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› ANCEL S-300 Automotive Smoke Machine User Manual

ANCEL

ANCEL S-300 Automotive Smoke Machine User Manual

Brand: ANCEL | Model: S-300

1. PRODUCT OVERVIEW

The ANCEL S-300 Automotive Smoke Machine is a professional diagnostic tool designed for efficient and accurate detection of leaks in various vehicle systems. Featuring an innovative isolated heat conduction system, a built-in air pump, and dual operating modes, this device provides a safer, more efficient, and durable solution for identifying even the smallest leaks.



Figure 1: ANCEL S-300 Smoke Machine and included accessories.

2. KEY FEATURES

- **Isolated Heat Conduction:** Utilizes a safer method of vaporizing smoke liquid at high temperatures, producing less odor and ensuring durability.
- **Built-in Air Pump:** Eliminates the need for an external air supply, offering a pressure output range of 0.8-14.5 Psi and a smoke output of 6 L/Min for rapid leak detection.
- **Dual Operating Modes:** Features both 'Air Mode' for non-consumable testing of minimal EVAP and vacuum leaks, and 'Smoke Mode' for pinpointing specific leak locations with dense, visible smoke.
- **Comprehensive Leak Detection:** Capable of diagnosing leaks in EVAP systems, vacuum systems, turbo systems, intake manifolds, cooling systems, EGR systems, and exhaust systems.
- **Real-Time Monitoring:** Equipped with a pressure gauge and flow meter for precise monitoring of pressure and flow rate, allowing for quick determination of leak size.
- **User-Friendly Design:** Simple three-step operation for quick setup and testing, suitable for beginners and professionals alike.

Advanced Internal Design



Shop air compressor

- 1 x ANCEL S-300 Smoke Machine Automotive
- 1 x User Manual
- 1 x 23Pcs Full Size Cap Plugs
- 1 x Funnel
- 1 x Hook
- 1 x EVAP Adapter
- 1 x EVAP Removal Tool
- 1 x Intake Bladder

- 1 x Intake Bladder Replacement Rubber
- 1 x 8.2FT Long Power Cord
- 1 x 8.2FT Smoke Delivery Hose

Includes ALL Premium Components



ANCEL S300



Package

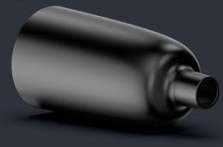
\$19⁹⁹ free  23Pcs Full Size Cap Plugs	\$19⁹⁹ free  EVAP Service Port Adapter	\$19⁹⁹ free  Intake Adapter Cone	\$24⁹⁹ free  Intake Bladder
\$9⁹⁹ free  Funnel & Hook	\$9⁹⁹ free  Intake Bladder Replacement Rubber	\$19⁹⁹ free  8.2FT Long Power Cord	\$19⁹⁹ free  8.2FT Smoke Delivery Hose

Figure 3: All premium components included in the ANCEL S-300 package.

4. SETUP INSTRUCTIONS

Follow these steps to set up your ANCEL S-300 smoke machine:

- Add Smoke Liquid:** Open the oil filler cap and use the provided funnel to pour approximately 10-20ml of smoke fluid (not included) into the machine. Do not overfill.
- Connect Power and Hose:** Connect the power cord to a 12V vehicle battery (red clamp to positive, black clamp to negative). Attach the smoke delivery hose to the machine's output port.
- Prepare Vehicle System:** Identify the system to be tested (e.g., intake, EVAP). Use the appropriate adapter (intake

bladder, cone, or EVAP adapter) to seal the opening where smoke will be introduced.

