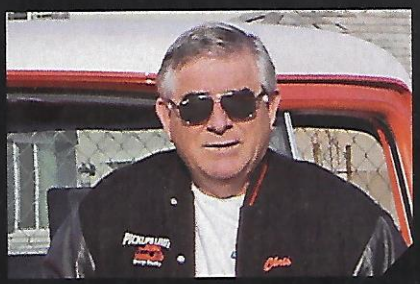
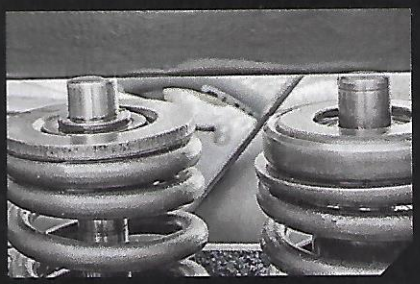


[Chris Travers has owned his F-100 almost 20 years. He cruises with Pickups Limited, said to be "the world's oldest standing F-100 club."

[Beneath the sheetmetal is a blown EFI 302, a 4R70W auto trans, and a C4 Vette IRS. The combo wouldn't idle or run smoothly down low.



[Besides mismatched EFI parts, unequal valve-stem heights on Ford's nonadjustable valvetrain contributed to the F-100's idle issues.

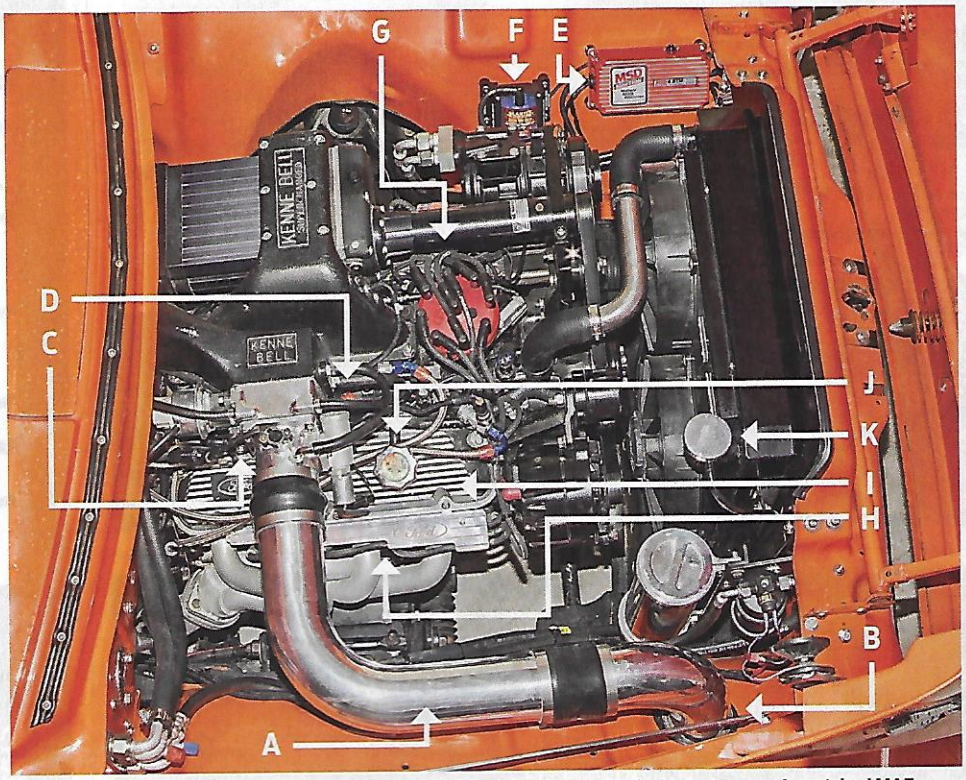
The Supercharged 5.0L EFI V8 in Chris Travers' 1956 Ford F-100 Won't Idle and Runs Badly at Low RPM. We're Gonna Fix It.

Marlan Davis Marlan Davis and Brett Turnage

THE COMBO

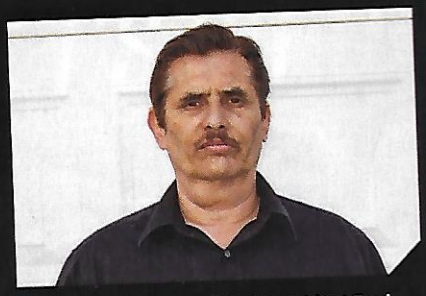
Chris Travers has been into F-100 pickups a long time. Since purchasing his bright-orange 1956 model 20 years ago, it's been in what he says is a state of never-ending evolution: "I've upgraded everything except the paint." An Industrial Chassis Dodge Dakota–based independent front suspension with rack-and-pinion steering is used up front. Out back, a 3.55:1-geared C4 Corvette IRS from Flat Out

- A New air intake duct (01–03)
- B New Pro-M MAF sensor and air filter (04)
- C New 75mm Accufab throttle-body (05–07)
- D 30-lb/hr fuel injectors, new intake gaskets (08)
- E MSD 6-BTM boast/retard ignition box (09–10)
- F Optional MSD HVC E-core 42,000-volt coil
- G Optional MSD Ford 5.0L EFI billet distributor
- H Replace fouled spark plugs
- I Check and fix rocker-arm/lifter preload (11–14)
- J Change engine oil and filter
- K Replace engine coolant



