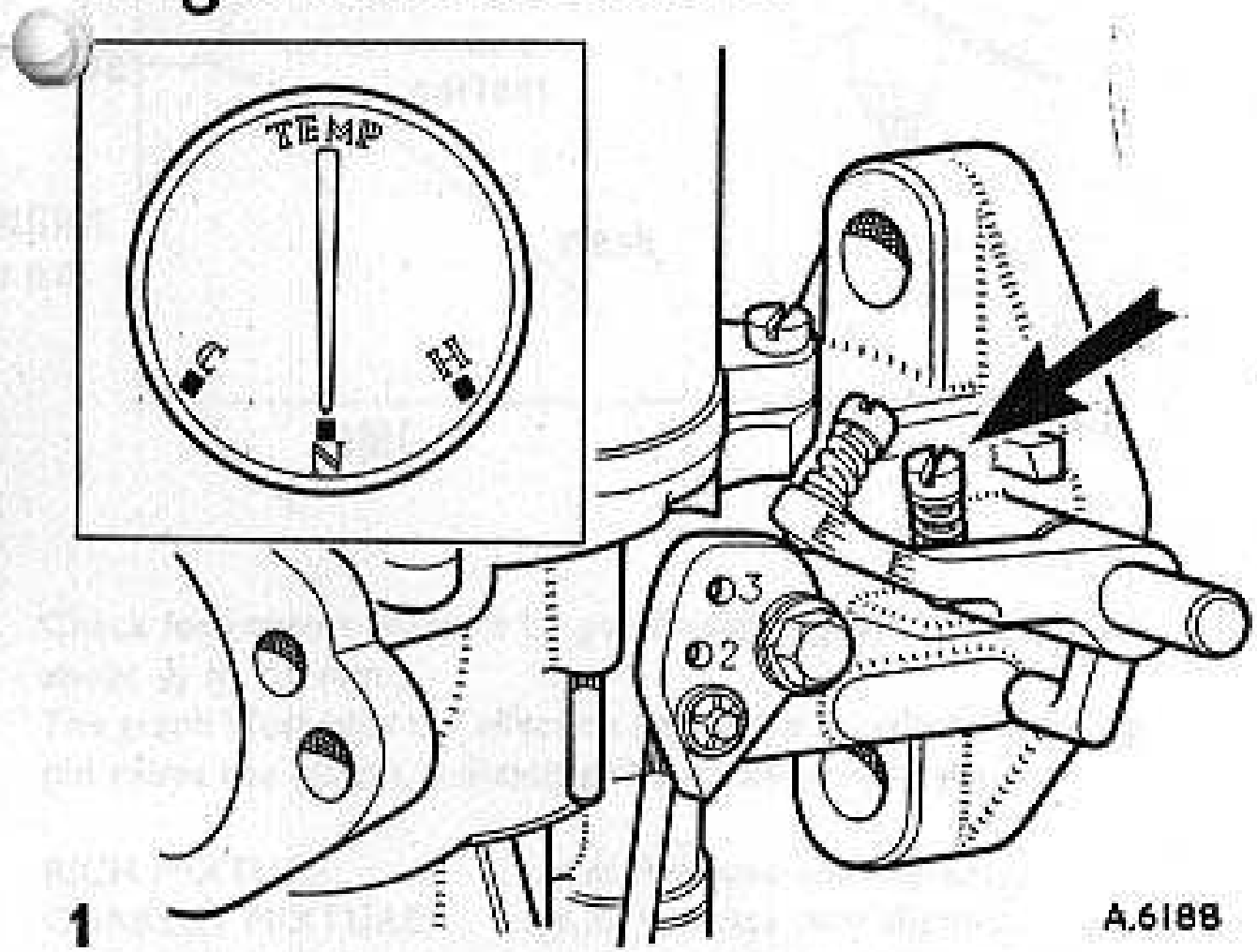
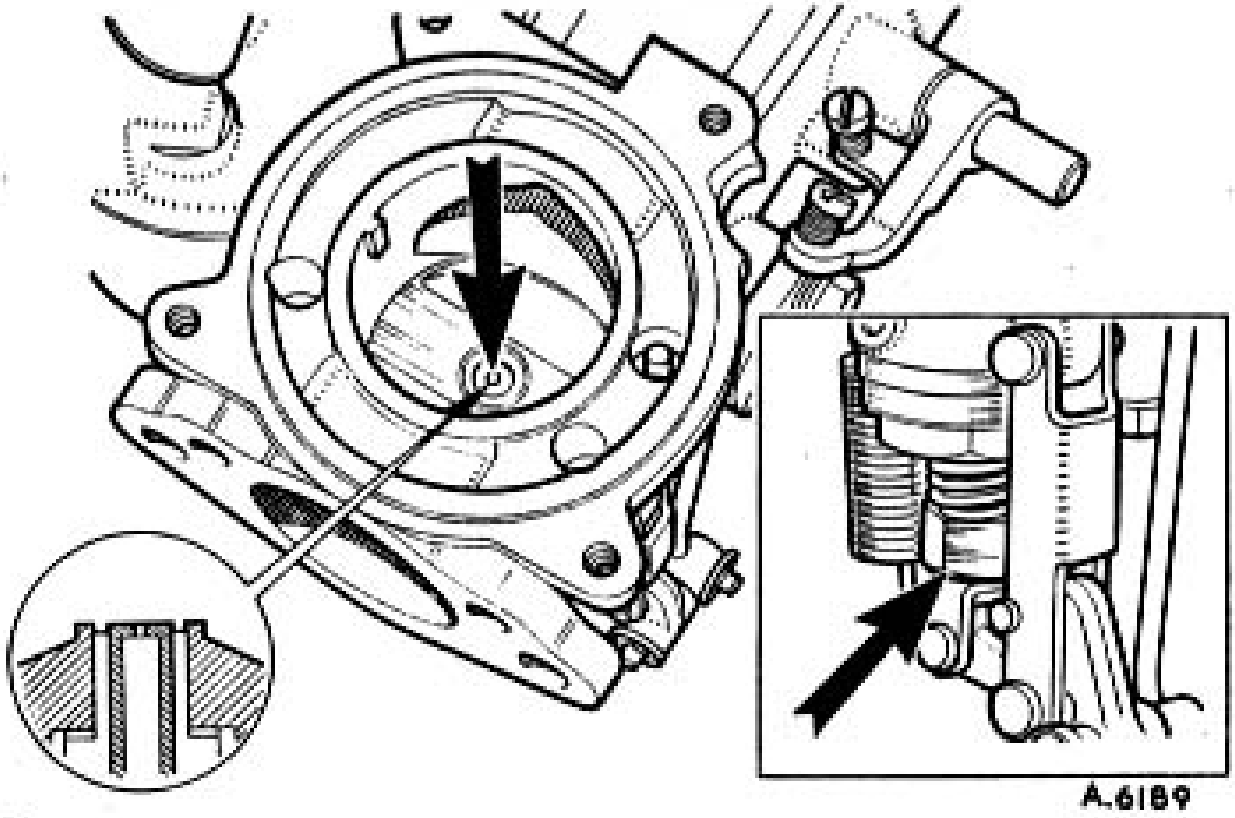
TUNING
Single carburetters



