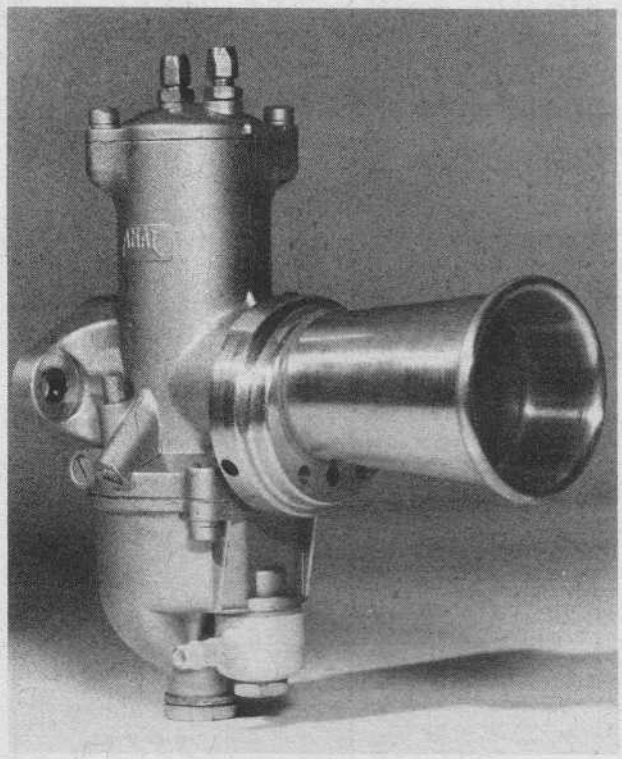
Amal Concentric Technical Manual



New magnesium Amal Concentric carb is now on the market. It looks just like the old one, but only weighs 15 ounces—about half the weight of the standard model. The velocity stack adds to performance, bringing the effective venturi size up a few steps higher than indicated.

IF YOU TOOK the time to read the last section on the retired Monobloc carb, then you know that the newer Concentric (though basically a superior design) had its share of problems. Designed in bugs, as it were. Most of the hassle was caused by a lack of available information from abroad. The few tuners who knew what they were doing sure didn't go out of their way to let anyone else know.

The Concentric was a lighter, slimmer carb than the 'Bloc and featured a float bowl directly under the main jet. This feature allowed the bike to be leaned at severe angles without affecting the flow of fuel to the main jet. However, the Concentric dealt the four stroke riders a serious jolt by removing the normal pilot jet that the Monobloc had. In its place was an insidious little pressed in bushing that defied tuning. Two stroke riders didn't have this problem, as all the two-stroke carbs came with a removable pilot jet. However, they had their own problems with frothing and slide breakage. Later models of the Concentric cured many of these problems, but the four stroke carbs are still coming through as of this writing with a non-adjustable pilot circuit. The Mark II promises to change all that.

One advantage that the Concentric did offer, though, was that it could pull more horsepower on the top end out of a given motor than other comparative carbs. Dyno tests have repeatedly backed this up. The bore of the Concentric is less interrupted than any other carb on the market as of this writing. Simply put, a 36mm Amal will flow more than a 36mm anything else. What it does to the low end response of the bike, is still open to hot debate, however.

Concentric carbs come in three series: The 600 Series goes 22mm, 24mm and 26mm. The 900 Series has 28mm, 30mm and 32mm and is probably the most common Amal in use today. The 1000 Series is generally found on racing machines and comes in 34mm, 36mm and 38mm.

A wide range of jets is available:

Pilot jets .... 15 to 70 in steps of 5.

Needle jets ... 105 to 110 in one point jumps; special jets go to 135 in 5 point jumps.

Main jets .... 60 thru 500 in 5 point jumps and 500 thru 1000 in 40 point jumps. Alcohol jets go from 1000 to 1900 in 100 point jumps.

Like other Amals, all the jets are interchangeable from carb to carb. Even the new Mark II can use the same jets that were good decades ago.

The only big changes in jetting is in the four stroke to two stroke. Pilot jets and main jets are identical in both, but needle jets and spray tubes vary. And the jet holders are different. Here is where most tuners make their mistakes. Needle jets part number for four strokes is 622/122, while the two stroke number is 622/079. A four stroke spray tube is called by its proper Christian part number of 622/074 and the two stroker is 622/075. Look at the photos for a comparison. The four stroke needle jet has a hole drilled through it and meters

through the bottom hole, while the two stroke needle jet is solid on the sides and is metered through the top hole. You can easily convert one carb from the other, with the alarming exception of taking the cruddy fixed pilot circuit out of the four stroke carb. It can be done, but Jerry Burak assured us that it was most assuredly not worth the trouble.

Why should he know? Simply because he knows more about Amal carbs than anyone in the country. We got much information from Jerry and his partner Norm at their place of business,

BURAK BYE-PRODUCTS
15170 Raymer St.
Van Nuys, Calif. 91405
(213) 780-1768

If this sounds like a plug, it is. But a highly recommended one. Jerry sells all Amal parts and welcomes tough problems. Give him a call if you have any question regarding Amals. But not collect, OK?

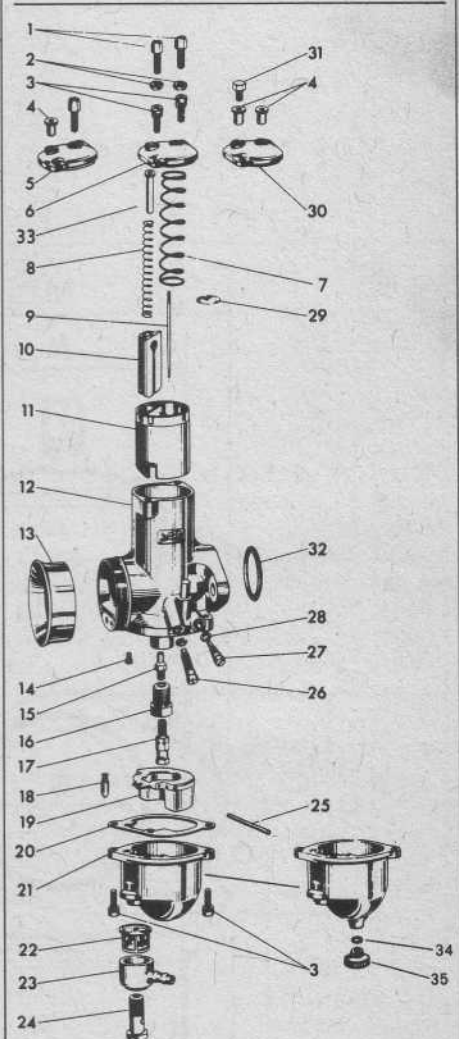
One of Jerry's favorite tuning tricks is take the two stroke carb (with the adjustable idle circuit) and convert it to four stroke parts and surprise people with the resultant performance gains.

He claims that most of the hassle that has been experienced with Concentrics is because people have never known how to tune them and set them up properly in the first place. Additionally, he recommends that a VITON tipped float needle be installed in *any* Amal and most of the loading up problems will go away. Apparently, the standard float needle allows gas to dribble in the motor at the oddest times. He sells this needle for a buck and a half and it fits

Parts List for Amal Concentric Carburetors

Key to illustration	Component	Carburetor Series 600	Carburetor Series 900	Carburetor Series 1000
1	Cable adjuster	4/035	4/035	4/035
2	Cable-adjuster locknut	5/077	5/077	5/077
3	Securing screw for float-bowl and mixing-chamber top	622/086	622/086	622/086
4	Cable ferrule for use with mid-cable adjuster	6/132A	6/132A	—
5	Mixing-chamber top for adjuster and ferrule	622/097	928/097	—
6	Mixing-chamber top (standard)	622/064	928/064	1034/064
7	Throttle-slide spring	622/131	622/131	1034/061
8	Choke-valve spring	622/129	622/129	—
9	Throttle needle (paired with needle jet 622/079)	622/063	928/063	1034/063
9	Throttle needle (paired with needle jet 622/122)	622/124	622/124	622/124
9	Throttle needle (for alcohol only)	622/099	928/099	1034/089
10	Choke valve	622/062	928/062	—
11	Throttle slide (specify cutaway)	622/060	928/060	1034/060
12	Carburetor body and tickler assembly	*	*	*
13	Velocity stack – standard	376/066	928/066	—
13	Velocity stack – 2 3/4 in. (*70 mm*) long	376/143	928/069	1034/070
13	Velocity stack – 2 5/16 in. (*59 mm*) long	—	928/070	—
14	Pilot jet	124/026	124/026	124/026
15	Needle jet (prefered for 2-cycle engines)	622/079	622/079	622/079
15	Needle jet (prefered for 4-cycle engines)	622/122	622/122	622/122
15	Needle jet (for alcohol only)	622/100	622/100	622/100
16	Jet holder	622/128	622/128	622/128
17	Main jet (specify size)	376/100	376/100	376/100
18	Float needle	622/068	622/068	622/068
18	Float needle (for alcohol only. Use with 622/054 float bowl)	622/149	622/149	622/149
19	Float	622/069	622/069	622/069
20	Float-bowl washer	622/073	622/073	622/073
21	Float bowl – 0.10 in. (*2.5 mm*) seating	622/050	622/050	622/050
21	Float bowl – 0.10 in. seating with drain plug	622/055	622/055	622/055
21	Float bowl – 0.062 in. (*1.6 mm*) seating	622/052	622/052	622/052
21	Float bowl – 0.062 in. seating with drain plug	622/057	622/057	622/057
21	Float bowl – 0.125 in. (*3.2 mm*) seating	622/051	622/051	622/051
21	Float bowl – 0.125 in. seating with drain plug	622/056	622/056	622/056
21	Float bowl – 0.156 in. (*4.0 mm*) seating (for alcohol only. Use with 622/149 float needle)	622/054	622/054	622/054
22	Filter	376/093	376/093	376/093
22	Filter (for alcohol only)	376/093B	376/093B	376/093B
23	Banjo, single, push-on (1/4 in. inside diameter tubing)	376/097	376/097	376/097
23	Banjo, single, threaded 1/4 in. BSP (5/16 in. tubing)	376/090	376/090	376/090
23	Banjo, single, push-on (5/16 in. tubing)	376/130	376/130	376/130
23	Banjo, double, 90°, push-on (5/16 in. tubing)	376/135	376/135	376/135
23	Banjo, double, 150°, push-on (5/16 in. tubing)	376/139	376/139	376/139
23	Banjo, double, 55°, push-on (5/16 in. tubing)	376/410	376/410	376/410
23	Banjo, double, 180°, push-on (1/4 in. tubing)	376/419	376/419	376/419
Not shown	Banjo washer (for alcohol only)	14/175	14/175	14/175
24	Banjo bolt	622/078	622/078	622/078
Not shown	Banjo bolt washer (for diecast banjos only)	13/163	13/163	13/163
25	Float spindle	622/071	622/071	622/071
26	Throttle stop adjusting screw	622/077	622/077	622/077
27	Pilot air adjusting screw	622/076	622/076	622/076
28	'O' rings	622/082	622/082	622/082
29	Needle clip	622/067	622/067	1034/065
30	Mixing-chamber top for two ferrules	622/098	928/098	—
31	Plug for mixing-chamber top	4/137A	4/137A	—
32	'O' ring for flange sealing	622/101	622/101	—
33	Choke valve guide	622/134	928/103	—
Not shown	Jet key and 'Pozidriv' screwdriver	622/104	622/104	622/104
34	Float-bowl drain-plug washer	622/151	622/151	622/151
35	Float-bowl drain plug	622/147	622/147	622/147
Not shown	Tickler stem	622/089	622/089	1034/067
Not shown	Tickler head	622/081	622/081	1034/068
Not shown	Tickler spring	14/032	14/032	1034/073
Not shown	Tickler body	—	—	1034/074
Not shown	Main-jet filter	928/071	928/071	928/071
Not shown	Cable sheath	—	—	316/083
Not shown	Air-intake adapter	—	—	1034/075

SPARE PARTS LIST FOR SERIES 600, 900 & 1000 CARBURETTERS



all Amals, from the oldest to the newest. And it will be standard equipment on the new Mark II carb.

Burak used to do all the tuning for J. N. Roberts. You may have heard of him. One of the tricks he use to do on J. N.'s Husky, was to use the smallest capacity float (there are two available) and the biggest banjo fitting available. The 5/16" I.D. fitting flows like a ruined kidney. This gave less area in the float chamber and made J.N.'s bike far less susceptible to changes in altitude. But don't try this unless you get a lot of gas flowing in the float chamber.

Slides in Concentric Series carbs are few, but apparently sufficient for tuning. Needle selection is limited. The 600 Series goes from 2.0 cutaway to 4.0 in .5 jumps. The 900 Series from 2.0 to 5.0 in the same jumps, and the 1000 Series from 2.0 to 3.5 likewise. The newer Mark II will go from 2.0 to 4.0.

Jerry feels that whatever shortcomings the Concentric may have, the performance gains are worth it. But, the new Mark II is supposed to have all the benefits and none of the hassles.

