

Contents

01 - Self-diagnosis	1
1 Self-diagnosis of Motronic system	1
1.1 Self-diagnosis of Motronic system	1
1.2 Technical data of self-diagnosis	1
1.3 Safety precautions	1
1.4 Connecting vehicle diagnostic, testing and information system VAS 5051 and selecting functions	1
2 Interrogating and erasing fault memory	5
2.1 Interrogating and erasing fault memory	5
2.2 Interrogating fault memory	5
2.3 Erasing fault memory	7
2.4 End of output	8
2.5 Fault table	8
2.6 Fault codes 00281 - 00537	9
2.7 Fault codes 00540 - 65535	15
3 Final control diagnosis	20
3.1 Final control diagnosis	20
4 Basic setting	24
4.1 Basic setting	24
5 Encoding control unit	28
5.1 Encoding control unit	28
6 Reading measured value block	30
6.1 Reading measured value block	30
6.2 Display group overview	32
6.3 Specified display values	34
7 Checking diagnostic connector wiring connections	42
7.1 Checking diagnostic connector wiring connections	42
7.2 Checking voltage supply to "black" diagnostic connector	43
7.3 Checking wiring between "white" diagnostic connector and engine control unit	43
7.4 Checking cable connection of coding connector	47
24 - Mixture preparation, Injection	48
1 Servicing Motronic injection system	48
1.1 Servicing Motronic injection system	48
1.2 Safety precautions	48
1.3 Rules for cleanliness	48
1.4 Technical data	49
1.5 Fitting locations overview	50
1.6 Removing and installing injection system components	56
1.7 Checking wiring and components with test box V.A.G 1598 A and adapter 1598/5	59
1.8 Replacing engine control unit	60
1.9 Checking idling speed	63
1.10 Checking system pressure, fuel pressure regulator and holding pressure	64
1.11 Checking injectors	67
1.12 Removing and installing injectors	71
1.13 Checking injection quantity, leak tightness and spray pattern of injectors	73
1.14 Checking fuel pump relay -J17 and relay actuation	75
1.15 Checking idling stabilisation valve -N71	80
1.16 Checking air mass meter -G70	84
1.17 Checking altitude sender -F96	88
1.18 Checking intake air system for leaks (unmetered air)	92
2 Checking lambda control	93
2.1 Checking lambda control	93

2.2	Checking lambda probe signal wiring and actuation	94
2.3	Checking lambda probe heater -Z19	95
2.4	Removing and installing lambda probe	97
3	Checking fuel tank breather	98
3.1	Checking fuel tank breather	98
3.2	Checking activated charcoal filter system solenoid valve 1 -N80	99
4	Checking throttle valve potentiometer -G69	103
4.1	Checking throttle valve potentiometer -G69	103
4.2	Checking and adjusting idling speed switch -F60	106
4.3	Checking and adjusting closing damper	109
5	Checking auxiliary signals	110
5.1	Checking auxiliary signals	110
5.2	Checking signals from/to air conditioner	110
5.3	Checking engine speed signal	113
5.4	Checking consumption signal for on-board computer	113
5.5	Checking boost pressure signal for onboard computer	113
5.6	Checking vehicle speed signal	114
6	Vacuum diagram	116
6.1	Vacuum diagram	116
28 - Ignition system	118	
1	Checking ignition system	118
1.1	Checking ignition system	118
1.2	Safety precautions	118
1.3	Technical data	118
1.4	Checking ignition coils and output stages	119
1.5	Checking ignition timing sender -G4	128
1.6	Checking engine speed sender -G28	130
1.7	Checking intake air temperature sender -G42	132
1.8	Checking coolant temperature sender -G62	135
1.9	Checking control unit power supply	138
1.10	Checking knock sensors	140
1.11	Checking Hall sender -G40	142
1.12	Basic setting of Hall sender - vehicles of model year 1991	145