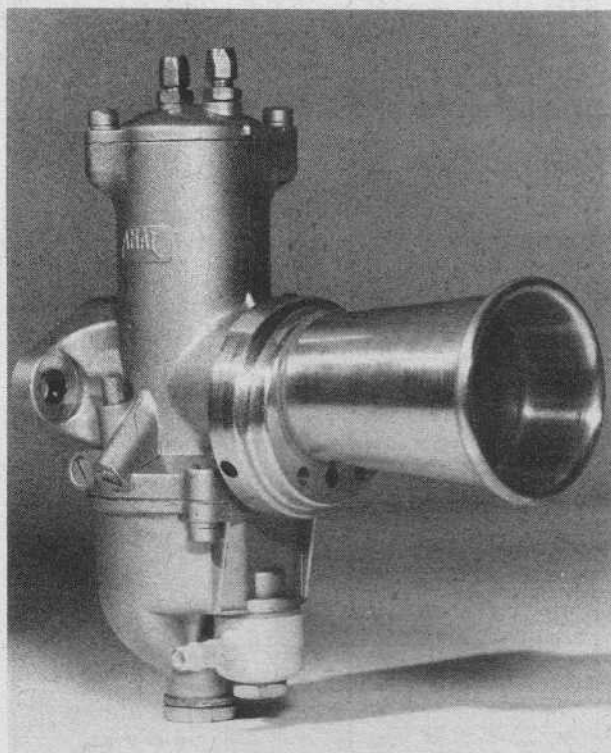


Amal Concentric Technical Manual



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 cir-

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.

cuit. 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

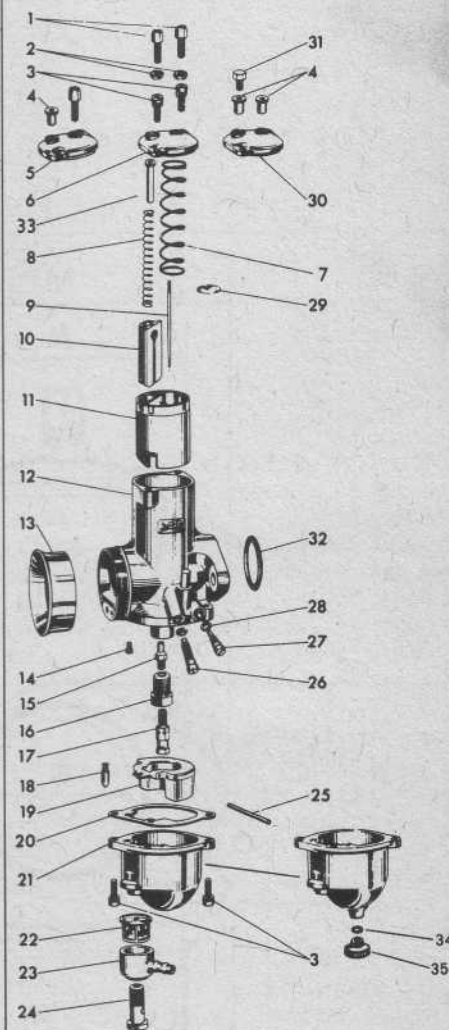
adjustable idle circuit) and convert it to four stroke parts and surprise people with the resultant performance gains.

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	1034/099
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 1/4 in. (70 mm) long	376/143	928/069	1034/070
13	Velocity stack - 2 3/8 in. (59 mm) long	—	928/070	—
14	Pilot jet	124/026	124/026	124/026
15	Needle jet (preferred for 2-cycle engines)	622/079	622/079	622/079
15	Needle jet (preferred 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 (3/8 in. tubing)	376/090	376/090	376/090
23	Banjo, single, push-on (3/8 in. tubing)	376/130	376/130	376/130
23	Banjo, double, 90°, push-on (3/8 in. tubing)	376/135	376/135	376/135
23	Banjo, double, 150°, push-on (3/8 in. tubing)	376/139	376/139	376/139
23	Banjo, double, 55°, push-on (3/8 in. tubing)	376/410	376/410	376/410
23	Banjo, double, 180°, push-on (1/2 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 'Poqidriv' 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 alti-

