



## Contents

<b>00 - Technical data</b>	<b>1</b>
<b>1 Technical data</b>	<b>1</b>
1.1 Engine number	1
1.2 Engine characteristics	1
<b>10 - Removing and installing engine</b>	<b>2</b>
<b>1 Engine - remove and install</b>	<b>2</b>
1.1 Removal - recommendations	5
1.2 Engine - fasten to assembly stand	8
1.3 Installation notes	9
1.4 Tightening torques	10
1.5 Power-drive unit supports	11
1.6 Additional notes and installation works in vehicles with air conditioning	12
<b>13 - Crankshaft group</b>	<b>14</b>
<b>1 Engine - assembly and disassembly</b>	<b>14</b>
1.1 Seal lid - replace	18
1.2 Poly-V belt - remove and install	18
<b>2 Crankshaft flanges - removal and installation</b>	<b>22</b>
2.1 Flywheel - remove and install	23
2.2 Crankshaft seal (pulley side) - replace	24
2.3 Crankshaft flange (flywheel side) - replace	26
<b>3 Crankshaft - remove and install</b>	<b>35</b>
3.1 Identifying engine bearing shells	36
3.2 Crankshaft dimensions	36
<b>4 Pistons and connecting rods - removal and installation</b>	<b>37</b>
4.1 Piston and cylinder specifications	40
<b>15 - Cylinder head, valve gear</b>	<b>41</b>
<b>1 Cylinder head - assembly and disassembly</b>	<b>41</b>
1.1 Toothed belt semi-automatic tensioning pulley - check	43
1.2 Toothed belt - remove and install, adjust	45
1.3 Cylinder head - remove and install	50
1.4 Compression - check	55
<b>2 Valve command - repair</b>	<b>58</b>
2.1 Camshaft - check axial clearance	60
2.2 Valve seat - trim	61
2.3 Camshaft seal - replace	62
2.4 Camshaft and cylinder head cover - removal and installation	64
2.5 Valve guides - check	67
2.6 Valve rod sealant - replacement	68
<b>17 - Lubrication</b>	<b>72</b>
<b>1 Lubrication system components</b>	<b>72</b>
1.1 Lubricating system components - assembly overview	72
1.2 Engine oil	74
1.3 Oil pan- remove and install	74
1.4 Oil filter - replace	77
1.5 Oil pump - remove and install	79
1.6 Oil pressure switch F1 - remove and install	81
1.7 Oil pressure and Oil pressure switch F1 - check	82
<b>19 - Cooling</b>	<b>85</b>



<b>1</b>	<b>Cooling system components - remove and install</b>	<b>85</b>
1.1	Cooling system components, body side	85
1.2	Cooling system components, engine side	87
1.3	Hose connection diagram for cooling system	89
1.4	Cooling system - drainage and replenishment	90
1.5	Cooling system - check air-tightness	96
1.6	Radiator - remove and install	98
1.7	Water pump - remove and install	100
<b>20</b>	<b>Fuel supply system</b>	<b>103</b>
<b>1</b>	<b>Fuel supply system components - removal and installation</b>	<b>103</b>
1.1	Fuel tank components with accessories and fuel filter - removal and installation	103
1.2	Safety measures regarding work on the fuel supply systems	106
1.3	Cleaning rules	106
1.4	Fuel pump (pre-supply pump) G6 - remove and install	107
1.5	Fuel level indicator sensor G - removal and installation	108
1.6	Fuel reservoir - remove and install	109
1.7	Fuel pump (pre-supply pump) G6 - check	111
<b>2</b>	<b>Engine power electronic adjustment (electronic accelerator)</b>	<b>119</b>
2.1	Operation	119
2.2	Engine power electronic adjustment (electronic accelerator) - check	119
<b>3</b>	<b>Activated charcoal filter system</b>	<b>121</b>
3.1	Operation	121
3.2	Activated charcoal filter system components - repair	121
3.3	Fuel tank ventilation - check	122
<b>24</b>	<b>Mixture preparation - injection</b>	<b>124</b>
<b>1</b>	<b>Injection system - repair</b>	<b>124</b>
1.1	General instructions regarding the injection system	124
1.2	Component location	124
1.3	Injection components - remove and install	127
1.4	Intake manifold - remove and install	130
1.5	Fuel distributor with injectors - removal and installation	131
1.6	Air filter set - assemble and disassemble	131
1.7	Safety measures	133
1.8	Cleaning rules	134
1.9	Technical data	134
<b>2</b>	<b>Component checks</b>	<b>136</b>
2.1	Injection valves - check	136
2.2	Residual pressure and fuel pressure regulator - check	138
<b>3</b>	<b>Engine control unit J623</b>	<b>143</b>
3.1	Engine control unit J623 - remove and install	143
3.2	Adjust components	144
3.3	Check Engine control unit J623 fault memory and clear it	144
<b>4</b>	<b>READINESS code</b>	<b>147</b>
4.1	Creating and Interpreting the READINESS code	147
<b>26</b>	<b>Exhaust system</b>	<b>148</b>
<b>1</b>	<b>Exhaust system components - remove and install</b>	<b>148</b>
1.1	Exhaust manifold, catalyst and front exhaust pipe with intermediate muffler	148
1.2	Rear muffler with supports	150
<b>28</b>	<b>Ignition system</b>	<b>152</b>
<b>1</b>	<b>Ignition system - repair</b>	<b>152</b>
1.1	General instructions regarding the ignition system	152



1.2	Ignition system components - remove and install .....	152
1.3	Safety measures .....	153
1.4	Test data, spark plugs .....	154