

# The British performance CARBURETTOR

*John Gleed explained the workings and maintenance of the monobloc and concentric Amal carbs in Mechanics last year. Now he turns to the Amals that were fitted to British ironware—with added performance in mind. Pictures by Doug Millhouse.*

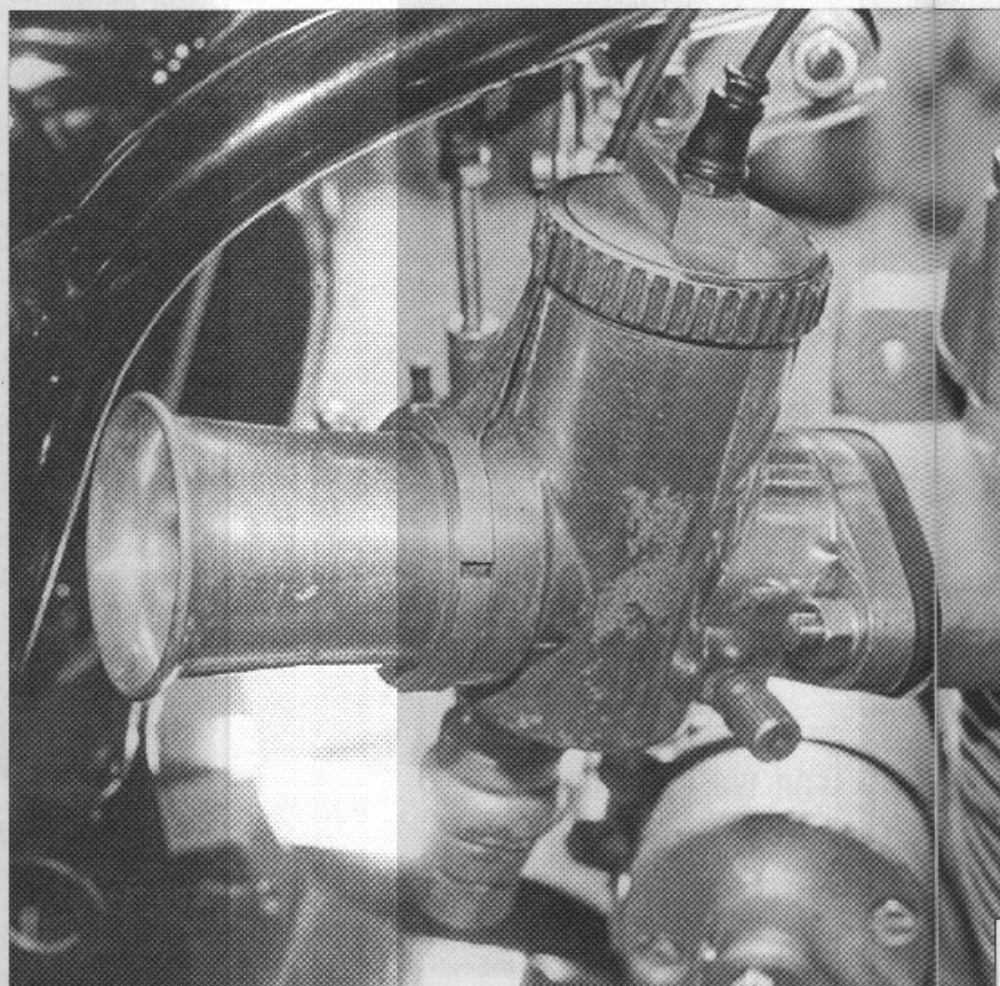
**W**ITH the increase in motorcycle engine performance in the late 1920s, improved carburation became an important requirement. To meet the demand, the 'AMAC' company marketed a racing carburettor, and when they and 'AMAL' merged, this carb became known as the 'TT' model.

After the Second World War further development resulted in two other models, the Remote Needle (RN) and the GP carb.

Although intended for racing use, a number of road bikes have been fitted with various versions of these carbs and this series is intended to help the owner of a bike fitted with any of these carbs to keep it in good order and a proper state of tune—rather than trying to extract as much power as possible from the bike.

