

AUTOOL SDT203

AUTOOL SDT203 Smoke Leak Detector User Manual

Model: SDT203

Automotive Smoke Machine for EVAP Vacuum Diagnostic Leak Detection

1. INTRODUCTION

The AUTOOL SDT203 Smoke Leak Detector is an essential tool for automotive technicians and DIY enthusiasts. It is designed to quickly and accurately locate leaks in various vehicle systems, including:

- Fuel Pipe Systems
- Air Intake Systems
- Cooling Tanks
- EVAP (Evaporative Emission Control) Systems
- Exhaust Systems
- Various Pipe Fittings

By generating a visible smoke, the device allows for easy identification of leaks that might otherwise be difficult to detect, improving diagnostic efficiency and accuracy.

2. SAFETY INFORMATION

Please read and understand all safety warnings before operating the device to prevent injury or damage.

- **Ventilation:** Operate the device in a well-ventilated area.
- **Power Source:** Use only a 12V DC power source. Ensure correct polarity when connecting to the vehicle battery.
- **Test Oil:** Use only approved test oil (mineral oil or baby oil). Do not use flammable liquids.
- **Hot Surfaces:** The device generates heat during operation. Avoid touching hot surfaces.
- **Smoke Inhalation:** Avoid direct inhalation of smoke. While the smoke is generally non-toxic, prolonged exposure is not recommended.
- **Eye Protection:** Always wear appropriate eye protection during operation.
- **Overheat Protection:** The device has built-in overheat protection. If the temperature exceeds 75°C, power protection will activate to turn it off.

- **Anti-frost Protection:** The device is designed to operate normally down to -20°C.

3. PRODUCT OVERVIEW AND COMPONENTS

The SDT203 Smoke Leak Detector comes with the main unit and several accessories to facilitate various leak detection tasks.



Figure 3.1: AUTOOL SDT203 Smoke Leak Detector and Accessories

Main Unit Features:

