



## Contents

<b>00 - Technical data</b>	1
1 <b>Technical data</b>	1
1.1    Engine number	1
1.2    Engine data	1
<b>10 - Removing and installing engine</b>	2
1 <b>Removing and installing engine</b>	2
1.1    Notes on removing	3
1.2    Securing engine to assembly stand	7
1.3    Notes on installing	8
1.4    Assembly mountings	10
1.5    Additional information and removal instructions for vehicles with air conditioner	11
<b>13 - Crankshaft group</b>	13
1 <b>Dismantling and assembling engine</b>	13
1.1    Assembly overview	13
1.2    Removing and installing poly V-belt	16
2 <b>Removing and installing sealing flange and pressure plate/drive plate</b>	19
2.1    Renewing crankshaft oil seal - belt pulley end	20
2.2    Removing and installing front sealing flange	22
2.3    Removing and installing drive plate	25
3 <b>Removing and installing crankshaft</b>	27
3.1    Crankshaft dimensions	28
4 <b>Dismantling and assembling pistons and conrods</b>	30
4.1    Checking pistons, piston rings and cylinder bores	31
4.2    Piston and cylinder dimensions	32
<b>15 - Cylinder head, valve gear</b>	33
1 <b>Cylinder head</b>	33
1.1    Removing and installing cylinder head	35
1.2    Removing, installing and tensioning toothed belt	38
1.3    Checking semi-automatic toothed belt tensioning roller	43
1.4    Checking compression	44
2 <b>Repairing valve gear</b>	46
2.1    Reworking valve seats	48
2.2    Renewing camshaft oil seal	50
2.3    Removing and installing camshaft	53
2.4    Checking valve guides	56
2.5    Renewing valve stem seals	57
<b>17 - Lubrication</b>	60
1 <b>Removing and installing parts of lubrication system</b>	60
1.1    Engine oil	60
1.2    Assembly overview - parts of lubrication system	60
1.3    Assembly overview - oil filter bracket	62
1.4    Removing and installing sump	63
1.5    Checking oil pressure and oil pressure switch	65
<b>19 - Cooling</b>	68
1 <b>Removing and installing parts of cooling system</b>	68
1.1    Parts of cooling system - body side	68
1.2    Parts of cooling system - engine side	71



1.3	Coolant hose schematic diagram .....	72
1.4	Draining and filling coolant .....	73
1.5	Removing and installing radiator .....	75
1.6	Removing and installing coolant pump .....	77
1.7	Electronically controlled cooling system .....	78
1.8	Dismantling and assembling coolant distribution housing .....	80
1.9	Checking map-controlled engine cooling thermostat F265 .....	81
<b>20</b>	<b>- Fuel supply system .....</b>	<b>84</b>
1	<b>    Removing and installing parts of fuel supply system .....</b>	<b>84</b>
1.1	Removing and installing fuel tank with attachments and fuel filter .....	84
1.2	Safety precautions when working on fuel supply system .....	87
1.3	Rules for cleanliness .....	87
1.4	Removing and installing fuel delivery unit .....	88
1.5	Removing and installing fuel gauge sender G .....	89
1.6	Removing and installing fuel tank .....	89
1.7	Crash fuel shut-off .....	91
1.8	Checking fuel pump .....	91
2	<b>    Checking electronic power control (EPC) .....</b>	<b>98</b>
2.1	Function of EPC system .....	98
2.2	Checking accelerator pedal position sender .....	99
3	<b>    Activated charcoal filter system .....</b>	<b>103</b>
3.1	Function .....	103
3.2	Repairing parts of the activated charcoal filter system .....	103
3.3	Checking active charcoal filter system solenoid valve 1 N80 .....	104
3.4	Checking fuel tank breather system .....	106
<b>26</b>	<b>- Exhaust system .....</b>	<b>108</b>
1	<b>    Removing and installing parts of exhaust system .....</b>	<b>108</b>
1.1	Exhaust manifold, front exhaust pipe and catalytic converter with attachments .....	108
1.2	Silencer with mountings .....	110
1.3	Checking catalytic converter .....	111
2	<b>    Secondary air system .....</b>	<b>114</b>
2.1	Function .....	114
2.2	Removing and installing parts of secondary air system .....	114
2.3	Checking secondary air system .....	116
2.4	Checking secondary air pump motor V101 .....	118
3	<b>    Exhaust gas recirculation system .....</b>	<b>120</b>
3.1	Repairing parts of exhaust gas recirculation system .....	120
3.2	Checking exhaust gas recirculation system .....	121
3.3	Checking exhaust gas recirculation potentiometer G212 .....	122