

## ANCEL S200

# ANCEL S200 Automotive Smoke Machine

## USER MANUAL

### Introduction

The ANCEL S200 Automotive Smoke Machine is a diagnostic tool designed for detecting leaks in various automotive systems. It features a built-in air pump and advanced overheat protection, making it suitable for EVAP, vacuum, exhaust, and other system leak tests in cars, motorcycles, and trucks. This manual provides detailed instructions for the proper setup, operation, maintenance, and troubleshooting of the device.

### Key Features

- **Upgraded Heat Transfer Technology:** Incorporates an intelligent auto-shutoff system for overheat protection, enhancing device and vehicle safety.
- **Built-in Air Pump:** Eliminates the need for an external air compressor, providing convenience and portability for diagnostics.
- **Professional Leak Detection:** Designed to accurately locate and repair leaks, improving vehicle performance and efficiency.
- **Versatile Leak Pinpointing:** Capable of detecting leaks in EVAP systems, vacuum lines, turbochargers, intake manifolds, cooling systems, exhausts, gaskets, and seals.
- **Dual Operating Modes:** Offers an Air Mode for quick preliminary checks and a Smoke Mode for precise leak identification.
- **Visual Pressure Gauge:** Allows for easy monitoring of pressure drops to identify the severity of leaks.
- **Durable Construction:** Made from high-temperature-resistant metal for extended service life.
- **Wide Compatibility:** Compatible with all 12V vehicles.



Figure 1: ANCEL S200 advantages over traditional leak detectors.

## Package Contents

The ANCEL S200 package includes the following items:

- ANCEL S200 Main Unit
- Power Cord (for connecting to 12V vehicle battery)
- Delivery Hose (for introducing air/smoke into the system)
- Funnel (for pouring oil into the unit)
- Intake Bladder (for testing pipes with various diameters)
- Service Replacement (replacement for intake bladder)
- Adapter Cone Set (applicable for 25-80mm round shaped openings, e.g., intake, engine oil filler port)
- EVAP Adapter (for fitting to the EVAP service port)
- EVAP Removal Tool (EVAP service port valve removal tool)
- User Manual



Figure 2: Complete package contents of the ANCEL S200.

## Setup Guide

Follow these steps to prepare your ANCEL S200 for leak detection:

1. **Add Test Oil:** Open the oil filler port on the top of the unit. Use the provided funnel to carefully pour approximately 20ml of test oil (e.g., baby oil) into the unit. Observe the oil level gauge to ensure it does not exceed the maximum fill line. Overfilling can lead to oil spills.
2. **Install Hook:** Screw the hanging hook into the designated port on the top of the unit. This allows you to hang the device securely during testing.
3. **Connect Power Cord:** Insert the power cord into the power socket on the unit. Connect the red clamp to the positive (+) terminal of your vehicle's 12V battery and the black clamp to the negative (-) terminal.
4. **Install Smoke Hose:** Connect the delivery hose to the air/smoke output port on the unit.



Figure 3: Quick setup steps for the ANCEL S200.

Your browser does not support the video tag. This video demonstrates the setup process, including adding test oil, connecting the power cord, and installing the smoke hose, followed by a demonstration of the Air and Smoke modes and leak detection.

Video 1: ANCEL S200 Setup and Operation Overview.

## Operating Instructions

The ANCEL S200 offers two primary operating modes for effective leak detection:

### 1. Air Mode

In Air Mode, the unit generates air pressure without smoke. This mode is useful for a quick preliminary check to determine if a leak exists before introducing smoke. It helps in identifying larger leaks or confirming system integrity.

### 2. Smoke Mode

In Smoke Mode, the unit generates thick, visible smoke to accurately pinpoint the exact location of leaks. This is the primary mode for detailed leak detection.

#### Leak Detection Process:

1. **Select Mode:** Use the mode selector switch on the unit to choose between Air Mode (fan icon) or Smoke Mode (smoke icon).
2. **Connect to System:** Attach the appropriate adapter cone or intake bladder to the system you wish to test (e.g., intake manifold, exhaust pipe, EVAP port). Ensure a tight seal.
3. **Activate Unit:** Turn on the unit. In Smoke Mode, smoke will generate quickly, typically within 10 seconds.



