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AUTOOL CT500

AUTOOL CT500 Fuel Injector Cleaner and Tester Machine User Manual

Model: CT500

1. PRODUCT OVERVIEW

The AUTOOL CT500 is a professional-grade ultrasonic fuel injector cleaner and tester machine designed for comprehensive maintenance of various fuel injector types, including GDI, EFI, and FSI. It features a color display for real-time data, a large cleaning tank, and supports multi-voltage injectors. This machine is capable of performing both cleaning and testing functions to ensure optimal performance of your vehicle's fuel system.

15 FUNCTIONS AVAILABLE

15



3 CLEANING FUNCTIONS

- ① Ultrasonic Cleaning
- ② Reverse Flushing
- ③ No-disassembly Cleaning

12 TESTING FUNCTIONS

- ④ Idle Speed Test
- ⑤ Medium Speed Test
- ⑥ High Speed Test
- ⑦ Accelerating Test
- ⑧ Variable Speed Test
- ⑨ Leakage Test
- ⑩ Idling Spray Value Test
- ⑪ Medium Speed Spray Value Test
- ⑫ High Speed Spray Value Test
- ⑬ Pulse Injection Test
- ⑭ Wide Pulse Injection Test
- ⑮ Continuous Injection Test

Image: Overview of the AUTOOL CT500 highlighting its 15 available functions, including 3 cleaning functions and 12 testing functions.

2. SAFETY INFORMATION

Please read and understand all safety warnings and instructions before operating the AUTOOL CT500. Failure to do so may result in serious injury or damage to the equipment.

- **Electrical Safety:** Ensure the power supply is well-connected and grounded. Do not operate the machine with wet hands.
- **Chemical Handling:** Use appropriate protective gear (gloves, eye protection) when handling cleaning and testing fluids. Ensure adequate ventilation in the work area.
- **Flammable Liquids:** **No open flames are allowed around the machine during operation.** Use non-flammable cleaning and testing solutions.
- **Injector Handling:** Always ensure injectors are securely installed before starting any cleaning or testing process.
- **Pressure Safety:** Do not disconnect hoses or fittings while the system is pressurized. Release pressure before performing any maintenance or adjustments.

- **Children and Pets:** Keep the machine out of reach of children and pets.

3. WHAT'S IN THE BOX

The AUTOOL CT500 package includes the following components:

- AUTOOL CT500 Main Unit
- Various sizes of Injector Connectors and Adapters
- 3 Different Pulse Signal Cables (e.g., Mercedes-Benz, BMW, Universal)
- Ultrasonic Cleaning Tank
- Oil Rail and Lock Poles
- Measuring Cylinders
- Oil Drain Handle
- Power Cable
- Funnel
- User Manual



Image: The AUTOOL CT500 Fuel Injector Cleaner and Tester machine along with its comprehensive set of accessories, including various connectors, cables, and tools.

COMES WITH 3 DIFFERENT PULSE SIGNAL CABLES



**Mercedes-Benz Exclusive
Pulse Signal Cable**



**BMW Exclusive
Pulse Signal Cable**



**Universal
Pulse Signal Cable**

Image: Close-up of the three different pulse signal cables provided, including specific cables for Mercedes-Benz and BMW, and a universal cable.

COMES WITH VARIOUS CONNECTORS



Ø 11



Ø 12



Ø 12.5



Ø 13



Ø 13.6



Ø 14



Ø 15



Ø 15.8



for BMW

Image: A selection of various sized injector connectors, ranging from Ø11 to Ø15.8, and specific connectors for BMW, ensuring wide compatibility.

4. SETUP

- Unpacking:** Carefully remove all components from the packaging.
- Placement:** Place the CT500 main unit on a stable, level surface in a well-ventilated area, away from open flames.
- Power Connection:** Connect the power cable to the machine and a grounded AC 110V/220V power outlet.
- Fluid Preparation:**
 - For ultrasonic cleaning, add appropriate cleaning fluid to the ultrasonic tank.
 - For testing, add suitable test fluid (e.g., 99% rubbing alcohol) to the main tank using the provided funnel. Ensure the fluid level is adequate for testing.
- Injector Installation:**
 - Install the desired injector connectors onto the oil rail.

