

Leak Detection System

Containing OEM EVAP-Approved Smoke Technology
with UltraTraceUV® Solution



Operator Manual

Rotunda Part No. 218-00036

Manufacturer Part No. WV604FK



LINCOLN

ROTUNDA
GENERAL SERVICE EQUIPMENT



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

**WARNING: TO PREVENT PERSONAL INJURY
AND / OR DAMAGE TO EQUIPMENT**



- Three things are necessary for fire: fuel, oxygen, and an ignition source. In working on or near any fuel-related component, always assume flammable fuel vapors are present. Never smoke, carry lighted tobacco, or have an open flame near fuel vapors to avoid potential ignition. The risk of ignition is increased in the presence of oxygen. To further minimize the risk of ignition, we strongly recommend that you utilize an inert gas, such as nitrogen, argon or CO₂, when testing the vehicle's fuel vapor recovery system.
- Use this equipment in the manner specified by the manufacturer.
- Understand operating procedures / Follow all safety precautions.
- Correctly connect power supply to battery and chassis ground.
- Use **only** OEM-approved UltraTraceUV[®] Diagnostic Smoke[®] Solution Rotunda No. 218-00039. Altering the solution; may cause damage to the vehicle being tested; could void the warranty; may cause tester malfunction; may cause damage to property or may cause personal injury.
- Do not use with running vehicle engine.
- Do not perform test near source of spark or ignition.
- Do not leave the tester hoses or power cables connected to the vehicle for extended periods of time if tests aren't being performed.
- The 12V DC battery source you use to power the tester must be in good condition and fully charged.
- Wear eye protection that meets OSHA standards.
- Follow safety precautions when using ultraviolet light source.
- Optimum input pressure for the tester is 100 PSI (6.9 bar), although will operate in a pressure range of 50-150 PSI (3.4-10.3 bar)
- Store and operate the tester in upright position.



- ✓ Use the combination light supplied, with white-light on, to highlight the smoke exiting a leak. Turn it to UV-light to look for the fluorescent dye deposited at the exact location of a leak. The longer smoke is allowed to exit a leak, the more UV will be deposited. When using an alternate UV light, be sure the UV light includes 400 nanometer (nm) in its ultraviolet range.
- ✓ When operating the tester in near freezing temperatures, cycle the ON / OFF button 30-seconds ON and 30-seconds OFF for approximately the first minute or two of operation. This will allow the tester to reach operating temperature.
- ✓ When testing an exhaust system for leaks, it is recommended that the engine be cold - small leaks may be sealed due to thermal expansion.

Contents

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

Thank You and Congratulations! Your LeakFinder® Rotunda 218-00036 tester, which incorporates STAR Diagnostic Smoke® Technology *inside*, is the simplest and quickest way to find many vehicle system leaks and is the only smoke technology in the world approved by automakers (OEMs).

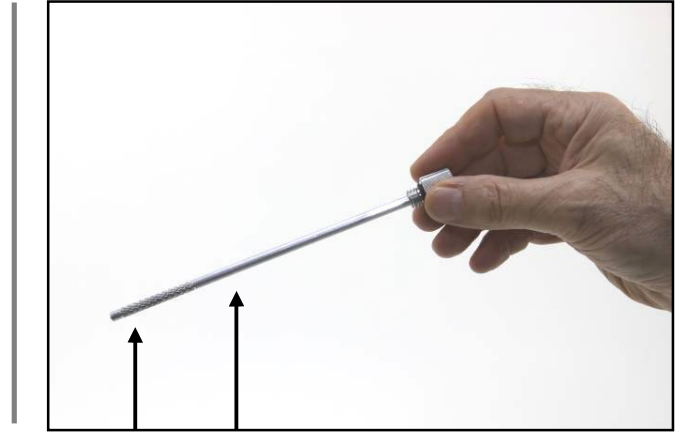
The patented technology *inside* your LeakFinder®, including the vapor-producing solution UltraTraceUV®, was designed in collaboration with major OEMs in order to establish a standard for leak detection. It is designed to be safe for vehicle systems and will not void factory warranties.

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 CO₂) when testing a vehicle's fuel evaporative (EVAP) system [SAE: 2007-01-1235 & 2008-01-0554].

Accessories Included	
<p>UltraTraceUV®: (218-00039) 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 full cycle tests. (12 oz. / 355 ml). (Part No. is for one bottle, two bottles included with Tester).</p>	
<p>Combination Light: (218-00038) 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.</p>	
<p>Standard Size EVAP Service Port Adapter: (218-00007) connects to factory service port on many OBD-II vehicles.</p>	
<p>Schrader Removal / Installation Tool: (218-00014) fits both sizes of Schrader valves in vehicles with factory OBD-II service port fittings.</p>	
<p>Adapter Cone (standard): (218-00003) 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).</p>	
<p>Adapter Cone (large): (218-00037) Cone is 3.5" x 6" and 4.5" long (89 mm x 152 mm x 144 mm). Perfect for introducing smoke into a large intake or exhaust system.</p>	
<p>Cap Plugs Kit: (218-00004) used for sealing some systems during leak testing.</p>	
<p>Smoke Diffuser: (218-00005) locates leaks around doors, windows, sunroofs, trunk compartment seals, tail light lenses, etc.</p>	
<p>Inert Gas Pack Kit: (218-00033) includes preset CO₂ regulator with cylinder fitting, pressure gauge, universal push-on female coupler and 20 oz. <i>liquid</i> CO₂ cylinder. (Cylinder arrives empty). Performs approximately 25 EVAP full cycle tests per 20 oz. cylinder. Perfect for a moderate volume shop, and portable – too! Cylinders can be locally filled or exchanged with <i>liquid</i> CO₂ at larger paintball or welding supplies store.</p>	
<p>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 some auto facilities.</p>	

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 Kit

When filled with *liquid* CO₂ will perform approximately 50 EVAP tests.

