RESET / STOP

PRESSURE SELECT

VEHICLE SELECT

POWER

(—)
CONTRAST
(+)

AIR BRAKE NANOLEAK FINDER™
Tests and Locates High Pressure Air Leaks in Minutes

PASS LEAK TEST
FAIL LEAK TEST

```
NANOLEAK FINDER
VEHICLE: TRAILER
TEST PRESSURE:125PSI
PRESSURE IN:125PSI
```

TEST SYSTEM

FIND LEAKS

SYSTEM BLEED
CAUTION

OEM APPROVED

Air Brake NanoLeak Finder™

OPERATION MANUAL

REDLINE
DETECTION.COM

P/N 95-0121/A

CONTENTS

Technical Support: 1-800-55-SMOKE
+1 714-451-1411

Email Support: info@RedlineDetection.com
You will receive a call or email response within one business day

Shop Online: www.RedlineDetection.com

Dimensions	12 in x 12 in x 9 in (31 cm x 31 cm x 23 cm)
Weight - NanoLeak Finder™ Machine	19 lbs (8 kg)
Weight - Accessory Kit Only	4 lbs (2 kg)
Shipping - Weight	25 lbs (12 kg)
Shipping - Dimensions	19.5 in x 15 in x 23.5 in (50 cm x 38 cm x 60 cm)
Power Supply	12/24V DC
Pressure Supply	max 150 PSI Compressed Air
Output Pressure	100-125 PSI (7-9 BAR)
Operating Temperature	0°F to 140°F (-17°C to 60°C)
Operating Humidity	No Restrictions
Operating Altitude	No Restrictions
Output Hose	15 ft. (5 m)
12/24V DC Power Cable	15 ft. (5 m)
Operating Modes	Test System Cycle / Find Leaks Cycle
Housing Material	Steel
NanoLeak™ Finder Warranty	1 Year

1. **RESET/STOP switch**
   Clear stored logic / end test / return to home screen

2. **PRESSURE SELECT switch**
   Depress to select desired test pressure

3. **VEHICLE SELECT switch**
   Depress to select desired vehicle configuration
   to perform leak down test

4. **PASS LEAK TEST indicator**
   Illuminates when vehicle passes leak down test

5. **FAIL LEAK TEST indicator**
   Illuminates when vehicle fails leak down test

6. **CONTRAST (-) switch**
   Depress to decrease display contrast

7. **CONTRAST (+) switch**
   Depress to increase display contrast

8. **LCD screen**

9. **TEST SYSTEM switch**
   Depress to begin leak down test

10. **SYSTEM BLEED switch**
    Depress to bleed down system pressure
    ⚠ **Caution:** Brakes may engage

11. **FIND LEAKS switch**
    Depress to begin procedure to find leaks

12. **Output Hose**

13. **DC Circuit Breaker**

14. **Compressed Air Inlet**
    Replace coupler fitting as necessary.
    Female 1/4 inch NPT fitting

15. **NanoLeak Solution Fill Port**
    Remove fluid fill plug to fill machine with Redline
    NanoLeak Solution

16. **12/24V DC Power Cable Inlet Port**
    Depress to begin find leak procedure

17. **SYSTEM BLEED Outlet Port**

FRONT VIEW

BACK VIEW

QUANTITY

1. Detachable 12/24V DC Power Cable [97-0164/B]

Detachable 12/24V DC power cable. 15 ft (5 m)

1

2. OEM-Approved NanoLeak Solution [96-0761] 8 fl. oz. (236 ml)
Important: NanoLeak Solution contains NO Dye / Contaminants.
*Replace solution every 1,000 tests or 4 months, whichever comes first

2

3. 1/4" NPT Outlet Hose Adapter (male thread) [11-0061]

Use to access compressed air system such as primary tank drain port

1

4. Gladhand Adapter - Emergency Side [96-0753]

1

5. Gladhand Adapter - Service Side [96-0754]

1

6. NanoLeak™ Handheld Leak Locator [96-0116]
Use to pinpoint leaks. Detects minute amounts of NanoLeak Signature Air

1

OPTIONAL ACCESSORIES

"Y" Hose Adapter [96-0770]
Use to deliver Signature Air simultaneously to two parts

