

## Autel MS909CV

# Autel MaxiSys MS909CV Heavy Duty Truck Diagnostic Scanner Instruction Manual

Model: MS909CV

## 1. INTRODUCTION

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The Autel MaxiSys MS909CV is an advanced diagnostic tool designed for heavy-duty commercial vehicles. This manual provides detailed instructions on the setup, operation, and maintenance of your MS909CV device, ensuring optimal performance and efficient vehicle diagnostics.



Figure 1.1: Autel MaxiSys MS909CV Diagnostic System

This image displays the complete Autel MaxiSys MS909CV kit, including the rugged diagnostic tablet, the Vehicle Communication Interface (VCI), and various cables and adapters neatly organized within a durable carrying case. The tablet screen shows a user interface with icons for diagnostics, service, battery test, and multimeter functions.

## 2. KEY FEATURES

The MS909CV offers a comprehensive suite of features for heavy-duty vehicle diagnostics:

- **Extensive Vehicle Coverage:** Supports over 150 light, medium, and heavy-duty commercial vehicle brands (Class 1 to Class 9).
- **Intelligent Diagnostics:** Includes advanced functions like MOTOR TruSpeed Repair, Topology Mapping 2.0, and ECU coding.
- **Advanced ECU Coding:** Utilizes a J2534 programmer for updating vehicle systems and writing adaptive data.
- **Comprehensive Service Functions:** Over 40 special service functions and 23 adaptation functions, including Oil Reset, BMS, SAS, ABS, Injector Coding, DPF Regeneration, and more.
- **OE-Level All Systems Diagnostics:** Accesses all available vehicle systems for in-depth diagnosis and performs over 3000 tests.
- **Enhanced Hardware:** Features an upgraded processor and extended battery life for improved performance.

- **Wireless Connectivity:** Offers up to 150 ft wireless range for flexible operation.



**AUTEL MAXISYS MS909CV**  
Next-Generation CV Diagnostics, Upgraded from Ms908CV II

**2<sup>nd</sup> Gen. Full Power Up!**

- ★ Motor TruSpeed Repair
- ★ Topology Mapping 2.0
- ★ Advanced J2534 ECU Coding
- ★ 39+ Service Functions
- ★ 25+ Adaptation Functions
- ★ D-PDU/RP1210
- ★ AutoScan 2.0
- ★ Scan VIN/License
- ★ OE All System Diagnostics
- ★ 3000+ Active Test
- ★ 210ft. Wireless Blu. Connection
- ★ Battery Test & Health Report
- ★ ADAS Calibration

Light/Medium/Heavy Duty      Agricultural, Construction      .....

Figure 2.1: MS909CV Feature Overview

This image visually summarizes the core capabilities of the Autel MaxiSys MS909CV, such as Motor TruSpeed Repair, Topology Mapping 2.0, J2534 ECU Coding, and various service and adaptation functions. It also indicates compatibility with light, medium, and heavy-duty vehicles, as well as agricultural and construction equipment.

### 3. SETUP

Follow these steps to set up your Autel MaxiSys MS909CV for initial use:

1. **Charge the Tablet:** Connect the power adapter to the tablet and a power outlet. Ensure the tablet is fully charged before first use.
2. **Power On:** Press and hold the power button on the tablet to turn it on.
3. **Initial Configuration:** Follow the on-screen prompts to select your language, time zone, and connect to a Wi-Fi network.
4. **VCI Connection:** Connect the Vehicle Communication Interface (VCI) to the vehicle's diagnostic port (typically a 9-pin or 6-pin connector for heavy-duty vehicles). The VCI will establish a wireless connection with the tablet.
5. **Software Updates:** Ensure the device software is up-to-date by navigating to the 'Update' icon on the main menu and downloading any available updates.

## 4. OPERATING THE DEVICE

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### 4.1. Vehicle Selection and Diagnostics

To begin diagnostics, select the appropriate vehicle brand and model:

1. From the main menu, tap the 'Diagnostics' icon.
2. Select the vehicle manufacturer (e.g., Freightliner, Cummins, Hino, Mack).
3. Choose 'Auto Scan' to perform a comprehensive scan of all available systems or select 'Control Unit' to access specific modules.
4. The system will display Diagnostic Trouble Codes (DTCs) and live data.

### 4.2. Topology Mapping 2.0

The Topology Mapping 2.0 feature provides a visual representation of the vehicle's CAN BUS network, showing all control units and their communication status. This helps in quickly identifying faulty modules.

- After an Auto Scan, navigate to the 'Topology' tab to view the diagram.
- Modules are color-coded to indicate their status (e.g., green for healthy, red for fault).
- Click on a module to view detailed information or perform specific tests.



# 2025 Enhanced Features

## Module Topology 2.0 & Auto Scan 2.0

### Autel upgraded Topology 2.0

One click to Scan & View All Modules in One Map

- Based on Real Circuit Diagram
- Display Real ECU Structures
- Locate DTCs & Number of DTCs in Seconds
- Cover 150+ Makes & Engines

### Auto scan 2.0

- Super Easy Vehicle Decoding
- 10–40s All Systems Scanning
- 5X Faster than Other Brands
- BENZ, FORD, CHRYSLER, DODGE



Figure 4.1: Topology 2.0 and Auto Scan 2.0

This image illustrates the enhanced features of the MS909CV, specifically Topology 2.0, which provides a real circuit diagram view of vehicle modules, and Auto Scan 2.0 for rapid system scanning. The screen shows a complex network of interconnected modules within a truck's electrical system.