4. **Observe Pressure Gauge:** Monitor the built-in pressure gauge. A significant drop in pressure indicates a leak.
5. **Locate Leak:** In Smoke Mode, observe for smoke escaping from any part of the system. The smoke will clearly indicate the leak's location.

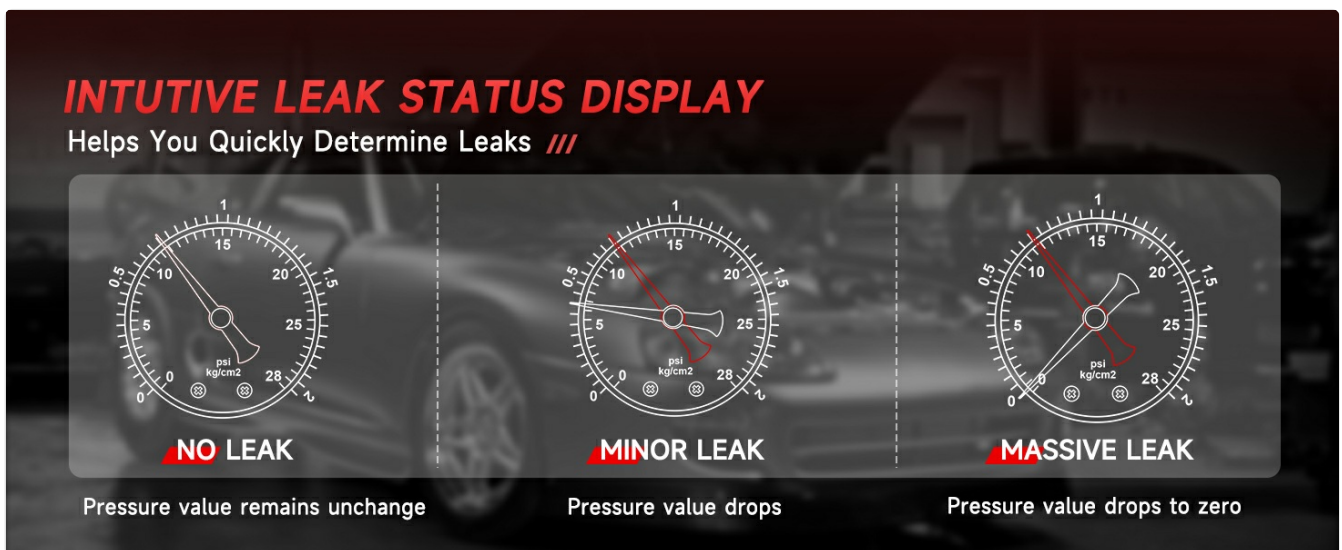


Figure 4: Dual operating modes for leak detection.



Figure 5: Interpreting the pressure gauge for leak status.

Your browser does not support the video tag. This video demonstrates the use of cone adapters for various pipe sizes, including radiator and coolant reservoir applications.

Video 2: Demonstrating adapter usage for different system openings.

## Leak Detection Applications

The ANCEL S200 is capable of detecting leaks in a wide range of automotive systems:

- **EVAP System:** Leaks can lead to increased fuel consumption and reduced engine performance.
- **Intake System:** Critical for engine performance and fuel efficiency.
- **Exhaust System:** Leaks can cause high emissions, slower acceleration, and abnormal noise.
- **Crankcase System:** Important for engine lubrication and pressure regulation.
- **Fuel Tank System:** Essential for fuel integrity and safety.
- **Cooling System:** Prevents engine overheating.

- **Turbo System:** Ensures optimal turbocharger performance.
- **Car Sealing:** Detects leaks in door seals, window seals, and other cabin areas.



Figure 6: Comprehensive system leak detection capabilities.



Figure 7: Exhaust system leak detection.



Figure 8: EVAP system leak detection.



Figure 9: Cabin air leak detection.

