Torque Lite Obd2 Car

Bob Henderson, John Haynes

Data Acquisition from Light-Duty Vehicles Using OBD and CAN Eric Walter, Richard Walter, 2018-11-15 Modern vehicles have multiple electronic control units (ECU) to control various subsystems such as the engine, brakes, steering, air conditioning, and infotainment. These ECUs are networked together to share information directly with each other. This in-vehicle network provides a data opportunity for improved maintenance, fleet management, warranty and legal issues, reliability, and accident reconstruction. Data Acquisition from LD Vehicles Using OBD and CAN is a guide for the reader on how to acquire and correctly interpret data from the in-vehicle network of light-duty (LD) vehicles. The reader will learn how to determine what data is available on the vehicle's network, acquire messages and convert them to scaled engineering parameters, apply more than 25 applicable standards, and understand 15 important test modes. Topics featured in this book include: • Calculated fuel economy • Duty cycle analysis • Capturing intermittent faults Written by two specialists in this field, Richard P. Walter and Eric P. Walter of HEM Data, the book provides a unique roadmap for the data acquisition user. The authors give a clear and concise description of the CAN protocol plus a review of all 19 parts of the SAE International J1939 standard family. Data Acquisition from LD Vehicles Using OBD and CAN is a must-have reference for product engineers, service technicians fleet managers and all interested in acquiring data effectively from the SAE J1939-equipped vehicles.

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 posses 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

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

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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.

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

OBD2 Automotive Code Encyclopedia and Cross Reference Guide Mandy Concepcion, Includes pressure/voltage/current volumes, OBD-2 code definitions & code-setting criteria--Cover.

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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 vehicles OBD-II sytem, 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

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 acquistion 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!

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 & Sistemas de Control Electronico del Motor Bob Henderson, John Haynes, 2011-07-11 This manual takes the mystery out of Second-Generation On-Board Diagnostic Systems allowing you to understand your vehicles OBD-II sytem, 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

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 posses 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 TABLE OF CONTENTS Section 1 - Basics of OBD II- What is OBD II?- Why do we need it? The

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Automotive Diagnostic Systems Keith McCord, 2020

OBDII Diagnostic Peter David,2002 The principles of tuning OBDII vehicles are outlined for do-ityourself 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.

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.

<u>Getting to Know OBD II</u> Ralph Birnbaum, Jerry G. Truglia, 2001-01-01 Ring bound instructor guide for use with book Getting to Know OBD II- Pages referenced with thumbnails for use with 154 color slides in PDF format. Includes 25 question final test.

OBD-II: Functions, Monitors and Diagnostic Techniques AI 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.

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.

SAE On-Board Diagnostics for Light and Medium Duty Vehicles Standards Manual 1999 Edition Society of Automotive Engineers, Society of Automotive Engineers Staff, 1999-02 Contents include: Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations and Acronyms Diagnostic Connector OBD II Scan Tool E/E Diagnostic Test Modes Recommended Practice for Diagnostic Trouble Code Definitions E/E Data Link Security Enhanced E/E Diagnostic Test Modes Class B Data Communications Network Interface Class B Data Communication Network Messages - Detailed Header Formats and Physical Address Assignments Class B Data Communication Network Messages - Part 2: Data Parameter Definitions Class B Data Communication Network Messages - Part 3: Frame IDs for Single Byte Forms of Headers Class B Data Communication Network Messages - Message Definitions for Three Byte Headers High-Speed CAN (HSC) for Vehicle Applications at 500 KBPS Bibliography of related SAE technical papers.

The Car Hacker's Handbook Craig Smith, 2016-03-01 Modern cars are more computerized than ever. Infotainment and navigation systems, Wi-Fi, automatic software updates, and other innovations aim to make driving more convenient. But vehicle technologies haven't kept pace with today's more hostile security environment, leaving millions vulnerable to attack. The Car Hacker's Handbook will give you a deeper understanding of the computer systems and embedded software in modern vehicles. It begins by examining vulnerabilities and providing detailed explanations of communications over the CAN bus and between devices and systems. Then, once you have an understanding of a vehicle's communication network, you'll learn how to intercept data and perform specific hacks to track vehicles, unlock doors, glitch engines, flood communication, and more. With a focus on low-cost, open source hacking tools such as Metasploit, Wireshark, Kayak, can-utils, and ChipWhisperer, The Car Hacker's Handbook will show you how to: -Build an accurate threat model for your vehicle -Reverse engineer the CAN bus to fake engine signals -Exploit vulnerabilities in diagnostic and data-logging systems -Hack the ECU and other firmware and embedded systems -Feed exploits through infotainment and vehicle-to-vehicle communication systems -Override factory settings with performance-tuning techniques -Build physical and virtual test benches to try out exploits safely If you're curious about automotive security and have the urge to hack a two-ton computer, make The Car Hacker's Handbook your first stop.

Advanced Automotive Fault Diagnosis Tom Denton,2006-08-14 Diagnostics, or fault finding, is a fundamental part of an automotive technician's work, and as automotive systems become increasingly complex there is a greater need for good diagnostic skills. Advanced Automotive Fault Diagnosis is the only book to treat automotive diagnostics as a science rather than a check-list procedure. Each chapter includes basic principles and examples of a vehicle system followed by the appropriate

diagnostic techniques, complete with useful diagrams, flow charts, case studies and self-assessment questions. The book will help new students develop diagnostic skills and help experienced technicians improve even further. This new edition is fully updated to the latest technological developments. Two new chapters have been added – On-board diagnostics and Oscilloscope diagnostics – and the coverage has been matched to the latest curricula of motor vehicle qualifications, including: IMI and C&G Technical Certificates and NVQs; Level 4 diagnostic units; BTEC National and Higher National qualifications from Edexcel; International Motor Vehicle qualifications such as C&G 3905; and ASE certification in the USA.

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