INSTRUCTION MANUAL

Smart Pressure®

Variable Pressure Diagnostic Smoke® Machine

*with UltraTrace**UV**® Non-Contaminant Dye Solution*

Model No. WV711

Leak Detection Systems for the Professional Technician

Caution and Usage Tips

- **DO NOT use this Tester in the fuel evaporative (EVAP) system, due to its high pressure capabilities.**
- **DO NOT connect the Tester in such a way where its high pressure will be introduced into the engine's crank case system, or oil seals may be damaged**
- ALWAYS use Tester with vehicle engine turned <OFF>.
- Use this equipment in the manner specified by the manufacturer.
- Follow common sense safety precautions.
- Connect Tester's black cable to chassis ground, when using Battery Cables WVA-40.
- Use UltraTrace**UV**® Smoke Solution No. WV0712UV in Tester. Using a non-approved solution can cause damage to vehicles being tested and may cause personal injury.
- Do not leave Tester's hose or power cables connected to the vehicle if tests are not being performed.
- Do not perform test near source of spark or ignition.
- Wear appropriate eye protection.
- Wear yellow glasses supplied when using ultraviolet light.
- When using alternate source of UV light, use light that includes 405 nanometer (nm) UV light range.
- Air or gas pressure supplied to Tester can be between 3.4 to 12 bar (50 ~ 175 PSIG).
- Tester can be used with workshop compressed air or any inert gas.
- When testing an engine's boosted intake or exhaust system for leaks, it is best if the engine is cold. Small leaks may be sealed due to thermal expansion.
- If using a gas other than workshop air (such as nitrogen), disconnect the nitrogen from the Tester after every use. An internal calibration 'bleed' system in the Tester will cause the nitrogen to slowly bleed off when the Tester is not in use.

Specifications

Height	14.5 in. (36.8 cm)	Inlet gas source	Compressed air or inert gas
Length	13.75 in. (34.9 cm)	Inlet pressure	50 to 175 PSIG (3.4 to 12 bar)
Width	10 in. (25.4 cm)	Output pressure	3 to 43.5 PSIG (0.21 to 3 bar)
Weight	20 lb. (9 kg)	Output volume	0-15 liters per minute
Shipping weight	25 lb. (11.3 kg)	Smoke output line	15 feet (4.6 m)
Power supply	12-24 volts DC (or 110-220V AC with Optional WVA-080)	Power supply line	15 feet (4.6 m)
		Power consumption	5-15 amps.
Solution Max. Volume	24 oz. (710 ml)		
Meets ASME Standards: for Division 1 Pressure Vessel Code and Pressure Relief Valve			

This product contains
STAR licensed technology, *inside*.

www.StarEnviroTech.com

STAR, inside

Contents

Thank You and Congratulations! Your Smart Pressure® leak detector, which incorporates STAR Diagnostic Smoke® Technology *inside*, is the simplest and quickest way to find many vehicle system leaks. Smoke vapor-generating leak detectors containing STAR Technology are the only leak detectors in the world internationally-mandated by automakers (OEMs).

Unlike conventional high pressure smoke machines, Smart Pressure® technology produces the densest visible smoke vapor over the Tester's *entire* operating pressure range. Smart Pressure® technology software prevents thinning of smoke density that occurs when conventional analog units are set at high pressure. A denser smoke vapor means it's easier to see at leak points. And setting the test pressure is fully automatic and could not be simpler.

At high pressure, the smoke vapor escaping a leak can be very difficult to see with a conventional smoke machine. However, this Smart Pressure® leak detector contains UltraTrace**UV**® smoke-producing solution, which is an essential feature for high pressure leak testing. The vaporized UltraTrace**UV**® solution deposits a trace dye at the exact location of the leak(s). **You simply cannot find all high pressure leaks without it!**

The patented technology *inside* your Tester, including the UltraTrace**UV**®, was designed in collaboration with major OEMs, in order to establish a contaminant-free standard for leak detection. It is designed to be safe for vehicle systems and will not void factory warranties.

