



Contents

00 - Technical data	1
1 Safety and repair instructions	1
1.1 Safety information	1
1.2 Repair instructions	1
2 Identification	2
2.1 Engine identification	2
2.2 Engine characteristics	3
3 Electrical components	5
3.1 Access to diagnoses	5
4 Technical data	7
4.1 Test and adjustment values	7
10 - Removing and installing engine	12
1 Safety and repair instructions	12
1.1 Safety information	12
1.2 Repair instructions	12
2 Removing and installing engine	13
2.1 Removing engine	13
2.2 Disconnecting engine and gearbox	27
2.3 Securing engine on engine and gearbox support	30
2.4 Installing engine	33
3 Assembly bracket	37
3.1 Summary of components: assembly bracket Octavia IV, Karoq, Superb III, Kodiaq	37
3.2 Summary of components - assembly bracket, Scala, Kamiq, Fabia IV	39
3.3 Removing and installing engine mounting	41
3.4 Removing and installing gearbox mount, Octavia IV, Karoq, Superb III, Kodiaq	43
3.5 Removing and installing gearbox mount, Scala, Kamiq, Fabia IV	44
3.6 Removing and installing pendulum support	46
3.7 Supporting the engine in its installed position, Octavia IV	47
3.8 Support the engine in its installed position, Scala, Kamiq, Fabia IV	50
3.9 Supporting the engine in its installed position, Karoq	53
3.10 Supporting the engine in installation position, Superb III	56
3.11 Supporting the engine in its installed position, Kodiaq	57
3.12 Adjusting assembly mountings	61
4 Engine trim panel	65
4.1 Removing and installing engine cover panel	65
13 - Crankshaft group	66
1 Safety and repair instructions	66
1.1 Safety information	66
1.2 Repair instructions	66
2 Cylinder block (pulley end)	67
2.1 Overview of components: V-ribbed belt drive	67
2.2 Removing and installing V-ribbed belt	69
2.3 Removing and installing V-ribbed belt tensioning device	74
2.4 Removing and installing vibration damper	75
2.5 Removing and installing engine support	78
2.6 Renewing crankshaft oil seal (pulley end)	80
3 Cylinder block, gearbox end	84
3.1 Assembly overview – cylinder block, gearbox side	84
3.2 Removing and installing sealing flange (gearbox end)	86
3.3 Removing and installing flywheel	94



3.4	Removing and installing intermediate plate	97
3.5	Removing and installing intermediate plate	97
4	Crankshaft	99
4.1	Renewing needle bearing in crankshaft	99
4.2	Measuring axial clearance of crankshaft	100
5	Pistons and conrods	102
5.1	Assembly overview – pistons and conrods	102
5.2	Removing and installing pistons	103
5.3	Checking pistons and cylinder bores	106
5.4	Separating new conrod	107
5.5	Checking radial clearance of conrods	108
5.6	Removing and installing oil spray jets	109
5.7	Setting piston to TDC (top dead centre)	110
15	- Cylinder head, valve gear	115
1	Safety and repair instructions	115
1.1	Safety information	115
1.2	Repair instructions	115
2	Cylinder head	116
2.1	Assembly overview - cylinder head	116
2.2	Assembly overview - camshaft housing	117
2.3	Removing and installing cylinder head	119
2.4	Removing and installing camshaft housing	123
2.5	Checking compression	128
2.6	Checking cylinder head for distortion	129
3	Toothed belt drive	130
3.1	Assembly overview - toothed belt cover	130
3.2	Assembly overview - toothed belt	130
3.3	Removing and installing toothed belt guard	132
3.4	Removing and installing toothed belt	134
3.5	Preassembling and assembling test tool VAS 611 007	139
3.6	Checking valve timing	146
3.7	Adjusting valve timing	149
4	Valve gear	159
4.1	Assembly overview – valve gear	159
4.2	Removing and installing camshaft gasket ring	159
4.3	Removing and installing camshaft control	165
4.4	Removing and installing cam actuators	171
4.5	Removing and installing inlet camshaft control valve 1 N727	173
4.6	Removing and installing exhaust camshaft control valve 1 [N318]	174
4.7	Removing and installing valve stem seal	175
4.8	Removing and installing holder for oil seal	185
4.9	Checking control valve	187
4.10	Removing and installing inlet camshaft control valve 1 [N727]	188
5	Inlet and exhaust valves	191
5.1	Checking valve guides	191
5.2	Checking valves	191
17	- Lubrication	193
1	Safety and repair instructions	193
1.1	Safety information	193
1.2	Repair instructions	193
2	Sump, oil pump	194
2.1	Summary of components: sump/oil pump, one-piece	194
2.2	Engine oil:	196



