Porsche
Special Tools & Equipment

Dual Purpose
Diagnostic Leak Detector

OPERATION MANUAL

P/N 95-0136

REDLINE DETECTION.COM

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Technical Support: 1-877-55-SMOKE
+1 714-451-1411

Email Support: info@RedlineDetection.com
You will receive a call or email response within six (6) hours

Shop Online: www.RedlineDetection.com

Dimensions	14 in. x 9 in. x 15 in. (10 cm x 23 cm x 38 cm)	
Weight - Machine Only	27 lbs. (12.25 kg)	
Weight - Accessory Kit Only	16 lbs. (7.25 kg)	
Shipping - Weight	46 lbs. (20.85 kg)	
Shipping - Dimensions	20 in. x 15 in. x 25 in. (50 cm x 38 cm x 63 cm)	
Power Supply	100-240V AC	
Pressure Supply	Compressed Air	
Output Pressure TURBO Mode	2 - 20 PSI (0.14 - 1.4 BAR)	
Output Pressure EVAP Mode	11 - 14 in wc / 0.47 PSI / 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	15 ft. (5 m) TURBO	10 ft. (3 m) EVAP
Operating Modes	Vapor Cycle / Air Only Cycle	
Housing Material	Steel	
Vapor Chambers Material	Billet Aluminum	
Vapor Chambers Assembly	Bolted	
Vapor Chambers Warranty	Lifetime	
Warranty	1 Year	

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 or replaced by Redline at no charge. Products are only to be used by persons having skill and knowledge in the motor vehicle 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.

THE PURCHASER'S SOLE REMEDY FOR ANY DEFECTIVE PRODUCT SHALL BE REPAIR, REPLACEMENT OR REFUND AS STATED ABOVE AND REDLINE SHALL NOT BE LIABLE TO ANYONE FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, INDIRECT OR PUNITIVE DAMAGES ON ACCOUNT OF DEFECTIVE PRODUCTS, HOWEVER CAUSED, UNDER ANY THEORY OF LABILITY.

TURBO/HIGH PRESSURE

1. Power/Mode Selection Toggle Switch
Toggle left for Turbo/High Pressure,
Toggle right for Low Pressure EVAP

2. Turbo Testing Indicator
Indicates Turbo / High Pressure testing selected

3. Turbo / High Pressure Vapor Output Hose

4. Flow Meter
Measures flow rate into system under test

5. System Pressure Gauge
Displays the back pressure of system under test

6. Power Indicator
Green light indicates proper connection to electrical power

7. Flow Control Valve (Variable)
Releases vapor / pressure into the system
Close flow control valve to lock out system for pressure decay testing

8. Test Pressure Gauge
Indicates test pressure set by regulator

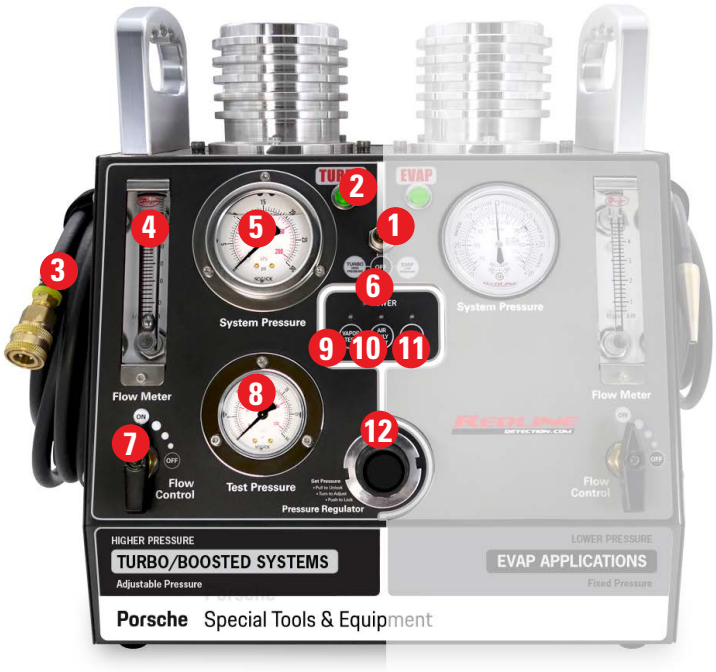
9. Vapor Test Switch
Begins ten-minute vapor cycle. Red light indicates vapor cycle. Push again to stop testing

