	Type	Thread	Tightening specification	Measure
If there are no cross-references to tightening torques in the repair instructions, the excerpts from the company standard BMW GS 90003-2 must be observed.				
There are different screws / nuts with surface color / (surface coating) - yellow (ZN) and silver (ZNS) The maximum tightening torques are: Surface color yellow (ZN): Applicable only to shank screws with metric coarse- and fine-pitch threads according to DIN 13-28 and nuts with nut height 0.8 x d according to DIN 934 and exclusively for a μ_{tot} = 0.125 (screws phosphatized, nuts without subsequent treatment or galvanized. Lubrication condition: unlubricated and also oiled).				

Surface color silver (ZNS):

Applicable only to shank screws with metric coarse- and fine-pitch threads according to DIN 13-28 and nuts with nut height 0.8 x d according to DIN 934 and exclusively for a spread of μ = 0.09 to 0.15 (screws cadmium-plated, nuts without subsequent treatment or galvanized. Lubrication condition: unlubricated and also oiled).

The values specified in this table apply to all screw connections conforming to the aforementioned conditions.

Not applicable when using a different surface or lubricant condition on the thread, or if the height of the nut differs.				
Not applicable to necked-down bolts, self-tapping screw connections or to connections between parts made of different materials. Attention! To be able to carry out competent repairs, it is essential to comply with the specified tightening torques. This presupposes that the required torque wrenches are subjected to regular testing. Permitted tolerance of torque wrenches ± 2 % of scale value. Approved torque wrenches and torque testers are contained in the catalogue Workshop Equipment Planning documentation.				

00 00 M10 and M10 x 1 - maximum tightening torques acc. to BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M10 thread	yellow (ZN)	M10 8.8		47 Nm
	silver (ZNS)	M10 8.8		38 Nm
	yellow (ZN)	M10 10.9		66 Nm
	silver (ZNS)	M10 10.9		56 Nm
	yellow (ZN)	M10 12.9		79 Nm
	silver (ZNS)	M10 12.9		62 Nm
M10x1 thread	yellow (ZN)	M10 x 1 8.8		54 Nm
	silver (ZNS)	M10 x 1 8.8		41 Nm
	yellow (ZN)	M10 x 1 10.9		75 Nm
	silver (ZNS)	M10 x 1 10.9		60 Nm
	yellow (ZN)	M10 x 1 12.9		91 Nm
	silver (ZNS)	M10 x 1 12.9		67 Nm

00 00 M12 and M12x1.5 - maximum tightening torques acc. to BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M12 thread	yellow (ZN)	M12 8.8		82 Nm
	silver (ZNS)	M12 8.8		66 Nm
	yellow (ZN)	M12 10.9		115 Nm
	silver (ZNS)	M12 10.9		98 Nm
	yellow (ZN)	M12 12.9		140 Nm
	silver (ZNS)	M12 12.9		108 Nm
M12x1.5 thread	yellow (ZN)	M12 x 1.5 8.8		87 Nm
	silver (ZNS)	M12 x 1.5 8.8		68 Nm
	yellow (ZN)	M12 x 1.5 10.9		123 Nm
	silver (ZNS)	M12 x 1.5 10.9		100 Nm
	yellow (ZN)	M12 x 1.5 12.9		147 Nm
	silver (ZNS)	M12 x 1.5 12.9		110 Nm

00 00 M14 and M14x1.5 - maximum tightening torques acc. to BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M14 thread	yellow (ZN)	M14 8.8		130 Nm
	silver (ZNS)	M14 8.8		104 Nm
	yellow (ZN)	M14 10.9		180 Nm
	silver (ZNS)	M14 10.9		155 Nm
	yellow (ZN)	M14 12.9		220 Nm
	silver (ZNS)	M14 12.9		170 Nm
M14x1.5 thread	yellow (ZN)	M14 x 1.5 8.8		143 Nm
	silver (ZNS)	M14 x 1.5 8.8		110 Nm
	yellow (ZN)	M14 x 1.5 10.9		200 Nm
	silver (ZNS)	M14 x 1.5 10.9		165 Nm
	yellow (ZN)	M14 x 1.5 12.9		240 Nm
	silver (ZNS)	M14 x 1.5 12.9		180 Nm

00 00 M16 and M16x1.5 - maximum tightening torques acc. to BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M16 thread	yellow (ZN)	M16 8.8		200 Nm
	silver (ZNS)	M16 8.8		160 Nm
	yellow (ZN)	M16 10.9		280 Nm
	silver (ZNS)	M16 10.9		235 Nm
	yellow (ZN)	M16 12.9		340 Nm
	silver (ZNS)	M16 12.9		260 Nm
M16x1.5 thread	yellow (ZN)	M16 x 1.5 8.8		216 Nm
	silver (ZNS)	M16 x 1.5 8.8		170 Nm
	yellow (ZN)	M16 x 1.5 10.9		303 Nm
	silver (ZNS)	M16 x 1.5 10.9		250 Nm
	yellow (ZN)	M16 x 1.5 12.9		364 Nm
	silver (ZNS)	M16 x 1.5 12.9		275 Nm

00 00 M18 and M18x1.5 - maximum tightening torques acc. to BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M18 thread	yellow (ZN)	M18 8.8		280 Nm
	silver (ZNS)	M18 8.8		225 Nm
	yellow (ZN)	M18 10.9		390 Nm
	silver (ZNS)	M18 10.9		330 Nm
	yellow (ZN)	M18 12.9		470 Nm
	silver (ZNS)	M18 12.9		365 Nm
M18x1.5 thread	yellow (ZN)	M18 x 1.5 8.8		313 Nm
	silver (ZNS)	M18 x 1.5 8.8		245 Nm
	yellow (ZN)	M18 x 1.5 10.9		440 Nm
	silver (ZNS)	M18 x 1.5 10.9		360 Nm
	yellow (ZN)	M18 x 1.5 12.9		527 Nm
	silver (ZNS)	M18 x 1.5 12.9		400 Nm