AC Power Inverter [96-0772]
110V / 230V AC to 12/24V DC

Volvo Mack Tractor Fill Adapter [96-0765]

Kenworth/Peterbilt Tractor Fill Adapter [96-0766]

International Tractor Fill Adapter [96-0767]

Schraeder Valve Fill Adapter [96-0768]

Air Brake NanoLeak Finder™ is designed to be used to quickly test and precisely locate leaks in all high pressure Air Brake, Air Suspension and Air Powered Accessory systems.

⚠️ **DO NOT USE IN EVAP SYSTEM**

Air Brake NanoLeak Finder™ utilizes high test pressure that can damage components in evaporative emission systems. Redline Detection manufactures low pressure OEM approved EVAP leak detectors such as Smoke Pro® Total-Tech® [PN 95-0003/B] and Smoke Pro Air Complete™ [95-0051] which are specifically designed for Fuel Vapor Recovery Systems and general engine repair diagnostics.

⚠️ **DO NOT USE IN INTAKE OR EXHAUST SYSTEM**

Air Brake NanoLeak Finder™ utilizes high test pressure that may damage components in Intake or Exhaust systems. Redline Detection manufactures mid-pressure OEM approved leak detectors such as PowerSmoke Pro® [PN 95-0170] and HD PowerSmoke™ [95-0171] which are specifically designed for Boosted Intake and Exhaust Systems and general engine repair diagnostics. Visit www.redlinedetection.com to see the full product range.

⚠️ **SAFETY GLASSES MUST BE WORN**

 • Always wear proper safety protection for the work being performed, including OSHA standard eyewear

⚠️ **SAFETY AIR BRAKE PRECAUTIONS**

 • *CAUTION*: Wheel chocks must be installed before testing

 • Ensure that the vehicle is secure and stable

 • Test to be conducted with ENGINE and vehicle COMPRESSORS off

 • All diagnostic work should be performed with the engine off

 • Never leave a vehicle unattended while equipment is connected and operating

 • Exercise caution when connecting and disconnecting compressed shop air supply

 • System testing pressure should never exceed manufacturer's maximum vehicle operating pressure

TO BE USED BY PROFESSIONAL TECHNICIANS ONLY

 • Never use dye / UV dye in air systems because it may coat and / or harm critical sensors, seals, air dryers, etc.

 • Some valving components may have acceptable leak tolerances. Check with the component manufacturer prior to part replacement.

NanoLeak™ Finder OEM-Approved NanoLeak Solution

Redline Detection uses an environmentally friendly (non-polluting), contaminant free NanoLeak Solution. For this reason, the Signature Air can be safely released into the environment after the leak detection procedure is completed. The NanoLeak™ Handheld Leak Locator will detect even the most minute leak. Because the Signature Air atoms in the NanoLeak™ Solution are so small, it is effective and approved for leak detection using your NanoLeak™ Handheld Leak Locator.

The NanoLeak Signature Air is charged into an empty system at a pressure of 100 to 125 PSI (7 to 9 BAR). Once the source of the leak is located, release system of pressurized Signature Air, perform repairs, retest system to ensure that the repair has been performed properly.

FULLY DEPRESSURIZE MACHINE (⚠ Wear Eye Protection)

a. Disconnect Compressed Air Line
b. Connect DC Power
c. Machine must be completely depressurized. Press and Hold SYSTEM BLEED button until machine is fully depressurized

FILL NANOLEAK SOLUTION
⚠ Machine must be completely depressurized (see above)

a. Remove Fluid Fill Plug
b. Fill NanoLeak Solution to top of fill port (10 oz / 300 ml)
c. Replace Fluid Fill Plug
d. Do not overtighten Fill Plug
e. Top off solution every 100 hours of use
f. Only use Redline NanoLeak Solution. Use of any other solution voids warranty.

