

ILD-612 Universal Combustion Leak Tester Instructions

GOODSON

Tools and Supplies for Engine Builders

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ILD-612

Please read instructions before using.

Universal Combustion Leak Tester:
Simple to use... No additional tools need-
ed ... builds your service business and
satisfied customers too.

Test in seconds for:

- Cracked Blocks
- Leaky Gaskets
- Cracked Heads
- Warped Heads

Your customer can see it, locate combus-
tion leaks without guess work!

“Yellow means trouble”

When Fluid Turns From



Combustion Leak is present

Operating Instructions

1. **CAUTION:** Since engine will be running during test, care must be taken to assure vehicle cannot go into gear accidentally. Take necessary precautions such as securely setting the hand brake, firmly blocking all four wheels, and positioning shift lever with tape or other restraints to assure it will not move. Also take care to assure your hands and arms stay well clear of engine fan, belts and any other moving items.
2. Engine should be warm and allowed to idle during the test. Coolant **MUST** be warm and circulating while test is in progress.
3. **CAUTION:** Hot coolant can cause severe burns. A coolant system can fail at any time from hose rupture, gasket failure, radiator failure, etc. Protect your self from these hazards. Wear goggles, heat resistant gloves and outer clothing that will protect you from burns if coolant system fails during test.
4. Remove radiator cap carefully & slowly and check to see that radiator coolant level is low enough to prevent plugging of unit. Either siphon off or drain coolant so that level is 2" to 3" below the neck of the radiator.
5. Check color of test fluid. If blue, ok to use. If green or yellow, discard and obtain fresh fluid.
6. Remove bulb by gently twisting. Pour test fluid from bottle into test instrument, through either opening in top cap, or remove top cap if more convenient, to the "fill to here" level line. Reinstall top cap (if removed) and install bulb by gently twisting into top plug, metal valve end up.
7. Insert test instrument firmly into neck of radiator, by gripping the bottom rubber plug, with a rotating motion, so that a seal is formed with the inner neck of the radiator. Force radiator gasses through test fluid by squeezing bulb.
8. Continue to force radiator gasses through test fluid by squeezing bulb for about 1 minute. If fluid is **YELLOW** a combustion leak is present. (In diesel engines, the fluid may turn yellow-green.) If fluid remains **BLUE**, a combustion leak is not occurring while test is in process.
9. If radiator opening is greater than 1 3/4", insert combustion leak tester into Large Engine Adaptor plate (which may be purchased as an accessory.) Block radiator overflow outlet with a suitable rubber plug or piece of tape. (Be sure to remove after completion of test.) Place tester with Large Engine Adaptor plate, on top of radiator opening, press down firmly to seal, and perform test.

To locate exact source of Combustion leak:

Should the test fluid give positive results, (turn YELLOW), then the location of the combustion leak may be further pin-pointed to assist in the repair by following these simple steps:

WARNING!

CAUTION: If vehicle has catalytic converter, disconnect while "exact source" testing is being done. Increased amounts of unburned fuel in exhaust (caused by spark plug wire removal) may cause catalytic converter to get too hot. Damage to converter and ignition of surrounding surfaces with resulting fire could result. Be sure to reconnect converter after completion of test.

- A.** On an In-line Engine, remove 1 spark plug wire at a time allowing engine to idle for a few minutes to purge cooling system of combustion gasses from previous test. Then re-test. Continue this process for each cylinder until all leaks are located.
- B.** On a V type Engine disconnect all spark plugs on one bank, allowing engine to purge itself by idling in this condition for 5 minutes. (You may have to keep it running since half of the plugs are disconnected.) Re-run the combustion leak test. If the fluids stays BLUE (negative), the leak must be in the non-firing bank. If the fluid turns YELLOW (positive), the leak is in the firing bank. Then go on to check each cylinder, as with **A.** above. However, there may be a leak in the non-firing bank. be sure to check both banks, for each cylinder, until all leaks are located.

After the repair is made, double check the work:

It is very important, after the repair has been made, to flush the block to expel any accumulated gasses. Then, re-test with the Universal Combustion Leak Tester for final check on the repair job.

Use the Universal Block Tester when:

- The condition of the engine is unknown
- Engine starts hard
- Cylinder head had been removed
- Engine overheats
- Loss of engine coolants occurs
- Rusty radiator conditions are present
- Before engine tune-ups
- Cracked block or head gaskets problems are suspected.

How to use

- Engine must be warm and idling
- Determine that radiator fluid level is low enough so that water will not enter tester unit
- Fill Block Tester through top plug opening with combustion leak test fluid to "Fill to here" line
- Insert lower plug end of tester firmly into radiator opening
- Rapidly squeeze and release top aspirator bulb, pressurizing radiator and forcing air from radiator up through test fluid. Radiator air bubble should pass through test fluid for 60 seconds before test is complete.
- If test fluid turns from Blue to Yellow combustion leak is present. never return test fluid from Block Tester to bottle

Important points to remember.

- Seating the instrument is important. Be sure to grip the bottom rubber cap, rather than the outer fluid tube since you may cause the seal to be broken between the tube and the bottom cap, thereby causing the instrument to become inoperative, or to leak.
- Always be sure the level of the radiator coolant is 2" to 3" below the neck of the radiator. Otherwise, coolant may be drawn into the test instrument itself, contaminating the fluid. Should this occur, remove the test instrument and discard the coolant-test fluid mixture, rinse unit well with cool excess water as possible, and begin the testing process again, after reducing the level of the radiator coolant to the required level.
- Always destroy test fluid which has given a positive test (turned YELLOW). Do not attempt to return test fluid to the bottle, after conducting a test which is negative (fluid stays BLUE)- it may carry contamination which could ruin the entire bottle of fluid.
- Always put the cap back on the bottle of fluid immediately to avoid contamination of the fluid.
- Always remove the test instrument from the neck of the radiator immediately after completion of the test. Otherwise, as the engine stops and the coolant cools, the fluid in the test instrument will be drawn into the radiator.

If there are any questions concerning the Universal Combustion Leak Tester call tech services at Goodson. 1-800-533-8010 or 507-452-1830