

Contents

01 - Self-diagnosis	1
1 Self-diagnosis of Multi Point Injection	1
1.1 Self-diagnosis of Multi Point Injection	1
1.2 Control unit overview	1
1.3 Technical self-diagnosis data	1
1.4 Safety precautions	1
1.5 Connecting vehicle diagnosis, measurement and information system VAS 5051 or fault reader V.A.G 1551 and selecting functions	2
2 Interrogating and erasing fault memory	5
2.1 Interrogating and erasing fault memory	5
2.2 Fault table	6
2.3 Fault codes 00281 - 00537	7
2.4 Fault codes 00540 - 65535	15
3 Final control diagnosis	23
3.1 Final control diagnosis	23
4 Basic setting	25
4.1 Basic setting	25
4.2 control unit no. 8A0 906 266 A (ä 08.92)	25
4.3 Control unit no. 8A0 906 266 B (08.92 >)	31
5 Coding control unit	32
5.1 Coding control unit	32
5.2 Control unit no. 8A0 906 266 A (ä 08.92)	32
5.3 Control unit no. 8A0 906 266 B (08.92 >)	34
6 Reading measured value block	35
6.1 Reading measured value block	35
6.2 Control unit no. 8A0 906 266 A (ä 08.92)	35
6.3 Control unit no. 8A0 906 266 B (08.92 >)	36
6.4 Display group overview	37
6.5 Reading measured value block: Display groups 000 to 010	39
6.6 Reading measured value block: Display groups 011 to 019	54
7 Read individual measured value	58
7.1 Read individual measured value	58
7.2 Control unit no. 8A0 906 266 A (ä 08.92)	58
7.3 Channel overview	59
8 Adaptation	60
8.1 Adaptation	60
8.2 CO adjustment for vehicles without lambda probes 08.92 ä	60
9 Test wiring connections for diagnostic connector	63
9.1 Test wiring connections for diagnostic connector	63
9.2 Checking voltage supply for black diagnostic connector	64
9.3 Checking wiring connection between white diagnostic connector and engine control unit ..	64
24 - Mixture preparation, Injection	67
1 Servicing Multi Point Injection system	67
1.1 Servicing Multi Point Injection system	67
1.2 Safety precautions	67
1.3 Rules for cleanliness	67
1.4 Technical data	68
1.5 Fitting locations overview	69
1.6 Dismantling and assembling fuel manifold with injectors	73
1.7 Removing and installing throttle valve unit and intake manifold changeover components ..	75
1.8 Checking wiring and components with test box V.A.G 1598	78
1.9 Replacing engine control unit	79



1.10	Checking idling speed and CO content	82
1.11	Checking system pressure, fuel pressure regulator and holding pressure	84
1.12	Checking injectors	87
1.13	Testing injection quantity, leak tightness and spray pattern of injectors	92
1.14	Checking fuel pump relay -J17 and actuation	95
1.15	Checking idling stabilisation valve -N71	100
1.16	Checking air mass meter -G70 with CO potentiometer -G74 for control unit no. 8A0 906 266 A (ä 08.92)	104
1.17	Checking air mass meter -G74 for control unit no. 8A0 906 266 B (08.92 >)	109
2	Checking intake manifold changeover function	113
2.1	Checking intake manifold changeover function	113
2.2	Checking function	113
2.3	Checking vacuum system for leaks	114
2.4	Checking intake manifold changeover valve -N156	116
3	Test lambda control	120
3.1	Test lambda control	120
3.2	Checking function of lambda probes	121
3.3	Vehicles with control unit no. 8A0 906 266 A (ä 08.92)	121
3.4	Vehicles with control unit no. 8A0 906 266 B (08.92 >)	122
3.5	Checking lambda probe heating	124
3.6	Checking lambda probe and signal wire	127
3.7	Removing and installing lambda probe	129
4	Checking fuel tank breather	130
4.1	Checking fuel tank breather	130
4.2	Checking activated charcoal filter solenoid valve 1 -N80	130
5	Checking throttle valve potentiometer -G69	135
5.1	Checking throttle valve potentiometer -G69	135
5.2	Checking idling switch -F60	139
6	Checking EGR	143
6.1	Checking EGR	143
6.2	Checking EGR valve -N18	143
6.3	Test mechanical exhaust gas recirculation valve	147
6.4	Checking EGR temperature sensor -G98	149
7	Checking auxiliary signals	152
7.1	Checking auxiliary signals	152
7.2	Testing air conditioner compressor signal and air conditioner compressor shut-off	152
7.3	Control unit no. 8A0 906 266 A (ä 08.92)	153
7.4	Control unit no. 8A0 906 266 B (08.92 >)	156
7.5	Checking engine speed signal	159
7.6	Checking vehicle speed signal	159
7.7	Checking consumption signal for on-board computer	161
7.8	Checking output signal for throttle valve position	162
7.9	Checking gear signal	164
7.10	Checking ignition timing retardation on changing gear	167
8	Vacuum diagram	170
8.1	Vacuum diagram	170
8.2	Vehicles with manual gearbox without EGR	170
8.3	Vehicles with automatic gearbox without EGR	172
8.4	Vehicles with manual gearbox and EGR	174
8.5	Vehicles with automatic gearbox and EGR	177
28 - Ignition system		180
1	Checking ignition system	180
1.1	Checking ignition system	180
1.2	Safety precautions	180
1.3	Technical data	180

1.4	Removing and installing ignition system components	181
1.5	Checking ignition coils -N, -N128, and -N158	184
1.6	Checking output stage -N122	187
1.7	Checking ignition timing sender -G4	190
1.8	Checking engine speed sender -G28	192
1.9	Checking coolant temperature sender -G62	197
1.10	Checking control unit voltage supply	200
1.11	Checking knock sensors	203
1.12	Checking Hall sender -G40	206