2.3	Removing and installing oil sump, one-piece	196
2.4	Removing and installing oil pump	200
2.5	Removing and installing oil level and oil temperature sender [G266]	201
3	Engine oil cooler	203
3.1	Assembly overview - engine oil cooler	203
3.2	Removing and installing engine oil cooler	203
4	Crankcase ventilation	205
4.1	Assembly overview - crankcase breather system	205
4.2	Removing and installing oil separator	206
5	Oil filter, oil pressure switch	210
5.1	Assembly overview - oil filter/oil pressure switches	210
5.2	Removing and installing oil pressure sender [G10]	210
5.3	Checking oil pressure and oil pressure switch	211
5.4	Removing and installing oil filter	211
5.5	Removing and installing oil pressure regulating valve [N428]	212
19	Cooling	214
1	Safety and repair instructions	214
1.1	Safety information	214
1.2	Repair instructions	214
2	Cooling system, coolant	215
2.1	Connection diagram - coolant hoses	215
2.2	Checking cooling system for leaks	217
2.3	Checking filling quality of cooling system	219
2.4	Removing and installing coolant expansion tank	222
2.5	Draining coolant	224
2.6	Filling cooling system	225
2.7	Checking coolant level and topping up	227
2.8	Removing and installing cap for cooling system in cylinder block	229
3	Coolant pump, regulation of cooling system	231
3.1	Assembly overview – coolant pump/thermostat	231
3.2	Assembly overview – electric coolant pump	232
3.3	Assembly overview – coolant temperature sender	232
3.4	Removing and installing electric coolant pump	233
3.5	Removing and installing coolant pump	235
3.6	Removing and installing toothed belt pulley for coolant pump	240
3.7	Removing and installing coolant temperature sender [G62]	242
3.8	Removing and installing radiator outlet coolant temperature sender [G83]	244
3.9	Removing and installing engine outlet coolant temperature sender G82	246
3.10	Removing and installing engine temperature regulation module GX33	248
3.11	Checking coolant pump	251
4	Coolant pipes	255
4.1	Assembly overview - coolant pipes	255
4.2	Removing and installing coolant pipes	256
5	Radiator, radiator fan	261
5.1	Summary of components: radiator	261
5.2	Assembly overview - radiator cowl and radiator fan	262
5.3	Removing and installing radiator	263
5.4	Removing and installing water radiator for charge air cooling circuit	265
5.5	Demontáž a montáž krytu ventilátoru, Scala, Kamiq, Fabia IV	270
5.6	Removing and installing fan shroud, Octavia IV, Karoq, Superb III, Kodiaq	273
5.7	Removing and installing radiator fan VX57	276
5.8	Removing and installing radiator blind	276
5.9	Removing and installing radiator blind control motor [V544]	278
5.10	Assembly overview - radiator blind	283



21 - Turbocharging/supercharging	286
1 Safety and repair instructions	286
1.1 Safety information	286
1.2 Repair instructions	286
2 Exhaust gas turbocharger	287
2.1 Overview of components: exhaust gas turbocharger	287
2.2 Removing and installing turbocharger	290
2.3 Removing and installing element for load pressure control -GX34	295
2.4 Removing and installing connection for turbocharger	296
3 Charging system	299
3.1 Assembly overview - charge air system	299
3.2 Removing and installing charge air cooler	301
3.3 Removing and installing charge pressure sender [GX26]	303
3.4 Checking charge air system for leaks	304
3.5 Installing and removing the air guide pipe	307
3.6 Checking charge air cooler for leaks	315
24 - Mixture preparation - injection	320
1 Safety and repair instructions	320
1.1 Safety information	320
1.2 Repair instructions	320
2 Injection system	321
2.1 Installation location overview: injection system	321
3 Injection valves	326
3.1 Assembly overview - fuel rail with injectors	326
3.2 Removing and installing fuel rail	328
3.3 Removing and installing injectors	329
3.4 Renewing seals on injector	332
3.5 Cleaning injectors	333
4 Air filter	335
4.1 Assembly overview - air filter housing	335
4.2 Removing and installing air filter housing	337
4.3 Removing and installing air guide pipe on lock carrier, Octavia IV, Karoq, Superb III, Kodiaq	339
4.4 Removing and installing air guide pipe on lock carrier, Scala, Kamiq, Fabia IV	340
5 Intake manifold	342
5.1 Assembly overview – intake manifold	342
5.2 Removing and installing intake manifold	344
5.3 Removing and installing throttle valve module GX3	350
5.4 Cleaning throttle valve module [GX3]	351
6 Senders and sensors	353
6.1 Removing and installing fuel pressure sender [G247]	353
6.2 Checking fuel pressure sender [G247]	354
6.3 Removing and installing intake manifold sender [GX9]	355
6.4 Removing and installing exhaust gas pressure sensor 1 [G450]	357
6.5 Removing and installing air mass measurement module [GX35]	359
7 Engine control unit	361
7.1 Assembly overview - engine control unit	361
7.2 Removing and installing engine control unit -J623	361
8 High pressure pump	366
8.1 Assembly overview - high-pressure pump	366
8.2 Removing and installing high-pressure pump	367
8.3 Removing and installing high-pressure pipe	369