tude. 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

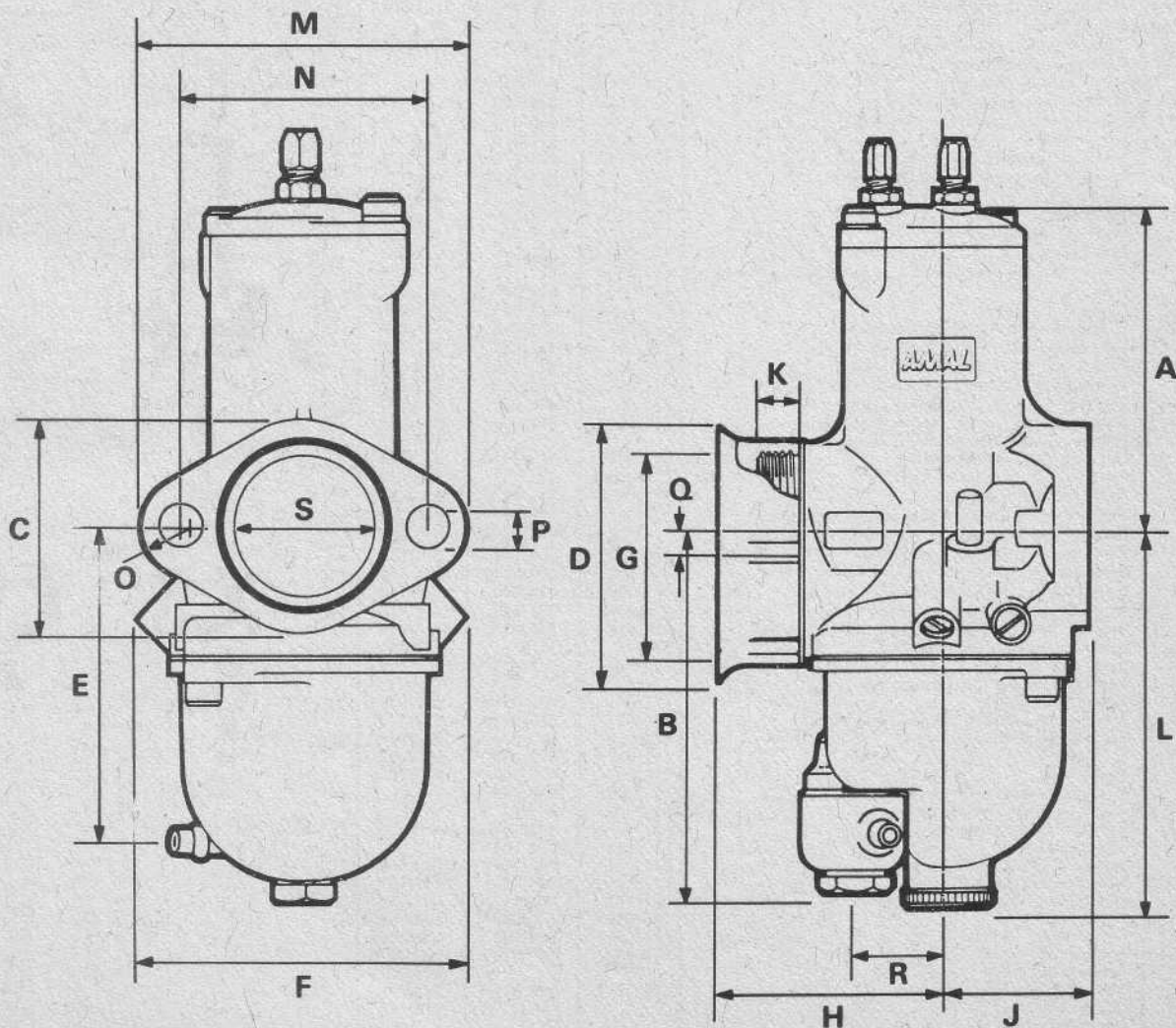
		A	B	C	D	E	F	G	H	J
Series 600	inches	2.41	2.90	1.63	1.94	2.43	2.56	1.63	1.84	1.30
	mm	61.2	73.6	41.3	49.2	61.7	65.0	41.2	46.4	33.0
Series 900	inches	2.74	3.02	1.69	2.13	2.55	2.75	1.81	1.84	1.30
	mm	69.6	76.6	42.9	53.9	64.7	69.8	46.0	46.4	33.0
Series 1000	inches	3.00	3.13	2.05	2.76	2.66	3.00	2.06	3.93	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 1/4" BSP complete with nut and nipple for copper pipe.

Banjo part No. 376/097 Single feed for 1/4" bore flexible pipe.

