

# INSTRUCTION MANUAL



**Leakfinder<sup>®</sup>**

Model No. WV604



Diagnostic Smoke<sup>®</sup> Vapor Machine  
*with UltraTraceUV<sup>®</sup> Dye Solution*

Leak Detection System for the Professional Technician



USA | Canada Patents • 6,392,227 • 6,439,031 • 6,526,808 | 2,279,147 • 2,394,911 | Int'l Patents Pending

---



## Caution and Usage Tips



- ALWAYS use Tester with vehicle engine turned <OFF>.
- Use this equipment in the manner specified by the manufacturer.
- Follow common sense safety precautions.
- Connect Tester's black cable to chassis ground.
- Use UltraTraceUV® Smoke Solution No. P0712UV in Tester. Using a non-approved solution can cause damage to vehicles being tested and may cause personal injury.
- Do not leave Tester's hose or power cables connected to the vehicle if tests are not being performed.
- Do not perform test near source of spark or ignition.
- Wear appropriate eye protection.
- Wear yellow glasses supplied when using ultraviolet light.
- Air or gas pressure supplied to Tester can be 50 to 150 PSI (3.4 to 10.3 bar).
- Connect Tester to compressed air for general purpose leak detection applications.
- Connect Tester to inert gas, such as nitrogen, when testing fuel vapor (EVAP) system. Note: DO NOT use workshop air for EVAP testing. Adding oxygen to the fuel vapor space can create a flammable mixture in the fuel tank.
- When using alternate source of UV light, use light that includes 405 nanometer (nm) UV light range.
- The more time smoke is allowed to exit a leak, the more dye will be deposited at that leak location.
- When operating the Tester in near freezing temperatures, cycle the operation of the Tester 15 seconds <ON> and 15 seconds <OFF> for approximately the first minute or two of operation. This will allow the Tester to reach optimum operating temperature.
- When testing an engine's intake or exhaust system for leaks, it is best if the engine is cold. Small leaks may be sealed due to thermal expansion.
- When testing a closed system, such as the EVAP system, it is best to purge the 'non-smoke' air out of the system by leaving an opening in the system being filled. Close the system once smoke exits and continue to fill with smoke. This quickly fills the system with smoke.

## **Contents**

<b>Accessories Included</b>	<b>1</b>
<b>Initial Setup</b>	<b>2</b>
<b>Quick Start Guide</b>	<b>3 – 5</b>
<b>Other Leak Samples</b>	<b>6 – 7</b>
<b>Technical Specifications</b>	<b>8</b>
<b>Troubleshooting Guide</b>	<b>9</b>
<b>Warranty</b>	<b>10</b>

**Thank You and Congratulations!** Your *Leakfinder*<sup>®</sup>, which incorporates STAR Diagnostic Smoke<sup>®</sup> Technology *inside*, is the simplest and quickest way to find many vehicle system leaks. Smoke vapor-generating leak detectors containing this STAR Technology are the only leak detectors in the world approved by automakers (OEMs).

The patented technology *inside* your *Leakfinder*<sup>®</sup>, including the vapor-producing solution (UltraTraceUV<sup>®</sup>), was designed in collaboration with major OEMs, in order to establish a standard for leak detection. It is designed to be safe for vehicle systems and will not void factory warranties.

It is also the only smoke technology in the world that meets SAE INTERNATIONAL Published Papers' safety standards recommendation to use a smoke machine designed to function with an inert gas (such as Nitrogen, Argon or CO<sub>2</sub>) when testing a vehicle's fuel evaporative (EVAP) system [SAE: 2007-01-1235 & 2008-01-0554].

## Accessories Included

**UltraTraceUV®:** (P0712UV) this patented solution is the only Automaker-approved smoke-producing solution in the world. The solution's chemistry is specially formulated to withstand vaporization temperatures, is designed not to damage vehicle components and contains a special dye that deposits at the exact location of a leak. Will not harm automotive systems and each bottle will perform approximately 300 tests. (12 oz. / 355 ml). (Part No. is for one bottle, two bottles included with Tester).