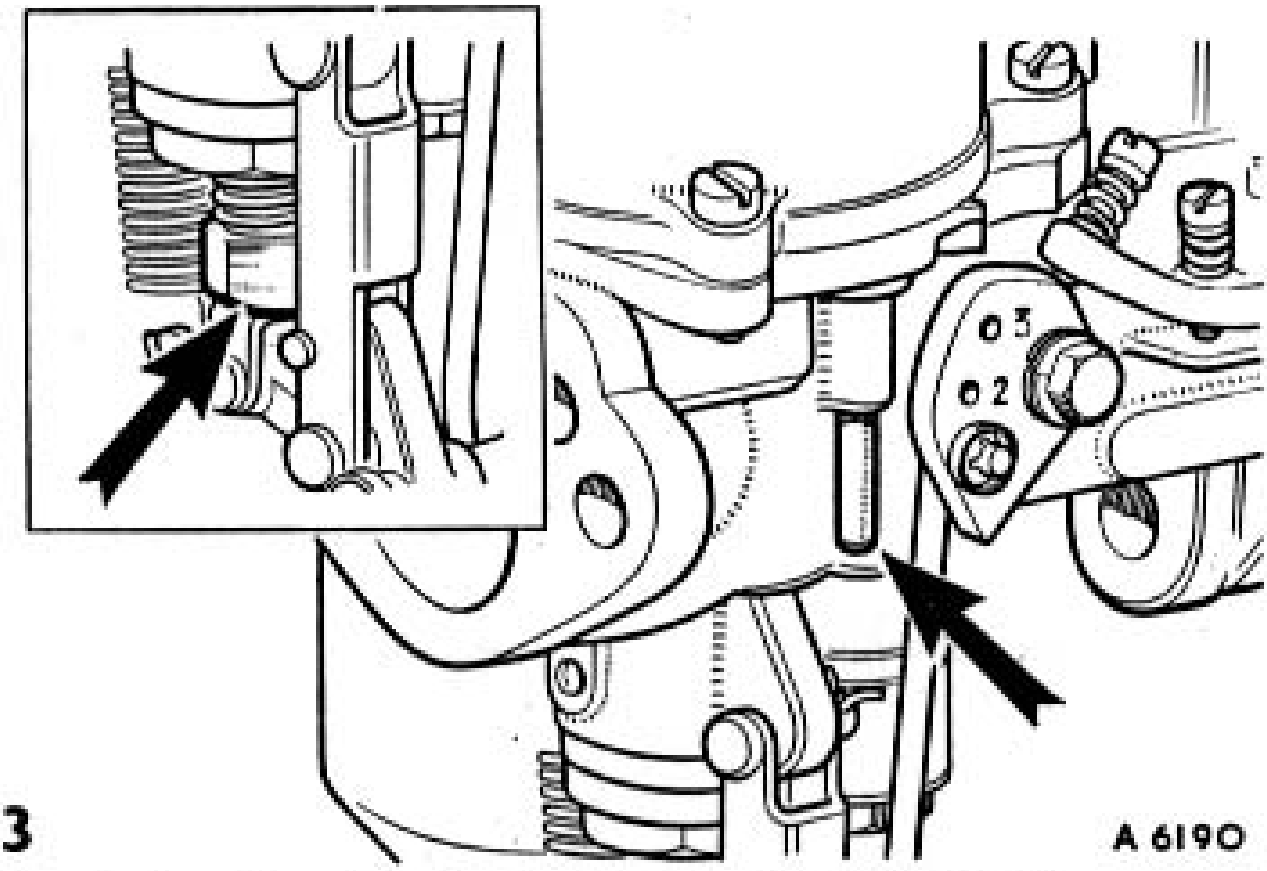
1

A. Warm engine up to normal temperature.
B. Switch off engine.
C. Unscrew the throttle adjusting screw until it is just clear of its stop and the throttle is closed.
D. Set throttle adjusting screw 1½ turns open.



2

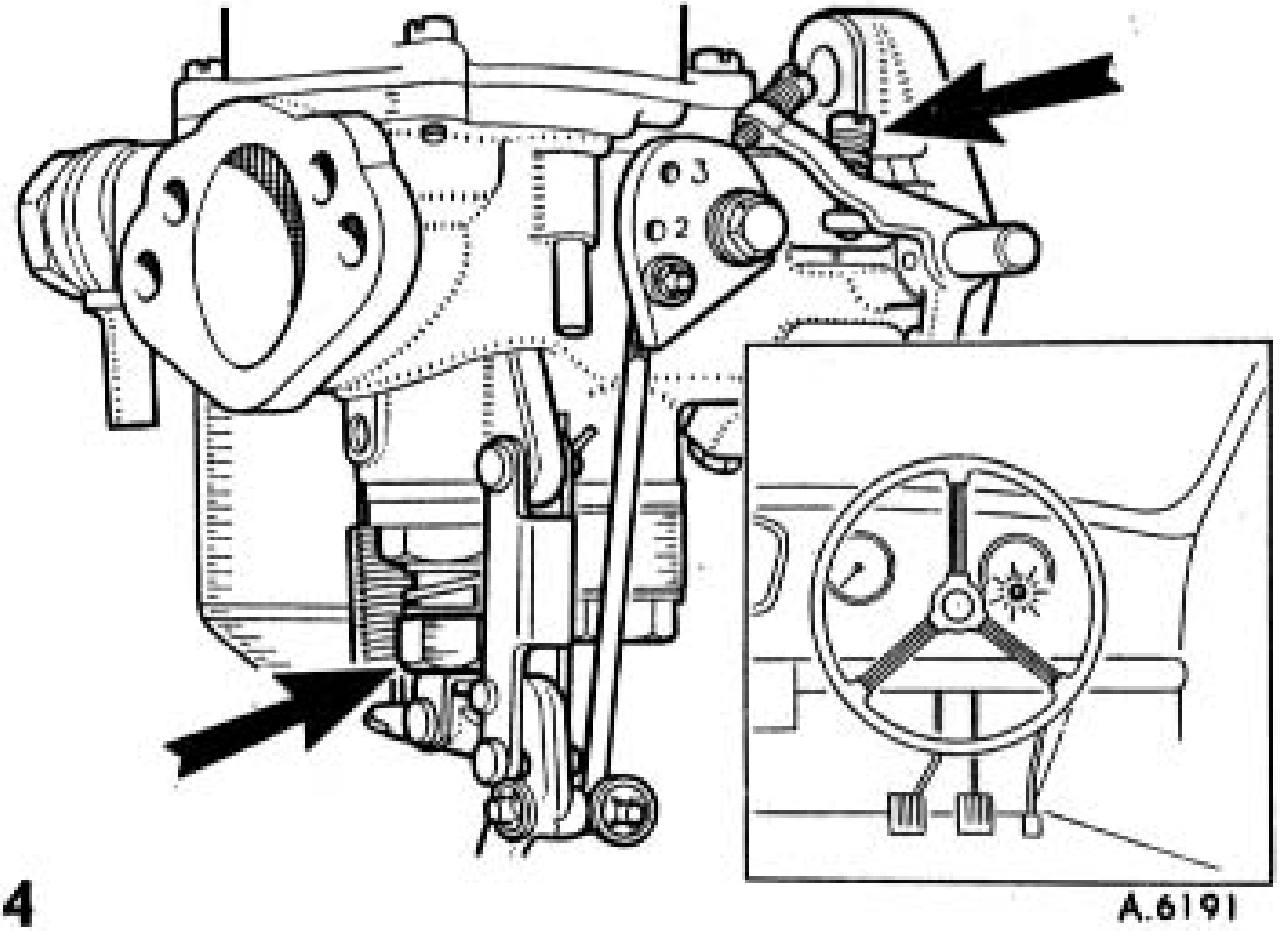
A. Mark for reassembly and remove piston/suction chamber unit.
B. Disconnect mixture control wire.
C. Screw the jet adjusting nut until the jet is flush with the bridge of the carburetter or fully up if this position cannot be obtained.



A. Replace the piston/suction chamber unit as marked.

B. Check that the piston falls freely onto the bridge when the lifting pin is released. If not, see items 15, 16, and 17.

