A. Engine 615, 616 M-injection pump with pneumatic governor

Standard version
(AUS) (E) (J) (S) (ZA) (USA) **up to 1975**

Testing and adjusting data

Idle speed	700–800/min

National version (USA) 1976

Identification: Information plate in national language on cross member in front of radiator.
Adjust engines according to data of respective emission control information plate.
Color code: black

Model	Engine	Model year	Injection pump abbreviation	Idle speed 1/min
115.1	616.916	1976	M	700–800

Special tools

Oil telethermometer		116 589 27 21 00
Adaptor for revolution counter	 11004-7631	616 589 00 63 00

Conventional tool

Revolution counter, mechanical with hexagonal adaptor	e.g. made by Gann, D-7000 Stuttgart 1

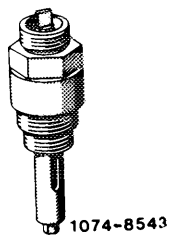
Note

Do not adjust idle speed when engine is too hot, e.g. immediately following a fast ride or after measuring output on output dynamometer.

Adjustment

1 Switch off air conditioner or automatic climate control. Move selector lever in position "P".

2 Connect revolution counter. Use adaptor when connecting mechanical revolution counter.

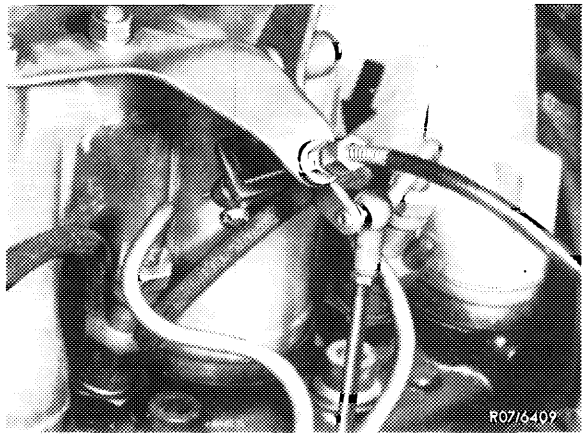


3 Run engine to 75–85 °C oil temperature.

4 Check regulating linkage for easy operation and wear.

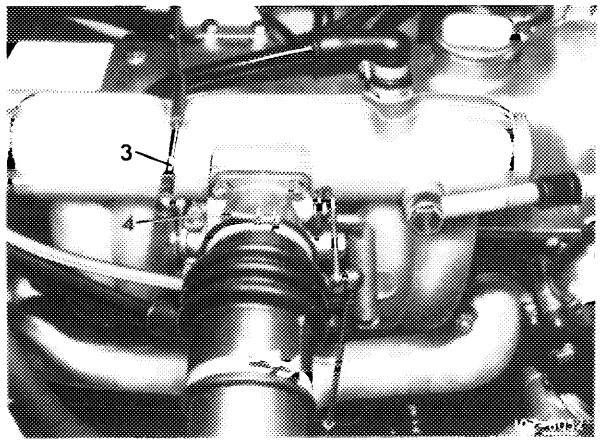
5 Turn idle speed adjuster completely to the right.

6 Check distance between adjusting ring and guide lever and adjust, if required. Nominal dimension approx. 0.1 mm.



7 Disconnect connecting rod (3). Check throttle valve and check valve flap for easy operation.

8 Check idle speed and adjust to specified speed by means of idle speed adjusting screw (4), if required. If the idle speed cannot be adjusted, check vacuum line, sealing rings for tickler shaft, governor housing, governor diaphragm for leaks (07.1–125).

