

# **AUTOOL TG501**

Coating Thickness Gauge

User Manual

用户手册



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## **PRECAUTION**

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- ▶ Execute proper operations according to the provided instructions. Use the instrument in environments specified within the technical parameters table.
- ▶ Avoid storing or operating the instrument in environments with high temperatures, high humidity, flammable substances, explosive elements, or strong electromagnetic fields.
- ▶ Shield the instrument from corrosive chemicals. When cleaning the outer shell, opt for a neutral cleaning agent.
- ▶ Resist the temptation to disassemble the instrument without proper authorization.

## **PRODUCT OVERVIEW**

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- The AUTOOL TG501 coating thickness gauge allows non-destructive measurements of non-conductive coatings on metal surfaces and non-magnetic metal coatings on ferromagnetic metals (iron, nickel, cobalt, etc.). Dive into diverse applications, such as gauging paint or galvanized layer thickness on iron and stainless steel or measuring paint or plastic film thickness on aluminum and copper surfaces.
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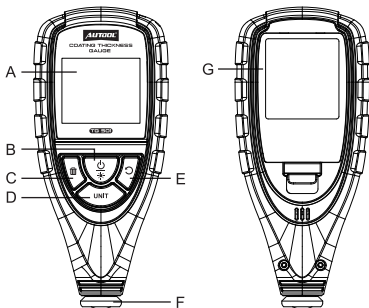





## Product Parameters

Measurement principle	<b>Fe (Magnetic Induction); NFe (Eddy Current Effect)</b>
Measurement range	<b>0~2,000μm</b>
Resolution	<b>0.1μm(0~100μm); 1μm(&gt;100μm)</b>
Accuracy	<b>±(3%+1μm)</b>
Units	<b>μm, mm, mil</b>
Calibration	<b>Zero Calibration</b>
Substrate (iron galvanized base) Recognition Range	<b>3~500μm</b>
Substrate minimum curvature radius	<b>Convex 5mm; Concave 25mm</b>
Minimum measurement area	<b>Diameter 15mm</b>
Minimum substrate thickness	<b>Fe: 0.30mm; NFe: 0.05mm</b>
Maximum measurement speed	<b>2 readings per second</b>
Operating environment	<b>Temperature: -10°C~50°C; Humidity: 20%RH~90%RH (non-condensing)</b>
Power supply	<b>3 AAA 1.5V alkaline batteries</b>
Protection level	<b>IP40</b>
Housing material	<b>ABS</b>

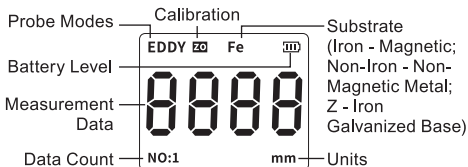
## PRODUCT STRUCTURE

### Structural Diagram



<b>A</b>	<b>LCD</b>
<b>B</b>	<b>[  ] Power On/Off, switch backlight, measure data</b>
<b>C</b>	<b>[  ] Delete data</b>
<b>D</b>	<b>[UNIT] Switch units</b>
<b>E</b>	<b>[  ] Switch probe mode</b>
<b>F</b>	<b>Probe</b>
<b>G</b>	<b>Battery compartment</b>


### Interface Display





## OPERATING INSTRUCTIONS

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### Battery Installation

- Observe the positive (+) and negative (-) indicators inside the battery compartment. Then insert the batteries accordingly.
  - Close the battery cover securely.
  - If the instrument displays [  ] indicating low battery, replace the batteries promptly.
  - When not using the instrument for an extended period, remove the batteries and store them properly.
- 

### Power On/Off

- Press the [  ] button to turn on the instrument.
  - Long press the [  ] button to turn off the instrument.
- 

### Measurement Steps


- Prepare the item to be measured.
  - Keep the probe at least 2cm away from any metal object, and press the power button to turn on.
  - Quickly place the probe on the surface of the item to be measured. As the probe retracts, it automatically identifies the substrate and measures the thickness of the coating. Once the displayed thickness value refreshes with a “beep” sound, lift the instrument, maintaining a distance of at least.
- 

### Function Description



#### • Unit

Press the [ **UNIT** ] button to toggle between units:  $\mu\text{m}$ , mm, mil.

#### • Backlight

Press the [  ] button to turn the screen backlight on or off.

- **Clear Data**

During use, press [  ] to clear the current measurement data. Each press deletes the latest measurement; long-pressing [  ] deletes all recorded data.

- **Switch Probe Modes**



Press [  ] to switch between probe modes:

**[AUTO]:** Adaptive measurement.



**[MAG]:** Magnetic induction mode for ferromagnetic substrates.

**[EDDY]:** Eddy current effect mode for non-ferromagnetic substrates.

- **Zero Calibration**

Long-press [  ]. The instrument beeps twice, displays “ZO” at the top, and touching the probe to the surface triggers zero calibration. When the screen shows “0.000” with a flashing “ZO”, calibration is complete. Press [  ] to exit, and “ZO” disappears. For rough surfaces, calibrate at multiple positions before exiting.