Included Accessories

UltraTraceUV®: (WV0712UV) this patented solution is the only Automaker-Mandated smoke-producing solution in the world. The solution's chemistry will not damage vehicle components and contains a special contaminant-free dye that deposits at the exact location of a leak. Each bottle will perform approximately 150 test cycles. (12 oz. / 355 ml). (Part No. is for one bottle, two bottles included with Tester).

Combination Light: (WVA-065) 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 to view laser reflections on exiting vapor.

Remote Control: (WVA-073)

Plug-in Battery Cables: (WVRP-40) connects to WV711 and 12VDC battery.

Supply Hose Male Fitting: (sourced locally) it is the same fitting as is attached to optional adapter kit WVA-091. It is the matching coupler to the female connection at the end of the WV711 Tester's smoke supply hose. It can be used as a universal fitting to convert to any adapter required to access a test system.

Air/Gas Fitting: (sourced locally) two are supplied. The automotive style fitting is already installed on the air/gas inlet side of the WV711 Tester. The spare fitting is an industrial fitting.

Optional Accessories

Turbo Adapter Set, with through hole: (WVA-091): sizes 35mm to 105mm, in 5mm increments.

Adapter plug: (WVA-095): used to convert a WVA-091 through hole adapter into a plug. It is included in the WVA-091 set.

VW Turbo Adapter: (WVA-092)

Power Converter (WVA-080) connects to smoke tester and grounded wall power outlet, to avoid using the vehicle battery as a power source.

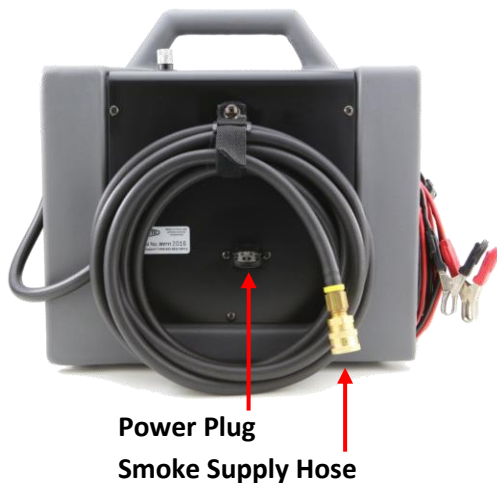**AC input:** 100-240V AC/5A 50/60Hz | **DC output:** 12V 25A

Nitrogen Tank Pressure Regulator: (WVA-051) preset 100 PSIG (6.9 bar) regulator connects directly onto nitrogen cylinder and coiled hose WVA-041, in the event test specifications requires nitrogen instead of compressed air.

¼" x 25' Coiled Nitrogen Hose: (WVA-041) connects directly onto nitrogen tank pressure regulator WVA-051 and WV711 Tester.

Product Overview

Scratch-Resistant Housing →

Air/Gas Inlet →

Power Cables →

Smoke Solution Dipstick

Control Panel
 (See panel on next page)

Basic Instructions

Remote Control Fob
(Red button controls ON/OFF.
Gray button control MODE)

