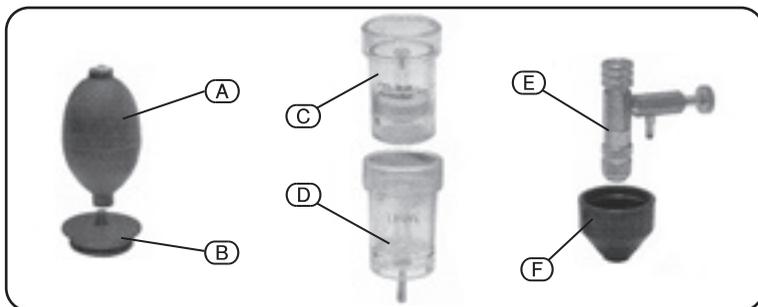


SAFETY INSTRUCTIONS

- Always ensure engine is COLD before carrying out any maintenance.
- Always ensure approved safety goggles and gloves are worn before carrying out any maintenance.
- Always release any pressure from the radiator BEFORE disconnecting the Detector Kit.
- Avoid drawing radiator coolant into the lower chamber. A small amount is sometimes unavoidable, but if the level exceeds the red line printed on the lower chamber, the following procedure must be followed:
 - Turn the brass adaptor connector in order to release the fluid.
 - Turn the connector anti-clockwise to lock it.

GETTING TO KNOW YOUR COMBUSTION GAS DETECTOR KIT

- (A) Bulb.
- (B) Cap.
- (C) Upper chamber.
- (D) Lower chamber.
- (E) Brass radiator cap/Header tank connector.
- (F) Rubber cone.



OPERATION AND USE

Adaptor configuration (Figs.1-2).

- The tester can be configured to fit onto a header tank or radiator when used with a radiator cap/header tank adaptor (not supplied). Fig.1 shows the Combustion Gas Detector Kit being used in conjunction with the Draper Expert Radiator Pressure Test Kit (Stock No.14455 – sold separately). When the tube on the lower chamber (D) is inserted into the brass connector (E) ensure that the brass ring at the top of the connector is tightened down so that it grips the tube. The brass connector will be a push fit onto the radiator or header tank adaptor. Push down until it clicks into place. To release, pull the ring at the bottom of the brass connector upwards.
- Fill the upper chamber (C) with test fluid to the dotted line.
- Fit the cap (B) onto the upper chamber and then fix the rubber bulb (A) onto the top of the cap.

**FIG. 1**

- Turn on the vehicle engine and wait for steam to enter the lower chamber.
- When the steam is visible in the lower chamber, pump the rubber bulb several times to draw steam into the upper chamber. If the fluid turns yellow this indicates the presence of CO² in the coolant and thus possible damage to cylinder head gasket or cracked head.
- Alternatively the tester can be used without the bulb attached. In this configuration the steam will automatically pass into the upper chamber. Take care to keep hands and face away from any jet of steam being expelled from the hole in the top of the cap.
- As soon as the test is complete turn off the engine and allow the system to cool. Before removing the tester from the radiator or header tank, open the tap on brass connector to allow any remaining pressurised steam to escape. Thick gloves must be worn during this process and when the tester and connector are removed from the radiator.
- Remove the upper chamber from the lower chamber by twisting apart. Pump the bulb several times to draw fresh air into the chamber. When the air mixes with the test fluid it should return to a blue colour and can be retained for future use in spare bottle, this fluid can be used approx. 3 times.



FIG. 2

Hand-held cone configuration (Figs.3-4).

- Where no adaptor is available a rubber cone can be fitted to the bottom of the tester as shown in Fig.3. This allows the tester to be held in place on a header tank or radiator opening.



FIG. 3

WARNING: Thick protective gloves must be worn when using the tester in this configuration to protect the operator from any escaping steam. Great care should be taken when placing the adaptor over the radiator or header tank opening and also when removing it.

- Fill the upper chamber (C) with test fluid up to the dotted line.
- Remove the radiator or header tank cap. Turn on the vehicle engine and wait for steam to appear. Place the tester onto the radiator or header tank opening and hold it down and steady so that it makes an effective seal against the opening.
- As soon as the steam appears in the lower chamber (D) pump the bulb (A) to draw the steam into the upper chamber. If the fluid turns yellow this indicates the presence of CO² in the coolant and thus possible damage to cylinder head gasket or cracked head.
- As soon as the test is complete remove the tester from the radiator or header tank (and turn the engine off). Where there is no more steam emanating from the radiator or header tank, replace the cap.
- Remove the upper chamber from the lower chamber by twisting apart. Pump the bulb several times to draw fresh air into the chamber. When the air mixes with the test fluid it should return to a blue colour and can be retained for future use.



FIG. 4