

**The AMAL
Track Racing Carburetter.**

**IS MADE IN TWO MODELS ONLY
WITHOUT NEEDLE JET CONTROL
FOR USE EXCLUSIVELY WITH
ALCOHOL FUELS.**

Supplied with :—

**Double Float Chambers, fitted with
Single Banjo Swivelling Petrol Pipe
Connections.
Three Gauze Air Intake Funnel.**

WHEN ORDERING specify :—

- 1.—WHICH MODEL YOU REQUIRE and if inclined, state the angle.
- 2.—Single control to the throttle or double control for throttle and mixture.
- 3.—If twist grip, lever or cables are required, state particulars.
- 4.—Name and details of engine.
- 5.—Name of fuel to be used.
- 6.—Are extra spare jets and throttles wanted.

AMAL

**TRACK RACING
CARBURETTER**

TYPE 27.

This Carburetter has been designed primarily to meet the conditions imposed by Track Racing and the use of Alcohol fuels ; it is fitted as standard with double Float Chambers to maintain a fuel level in the Jet when cornering in either direction. The through way is unobstructed and designed to allow the highest possible volumetric efficiency. It is of the plain jet pattern without needle control above the main jet.

The fuel supplied by the main jet is primarily mixed with air before it enters the choke block, the primary air being taken from outside through an orifice in the boss on the side of the mixing chamber body. This primary air may be alternatively fixed so making the Carburetter single control, or may be hand operated so providing a mixture control, thus making the Carburetter one with double control.

A pilot jet and by-pass are incorporated in the design to ensure easy starting and slow running. The actual fuel orifice of the pilot jet is fixed and a screw at the side of the Carburetter is provided to regulate the mixture by controlling the air. The Carburetter is frequently used without the mixture control at the side of the Carburetter, so once the correct setting is arrived at for the fuel and the conditions the engine is to run, the Carburetter is single controlled.

Type 27/002	{ 1 1/16" cross bore 1 1/4" clip fitting	} PRICE each 180s. 0d. without controls
Type 27/013	{ 1 1/8" cross bore 1 3/8" clip fitting	

EXTRAS.

Control cable up to 4 ft.	each	2s. 6d.
Midway adjuster	each	1s. 6d.
Twist grip for throttle ..	each	11s. 0d.
Single lever for mixture control	each	9s. 0d.

SPARES EXTRAS.

Interchangeable in both models.		
Throttles with various cutaways	each	8s. 6d.
Maximum cutaway No. 14.		
Jets, any size up to 1800 c.c.	each	2s. 6d.

All Prices are subject to alteration without notice.

AMAL LTD., BIRMINGHAM, England.

Telephone: BIRchfields 4571 (5 lines).

Telegrams: Amalcarb, Birmingham.

Tuning the Amal Track Racing Type Carburetter.

THE TUNING of the Track Racing Carburetter is carried out in three stages of throttle opening :—

- 1.—The Main Jet (three-quarter to full throttle).
Spare jets required for tuning.
- 2.—The Pilot Screw (closed to one-eighth throttle).
- 3.—Throttle Valve Cut-away (one-eighth to three-quarter throttle). *Spare throttles with different cut-aways may be required for tuning.*

The tuning should be carried out in the order mentioned.

The condition of the sparking plug should be carefully observed each time a trial is made, this being used as an indication of the full throttle mixture strength, or, in other words, whether the main jet is weak, or rich : A dry baked appearance being an indication of weak mixture, and, of course, a sooty appearance denoting rich mixture or too large a main jet, but attention would be drawn especially to the fact that the condition of the sparking plug can only be used to indicate the mixture strength at full throttle, and it should not be assumed that the main jet is too big if, after normal running, the sparking plug is found to be sooty, as this may quite easily have accumulated from too rich a slow-running mixture.

1. TO OBTAIN MAIN JET SIZE :—

Select a size of jet which gives maximum power and speed, bearing in mind that a powerful mixture may be the cause of overheating if it is too weak to keep the engine cool. A larger jet may be necessary than the minimum size for power, for this purpose of cooling and if the sparking plug should look dry and burnt a larger jet must be used which will not of necessity reduce the power.

