



## 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 when working on vehicles with auxiliary/supplementary heater .....	4
<b>2 Identification</b> .....	<b>5</b>
2.1 Identification of heater and air conditioning unit .....	5
<b>3 General information</b> .....	<b>6</b>
3.1 Notes concerning odours in air conditioned vehicles .....	6
3.2 Notes for vehicles with start-stop system .....	6
3.3 Type plates .....	7
<b>4 Repair notes</b> .....	<b>8</b>
4.1 Working on refrigerant circuit .....	8
4.2 General repair instructions .....	9
4.3 Refrigerant circuit seals .....	9
4.4 Checking heater output .....	10
4.5 Checking cooling output .....	30
<b>5 Technical data</b> .....	<b>60</b>
5.1 Refrigerant capacity .....	60
5.2 Refrigerant oil capacities .....	60
5.3 Oil distribution .....	61
<b>80 - Heating</b> .....	<b>62</b>
<b>1 Heating</b> .....	<b>62</b>
<b>87 - Air conditioning system</b> .....	<b>63</b>
<b>1 Overview of fitting locations - air conditioning system</b> .....	<b>63</b>
1.1 Overview of fitting locations - components not located in passenger compartment .....	63
1.2 Overview of fitting locations - components located in front section of passenger compartment .....	66
<b>2 Refrigerant circuit</b> .....	<b>69</b>
2.1 System overview - refrigerant circuit .....	69
2.2 Assembly overview - condenser .....	75
2.3 Removing and installing refrigerant circuit pressure sender G805 .....	77
2.4 Removing and installing expansion valve .....	79
2.5 Removing and installing condenser .....	86
2.6 Removing and installing desiccant bag or cartridge .....	90
2.7 Removing and installing damper weight for refrigerant line, low-pressure side .....	98
2.8 Removing and installing refrigerant pressure and temperature sender G395 .....	99
2.9 Removing and installing refrigerant shut-off valve for heater and air conditioner unit N541 .....	100
2.10 Removing and installing refrigerant shut-off valve for high-voltage battery heat exchanger N542 .....	104
2.11 Removing and installing heat exchanger for high-voltage battery .....	107
2.12 Removing and installing evacuating and charging valves on low and high-pressure side .....	110
2.13 Removing and installing refrigerant line with internal heat exchanger .....	112
2.14 Refrigerant line with restrictor .....	119



