

OBD 2

Bob Henderson, John Haynes

Automotive Diagnostic Systems Keith McCord, 2011 OBD expert, tuner, and author Keith McCord explains system architecture, function, and operation. He shows you how to use a hand-held scanner, connect it to the port connector in the car, and interpret the data. But most importantly, he shows you a practical, analytical, and methodical process for tackling a problem, so you can quickly trace its actual source and fix the root cause and not just the symptom... -- from page 4 of cover.

OBD II Repair Strategies Mandy Concepcion, In the early part of the 21st century, we find our lives intertwined with a maze of technological wonders. From cell-phones to personal computers, no human being today can escape it. Automobiles are no exception to this rule. With the ever changing emission laws of today, the one constant in the automotive industry is that things always change and will continue to do so. OBD II was designed from the beginning to do so as well. Late model vehicle systems are much more demanding, in both the amount of technology they possess and in the knowledge necessary to repair them. This work was designed to just that, a step-by step diagnostic approach to OBD II systems. It is also written with the State Inspections in mind. This is in direct response to the increasing adoption of OBD II inspections by most States throughout the country. OBD II repair don't have to be difficult or cumbersome and knowledge is the key to successful OBD II diagnostics and repair. About the Author Mandy Concepcion has worked in the automotive field for over 21 years. He holds a Degree in Applied Electronics Engineering as well as an ASE Master & L1 certification. For the past 16 years he has been exclusively involved in the diagnosis of all the different electronic systems found in today's vehicles. It is here where he draws extensive practical knowledge from his experience and hopes to convey it in his books. Mandy also designs and builds his own diagnostic equipment, DVD-Videos and repair software. Edition 4.0, Table of Contents, Copyright 2004, 2011, All rights reserved TABLE OF CONTENTS Section 1 - Basics of OBD II - What is OBD II? - Why do we need it? The Federal Test Procedure (FTP) - Technical aspects of OBD II. (FF, Monitors, Pending & Current Codes, The Drive Cycle, Re-setting Monitors, etc) - The data link connector - Diagnostic Trouble Code implementation - Resetting Monitors - What are Freeze Frames and how are they useful in diagnostics - A word about misfires - Do I need an OEM scanner or can I get by with an aftermarket scan tool? - Generic vs. Enhanced. What's the difference? why do you need to pull-out both codes? - The vehicle failed OBD II-State Inspection, but is passing a 5 gas emissions test. Why is it? - Resetting fuel trims. It's not the same procedure for every system - The Diagnostic Executive or Task Manager. What is it? - Bi-Directional control capabilities are revolutionizing the diagnostic process - Diagnosing EVAP leaks. It doesn't have to be complicated Section 2 - Base-lining the system includes retrieving FF, codes, & monitor status - Freeze Frames information gathering - Monitor status flag - Code Setting Criteria. How and why was the code set? - Freeze Frame and Code Setting Criteria comparison - Dividing the diagnostic process into systems and using the codes to detect system faults - First rule of diagnostics—Know the system you're working on - System by System outlook - Which Monitors are Incomplete. The need to prove each system without having to run a drive cycle by using the scanner, saving time & money - General Idle PID Snap-Shot Section 3 - INTRODUCTION - OBD-2 Generic PID list - OBD I and OBD II, and general PID analysis - FUEL DELIVERY FAULT DETECTION - TEST # 1 - TEST #2 - TEST #3 - TEST #4 - TEST #5 - RUNNING THE MONITORS IN YOUR MIND USING THE SCANNER Section 4 - Putting it all together. - Principles of diagnostics - Basic Scope Testing and Bi-Directional Control - No-Start, General Diagnostics - The correct decision making process to a sound repair - Don't assume anything or get caught in a particular mind set - Taking all the facts into account

OBD2 Automotive Code Encyclopedia and Cross Reference Guide Mandy Concepcion, Includes

pressure/voltage/current volumes, OBD-2 code definitions & code-setting criteria--Cover.

