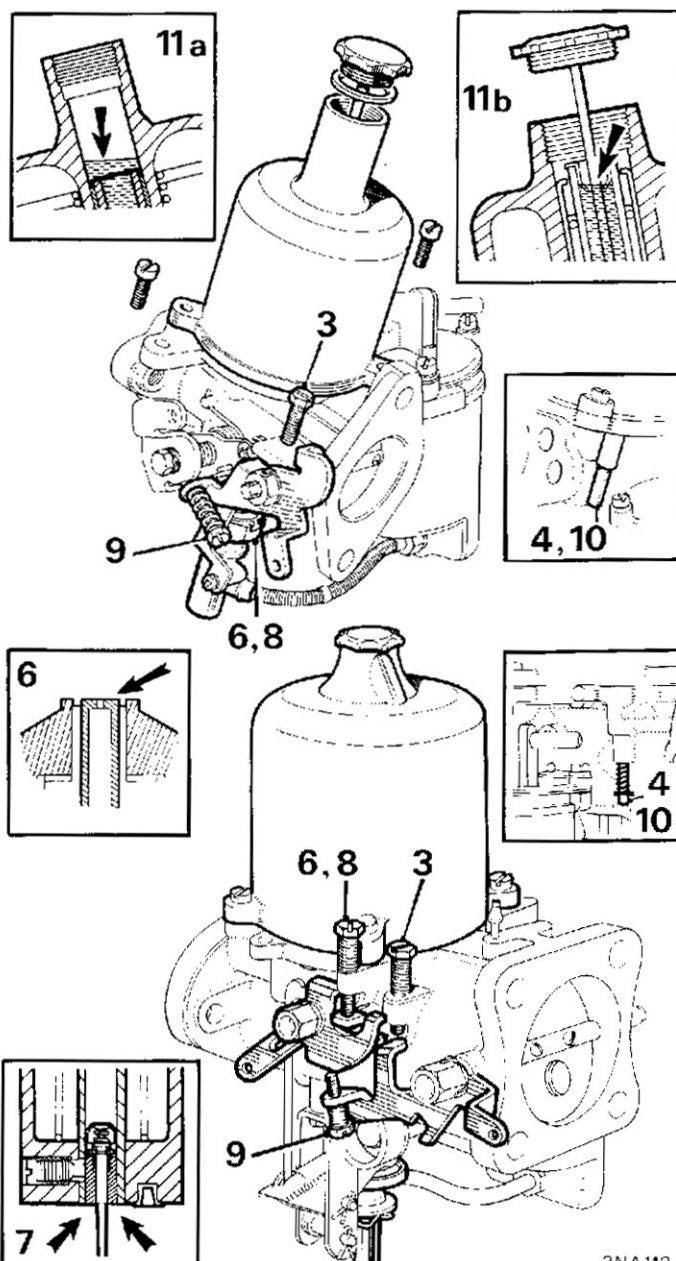


Single and multi-carburettor installations

1. Remove the air cleaner(s).
2. Check the throttle for correct operation and signs of sticking.
3. Unscrew the throttle adjusting screw (each screw multi-carburetters) until it is just clear of the throttle lever with the throttle closed, then turn the screw clockwise $1\frac{1}{2}$ full turns (single), one turn on each (multi-).
4. Raise the piston of each carburettor with the lifting pin and check that it falls freely onto the bridge when the pin is released. If the piston shows any tendency to stick, the carburettor must be serviced.
5. Lift and support the piston clear of the bridge so that the jet is visible; if this is not possible due to the installed position of the carburettor, remove the suction chamber assembly.
6. Turn the jet adjusting nut/screw up/anti-clockwise until the jet is flush with the bridge or as high as possible without exceeding the bridge height. Ensure that the jets on multi-carburetters are in the same relative position to the bridge of their respective carburetters.
7. Check that the needle shank is flush with the underside of the piston.
8. Turn the jet adjusting nut/screw two turns down/clockwise (each nut/screw multi-carburetters).
9. Turn the fast idle adjusting screw anti-clockwise (each screw multi-carburetters) until it is well clear of the cam.
10. Refit the suction chamber assembly if it has been removed and, using the lifting pin, check that the piston falls freely onto the bridge.

NOTE: If ball bearing suction chambers are fitted take care not to wind up piston spring when refitting the suction chamber—see item 38 d, page 9.