00 00 M4 and M5 - maximum tightening torques acc. to BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M4 thread	yellow (ZN)	M4 8.8		3 Nm
	silver (ZNS)	M4 8.8		2 Nm
	yellow (ZN)	M4 10.9		4 Nm
	silver (ZNS)	M4 10.9		3 Nm
	yellow (ZN)	M4 12.9		5 Nm
M5 thread	yellow (ZN)	M5 8.8		6 Nm
	silver (ZNS)	M5 8.8		5 Nm
	yellow (ZN)	M5 10.9		8 Nm
	silver (ZNS)	M5 10.9		7 Nm
	yellow (ZN)	M5 12.9		10 Nm
	silver (ZNS)	M5 12.9		8 Nm

00 00 M6 and M7 - maximum tightening torques acc. to BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M6 thread	yellow (ZN)	M6 8.8		10 Nm
	silver (ZNS)	M6 8.8		8 Nm
	yellow (ZN)	M6 10.9		14 Nm
	silver (ZNS)	M6 10.9		12 Nm
	yellow (ZN)	M6 12.9		17 Nm
	silver (ZNS)	M6 12.9		13 Nm
M7 thread	yellow (ZN)	M7 8.8		15 Nm
	silver (ZNS)	M7 8.8		13 Nm
	yellow (ZN)	M7 10.9		21 Nm
	silver (ZNS)	M7 10.9		19 Nm
	yellow (ZN)	M7 12.9		26 Nm
	silver (ZNS)	M7 12.9		21 Nm

00 00 M8 and M8 x 1 - maximum tightening torques acc. to BMW GS 90003-2

	Type	Thread	Tightening specification	Measure
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M8 thread	yellow (ZN)	M8 8.8		24 Nm
	silver (ZNS)	M8 8.8		19 Nm
	yellow (ZN)	M8 10.9		34 Nm
	silver (ZNS)	M8 10.9		28 Nm
	yellow (ZN)	M8 12.9		40 Nm
	silver (ZNS)	M8 12.9		32 Nm
M8x1 thread	yellow (ZN)	M8 x 1 8.8		26 Nm
	silver (ZNS)	M8 x 1 8.8		21 Nm
	yellow (ZN)	M8 x 1 10.9		36 Nm
	silver (ZNS)	M8 x 1 10.9		30 Nm
	yellow (ZN)	M8 x 1 12.9		44 Nm
	silver (ZNS)	M8 x 1 12.9		33 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hexagon screws (14 x) Bedplate to crankcase.	N52K	M10 x 100	Replace screws. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 20 Nm 70 °
2AZ ASA screws (25 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M10 x 27	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 15 Nm 90 °
3AZ ASA screws (4 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M8 x 37	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 8 Nm 90 °
4AZ ASA screws (2 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M10 x 41	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 15 Nm 90 °

5AZ Oil spray nozzles (6 x) Oil spray nozzles in crankcase.	N52K	M8 x 1		12 Nm
6AZ Plug (1 x) Coolant drain to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M14 x 1.5	Replace screw and sealing ring. Thread repairs are not permitted!	50 Nm
7AZ Plug (1 x) Assembly opening to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M22 x 1.5	Replace screw. Thread repairs are not permitted!	50 Nm
8AZ Plug (1 x) Assembly opening to bedplate. The end faces of the aluminium screw heads are painted blue.	N52K	M16 x 1.5	Replace screw. Thread repairs are not permitted!	27 Nm

11 12 Cylinder Head with Cover

	Type	thread	tightening specification	Measure
11AZ Cylinder head cover	All	M6		10 Nm
	All	M7		15 Nm
	M21	M8		15 Nm
12AZ Oil trap to cylinder head cover	M21	M8		17 Nm
13AZ Timing case to cylinder head	All	M7		15 Nm
	All	M8		20 Nm
14AZ Plug for oil channel (microencapsulated)	M47 / M57	M12 x 1.5		20 Nm
15AZ Vent plugs to cylinder head (coolant)	M67			2 Nm

	Type	Thread	Tightening specification	Measure
1AZ ISA screws (cylinder head bolts) (10 x) Cylinder head to crankcase.	N52K	M10 x 125	Replace screws. Tighten screws from inside outwards. Jointing torque and angle of rotation must be observed without fail. Jointing torque 1st angle of rotation 2. Angle of rotation 3. Angle of rotation	 30 Nm 90 ° 90 ° 45 °
2AZ ISA screws (cylinder head bolts) (1 x M9 x 95) (3 x M9 x 125) Cylinder head to crankcase.	N52K	M9	Replace screws. Jointing torque and angle of rotation must be observed without fail. Jointing torque 1st angle of rotation 2. Angle of rotation 3. Angle of rotation	 30 Nm 90 ° omitted 45 °
3AZ Al screw (1 x) Cylinder head to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M9 x 30	Replace screw. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 10 Nm 90 °
4AZ ASA screws (3 x) Cylinder head to crankcase.				

The end faces of the aluminium screw heads are painted blue.	N52K	M9 x 70	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 10 Nm 135 °
5AZ ASA screws (15 x M7 x 33.5 round) (1 x M7 x 33.5 oval) (1 x M7 x 35) (2 x M7 x 36) Hexagon screw (1 x M7 x 46) Studs (2 x M7 x 75) Cylinder head cover to cylinder head.	N52K	M7		9 Nm
6AZ Fillister head screws (4 x) Ignition coil cover to cylinder head cover.	N52K	M6 x 20		4 Nm
7AZ ISA screws (12 x) Bearing cap of eccentric shaft to cylinder head.	N52K	M6 x 30.5		9 Nm
8AZ Seal plugs (3 x) Seal, oil channel, in cylinder head.	N52K	M16 x 1.5	Thread must be oiled.	40 Nm
9AZ Towing eye (1 x) Towing eye to cylinder head.	N52K	M16	Use towing eye exclusively with M16 thread. Use towing eye for engine transportation only.	30 Nm

	Type	Thread	Tightening specification	Measure
Optional extra designation: SA203 = All-wheel drive SA205 = Automatic transmission				
1AZ Plug (1 x) Oil drain to oil sump.	N52K	M12 x 1.5	Replace sealing ring.	25 Nm
2AZ ASA screws (19 x with optional extra SA203) (23 x with optional extra SA205 without optional extra SA203) Oil sump (aluminium) to bedplate for vehicles with SA203 or SA205. The end faces of the aluminium screw heads are painted blue.	N52K	M8 x 26	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 8 Nm 90 ◦
3AZ ASA screws (5 x M8 x 112 with optional extra SA203) (2 x M8 x 112 with optional extra SA205 without SA203) (3 x M8 x 92 with optional extra SA203/205) Oil sump (aluminium) to bedplate for vehicles with SA203 or SA205. The end faces of the aluminium screw heads are painted blue.	N52K	M8	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 8 Nm 180 ◦
4AZ ASA screw (1 x) Oil sump (aluminium) to bedplate for vehicles with SA203.				

