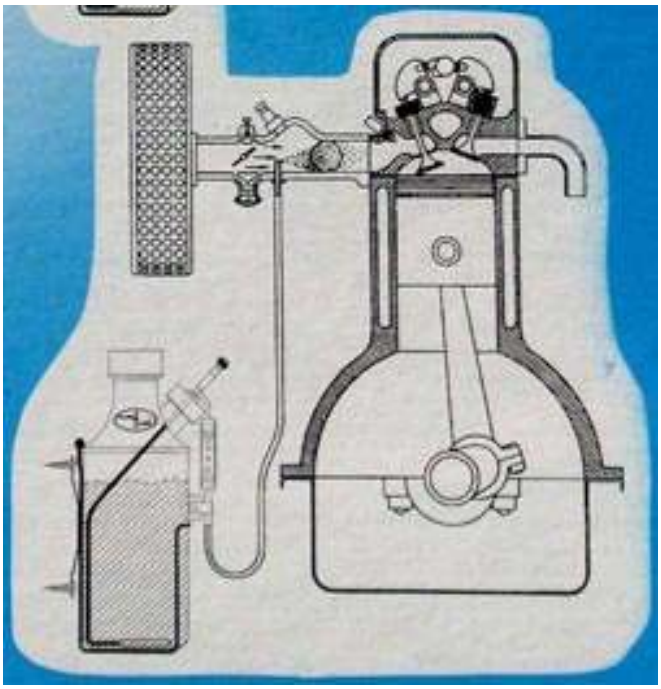
- Upper Cylinder Lubrication & Unleaded Petrol

Going back in time a small quantity of additive could be mixed with the petrol as a means of prolonging engine life. Its addition aimed to minimize upper cylinder wear and tear that at the time suffered as a result of poorer quality metals, lubrication and petrol. This upper cylinder lubricant could be purchased commercially or an alternative, for the cash strapped owner, was to use cooling oil taken from decommissioned 'high voltage' power transformers.



Over time engine materials, lubrication {the system and the oils} and petrol improved to such an extent that adding upper cylinder lubricant did not have the same profile with the majority of owners; that is until Governments stopped the use of lead in fuel to prevent pollutant car emissions of lead. New cars now have as a minimum, upgraded valves and valve seats to cope with unleaded petrol. {Previously the lead additive provided protection to the valves and seats, plus aided the octane rating specified by manufacturers}. Also owners using LPG {liquid petroleum gas} should consider the additive option.

Diagram Number 1 Automatic System For Supplying Upper Cylinder Lubricant

Older vehicles designed to use leaded petrol must either upgrade their valves and seats or place an additive in the fuel that will perform the same function of the missing lead component. This write-up looks at the option of using an upper cylinder lubricant for unmodified or limited use cars that now must run on unleaded fuel.

In Australia there are a number of lead replacement additive options, although only one product will be discussed here, as it's the only product I have experience with. At this point the question needs to be asked " how will the additive be mixed with the unleaded fuel"? Basically three options can be available:

- At refueling time squirt the correct ratio of additive into the tank.
- Use a lead replacement fuel provided by a fuel manufacturer {discontinued in Australia}
- Install an automatic form of metering the additive into unleaded petrol.

All three options have there for and against opinions, but the 'FlashLube' automatic option had the strongest appeal in the light of lead replacement fuel being discontinued. For me the prime benefits for using an automatically metered additive are:

-Hobby cars sit idle for long periods and in my case often involve short, start stop trips when used.

- Additive is not under or over supplied by forgetting or misjudging quantity.

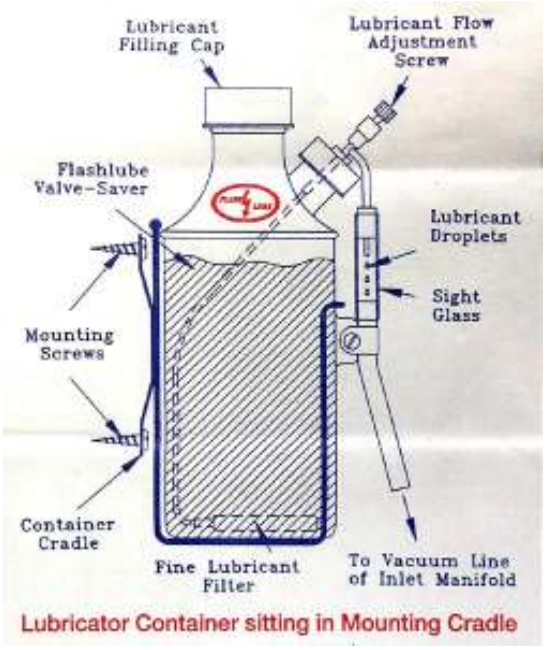


Diagram No2 Container Cross Section.

Picture No1 Sight Glass Highlighted.

INSTALLATION- OF RESERVOIR Diagram No.1 shows the full vacuum driven system. Its important to prevent siphoning by mounting the lubricant reservoir below its connection point to the fuel supply. In addition, considerations such as accessibility, visibility {Diagram 2 shows the sight glass}, heat/hot areas, and securing the vacuum tubing along its path to the carbies should be thought through. Pictures 1 & 2 show positioning of reservoir in engine bay of MG ZB Magnette. Vacuum tubing was routed in front of the engine, to avoid the exhaust manifold, using stationary style spring clips with foldout wire levers that loop the tubing.

Picture No.2 Better View of Adjustment Screw

INSTALLATION –AT MANIFOLD

Having twin carburetors and not wishing to drill into the inlet manifold it seemed better to install a connector in each of the distance pieces [Chill blocks] as shown in Picture No.3. Be mindful the brass connector does not fowl the carburetor butterfly and ensure the connector extends far enough into the fuel stream. Refer closely to suppliers Installation sheet!

Picture No.3 Vacuum Tubing Installation at Manifold

Picture No. 4 shows the vacuum hose fitted to each threaded brass connector. A tee piece joins the two [equal length] vacuum tubes to provide a single return back to the reservoir's metering system. In addition some small lengths of slightly bigger tubing was split and placed over the vacuum tubing to prevent contact with the heat shield.

Picture No.4 Close Up Of Installation to Carbie Distance Blocks

Finally reinstall the twin SU carburetors and check the completed installation meets manufacturers instructions. Then, after the engine has reached normal operating temperature set the [in this case] Flash Lube for the first time using the sight glass. Over time fine-tune for best setting as per manufacturers instructions.

Summary and Conclusion

Flash Lube has operated flawlessly and the only noticeable change is the engine seems to idle smoother and drive a little quieter. With a usage rate adjusted to use 1 millilitre per 1 litre of petrol it seems a reasonable option. Please note the yellow arrow in picture 4 indicates the vacuum take off originally used for the windscreen washers [1953 – 1958 MG ZA/ZB Sedan]; it proved ineffective in drawing upper cylinder lubricant. Check the

Internet for further details if you have an interest in upper cylinder/ lead replacement additives.

References:

FlashLube – {Installation Instructions}.
FlashLube Internet site {WWW.flashlube.com.au}

Write-up by Loz [Laurence] Scott, Geelong; Australia. April'06