



Contents

01 - Self-diagnosis	1
1 Auxiliary heater self-diagnosis B1LC, D1LC, B3LP, D3LP, B3LC and D3LC (compact) ..	1
1.1 Vehicle diagnosis, testing and information system VAS 5051B	1
1.2 Fault reader V.A.G 1551	2
1.3 Function	3
1.4 Reading fault memory 02	5
1.5 Fault table	7
1.6 Erasing fault memory 05 and ending output 06	14
80 - Heating	16
1 Repairing heating system	16
1.1 In passenger compartment	16
1.2 Removing driver, front passenger and centre vents	17
1.3 Removing controls for fresh and heated air	19
2 Dismantling and assembling heated air and fresh air controls	20
2.1 Remove heater unit	20
2.2 Removing regulating valve	21
3 Dismantling and assembling heater unit	23
3.1 Removing, installing and adjusting cables	24
3.2 Coolant hose connection diagram	29
3.3 Repairing blower housing	30
3.4 Vacuum hose connection diagram	33
3.5 Removing blower housing	33
4 Repairing second heat exchanger	40
4.1 Dismantling and assembling 2nd heat exchanger (in passenger compartment)	43
4.2 Removing and installing 2nd heat exchanger	45
4.3 Removing and installing rear warm air blower V47	46
4.4 Electrical check of rear warm air blower V47	47
4.5 Air ducts in passenger compartment	48
82 - Supplementary heating	49
1 Auxiliary heaters B1LC, D1LC, B3LP, D3LP, B3LC and D3LC (compact)	49
1.1 Type and version of heater	49
1.2 Heater unit technical data	50
1.3 Functional description	51
1.4 Auxiliary heaters B1LC and D1LC	52
1.5 Auxiliary heaters B3LC, D3LC, B3LP and D3LP	59
1.6 Removing and installing glow plug for heater Q9	69
1.7 Removing and installing glow plug mantle	71
2 Dismantling and assembling heater unit	72
3 Fuel supply to auxiliary heater	76
3.1 Rules for cleanliness	76
3.2 Fuel take-off	76
3.3 Removing and installing fuel pump G23	79
3.4 Testing quantity of fuel delivered	81
87 - Air conditioning system	85
1 Notes on repair work to vehicles with air conditioning and on handling refrigerant	85
2 Air conditioning system with manual controls	87
2.1 Repairing air conditioning and heating - passenger compartment	87
2.2 Removing, installing and adjusting cables	90
2.3 Repairing air conditioning and heating - engine compartment	91



2.4	Vacuum hose connection diagram	94
3	Bracket for air conditioner compressor	96
3.1	Removing and installing air conditioner compressor bracket, engine codes ATA, AGK, AUH and BCQ	96
3.2	Removing and installing air conditioner compressor bracket, engine codes AGX, AHD, ANJ, APA, AVR, BBE and BBF	98
3.3	Removing and installing air conditioner compressor bracket, engine code AGL	100
4	Repair work on refrigerant circuit which may be performed only in appropriate workshops by specially trained mechanics	103
4.1	Repairing components in refrigerant circuit	103
4.2	Checking high-pressure safety valve on air conditioner compressor	111
4.3	Overview - air conditioner compressor manufacturers	111
4.4	Removing expansion valve	113
4.5	Repairing Sanden air conditioning system magnetic clutch N25 with air conditioner compressor removed	115
4.6	Repairing Denso air conditioning system magnetic clutch N25 with air conditioner compressor removed	119
4.7	Removing and installing condenser	122
4.8	Dismantling and assembling evaporator housing	124
5	Capacities	127
5.1	Refrigerant R134a	127
5.2	Refrigerant oil	127