

2002 BMW X5 30i

2001-2003 ENGINE Engine Electrical System - Tightening Torque - X5 (3.0i)

2001-2003 ENGINE**Engine Electrical System - Tightening Torque - X5 (3.0i)****IGNITION WIRES, SPARK PLUGS****12 12 SPARK PLUGS****SPARK PLUGS TIGHTENING TORQUE SPECIFICATIONS (1AZ)**

	Type	Thread	Tightening specification	Measure
1AZ Spark plugs (ungreased)	All	M12x1.25		23+/-3 N.m.
	All	M14x1.25		30+/-3 N.m.

ELECTRONIC SWITCHING OR CONTROL UNIT**12 14 ELECTRONIC SHIFT UNITS OR CONTROL UNITS****ELECTRONIC SWITCHING TIGHTENING TORQUE SPECIFICATIONS (1AZ - 4AZ)**

	Type	Thread	Tightening specification	Measure
1AZ TCI control unit	All			2.5 N.m.
2AZ Knock sensor	E23			13 N.m.
	All			20 N.m.
3AZ Engine speed and reference mark sensor	All	M6	Replace microencapsulated screw	10 N.m.
4AZ Cover on control unit box	All			4.4 N.m.

ALTERNATOR WITH DRIVE AND MOUNT**12 31 ALTERNATOR WITH DRIVE AND MOUNTING PARTS****ALTERNATOR WITH DRIVE AND MOUNTING PARTS TIGHTENING TORQUE SPECIFICATIONS (1AZ - 8AZ)**

	Type	Thread	Tightening specification	Measure
1AZ Wires to alternator				
Terminal D+	M10 / M20			5 N.m.
	All / others	M6		7 N.m.
Terminal B+	S38 / B38			8 N.m.
	All / others	M8		13 N.m.
2AZ Pulley	All			45 N.m.
3AZ Pulley (ribbed drive belt)	Alternator with cooling jacket			80 N.m.
	all others			70 N.m.

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	N42, N46 Valeo			75 N.m.
	N42, N46 Bosch			65 N.m.
4AZ Rear holder	All			3.5 N.m.
5AZ Fillister head screw for wire holder	All			3.5 N.m.
6AZ Alternator on bearing block	M40/M42 / M43 / M44			43 N.m.
7AZ Alternator to crankcase	N42, N46, N62	M8		21 N.m.
8AZ Belt pulley (ribbed V-belt) with freewheel (Ina) fitted to Bosch and Valeo alternators	N42			80 N.m.

REGULATOR**12 32 GOVERNOR****GOVERNOR TIGHTENING TORQUE SPECIFICATIONS (1AZ)**

	Type	thread	tightening specification	Value
1AZ Regulator switch	All	M4		2 N.m.
	All	M5		4 N.m.

STARTER WITH MOUNTING**12 41 STARTER AND MOUNTING PARTS****STARTER AND MOUNTING PARTS TIGHTENING TORQUE SPECIFICATIONS (1AZ - 6AZ)**

	Type	Thread	Tightening specification	Measure
1AZ Starter motor mounting to transmission bell housing	All			45 N.m.
2AZ Support to starter	All	M5		5 N.m.
3AZ Support to crankcase	All			47 N.m.
4AZ Electrical leads to starter				
	All	M5		5 N.m.
	All	M6		7 N.m.
	All	M8		13 N.m.
5AZ Bolt connection, pole tube	All	M6		6 N.m.
6AZ Heat shield to starter motor		M6		6 N.m.

STARTER LEAD**12 42 WIRES TO STARTER**

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WIRES TO STARTER TIGHTENING TORQUE SPECIFICATIONS (1AZ - 2AZ)

	Type	Thread	Tightening specification	Measure
1AZ Battery positive connection point in/at distributor	E32 / E34 / E31 / E36 / E46 / E87	M8		20 N.m.
	E39 / M57	M8		11 N.m.
	E38 / M67	M8		11 N.m.
	E46 / M47TU	M8		11 N.m.
	E60 / N62	M8		15 N.m.
	E65 / N62 / N73	M8		15 N.m.
2AZ Wiring harness on distributor	E36 / M41	M8		10 N.m.

ENGINE WIRING LOOM**12 51 ENGINE WIRING HARNESS****ENGINE WIRING HARNESS TIGHTENING TORQUE SPECIFICATIONS (1AZ - 7AZ)**

	Type	Thread	Tightening specification	Measure
1AZ Wiring harness on electrical cutout device	M51 / M41	M5		2.5 N.m.
2AZ Wiring harness on distributor	E36 / M41	M8		10 N.m.
3AZ Battery positive terminal to intake manifold	M57	M8		7 N.m.
4AZ Battery positive terminal in engine compartment	M62 / S62	M8		10 N.m.
	M57 / M67	M8		10 N.m.
	M54	M8		21 N.m.
5AZ Wiring harness to ground holder	M67	M6		10 N.m.
	M47TU	M6		7 N.m.
6AZ DDE wiring harness pick-off to battery positive terminal	M47TU / M57TU / M67	M6		9 N.m.
7AZ Injector guide strip to cylinder head cover	M47TU / M57TU			3.5 N.m.

OIL PRESSURE/OIL TEMPERATURE GAUGE**12 61 OIL PRESSURE, OIL TEMPERATURE, OIL LEVEL DISPLAY****OIL TEMPERATURE SWITCH TIGHTENING TORQUE SPECIFICATIONS (1AZ - 2AZ)**

	Type	Thread	Tightening specification	Measure
1AZ Oil-pressure switch/oil-temperature		M		

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switch	All	12x1.5		27 N.m.
2AZ Level switch for engine oil	N62 / N73 / M67TU		Jointing torque 2 N.m.	8.5 N.m.

COOLANT TEMPERATURE**12 62 COOLANT TEMPERATURE****SENSOR TIGHTENING TORQUE SPECIFICATIONS (1AZ - 7AZ)**

	Type	Thread	Tightening specification	Measure
1AZ Temperature sensor to water flange (glow time/coolant temperature gauge)	M21			18 N.m.
	M51			13 N.m.
2AZ Temperature switch (5.5° C / 17° C) to fuel filter/cylinder head	M21			18 N.m.
3AZ Coolant temperature sensor (2-pin plug-in connection)	S38 / S50			13 N.m.
	All / others			20 N.m.
4AZ Remote thermometer sensor (2-pin plug-in connection)	All			20 N.m.
Remote thermometer sensor (4-pin plug-in connection)	M62			16 N.m.
	S62	M12x1.5		14 N.m.
5AZ Remote thermometer sensor on coolant flange	S50			18 N.m.
6AZ Temperature sensor - air	S38 / S50			13 N.m.
7AZ Temperature sensor - oil	S38 / S50			13 N.m.

SENDERS FOR CONTROL UNIT**12 72 SENDERS FOR CONTROL UNIT****SENDERS FOR CONTROL UNIT TIGHTENING TORQUE SPECIFICATIONS (1AZ - 2AZ)**

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