Some of my comments in previous articles covering the monobloc and concentric carbs will apply here—things relevant to wear in the body and slide for instance, or bowing of the flange and damage to float needles, so we'll assume you have already read those features.

If not, back issues are available. Check the advert in this issue for when the features appeared.



## TT CARBURETTOR

*FIRST introduced in the early Thirties, the TT carb is similar in looks to the old pre-monobloc model, having a separate float chamber. Early ones were made in brass but, post-War, alloy was used for the body and float chamber.*

**1** It was made in both clip-fitting and flange-fitting with the studs at two inch centres.

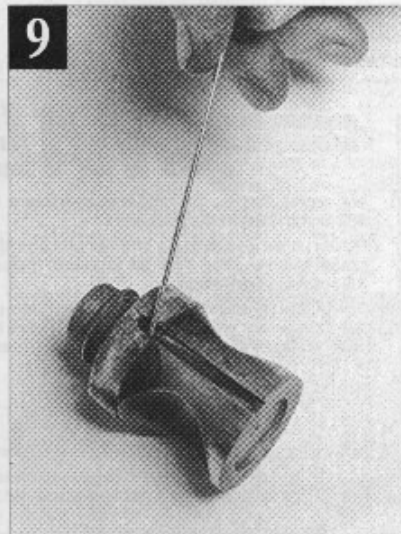