C. Turn down the jet adjusting nut two complete turns.

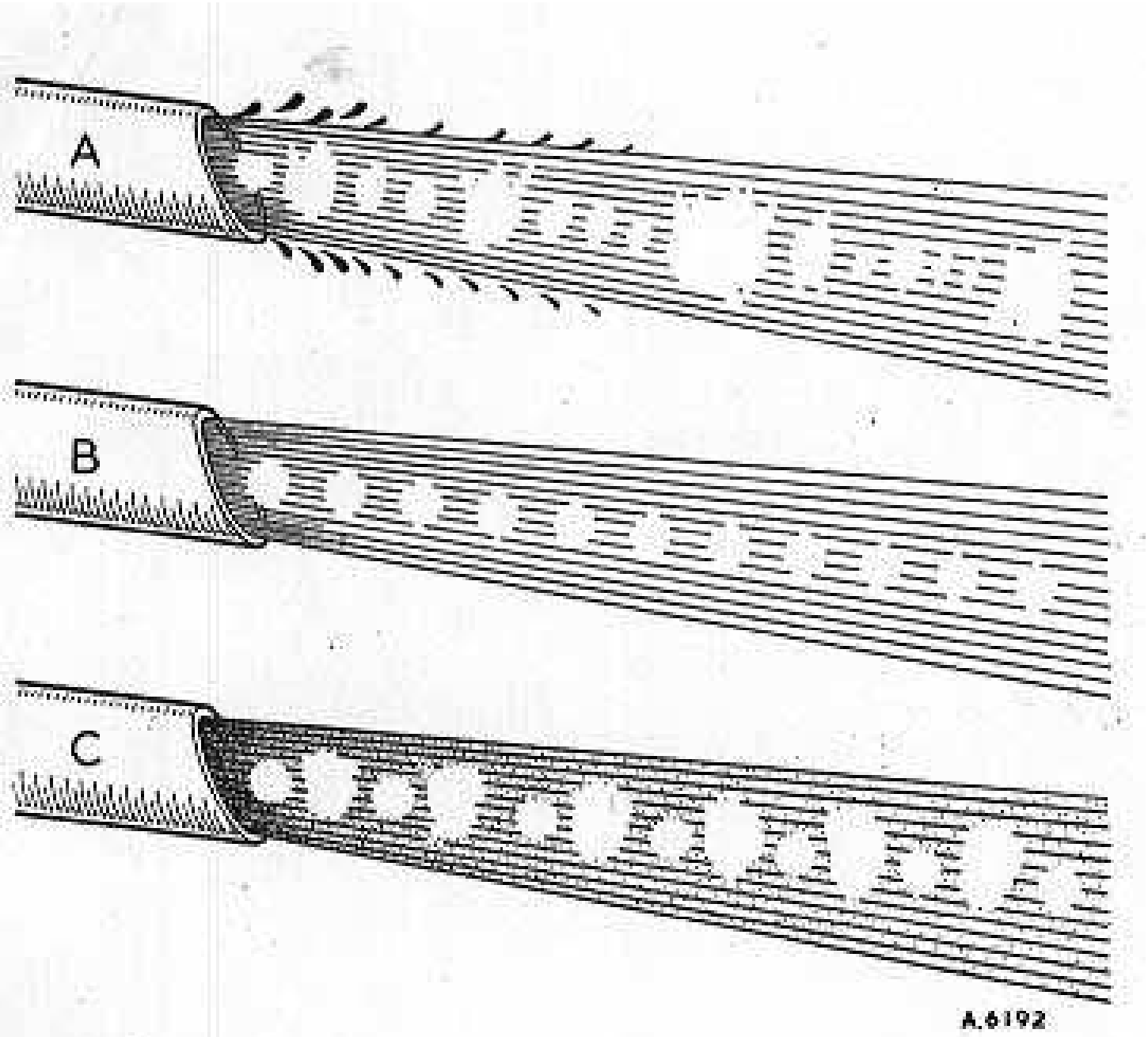


4 A.6191

A. Restart the engine and adjust the throttle adjusting screw to give desired idling as indicated by the glow of the ignition warning light.

B. Turn the jet adjusting nut up to weaken or down to richen until the fastest idling speed consistent with even running is obtained.

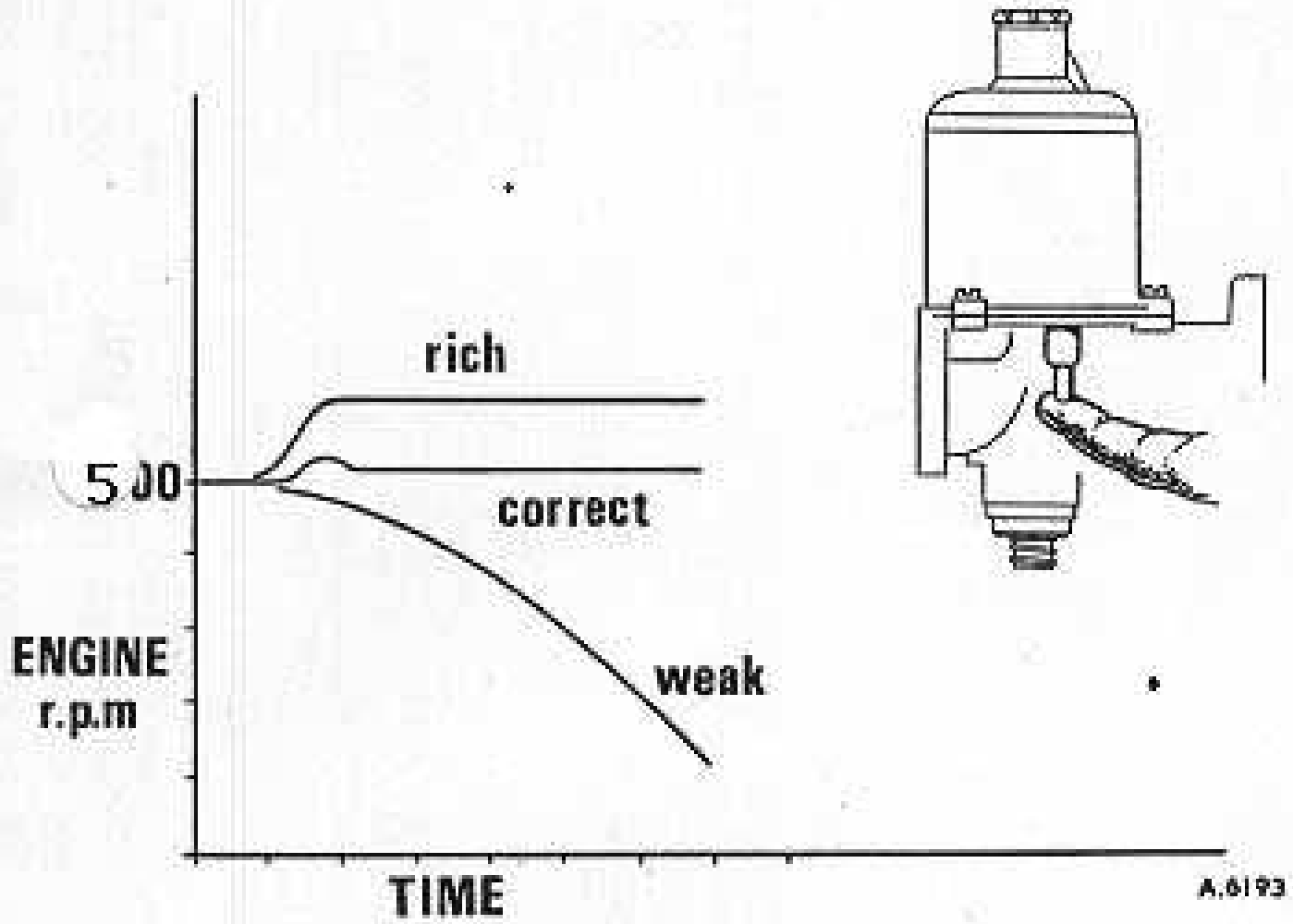
C. Re-adjust the throttle adjusting screw to give correct idling if necessary.



5

The effect of mixture strength on exhaust smoke

A. TOO WEAK: Irregular note, splashy misfire, and colourless.
B. CORRECT: Regular and even note.
C. TOO RICH: Regular or rhythmical misfire, blackish.

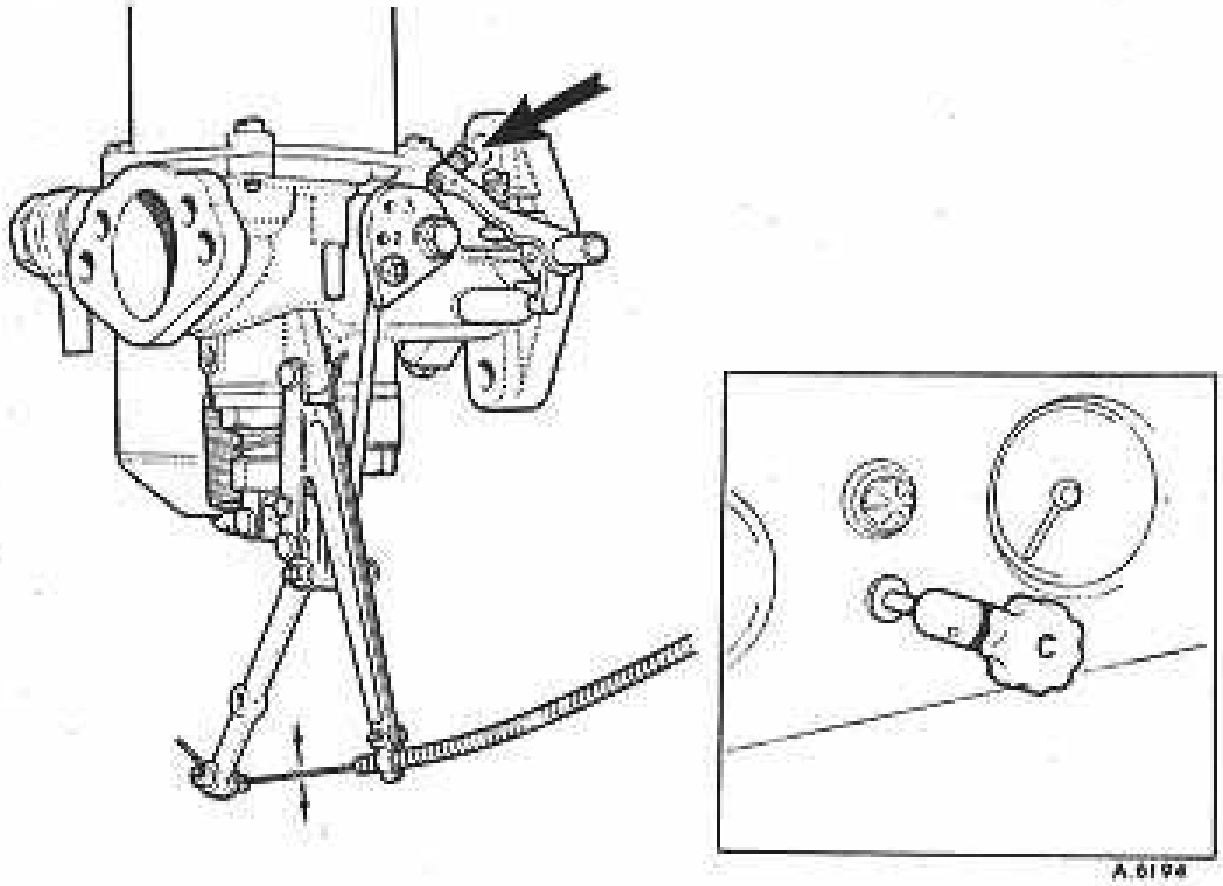


6

A. Check for correct mixture by gently pushing the lifting pin up about $\frac{1}{32}$ in. (·8 mm.).

B. The graph illustrates the effect on engine r.p.m. when the lifting pin raises the piston, indicating the mixture strength.