Series 600 and 900 Carburetors

GENERAL INFORMATION

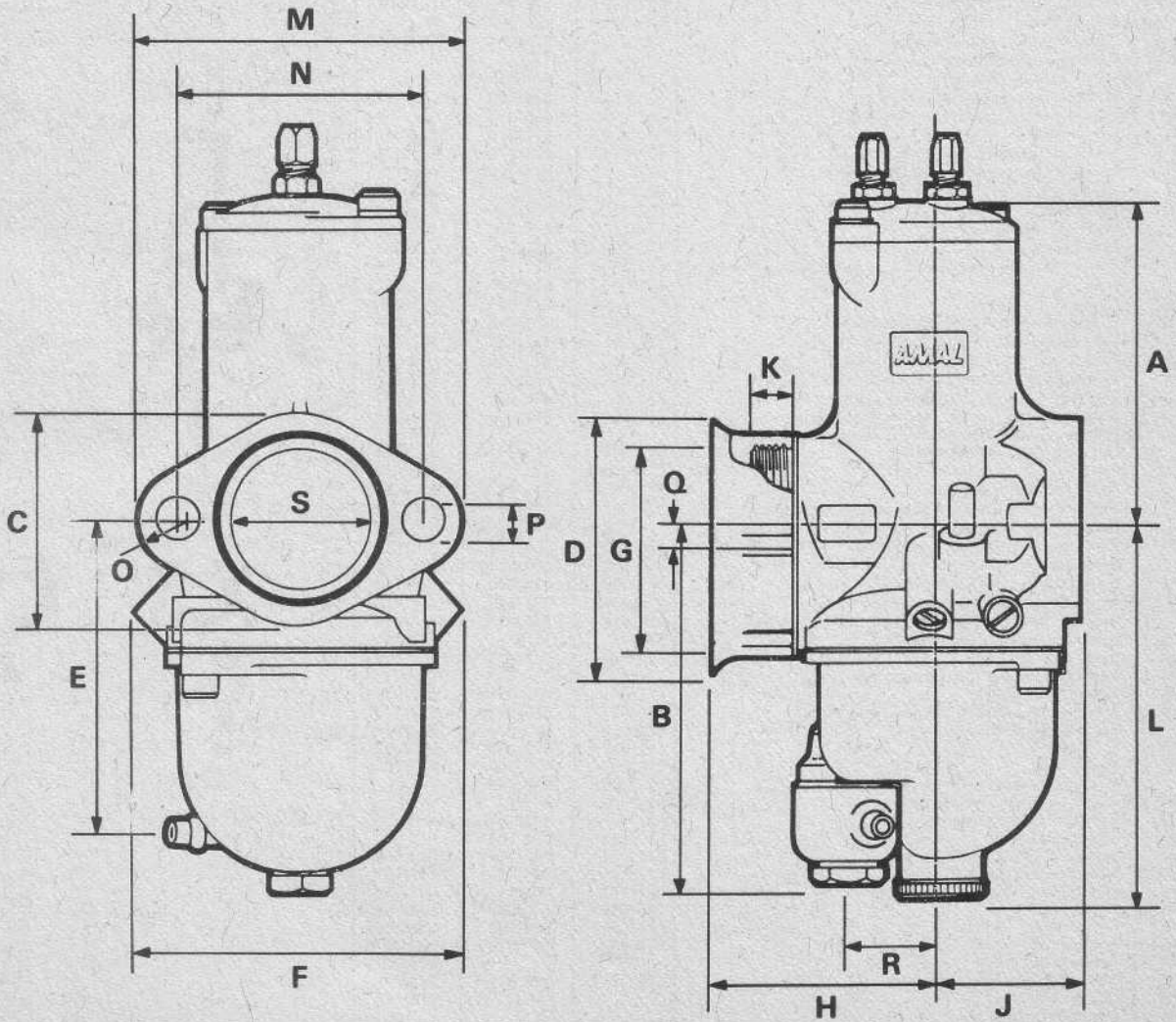
These carburetors are supplied right hand as standard with the tickler, throttle stop and pilot air adjustment positioned on the right hand side as viewed from the air intake end. Left hand instruments are available with tickler,

Amal Concentric Carburetor Dimensions

		A	B	C	D	E	F	G	H	J
Series 600	inches	2.41	2.90	1.63	1.94	2.43	2.56	1.63	1.84	1.30
	mm	*61.2*	*73.6*	*41.3*	*49.2*	*61.7*	*65.0*	*41.2*	*46.4*	*33.0*
Series 900	inches	2.74	3.02	1.69	2.13	2.55	2.75	1.81	1.84	1.30
	mm	*69.6*	*76.6*	*42.9*	*53.9*	*64.7*	*69.8*	*46.0*	*46.4*	*33.0*
Series 1000	inches	3.00	3.13	2.05	2.76	2.66	3.00	2.06	3.93	1.38
	mm	*76.2*	*79.6*	*52.0*	*70.0*	*67.7*	*76.2*	*52.4*	*98.8*	*35.0*

		K	L*	M	N	O†	P‡	Q	R	S
Series 600	inches	0.30	3.13	2.63	2.00	0.38	0.34	0.19	0.78	Bore
	mm	*7.6*	*79.6*	*66.7*	*50.8*	*9.5*	*8.7*	*4.7*	*19.8*	*22, 24 or 26*
Series 900	inches	0.30	3.23	2.63	2.00	0.38	0.34	0.19	0.78	Bore
	mm	*7.6*	*82.1*	*66.7*	*50.8*	*9.5*	*8.7*	*4.7*	*19.8*	*28, 30 or 32*
Series 1000	inches	0.32	3.35	3.35	2.56	0.52	0.34	0.18	0.78	Bore
	mm	*8.0*	*85.1*	*85.0*	*65.0*	*13.2*	*8.7*	*4.5*	*19.8*	*34, 36 or 38*

* This dimension only applies to carburetors fitted with drain plug (optional extra).
† Flange radius.
‡ Hole diameter.



throttle stop and pilot air adjustment on the opposite side.

Carburetors are normally supplied with an air valve which is cable operated from the handlebar position, if requested this valve can be omitted and the mixing chamber top sealed with a plug screw.

The standard range of float chamber connections available are as follows:

Banjo part No. 375/068 Single feed for 3/16" bore pipe.

Banjo Part No. 376/090 Single feed screwed ¼" BSP complete with nut and nipple for copper pipe.

Banjo part No. 376/097 Single feed for ¼" bore flexible pipe.

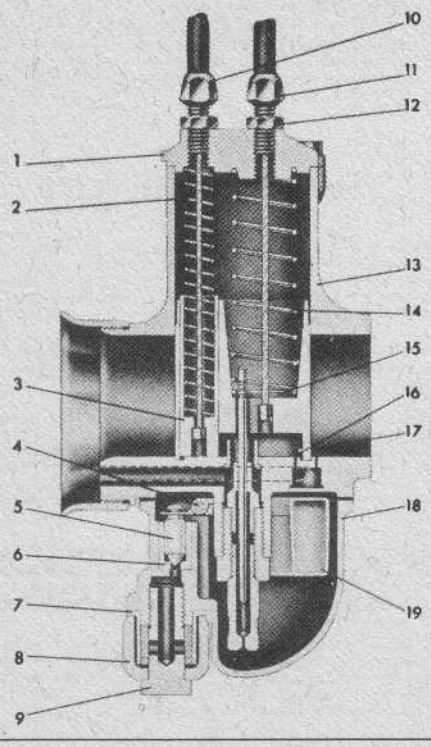
Banjo part No. 376/098 Double feed for ¼" bore flexible pipe.

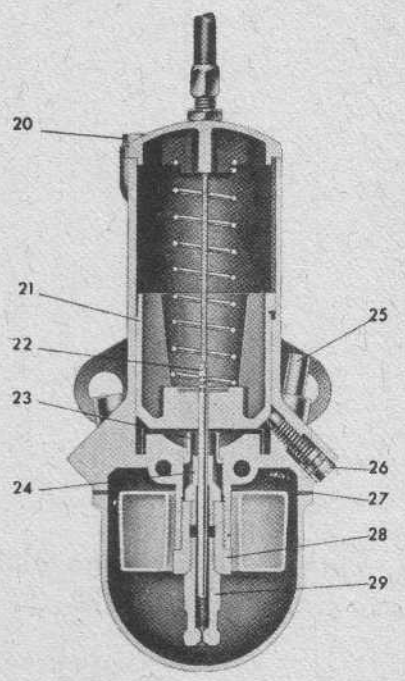
Banjo part No. 376/108 Double feed screwed ¼" BSP complete with nuts and nipples for copper pipes.

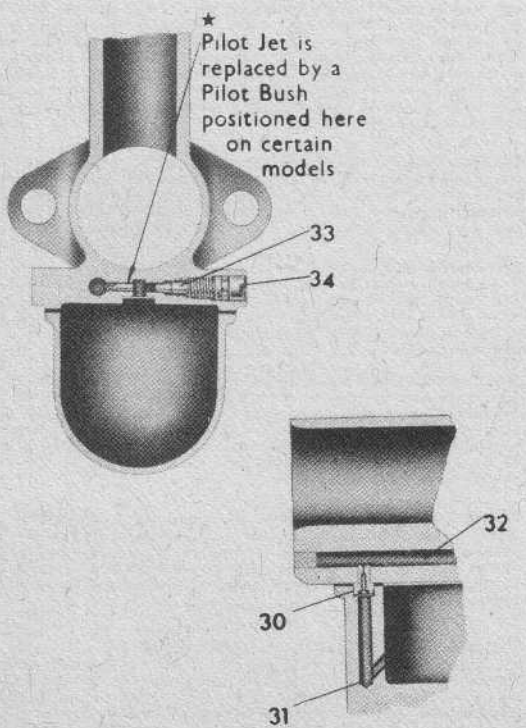
Important

When incorporating the latest metering system the following three items must be fitted as a set: Throttle Needle 622/124, Needle Jet 622/122 and Jet Holder 622/128.

It is permissible to fit the latest Jet Holder 622/128 with the original Throttle Needle and Needle Jet, but not possible to fit the new Needle and Needle Jet with the original Jet Holder, obviously the Needle and Needle Jet must be paired. ●







1 - MIXING CHAMBER TOP.
2 - AIR VALVE SPRING.
3 - AIR VALVE.
4 - FLOAT SPINDLE.
5 - FLOAT NEEDLE.
6 - NEEDLE SEATING.
7 - FILTER GAUZE.
8 - BANJO.
9 - BANJO BOLT.
10 - CABLE ADJUSTER (AIR).
11 - CABLE ADJUSTER (THROTTLE).
12 - CABLE ADJUSTER LOCKNUTS.
13 - CARBURETTER BODY.
14 - THROTTLE VALVE SPRING.
15 - JET NEEDLE CLIP.
16 - PILOT BY-PASS.
17 - PILOT OUTLET.
18 - FLOAT CHAMBER BODY.
19 - FLOAT.
20 - MIXING CHAMBER TOP SCREWS.
21 - THROTTLE VALVE.
22 - JET NEEDLE.
23 - CHOKE TUBE.
24 - NEEDLE JET.
25 - TICKLER.
26 - THROTTLE ADJUSTING SCREW.
27 - FLOAT CHAMBER WASHER.
28 - JET HOLDER.
29 - MAIN JET.
★ 30 - PILOT JET.
31 - PILOT JET FEED PASSAGE.
32 - FEED PASSAGE FROM PILOT JET.
33 - PILOT AIR FEED PASSAGES.
34 - PILOT AIR ADJUSTING SCREW.

Carburetor Settings List 1969, 1970

MACHINE	Carburetter No. 1969	1970
A.J.S.		
250 Scrambler Y4	R932/17	R932/17
380 Scrambler Y5	R1034/3	R1034/3
B.S.A.		
175 Bantam 175	R626/17	R626/17
175 Bushman 175	R626/17	R626/17
247 Starfire B25	R928/8	R928/8
441 Shooting Star B44SS	R930/38	R930/38
441 Victor Special B44US	R930/38	R930/38
499 Royal Star A50	R626/19	R626/19
654 Firebird Scrambler A65SS A65FS	R930/34	R930/34
	L930/35	L930/35
654 Lightning A65L	R930/34	R930/34
	L930/35	L930/35
654 Thunderbolt A65T	R928/6	R928/6
740 Rocket 3 A75R	R626/14-16	R626/14-16
	L626/15	L626/15
BULTACO		
Lobito Mk. 3		R622/405
Lobito Mk. 5		L622/406
Lobito 125		L625/405
Sherpa S100		R625/406
Sherpa S100		L625/407
Campera 125 Mk. 2		R625/408
Campera 125 Mk. 2		L625/409
Lobito 125		L625/410
Lobito 125		R625/425
Pursang 175 Mk. 3 - Mk. 4		R930/409
Pursang 175 Mk. 3 - Mk. 4		L930/410
Matador Mk. 3		R932/413
Matador Mk. 3		L932/414
Metralla Mk. 2		R932/415
Metralla Mk. 2		L932/416
El Montadero El Bandido		R932/417
El Montadero El Bandido		L932/418
TS 350		R1038/5
TS 350		L1038/6

MACHINE	Carburetter No. 1969	1970
GILERA (ARGENTINA)		
	R622/2	R622/2
GREEVES		
250cc	R932/3	R932/3
MONTESSA		
Cota TT	L627/411	L627/411
NORTON VILLIERS		
Commando	R930/30	R930/46
	L930/31	L930/47
SANGLAS S.A.		
400	R930/415	R930/415
TRIUMPH		
Tiger T100 100c	R626/8	R626/25
	L626/9	R626/26
100T & 100R	R626/10	L626/27
	R930/23	R930/23
TR6, TR6R, TR6C	R930/9	R930/9
T120, T120R	L930/10	L930/10
	R626/14-16	R626/14-16
T150 Trident	L626/15	L626/15
TR25W	R928/20	R928/20
VELOCE		
Thruxton		R1036/4
Venom	R930/15	R930/29

Carburetor Settings List 1971 and 1972

MACHINE	Carburetter No. 1971	1972
A.J.S.		
250 Scrambler Y4	R932/13	—
380 Scrambler Y5	R1034/3	R1034/3
B.S.A.		
247 Starfire B25	R928/20	R928/20
654 Firebird A65SS A65-FS	R930/72	—
	L930/73	—
654 Lightning	R930/70	R930/70
	L930/71	L930/71
654 Thunderbolt A65-T	R928/17	R928/17
740 Rocket 3 A75-R	R626/61/63	R626/61/63
	L626/62	L626/62
BULTACO		
Lobito 175 Mk. 4	L930/403	L930/403
Pursang 175	R930/404	R930/404
Pursang 175	L930/405	L930/405
Sherpa S		R930/406
Sherpa S		L930/407
Sherpa S175Y 125 Mk. 3	R930/411	R930/411
Sherpa S125Y K125 Mk. 3	L930/412	L930/412
Pursang 125 Mk. 3	R930/413	R930/413
Pursang 125 Mk. 3	L930/414	L930/414
Pursang 250 Mk. 5		L930/416
Bandido	R932/403	R932/403
Bandido	L932/404	L932/404
Pursang 250	R932/405	R932/405
Pursang 250	L932/406	L932/406
Pursang 250 Mk. 3	R932/408	R932/408
Pursang 250 Mk 3	L932/409	L932/409
El Montadero	R932/411	R932/411
El Montadero	L932/412	L932/412
Pursang Mk. 4	R932/419	R932/419
Pursang Mk. 4	L932/420	L932/420
Pursang 250 Mk. 4 USA	R932/424	R932/424
Pursang 250 Mk. 4 USA	L932/425	L932/425
Kit Metralla Mk. 2	L932/426	L932/426
Matador	L932/427	L932/427
Bandido 360 USA Mk. 2	L932/428	L932/428
Matador SD Mk. 4		R932/430
Matadero Mk. 2	L932/431	L930/431
Pursang Astro		L1038/7
Sherpa T		L627/412
DALESMAN		
Puch 125	R626/55	
DUCATI		
750 GT	R930/76	R930/76
	L930/77	L930/77
250		R627/408

MACHINE	Carburetter No. 1971	1972
GILERA (ARGENTINA)		
	R622/2	R622/2
GREEVES		
250	R932/3	R932/3
380 Q.U.B. Griffon		R1034/3
HUSQVARNA		
125	L932/23	L932/23
K.T.M.		
175	R930/75	R930/75
MAICO		
	R1036/2	R1036/2
MONTESSA		
Cota 247	R627/406	R627/406
Cota 247	L627/407	L627/407
Caprra 125 MX	L627/410	L627/410
Cota 247	L627/413	L627/413
King Scorpion	L627/414	L627/414
Cota TT	L627/411	L627/411
MOTO GUZZI		
750 Twin		R930/80
		L930/81
NORTON VILLIERS		
Commando	R930/68	R930/68
	L930/69	L930/69
Combat		R932/19
		L932/20
OSSA		
Trials	L627/416	L627/416
TRIUMPH		
100C	R626/32	R626/52
100T 100R	R626/53	R626/53
	L626/54	L626/54
TR6R TR6C	R930/60	R930/60
T120R	R930/66	R930/66
	L930/67	L930/67
T150R Trident	R626/47-48-49	R626/61 L626/62 R626/63
TR25W	R928/20	R928/20
WASSELL		
Trials 125		R622/7

HOW THE CARBURETTER WORKS

The carburetter proportions and atomises the right amount of petrol with the air that is drawn in by the engine because of the correct proportions of jet sizes and the main choke bore. The float chamber maintains a constant level of fuel at the jets and cuts off the supply when the engine stops.