11. Check the piston damper oil level:
 - a. *Standard suction chambers.* Unscrew the cap and withdraw the damper. Top up with engine oil (preferably S.A.E. 20) until the level is $\frac{1}{2}$ in (13 mm) above the top of the hollow piston rod, refit the damper and screw the cap firmly into the suction chamber.
 - b. *Ball bearing suction chambers.* Unscrew the cap and raise the piston and damper to the top of their travel. Fill the recess in the damper retainer with engine oil (preferably S.A.E. 20). lower the damper until the cap contacts the suction chamber, repeat this procedure until the oil level is just visible at the bottom of the retainer recess. Screw the cap firmly into the suction chamber.
12. *Vehicles with emission control.* Connect a reliable tachometer to the engine in accordance with the instrument manufacturer's instructions.



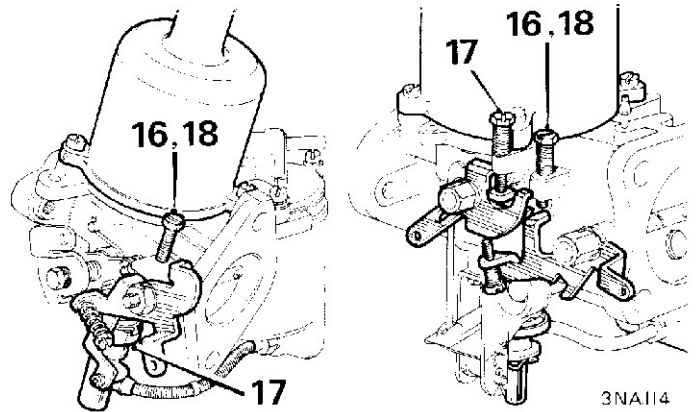
3NA113

13. Start the engine and run it at a fast idle speed until it attains normal running temperature, then run it for a further five minutes.
14. Increase the engine speed to 2,500 rev/min for 30 seconds.
15. *Vehicles with emission control.* Connect an exhaust gas analyser to the engine in accordance with the instrument manufacturer's instructions.

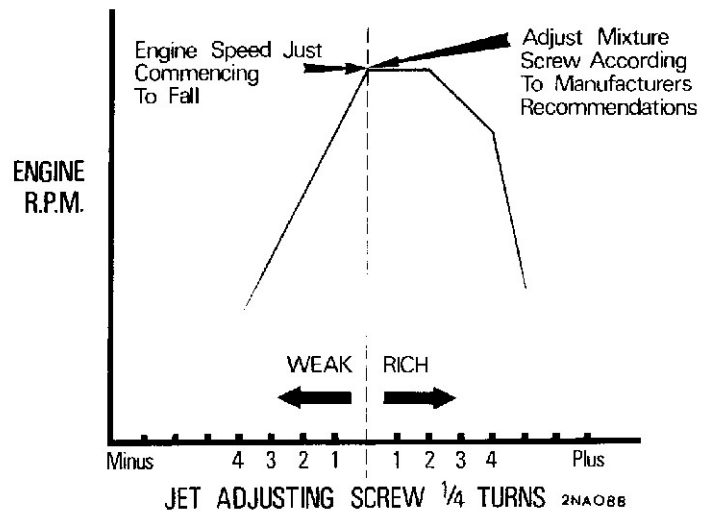
Setting can now commence. If the correct setting cannot be obtained within three minutes, increase the engine speed to 2,500 rev/min for 30 seconds and then re-commence tuning. Repeat this clearing operation at three-minute intervals until tuning is completed.

Single carburetters

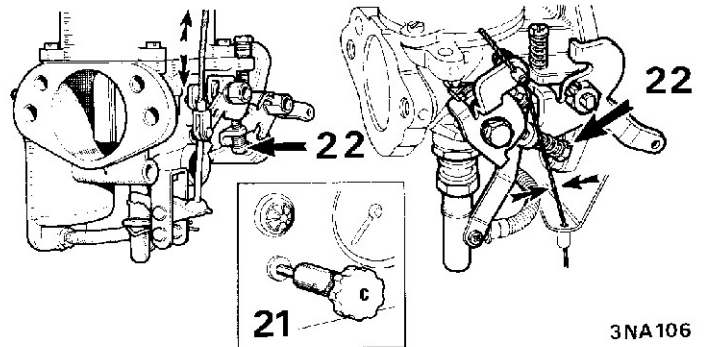
16. Adjust the throttle adjusting screw until the correct idle speed (see vehicle manufacturer's tuning data) is obtained.
17. Turn the jet adjusting nut/screw, down/clockwise to enrich or up/anti-clockwise to weaken, until the fastest speed is indicated; turn the nut/screw up/anti-clockwise until the engine speed just commences to fall. Turn the nut/screw down/clockwise very slowly the minimum amount until the maximum speed is regained. From this setting adjust the mixture screw according to the vehicle manufacturer's recommendations.
18. Check the idle speed, and re-adjust it as necessary with the throttle adjusting screw to obtain the correct setting.
19. *Vehicles with emission control.* Using the exhaust gas analyser, check that the percentage CO reading is within the limits given by the vehicle manufacturer. If the reading falls outside the limits given, reset the jet adjusting nut/screw by the minimum amount necessary to bring the reading just within the limits. If an adjustment exceeding three flats of the nut/half a turn of the adjusting screw is required to achieve this, the carburetter must be removed and serviced.