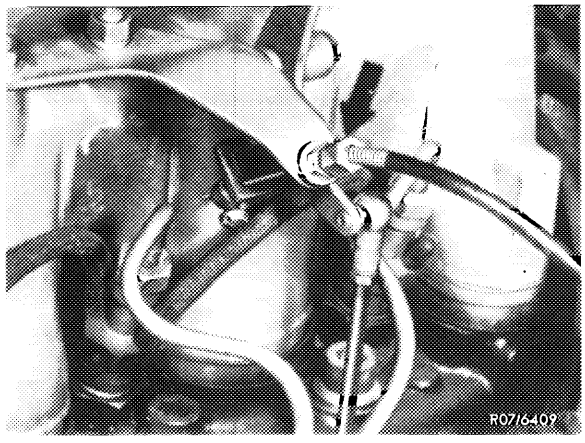


3 Connecting rod
4 Idle speed adjusting screw

9 Attach connecting rod (3) free of tension. Adjust regulating linkage, if required (30–300).

10 Set selector lever to driving position (automatic transmission), engage air conditioner, turn power steering to full lock, engine should run smoothly. Readjust speed, if required.

11 Set idle speed adjuster by turning knob counter-clockwise, approx. 1/2 turn idle travel should be available until idle speed increases. Adjust idle travel with adjusting screw (arrow) if required.



B. Engine 615, 616, 617 MW and M/RSF-injection pump with mechanical governor

Standard version

(AUS) (E) (J) (S) up to 1978, (USA) up to 1975, (ZA)

Testing and adjusting data

Engine	Injection pump abbreviation	Idle speed 1/min
615, 616, 617 (59 kW)	MW, M/RSF	700–800
617 (65 kW)	M/RSF	650–750

(E) (S) starting 1979, (USA) (ZA) starting 1976

Identification: Information plate in national language on cross member in front of radiator.
Adjust engines according to data of respective emission control information plate.

Model	Engine	Model year	Injection pump abbreviation	Idle speed 1/min
(S)				
Identification: Injection pump governor housing lead-sealed.				
123.1	616 (53 kW)	1979	M/RSF	750
	617 (59 kW)		MW	700–800
	615 (44 kW)	1980/81	M/RSF	
	616 (53 kW)		M/RSF	
	617 (65 kW)		M/RSF	650–750

(USA) (ZA)

Color code: (USA) black

115.1	617.910	1976	MW	680–760
123.1	616.912 617.912	1977/78		700 ± 50
		1979		750
		1980/81		750 ± 50

Special tools

Oil telethermometer		116 589 27 21 00
Adaptor for revolution counter	 11004-7631	616 589 00 63 00

Conventional tool

Revolution counter, mechanical with hexagonal adaptor	e.g. made by Gann, D-7000 Stuttgart 1

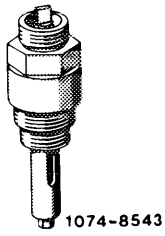
Note

Do not adjust engine when it is too hot, e.g. immediately following a fast ride or after measuring output on output dynamometer.

Adjustment

1 Switch off air conditioner or automatic climate control. Move selector lever into position "P".

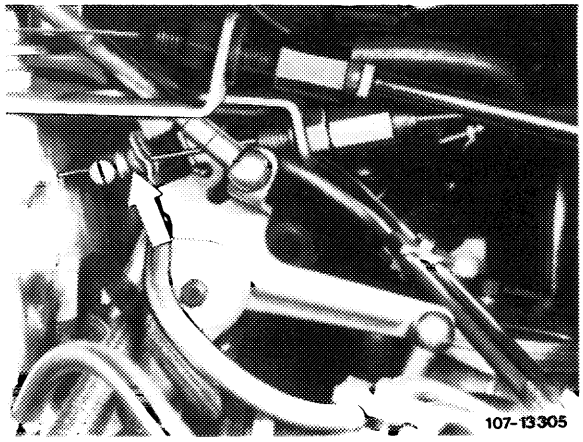
2 Connect revolution counter.
Use adaptor when connecting mechanical revolution counter.