The end faces of the aluminium screw heads are painted blue.	N52K	M8 x 36	Replace screw. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 8 Nm 90 °
5AZ ASA screws (28 x) Oil sump (plate) to bedplate for vehicles without SA203 and SA205. The end faces of the aluminium screw heads are painted blue.	N52K	M8 x 24.5	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 8 Nm 90 °
6AZ ASA screws (6 x without optional extra SA203) (7 x with optional extra SA203) Oil deflector to bedplate. The end faces of the aluminium screw heads are painted blue.	N52K	M6 x 20	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 4 Nm 90 °
7AZ ASA screws (3 x) Transmission to oil sump.	N52K	M8 x 50		19 Nm

11 14 Transmission closing plate

	Type	Thread	Tightening specification	Measure
1AZ ASA screws (4 x) Transmission cover plate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M6 x 16	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 4 Nm 45 ◦

	Type	Thread	Tightening specification	Measure
1AZ Hexagon screws (14 x) Bedplate to crankcase.	N52K	M10 x 100	Replace screws. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 20 Nm 70 °
2AZ ASA screws (25 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M10 x 27	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 15 Nm 90 °
3AZ ASA screws (4 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M8 x 37	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 8 Nm 90 °
4AZ ASA screws (2 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M10 x 41	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 15 Nm 90 °

5AZ Oil spray nozzles (6 x) Oil spray nozzles in crankcase.	N52K	M8 x 1		12 Nm
6AZ Plug (1 x) Coolant drain to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M14 x 1.5	Replace screw and sealing ring. Thread repairs are not permitted!	50 Nm
7AZ Plug (1 x) Assembly opening to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M22 x 1.5	Replace screw. Thread repairs are not permitted!	50 Nm
8AZ Plug (1 x) Assembly opening to bedplate. The end faces of the aluminium screw heads are painted blue.	N52K	M16 x 1.5	Replace screw. Thread repairs are not permitted!	27 Nm

	Type	Thread	Tightening specification	Measure
1AZ ASA screws (connecting rod bolts) (12 x) Connecting rod bearing cap to connecting rod.	N52K	M8 x 47	Replace screws. Screws washed and oiled. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 20 Nm 70 ◦

	Type	Thread	Tightening specification	Measure
1AZ Increment wheel on crankshaft	S54	M5 10.9	Replace screws Jointing torque Torque angle	 5.0 Nm 45 ◦
Increment wheel on crankshaft		M5 10.9	Replace screws	13 Nm
Increment wheel on crankshaft		M5 8.8	Replace screws	5.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hexagon screw (central screw) (1 x) Hub of vibration damper to crankshaft.	N52K	M16 x 80	Replace screw. Screw and thread are lightly oiled. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 100 Nm 360 °

	Type	Thread	Tightening specification	Measure
1AZ Hexagon screws (6 x) Flywheel to crankshaft for vehicles with SA205 (automatic transmission).	N52K	M12 x 25.5	Replace screws. Jointing torque and final tightening must be observed without fail. 1. Jointing torque 2. Final tightening	 30 Nm 125 Nm
2AZ ISA screws (6 x) Flywheel to crankshaft for vehicles without SA205 (automatic transmission).	N52K	M12 x 25	Replace screws.	120 Nm

	Type	Thread	Tightening specification	Measure
3AZ Belt pulley / vibration damper to hub	S38 / B36	M8 10.9		34 Nm
	N40 / N42 / N45 / N46 / S38 / B38	M8 10.9		34 Nm
	All / others	M8		22 Nm
4AZ Belt pulley to vibration damper	S38 / B35	M8 8.8		22 Nm
	S50	M8 8.8		22 Nm
5AZ Sprocket with hub or hub to crankshaft	M40	M16 x 1.5	Replace screw	310 Nm
	M42 / M43 / M43TU / M44	M16 x 1.5	Replace screw	330 Nm
6AZ Hub to crankshaft	N40 / N42 / N45 / N46	M16 x 1.5	Replace screw	300 Nm

11 23 Vibration Damper

	Type	Thread	Tightening specification	Measure
1AZ ASA screws (6 x) Vibration damper to hub.	N52K	M8 x 16		35 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hexagon screws (14 x) Bedplate to crankcase.	N52K	M10 x 100	Replace screws. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 20 Nm 70 °
2AZ ASA screws (25 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M10 x 27	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 15 Nm 90 °
3AZ ASA screws (4 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M8 x 37	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 8 Nm 90 °
4AZ ASA screws (2 x) Bedplate to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M10 x 41	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 15 Nm 90 °

5AZ Oil spray nozzles (6 x) Oil spray nozzles in crankcase.	N52K	M8 x 1		12 Nm
6AZ Plug (1 x) Coolant drain to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M14 x 1.5	Replace screw and sealing ring. Thread repairs are not permitted!	50 Nm
7AZ Plug (1 x) Assembly opening to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M22 x 1.5	Replace screw. Thread repairs are not permitted!	50 Nm
8AZ Plug (1 x) Assembly opening to bedplate. The end faces of the aluminium screw heads are painted blue.	N52K	M16 x 1.5	Replace screw. Thread repairs are not permitted!	27 Nm

	Type	Thread	Tightening specification	Measure
1AZ ASA screws (connecting rod bolts) (12 x) Connecting rod bearing cap to connecting rod.	N52K	M8 x 47	Replace screws. Screws washed and oiled. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 20 Nm 70 ◦

	Type	Thread	Tightening specification	Measure
1AZ ASA screw (1 x) Belt tensioner to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K / Not for E70 N52K B30	M11 x 65	Replace screw. Thread repairs are not permitted! Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 25 Nm 90 ◦
2AZ ASA screw (1 x) Belt tensioner with deflection pulley to crankcase. The end faces of the aluminium screw heads are painted blue.	E70 N52K B30	M11 x 99	Replace screw. Thread repairs are not permitted! Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 25 Nm 90 ◦
3AZ Hexagon screw (1 x) Deflection pulley to alternator.	N52K	M10 x 45		40 Nm