### 4.3. Parameter Changes (ECU Coding)

The MS909CV allows for modification of vehicle parameters to meet specific operational or regulatory requirements. This includes adjusting speed limits, idle times, and enabling/disabling certain features.

1. From the 'Function menu', select 'Coding'.
2. Choose 'Modify data' to adjust parameters.
3. Select the parameter you wish to change (e.g., 'Maximum accelerator vehicle speed').
4. Enter the new value and confirm.
5. Follow on-screen instructions to save changes to the ECM, which may include cycling the ignition key.

#### Video 4.1: Demonstrating Parameter Changes and Cylinder Cutout

This video features an Autel product specialist demonstrating how to use the MS909CV to change vehicle parameters, such as maximum speed and idle time, for heavy-duty trucks. It also shows the process of performing a cylinder cutout test to diagnose engine issues, highlighting the device's ability to identify and resolve problems efficiently.

### 4.4. Special Functions and Services

The MS909CV provides a wide array of special functions to assist with vehicle maintenance and repair:

- **Oil Reset:** Resets the oil service light.
- **ABS Bleeding:** Performs brake bleeding procedures.
- **Injector Coding:** Codes new injector values into the ECM.
- **SAS Reset:** Resets the steering angle sensor.
- **DPF Regeneration:** Initiates forced Diesel Particulate Filter regeneration.
- **Cylinder Cutout Test:** Helps identify faulty cylinders by temporarily disabling injectors.
- **Other Services:** Includes BMS, Suspension, Throttle Matching, EPB Reset, TPMS Reset, DEF Pump Override Test, and Engine Status Monitor.

# 64+ Resets, Cover Most Useful Maintenance for Trucks



- Monitor Throttle Position Sensor
- DOC Replacement Reset
- F-u-e-l Pressure Adaptation Reset
- Injector CEOM Reset
- O2 Sensor Calibration
- Injection Quantity Adjustment
- DSI System De-Aeration
- MAF Sensor Calibration
- Parameter Setting
- Aftertreatment Maintenance
- Boost Calibration
- Rack Sensor Calibration
- Timing Calibration
- Injector Trim Calibration

Figure 4.2: 64+ Reset Functions

This image displays a selection of over 64 reset and maintenance functions supported by the MS909CV, including Oil Reset, ABS Bleeding, Injector Coding, SAS Reset, Suspension, Throttle Matching, EPB Reset, and TPMS Reset. Each function is represented by a clear icon and label.





Figure 4.3: All CV System Diagnostics

This diagram illustrates the comprehensive diagnostic capabilities of the MS909CV across all commercial vehicle systems. It shows the diagnostic tablet connected to various modules like Engine, Transmission (TCM), ABS/EBS, BMS, SCR, DPF, and ECAS, indicating its ability to perform over 3000 tests and functions like AutoScan 2.0, Read/Clear DTCs, Live Data, ECU Info, Freeze Frame, and Health Report.

#### 4.5. MOTOR TruSpeed Repair

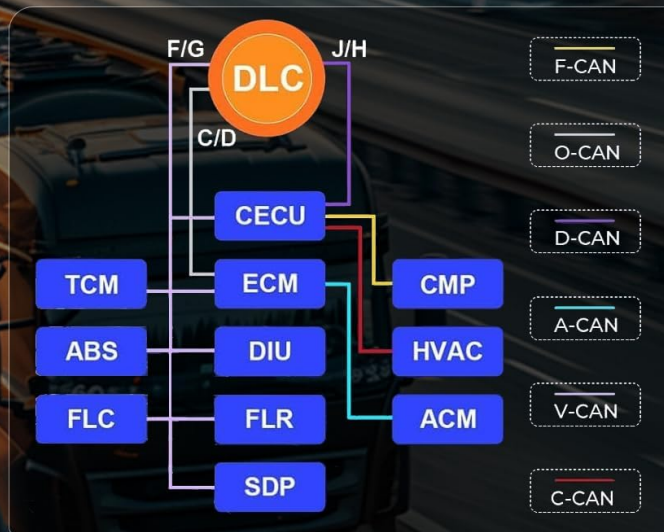
This feature provides extensive repair information and tips directly on the device, including Technical Service Bulletins (TSB), DTC analysis, step-by-step repair procedures, component locations, wiring diagrams, and maintenance schedules. *Note: This is an optional paid subscription service.*

# MOTOR TRUSPEED REPAIR

- **TSBs & Wiring Diagrams**



- Diagnostic Trouble Codes(DTCs)
- Repair Procedures/ Specifications
- Maintenance Schedules
- OEM Position Statements
- Component Locations



- Clearly show the communications between the ECU modules

- Intuitively determine where the vehicle problem is by different colors

- Greatly shorten 2x diagnostic time and improve 50% efficiency

Figure 4.4: MOTOR TruSpeed Repair

This image displays the MOTOR TruSpeed Repair interface on the MS909CV tablet, showing detailed diagnostic information such as TSBs, wiring diagrams, DTC analysis, repair procedures, maintenance schedules, and component locations. It highlights how the tool can intuitively determine vehicle problems and improve diagnostic efficiency.

