



[Home](#) » [AUTOOL](#) » **AUTOOL AS506 Brake Fluid Boiling Point Tester User Manual** 

Contents [[hide](#)]

- [1 AUTOOL AS506 Brake Fluid Boiling Point Tester](#)
- [2 COPYRIGHT INFORMATION](#)
- [3 SAFETY RULES](#)
- [4 PRODUCT INTRODUCTION](#)
- [5 PRODUCT STRUCTURE](#)
- [6 INSTRUCTIONS](#)
- [7 BRAKE FLUID RELATED KNOWLEDGE](#)
- [8 INTERFACE DISPLAY AND DESCRIPTION](#)
- [9 MAINTENANCE SERVICE](#)
- [10 WARRANTY](#)
- [11 RETURN & EXCHANGE SERVICE](#)
- [12 FAQs](#)
- [13 Documents / Resources](#)
 - [13.1 References](#)
- [14 Related Posts](#)



AUTOOL AS506 Brake Fluid Boiling Point Tester



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SAFETY RULES

General safety rules

- Always keep this user manual with the machine.
- Before using this product, read all the operational instructions in this manual. Failure to follow them may result in electric shock and irritation to skin and eyes.
- Each user is responsible for installing and using the device according to this user manual. The supplier is not responsible for damage caused by improper use and operation.
- This device must only be operated by trained and qualified personnel. Do not operate it under the influence of drugs, alcohol, or medication.
- This machine is developed for specific applications. The supplier points out that any modification and/or use for any unintended purposes is strictly prohibited.
- The supplier assumes no express or implied warranties or liabilities for personal injury or property damage caused by improper use, misuse, or failure to follow safety instructions.
- This device is intended for use by professionals only.
- Improper use by non-professionals may result in injury or damage to the tools or

workpieces.

- Keep out of reach of children.
- When operating, ensure that nearby personnel or animals maintain a safe distance. Avoid working in rain, water, or damp environments. Keep the work area well-ventilated, dry, clean, and bright.

Handling

- Used/damaged device must not be disposed of in household waste but must be disposed of in an environmentally friendly manner. Use designated electrical equipment collection points.
- Used recycling oil and batteries should be treated as hazardous waste, such as at a designated waste collection station.

Electrical safety rules

Do not twist or severely bend the power line, as this may damage the internal cables. If the power line shows signs of damage, do not use the brake fluid boiling point tester. Damaged cables pose a risk of electrical injury. Keep the power line away from heat sources, oil sources, sharp edges, and moving parts. Damaged power lines must be replaced by the manufacturer, their technicians, or similarly qualified personnel to prevent hazardous situations or injury.

Equipment safety rules

- Never leave the device unattended while it is powered on. Always disconnect the power line and ensure the device is turned off when it is not being used for its intended purpose!
- Do not attempt to repair the equipment yourself.
- Before connecting the device to power, check whether the battery voltage matches the value on the nameplate. If they do not match, it may pose serious dangers and damage the device.
- It is essential to protect the equipment from rainwater, moisture, mechanical damage, overload, and rough handling.

Application

- Check the power line and detection probe for damage before use. If there is any damage, do not operate the device.
- Use the equipment only in compliance with all safety instructions, technical documents, and vehicle manufacturer specifications.
- After the previous test is completed, be sure to clean and dry the testing probes before the next test.

Personnel protection safety rules

- The test fluid used by the device may be harmful to health, and any contact must be avoided.
- When using oil analysis tester, always wear protective goggles to prevent potential splashes from reaching your eyes. In case of contact, rinse with running water under your open eyelids for several minutes. If symptoms persist, consult a doctor.
- Always wear protective gloves while working to avoid skin contact with the oil. If skin contact occurs, wash immediately with soap and water. Remove any clothing or footwear contaminated with oil immediately.
- If swallowed, seek medical advice immediately.
- Always ensure you have a stable footing to safely control equipment in case of emergencies.

Any other use is considered beyond the intended purpose of the equipment and is prohibited.

WARNING

Before using the instrument, please read this manual carefully for proper operation.

- Please read this manual before the first use.
- Please wear goggles when working and be careful not to splash brake fluid into your eyes.
- Do not perform the test without sufficient liquid in the beaker. (The test stick can be damaged by empty boiling)
- Do not touch to avoid burns after the test, as the test stick and liquid are at high temperature.
- Do not pour the brake fluid back into the reservoir as the structure of the fluid has

been damaged and the boiling point has been lowered, otherwise, it will affect driving safety.