If the primary mixture control is operated by hand control it should be set three quarters open during tests.

2. PILOT ADJUSTMENT.

To weaken slow-running mixture, screw pilot air adjuster anti-clockwise.

To richen slow-running mixture, screw pilot air adjuster clockwise.

TO START, slightly flood float chamber by gently depressing the tickler until fuel can be observed overflowing from the mixing chamber.

Set magneto half-advance; throttle slightly open; close air lever and start up the engine. After having warmed up the engine, the pilot can now be adjusted. It will be found that as the pilot air screw is screwed out, or weakened, the engine revs. will increase, necessitating the throttle being closed slightly, and it is a combination of throttle position and air adjustment which will give the desired idling or tick-over.

It is sometimes necessary to fully retard the magneto before good idling is obtained, this being usually the case when excessive valve overlap

or an early ignition timing is employed. Failure to secure good idling will probably be traced to one of the following causes :—

Air leaks at junction of carburetter and engine, or due to worn inlet valve stem or guide.

Faulty inlet or exhaust valve seatings.

Oily sparking plug.

Too much ignition advance.

Magneto contact breaker points dirty or too closely adjusted.

Short on high tension cable.

Sparking plug points too closely set.

3. THROTTLE VALVE CUT-AWAY.

After having set the slow running as explained above, slowly open the throttle valve, when, if the engine responds regularly, the valve cut-away is correct.

A weak mixture is indicated by spitting back through the air intake, and as a second check on this weak flat spot it will be found that if the air lever is closed the flatness will disappear, this pointing to the fact that a throttle valve with less cut-away is required.

A rich mixture, which is shown by black smoke from the exhaust, coupled with erratic running or eight-stroking, and which again is accentuated when the air valve is closed, points to the fact that a throttle valve with more cut-away is required. The number of cut-away is stamped on the top of the throttle valve, the higher the number the greater the cut-away.

The standard valve for single cylinder engines is a No. 12.

Having obtained correct "idling," Throttle Valve Number and Main Jet Size, the setting should be now in order.

A general Carburetter setting cannot be given for any particular machine because of the variety of alcohol mixtures and conditions under which they are used. Each Carburetter can be tuned according to the foregoing instructions for the actual conditions under which the machine is to be used. As an indication, for example, of starting to tune up J.A.P. Track Racing Engines on J.A.P. Racing Fuel, the following settings may be taken as a guide but not necessarily final :—

350 O.H.V. Single Control, type 27/002.

Throttle valve cut-away, 12.

Main jet No. 700 c.c.

