Contents

82 - Auxil	iary heating	1
1	Servicing auxiliary/additional heater	1
1.1	Contact corrosion	1
1.2	Notes on auxiliary/additional heater	1
1.3	Note on operation of auxiliary/additional heater in vehicles with diesel engine	5
2	Safety precautions when working on vehicles fitted with auxiliary/additional heater	7
3	Notes on general repair work on vehicles fitted with auxiliary/additional heater	8
4	Rules for cleanliness when working on auxiliary/additional heater (and fuel system)	9
5	Layout of components for auxiliary/additional heater in vehicle	10
5.1	Auxiliary heater remote control buttons and indicator lamp	16
5.2	Checking and replacing auxiliary heater remote control batteries	20
5.3	Adaption of remote control hand transmitter in additional heater control unit J364	21
5.4	Activating/deactivating auxiliary heater/auxiliary ventilation via Multi Media Interface (MMI)	
		21
6	Diverting fuel for auxiliary/additional heater	23
6.1	Filling fuel pipe to metering pump V54 with fuel (bleeding)	25
6.2	Diverting fuel (for auxiliary/additional heater) from fuel tank	26
6.3	Checking fuel delivery of metering pump V54	27
6.4	Removing and installing metering pump V54	33
6.5	Routing of fuel pipe to auxiliary/additional heater	35
6.6	Checking actuation and electrical connections of auxiliary/additional heater	35
7	Checking and adjusting CO2 content in auxiliary/additional heater exhaust gas	40
7.1	Checking CO2 content in auxiliary/additional heater exhaust gas	42
7.2	Adjusting CO2 content in auxiliary/additional heater exhaust gas	45
7.3	Removing residue from burner element of auxiliary/additional heater (operation with vegetable-oil or rape-oil methylester fuel only)	50
8	Incorporation of auxiliary/additional heater into coolant circuit	54
8 8.1	Incorporation of auxiliary/additional heater into coolant circuit	54 54
8.1 8.2	Incorporation of supplementary heater into coolant circuit	54 56
8.1 8.2 8.3	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit	54 56 58
8.1 8.2 8.3 8.4	Incorporation of supplementary heater into coolant circuit	54 56 58 59
8.1 8.2 8.3 8.4 8.5	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit	54 56 58 59 61
8.1 8.2 8.3 8.4 8.5 8.6	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running	54 56 58 59 61 62
8.1 8.2 8.3 8.4 8.5	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater	54 56 58 59 61 62 65
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater	54 56 58 59 61 62 65 66
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing components of auxiliary/additional heater Checking components of auxiliary/additional heater	54 56 58 59 61 62 65 66 71
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater	54 56 58 59 61 62 65 66 71 74
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater	54 56 58 59 61 62 65 66 71 74
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system	54 56 58 59 61 62 65 66 71 74 74
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater	54 56 58 59 61 62 65 66 71 74 77
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer	54 56 58 59 61 62 65 66 71 74 77 77 82
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element	54 56 58 59 61 62 65 66 71 74 77 77 82 83
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5 10.6	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element Types of bracket for auxiliary/additional heater	54 56 58 59 61 62 65 66 71 74 77 77 82 83 83
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5 10.6 10.7	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element Types of bracket for auxiliary/additional heater Auxiliary/additional heater exhaust system	54 56 58 59 61 62 65 66 71 74 77 77 82 83 83 84
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5 10.6 10.7	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element Types of bracket for auxiliary/additional heater Auxiliary/additional heater exhaust system Attaching spacer and insulating sleeve to exhaust system of auxiliary/additional heater	54 56 58 59 61 62 65 66 71 74 77 77 82 83 83 84 85
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5 10.6 10.7	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element Types of bracket for auxiliary/additional heater Auxiliary/additional heater exhaust system Attaching spacer and insulating sleeve to exhaust system of auxiliary/additional heater Routing wiring to circulation pump V55	54 56 58 59 61 62 65 66 71 74 77 77 82 83 83 84 85 85
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5 10.6 10.7 10.8 10.9 10.10	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element Types of bracket for auxiliary/additional heater Auxiliary/additional heater exhaust system Attaching spacer and insulating sleeve to exhaust system of auxiliary/additional heater Routing wiring to circulation pump V55 Dismantling and assembling auxiliary/additional heater	54 56 58 59 61 62 65 66 71 74 77 77 82 83 83 84 85 85 86
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5 10.6 10.7 10.8 10.9 10.10	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element Types of bracket for auxiliary/additional heater Auxiliary/additional heater exhaust system Attaching spacer and insulating sleeve to exhaust system of auxiliary/additional heater Routing wiring to circulation pump V55 Dismantling and assembling auxiliary/additional heater Removing and installing connector console cover	54 56 58 59 61 62 65 66 71 74 77 77 82 83 83 84 85 86 88
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5 10.6 10.7 10.8 10.9 10.10 10.11	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element Types of bracket for auxiliary/additional heater Auxiliary/additional heater exhaust system Attaching spacer and insulating sleeve to exhaust system of auxiliary/additional heater Routing wiring to circulation pump V55 Dismantling and assembling auxiliary/additional heater Removing and installing connector console cover Assignment of auxiliary/additional heater connector console	54 56 58 59 61 62 65 66 71 74 77 77 82 83 83 84 85 86 88 88
8.1 8.2 8.3 8.4 8.5 8.6 9 9.1 9.2 10 10.1 10.2 10.3 10.4 10.5 10.6 10.7 10.8 10.9 10.10 10.11	Incorporation of supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Incorporation of auxiliary/supplementary heater into coolant circuit Operation of and removing/installing heater coolant shutoff valve N279 Bleeding coolant circuit Note for vehicles with the problem "poor heat output" with engine running Removing and installing auxiliary/additional heater Removing and installing auxiliary/additional heater Checking components of auxiliary/additional heater Dismantling and assembling auxiliary/additional heater Detaching and re-attaching add-on components from/to additional heater Removing and installing auxiliary/supplementary heater exhaust system Detaching and re-attaching add-on components from/to auxiliary/additional heater Attaching intake hose with intake air silencer Attaching bracket for auxiliary/additional heater with bonded rubber element Types of bracket for auxiliary/additional heater Auxiliary/additional heater exhaust system Attaching spacer and insulating sleeve to exhaust system of auxiliary/additional heater Routing wiring to circulation pump V55 Dismantling and assembling auxiliary/additional heater Removing and installing connector console cover Assignment of auxiliary/additional heater connector console Removing and installing combustion air blower V6	54 56 58 59 61 62 65 66 71 74 77 77 82 83 83 84 85 86 88

11	Block diagram of auxiliary/additional heater	93
11.1	Incorporation of auxiliary/additional heater into vehicle electrics	93
11.2	Fitting location of temperature sensor G18 in auxiliary/additional heater	95
12	Block diagram of auxiliary/additional heater actuation with remote control	96
12.1	Fitting location for auxiliary heating radio receiver R64	101
13	Functional description of auxiliary/additional heater	103
13.1	Sequence of operation	104
13.2	Required heating output between 50 and 100 %	113
13.3	Required heating output less than 50 %	113