

ENGINE LUBRICATOR KIT -

CAR FITTING INSTRUCTIONS

Mount the Lubricator Kit in the engine bay behind the headlights, on the inner guard or in another convenient position, **preferably where cooler air can keep the oil at a more constant temperature and thus ensure more even drip rates.** However, it is best to have the kit mounted behind a headlight or on the side of the engine bay nearest to the air filter. Two screws or the supplied plastic ties are all that is required to fasten the cradle into the engine bay. After installation, you will need to be able to observe the drip rate in the sight glass in order to make any necessary adjustment, also you need convenient access to the bottle cap to re-fill the reservoir bottle from time to time. It is important that the reservoir bottle be mounted in a vertical position so that the UCL oil does NOT run down the side of the glass (because this would draw the oil faster than required) – the oil should drip vertically for correct measurement of the consumption rate.

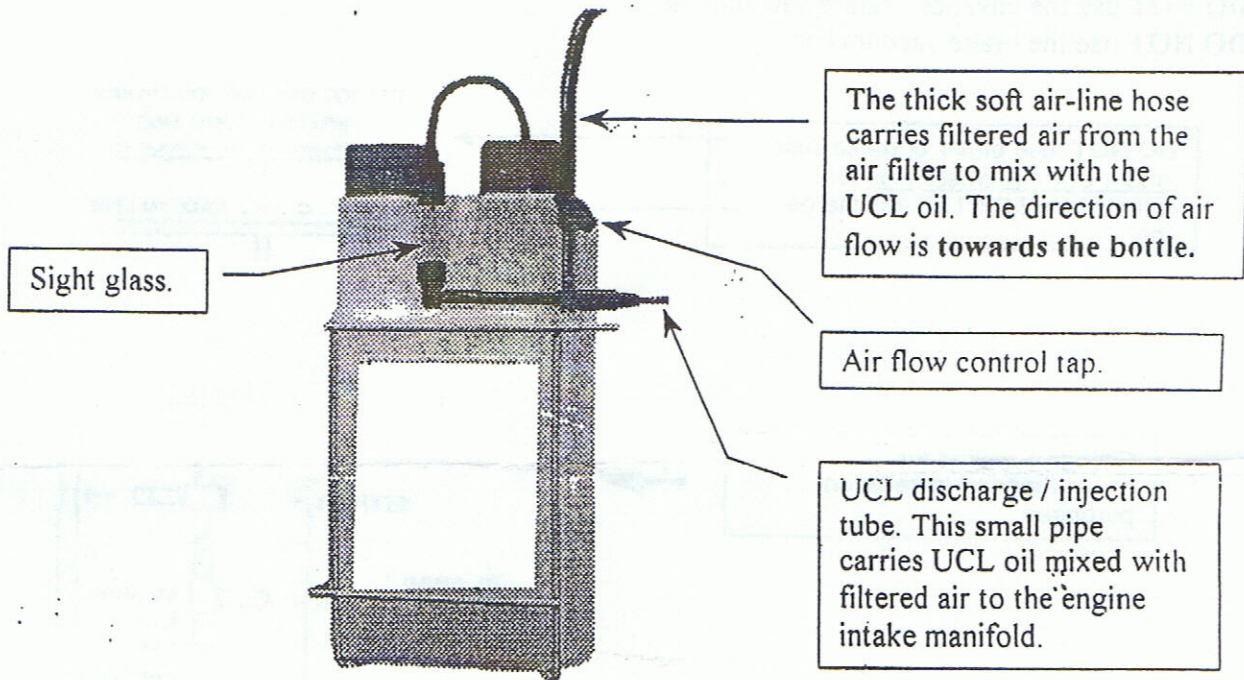


Fig.1

Connecting the thin hose (UCL discharge / injection tube) :

WARNING:

The Lubricator Kit is designed to operate under constant vacuum. **MAKE SURE** the vacuum port you choose is central in the manifold and all inlets are upstream of the airflow, otherwise some cylinders will starve while others receive too much fluid and this will cause uneven running and unnecessary wear to your engine. We **RECOMMEND** installation be carried out by a qualified motor engineer.

EITHER cut a suitable vacuum line (see "To Find a Suitable Vacuum Line Inlet" hereunder) close to the carburettor or throttle body position on the engine – see Figs. 2, 3 & 4 and insert the Tee piece connector supplied to re-join the vacuum line, **OR** drill a 4mm hole in the throttle body and use the Elbow connector supplied, then connect the UCL discharge tube. **If you connect into a vacuum line make sure you loop that vacuum line and secure it higher than the incoming UCL tube to prevent UCL oil from flowing backwards with gravity and down into the original vacuum line after the engine is stopped.** Glue all connections securely, taking care not to block the end of the pipe or the connector with glue.