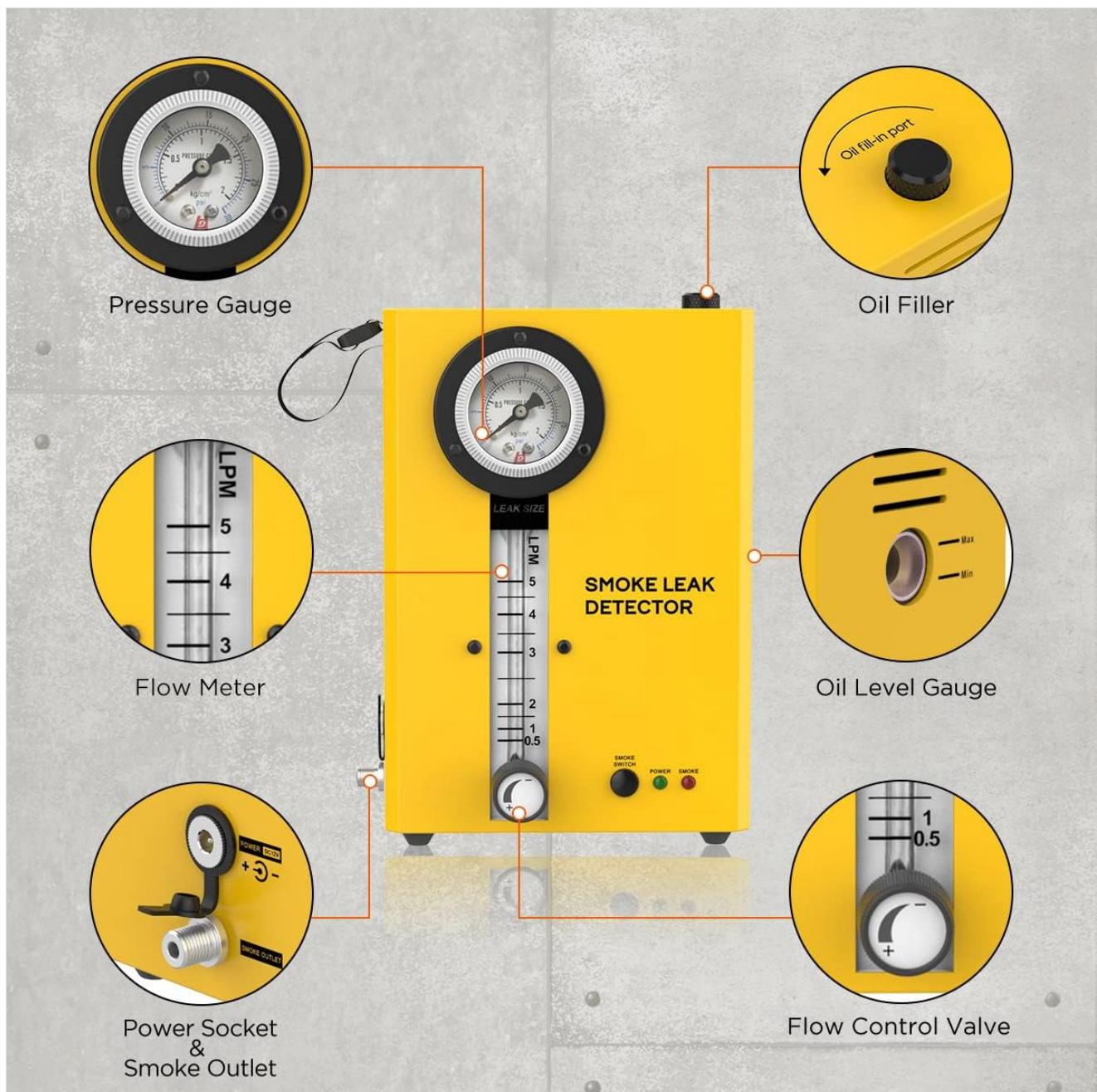


Figure 3.2: SDT203 Main Unit Components

- **Pressure Gauge:** Displays the system pressure during testing.
- **Oil Filler:** Port for adding test oil.
- **Oil Level Gauge:** Indicates the current level of test oil.
- **Flow Meter:** Allows monitoring and adjustment of smoke output flow.
- **Power Socket & Smoke Outlet:** Connection points for power and smoke hose.
- **Flow Control Valve:** Adjusts the smoke output rate.
- **Power LED:** Indicates power status.
- **Smoke LED:** Indicates smoke generation status.
- **Hook:** For convenient hanging under the vehicle hood.

Included Accessories:

- Power Cables (with alligator clips for 12V battery connection)
- Smoke Output Hose
- Funnel for oil filling

- Various Adapters (e.g., EVAP service port adapter, universal cone adapter)
- User Manual

4. SPECIFICATIONS

SPECIFICATIONS

Main unit dimensions	190X130X85mm
Weight	2.5Kg
Package dimensions	227x160x242mm
Output pressure	<1.2bar
Output flow	7L/min
Air pressure output	Built-in air pump
Power supply	DC12V battery

