



HD POWERSMOKE

OPERATION MANUAL

P/N 95-0171

REDLINE
DETECTION.COM

CONTENTS

| | |
|-------------------------------------|---|
| Specifications / Warranty | 1 |
| Reference Guide | 2 |
| Safety | 3 |
| Accessories | 4 |
| HD PowerSmoke™ Set up | 5 |
| Adapters Installation | 6 |
| Testing for Leaks | 7 |
| Maintenance / Troubleshooting | 8 |
| Optional Accessories | 9 |

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

Shop Online: www.RedlineDetection.com

| | |
|-----------------------------|--|
| Dimensions | 9 in. x 9 in. x 15 in. (23 cm x 23 cm x 38 cm) |
| Weight - HD PowerSmoke™ | 19 lbs. (8.5 kg) |
| Weight - Accessory Kit Only | 16 lbs. (7.3 kg) |
| Shipping - Weight | 41 lbs. (19 kg) |
| Shipping - Dimensions | 20 in. x 15 in. x 24 in. (50 cm x 38 cm x 60 cm) |
| Power Supply | 110-240V AC or 12V DC |
| Pressure Supply | Compressed Air |
| Output Pressure | 2 to 20+ PSI (0.14 to 1.4+ 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) |
| 12V Power Cable | 15 ft. (5 m) |
| Operating Modes | Vapor Cycle / Air Only Cycle |
| Housing Material | Steel |
| Vapor Chambers Material | Billet Aluminum |
| Vapor Chambers Assembly | Bolted |
| Vapor Chambers Warranty | Lifetime |
| HD PowerSmoke™ 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 LIABILITY.

REFERENCE GUIDE

1. Flow Control Knob (Variable)

Releases vapor / pressure into the system

Close flow control valve to lock out system for pressure decay testing

2. System Pressure Gauge

Displays the back pressure of system under test

3. Flow Meter

Measures flow rate into system under test

4. Power Indicator

Green light indicates proper connection to electrical power

5. Vapor Test Switch

Begins fifteen-minute vapor cycle. Red light indicates vapor cycle. Push again to stop testing

6. Air Only Test Switch

Begins fifteen-minute air only cycle. Blue light indicates air only cycle. Push again to stop testing

7. Reset Switch

Clears stored logic

8. Adjustable Pressure Regulator

Adjust test pressure from 2 to 20+ PSI (0.14 to 1.4+ BAR)

9. Test Pressure Gauge

Indicates test pressure set by regulator

10. Fluid Fill Port

Remove fluid fill plug to fill machine with OEM-Approved Vapor Producing Fluid

11. Vapor Output Hose

12. Compressed Air Inlet

Replace coupler fitting if necessary. Female 1/4 in. NPT fitting

13. 12 Volt DC Power Cables

14. International AC Power Inlet (110-240V)

15. Power Supply Selector Switch
AC-OFF-DC

16. Fuse Holder

2.5A 250V Fuse plus one spare fuse

FRONT VIEW



BACK VIEW



HD PowerSmoke™ is designed to be used in conjunction with the supplied Power INTAKE™ Adapters, or threaded sensor port adapters, also provided is a cooling system adapter to test the intake, exhaust, and cooling systems of boosted engines.



DO NOT USE IN EVAP SYSTEM

HD PowerSmoke™ utilizes higher test pressure that may damage components in evaporative emission systems. Redline Detection manufactures OEM approved EVAP leak detectors such as, Smoke Pro® Total-Tech® [95-0003/B] and Smoke Pro Air Complete™ [95-0051] which are specifically designed for EVAP system and general repair diagnostics.

