

Topping up the carburettor damper on an SU HIF – V8NOTE387

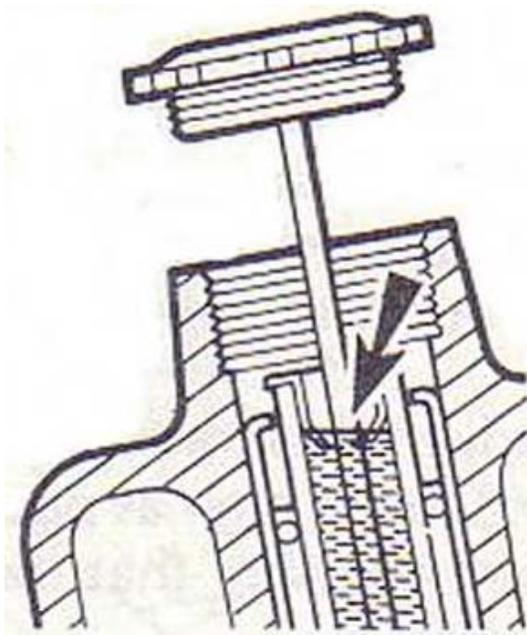
Topping up the carburettor damper on an SU HIF

Victor Smith (Harvest Gold 1089) describes a simple routine service item which makes the MGBGTV8 a smooth and pleasant drive. (Oct 08)



Topping up the dampers on the twin SU HIF carburetors on an MGBGTV8 is a very worthwhile simple service routine which can make driving the MGBGTV8 so much more enjoyable with a smoother pick up and acceleration and a less frisky engine at slow speeds. Enthusiasts not familiar with SU carburetors may not be aware of the benefits of regular damper topping-up or what to do, so this note is a straightforward guide.

This procedure is set out on page 58 of the MGBGTV8 Driver's Handbook AKD8423. Unscrew the black plastic cap at the top of each carburettor suction chamber and **gently** lift the piston and damper up to the top of their travel. Do not attempt to pull them right out. Fill the circular opening at the top of the suction chamber with engine oil (preferably 20-50 multigrade) until the oil level is just visible where there is a slight change in the internal diameter of the tube (marked below). Carefully push the damper down until the black cap contacts the top of the suction chamber. You may need to repeat the process to achieve the oil level noted above and then screw the black cap on firmly on the suction chamber.



The use of "gently" above is a caution when lifting the piston damper because care must be taken not to dislodge the damper retaining clip which is pressed into the top of the piston rod. So just lift the black cap very carefully and park it whilst you add oil.

A traditional small engineer's oil can with a moderately long flexible spout and convenient lever actuating a pump mounted in the handle is the ideal piece of equipment for leaning across from the wing and directing a gentle flow of oil into the damper. The pumping action on that type of oil can provides the ideal level of control for this operation.

Useful reference
Tuning SU Carburetors
including full needle charts
Published by Speedsport Motobooks
ISBN 85113-072-0

What is the function of the damper?

The basic function of the carburettor dashpot is to lift the large diameter piston in the bell shaped suction chamber for a given pressure differential across the upper and lower faces of the piston. Underneath the piston is the airstream from the aircleaners through the butterfly valve and on to the engine. The underside of the piston is connected to a tapered needle extending down into the jet below which governs an accurate supply of fuel into that airstream. That fuel mixes with air and passes through the butterfly valve and on to the engine.

Above the piston in the dashpot assembly there is also a guide rod and piston damper. The function of the guide rod is to guide the piston accurately within the bore of the suction chamber. The damper damps or moderates the movements of the piston in the suction chamber and consequently the changes in fuel supply governed by the needle in the jet.

The function of the damper is twofold: first it prevents the piston from following the fluctuations of the air flow at low engine speeds thereby keeping the piston steady and second, when the throttle is opened rapidly, it prevents the piston from rising rapidly in unison with the throttle opening. When the piston rises rapidly, the fuel/air mixture becomes weak because the air has less inertia than petrol. By damping the movement of the piston when the throttle is opened rapidly, the piston movement is retarded to cause a momentary enrichment of the fuel/air mixture which gives the engine a prompt pickup.

The damper operates in a column of oil. Failure to maintain an adequate oil level in the damper will cause carburettor piston flutter and adversely affect pickup and acceleration. So there is a need to top up the carburettor dampers regularly using the simple service routine described in this note.