

# ABOUT THIS MANUAL

## GENERAL

This electrical diagnostic service manual has been prepared with two purposes in mind. First, it will acquaint the user with the construction of the Harley-Davidson product and assist in the performance of repair. Secondly, it will introduce to the professional Harley-Davidson Technician the latest field-tested and factory-approved diagnostic methods. We sincerely believe that this manual will make your association with Harley-Davidson products more pleasant and profitable.

## HOW TO USE YOUR SERVICE MANUAL

Refer to the table below for the content layout of this manual.

NO.	CHAPTER
1	General Information
2	Initial Diagnostics and Serial Data
3	Starting and Charging
4	Instruments
5	Accessories, Horn, Lighting and Security
6	Engine Management
7	ABS
A	Appendix A Connector Repair
B	Appendix B Wiring
C	Appendix C Conversions
D	Appendix D Glossary

Use the TABLE OF CONTENTS (which follows this FOREWORD) and the INDEX (at the back of this manual) to quickly locate subjects. Chapters and topics in this manual are sequentially numbered for easy navigation.

For example, a cross-reference shown as **2.2 SPECIFICATIONS** refers to chapter 2 CHASSIS, heading 2.2 SPECIFICATIONS.

For quick and easy reference, all pages contain a chapter number followed by a page number. For example, **page 3-5** refers to page 5 in Chapter 3.

A number of acronyms and abbreviations are used in this document. See the [D.1 GLOSSARY](#) for a list of acronyms, abbreviations and definitions.

## PREPARATION FOR SERVICE

PART NUMBER	TOOL NAME
HD-48650	DIGITAL TECHNICIAN II

### WARNING

**Stop the engine when refueling or servicing the fuel system. Do not smoke or allow open flame or sparks near gasoline. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00002a)**

Good preparation is very important for efficient service work. Start each job with a clean work area. This will allow the repair to proceed as smoothly as possible. It will also reduce the incidence of misplaced tools and parts.

Clean a motorcycle that is excessively dirty before work starts. Cleaning will occasionally uncover sources of trouble. Gather any tools, instruments and any parts needed for the job before work begins. Interrupting a job to locate tools or parts is a distraction and causes needless delay.

### NOTES

- *To avoid unnecessary disassembly, carefully read all related service information before repair work begins.*
- *In figure legends, the number which follows the name of a part indicates the quantity necessary for one complete assembly.*
- *When servicing a vehicle equipped with the Harley-Davidson Smart Security System (H-DSSS), first disarm the system. Keep the fob close to the vehicle or use DIGITAL TECHNICIAN II (Part No. HD-48650) to disable the system. Activate the system after service is completed.*

## SERVICE BULLETINS

In addition to the information presented in this manual, Harley-Davidson Motor Company will periodically issue service bulletins to Harley-Davidson dealers. Service bulletins cover interim engineering changes and supplementary information. Consult the service bulletins to keep your product knowledge current and complete.

## USE GENUINE REPLACEMENT PARTS

### WARNING

**Harley-Davidson parts and accessories are designed for Harley-Davidson motorcycles. Using non-Harley-Davidson parts or accessories can adversely affect performance, stability or handling, which could result in death or serious injury. (00001b)**

To achieve satisfactory and lasting repairs, carefully follow the service manual instructions and use only genuine Harley-Davidson replacement parts. Behind the emblem bearing the words GENUINE HARLEY-DAVIDSON stand more than 100 years of design, research, manufacturing, testing and inspecting experience. This is your assurance that the parts you are using will fit right, operate properly and last longer.

## WARNINGS AND CAUTIONS

Statements in this manual preceded by the following words are of special significance.

### WARNING

**WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. (00119a)**

### CAUTION

**CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. (00139a)**

### NOTICE

**NOTICE indicates a potentially hazardous situation which, if not avoided, may result in property damage. (00140b)**

## NOTE

*Refers to important information, and is placed in italic type. It is recommended that you take special notice of these items.*

Proper service and repair is important for the safe, reliable operation of all mechanical products. The service procedures recommended and described in this manual are effective methods for performing service operations.