Power Plug
Smoke Supply Hose

Filter Drain Port
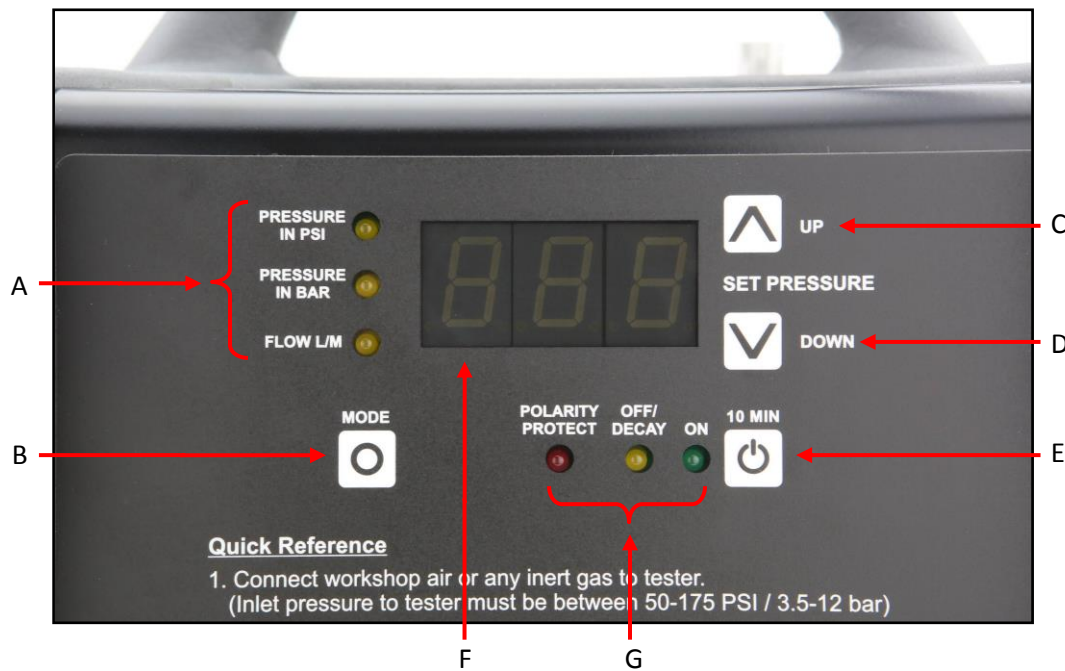Underside of Tester

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Water Separator / Filter (inside tester) with filter drain port on underside of Tester; keeps tester and vehicle clean by automatically draining water and contaminants from workshop air compressor. It is normal to occasionally see drainage of fluid from this port. But excessive drainage indicates your air compressor requires draining and/or a filter system.

IMPORTANT NOTE: In order for the moisture and contaminants that collect in the filter bowl of the Tester to drain, the air supply to the Tester must be disconnected and re-connected at the Tester's Air Fitting. So do not leave air supply to the Tester connected for days at a time, or the filter will never drain. It is sufficient to occasionally disconnect/ connect air supply to tester. This procedure is not necessary if using dry nitrogen.

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Product Overview, *continued*

Control Panel Overview

A. **Test Mode Lights:** indicate if Tester is set to measure pressure in PSI, pressure in bar, or flow in liters per minute, all of which are controlled by MODE Button (B) and displayed in the Digital Display (F).

B. **Mode Button:** selects test modes, turning on appropriate Test Mode Light (A).

C. **UP Arrow Button:** selects desired test pressure and/or increases test pressure.

D. **DOWN Arrow Button:** selects desired test pressure and/or decreases test pressure.

E. **ON/OFF Button:** 'ON' starts a 10 minute test cycle and illuminates the green light (G). Test cycle automatically turns 'OFF' after 10 minutes (or if manually turned off) and goes into OFF/DECAY setting, turning on yellow OFF/DECAY light (G).

F. **Digital Display:** shows selected setting: pressure in PSI, pressure in bar, or flow in L/M. Also verifies if system being tested has decay (leak), indicated by if either pressure setting on display stays stable or decreases.

G. **Function Lights:** green 'ON' light turns on when 'ON' button (E) is pressed. Yellow OFF/DECAY light turns on when 'OFF' button (E) is pressed, turning Tester off and starting a decay test. Red POLARITY light turns on if battery power cables are reversed on the battery power supply.
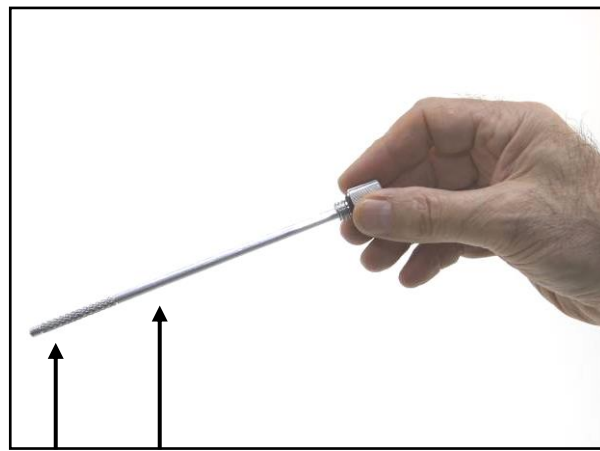
Initial Setup