- After the test, please empty the brake fluid and fill another 50ml of water to test the boiling point in order to clean the residual brake fluid of the test stick.
- If the same brake fluid sample is tested continuously and the data varies, this is normal because the test sample has been boiled and the structure has changed.
- This equipment is designed for brake fluid detection and is not responsible for any product damage or property damage caused by its use for other purposes.
- This equipment requires a professional technician or trained service personnel. Please do not touch or use this equipment with non-automotive technicians or by children.

Please read this manual carefully before using the product for the first time and refer to the following documents to assist in diagnosis.

- Vehicle Original Service Manual.
- Related technical bulletins.
- The Material Safety Data Sheet (MSDS) provided by brake fluid manufacturer. Please put the relevant documents in the portable box of this device for easy checking at any time.

PRODUCT INTRODUCTION

Product parameters

Applicable brake fluid types	DOT3, DOT4, DOT4+, DOT4ESP, DOT5, DOT5.1, DOT5.1ESP, ENV4, ENV6
Wet boiling point range	140~205°C (284~401°F) ±5%
Dry boiling point range	160~320°C (320~608°F) ±5%
Working voltage	12V, minimum 10V

Detection time	16 seconds
Working temperature range	0~50°C

Features

- Battery polarity reverse protection
- The screen will prompt the operation, which is clear and easy.
- Suitable for detecting different types of brake fluid. The minimum boiling point of brake fluid can be obtained quickly and accurately, and the official dry and wet boiling point values are also available as a reference.
- No need to use consumable test sticks to save costs.

Maintenance and calibration

Maintenance

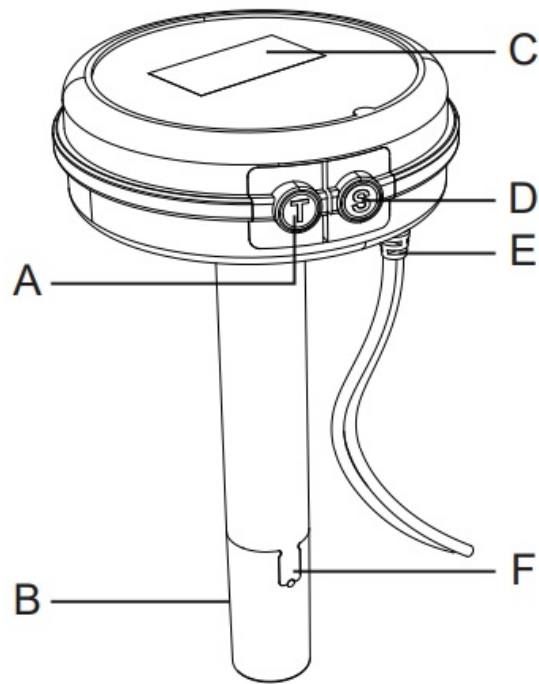
When it is not in use for a long time, please detect it with water, so that the corrosive brake fluid can be removed vertically from the test stick and dilute the corrosiveness, and then leave the heating stick to dry in the air at room temperature.

Calibration

Fill the beaker with water and test if the boiling point is at 100 °C (212 °F) \pm 3 %, and make a quick initial diagnosis of whether the tool is working properly. If more rigorous standards are required, it must be returned to the factory for re-testing and calibration.

PRODUCT STRUCTURE

Structure diagram



A	TAB key	B	Test stick
C	OLED display	D	START key
E	Protective liners	F	Air hole

INSTRUCTIONS

Sampling operation

- Clamp the power clip of the main unit to the 12V battery, and be careful not to connect the positive and negative reversely or short-circuit with the vehicle.
- Use the injection sampler to suck the brake fluid, take out 50ml of fluid, and then fill it into the beaker to be tested.

CAUTION

- The brake fluid to be tested should be filled into the beaker over the 40ml scale and not more than 50ml.
- Put the test stick into the beaker and make sure the sampling hole of the test stick is immersed in the brake fluid and the air bubbles are bled from the cavity inside the test head to avoid affecting the test results.
- Do not shake, knock or drop the test head (heater bar) to avoid injury to the sensor

and other parts.

Detection operation

- The red power clamp is connected to the positive of the battery, and the black power clamp is connected to the negative, and then the tester is automatically powered on.
- Select measurement mode: normal mode or brand mode.
- Select the brand and brake fluid type (DOT3\DOT4, etc.).
- After entering the ready interface, press and hold the S button for about 16s, and wait for the progress bar to run full to complete the test. During the test, the live fluid temperature and battery voltage will be displayed.
- When the test is complete, remove the unit vertically to avoid brake fluid from being spilled.

