

Contents

00 - Technical data	1
1 Technical data	1
1.1 Technical data	1
1.2 Engine number	1
1.3 Engine features	1
10 - Removing and installing engine	3
1 Removing and installing engine	3
1.1 Removing and installing engine	3
1.2 Removing	4
1.3 Attaching engine to repair stand	15
1.4 Installing	15
1.5 Tightening torques	17
13 - Crankshaft group	19
1 Dismantling and assembling engine	19
1.1 Dismantling and assembling engine	19
1.2 Removing and installing alternator V-belt	19
1.3 Removing and installing V-belt for power-steering vane pump	20
1.4 Removing and installing V-belt for air-conditioner compressor	21
1.5 Toothed belt drive > 07.91	22
1.6 Removing and installing toothed belt assembly > 07.91	26
1.7 Detaching toothed belt from camshaft sprocket > 07.91	35
1.8 Toothed belt drive 08.91 ä	42
1.9 Removing and installing toothed belt assembly 08.91 ä	47
1.10 Detaching toothed belt from camshaft sprocket 08.91 ä	53
1.11 Turning crankshaft to TDC with engine removed	58
2 Removing and installing crankshaft, flywheel/drive plate and sealing flanges	59
2.1 Removing and installing crankshaft, flywheel/drive plate and sealing flanges	59
2.2 Replacing crankshaft oil seal on pulley end	65
2.3 Removing and installing flywheel/drive plate	67
2.4 Extracting ball bearing from crankshaft/driving in	69
2.5 Crankshaft dimensions	70
3 Dismantling and assembling piston and conrod	71
3.1 Dismantling and assembling piston and conrod	71
3.2 Piston and cylinder dimensions	78
3.3 Checking conrod radial clearance	78
15 - Cylinder head, Valve gear	79
1 Removing and installing cylinder head	79
1.1 Removing and installing cylinder head	79
1.2 Exploded view of upper part of intake manifold	80
1.3 Removing and installing upper part of intake manifold	81
1.4 Exploded view of lower part of intake manifold	83
1.5 Removing and installing lower part of intake manifold	86
1.6 Exploded view of cylinder head	90
1.7 Removing and installing cylinder head cover	94
1.8 Removing cylinder head	96
1.9 Installing cylinder head	100
1.10 Checking compression	102
2 Servicing valve gear	103
2.1 Servicing valve gear	103
2.2 Replacing camshaft oil seal	109
2.3 Removing and installing camshaft	111



2.4	Checking hydraulic bucket tappets	115
2.5	Replacing valve stem seals	116
2.6	Checking valve guides	118
2.7	Replacing valve guides	119
2.8	Reworking valve seats	120
17	- Lubrication	123
1	Removing and installing lubrication system components	123
1.1	Removing and installing lubrication system components	123
1.2	Removing and installing sump	129
1.3	Removing and installing oil pump	132
1.4	Checking oil pressure and oil pressure switch	136
1.5	Engine oil	138
1.6	Checking oil level	138
19	- Cooling system	140
1	Removing and installing cooling system components	140
1.1	Removing and installing cooling system components	140
1.2	Cooling system components	141
1.3	Draining off and topping up coolant	143
1.4	Exploded view of coolant pump and thermostat	147
1.5	Removing and installing coolant pump	149
1.6	Removing, installing and checking thermostat	150
1.7	Exploded view of radiator	152
1.8	Removing and installing radiator	156
1.9	Checking cooling system for leaks	158
26	- Exhaust system	160
1	Removing and installing exhaust system components	160
1.1	Removing and installing exhaust system components	160
1.2	Separating centre and rear silencer	165
1.3	Exploded view of exhaust manifold	167
1.4	Removing and installing exhaust manifold	169
1.5	Stress-free alignment of exhaust system	173
1.6	Checking exhaust system for leaks	174