How To Use Automotive Diagnostic Scanners Tracy Martin, 2015-08-01 From hand-held, dedicated units to software that turns PCs and Palm Pilots into powerful diagnostic scanners, auto enthusiasts today have a variety of methods available to make use of on-board diagnostic systems. And not only can they be used to diagnose operational faults, they can be used as low-budget data acquisition systems and dynamometers, so you can maximize your vehicle's performance. Beginning with why scanners are needed to work effectively on modern cars, this book teaches you how to choose the right scanner for your application, how to use the tool, and what each code means. *How To Use Automotive Diagnostic Scanners* is illustrated with photos and diagrams to help you understand OBD-I and OBD-II systems (including CAN) and the scanners that read the information they record. Also included is a comprehensive list of codes and what they mean. From catalytic converters and O2 sensors to emissions and automotive detective work, this is the complete reference for keeping your vehicle EPA-compliant and on the road!

OBD-II Repair Strategies Mandy Concepcion, 2011 OBD 2 Repair Strategies (Including State Smog Inspections) In the early part of the 21st century, we find our lives intertwined with a maze of technological wonders. From cell-phones to personal computers, no human being today can escape it. Automobiles are no exception to this rule. With the ever changing emission laws of today, the one constant in the automotive industry is that things always change and will continue to do so. OBD II was designed from the beginning to do so as well. Late model vehicle systems are much more demanding, in both the amount of technology they possess and in the knowledge necessary to repair them. This work was designed to just that, a step-by-step diagnostic approach to OBD II systems. It is also written with the State Inspections in mind. This is in direct response to the increasing adoption of OBD II inspections by most States throughout the country. OBD II repairs don't have to be difficult or cumbersome and knowledge is the key to successful OBD II diagnostics and repair. About the Author Mandy Concepcion has worked in the automotive field for over 32 years. He holds a Bachelor's Degree in Electronics Engineering as well as an ASE Master & L1 certification. For the past 16 years he has been exclusively involved in the diagnosis of all the different electronic systems found in today's vehicles. It is here where he draws extensive practical knowledge from his experience and hopes to convey it in his books. Mandy also designs and builds his own diagnostic equipment, DVD-Videos and repair software. Edition 4.0, Table of Contents, Copyright 2004, 2011, All rights reserved

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OBDII Diagnostic Peter David,2002 The principles of tuning OBDII vehicles are outlined for do-it-yourself novices and repair professional alike in this introduction to automotive electronic diagnostics. Beginning with basic automotive concepts of engine operation and the powertrain control module, topics span the history of OBDII, anatomy of the scan tool and its components, and the language and protocols that the OBDII uses to communicate faults. Diagnostic tips and detailed fault code descriptions for major domestic automobile manufacturers including General Motors, Ford, and Daimler-Chrysler accompany tips for Asian and European vehicles. The straightforward prose and cooking recipes listed at the end contribute to this comprehensive primer to electronic diagnostics.

OBD-2 Automotive Code Encyclopedia and Cross-Reference Guide Mandy Concepcion,2012-05-13 Includes pressure/voltage/current volumes, OBD-2 code definitions & code-setting criteria--Cover.

OBD-II: Functions, Monitors and Diagnostic Techniques Al Santini,2010-06-08 OBD II: FUNCTIONS, MONITORS, AND DIAGNOSTIC TECHNIQUES is a resource that offers complete coverage of OBD II and tells your students what they need to know to succeed as field technicians. This exciting new book combines coverage of OBD II design, its role in state emission testing failures, diagnosis and repair, and the setting of readiness monitors. It provides your students with a solid working knowledge of the purpose and functions of the OBD II by beginning with an overview of the technology and its role in on-the-job tasks. Using this as a foundation, the author then addresses more advanced topics, including the extremely high-powered diagnostic abilities involving the various scanner modes, as well as the hows and whys of setting readiness monitors. With numerous practical examples and an emphasis on world-wide vehicle coverage that does not limit explanations to specific manufacturers, OBD II: FUNCTIONS, MONITORS, AND DIAGNOSTIC TECHNIQUES, will prepare your students for success in the industry. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Automotive Scan Tool PID Diagnostics Mandy Concepcion,2011-10-06 Automotive Scan Tool PID Diagnostics (Diagnostics Strategies of Modern Automotive Systems) By Mandy Concepcion In this section, the different techniques of scan tool parameter (PID) analysis will be exposed. Techniques involving PID analysis are quickly catching on, due to their speed and accuracy. By properly analyzing the different scanner PIDs, the technician can arrive at the source of the problem much faster and accurately. These procedures give rise to the new term “driver seat diagnostics”, since most of the preliminary diagnostic work is done through the scanner. However, these techniques will in no way replace the final manual tests that are a part of every diagnostic path. They are simply geared to point the technician in the right direction. Table of Contents INTRODUCTION (Introduction to scan tool diagnostics and the relevance of using PIDs or scanner parameter to perform the first leg of all diagnostics.) - Theory of Operation Behind the Different PIDs (Describes CARB, the difference between generic and enhanced PIDs, the FTP) - OBD II Generic PIDs (PID calculated and actual values, calculated data relationships, base injection timing, ECM value substitution) - OBD I & II General PID analysis (erasing code-or not, recording, analyzing and pinpoint tests, separating PIDs into groups) - Fuel Delivery Fault Detection (fuel delivery issues, intake air

