

2007 ENGINE

Engine Electrical System - Tightening Torques - X5

12 IGNITION WIRES, SPARK PLUGS

12 12 SPARK PLUGS

TECHNICAL DATA - SPARK PLUGS

	Type	Thread	Tightening specification	Measure
1AZ Spark plugs (ungreased)	All	M12x1.25		23 ± 3 Nm
	All	M14x1.25		30 ± 3 Nm

14 ELECTRONIC SWITCHING OR CONTROL UNIT

12 14 ELECTRONIC SHIFT UNITS OR CONTROL UNITS

TECHNICAL DATA - ELECTRONIC SHIFT UNITS OR CONTROL UNITS

	Type	Thread	Tightening specification	Measure
1AZ Knock sensor	N62 / N62TU / N73	M8-8.8		21 ± 1 Nm

31 ALTERNATOR WITH DRIVE AND MOUNT

12 31 ALTERNATOR WITH DRIVE AND MOUNTING PARTS

TECHNICAL DATA - ALTERNATOR WITH DRIVE AND MOUNTING PARTS

	Type	Thread	Tightening specification	Measure
1AZ Wires to alternator				
Terminal D+	M10 / M20			5 Nm
	All / others	M6		7 Nm
Terminal B+	S38 / B38			8 Nm
	All / others	M8		13 Nm
2AZ Pulley	All			45 Nm
3AZ Pulley (ribbed drive belt)	Alternator with cooling jacket			80 Nm
	all others			70 Nm
	N42, N46 Valeo			75 Nm
	N42, N46 Bosch			65 Nm
4AZ Rear holder	All			3.5 Nm
5AZ Fillister head screw for wire holder	All			3.5 Nm
6AZ Alternator on bearing block	M10 / M12 / M14 / M16 / M18 / M20 / M22 / M24 / M26 / M28 / M30 / M32 / M34 / M36 / M38 / M40 / M42 / M44 / M46 / M48 / M50 / M52 / M54 / M56 / M58 / M60 / M62 / M64 / M66 / M68 / M70 / M72 / M74 / M76 / M78 / M80 / M82 / M84 / M86 / M88 / M90 / M92 / M94 / M96 / M98 / M100	M10 / M12 / M14 / M16 / M18 / M20 / M22 / M24 / M26 / M28 / M30 / M32 / M34 / M36 / M38 / M40 / M42 / M44 / M46 / M48 / M50 / M52 / M54 / M56 / M58 / M60 / M62 / M64 / M66 / M68 / M70 / M72 / M74 / M76 / M78 / M80 / M82 / M84 / M86 / M88 / M90 / M92 / M94 / M96 / M98 / M100		43 Nm

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7AZ Alternator to crankcase	N42, N46, N62	M8		21 Nm
8AZ Belt pulley (ribbed V-belt) with freewheel (Ina) fitted to Bosch and Valeo alternators	N42, N43			80 Nm

12 31 ALTERNATOR WITH DRIVE AND MOUNTING PARTS**TECHNICAL DATA - ALTERNATOR WITH DRIVE AND MOUNTING PARTS**

	Type	Thread	Tightening specification	Measure
1AZ Alternator to crankcase		M10		38 Nm
2AZ Threaded support sleeves		M16 x 1.5		3 Nm
3AZ Belt pulley (ribbed V-belt) with freewheel (Ina) fitted to Bosch and Valeo alternators				80 Nm

32 REGULATOR**12 32 GOVERNOR****TECHNICAL DATA - GOVERNOR**

	Type	thread	tightening specification	Value
1AZ Regulator switch	All	M4		2 Nm
	All	M5		4 Nm

41 STARTER WITH MOUNTING**12 41 STARTER AND MOUNTING PARTS****TECHNICAL DATA - STARTER AND MOUNTING PARTS**

	Type	Thread	Tightening specification	Measure
1AZ Starter motor mounting to transmission bell housing	All, except N51, N52, N52K, N53, N54			45 Nm
2AZ Support to starter	All	M5		5 Nm
3AZ Support to crankcase	All			47 Nm
4AZ Electrical leads to starter				
	All	M5		5 Nm
	All	M6		7 Nm
	All	M8		13 Nm
5AZ Bolt connection, pole tube	All	M6		6 Nm
6AZ Heat shield to starter motor		M6		6 Nm

12 41 STARTER MOTOR WITH MOUNTING

TECHNICAL DATA - STARTER MOTOR WITH MOUNTING

	Type	Thread	Tightening specification	Measure
1AZ Heat shield to starter	N62TU	M6		6 Nm
2AZ Starter motor to transmission	N62TU	M10		43 Nm