10. Air Only Test Switch
Begins ten-minute air only cycle. Blue light indicates air only cycle. Push again to stop testing

11. Reset Switch
Clears stored logic

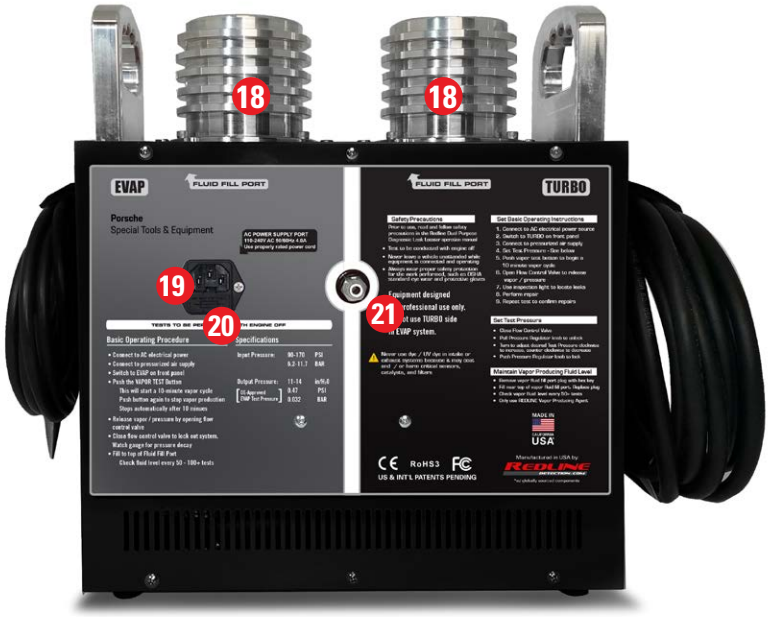
12. Adjustable Pressure Regulator
Adjust test pressure from 2 to 20 PSI
(0.14 to 1.4 BAR)

FRONT VIEW



FRONT VIEW

BACK VIEW



13. EVAP Testing Indicator
Indicates EVAP / Low Pressure testing selected

14. System Pressure
System compound pressure gauge EVAP

15. Flow Meter
Measures flow rate into system under test

16. EVAP / Low Pressure Vapor Output Hose

17. EVAP/Low Pressure Flow Control Valve (Variable)
Releases vapor / pressure into the system. Close flow control valve to lock out system for pressure decay testing

***NOTE**: For Fixed Pressure, adjustable regulator only affects high pressure testing

REAR / BACK VIEW

18. Fluid Fill Ports (2x)
Remove fluid fill plug to fill machine with Redline approved vapor producing agent

19. International AC Power Inlet (100-240V)

20. Fuse Holder
10A 250V Fuse plus one spare fuse

21. Compressed Air Inlet
Replace coupler fitting if necessary. Male 1/4 in. NPT fitting

INCLUDED ACCESSORIES

TURBO / HIGH PRESSURE

1. Accessory Storage Case [91-0006]

2. Power Intake™ Adaptor 2.9 in. (7.4 cm) Diameter [95-0081]
Inflatable block off bladder with a pressurized vapor pass-through

3. Power Intake™ Adaptor 1.9 in. (4.8 cm) Diameter [95-0086]
Inflatable block off bladder with a pressurized vapor pass-through

4. Halogen Inspection Light [96-0011]
12V DC with 20 ft. (6.1 m) cable. Always use to pinpoint leaks

5. AC Power Cable [20-0010]

6. OEM-Approved Smoke Producing Fluid 2x [96-0039] 8 fl. oz. (237 ml)
Vapor Producing Fluid will perform 100's of typical tests per bottle
Important: Contains NO Dye / Contaminants