TO FIND A SUITABLE VACUUM LINE INLET:

A **SUITABLE** vacuum line will enter the carburettor below the butterfly OR enter the throttle body after the throttle butterfly. To find a suitable vacuum line, test it for vacuum by having the engine at idle and placing a finger lightly over the end of the proposed line to feel for suction or by using a vacuum gauge, place the end of the vacuum gauge pipe over the proposed vacuum line and read the gauge. The reading on the gauge should be 18 to 25 inches of constant vacuum at idle and unless the vacuum line selected has a very small internal diameter then you should feel a reasonable suction on your finger if you have selected a suitable line.

Lines that are **UNSUITABLE** will enter the carburettor or throttle body above or before the throttle butterfly and will only have vacuum when the engine is above 1500 to 2000 revs. so if you connect there, the Lubricator will operate above these rev ranges BUT will not operate below those rev ranges. (The advance / retard line is one such example of this).

DO NOT use the PCV (positive crankcase ventilation) vacuum line.

DO NOT use the advance / retard vacuum line.

DO NOT use the brake vacuum line.

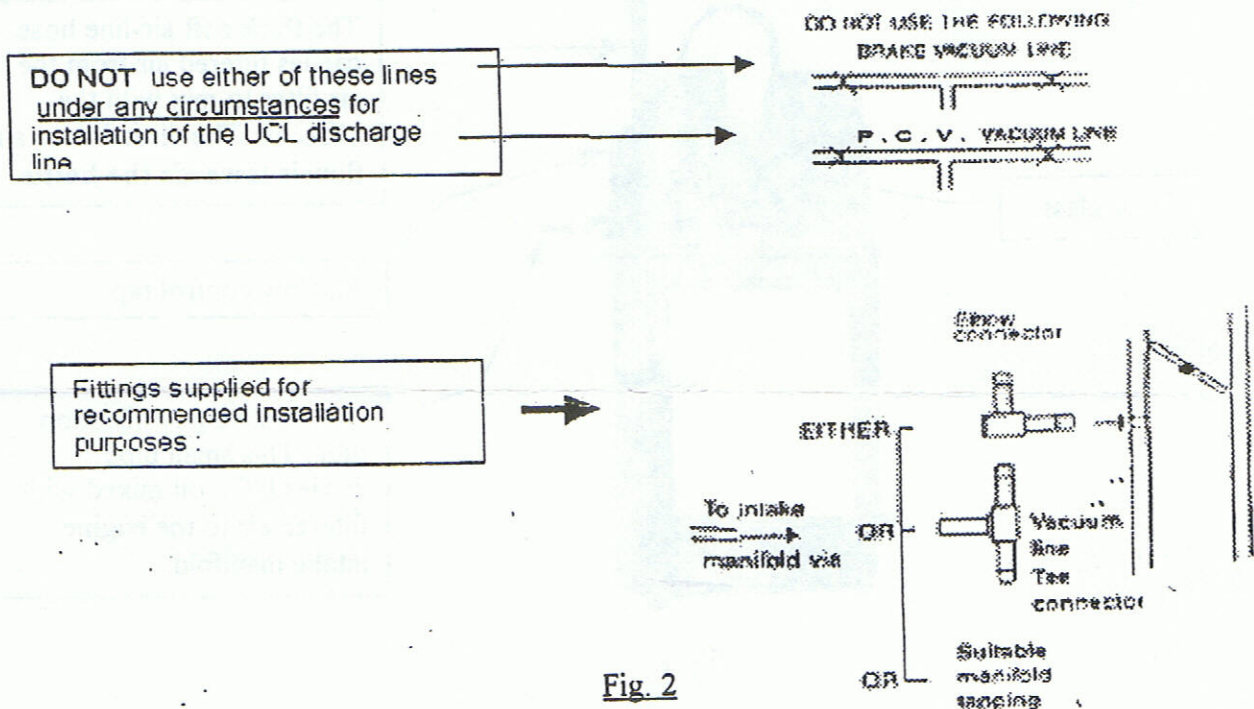


Fig. 2

CARBURETTOR ENGINES

If you have to drill for a carburettor engine, the ideal place to drill is in the area at the bottom of the carburettor, i.e. below the butterfly. Under NO circumstance use a vacuum port that is not central in the inlet manifold as this will starve some cylinders and cause uneven running. It is preferable not to drill the top of the manifold. Drill into the insulator block if one is fitted or into the base of the carburettor. **DO NOT**

