ANCEL

Automotive Diagnostic Leak Detector

User Manual

Warning

1. Only Authorized operator could use this equipment.
2. Always confirm Fluid level before use, if the fluid level is low enough to the bottom of the filler port, it will need a refill.
3. Do NOT use the unit on smoke sensitive parts. Eg. Lamp housing.
4. Avoid using the equipment on windy environment.

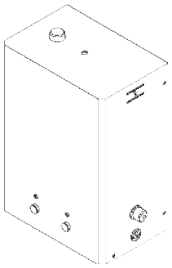
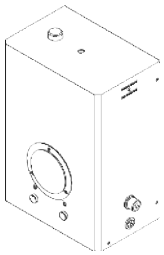
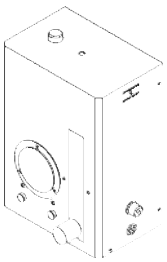
Safety

1. Do not use the equipment while the engine's running.
2. Wear Protection Glass.
3. It is always best to test in a draft free area. Always use a bright halogen lamp to enhance the visibility of the smoke exiting the leak.

Smoke Oil

The equipment is compatible with mineral oil based baby oil like Johnson&Johnson Pink bottle. Pure #5 white oil is the best choice if available.	

Specification

			
Model	**S1000**	**S2000**	**S3000**
Pressure Gauge	N/A	Yes	Yes
Flow Indication	N/A	N/A	Yes
Flow Control	N/A	N/A	Yes
Flow Rate	<6 L/Min		
Power Supply	12V automobile Battery 6Amp		
Output Pressure	0.5-8Bar		
Length of Power Cord	2.5Meters		
Length of Smoke Hose	2.5Meters		

Packing List



Power Cord * 1



Smoke Delivery Hose * 1



Funnel * 1



Intake Bladder * 1



Intake Bladder Replacement Rubber * 1



Adapter Cone * 1

Main Unit * 1

Accessories Explanation

Power Cord

To offer connection from the unit to the automobile battery, in order to drive the unit.

Smoke Delivery Hose

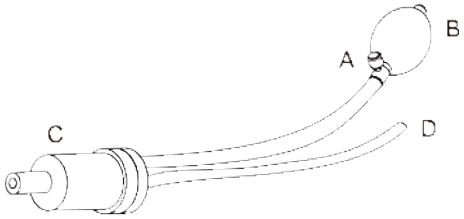
For introduction of smoke from the unit to Adapter Cone / Universal Intake Bladder or to the vacuum pipe directly.

Funnel

Assistance method for smoke oil refill, to prevent pour oil to the unit surface.

Intake Bladder

To fit the intake and exhaust, seal the system and introduce smoke into the system. Especially while the inlet position is not rounded-shape.



1. Clean the inner wall of the intake opening while the Air Filter, and the Throttle connections are removed, so as not to scratch the adapter.
2. Close the Pressure Relief Valve(A) next to the Hand Pump(B).
3. Put the Rubber Component(C) into the intake opening.
4. Inflate the Rubber Component(C) by pressing the Hand Pump(B) till the intake opening is tightly sealed.
5. Now the system is ready to test, introduce air/smoke into the system by plug the smoke nozzle into the Tube Opening(D) .
6. After test,pull off the smoke nozzle, release the inflated air by open the Pressure Relief Valve(A) next to the Hand Pump(B).
7. Clean the adapter for storage, avoid contact with corrosive liquids.

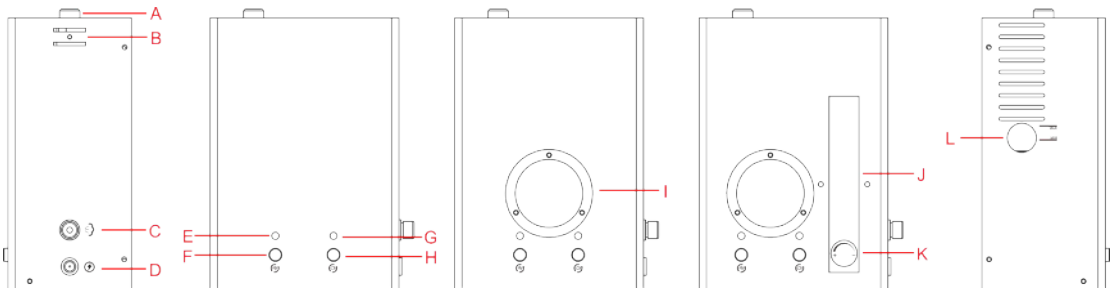
Intake Bladder Replacement Rubber

The rubber on the Intake Bladder may be easily broken, if not operate it properly with caution. The rubber could be replaced with new one without replace the whole Intake Bladder.

Adapter Cone

To fit the intake and exhaust, seal the system and introduce smoke into the system. It may fall out at high pressure and need a second hand to push and hold at operation.

Product Structure



The following list is designed to familiarize you with the function of the operational components of the machine.

A - Oil Refill Port

For oil refill while its needed. The funnel is a nice helper to prevent oil from poured to the surface of the unit.

B - Velcro Strap

For collection of the smoke delivery hose, and power cord before storage.

C - Smoke Outlet Port

While set up the unit, the Smoke Delivery Hose need to be mounted onto the Smoke Outlet .

D - Power Socket

While set up the unit, the power cords need to plug into the power socket.

