

Contents

01 - Self-diagnosis	1
1 Self-diagnosis of Multi Point Fuel Injection	1
1.1 Self-diagnosis of Multi Point Fuel Injection	1
1.2 Technical self-diagnosis data	1
1.3 Safety precautions	1
1.4 Connecting vehicle diagnosis, measurement and information system VAS 5051 or fault reader V.A.G 1551 and selecting functions	1
2 Interrogating and erasing fault memory	4
2.1 Interrogating and erasing fault memory	4
2.2 Fault table	6
3 Final control diagnosis	14
3.1 Final control diagnosis	14
4 Basic setting	16
4.1 Basic setting	16
5 Coding control unit	20
5.1 Coding control unit	20
5.2 Encoding table	20
6 Reading measured value block	21
6.1 Reading measured value block	21
6.2 Display group overview	22
7 Adaptation	30
7.1 Adaptation	30
24 - Mixture preparation, Injection	34
1 Repairing Multi Point Fuel Injection system	34
1.1 Repairing Multi Point Fuel Injection system	34
1.2 Safety precautions	34
1.3 Rules for cleanliness	34
1.4 Technical data	35
1.5 Fitting locations overview	36
1.6 Checking wiring and components with test box V.A.G 1598 A	40
1.7 Replacing engine control unit	41
1.8 Checking idling speed	43
1.9 Checking system pressure, fuel pressure regulator and holding pressure	45
1.10 Checking injectors	48
1.11 Removing and installing fuel manifold with injectors and throttle valve unit	53
1.12 Removing and installing injectors	55
1.13 Testing injection quantity, leak tightness and spray pattern of injectors	57
1.14 Checking fuel pump relay -J17 and actuation	59
1.15 Checking idling stabilisation valve -N71	63
1.16 Checking intake air system for leaks (non-metered air)	66
2 Checking Lambda control	67
2.1 Checking Lambda control	67
2.2 Checking Lambda probe heating - vehicles > 07.96	68
2.3 Checking Lambda probe heating - vehicles 08.96 ä	74
2.4 Checking Lambda probe and signal wire	77
2.5 Checking function of Lambda probes	80
2.6 Removing and installing Lambda probe	81
3 Checking fuel tank breather	82
3.1 Checking fuel tank breather	82
3.2 Checking activated charcoal filter system solenoid valve 1 -N80	82
4 Checking throttle valve potentiometer -G69	87



4.1	Checking throttle valve potentiometer -G69	87
4.2	Checking idling switch -F60	90
5	Checking auxiliary signals	94
5.1	Checking auxiliary signals	94
5.2	Checking heated rear window signal	94
5.3	Checking the air conditioner compressor shutoff	96
5.4	Checking engine speed signal	98
5.5	Checking vehicle speed signal	98
5.6	Checking output signal for throttle valve position	100
5.7	Checking gear signal	102
5.8	Checking ignition timing retardation on changing gear	105
6	Vacuum diagram	107
6.1	Vacuum diagram	107
6.2	Vehicles with manual gearbox	107
6.3	Vehicles with automatic gearbox	109
28	- Ignition system	111
1	Checking ignition system	111
1.1	Checking ignition system	111
1.2	Safety precautions	111
1.3	Technical data	111
1.4	Removing and installing ignition system components	112
1.5	Checking ignition coils -N, -N128, and -N158	115
1.6	Checking output stage -N122	118
1.7	Checking ignition timing sender -G4	121
1.8	Checking engine speed sender -G28	123
1.9	Checking intake air temperature sensor -G42	128
1.10	Checking coolant temperature sender -G62	132
1.11	Checking control unit power supply	135
1.12	Checking knock sensors	137
1.13	Checking Hall sender -G40	140