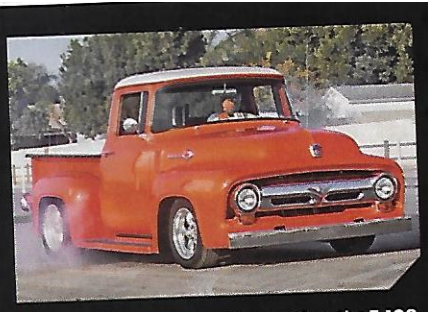
[Like many modded 302s Sanchez has seen, the F-100 had the wrong-size fuel injectors, a mismatched MAF sensor, and a poorly configured air inlet duct. Sanchez also upgraded the ignition system and installed a larger throttle-body. Contributing to the truck's idle-quality issues were incorrect valve-stem heights that screwed up the nonadjustable valvetrain's preload settings. The red-number callouts (box, *left*) refer to detailed photos on the following pages.

NEED JUNK FIXED? If your car has a gremlin that just won't quit, you could be chosen for HOT ROD to the Rescue. Email us at PITSTOP@HotRod.com and put "Rescue" in the subject line. Include a description of your problem, a photo, your location, and a daytime phone number.



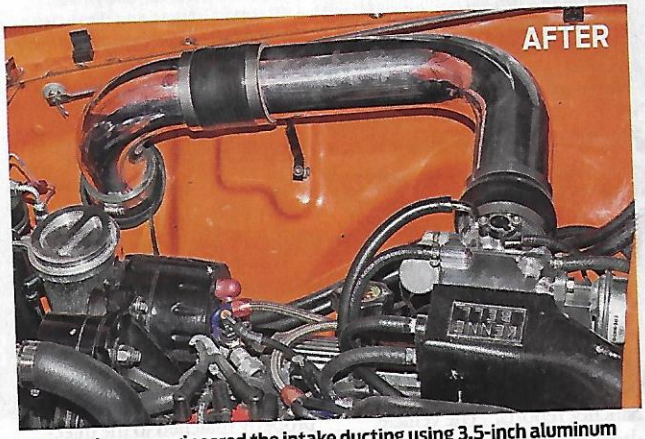
[Advanced Engineering West's resident Ford expert Mark Sanchez is a whiz at diagnosing pesky Ford EFI issues that no one else can solve.

[Sanchez put in a Pro-M 80mm MAF sensor, a FPP rocker arm pedestal shim kit, a set of 30-pound fuel injectors, and new inlet ductwork.



[Finally! After 10 years of frustration, the F-100 is happy cruising cross-country as well as in Southern California's stop-and-go traffic.

01] Travers' original air inlet setup mounted the MAF sensor (*arrow*) between corrugated "dryer-duct" on the inlet side and a molded 90-degree plastic elbow on the outlet. "Corrugated ducting disturbs air flow into the meter," Sanchez says. "I don't like air hitting a wall going into the throttle-body, and Ideally, I don't want hot engine air entering the MAF."



02] Sanchez re-engineered the intake ducting using 3.5-inch aluminum tubing. "I used two prebent 90-degree elbows with a generous curved radius, a hump-hose to allow flex at the engine/throttle-body end, and short lengths of straight hose between the two duct sections and at the MAF end."

Engineering gets the power to the ground.

For the last 10 years, that power has come from a Kenne Bell (KB) supercharged, 0.030-over 302 Ford Windsor with 8.5:1 pistons, a Ford Performance Parts (FPP) E303 hydraulic roller cam, rebuilt stock heads with a three-angle valve job, electronic fuel injection (EFI) managed by the versatile 1989 Mustang factory A9L electronic control unit (ECU), and BBK 1986–1993 Mustang headers (1⅝-inch primaries into 2½-inch collectors). Gear changes are via a Performance Automatic Ford 4R70W electronic automatic overdrive managed by a PCS Simple Shift standalone controller.

THE PROBLEM

"At the time I built the motor," Travers says, "I tried to get the best advice from professionals and my fellow hot rodders. I wanted decent performance but also be able to cruise in town and on long-distance highway trips. I wanted a full set of creature comforts like air conditioning. What I ended up with was good full-throttle, top-end performance but not great driveability."

At best, that's an understatement: Travers explains that since the combo went together, "At idle and off-idle—especially when the engine is cold—there's been a constant surging cycle. I couldn't give it gas when it was cold; it would die out. After warm-up, it belched, misfired, and used gas. I had to break the tires loose to get it going. It didn't like to run under 1,800 to 2,000 rpm. It wasn't too happy in traffic. Once on the freeway, it was fine. With the overdrive and mild gears at 75 mph, it cruises at 2,200 rpm. If it was a carb with no supercharger, I could have fixed it!"

03] After mocking up the new duct and cutting off the legs to the correct length, Sanchez says, "I rolled each end of the ducts on my bead-roller so everything seals up tight. You can buy reasonably efficient and priced bead-rollers from Eastwood or Harbor Freight."

Alas, it wasn't. Travers just lived with the problem. He tried several dyno-tuning shops, different spark-plug heat ranges, messed with the ignition timing, had the ECU reprogrammed—all of which yielded only a mild improvement. "No one could really get the truck to idle." Then Travers read about other HOT ROD rescues undertaken by Ford expert Mark Sanchez at Advanced Engineering West

04] Sanchez located the new Pro-M MAF meter and its air cleaner in the wheelwell where it always receives cool air. "The Pro-M MAF is designed and calibrated to mount directly to the air filter the unit is supplied with. Don't separate the parts or you will ruin the application."