BRAKE FLUID RELATED KNOWLEDGE

Brake fluid boiling point reference value

Types	Dry Boiling Point (Brand new brake fluid)	Wet Boiling Point (Brake fluid in use)
DOT3	205°C/401°F	140°C/284°F
DOT4	230°C/446°F	155°C/311°F
DOT4+	230°C/446°F	155°C/311°F
DOT5	260°C/500°F	180°C/356°F
DOT5.1	270°C/518°F	190°C/374°F

Remarks

DOT 4+ (or Super DOT 4) does not have a standard specification. There are currently three statements:

- The boiling point specification is in accordance with DOT 4, but the wet absorption performance is lower.

- The boiling point specification is based on DOT 5.1, but the low temperature fluidity is based on DOT 4.
- The boiling point specification is 300°C / 195°C, and other properties are in accordance with DOT 4.

Supporting brand list

- This product covers 14 popular brands in the market: ATE, TRW, BOSCH, MOBIL, TOTAL, FUCHS, MOTUL, DELPHI, KUNLUN FERODO, BREMBO, TEXTAR, MONARCH, CHANGCHENG.

Brake fluid-related knowledge

- Brake fluid specifications and components

	DOT3	DOT4	DOT4+	DOT5.1	DOT5
Base oil (Compatible ingredients)	Polyalkylene Glycol Ether, PAG				Silicon oil
Additives		BorateEsters		Diethylene Glycol-Ester	
Dry boiling point (Boiling point of new fluid)	205°C 401°F	230°C 446°F	230°C 446°F	270°C 518°F	260°C 500°F
Wet boiling point (Use boiling point with caution)	140°C 284°F	155°C 311°F	155°C 311°F	190°C 374°F	180°C 356°F

Why do we need to detect the boiling point of brake fluid

- Brake fluid is essentially a corrosive, water-soluble fluid for low-temperature hydraulics

and is not an actual oil. Brake fluid tends to absorb wetness in the air causing the boiling point to decrease and the brake fluid disc to boil due to prolonged friction. Brake fluids with lowered boiling points are more likely to boil and generate vapor due to heat absorption. Since the brake fluid circuit is a sealed fluid system and no air is allowed to exist, the boiling steam will affect the transmission of the fluid pressure channel and finally cause brake failure.

- Generally, the brake fluid should be changed every 20,000 kilometers or within two years. Detecting the boiling point of brake fluid is to determine whether the brake fluid is good or bad, which is closely related to driving safety.
- In addition to the above-mentioned reasons that will cause the air lock phenomenon to cause the brake to fail, it will also greatly consume the additives in the oil, causing the brake fluid lose its protective ability and acidify the brake fluid. And it will produce copper ions, which will cause metal corrosion and produce sludge, and finally, jam the master cylinder and sub-cylinder of the brake system, and damage the ABS.

Why the actual boiling point is lower than the detected boiling point

The typical working temperature of brake calipers is about 150°C~200°C. If the boiling point of the brake fluid is detected to be 180°C when the brake fluid is taken out from the mouth of the reservoir, the brake fluid caliper point is actually only about 155°C, because the rubber tubing easily absorbs water, resulting in a large difference.

How to prevent/remove vapor

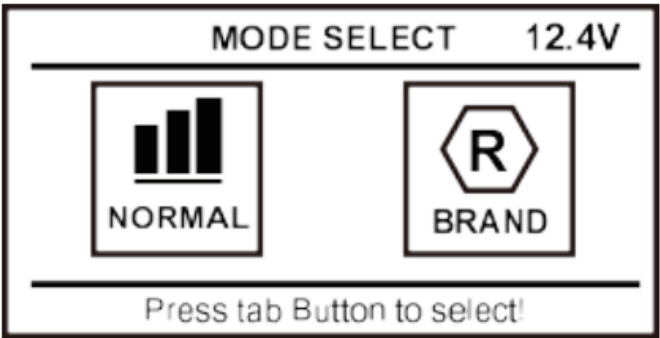
In fact, it is impossible to completely prevent vapor from entering, so vapor will enter the brake fluid from the brake fluid reservoir cover, rubber hose, and connector gap. For the majority of cars, vapor increases by about 2% over a year, and this alone can significantly affect brake fluid quality, so it should be taken seriously. The only way to remove water vapor is to use twice the amount of brake fluid. One bottle is used for rinsing to remove residual vapor in the pipeline, and the other bottle is used for adding and refilling the pipeline.

