

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	17
3.1 Final control diagnosis	17
4 Basic setting	20
4.1 Basic setting	20
5 Encoding control unit	22
5.1 Encoding control unit	22
6 Reading measured value block	23
6.1 Reading measured value block	23
6.2 List of display groups	24
6.3 Display specifications for general vehicle checking	28
6.4 Injection pump display specifications	29
6.5 Engine idling display specifications	30
6.6 EGR display specifications	32
6.7 Temperature sender display specifications	32
6.8 Vehicle performance display specifications	33
6.9 Charge pressure control display specifications	34
23 - Mixture preparation, Injection	35
1 Servicing diesel direct-injection system	35
1.1 Servicing diesel direct-injection system	35
1.2 Safety precautions	35
1.3 Rules for cleanliness	35
1.4 Exploded view of fitting locations	36
1.5 Servicing fuel injection system	38
1.6 Removing, installing and adjusting injection pump	43
1.7 Dynamic checking and adjustment of commencement of injection	49
1.8 Removing, installing and checking injectors and constant pressure valves	51
1.9 Replacing O-ring at injection timing control cover	54
1.10 Replacing engine electronics control unit	54
1.11 Wiring and component check using test box V.A.G 1598/18	57
2 Checking charge pressure system	59
2.1 Checking charge pressure system	59
2.2 Checking intake manifold temperature sender -G72	59
2.3 Checking elevation sender -F96	60
3 Checking injection control	62
3.1 Checking injection control	62
3.2 Checking injection timing control range	62
3.3 Checking commencement of injection valve -N108	63
3.4 Checking fuel-temperature sender -G81	66
4 Checking control-unit input variables	67
4.1 Checking control-unit input variables	67
4.2 Checking power supply for diesel direct injection system	68
4.3 Checking engine speed sender -G28	72



4.4	Checking needle lift sender -G80	74
4.5	Checking air-mass meter -G70	76
4.6	Checking coolant temperature sender -G62	79
4.7	Checking brake light switch and brake pedal switch	81
4.8	Checking modulating piston movement sender -G149 and metering adjuster -N146	84
5	Checking additional signals	87
5.1	Checking additional signals	87
5.2	Checking air-conditioner compressor shutoff	87
5.3	Checking vehicle-speed signal	89
5.4	Checking clutch pedal switch -F36	91
5.5	Checking cruise control system (CCS)	93
5.6	Checking engine-speed signal	96
28	Glow plug system	98
1	Checking glow plug system	98
1.1	Checking glow plug system	98
1.2	Checking operation	98
1.3	Checking glow plugs	99
1.4	Checking glow period warning lamp -K29	101