**Combination Light:** (WVA-065) white light, for easier smoke location and ultraviolet (UV) light, to highlight the fluorescent dye deposited at the exact location of a leak. Also has laser pointer.



**Standard Size Service Port Adapter:** (WVA-06) connects to factory service port on many OBD-II vehicles.



**Schrader Removal / Installation Tool:** (WVA-049) fits both sizes of Schrader valves in vehicles with factory OBD-II service port fittings.



**Cap Plugs Kit:** (WVA-02) used for sealing some systems during leak testing.



**Smoke Diffuser:** (WVA-03) locates leaks around doors, windows, sunroofs and trunk compartment seals.



**Adapter Cone (standard):** (WVA-01) for introducing smoke into the exhaust system or the induction system. Cone is 1" x 3.5" and 6" long (25.4 mm x 89 mm x 152 mm).



**Adapter Cone (large):** (WVA-067) Cone is 3.5" x 6" and 4.5" long (89 mm x 152 mm x 144 mm).



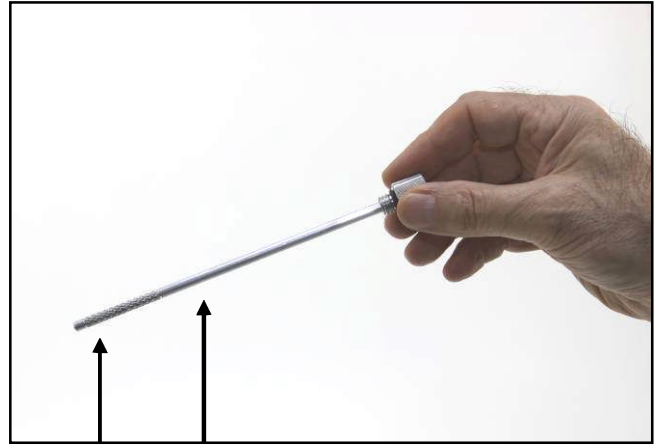
**Air fitting:** Two are supplied. The automotive style fitting is already installed on the tester. The spare fitting is an industrial fitting but also a popular one in auto facilities.



See website for more available accessories: [www.vacutec.com](http://www.vacutec.com)

# Initial Setup

1.



Low Full

> Pour entire contents of one 12 oz. UltraTraceUV® solution bottle into the smoke chamber.

**NOTE:** Use second bottle supplied to regularly maintain at or near FULL mark.

2.



> If not supplied; install correct air fitting onto the *Leakfinder*®.

**NOTE:** Your *Leakfinder*® is now ready for operation.

---

# Quick Start Guide

Do One of the Following:

1.



Connect to workshop air for general purpose leak testing.



Or

---

1.



Regulate nitrogen from 50 to 150 PSI (3.4 bar ~ 10.3 bar)

Connect to Nitrogen, or other inert gas, when testing fuel evaporative (EVAP) system.



Or

---

1.

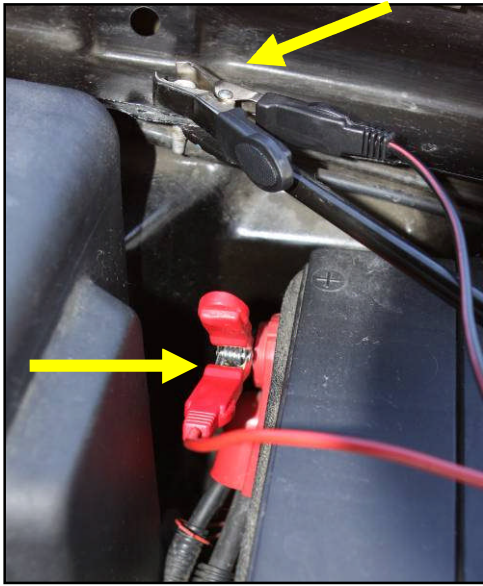
Inert Gas Pack

Optional accessory; Inert Gas Pack Kit (**WVA-060**).  
When filled with *liquid* CO<sub>2</sub> will perform approximately 50 EVAP tests.

