



## Contents

<b>00 - Technical data</b>	<b>1</b>
<b>1 Safety information</b>	<b>1</b>
1.1 Safety precautions when working on air conditioning systems	1
1.2 Safety precautions when handling refrigerants	2
1.3 Safety measures when working on vehicles with a start/stop system	2
1.4 Safety precautions when working on high-voltage system	2
1.5 Safety precautions when working in the vicinity of high-voltage components	3
1.6 Safety precautions when working on the cooling system	3
1.7 Safety precautions for working on vehicles with auxiliary/supplementary heater	4
1.8 Safety precautions when using testers and measuring instruments during a road test	5
<b>2 Identification</b>	<b>6</b>
2.1 Identification of heater and air conditioning unit	6
<b>3 General information</b>	<b>8</b>
3.1 Notes concerning odours in air conditioned vehicles	8
3.2 Notes for vehicles with start-stop system	8
3.3 Type plates	9
<b>4 Repair instructions</b>	<b>12</b>
4.1 Working on refrigerant circuit	12
4.2 General repair instructions	13
4.3 Refrigerant circuit seals	13
4.4 Checking cooling output	14
<b>5 Technical data</b>	<b>17</b>
5.1 Refrigerant capacity	17
5.2 Refrigerant oil	17
5.3 Oil distribution	18
<b>80 - Heating</b>	<b>19</b>
<b>1 Heating</b>	<b>19</b>
<b>87 - Air conditioning system</b>	<b>20</b>
<b>1 Overview of fitting locations - air conditioning system</b>	<b>20</b>
1.1 Overview of fitting locations - components not located in passenger compartment	20
1.2 Overview of fitting locations - components located in front section of passenger compartment	22
<b>2 Refrigerant circuit</b>	<b>25</b>
2.1 System overview - refrigerant circuit	25
2.2 Assembly overview - condenser	27
2.3 Removing and installing refrigerant circuit pressure sender G805	32
2.4 Removing and installing expansion valve	34
2.5 Removing and installing condenser	38
2.6 Removing and installing desiccant bag or cartridge	40
2.7 Removing and installing damper weight for refrigerant line, low-pressure side	51
2.8 Removing and installing evacuating and charging valves on low and high-pressure side	51
2.9 Removing and installing refrigerant line with internal heat exchanger	54
2.10 Removing and installing refrigerant line from air conditioner compressor to evaporator	57
2.11 Removing and installing refrigerant line from condenser to air conditioner compressor	60
2.12 Removing and installing refrigerant line from air conditioner compressor to evaporator	62
2.13 Commissioning air conditioning system after filling refrigerant circuit	65
<b>3 Air conditioner compressor</b>	<b>66</b>
3.1 Assembly overview - drive unit of air conditioner compressor	66
3.2 Assembly overview - pulley	70
3.3 Removing air conditioning compressor from and installing on bracket	74



3.4	Removing and installing air conditioner compressor	76
3.5	Checking high-pressure safety valve on air conditioner compressor	82
3.6	Removing and installing pulley	83
<b>4</b>	<b>Control motors</b>	<b>89</b>
4.1	Overview of fitting locations – front control motors	89
4.2	Removing and installing temperature flap control motor V68 with potentiometer G92	94
4.3	Removing and installing defroster flap control motor V107 with potentiometer G135	98
4.4	Removing and installing air recirculation flap control motor V113	101
4.5	Removing and installing left temperature flap control motor V158 with potentiometer G220	106
4.6	Removing and installing right temperature flap control motor V159 with potentiometer G221	110
4.7	Removing and installing rear temperature flap control motor V137	114
4.8	Removing and installing fresh air/air recirculation, air flow flap control motor V425 with potentiometer G644	115
4.9	Removing and installing front air distribution flap control motor V426 with potentiometer for front air distribution flap control motor G642	119
4.10	Removing and installing air distribution flap control motor V428 with potentiometer G645	123
4.11	Removing and installing air distribution flap actuator	127
<b>5</b>	<b>Front heater and air conditioning unit</b>	<b>136</b>
5.1	Assembly overview – heater and air conditioning unit	136
5.2	Assembly overview - add-on parts of heater and air conditioning unit and of air intake box	141
5.3	Assembly overview – evaporator housing	143
5.4	Assembly overview - flaps and partitions in air distribution housing	144
5.5	Removing and installing heater and air conditioning unit	147
5.6	Dismantling and assembling heater and air conditioning unit	153
5.7	Removing and installing air distribution housing	154
5.8	Removing and installing holder for heater and air conditioning unit	155
5.9	Removing and installing evaporator	157
5.10	Removing and installing fresh air blower control unit J126	158
5.11	Removing and installing dust and pollen filter	160
5.12	Removing and installing fresh air blower V2	164
5.13	Checking auxiliary air heater element Z35 with auxiliary air heater control unit J604	167
5.14	Removing and installing auxiliary air heater element Z35 with auxiliary air heater control unit J604	169
5.15	Removing and installing heat exchanger	171
5.16	Removing and installing coolant pipes on heat exchanger	192
5.17	Removing and installing evaporator temperature sensor G308	196
5.18	Checking condensation drain	198
5.19	Removing and installing condensation drain	199
5.20	Removing and installing baffle plate	201
<b>6</b>	<b>Air duct</b>	<b>202</b>
6.1	Assembly overview - air duct and air distribution in passenger compartment	202
6.2	Removing and installing fresh air intake	203
6.3	Removing and installing air intake duct	205
6.4	Removing and installing driver side footwell vents	206
6.5	Removing and installing front passenger side footwell vents	208
6.6	Removing and installing rear footwell vent	210
6.7	Removing and installing air duct for rear vent	211
6.8	Removing and installing rear centre console vent duct	211
6.9	Checking forced ventilation for passenger compartment	212
6.10	Removing and installing forced ventilation for passenger compartment	212
6.11	Removing and installing air duct for defroster vent	213
6.12	Removing and installing air duct for centre vent	214
<b>7</b>	<b>Operating and display unit</b>	<b>215</b>
7.1	Overview of operating and display unit	215
7.2	Removing and installing operating and display unit	222



<b>8</b>	<b>Other controlling and regulating components</b> .....	<b>225</b>
8.1	Removing and installing sunlight penetration photosensor G107 .....	225
8.2	Removing and installing external air quality and humidity sensor G935 .....	226
8.3	Removing and installing ambient temperature sensor G17 .....	228
8.4	Removing and installing humidity sender for air conditioning system G260 .....	228
8.5	Removing and installing left vent temperature sender G150 .....	228
8.6	Removing and installing right vent temperature sender G151 .....	230
8.7	Removing and installing rear vent temperature sender G174 .....	231
8.8	Removing and installing footwell vent temperature sender G192 .....	232