The throttle control from the handlebar controls the volume of mixture and therefore the power, and at all positions of the throttle the mixture is automatically correct. The opening of the throttle brings first into action the mixture supply from the pilot jet system for idling, then as it progressively opens, via the pilot by-pass the mixture is augmented from the main jet, the earlier stages of which action is controlled by the needle in the needle jet. The pilot jet system is supplied by the pilot jet (30) which is detachable on removal of the float chamber. On certain other models no pilot jet is fitted but a pilot bush is inserted in the continuation of the pilot air adjusting screw passage. The main jet does not spray directly into the mixing chamber, but discharges through the needle jet into the primary air chamber, and goes from there as a rich petrol-air mixture through the primary air choke into the main air choke.

The carburetters usually have a separately operated mixture control called an air valve, for use when starting from cold, and until the engine is warm ; this control partially blocks the passage of air through the main choke.

HINTS AND TIPS

STARTING *from cold.* Turn on fuel supply, set ignition (if manually operated) for best slow running, depress tickler to flood float chamber, close air valve, open throttle slightly and start engine. When engine starts open air valve and close the throttle ; if engine begins to falter, partially close the air valve until engine is warm, then set in fully open position.

STARTING, *engine hot.* Open throttle slightly and start engine. It should not normally be necessary to flood the float chamber or close the air valve when starting a warm engine.

STARTING, *general.* Experience will show when it is necessary to flood the carburetter or use the air valve and also the best setting of the throttle valve. If the carburetter has been over-flooded or strangled, which would result in a wet engine and over-rich starting mixture—fully open the throttle valve and air valve, give the engine several turns to clear the richness, then start again with the air valve fully open and the throttle valve slightly open.

STARTING, SINGLE LEVER CARBURETTERS. OPEN THE THROTTLE VERY SLIGHTLY FROM THE IDLING POSITION AND FLOOD THE CARBURETTER MORE OR LESS ACCORDING TO THE ENGINE BEING COLD OR HOT RESPECTIVELY.

CABLE CONTROLS. See that there is a minimum of backlash when the controls are set back and that any movement of the handlebar does not cause the throttle to open ; this is done by the adjusters on top of the carburetter, after releasing the adjuster locknuts. See that the throttle valve shuts down freely, then reset locknuts.

PETROL FEED. A filter gauze is fitted at the inlet to the float chamber, to remove this gauze unscrew the banjo bolt (9) the banjo and filter gauze can then be removed. Before replacement ensure that the filter gauze is both clean and undamaged and check fuel supply by momentarily turning on fuel tap. Vertical loops in petrol pipes must be avoided to prevent air locks. Float chamber flooding may be due to a worn float needle but nearly all flooding and blockage of the filter gauze with new machines is due to impurities from the tank. Periodically clean out filter gauze and float chamber until the trouble ceases or alternatively the tank may be drained and swilled out, etc.

FIXING CARBURETTER AND AIR LEAKS. Erratic slow running is often caused by air leaks, so verify there are none at the point of attachment to the cylinder or inlet pipe. A sealing ring is fitted into the attachment flange of the carburetter. Also in old machines look out for air leaks caused by a worn throttle or worn inlet valve guide.

BANGING IN EXHAUST may be caused by too weak a pilot mixture when the throttle is closed or nearly closed—also it may be caused by too rich a pilot mixture and an air leak in the exhaust system ; The reason in either case is that the mixture has not fired in the cylinder and has fired in the hot silencer. If the banging happens when the throttle is fairly wide open the trouble will be ignition—not carburation.

BAD PETROL CONSUMPTION of a new machine may be due to flooding, caused by impurities from the petrol tank lodging on the float needle seat and so prevent its valve from closing. Flooding may be caused by a worn float needle valve. Also bad petrol consumption will be apparent if the needle jet (24) has worn ; it may be remedied or improved by lowering the needle in the throttle, but if it cannot be—then the only remedy is to get a new needle jet.

AIR FILTERS. These may affect the jet setting, so if one is fitted afterwards to the carburetter the main jet may have to be smaller. If a carburetter is set with an air filter and the engine is run without it, take care not to overheat the engine due to too weak a mixture ; testing with the air valve (page 5), will indicate if a larger main jet and higher needle position are required.

EFFECT OF ALTITUDE ON CARBURETTER. Increased altitude tends to produce a rich mixture. The greater the altitude, the smaller the main jet required. Carburetters ex-works are set suitable for altitudes, up to 3,000 feet approximately. Carburetters used constantly at altitudes 3,000 to 6,000 feet should have a reduction in main jet size of 5 per cent. and thereafter for every 3,000 feet in excess of 6,000 feet altitude further reductions of 4 per cent., should be made.

RE-ASSEMBLING

When replacing the valve assembly see that the jet needle goes into the holes in the choke tube, needle jet and main jet and that both the throttle and air valve spring locate correctly in the mixing chamber top.

When refitting the float, engage the float needle recess in the horseshoe section of the float and fit in float chamber. Check that the needle jet (24) jet holder (28) and main jet (29) are fully tightened together before screwing assembly into the body.

HOW TO TRACE FAULTS

There are only two possible faults in carburation, either richness or weakness of mixture.

INDICATIONS OF :—

RICHNESS.	WEAKNESS.
Black smoke in exhaust.	Spitting back in carburetter.
Petrol spraying out of carburetter.	Erratic slow running.
Four strokes, eight-stroking.	Overheating.
Two strokes, four-stroking.	Acceleration poor.
Heavy, lumpy running.	Engine goes better if :—
Sparking plug sooty.	Throttle is not wide open or Air Valve is partially closed.

If richness or weakness is present, check if caused by :—

(1) Petrol feed. — Check that jets and passages are clear, that filter gauze in float chamber banjo connection is not choked with foreign matter, and that there is ample flow of fuel. Check there is no flooding.

(2) Air leaks. — At the connection to the engine or due to leaky inlet valve stems.

(3) Defective or worn parts. — As a loose fitting throttle valve, worn needle jet, loose jets.

(4) Air cleaner being choked up.

(5) An air cleaner having been removed.

Removing the silencer or running with a straight through pipe requires a richer setting.

Having verified the correctness of fuel feed and that there are no air leaks, check over ignition, valve operation and timing. Now at throttle position shown on page 7, fig. 5, test to see if mixtures are rich or weak. This is done by partially closing the air valve, and if engine runs better weakness is indicated, but if engine runs worse richness is indicated.

To remedy, proceed as follows :—

	To cure richness,	To cure weakness.
Position 1.	Fit smaller main jet.	Fit larger main jet.
Position 2.	Screw out pilot air adjusting screw.	Screw pilot air adjusting screw in.
Position 3.	Fit a throttle with larger cutaway (page 6).	Fit a throttle with smaller cutaway (page 6).
Position 4.	Lower needle one or two grooves (page 6).	Raise needle one or two grooves (page 6).

NOTE. It is not correct to cure a rich mixture at half throttle by fitting a smaller main jet because the main jet may be correct for power at full throttle : the proper thing to do is to lower the needle.

PARTS TO TUNE UP WITH

THROTTLE ADJUSTING SCREW (26). Set this screw to hold the throttle open sufficiently to keep the engine running when the twist grip is off. An "O" ring is fitted to the screw to hold this adjustment by friction.

MAIN JET (29). The main jet controls the petrol supply when the throttle is more than three-quarters open, but at smaller throttle openings although the supply of fuel goes through the main jet, the amount is diminished by the metering effect of the needle in the needle jet. Each jet is calibrated and numbered so that its exact discharge is known and two jets of the same number are alike. NEVER REAMER A JET OUT, GET ANOTHER OF THE RIGHT SIZE. The bigger the number the bigger the jet.

To remove the main jet, remove the float chamber, the exposed main jet can then be unscrewed from the jet holder (28).

Carburetor Settings List 1973

MACHINE	Carburetter No. 1973
A.J.S.	
380 Scrambler V5	R1034/3
410 Scrambler	R1034/3
B.S.A.	
200 T20 (French Army)	R622/10
740 Rocket 3 A75-R	R626/66 L626/67 R626/68
740 T150 Hurricane	R626/69 L626/70 R626/71
Moto-Cross 500	R932/28
BOUDET	L1036/9
BULTACO	
Lobito 100 Mk. 3	R622/406
Lobito 125	L625/405
Sherpa S100	R625/406
Sherpa S100	L625/407
Campera 125 Mk. 2	R625/408
Campera 125 Mk. 2	L625/409
Lobito 125 Mk. 4 and Mk. 5	L625/410
Sherpa T350	L625/414
Alpina 175	L625/415
Lobito 175 Mk. 6	L625/415
Sherpa T	L627/412
Alpina 250 and 350	L627/412
Pursang 125 Mk. 6	L627/420
Lobito 175 Mk. 4 and Mk. 5	L930/403
Pursang 175	R930/404
Pursang 175	L930/405
Sherpa S175 and 200	R930/406
Sherpa S175 and 200	L930/407
Sherpa S200	R930/408
Pursang 175 Mk. 3 and Mk. 4	R930/409
Pursang 175 Mk. 3 and Mk. 4	L930/410
Sherpa S125 and 125 Mk. 2	R930/411
Sherpa S125 and 125 Mk. 2	L930/412
Pursang 125 Mk. 3	R930/413
Pursang 125 Mk. 3	L930/414
Pursang 125 Mk. 5	L930/416
Bandido 350 and 360	R932/403
Bandido 350 and 360	L932/404

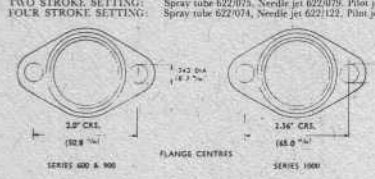
MACHINE	Carburetter No. 1973
BULTACO (continued)	
Pursang 250	R932/405
Pursang 250	L932/406
Pursang 250 Mk. 3	R932/408
Pursang 250 Mk. 3	L932/409
Montadero 360	R932/411
Montadero 360	L932/412
Matador Mk. 3	L932/413
Matador Mk. 3	L932/414
Metralla Mk. 2	R932/415
Metralla Mk. 2	L932/416
Bandido 350 and 360 Euro Mk. 2	R932/417
Bandido 350 and 360 Euro Mk. 2	L932/418
Montadero 360 USA	R932/417
Montadero 360 USA	L932/418
Pursang Mk. 4 Europa	R932/419
Pursang Mk. 4 Europa	L932/420
Pursang 250 Mk. 4 USA	R932/424
Pursang 250 Mk. 4 USA	L932/425
Kit Metralla Mk. 2	L932/426
Matador Mk. 4 USA	L932/427
Nacional Mk. 4	L932/427
Bandido 360 USA Mk. 2	L932/428
Matador SD Mk. 4	R932/430
Montadero Mk. 2	L932/431
Bandido Mk. 2 Europa	L932/431
Bandido Mk. 2 Europa	L932/432
Pursang 250 Mk. 5	L932/433
Pursang 125 and 200 Mk. 6	L932/434
Astro 250	L932/435
Matador SD Mk. 5	R932/437
Tigre 250	L932/438
Pursang 350 Mk. 5 and Mk. 6	L1036/5
Pursang 250 Mk. 6	L1036/6
TSS 350	L1038/6
Pursang Astro	L1038/7
Astro 350	L1038/8
DUCATI	
250	R627/408
750 GT	R930/76 L930/77
350	R930/417

MACHINE	Carburetter No. 1973
GILERA (ARGENTINA)	R622/2
GREEVES	
250	R932/3
380 Q.U.B. Griffon	R1034/4
HUSQVARNA	
125	L932/21
K.T.M.	
175	R930/75
MAICO	R1036/2
MONTESSA	
Cota 75 and 123	L625/413
Cota 247	R627/406
Cota 247	L627/407
Capra 125 MX	L627/410
Cota TT	L627/411
Cota 247	L627/413
King Scorpion	L627/414
MOTO GUZZI	
750 Twin	R930/80 L930/81
NORTON VILLIERS	
Commando	R930/82 L930/83
Combat	R932/26 L932/27
Roadster	R932/29 L932/30
Interstate	R932/31 L932/32

MACHINE	Carburetter No. 1973
OSSA	
Trials	L627/422
Enduro	L932/436
RICKMANN	
125 Enduro	R627
SANGLAS	
Sanglas 40	R930/415
Sanglas 400	R930/418
MOTOTRANS	
Deluxe 250	R627/417
Italia 250	R627/419
Road 250	R627/421
24 Horas 250	R627/424
SUNBEAM (Stewart Engineering)	
S7	R624/4
TRIMAKAR	R622/407
TRIUMPH	
T100 SS	R626/64 L626/65
T150R Trident	R626/66 L626/67 R626/68
740 T150 Hurricane	R626/69 L626/70 R626/71
P51 500	R928/21
T120R	R930/84 L930/85
TR6R, TR6C	R930/86
TR7	R930/89
T140	R930/92 L930/93
WASSELL	
Trials 125	R622/7 or R622/8

Carburetor Settings List
1969, 1970, 1971 and 1972

Parts normally fitted to all Amal concentric carburetters unless otherwise stated under Special Details are as follows:
TWO STROKE SETTING: Spray tube 622/075, Needle jet 622/079. Pilot jet 124/026, Needle 622/033, 928/063 or 1034/063.
FOUR STROKE SETTING: Spray tube 622/074, Needle jet 622/122. Pilot jet 622/107, Needle 622/124.



EXPLANATION OF CARBURETTER TYPE No.

R626/2 denotes a right hand series 600 Carburetter with Tickler, Throttle Stop and Pilot Air adjustment on the right hand side as viewed from the air intake, with a 20 millimetre crossbore. The digits after the stroke are specification reference.

Complete carburetter numbers are found marked on the raised boss adjacent to the air intake.