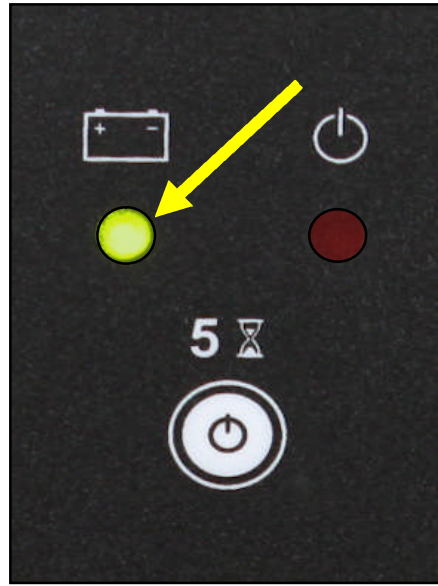




2.



- > Connect red clip to 12V-DC power.
- > Connect black clip to chassis ground.



- > Green light will turn <ON>.
- > A blinking green light indicates a weak battery.

3.



- > Use cone to access intake system and connect smoke supply hose to cone.

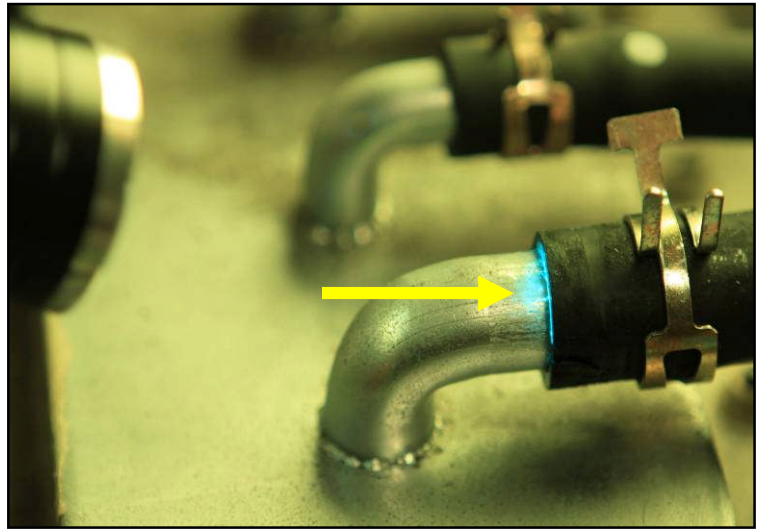


4.

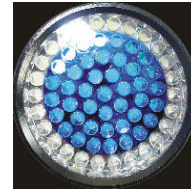


- > Press **START** button.
- > Green and red lights are <ON>.
- > 5-minute timer.

5.



> Use white light to find the smoke.

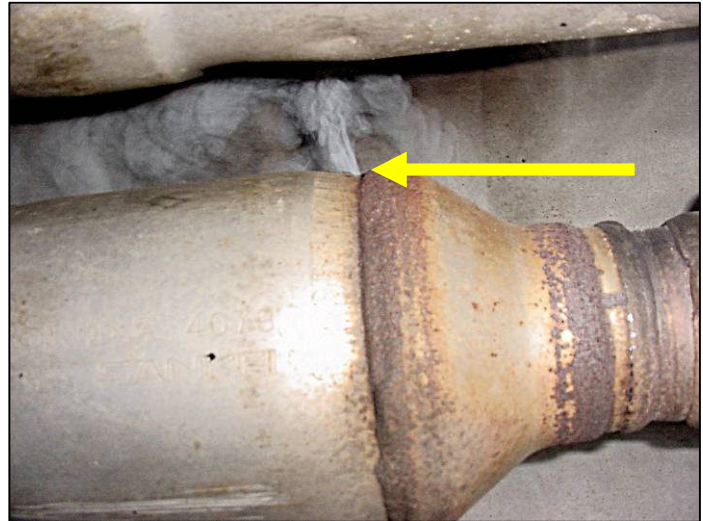


> Use UV light and yellow glasses to find the dye.

