



Contents

00 - Technical data	1
1 Technical Data	1
1.1 Technical Data	1
1.2 Engine Number	1
1.3 Engine Specifications	1
10 - Removing and installing engine	3
1 Removing and installing engine	3
1.1 Removing and installing engine	3
1.2 Instructions for removal	3
1.3 Removing	3
1.4 Mounting engine on repair stand	8
1.5 Installing	8
1.6 Align engine and gearbox	9
1.7 Adjusting alternator V-belt tension	9
1.8 Air conditioner only	10
1.9 Power assisted steering only	10
1.10 Tightening torques	10
13 - Crankshaft group	12
1 Dismantling and assembling crankshaft and flywheel	12
1.1 Dismantling and assembling crankshaft and flywheel	12
1.2 Measuring crankshaft radial clearance	17
1.3 Crankshaft identification	18
1.4 Crankshaft sizes	18
2 Dismantling and assembling pistons and conrods	19
2.1 Dismantling and assembling pistons and conrods	19
2.2 Measuring conrod radial clearance	27
2.3 Piston and Cylinder sizes	28
15 - Cylinder head, Valve gear	29
1 Removing and installing toothed belt	29
1.1 Removing and installing toothed belt	29
1.2 Installing toothed belt	31
2 Removing and installing cylinder head	33
2.1 Removing and installing cylinder head	33
2.2 Installing cylinder head	35
2.3 Checking compression pressure	37
3 Dismantling and assembling valve gear	38
3.1 Dismantling and assembling valve gear	38
3.2 Removing and installing camshaft oil seal	42
3.3 Measuring valve guide wear	46
3.4 Checking hydraulic bucket tappets	47
3.5 Reworking valve seats	47
3.6 Renewing valve stem seal	50
3.7 Removing and installing exhaust manifold	50
17 - Lubrication	51
1 Removing and installing parts of lubrication system	51
1.1 Removing and installing parts of lubrication system	51
1.2 Removing and installing oil pump	55
1.3 Oil spray jets	56
1.4 Oil cooler fitment	57



1.5	Checking oil pressure switch and oil pressure	57
2	Dipstick and oil filler pipe	59
2.1	Dipstick and oil filler pipe	59
2.2	Engine oil specifications	62
19	- Cooling system	63
1	Removing and installing parts of the cooling system	63
1.1	Removing and installing parts of the cooling system	63
1.2	Removing and installing parts of the radiator	64
1.3	Removing and installing parts of cooling system engine side	67
1.4	Removing and installing expansion tank and top-up reservoir	69
1.5	Routing of coolant and heater hoses	71
1.6	Filling cooling system	72
20	- Fuel supply system	75
1	Removing and installing parts of the fuel system	75
1.1	Removing and installing parts of the fuel system	75
1.2	Safety precautions when working on fuel tank	77
1.3	Rules for cleanliness when working on fuel system	77
1.4	Removing and installing fuel gauge sender	77
1.5	Removing the fuel tank	78
1.6	Checking fuel system for leaks	79
1.7	Checking electric fuel pump	80
1.8	Checking electric fuel pump delivery rate	80
1.9	Checking electric fuel pump relay	81
1.10	Accelerator cable adjustment	82
26	- Exhaust system	85
1	Removing and installing parts of exhaust system	85
1.1	Removing and installing parts of exhaust system	85