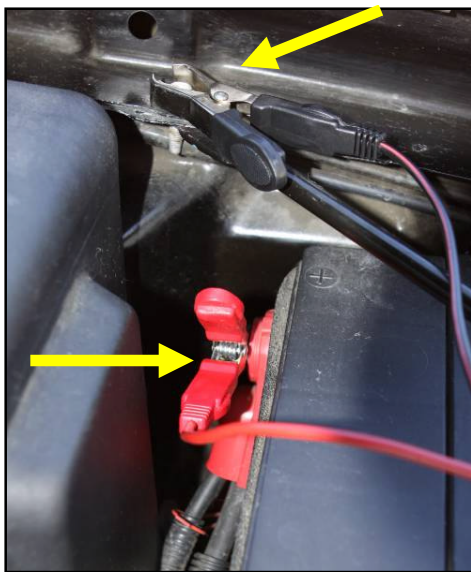




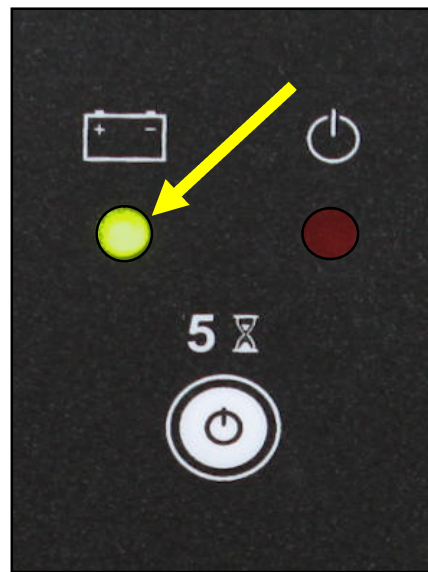
Before using the smoke machine to look for engine vacuum leaks, understand that there are allowable leak sources in the intake system that can cause a false failure.

NOTE: The intake manifold is allowed to leak up to 1000 cc/min. (1 Liter/min.). In addition; smoke emitting from the ETB, or MTB plates and bearings, EGR valve, IAC valve, and IMRC bushings is considered normal.

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.



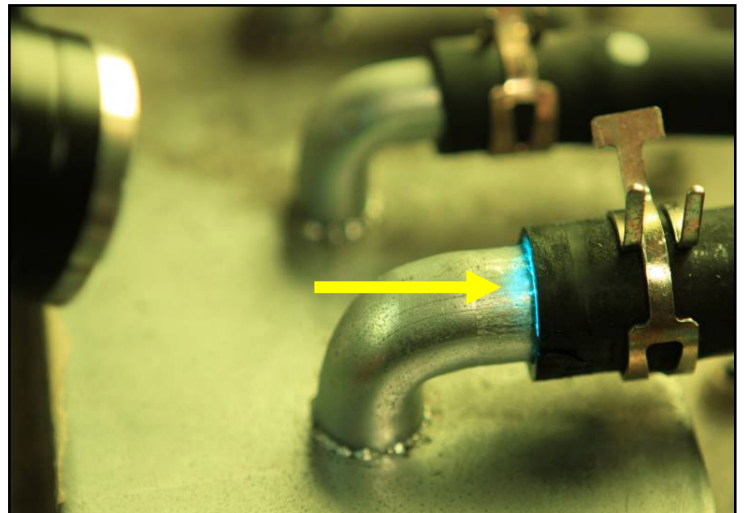
- > Use cone to access intake system and connect smoke supply hose to cone.

4.

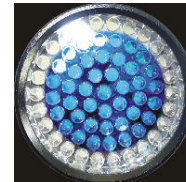


- > Press **START** button.
- > Green and red lights are <ON>.
- > 5-minute timer.

5.



- > Use white light to find the smoke.



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

Other Leak Samples

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

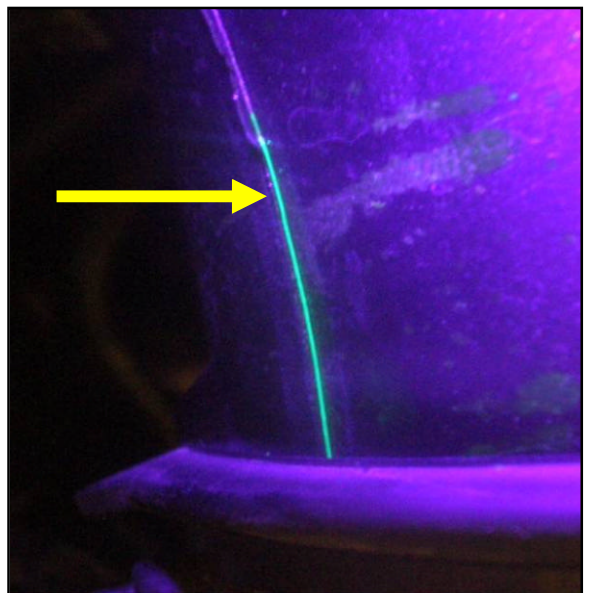


Fluorescent Dye Deposit

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 ₂ 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 or ‘baby oil’, in the LeakFinder™ to create the smoke vapor.

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

Warranty | Technical Support



LIMITED TWO (2) YEAR WARRANTY

LeakFinder® Rotunda Models 218-00035 & 218-00036

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

TechSupport@vacutec.com

To order smoke solution fluid or accessories contact:
Rotunda at 1-800-ROTUNDA (1-800-768-8632) Option #2
or from PTS home page click on Rotunda then GSE.