temp. sensor, BARO sensor, Engine LOAD, RPM PID, Short-Term Fuel Trims, Long-Term Fuel Trims, 60% of check engine light issues, block learn/integrators, Example 1: injector fault, Example 2: intake gasket issues, fuel status, ignition timing, MAP/MAF, TPS, O2 sensor, IAC, Closed Throttle, injector pulse width, voltage power, injector dutycycle, fuel trim cell) - Test #1 (Determining an engine's fuel Consumption (rich-lean operation, duty-cycle to fuel trim relationship, O2 sensor to fuel trim relation, FT and vacuum leaks, ignition timing and idle control, test conclusion) - Test # 2 (Misfire Detection Strategy, EGR, Ignition and Mechanical misfires) (misfires and OBD2, scanner misfire detection – a time saver, OBD2 40 and 80 cycle misfire, ignition, injector and EGR density misfire, coil-on-plug, misfires and O2 sensor, lean O2 & Secondary misfire, O2 sensor & injector misfires, leaky injector, EGR and the MAP, Type A, B, C misfires, test conclusion) - Test # 3 (Air/Fuel Ratio Faults) (air-fuel imbalance, MAF and post O2 sensors, open-closed-loop, fuel enable, HC & CO relation to AF issues, test conclusion) - Test # 4 (BARO, MAP & MAF PID analysis) (MAP & valve timing faults, ECM behavior, fuel delivery or duty cycle test, volumetric efficiency, , test conclusion) - Test # 5 (Clogged exhaust) (clogged catalytic converter detection, TPS, MAF and converters, idle and WOT or wide open throttle values, vacuum readings, MAP to WOT chats analysis, engine and MAP vacuum, test conclusion) - Test # 6 (EGR Fault Detection) (EGR and MAP values, ECM reaction to EGR issues, EGR temp sensor, DPFE sensor, EGR and O2-MAP and lift position sensor, EGR and engine pre-loading, EGR and the ECM erroneous high LOAD issues, test conclusion) - Test # 7 (O2 Sensor Heater) (O2 heaters and why?, tough to check O2 heater issues, O2 heater effect on signal output, O2 heater bias voltage, engine off and O2 changing value, test conclusion) - Test # 8 (Resetting Fuel Trims) (resetting injection pulse corrections, long-term and short-term fuel trims, learn condition, Lambda, case study on fuel trims, FT resetting according to manufacturer, test conclusion) - Test # 9 (Engine Cranking Vacuum Test) (MAP/MAF cranking vacuum, vacuum to PID analysis, vacuum leaks, gauge-PID test, sources of leaks, cranking values, test conclusion)

OBD II Diagnostic Strategies Ralph Birnbaum, Jerry Truglia, 2002-10-01 This book is designed to enable you to successfully test on-board diagnostic II vehicle problems, and prepare the reader for scan tool emissions tests.