# Other Leak Samples

Your Leakfinder® can be used in virtually any vehicle low pressure system suspected of having a leak, such as; intake / induction, intercooler and turbocharger, vacuum, exhaust, EVAP and even wind/water leaks. Can also be used to verify air solenoid functions and test components prior to assembly.

## Exhaust

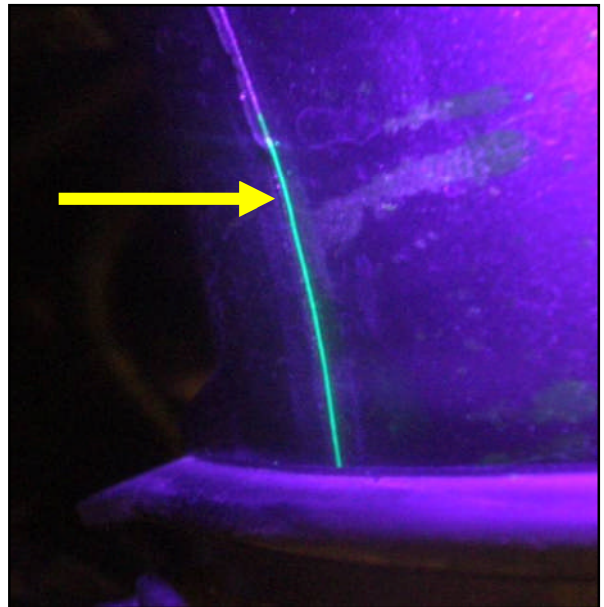


## Fluorescent Dye Deposit

The UltraTraceUV® smoke solution contains a special ultraviolet-activated fluorescent dye that deposits at the exact location of a leak. Use the UV light provided to highlight the dye.

> *The longer the smoke is allowed to exit a leak, the more dye will be deposited.*

> *This technology has been designed so that the dye deposits only if there is pressure-differential. So for instance; the dye will deposit when exiting a leak but will not deposit during a wind and water leak test.*





## Wind and Water Leaks

1. Set vehicle's climate control to 'Fresh Air' (not to re-circulate). Set blower on full speed.

> *This creates positive cabin pressure.*

2. Connect supply hose nozzle to Smoke Diffuser.

3. Lay smoke path along seals.

4. Look for smoke disturbance indicating a leak.

**No smoke disturbance means 'No Leak' >**



**< Smoke disturbance pinpoints the leak**

## Technical Specifications

Height	13.5 in. (34 cm)	Solution Max. Volume	12 oz. (355 ml)
Length	13 in. (33 cm)	Supply pressure	13.0 in. H <sub>2</sub> O (0.032 bar)
Width	9 in. (23 cm)	Supply volume	10 liters per minute
Weight	10 lb. (4.4 kg)	Smoke supply line	8 feet (2.4m)
Shipping weight	13 lb. (5.9 kg)	Power supply line	8 feet (2.4m)
Power supply	12 volts DC	Power consumption	15 amps.

**NOTE: A common question asked is if one can use a very basic generic mineral oil, such as ‘baby oil’, in the Leakfinder® to create the smoke vapor.**

**Your Leakfinder® will create smoke vapor with baby oil, but we do not recommend it.** The patented UltraTraceUV® smoke solution supplied with your Leakfinder®; will perform hundreds of tests (is very economical to use); is the only solution in the world approved by the OEMs; and will not void any vehicle factory warranties. Plus you have the added benefit of the trace dye that marks the exact location of a leak, increasing diagnostic accuracy. UltraTraceUV® solution is not a “generic” mineral oil. In fact, generic mineral oils are not intended for this type industrial use. The generic mineral oils break down, evidenced by its foul odor and they could damage vehicle components and void factory warranty.

