

ENGINE PERFORMANCE

Fuel System - Tightening Torques - X6

CARBURETOR

13 11 CARBURETOR

CARBURETOR - TIGHTENING TORQUE SPECIFICATIONS

		Type	Thread	Tightening specification	Measure
1AZ	Carburetor to intake manifold	M10/M20/M30			10 Nm
2AZ	Carburetor to insulating flange	M10/M20/M30			10 Nm
3AZ	Insulating flange to intake manifold	M10/M20/M30			10 Nm
4AZ	Idling shut off valve; max.	M10/M20/M30			5 Nm
5AZ	Flow valve; max.	M10/M20/M30			28 Nm
6AZ	Throttle valve assembly to float housing; max.	M10/M20/M30			9 Nm
8AZ	Throttle valve control to carburetor; max.	2BE			3 Nm
9AZ	Warm-up regulator to engine	M10/M20/M30			23 Nm

FUEL PUMP WITH DRIVE AND LINE

13 31 FUEL PUMP WITH DRIVE AND PIPES

FUEL PUMP WITH DRIVE AND PIPES - TIGHTENING TORQUE SPECIFICATIONS

		Type	Thread	Tightening specification	Measure
1AZ	Fuel pump to engine	All			12 Nm
2AZ	Fuel pipe coupling bolt	All/with K-Jetr.	M8		9 Nm
3AZ	Fuel pipe coupling bolt	All/with K-Jetr.	M12		20 Nm
4AZ	Fuel pipe to pressure regulator	All/with L-Jetr.			30 Nm
5AZ	Return pipe connector to pressure regulator	All/with L-Jetr.			27 Nm

FUEL FILTER

13 32 FUEL FILTER

FUEL FILTER - TIGHTENING TORQUE SPECIFICATIONS

	Type	Thread	Tightening specification	Measure
1AZ	Fuel line to filter housing and injection pump			
	Coupling nut	M21/M51/M41	M14 x 1.5	14 Nm
	Adapter	M21/M51/M41	M12 x 1.5	9 Nm
	Hollow bolt	M21/M51/M41	M14 x 1.5	14 Nm
2AZ	Fuel filter to holder	M51/M41	M8	22 Nm
3AZ	Air duct to fuel cooler	M47		5.7 Nm
		M57		2 Nm
4AZ	Fuel filter cover	M47		25 Nm
5AZ	Fuel filter with holder to body	N42		8.8 Nm

INJECTION PUMP, REGULATOR, MIXTURE REGULATOR

13 51 INJECTION PUMP, CONTROL RECEPTACLE

INJECTION PUMP, CONTROL RECEPTACLE - TIGHTENING TORQUE SPECIFICATIONS

	Type	Thread	Tightening specification	Measure
1AZ	Plug for high pressure section of injection pump	M21/M51/M41		25 Nm
2AZ	Distributor injection pump to holder	M21/M51/M41		25 Nm
3AZ	Electric shutoff to injection pump	M21/M51/M41		20 ± 5 Nm
4AZ	Electric cold start valve to injection pump	M21		20 Nm
5AZ	Coupling bolt (OUT) to injection pump (fuel return)	M21/M51/M41		25 Nm
6AZ	Pressure valve holder to injection pump	M21/M51		45 Nm
7AZ	Expansion element housing (temperature dependent idling speed boost) to injection pump	M21		18 Nm
8AZ	Distributor injection pump to flange and	M21/M51/M41		22 Nm

	console				
9AZ	Electr. line on fuel cutout device	M51/M41			2.5 Nm
10AZ	Fuel feed line to injection pump (VP44)	M47			30 Nm
11AZ	Fuel return line to injection pump (VP44)	M47			25 Nm
12AZ	Plug for static basic adjustment (injection pump VP44)	M47			13 Nm
13AZ	Blocking screw for injection pump shaft without spacer plate (injection pump VP44)	M47			31 Nm
14AZ	Blocking screw for injection pump shaft with spacer plate (injection pump VP44)	M47			13 Nm
15AZ	Injection line (union nut) to injection pump (VP44)	M47			30 Nm

13 51 INJECTION PUMP, CONTROL

INJECTION PUMP, CONTROL - TIGHTENING TORQUE SPECIFICATIONS

	Type	Thread	Tightening specification	Measure
1AZ	High-pressure fuel pump to cylinder head cover	M6	Replace screws. Tighten screws in 180° increments uniformly until final tightening. Observe repair instruction. See <u>13 51 065 REMOVING AND INSTALLING/REPLACING LEFT HIGH-PRESSURE FUEL PUMP (N63)</u> and <u>13 51 070 REMOVING AND INSTALLING/REPLACING RIGHT HIGH-PRESSURE FUEL PUMP (N63)</u> .	12 Nm