INTERFACE DISPLAY AND DESCRIPTION

Home interface

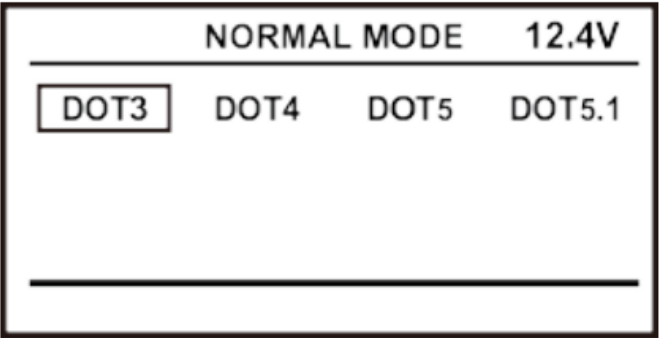
- After the power clip is properly connected, the home interface will appear on the

screen. Press the “T” key to switch modes or press the “S” key to select and enter this mode. As shown in the figure below:

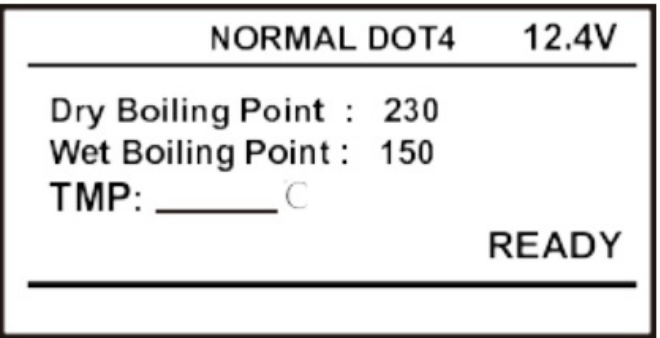


NORMAL Mode

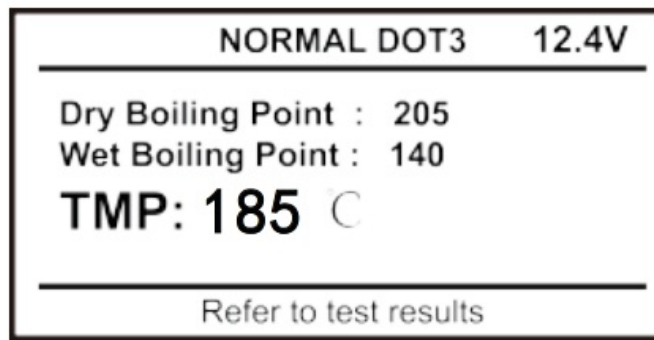
- After entering the “NORMAL” mode, you can use the “T” key to switch the brake fluid types (DOT3, DOT4, DOT5); then press the “S” key to select the required fluid type. As shown in the figure below:



- In the NORMAL mode, after selecting a fluid type, it will enter the ready interface, which displays the reference dry and wet boiling points and battery voltage of the oil product; The page is as shown in the figure below:



- In the NORMAL mode, when the ready page is displayed, press and hold the “S” key, the progress bar starts to read, and the TMP displays the live temperature value at the same time; after the progress bar is full (about 16s), the screen will display the final test result. It can be used to judge whether the brake fluid needs to be changed.

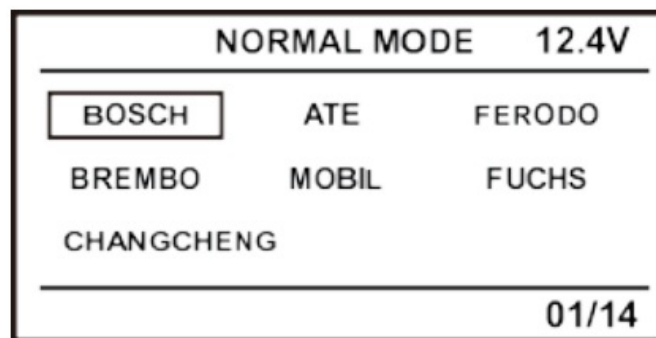


- Press the “T” key again to return to the startup homepage.