## Maintenance

To ensure optimal performance and longevity of your ANCEL S200, regular maintenance is recommended:

- **Check Oil Level:** Periodically check the oil level through the transparent window. Refill with appropriate test oil when the level is low. Do not overfill.
- **Clean Smoke Hose:** If oil drops are observed from the output, it may indicate normal smoke condensation or a need to clean the hose. Periodically blow out the smoke hose with an air gun to clear any blockages or condensation.
- **Storage:** Store the unit in a cool, dry place when not in use.

## Troubleshooting

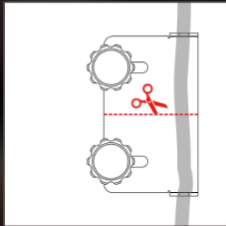
Refer to the table below for common issues and their solutions:

Index	Error	Possible Reason	Solution
#1	LED not On	Mistaken Positive to Navigate / Poor Contact of Power Line	Connect to power source correctly / Check with meter if the power line is broken, confirm and replace it
#2	Pump is on, but no air output	Flow Dial Not Open / Pump Failure	Open the flow dial anti-clockwise / Replace a new pump
#3	No Smoke Output	Smoke Oil Out or Overfilled / Voltage Low / Heater Damaged	Check oil level; turn unit upside down while the oil filler port is open, and refill to the correct level / Check battery voltage if it's over 12V / If current consumption less than 5Amp, replace the heater
#4	Weak Smoke, Obvious Oil Drops from the Output	Smoke Oil Not Compatible / Voltage Low	Change proper smoke oil / Check battery voltage if it's over 12V
#5	Slow Oil Drops from the Output	Normal Smoke Condensation	Periodically take off the smoke hose and blow it with an air gun
#6	Sudden Stop of Smoke Output	Overheat Protection Activated	Cool down the unit before use again

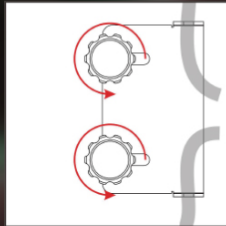


## Interesting DIY Design

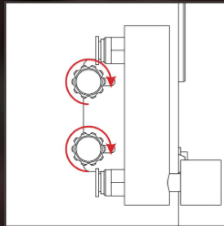
How to Upgrade S200 to a Higher Version?



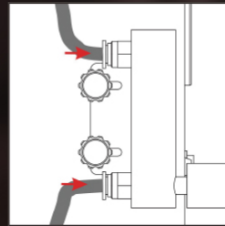
1. Cut off the hose at the middle of the rack.



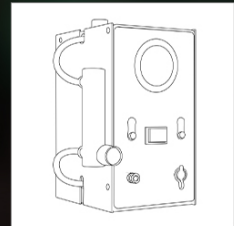
2. Take off the screws.



3. Mount the flow meter.



4. Connect hoses.



5. Upgrade finished

Figure 10: Troubleshooting guide.

## Specifications

Feature	Specification
Model	S200
Current	12V Fully Charged vehicle battery
Flow Rate	6A
Power Source	< 6 L/min
Pressure Output	0.5-1.0 bar / 0.8-14.5 psi
Main Unit Weight	2.06 kg
Package Weight	2.2 kg
Product Dimensions	25 x 24 x 17 cm
Country of Origin	China

## SAFE TO USE



## Safety Information

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The ANCEL S200 is designed with user safety in mind:

- **Overheat Protection:** The unit features an intelligent auto-shutoff system that activates if the device detects overheating (above 75°C), protecting both the tool and the vehicle.
- **Non-Hazard Smoke:** The smoke generated by the device is non-hazardous, ensuring a safer working environment.
- **Anti-Frost Protection:** The unit is designed to operate in temperatures as low as -20°C.
- **Vehicle Off During Test:** It is not necessary to start the car during testing, which enhances safety for both the vehicle and the user.



Figure 12: ANCEL S200 safety features.

## Warranty and Support

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The ANCEL S200 comes with a 3-year warranty. For technical support or any inquiries, please contact ANCEL customer service. Contact information can typically be found in the included user manual or on the official ANCEL website.