500 O.H.V. Single Control, type 27/013.

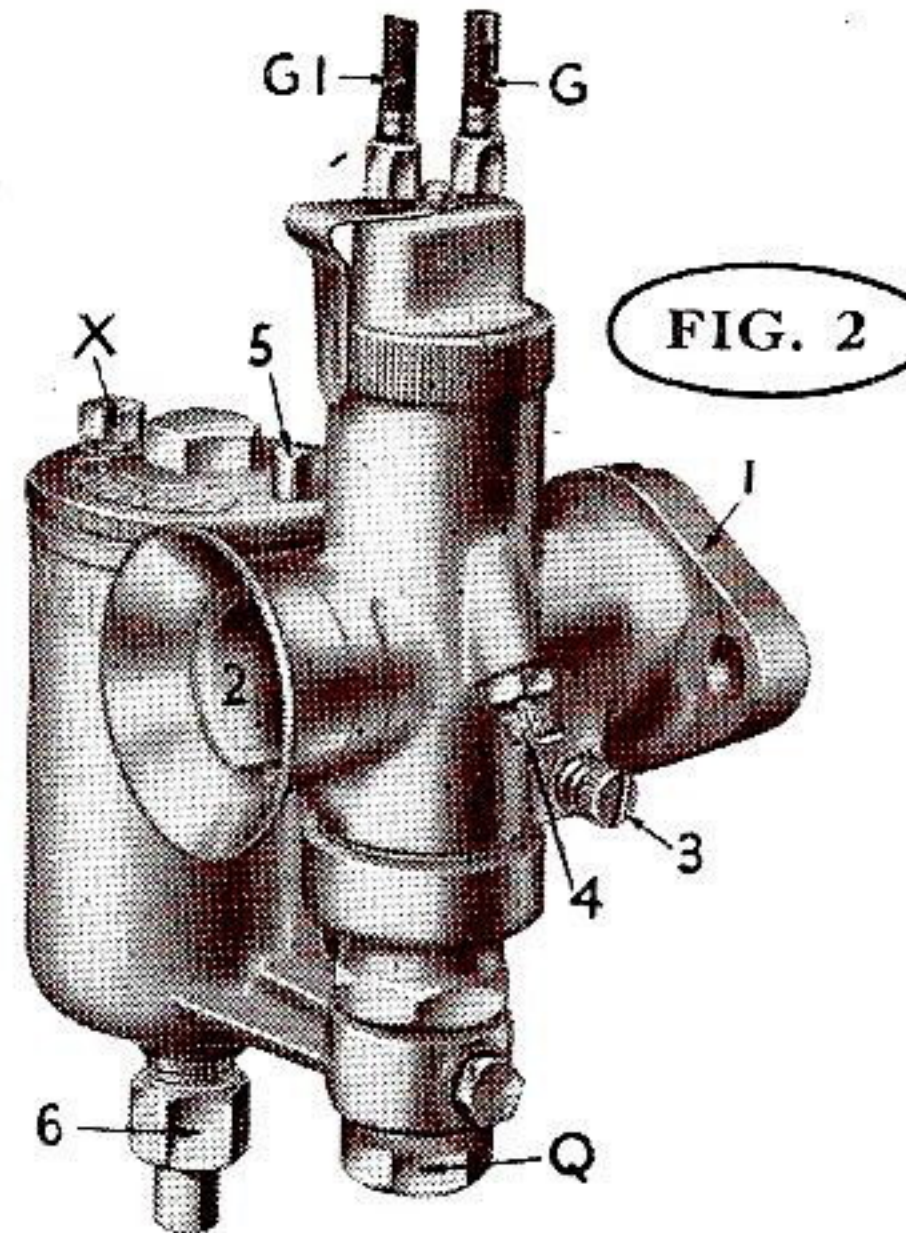
Throttle valve cut-away, 12.

Main jet No. 860 c.c.

The Float Chamber provides ample feed under all conditions, therefore, see that there is no restriction in the flow from the tank to float chamber. We recommend that fuel pipes should not be less than $\frac{1}{4}$ " inside diameter and fuel cocks should have large bores.

FIG. 1. Index to Photographs.

1. Connected to engine by flange or clip.
2. Cross bore or choke to be suitable for engine.
3. Pilot jet adjustment to give good tick over
4. Throttle stop screw to keep engine idling.
5. Tickler in float chamber to facilitate cold starting.
6. Petrol pipe connection direct or with banjo fitting, see figure 4.
7. Strangler for easy starting from cold on single lever carburetter.
- G. Throttle control cable.
- G1. Air control cable.
- X. Lock screw to prevent loss of float chamber lid.
- Q. Remove this cap to get at main jet.



Typical of standard models for Double Lever Control.

AMAL

Price List

FOR
the Carburetter of
Records and Successes

Flange or Clip Fitting.

With Piston Throttle and
Needle Jet Control
designed for all types of
Motor Cycle Engines,
for control by Twist Grip
or Lever.

HOW TO ORDER.

See general notes on foot of page 4.

Select a suitable carburetter for the machine by referring to page 2 for engines above 150 c.c. and pages 3 and 4 for smaller ones. Specify Make, Date and Particulars of Engine, and also specify as follows:—Double or Single Lever Control and if a single-lever Control, which type of Air Strangler. Is Carburetter to be Vertical, Horizontal or Inclined at 7° or 15°. Which side is Float Chamber on, looking into the Air Intake. State Top or Bottom Feed. State size of Attachment to Induction Pipe and state size of Cross Bore required. Are Control Cables, Levers, or Twist Grips required? If so, state diameter of handlebar.

