

The Carburettor, together with the magneto and generator, (dynamos if you are a Pom), is one of those mystical instruments that not too many of us are familiar with and would rather leave to someone else to fiddle with. Like all three items noted above the carb is essentially a simple instrument and most "carburetion" problems in fact stem from the carb being the wrong model or size or wrong components fitted.

Most of the AMC bikes on our register are post-war but there is an increasing interest in the 1920's flat tank era and a substantial following also in the 1930's.

Basically, AMAC carburettors were used from 1912 to 1924, Binks carburettors from 1925 to 1928 and AMAL from 1929 onwards. (Ed's note: Amalgamated Carburettors were formed by the joining of Binks, AMAC and Brown & Barlow (B&B) in 1928). We will deal basically with AMAL carburettors here but if anyone wants information on Binks or AMAC we do have some parts listings and tuning data. AMAL made several basic changes in their carburettors, these changes occurring in 1933, 1939 and 1955, as far as we in the Register are concerned.

AMAL CARBURETTORS

The following notes were prepared from AMAL information issued by the company just after World War 2 and may be of interest to members. I am indebted to Alan Lines, formerly of Amal for this data. If anyone has accurate data on the explanation of Amal's actual codes in relation particularly to bore size and whether flange or clip fitting, O/D of stub, vertical or horizontal etc., I think this would be of interest. The main bore size data is fairly easy to assess but the remaining codes, numbers and letters remain a puzzle.

STANDARD NEEDLE TYPE MOTORCYCLE CARBURETTORS

Definition of Type Numbers

The standard Amal Needle Type Carburettor was supplied mainly in four types, namely the original type numbers of 4, 5, 6 and 29. These type numbers were in operation from 1929 to 1933.

In 1933 the material used for the Mixing Chamber Bodies was changed from brass to die castings, and therefore, in order to identify this change-over, the type numbers were altered 74, 75, 76, and 89.

During 1939 Amal introduced the Internal Air Type Carburettor which necessitated a modified mixing chamber body and jet block, the difference being that the four holes around the bottom of the mixing chamber body were eliminated and the jet block had a flat milled across the top of the base block with two primary air passages drilled through. To identify this, the type numbers were changed to 274, 275, 276, and 289.

However, this type was very quickly superseded by a further modification, as detailed in the next paragraph, and the only machines for which these were supplied in any quantities were Nortons.

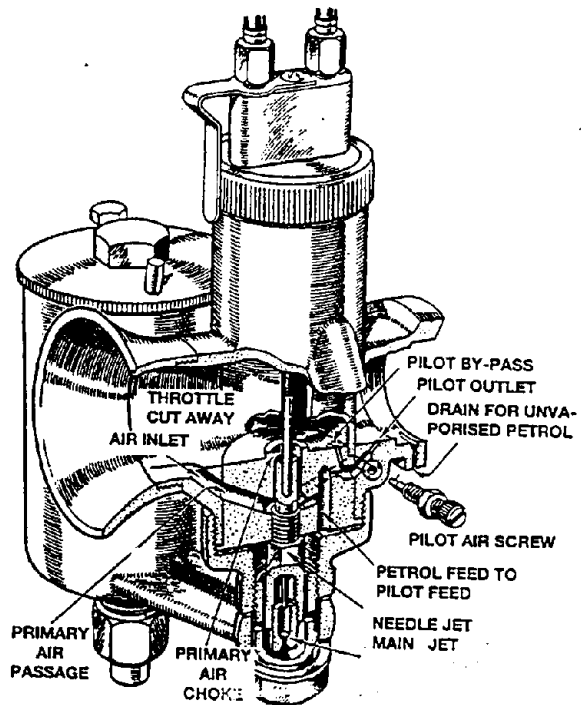
The further modification referred to is that the mixing chamber body had a primary air hole drilled through the bore of the main intake, and instead of the milled flat on the base of the block a primary air hole was drilled to correspond with that of the mixing chamber body. To identify this, the type numbers of the carburettor remained the same, but the letter "R" followed the complete type number.

The only changes to the standard carburettor, as can be seen from the above, were in the alteration to the mixing chamber bodies and jet blocks. All other parts remained the same throughout.

