

KEY TO SECTIONED ILLUSTRATION.

MIXING CHAMBER.

- 1.—Needle Jet.
- 2.—Air Jet.
- 3.—Air Jet Plug.
- 4.—Primary Air Slot.
- 5.—Air Valve Cable Adjuster Locknut.
- 6.—Air Valve Cable Adjuster.
- 7.—Throttle Cable Adjuster.
- 8.—Throttle Cable Adjuster Locknut.
- 9.—Needle Clip.
- 10.—Needle Clip Retaining Screw.
- 11.—Metering Needle.
- 12.—Spray Tube.
- 13.—Choke Adaptor Retaining Screws.
- 14.—Petrol Inlet Banjo.
- 15.—Main Jet.
- 16.—Mixing Chamber Cap.
- 17.—Throttle Valve Return Spring.
- 18.—Mixing Chamber Cap Lock-Spring.

- 19.—Air Tube Lock Ring.
- 20.—Jet Plug.
- 21.—Jet Holder.
- 22.—Choke Adaptor.
- 23.—Throttle Valve.
- 24.—Pilot Jet adjusting Needle.
- 25.—Pilot Adjuster Lock-Spring.

FLOAT CHAMBER.

- 26.—Petrol Outlet Connection.
- 27.—Baffle Plate.
- 28.—Base Plug and Float Guide Peg.
- 29.—Float.
- 30.—Float Needle.
- 31.—Tickler.
- 32.—Banjo Nut.
- 33.—Petrol Inlet Banjo.

TUNING SEQUENCE.

To get carburation for any stated fuel when the choke bore is correct for the peak revs. of the engine and the correct needle jet for the fuel to be used, the procedure is simple. Start off with an assumed setting, and then tune as follows. There are four phases:

- (1)—Main jet for power at full throttle;
- (2)—Pilot jet for idling;
- (3)—Throttle cut-away for "take off" from the pilot jet;
- (4)—Needle position for snappy mixture at quarter to three-quarter throttle; then final idling adjustment of the pilot jet.

Always tune in this order, then any alteration will not upset a correct phase.

SEQUENCE OF TUNING. (1)—Main jet size. (2)—Pilot jet adjustment. (3)—Throttle valve cut-away. (4)—Needle attachment.

1.—MAIN JET SIZE. This should be determined first: the smallest jet which gives the greatest maximum speed should be selected, keeping in mind the safety factor for cooling. (*The air lever should be fully open during these tests.*)

2.—PILOT JET ADJUSTMENT. Before attempting to set the pilot adjuster the engine should be at its normal running temperature, otherwise a faulty adjustment is possible, which will upset the correct selection of the throttle valve. The pilot adjuster, which controls the amount of fuel passed, is rotated clockwise to weaken the mixture, and anti-clockwise to richen it. Adjust this very gradually until a satisfactory tick-over is obtained, but take care that the achievement of too slow a tick-over—that is, slower than is actually necessary—does not lead to a "spot" which may cause stalling when the throttle is very slightly open.

3.—THROTTLE CUT-AWAY. Having set the pilot adjuster, open up the *throttle* progressively and note positions where, if at all, the exhaust note becomes irregular. If this is noticed, leave the throttle open at this position and close the air lever slightly; this will indicate whether the spot is rich or weak. If it is a rich spot, fit a throttle valve with more *cut-away* on the air intake side (or *vice versa* if weak).

4.—JET NEEDLE POSITION. Tuning sequence 2 and 3 will affect carburation up to somewhere over one-quarter throttle, after which the jet *needle*, which is suspended from the throttle valve, comes into action and when the throttle is opened further and tests are again made for rich or weak spots, as previously outlined, the needle can be raised to richen or lowered to weaken the mixture, whichever may be found necessary. With these adjustments correctly made, and the main jet size settled, a perfectly progressive mixture will be obtainable from tick-over to full throttle. The jet *needles* are interchangeable in carburetters type 15 G.P. or 10 G.P., but a longer needle is required for the Type 5.G.P.