Carburetter Type No.	Jet size Main	Pilot	Throttle Valve	Needle Position	Needle Jet	SPECIAL DETAILS
R622/2	100		3	2	105	Float Chamber 622/050.
R622/7	110	20	3	1	105	Banjo 376/097. Adaptor 622/164. Throttle Cable 530/49. Air Cable 530/81.
R622/405	120	25	2½	2	106	Banjo 376/097. Air Tube 622/162
R622/406	120	25	2½	2	106	Banjo 376/097. Air Tube 622/162
R622/405	150	30	2½	2	106	Banjo 376/097. Air Tube 622/162
R623/406	170	30	2½	2	106	Banjo 376/097. Air Tube 622/163
R623/407	170	30	2½	2	106	Banjo 376/097. Air Tube 622/163
R623/408	150	30	2½	2	106	Banjo 376/097.
R623/409	150	30	2½	2	106	Banjo 376/097.
R623/410	170	30	2½	2	106	Banjo 376/097. Air Tube 622/162
R623/425	150	30	2½	2	106	Banjo 376/097. Air Tube 622/162
R626/8	180		4	2	106	
R626/9	160		3	2	106	
R626/10	160		3	2	106	
R626/14	150		3	2	106	Spray Tube 622/123. Less Th: Valve Return Springs.
R626/15	150		3	2	106	Ferrule 6/132A.
R626/16	150		3	2	106	
R626/17	180		3½	2	105	Spray Tube 622/075
R626/19	200		3½	2	106	Top Hat Ferrules.
R626/25	170		4	2	106	Top Hat Ferrule.
R626/26	150		3	1	106	Top Hat Ferrule.
R626/27	150		3	1	106	Top Hat Ferrule.
R626/33	170		4	2	106	Top Hat Ferrules.
R626/35	170		3½	1	106	Top Hat Ferrules.
R626/34	170		3½	1	106	Top Hat Ferrules.
R626/47	150		3½	2	106	Less Air Valve Springs. Spray Tube 622/123
R626/48	150		3½	2	106	Less Air Valve Springs. Spray Tube 622/123
R626/49	150		3½	2	106	Less Air Valve Springs. Spray Tube 622/123
R626/52	170		4	2	106	
R626/53	150		3	1	106	
R626/54	150		3	1	106	
R626/55	150	20	2½	2	103	
R626/61	150		3½	2	106	Air Cables 530/22, 530/4. Junction Box 244/2080. Locknut 622/138. Spray Tube 622/123.
L626/62	150		3½	2	106	Air Cables 530/22, 530/4. Junction Box 244/2080. Locknut 622/138. Spray Tube 622/123.
R626/63	150		3½	2	106	Air Cables 530/22, 530/4. Junction Box 244/2080. Locknut 622/138. Spray Tube 622/123.
R627/406	160	40	2½	2	106	Banjo 376/097.
L627/407	160	40	2½	2	106	Banjo 376/097.
R627/408	253		2½	2	105	Needle Jet 622/122. Throttle Needle 622/187. Primary Air Hole 4·25mm. dia.
L627/410	170	40	2½	2	106	Banjo 376/097.
L627/411	175	40	2½	2	106	Float Chamber 622/055. Banjo 376/097. Throttle Needle 622/063.
L627/412	175	40	2½	2	106	Banjo 376/097.
L627/413	160	20	3	2	106	Banjo 376/097. Air Tube 622/169
L627/414	150	40	2½	3	106	Banjo 376/097.
L627/416	160	40	3	3	106	Banjo 376/097.
L627/436	150	20	2½	2	106	0·5mm Pilot Outlet. Banjo 376/097.
R928/6	250		3½	1	106	Top Hat Ferrules.
R928/8	260	25	3	2	106	Banjo No. 376/097.
R928/17	250		3½	1	106	Throttle Cable 530/17. Air Cable 530/13.
R928/20	200		3½	1	106	Top Hat Ferrule. Less Air Valve. Cable 530/14. Needle 928/104
R928/20	200		3½	1	106	Less Air Valve. Throttle Cable 530/14. Needle 928/104.
R930/8	190		3	2	106	6/132A Ferrules.
L930/10	190		3	2	106	6/132A Ferrules.
R930/15	270	30	3	3	107	Air Tube 928/066. 306/1 Twist Grip Control and Cables.
R930/21	250		3½	2		Ferrules 6/132A.
R930/28	270		3	3	106	Air Tube 928/066. 306/1 Twist Grip.
L930/30	220		3	2	106	
L930/31	220		3	2	106	
R930/34	180		3	1	106	Throttle Cable 530/1. Air Cable 530/2.
L930/35	180		3	1	106	
R930/38	240		3½	1	106	6/132A Ferrules. Less Air Valve.
R930/46	180		3	2	106	
L930/47	180		3	2	106	
R930/50	250		3½	2	106	
R930/66	180		3	1	106	
L930/67	180		3	1	106	
R930/68	220		3	2	106	Banjo 376/097. Throttle Cable 530/16. Air Cable 530/15.
L930/69	220		3	2	106	Banjo 376/097. Throttle Cable 530/16. Air Cable 530/15.
R930/70	200		3	1	106	Throttle Cable 530/19. Air Cable 530/20, 2 off each.
L930/71	200		3	1	106	Air Cables 530/17, 1 off.
R930/72	220		3	1	106	Throttle and Air Cables 530/19 and 20. Air Cable 530/17, 1 off.
L930/73	220		3	1	106	
R930/75	250	25	3½	2	106	Banjo 397/097. Air Tube No. 928/066. Float Chamber 622/050.
R930/76	190		3½	1	106	Banjo 376/097.
L930/77	190		3½	1	106	Banjo 376/097.
R930/80	200		3	1	105	Banjo 376/410. Throttle Cable 530/32. Air Cable 550/33. Flange Adaptor Required.
L930/81	200		3	1	106	
L930/403	260	30	3	2	106-A	Float Chamber 622/184. Banjo 376/419. Throttle Needle 928/075. Jet Holder 622/183. Needle Jet 622/173. Air Tube 928/072.
R930/404	240	40	3½	2	106	Float Chamber 622/056. Banjo 376/099. Air Tube 928/073.
L930/405	240	40	3½	2	106	Float Chamber 622/056. Banjo 376/099. Air Tube 928/073.
R930/406	250	40	3½	2	106	Float Chamber 622/056. Banjo 376/099. Air Filter 395/900C.
L930/407	250	40	3½	2	106	Float Chamber 622/056. Banjo 376/099. Air Filter 395/900C.
R930/409	240	40	3½	2	106	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073.
L930/410	240	40	3½	2	106	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073.
R930/411	230	40	3	2	106	Float Chamber 622/056. Banjo 376/099. Air Filter 395/900C.
L930/412	230	40	3	2	106	Float Chamber 622/056. Banjo 376/099. Air Filter 395/900C.
R930/413	230	40	3	2	106	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073.
L930/414	230	40	3	2	106	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073.
R930/415	210	25	3½	2	106	Banjo 376/099. Air Filter 395-E.
L930/416	380	25	2½	2	107	Float Chamber 622/174. Banjo 376/419. Throttle Needle 622/176. Air Tube 928/072. Jet Body L930/514. Jet Holder 622/175. Needle Jet 622/177.
R932/3	316	25	3	2	106	Banjo 376/097. Air Tube 928/066. Less Air Valve. Main Jet Filter.
R932/17	270	20	3½	2	107	Banjo 376/097. Less Air Valve. Main Jet Filter 928/071.
R932/19	220		3	1	106	Banjo 376/097. Throttle Cable 530/16. Air Cable 530/15.
L932/20	220		3	1	106	Banjo 376/097. Throttle Cable 530/16. Air Cable 530/15.
L932/21	220	20	2½	2	105	Banjo 376/097. Twist Grip 532/1. Cables 530/48. Less Air Valve. Float Chamber 622/050.
R932/403	240	40	3	2	107	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073.
L932/404	240	40	3	2	107	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073.
R932/405	260	40	3	2	106	Float Chamber 622/056. Banjo 376/097. Air Tube 928/073.
L932/406	260	40	3	2	106	Float Chamber 622/056. Banjo 376/097. Air Tube 928/073.
R932/408	260	40	3	2	106	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073.
L932/409	260	40	3	2	106	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073.
R932/411	210	40	3	2	106	Float Chamber 622/056. Banjo 376/097. Air Tube 928/073.
L932/412	210	40	3	2	106	Float Chamber 622/056. Banjo 376/097. Air Tube 928/073.
R932/413	240	40	3	2	106	Float Chamber 622/056. Banjo 376/097. Throttle Needle 928/075. Air Tube 928/072.
L932/414	240	40	3	2	106	Float Chamber 622/056. Banjo 376/097. Throttle Needle 928/075. Air Tube 928/072.
R932/415	230	30	3	2	106	Float Chamber 622/056. Banjo 376/419. Air Filter 395/900-C.
L932/416	230	30	3	2	106	Float Chamber 622/056. Banjo 376/419. Air Filter 395/900-C.
R932/417	240	40	3	2	107	Float Chamber 622/056. Banjo 376/419. Needle Jet 622/185. Air Tube 928/074.
L932/418	240	40	3	2	107	Float Chamber 622/056. Banjo 376/419. Needle Jet 622/185. Air Tube 928/074.
R932/419	260	30	3	2	107-C	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073. Needle Jet 622/185.
L932/420	260	30	3	2	107-C	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073. Needle Jet 622/185.
R932/424	280	30	3	2	107-C	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073. Needle Jet 622/185.
L932/425	280	30	3	2	107-C	Float Chamber 622/056. Banjo 376/419. Air Tube 928/073. Needle Jet 622/185.
L932/426	260	40	3	2	106	Float Chamber 622/056. Banjo 376/419. Air Tube 928/079.
L932/427	270	30	3	2	107	Float Chamber 622/056. Banjo 376/097. Air Tube 928/072.
L932/428	240	40	3	2	106	Float Chamber 622/056. Banjo 376/419. Air Filter 395/900.
R932/430	240	30	3	2	107	Float Chamber 622/056. Banjo 376/097. Air Tube 928/072.
L932/431	240	30	3	2	107	Float Chamber 622/056. Banjo 376/419. Air Tube 928/074.
R1034/2	30·	25	2½	3	107	Float Chamber 622/056. Air Tube 1034/070. Main Jet Filter 928/071.
R1034/3	30·	25	2½	3	107	Float Chamber 622/056. Air Tube 1034/070. Main Jet Filter 928/071.
R1034/4	320	30	3	2	107	
R1034/5	290	25	3½	3	107	Banjo 376/097. Main Jet Filter 928/071.
R1036/2	460	20	3	2	108	Banjo 376/130. Flange Adaptor Required.
R1036/4	3.0	30	3	1	106	Float Chamber 622/056. Air Tube 1034/070. Main Jet Filter 928/071.
R1038/5	440	40	3	2	107	Float Chamber 622/056. Banjo 376/419. Throttle Needle 1034/088. Air Tube 1034/087.
L1038/6	440	40	3	2	107	Float Chamber 622/056. Banjo 376/419. Throttle Needle 1034/088. Air Tube 1034/087.
L1038/7	460	35	2	2	108	Float Chamber 622/174.

SETTINGS SUGGESTED AS A BASIS FOR TUNING WHEN NO SETTING IS LISTED ABOVE ▶

NEEDLE AND NEEDLE JET (22 and 24). The needle being taper either allows more or less petrol to pass through the needle jet as the throttle is opened or closed throughout the range except when idling or nearly full throttle.. The taper needle position in relation to the throttle valve can be set according to the mixture required by repositioning the jet needle clip in any of three positions thus raising or lowering it. Raising the needle richens the mixture and lowering it weakens the mixture at throttle openings from one quarter to three-quarters open (see fig. 5, page 7). The throttle needles are marked with a single groove around the top diameter for use on the 600 series carburetter, the 900 series carburetter needles are identified by three grooves around the top of the needle, throttle needles indentified by two grooves are used on certain models for both series 600 and 900 carburetters.

THROTTLE VALVE CUT-AWAY. The atmospheric side of the throttle is cut away to influence the depression on the main fuel supply and thus gives a means of tuning between the pilot and needle jet range of throttle opening. The amount of cut-away is recorded by a number marked on the throttle valve, viz., 622/3 means throttle valve type 622 with No. 3 cut-away ; larger cut-aways, say 4 and 5, give weaker mixtures and 2 a richer mixture.

AIR VALVE (3) is used only for starting and running when cold, and for experimenting with, otherwise run with it wide open.

TICKLER (25), a small plunger spring loaded, fixed in the carburetter body. When pressed down on the float, the needle valve is allowed to open and so "flooding" is achieved. Flooding temporarily enriches the mixture until the level of the petrol subsides to normal.

ALCOHOL FUELS. When using alcohol fuels the following new components are necessary. A metallic banjo preferably double feed if not already fitted, float chamber 622/051, banjo bolt washer 13/163, needle jet 622/100, jet needle 622/099 or 8/099 according to type of carburetter, filter gauze 376/093B and banjo washer 14/175.
The main jet must be increased for straight alcohol by approximately 150%. The final setting must be a question of trial and error according to the nature of fuel used.

When using alcohol fuels it is advisable to err on the rich side to avoid engine overheating.

HOW TO TUNE UP

PHASES OF AMAL NEEDLE JET CARBURETTER THROTTLE OPENINGS

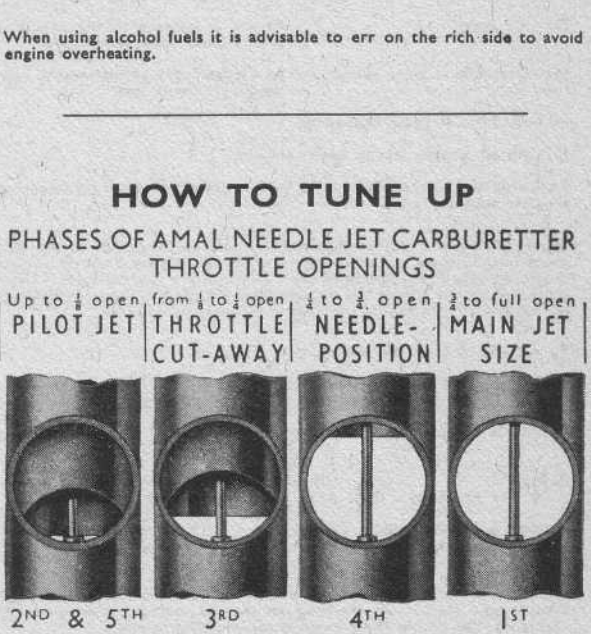


FIG. 5.

TUNE UP IN THE FOLLOWING ORDER.

NOTE. The carburetter is automatic throughout the throttle range—the air valve should always be wide open except when used for starting or until the engine has warmed up. We assume normal petrols are used.

READ REMARKS ON PAGES 6 AND 7 for each tuning device and get the motor going perfectly on a quiet road with a slight up gradient so that on test the engine is pulling.

1st. MAIN JET with throttle in position 1 (fig. 5).
If at full throttle the engine runs "heavily" the main jet is too large.
If at full throttle by slightly closing the throttle or air valve the engine seems to have better power, the main jet is too small.