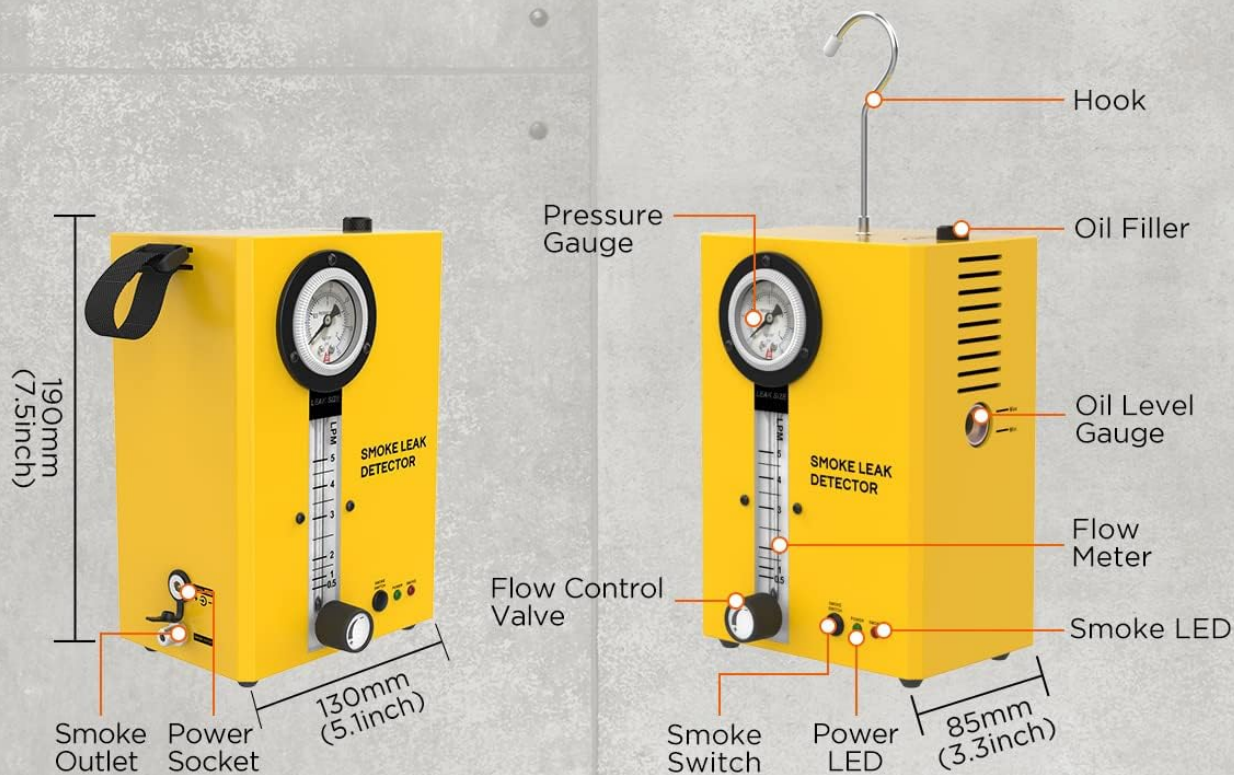


Figure 4.1: SDT203 Technical Specifications

Parameter	Value
Main Unit Dimensions	190 x 130 x 85 mm (7.5 x 5.1 x 3.3 inches)
Item Weight	2.5 kg (5.46 pounds)
Output Pressure	<1.2 bar
Output Flow	7 L/min
Air Pressure Output	Built-in air pump

Power Supply	DC 12V battery
Operating Humidity	95%
Alarm Type	Audible

5. SETUP

Follow these steps to set up your SDT203 Smoke Leak Detector for operation.

1. Fill with Test Oil:

Unscrew the oil filler cap on top of the device. Using the provided funnel, inject 20-30ml of fresh mineral oil or baby oil into the machine. Do not overfill. Replace the cap securely.



Figure 5.1: Filling Test Oil

2. Connect Power:

Connect the power cables to the device's power socket. Then, connect the red alligator clip to the positive (+) terminal of a 12V vehicle battery and the black alligator clip to the negative (-) terminal. The Power LED on the device should illuminate.



Figure 5.2: Connecting to 12V Battery

3. Connect Smoke Duct:

Attach the smoke output hose to the smoke outlet port on the device. Ensure a secure connection.

6. OPERATING INSTRUCTIONS

Once set up, you can begin the leak detection process.

1. Prepare the System:

Disconnect the pipe or system component that needs to be tested from the vehicle. Seal off any open ends of the system not being tested to create a closed environment for smoke injection.

2. Turn On Smoke Generation:

Flip the smoke switch on the device to the 'ON' position. The Smoke LED will illuminate, and the device will begin generating smoke. Smoke output should be visible within 30 seconds.



Figure 6.1: Smoke Output

3. **Adjust Flow Meter:**

Use the flow control valve to adjust the smoke output rate. The external flow meter allows you to monitor the flow, which is crucial for different pipe systems that may require varying air pressures. Adjusting the flow prevents damage from excessive pressure and ensures effective leak detection.