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

Power INTAKE™ Adapters Safety:

- The maximum test pressure a Power INTAKE™ Adapters may restrain can only be estimated.
- Slippage of a Power INTAKE™ Adapters is influenced by many factors including debris / residue in the Intake / Exhaust system, coefficient of friction, internal pressure of the Power INTAKE™ Adapters, and the accuracy of inflation instruments.
- Generally, a Power INTAKE™ Adapters 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™ Adapters 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™ Adapters. 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™ Adapters must be mechanically anchored with the provided chain / cable to a secure anchor before use.
- Power INTAKE™ Adapters slippage under test pressures may cause property damage or injury.
- NEVER use inflation pressure with Power INTAKE™ Adapters or a test pressure that is greater than the capacity of the weakest component in the system under test.
- NEVER use Power INTAKE™ Adapters when its failure could cause injury or catastrophic damage.
- Before use: Refer to Power INTAKE™ Adapters Installation and Inflation procedures, back pressure limitations and tether restraint installation instructions.

ACCESSORIES INCLUDED

1. Accessory Storage Case [91-0006]

2. PowerSmoke™ Adaptor 3.9 in. (10 cm) Diameter [95-0083]

Inflatable block off bladder with a pressurized vapor pass-through. Kit includes 2.

(Optional) PowerSmoke™ Adaptor 2.9 in. (7.4 cm) Diameter [95-0081]

Inflatable block off bladder with a pressurized vapor pass-through

3. Block Off Coupler [96-0084]

Used to block smoke hose to convert PowerSmoke™ Adaptor into a block off bladder

4. Exhaust Stack Retention Hoop [15-0064]

Prevents adaptor from falling into exhaust stack

5. SmokeMeister™ Wand [96-0088]

20 in. (51 cm) - 60 in. (152.4 cm) tube delivers vapor to find wind and water leaks in cabin or trunk.

6. Wand / Tip Adaptor [15-0080]

Install into SmokeMeister™ wand for pinpoint vapor stream

7. Halogen Inspection Light [96-0011]

12V DC with 20 ft. (6.1 m) cable. Always use to pinpoint leaks

8. AC Power Cable [20-0010]

Use with AC Power. Cable must be rated to match input voltage and plug configuration

9. OEM-Approved Smoke Producing Fluid [96-0039] 8 fl. oz. (237 ml)

Vapor Producing Fluid will perform over 500+ typical tests per bottle
Important: Contains NO Dye / Contaminants. Kit includes 3.

10. Hex Key [80-0009]

To remove / replace fluid fill plug

11. Cooling System Adaptor [96-0086]

To test cooling system or coolant reservoir. Attach to radiator

12. Oxygen Sensor Port Adaptor [15-0059]

Use to access exhaust system through oxygen sensor port

13. Temperature Sensor Port Adaptor [15-0056]

Use to access intake or exhaust system through temp sensor port

14. Pressure Sensor Port Adaptor [15-0055]

Use to access intake or exhaust system through pressure sensor port

1



2



3



4



5



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10



11



12



13



14






1. FILL / ADD VAPOR PRODUCING FLUID


- a. Remove fluid fill plug with hex key.
- b. Pour OEM-Approved Vapor Producing Fluid into fluid fill port.
- c. Fill fluid fill port until fluid level is near top of port.
- d. Replace fluid fill plug.

 **2 fl. oz. (60 ml) maximum to refill when empty**

2. CONNECT TO POWER

- Use the power selector switch on rear of machine to select input power, AC or DC.
- If 12 Volt DC is preferred, connect the battery cables to a fully charged 12 Volt battery. RED to positive, BLACK to chassis ground.
- If AC power is preferred, connect a properly rated power cord into the AC Power Port.
- Green Power Indicator lamp illuminates with proper power hook up and power source selected.

 Never connect HD PowerSmoke™ to a battery charger or jumper box.

 Never connect HD PowerSmoke™ to vehicle with 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. Adjust HD PowerSmoke™ for testing

- a. Turn Flow Control Valve off.
- b. Set desired Test Pressure. (**PULL** to unlock, **TURN** to adjust pressure, **PUSH** to lock)
- c. Attach Vapor Hose to installed adaptor of system being tested.
- d. Depress the **Vapor Test Switch (#5)** button to begin 15-minute vapor test cycle.
- e. Turn Flow Control Valve to release pressure / vapor.
- f. Use halogen inspection light provided to inspect for leaks.

