

DIAGNOSTIC LEAK DETECTOR

Version B

OPERATION MANUAL



Manufactured in California, USA*

CONGRATULATIONS

Thank you for purchasing the Diagnostic Leak Detector that 100,000+ technicians use to work smarter every day. We have manufactured a very rugged tool that works as hard as you do.

I appreciate how challenging your job can be: I promise your Diagnostic Leak Detector will make your job easier by drastically reducing diagnostic time and help you to make more money.

The versatile Diagnostic Leak Detector is not just for EVAP testing. You will find it indispensable in diagnosing vehicles with complex drivability issues. This tool will find more repairs and help you to sell the repair jobs to your customers. Don't tell your customers about leaks and faults, show them!

If you vapor test the intake system of most every vehicle that comes through your service center, your Diagnostic Leak Detector will pay for itself in less than 30 days. More importantly, your customers will enjoy better performance and increased fuel economy in their vehicles.

Thank you. I appreciate you.

Zachary Parker
President
Redline Detection, LLC

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SPECIFICATIONS

L x W x H	5.5 in. x 6 in. x 11 in. (14 cm x 15 cm x 28 cm)
Weight	6.5 lbs. (3 kg)
Shipping Weight	13 lbs. (6 kg)
Power Supply	12 Volts DC
Power Consumption	7 amps
Output Pressure	0.5 PSI / 13.0 in. H2O / 0.032 BAR
Operating Temperature	0°F to 140°F (-17°C to 60°C)
Operating Humidity	No Restrictions
Operating Altitude	No Restrictions
Vapor Output Hose	10 ft. (3.1 m)
Power Supply Cables	10 ft. (3.1 m)
Operating Modes	Vapor Cycle / Air Only Cycle
Pressure Supply	Compressed Air
Housing Material	Steel
Vapor Chamber Material	Billet Aluminum
Vapor Chamber Assembly	Bolted
Vapor Chamber Warranty	Lifetime

APPLICATION GUIDE

LEAKS

						
<input type="checkbox"/> CWP	●	●	●	○	○	●
<input type="checkbox"/> VACUUM	●	●	●	●	○	●
<input type="checkbox"/> OIL	●	●	●	●	○	●
<input type="checkbox"/> EXHAUST	●	●	●	●	●	●
<input type="checkbox"/> INTAKE	●	●	●	○	○	●
<input type="checkbox"/> WIND & WATER	●	●	●	●	●	●
<input type="checkbox"/> MANIFOLDS	●	●	●	●	●	●
<input type="checkbox"/> TIRE CHARGERS	○	○	○	○	●	○
<input type="checkbox"/> SENSORS	●	●	●	●	●	●
<input type="checkbox"/> SCALERS & HOSES	●	●	●	○	●	●

KEY

● EXCELLENT
Designed for
this purpose

○ SUITABLE
But not ideally
designed for this purpose

○ NOT APPROPRIATE
Does not apply
to this machine

○ FEATURED LEAK
Check out how to apply
to this leak on our DVD

SAFETY

The procedures in this operation manual are intended to be basic guidelines for users to practice using this diagnostic leak detector

This operation manual is not intended to be used in place of common sense:

- Use this equipment in the manner specified by the manufacturer
- Understand operating procedures