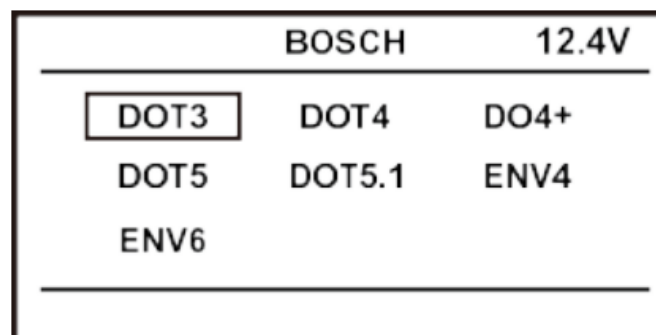
BRAND Mode

Press the “T” key to select “BRAND” on the home interface, and then press the “S” key to enter the brand selection page; This unit provides 14 kinds of popular brands of brake fluid for users to select. Press the “T” key to switch brands, and press the “S” key to confirm the brand.

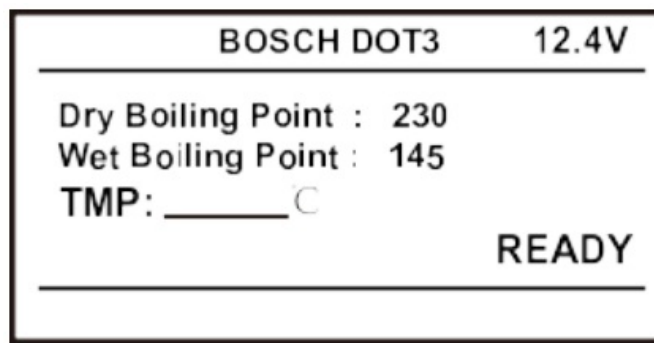
As shown in the figure below:



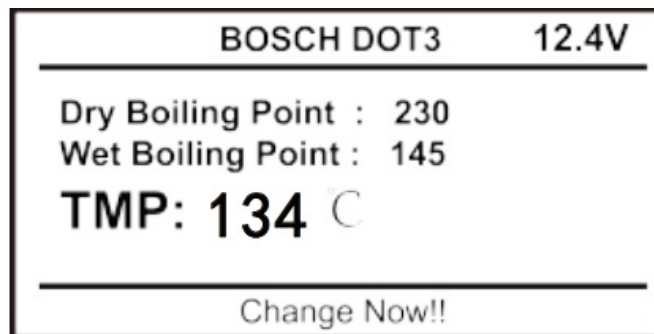
After selecting the brand, enter the fluid type selection interface of this brand; press the “T” key to switch the fluid type, press the “S” key to select. As shown in the figure below:



After the fluid type is confirmed, press the “S” key to enter the ready page under the brand mode. This page will display the dry and wet boiling points, battery voltage and live temperature. As shown in the figure below:



When the ready page is displayed, press and hold the “S” key, the progress bar starts to read, and the live temperature starts to go up; after the progress bar is full, the screen will display the final test result for the user’s reference. As shown in the figure below:



Press the “T” key again to return to the startup homepage after the detection is completed.

MAINTENANCE SERVICE

Our products are made of long-lasting and durable materials, and we insist on a perfect production process. Each product leaves the factory after 35 procedures and 12 times of testing and inspection work, which ensures that each product has excellent quality and performance.

Maintenance

To maintain the performance and appearance of the product, it is recommended that the following product care guidelines be read carefully

- Be careful not to rub the product against rough surfaces or wear the product, especially the sheet metal housing.
- Please regularly check the product parts that need to be tightened and connected. If found loose, please tighten it in time to ensure the safe operation of the equipment.

The external and internal parts of the equipment in contact with various chemical media should be frequently treated with anti-corrosion treatment such as rust removal and painting to improve the corrosion resistance of the equipment and extend its service life.

- Comply with the safe operating procedures and do not overload the equipment. The safety guards of the products are complete and reliable.
- Unsafe factors are to be eliminated in time. The circuit part should be checked thoroughly and the aging wires should be replaced in time.
- Adjust the clearance of various parts and replace worn (broken) parts. Avoid contact with corrosive liquids.
- When not in use, please store the product in a dry place. Do not store the product in hot, humid, or non-ventilated places.

WARRANTY

From the date of receipt, we provide a three-year warranty for the main unit, and all the accessories included are covered by a one-year warranty.

Warranty access

- The repair or replacement of products is determined by the actual breakdown situation of the product.
- It is guaranteed that AUTOOL will use a brand new component, accessory or device in terms of repair or replacement.
- If the product fails within 90 days after the customer receives it, the buyer should provide both video and picture, and we will bear the shipping cost and provide the accessories for the customer to replace it free of charge. While the product is received for more than 90 days, the customer will bear the appropriate cost and we will provide the parts to the customer for replacement free of charge.

