

## 43707 COMBUSTION GAS LEAK TESTER KIT



| ITEM | PART#     | DESCRIPTION                  |
|------|-----------|------------------------------|
| 1.   | 43709     | Combustion Leak Tester Fluid |
| 2.   | 43025-R   | Rubber Bulb                  |
| 3.   | 43025-TC  | Test Chamber                 |
| 4.   | 43025-2OR | Set of O-Rings for 43025-TC  |
| 5.   | 43025-RC  | Rubber Cone for 43025-TC     |
| 6.   | 43707-PB  | Plastic Box                  |

### WARNINGS



- Wear safety goggles, gloves and protective clothing.
- Use in a well-ventilated area.
- **DO NOT OPEN A HOT COOLANT SYSTEM.** Hot coolant systems are pressurized and can cause serious personal injuries. Follow the vehicle manufacturers instruction to open a coolant system.
- Keep yourself, clothing and tools clear of all moving parts.
- Read and follow the instructions contained on this document prior to using the tool.

### INSTRUCTIONS

#### Step #1 PREPARE THE VEHICLE THAT IS TO BE TESTED

- Drain some of the antifreeze out of the radiator until the water level is approximately 1-1/2 inches below the fill neck of the radiator.
- **NOTE: ANTI-FREEZE SHOULD NOT BE ALLOWED INTO THE LEAK TEST TOOL.** If this happens, stop the test when the coolant reaches the red line (**LEVEL**) in the lower chamber. Clean the tool and retest.
- **NOTE:** This step is necessary to provide a void in the top of the radiator for CO<sub>2</sub> to accumulate.

#### Step #2 PREPARE THE TOOL FOR TESTING

- Remove the cap from the top of the test chamber.
- Pour the test fluid into the top chamber to the line marked, "CO<sub>2</sub> leak detector."
- **NOTE:** Keep the bottle of test fluid capped to reduce the risk of contamination
- Install the cap onto the top test chamber.
- Attach the rubber bulb pump to the cap on the top of the test chamber.

#### Step #3 TEST THE VEHICLE (fig. 1)

- Start the car.
- Insert the test chamber into the radiator fill neck until the rubber cone makes a seal with the



fig. 1

radiator.

- Squeeze the rubber bulb pump several times to draw the vapors from the radiator into the test chamber.
- When the test is complete, remove the test chamber from the radiator and turn the vehicle off.

Step #4 CHECK THE RESULTS (fig. 2)

- If the test fluid turns yellow, then CO2 is leaking into the coolant system.
- If the test fluid remains blue, then CO2 is not leaking into the coolant system.
- **NOTE:** The presence of CO2 in the cooling system does not guarantee that the problem is solely a leaking head gasket. Other failures like, but not limited to a warped or cracked cylinder head could cause a positive leak test.
- This tool identifies the presence of CO2, not the cause. It is the end users responsibility to determine the cause of the presence of CO2 in the coolant system.



fig. 2

Step #5 CLEAN THE TOOL

- Pour the test fluid into a suitable container.
- **NOTE:** Do not pour the test fluid into the original container. Contamination will occur.
- **NOTE:** Check with your local government or recycling center on how to dispose of the test fluid. (Bromothymol Blue)
- Disassemble the tool and flush with clean water only. Allow the parts to air dry.
- **NOTE:** Do not use compressed air, paper or cloth towels. Contamination may occur.
- When the parts have dried. Reassemble the tool and put it back in the plastic box that it was purchased with.

**OPTIONAL**

These products can also be used with Mastercool tool kits, 43300, 43301, 43302, 43305, 43306.



**43708**  
**RADIATOR COOLING TEST CAP ADAPTER**  
**WITH VENT**



**43710**  
**COMBUSTION GAS LEAK TESTER KIT WITH TEST**  
**CAP ADAPTER**

## INSTRUCTIONS FOR USE WITH RADIATOR COOLING TEST CAP ADAPTER WITH VENT

Step #1 PREPARE THE VEHICLE THAT IS TO BE TESTED

- Drain some of the antifreeze out of the radiator until the water level is approximately 1-1/2 inches below the fill neck of the radiator.
- **NOTE: ANTI-FREEZE SHOULD NOT BE ALLOWED INTO THE LEAK TEST TOOL.** If this happens, stop the test when the coolant reaches the red line (**LEVEL**) in the lower chamber. Clean the tool and retest.
- **NOTE:** This step is necessary to provide a void in the top of the radiator for CO<sub>2</sub> to accumulate.

Step #2 PREPARE THE TOOL FOR TESTING (fig. 3)

- Remove the rubber cone from the bottom of the test chamber.
- Install the brass "T" (43708) to the bottom of the test chamber. Loosen the nut on the top of the brass "T". Insert the test chamber into the brass "T" and tighten the nut. Close the valve on the side of the brass "T".
- Select a test cap and attach it to the quick coupler at the bottom of the brass "T".
- Remove the cap from the top of the test chamber.
- Pour the test fluid into the test chamber to the line marked, "CO<sub>2</sub> leak detector."
- **NOTE:** Keep the bottle of test fluid capped to reduce the risk of contamination
- Install the cap onto the top of the test chamber.
- Attach the rubber bulb pump to the cap on the top of the test chamber.



fig. 3

Step #3 TEST THE VEHICLE (fig. 4)

- Attach the test chamber to the radiator fill neck.
- Start the car.
- Squeeze the rubber bulb pump several times to draw the vapors from the radiator into the test chamber.
- When the test is complete. Turn off the vehicle. Open the valve on the side of the brass "T" to release any pressure that accumulated during the test. Remove the test chamber from the radiator.



fig. 4

Step #4 CHECK THE RESULTS (fig. 5)

- If the test fluid turns yellow, then CO<sub>2</sub> is leaking into the coolant system.
- If the test fluid remains blue, then CO<sub>2</sub> is not leaking into the coolant system.
- **NOTE:** The presence of CO<sub>2</sub> in the cooling system does not guarantee that the problem is solely a leaking head gasket. Other failures like, but not limited to a warped or cracked



fig. 5

cylinder head could cause a positive leak test.

- This tool identifies the presence of CO<sub>2</sub>, not the cause. It is the end users responsibility to determine the cause of the presence of CO<sub>2</sub> in the coolant system.

#### Step #5 CLEAN THE TOOL

- Pour the test fluid into a suitable container.
- **NOTE:** Do not pour the test fluid into the original container. Contamination will occur.
- **NOTE:** Check with your local government or recycling center on how to dispose of the test fluid. (Bromothymol Blue)
- Disassemble the tool and **flush with clean water only**. Allow the parts to air dry.
- **NOTE: Do not use compressed air**, paper or cloth towels. Contamination may occur.
- When the parts have dried. Reassemble the tool and put it back in the plastic box that it was purchased with.

**⚠ WARNING:** This product can expose you to chemicals including Di (2-ethylhexyl) phthalate, lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)