	Type	Thread	Tightening specification	Measure
1AZ ASA screws (15 x) Upper and lower bearing banks of exhaust camshaft to cylinder head.	N52K	M7 x 70	Insert screws dry. Tighten screws from inside outwards. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 8 Nm 60 °
2AZ ISA screws (14 x) Bearing cap of inlet camshaft to cylinder head.	N52K	M6 x 30.5		9 Nm
3AZ ASA screws (2 x) Timing chain module to cylinder head.	N52K	M6 x 35		9 Nm
4AZ Bearing pin (1 x) Timing chain module to crankcase.	N52K	M8		20 Nm
5AZ Bearing pin (1 x) Timing chain module to cylinder head.	N52K	M7		14 Nm
6AZ Chain tensioner (1 x) Chain tensioner to cylinder head.	N52K	M22 x 1.5	Replace sealing ring.	55 Nm
7AZ Plug (1 x) Assembly opening to cylinder head.	N52K	M18 x 1.5		25 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hexagon screws (central bolts) (2 x) VANOS with sensor gear to inlet and exhaust camshafts.	N52K	M10 x 94	Replace screws. Grip inlet and exhaust camshafts at dihedron when tightening. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 20 Nm 180 °
2AZ Non-return valve (2 x) Non-return valve for VANOS to cylinder head	N52K	M14 x 1.5	Replace sealing ring.	13 Nm
3AZ Hexagon screws (2 x) Inlet and exhaust solenoid valve with holder to cylinder head.	N52K	M6 x 12	Replace support and sealing rings.	9 Nm

	Type	Thread	Tightening specification	Measure
1AZ ASA screws (11 x) Guide block to timing case.	N52K	M6 x 23	Only one screw (inside) plus the oil spray nozzle are fitted on cylinder no. 3.	10 Nm
2AZ ASA screws (6 x) Torsion spring to cylinder head.	N52K	M6 x 20		10 Nm
3AZ ASA screws (2 x on cylinder head) (1 x on cylinder head cover) Electric servomotor to cylinder head and to cylinder head cover.	N52K	M6 x 16	1. Join screws hand-tight to cylinder head. 2. Join screw hand-tight to cylinder head cover. 3. Jointing torque on cylinder head. 4. Jointing torque on cylinder head cover.	10 Nm
4AZ ASA screw (1 x) Oil spray nozzle to guide block.	N52K	M6 x 30	Oil spray nozzle is fitted on cylinder no. 3 (outside).	10 Nm
5AZ Stop screw (1 x) Stop screw of eccentric shaft to cylinder head.	N52K	M6		10 Nm

	Type	Thread	Tightening specification	Measure
Optional extra designation: SA203 = All-wheel drive				
1AZ ASA screws (2 x with optional extra SA203) (3 x without optional extra SA203) Suction pipe to bedplate. The end faces of the aluminium screw heads are painted blue.	N52K	M6 x 30	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 4 Nm 100 °
2AZ ASA screw (1 x) Oil pump to bedplate. The end faces of the aluminium screw heads are painted blue.	N52K	M8 x 123	Replace screw. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 10 Nm 180 °
3AZ ASA screws (2 x) Oil pump to bedplate. The end faces of the aluminium screw heads are painted blue.	N52K	M8 x 31	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 10 Nm 90 °

4AZ ASA screw

(1 x)

Chain module to crankcase.

The end faces of the aluminium screw heads are painted blue.	N52K	M6 x 16	Replace screw. Thread repairs are not permitted! Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 4 Nm 45 °
5AZ ASA screws (2 x) Chain module to oil pump. The end faces of the aluminium screw heads are painted blue.	N52K	M6 x 16	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 4 Nm 45 °
6AZ Fillister head bolt (1 x) Sprocket wheel to oil pump.	N52K	M8 x 20	Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 20 Nm 45 °

11 42 Oil filter element with connections

	Type	Thread	Tightening specification	Measure
1AZ Oil filter cap (1 x) Oil filter cap to oil-filter housing.	N52K		Replace sealing ring.	25 Nm
2AZ ASA screws (1 x M8 x 28) (1 x M8 x 43) (1 x M8 x 78) Oil filter housing to cylinder head.	N52K	M8	Replace seal.	22 Nm
3AZ Tapping screws (3 x) Oil/water heat exchanger to oil filter housing.	N52K	M8 x 20	Replace seal.	16 Nm

	Type	Thread	Tightening specification	Measure
1AZ ASA screws (3 x) Electric water pump to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K / Not for E70 N52K B30	M8 x 32	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 10 Nm 90 ◦
2AZ ASA screws (3 x) Electric water pump to crankcase. The end faces of the aluminium screw heads are painted blue.	E70 N52K B30	M8 x 28	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 10 Nm 90 ◦

	Type	Thread	Tightening specification	Measure
1AZ Fan clutch on water pump Coupling nut (left-hand threads)	All			40 Nm
	M54			45 Nm
2AZ Fan to fan clutch	All			10 Nm

11 53 Coolant thermostat with connections

	Type	Thread	Tightening specification	Measure
1AZ Hexagon screws (2 x) Coolant thermostat to electric water pump.	N52K	M6 x 25		9 Nm
2AZ ASA screws (2 x) Feed line (from electric water pump) to crankcase.	N52K	M6 x 16	Replace sealing ring and seal.	9 Nm
3AZ Hose clamp (1 x) Feed line (from crankcase) to electric water pump.	N52K	L42-48		3 Nm
4AZ Hose clamps (2 x) Coolant hose between oil-water heat exchanger and feed line.	N52K	L18-24		3 Nm
5AZ Hose clamps (2 x) Coolant hose between coolant thermostat and electric water pump.	N52K	L42-48		3 Nm
6AZ Hose clamp (1 x) Coolant hose (from cylinder head) to coolant thermostat.	N52K	L23-35		3 Nm
7AZ Hexagon screws (2 x) Coolant hose (from coolant thermostat) to cylinder head.	N52K	M6 x 25		9 Nm
8AZ ASA screw (1 x) Spacer to cylinder head.	N52K	M6 x 12		8 Nm