OBD-I & OBD-II Greg Branish, 2023-06-09 Onboard diagnostics (OBD) systems have been an integral part of vehicle design for decades, as OBD-II became mandatory in 1996 for all cars manufactured in the United States. Almost every aspect of the diagnostics system evolved from emissions requirements that were placed on the automotive industry. Manufacturers responded with increasing complexity in the electronic controls and reporting of errors. Fortunately, some commonization followed in the industry, which made the job of a repair technician or do-it-yourself enthusiast slightly easier when working on these challenging systems. Passing emissions testing has become critically important to manufacturers of high-performance parts and installation shops. Both the US Environmental Protection Agency (EPA) and California Air Resources Board (CARB) have assessed massive fines for violations of the Clean Air Act based on information that is available from the vehicle's OBD system. Many states now require vehicles to pass an OBD check to renew the registration, making proper operation even more important to consumers. **OBD-I & OBD-II: A Complete Guide to Diagnosis, Repair, & Emissions Compliance** is an insider's guide to modern original equipment manufacturer (OEM) diagnostics systems. As a former diagnostics and performance calibration engineer, Greg Banish guides you through critical electronic control unit (ECU) functions that ultimately lead to why the check engine light on the dash is lit. Strategies are provided for how to begin looking for a solution when problems are detected. Listing every imaginable repair is impossible, but this book provides a solid foundation from which to work by explaining the electronic control unit ECU's logic

in plain English. Practical examples from the author's experience highlight important lessons that will save hours of frustration and confusion. In addition to repair tips, sound advice is given for those looking to modify their vehicles while maintaining the full functionality of the emissions and diagnostics systems. Modern diagnostics systems can be a blessing or a curse, depending on your level of understanding. This book helps you harness the power of the diagnostics inside the ECU to improve the ability to find and make the right repair the first time. This book shows that by using commonly available electronic tools, the consumer has the power to access a wealth of information about his or her vehicle. It also helps those who are looking to improve performance do so without compromise to the environment or enforcement agencies. Whether you want to repair the vehicle yourself or simply want to possess an understanding of how these systems work while dealing with service professionals, this is the guide you need.

OBD-II & Electronic Engine Management Systems Bob Henderson, John Haynes, 2006-11-01 This manual takes the mystery out of Second-Generation On-Board Diagnostic Systems allowing you to understand your vehicle's OBD-II system, plus what to do when the Check Engine light comes on, from reading the code to diagnosing and fixing the problem. Includes a comprehensive list of computer codes. Computer-controlled car repair made easy! For all car and light truck models manufactured since 1996. Understand your vehicle's On-Board Diagnostic system How to deal with that Check Engine light--from reading the code to diagnosing and fixing the problem Comprehensive computer codes list Diagnostic tools: Powertrain management fundamentals OBD-II monitors explained Generic trouble codes that cover all models! Manufacturer-specific trouble codes for GM, Ford, Chrysler, Toyota/Lexus and Honda/Acura vehicles Let your car's computer help you find the problem! Component replacement procedures Glossary and acronym list Fully illustrated with over 250 photographs and drawings

Introduction to On-Board Diagnostics II (OBDII) Roy Cox, 2005-10 Here's an easy-to-understand, logical guide to the diagnosis and repair of today's complex and sophisticated automotive control systems! In Introduction to On-Board Diagnostics (OBD II) readers will learn how this complex system functions and be provided with valuable reference material for diagnosing and troubleshooting its many components and circuits. This book provides a simple, logical approach to explain the operation of the OBD II system and will teach the reader how to quickly spot problems and identify components that are not functioning correctly. In addition, the interrelationships between the fuel delivery, emission control, ignition, and accessory systems are clearly addressed and explained. CAM data is also included. An interactive Computer Based Training (CBT) CD-ROM is also available as a supplement to this book. This course leads users through ten simulated trouble-code scenarios to reinforce the hands-on components of diagnosis and repair procedures that are taught in the manual.

Automotive Diagnostic Systems Keith McCord, 2011-07-21 Author McCord provides a thorough process for trouble shooting problems, tracing a problem to its root, explaining why DTCs may not lead to the source of the underlying problem, and ultimately resolving the problem. Contains full DTC code chart.