TWO STOKE SETTINGS

Carburetter Type No.	Jet Size Main	Pilot	Throttle Valve	Needle Position	Needle Jet
R622/302	110	25	3	2	106
L622/303	110	25	3	2	106
R624/302	140	25	3	2	106
L624/303	140	25	3	2	106
R626/302	170	25	3	2	106
L626/303	170	25	3	2	106
R928/302	200	25	3	2	106
L928/303	200	25	3	2	106
R930/302	230	25	3	2	106
L930/303	230	25	3	2	106
R932/302	260	25	3	2	106
L932/303	260	25	3	2	106
R1034/302	360	30	3	2	108
L1034/303	360	30	3	2	108
R1036/302	380	30	3	2	108
L1036/303	380	30	3	2	108
R1038/302	400	30	3	2	108
L1038/303	400	30	3	2	108

FOUR STROKE SETTINGS

Carburetter Type No.	Jet Size Main	Pilot	Throttle Valve	Needle Position	Needle Jet
R622/300	120		3	2	106
L622/301	120		3	2	106
R624/300	140		3	2	106
L624/301	140		3	2	106
R626/300	160		3	2	106
L626/301	160		3	2	106
R928/300	180		3	2	106
L928/301	180		3	2	106
R930/300	200		3	2	106
L930/301	200		3	2	106
R932/300	220		3	2	106
L932/301	220		3	2	106
R1034/300	340		3	2	108
L1034/301	340		3	2	108
R1036/300	360		3	2	108
L1036/301	360		3	2	108
R1038/300	380		3	2	108
L1038/301	380		3	2	108

With a correct sized main jet the engine at full throttle should run evenly and regularly with maximum power.
If testing for speed work ensure that the main jet size is sufficient for the mixture to be rich enough to keep the engine cool, and to verify this examine the sparking plug after taking a fast run, declutching and stopping the engine quickly. If the plug body at its end has a cool appearance the mixture is correct : if sooty, the mixture is rich : if however there are signs of intense heat, the mixture is too weak and a larger main jet is necessary.

2nd. PILOT JET (fig. 5) with throttle in positions 2 and 5.
With engine idling too fast with the twist grip shut off and the throttle shut down on to the throttle adjusting screw, and ignition set for best slow running : (1) Screw out throttle adjusting screw until the engine runs slower and begins to falter, then screw pilot air adjusting screw in or out, to make engine run regularly and faster. (2) Now gently lower the throttle adjusting screw until the engine runs slower and just begins to falter, adjust the pilot air adjusting screw to get best slow running : if this 2nd adjustment make engine run too fast, go over the job again a third time. Both the throttle adjusting screw and pilot air screw have an "O" Ring fitted to hold the adjustment by friction.

3rd. THROTTLE CUT-AWAY with throttle in position 3 (fig. 5)
If, as you take off from the idling position, there is objectionable spitting from the carburetter, slightly richen the pilot mixture by screwing in the air screw sufficiently, but if this is not effective, screw it back again, and fit a throttle with a smaller cut-away. If the engine jerks under load at this throttle position and there is no spitting, either the jet needle is much too high or a larger throttle cut-away is required to cure richness.

4th. NEEDLE with throttle in position 4 (fig. 5).
The needle controls a wide range of throttle opening and also the acceleration. Try the needle in the lower position, *viz.*, with the clip in the groove at the top ; if acceleration is poor and with air valve partially closed the results are better, raise the needle by two grooves ; if very much better try lowering needle by one groove and leave it where it is best. If mixture is still too rich with clip in groove No. 1 nearest the top —the needle jet probably wants replacement because of wear. If the needle itself has had several years' use replace it also.

5th. FINALLY go over the idling again for final touches.

TUNING TWIN ENGINES WITH TWIN CARBURETTERS

where each cylinder has its own Carburetter.

First of all, slacken the Throttle stop screws and put the Twist Grip into the shut off position to allow the Throttles to shut off ; there should be a slight backlash in the cables which backlash can be obtained, if necessary, by screwing in the cable adjusting screws on the top of the Carburetter after releasing lock nuts. Then, with the Handlebars in the normal position, and with the Throttles closed, adjust the cable adjusting screws so that on the slightest opening of the Twist Grip, both Throttles begin to open simultaneously, then reset lock nuts.

To set the Carburetters, follow the procedure as given on page 7, and bear in mind these " Hints," which may be useful :—Main Jet sizes are of course selected by checking the effect of the Mixture on the Sparking Plugs after taking a run at full throttle over a straight piece of road ; the smallest pair of jets that give the best maximum speed are usually correct provided that the Plugs do not show any signs of excessive heat. It might be that for really critical tuning, one Carburetter might require a slightly different Jet size from the other.

For slow running, set the Twist Grip to make the Engine run slowly but just faster than a " tick-over " ; then gently screw in the Throttle stops to just hold the Throttles in that position, and return the Twist Grip into the shut position, leaving the Engine running on the Throttle Stops.

The next thing to do is to set each Carburetter according to paragraph 2, on page 7, to obtain the idling by screwing down the Throttle Stop Screws and adjusting the Pilot Air Screws accordingly.

Regarding the setting of the Pilot, a fairly satisfactory method is to detach one Sparking Plug lead, and set the Pilot Air Adjusting Screw on the other Cylinder as a single unit, and then reversing the process to the other Cylinder. It may be found that when both leads are connected to the Sparking Plugs, the Engine runs slightly quicker than desirable, in which case, a slight readjustment of the Throttle Stop Screws will put this right. It is essential that the speed of idling on both Cylinders is approximately the same, as this will either make or mar the smoothness of the get-away on the initial opening of the Throttle.

It is essential with Twin Carburetters that the Throttle Slides are a good fit in the bodies, and also that there is no suspicion of air leaks at either of the flange attachments to the Cylinder.

Regarding the lower end of the Throttle range, which is always the more difficult to set, one can only take excessive pains to make quite sure that the Control Cables are perfectly adjusted, without any excessive back lash or difference in the amount of back lash between one Carburetter and another ; otherwise one Throttle slide will be out of phase with the other, and so resulting in lumpy running.

To check the opening of the Throttle simultaneously, shut the Twist Grip back so that the Throttles are resting on the Throttle Stop Screws in their final position of adjustment ; then insert the fingers into the air intakes and press them on the Throttles and with the other hand, gently open by the Twist Grip and feel that the Throttles lift off their stops at the same time.

Carburetor Settings 1973

Carburetter Type No.	Jet size Main	Pilot	Throttle Valve	Needle Position	Needle Jet	SPECIAL DETAILS
R622/2	100		3	2	105	Float chamber 622/050.
R622/7	110	20	3	2	105	Banjo 376/097. Adaptor 622/164. Throttle cable 530/49. Air cable 530/81.
R622/8	110	20	3	1	105	Twist grip 532/3. Air control 12/608. Throttle cable 530/5. Air cable 530/81. Special flange adaptor to suit 33 mm stub.
R602/10	120		3½	2	105	Throttle cable 530/94.
L622/406	120	25	3½	2	105	Banjo 376/097. Air tube 622/162.
R622/407	120	25	3	2	106	Float chamber 622/053. Banjo 376/097. Air tube 622 /162. Main jet filter 928/071.
R624/4	140		3½	2	105	Banjo 376/090. Air control 12/608. Throttle cable 530/50. Air cable 530/84.
L625/405	150	30	3½	2	105	Banjo 376/097. Air tube 622/162.
R625/406	170	30	3½	2	106	Banjo 376/097. Air tube 622/163.
L625/407	170	30	3½	2	106	Banjo 376/097. Air tube 622/163.
R625/408	150	30	3½	2	106	Banjo 376/097.
L625/409	150	30	3½	2	106	Banjo 376/097.
L625/410	170	30	3½	2½	106	Banjo 376/097. Air tube 622 /162.
L625/415	150	30	3½	2	106	Banjo 376/097. Float chamber 622/050. Main jet filter 928/071.
L625/414	150	30	3	2	106	Banjo 376/097. Air tube 622/106.
L625/415	150	30	3	2	106	Banjo 376/097. Air tube 622/162.
R626/64	150		3½	1	106	
L626/65	150		3½	1	106	
R626/66	150		3½	2	106	
L626/67	150		3½	2	106	Air cables 530/22, 530/4. Junction box 244/2080. Locknut 622/138. Spray tube 622/123.
R626/68	150		3½	2	106	
R626/69	150		3½	2	106	
L626/70	150		3½	2	106	Air cables 530/22, 530/4. Junction box 244/2080. Locknut 622/138. Spray tube 622/123. Carburetter finish—silver grey stoving.
R626/71	150		3½	2	106	
R627	140	20	3	2	105	Air jet 4 in. Spray tube 928/107.
R627/406	160	40	2½	2	106	Banjo 376/092.
L627/407	160	40	2½	2	106	Banjo 376/097.
R627/408	250		2½	2	105	Needle jet 622/122. Throttle needle 622/182. Primary air hole 4.75 mm dia.
L627/410	170	40	2½	2	106	Banjo 376/097.
L627/411	175	40	2½	2	106	Float chamber 622/055. Banjo 376/097. Throttle needle 622/063.
L627/412	160	20	3	2	106	Banjo 376/097. Air tube 622/162.
L627/413	150	40	2½	3	106	Banjo 376/097.
L627/414	160	40	3	3	106	Banjo 376/097.
R627/417	190	15	3	2	105	Banjo 376/419. Float chamber 622/199. Air tube 376/066. Main jet filter 928/071.
R627/419	200	25	2½	2	105	Banjo 376/419. Float chamber 622/199. Air tube 622/212. Main jet filter 928/071.
L627/420	240	30	2½	2	106	Banjo 376/419.
R627/421	200	20	2½	2	105	Banjo 376/419 Float chamber 622/199. Air tube 622/089. Main jet filter 928/071.
L627/422	120	30	3	2	106	Banjo 376/097. Float chamber 622/050. Main jet filter 928/071.
R627/424	230	15	3	2	105	Banjo 376/419. Float chamber 622/199. Air tube 376/066. Main jet filter 928/071.
R928/21	210		3	2	106	
R930/75	250	25	3½	2	106	Banjo 376/097. Air tube 928/066. Float chamber 622/050.
R930/76	190		3½		106	
L930/77	190		3½		106	Banjo 376/097.
R930/80	200		3		105	
L930/81	200		3	1	106	Banjo 376/410. Throttle cable 530/32. Air cable 530/33.
R930/82	220		3	2	106	
L930/83	220		3	2	106	Throttle cable 530/16. Air cable 530/15.
R930/84	180		3	2	106	
L930/85	180		3	1	106	
R930/86	230		3½	2	106	
R930/89	260		3½	1	106	
R930/92	190		3	1	106	
L930/93	190		3	1	106	
L930/403	260	30	3	2	106A-4	Float chamber 622/184. Banjo 376/419. Throttle needle 928/075. Jet holder 622/183. Needle jet 622/173. Air tube 928/072.
R930/404	240	40	3½	2	106	Float chamber 622/056. Banjo 376/099. Air tube 928/073.
L930/405	240	40	3½	2	106	Float chamber 622/056. Banjo 376/099. Air tube 928/073.
R930/406	250	40	2½	2	106	Float chamber 622/056. Banjo 376/099. Air filter 395/900C.
L930/407	250	40	2½	2	106	Float chamber 622/056. Banjo 376/099. Air filter 395/900C.
R930/408	270	40	3½	2	106	Banjo 376/097.
R930/409	240	40	3½	2	106	Float chamber 622/056. Banjo 376/419. Air tube 928/073.
L930/410	240	40	3½	2	106	Float chamber 622/056. Banjo 376/419. Air tube 928/073.
R930/411	230	40	3	2	106	Float chamber 622/056. Banjo 376/099. Air filter 395/900C.
L930/412	230	40	3	2	106	Float chamber 622/056. Banjo 376/099. Air filter 395/900C.
R930/413	230	40	3	2	106	Float chamber 622/056. Banjo 376/419. Air tube 928/073.
L930/414	230	40	3	2	106	Float chamber 622/056. Banjo 376/419. Air tube 928/073.
R930/415	210	25	3½	2	106	Banjo 376/099. Air filter 395/900.
L930/416	380	25	2½	2	107	Float chamber 622/174. Banjo 376/419. Throttle needle 622/176. Air tube 928/072. Jet holder 622/175. Needle jet 622/177.
R930/417	270	30	3½	2	106	Banjo 376/419. Air tube 928/072. Main jet filter 928/071.
R930/418	220	25	3½	2	106	Banjo 376/097. Air filter 395/376. Main jet filter 928/071.
R932/3	310	25	3	2	106	Banjo 376/097. Air tube 928/066. Less air valve. Main jet filter 928/071.
L932/21	220	20	2½	2	105	Banjo 376/097. Twist grip 532/1. Cable 530/48. Less air valve. Float chamber 622/050.
R932/26	250		3	1	106	
L932/27	230		3	1	106	Banjo 376/097. Throttle cable 530/16. Air cable 530/15.
R932/28	180		3½	3	106	Throttle cable 530/92.
R932/29	260		3½		106	
L932/30	260		3½		106	Banjo 376/097. Throttle cable 530/16. Air cable 530/15.
R932/31	230		3½	2	106	
L932/32	230		3½	2	106	Banjo 376/097. Throttle cable 530/16. Air cable 530/15.
R932/402	240	40	3	2	107	Float chamber 622/056. Banjo 376/419. Air tube 928/073.
L932/404	240	40	3	2	107	Float chamber 622/056. Banjo 376/419. Air tube 928/073.
R932/405	260	40	3	2	106	Float chamber 622/056. Banjo 376/097. Air tube 928/073.
L932/406	260	40	3	2	106	Float chamber 622/056. Banjo 376/097. Air tube 928/073.
R932/408	260	40	3	2	106	Float chamber 622/056. Banjo 376/419. Air tube 928/073.
L932/409	260	40	3	2	106	Float chamber 622/056. Banjo 376/419. Air tube 928/073.
R932/411	210	40	3	2	106	Float chamber 622/056. Banjo 376/097. Air tube 928/073.
L932/412	210	40	3	2	106	Float chamber 622/056. Banjo 376/097. Air tube 928/073.
R932/413	240	40	3	2	106	Float chamber 622/056. Banjo 376/097. Throttle needle 928/075. Air tube 928/072.
L932/414	240	40	3	2	106	Float chamber 622/056. Banjo 376/097. Throttle needle 928/075. Air tube 928/072.
R932/415	230	30	3	2	106	Float chamber 622/056. Banjo 376/419. Air filter 395/900C.
L932/416	230	30	3	2	106	Float chamber 622/056. Banjo 376/419. Air filter 395/900C.
R932/417	240	40	3	2	107	Float chamber 622/056. Banjo 376/419. Needle jet 622/185. Air tube 928/074.
L932/418	240	40	3	2	107	Float chamber 622/056. Banjo 376/419. Needle jet 622/185. Air tube 928/074.
R932/419	260	30	3	2	107C	Float chamber 622/056. Banjo 376/419. Air tube 928/073. Needle jet 622/185.
L932/420	260	30	3	2	107C	Float chamber 622/056. Banjo 376/419. Air tube 928/073. Needle jet 622/185.
R932/424	280	30	3	2	107C	Float chamber 622/056. Banjo 376/419. Air tube 928/073. Needle jet 622/185.
L932/425	280	30	3	2	107C	Float chamber 622/056. Banjo 376/419. Air tube 928/073. Needle jet 622/185.
L932/426	260	40	3	2	106	Float chamber 622/056. Banjo 376/419. Air tube 928/079.
L932/427	270	30	3	2	107	Float chamber 622/056. Banjo 376/097. Air tube 928/072.
L932/428	240	40	3	2	106	Float chamber 622/056. Banjo 376/419. Air filter 395/900.
R932/430	240	30	3	2	107	Float chamber 622/056. Banjo 376/097. Air tube 928/072.
L932/431	240	30	3	2	107	Float chamber 622/056. Banjo 376/419. Air tube 928/079.
L932/432	240	30	3	2	107	Float chamber 622/056. Banjo 376/419.
L932/433	310	40	2½	2	107	Float chamber 622/198. Banjo 376/419. Air tube 928/072.
L932/434	300	40	2½	2	107	Float chamber 622/198. Banjo 376/419. Air tube 928/090.
L932/435	330	40	2½	2	107	Float chamber 622/198. Banjo 376/419. Main jet filter 928/071.
L932/436	310	40	3½	2	108	Float chamber 622/198. Banjo 376/419. Air tube 928/089. Main jet filter 928/071.
R932/437	280	40	2	2	106	Float chamber 622/198. Banjo 376/419. Air tube 928/072. Main jet filter 928/071.
L932/433	250	30	3	2	106	Float chamber 622/207. Banjo 376/097. Air filter 395/900C. Main jet filter 928/071.
R1034/3	300	25	2½	3	107	Float chamber 622/056. Air tube 1034/070. Main jet filter 928/071.
R1034/4	320	30	3	2	107	
R1034/5	290	25	3½	3	107	Banjo 376/097. Main jet filter 928/071.
R1036/2	400	20	3	2	108	Banjo 376/139.
L1036/5	430	40	2	2	107	Banjo 376/419. Air tube 1034/089. Main jet filter 928/071.
L1036/8	400	35	2	2	108	Banjo 376/419. Air tube 1034/089. Main jet filter 928/071.
L1036/9	430	35	2½	2	108	Banjo 376/419. Main jet filter 928/071.
L1038/6	440	40	3	2	107	Float chamber 622/207. Banjo 376/419. Throttle needle 1034/063. Air tube 1034/074.
L1038/7	460	35	2	2	108	Float chamber 622/174.
L1038/8	490	35	2	2	108	Float chamber 622/207. Banjo 376/419. Main jet filter 928/071.