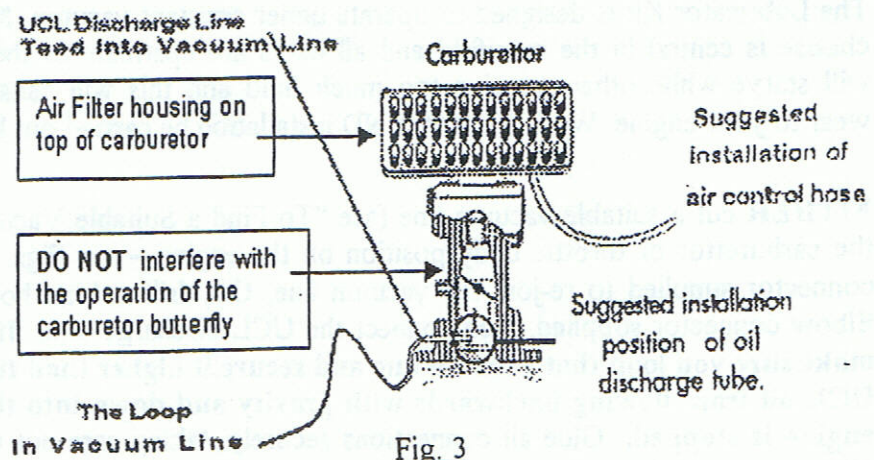


Fig. 3

hammer the Elbow connector in; push fit it firmly and glue securely. It is recommended that a mechanic install the connector, as damage can be caused or contaminants can enter the engine.

With twin carburettor vehicles connect a tee piece into the UCL discharge line. From this tee piece connect two lengths of line of exactly equal length and connect onto each carburettor as set out above. With twin throat carburettors, either connect as per twin carburettors or if using one line in, connect that line to the throat that is constantly open.

FUEL INJECTED ENGINES

When looking for a suitable port to Tee into, select one that gives a high (18 - 25 in.) constant vacuum at idle. If no spare port is available, drill the throttle body or inlet manifold just back from where the two meet and use the Elbow. It is preferable to drill the throttle body as this is usually alloy, (i.e. on the engine side of the butterfly). Inspect the engine components before drilling as damage can be caused. It is recommended that a competent mechanic carry out this work. Push fit the connector and glue securely.