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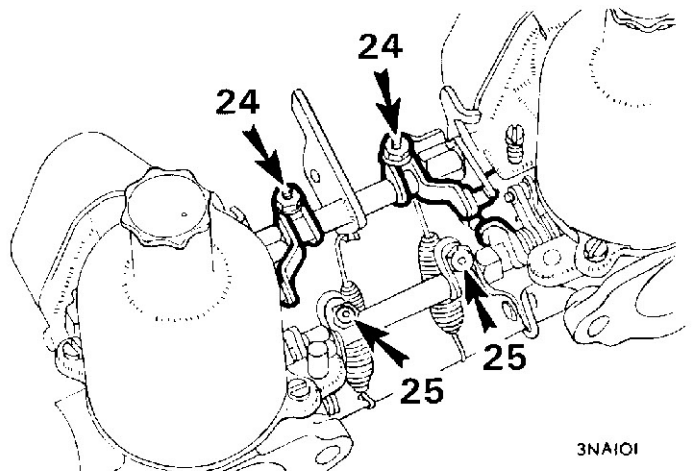
20. With the fast idle cam against its return stop, check that a $\frac{1}{16}$ in (1.5 mm) free movement of the mixture control (choke) cable exists before the cable moves the cam.
21. Pull out the mixture control (choke) until the linkage is about to move the jet.
22. Turn the fast idle adjusting screw clockwise until the correct fast idle speed (see vehicle manufacturer's recommendations) is obtained.
23. Refit the air cleaner.



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Multi-carburetters

24. Slacken both clamping bolts on the throttle spindle interconnections.
25. Slacken both clamping bolts on the cold start interconnections.



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26. Using a balancing meter in accordance with the maker's instructions, balance the carburetters by altering the throttle adjusting screws until the correct idle speed and balance is achieved. Alternatively, use a 'listening tube' to compare the intensity of the intake hiss on all carburetters and turn the throttle adjusting screws until the hiss is the same.
27. Turn the jet adjusting nut/screw on each carburetter down/clockwise to enrich or up/anti-clockwise to weaken, by the same amount until the fastest speed is indicated; turn each nut/screw up/anti-clockwise until the engine speed just commences to fall. Turn each screw very slowly down/clockwise by the minimum amount until the maximum speed is regained. From this setting adjust the mixture screws according to the vehicle manufacturer's recommendations. (See graph—*Single Carburetters*).
28. Check the idle speed and re-adjust it as necessary with the throttle adjusting screws, turning each by the same amount.
29. *Vehicles with emission control.* Using the exhaust gas analyser, check that the reading is within the limits given in the vehicle manufacturer's tuning data. If the reading falls outside the limits given, reset both jet adjusting nuts/screws by the minimum amount necessary to bring the readings just within the limits. If an adjustment exceeding three flats/half a turn is required to achieve this, the carburetters must be removed and serviced.
30. Set the throttle interconnection clamping levers, in accordance with the vehicle manufacturer's instructions, so that a clearance exists between the link pin and the lower edge of the fork. Tighten the clamp bolts, ensuring that there is approximately $\frac{1}{32}$ in end-float on the interconnection rod.
31. Run the engine at 1,500 rev/min and check the throttle linkage for correct connection by re-checking the carburetter balance.
32. With the fast idle cams of each carburetter against their respective stops, set the cold start interconnections so that all cams begin to move simultaneously.
33. With the fast idle cams against their stops check that a $\frac{1}{16}$ in (1.5 mm) free movement of the mixture control (choke) cable exists before the cable moves the cams.
34. Pull out the mixture control (choke) until the linkage is about to move the jet.
35. Using the balancing meter or listening tube to ensure equal adjustment, turn the fast idle adjusting screws to give the correct fast idle speed.
36. Refit the air cleaners.