CONNECT TO POWER

a. Connect power cable to 12/24V DC outlet port
b. Attach power cable to 12/24V DC Battery
c. Green LED illuminates with proper connection and LCD Screen Illuminates

⚠ Never connect to a vehicle with running engine

CONNECT AIR SUPPLY

a. Connect compressed air supply to air inlet
   *Replace air fitting if necessary with 1/4 in. NPT male
b. Attach output hose to installed adapter of system being tested with provided adapters

NANOLEAK SOLUTION REPLACEMENT
Replace Redline NanoLeak Solution every 1,000 Tests or 4 months, whichever comes first

1. Depressurize Machine

   a. Disconnect Compressed Air Line
   b. Connect DC Power
   c. Machine must be completely depressurized. Press and Hold SYSTEM BLEED button until machine is fully depressurized
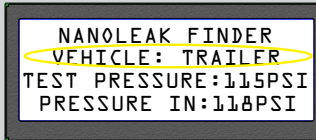
2. Drain and Refill Old Solution

   a. Tilt NanoLeak Finder on on backside and allow machine to drain of old solution.
   b. Refill to top of Fill Port
   c. Replace Fluid Fill Plug
   d. Do not over tighten
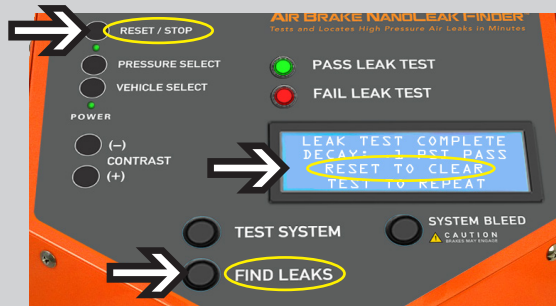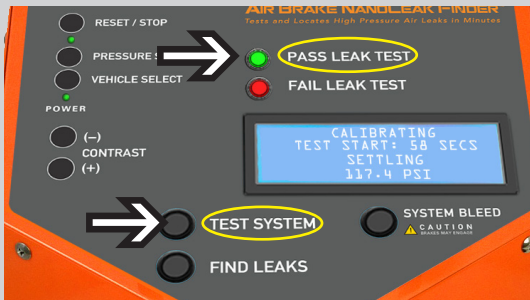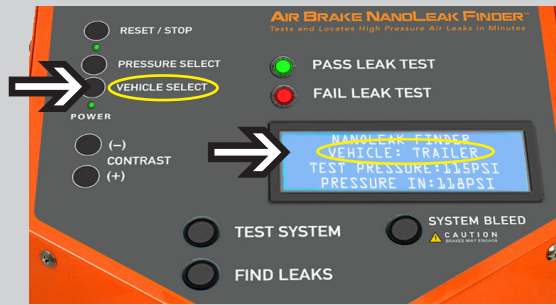
TEST SYSTEM

1. Press "VEHICLE SELECT" to select desired vehicle configuration:

```
   NANOLEAK FINDER
  VEHICLE: TRAILER
TEST PRESSURE:115PSI
 PRESSURE IN:118PSI
```

- TRAILER
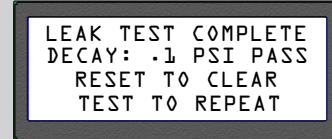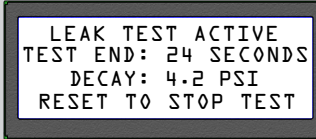- TRACTOR
- TRACTOR/TRAILER COMBINATION
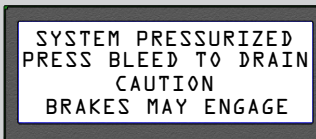- TRACTOR AND TWO TRAILER COMBINATION