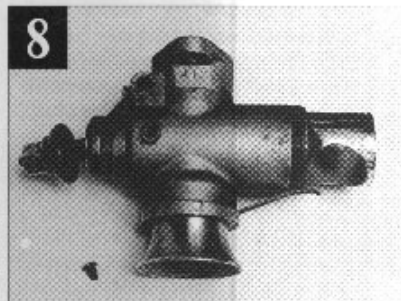
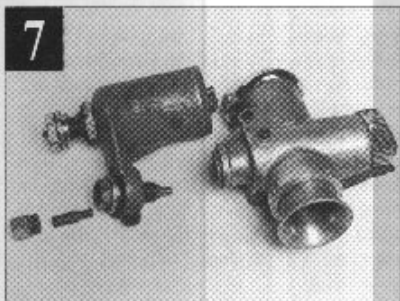
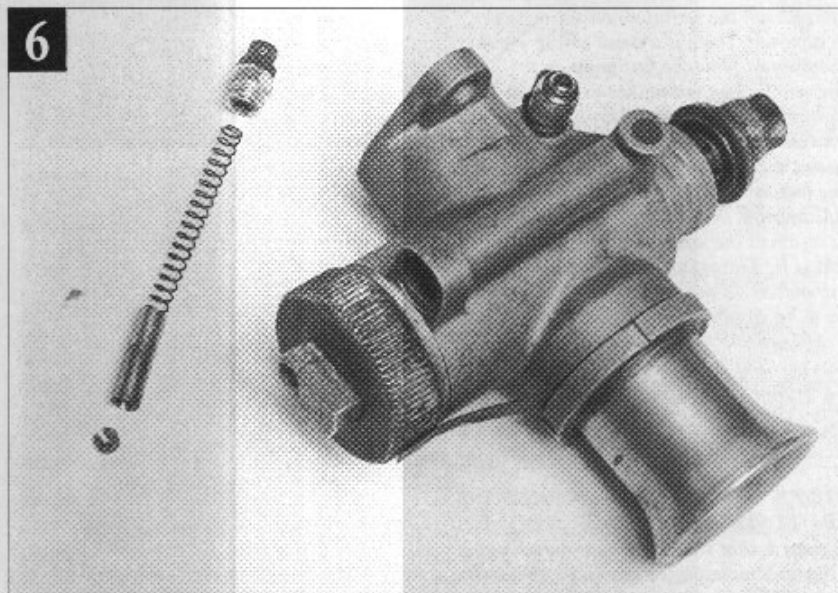
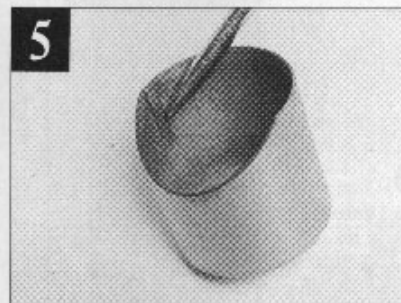
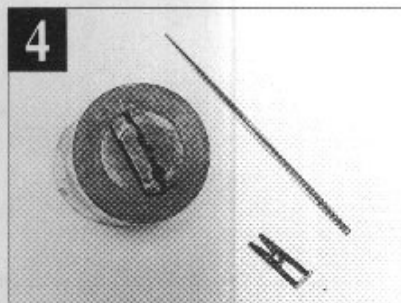
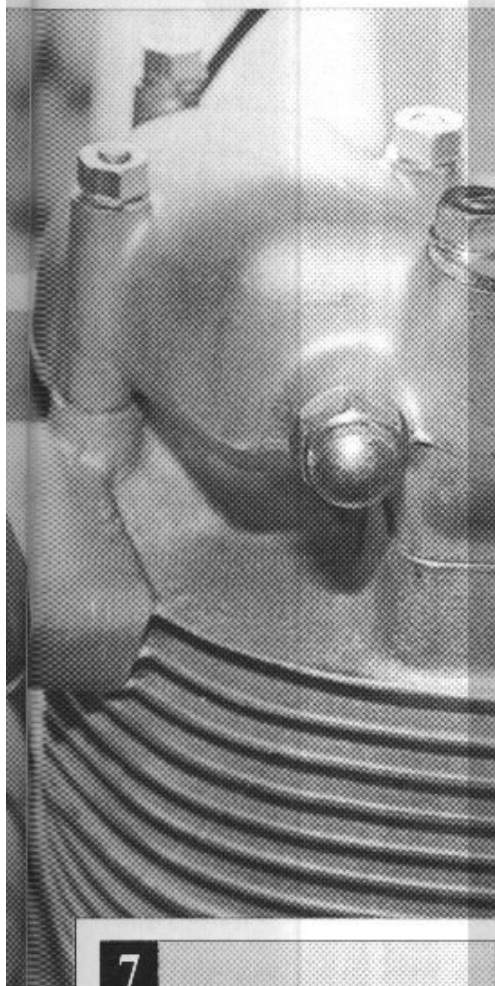
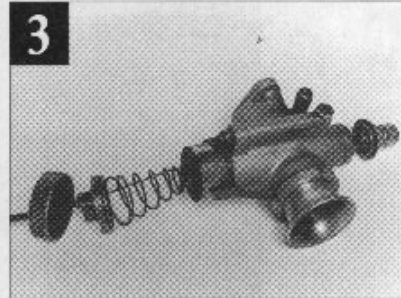
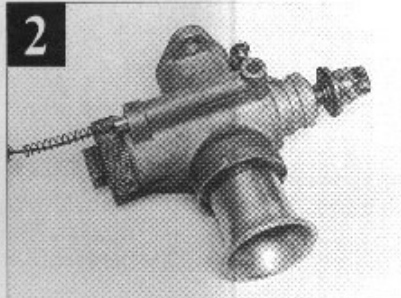
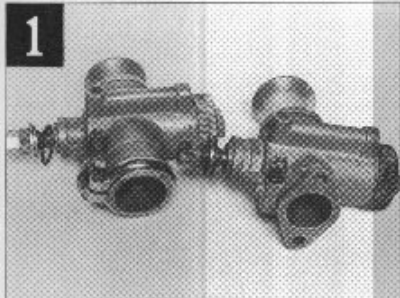
**2** One main difference is that the choke slide or air valve is housed in a separate chamber on the side of the mixing chamber, out of the main air venturi and giving a clear air flow for the mixture.

**3** The throttle slide is fitted in the usual manner. Note that the throttle spring is tapered and the small end fits on the slide.