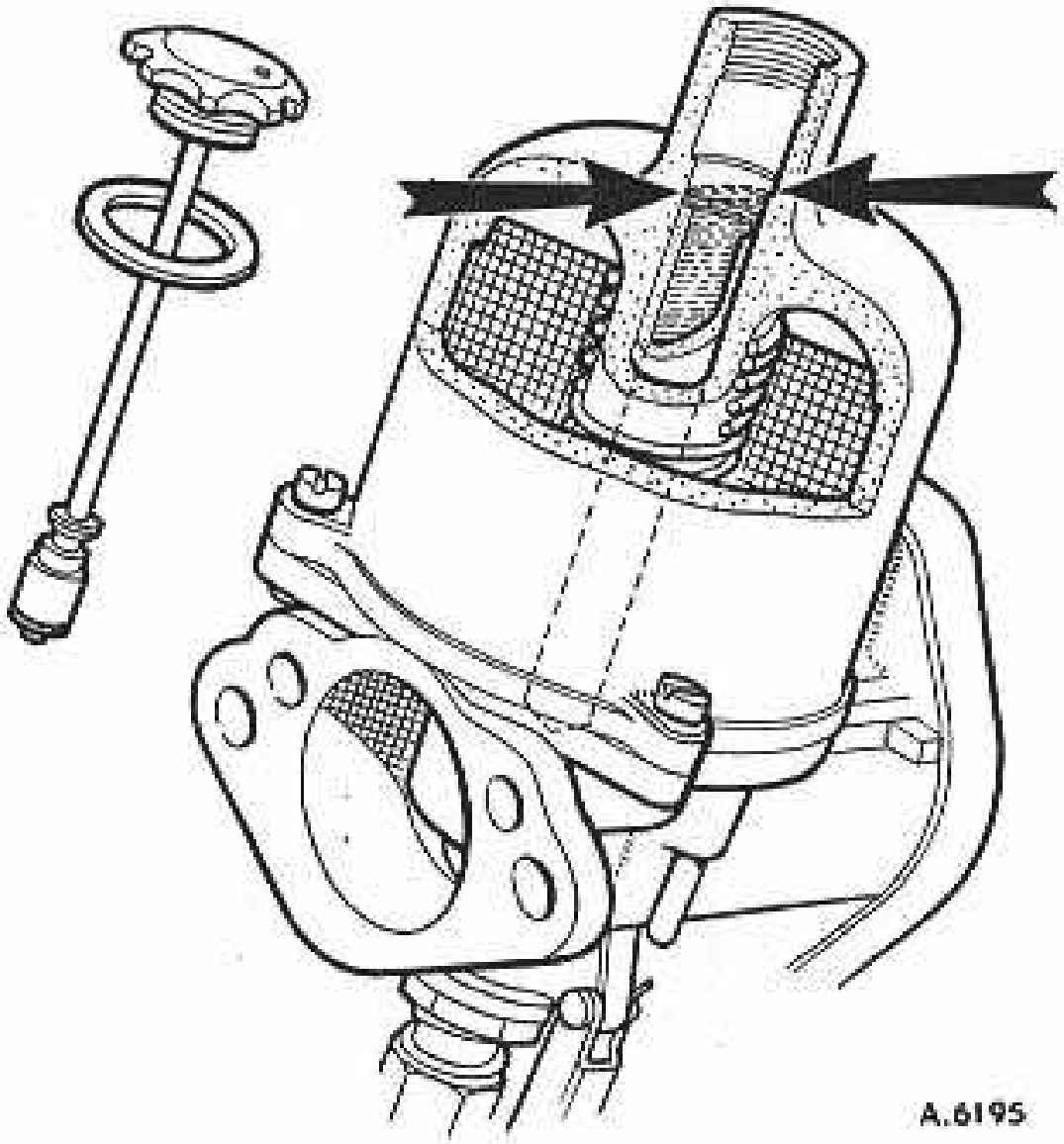
RICH MIXTURE:	r.p.m. increase considerably.
CORRECT MIXTURE:	r.p.m. increase very slightly.
WEAK MIXTURE:	r.p.m. immediately decrease.



7

A. Reconnect the mixture control wire with about $\frac{1}{16}$ in. (1·6 mm.) free movement before it starts to pull on the jet lever

B. Pull the mixture control knob until the linkage is about to move the carburetter jet and adjust the fast-idle screw to give an engine speed of about 1,000 r.p.m. when hot.



8

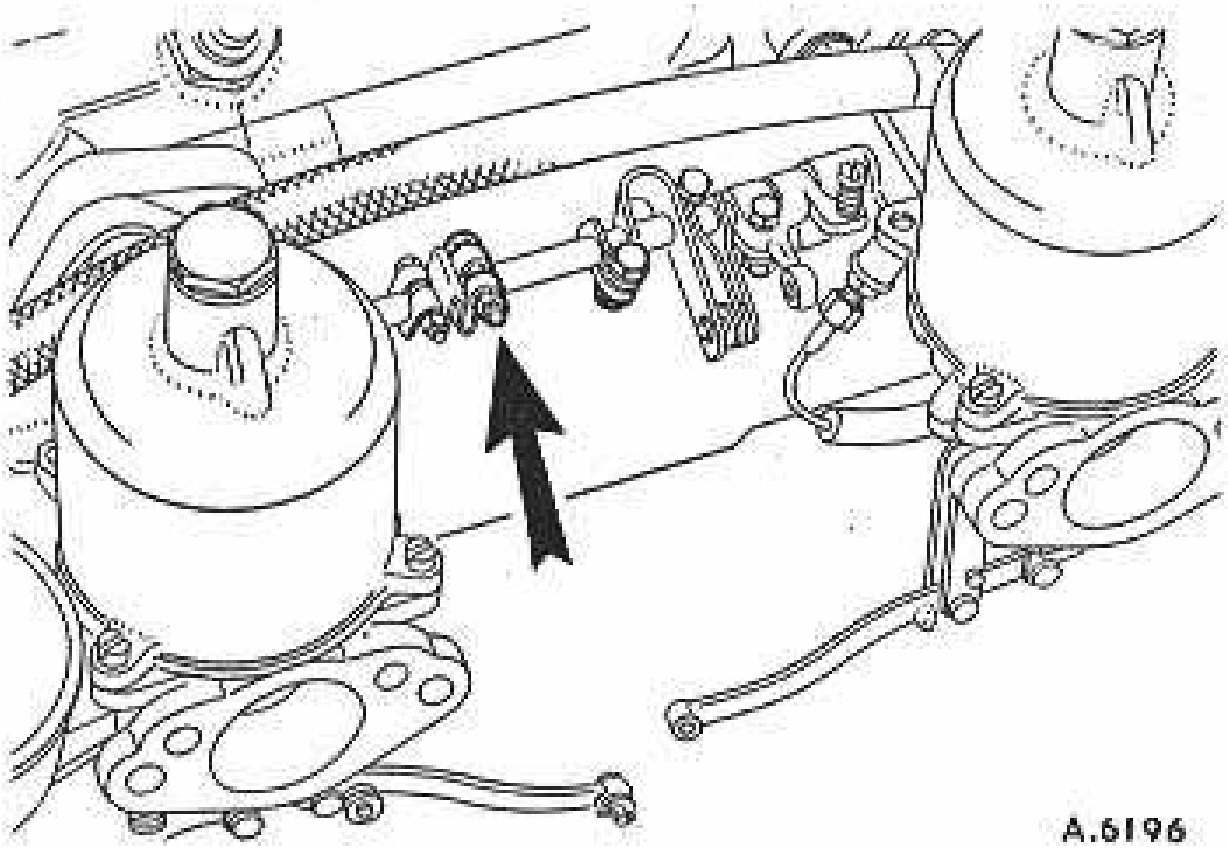
Finally top up the piston damper with thin engine oil grade S.A.E. 20 until the level is ½ in. (13 mm.) **above** the top of the hollow piston rod.

Note

On dust-proofed carburetters, identified by a transverse hole drilled in the neck of the suction chambers and no vent hole in the damper cap, the oil level should be ½ in. (13 mm,) **below** the top of the hollow piston rod.

