BRUSHLESS 3-PHASE MOTOR TESTER

GM-53435

USER GUIDE

HICKOK WAEKON

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Contents

Safety Information 2

Hardware Components 3,4

Hook-Up & Installation 5

Relieve System Fuel Pressure 5

Scan Tool Method — Preferred 5

Alternate Method — If no scan tool is available 5

Diesel Fuel Systems 5

Hook-Up & Installation 6

Fuel Return to Vehicle Fuel Tank 6

Capless Systems 6

Cap Systems 6

Connect Flow Sensor Assembly 6

Gasoline Fuel Systems 6

Diesel Fuel Systems 7

K111 FPPCM - Fuel Pump Power Control Module Connection 7

Testing Procedure 8

Automated Procedure 8

Manual Testing (optional) 8

Disconnecting Tester 9

Tester Disconnect Instructions 9

To prevent fuel contamination of tester components: 9

Reconnect all components and restore the vehicle to its original configuration 9

Replacement Parts 10

Contact Information 11

Warranty 12

Safety Information

Before using this tester, carefully read, understand and follow instructions and safety messages on equipment and in this manual.

The manual cannot anticipate or provide advice and cautions for all situations encountered by technicians. With this in mind, always follow and refer to the manuals provided by the manufacturer or the vehicle or equipment being tested or used for all information and testing procedures whenever diagnosing, repairing or operating such vehicle or equipment.

Failure to follow the instructions, cautions and warnings provided here as well as those provided by the vehicle and equipment manufacturers can result in fire, explosion, bodily injury and property damage.

In addition to the information listed here, additional warnings and cautions are listed throughout the manual. Please read them carefully.

⚠WARNING: Always wear approved eye protection.
Fuel under high pressure can cause serious injury to skin and eyes. ALWAYS relieve fuel system pressure before removing components under high fuel pressure.

⚠WARNING: Fire and personal injury hazard.
Relieve fuel system pressure before servicing fuel system components to reduce the risk of fire and personal injury.

After relieving system pressure, a small amount of fuel may be released when servicing fuel lines or connections. To reduce the chance of personal injury, cover fuel line fittings with a shop towel before disconnecting to catch any fuel that may leak out. Place the towel in an approved container when disconnection is complete.

NOTE:
Inspect the fuel system for damage or external leaks before proceeding. Verify the fuel tank is not empty before proceeding.

COMPONENTS



❶ MAIN UNIT TESTER



CARRY CASE



❷ FLOW SENSOR ASSEMBLY



❸ FUEL EXTENSION HOSE



❹ UNIVERSAL CABLE



❺ FLOW SENSOR CABLE

Hardware Components

COMPONENTS

FP1



BACK



FRONT

FP2



BACK



FRONT

❻ K111 FPPCM (2)



❼ FUEL FILLER NECK ADAPTER



❽ THREADED FUEL FILLER NECK ADAPTER



❾ DMAX WATER DRAIN ADAPTERS



❿ QC FEMALE TO FEMALE



⓫ QR FUEL LINES PLUGS/CAP



⓬ USB A TO USB C CABLE

Relieve System Fuel Pressure

Gasoline Fuel Systems

Scan Tool Method — Preferred

1. Hook-up scan tool and turn ignition ON.

2. Using the scan tool, command the fuel pump OFF allowing the low pressure fuel pump to shut off.

3. Start the vehicle and allow the engine to idle until the engine stops (approximately 5-20 seconds).

4. Repeat step 3. Using the scan tool, verify pressure has dropped to a minimal level.

5. Turn ignition OFF.

Alternate Method — If no scan tool is available

1. Disable the fuel pump by removing the B+ fuel pump control module fuse.

2. Start the vehicle and allow the engine to idle until the engine stops (approximately 5-20 seconds).

3. Attempt to restart the vehicle to ensure pressure has dropped to a minimal level.

4. Turn ignition OFF. Diesel Fuel Systems No scan tool required, continue Vehicle Fuel Tank section.

Diesel Fuel Systems

No scan tool required, continue to Vehicle Fuel Tank section.

Fuel Return to Vehicle Fuel Tank

Note:

Testing requires a closed-loop fuel connection so the tester can measure fuel flow and pump performance from the fuel pump, though the Extension Hose (3), and back to the fuel tank through the Fuel Tank Filler Neck Adapter (7).

Capless Systems

Insert the Fuel Filler Neck Adapter (7) into the capless fuel tank fill pipe until fully seated.

Cap Systems

Remove the fuel cap. Install the Threaded Fuel Filler Neck Adapter (8) into the fuel tank filler neck. Then insert the Fuel Filler Neck Adapter (7).

Connect Flow Sensor Assembly

Gasoline Fuel Systems

1. Disconnect the fuel line near the fuel tank.
2. Plug/cap the disconnected fuel line going to the engine to prevent fuel leakage during testing.
3. Install the Flow Sensor Assembly (2) to the fuel line coming from the tank with the mating quick coupler.
4. Attach the Fuel Extension Hose (3) to the Flow Sensor Assembly (2) and the other end to the Fuel Filler Neck Adapter (7) quick coupler. Use the Quick Coupler Female to Female Adapter (10) if necessary.
5. Attach the Flow Sensor Cable (5) to the Flow Sensor Assembly (2) and the other end to the Tester (1).