**4** The needle is retained by a clip and has to be removed to take out the cable. The needle has five grooves for mixture adjustment.

**5** Note the locating peg inside the bottom of the slide. The carburettors were made in left and right hand form and the slides are not interchangeable as the locating peg is on the opposite side, something to watch if buying slides from an autofumble.

**6** The air slide assembly can be removed by unscrewing the cap nut and pulling out the



assembly. The cable is retained by the split nipple at the bottom that fits up inside the plunger.

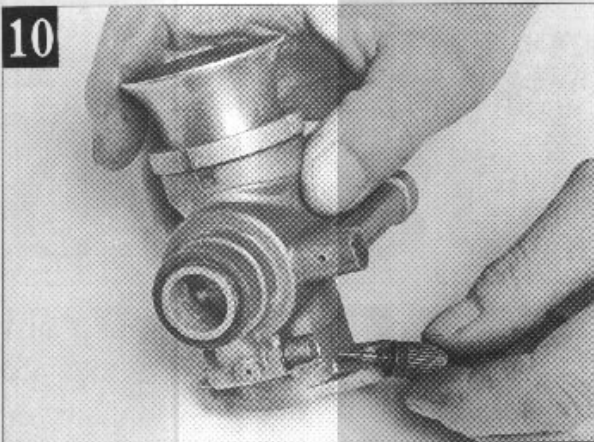
**7** The float chamber is secured to the mixing chamber by a large banjo bolt. This has a small cap nut which goes to the main jet. This nut has a taper seal so no washer is used. The needle jet screws in the top end.

As before, various sizes are available.

**8** To remove the jet block first remove the small locating screw in the side of the mixing chamber. The jet block can now be tapped out using a round wooden drift. If it seems tight immerse the body in boiling water and try again.

## AMAL TT, RN and GP carbs: part one

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**9** When refitting the jet block make sure the locating screw is correctly fitted in the slot in the side of the block.

**10** The pilot air adjuster can be unscrewed. It has a small click spring that engages with the serrations on the outside of the adjuster. There is a small spring inside the adjuster. Note the fine point on the adjuster. It is important not to screw in the adjuster too tight, this will damage that fine point or even break it off in the seating inside the carburettor.

One important difference with the pilot air adjustment is that screwing it in weakens the weakens the mixture and the reverse richens it. This is the reverse of standard carburetors. When setting the adjustment it has to be slightly rich otherwise starting can be difficult.

### THE RN (Remote Needle)

THE RN carb is very similar in appearance to the TT. The main difference, as its name suggests, is that the jet needle is moved out of the air stream into its own little chamber on the left hand side.

The other difference is that the jet block or choke adaptor is secured by two screws underneath the mixing chamber. There is no

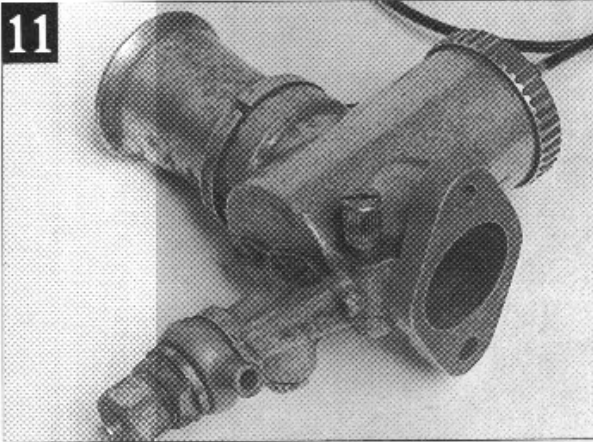
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need, normally, to remove the choke adaptor unless it is damaged.

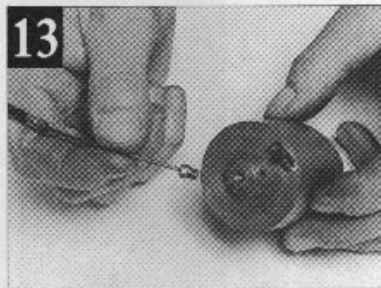
All tuning details are the same as for the TT model as already mentioned. The RN carb was quite difficult to tune and the racing men were pleased when the new GP carburettor was introduced in the Fifties.