2. Press "PRESSURE SELECT" to select desired test pressure:

```
   NANOLEAK FINDER
  VEHICLE: TRAILER
TEST PRESSURE:115PSI
 PRESSURE IN:118PSI
```
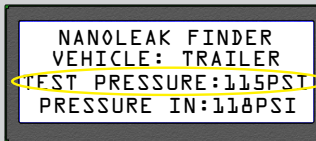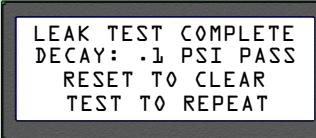
- 100 PSI
- 115 PSI
- 125 PSI

3. Press "TEST SYSTEM" Switch to begin Leak Down test
   - Machine self pressurizes to set testing pressure
   - Machine performs pressure settling cycle may take several minutes
   - Leak Down Test: 60 SECONDS
   - Display will indicate "PASS" or "FAIL" and Decay PSI

```
 SYSTEM PRESSURIZED
PRESS BLEED TO DRAIN
      CAUTION
 BRAKES MAY ENGAGE
```

```
     CALIBRATING
TEST START: 58 SECS
      SETTLING
      117.4 PSI
```

```
  LEAK TEST ACTIVE
TEST END: 24 SECONDS
   DECAY: 4.2 PSI
 RESET TO STOP TEST
```

```
 LEAK TEST COMPLETE
DECAY: .1 PSI PASS
  RESET TO CLEAR
  TEST TO REPEAT
```
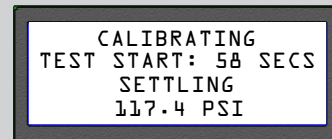
4. Press RESET/STOP to end test or press TEST SYSTEM to retest vehicle

```
 LEAK TEST COMPLETE
DECAY: .1 PSI PASS
  RESET TO CLEAR
  TEST TO REPEAT
```

5. If RESET/STOP is pressed to end test, depressurize system after test by pressing SYSTEM BLEED Switch

```
 SYSTEM PRESSURIZED
PRESS BLEED TO DRAIN
      CAUTION
 BRAKES MAY ENGAGE
```
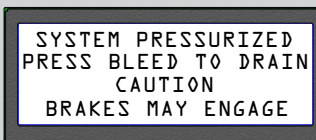
FIND LEAKS

⚠ Perform FIND testing in a still air environment

1. With system completely depressurized including air holding tanks on vehicle, press FIND LEAKS

  a. Find Leaks cycle initializes: 2 Minutes
  b. Begins a (15, 30, or 45 minutes) FIND cycle

```
FIND LEAKS MODE
INITIALIZING...
PLEASE STANDBY: 02:00
```

2. Press FIND LEAKS again if desired to INCREASE FIND cycle time: 15, 30, or 45 minutes

3. Find leaks active: Use hand held Nanoleak Locator to precisely locate leak(s). Refer to Page 8.

```
FIND LEAKS ACTIVE
USE HANDHELD DEVICE
FIND MODE END: 14:58
RESET TO STOP
```

- Probe around and above suspected leaking lines and fittings, moving NanoLeak Locator no faster than 1/2" per second

- Press sensor. Choose HIGH to find general areas of leaks. Then choose NORMAL or LOW sensitivity to pinpoint the precise location(s) of leak(s)

4. FIND LEAKS cycle complete

  a. Press FIND LEAKS to continue finding leaks
  b. Press RESET/STOP to end FIND testing

```
LEAK TEST COMPLETE
DECAY: .1 PSI PASS
RESET TO CLEAR
TEST TO REPEAT
```

5. Press SYSTEM BLEED to depressurize system

6. Repair located leaks

```
SYSTEM PRESSURIZED
PRESS BLEED TO DRAIN
CAUTION
BRAKES MAY ENGAGE
```

7. Re-test system by pressing TEST SYSTEM to confirm repair(s)

Refer to previous page (page 6)

```
CALIBRATING
TEST START: 58 SECS
SETTLING
117.4 PSI
```

NANOLEAK™ HANDHELD LEAK LOCATOR

Sensitivity	5 ppm
Response Time	Instantaneous
Power Supply	4 AA Alkaline Batteries
Battery Life	8 Hours Continous
Warm Up Time	25 Seconds
Probe Length	17 inches (43 cm)
Numerical Display	7 Segment Digital Display
Weight, lbs (kg)	1.5 lbs (.7 kg)
Warranty	1 Year

The NanoLeak™ Handheld Leak Locator features a long life sensor technology that is designed to detect minute amounts of Redline NanoLeak Signature Air.