### WARNING

**Always wear proper eye protection when using hammers, arbor or hydraulic presses, gear pullers, spring compressors, slide hammers and similar tools. Flying parts could result in death or serious injury. (00496b)**

Some of these service operations require the use of tools specially designed for the purpose. These special tools should be used when and as recommended. It is important to note that some warnings against the use of specific service methods, which could damage the motorcycle or render it unsafe, are stated in this manual. However, remember that these warnings are not all-inclusive. Inadequate safety precautions could result in death or serious injury.

Since Harley-Davidson could not possibly know, evaluate or advise the service trade of all possible ways in which service might be performed, or of the possible hazardous consequences of each method, we have not undertaken any such broad evaluation. Accordingly, anyone who uses a service procedure or tool which is not recommended by Harley-Davidson must first thoroughly satisfy himself that neither his nor the operator's safety will be jeopardized as a result. Failure to do so could result in death or serious injury.

## PRODUCT REFERENCES

### WARNING

**Read and follow warnings and directions on all products. Failure to follow warnings and directions can result in death or serious injury. (00470b)**

When reference is made in this manual to a specific brand name product, tool or instrument, an equivalent product, tool or instrument may be substituted.

## Kent-Moore Products

All tools mentioned in this manual with an "HD", "J" or "B" preface must be ordered through SPX Kent-Moore. For ordering

information or product returns, warranty or otherwise, visit [www.spx.com](http://www.spx.com).

## LOCTITE Sealing and THREADLOCKING Products

Some procedures in this manual call for the use of LOCTITE products. If you have any questions regarding LOCTITE product usage or retailer/wholesaler locations, contact Loctite Corp. at [www.loctite.com](http://www.loctite.com).

## PRODUCT REGISTERED MARKS

Apple, Alcantara S.p.A., Allen, Amp Multilock, Bluetooth, Brembo, Delphi, Deutsch, Dunlop, Dynojet, Fluke, G.E. Versilube, Garmin, Gunk, Hydroseal, Hylomar, iPhone, iPod, Kevlar, Lexan, Loctite, Lubriplate, Keps, K&N, Magnaflux, Marson Thread-Setter Tool Kit, MAXI fuse, Molex, Michelin, MPZ, Multilock, nano, NGK, Novus, Packard, Pirelli, Permatex, Philips, PJ1, Pozidriv, Robinair, S100, Sems, Snap-on, Teflon, Threadlocker, Torca, Torco, TORX, Tufoil, Tyco, Ultratorch, Velcro, X-Acto, XM Satellite Radio, and zumo are among the trademarks of their respective owners.

## H-D MICHIGAN, INC. TRADEMARK INFORMATION

Bar & Shield, Cross Bones, Digital Tech, Digital Technician, Digital Technician II, Dyna, Electra Glide, Evolution, Fat Bob, Fat Boy, Forty-Eight, Glaze, Gloss, H-D, H-Dnet.com, Harley, Harley-Davidson, HD, Heritage Softail, Iron 883, Low Rider, Night Rod, Nightster, Night Train, Profile, Revolution, Road Glide, Road King, Road Tech, Rocker, Screamin' Eagle, Seventy-Two, Softail, Sportster, Street Glide, Street Rod, Sun Ray, Sunwash, Super Glide, SuperLow, Switchback, SYN3, Tech-Link, TechLink II, Tour-Pak, Twin Cam 88, Twin Cam 88B, Twin Cam 96, Twin Cam 96B, Twin Cam 103, Twin Cam 103B, Twin Cam 110, Twin Cam 110B, Ultra Classic, V-Rod, VRSC and Harley-Davidson Genuine Motor Parts and Genuine Motor Accessories are among the trademarks of H-D Michigan, Inc.

## CONTENTS

All photographs, illustrations and procedures may not necessarily depict the most current model or component, but are based on the latest production information available at the time of publication.

Since product improvement is our continual goal, Harley-Davidson reserves the right to change specifications, equipment or designs at any time without notice and without incurring obligation.