IDENTIFICATION OF STANDARD CARBURETTER			List Price without Controls or Cables	ALTERNATIVE STANDARD SPECIFICATION			
See page	Throttle dia. inches m/m.	Carburetter Type No.		Attachment to Pipes	Attachment Flange	Float Chamber position when looking into intake (2)	Control from handlebar
4	5/8 15.9	52	31s. 6d.	3/4" outside dia.	not made	Right or Left Hand ..	Single only
4	3/4 19	53	39s. 0d.	1" "	not made	Right or Left Hand ..	Single only
3	5/8 15.9	259 and 265	31s. 6d.	3/4" "	not made	259 both, 265 Right only	Single only
3	3/4 19	261	39s. 0d.	1" "	not made	Right or Left Hand ..	Single only
3	7/8 22.2	223	41s. 3d.	1" "	not made	Left Hand only ..	Single only
2	1 25.4	274	44s. 3d.	1 & 7/8" "	2" or 40m/m.	Right or Left Hand ..	Double or Single
2	1 25.4	275	50s. 3d.	1 1/8 & 1" "	2" centres	Right or Left Hand ..	Double or Single
2	1 3/16 30.2	276	56s. 3d.	1 1/8 & 1 1/4" "	2" centres	Right or Left Hand ..	Double or Single
2	1 1/16 33.3	289	66s. 9d.	1 1/4" "	2" centres	Right or Left Hand ..	Double or Single

Special flanged or screwed outlets to Carburetters. 7s. 6d. extra.

EXTRAS FOR ALL TYPES:—State cable lengths; if a twist grip is required for throttle, and if an air lever is wanted?
 Control Cable & Wire, 3ft. standard (if over 4ft., 6d. a ft. extra) 2s. 6d. each. Midway Cable Adjusters 1s. 6d. each.
 Double Lever (clamp fitting) 10s. 6d. Single Lever (clamp fitting) 9s. 0d. Plate fixing .. 3s. 9d. extra on lever.
 Twist Grip:—racing type 10s. 6d. (for throttle only—suitable for touring). Spare Jets 8d. each.

PAGES 3 & 4. Extras for Types 52, 53, 223, 259, 261

- *Single Lever Control only, see pages 3 and 4.
- "A" as fig. 8, standard design, with strangler (7) .. no extra.
- "B" as fig. 8, with gauze intake instead of strangler, no extra.
- "C" as fig. 8, with large gauze and strangler (7) .. 3s. 0d.
- "D" as fig. 7, with air cleaner and strangler (7) .. 10s. 0d.
- "E" as fig. 9, with blow-back plate and strangler (7) 3s. 0d.
- "F" as fig. 9, but without strangler .. 2s. 3d.
- "G" as fig. 8, but with large gauze air intake instead of strangler (7) .. 2s. 3d.
- "H" as fig. 8, small gauze intake and strangler (7) 1s. 6d.

These carburetters are only made as vertical instruments with fixed top feed float chambers (either side), but a horizontal banjo petrol pipe connection can be supplied at an extra of 2s. 3d.

PAGE 2. Extras for Types 274, 275, 276 and 289.

- Single or Double Lever Control. See page 2.
- Double Float Chamber 16s. 3d.
- Twin Banjo petrol pipe connections 6s. 9d.
- Single Banjo, as shown on fig. 4 (6), page 2 3s. 0d.
- Inclined Carburetters, Standard angles 7° and 15°, no extra.
- Special angles to be quoted for by arrangement 3s. 9d.
- 3 gauze air intake 3s. 9d.
- Air filters in place of air intake bell, see list 325R.
- Clip fitting reduction liners to standard sizes available.
- Overhead levers for rod control, double 15s. 6d., single 11s. 6d.
- These carburetters have detachable float chambers that can be placed on either side and the throttle chamber can be vertical or horizontal, or set at angles of 7° or 15° from the vertical. Float chambers can be top or bottom feed.

All prices are subject to alteration without notice.

AMAL LTD., Holford Works, Perry Barr, BIRMINGHAM, 20 ENGLAND.

TELEPHONE: BIRCHFIELDS 4571 (5 lines).

TELEGRAMS: AMALCARB, BIRMINGHAM.

Price correction Jan. 1st, 1952. Twist Grip, Typ. 16. 11s. 6d.