Video 6.1: Demonstration of SDT203 Leak Detector in use, showing pressure gauge display, smoke output, intake system test, and adjustable flow meter.

This video demonstrates the setup and operation of the SDT203, including connecting power, attaching the smoke duct, observing the pressure gauge, and adjusting the flow meter for effective leak detection in an intake system.

4. **Inject Smoke:**

Insert the smoke output nozzle into the system being tested. The system will fill with smoke.

5. **Locate Leaks:**

Observe the system for visible smoke escaping from any points. The external pressure gauge can also help: if the pressure drops significantly or does not build up, it indicates a leak. Repair the identified leak points.

6. **EVAP System Detection:**

For American cars produced after 1996, locate the EVAP service port (usually in the engine compartment). Use a spool wrench to remove the check valve clockwise, then install the EVAP service port adapter. Introduce smoke from this port into the EVAP system to detect leaks.

ADVANCED TECHNOLOGY

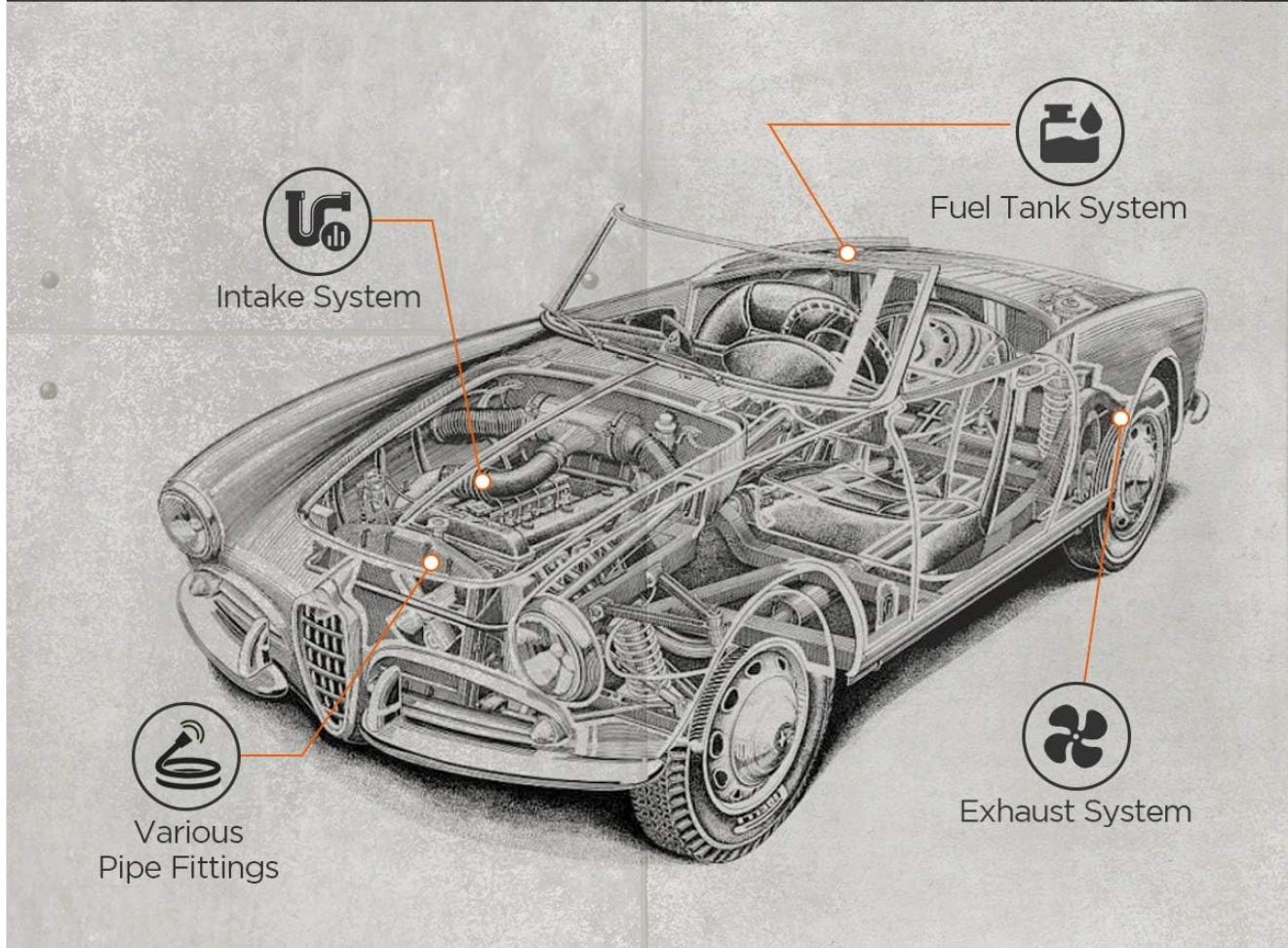


Figure 6.2: Wide Range of Applications

The SDT203 is suitable for a wide range of vehicles, including cars, motorcycles, snowmobiles, off-road vehicles, ATVs, light trucks, and speedboats.

7. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your SDT203 Smoke Leak Detector.

- **Oil Level:** Regularly check the oil level using the oil level gauge. Refill when low to prevent dry burning.
- **Cleaning:** After use, wipe down the exterior of the device with a clean, dry cloth.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures. Ensure all hoses and accessories are neatly stored to prevent damage.
- **Oil Type:** Always use the recommended test oil (mineral oil or baby oil). Using incorrect oil can damage the heating element or pump.

8. TROUBLESHOOTING

If you encounter issues with your SDT203, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
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No smoke output	Low or no test oil Power not connected Smoke switch off	Refill test oil Check 12V power connection Turn smoke switch ON
