

## 07.3–135 Checking injection valves

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### Test data

Injection valves		Bosch no. 0 437 502 010
Opening pressure	with new injection valves	3.5–4.1 bar gauge pressure
	with used injection valves min.	3.0 bar gauge pressure

### Tightening torques

	Nm
Injection lines to fuel distributor (reference value)	10–12
Injection lines to injection valves (reference value)	10–15

### Conventional tools

Valve tester Bosch KD-JE 7452	Bosch order designation KD-JE 7452
Nozzle tester EFEP 60 H <sup>1)</sup>	Bosch no. 0 684 200 700
Pressure gauge 0–6 bar gauge pressure Quality class 1.0 housing dia. = 100 mm	Bosch no. 1 687 231 00
Pipe line	Bosch no. 1 680 750 001

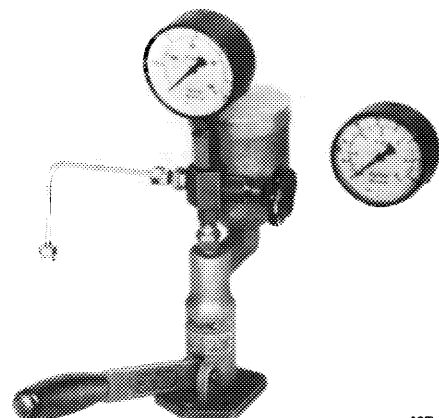
<sup>1)</sup> Corresponds to nozzle testers used up to now. To check injection valves, the pressure gauge named above or the pressure gauge of pressure measuring device 100 589 13 21 00 will be required.

### Note

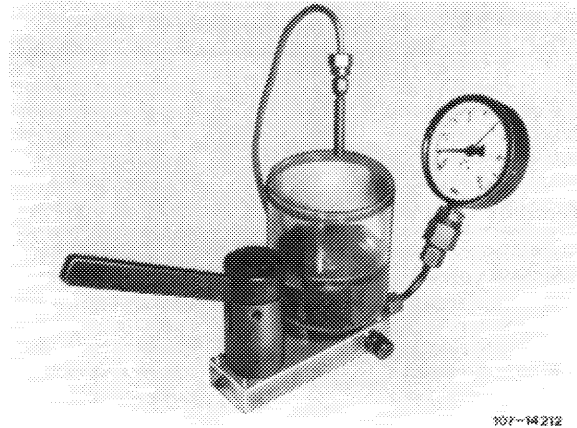
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The nozzle or valve tester serves to check the opening pressure, the buzzing test and the fuel jet, and also for checking the injection valves for leaks.

Prior to checking injection valves, fill container of tester and bleed. For testing, use kerosene only.



Injection valves, beyond tolerance must be renewed.  
Injection valves can be individually interchanged within one set.



For checking, remove injection valves (07.3–215).

1 Coarse leak test:

- a) Connect removed injection valves to tester. Bleed pressure line with shutoff valve open and coupling nut released by actuating lever slowly several times. Then tighten coupling nut.
- b) With shutoff valve open, **slowly** actuate hand lever (4 s/stroke) and build up pressure up to max. 1.5 bar gauge pressure. If injection valve shows a leak, replace.

2 Check opening pressure.

Close shutoff valve. Operate hand lever quickly several times to flush injection valve.

Open shutoff valve and check opening pressure while moving lever slowly.

3 Fine leak test:

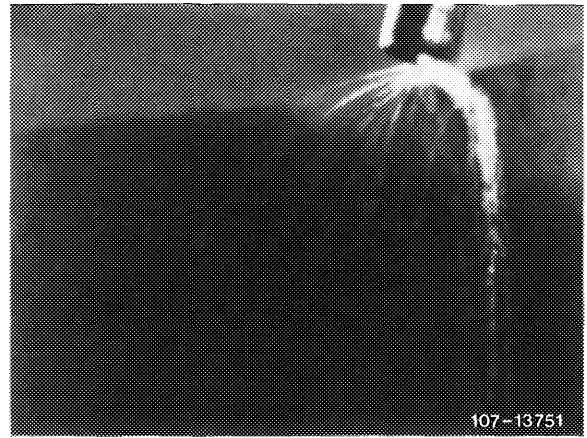
Close shutoff valve. Operate hand lever fast several times to flush injection valve, open shutoff valve and increase pressure slowly up to 0.5 bar gauge pressure at previously determined opening pressure and hold. No drops should show up at injection valve within 15 seconds.

4 Buzzing test, evaluation of jet:

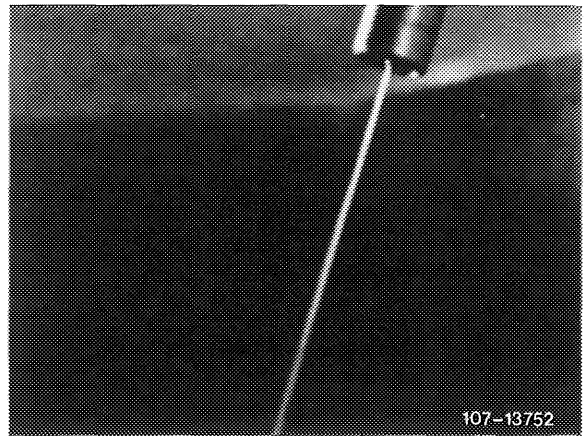
Close shutoff valve and flush valve by operating lever several times (0.5 s/stroke). Then reduce lever speed to approx. 1 s/stroke. Valve should then buzz. No drops should show up at valve mouth. There should be no cord-type jet. One-sided, atomized jet formations within a total spray angle of approx. 35° is permitted.

Damaged injection valves

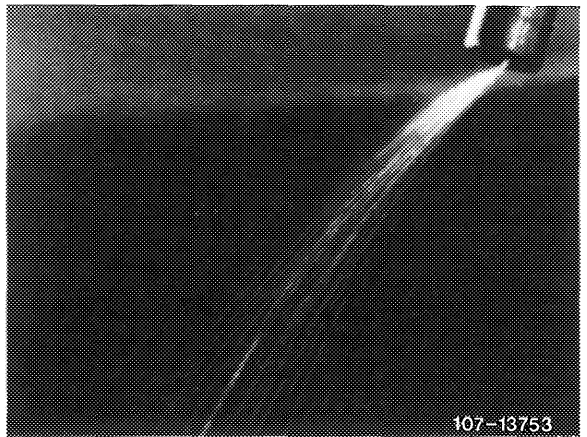
Formation of drops



Cord-type jet



Poorly proportioned jet



Good injection valves

Well proportioned jet



Slightly one-sided atomization