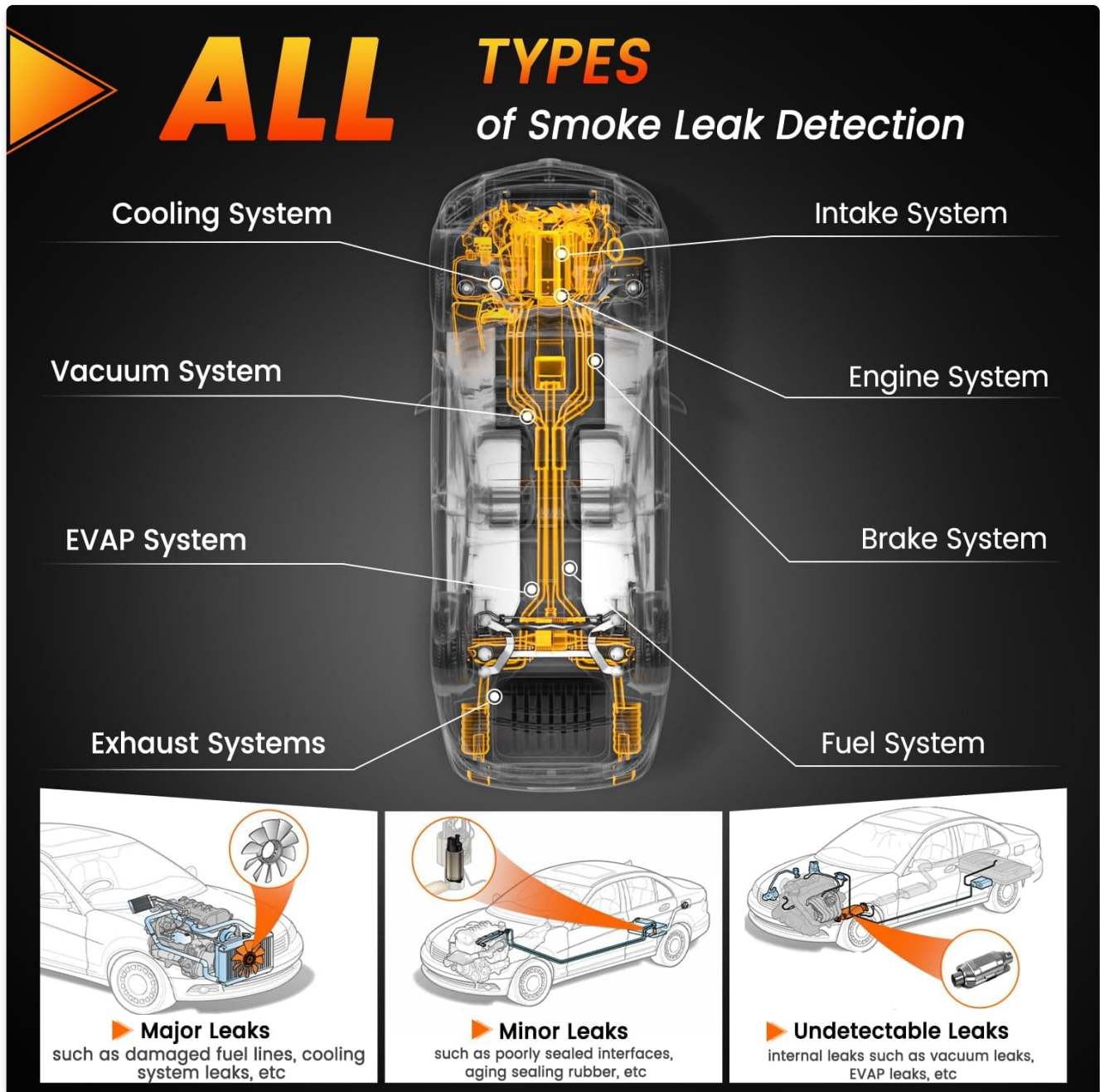


Figure 4: Visual guide for adding smoke liquid, connecting power, and importing smoke.

5. OPERATING INSTRUCTIONS

The ANCEL S-300 offers two operating modes for versatile leak detection:

5.1. Smoke Mode

Use this mode for generating dense, visible smoke to quickly locate specific leak points.

1. Ensure smoke fluid is added.
2. Switch the machine to 'Smoke Mode' (indicated by a smoke icon).
3. Allow a few moments for the machine to heat up and begin producing smoke.
4. Direct the smoke delivery hose into the sealed vehicle system.

5. Observe for smoke escaping from any leak points.

5.2. Air Mode

This mode uses air pressure without consuming smoke oil, ideal for detecting minimal EVAP leaks and vacuum leaks, or for pre-diagnostic checks.

1. Switch the machine to 'Air Mode' (indicated by a fan icon).
2. Connect the hose to the system.
3. Monitor the pressure gauge and flow meter for indications of a leak. A drop in pressure or a high flow rate suggests a leak.



Figure 5: Illustration of the dual operating modes for accurate leak detection.

5.3. Interpreting Pressure Gauge and Flow Meter

The integrated pressure gauge and flow meter provide real-time feedback on the system's integrity:

- **No Leak:** Pressure remains constant, and the float in the flow meter stays at the bottom.
- **Undetectable Leak (P0456):** Pressure decays slightly, and the float is located at the P0456 scale, indicating a very subtle leak.