9AZ ASA screws

(2 x)

Dual bracket to crankcase. The end faces of the aluminium screw heads are painted blue.	N52K	M6 x 16	Replace screws. Thread repairs exclusively with aluminium Helicoil threaded insert. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 4 Nm 45 °

	Type	thread	tightening specification	Measure
1AZ Thermostat housing	All	M6		10 Nm
2AZ Bleeder screw	All	M8		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hexagon screws (4 x) Air intake manifold to cylinder head.	N52K	M7 x 50		15 Nm
2AZ Hexagon nuts (3 x) Air intake manifold to cylinder head.	N52K	AM7 (to DIN 439)		15 Nm

11 61 Intake manifold

	Type	thread	tightening specification	Measure
1AZ Intake manifold on cylinder head	All	M8		22 Nm
	All	M7		15 Nm
	All	M6		10 Nm
2AZ Soundproofing hood to holder	M60/1 / M60/2 / M62	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Exhaust manifold to cylinder head Coat screw connections with CRC copper paste	All	M6	Replace nuts	10 Nm
	M50 / M52 / M52TU / M54 / M56 / S52 / S50 US	M7	Replace nuts	20 Nm
	All / others	M7	Replace nuts	15 Nm
	M10	M8	Upper row of staybolts installed with bolt cement	23 Nm
	M21	M8	Replace nuts Retighten after 2000 km Slacken nuts by a 1/4 turn	12 Nm 12 Nm
	M41 / M47 / M47TU / M51 / M57 / M57TU	M8	Replace nuts	20 Nm
	All / others	M8	Replace nuts	23 Nm

11 66 Vacuum pump

	Type	Thread	Tightening specification	Measure
1AZ ISA flat mushroom head screws 10.9 (3 x) Vacuum pump to crankcase.	N52K	M6 x 40		10 Nm
2AZ ISA screw (1 x) Sprocket wheel to vacuum pump.	N52K	M10 x 30		66 Nm

	Type	Thread	Tightening specification	Measure
1AZ Secondary air valve to cylinder head	N52K	M6		8 Nm
2AZ Secondary air pump to mounting bracket/pump carrier	N52K	M6		8 Nm
3AZ Intake hose / intake line to body	N52K	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Oxygen control sensor; oxygen monitor sensor	All	M18 x 1.5		50 Nm

11 78 Exhaust gas control, lambda control sensor / lambda monitor sensor

	Type	Thread	Tightening specification	Measure
1AZ Lambda control sensor LSU 4.9 Lambda monitor sensor LSF 4.2	N52K	M18 x 1.5		50 Nm
2AZ ASA screws (2 x) Bracket, lambda control sensors, to cylinder head.	N52K	M6 x 12		8 Nm
3AZ Hexagon screw (1 x) Bracket, lambda monitor sensors, side, to transmission.	N52K / Not for E6x and E85	M8 x 16		19 Nm
4AZ Bracket, plug connection, lambda monitor sensors, bottom, to transmission.	N52K			

12 12 Spark Plugs

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

	Type	Thread	Tightening specification	Measure
1AZ Knock sensor	N52, N52K, N51, N53	M8x31	Replace screws Jointing torque Torque angle	 10 Nm 90 °
2AZ Pulse generator for crankshaft	N52, N52K, N51, N53	M6x16	Replace screws Jointing torque Torque angle	 3 Nm 45 °
3AZ Pulse generator for inlet camshaft	N52, N52K, N51, N53	M6x16		9 Nm
4AZ Pulse generator for exhaust camshaft	N52, N52K, N51, N53	M6x16		9 Nm

12 31 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	M40/M42 / M43 / M44			43 Nm
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

	Type	Thread	Tightening specification	Measure
1AZ Wires to alternator	N52, N52K, N51, N53	M8		19 Nm
2AZ Alternator to crankcase	N52, N52K, N51, N53	M8x82	Replace screws Jointing torque Torque angle	 10 Nm 180 °
3AZ Belt pulley (ribbed V-belt) with freewheel (Ina) fitted to Bosch and Valeo alternators	N52			80 Nm

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

12 41 Starter motor with mounting

	Type	Thread	Tightening specification	Measure
1AZ Starter motor mounting to crankcase	N52, N52K, N51, N53	M10x85	Replace screw Jointing torque Torque angle	 20 Nm 180 °
2AZ Starter motor mounting to crankcase	N52, N52K, N51, N53	M10x30	Replace screw Jointing torque Torque angle	 20 Nm 90 °
3AZ Battery positive lead to starter	N52, N52K, N51, N53	M8		13 Nm

12 42 Starter line

	Type	Thread	Tightening specification	Measure
1AZ Starter line to jump-start connection point	N52, N52K, N51, N53	M8		19 Nm
2AZ Starter line to jump-start connection point	E70 / N52K	M8		13 Nm

12 42 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

	Type	Thread	Tightening specification	Measure
1AZ Holder, wiring harness, to cylinder head	N52, N54	M6x12		8 Nm
2AZ Cable duct to cylinder head cover	N52, N54, N53	M6	Replace screws Jointing torque Torque angle	 3 Nm 45 °
3AZ Ground cable to crankcase (electr. coolant pump)	N52, N54, N52K, N51, N53	M8	Replace screws Jointing torque Torque angle	 8 Nm 45 °
4AZ Assembly: holder, monitor sensors	N54	M6x12		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Holder, wiring harness, to cylinder head	N52, N54	M6x12		8 Nm
2AZ Cable duct to cylinder head cover	N52, N54, N53	M6	Replace screws Jointing torque Torque angle	 3 Nm 45 °
3AZ Ground cable to crankcase (electr. coolant pump)	N52, N54, N52K, N51, N53	M8	Replace screws Jointing torque Torque angle	 8 Nm 45 °
4AZ Assembly: holder, monitor sensors	N54	M6x12		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Engine oil pressure switch/engine oil temperature sensor	N52, N52K, N51, N54, N53	M12x1.5	Jointing torque Torque angle	20 Nm 16 °
2AZ Oil condition sensor for engine oil	N52, N52K, N51, N54, N53	M6	Jointing torque 2 Nm	8.5 Nm

