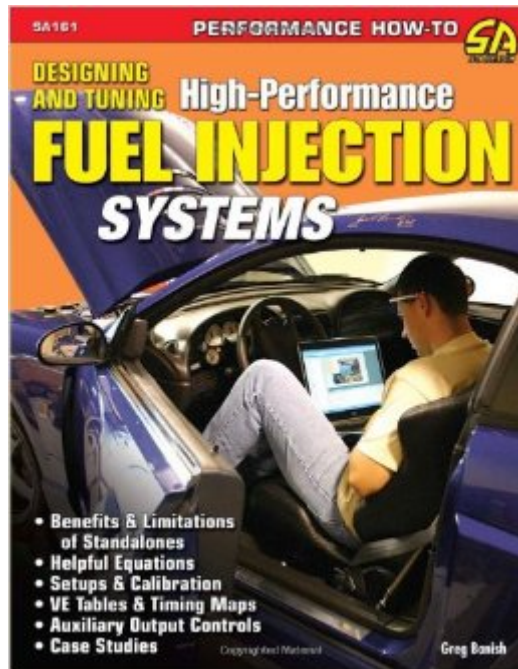# Designing And Tuning High-Performance Fuel Injection Systems

Synopsis

So you've decided that fuel injection is for you, but want to know more. Many questions surround what appears to many as more of a black art than science. Engine tuning used to be the hallowed ground of vehicle engineers and cutting-edge hot rodders. For years, the carburetor filled the needs of enthusiasts and provided simple adjustments at the end of a flat-bladed screwdriver. But today, electronic controls for engines are the norm. Even the casual enthusiast who actually drives his favorite hot rod on the streets can easily see the benefit of increased precision when he fires the car up for the first time each spring. A properly tuned EFI system rarely needs anything more than the turn of the key to come to life. Following up his best-selling title, Engine Management: Advanced Tuning, author Greg Banish goes in-depth on the combustion basics of fuel injection as well as benefits and limitations of standalone. Learn useful formulas, VE equation and airflow estimation, and more. Also covered are setups and calibration, creating VE tables, creating timing maps, auxiliary output controls, start to finish calibration examples with screen shots to document the process. Useful appendixes include glossary and a special resources guide with standalone manufacturers and test equipment manufacturers. Aftermarket standalone systems are a great way to dial in performance and reliability. Designing and Tuning High-Performance Fuel-Injection Systems is the book you need to become an expert in this popular modification.

Book Information

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Customer Reviews

Say you own a '60s muscle car which you've converted to electronic fuel injection. Depending on which aftermarket fuel injection system you buy, the instructions on how to set-up the system will

vary from not very good to above average. Additionally, depending on what system you bought, the actual calibration process varies from being painfully difficult to reasonably easy.This book, "Designing and Tuning High-Performance Fuel Injection Systems", fills a dire need in the enthusiast community for a text on how to calibrate an aftermarket or "stand alone" EFI system from scratch.Author, Banish, is a car company Calibration Engineer by day and runs a well-respected, Michigan-based performance tuning business in his off hours. His expertise is a large part of why this book succeeds in its goal.Not only does this book cover the calibration procedure, but it also covers subjects like the basics of combustion science, volumetric efficiency and airflow, fuel injector characteristics along with spark timing and its effect on cylinder pressure. All of these, when better-understood by the calibrator, make the process of tuning an aftermarket EFI system more seamless.This book is not for beginning DIYs. Some basic understanding of electronic engine controls is necessary for the book to be useful. Additionally there is math and chemistry involved when the Author writes of subjects like combustion, volumetric efficiency and cylinder pressure. Thankfully, Banish's discussions involving of math and algebra are limited and, in general, not required to get substantial benefit from the content in the book.

This isn't going to be like my other review of this author's previous book. This one is great value for money except for the fact that after reading it you become a little depressed when you have to accept the fact that you cannot clone him and keep him around your shop 24 hours a day. I dare you to find a better book about this stuff. I literally dare you.UPDATE:(6/4/2014)I'm going to be a bit harsh and deduct one star from my previous 5 star rating because upon giving this book a second read I DID discover one "small" thing that I think is significant enough to hamper a reader of this book in their attempts to fully grasp what is being explained. If you jump to chapter 10 there's a perfect example you can use to follow my logic. At the bottom left corner on page 76, Greg begins to explain a topic of particular interest to most tuners (especially myself)which is the process of populating the volumetric efficiency table, without the luxury of a reference base map to use as a start point.Now while I find no fault with the actual information that is presented, I do think that the principles would be much easier to grasp and to follow if the information coincided with what is displayed in the table snapshots next to what is being read. So for example on page 78 the 3rd column of text begins to explain where to apply an RPM specific correction to an entire column and it goes on to advise using this correction value to populate all of the values in the VE table above this same engine speed. Meanwhile there are a whopping FOUR snapshot table illustrations surrounding this body of text but not one of them shows an example of what you should see after

applying these corrections.

Designing and Tuning High-Performance Fuel Injection Systems Fuel Injection '86'99 (Spanish) (Haynes Repair Manuals) (Spanish Edition) International Fuel Gas Code 2006 (International Fuel Gas Code) Oracle SQL High-Performance Tuning (2nd Edition) Accelerating AIX: Performance Tuning for Programmers and Systems Administrators High Blood Pressure Cure: How To Lower Blood Pressure Naturally in 30 Days (Alternative Medicine, Natural Cures, Natural Remedies, High Blood Pressure ... Cures for High Blood Pressure, High Bl) Oracle SQL Performance Tuning and Optimization: Its all about the Cardinalities Oracle PL/SQL Performance Tuning Tips & Techniques System Performance Tuning, 2nd Edition (O'Reilly System Administration) Web Performance Tuning, 2nd Edition (O'Reilly Internet) AIX Performance Tuning Guide Happiness Advantage: The Seven Principles That Fuel Success and Performance at Work The Home Run Horse: Inside America's Billion-Dollar Racehorse Industry and the High-Stakes Dreams That Fuel It Tuning of Industrial Control Systems Combustion Engineering Issues for Solid Fuel Systems High-Performance System Design: Circuits and Logic (IEEE Press Series on Microelectronic Systems) 500 High Fiber Recipes: Fight Diabetes, High Cholesterol, High Blood Pressure, and Irritable Bowel Syndrome with Delicious Meals That Fill You Up and Help You Shed Pounds! Foods High in Fiber Cookbook: List of High Fiber Foods for a Healthy Lifestyle - Recipes for High Fiber Foods Cosmetic Injection Techniques: A Text and Video Guide to Neurotoxins and Fillers 21st Century Guide to Hydraulic Fracturing, Underground Injection, Fracking, Hydrofrac, Marcellus Shale Natural Gas Production Controversy, Environmental and Safety Risks, Water Pollution