

# **AUTOOL SDT203**

Smoke Leak Detector

User Manual





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企业标准 / Corporate standard: Q/OR 006-2023



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## CAUTIONS

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### Warning



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

- ▶ If you are not a technician, please do not change, disassemble or repair the product; otherwise all the losses shall be borne by the user.
- ▶ This product is powered by electricity and should not be used as a toy for children.
- ▶ To avoid a short circuit, do not put the product in water or other liquid.
- ▶ Please use the power source and power cord supplied by the manufacturer according to the standards.
- ▶ Please do not expose the product to intense light or high temperature when it's not used.
- ▶ When doing leak detection test, keep away from the smoke sensitive parts like the headlight.
- ▶ Replace the oil in the detector regularly. Before adding the new oil, please drain out the remaining used oil in the detector.
- ▶ Selection of the detector oil: liquid paraffin and baby oil are both usable.
- ▶ Please make sure there is no water in it, and please do not use any sticky liquid.

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# PRODUCT INTRODUCTION

## Overview

AUTOOL SDT203 automotive diagnostic leak detector is designed for testing leaks in vehicle pipe systems. It could be used on all cars, motorcycles, snowmobiles, ATV, light trucks, boats, etc.

## Working theory

### Low oxygen combustion

- The AUTOOL smoke leak detector employs a forced combustion smoke generation method in a low oxygen environment. It is energized by a conductive column to the heating wire, which rapidly heats up to more than 300°C so that the mineral oil reaches the ignition point and enters the state of combustion. Due to the small intake of air flow, it is insufficient to provide sufficient oxygen to maintain full combustion, thus the combustion mainly occurs on the surface of the heating wire. Subject to high-temperature heating, the mineral oil retention object can continue to burn insufficiently around the heating wire, thus producing a large amount of smoke.

## Features

|                             |             |
|-----------------------------|-------------|
| Built-in Air Pump           | <b>Yes</b>  |
| Overheat Protection         | <b>Yes</b>  |
| Pressure Gauge              | <b>Yes</b>  |
| Fault Indicator             | <b>Yes</b>  |
| Flow Meter                  | <b>Yes</b>  |
| Flow Adjustment Knob        | <b>Yes</b>  |
| Oil Drain Valve             | <b>None</b> |
| Liquid Level Gauge          | <b>None</b> |
| Air Control Switch          | <b>None</b> |
| Smoke Control Switch        | <b>Yes</b>  |
| Adjustable Pressure         | <b>None</b> |
| Intelligent Digital Display | <b>None</b> |

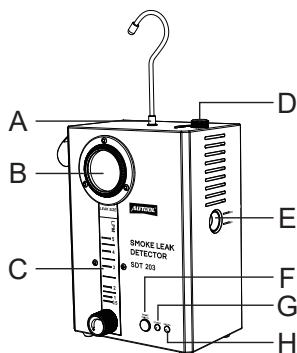
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**Technical  
parameter**

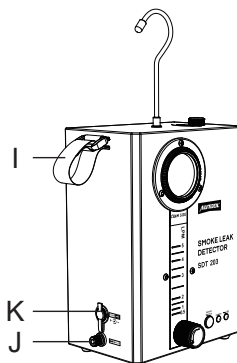
|                         |                      |
|-------------------------|----------------------|
| Power Supply            | <b>DC 12V</b>        |
| Test Oil Filling Volume | <b>10-20ml</b>       |
| Rated Output Pressure   | <b>&lt;15psi</b>     |
| Rated Output Flow       | <b>&lt;6L/min</b>    |
| Rated Power             | <b>65W</b>           |
| Product Size            | <b>190*130*85mm</b>  |
| Package Size            | <b>234*246*179mm</b> |
| Product Weight          | <b>2.5kg</b>         |
| Gross Weight            | <b>2.7 kg</b>        |

# PRODUCT STRUCTURE

## Structure diagram



|          |                 |          |                     |
|----------|-----------------|----------|---------------------|
| <b>A</b> | Hook port       | <b>B</b> | Pressure gauge      |
| <b>C</b> | Flow meter      | <b>D</b> | Oil refill port     |
| <b>E</b> | Oil level gauge | <b>F</b> | Start / Stop button |
| <b>G</b> | Power LED       | <b>H</b> | Working cycle LED   |



|          |              |          |              |
|----------|--------------|----------|--------------|
| <b>I</b> | Velcro strap | <b>J</b> | Smoke outlet |
| <b>K</b> | Power socket |          |              |

## OPERATIONS INSTRUCTION

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### Preparation before use

- Mount the Hook to the hook port (A), used for carrying the unit around or hanging somewhere under the hood.
- Open the oil refill port (D), fill the smoke oil into the reservoir and note the oil level gauge (E), make sure the oil level will not exceed 2cm above the bottom of the gauge. If the oil level is close to the bottom before use, the unit will need a refill.

