

National version (J) (USA)

Adjust engines according to data of respective emission information label.

Identification: Information label in national language on cross member in front of radiator.

Scope

Testing, adjusting firing point.

Raising engine oil temperature to approx. 80 °C.

Checking operation and ease of movement of accelerator control linkage.

Testing, adjusting idle speed and on/off ratio.

Switching on all ancillaries and checking smooth engine running.

Testing and adjusting data

Engine	National version and model year	Information plate	Idle speed ¹⁾ 1/min	On/off ratio in %		Firing point with vacuum when idling
				Test reading	Setting	
116	1981/1982	In Japanese	500–600	40–60	50 ± 10	5° BTDC
116 117	1983–1985		650 ⁺¹⁰⁰ – 50	2)		TDC ³⁾
116	1981	Color code black	500–600	40–60	50 ± 10	5° BTDC
	1982			2)		
116 117	1983–1985		650 ⁺¹⁰⁰ – 50	2)		TDC ³⁾

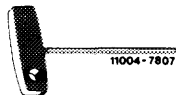
¹⁾ Electronically controlled.

²⁾ Test on/off ratio at 2500 rpm and take average reading. Compare this reading with the idle speed, adjust if necessary. The average reading at idle speed must not vary by more than ± 10 from the reading measured at 2500 rpm.

³⁾ Without vacuum.

Special tools

3 mm screwdriver with tommy handle for adjusting idle emissions level



000 589 14 11 00

Puller



123 589 05 33 00

Installer for security plug



123 589 00 15 00

Oil telethermometer



116 589 27 21 00

Conventional testers

Revolution counter

Digital tester

e.g. Bosch, MOT 001.03

Lambda control tester

e.g. Bosch, KDJE-P 600
Hermann L 115

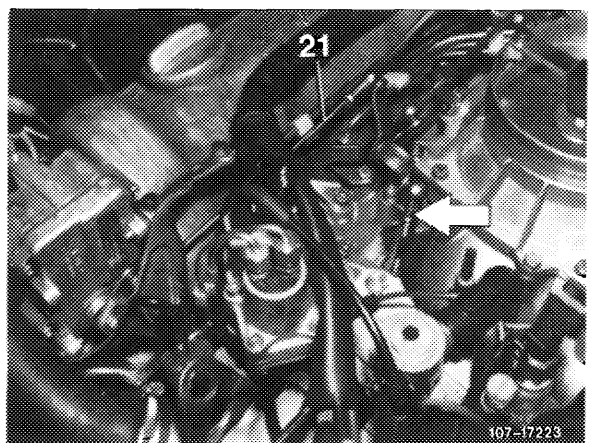
Adjusting

- 1 Connect digital tester and revolution counter, oil telethermometer and lambda control tester, as necessary.
- 2 Switch off air conditioning system. Move selector lever into position "P".
- 3 Raise engine oil temperature to approx. 80 °C.
- 4 Check whether the throttle valve lever is resting against the idle stop.
- 5 Test firing point when idling with vacuum, adjust (refer to table).
- 6 Check operation and ease of movement of accelerator control linkage, adjust.

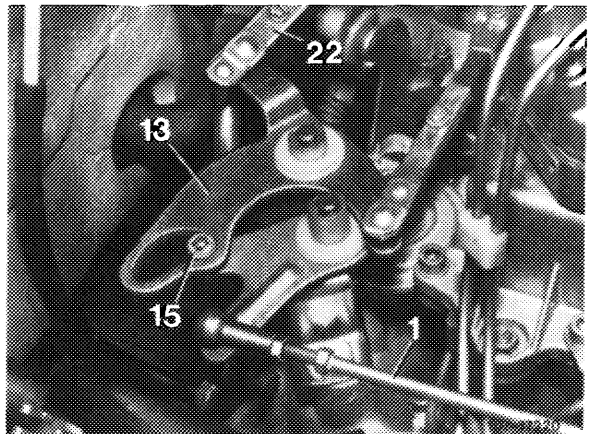
Vehicles with cruise control

Check whether the actuator is resting against idle stop of the cruise control by detaching tie rod (21) and pressing lever of actuator clockwise to idle stop.

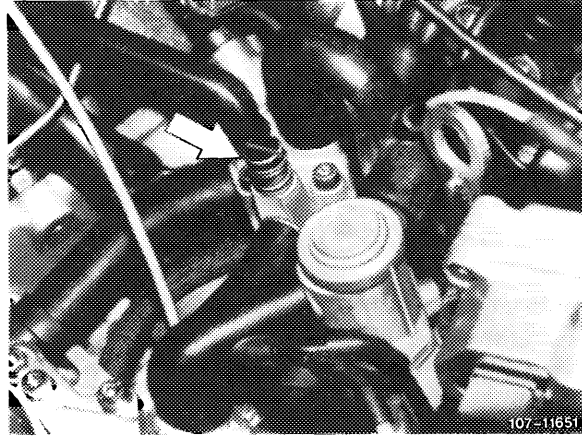
When attaching tie rod (21), ensure that the lever of the actuator is raised by approx. 1 mm off the idle stop. Adjust tie rod, if necessary.