7. Hex Key [80-0009]
To remove / replace fluid fill plug

8. Block Off Coupler [96-0084]
Use to block smoke hose to convert Power Intake™ Adaptor into a block off bladder

9. Oxygen Sensor Port Adaptor [15-0059]
Use to access exhaust system through oxygen sensor port

10. Temperature Sensor Port Adaptor [15-0056]
Use to access intake or exhaust system through temp sensor port

11. Pressure Sensor Port Adaptor [15-0055]
Use to access intake or exhaust system through pressure sensor port

EVAP / LOW PRESSURE

12. EVAP Service Tool Kit [96-0003]
Schrader Valve Removal tool. Evap Service Port Adaptor.

13. Cap Plug Kit [96-0007]
Seals a variety of openings in order to pressurize system for testing.

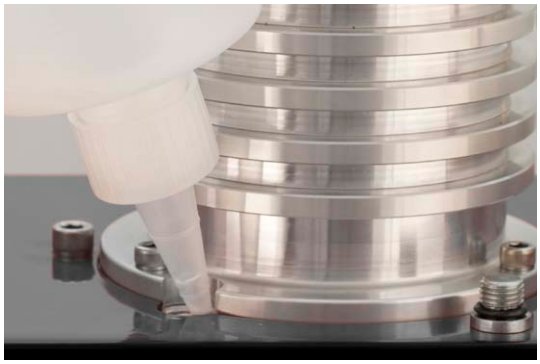
14. Standard Cone Adaptor [96-0004]
For use to seal openings from 1 in. (2.5 cm) to 3.4 in. (8.6 cm) to introduce vapor into exhaust and induction systems

15. EVAP Quick Connect Hose [96-0656]

16. Smoke Machine Quick Connector Kit [96-0190]

17. 11.8mm Male Quick Connect Adapter [96-0218]

18. #4 Rubber Stopper [96-0219]



1. FILL / ADD VAPOR PRODUCING FLUID

a. Remove fluid fill plug with hex key.

b. Pour Redline Approved Vapor Producing Fluid into fluid fill port

c. Fill fluid to top of port

d. Replace fluid fill plug

2 fl. oz. (60 ml) maximum. Only use Redline Approved Vapor Producing Fluid

Never use dyes, solvents or other contaminants in intake or exhaust systems because they may coat and/or harm critical sensors, catalysts or filters

2. CONNECT TO POWER

- Connect a properly rated power cord into the AC Power Port
- Green Power Indicator lamp illuminates with proper power connection

***POWER / MODE SELECTION TOGGLE SWITCH:**

Toggle left for Turbo/High Pressure,
Toggle right for Low Pressure EVAP

POWER INDICATOR:

GREEN LIGHT: Machine has adequate power
NO LIGHT: No Power

Never connect the Redline Dual Purpose Leak Locator to vehicle with the engine running

3. CONNECT TO AIR SUPPLY

a. Connect compressed air supply to Air Inlet
**Replace quick coupler fitting if necessary. 1/4 in. NPT male*

4. TO ADJUST FOR EVAP / LOW PRESSURE TESTING

Push Vapor or Air Only Test to begin 10 minute cycle. Push again to stop.

a. RED LIGHT indicates Vapor Test
BLUE LIGHT indicates Air Only Test

b. Flow Meter indicates flow and measures leak size

5. TO ADJUST FOR TURBO / HIGH PRESSURE TESTING

a. Close flow control valve

b. Pull pressure regulator knob to unlock

c. Push Vapor or Air Only Test to begin 10 minute cycle. Push again to stop.
RED LIGHT indicates Vapor Test
BLUE LIGHT indicates Air Only Test

d. Turn pressure regulator knob to desired test pressure.
To adjust, turn clockwise to increase, counter clockwise to decrease

e. Push pressure regulator knob to lock.