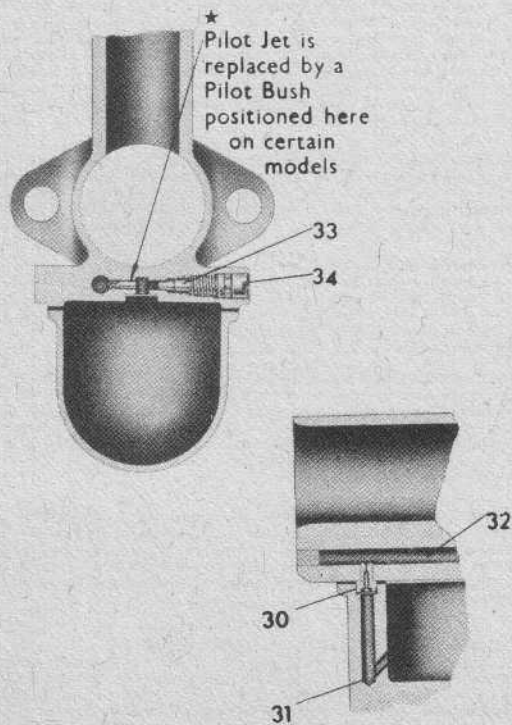
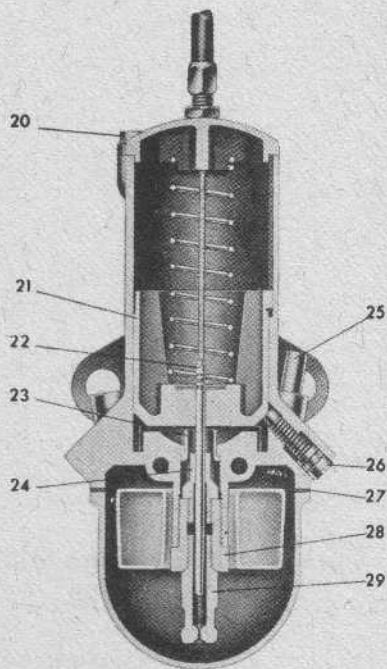
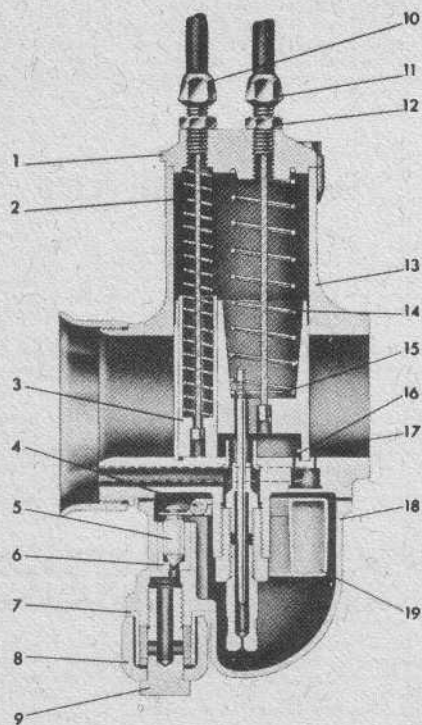
Banjo part No. 376/098 Double feed for 1/4" bore flexible pipe.

Banjo part No. 376/108 Double feed screwed 1/4" 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. | 18 - FLOAT CHAMBER BODY. |
| 2 - AIR VALVE SPRING. | 19 - FLOAT. |
| 3 - AIR VALVE. | 20 - MIXING CHAMBER TOP SCREWS. |
| 4 - FLOAT SPINDLE. | 21 - THROTTLE VALVE. |
| 5 - FLOAT NEEDLE. | 22 - JET NEEDLE. |
| 6 - NEEDLE SEATING. | 23 - CHOKE TUBE. |
| 7 - FILTER GAUZE. | 24 - NEEDLE JET. |
| 8 - BANJO. | 25 - TICKLER. |
| 9 - BANJO BOLT. | 26 - THROTTLE ADJUSTING SCREW. |
| 10 - CABLE ADJUSTER (AIR). | 27 - FLOAT CHAMBER WASHER. |
| 11 - CABLE ADJUSTER (THROTTLE). | 28 - JET HOLDER. |
| 12 - CABLE ADJUSTER LOCKNUTS. | 29 - MAIN JET. |
| 13 - CARBURETTOR BODY. | * 30 - PILOT JET. |
| 14 - THROTTLE VALVE SPRING. | 31 - PILOT JET FEED PASSAGE. |
| 15 - JET NEEDLE CLIP. | 32 - FEED PASSAGE FROM PILOT JET. |
| 16 - PILOT BY-PASS. | 33 - PILOT AIR FEED PASSAGES. |
| 17 - PILOT OUTLET. | 34 - PILOT AIR ADJUSTING SCREW. |