# GENERAL INFORMATION

## 1.1 SPECIFICATIONS AND COMPONENT LOCATIONS

Specifications.....	1-1
Component Locations.....	1-1

## 1.2 DIAGNOSTIC TOOLS

How To Use Diagnostic Tools.....	1-11
GRX-3110 HD Battery Diagnostic Station.....	1-11
HD-26792 Spark Tester.....	1-11
HD-39978 Digital Multimeter (Fluke 78).....	1-11
HD-39617 Fluke AC/DC Current Probe.....	1-11
HD-41199-3 IAC Test Light.....	1-12
HD-41404 Harness Connector Test Kit.....	1-12
HD-50341 Wheel Speed Sensor Test Lead.....	1-12
HD-42682 Breakout Box (Instruments).....	1-12
HD-50390-1 Breakout Box (ECM).....	1-13
HD-50390-1 Breakout Box (BCM).....	1-13
HD-48642 Breakout Box (ABS).....	1-14
HD-48650 Digital Technician II.....	1-14

## 1.3 DIAGNOSTICS AND TROUBLESHOOTING

Voltage Drop.....	1-15
Voltage Drop Test.....	1-15
Wiggle Test.....	1-16
Job/Time Codes Values.....	1-16

## INITIAL DIAGNOSTICS AND SERIAL DATA

### 2.1 INITIAL DIAGNOSTICS

Description and Operation.....	2-1
Retrieving Trouble Codes.....	2-1
Odometer Self-Diagnostics.....	2-1
Diagnostic Mode.....	2-1
Initial Diagnostics.....	2-1
1. Fuse Test.....	2-1
2. Current DTC Test.....	2-1
3. Odometer Function Test.....	2-1
4. Odometer Inoperative Test.....	2-1
5. Battery Power Test.....	2-2
6. Starter Test.....	2-2
7. LHCM Test.....	2-2
Diagnostics.....	2-2
Diagnostic Tips.....	2-2
Code Types.....	2-8
Current.....	2-9
Historic.....	2-9
Multiple Trouble Codes.....	2-9
Clearing DTCs.....	2-9
Security Lamp.....	2-9
Check Engine Lamp.....	2-9
Symptoms.....	2-10

### 2.2 SERIAL DATA COMMUNICATION

Description and Operation.....	2-12
Components.....	2-13
Electronic Control Module (ECM).....	2-13
Speedometer.....	2-13
BCM.....	2-13
ABS Module.....	2-13
Hand Control Modules.....	2-13

Data Link Connector (DLC).....	2-13
Communication DTCs and Error Messages.....	2-13
Diagnostic Tips.....	2-13

### 2.3 ODOMETER SELF-DIAGNOSTIC INOPERATIVE, DTC U0001, U0011, B2274

Description and Operation.....	2-14
Diagnostic Tips.....	2-14
Connector Information.....	2-14
Odometer Self-Diagnostic Inoperative, DTC U0001, U0011, B2274.....	2-16
1. CAN Bus Shorted Together Test.....	2-16
2. Speedometer Test.....	2-16
3. ECM Test.....	2-16
4. LHCM Test.....	2-16
5. RHCM Test.....	2-16
6. Tachometer Test.....	2-16
7. BCM Test.....	2-16
8. ABS Test.....	2-16
9. CAN High Circuit Short to Voltage Test.....	2-16
10. Speedometer Test.....	2-16
11. ECM Test.....	2-17
12. LHCM Test.....	2-17
13. ABS Test.....	2-17
14. RHCM Test.....	2-17
15. Tachometer Test.....	2-17
16. BCM Test.....	2-17
17. CAN Low Circuit Short to Voltage Test.....	2-17
18. CAN High Circuit Short to Ground Test.....	2-17
19. Speedometer Test.....	2-17
20. ECM Test.....	2-17
21. LHCM Test.....	2-17
22. RHCM Test.....	2-17
23. Tachometer Test.....	2-18
24. BCM Test.....	2-18
25. ABS Test.....	2-18
26. CAN Low Circuit Short to Ground Test.....	2-18
27. Speedometer Test.....	2-18
28. ECM Test.....	2-18
29. LHCM Test.....	2-18
30. RHCM Test.....	2-18
31. Tachometer Test.....	2-18
32. BCM Test.....	2-18
33. ABS Test.....	2-18
34. CAN Low Circuit Resistance to ECM Test.....	2-18
35. CAN High Circuit Resistance to ECM Test.....	2-19
36. CAN Low Circuit Resistance to BCM Test.....	2-19
37. CAN High Circuit Resistance to BCM Test.....	2-19
38. CAN Low Circuit Resistance to ABS Module Test.....	2-19
39. CAN High Circuit Resistance to ABS Module Test.....	2-19
40. CAN Low Circuit Resistance to Tachometer Test.....	2-19
41. CAN High Circuit Resistance to Tachometer Test.....	2-19
42. CAN Low Circuit Resistance to Speedometer Test.....	2-19
43. CAN High Circuit Resistance to Speedometer Test.....	2-20
44. Speedometer Power Test.....	2-20
45. Speedometer Ground Test.....	2-20