- **Minor Leak (P0442):** Pressure is noticeably attenuated, and the float is at the P0442 scale, indicating a larger leak.
- **Major Leak:** Pressure drops to zero, and the float is at the top, indicating a significant leak.



Figure 6: Understanding leak detection through pressure gauge and flow meter readings.

5.4. Application Scenarios

The ANCEL S-300 is suitable for various leak detection applications:

- EVAP Systems
- Vacuum Leaks
- Turbo Leaks
- Intake Manifolds
- Cooling Systems
- EGR Systems
- Exhaust Systems



Figure 7: Overview of all types of smoke leak detection supported by the S-300.

5.5. Instructional Videos

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Video 1: All in One ANCEL S300 smoke tester machine. This video provides a general overview of the ANCEL S300 smoke tester and its capabilities.

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Video 2: ANCEL S300 -- How to Use Cone Adapter & Intake Bladder. This video demonstrates the proper use of the cone adapter and intake bladder for various applications.

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Video 3: Operation Guidelines & Application Scenarios. This video covers general operation guidelines and shows different scenarios where the smoke machine can be applied.

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Video 4: ANCEL S300 Smoke Leak Detector Operation Guide. A detailed guide on operating the ANCEL S300 for effective leak detection.

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Video 5: ANCEL S300 - Determine Leaks via Flow Meter & Pressure Gauge. This video explains how to interpret the flow meter and pressure gauge to identify and quantify leaks.

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Video 6: ANCEL S300 -- For Exhaust Leaks & Various Other Leaks. Demonstrates the use of the S300 for detecting leaks in exhaust systems and other common areas.

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Video 7: ANCEL S300 Smoke Leak Detector for Engine Leak Detection. Focuses on using the S300 to identify leaks within the engine compartment.

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your ANCEL S-300 smoke machine:

- **Fluid Level:** Regularly check the smoke fluid level. Refill as needed, ensuring not to overfill.
- **Cleaning:** After each use, wipe down the exterior of the machine and accessories with a clean, dry cloth. Ensure no smoke fluid residue remains on external surfaces.
- **Hose and Adapter Inspection:** Periodically inspect the smoke delivery hose and all adapters for any signs of wear, cracks, or damage. Replace damaged components immediately to maintain effective sealing.
- **Storage:** Store the machine in a cool, dry place away from direct sunlight and extreme temperatures. Ensure all hoses are neatly coiled and accessories are stored securely to prevent damage.

For detailed maintenance procedures, please refer to the comprehensive user manual PDF available for download via the provided link.

7. TROUBLESHOOTING

If you encounter issues with your ANCEL S-300, consider the following common troubleshooting steps:

- **No Smoke Output:**
 - Check if smoke fluid has been added and is at an adequate level.
 - Ensure the power connections to the 12V battery are secure and correct (red to positive, black to negative).
 - Verify the machine is switched to 'Smoke Mode'.
 - Allow sufficient time (a few minutes) for the heating element to warm up.
- **Low Smoke Output/Weak Pressure:**
 - Check for blockages in the smoke delivery hose or adapters.

- Ensure all connections to the vehicle system are tightly sealed to prevent smoke/pressure escape.
- Verify the smoke fluid level is not too low.

• **Machine Not Powering On:**

- Confirm the 12V power source (vehicle battery) is functional and has sufficient charge.
- Check the power cord and clamps for any damage or loose connections.

For more complex issues or if the problem persists, please consult the detailed troubleshooting section in the official user manual PDF or contact ANCEL customer support.

8. SPECIFICATIONS

Feature	Specification
Model	ANCEL S-300
Manufacturer	ANCEL
Item Weight	4 pounds (1.8 kg)
Product Dimensions	9.84 x 9.45 x 6.69 inches
Pressure Output Range	0.8-14.5 Psi
Smoke Output	6 L/Min (Maximum)
Power Supply	12V DC Vehicle Battery
Country of Origin	China

9. WARRANTY AND SUPPORT

ANCEL is committed to providing high-quality products and excellent customer service.

- **Warranty:** The ANCEL S-300 comes with a 24-month maintenance period from the date of purchase.
- **Returns:** A 30-day free return policy is available for eligible purchases.
- **Technical Support:** 24/7 technical support is available to assist with any product-related inquiries or issues.

For further assistance, please visit the official ANCEL website or refer to the contact information provided in the user manual PDF. You can access the full user manual [here](#).

