

Contents

24 - Mixture preparation - injection	1
1 Servicing Simos injection system	1
1.1 Technical data	1
1.2 Safety precautions	1
1.3 Repair instructions	4
1.4 Overview of fitting locations - injection system	8
1.5 Servicing injection system	14
1.6 Dismantling and assembling intake manifold (top section)	17
1.7 Dismantling and assembling air cleaner	17
1.8 Removing and installing intake manifold (bottom section)	18
1.9 Wiring and component check with test box V.A.G 1598/31	22
1.10 Renewing engine control unit	26
1.11 Performing adaption of exhaust gas recirculation valve	32
1.12 Checking idling speed	32
1.13 Checking system pressure, fuel pressure regulator and residual pressure	35
1.14 Checking injectors	38
1.15 Dismantling and assembling fuel rail with injectors	41
1.16 Removing and installing injectors	42
1.17 Checking injection quantity and spray pattern of injectors; checking for leaks	45
1.18 Checking fuel pump relay J17 and activation	47
1.19 Checking air mass meter G70	51
1.20 Checking intake system for leaks (unmetered air)	54
2 Checking intake manifold changeover function	56
2.1 Checking vacuum system for leaks	56
2.2 Checking variable intake manifold changeover valve N156	58
3 Checking Lambda control function	62
3.1 Checking Lambda probe and Lambda control before catalytic converter	62
3.2 Checking ageing of Lambda probe before catalytic converter	68
3.3 Checking Lambda probe heater Z19 for Lambda probe before catalytic converter	69
3.4 Checking Lambda probe and Lambda control after catalytic converter	73
3.5 Checking Lambda probe heater Z29 for Lambda probe after catalytic converter	76
3.6 Removing and installing Lambda probe	80
4 Checking secondary air pump relay J299 and activation	82
4.1 Checking voltage supply of secondary air pump relay	83
4.2 Checking activation of secondary air pump relay	84
4.3 Checking voltage supply for secondary air pump motor	85
5 Checking fuel tank breather system	88
5.1 Checking activated charcoal filter solenoid valve 1 N80	88
6 Checking electronic engine power control (electronic throttle)	92
6.1 Operation of electronic throttle system	92
6.2 Notes on electronic power control fault lamp (warning lamp for electronic throttle) in dash panel insert	92
6.3 Checking electronic power control fault lamp K132	93
6.4 Checking throttle valve module J338	95
6.5 Performing adaption of throttle valve module	95
6.6 Checking angle senders for throttle valve drive	97
6.7 Checking accelerator position senders	100
6.8 Adapting kickdown function	103
7 Checking auxiliary signals	105
7.1 Checking engine speed signal	105
7.2 Checking fuel consumption signal for on-board computer	105
7.3 Checking vehicle speed signal	105



7.4	Testing air conditioner compressor shut-off	107
7.5	Checking tank level signal wire	109
7.6	Checking brake light switch and brake pedal switch	109
7.7	Checking clutch pedal switch F36 - up to model year 2001	111
7.8	Checking clutch pedal switch F36 - from model year 2002 onwards	114
7.9	Checking power assisted steering pressure switch F88	116
7.10	Checking crash signal wire	119
28	- Ignition system	120
1	Checking ignition system	120
1.1	General notes on ignition system	120
1.2	Safety precautions	120
1.3	Technical data for ignition system	120
1.4	Exploded view - ignition system	121
1.5	Identifying ignition connections on ignition coil	122
1.6	Checking ignition coils	123
1.7	Checking intake air temperature sender G42	126
1.8	Checking engine speed sender G28	129
1.9	Checking coolant temperature sender G62	132
1.10	Checking voltage supply for current supply relay for Simos control unit J363	134
1.11	Checking knock control limit	136
1.12	Checking knock sensor 1 G61	138
1.13	Checking Hall sender	141
1.14	Checking misfiring detection	143