Carburetor Settings List 1969, 1970

MACHINE	Carburetor No.		MACHINE	Carburetor No.	
	1969	1970		1969	1970
A.J.S.			GILERA (ARGENTINA)		
250 Scrambler Y4	R932/17	R932/17	8622/2	R622/2	
380 Scrambler Y3	R1034/3	R1034/3			
B.S.A.			GREEVES		
173 Bantam 175	R626/17	R626/17	250	R932/3	R932/3
173 Bushman 175	R626/17	R626/17			
247 Starline 305	R626/3	R626/3			
441 Shooting Star B41SS	R930/38	R930/38			
441 Victor Special B41CS	R930/38	R930/38	MONTESSA		
499 Royal Star A50	R626/19	R626/19	Costa TT	L627/411	L627/411
654 Firebird Scrambler A65SS A65FS	R930/34	R930/34			
	L930/35	L930/35			
	R930/34	R930/34			
654 Lightning A61L	L930/35	L930/35	NORTON VILLIERS		
654 Thunderbolt A61T	R626/14/16	R626/14/16	Commando	L930/30	R930/46
740 Rocket 3 A73R	L626/13	L626/13		L930/31	L930/47
			SANGLAS S.A.		
BULTACO			400	R930/445	R930/445
Lobito Mk. 3		R622/403			
Lobito Mk. 3		L622/406			
Lobito 125		L625/405			
Sherpa S100		R625/406	TRIUMPH		
Campera 12 Mk. 2		L625/407	Tiger T100 1000	R626/6	R626/25
Campera 175 Mk. 2		R625/408	100T & 100R	L626/10	L626/27
Lobito 125		L625/409	TR6, TR6R, TR6C	R930/23	R930/23
Lobito 125		L625/410	T120, T120R	R930/9	R930/9
Purang 175 Mk. 1 - Mk. 4		R627/425	T150 Trident	L2950/10	L2950/10
Purang 175 Mk. 1 - Mk. 4		R930/409	TR25W	R626/14-16	R626/14-16
Mataador Mk. 3		L930/410		L626/13	L626/13
Mataador Mk. 2		R932/413		R928/20	R928/20
Mataador Mk. 1		L626/14			
Merrilla Mk. 2		R932/415			
Merrilla Mk. 1		L932/416			
El Monasterio El Bandido		R932/417			
El Monasterio El Bandido		L932/418			
TS 350		R1036/5	VELOCE		
TS 350		L1036/6	Thronon	R930/15	R1036/4
			Venom		R930/29

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.

Carburetor Settings List 1971 and 1972

MACHINE	Carburetor No.		MACHINE	Carburetor No.	
	1971	1972		1971	1972
A.J.S.			GILERA (ARGENTINA)		
250 Scrambler Y4	R932/13		8622/2	R622/2	
380 Scrambler Y5	R1034/3	R1034/3			
B.S.A.			GREEVES		
247 Starline 305	R626/20	R928/20	250	R912/3	R922/3
654 Firebird A63SS A65FS	R930/72	R930/72	380 (U.S.B. Griffin)		R1044/3
654 Lightning	R930/70	R930/70			
654 Thunderbolt A65-T	R928/17	R928/17	HUSQVARNA		
740 Rocket 3 A73-R	R930/163	R626/51/53	125	L932/23	L932/23
	L626/62	L626/62			
			K.T.M.		
BULTACO			175	R930/75	R930/75
Lobito 175 Mk. 4	R930/403	L930/403			
Purang 175	R930/404	R930/404	MAICO		
Purang 175	R930/405	R930/405	R1036/2	R1036/2	
Sherpa S	R930/406	R930/406			
Sherpa S	R930/407	R930/407			
Sherpa S 15V 125 Mk. 3	R930/411	R930/411	MONTESSA		
Sherpa S 15V 125 Mk. 3	L930/412	L930/412	Costa 247	R627/403	R627/403
Purang 125 Mk. 3	R930/413	R930/413	Costa 247	L627/407	L627/407
Purang 125 Mk. 3	L930/411	L930/414	Capra 125 MX	L627/410	L627/410
Purang 250 Mk. 3	R930/416	R930/416	King Scorpion	L627/413	L627/413
Bandido	R932/403	R932/403	Costa TT	L627/414	L627/414
Bandido	L932/404	L932/404		L627/411	L627/411
Purang 250	R932/405	R932/405	MOTO GUZZI		
Purang 250	L932/406	L932/406	750 Twin	R930/60	L930/61
Purang 250 Mk. 3	R932/408	R932/408			
Purang 250 Mk. 3	L932/409	L932/409	NORTON VILLIERS		
El Monasterio	R932/411	R932/411	Commando	R930/68	R930/68
El Monasterio	L932/412	L932/412		L930/69	L930/69
Purang Mk. 4	R932/416	R932/416	Combat	R932/19	L932/20
Purang Mk. 4	L932/409	L932/409			
Purang 250 Mk. 4 USA	R932/424	R932/424	OSSA		
Purang 250 Mk. 4 USA	L932/425	L932/425	Trials	L627/416	L627/416
Sci Merrilla Mk. 1	L932/426	L932/426			
Mataador	L932/427	L932/427	TRIUMPH		
Bandido 360 USA Mk. 2	R932/428	R932/428	100C	R626/32	R626/32
Mataador SD Mk. 2	L932/429	L932/429	100T 100R	L626/33	L626/33
Mataadero Mk. 2	R932/431	R932/431	TR6R TR6C	L626/34	L626/34
Purang 400	L932/432	L932/432	T120R	R930/66	R930/66
Sherpa 4	L627/412	L627/412	T150R Trident	L930/67	L930/67
				L626/37	R626/37
				-48-49	L626/62
					R626/63
					R628/26
DALESMAN			WASSELL		
Puch 125	R626/55		Trials 125		R622/7
DUCAPI					
750 GT	R930/76	R930/76			
250	L930/77	L930/77			
		R627/408			