Diesel Fuel Systems

1. Remove the fuel filter drain plug per SI.

2. Install the appropriate DMAX Water Drain Plug Adapter (11) to the filter assembly.

3. Attach the Flow Sensor Assembly (2) to the DMAX Water Drain Plug Adapter (11).

4. Attach the Fuel Extension Hose (3) to The Flow Sensor Assembly (2) and the other end to the Fuel Filler Neck Adapter (7) quick coupler. Use the Quick Coupler Female to Female Adapter (10) if necessary.

5. Attach the Flow Sensor Cable (5) to the Flow Sensor Assembly (2) and the other end to the Tester (1).

K111 FPPCM - Fuel Pump Power Control Module Connection

1. With ignition OFF, gain access to the K111 FPPCM module as necessary.

2. Disconnect the K111 FPPCM electrical connector.

3. Connect the appropriate K111 FPPCM Adapter (6) to the disconnected harness connector.

4. Connect the Universal Cable (4) to the K111 FPPCM adapter (6) and the other end to the Tester (1).

Testing Procedure

Several tests are performed on the fuel pump and motor. Refer to SI for Pass/Fail criteria. Data results are displayed for the following:

- Vehicle Battery Voltage
- RPM and RPM Variance (6000 RPM for Full Auto Test)
- Flow in lph (liters/hr)
- Current in Amps (I)

Automated Test

1. Turn on the tester. Start up screen displays for 2 sec.
2. On Test screen select "Full Auto Test" press enter.
    a. Test will run for ~10 sec., then display test results.
3. Confirm results meet Pass/Fail criteria per SI data.

Manual Tests (optional)

1. 3000 or 6000 RPM tests.
    a. Must select "See Test Results" for test data
2. Continuity Test – Tests Fuel Pump Motor Coils
3. Manual Motor Run – Manually adjust motor RPM using UP/DOWN buttons

Tester Disconnect Instructions

After testing, the flow sensor and extension hose will be lower than the filler neck and will contain residual fuel.

1. Disconnect the Fuel Extension hose (3) from the Filler Neck Adapter (7) and temporarily plug the hose.

2. With the plugged hose lower than the flow sensor, disconnect the Flow Sensor Assembly (2) from the vehicle.

3. Drain the Flow Sensor Assembly (2) and Fuel Extension Hose (3) into an approved fuel container.

To prevent fuel contamination of tester components:

1. Connect the ends of the Flow Sensor Assembly (2) together.

2. Connect the ends of the Fuel Extension Hose (3) together.

3. Plug both ends of the Female-To-Female QC adapter (10), if used.

Reconnect all components and restore the vehicle to its original configuration.

Note:
Reconnect the fuel plumbing before reconnecting the K111 FPPCM connector to prevent fuel leakage if the fuel pump is accidentally activated.

Reconnect the fuel line (gasoline) or reinstall the water drain plug (diesel) before reconnecting the K111 FPPCM connector.

Replacement Parts

Description	Part Numbers
Main Unit Tester	GM-53435-1
Universal Cable	GM-53435-2
FP1 Low FPPCM Adapter	GM-53435-3
FP2 High FPPCM Adapter	GM-53435-4
Flow Sensor Assembly	GM-53435-5
Flow Sensor Cable	GM-53435-6
10' Fuel Extension Hose	GM-53435-7
Fuel Filler Capless	GM-53435-8
DMAX Adapter M12	GM-53435-9
DMAX Adapter M10	GM-53435-10
3/8 Female Plug	GM-53435-11
Fuel Filler Threaded	GM-53435-12
3/8 Male Fuel Plug	GM-53435-13
3/8 FE to FE Adapter	GM-53435-14
USB Cable	GM-53435-15
Fuel Accessory Kit	GM-53435-16
Carry Case	GM-53435-17

For technical assistance
or to order service parts, locate software updates,
and certification documentation, contact:

gmglobaltools.com

(844-742-8471)

Or Contact

Hickok Waekon at:
Technical Assistance (800-342-5080)
https://hickokwaekon.com/gm-53435/
or
Scan Hickok Waekon QR Code:

⚠ Important!
Make sure to drain ALL fuel from the unit(s) before returning for servicing.

Warranty

THIS WARRANTY IS EXPRESSLY LIMITED TO ORIGINAL RETAIL BUYERS OF HICKOK WAEKON DIAGNOSTIC TOOLS ("UNITS").

Hickok Waekon Units are warranted against defects in materials and workmanship for one year (12 months) from date of delivery. This warranty does not cover any Unit that has been abused, altered, used for a purpose other than that for which it was intended, or used in a manner inconsistent with instructions regarding use. The sole and exclusive remedy for any Unit found to be defective is repair or replacement, at the option of Hickok Waekon. In no event shall Hickok Waekon be liable for any direct, indirect, special, incidental or consequential damages (including lost profit) whether based on warranty, contract, tort or any other legal theory. The existence of a defect shall be determined by Hickok Waekon in accordance with procedures established by Hickok Waekon. No one is authorized to make any statement or representation altering the terms of this warranty.

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Notes