- Securely mount the injectors into the oil rail and then into the measuring cylinders.
- Connect the appropriate pulse signal cables from the machine to each injector.

6. **Initial Power On:** Flip the power switch to turn on the machine. The color display will illuminate.

Your browser does not support the video tag.

Video: A demonstration of setting up and operating the AUTOOL CT500, including installing injectors, adding cleaning and test fluids, and initiating cleaning and testing cycles. This video shows the process of testing and cleaning 6 injectors simultaneously.



Image: The high-definition color display of the AUTOOL CT500, showing real-time work data, function selection, voltage selection, and working pressure control.

5. OPERATING INSTRUCTIONS

5.1 Cleaning Functions

The CT500 offers three primary cleaning functions:

1. Ultrasonic Cleaning:

This function uses ultrasonic waves to thoroughly remove carbon deposits and internal blockages from injectors. It can clean single or multiple injectors simultaneously.

- Place injectors in the ultrasonic cleaning tank.
- Add appropriate ultrasonic cleaning fluid to cover the injector tips.
- Select "Ultrasonic Cleaning" on the display and set the desired cleaning time.
- Start the cleaning process.

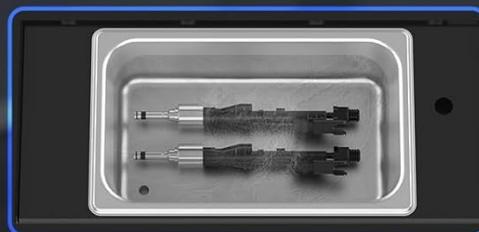


Image: Fuel injectors submerged in the ultrasonic cleaning tank, demonstrating the ultrasonic cleaning technology in action.

LARGE CLEANING TANK



Internal cleaning



Surface cleaning



Image: The large 67.63oz ultrasonic cleaning tank, capable of both internal and surface cleaning of fuel injectors.

2. Reverse Flushing:

This function cleans injectors by flowing fluid in the opposite direction of normal fuel flow. **Note: Only 12V injectors are supported for reverse flushing. 70V and 120V injectors are not supported.**

- Install injectors in the opposite direction on the oil rail.
- Select "Reverse Flushing" and initiate the process.

3. No-Disassembly Cleaning:

This method allows for cleaning of the combustion chamber or throttle without disassembling the injectors. It requires connection to specific C100 special parts (sold separately).

- Connect the machine to the C100 special parts as per the C100 manual.
- Follow the instructions on the CT500 display to perform no-disassembly cleaning.

5.2 Testing Functions

The CT500 provides 12 comprehensive testing modes to evaluate injector performance:

- **Idle Speed Test:** Simulates engine idling conditions.

- **Medium Speed Test:** Simulates medium engine speeds.
- **High Speed Test:** Simulates high engine speeds.
- **Accelerating Test:** Evaluates injector response during acceleration.
- **Variable Speed Test:** Tests performance across a range of speeds.
- **Leakage Test:** Checks for fuel leaks from the injector.
- **Idling Spray Value Test:** Measures spray volume at idle.
- **Medium Speed Spray Value Test:** Measures spray volume at medium speed.
- **High Speed Spray Value Test:** Measures spray volume at high speed.
- **Pulse Injection Test:** Tests short pulse injection.
- **Wide Pulse Injection Test:** Tests longer pulse injection.
- **Continuous Injection Test:** Evaluates continuous fuel flow.

During testing, the machine assesses injection volume, uniformity of injection, atomization pattern, tightness, and dripping.