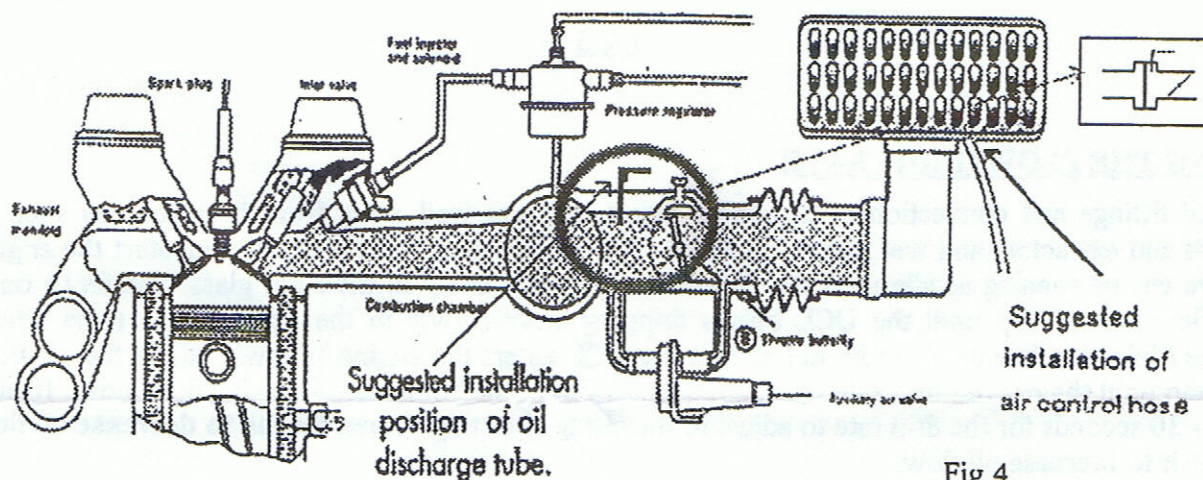


Fig. 4

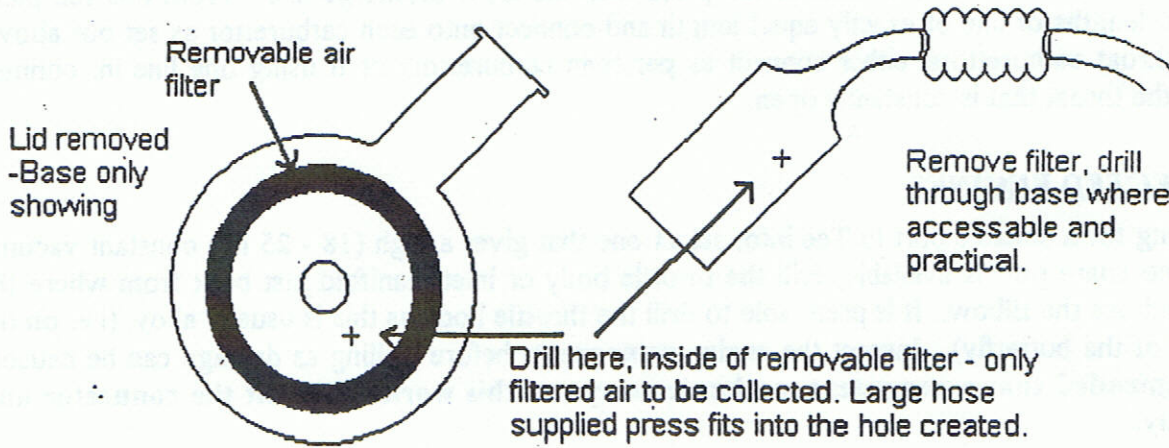
NB: Ensure fitting does not interfere with throttle butterfly operation.

Connecting the larger diameter hose (filtered air hose) :

Locate a suitable point within the vehicle air filter housing or in the rubber air duct (linked from the air filter to the engine inlet manifold) at a point as close as possible to the air filter housing, which only contains filtered air. Make sure the intended area you tap into has only filtered air, that is, after the air has passed through the air filter from the outside atmosphere – as recommended in Fig.5 on the following page.

Having located a suitable point, drill into the point chosen in the air filter housing or into the filtered air duct to make a hole, smaller than the diameter of the large air-line hose supplied. You may either use the Tee connector or Elbow piece (supplied) to plug the hole and connect the other end of the large hose to this, or push the end of the large hose through the hole and push the Tee or Elbow connector into the hose on the inside of the housing, to effect a thorough seal. Angle the Tee or Elbow connector inside the air filter towards the incoming air, for preference.

This connection can be tested by disconnecting the other end of the hose at the air flow control tap on the Lubricator bottle and using a vacuum pressure gauge or by placing your finger at the other end of the hose, ensure that there is NO suction when the engine is running. It is **ESSENTIAL** for correct operation of the apparatus that a flow of filtered air moves towards the bottle, not away from it.

CARBURETOR ENGINES**FUEL INJECTED ENGINES****Fig.5****SETTING THE FLOW (DRIP) RATE**

Check all fittings and connections. Ensure all hoses, etc. are well away from heat sources such as manifolds and extractors and well clear of the fans. With the air flow control tap closed, start the engine and leave engine running at idle until the UCL is seen to drip freely in the sight glass. Begin to open the air-flow control tap until the UCL begins dripping more slowly in the sight glass. (The whole discharge / injection line needs to be full so that the UCL enters the engine.) Slowly adjust the air-flow control tap until the desired drip rate is achieved as set out in the "Suggested Guide" hereunder. It may take 20 - 30 seconds for the drip rate to adjust to the changed setting. **Open the tap to decrease oil flow and close it to increase oil flow.**

It is best to set the drip rate while the vacuum is approx. 15 in. so that as the vacuum fluctuates up and down, there is a minimal variation in the drip rate. You will find the drip rate will approximately double when the engine is hot, if the drip rate was set when the engine was cold.

When the engine has reached its normal under-bonnet temperature, re-check the flow rate and reset if necessary. You may find that after the Lubricator Kit has been fitted, the engine idle revs will increase and need to be readjusted. This is due to improved lubrication, i.e. improved compression, ring and valve sealing.

SUGGESTED GUIDE TO SET FLOW RATE ON THE ENGINE LUBRICATOR

<u>Miles per Gallon</u>	<u>Litres per 100 Kms</u>	<u>Drips per Minute</u>
46 - 50	5.6 - 6.2	4
39 - 45	6.3 - 7.3	5
33 - 38	7.4 - 8.7	6
28 - 32	8.8 - 10.3	7
26 - 27	10.4 - 11.1	8
23 - 25	11.2 - 12.5	9
19 - 22	12.6 - 15.3	10
15 - 18	15.4 - 19.5	12
13 - 14	19.6 - 22.6	15
11 - 12	22.7 - 26.9	18
10	27.0 - 28.6	22