INJECTION NOZZLE AND LINES

13 53 FUEL INJECTION NOZZLES AND PIPES

FUEL INJECTION NOZZLES AND PIPES - TIGHTENING TORQUE SPECIFICATIONS

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		Type	Thread	Tightening specification	Measure
1AZ	Rail, high-pressure side, to cylinder head	N63	M7		13 ± 2 Nm
2AZ	High-pressure lines to rail and injector	N63	M12	Initial tightening	10 Nm
				Final tightening (Retorque twice)	23 Nm
3AZ	High-pressure line to rail and high-pressure pump	N63	M14	Initial tightening	10 Nm
				Final tightening (Retorque twice)	30 Nm
4AZ	Feed line to high-pressure pump	N63	M14	Initial tightening	10 Nm
				Final tightening (Retorque twice)	30 Nm
5AZ	Holding-down element to cylinder head for injection nozzles	N63	M7		13 ± 2 Nm
6AZ	Lug to fuel low-pressure sensor	N63	M6		10 Nm
7AZ	Retaining clips to holder	N63	M6		10 Nm
8AZ	High-pressure sensor to rail, high-pressure side	N63			30 Nm
9AZ	Low-pressure fuel sensor to feed line	N63			20 Nm

THROTTLE AND OPERATION

13 54 THROTTLE AND ACTUATOR

THROTTLE AND ACTUATOR - TIGHTENING TORQUE SPECIFICATIONS

		Type	Thread	Tightening specification	Measure
1AZ	Throttle-valve assembly to intake manifold	N63	M6 x 50		7 Nm

SENSOR FOR CONTROL UNIT

13 62 SENDERS FOR CONTROL UNIT

SENDERS FOR CONTROL UNIT - TIGHTENING TORQUE SPECIFICATIONS

	Type	Thread	Tightening specification	Measure

1AZ Temperature time switch	M21/M51			18 Nm
2AZ Temperature sensor, water	M60/1/M60/2/M21/M51			18 Nm
	all others			13 Nm
3AZ Temperature switch	All			28 Nm
4AZ Temperature sensor, air	All			13 Nm
5AZ Charge-air pressure sensor to bracket	M51/M41			4 Nm
Charge-air pressure sensor to intake manifold	M47			5 Nm
6AZ Dual temperature sensor (4-pin plug connection)	M41/M43/M44/S50/S52/M52/M57/M67/M62/M73			13 Nm
7AZ Air-mass sensor on lower section of intake filter housing	M51			3.5 Nm
Air-mass flow sensor to cylinder head cover	M47/M47TU/M57/M57TU/M57T2			4.5 Nm
8AZ Pulse generator, camshaft to cylinder head cover	M57			4.5 Nm
	M47TU/M57TU			3.5 Nm
	M57T2			2.3 Nm
9AZ Intake neck on air-mass flow sensor	M47			9 Nm

13 62 SENDERS FOR CONTROL UNIT

SENDERS FOR CONTROL UNIT - TIGHTENING TORQUE SPECIFICATIONS

		Type	Thread	Tightening specification	Measure
1AZ	Temperature sensor, coolant/oil	N63	M12 x 1.5		13.5 Nm
2AZ	Pressure sensor to intake manifold	N63	K50 x 14		3.5 Nm
3AZ	Camshaft sensor to cylinder head	N63	M6		9 Nm
		N63	K50		5 Nm
4AZ	Crankshaft sensor to transmission	N63	M6		9 Nm
5AZ	Knock sensor to crankcase	N63	M8		21.5 Nm
6AZ	Air-mass flow sensor to upper section of intake filter housing	N63	K50 x 16		3 Nm
7AZ	Pressure sensor to intercooler	N63	M6		4 Nm

START VALVES

13 64 FUEL INJECTORS

FUEL INJECTORS - TIGHTENING TORQUE SPECIFICATIONS

		Type	Thread	Tightening specification	Measure
1AZ	Fuel injector to intake manifold	All	M6		10 Nm
2AZ	Coupling nut on fuel injector	All / with K-Jetr.			25 Nm

INTAKE SILENCER

13 71 AIR INTAKE DUCT

AIR INTAKE DUCT - TIGHTENING TORQUE SPECIFICATIONS

		Type	Thread	Tightening specification	Measure
1AZ	Clean-air pipe to turbocharger	N63	M6		10 Nm
2AZ	Intake filter housing to clean-air pipe	N63	Hose clamp		3 Nm
3AZ	Carrier plate, cylinder 1-4 to cylinder head cover	N63	M6		10 Nm
4AZ	Carrier plate, cylinder 5-8	N63	M6		10 Nm

	to cylinder head cover				
5AZ	Carrier plate for acoustic cover	N63	M6 Snaploc bolt		10 Nm
6AZ	Intercooler to engine	N63	M6		10 Nm
7AZ	Hose to throttle valve	N63	Screw clamp		4 Nm
8AZ	Hose to turbocharger	N63	V-band clamp		3.5 Nm