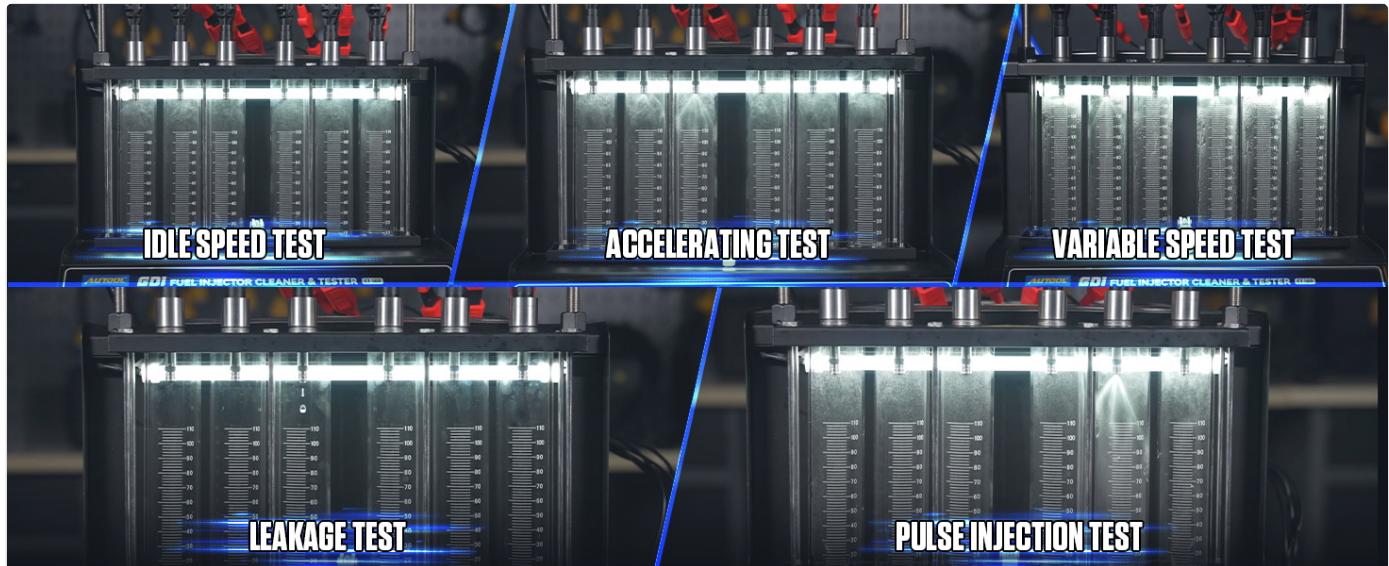


Image: Visual representation of different injector testing functions, including Idle Speed Test, Accelerating Test, Variable Speed Test, Leakage Test, and Pulse Injection Test, showing fluid levels in the measuring cylinders.

Voltage Selection: The CT500 supports 12V, 70V, and 120V voltage outputs to drive different types of injectors (GDI, EFI, FSI). Select the appropriate voltage on the control panel before testing.

COMPATIBLE WITH VARIOUS INJECTOR TYPES



Image: Illustration of the CT500's compatibility with various injector types (GDI, EFI, FSI) and the selectable voltage options (12V, 70V, 120V).

6. MAINTENANCE

- Fluid Management:** Regularly drain and replace cleaning and testing fluids to maintain optimal performance and prevent contamination. Use the oil drain handle for easy fluid removal.
- Cleaning:** Wipe down the machine's exterior with a soft, damp cloth after each use. Avoid using abrasive cleaners or solvents.
- Injector Adapters:** Clean injector adapters and connectors after each use to prevent residue buildup. Store them in the built-in storage drawer.
- Storage:** Store the machine in a dry, clean environment when not in use.



Image: A detailed diagram labeling the main components of the AUTOOL CT500, including the oil drain handle, ultrasonic cleaning tank, and portable drawer.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Machine does not power on.	Power cable not connected, power switch off, or power outlet issue.	Check power cable connection, ensure power switch is on, test power outlet.
Injectors not spraying during test.	Incorrect voltage selected, pulse signal cables loose, or injectors clogged.	Verify correct voltage setting, check cable connections, perform ultrasonic cleaning.
Inconsistent spray pattern.	Injector partially clogged, or pressure setting incorrect.	Perform thorough ultrasonic cleaning, adjust system pressure as needed.
Fluid leakage during test.	Injectors not properly sealed, or O-rings damaged.	Ensure injectors are securely installed, replace worn O-rings.