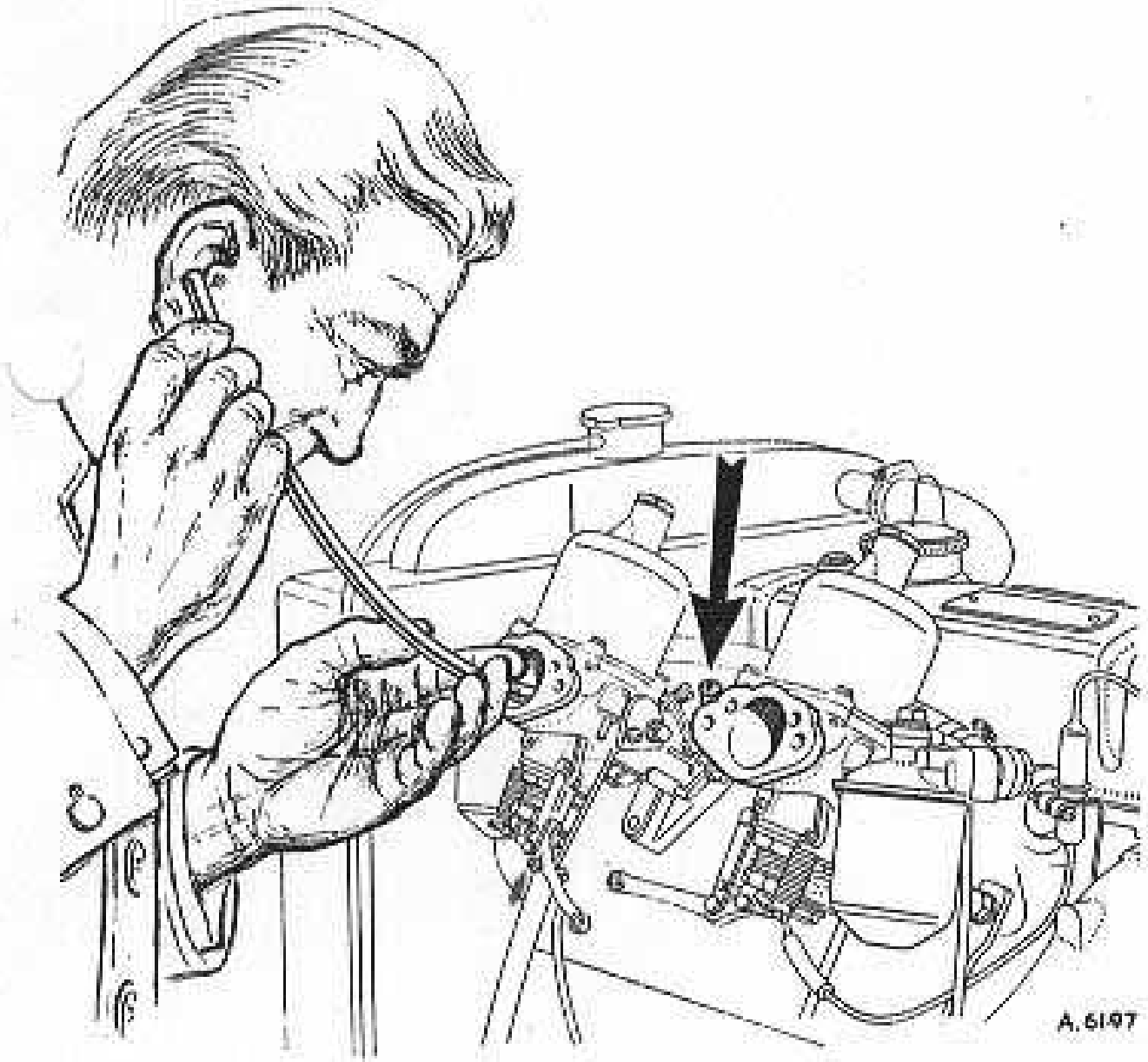
TUNING
Multi-carburetters

Remove the air cleaners and carry out item 1 as for single on all carburetters then:



A.6196

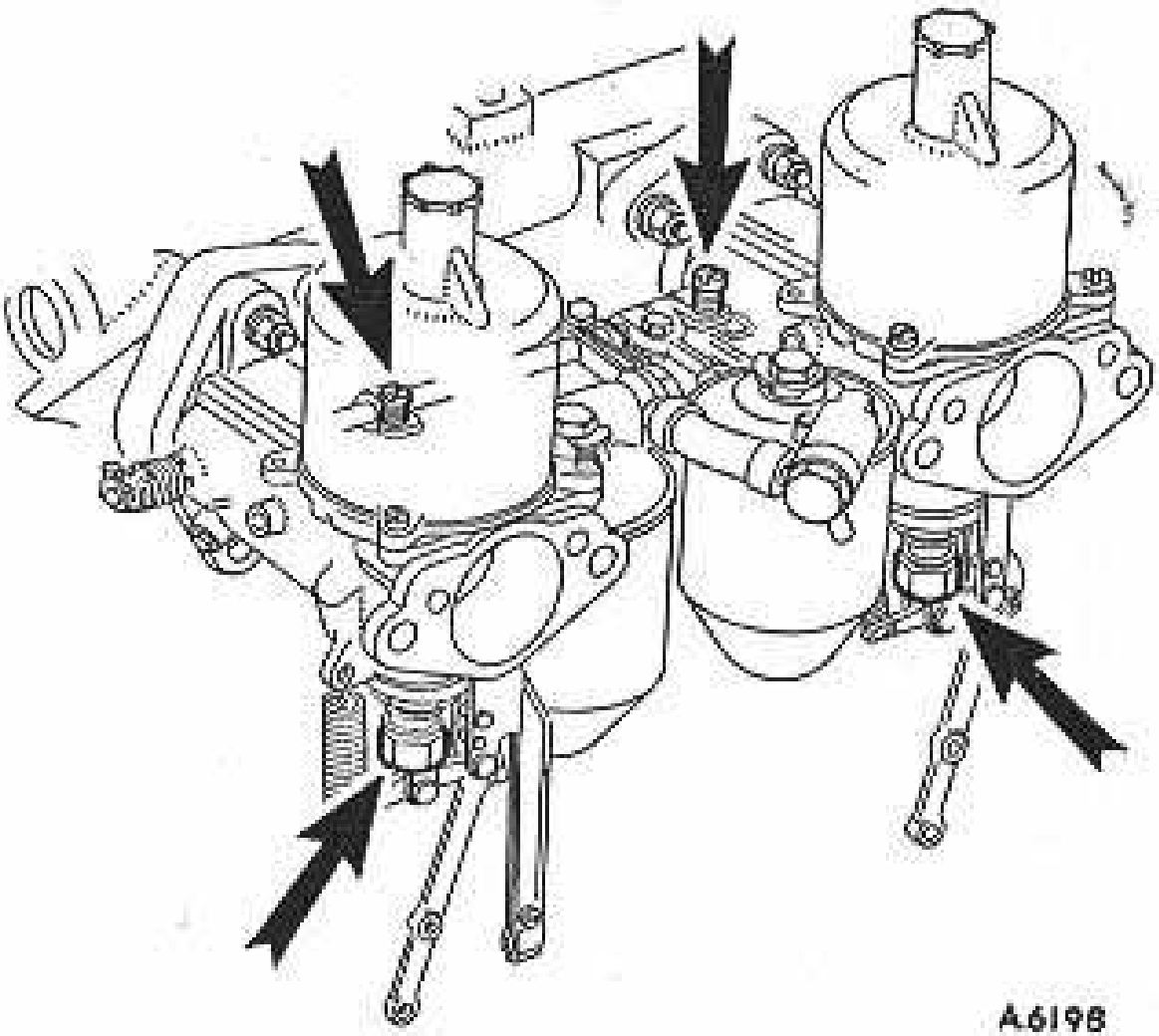
A. Slacken one of the clamping bolts on the throttle spindle interconnections.
B. Disconnect the jet control linkage by removing one or, in the case of triple carburetters, two of the linkage swivel pins.
C. Carry out items 2 and 3 as for single carburetters, then additionally:



10

A. Restart the engine and adjust the throttle adjusting screws on each carburetter to give the desired idling speed as indicated by the glow of the ignition warning light.