### 2.4 NO VEHICLE POWER OR DTC U0100, U0121, U0140, U0141, U0142, U0156

Description and Operation.....	2-21
--------------------------------	------

# TABLE OF CONTENTS

Diagnostic Tips.....	2-21
Connector Information.....	2-21
DTC U0100.....	2-23
1. Module Test.....	2-23
2. System Power Test.....	2-23
3. ECM [78-1] Ground Test.....	2-23
4. ECM [78-2] Ground Test.....	2-23
5. CAN High Circuit Continuity Test.....	2-23
6. CAN Low Circuit Continuity Test.....	2-23
7. Verify ABS Module Test.....	2-23
8. Verify Speedometer Test.....	2-23
9. Verify Tachometer Test.....	2-23
10. Verify BCM Test.....	2-24
DTC U0121.....	2-24
1. ABS Voltage Test.....	2-24
2. ABS Ground Test.....	2-24
3. CAN High Circuit Continuity Test.....	2-24
4. CAN Low Circuit Continuity Test.....	2-24
No Vehicle Power: DTC U0140.....	2-24
1. Fuse Test.....	2-24
2. Ignition Switch Ground Test.....	2-24
3. Ignition Switch Test.....	2-24
4. Ignition Switch Accessory Test.....	2-25
5. Ignition Switch Signal Test.....	2-25
6. Switch Signal Short to Ground Test.....	2-25
7. Ignition Switch Signal Short to Voltage Test.....	2-25
8. BCM Ground Test.....	2-25
9. CAN High Circuit Continuity Test.....	2-25
10. CAN Low Circuit Continuity Test.....	2-25
11. BCM Voltage Test.....	2-25
Left Hand Controls Inoperative: DTC U0141.....	2-25
1. LHCM Voltage Test.....	2-25
2. LHCM Test.....	2-25
3. CAN High Circuit Continuity Test.....	2-26
4. CAN Low Circuit Continuity Test.....	2-26
DTC U0142.....	2-26
1. Fuse Test.....	2-26
2. RHCM Voltage Test.....	2-26
3. CAN High Circuit Continuity Test.....	2-26
4. CAN Low Circuit Continuity Test.....	2-26
Speedometer Inoperative: DTC U0156.....	2-26
1. Speedometer Voltage Test.....	2-26
2. Speedometer Ground Test.....	2-26
3. CAN High Circuit Continuity Test.....	2-26
4. CAN Low Circuit Continuity Test.....	2-27

## STARTING AND CHARGING

### 3.1 BATTERY TESTING

General.....	3-1
Voltmeter Test.....	3-1
Battery Diagnostic Test.....	3-1
Load Test.....	3-1

### 3.2 STARTING SYSTEM

Description and Operation.....	3-3
Components.....	3-3
Starter.....	3-3
Starter Solenoid.....	3-3
Engine Stop Switch.....	3-3
Start Switch.....	3-3
BCM.....	3-3