Interchangeability

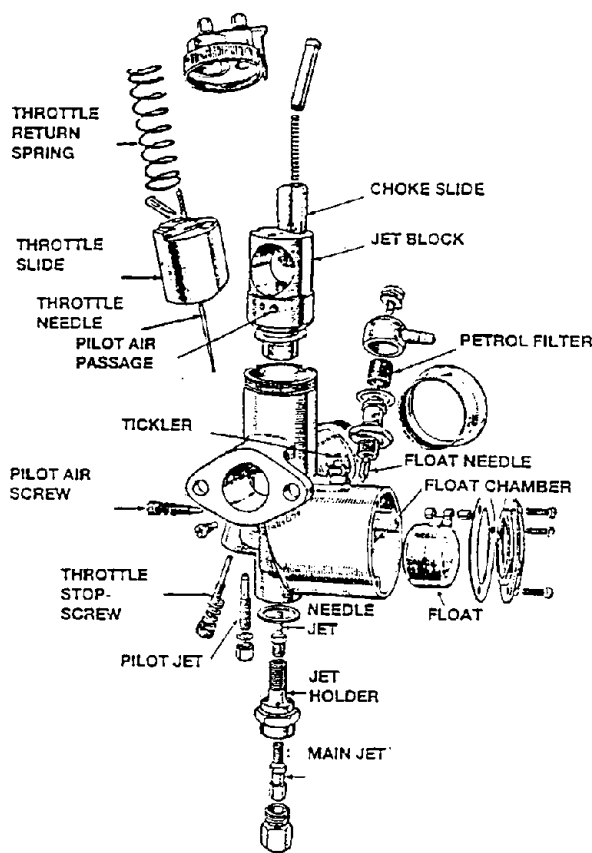
The internal air type mixing chamber can be used in place of the original external air type, providing that the corresponding internal air type jet block is also fitted. In like manner can the external air type mixing chamber body be fitted in place of the internal air type, providing the corresponding external type jet block is also fitted.

Regarding other mixing chamber parts, these have remained the same; for example, the jet needle for the original type 4 carburettor is the same as that used in the final type 274 carburettor, namely, part number 4/065.



System of Type Numbering

During the war period it was found necessary to adopt a new style of type number. Originally, the type of the carburettor was the same as that of the mixing chamber body, for example, the type 76/014 carburettor had a mixing chamber body part no. 76/014. This method of numbering gave no clue whatever as to the type of float chamber which was fitted, or any other special details.



The system of type numbering introduced in the war, however, still bore as a pre-fix the main type number, and this was followed by one or two letters, which were a key to Amal's specifications for the mixing chamber parts. Added to these numbers and letters was an oblique stroke followed by a further number and letter, which denoted the type of float chamber fitted, for example, a carburettor type number 276.AC/1A, when analysed, gives the following information:-

That the type of carburettor is 276, the letters AC are Amal's specification key, and the 1A following the oblique stroke denotes that the complete float chamber is part number 1A, which happens to be the standard large bottom feed float chamber.

The aforementioned is generally correct, although there are examples, but not many, of Type 276 carburettors having air holes around the bottom of the mixing chamber like the pre-war 76 type. The most significant thing as far as we are concerned is that AMC for some strange reason, continued to use type 76 pre-war carburettors on post war bikes right up to the introduction of the MONOBLOC. Why this was I don't know, maybe AMAL had surplus old stock and AMC got it cheap, but having said this, Norton also used these pre-war type carbs on their model 7 Dominator up to 1954.

If you are fitting an AMAL pre-monobloc carb to your bike make sure that the specification and components are correct for the year and size of your machine. One very important aspect is the bowl to mixing chamber angle.

On a twin, basically the inlet port on the engine is horizontal so the carb mixing chamber and the bowl must be vertical. On some singles the port is down-draft in the head and the mixing chamber must therefore be at an angle to the bowl due to the fact that the bowl must be vertical in all cases otherwise flooding will occur. This angle is 3° on some singles and 15° on others so it is most important to get it right!

Partly because of this problem, the MONOBLOC was introduced in 1955 and the angle of the carburettor does not affect the float shut-off. Also, the carburettor being in one piece incorporating the float chamber, there are less joints to leak petrol.

The major drawback to both pre-monobloc and monobloc carbs is that the material they are made of wears quite rapidly and a worn carburettor will not perform correctly. When they reach this stage an overhaul including a "re-bore" and sleeving is the only way to restore them to original performance.

If you have any doubt about what should fit your bike and its full specification, don't hesitate to contact the writer as we keep full AMAL specifications from 1933 to 1963 and a few other random fitments.

Norm & Lynda Maddock
VINTAGE MOTORCYCLE ENTHUSIASTS