6. OPEN FLOW CONTROL VALVE TO RELEASE VAPOR / PRESSURE

7. USE INSPECTION LIGHT TO LOCATE LEAKS

8. PERFORM REPAIR

9. REPEAT TEST TO CONFIRM REPAIRS

How To Diagnose EVAP Leaks

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

PRESSURE DECAY / LEAK DOWN TEST

1. Verify if a leak is currently present, test the EVAP system using the Decay or Leak Down testing method with air only
   a. 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)
   b. 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)
   c. Input air into EVAP system until fully pressurized. When pressure gauge reaches its maximum pressure (12-14 inches of water column), Flow Meter will indicate leak size (if leak is present)
   d. Lock out system by turning the Flow Control Knob to the fully closed position. Observe pressure gauge for decay
   e. If no leaks are present, system will hold pressure
   f. If pressure decays or leaks down, leaks exist. Proceed to step 2 to find leaks
2. Remove the fuel cap
3. Open Flow Control Valve to input vapor into the system through adaptor
4. Replace fuel cap when dense vapor is seen exiting the filler neck
5. Continue pumping vapor into the system
6. Using the provided Halogen Inspection Light, inspect for leaks (under the hood and tracing the route of the EVAP system on the underside of the vehicle)
7. Repair the system as needed
8. Repeat procedures in steps above until all repairs are complete and final quality test is performed, indicating no leaks

VERIFY REPAIRS

PERFORM DECAY / LEAK DOWN TEST

Pressurize the sealed system

Lock out sealed 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, Repair and retest until all repairs are complete

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

The procedures in this section are intended to be basic guidelines for users to practice using the Dual Purpose Diagnostic Leak Locator (EVAP / Low Pressure mode)

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

DO NOT USE TURBO / HIGH PRESSURE IN EVAP SYSTEM

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 AC Voltage
- Do not perform tests near a source of spark of 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

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

TURBO/HIGH PRESSURE TESTING FOR LEAKS

Intake System Leak Testing

This test will find any leaks in ducting, charged air cooler, turbocharger, intake manifold, throttle body, seals, gaskets, hoses, etc.

Seal off intake system by installing Power Intake™ Adaptor (see instructions) into intake ducting after air cleaner box. Begin a 10-minute vapor cycle and pressurize entire system with vapor at 5 PSI (0.35 BAR) while inspecting for leaks using provided halogen inspection light. If no leaks are present, increase pressure to 10 PSI (0.7 BAR) to observe leaks. Retest after repairs are performed to confirm proper repair and seal.

Exhaust System Leak Testing

This test will find any leaks in exhaust tubing, clamps, flex pipe, muffler, diesel particulate filter, turbocharger, exhaust manifold, etc.

Seal off exhaust system by installing Power Intake™ Adaptor (see instructions) into exhaust pipe. If using inside exhaust stack use the exhaust retention hoop to keep Power Intake™ Adaptor from falling inside exhaust stack. Exhaust Particulate Filter or Catalytic Convertor may not allow visible vapor to pass through because the particulates get trapped. In that case you may use block off coupler to convert Power Intake™ Adaptor into a block off adaptor while injecting smoke into the system using the Temperature Sensor Port Adaptor, Pressure Sensor Port Adaptor or Oxygen Sensor Port Adaptor. These adaptors give you a great amount of flexibility in testing all areas of the exhaust system. Retest after repairs are performed to confirm proper repair and seal.

Combination Intake / Exhaust Testing

Some vehicles allow for a single procedure to test the entire intake and exhaust system at one time.

Many engine systems can be tested from the air box to the tip of the exhaust completely in a single test. To do so, install Power Intake™ Adaptor (see instructions) into intake ducting after air cleaner box AND install Power Intake™ Adaptor (see instructions) into exhaust pipe. Convert Power Intake™ Adaptor in exhaust system into a block off by installing block off coupler. Inject vapor into the intake system through the Power Intake™ Adaptor. Pressurize entire system inspecting for leaks. Note: Complete system testing can will occur when valve overlap is present or EGR valve is in open position. In cases where valve overlap cannot occur or EGR may not be opened either manually or computer controlled, separate system testing must be performed. Retest after repairs are performed to confirm proper repair and seal.

Cab Leak Testing

Test for driver cabin exhaust / carbon monoxide infiltration, wind and water leaks.