Ignition Switch.....	3-4
Battery.....	3-4
Grinding Noise or Erratic Starting.....	3-4
Job/Time Code Values.....	3-4
Connector Information.....	3-4
Starter Troubleshooting.....	3-6
Starter Testing.....	3-7
1. Starting System Operational Test.....	3-7
2. Audible Noise Test.....	3-7
3. Starter Solenoid Test.....	3-7
4. Checking DTCs Test.....	3-7
Nothing Clicks.....	3-7
1. Battery Test.....	3-7
2. Fuse Test.....	3-7
3. Ignition Circuit Test.....	3-7
4. Starter Solenoid Circuit Test.....	3-8
5. Starter Ground Test.....	3-8
6. Neutral Switch Test.....	3-8
7. Starter Solenoid Circuit Test.....	3-8
8. BCM Test.....	3-8
Starter Solenoid Clicks.....	3-8
1. Battery Test.....	3-8
2. Starter Voltage Drop Test.....	3-8
3. Starter Solenoid Voltage Drop Starter Side Test.....	3-8
4. Starter Solenoid Battery Side Voltage Drop Test.....	3-8
5. Starter Ground Circuit Voltage Drop Test.....	3-9
6. Starter Ground Test.....	3-9
7. Starter Draw Test.....	3-9
8. Mechanical Binding Test.....	3-9
Starter Spins But Does Not Engage.....	3-9
1. Pinion Gear and Clutch Shell Test.....	3-9
Starter Stalls or Spins Too Slowly.....	3-9
1. Battery Test.....	3-9
2. Starter Stud Voltage Drop Test.....	3-9
3. Starter Ground Circuit Voltage Drop Test.....	3-10
4. ACR Test.....	3-10
5. Starter Draw Test.....	3-10
6. Starter Solenoid Voltage Drop Starter Side Test.....	3-10
7. Starter Solenoid Battery Side Voltage Drop Test.....	3-10

### 3.3 DTC B2121, B2122, B2123, B2124

Description and Operation.....	3-11
Conditions for Setting.....	3-11
Connector Information.....	3-11
DTC B2121.....	3-12
1. Starter Solenoid Circuit Test.....	3-12
2. Starter Solenoid Supply Voltage Test.....	3-12
DTC B2122.....	3-12
1. Starter Solenoid Circuit Test.....	3-12
2. Starter Solenoid Supply Voltage Test.....	3-12
DTC B2123.....	3-12
1. Starter Solenoid Supply Continuity Test.....	3-13
DTC B2124.....	3-13
1. Starter Solenoid [128] Test.....	3-13
2. Starter Solenoid Circuit Test.....	3-13
3. Starter Solenoid Supply Continuity Test.....	3-13

### 3.4 TESTING STARTER ON MOTORCYCLE

Starter Current Draw Test.....	3-14
--------------------------------	------

### 3.5 TESTING STARTER ON BENCH

Free Running Current Draw Test.....	3-15
-------------------------------------	------

# TABLE OF CONTENTS

Starter Solenoid.....	3-15
Solenoid Pull-In Test.....	3-15
Solenoid Hold-In Test.....	3-16
Solenoid Return Test.....	3-16

## 3.6 CHARGING SYSTEM

Description and Operation.....	3-17
Alternator.....	3-17
Voltage Regulator.....	3-17
Troubleshooting.....	3-17
Battery.....	3-17
Wiring.....	3-17
Voltage Regulator Inspection.....	3-17
Job/Time Code Values.....	3-17
Connector Information.....	3-17
Low or No Charging.....	3-18
1. Battery Test.....	3-18
2. Off Idle Voltage Test.....	3-18
3. AC Output Test.....	3-18
4. Stator Test.....	3-18
5. Rotor Inspection Test.....	3-18
6. Voltage Regulator Power Circuit Test.....	3-18
7. Voltage Regulator Ground Circuit Test.....	3-18
Overcharging.....	3-18
1. Battery Voltage Test.....	3-18
2. Voltage Regulator Ground Circuit Test.....	3-18
Low Battery After Extended IGN OFF.....	3-19
1. Battery Test.....	3-19
2. Amp Draw Test.....	3-19
Battery Runs Down During Use.....	3-19
1. Total Current Draw Test.....	3-19
2. Battery Test.....	3-19
Battery Charging Tests.....	3-19
Milliampere Draw Test.....	3-19
Total Current Draw and Output Test.....	3-20
Stator Test.....	3-20
AC Output Test.....	3-21