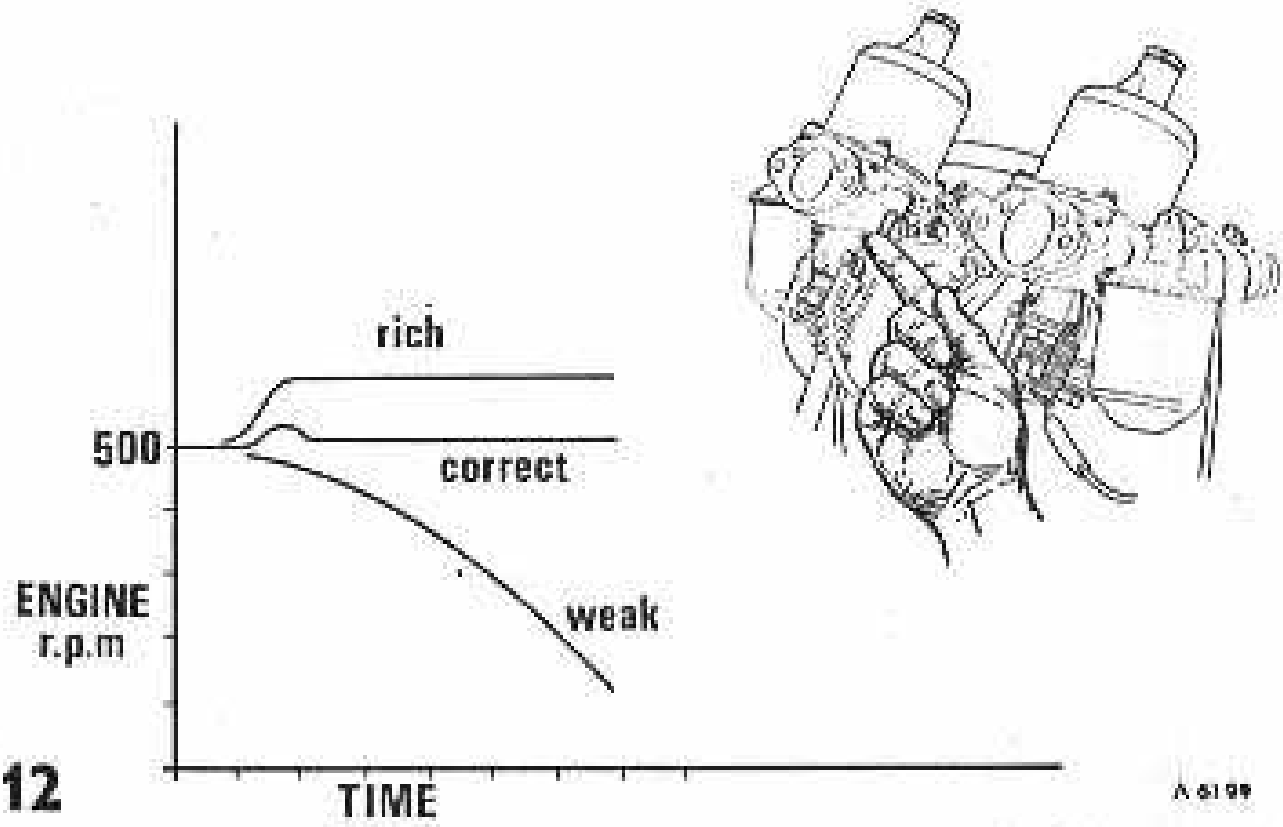
B. Compare the intensity of the intake 'hiss' on all carburetters and alter the throttle adjusting screws until the 'hiss' is the same.



11 A.6198

A. Turn the jet adjusting nuts on all carburetters up to weaken or down to richen the same amount until the fastest idling speed consistent with even running is obtained.

B. Re-adjust the throttle adjusting screws to give correct idling if necessary.

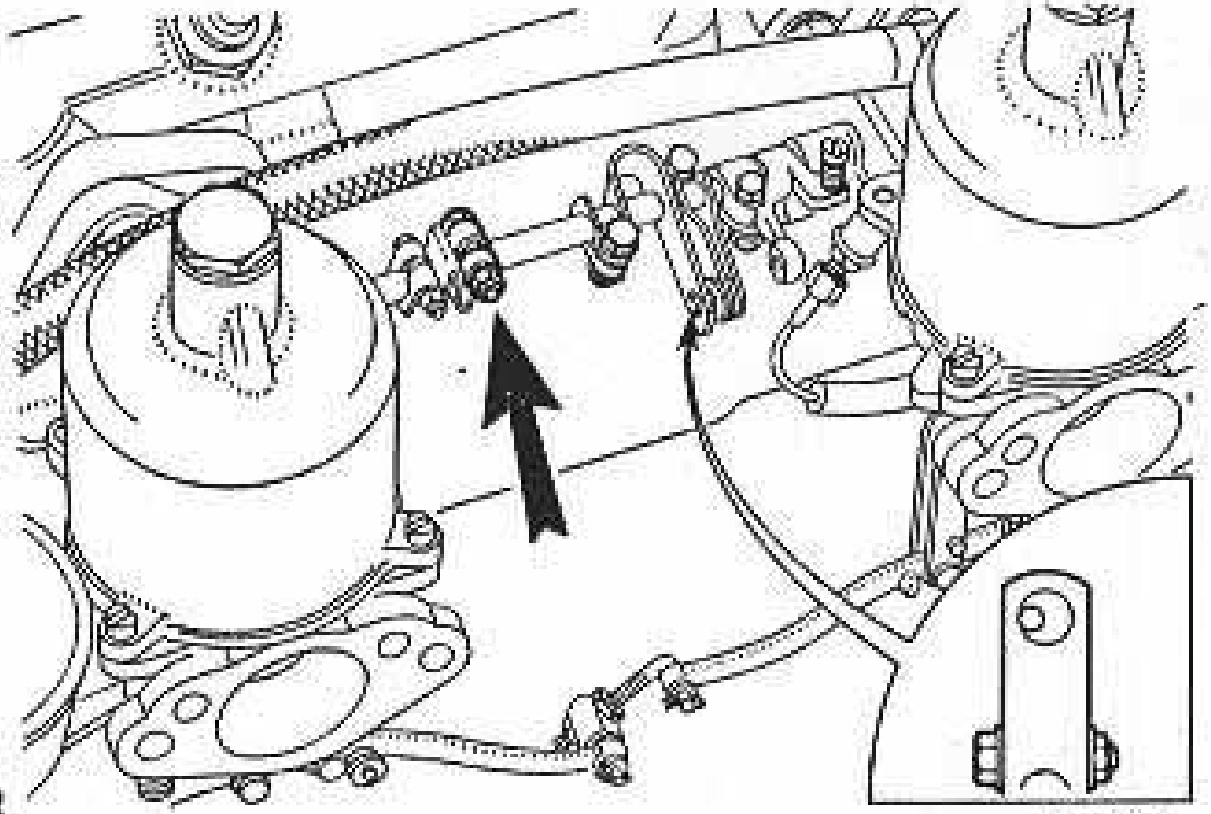


12

A. Check for correct mixture by gently pushing the lifting pin of the *front* carburetter up $\frac{1}{32}$ in. (·8 mm.). The graph illustrates the possible effect on engine r.p.m.

B. Repeat the operation on the *rear* carburetter and after adjustment re-check the front carburetter since the two are interdependent.

C. Item **5** shows the correct type of exhaust smoke.

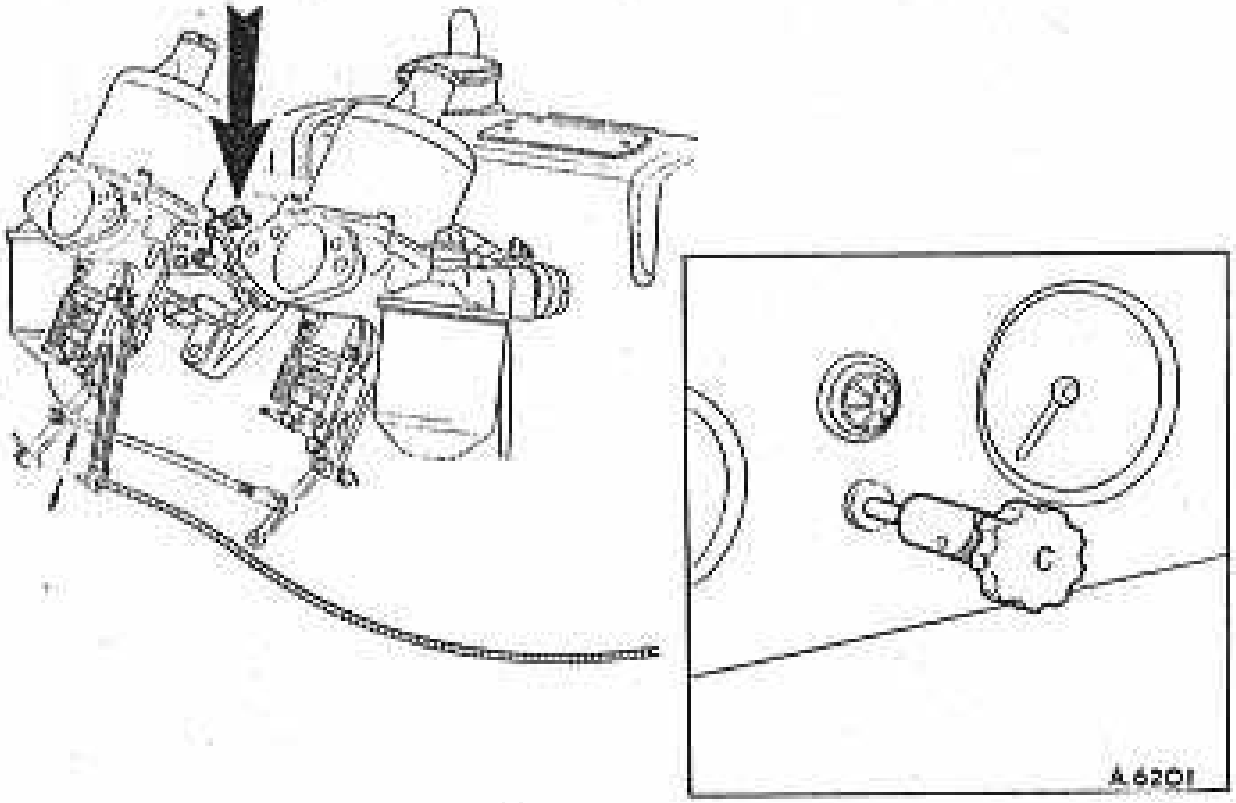


13

A. Tighten the clamp bolt of the throttle spindle interconnections and set the link pin lever with the pin resting against the edge of the pick-up lever hole (see inset). This provides the correct delay in opening the front carburetter throttle disc.

