

## Contents

<b>23</b>	<b>Mixture preparation - injection</b> .....	<b>1</b>
1	<b>Safety precautions and rules for cleanliness</b> .....	1
1.1	Safety precautions when using testers and measuring instruments during a road test .....	1
1.2	Safety precautions for vehicles with start/stop system .....	2
1.3	Safety precautions when working on the fuel system .....	2
1.4	To avoid any risk of injuries to persons and/or damage to the injection and glow plug system, always observe the following safety precautions: .....	3
1.5	Checking vacuum system .....	4
2	<b>Overview of fitting locations</b> .....	5
3	<b>System layout</b> .....	13
4	<b>Fuel system - exploded view</b> .....	15
5	<b>Bleeding fuel system</b> .....	18
6	<b>Air cleaner</b> .....	19
6.1	Air cleaner - exploded view .....	19
6.2	Removing and installing engine cover panel .....	20
6.3	Removing and installing air filter element .....	20
6.4	Removing air cleaner (bottom section) .....	21
7	<b>Intake manifold</b> .....	24
7.1	Intake manifold - exploded view .....	24
7.2	Removing and installing intake manifold .....	24
7.3	Removing and installing fuel rail .....	28
8	<b>High-pressure pump</b> .....	31
8.1	Removing and installing high-pressure pump .....	31
8.2	Performing first fuel filling operation after installing high-pressure pump .....	32
9	<b>Injectors</b> .....	34
9.1	Checking injectors .....	34
9.2	Performing adaption of injectors .....	34
9.3	Checking return flow rate of injectors with engine running .....	35
9.4	Checking return flow rate of injectors at starter cranking speed .....	37
9.5	Checking for injectors sticking open .....	39
9.6	Removing and installing injectors .....	41
10	<b>Components of injection system</b> .....	48
10.1	Removing and installing air mass meter G70 .....	48
10.2	Installing high-pressure pipes .....	49
10.3	Checking pressure retention valve in fuel return line .....	51
10.4	Checking fuel system for leaks .....	52
10.5	Checking fuel pressure (low pressure) system .....	52
10.6	Checking fuel pressure regulating valve N276 .....	54
10.7	Removing and installing fuel pressure regulating valve N276 .....	55
10.8	Removing and installing fuel pressure sender G247 .....	57
11	<b>Lambda probes</b> .....	61
11.1	Lambda probe - exploded view .....	61
11.2	Removing and installing Lambda probe G39 with Lambda probe heater Z19 .....	62
11.3	Removing and installing exhaust gas pressure sensor 1 G450 .....	63
12	<b>Engine control unit</b> .....	64
12.1	Wiring and component check with test box V.A.G 1598/42 .....	64
12.2	Renewing engine control unit J623 .....	65
<b>28</b>	<b>Glow plug system</b> .....	<b>69</b>
1	.....	69
1.1	Removing and installing glow plugs .....	69



1.2	Removing and installing engine speed sender G28 .....	71
1.3	Removing and installing Hall sender G40 .....	72