The NanoLeak™ Handheld Leak Locator's unique digital leak size indicator takes the guesswork out of whether or not to repair a small leak. The digital display is independent from the audio alarm and sensitivity level, allowing the precise pinpointing of the leak source.

The NanoLeak™ Handheld Leak Locator does not require rechargeable batteries. When used with the NanoLeak Finder, the NanoLeak™ Handheld Leak Locator will detect leak rates less than 5 ppm.

Features

- Unique numeric leak size indicator
- Long life, stable sensor
- NanoLeak™ Leak Locator sensitivity < 5 ppm
- Visual LED leak alarm near sensor
- Low battery indicator
- Audio mute function
- CE certified
- 1 year warranty
- Automatic calibration and reset to ambient
- 3 adjustable sensitivity levels
- True mechanical pump
- Uses 4 AA alkaline batteries
- Comfort grip
- Made in the USA

NanoLeak™ Detection

Redline NanoLeak Signature Air consists of an environmentally friendly (non-polluting), contaminant free mixture. For this reason, the NanoLeak Signature Air can be released into the environment after the leak detection procedure is completed.

The NanoLeak™ Handheld Leak Locator will detect even the most minute amounts of NanoLeak Signature Air. Because the air molecules in NanoLeak Signature Air are so small, it is the only effective and approved air for leak detection using your NanoLeak™ Handheld Leak Locator.

The NanoLeak Signature Air is charged into an empty system at a pressure of approximately 100-125 PSI. Always probe slightly above and around the suspected leak area. Once the source of the leak is located and repaired, the NanoLeak Signature Air can be safely released.

NOTE: All repairs should be re-checked for quality of repair.

LEAK SIZE INDICATOR

The digital leak size indicator remains off normally but once a leak is detected, a number from 1-9 will be displayed for all NanoLeak Signature Air regardless of the sensitivity setting.

The number will continue to increase or decrease depending on the amount of NanoLeak Signature Air that is detected. The maximum value will be displayed once the leak source has been located. The table below can be used to approximate the size of leak :

Maximum # Displayed Approximate Leak Size (oz/vr)

Maximum # Displayed	Approximate Leak Size (oz/vr)
1-3	< 0.1
4-6	0.1 to 0.5
7-9	> 0.5

LOW BATTERY INDICATOR

Replace the 4 AA alkaline batteries when the red LED on, the control panel is lit. Follow battery installation instructions under Maintenance section.

AUDIO MUTE FUNCTION

To silence or mute the audio beep and alarm signal, press the MUTE button. To restore the audio sound, press the MUTE button again. (Note: a few seconds is required to restore sound if the mute button is pressed in rapid succession.)

ADJUSTING SENSITIVITY LEVELS

The NanoLeak™ Handheld Leak Locator will default to the NORMAL sensitivity level automatically once the unit comes out of the warm up cycle and the green LED will turn on.

To change sensitivity levels, press the SENSOR once for HIGH sensitivity (red LED will turn on) and again for LOW sensitivity (yellow LED will turn on).

LEAK TEST VIAL

The NanoLeak™ Handheld Leak Locator comes with a Leak Test Vial that allows the user to make sure the NanoLeak™ Handheld Leak Locator is performing properly. To test:

1. Remove the plastic seal cap on top of the Leak Test Vial by pulling it off (see fig. below).
2. Turn on the locator and allow the unit to complete the warm up cycle .
3. Place the sensor close to the small hole in the top of the Leak Test Vial. The beep rate should increase and the Digital Leak Size Indicator should display a number from 4-6 indicating that the sensor and electronics are working properly.