9	Lambda probe	371
9.1	Assembly overview – lambda probe	371
9.2	Removing and installing Lambda probe	371
26	- Exhaust system	375
1	Safety and repair instructions	375
1.1	Safety information	375
1.2	Repair instructions	375
2	Exhaust pipes/silencers, Octavia IV	376
2.1	Assembly overview – silencers	376
2.2	Separating exhaust pipes from silencers	378
2.3	Removing and installing front silencers	379
2.4	Removing and installing centre silencer	381
2.5	Removing and installing silencer	382
2.6	Aligning exhaust system free of stress	384
2.7	Checking exhaust system for leaks	385
2.8	Installation position of clamp	385
3	Exhaust pipes/silencer, Scala, Kamiq, Fabia IV	387
3.1	Summary of components: silencers	387
3.2	Separating exhaust pipes from silencers	389
3.3	Removing and installing front silencers	390
3.4	Removing and installing rear silencer	392
3.5	Aligning exhaust system free of stress	393
3.6	Checking exhaust system for leaks	394
3.7	Installation position of clamp	394
4	Exhaust pipes/silencers, Superb III	396
4.1	Summary of components: silencers, Superb III, DADA	396
4.2	Summary of components: silencers, Superb III, DPCA	398
4.3	Separating exhaust pipes from silencers	399
4.4	Removing and installing silencers, Superb III, DADA	400
4.5	Removing and installing front silencers	401
4.6	Removing and installing centre silencer	402
4.7	Removing and installing rear silencer	404
4.8	Aligning exhaust system free of stress	405
4.9	Checking exhaust system for leaks	406
4.10	Installation position of clamp	406
5	Exhaust pipes/silencers, Kodiaq	408
5.1	Summary of components: muffler Kodiaq with front drive	408
5.2	Summary of components: muffler Kodiaq with all-wheel drive	410
5.3	Separating exhaust pipes from silencers	410
5.4	Removing and installing silencers, Kodiaq vehicles with front-wheel drive	412
5.5	Removing and installing silencers, Kodiaq with all wheel drive	413
5.6	Removing and installing front silencers	415
5.7	Aligning exhaust system free of stress	416
5.8	Checking exhaust system for leaks	417
5.9	Installation position of clamp	417
6	Exhaust pipes/silencers, Karoq	419
6.1	Overview of components: silencer, torsion beam rear axle	419
6.2	Overview of components: silencer, multi-link rear axle	421
6.3	Removing and installing center silencer, torsion beam rear axle	422
6.4	Removing and installing rear silencer, torsion beam rear axle	423
6.5	Removing and installing silencer, multi-link rear axle	425
6.6	Separating exhaust pipes from silencers	427
6.7	Removing and installing front silencers	428
6.8	Aligning exhaust system free of stress	430



6.9	Checking exhaust system for leaks	431
6.10	Installation position of clamp	431
7	Cleansing exhaust emissions	433
7.1	Summary of components: exhaust gas cleaning	433
7.2	Summary of components: exhaust gas cleaning, Kodiaq, with all wheel drive	435
7.3	Removing and installing catalytic converter	437
7.4	Removing and installing particulate filter	442
7.5	Removing and installing exhaust flap control unit [J883]	443
28	- Ignition system	444
1	Safety and repair instructions	444
1.1	Safety information	444
1.2	Repair instructions	444
2	Ignition system	445
2.1	Assembly overview - ignition system	445
2.2	Removing and installing ignition coil with output stage	447
2.3	Removing and installing knock sensor 1 [G61]	450
2.4	Removing and installing engine speed sender [G28]	451
2.5	Removing and installing inlet camshaft position sender [G1002]	453
2.6	Removing and installing exhaust camshaft position sender [G1003]	454