Power INTAKE™ ADAPTERS INSTALLATION

Safety Warnings:

- The maximum test pressure a Power INTAKE™ Adapters may restrain can only be estimated.
- Slippage of a Power INTAKE™ Adapters is influenced by many factors including debris / residue in the Intake / Exhaust system, coefficient of friction, internal pressure of the Power INTAKE™ Adapters, and the accuracy of inflation instruments.
- Generally, a Power INTAKE™ Adapters 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™ Adapters 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™ Adapters. 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™ Adapters must be mechanically anchored with the provided chain / cable to a secure location before use.
- Power INTAKE™ Adapters slippage under test pressures may cause property damage or injury.
- NEVER use inflation pressure with Power INTAKE™ Adapters or a test pressure that is greater than the capacity of the weakest component in the system under test.
- NEVER use Power INTAKE™ Adapters when its failure could cause injury or catastrophic damage.
- Before use: Refer to Power INTAKE™ Adapters Installation and Inflation procedures, back pressure limitations and tether restraint installation instructions.

Installing Power INTAKE™ Adapters:

1. Install Power INTAKE™ Adapters 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™ Adapters must insert completely inside ducting / tubing.
2. Install safety chain / cable to a secure location.
3. Inflate Power INTAKE™ Adapters 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™ Adapters is firmly installed and properly secure.
5. Attach vapor hose for testing.



Proper Installation



Improper Installation

Removal of Power INTAKE™ Adapters:

1. Remove vapor hose (or block off adapters) 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™ Adapters from ductwork, making sure not to rub across sharp edges



Follow all Redline Detection procedures for installation, testing and use of HD PowerSmoke™

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™ Adapters (see instructions) into intake ducting after air cleaner box. Begin a 15-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™ Adapters (see instructions) into exhaust pipe. If using inside exhaust stack use the exhaust retention hoop to keep Power INTAKE™ Adapters from falling inside exhaust stack. Exhaust Particulate Filter or Catalytic Converter 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™ Adapters into a block off adapters while injecting smoke into the system using the Temperature Sensor Port Adapter, Delta P Sensor Port Adapter, DPF Port Adapter, NOx Sensor Port Adapter or Particulate Sensor Port Adapter. These particular port adapters 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™ Adapters (see instructions) into intake ducting after air cleaner box AND install Power INTAKE™ Adapters (see instructions) into exhaust pipe. Convert Power INTAKE™ Adapters in exhaust system into a block off by installing block off coupler. Inject vapor into the intake system through the Power INTAKE™ Adapters. 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 adapters 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 HD PowerSmoke™ to quickly and easily find cooling system leaks either with decay testing or using visible vapor. First, attach provided cooling system adapters 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.

MAINTENANCE / TROUBLESHOOTING

| PROBLEM | SOLUTION |
|------------------------------|--|
| No Green Light | <ul style="list-style-type: none">• Ensure electrical power cord is properly installed• Check for blown fuse |
| Red Light Flashing | <ul style="list-style-type: none">• Open circuit / internal component Contact Technical Support +1 714 451-1411 or email: info@RedlineDetection.com |
| No Air Flow | <ul style="list-style-type: none">• Check connection to compressed air• Open the flow control valve• Check hoses are not kinked or pushed into machine |
| Poor Vapor Density or Volume | <ul style="list-style-type: none">• Insufficient Vapor Producing Fluid: Refill• Flow Control Valve is partially closed• Vapor Output Hose is kinked |

1. Power INTAKE™ Adapters 1.5 in. (3.8 cm) [95-0080]

Inflatable block off bladder with a vapor pass-through

2. Power INTAKE™ Adapters 1.9 in. (4.8 cm) [95-0086]

Inflatable block off bladder with a vapor pass-through

3. Power INTAKE™ Adapters 2.9 in. (7.4 cm) Diameter [95-0081]

Inflatable block off bladder with a vapor pass-through

4. OEM-Approved Smoke Producing Fluid [96-0039] 8 fl. oz. (237 ml)

Vapor Producing Fluid will perform over 500+ typical tests per bottle

Important: Contains NO Dye / Contaminants

5. Replacement Bulb [PN 20-0002]

MR-16 Spot, 12V DC, 50 Watt, replacement bulb for Inspection Light





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