No pressure reading on gauge	System not sealed Hose disconnected Internal pump issue	Ensure all openings are sealed Check smoke hose connection Contact support if pump fails
Cannot find leak	Insufficient smoke time Flow rate too low Leak is very small	Allow more time for smoke to fill system Increase flow rate with control valve Use a bright light to inspect closely
Device overheats and shuts off	Prolonged continuous use Poor ventilation	Allow device to cool down Ensure adequate airflow around device


9. WARRANTY AND SUPPORT


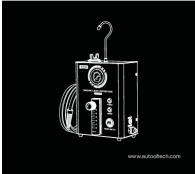






AUTOOL provides comprehensive support for the SDT203 Smoke Leak Detector.

- **Warranty:** For damages caused by non-human factors, AUTOOL promises to resend parts for free within 3 years from the date of purchase.
- **Lifelong Maintenance:** AUTOOL is committed to providing lifelong maintenance support for the product.
- **Customer Support:** For any inquiries, technical assistance, or warranty claims, please contact AUTOOL customer support. We aim to reply as soon as possible within 24 hours.

Please visit the official AUTOOL website or refer to the contact information provided with your purchase for the most up-to-date support details.

Related Documents - SDT203

	<p>AUTOOL SDT205 Smoke Leak Detector User Manual</p> <p>Comprehensive user manual for the AUTOOL SDT205 Smoke Leak Detector, detailing its features, specifications, operation, maintenance, and warranty for automotive leak detection.</p>
	<p>AUTOOL SDT205 Smoke Leak Detector User Manual Vehicle Diagnostic Tool</p> <p>Comprehensive user manual for the AUTOOL SDT205 Smoke Leak Detector. Learn about its features, technical specifications, operation, maintenance, and troubleshooting for professional vehicle leak detection.</p>

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<div><div></div><div><div>AUTOOL SDT205</div><div>Smoke Leak Detector</div><div>User Manual</div></div><div></div></div>	<p>AUTOOL SDT205 Smoke Leak Detector User Manual</p> <p>This user manual provides comprehensive instructions for the AUTOOL SDT205 Smoke Leak Detector, an essential automotive diagnostic tool for identifying leaks in vehicle pipelines. It covers product overview, features, technical specifications, operation guidelines, maintenance, and warranty information.</p>