B. Re-connect the jet control linkage, so that both jets commence to move simultaneously.

TUNING
Multi-carburetters (*continued*)



14

A. Reconnect the mixture control wire with about $\frac{1}{16}$ in. (1·6 mm.) free movement before it starts to pull on the jet levers.

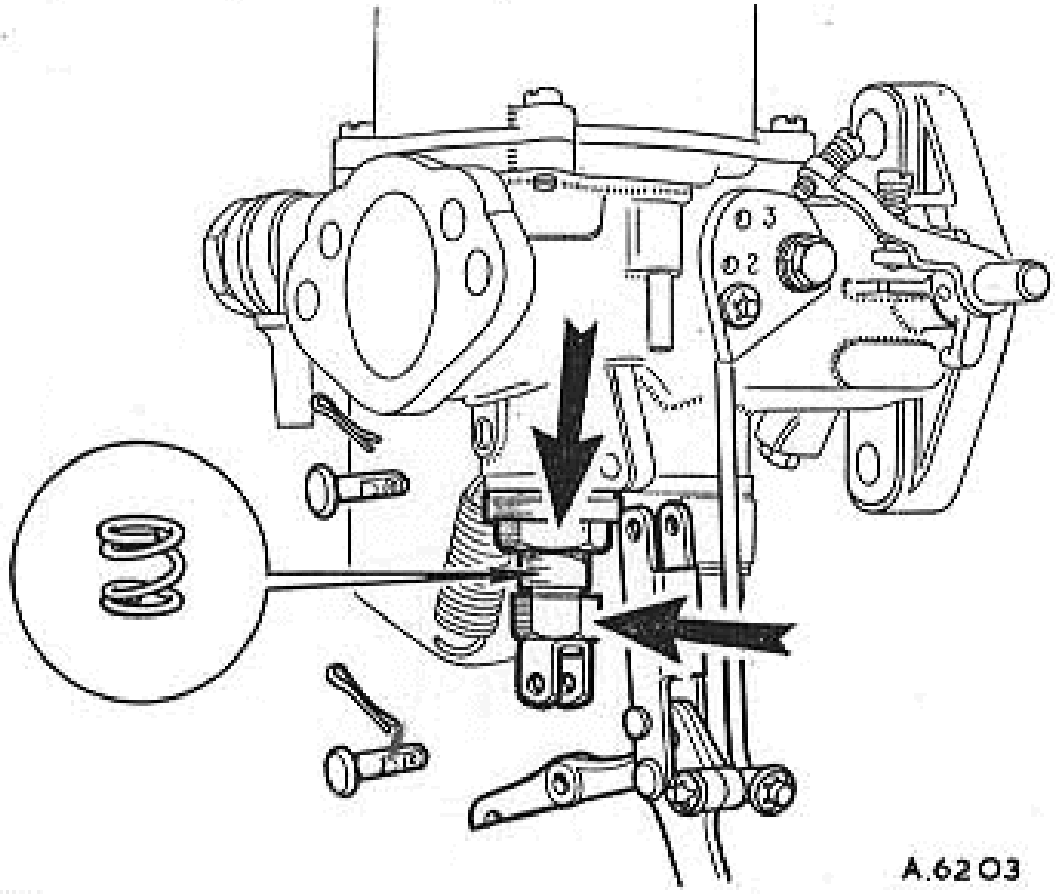
B. Pull the mixture control knob until the linkage is about to move the carburetter jets, and adjust the fast idle screw to give an engine speed of about 1,000 r.p.m. when hot.

C. Refit the air cleaners.

ADJUSTING AND SERVICING
Jet Centring

15

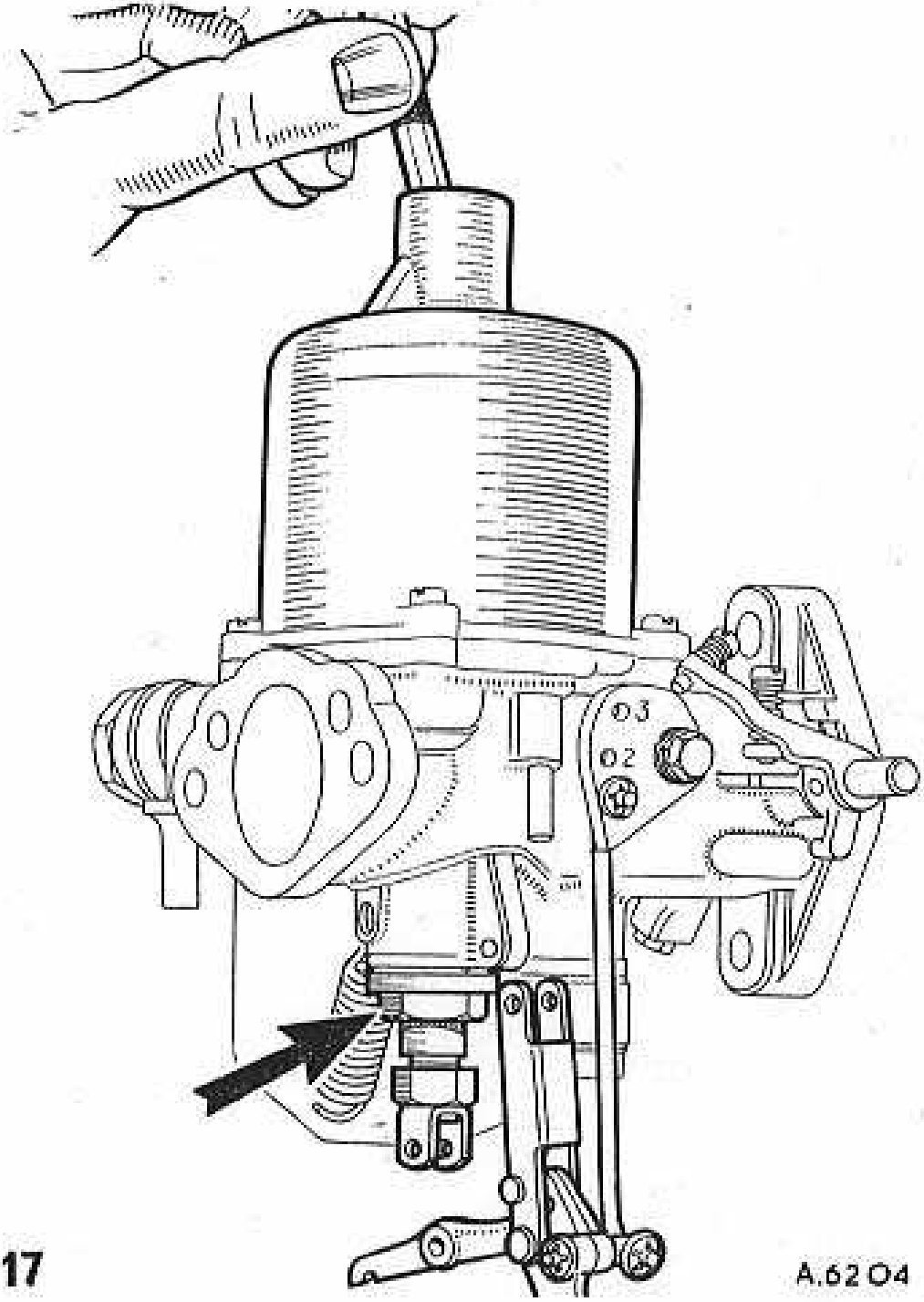
The piston should fall freely onto the carburetter bridge with a click when the lifting pin is released with the jet in the fully up position. If it will only do this with the jet lowered then the jet unit requires re-centring. This is done as follows:



A.62 03

16

A. Remove the jet control linkage and swing it to one side.
B. Mark for reassembly and withdraw the jet, remove the jet locking spring, replace the adjusting nut and screw it up as far as it will go.
C. Replace the jet, keeping the slot in the jet head in the correct relative position to the control.
D. Slacken the **jet locking nut** until the assembly is free to rotate.