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.

Black smoke in exhaust.
Petrol spraying out of carburetter.
Four strokes, eight-stroking.
Two strokes, four-stroking.
Heavy, lumpy running.
Sparking plug sooty.

WEAKNESS.

Spitting back in carburetter.
Erratic slow running.
Overheating.
Acceleration poor.
Engine goes better if :-
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).

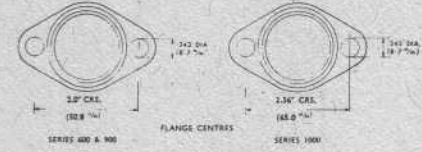
Carburetor Settings List 1973

MACHINE	Carburetor No. 1973	MACHINE	Carburetor No. 1973
A.J.S.			
380 Scrambler X5	R1034/3	BULTACO (continued)	
410 Scrambler	R1034/3	Pursang 250	R932/405
U.S.A.		Pursang 250	L932/406
200 T20 (French Army)	R622/10	Pursang 250 Mk. 3	R932/408
740 Rocket 3 A75-R	R626/65	Pursang 250 Mk. 3	L932/409
	L626/67	Montadero 360	R932/411
	R626/68	Montadero 360	L932/412
740 T150 Hurricane	L626/70	Matador Mk. 3	L932/413
	R626/71	Matador Mk. 3	L932/414
Moto-Cross 500	R932/28	Metralia Mk. 2	R932/415
		Metralia Mk. 2	L932/416
BOUDET		Bandido 350 and 360 Euro Mk. 2	R932/417
	L1036/9	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 Metralia Mk. 2	L932/426
		Matador Mk. 4 USA	L932/427
		National 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	R932/434
		Astro 250	L932/435
		Matador SD Mk. 5	R932/437
		Tiger 250	L932/438
		Pursang 250 Mk. 5 and Mk. 6	L932/439
		Pursang 250 Mk. 6	L1036/8
		Pursang 250 Mk. 6	L1036/8
		Pursang Astro	L1038/7
		Astro 350	L1038/8
		DUCATI	
		250	R627/408
		750 GT	R930/76
		350	L930/77
			R930/417

MACHINE	Carburetor No. 1973	MACHINE	Carburetor No. 1973
GILERA (ARGENTINA)			
	R622/2	OSSA	
		Trials	L627/422
		Enduro	L932/436
GREEVES			
250	R932/3	RICKMANN	
380 Q.U.R. Griffin	R1034/4	125 Enduro	R627
HUSQVARNA			
125	L932/21	SANGLAS	
		Sanglas 40	R930/415
		Sanglas 400	R930/418
K.T.M.			
175	R930/75	MOTOTRANS	
		Deluxe 250	R627/417
		Italia 250	R627/419
		Road 250	R627/421
		24 Hours 250	R627/424
MAICO			
	R1036/2	SUNBEAM (Stewart Engineering)	
		57	R624/4
MONTESSA			
Cota 75 and 125	L625/413	TRIMAKAR	
Cota 247	R627/406		R622/407
Cota 247	L627/407	TRIUMPH	
Capra 125 MX	L627/410	T100 SS	R626/64
Cota 7 T	L627/411		L626/65
Cota 247	L627/415		R626/66
King Scorpion	L627/414		L626/67
			R626/68
			R626/69
			L626/70
			R626/71
			R626/72
			R626/73
			R626/74
			R626/75
			R626/76
			R626/77
			R626/78
			R626/79
			R626/80
			R626/81
			R626/82
			R626/83
			R626/84
			R626/85
			R626/86
			R626/87
			R626/88
			R626/89
			R626/90
			R626/91
			R626/92
			R626/93
			R626/94
			R626/95
			R626/96
			R626/97
			R626/98
			R626/99
		WASSELL	
		Trials 125	R622/7 or R622/8

Carburetor Settings List 1969, 1970, 1971 and 1972

Parts normally fitted to all Amal carburetors unless otherwise stated under Special Details are as follows:
TWO STROKE SETTING: Spray tube 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 621/107, Needle 622/124.



