1. Overview

The FOXWELL BT705 Plus is a digital battery, cranking, and charging system tester designed for 12V and 24V lead-acid batteries. It is an upgraded version of the BT705, featuring a faster processor and refined algorithms for quicker and more accurate diagnostics.

The device is used to assess battery health (SOH, SOC), simulate cold cranking (CCA), and test alternator output and stability. It is compatible with a wide range of vehicles including cars, trucks, RVs, boats, motorcycles, and heavy-duty machinery.

2. Features and Specifications

2.1 Key Features

- **3-in-1 Diagnostics:** Performs battery health, cranking, and charging system tests in any sequence.
- **High-Contrast Color LCD:** Displays five diagnostic indicators clearly, even outdoors.

- **Long Test Cables:** 5.9 ft (1.8 m) cables allow for solo testing.
- **Wide Compatibility:** Tests 12V and 24V Flooded, AGM, Spiral, and GEL lead-acid batteries (100-2000 CCA range). Not for lithium batteries.
- **Cold Weather Operation:** High-conductivity clamps are designed to deliver accurate readings in freezing conditions.
- **Fast Results:** Upgraded processor provides results up to 30% faster than the previous model.

2.2 Physical Specifications

- **Color:** Orange
- **Item Weight:** 1.33 kg (2.93 lbs)
- **Dimensions (L x W x H):** 16 x 7 x 3 mm (0.63 x 0.28 x 0.12 in)
- **Power Source:** Corded Electric (powered by the battery under test)
- **Operating Voltage:** 12V (Min), 24V (Max)
- **Upper Temperature Rating:** 158°F (70°C)

3. Components and Controls

3.1 Main Unit and Display

The tester consists of a handheld unit with a color LCD screen. The screen displays:

- Battery Voltage
- State of Health (SOH)
- State of Charge (SOC)
- Cranking Voltage/Time/CCA
- Charging Ripple

- Test results and diagnostic indicators (Good, Fair, Replace, etc.)

3.2 Test Clamps and Cables

The device includes high-conductivity, military-grade clamps attached to 5.9 ft cables.

- **Red Clamp:** Connect to the positive (+) battery terminal.
- **Black Clamp:** Connect to the negative (-) battery terminal or a solid ground on the vehicle chassis.

Important: Ensure clamps have full mechanical connection to clean battery terminals to prevent false readings.