12 61 Oil pressure, oil temperature, oil level display

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

	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

	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

	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

13 11 Carburetor

	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

13 31 Fuel Pump with Drive and Pipes

	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

	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

	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 console	M21 / M51 / M41			22 Nm
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

	Type	Thread	Tightening specification	Measure
1AZ Fuel rail	N52, N52K	M6 x 12		9 ± 1 Nm
1AZ Fuel rail	N51	M6 x 16		9 ± 1 Nm

	Type	Thread	Tightening specification	Measure
1AZ Throttle-valve assembly to intake manifold	N52 / N52K / N51 / N53	M6 x 50		9 Nm

	Type	Thread	Tightening specification	Measure
1AZ Temperature time switch	M21 / M51			18 Nm
2AZ Coolant temperature sensor	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 on holder	M51 / M41			4 Nm
Charge-air pressure sensor on intake manifold	M47			5 Nm
6AZ Twin temperature sensor (4-pin plug-in connection)	M41 / M43 / M44 / S50 / S52 / M52 / M57 / M67 / M62 / M73			13 Nm
7AZ Air-mass sensor on lower section of air filter housing	M51			3.5 Nm
Air-mass flow sensor to cylinder head cover	M47 / M47TU / M57 / M57TU			4.5 Nm
8AZ Pulse generator, camshaft to cylinder head cover	M57			4.5 Nm
	M47TU / M57TU			3.5 Nm
9AZ Intake neck on air-mass flow sensor	M47			9 Nm

13 64 Fuel Injectors

	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

	Type	Thread	Tightening specification	Measure
1AZ Fuel tank to body (hexagon nut)	E81, E82, E87, E88, E90, E91, E92, E93	M8	Replace self-locking nuts	19 Nm
2AZ Tension strap to body (hexagon screw)	E81, E82, E87, E88, E90, E91, E92, E93	M8		19 Nm
3AZ Hose clip to clamping ring (filler pipe)	E81, E82, E87, E88, E90, E91, E92, E93		Replace hose clip	3.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hose clamps 42 - 48 mm dia.	E81, E82, E87, E88, E90, E91, E92, E93			4 Nm
2AZ Fuel filler pipe to body	E81, E82, E87, E88, E90, E91, E92, E93	M5	Plastic nut	4 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	M6	Hexagon nut	8 Nm
3AZ Ball-taper screw connection, fuel feed line	E90 / N51, E92 / N51, E93 / N51	M14	Ensure precise alignment between ball and taper.	30 ±6 Nm

	Type	Thread	Tightening specification	Measure
1AZ Carbon canister to battery compartment	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm
2AZ Tank leak diagnosis module to carbon canister	E81, E82, E87, E88, E90, E91, E92, E93			2 Nm
3AZ Dust filter to body	E81, E82, E87, E88, E90, E91, E92, E93			4 Nm

	Type	Thread	Tightening specification	Measure
1AZ Locking ring (metal)	E81, E82, E87, E88, E90, E91, E92, E93		Tightening on marking! (See Repair Instruction)	
2AZ El. fuel pump control unit to body / holder	E81, E82, E87, E88, E90, E91, E92, E93	M6		4 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hose clamps to coolant hoses 32 ... 48 mm dia.	All			2.5 Nm
2AZ Bleed screw (WAF 8) to thermostat housing	All, without E46			8 Nm
Plastic bleed screws to coolant lines	E46			2 -0.5/+1 Nm
3AZ Level switch (WAF 30) to coolant expansion tank	All			3 Nm
4AZ Bleed screw to water valve or auxiliary water pump	E90 / E91			3.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Radiator to body				
self-tapping screw	All	B6.3		9 Nm
	All	M6		10 Nm
2AZ Drain plug to radiator	All			2.5 Nm
3AZ Temperature switch to radiator (91 °C / 99 °C) max.	All			15 Nm
4AZ Expansion tank to body	All			9 Nm
	M57TU / E65			4 Nm
5AZ Radiator on module carrier	E46			4 + 1 Nm
6AZ Retaining plate, expansion tank, to radiator	E46			4 + 1 Nm
7AZ Fan cowl on radiator	E46			4 + 1 Nm
8AZ Plug in radiator (temperature switch omitted)	E36/7 / M54	M14 x 1.5		15 Nm
9AZ Mounting plate to radiator	M57TU / E65			4.5 Nm
10AZ Radiator bracket	All			2.5 Nm

17 11 Radiator, expansion tank, lines (N52, N52K, N51, N54, N45, N46)

	Type	Thread	Tightening specification	Measure
1AZ Radiator bracket, top	N52, N52K, N51, N54, N45, N46, N53, N43			3 Nm
2AZ Radiator to cooling module	N52, N52K, N51, N54, N45, N46, N53	K60 x 20		4.5 Nm
3AZ Expansion tank to body	N52, N52K, N51, N54, N45, N46, N53, N43	M6 x 20		8 Nm

17 11 Radiator, expansion tank, lines (N52, N52K, N51, N54, N45, N46)

	Type	Thread	Tightening specification	Measure
1AZ Radiator bracket, top	N52, N52K, N51, N54, N45, N46, N53, N43			3 Nm
2AZ Radiator to cooling module	N52, N52K, N51, N54, N45, N46, N53	K60 x 20		4.5 Nm
3AZ Expansion tank to body	N52, N52K, N51, N54, N45, N46, N53, N43	M6 x 20		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Engine oil cooler to body	All			14 Nm
Oil cooler vapor extraction guide to trim panel	E36 / M3	B4.8		4 Nm

17 21 Engine Oil Cooler

	Type	Thread	Tightening specification	Measure
1AZ Transmission oil-water heat exchanger to front axle carrier	N52	M6x35		8 Nm
2AZ Engine oil cooler to holder	N52	M8 x 35		12 Nm
3AZ Engine oil cooler to holder	N52	Oval-head screw		3 Nm

17 40 Additional Fan (electric)

	Type	Thread	Tightening specification	Measure
1AZ Electric auxiliary fan on fan cowl	E46			6 Nm
2AZ Electronics for auxiliary fan on fan cowl	E46			6 Nm