Key on / Engine off, turn circulation fan to its highest speed making sure that the fresh air option is used (NOT recirculate). If vehicle has dual air option, also initiate fan, selecting highest fan speed setting. The circulation fan produces a positive cabin pressure. Make sure all windows and doors are completely closed. Install SmokeMeister™ Wand to end of Vapor hose. Set test pressure to 3 PSI (0.2 BAR). Make sure test is performed in a "still air" environment such as in a closed building. Using SmokeMeister™ Wand proceed around vehicle cabin laying down fluffy vapor on all seams, seals and joints looking for vapor deflection from escaping air (leaks). Where vapor is deflected is a visual conformation of a leak. Seal leak and retest entire cabin for further leaks. To check for doghouse engine cover leaks, turn off fans, install wand tip adaptor into wand, and inject vapor underside of doghouse while someone inside cabin looks for leaks. Retest after repairs are performed to confirm proper repair and seal.

Coolant System Leak Testing

Cooling system leak testing can be performed two ways

Use Dual Purpose Leak Locator to quickly and easily find cooling system leaks either with decay testing or using visible vapor. First, attach provided cooling system adaptor to pressurized coolant bottle or radiator at cap. For decay testing, simply pressurize coolant system with air-only to manufacturers recommended test pressure, typically 15 PSI (1 BAR). Turn off flow control valve to lock out system and watch for decay. Inspect visually for leaking fluid. Alternatively, to perform leak test using vapor, first drain the cooling system of all fluid. Introduce pressurized vapor in to cooling system at no more than the manufacturers recommended test pressure and use inspection light to find leaks. Retest after repairs are performed to confirm proper repair and seal.

IMPORTANT NOTE

Many leaks in heavy duty systems are considered "normal" or "within tolerance." For example, a weep hole in a muffler is acceptable. DO NOT assume every wisp of vapor represents a failing component. Check with vehicle manufacturer before replacing suspected failed part.

ADAPTOR INSTALLATION

Safety Warnings:

- The maximum test pressure a Power Intake™ Adaptor may restrain can only be estimated.
- Slippage of a Power Intake™ Adaptor is influenced by many factors including debris / residue in the Intake / Exhaust system, coefficient of friction, internal pressure of the Power Intake™ Adaptor, and the accuracy of inflation instruments.
- Generally, a Power Intake™ Adaptor properly inserted into an Intake / Exhaust system may begin slipping when test pressure exceeds 50% of the internal inflation pressure. Inflation pressure and back pressure limitations are subject to temperature / humidity change.
- Power Intake™ Adaptor should NEVER be inflated over 1.6 times its outside diameter.
- Debris, protrusions and residue in the Intake / Exhaust system could weaken and / or rupture the bladder of the Power Intake™ Adaptor. Bladder failures due to misuse or abuse are not covered by warranty.Redline Detection shall not be responsible for any incidental or consequential damages.
- Power Intake™ Adaptor must be mechanically anchored with the provided chain / cable to a secure location before use.
- Power Intake™ Adaptor slippage under test pressures may cause property damage or injury.
- NEVER use inflation pressure with Power Intake™ Adaptor or a test pressure that is greater than the capacity of the weakest component in the system under test.
- NEVER use Power Intake™ Adaptor when its failure could cause injury or catastrophic damage.
- Before use: Refer to Power Intake™ Adaptor Installation and Inflation procedures, back pressure limitations and tether restraint installation instructions.

Installing Power Intake™ Adaptor:

1. Install Power Intake™ Adaptor fully into intake system ductwork or exhaust tubing. Make sure there are no obstructions or sharp edges that might puncture bladder when inflated. Power Intake™ Adaptor must insert completely inside ducting / tubing.
2. Install safety chain / cable to a secure location.
3. Inflate Power Intake™ Adaptor to 30 PSI (2 BAR) maximum. If over inflated, pop off safety valve may release. If release occurs, reinflate to 30 PSI (2 BAR).
4. Firmly tug on safety chain to insure Power Intake™ Adaptor is firmly installed and properly secure.
5. Attach vapor hose for testing.

