



### Clip on the damper in an HIF carburettor

Keith Belcher with MGBGTV8 (Damask 1949) posted a note on the V8BB saying "two different mechanics have told me recently that these retaining clips "are more trouble than they are worth." What do other owners think? (April 2018)

**Victor Smith** responded saying "I attach a diagram from page 46 of Tuning SU Carburetors 3rd Edition by Speedsport, Feb 1975. It's a useful 128-page A5 size [book](#) on tuning SUs I have had for years which provides detailed exploded diagrams of SUs and information on how to dismantle, service them and tune them. The book is mentioned on our "MGBGTV8 Manuals" [webpage](#) via the "Technical Support" link on the V8 Website homepage."

**Keith Belcher** was then in touch and sent **photos illustrating the clip on the damper** on his HIF carburetors which the V8 Webmaster referred to as a "**floral clip**". It seems this clip was fitted to the HIF carburetors fitted on the MGBGTV8 model.

**Nic Houslip** then contacted Burlen (who took over the SU carburettor activities) with the aim of getting some authoritative information on the "floral clip" so that is clear an illustrated V8NOTE could be produced to explain the matter with Burlen's information.

**Keith Belcher** later mentioned "quite why these clips are fitted is a mystery to me. My research shows that few rods were fitted with them. They are seen on some late Minis, possibly late Midgents and Austin/Morris 1300s. I have only once ever had a dash rod come loose, on a 1967 1275 Sprite, but I was fairly sure it hadn't been tightened properly. The only reasons I can think of as a reason for them on an MGBGTV8 could be that the closeness of the damper to the bonnet? Were they worried if one came loose it might get wedged causing the throttle to stick? Or perhaps that to lose one they might fall into the engine valley and be almost impossible to recover. I have a couple of washers and a new throttle spring there. Since being recommissioned in 2014, my car (Damask 1949) has rarely had a constant tick-over. After a complete dismantle with required new bits the fitter could not get the emissions right and fuel consumption was heavy. However after a visit to Aldons in October 2016 this was rectified. Rest assured I have checked everything on the website. It has always been between 900 and 1200 rpm, rising when warm. I was resigned to put up with it as just an old cars foible.

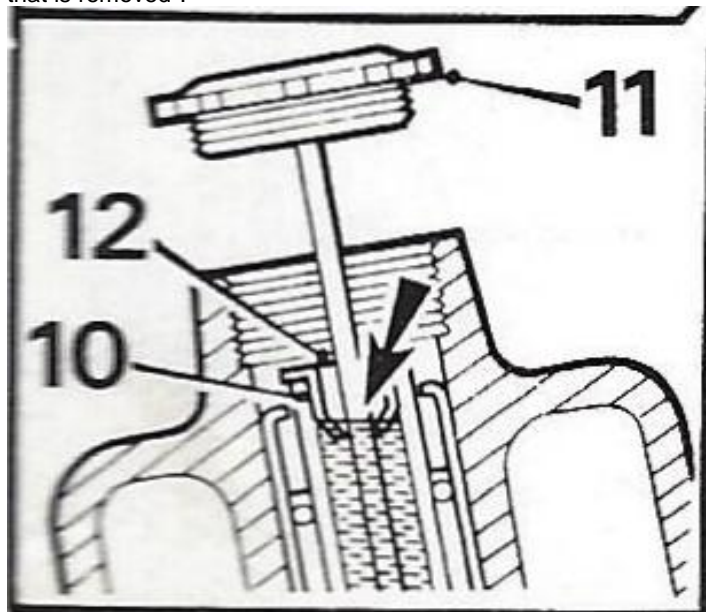
However I have had a few instances when the throttle seems to stick on, or there is rough running with lumpy pick up, accompanied by a rise in engine temperature. It would go away after leaving it to cool for 15 minutes or so. When this happened at the Classic Car Weekly photoshoot I attended in July 2017, I noticed a clip had

come dislodged. They are difficult to re insert. When this happened again a couple of weeks ago, on investigation both clips were loose and the rods showed signs of deep scratches. On thinking about it I surmised that one clip was wedging the rod to one side causing the piston to fail to return to the bottom, causing a rise in rpm and the other carb to run weak, causing the temperature increase.



So I asked two "old school" mechanics and both said the clips were "more trouble than they are worth!" Hence the post on the V8BB. But with no useful replies I took the bull by the horns and snipped the clips off. Over the weekend and today I must have completed over 200 test miles. The tick-over has been a rock steady 900 rpm all the time, even on a long run when it was very warm. The tickover was steady even when throttle off free-wheeling at speed. It might be too early to say that I have sorted my problem, but I must say that initial findings are looking good. The clips were very easy to snip off,"

**Burlen** responded to Nic Houslip's query saying "the clip was introduced to stop the damper being lost if the cap (11) became unscrewed. The later damper caps have quite short lengths of thread. It also stops the piston falling out of the suction chamber if that is removed".



Item 10 Damper retaining clip, 11 Damper cap and 12 Retaining recess. (Carburettor (HIF) damper topping up, page 58 & 59, MGBGTV8 Driver's Handbook AKD8423 4th Edition)

On receiving the clarification from Burlin, **Nic Houslip** said "I would think it quite safe to recommend that people remove them (the clips on the floral clip) if they want to. I do not recall ever seeing

a damper coming loose, but I suppose it could. A useful caution for fellow members is "make sure they keep the damper caps tight".

#### What does the damper do in the SU HIF carburettor?

Whether or not an MGBGT V8 is fitted with the "floral" clip on its HIFs depends on the age of your carburettors, because it seems the clip was introduced at an unspecified date to prevent loss of the damper rod if the cap should work loose by vibration, or perhaps from a failure to tighten it correctly. Before discussing the clip and its removal Nic Houslip feels it's worth understanding what the damper does.

The piston in the SU HIF carburettor controls the size of the fuel orifice by raising and lowering the needle and the size of the air path over the jet where the fuel mixes with the incoming air. The height that the piston rises is controlled by the difference between the air pressures acting on the top of and below the piston. While idling the piston is in its lowest position and as the throttle butterfly is opened the pressure differential raises the piston, increasing fuel flow; but the fuel has greater inertia than the air, so the damper slows the piston's movement to prevent a "stutter" as you move off from a standstill or low speed. It also "damps" the piston while idling when the air flow is less than smooth, giving smoother idle.

The **floral clip** is a friction fit inside the piston rod. It was

added to prevent the damper rod falling out if the cap worked loose, but otherwise contributes nothing to the carburetion, so it can be removed if you take precautions to prevent the damper caps from working loose. My suggestions are to check for tightness regularly, and if wished you can add some mechanical means of securing the cap, wire locking seems a bit OTT, but a strip of Duct Tape over the top and down the sides of the bell chamber, although not pretty will suffice.

**Removing the floral clip is simple**, a snip with a pair of side cutters will enable you to remove it quickly. If you can spend more time, taking the damper assembly out and removing the tiny circlip at the bottom will allow you to slide the brass damper off and then the clip. The only downside here is that the circlip is very small and may be damaged unless care is taken when removing and replacing it.

**Keith Belcher** reported at MGLive! 2018 that "the car has done over 1000 miles of testing and the rough running, fast idling and temperature symptoms have now all gone".

Below: Keith Belcher with his MGBGT V8 at a Classic Car Weekly photoshoot for an article on the Rover V8 engine. Five cars with V8 engines were selected to celebrate the engine's 50<sup>th</sup> anniversary in 2017. Photo: CCW



