causing the knock retard sensor to dial back the advance. Using HP Tuning software and a few test pulls on the dyno, Robert Barth from Strictly Performance in Van Nuys, California, was able to get the Vette into the 12.25-12.50 air/fuel ratio range, and at the aforementioned 14 degrees of timing, we saw 585.6 hp at 5,906 rpm with 540.3 lb-ft of torque at 5,430 rpm on Westech's chassis dyno with 10 psi of boost.

This is the ideal air/fuel ratio to begin with when installing the Boost Cooler, and with patient tuning of the ECU and the Boost Cooler kicking in around 3 psi (~3,500 rpm), we were able to dial in an impressive 24 degrees of timing with the knock retard occasionally dialing back about 1 degree. With a little more dyno time, we would have most likely remedied this as well. Best of all, the car picked up more than 50 hp to the wheels and the air/fuel ratio stayed well within the safe 12.00-12.25 range for most of the dyno pull. —CHRISTOPHER CAMPBELL

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