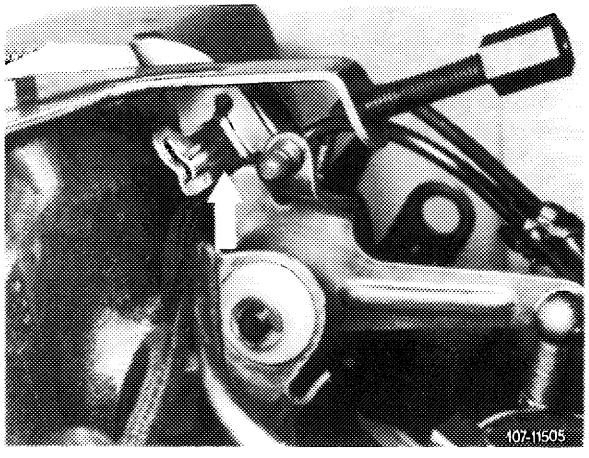
3 Run engine to 75–85 °C oil temperature.

4 Check regulating linkage for easy operation and wear.

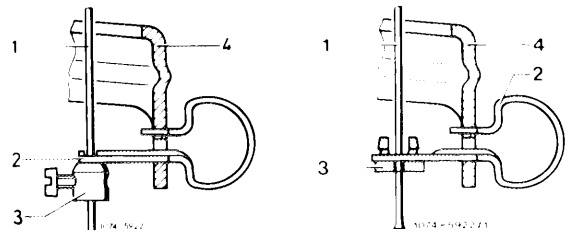
5 Turn idle speed adjuster completely to the right and check distance between adjusting ring and shaped spring or nipple and clip on shaped spring and adjust, if required. Nominal dimension = approx. 1.0 mm.



Attention!
Check whether shaped spring (arrow) has been correctly installed.



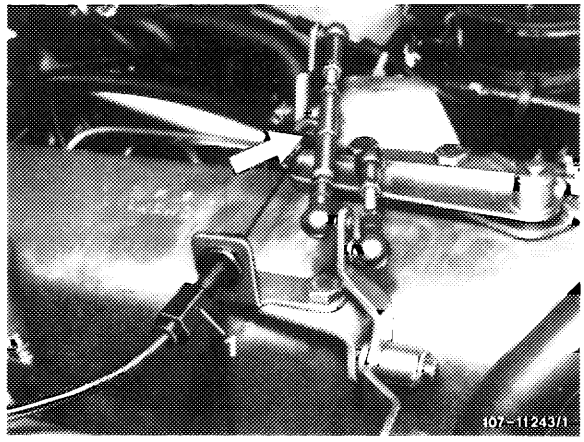
1 Cable control for increasing speed
2 Shaped spring
3 Adjusting ring/nipple
4 Guide lever



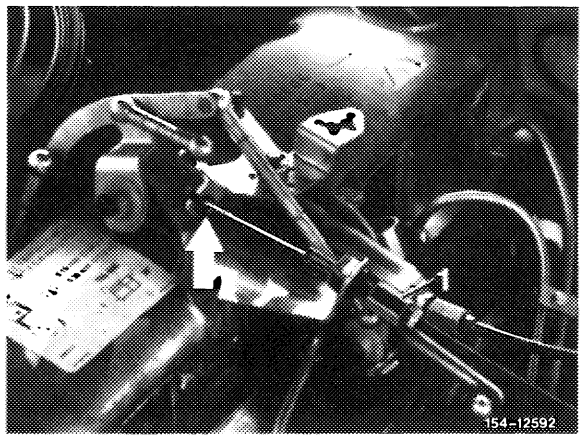
6 Check whether Bowden wire for Tempomat/cruise control rests free of tension against regulating lever (arrow). For this purpose, push shutoff lever up to stop. Adjust Bowden wire with adjusting nut (1), if required.

Release shutoff lever (idle speed position). In this position, Bowden wire is slack.