## 3.7 DTC C0562, C0563, C1222, C1223

Description and Operation.....	3-22
DTC C0562 and C0563.....	3-22
DTC C1222 and C1223.....	3-22
Diagnostics.....	3-22
Diagnostic Tips.....	3-22
Connector Information.....	3-22
DTC C0562.....	3-24
1. Battery Test.....	3-24
2. Charging System Test.....	3-24
3. ABS ECU Battery Voltage Test.....	3-24
4. ABS ECU Battery Voltage Drop Test.....	3-24
5. ABS ECU Ground Circuit Voltage Test.....	3-24
6. Main Fuse Voltage Drop Test.....	3-24
7. Fuse Block Voltage Drop Test.....	3-24
8. Fuse Block Supply Voltage Drop Test.....	3-24
9. Repair Validation Test.....	3-24
DTC C0563.....	3-24
1. Charging System Test.....	3-24
2. Repair Validation Test.....	3-25
DTC C1222, C1223.....	3-25
1. ABS ECU Battery Voltage Test.....	3-25
2. ABS ECU Battery Voltage Drop Test.....	3-25
3. Repair Validation Test.....	3-25

## 3.8 DTC P0562

Description and Operation.....	3-26
Diagnostics.....	3-26
Diagnostic Tips.....	3-26
Connector Information.....	3-26
DTC P0562.....	3-28
1. Battery Test.....	3-28
2. Charging System Test.....	3-28
3. ECM Switched Voltage Test.....	3-28
4. ECM System Power Test.....	3-28
5. ECM Ground [78-1] Circuit Test.....	3-28
6. ECM Ground [78-2] Circuit Test.....	3-28
7. BCM System Power Test.....	3-28
8. BCM Power Test.....	3-28
9. Main Fuse Voltage Test.....	3-28
10. Fuse Block Voltage Drop Test.....	3-29
11. Fuse Block Supply Voltage Drop Test.....	3-29
12. Repair Validation Test.....	3-29

## 3.9 DTC B2203

Description and Operation.....	3-30
Connector Information.....	3-30
DTC B2203.....	3-32
1. Ignition Continuity [242B] Test.....	3-32
2. Ignition Switch Run Test.....	3-32
3. Ignition Switch ACC Test.....	3-32
4. Ignition Switch OFF Test.....	3-32

## 3.10 DTC B2206, B2208

Description and Operation.....	3-33
DTC B2206.....	3-34
1. BCM Supply Voltage Test.....	3-34
2. BCM Voltage Test.....	3-34
DTC B2208.....	3-34
1. BCM to Ground Continuity Test.....	3-34
2. BCM Voltage Test.....	3-34

## 3.11 DTC B2271, B2272

Description and Operation.....	3-35
DTC B2271.....	3-35
DTC B2272.....	3-35
Diagnostic Tips.....	3-35
Connector Information.....	3-35
DTC B2271.....	3-37
1. Battery Test.....	3-37
2. Charging System Test.....	3-37
3. BCM Power Test.....	3-37
4. Main Fuse Voltage Test.....	3-37
5. Fuse Block Voltage Test.....	3-37
6. Fuse Block Supply Voltage Test.....	3-37
7. Repair Validation Test.....	3-37
DTC B2272.....	3-37
1. Charging System Test.....	3-37
2. Repair Validation Test.....	3-37

## INSTRUMENTS

### 4.1 INSTRUMENTS

Description and Operation.....	4-1
Trip Odometer Reset Switch Operation.....	4-1
Speedometer Theory of Operation.....	4-1

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