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**11** The GP range superseded the TT and RN models. The GP1 was available in choke sizes from 7/8" to 1 1/2" and catered for all

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machines from racing 125cc Bantams to 500cc Gold Stars.

**12** On the GP the jet needle is suspended on the edge of the slide and fits in a hole in the choke adaptor. Because of this the spray tube in the intake is also offset.

**13** The throttle slides are very delicate and must be handled with care. The throttle cable is fitted with a small screwed adaptor that screws into the top of the slide.

**14** Note that the locking clip for the top ring sticks up above the ring. Make sure that when the petrol tank is fitted this does not touch the tank. If it does, vibration will quickly wear a hole in the tank, especially an alloy one. The top of the clip can also be ground level with the top of the ring.

**15** At the bottom of the mixture control is a hexagon plug. Under the plug is the pri-

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# AMAL

We regret that we no longer manufacture Monobloc and Pre-Monobloc Carburetors or spares.

However, we do still make and sell MkI and MkII Carburetors in a range of bore sizes from 22 to 40mm including Power Jet and Smoothbore Derivatives.

These date back to 1966 but will also retro fit many machines back to the 1930's and whilst not original they do allow the Motor Cycle to be used, which helps to preserve the original Carburettor.

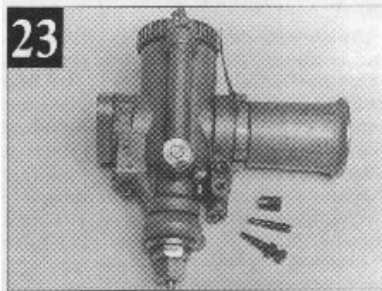
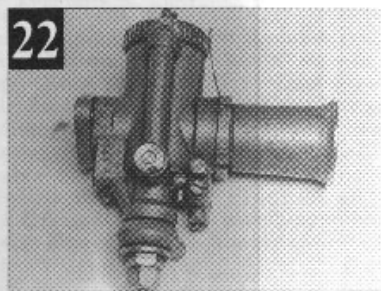
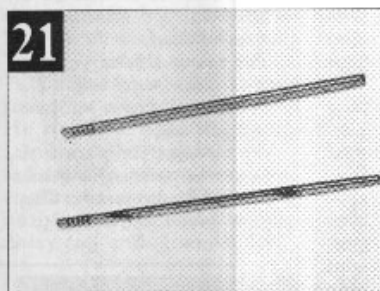
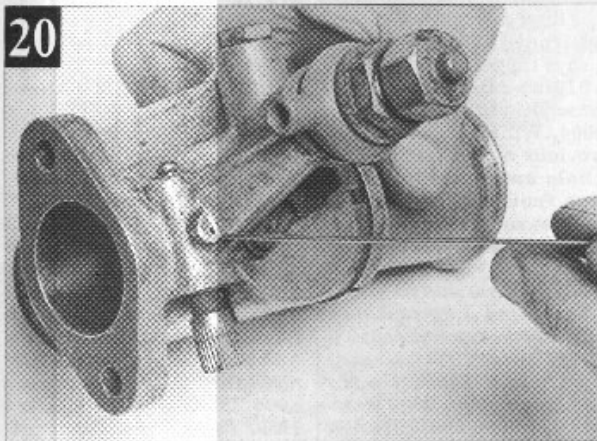
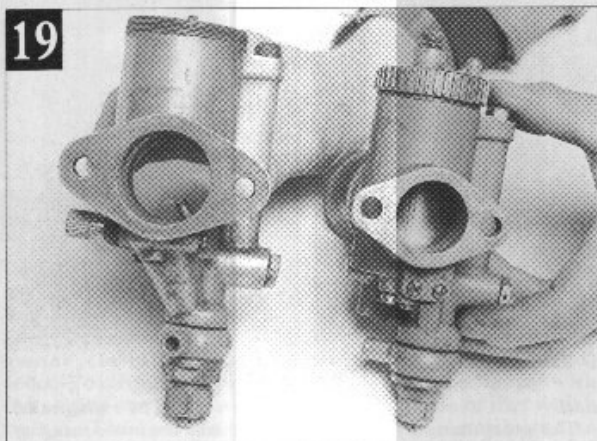
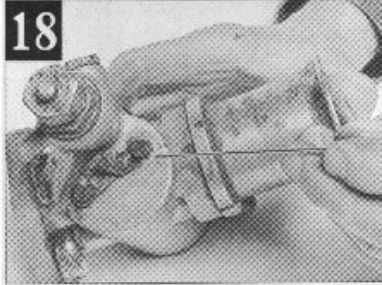
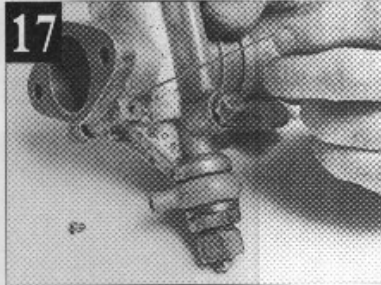
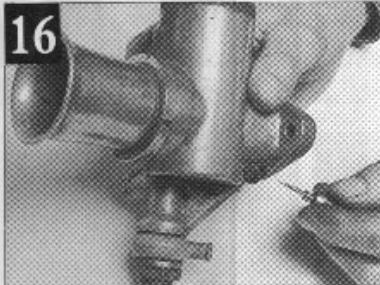
Contact your Dealer