Remove Seal Cap To test
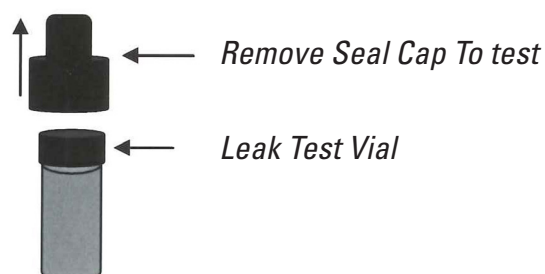
Leak Test Vial

NOTE: Always remember to replace plastic seal cap after leak test is completed. Replace Test Vial when the green color is no longer visible.

BATTERIES:

Install Batteries: Remove screw located at rear end of unit and pull down hinged battery door to open as shown. Always insert all four batteries into the battery compartment in the same direction.
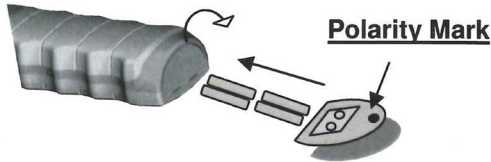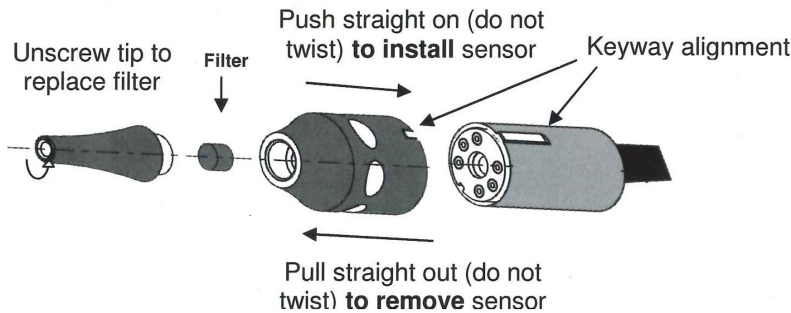
Polarity Mark

NOTE: polarity mark on the insided of the battery door for proper battery orientation

SENSOR:

Replace Filter: Unscrew sensor tip as shown to replace filter. Replace filter whenever it becomes visibly dirty or every 10 uses depending on severity of work environment.

Replace Sensor: Remove sensor by pulling out of socket. Install the new sensor by aligning the notch in sensor cover with the raised keyway on sensor socket holder (see figure below). Sensor life is approx. 300 working hours

Unscrew tip to replace filter

Filter

Push straight on (do not twist) **to install** sensor

Keyway alignment

Pull straight out (do not twist) **to remove** sensor

⚠ **NOTE:** DO NOT FORCE SENSOR INTO SOCKET. Misalignment can damage the sensor pins.

OPERATING INSTRUCTIONS

1. TURN ON: Press the ON/OFF button once to turn on and again to turn off. NOTE: Hold button down for approximately 1 second to turn unit off.

2. WARM UP: The NanoLeak™ Handheld Leak Locator automatically starts heating the sensor. During the heating cycle, the digital leak size indicator will flash 0 and the NanoLeak™ Handheld Leak Locator will sound a slow "beep". Warm up is usually less than 20 seconds.

3. READY: The NanoLeak™ Handheld Leak Locator is ready to begin searching for leaks when the flashing 8 stops and the green sensitivity LED turns on.

The audio "beep" increases in frequency and probe LED begins to blink steadily.

Leak Size

Low battery

Low   Normal   High

Mute   Sensor

Digital Leak Size Indicator

Low Battery Indicator

Sensitivity Level

Audio Mute and Sensitivity Level

Power On / Off

1. NanoLeak Sensor with Filter [96-1005]

2. NanoLeak Leak Test Reference Vial [96-1006]

3. NanoLeak Sensor Filters (5 Pack) [96-1007]

4. Parts Kit: [96-1009]

Includes Sensor, Test Vial, Filter Kit

5. Carrying Case 14" D640 [96-1010]

NANOLEAK FINDER	SOLUTION
No Green Light	• Connect power cable to 12/24VDC
LCD Display Not Illuminated	• Contact Redline Technical Support 800-55-SMOKE or +1 714-451-1411 Email: info@RedlineDetection.com
Amber Light Flashing	• Depress RESET / STOP button
Low Air Flow Through Machine	• Check input air source • Output hose may be kinked

