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# LEAKCHEK

with Illuminating Vapor Trail

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## LC 210

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## LEAK DETECTION SYSTEM

For Use By Qualified Automotive Technicians

# OPERATOR'S MANUAL

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## ***NOTICE:***

**Please note that this operating manual is intended only to provide information to the user. This manual does not provide an exhaustive discussion and does not constitute professional advice on the matters or procedures in question. Please refer to the vehicles manufacturer’s recommendations or specifications for further details and specific instructions or procedures.**

**Although this operating manual has been prepared with the greatest care and attention to detail, the manufacturer shall not be liable for damages or losses incurred due to any errors or omissions in this operating manual.**

# Introduction

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Traditionally, in the automotive industry engine oil leaks, transmission fluid leaks, manifold vacuum leaks and front / rear axle leaks have been detected using dyes with special lights and sound devices & sometimes even flammable sprays. Technicians have spent countless hours detecting and locating leaks using these methods with less than desirable results.

In some industries, leak diagnosis has involved the use of visible vapor. This technology is effective but expensive. The LEAKCHEK™ PLUS unit utilizes an affordable technology that uses visible vapor at a specific pressure along with the added benefit of ultra-violet detection capabilities. The ultra-violet detection additive, known as “Chemo-Luminescence” is detectable using a U.V. detection lamp. It is now cost effective for professional automotive technicians to use this reliable and efficient visual & U.V. (Ultra-Violet) leak detection technology.

Another key advantage to the LEAKCHEK™ PLUS visual diagnostic tool is that tests are performed with the engine “off”. Automotive technicians are aware that while the vehicle’s engine is running, the computer is in control of the engine, masking the driveability problem. By testing with the engine off, the computer is taken out of the loop. Therefore, with the LEAKCHEK™ PLUS the computer is not compensating for and hiding potential problems. Leaks that previously went undetected are found literally in seconds.

LEAKCHEK™ PLUS systems are engineered and manufactured to exceed accepted quality standards ensuring long lasting durability for years to come.

## ***IMPORTANT:***

**The LC 210 LEAKCHEK™ PLUS unit is designed to work  
EXCLUSIVELY with the LEAKCHEK™ PLUS visible vapor oil distributed  
by MotorVac Technologies, Inc. (P/N: 400-0125)  
Use of any other chemical or oil in the unit may cause operational failure of  
the LC 210 LEAKCHEK™ PLUS visible vapor system and voids the  
manufacturer’s warranty. See warranty card for details.**

## Instructions for Use

- A. Attach the unit to the vehicle's battery by connecting the red battery clip to the positive (+) battery terminal and the black battery clip to a solid ground point as far from the battery as possible. (The unit's GREEN L.E.D. indicator will glow indicating that battery polarity is correct.
- B. Push the handheld pendant control button to produce Vapor.
- C. Use a bright light source to locate visible vapor or a U.V. / Black light to utilize the luminescent qualities of the LEAKCHEK™ PLUS's vapor

## Test Methods

All tests are performed with the vehicle's engine turned off.  
Both Battery clamps from the LEAKCHEK™ PLUS system must be attached to a 12 volt battery.