2.15	Removing and installing refrigerant line between condenser and heat exchanger for high-voltage battery, refrigerant line with internal heat exchanger, Passat GTE	119
2.16	Removing and installing refrigerant line between electrical air conditioner compressor V470 and heat exchanger for high-voltage battery, refrigerant line with internal heat exchanger, Passat GTE	121
2.17	Removing and installing refrigerant line between condenser and evaporator	124
2.18	Removing and installing refrigerant line between condenser and air conditioner compressor	127
2.19	Removing and installing refrigerant line between condenser and air conditioner compressor, Passat GTE	130
2.20	Removing and installing refrigerant line between air conditioner compressor and evaporator	132
2.21	Commissioning of air conditioning system after filling refrigerant circuit	135
<b>3</b>	<b>Air conditioner compressor</b>	<b>137</b>
3.1	Assembly overview - drive unit of air conditioner compressor	137
3.2	Assembly overview - pulley	141
3.3	Removing air conditioning compressor from and installing on bracket	145
3.4	Removing and installing air conditioner compressor	149
3.5	Removing and installing high-voltage system fuse 3 S353	156
3.6	Checking high-pressure safety valve on air conditioner compressor	157
3.7	Removing and installing pulley	157
<b>4</b>	<b>Control motors</b>	<b>162</b>
4.1	Overview of fitting locations – front control motors	162
4.2	Removing and installing temperature flap control motor V68 with potentiometer G92	167
4.3	Removing and installing defroster flap control motor V107 with potentiometer G135	170
4.4	Removing and installing air recirculation flap control motor V113	174
4.5	Removing and installing left temperature flap control motor V158 with potentiometer G220	178
4.6	Removing and installing right temperature flap control motor V159 with potentiometer G221	182
4.7	Removing and installing rear temperature flap control motor V137	185
4.8	Removing and installing fresh air/air recirculation, air flow flap control motor V425 with potentiometer G644	186
4.9	Removing and installing front air distribution flap control motor V426 with potentiometer for front air distribution flap control motor G642	191
4.10	Removing and installing air distribution flap control motor V428 with potentiometer G645	196
4.11	Removing and installing air distribution flap actuation unit	200
<b>5</b>	<b>Front heater and air conditioning unit</b>	<b>206</b>
5.1	Assembly overview - heater and air conditioning unit	206
5.2	Assembly overview - add-on parts of heater and air conditioning unit and of air intake box	210
5.3	Assembly overview - evaporator housing	212
5.4	Assembly overview - flaps and partitions in air distribution housing	213
5.5	Removing and installing heater and air conditioning unit	216
5.6	Dismantling and assembling heater and air conditioning unit	221
5.7	Removing and installing air distribution housing	222
5.8	Removing and installing holder for heater and air conditioning unit	222
5.9	Removing and installing evaporator	223
5.10	Removing and installing fresh air blower control unit J126	225
5.11	Removing and installing dust and pollen filter	226
5.12	Removing and installing fresh air blower V2	228
5.13	Checking auxiliary air heater element Z35 with auxiliary air heater control unit J604	229
5.14	Removing and installing auxiliary air heater element Z35 with auxiliary air heater control unit J604	231
5.15	Removing and installing heat exchanger	233
5.16	Removing and installing coolant pipes on heat exchanger	254
5.17	Removing and installing evaporator temperature sensor G308	256



5.18	Checking condensation drain	258
5.19	Removing and installing condensation drain	259
5.20	Removing and installing baffle plate	263
<b>6</b>	<b>Air duct</b>	<b>264</b>
6.1	Assembly overview - air duct and air distribution in passenger compartment	264
6.2	Removing and installing fresh air intake	265
6.3	Removing and installing cover for fresh air intake	267
6.4	Removing and installing air intake duct	268
6.5	Removing and installing driver side footwell vents	269
6.6	Removing and installing front passenger side footwell vents	270
6.7	Removing and installing rear footwell vent	271
6.8	Removing and installing air duct for rear vent	272
6.9	Removing and installing dash panel air duct	273
6.10	Removing and installing rear centre console vent duct	273
6.11	Checking forced ventilation for passenger compartment	274
6.12	Removing and installing forced ventilation for passenger compartment	274
6.13	Removing and installing air duct for defroster vent	275
6.14	Removing and installing air duct for centre vent	276
<b>7</b>	<b>Coolant circuit</b>	<b>277</b>
7.1	Incorporation of high-voltage heater (PTC) Z115 into coolant circuit	277
7.2	Incorporation of heat exchanger for high-voltage battery into coolant circuit of high-voltage system	281
7.3	Removing and installing coolant valve for high-voltage battery N688	283
7.4	Removing and installing coolant valve for high-voltage battery V590	285
7.5	Removing and installing high-voltage heater (PTC) Z115 / high-voltage heater (PTC) J848	286
<b>8</b>	<b>Operating and display unit</b>	<b>291</b>
8.1	Overview of operating and display unit	291
8.2	Removing and installing operating and display unit	296
<b>9</b>	<b>Other controlling and regulating components</b>	<b>299</b>
9.1	Removing and installing sunlight penetration photosensor G107	299
9.2	Removing and installing external air quality and humidity sensor G935	300
9.3	Removing and installing ambient temperature sensor G17	302
9.4	Removing and installing humidity sender for air conditioning system G260	302
9.5	Removing and installing left vent temperature sender G150	302
9.6	Removing and installing right vent temperature sender G151	303
9.7	Removing and installing rear vent temperature sender G174	304
9.8	Removing and installing footwell vent temperature sender G192	305