#### **NOTE**

- ▶ If the smoke oil is overfilled, turn the unit upside down to drain some oil out.
- 
- Now the unit is ready to use.

### Smoke test

- Mount the smoke hose to the smoke outlet (J) and the power cord to the power socket (K).
- Connect the power cord to 12V vehicle battery.

#### **NOTE**

- ▶ Red clamp to positive (+), black clamp to negative (-). For best performance, the vehicle battery shall be fully charged. Do not use a DC12V switch power supply.
  - ▶ Only 12V vehicle battery is allowed to be used as power supply for the unit.
- 
- Now the power LED (G) is on and the unit starts generating pressurized air.
  - Press start / stop button (F), the working cycle LED (H) will be on. The unit will start generating smoke and stop automatically when a 5 minutes working cycle is finished.
  - To stop the unit from generating smoke manually, simply press start / stop button (F) again within any working cycle. Leave the unit to blow the residual smoke out of the smoke nozzle.
-

## Generic operation

- Turn off the ignition of the vehicle. Leak test of vehicle systems requires the engine to be off.
- Dismantle the air filter and the throttle connections.
- Clean the inner wall of the intake opening to avoid sharp objects and put the universal intake adapter into the opening.
- Mount the smoke hose to the smoke outlet (J) and the power cord to the power socket (K).
- Connect the power cord to 12V vehicle battery.
- Now the power LED (G) is on and the unit starts generating pressurized air.
- Introduce the smoke nozzle into the system via the cone adapter.
- Wait for 30 seconds until the system is pressurized, and check the pressure gauge (B) & flow meter(C) reading for leak status.
- Pull off the smoke nozzle from the cone adapter. Press the start/stop button (F), the working cycle LED (H) will be on. The unit will start generating smoke for an auto-stop 5 minutes working cycle.
- Plug the smoke nozzle back into the cone adapter, when there's obvious smoke coming out of the smoke nozzle.
- The system will be ready for leak check in 2 minutes. Use a bright light torch or working lamp to assist.
- After test, if the working cycle LED (H) is still on, press the start/stop button (F) again to stop the unit from generating smoke.
- Collect the smoke hose and the power cord with the velcro straps for storage. Hang the unit or make it stand in upright position only. Do not lay it down.

### **NOTE**

- Cap Stoppers (Optional) could be used to block off various openings, if a test on partial of the whole system is required. It also could be used to block off the intake opening, the smoke nozzle connects to the system via other openings available.

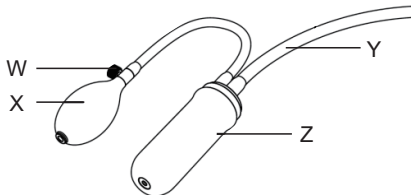
## Airbag adapter instructions

Airbag adapters are suitable for non-circular connections. While for round and oval ports, please use the inlet tapered adapter for normal cases.

- Before using the airbag adapter, be sure to clean the inner wall of the intake manifold (or other test interfaces) to prevent sharp protrusions from piercing the airbag adapter.
- Put the air bag (Z) into the test port.
- Press the hand pump (X) until the bladder (Z) inflates and fully seals the test port.
- Connect the cone head on the smoke outlet pipe with the smoke guide pipe (Y), introduce gases and smoke into the duct to be tested.
- After the test is completed, turn the pressure relief valve (W) counter clockwise, take out the car air inlet adapter from the test port, clean and save it.

### **NOTE**

- Airbag adapter can not contact with corrosive oil.

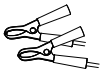


|          |                       |          |           |
|----------|-----------------------|----------|-----------|
| <b>W</b> | Pressure Relief Valve | <b>X</b> | Hand Pump |
| <b>Y</b> | Smoke Duct            | <b>Z</b> | Airbag    |

## Chemical

- This unit uses paraffin wax / baby oil / mineral as smoke oil, available in supermarket or pharmacy.
- Use a needle-tip-bottle or a funnel to refill the smoke oil.
- Only when the smoke oil is overfilled, turn the unit upside down to drain some oil out.
- Every three months, do drain all the old oil out and refill new.

## DESCRIPTION OF ACCESSORIES

| Accessories                                                                       | Name                              | Quantity | Remark                                 |
|-----------------------------------------------------------------------------------|-----------------------------------|----------|----------------------------------------|
|  | Power cord                        | 1 pc     | Connected to car battery               |
|  | Smoke outlet hose                 | 1 pc     | Connecting adapter                     |
|  | Cone adapter                      | 1 pc     | Installed on the detected pipeline     |
|  | Universal airbag adapter          | 1 pc     | Used to seal the air inlet             |
|  | Hook                              | 1 pc     | Used for hanging products              |
|  | Funnel                            | 1 pc     |                                        |
|  | Intake bladder replacement rubber | 1 pc     |                                        |
|  | User manual                       | 1 pc     | Product related operation instructions |

## 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.

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**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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