



Contents

00 - Technical data	1
1 Safety information and repair notes	1
1.1 Safety information	1
1.2 Repair instructions	1
2 Identification	2
2.1 Identification of heater and air conditioning unit	2
3 General information	4
3.1 Type plates, R1234yf	4
4 Technical data	5
4.1 Refrigerant capacity	5
4.2 Refrigerant oil R1234yf – capacities	5
4.3 Oil distribution	5
5 Electrical components	6
5.1 Access to diagnoses	6
87 - Air conditioning system	7
1 Safety information and repair notes	7
1.1 Safety information	7
1.2 Repair instructions	7
2 Overview of fitting locations - air conditioning system	8
2.1 Overview of fitting locations – components not located in passenger compartment	8
2.2 Overview of fitting locations – components not located in passenger compartment, vehicles with high-voltage system	10
2.3 Overview of fitting locations - components located in front section of passenger compartment	12
3 Refrigerant circuit	15
3.1 Assembly overview – refrigerant lines	15
3.2 Assembly overview – refrigerant lines, vehicles with high-voltage system	17
3.3 Assembly overview – condenser	19
3.4 Assembly overview - heat exchanger for high-voltage battery	20
3.5 Removing and installing pressure sender for refrigerant circuit [G805]	21
3.6 Removing and installing expansion valve	22
3.7 Removing and installing condenser	23
3.8 Removing and installing condenser, vehicles with high-voltage system	26
3.9 Disconnecting and connecting refrigerant lines on condenser	26
3.10 Removing and installing desiccant bag or cartridge	27
3.11 Removing and installing evacuating and charging valves on low and high-pressure side	31
3.12 Removing and installing refrigerant shut-off valve for heater and air conditioning unit [N541]	32
3.13 Refrigerant shut-off valve for high-voltage battery heat exchanger [N542]	35
3.14 Removing and installing heat exchanger for high-voltage battery	36
3.15 Removing and installing refrigerant line with internal heat exchanger	39
3.16 Removing and installing refrigerant lines to expansion valve, vehicles with high-voltage system	41
3.17 Removing and installing refrigerant line from condenser to inner heat exchanger	43
3.18 Removing and installing refrigerant line from condenser to evaporator, vehicles with high-voltage system	44
3.19 Removing and installing refrigerant line from air conditioner compressor to condenser	46
3.20 Removing and installing refrigerant line from internal heat exchanger to air conditioner compressor	47
3.21 Removing and installing refrigerant line from evaporator to air conditioner compressor, vehicles with high-voltage system	48
3.22 Commissioning air conditioning system after filling refrigerant circuit	49



4	Air conditioner compressor	51
4.1	Assembly overview – air conditioner compressor	51
4.2	Assembly overview – air conditioner compressor, vehicles with high-voltage system	51
4.3	Assembly overview - pulley	52
4.4	Removing air conditioner compressor from and installing on bracket	53
4.5	Removing air conditioner compressor from and installing to bracket, vehicles with high-voltage system	54
4.6	Removing refrigerant line from and installing to air conditioner compressor	56
4.7	Removing refrigerant line from and installing to air conditioner compressor, vehicles with high-voltage system	57
4.8	Removing and installing air conditioner compressor	58
4.9	Removing and installing air conditioner compressor, vehicles with high-voltage system	61
4.10	Removing and installing air conditioning system magnetic clutch [N25]	61
5	Control motors	66
5.1	Overview of fitting locations – control motors at front	66
5.2	Assembly overview – front control motors	68
5.3	Removing and installing air distribution flap control motor [VX33]	70
5.4	Removing and installing control motor for front left temperature flap [VX34]	71
5.5	Removing and installing control motor for front right temperature flap [VX35]	73
5.6	Removing and installing control motor for defroster flap [VX47]	74
5.7	Removing and installing control motor for rear temperature flap [VX95]	75
5.8	Removing and installing control motor for fresh air and air recirculation flap [VX96]	76
5.9	Removing and installing air distribution flap actuator	77
5.10	Removing and installing fresh air/air recirculation, air flow flap actuator	79
5.11	Removing and installing rear temperature flap actuator	80
6	Front heater and air conditioning unit	82
6.1	Assembly overview – heater and air conditioning unit	82
6.2	Assembly overview - add-on parts of heater and air conditioning unit and of air intake box	84
6.3	Assembly overview – evaporator housing	85
6.4	Removing and installing evaporator	86
6.5	Removing and installing auxiliary air heater element [Z35]	87
6.6	Removing and installing heater and air conditioning unit	88
6.7	Removing and installing bracket for heater and air conditioning unit	91
6.8	Dismantling and assembling heater and air conditioning unit	93
6.9	Removing and installing air distribution housing	93
6.10	Removing and installing dust and pollen filter	95
6.11	Removing and installing fresh air blower [V2]	97
6.12	Removing and installing fresh air blower control unit [J126]	99
6.13	Removing and installing heat exchanger	99
6.14	Removing and installing coolant pipes on heat exchanger	106
6.15	Removing and installing evaporator temperature sensor [G308]	107
6.16	Removing and installing condensation drain	108
6.17	Checking condensation drain	110
7	Air duct	112
7.1	Assembly overview – air duct and air distribution in passenger compartment	112
7.2	Removing and installing driver side footwell vents	113
7.3	Removing and installing front passenger side footwell vents	114
7.4	Removing and installing rear footwell vent	114
7.5	Removing and installing fresh air intake	116
7.6	Removing and installing cover for fresh air intake	116
7.7	Removing and installing intake duct	117
7.8	Removing and installing air duct for defroster vent	118
7.9	Removing and installing air duct for centre dash panel vent	118
7.10	Removing and installing air duct for rear centre console vent	119
8	Coolant circuit	120



8.1	Assembly overview – high-voltage heater (PTC) [ZX17]	120
8.2	Removing and installing high voltage heater (PTC) [ZX17]	121
9	Operating and display unit	124
9.1	Overview of fitting locations – operating and display unit	124
9.2	Removing and installing operating and display unit for rear air conditioning system [E265]	124
10	Other controlling and regulating components	125
10.1	Removing and installing heater and air conditioning system control unit [J979]	125
10.2	Removing and installing sunlight penetration photosensor [G107]	125
10.3	Removing and installing air quality sensor [G238]	126
10.4	Removing and installing ambient temperature sensor [G17]	126
10.5	Removing and installing humidity sender for air conditioning system [G260]	127
10.6	Removing and installing left vent temperature sender [G150]	127
10.7	Removing and installing right vent temperature sender [G151]	127
10.8	Removing and installing footwell vent temperature sender [G192]	128
10.9	Removing and installing vehicle interior temperature sensor [G1090]	128
10.10	Removing and installing rear vent temperature sender [G174]	129