E,F - State Indication and Air Control

The *<E - LED Indication>* LED has two states.

RED: Power ON.

GREEN: Pressurized air production.

While power up the unit, the LED would turn **RED**.

Press *<F - Air Control switch>*, the *<E - LED Indication>* would turn **GREEN**, and the unit start to generate pressurized air.

Press *<F - Air Control switch>* again anytime, the *<E - LED Indication>* would turn RED, and the unit stops generating pressurized air.

G,H - State Indication and Smoke Control

The *<G - LED Indication>* LED has three states.

OFF: Smoke generation not started.

GREEN: Smoke generation.

RED: Overheat.

While not smoke the unit, the LED would be OFF.

Press *<H - Smoke Control switch>*, the *<G - LED Indication>* would turn **GREEN**, and the unit start to generate smoke.

Press *<H - Smoke Control switch>* again anytime, the *<G - LED Indication>* would turn OFF, and the unit stops generating smoke.

While the smoke generating chamber is overheat, for protection, the smoke generation would be halted and the *<G - LED Indication>* would turn RED and restart generating smoke while the smoke generating chamber cooled down, or you can switch it OFF by pressing *<H - Smoke Control switch>* .

I - System Pressure Gauge

The Pressure Gauge displays the output pressure of the machine if block the smoke outlet port, otherwise it shows the real time pressure of the system been testing.

Pressure Decay Test: This gauge can also be used to determine if a leak exists by switching off the *<F - Air Control>* while the system is under pressure. If the gauge holds the displayed pressure, there is no leakage. If the displayed pressure starts drops, there is leakage in the system.

J - Flow Meter

The purpose of the flow meter is to provide a quick visual indication of the amount of air/smoke passing through the system being tested. If the smoke nozzle is in a closed system, and there are no leaks in that system, the flow meter will read zero (ball at bottom of scale). As the system is

filled with air or smoke, the ball in the flow meter will slowly fall to the bottom of the scale as the pressure in the system equalizes to the output pressure of the unit. As the flow decreases, the output pressure will increase. If the flow meter ball never falls to the bottom of the scale, there is leakage or air passing through the system. It is not necessary to use smoke when using the flow meter to determine if a leak exists.

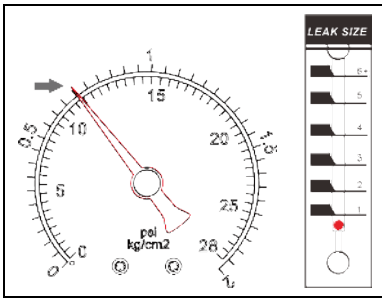
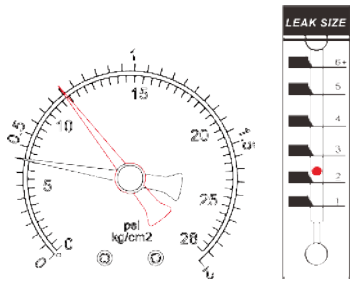
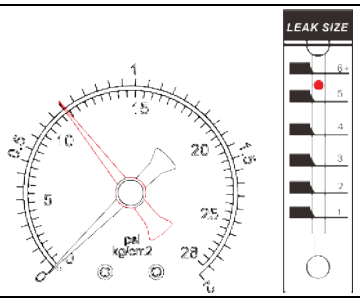
K - Flow Dial

In many cases excessive smoke exiting a leak may make it difficult to determine the exact location of the leak. The purpose of the Flow Control Valve is to decrease the amount of smoke exiting a leak so that its position may be pinpointed without the masking effect of excessive smoke. Turn clockwise to decrease flow, counterclockwise to increase flow. This valve is also used to lock out the system under test and observe any pressure decay on the pressure gauge.

L - Oil Level Gauge

While set up the unit, smoke oil need to be filled into the unit, do not exceed the MAX line. Check and confirm proper oil level periodically. If the oil level is lower than the MIN line,the unit would need a refill.

Leak Status Indication

		
No Leak	Small Leak	Massive Leak

Generic Operation

1. Turn OFF the ignition of the vehicle.

LEAK TEST OF VEHICLE SYSTEMS REQUIRES THE ENGINE TO BE OFF.

2. Dismantle the air filter and the throttle connections.
3. Clean the inner wall of the intake opening to avoid sharp objects and put the Universal Intake Adapter into the opening.
4. Connect the Power Cord to 12V vehicle battery.
5. Now the Power LED would be ON, if else check the power supply.
6. Introduce the smoke nozzle into the system via the Adapter Cone.
7. Press Air Control Switch, wait for 30 seconds until the system is pressurized, and check the Pressure Gauge & Flow Meter reading for leak status, if the unit is equipped with Pressure Gauge & Flow Meter.

9. Press Smoke Control Switch, .unplug and Plug back the smoke nozzle back into the Cone Adapter when there's obvious smoke coming out of the smoke nozzle.
10. The system will be ready for leak check in 2 minutes. Use a bright light torch or working lamp to assist.
11. After test, press Smoke Control Switch again to stop the unit from generating smoke and press Air Control Switch to stop generating pressurized air.
12. 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.

Warranty

1. The main unit entitled free warranty since the date of purchasing up to 12 months.
2. All accessories entitled free warranty since the date of purchasing up to 6 months, except the Intake Bladders.
3. Any damage to the machine caused by misuse, or improper operation, is not covered by warranty.