42 STARTER LEAD

12 42 STARTER CABLE

TECHNICAL DATA - STARTER CABLE

	Type	Thread	Tightening specification	Measure
1AZ Assembly, starter/alternator cable to alternator terminal B+	N62TU	M8		21 Nm
2AZ Assembly, starter/alternator cable to starter terminal 30	N62TU	M8		13 Nm
3AZ Assembly, starter/alternator cable to supply support point	N62TU	M8	Flange nut	15 Nm
4AZ Assembly, grounding cable to engine support frame	N62TU	M8		21 Nm
5AZ Assembly, grounding cable to engine frame side member	N62TU	M8		21 Nm
6AZ Assembly, B-jump-start connection point	N62TU	M8	Flange nut	15 Nm
7AZ Assembly, engine wiring harness to ground support point, spring strut dome	N62TU	M8		21 Nm
8AZ Assembly, ignition module ground to ZKH	N62TU	M5		5 Nm

12 42 WIRES TO STARTER

TECHNICAL DATA - WIRES TO STARTER

	Type	Thread	Tightening specification	Measure
1AZ Battery positive terminal in/on distribution box	E32 / E34 / E31 / E36 / E46 / E87 / E90 / E85 / E86 / E81	M8		20 Nm
	E39 / M57	M8		11 Nm
	E38 / M67	M8		11 Nm
	E46 / M47TU	M8		11 Nm
	E60 / N62	M8		15 Nm
	E65 / N62 / N73	M8		15 Nm
2AZ Wiring harness on distributor	E36 / M41	M8		10 Nm

61 OIL PRESSURE/OIL TEMPERATURE GAUGE

12 61 OIL PRESSURE, OIL TEMPERATURE, OIL LEVEL DISPLAY**TECHNICAL DATA - OIL PRESSURE, OIL TEMPERATURE, OIL LEVEL DISPLAY**

	Type	Thread	Tightening specification	Measure
1AZ Oil-pressure switch/oiltemperature switch	All	M12x1.5		27 Nm
2AZ Level switch for engine oil	N62 / N73 / M67TU		Jointing torque 2 Nm	8.5 Nm
3AZ Oil pressure switch	N46	M12 x 1.5		27 Nm
4AZ Level sensor to oil sump	N46	M6		9 Nm

62 COOLANT TEMPERATURE**12 62 COOLANT TEMPERATURE****TECHNICAL DATA - COOLANT TEMPERATURE**

	Type	Thread	Tightening specification	Measure
1AZ Temperature sensor to water flange (glow time/coolant temperature gauge)	M21			18 Nm
	M51			13 Nm
2AZ Temperature switch (5.5°C / 17°C) to fuel filter/cylinder head	M21			18 Nm
3AZ Coolant temperature sensor (2-pin plug-in connection)	S38 / S50			13 Nm
	S85	M12 / 1.52		13.5 Nm
	All / others			20 Nm
4AZ Remote thermometer sensor (2- pin plug-in connection)	All			20 Nm
Remote thermometer sensor (4- pin plug-in connection)	M62			16 Nm
	S62	M12 x 1.5		14 Nm
5AZ Remote thermometer sensor on coolant flange	S50			18 Nm
6AZ Temperature sensor - air	S38 / S50			13 Nm
7AZ Temperature sensor - oil	S38 / S50			13 Nm

72 SENSOR FOR CONTROL UNIT

12 72 SENDERS FOR CONTROL UNIT**TECHNICAL DATA - SENDERS FOR CONTROL UNIT**

	Type	Thread	Tightening specification	Measure
1AZ Lever to pedal value sender	E32 / E34 / E31 / E36			9 Nm
2AZ Pedal value sender to pedal console	E32 / E34 / E31			5 Nm

90 CONTROL UNIT BOX**12 90 CONTROL UNIT HOUSING****TECHNICAL DATA - CONTROL UNIT HOUSING**

	Type	Thread	Tightening specification	Measure
1AZ Assembly of upper and lower sections	E32 / E34 / E36			5 Nm
2AZ Center section to body	E32 / E34			3 Nm
3AZ Control unit holder in E box	E36			5 Nm
4AZ Control unit box cover	E38 / E39 / E52			4 Nm
	E46			6 Nm
	E53 / E36/7 / E54			3 Nm
5AZ Electronics box to firewall	E65	Plastic screw		6 Nm