

Contents

01 - Self-diagnosis	1
1 Self-diagnosis of Multi Point Injection	1
1.1 Self-diagnosis of Multi Point Injection	1
1.2 Technical data of self-diagnosis	1
1.3 Safety precautions	1
1.4 Connecting fault reader V.A.G 1551 and selecting engine electronics control unit	1
2 Interrogating and erasing fault memory	4
2.1 Interrogating and erasing fault memory	4
2.2 Fault table	6
2.3 Fault code from 01119 to 17509	6
2.4 Fault code from 17514 to 18020	15
3 Final control diagnosis	25
3.1 Final control diagnosis	25
4 Basic setting	27
4.1 Basic setting	27
5 Encoding control unit	29
5.1 Encoding control unit	29
5.2 Encoding table for control unit no. 8A0 906 266 with index lower than "E"	30
5.3 Encoding table as of control unit no. 8A0 906 266 E	31
6 Reading measured value block	31
6.1 Reading measured value block	31
6.2 Display groups	32
6.3 Reading measured value block: Display Groups 001 to 010	35
6.4 Reading measured value block: Display Groups 011 to 099	48
7 Adaptation	54
7.1 Adaptation	54
7.2 Adapting engine control unit to immobilizer - vehicles > 1994	54
7.3 CO adjustment on vehicles not fitted with lambda probes	56
8 Checking wiring of diagnostic connector	59
8.1 Checking wiring of diagnostic connector	59
24 - Mixture preparation, Injection	64
1 Servicing Multi Point Injection System	64
1.1 Servicing Multi Point Injection System	64
1.2 Safety precautions	64
1.3 Rules for cleanliness	64
1.4 Technical data	65
1.5 Fitting locations overview	66
1.6 Dismantling and assembling air cleaner	71
1.7 Dismantling and assembling fuel manifold with injectors	72
1.8 Removing and installing throttle valve unit and intake manifold changeover system components	74
1.9 Wiring and component check with test box V.A.G 1598 A	77
1.10 Replacing engine control unit	78
1.11 Checking idling speed and CO content	81
1.12 Checking system pressure, fuel pressure regulator and holding pressure	82
1.13 Checking injectors	85
1.14 Checking injection quantity, leak tightness and spray pattern of injectors	90
1.15 Checking fuel pump relay -J17 and actuation	93
1.16 Checking idling stabilisation valve -N71	98
1.17 Checking air mass meter -G70	102
2 Testing intake manifold changeover system	106
2.1 Testing intake manifold changeover system	106



2.2	Checking function	106
2.3	Checking vacuum system for leaks	107
2.4	Checking intake manifold changeover valve -N156	109
3	Checking lambda control	113
3.1	Checking lambda control	113
3.2	Engine running problems after cold start	114
3.3	Checking function of lambda probes	115
3.4	Checking lambda probe heating	117
3.5	Checking lambda probe and signal wire	120
3.6	Removing and installing lambda probe	121
4	Checking fuel tank breather	122
4.1	Checking fuel tank breather	122
4.2	Checking ACF solenoid 1 -N80	123
5	Checking throttle valve potentiometer -G69	128
5.1	Checking throttle valve potentiometer -G69	128
5.2	Checking idling switch -F60	132
6	Checking EGR	135
6.1	Checking EGR	135
6.2	Checking EGR valve -N18	135
6.3	Checking EGR temperature sensor -G98	141
7	Checking auxiliary signals	144
7.1	Checking auxiliary signals	144
7.2	Checking air conditioner compressor shut-off	144
7.3	Checking engine speed signal	146
7.4	Checking speed signal	147
7.5	Checking consumption signal for vehicle computer	149
7.6	Checking output signal for throttle valve position	151
7.7	Checking gear signal	153
7.8	Checking ignition timing retardation on changing gear	156
7.9	Checking engine torque signal from ABS/ASR control unit	159
28	- Ignition system	160
1	Checking ignition system	160
1.1	Checking ignition system	160
1.2	Safety precautions	160
1.3	Technical data	160
1.4	Removing and installing ignition system components	161
1.5	Checking ignition coils -N, -N128, and -N158	164
1.6	Checking output stage -N122	167
1.7	Checking ignition timing sender -G4	170
1.8	Checking engine speed sender -G28	172
1.9	Checking coolant temperature sender -G62	177
1.10	Checking control unit voltage supply	180
1.11	Checking knock sensors	182
1.12	Checking Hall sender -G40	185