Automotive Diagnostic Systems Keith McCord, 2020

Automotive Code-to-Flowchart Repair (Ford) Mandy Concepcion, 2012-03-30 The beginnings of this book came about from the development of various different products, including the Scan-1 Scan-Tool Diagnostic System and the OBD-2 secret weapon diagnostic software by the same author. After development a large amount of information had been accumulated and it was then decided to put it on a book series. All DTCs we acquired from a large bank of ECMs converted to test the development of the Scan-1. As a result, the backward engineering of the DTCs was possible and allowed us to compile the largest selection of factory codes (DTCs) on record. All DTC definitions in this book series are the result of

such development. Coincidentally from our OBD-2 secret weapon software, we derived the technology to develop easy to understand flowcharts. Although these products did not have flowcharts, the program algorithm or logic allowed us to convert into flowcharts fairly quick. Our flowcharts were developed by our team from our software and equipment technology. You won't find these flowcharts, which often tend to be useless from manufacturer data, anywhere else. Here we present an easy and fast way to tackle electronic diagnostic and repair issues, which apply to both the DIY and professional technician as well. Our book series cover Domestic, Asian and European makes and it is by far the most complete in way of information. This book series can be used for training as well as during repair work. Enjoy...**IMPORTANT:** This book only covers FORD vehicles. See our other books in this series for a different manufacturer.

Table of Contents * LEAN Condition (includes DTCs covered)* MAF Sensor Wiring Diagram* (MAF) Mass-Air-Flow Repair Flowchart* CAM/CRK Sensor Wiring Diagram* CAM/CRK (Magnetic) Position Sensor Flowchart* CAM/CRK (Hall-Effect) Position Sensor Flowchart* O2 Sensor Heater Wiring Diagram* O2 Sensor Heater Test (Flowchart)* (AFR) Heater Wiring Diagram* (AFR) Heater Flowchart Repair* O2 Sensor Response Test (Except AFR)* AFR Sensor Response Test* MAP Sensor Flowchart Coverage* MAP (Boost) Sensor Wiring Diagram* MAP Sensor Test* TPS Sensor Flowchart Coverage* TPS (Boost) Sensor Wiring Diagram* TPS Sensor Test* APP Sensor Flowchart Coverage* APP Sensor Wiring Diagram* APP Sensor Test* ECT Sensor Flowchart Coverage* ECT Sensor Wiring Diagram* ECT Sensor Test* Knock Sensor Flowchart Coverage* Knock Sensor Wiring Diagram* Knock Sensor Test* FRP Sensor Flowchart Coverage* FRP Sensor Wiring Diagram* FRP Sensor Test* Intake Valve Control Solenoid Flowchart Coverage* Intake Valve Control Solenoid Wiring Diagram* Intake Valve Control Solenoid Test* Exhaust Valve Control Solenoid Flowchart Coverage* Exhaust Valve Control Solenoid Wiring Diagram* Exhaust Valve Control Solenoid Test* Generic OBD-2 Code Definitions* FORD Factory OBD-2 Code Definitions

Onboard-Diagnose III Oliver Predelli,2009

Onboard Diagnostics and Measurement in the Automotive Industry, Shipbuilding, and Aircraft Construction Michael Palocz-Andresen,2012-07-03 Onboard Diagnostics and Measurement in the Automotive, Shipbuilding and Aircraft Industries is a unique title which focuses on the direct (OBM) and indirect (OBD) determination of emissions in transportation. It offers the reader a state-of-the-art report on the recent developments concerning the determination of emissions and the estimation of pollutants concentrated in the exhaust pipe, using technologies such as intelligent micro controllers, micro sensors and micro actuators systems on board. Written by Dr. Palocz-Andresen, guest professor of Sustainable Transportation at Leuphana University in Lüneburg, this book is especially useful in understanding how the European Union and the United States address the problem of transport-generated emissions. This book goes beyond the more common emissions issues encountered in the automotive arena (including light duty and heavy commercial vehicles), to expand upon the upcoming and similar concerns derived from air and sea transport. Onboard Diagnostics and Measurements in the Automotive, Shipbuilding and Aircraft Industries is a must-have source of technical information to those studying or working in the areas of transportation technology, sustainability, legislation, environment and climate protection.

The Haynes OBD-II & Electronic Engine Management Systems Manual Bob Henderson,John Harold Haynes,2006

Diagnostic Code Reader for All Vehicles LOG Artbc Lms,2020-01-26 diagnostic code reader for all vehicles log

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OBD 2 Introduction

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