## IMI Amal Ltd

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Telephone 021-356 2000 Telex 335959 IMICOM G  
Fax 021-356 7987

### GP1

**11** The GP range superseded the TT and RN models. The GP1 was available in choke sizes from 7/8" to 1 1/2" and catered for all



many air jet. This is available in different sizes but is not changed in the tuning sequence. The correct size would be fitted when the carburettor was assembled from new.

**16** The pilot air adjuster is similar to the TT model and previous comments regarding damage applies.

**17** Sometimes you find that when the adjuster is moved it does not change the mixture strength and seems hopelessly weak. It could be that the end of the needle has jammed in the seating and broken off. This can be checked by unscrewing the small plug screw opposite the adjuster and checking that the hole is not blocked.

**18** The choke adaptor is secured with two screws as on the RN. As before, it is not usual to disturb it unless it is damaged. There is a paper washer underneath it and only the correct thickness should be used.

**19** Apart from one or two exceptions all GP carbs of a choke size 1 5/32" or larger

have a flange fitting with stud centres of 65mm. Smaller sizes are two inch centres.

**20** Underneath the pilot mixture screw is a small bleed hole. This is for excess fuel to drain out instead of running into the engine. When the engine is running slowly a fine mist of fuel sometimes can be seen. If it becomes excessive, it's probably due to the float level being too high.

**21** Sometimes carburation can be very poor at one quarter to one half throttle. This can be caused by an incorrect jet needle being fitted. When a GP is used on a racing machine fitted with a megaphone, a weak needle is used. When the bike is fitted with a silencer this must be changed for a standard one. The type is stamped on the needle.

In the case of the 3GP carb a weak needle is stamped '3GP6' and the standard one marked '3GP'. Sometimes the marking is not clear, but if you look at the two needles you will notice that the standard one has a definite taper whereas the 'weak' version appears to have a constant diameter.

## GP2

**22** The GP2 was the final production model, virtually the same as the GP1 except for the pilot mixture system.

**23** The pilot mixture system is moved to the rear of the mixing chamber. Under the cap nut is a pilot jet as used on the monobloc carb. This is available in different sizes and can be changed as an aid to tuning. The adjusting screw is also a monobloc part and is secured by a locknut. On the GP2 the adjustment reverts to standard - screw in for rich and out for weak.

**NEXT MONTH:**  
the differing types  
of float chamber.  
April issue on sale  
March 17th.