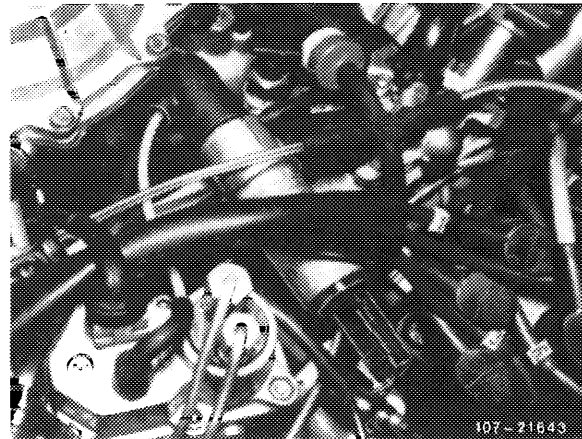
Check whether the roller (15) in the slotted lever (13) is resting free of tension against the end stop. Adjust with the connecting rod (1), if necessary.



7 Run engine at idle speed and set to specified idle speed with the idle air screw (arrow).



The idle speed on engines with electronic idle speed control cannot be varied. If the idle speed differs, perform test routine (07.3-112, section "B").



8 Check on/off ratio and adjust, if required.

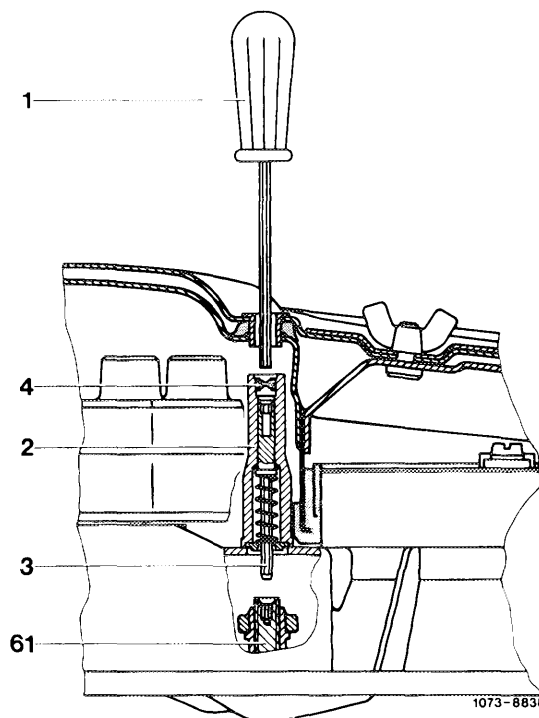
Ⓝ 1981

Note: The air cleaner need no longer be removed for adjusting on/off ratio at idle.

Read on/off ratio on tester, on/off ratio is in order if value is between 40-60 %. If not, pull out safety plug (4) by means of puller.

Insert screw driver (1) through cutout on air cleaner top onto adjusting device (2). Push with screw driver in downward direction against spring force of adjusting device, turn slightly until hexagon (3) engages in mixture control screw (61).

Turning counterclockwise = 60 % (leaner)
Turning clockwise = 40 % (richer)



Release screw driver, the compression spring will disengage adjusting device from mixture control screw.

Accelerate for a short moment and check on/off ratio and readjust, if required.

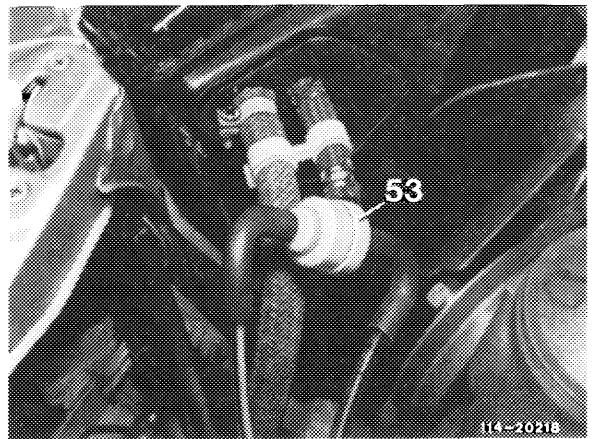
Following adjustment, install a blue safety plug (4), part no. 000 997 59 86 by means of installer.

Ⓝ starting 1982

Note: The air cleaner need not be removed for adjusting on/off ratio at idle.

Pull purge line toward throttle valve housing from purge valve and close.

Check on/off ratio at 2500 rpm and read mean value. Compare this value with idle speed value. Mean value at idle should not deviate from value measured at 2500 rpm by more than ± 10 .



If not, pull out safety plug (4) by means of puller.

Insert screw driver (1) through cutout on air cleaner top onto adjusting device (2). Push with screw driver in downward direction against spring force of adjusting device, turn slightly until hexagon (3) engages in mixture control screw (61).