SETTINGS SUGGESTED AS A BASIS FOR TUNING WHEN NO SETTING IS LISTED ABOVE

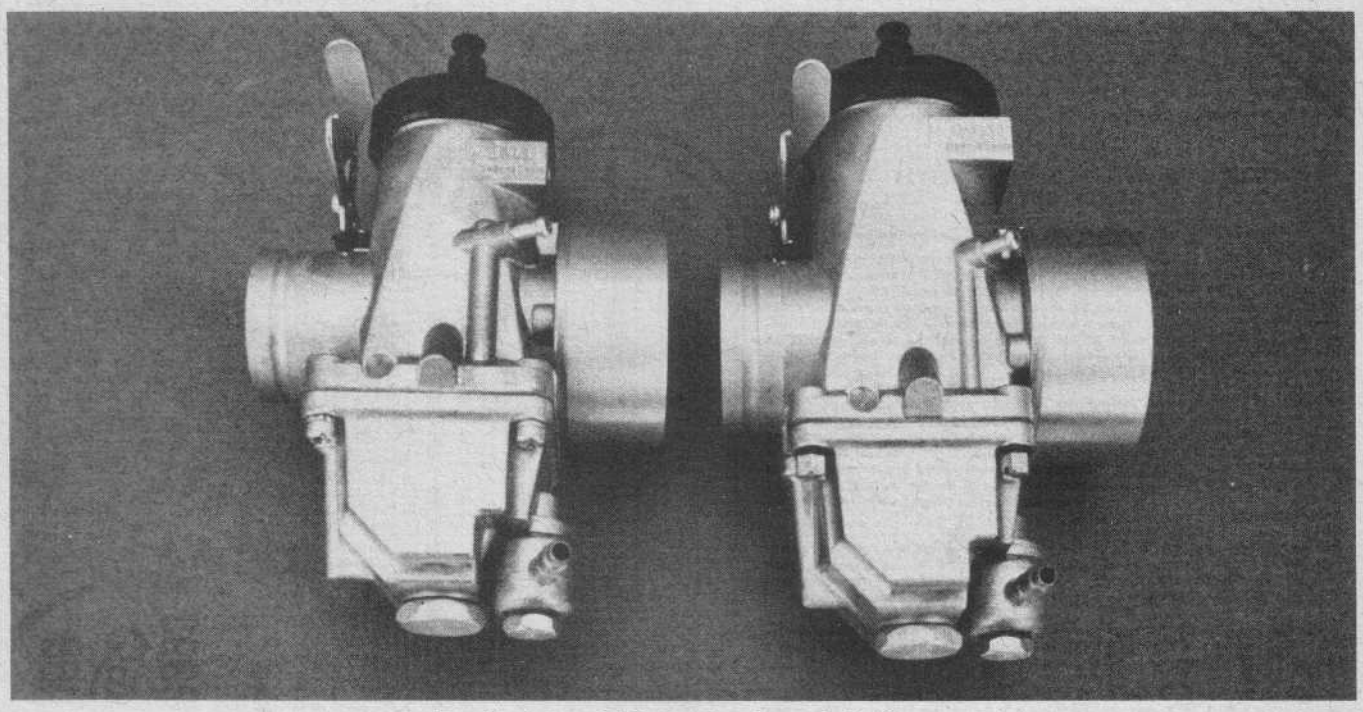
TWO-STROKE SETTINGS

Carburetter Type No.	Jet Size Main	Pilot	Throttle Valve	Needle Position	Needle Jet
R622/302	110	25	3	2	106
L622/303	110	25	3	2	106
R624/302	140	25	3	2	106
L624/303	140	25	3	2	106
R626/302	170	25	3	2	106
L626/303	170	25	3	2	106
R928/302	200	25	3	2	106
L928/303	200	25	3	2	106
R930/302	230	25	3	2	106
L930/303	230	25	3	2	106
R932/302	260	25	3	2	106
L932/303	260	25	3	2	106
R1034/302	360	30	3	2	108
L1034/303	360	30	3	2	108
R1036/302	380	30	3	2	108
L1036/303	380	30	3	2	108
R1038/302	400	30	3	2	108
L1038/303	400	30	3	2	108

FOUR-STROKE SETTINGS

Carburetter Type No.	Jet Size Main	Pilot	Throttle Valve	Needle Position	Needle Jet
R622/300	120		3	2	106
L622/301	120		3	2	106
R624/300	140		3	2	106
L624/301	140		3	2	106
R626/300	160		3	2	106
L626/301	160		3	2	106
R928/300	180		3	2	106
L928/301	180		3	2	106
R930/300	200		3	2	106
L930/301	200		3	2	106
R932/300	220		3	2	106
L932/301	220		3	2	106
R1034/300	340		3	2	108
L1034/301	340		3	2	108
R1036/300	360		3	2	108
L1036/301	360		3	2	108
R1038/300	380		3	2	108
L1038/301	380		3	2	108

Amal Mark II Technical Manual



New Mark II carb. Right side, 38mm. Left, 30mm.

EVEN THOUGH THE Mark II is a breakthrough, it still has to be tuned the same way as the Concentric, or even the stately Monobloc. Refer to these sections for tuning procedures and jetting specifications. The same jets are used throughout, so you don't have to throw away your box of old jets. The only new jets you'll need, will be the new high speed air bleeds, and there are only three of these. •

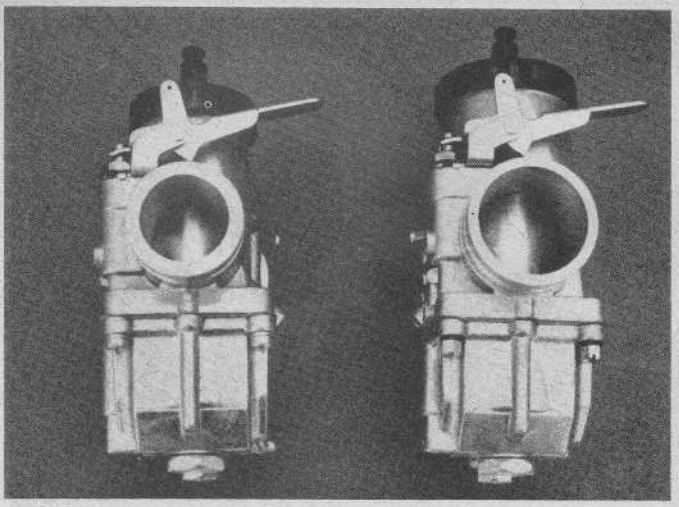
Series numbers in the new Mark II will be similar to the Concentric numbering system. All they've done is add a "2" in front of the basic numbers. The 2600 Series Mark II will come in 22, 24 and 26mm bore. The 2900 Series in 28, 30, 32 and 34mm, while the 2000 Series will be 36, 38 and 40 millimeters across the throat. This 40 should be a highly sought after number.

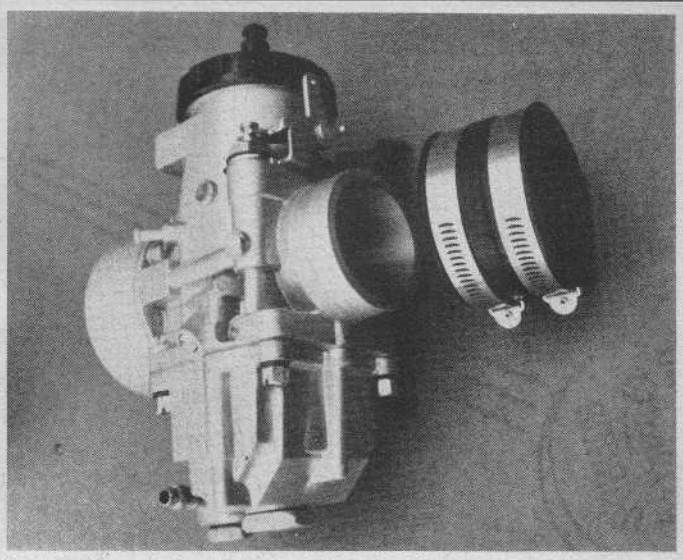
Probably the single biggest change to the Mark II (other than spiffy looks) is the first ever "two pilot" system. Now the tuner has a choice of not only what pilot jet to use, but *where* he can put it. It can be located near the front or the back of the carb, depending on the need of the motor. Two stroke motors (with poor pressure drops at very low rpm) will benefit from a location closest to the venturi. The pilot hole that isn't being used is simply blocked off. Naturally, standard pilot jets are used.

Other features of the Mark II include the following, in no particular order:

1. Plastic cap, so you don't have to fart around with screws.
2. 5 position needle, for finer tuning without changing the needle.
3. Thicker slide. That should eliminate the breakage problem of the past.
4. Cold start jet for choke. Uses a standard pilot jet. (larger)
5. A high flow bell that increases flow.
6. Removable high speed air bleed jets for finer tuning.
7. Choice of floats. (But, you've had this all along and didn't know it)
8. A stabilizer bar and mounting holes for multi-cylinder bikes. Keeps the carbs locked in line.
9. Two float tubes vented high up for cleaner carbs. If there is any leakage, it won't dribble all over the motor like in days of old.
10. Lighter weight. The new carb is aluminum and weighs 1¾ pounds, while the Concentric weighed 2¼ pounds.

Other than the above reasons, the whole carb looks like it was made much more carefully than Amals of old. We're going to be trying some of them soon and checking results on the dyno and on the track. We'll keep you posted. Oh yes, they'll be coming as standard equipment on several bikes, including Bultaco and Montesa. •





All Mark II carbs will be rubber mounted for protection against frothing from vibration.

Dimensions

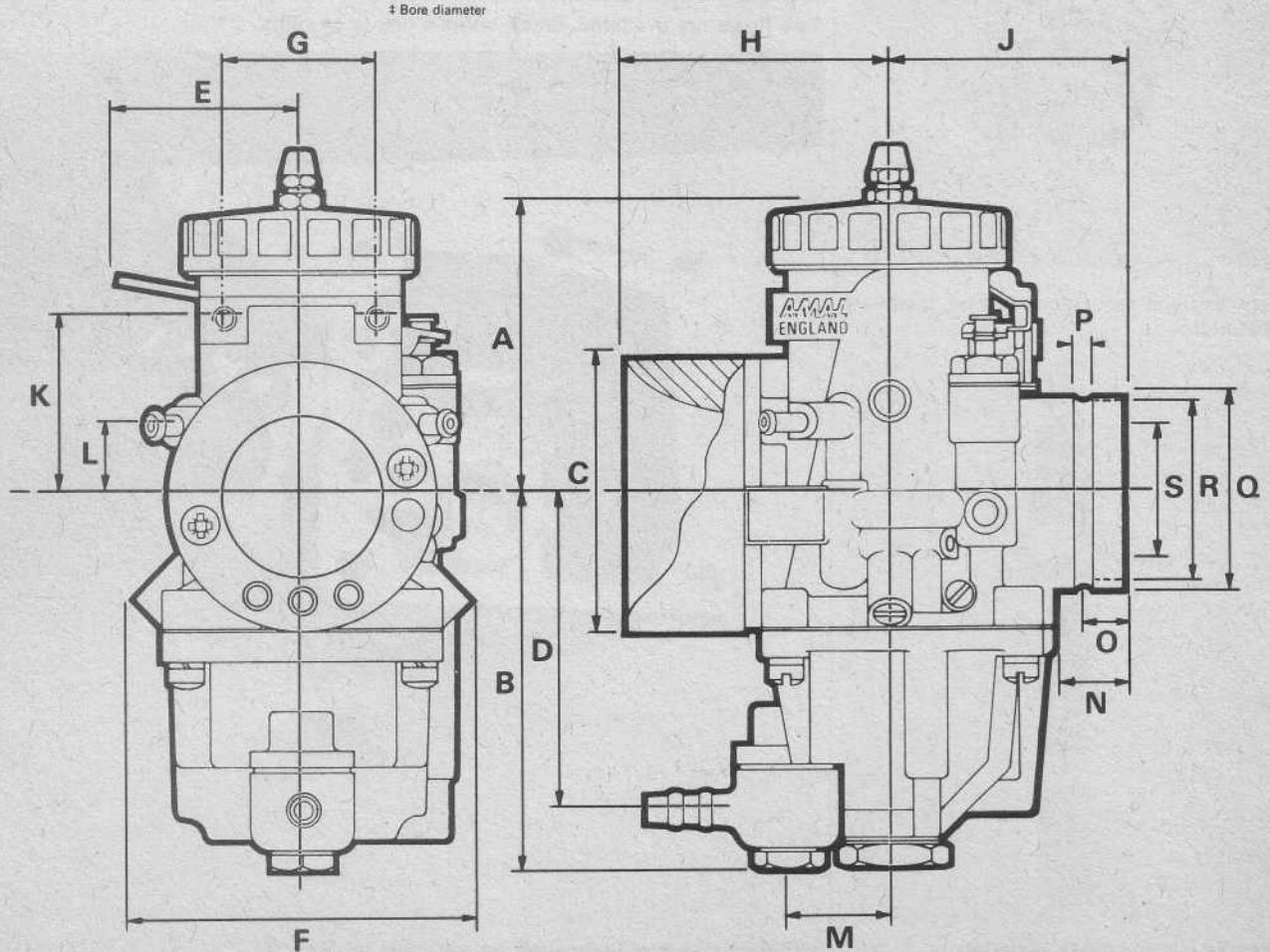
		A	B	C*	D	E	F	G†	H	J
Series 2600	mm	60	75	52	62	40	66	27	53·5	49·5
Series 2900	mm	62	79·5	58	66·5	40	72·5	32	56	49·5
Series 2000	mm	72	82	62	69	40	75·5	38	58·5	49·5