Follow all safety precautions

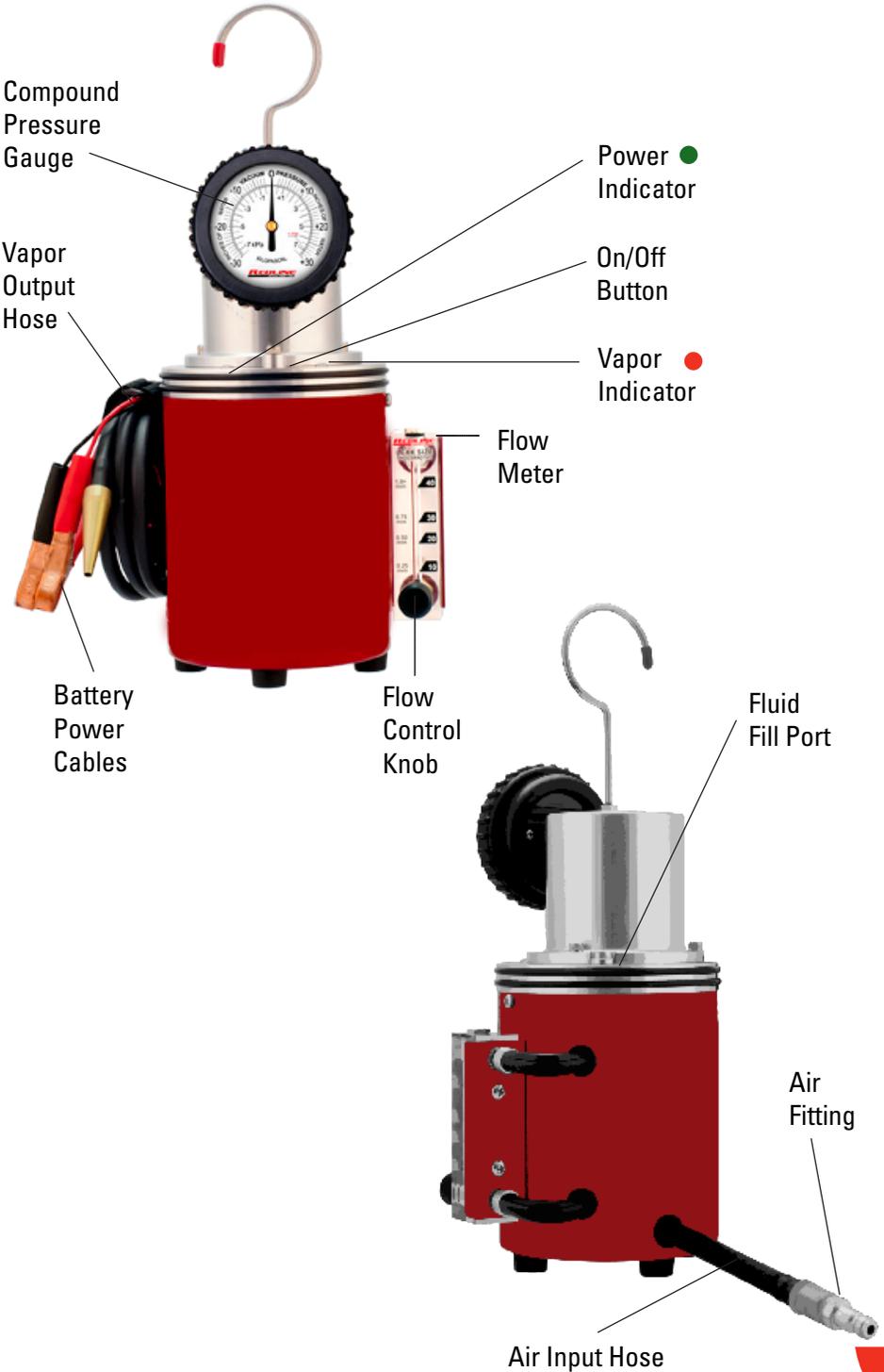
SAFETY PRECAUTIONS

- All diagnostic work should be performed with the engine off
- Do not leave a vehicle unattended while equipment is connected or operating
- Equipment operates on a 12 Volt battery
Connect machine to battery (+) and chassis ground (-)
- Do not perform tests near a source of spark or ignition
- When working with the fuel system, work in a well-ventilated area
- Always wear the appropriate safety protection
Wear OSHA standard eye wear and protective gloves when using this equipment



Always use a supplemental hood support or prop rod whenever hanging unit under a hood

COMPONENTS



ACCESSORIES INCLUDED

Hook [PN 96-0005]

To hang Diagnostic Leak Detector under hood or chassis

Hex Key [PN 80-0009]

To remove / replace fluid fill plug

OEM-Approved Vapor Producing Agent [PN 96-0039]

Vapor Producing Fluid will perform over 500+ typical tests per bottle
IMPORTANT: Contains NO Dye / Contaminants

EVAP Service Tool Kit [PN 96-0003]

Schrader Valve Removal Tool
EVAP Service Port Adaptor

Halogen Inspection Light [PN 96-0011]

Bright white beam finds even the tiniest wisps of vapor under the hood or chassis

Cap Plug Kit [PN 96-0007]

Seals a variety of openings in order to pressurize system for testing

Standard Cone Adaptor [PN 96-0004]

To introduce vapor into exhaust and induction systems

Accessory Storage Case [PN 91-0011]



ADDITIONAL ACCESSORIES

EasyEVAP™ [PN 95-0030]

This universal Fuel Filler Neck Connector system fits 100% of vehicles to simplify EVAP testing

Universal Filler Neck Connector [PN 95-0011]

Made in USA of billet aluminum

Sealing Disks [PN 96-0017]

Creates an air-tight seal with any filler neck

CapAdapt™ Capless Adaptor [PN 96-0054]

Opens throat of capless filler necks

XL Cone Adaptor [PN 96-0055]

For use with large vehicles and trucks with large openings

Extended Accessory Kit [PN 95-0005]