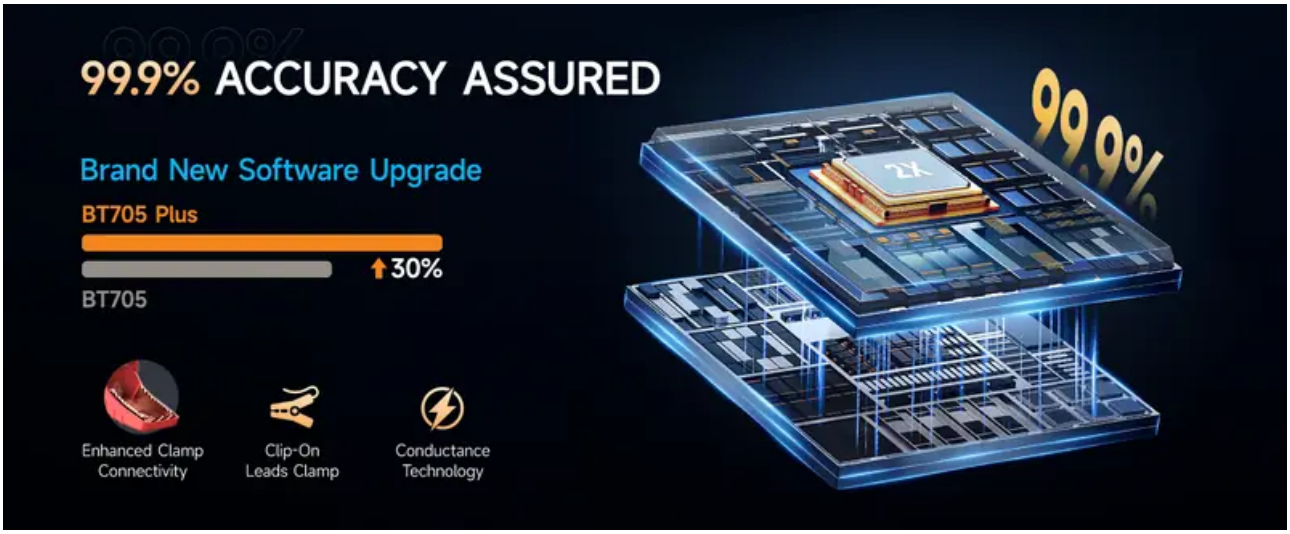
4. Use Guide

4.1 Safety and Preparation

1. Park the vehicle on a level surface and engage the parking brake.
2. Turn the ignition key to the OFF position.
3. Ensure all accessory loads (lights, radio, A/C) are switched off.
4. Close all vehicle doors.
5. Identify the battery's rated CCA (Cold Cranking Amps) value from its label. You will need to enter this.

4.2 Connection

1. Connect the **RED** test clamp to the battery's **POSITIVE (+)** terminal.
2. Connect the **BLACK** test clamp to the battery's **NEGATIVE (-)** terminal or a clean, unpainted metal point on the vehicle chassis (a solid ground).
3. Ensure connections are secure and the clamps are fully seated.



4.3 Performing Tests

The tester will guide you through the menu. Follow the on-screen prompts. Tests can be performed in any order.

Battery Health Test

Measures voltage, internal resistance, State of Health (SOH), and State of Charge (SOC).

1. Select the "Battery Test" or "Health Test" option from the menu.
2. Enter the battery's rated CCA when prompted.
3. Select the correct battery type (Flooded, AGM, GEL, Spiral).
4. Initiate the test. Results will display in approximately 8 seconds.

Cranking Test (CCA Test)

Simulates a cold crank to assess the battery's ability to start the engine.

1. Select the "Cranking Test" or "CCA Test" option.
2. Enter the battery's rated CCA.
3. Follow the on-screen instructions. The test may instruct you to crank the engine.
4. Review the measured CCA, cranking voltage, and time.

Charging System Test

Checks the alternator's output voltage and stability at idle and high speeds.

1. Select the "Charging Test" option.
2. Start the vehicle's engine.
3. The tester will measure charging voltage and ripple. You may be asked to increase engine RPM.
4. Review the results for proper alternator function.

5. Interpreting Results

- **Good/Pass:** The tested component is functioning within normal parameters.
- **Fair/Borderline:** The component is showing signs of wear or may be near the end of its service life. Monitor closely.
- **Replace/Fail:** The component has failed or is no longer reliable. Replacement is recommended.
- **Low Voltage:** Indicates a weak or discharged battery. The battery may need charging or replacement.
- **High Ripple:** May indicate a faulty alternator diode rectifier.

Always refer to the specific numeric values and compare them to your vehicle manufacturer's specifications for the most accurate diagnosis.

6. Compatibility

The BT705 Plus is compatible with the following:

- **Battery Types:** Flooded (Standard), AGM (Absorbent Glass Mat), GEL, Spiral (not compatible with Lithium batteries).
- **Vehicle Systems:** 12V and 24V electrical systems.
- **Vehicles:** Cars, Trucks, SUVs, RVs, ATVs, Boats (Marine), Motorcycles, Tractors, Electric Mowers, Agricultural & Construction Machinery, Buses, Heavy-Duty Truck Trailers.

7. Important Notes

- You **must** enter the rated CCA value as printed on the battery's label for accurate test results.

- For in-vehicle testing, ensure the ignition key is OFF, all accessory loads are OFF, and all vehicle doors are CLOSED before connecting the tester.
- This tester is NOT designed for use with Lithium-ion batteries.
- Keep the tester dry and avoid extreme temperatures outside its operating range.
- Disconnect the tester from the battery when not in use.

Warning

This content is compiled from multiple sources and is provided for reference purposes only. It may not be complete or fully applicable to all situations. If you are unable to resolve your issue, please contact the product manufacturer or an authorized service provider for official support.
