

WEBER CARBURETOR, PART 2

By Tom Dill

Table number 3 gives the size of the idle jet air correction or bleed hole or holes against each 'F' number in mm's. It will be seen that the 'F' numbers do not run in sequence, but in table number 4 they have arranged in their order from rich to lean.

<u>'F' Number</u>	<u>Table No. 3</u> <u>One Hole Type</u> <u>hole Sized in mm.</u>	<u>Two Hole Type</u> <u>hole Sizes in mm.</u>
F1		1.35
F2	1.30	
F3		1.60
F4	1.35	
F5	1.60	
F6	0.65	
F7		1.20
F8	1.20	
F9	1.00	
F10	No hole, for use in IDA carburetor where air correction is in idle jet carrier or holder.	
F11	1.25	
F12	0.85	
F13		0.90

Table No. 4

Idle jet air correction or bleed holes arranged from rich to lean

Rich

F6

F12

F9

F8

F11

F13

F2

F4

F5

F7

F1

F3

Lean

Example

Take a four-cylinder engine of 1275 cc., divide by 4, this is 319 cc per cylinder. From table number 2 it shows that both 300 and 250 cc's can use as a starting point either a 45 or 50 idle fuel bleed hole size but as the example has Siamese ports, the 50 is the jet to start with.

To get a reading for the correct selection of the idle air bleed or 'F' number hole size it is recommended that a midway choice be made F8 (1.20mm) be used which will give an idle jet assembly number of 50F8.

To check this selection start the engine and bring it up to the normal operating temperature; leaving chokes, secondary venturies, mains, emulsions, air corrections, etc, as fitted. Carefully set the idle mixture screws (see diagrams numbers 1 and 2) taking time to allow engine to settle down after each adjustment (this is done in conjunction with the idle speed screw, see diagrams 1 and 2) and when set to the most even idling position - due allowance made if a competition camshaft is being used as this will produce rough idling generally.

After completing this operation, open the throttle and hold it steady at 200 - 2500 rpm - below where the main jet would enter the circuit and check with a gas analyzer which should read 12.5 to 13.1 air fuel ratio. If an analyzer is not available, a quick means of determining the mixture is by listening to the engine, if it is backfiring through the carburetors, the mixture is too lean and conversely too rich if backfiring through the exhaust. If it is found necessary to change the idle jet selected; reference to the 'F' number scale, tables 3 and 4 shall indicate the appropriate change. When a change has been made carry out the aforementioned procedure again.

Part 3

CHOKE TUBE

The choke tube governs the gas speed through the carburetor.

As the choke tube and carburetor size is very closely associated the following information can be used as a guide to carburetor size selection as well if this has not already been done.

The main points to be kept in mind when selecting choke tubes sizes are as follows:

- (1) Use of the vehicle - road or track, if track
 - a) hill climbing, good torque characteristics required, smaller chokes.
 - b) Road racing, fast circuits which require more power at the top end of the rev range, larger chokes. Slow circuits, which require better torque, smaller chokes.
- (2) Weight of the vehicles, the lighter the vehicle for a set engine capacity, increase the choke size.