# Troubleshooting Guide

Two lights on the control panel double as diagnostic lights.

Green	Red	Interval	Cause
✓		Blinks: 1 per second	Insufficient battery power
✓	✓	Blink simultaneously: 1 per second	Bad ground or power connection at smoke canister or short in circuit
✓	✓	Blink simultaneously: 4 times per second	Bad ground at smoke canister or open heating circuit
✓	✓	Blink alternately: 1 per second (System shuts down)	Bad ground or circuit board failure *

\* If circuit board failure occurs, first disconnect power to your Tester for 10 seconds and reconnect. If failure code occurs a second time, disconnect Tester and contact Authorized Dealer.

Symptom	Likely Cause	Solution
<b>The green power indicator lamp on the Tester does not turn ON.</b>	<ol style="list-style-type: none"> <li>1. The power cables are reversed.</li> <li>2. Poor power-supply cable connection.</li> <li>3. Battery providing power is too weak.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Correctly position power cables.</i></li> <li>2. <i>Secure the connection at the positive terminal and chassis ground.</i></li> <li>3. <i>Verify the battery is in good condition and fully charged.</i></li> </ol>
<b>There is no air or smoke coming out of the supply hose.</b>	<ol style="list-style-type: none"> <li>1. Flow Control valve is closed.</li> <li>2. Bad power-supply cable connection.</li> <li>3. Battery providing power is too weak.</li> <li>4. Air supply to tester is insufficient.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Open flow control.</i></li> <li>2. <i>Secure the connection at the positive terminal and chassis ground.</i></li> <li>3. <i>Verify the battery is in good condition and fully charged.</i></li> <li>4. <i>Check for sufficient air supply.</i></li> </ol>
<b>Very little smoke coming out of the smoke hose or oil dripping from the smoke hose.</b>	<ol style="list-style-type: none"> <li>1. There is too much smoke condensation inside the smoke supply hose. &gt; This usually does <u>not</u> indicate a failure.</li> </ol>	<ol style="list-style-type: none"> <li>1 <i>Position the hose lower than the Tester. Turn Tester &lt;ON&gt; for one minute, or until oil has drained from hose.</i></li> </ol>

# Warranty | Technical Support

  
**Worldwide Vapor**, Inc.

## LIMITED TWO (2) YEAR WARRANTY

### ***Leakfinder***<sup>®</sup> Models WV604 and WV605

**Worldwide Vapor, Inc. Warrants To the Original Purchaser; under normal use, care and service, Tester shall be free from defects in material and workmanship for TWO YEAR from the date of original invoice.**

Seller's obligations under this warranty are limited solely to the repair or, at Seller's option, replacement of or refund of the original purchase price for, Equipment or parts which to Seller's satisfaction are determined to be defective and which are necessary, in Seller's judgment, to return the equipment to good operating condition.

Repairs or replacements qualifying under this Warranty will be performed or made on regular business days during Seller's normal working hours within a reasonable time following Buyer's request. All requests for warranty service must be made during the stated warranty period.

### **For Technical Support:**

1-888-822-8832 (Opt. #2) Mon.-Fri. 8:00am to 3pm Pacific Time or [TechSupport@vacutec.com](mailto:TechSupport@vacutec.com)

### **Activate Your Warranty:**

**To activate your *Leakfinder*<sup>®</sup> warranty; send the information below to the email address or fax number provided within 30 days of your purchase.**

Send information below to: [TechSupport@vacutec.com](mailto:TechSupport@vacutec.com) or Fax: 714-433-2840

Purchaser's Name:

Company Name:

Address:

Country:

Telephone number:

Email address:

Web address:

Smoke Machine Model:

Serial Number:

Date Purchased (keep your invoice for verification, if needed):