



Contents

00 - Technical data	1
1 Safety information	1
1.1 Safety precautions when working on air conditioners	1
1.2 Safety measures when working on vehicles with a start/stop system	2
1.3 Safety precautions when using testers and measuring instruments during a road test	2
1.4 Safety precautions when working on the cooling system	2
1.5 Safety precautions when handling refrigerants	2
1.6 Safety precautions when working on vehicles with auxiliary/supplementary heater	3
1.7 Safety precautions when working on SCR system	4
2 General information	6
2.1 Type plates	6
3 Repair notes	8
3.1 Rules for cleanliness	8
3.2 General information	8
3.3 General repair instructions	9
3.4 Contact corrosion	9
3.5 Nuts and bolts	9
3.6 Pipe/wire routing and attachment	9
3.7 Fitting radiator and condensers	10
3.8 Working on refrigerant circuit	10
3.9 Refrigerant circuit seals	11
4 Technical data	12
4.1 Refrigerant capacities	12
4.2 Refrigerant oil capacities	13
4.3 Oil distribution	13
5 Hazard classification of high-voltage system	15
80 - Heating	16
1 Heater	16
1.1 Overview of fitting locations - heater unit	16
1.2 Assembly overview - heater unit	17
1.3 Removing and installing fresh air blower V2	19
1.4 Removing and installing fresh air blower series resistor with overheating fuse N24	19
1.5 Removing and installing dust and pollen filter	20
1.6 Removing and installing heat exchanger	20
1.7 Removing and installing coolant pipes at heat exchanger	21
1.8 Removing and installing heater unit	22
1.9 Checking ventilation	25
1.10 Removing and installing air distribution housing	26
2 Control motors	28
2.1 Removing and installing temperature flap VX27 control motor	28
2.2 Removing and installing air recirculation flap VX52 control motor	28
2.3 Removing and installing air distribution flap VX33 control motor	28
3 Air duct	29
3.1 Assembly overview - routing of air flow and air distribution in passenger compartment	29
3.2 Removing and installing footwell vent (driver side)	30
4 Operating and display unit	32
4.1 Removing and installing operating and display unit	32
85 - Ventilation	34
1 Roof blower	34
1.1 Assembly overview - roof blower	34



1.2	Removing and installing roof ventilator V3	35
2	Roof blower air duct	41
2.1	Removing and installing air duct ring	41
2.2	Removing and installing roof ventilator V3 frame	43
87 - Air conditioning system		45
1	Overview of fitting locations - air conditioner	45
1.1	Overview of fitting locations - components not located in passenger compartment	45
1.2	Overview of fitting locations - components in front passenger compartment	46
1.3	Overview of fitting locations - components in rear passenger compartment	49
2	Refrigerant circuit	50
2.1	System overview - refrigerant circuit	50
2.2	Removing and installing pressure sender for refrigerant circuit G805	52
2.3	Removing and installing expansion valve	54
2.4	Removing and installing condenser	59
2.5	Removing and installing desiccant bag/desiccant cartridge	62
2.6	Removing and installing evacuating and charging valve (low-pressure and high-pressure sides)	64
2.7	Starting up air conditioner after charging refrigerant circuit	66
2.8	When is it necessary to purge the refrigerant circuit with refrigerant	67
3	Air conditioner compressor	69
3.1	Assembly overview – drive unit of air conditioner compressor	69
3.2	Assembly overview - pulley	72
3.3	Removing and installing air conditioner compressor	75
3.4	Detaching and attaching air conditioner compressor at bracket	79
3.5	Checking high-pressure safety valve on air conditioner compressor	81
3.6	Removing and installing pulley	82
3.7	Removing and installing air conditioner compressor regulating valve N280	86
4	Control motors	90
4.1	Overview of fitting locations - front control motors	90
4.2	Removing and installing temperature flap VX27 control motor	94
4.3	Removing and installing defroster flap VX47 control motor	95
4.4	Removing and installing air recirculation flap VX52 control motor	97
4.5	Removing and installing front left temperature flap VX34 control motor	98
4.6	Removing and installing front right temperature flap VX35 control motor	99
4.7	Removing and installing air distribution flap VX33 control motor	101
4.8	Removing and installing fresh air and air recirculation flap VX96control motor	104
4.9	Removing and installing footwell flap VX40 control motor	106
4.10	Removing and installing air distribution flap adjustment unit	108
5	Front heater and air conditioning unit	112
5.1	Assembly overview - heater and air conditioning unit	112
5.2	Removing and installing heater and air conditioning unit	116
5.3	Removing and installing dust and pollen filter	120
5.4	Removing and installing fresh air blower V2	121
5.5	Removing and installing fresh air blower control unit J126	125
5.6	Removing and installing heat exchanger	126
5.7	Removing and installing coolant pipes at heat exchanger	126
5.8	Removing and installing evaporator temperature sensor G308	128
5.9	Checking condensation drain	129
5.10	Removing and installing fresh air blower series resistor with overheating fuse N24, air conditioning system with electric/manual controls	129
5.11	Removing and installing air distribution housing	130
6	Rear heater and air conditioning unit	133
6.1	Assembly overview - heater and air conditioning unit	133
6.2	Removing and installing evaporator	135



6.3	Removing and installing heater and air conditioning unit	136
6.4	Removing and installing rear fresh air blower V80	140
6.5	Removing and installing rear fresh air blower control unit J391	140
6.6	Removing and installing heat exchanger	141
6.7	Removing and installing control motors	143
7	Operating and display unit	147
7.1	Overview - operating and display unit	147
7.2	Removing and installing front operating and display unit	153
7.3	Removing and installing rear operating and display unit	154
8	Further control components	157
8.1	Removing and installing sunlight penetration photosensor G107	157
8.2	Operation of air quality sensor G238	158
8.3	Removing and installing air quality sensor G238	159
8.4	Removing and installing ambient temperature sensor G17	160
8.5	Removing and installing humidity sender for air conditioning system G260	161
8.6	Removing and installing left vent temperature sender G150	161
8.7	Removing and installing right vent temperature sender G151	162
8.8	Removing and installing left footwell vent temperature sender G261	163
8.9	Removing and installing right footwell vent temperature sender G262	163