NANOLEAK™ HANDHELD LOCATOR	SOLUTION
Excessive "False Positives"	• Sensor Tip Filter is dirty – replace filter • Sensor Tip is loose. Reconnect. • Contact Redline Technical Support 800-55-SMOKE or +1 714-451-1411 Email: info@RedlineDetection.com

AIR BRAKE NANOLEAK FINDER™
Tests and Locates High Pressure Air Leaks in Minutes

P/N 95-0121/A

SAFETY AIR BRAKE PRECAUTIONS

Read and follow safety precautions in the
Air Brake NanoLeak Operation Manual

⚠ CAUTION: Wheel chocks must be installed before testing

⚠ Eye protection must be worn

• Test to be conducted with ENGINE and COMPRESSOR
• Never leave a vehicle unattended while equipment is
  connected and operating
• Always wear proper safety protection for the work
  performed, such as OSHA standard eyewear

TO BE USED BY PROFESSIONAL TECHNICIANS ONLY

⚠ Never use dye / UV dye in air systems because it may coat
  and / or harm critical sensors, seals, air dryers, etc.

Not for use in Intake, Exhaust, or EVAP systems

Certain valving components may have specific leak tolerances.
Check with the part manufacturer prior to part replacement.

RoHS Compliant   CE   FC

US & INT'L PATENTS PENDING

Manufactured by

REDLINE
DETECTION.COM

www.RedlineDetection.com
+1 714 451 1411

Operating Procedure for the
Air Brake NanoLeak Finder™

Setup Procedure

• Ensure proper vapor producing solution is full
• Connect compressed air supply to inlet (Max 150 PSI)
• Attach power cables to 12/24 V DC Battery
• Connect output hose line to system

Test System

1. Press VEHICLE SELECT to select test configuration
2. Press PRESSURE SELECT to change test pressure
3. Press TEST SYSTEM to begin test
   a. System pressurizes to desired test pressure
   b. System Pressure Setting may take several minutes
   c. Leak Down Test: 60 seconds
4. Press RESET to return to home screen
5. Depressurize system by pressing SYSTEM BLEED

Find Leaks

1. With System Depressurized, press FIND LEAKS
   a. Find Leaks Cycle initializes: 120 seconds
2. Press FIND LEAKS to increase cycle time:
   15 minutes (Max 45 minutes)
3. Find Leaks Active: Use handheld NanoLeak
   Locator to precisely locate leak(s)
4. Test Complete
   a. Press FIND LEAKS to continue finding leaks
   b. Press RESET / STOP to return to home screen
5. Repair located leak(s)
6. Re-test system above to confirm repair(s)

AIR INPUT
Max 150 PSI
(10.3 BAR)

POWER INPUT
12V DC
24V DC
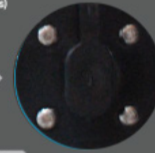
SOLUTION FILL PORT

MADE IN
CALIFORNIA
USA*
*with globally
sourced
components

Maintain Vapor Producing Fluid Level

1. Completely DEPRESSURIZE MACHINE (⚠ Wear eye protection)
   a. Disconnect Air   b. Connect DC power   c. Press SYSTEM BLEED button
2. REFILL NANOLEAK SOLUTION
   a. Remove Fluid Fill Plug   b. Fill near top of fill port   c. Replace plug   d. Do not overtighten
   • Check fluid after every 100 tests   ⚠ Only use Redline NanoLeak Solution

REDLINE
DETECTION.COM

Technical Support +1 714-451-1411
Shop Online: www.RedlineDetection.com

Manufactured in USA* By
Redline Detection, LLC

*w/ globally sourced components

MADE IN
CALIFORNIA
USA

CE   RoHS Compliant   FC

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