EXPLANATION OF CARBURETTOR TYPE No.

R020/C denotes a right hand series 600 Carburettor 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 digit after the stroke specification reference Complete carburetor numbers are found numbered on the raised base adjacent to the air intake.

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 enriches 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 carburettor, the 900 series carburettor needles are identified by three grooves around the top of the needle, throttle needles indented by two grooves are used on certain models for both series 600 and 900 carburetors.

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 carburettor 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 carburettor, filter gauze 376/093B and banj. w.s.s. 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.

Carburetor Type No.	Jet size Main	Pilot	Throttle Valve	Needle Position	Needle Jet	SPECIAL DETAILS
R022/2	100	30	3	2	105	Float Chamber 622/050.
R022/7	110	30	3	1	105	Banjo 376/097, Adapter 622/164, Throttle Cable 530/49, Air Cable 530/111.
R022/105	120	25	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/106	120	25	2	106	Pilot Jet 1034/079, Air Tube 928/182.	
L034/005	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
L034/007	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/107	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/108	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/109	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/110	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/111	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/112	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/113	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/114	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/115	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/116	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/117	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/118	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/119	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/120	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/121	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/122	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/123	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/124	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/125	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/126	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/127	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/128	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/129	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/130	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/131	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/132	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/133	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/134	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/135	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/136	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/137	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/138	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/139	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/140	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/141	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/142	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/143	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/144	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/145	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/146	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/147	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/148	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/149	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/150	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/151	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/152	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/153	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/154	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/155	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/156	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/157	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/158	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/159	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/160	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/161	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/162	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/163	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/164	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/165	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/166	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/167	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/168	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/169	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/170	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/171	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/172	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/173	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/174	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/175	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/176	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/177	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/178	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/179	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/180	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/181	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/182	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/183	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/184	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/185	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/186	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/187	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/188	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/189	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/190	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/191	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/192	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/193	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/194	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/195	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/196	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/197	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/198	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/199	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.
R022/200	130	30	24	2	106	Banjo 376/097, Air Tube 928/182.

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

HOW TO TUNE UP PHASES OF AMAL NEEDLE JET CARBURETTOR THROTTLE OPENINGS

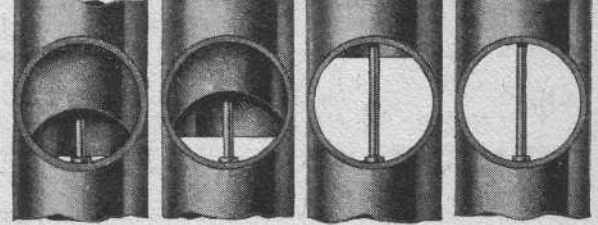


FIG. 5. SEQUENCE OF TUNING

TUNE UP IN THE FOLLOWING ORDER.
NOTE. The carburettor 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.

Carburetor Type No.	TWO STROKE SETTINGS			FOUR STROKE SETTINGS						
	Jet Size Main	Pilot	Throttle Valve	Needle Position	Needle Jet	Needle Jet				
R022/202	110	25	3	2	106	R022/300	120	3	2	106
R022/303	110	25	3	2	106	R022/303	120	3	2	106
R024/300	140	25	3	2	106	R024/300	140	25	3	106
R024/301	140	25	3	2	106	R024/301	140	25	3	106
R026/300	170	25	3	2	106	R026/300	180	25	3	106
R026/303	170	25	3	2	106	R026/303	180	25	3	106
R028/300	200	25	3	2	106	R028/300	180	25	3	106
R028/303	200	25	3	2	106	R028/303	180	25	3	106
R030/300	230	25	3	2	106	R030/300	200	25	3	106
R030/303	230	25	3	2	106	R030/303	200	25	3	106
R032/300	260	25	3	2	106	R032/300	220	25	3	106
R032/303	260	25	3	2	106	R032/303	220	25	3	106
R034/300	300	30	3	2	108	R034/300	260	30	3	108
R034/303	300	30	3	2	108	R034/303	260	30	3	108
R036/300	380	30	3	2	108	R036/300	340	30	3	108
R036/303	380	30	3	2	108	R036/303	340	30	3	108
R038/300	400	30	3	2	108	R038/300	360	30	3	108
R038/303	400	30	3	2	108	R038/303	360	30	3	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 carburetor, 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 at 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