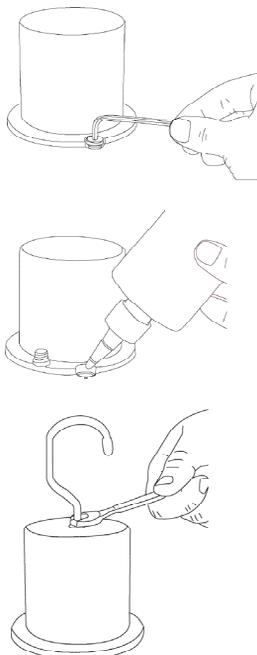
Standard Cone Adaptor for dual exhaust
Vapor Output Hose extension allows operator to test 20 ft. from unit
Additional OEM-Approved vapor producing fluid for 500+ typical tests

Replacement Bulb [PN 20-0002]

MR-16 bulb, replacement for Inspection Light



SET UP



1. FILL / ADD VAPOR PRODUCING FLUID

Remove Fluid Fill Plug with hex key
Pour OEM-Approved Vapor Producing Fluid into Fluid Fill Port until fluid level is near top of the fill port
Replace Fluid Fill Plug



Do not overfill
Only takes 2 fl. oz. (60 ml) to refill when empty

2. INSTALL HOOK

Use a wrench to tighten jam nut

HOOK UP

3. CONNECT TO POWER

This machine runs on a fully-charged 12-Volt battery
Connect red lead (+) to battery's positive terminal
Connect black lead (-) to chassis ground



Do not connect to battery charger

POWER INDICATOR:

- Green Light: Machine has adequate power
- No Light: No Power, See Troubleshooting (pg 11)

4. CONNECT TO AIR SUPPLY

Connect Air Input Hose to a compressed air supply
If necessary, replace Air Fitting to match your air supply

TESTING FOR LEAKS

5. PUSH ON / OFF BUTTON

Begins 5-minute vapor cycle

VAPOR INDICATOR:

- Red Light: Vapor is Generating
- ◻ Flashing Red Light: Open Circuit, See Troubleshooting (pg 11)
- No Red Light: No Vapor Generating

Turn Flow Control Knob counter-clockwise to release vapor / pressure

Flow Meter indicates flow and measures leak size

Use provided Halogen Inspection Light to locate leaks

Perform repair(s) as needed

VERIFY REPAIRS

6. PERFORM DECAY / LEAK DOWN TEST

Pressurize the sealed system

Lock out system by turning Flow Control Knob clockwise to the fully closed position

OBSERVE PRESSURE GAUGE FOR DECAY:



Pressure Holds: No leaks, Repair is complete



Pressure Decreases:

Leak(s) exist, Repeat Steps 5 & 6 until all repairs are complete

NOTE: Not all systems are designed to be 100% sealed

HOW TO DIAGNOSE INTAKE SYSTEM & VACUUM LEAKS

This procedure will locate leaks in vacuum lines as well as manifolds, EGR valves, oil seals, gaskets, solenoids, o-rings, ducting, throttle shafts, diaphragms, canisters, and more

For best results, test in a draft-free area

1. Remove the air filter housing from ducting
2. If the vehicle has a round inlet tube from the air filter, place the Cone Adaptor into the duct toward the engine
3. Put Vapor Supply Hose into Cone Adaptor to introduce vapor into the system
4. Use provided Halogen Inspection Light to locate leaks

ALTERNATIVE METHOD

1. Select an appropriate vacuum line to access the vacuum system
(i.e. a brake booster supply line before the check valve)
2. Seal all system openings
 - a. Air Intake must be sealed to prevent vapor from leaking back through the intake
 - b. To seal the intake, use Cap Plugs, a latex glove, or plastic wrap around the filter
3. Put Vapor Output Hose into Cone Adaptor to introduce vapor into the system
4. Use provided Halogen Inspection Light to locate leaks

HOW TO DIAGNOSE EVAP LEAKS

Leaks in the EVAP system, or fuel vapor recovery system, are frequently the cause for check engine lights. Using a diagnostic leak detector, these leaks can now be quickly diagnosed and repaired, making them profitable services for repair facilities

1. To access the EVAP service port, remove the green cap
Remove Schrader valve using the provided Schrader Valve Removal Tool (Schrader valve has left-handed threads, turn clockwise to remove)
2. Connect the provided EVAP Service Port Adaptor to the service port
3. Using a scan tool, close the vent solenoid to close EVAP system from atmosphere (If vent solenoid does not close, intermittent solenoid may have failed)
4. Input vapor into the system through adaptor
5. Remove the fuel cap until dense vapor is seen exiting the filler neck
6. Replace the fuel cap and continue pumping vapor into the system

As the system fills with vapor and the system pressure equalizes, observe the Flow Meter and Pressure Gauge

When pressure gauge reaches its maximum pressure, Flow Meter will indicate leak size (Flow Meter will drop to zero if there are no leaks)