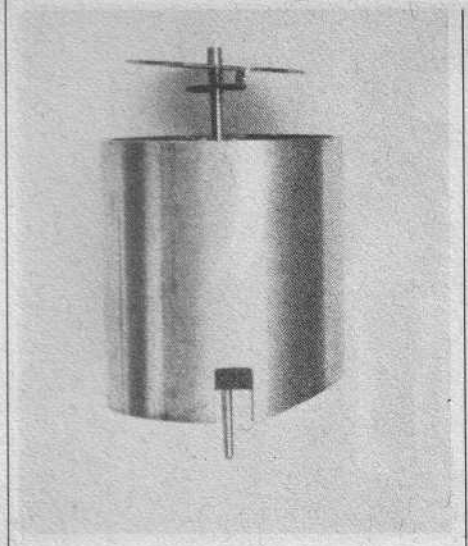
		K	L	M	N	O	P	Q*	R*	S‡
Series 2600	mm	33	19·5	22·5	15	10	4	35	33	22, 24 or 26
Series 2900	mm	38	15	22·5	15	8	4	40	38	28, 30, 32 or 34
Series 2000	mm	48	15	22·5	15	8	4	45	43	36, 38 or 40

* Diameter

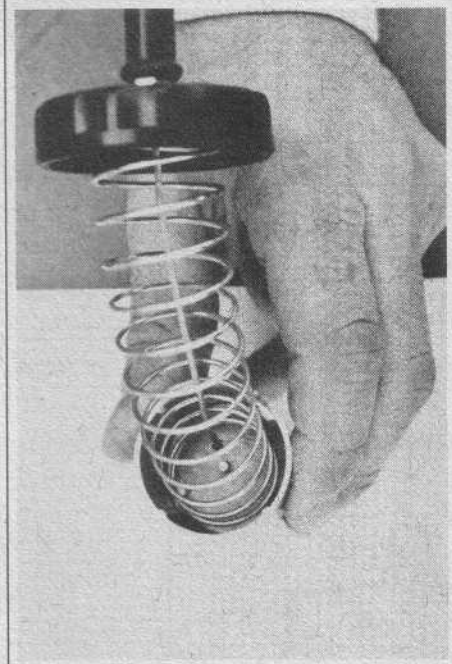
† Two holes, tapped M6-6H (Series 2600: M5-6H)

‡ Bore diameter

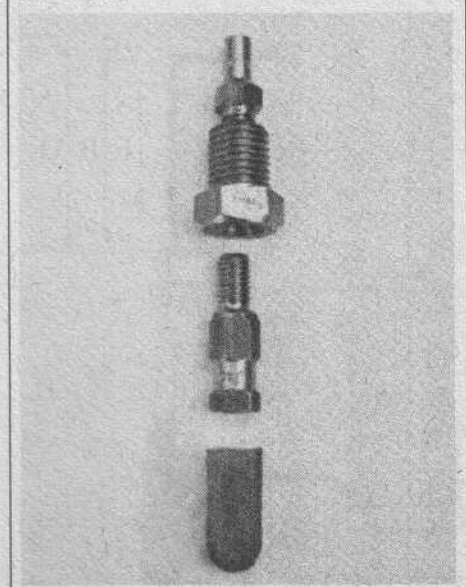




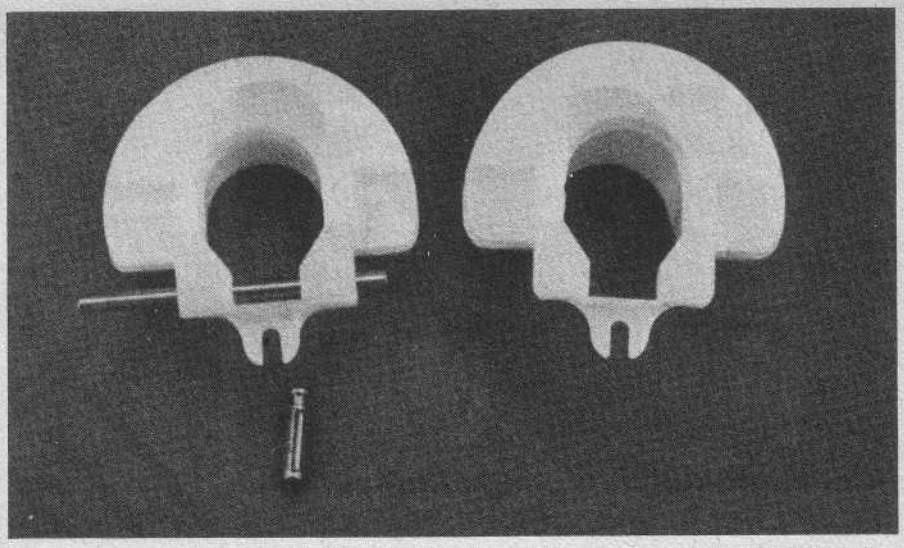
Needle, clip and slide from 36mm carb.

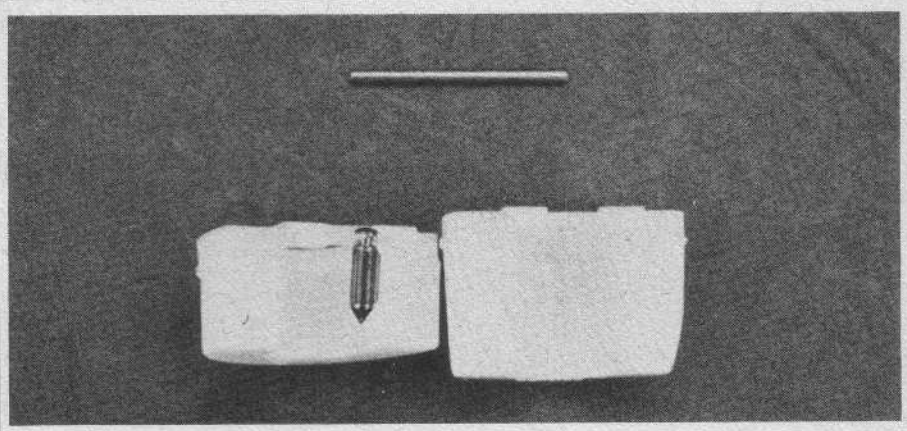


New cap and spring/clip combo look very Mikuni-ish.

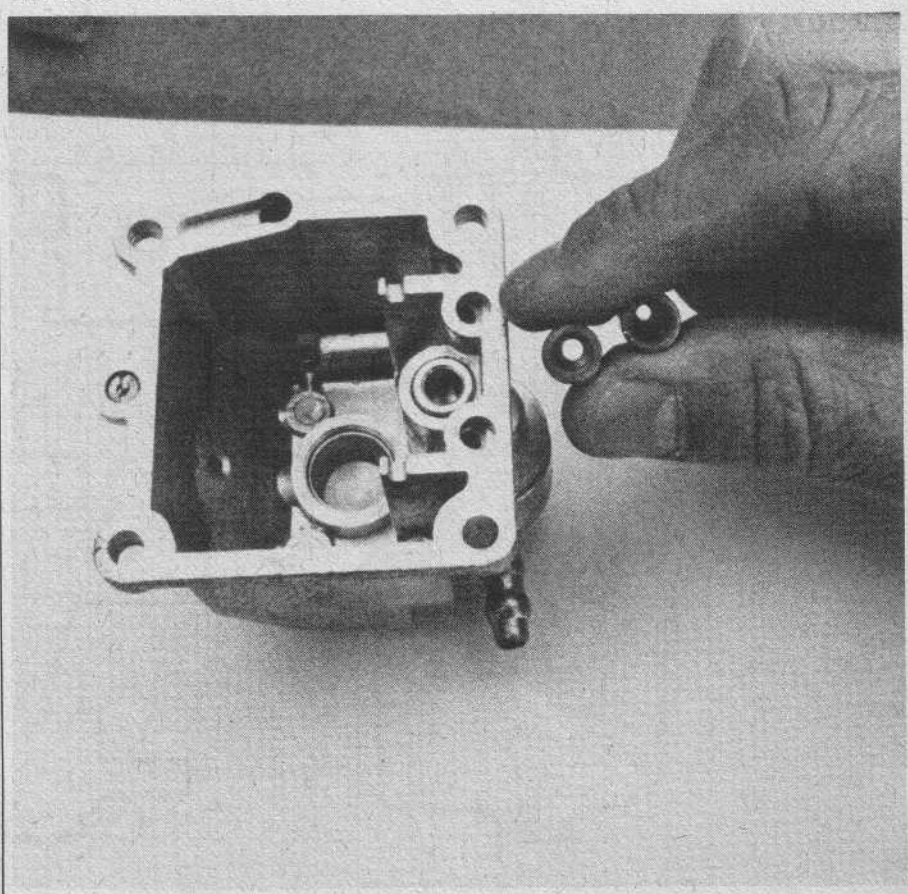


Needle jet, jet holder, main jet and screen—in order.

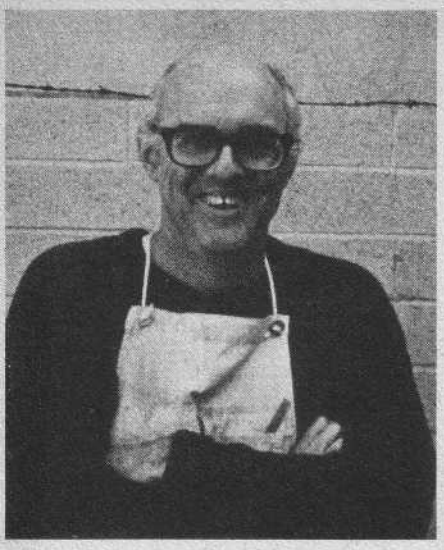




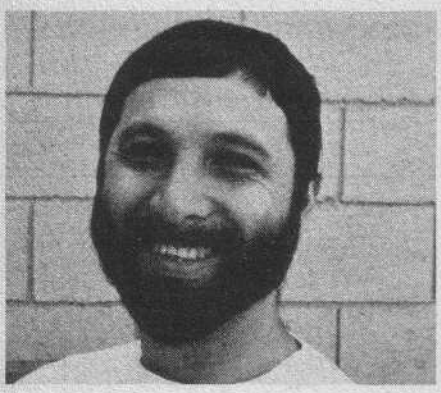
Two floats are available. Small volume one is on right.



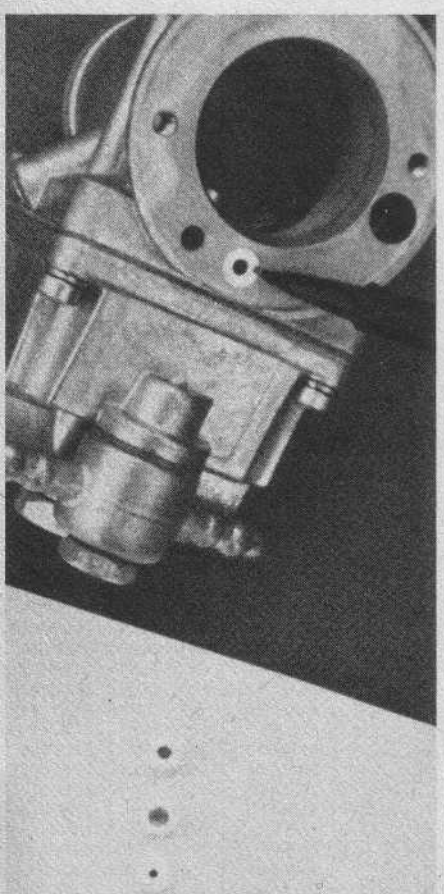
Different size flow fittings will be available for Mark II.



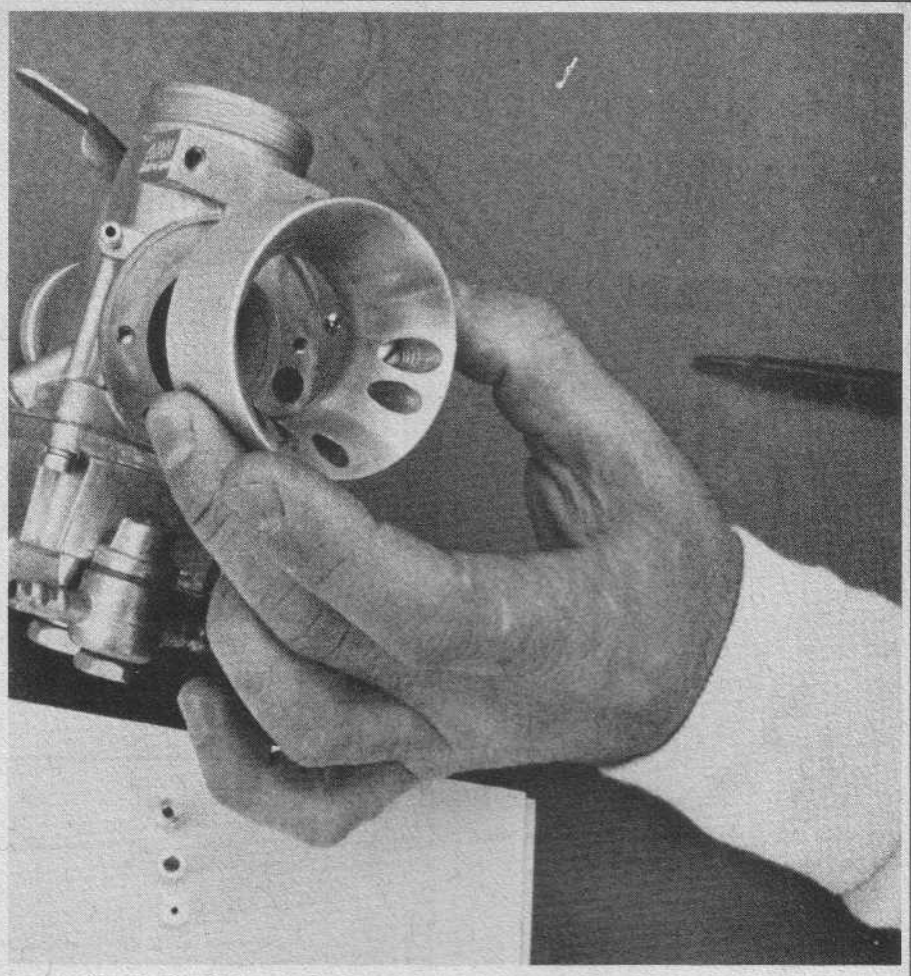
Norm.