Prior to Using for the First Time

1. **Pour entire contents of <u>two</u> 12 oz. UltraTraceUV® solution bottles into the smoke chamber.**

   NOTE: Check solution level regularly and maintain at or near FULL mark.

Low   Full

2. **If not supplied; install correct air/gas fitting onto the Tester.**

NOTE: Your Tester is now ready for operation.
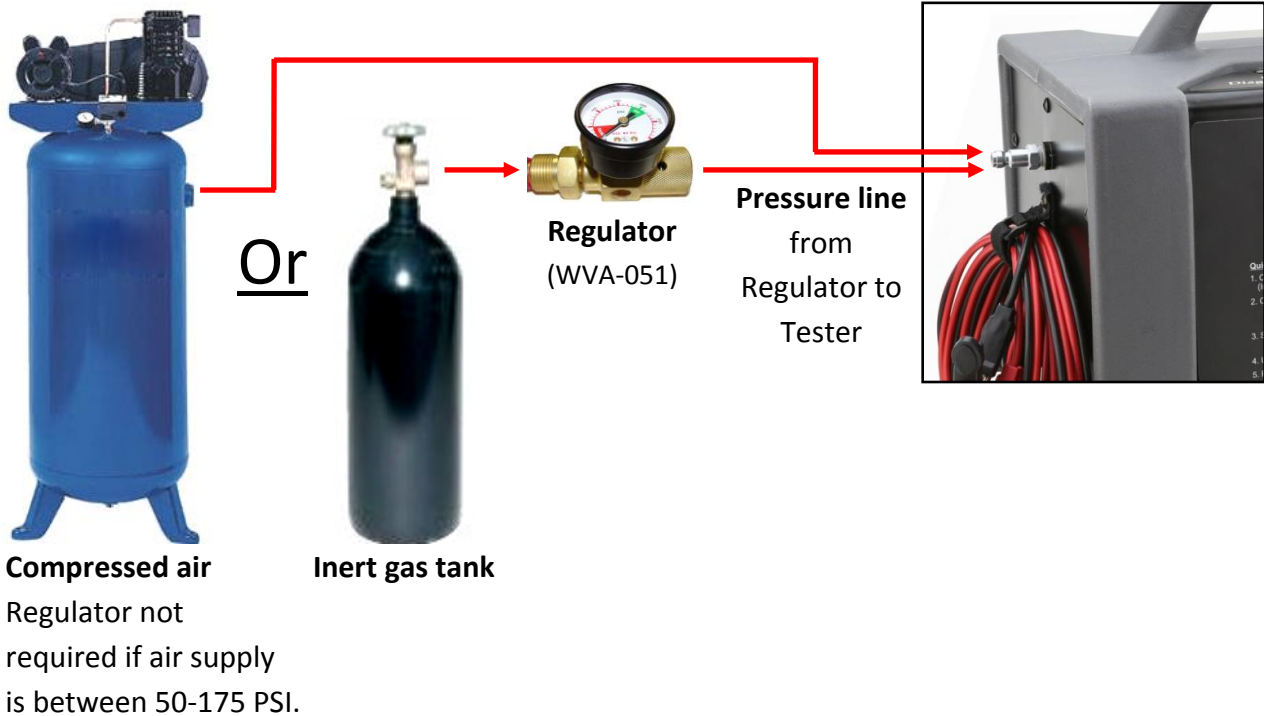**Read instruction in its entirety prior to using this Tester.**