## 4.6. Other High-End Functions

- **Scan VIN/License:** Quickly identify vehicle information.
- **Pre & Post Report:** Generate reports before and after repairs.
- **Autel Cloud Report:** Store and access diagnostic reports via cloud.
- **Wi-Fi Printing:** Print reports wirelessly.
- **Inspection:** Supports integration with inspection cameras (MV05S/108S).
- **Battery Test:** Compatible with battery analysis tools (BT506).
- **Remote Expert:** Access remote assistance for complex issues.





Figure 4.5: 10+ High-End Functions

This image showcases more than ten advanced functions of the MS909CV, including Scan VIN/License, Pre & Post Report, Autel Cloud Report, Auto Scan 2.0, Wi-Fi Printing, Inspection (with MV05S/108S), Battery Test (with BT506), and Remote Expert. Each function is depicted with a relevant icon.

## 5. MAINTENANCE

To ensure the longevity and optimal performance of your MS909CV:

- **Keep Clean:** Regularly wipe the tablet screen and body with a soft, damp cloth. Avoid abrasive cleaners.
- **Software Updates:** Periodically check for and install software updates to ensure compatibility with new vehicle models and features.
- **Storage:** Store the device and its accessories in the provided protective case when not in use, in a dry environment away from extreme temperatures.
- **Battery Care:** Avoid fully discharging the battery frequently. Charge the device regularly.

## 6. TROUBLESHOOTING

If you encounter issues with your MS909CV, consider the following:

- **No Power:** Ensure the tablet is charged and the power button is pressed firmly. Check the power adapter connection.
- **VCI Not Connecting:** Verify the VCI is properly connected to the vehicle's diagnostic port and the tablet's Bluetooth/Wi-Fi is enabled. Restart both the tablet and the VCI.
- **Communication Errors:** Check vehicle ignition status. Ensure the VCI firmware is up-to-date. Try connecting to a different vehicle to rule out vehicle-specific issues.
- **Software Freezes:** Restart the tablet. If the issue persists, perform a factory reset (backup data first).
- **Slow Performance:** Close unnecessary applications. Clear cache if available in settings. Ensure sufficient storage space.

For persistent issues, contact Autel Support for assistance.

## 7. SPECIFICATIONS

Specification	Detail
Brand	Autel
Operating System	Android 11.0
Language	English
UPC	792499540630
Manufacturer	Autel

<div> <div> <b>MS909 CV</b>  <b>BOOST BUSINESS 200%</b> </div> <div>  <b>MS909CV</b> </div> <div> <b>MS908CV</b> </div> <div> <b>MS908 CV II</b> </div> </div>			
<b>MS909CV&gt;MS908CVI&gt;MS908CV&gt;MS906CV</b>			
Processor	Qualcomm 660	Samsung Exynos	Qualcomm 660
System	Android 7.0	Android 4.4.2	Android 7.0
RAM+ROM	4+128G	2+64G	4+128G
Battery	15000mAh	11000mAh	15000mAh
Motor TureSpeed	✓	✗	✗
Topology 2.0	✓	✗	✗
ADAS Calibration	✓	✗	✗
Battery Test	✓	✗	✗
Service Functions	60+	41+	60+
Tests	3000+	✓	✓
All System Scan	✓	✗	✗
Scan VIN/License	✓	✗	✓
Pre & Post Scan	✓	✗	✓
Wi-Fi Printing	✓	✗	✓
Autel Cloud Report	✓	✗	✓
Screen Cast	✓	✗	✓
Pair With MV108S	✓	✗	✓

Figure 7.1: MS909CV Model Comparison




This image presents a comparative table highlighting the superior specifications and features of the MS909CV against its predecessors (MS908CVi, MS908CV, MS906CV). Key differences include processor type, operating system, RAM+ROM, battery capacity, and the inclusion of advanced features like Motor TruSpeed, Topology 2.0, and ADAS Calibration.

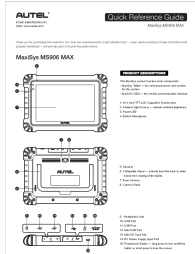
## 8. WARRANTY AND SUPPORT

The Autel MaxiSys MS909CV is backed by a 1-year warranty and includes 1-year of free software updates. For any product-related inquiries or technical assistance, please contact Autel Support. The device also features a 'Remote Expert' function to facilitate professional remote troubleshooting.

### Related Documents - MS909CV



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## [Autel MaxiSys MS906 MAX Quick Reference Guide | Professional Diagnostic Tool](#)

Get started quickly with the Autel MaxiSys MS906 MAX professional diagnostic tablet and MaxiVCI V200. This guide covers product features, component identification, and initial setup for vehicle diagnostics.