17 A.62 04

A. Remove the piston damper and apply pressure to the top of the piston rod with a pencil.

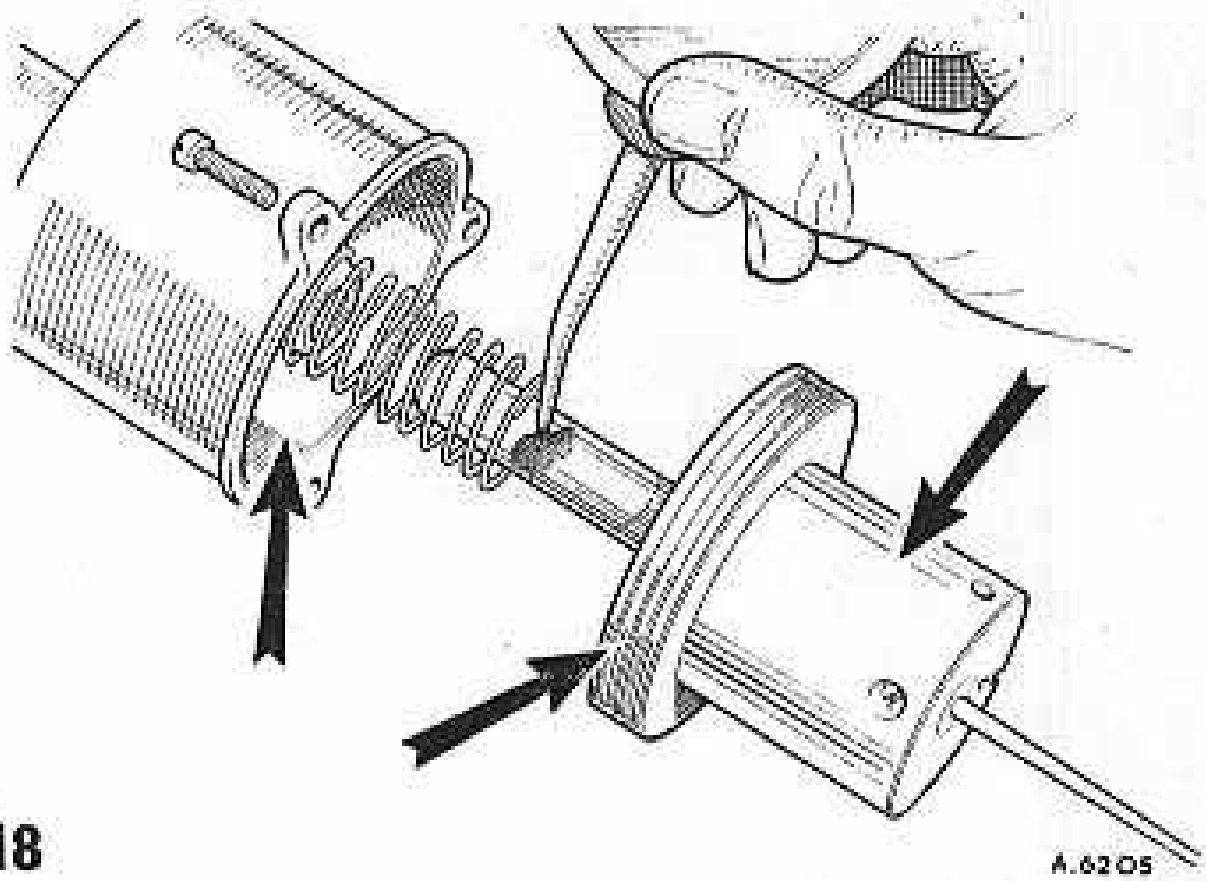
B. Tighten the **jet locking nut** keeping the slot in the jet head in the correct position and the jet hard up against the adjusting nut.

C. Finally check again as in item **15.**

D. Reassemble the controls.

E. Refill the piston dampers with thin engine oil. (See item **8.**)

Cleaning



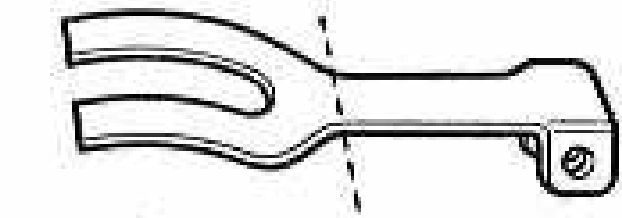
18

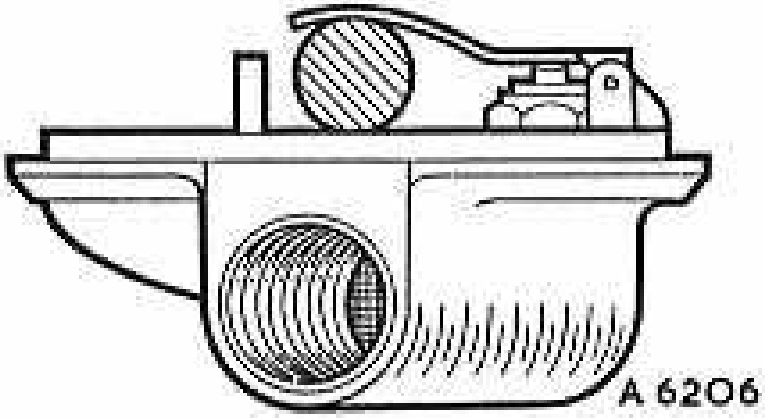
A.62 05

A. At the recommended intervals mark for reassembly and carefully remove the piston/suction chamber unit.
B. Using a petrol-moistened cloth, clean the inside bore of the suction chamber and the two diameters of the piston.
C. Lightly oil the piston rod only and reassemble as marked.

ADJUSTING AND SERVICING (*continued*)

Float chamber fuel level





A 6206

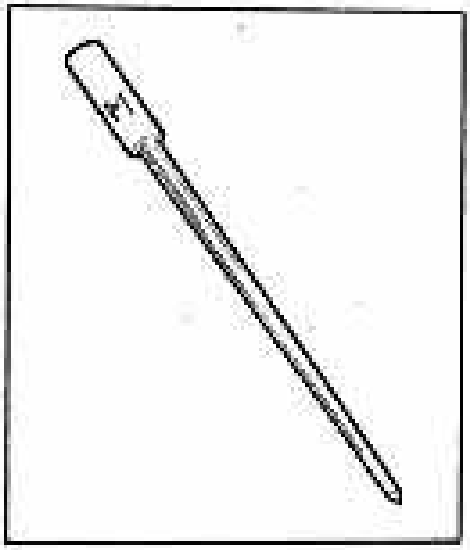
19

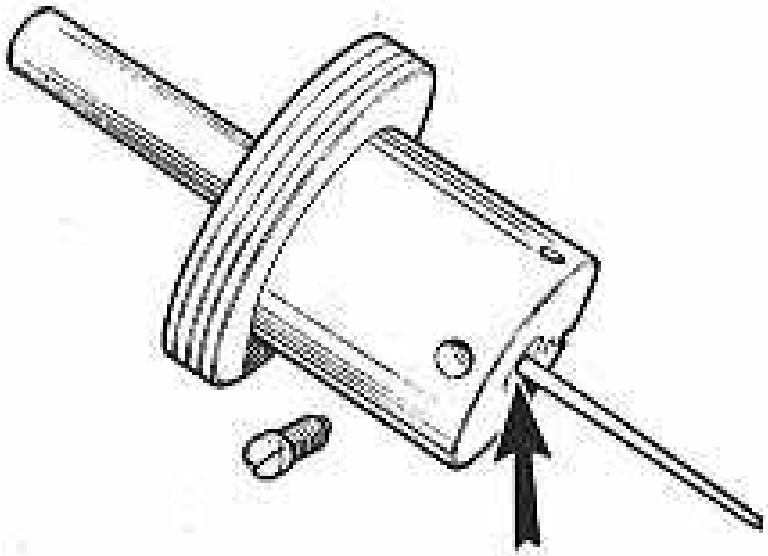
A. Remove the float chamber lid and invert it.

B. With the needle on its seating insert a $\frac{7}{16}$ in. (11 mm.) diameter round bar between the forked lever and the lip of the float chamber lid.

C. The prongs of the lever should just rest on the bar. If not, carefully bend the lever until they do.

Needle size and position





A 6207

20

A. The needle size is determined during engine development.
B. To check that the correct needle is fitted: mark for reassembly and remove the piston/suction chamber unit.
C. Slacken the needle clamping screw, extract the needle, and check its identifying mark against the recommendation.
D. Replace the correct needle and lock it in position so that the shoulder on the shank is flush with the piston base.
E. Reassemble the piston/suction chamber unit as marked.

Faults

Symptom	Cause	Remedy	Item No.
Erratic running Stalling at idling Lack of power High fuel consumption	Sticking piston: Dirty piston and suction chamber Jet out of centre Bent needle	 Clean Re-centre Fit new	 **18** **15, 16,** and **17** **20**
Too rich at idling Fuel leak	Jet gland leakage: Faulty top gland Dirt under top gland washer Faulty bottom gland	 Fit new Clean Fit new	 See Dismantling and Reassembly Leaflet
Float chamber or jet flooding	Incorrect fuel level Dirty or worn float chamber needle valve Punctured float	Check and reset level Clean or renew valve Fit new	**19** See Dismantling and Reassembly Leaflet