Quick Start Guide

1. **Connect Tester to either compressed air or any inert gas, such as nitrogen.**
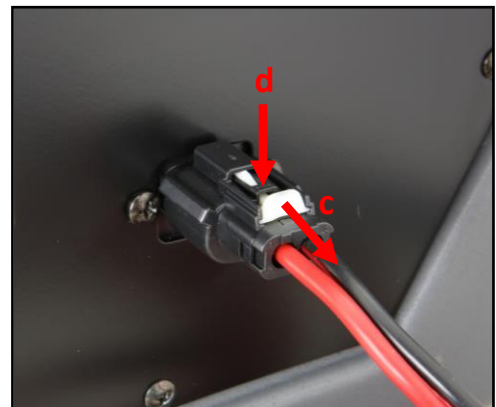
   ⚠️ **NOTE: When using inert gas; you must regulate the pressure exiting the gas tank, prior to connecting to the WV711 Tester!**

   Compressed air or nitrogen tank pressure to the Tester can be between 50-175 PSI (3.4 to 12 bar).   The internal pressure regulator in the WV711 Tester sets the test pressure 3-43.5 PSIG (0.21 to 3 bar), according to your settings.

   Or

   Regulator
   (WVA-051)

   Pressure line
   from
   Regulator to
   Tester

   Compressed air
   Regulator not
   required if air supply
   is between 50-175 PSI.

   Inert gas tank

2. **a) Connect power cord onto back of Tester.**
   b) Push white tab forward to locked position.

   c) To remove: pull white tab.
   d) Push inner section downward, while at the same time pulling plug away from Tester.

Basic Smart Pressure® Tester Procedure

1. Connect compressed air or any inert gas to Tester.
   (Inlet pressure to Tester can be between 50-175 PSIG (3.5-12 bar)

> **NOTE:** Step 1 must occur <u>prior</u> to connecting the Tester to power, or its screen will show an error code "**n0A**" (no air connected).

2. Connect the Tester to power.
   > Within 20 seconds the Tester will automatically run a self-test and will self-calibrate.
   > Once calibrated; Tester's display shows all zeroes.

3. Set desired system test pressure with Tester's UP/DOWN arrows.
   (Adjustable from 3 PSI to 43.5 PSI / 0.21 bar to 3 bar)

> **NOTE:** Step 3 must occur <u>prior</u> to pressing Tester's ON button (step 5) or Tester will not respond, since a test pressure command has not been set.

4. Use appropriate adapter and connect supply hose to system for test.

5. Press ON button.
   > MODE button toggles the digital display between PSI, bar and flow.

6. While system is filling, use white light to look for exiting smoke at leak points.

> **NOTE:** Smoke vapor exiting from a leak is even easier to see at low test pressures.
> **NOTE:** If possible, it is best to purge the 'non-smoke' air out of the system by leaving an opening in the system being filled. Close the system once smoke exits that opening and continue to fill with smoke. This quickly fills the system with Diagnostic Smoke®.

7. Once system is full, use UV light provided to look for UV deposit(s) at leak point(s)
   > The laser light provided will 'see' a leak by reflecting on the escaping smoke vapor.

> **NOTE:** After 10 minutes of operation Tester turns off and starts a pressure-decay cycle. Pressure decay cycle can also be activated by turning Tester OFF at any time.
> **NOTE:** During decay mode, do not press either the UP or DOWN pressure arrows, or it will interrupt the decay process.
> **NOTE:** After 8 minutes of non-operation the Tester goes into sleep mode. Pressing any button wakes Tester up remembering the setting prior to sleep mode.
> **NOTE:** To completely turn OFF the Tester, remove power source.