8. SPECIFICATIONS

Parameter	Value
Model	CT500
Item Weight	41.4 pounds
Product Dimensions	17 x 17 x 19 inches
Country of Origin	China
Power Supply	AC 110/220V ±10%
Frequency	50HZ ±0.5
Relative Humidity	<85%
Environment Temperature	0°C - +40°C

Parameter	Value
External Magnetic Field Strength	<400A/m
Fuel Tank Capacity	2000ml
Ultrasonic Cleaning Power	700W
Range of Rotation	0-7500r/min
PWM Pulse Width	0-40ms, step 0.1ms
Time Settings	0-10min
Cylinder Volume	140ml
Injection Times	0-9900 times, step 100ms
System Pressure	0-0.8Mpa

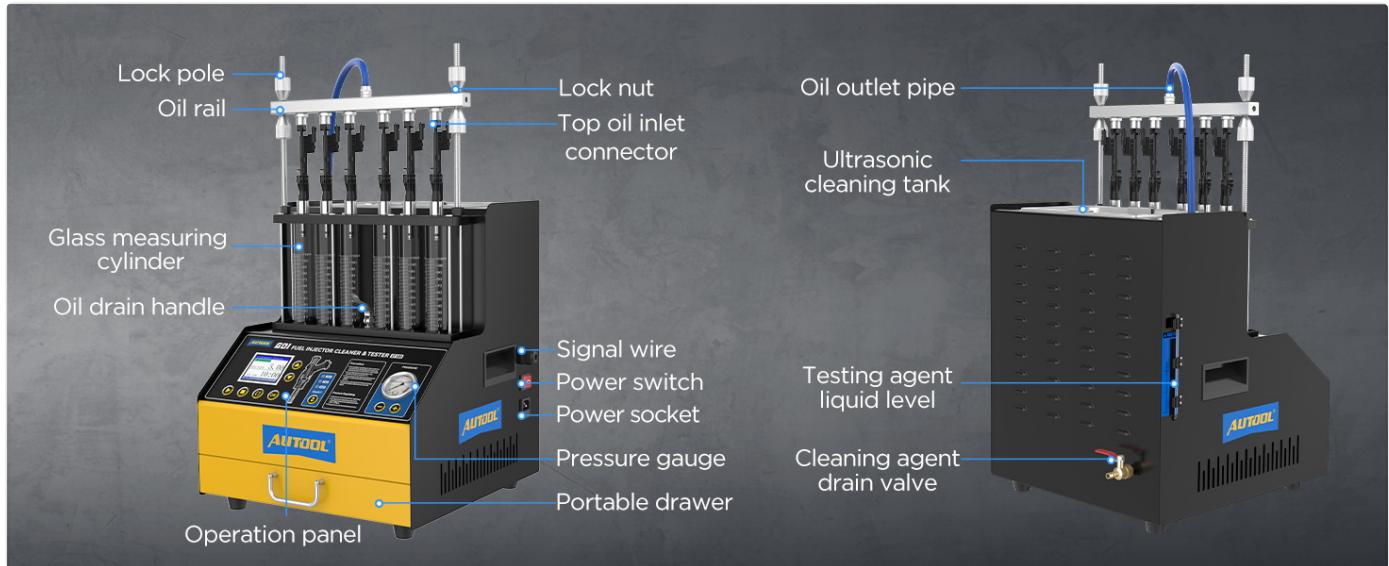


Image: A table detailing the working environment requirements and technical parameters of the AUTOOL CT500 Fuel Injector Cleaner and Tester.

9. WARRANTY AND SUPPORT

The AUTOOL CT500 Fuel Injector Cleaner and Tester Machine comes with a **Three Years Warranty** from the date of purchase. AUTOOL is committed to providing high-quality products and customer satisfaction.

- Warranty Coverage:** This warranty covers defects in materials and workmanship under normal use.
- Technical Support:** AUTOOL provides **lifetime technical support** for the CT500. If you encounter any issues or have questions regarding the operation, maintenance, or troubleshooting of your device, please contact AUTOOL customer service.
- Contact Information:** For any quality problems, technical assistance, or inquiries, please reach out to AUTOOL customer support. We aim to respond within 24 hours.
- Replacements:** In case of any defect covered under warranty, AUTOOL will provide a new replacement or suitable solution to ensure customer satisfaction.

For the most up-to-date support information and contact methods, please refer to the official AUTOOL website or the contact details provided with your product documentation.

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