Proper Installation

Improper Installation

Removal of Power Intake™ Adaptor:

1. Remove vapor hose (or block off adaptor) at quick coupler to deflate tested system
2. ONLY AFTER system under test is fully depressurized, release internal pressure of Power Intake™ slowly by depressing Schrader valve
3. Detach safety chain / cable
4. Remove Power Intake™ Adaptor from ductwork, making sure not to rub across sharp edges

EVAP/LOW PRESSURE SAFETY

The procedures in this section are intended to be basic guidelines for users to practice using the Dual Purpose Diagnostic Leak Locator (EVAP / Low Pressure mode).

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 AC Voltage
- Do not perform tests near a source of spark of 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

TURBO/HIGH PRESSURE SAFETY

The procedures in this section are intended to be basic guidelines for users to practice using the Dual Purpose Diagnostic Leak Locator (TURBO / High Pressure mode).

Dual Purpose Leak Locator is designed to be used in conjunction with the supplied Power Intake™ Adaptor, or threaded sensor port adaptors, also provided is a cooling system adaptor to test the intake, exhaust, and cooling systems of boosted engines.

DO NOT USE TURBO / HIGH PRESSURE IN EVAP SYSTEM

SAFETY TIPS

- All diagnostic work should be performed with the engine off
- For use only by professional technicians
- Ensure that the vehicle is secure and stable
- Exercise caution when connecting and disconnecting compressed shop air supply
- Do not leave a vehicle unattended while equipment is operating
- Always wear proper safety protection
- This safety guide is not intended to take the place of common sense and good judgment

TROUBLESHOOTING / MAINTENANCE

PROBLEM	SOLUTION
No Green Light	• Ensure AC Voltage power cord is properly installed • Check for blown fuse
Red Light Flashing	• Open circuit / internal component Contact Redline Detection Technical Support
No Air Flow	• Check connection to compressed air • Open the flow control valve • Check hoses are not kinked or pushed into machine
Poor Vapor Density or Volume	• Insufficient Vapor Producing Fluid: Refill • Flow Control Valve is partially closed • Vapor Output Hose is kinked
High Test Pressure Reading	• Vapor Output Hose is kinked

OPTIONAL ACCESSORIES

1. Easy EVAP™ [PN 95-0030]
This universal Fuel Filler Neck Connector system fits 100% of vehicles to simplify EVAP testing

Replacement Sealing Disks
2a. [PN 96-0017-12] 2b. [PN 96-0017-20] 2c. [PN 96-0017-40]
Replacement Sealing Discs for Easy EVAP

3. Easy INTAKE™ [95-0082]
Award-winning Easy INTAKE™ is an inflatable block off bladder with a pressurized vapor pass-through that allows technicians to test an entire intake or exhaust system quickly and easily

4. Extended Accessory Kit [95-0005]
Standard Cone Adaptor for dual exhaust for use to seal openings between 1 in. (2.5 cm) to 3 in. (7.6 cm). Vapor Output Hose extension allows operator to test 20 ft. (6.1 m) from unit. Additional OEM-Approved vapor producing fluid for 500+ typical tests

5. XL Cone Adaptor [PN 96-0055]
For use to seal openings from 3.4 in. (8.6 cm) to 5.25 in. (13.3 cm) to introduce vapor into exhaust and induction systems

6. Replacement Bulb [PN 20-0002]
MR-16 bulb, replacement for Inspection Light

7. Cooling System Adaptor [96-0086]
To test cooling system or coolant reservoir, attach to radiator

8. SmokeMeister™ Wand [96-0088]
Tube delivers vapor to find wind and water leaks in cabin or trunk

9. Wand / Tip Adaptor [15-0080]
Install into SmokeMeister™ wand for pinpoint vapor stream

10. PowerSmoke Adaptor 1.5 in (3.8 cm) [95-0080]
Inflatable block off bladder with a pressurized vapor pass-through

11. PowerSmoke Adaptor 3.9 in (9.9 cm) [95-0083]
Inflatable block off bladder with a pressurized vapor pass-through

REDLINE DETECTION.COM

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