

UNLOCK HIDDEN HORSEPOWER • CHOOSE THE RIGHT OIL • MAZDA RX-7 • NISSAN SKYLINE

Grassroots Motorsports

THE HARDCORE SPORTS CAR MAGAZINE

LOOKING BACK:



25 Years of GRM feature cars

18 POWER SECRETS

Dyno test extravaganza!

Maximize your tuning time



WIN A SET OF RACE RAMPS!
see page 12

CORONA CA 92879-1286

V9011
10043
22376
P0218

#BXNKPEN TO**SCH 5-DIGIT 92877
JASON BRUCE
ADVANCED FLOW ENGINEERING
191 GRANITE STREET

METHODS: For Road Race and Autocross

speed3, BMW 335i and Dodge Neon

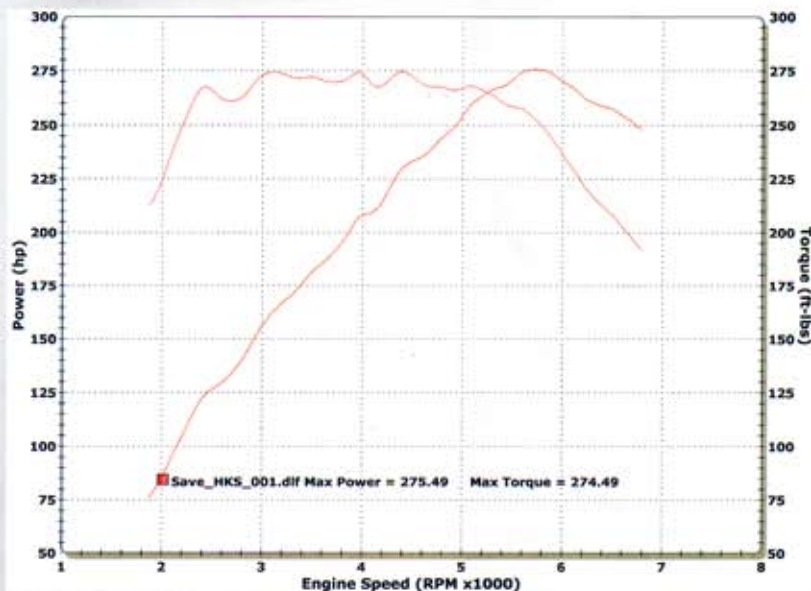
DIY: DIY fabrication tips from the pros

School Style: Classic Nissan Skyline

GrassrootsMotorsports.com



Grassroots Motorsports
1984-2009



Baseline

horsepower: 275
torque: 274 lb.-ft.

Several months had passed since our exhaustive muffler testing, so we once again ran the car on the dyno to recreate our baseline for this day of testing. Our numbers for the several baseline pulls were slightly lower than our prior figures—we were down 5 horsepower and 8 lb.-ft. of torque.

Since the numbers were still in the realm of normal for an engine of this type, we wrote off the difference as a result of pump gas formulation, weather and possibly the celestial tides' effect on BMW engine programming.

It had been a few months since we last tuned our BMW 335i, so we performed another baseline run. Our plan for this dyno session included testing a new intake setup and a pair of piggyback ECU turbo controllers.

aFe Stage 2 Air Intake System

horsepower: 279
torque: 278 lb.-ft.
price: \$469 plus \$129 for scoops
installation time: 45 min.

The factory BMW intake, like those on most modern cars, was designed more for sound attenuation than maximum performance. Its large plastic airbox houses a flat panel filter that is fed by a rectangular air intake pipe. This pipe draws air from behind the BMW's iconic grilles.

The aFe air intake system replaces the factory box with a steel heat shield and a bracket that holds two round filters. Each filter feeds one side of the engine's dual-inlet intake manifold. The result, in theory, is more flow and less turbulence at high air intake velocity.

We also installed the optional Dynamic Air Scoops from aFe. These sheet metal widgets direct air from the grilles into the intake tract, creating a ram-air effect at highway speeds.

The entire installation took about 45 minutes. We'll give some credit to the excellent supplied directions. The fit and finish on both the intake and the scoops were very good—we especially liked the crinkle-finish paint on all of the sheet metal parts.

Upon restarting the car, we noticed only a slight increase in intake noise. We allowed the engine to acclimate to the new intake tract while covering several miles on the dyno.

The data samples were less than impressive at first glance: We picked up just 4 horsepower and 3 lb.-ft. of torque. What those peak numbers don't show is that we gained nearly 10 horsepower at about 6700 rpm. While this gain comes after the curve's peak, it should improve on-track performance by helping maintain acceleration until the redline. Before the modification, power trailed off as the redline approached.

We also tested the intake both with and without the Dynamic Air Scoops. We could find no discernible difference in power or torque while on the stationary dynamometer, but this piece is designed to work with 60-plus mph winds. The shop's cooling fans simply couldn't provide enough airflow.