Engine 617 in model 115.1

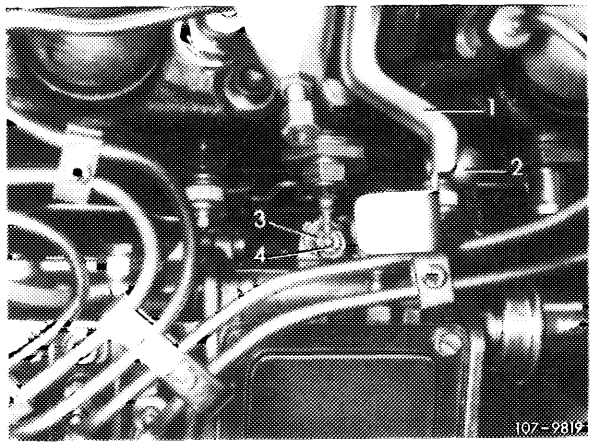


Engine 616, 617 in model 123.1

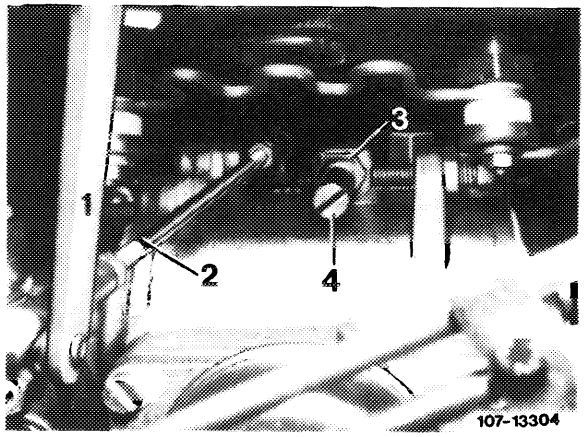


7 Disconnect connecting rod (2) on guide lever (1).

8 Check idle speed, loosen counternut (3) if required and set idle speed to specified speed by means of idle speed adjusting screw (4).

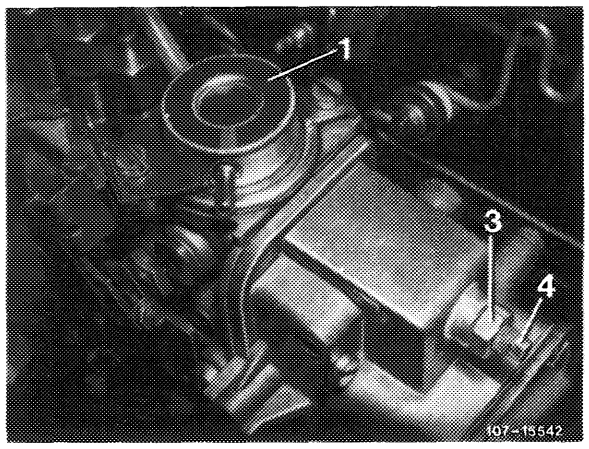


Engine 617.910 with MW-injection pump
1 Guide lever
2 Connecting rod
3 Counternut
4 Idle speed adjusting screw



Engine 616, 617 with MW-injection pump

Use box wrench to avoid damage to adjusting screw (4).



Engine 615, 616, 617 with M/RSF-injection pump

9 Attach connecting rod free of tension. Adjust regulating linkage, if required (30–300).

10 Place selector lever into driving position (automatic transmission), switch on air conditioner, turn power steering to full lock, engine should run smoothly. Readjust speed, if required.

11 Accelerate with accelerator pedal, while simultaneously turning idle speed adjuster counterclockwise. Speed should now amount to 1000–1100/min. Adjust with adjusting screw (arrow in fig. item 12), if required.

Run engine for some time at this speed. If speed increases automatically, slightly reduce speed at adjusting screw.

Attention!
When the speed is set higher, the idle speed control range is left. As a result, the engine speed can increase up to max speed (unloaded).

12 Adjust idle speed adjuster by turning knob counterclockwise, approx. 1/2 turn idle travel should be available until idle speed increases. Set idle speed by means of adjusting screw (arrow), if required.