17 22 Oil Cooler Pipes

	Type	Thread	Tightening specification	Measure
5AZ Cap nut on transmission oil cooler (on radiator) and on transmission	All	M18 x 1.5		20 Nm
	5HP30	M22 x 1.5		28 Nm
6AZ Oil lines on transmission				
Hollow bolt	All	M16 x 1.5		37 Nm
7AZ Oil lines on transmission oil cooler	A 5 S 300 J			28 Nm
Hollow bolt	All	M14 x 1.5		27 Nm
8AZ Screw-in fitting on transmission	All	M14x1.5 und M16x1.5		37 Nm
9AZ Oil hose on oil pipe	E23			28 Nm
10AZ Oil pipe bracket on radiator	E23			2 Nm
11AZ Oil pipe bracket on body	E23			6.5 Nm
12AZ Oil cooler on transmission	5HP30			10 Nm
13AZ Transmission oil cooler line to transmission	N42	M8		21 Nm

17 22 Oil Cooler Pipes

	Type	Thread	Tightening specification	Measure
1AZ Transmission oil cooler line to transmission	N52K	M8x28		20 Nm
2AZ Transmission oil cooler line to oil sump	N52K	M6		10 Nm
3AZ Transmission oil cooler line to transmission sump	N52K	M6x35		8 Nm
4AZ Transmission oil cooler line to transmission oil-water heat exchanger	N52K	M6x35		8 Nm
5AZ Engine oil cooler lines to oil module/engine oil cooler	N52K	M8		20 Nm

17 40 Additional Fan (electric)

	Type	Thread	Tightening specification	Measure
1AZ Electric auxiliary fan on fan cowl	E46			6 Nm
2AZ Electronics for auxiliary fan on fan cowl	E46			6 Nm

17 22 Oil Cooler Pipes

	Type	Thread	Tightening specification	Measure
1AZ Transmission oil cooler line to transmission	N52K	M8x28		20 Nm
2AZ Transmission oil cooler line to oil sump	N52K	M6		10 Nm
3AZ Transmission oil cooler line to transmission sump	N52K	M6x35		8 Nm
4AZ Transmission oil cooler line to transmission oil-water heat exchanger	N52K	M6x35		8 Nm
5AZ Engine oil cooler lines to oil module/engine oil cooler	N52K	M8		20 Nm

	Type	Thread	Tightening specification	Measure
1AZ Primary catalytic converter to turbocharger/or jacket pipe to catalytic converter	M57 / M57TU	M10		42 Nm
	M67			15 Nm
	M30 / M70		Tighten down compression spring with nut uniformly to full extent, then slacken by 1.5 turns	10 Nm
	M51		Preload compression springs with nut to 27 ± 1 mm	
	S50	M10		30 Nm
	S54 / ECE	M10		27 Nm
	S54 / US	M10		24 Nm
2AZ Exhaust pipe to flow section	E23			25 Nm
3AZ Clamp for final muffler	All	M8		15 Nm
4AZ Catalytic converter on silencer	E36 / M42 / M43 / M44		Version with compression spring: Evenly preload compression springs with nuts to 30 mm	
5AZ Connection of positive and negative leads to E catalytic converter	M73			5 Nm
6AZ Rear muffler to intermediate muffler	E53	M8		30 Nm
7AZ Vacuum tank to retaining plate	E46 / M54	M8		10 Nm
8AZ Exhaust system to exhaust manifold	M40 / M42 / M43 / M44	M10		45 Nm
9AZ Primary cat. to exhaust system	M57TU / E65			55 Nm

18 40 Exhaust manifold

	Type	Thread	Tightening specification	Measure
1AZ Exhaust manifold to cylinder head	N52/ N52K/N51/ N45/N53	M7 nut		20 Nm

	Type	Thread	Tightening specification	Measure
1AZ Exhaust system to manifold	N52 / N52K / N51	M10 nut		45 Nm
2AZ Preliminary pipe bracket to transmission	N52 / N52K / N51	M8		21 Nm
3AZ Bracket to rear differential	N52 / N46 / M47T2 / M57T2	M12 nut		30 Nm
4AZ Bracket, rear muffler, to support plate	N52 / N52K / N51	M8 nut		21 Nm
5AZ Rear muffler to body	N52 / N52K / N51/ M47T2	M8 nut		21 Nm
6AZ Exhaust system to transmission	M47T2	ASA M8 bolt		21 Nm
7AZ Exhaust system to body	N52 / N52K / N51,	M8		21 Nm
8AZ Clamp	N52 / N52K / N51			45 Nm

18 00 Rear muffler

	Type	Thread	Tightening specification	Measure
1AZ Chrome panel to rear muffler	E8x,E9x		Screw securing, Powerlok	9.5 Nm

17 22 Oil Cooler Pipes

	Type	Thread	Tightening specification	Measure
1AZ Transmission oil cooler line to transmission	N52K	M8x28		20 Nm
2AZ Transmission oil cooler line to oil sump	N52K	M6		10 Nm
3AZ Transmission oil cooler line to transmission sump	N52K	M6x35		8 Nm
4AZ Transmission oil cooler line to transmission oil-water heat exchanger	N52K	M6x35		8 Nm
5AZ Engine oil cooler lines to oil module/engine oil cooler	N52K	M8		20 Nm

18 40 Exhaust manifold

	Type	Thread	Tightening specification	Measure
1AZ Exhaust manifold to cylinder head	N52/ N52K/N51/ N45/N53	M7 nut		20 Nm

	Type	Thread	Tightening specification	Measure
1AZ Exhaust system to manifold	N52 / N52K / N51	M10 nut		45 Nm
2AZ Preliminary pipe bracket to transmission	N52 / N52K / N51	M8		21 Nm
3AZ Bracket to rear differential	N52 / N46 / M47T2 / M57T2	M12 nut		30 Nm
4AZ Bracket, rear muffler, to support plate	N52 / N52K / N51	M8 nut		21 Nm
5AZ Rear muffler to body	N52 / N52K / N51/ M47T2	M8 nut		21 Nm
6AZ Exhaust system to transmission	M47T2	ASA M8 bolt		21 Nm
7AZ Exhaust system to body	N52 / N52K / N51,	M8		21 Nm
8AZ Clamp	N52 / N52K / N51			45 Nm

18 00 Rear muffler

	Type	Thread	Tightening specification	Measure
1AZ Chrome panel to rear muffler	E8x,E9x		Screw securing, Powerlok	9.5 Nm