Jerry.

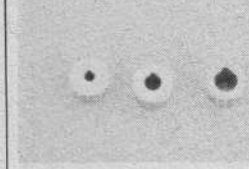


Removable high speed air bleeds.

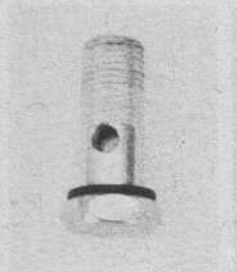


New bell holds the high speed air bleeds in place.

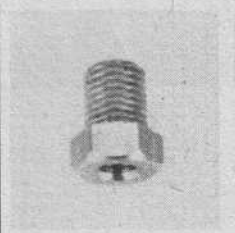
Burak-Bye offers this racing bell as an accessory for the Mark II as well as the Concentric.



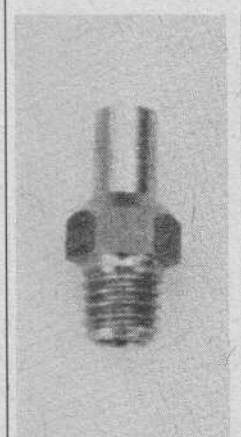
High speed air bleeds. Richest on the left, leanest on the right.



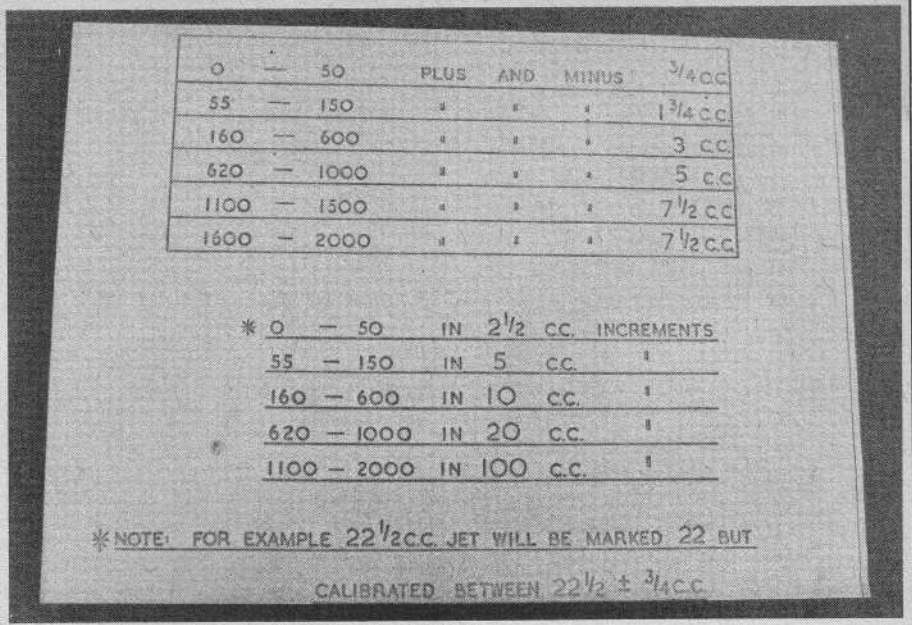
Old style small flow banjo fittings are on the left. High flow one is at right.



Two stroke main jet holder on left; four stroke on right.



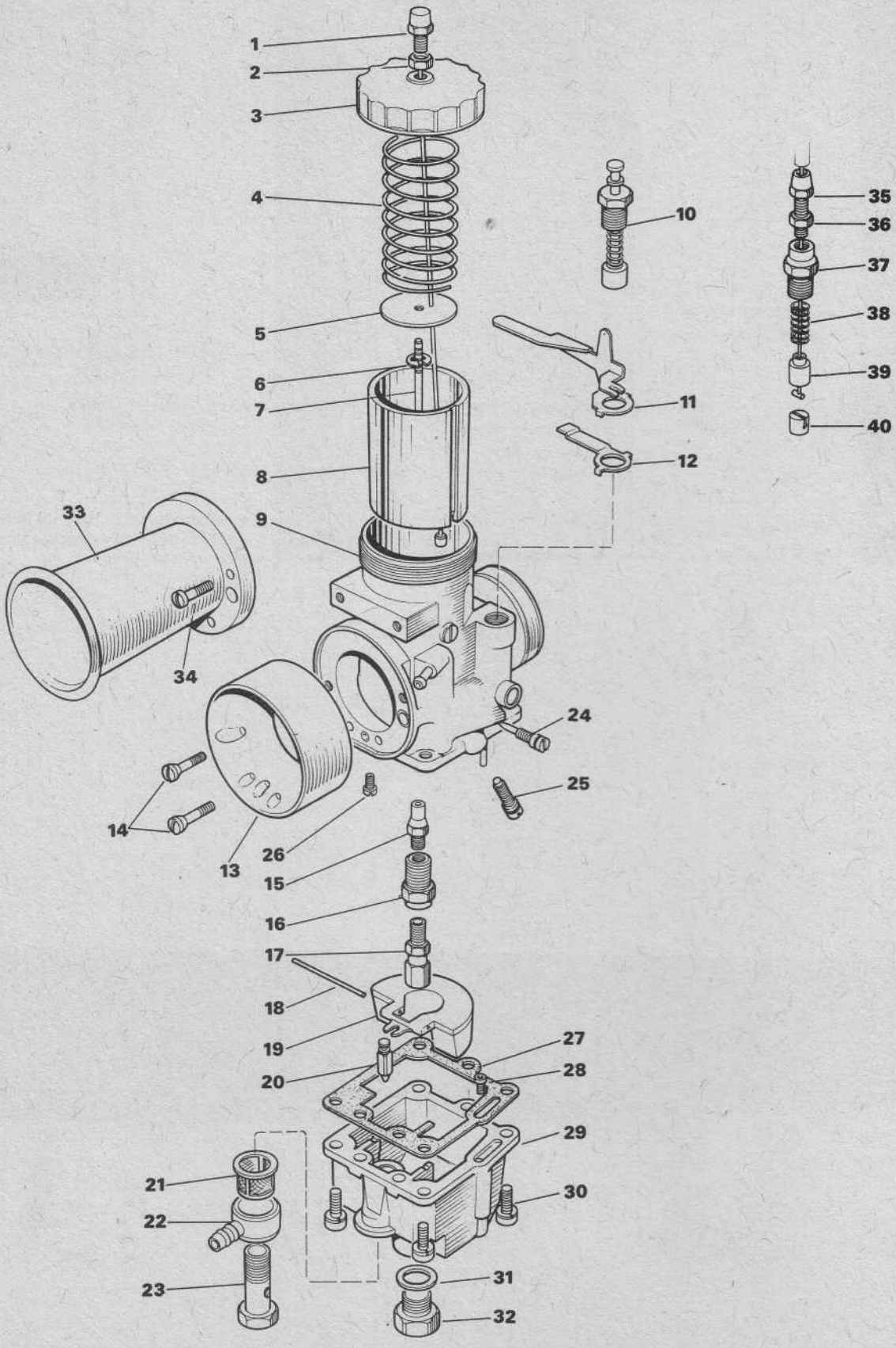
Two stroke needle jet on left; four strokes on right.



New line of jets is bench flowed for markings.

Service Parts for Mark 2 Amal Concentric Carburetors

Key to illustration	Component		Carburetor Series 2600	Carburetor Series 2900	Carburetor Series 2000
1	Cable adjuster		4/035	4/035	4/035
2	Cable-adjuster locknut		5/077	5/077	5/077
3	Mixing-chamber top (standard)		2622/064	2928/064	2036/064
Not shown	Cable ferrule for use with mid-cable adjuster		6/132A	6/132A	6/132A
Not shown	Mixing-chamber top for ferrule		2622/120	2928/120	2036/120
4	Throttle-slide spring		2622/061	2928/061	2036/061
5	Needle retaining disc		2622/071	2928/071	2036/071
6	Needle clip		2622/067	2622/067	2622/067
7	Throttle needle (paired with 2-cycle needle jet below)		2622/063	2928/063	2036/063
7	Throttle needle (paired with 4-cycle needle jet below)		2622/124	2622/124	2622/124
7	Throttle needle (for alcohol only)		2622/125	2928/125	2036/125
8	Throttle slide (specify cutaway)		2622/060	2928/060	2036/060
9	Carburetor body assembly		*	*	*
10	Cold start plunger assembly (lever operated)		2622/079	2622/079	2622/079
11	Cold start lever and bracket assembly		2622/075	2622/075	2622/075
12	Cold start click spring		2622/087	2622/087	2622/087
13	Air intake adaptor		2622/062	2928/062	2036/062
14	Air intake adaptor securing screws		2622/073	2622/073	2622/073
15	Needle jet (prefered for 2-cycle engines)		622/079	2928/079	622/079
15	Needle jet (prefered for 4-cycle engines)		622/122	2928/122	622/122
15	Needle jet (for alcohol only)		622/100	2928/100	622/100
16	Jet Holder		622/128	622/128	622/128
17	Main jet (specify size)		376/100	376/100	376/100
18	Float spindle		2622/069	2622/069	2622/069
19	Float (standard)		622/069	622/069	622/069
19	Float		622/196	622/196	622/196
20	Float needle		622/149	622/149	622/149
21	Filter		376/093	376/093	376/093
21	Filter (for alcohol only)		376/093B	376/093B	376/093B
22	Banjo, single, push-on ($\frac{1}{4}$ in. inside diameter tubing)		376/097	376/097	376/097
22	Banjo, single, threaded $\frac{1}{4}$ in. BSP ($\frac{5}{16}$ in. tubing)		376/090	376/090	376/090
22	Banjo, single, push-on ($\frac{5}{16}$ in. tubing)		376/130	376/130	376/130
22	Banjo, double, 90°, push-on ($\frac{5}{16}$ in. tubing)		376/135	376/135	376/135
22	Banjo, double, 150°, push-on ($\frac{5}{16}$ in. tubing)		376/139	376/139	376/139
22	Banjo, double, 55°, push-on ($\frac{5}{16}$ in. tubing)		376/410	376/410	376/410
22	Banjo, double, 180°, push-on ($\frac{1}{4}$ in. tubing)		376/419	376/419	376/419
Not shown	Banjo washer (for alcohol only)		14/175	14/175	14/175
23	Banjo bolt		622/078	622/078	622/078
24	Pilot-air adjusting-screw assembly		2622/128	2622/128	2622/128
25	Throttle-stop adjusting-screw assembly		2622/129	2622/129	1222/129
26	Pilot jet		124/026	124/026	124/026
27	Float bowl washer		2622/070	2622/070	2622/070
28	Cold start jet		124/026	124/026	124/026
29	Float bowl – 0·10 in. seating (*2·5 mm*)		2622/055	2622/055	2622/055
29	Float bowl – 0·062 in. seating (*1·6 mm*)		2622/056	2622/056	2622/056
29	Float bowl – 0·125 in. seating (*3·2 mm*)		2622/057	2622/057	2622/057
29	Float bowl – 0·156 in. seating (*4·0 mm*)		2622/058	2622/058	2622/058
30	Float-bowl securing screws		622/086	622/086	622/086
31	Float-bowl drain-plug washer		2622/066	2622/066	2622/066
32	Float-bowl drain-plug		2622/065	2622/065	2622/065
33	Velocity stack		2622/126	2928/126	2036/126
34	Velocity stack securing screws		2036/073	2036/073	2036/073
35	Adjuster	Alternative cable-operated cold start	4/035	4/035	4/035
36	Adjuster locknut		5/077	5/077	5/077
37	Screw		2622/091	2622/091	2622/091
38	Spring		2622/084	2622/084	2622/084
39	Plunger cap		2622/092	2622/092	2622/092
40	Plunger assembly		2622/094	2622/094	2622/094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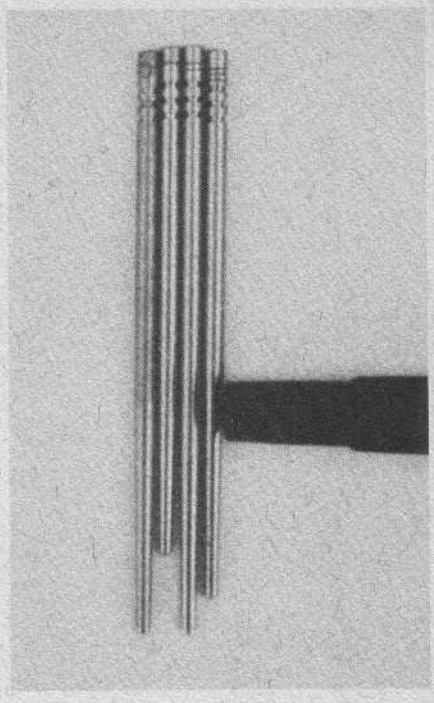
THROTTLE NEEDLE MARKINGS

PART Nº	MARKING	PART Nº	MARKING
4/003	4	622/080	Y
5/003	5	622/124	3 V GROOVES
6/003	6	828/023	X SPANISH 3 V GROOVES
22-075	22	828/080	Z
185/118	2N	1034/003	O
316/027	6P	1034/099	P
316/029	5GP6	828/104	4 V GROOVES
316/030	6P5	410/007	Q
316/146	5GP		
316/408	3GP6		
316/405	3GP		
316/502	TT2		
3871 TT	10		
SPAIN GP	D1		
363/013	A		
370/013	E		
375/063	B		
375/105	B2		
376/063	C		
376/096	C1		
376/116	C2		
389/063	D		
389/088	D2		
622/063	"U" SPANISH 1 V GROOVE		

SEE OVER

Needle markings chart.

Needles are marked with grooves.



Four stroke spray tube on left, part no. 622/074. Two stroker on right, part no. 622/075.