Carburetor Type No.	Jet Size Main	Jet Size Pilot	Throttle Valve	Needle Position	Needle Jet	SPECIAL DETAILS
R622/72	100	20	2	2	105	Floater chamber 622/050.
R622/73	110	20	3	2	105	Floater chamber 622/050. Adaptor 622/164. Throttle cable 530/09. Air cable 530/01. Twist grip 530/3. Air control 12/000. Throttle cable 530/5. Air cable 530/81. Special flange adaptor to suit 33 mm stub.
R622/78	110	20	3	1	105	Throttle cable 530/14. Air cable 530/122.
R622/100	120	25	3	2	105	Banjo 376/097. Air tube 622/162. Main jet filter 928/071.
L622/406	120	25	3	2	106	Floater chamber 622/053. Banjo 376/097. Air tube 622/162. Main jet filter 928/071.
R622/407	120	25	3	2	100	Floater chamber 622/053. Banjo 376/097. Air tube 622/162. Main jet filter 928/071.
R624/4	148	30	2	2	105	Banjo 376/090. Air control 12/000. Throttle cable 530/50. Air cable 530/84.
L624/405	150	30	2	2	105	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R625/405	170	30	2	2	106	Banjo 376/092. Air tube 622/163.
L625/407	170	30	2	2	106	Banjo 376/097. Air tube 622/163.
R625/408	170	30	2	2	106	Banjo 376/097. Air tube 622/163.
L625/409	150	30	2	2	106	Banjo 376/097.
L625/410	170	30	2	2	106	Banjo 376/097. Air tube 622/162.
L625/411	200	30	2	2	106	Banjo 376/097. Floater chamber 622/050. Main jet filter 928/071.
L625/414	150	20	2	2	106	Banjo 376/092. Air tube 622/162.
L625/415	150	30	2	2	106	Banjo 376/097. Air tube 622/162.
R626/69	150	30	2	2	106	
L626/65	150	30	2	2	106	
R626/66	150	30	2	2	106	
L626/67	150	30	2	2	106	
R626/68	150	30	2	2	106	
R626/69	150	30	2	2	106	
L626/70	150	30	2	2	106	
R626/71	150	30	2	2	106	
R627	180	20	3	2	105	Air jet 4 in. Spray tube 928/107.
R627/406	160	40	2	2	106	Banjo 376/097.
R627/407	160	40	2	2	106	Banjo 376/097.
R627/408	160	40	2	2	106	Banjo 376/097.
L627/410	170	40	2	2	106	Needle jet 622/122. Throttle needle 622/182. Primary air hole 4.75 mm dia.
L627/411	170	40	2	2	106	Banjo 376/097.
L627/412	180	20	3	2	106	Floater chamber 622/055. Banjo 376/097. Throttle needle 622/063.
L627/413	150	40	2	2	106	Banjo 376/097. Air tube 622/162.
L627/414	180	40	2	2	106	Banjo 376/097.
L627/415	190	15	3	2	105	Banjo 376/419. Floater chamber 622/199. Air tube 376/066. Main jet filter 928/071.
R627/419	200	25	2	2	105	Banjo 376/418. Floater chamber 622/199. Air tube 622/122. Main jet filter 928/071.
L627/420	240	30	2	2	106	Banjo 376/419. Floater chamber 622/050. Main jet filter 928/071.
R627/421	200	20	2	2	105	Banjo 376/419. Floater chamber 622/199. Air tube 622/089. Main jet filter 928/071.
L627/422	120	30	2	2	106	Banjo 376/097. Floater chamber 622/050. Main jet filter 928/071.
R627/424	230	15	3	2	105	Banjo 376/419. Floater chamber 622/199. Air tube 376/066. Main jet filter 928/071.
R628/21	210	30	3	2	106	
R630/76	250	35	3	2	106	
R630/78	100	30	3	2	106	
L630/77	150	30	3	2	106	
R630/80	200	30	3	2	106	
L630/81	200	30	3	2	106	
R630/82	200	30	3	2	106	
L630/83	220	30	3	2	106	
R630/85	180	30	3	2	106	
L630/83	180	30	3	2	106	
R630/86	230	30	3	2	106	
R630/85	260	30	3	2	106	
R630/82	180	30	3	2	106	
R630/84	180	30	3	2	106	
L630/83	200	30	3	2	106	
R630/404	240	40	3	2	106	Floater chamber 622/184. Banjo 376/419. Throttle needle 928/075. Jet holder 622/183. Needle jet 622/173. Air tube 928/072.