- **Restore Factory Settings:**

On startup, long-press [  ] until the instrument displays “Reset all settings to factory defaults?” Press [  ] to confirm restoring factory settings.

- **Error Alerts**

**Data overflow:** Indicates measurements beyond the instrument’s range.

**No response during measurement:** Indicates measurements beyond the range or strong electromagnetic interference.

- **Display**

**Screen rotation:** The instrument features automatic screen rotation.

**Screen brightness:** Inactivity triggers automatic screen dimming after 15 seconds to extend battery life.

**Auto power off:** The instrument automatically shuts down after 2 minutes of inactivity.

## **MAINTENANCE SERVICE**

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- Our products are made of long-lasting and durable materials, and we insist on 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.
- Regularly clean and replace consumable parts such as oil pump and oil filter; 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**

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- 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.
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### **Warranty access**

- The repair or replacement of products is determined by the actual breakdown situation of product.
- It is guaranteed that AUTOOL will use 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.

### **These conditions below shall not be in warranty range**

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

We AUTOOL pride ourselves on superb design and excellent service. It would be our pleasure to provide you with any further support or services.

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### **Disclaimer**

- All information, illustrations, and specifications contained in this manual, AUTOOL reserves the right of modify this manual and the machine itself with no prior notice. The physical appearance and color may differ from what is shown in the manual, please refer to the actual product.

Every effort has been made to make all descriptions in the book accurate, but inevitably there are still inaccuracies, if in doubt, please contact your dealer or AUTOOL after-service centre, we are not responsible for any consequences arising from misunderstandings.

## 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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## 注意事项

- ▶ 请正确操作仪器，并在技术参数表限定的环境中使用。
- ▶ 请勿在高温、高湿、易燃、易爆和强电磁环境中存放或使用仪器。
- ▶ 避免仪器接触腐蚀性化学物质。如需清洁仪器外壳，请使用中性清洁剂。
- ▶ 禁止私自拆卸仪器。

## 产品简介

- AUTOOL TG501 可无损测量金属表面非导电覆层的厚度，以及铁磁性金属（如铁、镍和钴等）表面非铁磁性金属覆层的厚度。仪器具体用途包括测量铁、不锈钢表面油漆或镀锌层的厚度，测量铝、铜表面油漆或塑料薄膜的厚度等。

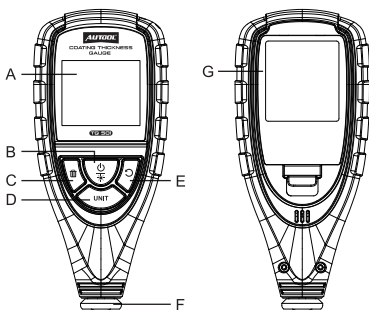
## 技术参数




测量原理	Fe: 磁感应; NFe: 涡流效应
测量范围	0~2,000 $\mu$ m
分辨率	0.1 $\mu$ m(0~100 $\mu$ m); 1 $\mu$ m(>100 $\mu$ m)
精度	$\pm$ (3%+1 $\mu$ m)
单位	微米 $\mu$ m、毫米mm、密尔mil
校准	零校准
铁镀锌基材识别范围	3~500 $\mu$ m
基材最小曲率半径	凸面5mm; 凹面25mm
最小测量区域	直径15mm

最小基材厚度	Fe: 0.30mm; NFe: 0.05mm
最大测量速度	2个读数/秒
操作环境	温度: -10°C~50°C; 湿度: 20%RH~90%RH(非凝结)
电源	3节7号1.5V碱性电池
防护等级	IP40
外壳材质	ABS

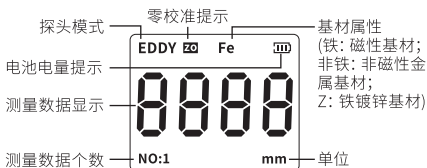
## 产品结构

### 结构图



A	液晶显示屏		
B	[  ] 开关机、切换背光、测量数据		
C	[  ] 删除数据		
D	[ UNIT ] 切换单位		
E	[  ] 切换探头模式		
F	探头	G	电池仓

## 界面展示



## 操作说明

### 电池安装

- 按电池仓内部正负极指示装入电池。
- 装入电池后，请盖上电池盖。
- 仪器提示[]时，表示电池电量过低，需及时更换电池。
- 长时间不使用仪器时，请务必将电池取出并妥善放置。

### 开关机

- 点按[]键，仪器开启。长按[]键，仪器关闭。

### 测量步骤

- 准备待测件。
- 探头远离金属物体至少2cm，按下电源键开机。
- 将探头快速贴合被测物表面，探头在收缩的过程中，便能自动分辨基材属性并测量出涂（镀）层的厚度。当显示的厚度值刷新并伴随“滴”声提示后，抬起仪器使探头距被测物表面至少2cm，进行下一次测量。

