

Contents

01 - Self-diagnosis	1
1 Self-diagnosis	1
1.1 Self-diagnosis	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/ 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	10
3.1 Final control diagnosis	10
4 Basic setting	12
4.1 Basic setting	12
5 Encoding control unit	13
5.1 Encoding control unit	13
6 Reading measured value block	14
6.1 Reading measured value block	14
6.2 List of display groups	15
7 Checking wiring of diagnostic connectors	24
7.1 Checking wiring of diagnostic connectors	24
7.2 Checking power supply for "black" diagnostic connector	25
7.3 Checking wiring between "white" diagnostic connector and engine control unit	25
7.4 Checking wiring of encoding connector	27
24 - Mixture preparation, Injection	29
1 Servicing Digifant injection system	29
1.1 Servicing Digifant injection system	29
1.2 Safety precautions	29
1.3 Rules for cleanliness	29
1.4 Technical data	30
1.5 Exploded view of fitting locations	31
1.6 Removing and installing injection system components	35
1.7 Dismantling and assembling air cleaner	38
1.8 Wiring and component check with test box V.A.G 1598 A and adapter 1598/9	40
1.9 Replacing engine control unit	41
1.10 Checking idling speed	43
1.11 Checking system pressure, fuel pressure regulator and holding pressure	46
1.12 Dismantling and assembling fuel rail with injectors	48
1.13 Checking injectors	50
1.14 Removing and installing injectors	54
1.15 Checking freedom from leaks and spray pattern of injectors	57
1.16 Checking fuel-pump relay -J17 and actuation	59
1.17 Checking cold start valve -N17	63
1.18 Checking idling-speed stabilisation valve -N71	69
1.19 Checking acceleration/full throttle enrichment and overrun shutoff	72
1.20 Checking air-flow meter potentiometer -G19	74
1.21 Checking intake system for leaks (unmetered air)	77
2 Checking Lambda control	78
2.1 Checking Lambda control	78
2.2 Engine running problems following cold start	78
2.3 Checking Lambda probe -G39 and Lambda control	80
2.4 Checking Lambda probe heater -Z19	82



3	Checking fuel tank breather system	84
3.1	Checking fuel tank breather system	84
3.2	Checking activated charcoal filter solenoid valve -N80	85
4	Checking throttle valve potentiometer -G69	89
4.1	Checking throttle valve potentiometer -G69	89
4.2	Matching Digifant control unit -J169 and throttle valve potentiometer -G69	92
4.3	Matching automaticgearboxcontrol unit and throttle valve potentiometer -G69	92
4.4	Basic setting of throttle valve	92
4.5	Checking and adjusting throttle damper	93
5	Checking intake air preheating	94
5.1	Checking intake air preheating	94
6	Checking additional signals	95
6.1	Checking additional signals	95
6.2	Checking air-conditioner compressor signal and air-conditioner compressor shutoff	95
6.3	Checking engine-speed signal	97
6.4	Checking fuel consumption signal	97
6.5	Checking vehicle-speed signal	98
6.6	Checking wiring to automatic gearbox control unit	100
6.7	Checking start signal	101
7	Vacuum diagram	103
7.1	Vacuum diagram	103
28	- Ignition system	106
1	Checking ignition system	106
1.1	Checking ignition system	106
1.2	Safety precautions	106
1.3	Adjustment data, spark plugs	106
1.4	Servicing ignition system	107
1.5	Installing ignition distributor	110
1.6	Checking and adjusting ignition point	111
1.7	Checking ignition transformer -N152	113
1.8	Checking output stage for ignition transformer	115
1.9	Checking intake-air temperature sender -G42	119
1.10	Checking coolant temperature sender -G62	121
1.11	Checking power supply for control unit	124
1.12	Checking current supply relay for Digifant control unit -J176	126
1.13	Checking knock sensor	130
1.14	Checking Hall sender -G40	132