The conditions below shall not be in the warranty range

- The product is not purchased through official or authorized channels.
- The product breaks down because the user does not follow the product instructions to use or maintain the product.

We at AUTOOL pride ourselves on superb design and excellent service. It would be our

pleasure to provide you with any further support or services.

Product usage statement

Dear Esteemed User, Thank you for selecting our product. Before you begin using it, we kindly ask you to carefully review the following product usage statement:

Data Referencing

Please note that all detection data and results provided by our product are for reference purposes only. Factors such as environmental conditions, operational variables, and device discrepancies may impact the accuracy of the data. While we strive for precision, we cannot guarantee 100% accuracy. Therefore, we advise users not to rely solely on this data for decision-making. It's essential to consider vehicle usage, environmental conditions, and seek professional advice when interpreting the data.

Oil Testing

Please note that our product design and functionality do not encompass the testing of oils with special additives at the time of manufacture. If your oil contains particulate additives or similar substances, our product may not provide accurate readings or may not be suitable. And we recommend seeking professional service or using device specifically designed for testing oils with special additives in such cases.

Limitation of Liability

We want to emphasize that our company bears no legal responsibility for any direct, indirect, special, or consequential losses resulting from the use of our product's detection data. This includes economic losses, business disruptions, or data loss. Users are advised to assume the associated risks when using the product.

Product Usage

To ensure optimal performance and longevity, please follow the instructions outlined in the product manual. Our company will not be held liable for any issues arising from misuse, abuse, or failure to adhere to the provided guidelines.

Continuous Improvement

We hereby retain the prerogative to amend product designs and specifications without prior notification. Consequently, it is advised that the actual appearance and color of the

product may deviate from representations delineated in the manual, and therefore, the physical product should be regarded as the definitive reference. While exhaustive efforts have been exerted to ensure the precision of all descriptions within the manual, the possibility of discrepancies cannot be entirely discounted. By acknowledging and understanding this product usage statement, you agree to its terms and conditions. If you have any questions or concerns, please don't hesitate to reach out to our customer service team for further assistance.

RETURN & EXCHANGE SERVICE

Return & Exchange

- If you are an AUTOOL user and are not satisfied with the AUTOOL products purchased from the online authorized shopping platform and offline authorized dealers, you can return the products within seven days from the date of receipt; or you may exchange it for another product of the same value within 30 days from the date of delivery.
- Returned and exchanged products must be in fully saleable condition with documentation of the relevant bill of sale, all relevant accessories and original packaging.
- AUTOOL will inspect the returned items to ensure that they are in good condition and eligible. Any item that does not pass inspection will be returned to you and you will not receive a refund for the item.
- You can exchange the product through the customer service center or AUTOOL authorized distributors; the policy of return and exchange is to return the product from where it was purchased. If there are difficulties or problems with your return or exchange, please contact AUTOOL Customer Service.
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EU DECLARATION OF CONFORMITY

We, as the manufacturer, declare that the designated product: Brake Fluid Boiling Point Tester (AS506) Complies with the requirements of the: EMC Directive 2014/30/EU RoHS Directive 2011/65/EU + 2015/863 + 2017/2102 Applied Standards: EN IEC 55014-1:2021, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, EN IEC 55014-2:2021 IEC 62321-3-1:2013, IEC 62321-7-1:2015, IEC 62321-4:2013+A1:2017, IEC 62321-7-2:2017, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-8:2017
Certificate No.: HS202409277704E, HS202409277706E Test Report No.:
HS202409277704-1ER, HS202409277706-1ER

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FAQs


Q: Can I use the AUTOOL AS506 Brake Fluid Boiling Point Tester for other fluids?

A: No, this tester is specifically designed for measuring the boiling point of brake fluid and should not be used with other fluids.

Q: How often should I calibrate the device?

A: It is recommended to calibrate the device at least once a year to ensure accurate measurements.

Documents / Resources

	<p>AUTOOL AS506 Brake Fluid Boiling Point Tester [pdf] User Manual</p> <p>AS506 Brake Fluid Boiling Point Tester, AS506, Brake Fluid Boiling Point Tester, Fluid Boiling Point Tester, Boiling Point Tester, Point Tester, Tester</p>
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References

- [Tool Tech](#)
- [autooltech.com](#)
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AUTOAND AS502 Brake Fluid Tester Product Structure A labelled diagram shows the brake fluid tester with various components...



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AUTOOL AS505 Transmission Fluid Tester There are still inaccuracies, if in doubt, please contact your dealer or AUTOOL...

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