> **<u>DO NOT</u> use the WV711 Tester in a vehicle's fuel evaporative (EVAP) system!**
> **<u>DO NOT</u> exceed normal system pressure in systems being tested!**
> **<u>DO NOT</u> connect the Tester in such a way where its high pressure will be introduced into the engine's crank case system, or oil seals may be damaged.**
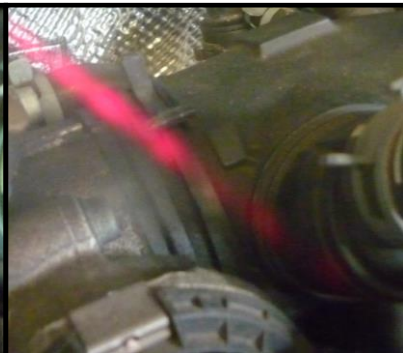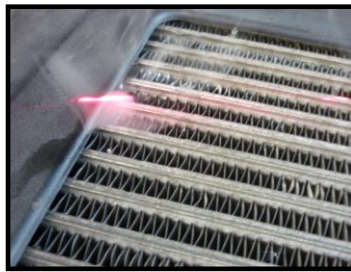
Leak Sample

Three Ways to See the Leak

White light highlights the smoke	Laser light is reflected by the smoke vapor	UV light sees the dye trace

LED Display Codes

The LED display is capable of showing the following codes.

rE   Indicates 'Program Version' or Revision; which will displayed next

t.x.x   Program Version ("x.x" indicates turbo program version number)

CAL   Calibrate

Fob   Key Fob

End   End of function

Pr9   Program

Lo bAt Low Battery or Bad Battery Connection (shown in two consecutive displays)

E01   Open Circuit (ground or power)

E02   There is pressure in the system to be tested; cannot calibrate.
NOTE: this error code will be followed by the amount of pressure in the system to be tested.

Relieve pressure in the system to be tested prior to continuing with the test.

n0A   No Air (no air/gas connected to tester)

PSI   Set to read PSI pressure (instead of bar)

bAr   Set to read bar pressure (instead of PSI)

Utl   Utilities

Programing Remote Control Fob

Your remote control Fob has already been programmed at the factory. Follow this procedure
if reprogramming becomes necessary, due to Fob replacement or after changing the Fob's battery.

1. Disconnect Tester from power.

2. Connect Tester to workshop air.

3. While pressing and holding the **SET PRESSURE** arrow **UP** button on the Tester:
    connect Tester to power.

4. When **Utl** (Utilities) is displayed; release arrow UP button.
    NOTE: "**Pr9**" (Program) is displayed.

5. Momentarily press the red button on the Remote Fob and release. After two seconds press the red
    button again and release.

    NOTE: The display will now read "**End**", indicating the remote is now programmed to the Tester.

6. Disconnect and reconnect Tester from power to resume normal operations.

Setting Pressure Reading Default to PSI or BAR

Your Tester has been preset at the factory to either default to PSI or BAR readings. Follow the steps below
to change the default setting.

1. Disconnect Tester from power.

2. Connect Tester to workshop air.

3. While pressing and holding the **SET PRESSURE** arrows **UP** / **DOWN** buttons on the Tester:
    connect Tester to power.

4. When **Utl** (Utilities) is displayed; release UP / DOWN arrow buttons.

5. Push start button until you see **PSI** (or until you see **bAr**, if system is preset to PSI).

6. Push arrow button **DOWN** once to read **bAr** (or to read PSI, if system is preset to bar).

7. Push start.

Disconnect and reconnect Tester from power to resume normal operations.

Worldwide Vapor, Inc.

LIMITED ONE (1) YEAR WARRANTY

Smart Pressure® Leak Detector Model WV711

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 ONE 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 or TechSupport@vacutec.com

Activate Your Warranty:

To activate your warranty; send the information below to the email address or fax number provided within 30 days of your purchase.

Send information below to: TechSupport@vacutec.com or Fax: 714-433-2840

Purchaser's Name:

Company Name:

Address:

Country:

Telephone number:

Email address:

Web address:

Smoke Machine Model:

Serial Number:

Date Purchased (keep your invoice for verification, if required):