L630/405	240	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/406	250	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/407	240	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/408	270	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/409	240	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/410	240	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/411	240	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/412	240	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/413	240	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/414	240	40	3	2	106	Floater chamber 622/056. Banjo 376/099. Air tube 928/073.
R630/415	210	25	3	2	106	Floater chamber 622/056. Banjo 376/419. Air tube 928/073.
R630/416	380	25	2	2	107	Banjo 376/092. Air tube 928/072. Main jet filter 928/071.
R630/417	220	35	3	2	106	Banjo 376/097. Air tube 928/072. Main jet filter 928/071.
R630/418	250	25	3	2	106	Banjo 376/097. Air tube 928/072. Main jet filter 928/071.
R630/419	250	25	3	2	106	Banjo 376/097. Air tube 928/072. Main jet filter 928/071.
R630/420	220	20	2	2	105	Banjo 376/097. Air tube 928/072. Main jet filter 928/071.
R630/421	220	20	2	2	105	Banjo 376/097. Air tube 928/072. Main jet filter 928/071.
R630/26	230	30	3	2	106	
L632/27	230	30	3	2	106	
R632/28	180	30	3	2	106	
R632/29	180	30	3	2	106	
L632/30	260	30	3	2	106	
R632/31	230	30	3	2	106	
L632/32	230	30	3	2	106	
R632/33	240	40	3	2	106	
L632/34	240	40	3	2	106	
R632/35	240	40	3	2	106	
R632/36	240	40	3	2	106	
R632/37	240	40	3	2	106	
R632/38	240	40	3	2	106	
R632/39	240	40	3	2	106	
R632/40	240	40	3	2	106	
R632/41	210	40	3	2	106	
L632/42	210	40	3	2	106	
R632/43	240	40	3	2	106	
L632/44	240	40	3	2	106	
R632/45	230	30	3	2	106	
R632/46	230	30	3	2	106	
R632/47	240	40	3	2	106	
R632/48	240	40	3	2	106	
R632/49	240	40	3	2	106	
R632/50	240	40	3	2	106	
R632/51	240	40	3	2	106	
R632/52	240	40	3	2	106	
R632/53	240	40	3	2	106	
R632/54	240	40	3	2	106	
R632/55	240	40	3	2	106	
R632/56	240	40	3	2	106	
R632/57	240	40	3	2	106	
R632/58	240	40	3	2	106	
R632/59	240	40	3	2	106	
R632/60	240	40	3	2	106	
R632/61	240	40	3	2	106	
R632/62	240	40	3	2	106	
R632/63	240	40	3	2	106	
R632/64	240	40	3	2	106	
R632/65	240	40	3	2	106	
R632/66	240	40	3	2	106	
R632/67	240	40	3	2	106	
R632/68	240	40	3	2	106	
R632/69	240	40	3	2	106	
R632/70	240	40	3	2	106	
R632/71	240	40	3	2	106	
R632/72	240	40	3	2	106	
R632/73	240	40	3	2	106	
R632/74	240	40	3	2	106	
R632/75	240	40	3	2	106	
R632/76	240	40	3	2	106	
R632/77	240	40	3	2	106	
R632/78	240	40	3	2	106	
R632/79	240	40	3	2	106	
R632/80	240	40	3	2	106	
R632/81	240	40	3	2	106	
R632/82	240	40	3	2	106	
R632/83	240	40	3	2	106	
R632/84	240	40	3	2	106	
R632/85	240	40	3	2	106	
R632/86	240	40	3	2	106	
R632/87	240	40	3	2	106	
R632/88	240	40	3	2	106	
R632/89	240	40	3	2	106	
R632/90	240	40	3	2	106	
R632/91	240	40	3	2	106	
R632/92	240	40	3	2	106	
R632/93	240	40	3	2	106	
R632/94	240	40	3	2	106	
R632/95	240	40	3	2	106	
R632/96	240	40	3	2	106	
R632/97	240	40	3	2	106	
R632/98	240	40	3	2	106	
R632/99	240	40	3	2	106	
R632/100	240	40	3	2	106	
R1034/3	300	23	2	2	107	Floater chamber 622/056. Banjo 376/419. Air tube 928/079.
R1034/4	320	23	2	2	107	Floater chamber 622/056. Banjo 376/419. Air tube 928/079.
R1034/5	350	25	2	2	107	Floater chamber 622/056. Banjo 376/419. Air tube 928/079.
R1034/6	400	20	3	2	108	Floater chamber 622/056. Banjo 376/419. Air tube 928/079.
L1034/5	450	40	2	2	107	Floater chamber 622/056. Banjo 376/419. Air tube 928/079.
L1034/6	480	35	2	2	108	Floater chamber 622/056. Banjo 376/419. Air tube 928/079.
L1034/7	430	35	2	2	108	Floater chamber 622/056. Banjo 376/419. Air tube 928/079.
L1034/8	440	40	3	2	107	Floater chamber 622/056. Banjo 3