## 功能说明

- 单位

点按[UNIT]键，切换单位 $\mu\text{m}$ 、mm、mil。


- 背光

点按[]键，仪器开启或关闭屏幕背光。

- 清除数据



使用时点按[]键可清除当前测量数据，每按一次可删除一个最近的测量值；长按[]键可删除所有已记录数据。

- 切换探头模式


使用时点按[]键可切换探头模式。探头模式为：

[AUTO]：仪器将进行自适应测量。[MAG]：仪器将以磁感应模式进行测量；适用于铁磁性金属基材。[EDDY]：仪器将以涡流效应模式进行测量；适用于非铁磁性金属基材。

- 零校准

长按[]键，仪器会“滴滴”响两声，屏幕上方出现“ZO”字样，将探头贴合被测物表面，即可触发仪器进行零校准。屏幕数值显示“0.000”且“ZO”字样闪烁时，零校准完成，点按[]键退出零校准，屏幕上方“ZO”消失。在粗糙被测物表面做零校准时，建议测多个位置的数据再退出零校准。

- 恢复出厂设置

开机时长按[]键，直到仪器显示“Reset all settings to factory defaults? ”，点按[]可确认恢复出厂设置。

- 异常提示

数据溢出：表示远超仪器测量范围。

测量时仪器无反应：表示远超仪器测量范围，或仪器受到强电磁干扰。

- **显示**

- 1)**屏幕旋转**: 仪器具有自动旋转屏功能。
- 2)**屏幕亮度**: 无操作情况下, 仪器15秒后自动调暗屏幕亮度, 以延长电池寿命。
- 3)**自动关机**: 无操作情况下, 仪器2分钟后自动关机。

## 维修保养服务

- 您所拥有的AUTOOOL产品选用持久耐用的材料，AUTOOOL坚持精益求精的生产工艺，每一件产品出厂都经过35道工序及12次质检工作，从而确保每一件产品都拥有卓越的品质及性能。所以您的AUTOOOL产品值得您定期维护保养，使其将能够长期稳定地工作。

## 维修保养

维护保养是为了保持产品性能和外观，我们建议您仔细阅读以下产品保养指南：

- 注意不要将产品与粗糙表面摩擦或揉搓产品，特别是钣金外壳。
- 对产品中需要紧固和连接的部位经常进行检查，如发现松动应及时紧固，以保证产品的安全运行。对与各种化学介质接触的产品外部和内部零件要经常进行除锈、喷漆等防腐处理，以提高产品的抗腐蚀能力，延长产品的使用寿命。
- 遵守安全操作规程，不超负荷使用产品。产品的安全防护装置齐全可靠，及时消除不安全因素。电路部分彻底检查，老化电线要及时更换。
- 定期清洗和更换油泵、滤油器等易耗部件；调整各部位配合间隙和更换磨损（已坏）部件清洁时，避免产品接触带腐蚀性的液态物品。
- 不使用时，请将产品存放于干燥的位置。不要将产品存放在高温、潮湿或不通风的地方。

## 保修服务

- AUTOOL主机自客户签收日起享有3年保修期。其所含附件自客户签收日起享有1年保修期。

## 保修方式

- 根据具体的故障情况对产品进行免费修理或更换；
- 我方保证所有更换的部件、附件或产品都是全新；
- 在客户收到产品90天内出现故障同时提供视频和图片，我方承担运费并免费提供相应配件给客户更换。收到产品超过90天，客户承担相应的费用，我方免费提供配件给客户更换；

### 以下情况不在免费保修范围：

- 非正规渠道购买AUTOOL的产品；
- 未按产品说明书要求使用和维护造成的损坏；

在AUTOOL，我们为精湛的设计和卓越的服务感到自豪。我们很乐意为您提供更多的支持或服务。

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## 退换货服务

### 退换货

- 如果您对从线上授权购物平台和线下授权经销商所购买的AUTOTOL产品不满意，根据《AUTOTOL全球销售条款》，您可以自收到产品之日起七日内退货；或者在产品交付之日起的30日内调换等值的其他产品。
- 退回及调换的产品必须处于完全可销售状态，并附上相关销售单单据，所有相关配件、纸质发票（如有）。
- AUTOTOL将会对寄回退货的商品进行检查，以确保其处于完好无损的状态并且符合条件，相关条件详情请参阅《AUTOTOL全球销售条款》。任何未通过检查的商品将退还给您，您将不会获得商品退款。
- 您可以通过客户服务中心或AUTOTOL授权经销商调换产品；退换货原则为从哪里购买，就从哪里退换货。如果您退换货遇见困难或者阻碍，请联系AUTOTOL客户服务中心。通过客户服务中心退换货时，我们建议您通过下面的方式进行：

中国区域致电	400-032-0988 / 18929303778
售后微信号	18929303778
海外区域致电	+86 0755 23304822
E-mail	aftersale@autooltech.com
Facebook	<a href="https://www.facebook.com/autool.vip">https://www.facebook.com/autool.vip</a>
YouTube	<a href="https://www.youtube.com/c/autooltech">https://www.youtube.com/c/autooltech</a>

- 如您的退换货得到确认，您将收到确认信息和邮件。



## 深圳市偶然科技有限公司

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