Converting a 1275 Midget to run on a HIF44 carburettor.

Why go single?
There was a time (in the 1960s) when sports cars had to have twin carburettors. As Midgets and Sprites were sports cars, they were, inevitably, fitted with twin SU carburettors. Actually, the idea that two carbs are better than one is flawed when the carbs are of the same size. Since only one cylinder can draw fuel at a time, the limit on gas flow is the size of the carb from which that cylinder draws fuel. The gain from fitting twin carburettors largely results from the better flowing inlet manifolds associated with such a set up (or an increase in size of carb). Moreover, twin carburettors can be difficult to set up in practice since the airflow through each needs to be the same (or balanced) and some people find this difficult to achieve (and this difficulty can increase as carbs become worn). Perhaps for these reasons, British Leyland fitted late carburettor Mini Coopers and MG Metros with a single 1.75 inch SU carburettor. The result was improved performance and economy. In view of this, there is a good case for converting a Midget from twin small SUs to a single large SU. If it was good enough for BL, it is good enough for me.

What parts do you need?
My Midget has been running with a ‘big valve’ MG Metro cylinder head for some time with greatly improved performance, so fitting a single HIF44 seemed the obvious next step and I have been collecting the necessary bits for some time. At the end of 2006 I finally felt ready make the conversion. Here is what you need:

- an SU HIF44 (or HIF6) carburettor
- a suitable inlet manifold and studs
- a standard head/manifold gasket
- a heat shield to suit a HIF44 (make sure it has the clip for the choke cable)
- a ‘plastic’ spacer to fit between the heat shield and carb
- suitable SU manifold gaskets (3 off)
- a replacement throttle cable (with fitting for clipping to the heat shield)
- a replacement (longer) choke cable
- a K&N air filter to suit
Most of these items can be picked up from e-bay, specialist Mini or Metro parts dealers or your local scrapyard. I found a company that specialised in breaking Metros and bought second-hand items, like the heat shield, from them. The carb (new!) and inlet manifold were purchased off e-bay. Some patience is required to wait for the right items to come up, but come up they do and fairly regularly too! Other items like gaskets are new part sourced in the same way as other spares.

**Getting the right parts**

While there is nothing very difficult about this conversion, there are some points to bear in mind that can trap the unwary and spoil the result. The SU HIF44 carb was fitted to many cars in the 1990s, including many variants of the Metro and 1275/1300 Mini Coopers (from 1990 onwards) but were found on many other BL products as well. A HIF44 from almost any of these cars will do but it is best to find one off a Metro or Mini. Some other versions have big anti-run on valves in the throttle butterfly and these are best avoided as air flow is seriously restricted by this. Some HIF44s were made in left and right configurations for twin carb set ups. You need one with the throttle and choke controls on the right-hand side (looking from the engine side). Most importantly, different needles were fitted for different vehicles and even different versions of the same model. The ideal set up is the MG Metro HIF44 with a BDL needle so try to get a carb as close to that as possible.

Obtaining a suitable inlet manifold can be a problem. Although the MG Metro inlet manifold seems the obvious choice, it angles the carb upwards too much with the result that you will not be able to close the bonnet (the manifold can be modified but that is usually beyond most people). Other manifolds are made by Titan Motorsport, Howley or Osselli. Usually these were made for Minis or ‘the A Series’ and they may, or may, not fit. Unfortunately, most of these are out of production (although the Titan continues to be listed in the MOSS and MINISPARES catalogues). As a guide, what is needed is a manifold that angles the carb upwards at no more than 20 degrees (Mini manifolds are 30 degrees). My Titan manifold from e-bay fits without any clearance problems.
You need a range of other ‘bits and bobs’ to complete the conversion. A heat shield designed for a HIF44 makes life easier since it provides a bracket for locating the throttle cable in just the right position. A suitable throttle cable to fit the heat shield is required (MG Metro part NAM7912 or Mini Cooper part SBB10099) and a replacement choke cable is necessary since the original will not be long enough to reach its new position clipped onto the heat shield). I used a Morris 1000 choke cable but there are plenty that will do. Once you have obtained all the parts (I collected mine over a two year period) then ‘go for it’.

**Fitting the new carburettor**

Fitting the new carb set up is easy. The two photos show the finished carburettor set up. Those who do not want to know the details of fitment (or to whom the procedure is blindingly obvious) can skip this bit and move on. First, *disconnect battery and disconnect and plug the fuel line (safety first!)*. Then disconnect the old throttle, choke, breather, vacuum pipes and remove the old carbs, heat shield and inlet manifold. Clean up the cylinder head and replace the manifold gasket with a new one. Attach the new inlet manifold followed by a gasket, Metro heat shield, gasket, spacer, gasket and carb. Now you have the manifold and carb in place and fastened down. At this point it is wise to fit the throttle cable and check that the throttle fully opens when ‘the pedal goes to the floor’. If you have the old ‘organ pedal’ throttle you may find that there is insufficient movement to fully open the throttle. I solved this by replacing the organ pedal with that from the 1500 midget which does have enough movement. Once you are sure all is OK, replace the dashpot and fill the damper with oil. All that remains now is to connect the fuel and breather pipes and the vacuum tube from the distributor. It will be necessary to extend the fuel line along the inner wing to the carb. Fit the choke cable and the job is almost done. Reconnect the battery, start up the engine, warm up, adjust the idle throttle setting and idle mixture then fit the new air filter. Job done.
A simple carburettor conversion for a 1275 Midget :: Chris Hasluck of The Black Country MG Club

The new carburettor viewed from the front. The Titan manifold and the MG Metro heat shield can clearly be seen on the left. Note the way that the throttle and choke cables clip onto the heat shield. The large tube on the left is the engine breather while the copper tube on the right is the extended fuel pipe.

Photo 1
Photo 2

The new carburettor from the nearside. The three tubes going into the rear of the carburettor are (respectively) the fuel inlet, fuel overflow and breather tube. Again, the throttle bracket and the relocated throttle and choke cables are clearly visible.

Any fine tuning of this the new carburettor very much depends on the specification and condition of the engine and the components used for the conversion. My Midget, with an MG Metro head, is running well using a standard MG Metro BDL needle. This may not be perfect for other Midgets depending on the engine specification or if slightly different carbs/manifolds were used. The ultimate check is to test the set up on a rolling road. Even here the single carb gives an advantage. It may be necessary to customise the needle to give the correct mixture over the entire rev range. An expert engine tuner can do this by filing a different profile on the needle. To produce two identical profiles in this way (as required for twin carbs) would be impossible.
**Is it worth it?**

Is it worth the effort to make this conversion? Well, if originality is your priority (for instance you enter concours competitions) then this is not for you. However, the new set up does not look entirely out of place (and is reversible) and if you make this conversion you will be amazed at the difference it makes to the feel, performance and economy of the Midget. On its own a HIF44 will add around 4-5 bhp but in conjunction with an MG Metro head will add a lot more bhp and, importantly, torque. Tests have shown that a single SU HIF44 outperforms a Weber DCOE carb at all engine speeds except very high revs. This gain in low rev torque is very useful, and noticeable, in road use. The gain in performance is not at the cost of economy either, unless the engine is frequently used at high revs for maximum performance. The engine tends to run much more smoothly than on twin carbs, not least because the problem of balancing the carbs has been removed. I also found the throttle operation much lighter and smoother than previously. All in all, the conversion has made the driving experience even more pleasurable than previously and is well worth the small effort involved.