



## 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 measures when working on vehicles with start/stop system	1
1.3 Safety precautions when using testers and measuring instruments during a road test	2
1.4 Safety precautions when working on cooling system	2
1.5 Safety precautions when handling refrigerants	2
1.6 Safety precautions for working on vehicles with auxiliary heater	3
1.7 Safety precautions when working on SCR system	4
<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 Type plates	8
3.2 Notes concerning odours in air conditioned vehicles	10
<b>4 Repair notes</b>	<b>12</b>
4.1 Rules for cleanliness	12
4.2 General information	12
4.3 General repair instructions	12
4.4 Contact corrosion	13
4.5 Nuts and bolts	13
4.6 Routing and attachment of lines	13
4.7 Fitting radiator and condensers	13
4.8 Working on refrigerant circuit	14
4.9 Refrigerant circuit seals	15
<b>5 Technical data</b>	<b>16</b>
5.1 Refrigerant capacity	16
5.2 Refrigerant oil capacities	16
5.3 Oil distribution	17
<b>80 - Heating</b>	<b>18</b>
<b>1 Heating</b>	<b>18</b>
<b>87 - Air conditioning system</b>	<b>19</b>
<b>1 Overview of fitting locations - air conditioning system</b>	<b>19</b>
1.1 Overview of fitting locations - components not located in passenger compartment	19
1.2 Overview of fitting locations - components located in front section of passenger compartment	21
<b>2 Refrigerant circuit</b>	<b>26</b>
2.1 System overview - refrigerant circuit	26
2.2 Assembly overview - condenser	28
2.3 Removing and installing refrigerant circuit pressure sender G805	30
2.4 Removing and installing refrigerant line with internal heat exchanger	32
2.5 Removing and installing expansion valve	35
2.6 Removing and installing condenser	40
2.7 Removing and installing desiccant bag or cartridge	43
2.8 Removing and installing evacuating and charging valves on low and high-pressure side	53
2.9 Commissioning air conditioning system after filling refrigerant circuit	56
2.10 Removing and installing refrigerant line from air conditioner compressor to condenser	56
2.11 Removing and installing refrigerant line from air conditioner compressor to evaporator	59
2.12 Removing and installing refrigerant line from evaporator to air conditioner compressor	63
2.13 Removing and installing damper weight for refrigerant line, low-pressure side	67
2.14 Commissioning air conditioning system after filling refrigerant circuit	68



---

<b>3</b>	<b>Air conditioner compressor</b>	70
3.1	Assembly overview - drive unit of air conditioner compressor	70
3.2	Assembly overview - pulley	74
3.3	Removing air conditioning compressor from and installing on bracket	78
3.4	Removing and installing air conditioner compressor	80
3.5	Checking high-pressure safety valve on air conditioner compressor	85
3.6	Removing and installing pulley	86
<b>4</b>	<b>Control motors</b>	93
4.1	Overview of fitting locations – front control motors	93
4.2	Removing and installing temperature flap control motor V68	97
4.3	Removing and installing defroster flap control motor V107	99
4.4	Removing and installing air recirculation flap control motor V113	101
4.5	Removing and installing left temperature flap control motor V158	102
4.6	Removing and installing right temperature flap control motor V159	104
4.7	Removing and installing fresh air/air recirculation, air flow flap control motor V425	105
4.8	Removing and installing front air distribution flap control motor V426	107
4.9	Removing and installing air distribution flap control motor V428	108
4.10	Removing and installing air distribution flap actuator	110
<b>5</b>	<b>Front heater and air conditioning unit</b>	117
5.1	Assembly overview - flaps and partitions in air distribution housing	117
5.2	Assembly overview – heater and air conditioning unit	119
5.3	Assembly overview – evaporator housing	121
5.4	Removing and installing evaporator	121
5.5	Checking auxiliary air heater element Z35	122
5.6	Removing and installing auxiliary air heater element Z35	123
5.7	Removing and installing heater and air conditioning unit	127
5.8	Removing and installing holder for heater and air conditioning unit	133
5.9	Dismantling and assembling heater and air conditioning unit	134
5.10	Removing and installing air distribution housing	135
5.11	Removing and installing dust and pollen filter	136
5.12	Removing and installing fresh air blower V2	137
5.13	Removing and installing fresh air blower control unit J126	140
5.14	Removing and installing heat exchanger	142
5.15	Removing and installing coolant pipes on heat exchanger	165
5.16	Removing and installing evaporator temperature sensor G308	169
5.17	Removing and installing condensation drain	170
5.18	Checking condensation drain	174
5.19	Removing and installing baffle plate	174
<b>6</b>	<b>Air duct</b>	175
6.1	Assembly overview - air duct and air distribution in passenger compartment	175
6.2	Removing and installing driver side footwell vents	176
6.3	Removing and installing front passenger side footwell vents	177
6.4	Removing and installing rear footwell vent	179
6.5	Removing and installing air ducts	181
6.6	Removing and installing forced ventilation for passenger compartment	182
6.7	Checking forced ventilation for passenger compartment	183
6.8	Removing and installing fresh air intake	183
6.9	Removing and installing cover for fresh air intake	185
6.10	Removing and installing air intake duct	186
6.11	Removing and installing air duct for defroster vent	186
6.12	Removing and installing air duct for centre vent	187
<b>7</b>	<b>Operating and display unit</b>	188
7.1	Overview of operating and display unit	188
7.2	Removing and installing operating and display unit	192
<b>8</b>	<b>Other controlling and regulating components</b>	194

---



---

8.1	Removing and installing sunlight penetration photosensor G107 .....	194
8.2	Removing and installing air quality sensor G238 .....	195
8.3	Removing and installing ambient temperature sensor G17 .....	196
8.4	Removing and installing humidity sender for air conditioning system G260 .....	196
8.5	Removing and installing left vent temperature sender G150 .....	196
8.6	Removing and installing right vent temperature sender G151 .....	198
8.7	Removing and installing footwell vent temperature sender G192 .....	200