### A. Air / Vacuum Leaks

*This test encompasses intake manifold, unfiltered air, unmetered air leaks:*

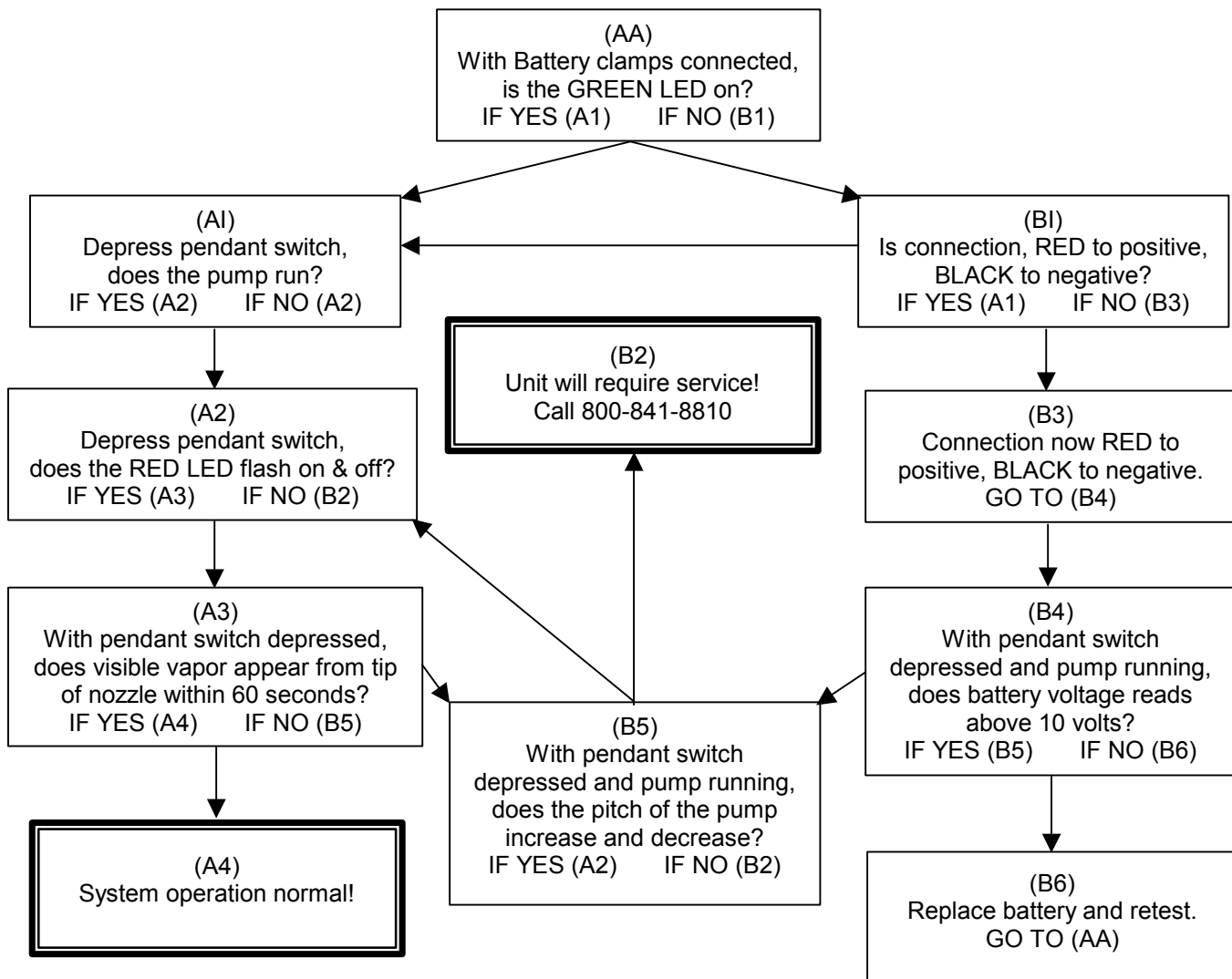
1. Attach the LEAKCHEK™ PLUS 's vapor hose to any large intake manifold vacuum hose (i.e. brake booster or PVC line).
2. Push the handheld pendant button to produce the visible vapor, (See Section 2. – Instructions For Use).
3. Use a bright light source to locate visible vapor or a U.V. / Black light to utilize the luminescent qualities of the LEAKCHEK™ PLUS's vapor
4. Leaking EGR valves can be detected during this procedure.
5. **Note:** Positive pressure EGR valves will leak. Be sure not to condemn the EGR valve before checking to see if it is a positive or negative pressure EGR valve. Refer to manufacturer's recommendations.
6. Vapor sources indicating the need for a repair may be detected in the following areas:

<b>Vapor Test Procedure</b>	<b>Carbureted Engine</b>	<b>PFI and TBI Injected Engine</b>
Throttle shafts/throttle body shafts	X	X
Throttle body gaskets	X	X
Injector O rings		X
Positive crank case vent hoses	X	X
Air valves	X	X
Exhaust gas recycle valves	X	X
Hoses and hose connection	X	X
Air cleaner assy.	X	X
Air cleaner duct hose assy.	X	X
Intake manifold gaskets	X	X
Vacuum advance modules	X	
Switches, one way valves	X	X
Choke pull off	X	
Air flow meters/mass air flow sensors		X
MAP sensors		X

# Diagnostic Flowchart

## FLOWCHART DIAGNOSTICS FOR LEAKCHEK™ SYSTEM OPERATORS:

Below is a flowchart describing troubleshooting procedures. Page 12 gives an explanation in detail of the observations you make and the conditions you may encounter. Verify clean and secure battery cable connections and good battery voltage BEFORE beginning.



## **TOXICOLOGY REPORT**

Occutech Services (HSE) Inc., was contacted to undertake an Industrial Hygiene Survey of the LEAKCHEK™ PLUS FOG (visible vapor) leak detecting machine at the University of Alberta Mechanical Engineering Lab.

Testing of the exposure of technician to vapor was performed during actual testing of the engine and a direct sample of FOG was taken for comprehensive analysis. Ambient conditions were recorded immediately prior to LEAKCHEK™ PLUS testing of the engine.

Personal sample results were less than ten percent of the lowest OEL, (Occupational Exposure Level), and components of the FOG would be several one-hundredths of the appropriate OELs.

The conclusion reached from these tests is that occupational hygiene requirements will be met when the LEAKCHEK™ PLUS equipment is used as designed and under normal conditions.

## **AUTHORIZED SERVICE CENTER**

For further information on the LEAKCHEK™ PLUS system, contact your MotorVac Representative.

## LEAKCHEK™ PLUS System Parts List

<b><u>MotorVac Part #</u></b>	<b><u>Description</u></b>
030-4607	Acetal 90 degree Elbow
070-0106	¼" Clear Vapor Hose
030-1008	¼" Hose Barb
050-3400	Clear Nose Nozzle
010-5611	Black Handle
011-0014	Black Hanger Bracket
020-8203	Exhaust cone
080-0110	Exhaust Cone Adapter
030-4004	Universal Vacuum Tee
040-2603	PCV Valve Grommet
200-3110	Cap Plugs (17 Piece Set)
200-3111	Vacuum Caps & Hose (8 Piece Set)
400-0125	Oil Refill Kit / with U.V. Additive

### **ORDERING PARTS**

**Parts for the unit may be ordered by calling  
Customer Service, have your model and serial  
numbers available:**

**In the U.S. call: (714-558-4822, 800-841-8810)  
E-MAIL: [marketing@motorvac.com](mailto:marketing@motorvac.com)**