Turning counterclockwise = leaner

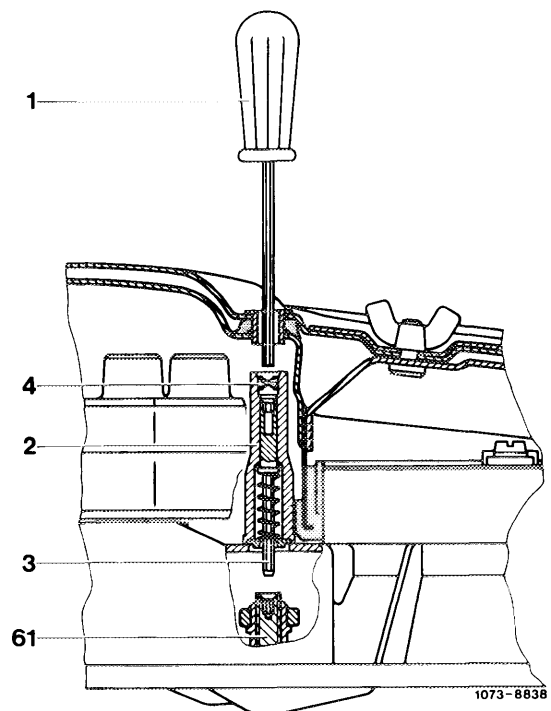
Turning clockwise = richer

Release screw driver, compression spring will disengage adjusting device from mixture control screw.

Accelerate for a short moment and check on/off ratio and readjust, if required.

Following adjustment, install a blue safety plug (4), part no. 000 997 59 86 by means of installer.

Reconnect purge line.



USA starting 1981

Note: The adjusting device (2) is provided with a protective steel lock.

If upon completion of engine repairs or following exchange of a part of the CIS-E injection system, adjustment of on/off ratio is required, proceed as follows:

Remove air cleaner.

Punch mark tear-off bolts (arrow) in center and drill approx. 6–8 mm deep by means of a 2.5 mm twist drill.

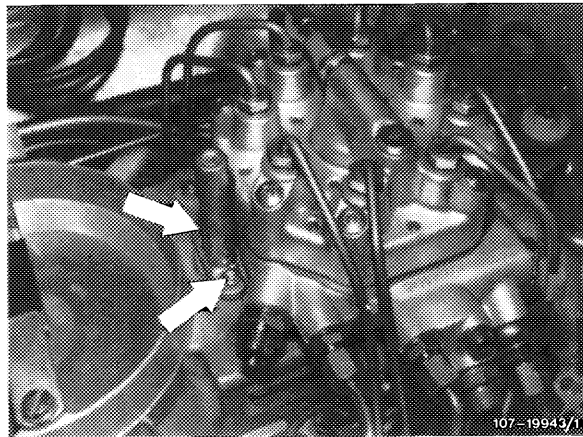
Attention!

Do not drill completely through bolts, since metal chips may lead to engine damage. Remove metal chips thoroughly with rag.

Unscrew tear-off bolts with a lefthand drill.

Install new repair set, part no. 102 586 02 07. Tighten bolts until tear-off head breaks off.

Mount air cleaner.



Checking on/off ratio

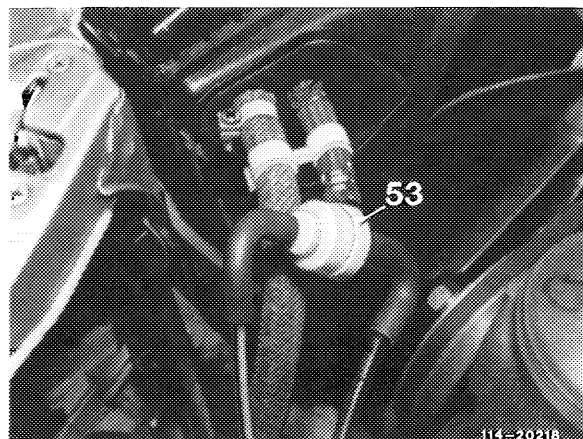
Pull purge line toward throttle valve housing from purge valve and close.

USA 1981

Read on/off ratio on tester. On/off ratio is in order if value is between 40–60 %.

USA starting 1982

Check on/off ratio at 2500 rpm and read mean value. Compare this value with idle speed value. Mean value at idle should not deviate more than ± 10 from value measured at 2500 rpm.



Adjusting on/off ratio

Insert screw driver (1) through cutout on air cleaner top onto adjusting device (2). Push with screw driver in downward direction against spring force of adjusting device, turn slightly until hexagon (3) engages in mixture control screw (61).

Turning counterclockwise = leaner

Turning clockwise = richer

Release screw driver, compression spring will disengage adjusting device from mixture control screw.

Accelerate for a short moment and check on/off ratio and readjust, if required.

Remove air cleaner.

Push in protective steel lock (included in repair set).

Mount air cleaner.

Connect purge line.

9 Check auxiliary units. For this purpose, move selector lever into driving position, switch on air conditioning, turn power steering to full lock, engine should be running smoothly. Adjust rpm, if required.