7. Using the provided Halogen Inspection Light, inspect under the hood and trace the route of the EVAP system on the underside of the vehicle for leaks
8. Repair the system as needed

PRESSURE DECAY / LEAK DOWN TEST

9. After all repairs have been made, retest the system using the Decay or Leak Down testing method with air only
 - a. Input air into EVAP system until fully pressurized
 - b. Lock out system by turning the Flow Control Knob to the fully closed position
 - c. If leaks are repaired properly, system will hold pressure
 - d. If pressure decays or leaks down, leaks existRepeat above procedures until all repairs are complete

HOW TO DIAGNOSE EXHAUST LEAKS

This test is most effective when exhaust system is cold
Thermal expansion may cause small leaks to seal

1. Insert appropriate Cone Adaptor into the end of the tailpipe
If the vehicle has dual exhaust with cross over system, plug the other tailpipe to seal the system
2. Put Vapor Output Hose into Cone Adaptor to introduce vapor into the system

A hot catalytic converter may consume some of the vapor



All testing is performed with the engine off

HOW TO DIAGNOSE UNDER DASHBOARD LEAKS

Many vehicles have a common vacuum line, leading from the engine compartment through the fire wall, under the dashboard
This line supplies vacuum to climate control functions and other vacuum-operated systems

1. Disconnect the vacuum line under the hood at its source
2. Input vapor into the vacuum line
3. Observe the Flow Meter and Pressure Gauge while changing the climate controls from heat to vent, to defrost, etc.
4. Change in the Flow Meter or Pressure Gauge's reading will indicate which system is leaking
5. Set the climate control to the leaking system
6. Use provided Halogen Inspection Light to locate under dash leaks

Central locking system leak inspection is performed in the same manner
Activate control solenoids while introducing vapor into the system

TROUBLESHOOTING

PROBLEM	SOLUTION
No Green Light	Check polarity Ensure 12-Volt battery is fully-charged Reconnect power cables
Red Light Flashing	Ensure 12-Volt battery is fully-charged Open circuit/ internal component Contact Redline Technical Support
No Air Flow	Check connection to compressed air Open the flow control valve Check hoses are not kinked or pushed into machine
Not Enough Vapor	Check Fluid Level ▶ Open the flow control valve Check hoses are not kinked or pushed into machine
Flow Meter Ball Sticking	Clean Flow Meter ▶
Gauge Bouncing Flow Meter Bouncing	Drain Vapor Hose ▶

REDLINE TECHNICAL SUPPORT



RedlineDetection.com/support



TechSupport@RedlineDetection.com



+1 714-451-1411

Monday - Friday: 7:00 AM to 5:00 PM PST

MAINTENANCE

CHECK FLUID LEVEL

Remove fill plug from fluid fill port with hex key

Pour OEM-Approved Vapor Agent into Fluid Fill Port until fluid level is near top of the fill port

Replace fill plug

Check fluid level every 50 - 100 tests

CLEAN FLOW METER

Disconnect air supply and power from the machine

Remove the flow meter's top plug with a wrench

Invert the machine to remove flow meter ball

Apply isopropyl/rubbing alcohol to a long cotton swab to clean flow meter tube

Use a dry cotton swab to dry flow meter tube

Wipe flow meter ball clean with dry cloth

 Do not use alcohol/ cleaners on flow meter ball

Reinstall flow meter ball and replace the top plug

DRAIN VAPOR HOSE

Elevate the machine

Allow the entire vapor hose to hang downward

Place a container beneath the nozzle to capture fluid

Process takes approximately 5 minutes

WARRANTY

The manufacturer, Redline Detection, LLC. ("Redline") warrants this product to be free from defects in workmanship and material under normal use and service for a period of one-year from the date of purchase. Redline's liability under this warranty is limited to: (1) repair or replacement of any parts or product which are determined to be defective; or at Redline's sole option (2) refund of the purchase price. In either event, product to be returned shipping prepaid within the one year warranty period. Additionally, the vapor chamber in any Redline product has a lifetime warranty as to its structural integrity: Any Redline-manufactured vapor chamber that leaks, cracks, or separates in any way shall be repaired/ replaced by Redline at no charge. Products are only to be used by persons having skill and knowledge in the automotive repair field, and improper use or maintenance may cause serious injury. In no event shall Redline be liable beyond replacement of product or refund of the purchase price. This warranty shall void if a product is improperly maintained, altered, abused or otherwise misused in any way.

THE AFORESAID WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, AND THERE ARE NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER MADE BY REDLINE, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR APPLICATION.

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DETECTION.COM

+1 714-451-1411

www.redlinedetection.com

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Redline Detection, LLC

MADE IN USA

With global components

RoHS
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