18 40 Exhaust manifold

	Type	Thread	Tightening specification	Measure
1AZ Exhaust manifold to cylinder head	N52/ N52K/N51/ N45/N53	M7 nut		20 Nm

	Type	Thread	Work instruction	Measure
1AZ Clutch to flywheel	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91	M8 8.8	Replace screws	25 Nm
	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91	M8 10.9	Replace screws	34 Nm
Clutch to flywheel With ZNS bolts			Replace ZNS bolts Jointing torque and angle of rotation must be observed without fail	
	S85 / S65		Jointing torque Torque angle	15 Nm 25 °
	N52, N53, N52K M47T2, N45T, N54, N46T, N43, N45K, N47, M57T2, N47S, N62TU	M8 10.9	Jointing torque Torque angle	15 Nm 90 ° ± 5 °

	Type	Thread	Tightening specification	Measure
1AZ Hydraulic line to clutch slave cylinder or throttle.	E36 / E38 / E39 / E52 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E81 / E87 / E90 / E91 / E92			14.5 Nm
	E46			20 + 5 Nm
2AZ Clutch master cylinder to bearing block	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E85 / E86 / E87 / E90 / E91 / E92 / E93			22 Nm
	E83			8 Nm
3AZ Fitting screw, clutch master cylinder	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91 / E92 / E93			22 Nm

4AZ Clutch master cylinder to pedal assembly

	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88			9 Nm
5AZ Clutch slave cylinder to clutch housing/transmission case	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88			22 Nm
	E60 / E63	7-speed SMG		25 Nm
6AZ Pressure accumulator to hydraulic unit	E36 / M3			35 Nm
7AZ Coupling bolts for hydraulic pipes	E46 / M3			14 Nm
8AZ Pressure accumulator for hydraulic unit	E46 / M3			40 Nm
9AZ Clutch position sensor to clutch slave cylinder	E46 / E60 / E61 / E63 / E64 / E85	6-speed SMG		2.5 Nm
	E60 / E61 / E63	7-speed SMG		3.5 Nm
10AZ Banjo bolt, pipe, actuator/pump block	E60 / E61 / E63	7-speed SMG		18 Nm
11AZ Filler plug, expansion tank, pump block	E60 / E61 / E63	7-speed SMG		2.1 Nm
12AZ Throttle valve to clutch slave cylinder	E60, E61			17 Nm

	Type	Thread	Tightening specification	Measure
1AZ Engine mount to front axle support	E52 / E85 / E86			42 Nm
	E65 / E66 / E67	M8-8		19 Nm
	E60 / E61 / E63 / E64 / E83	M8-8		21 Nm
	E53	M8-10.9		30 Nm
	E87 / E90 / E91 / E92 / E93 / E70 / E83 / E81 / E82 / E88	M8 10.9		28 Nm
	E70 / E83	M10		38 Nm
	E92 / S65	M10		56 Nm
2AZ Engine mount to engine support arm	E60 / E61 / E63 / E64 / E65 / E66 / E67 / E53 / E83 / E87 / E90 / E91 / E92 / E93 / E70 / E81 / E82 / E88	M10 10.9		56 Nm
	E65 / E66 / E67	M12 10.9		100 Nm
	E70 / E83	M12		68 Nm
	E85 / E86 / E52			42 Nm
	E92	M10		38 Nm

3AZ Engine support arm to engine

	E60 / E61 / E63 / E64 / E65 / E66 / E67 / E83 / E87 / E90 / E91 / E70 / E81 / E82 / E92 / E93 / E88	M10 8.8		38 Nm
	N51 / N52 / N52K / N53	M12	Aluminium screws marked blue must be replaced 1. Jointing torque 2. Angle of rotation	 34 Nm 100 °
	E60 / E61 / E65 / E66 / E67	M8 8.8		19 Nm
	E85 / E83	M8 8.8		21 Nm
	E70	M10 10.9		56 Nm
	E53 (N62/ M54)			38 Nm
	E53 (M57)			65 Nm
	N54	M12	N54 engine only	66 Nm
4AZ Engine mount to mounting bracket	E65 / E60 / E61 / E63/E64	M8 8.8		21 Nm
5AZ Mounting bracket to front axle carrier	E65 / E60 / E61 / E63 / E64	M8-8		21 Nm
6AZ Vibration damper to engine carrier	E70			19 Nm
7AZ Reinforcement plate to front axle carrier	E90 / E91 / E92	M8		19 Nm
8AZ Support angle to engine mount or front axle carrier	E90 / E91 / E92	M8		19 Nm

	Type	Thread	Tightening specification	Measure
1AZ Bolt to transmission cross-member	E60 / E65 / E66 / E67			30 Nm
2AZ Transmission support block to transmission	E60 / E61 / E65 / E66 / E67 / E85 / E86 / E63 / E64 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88	M10x35 M10x32.5	ASA screw Isa flat-head screw	38Nm 48 Nm
3AZ Transmission mount to transmission / transmission cross-member	E60 / E61 / E63 / E64 / E67 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88	M8		19 Nm
4AZ Transmission cross-member to body	E85 / E86 / E46 / E83	M8 8.8		21 Nm
	E60 / E61 / E63 / E64 / E67 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88			19 Nm
	E53	M10		41 Nm
	E70	M10		38 Nm
5AZ Transmission cross member to rubber mounts	E46 / E53 / E83	M12		73 Nm
	E70	M12		68 Nm
6AZ Vibration damper to transmission cross-member	E60, E61	M10		38 Nm

	Type	Thread	Tightening specification	Measure
1AZ Bolt to transmission cross-member	E60 / E65 / E66 / E67			30 Nm
2AZ Transmission support block to transmission	E60 / E61 / E65 / E66 / E67 / E85 / E86 / E63 / E64 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88	M10x35 M10x32.5	ASA screw Isa flat-head screw	38Nm 48 Nm
3AZ Transmission mount to transmission / transmission cross-member	E60 / E61 / E63 / E64 / E67 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88	M8		19 Nm
4AZ Transmission cross-member to body	E85 / E86 / E46 / E83	M8 8.8		21 Nm
	E60 / E61 / E63 / E64 / E67 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88			19 Nm
	E53	M10		41 Nm
	E70	M10		38 Nm
5AZ Transmission cross member to rubber mounts	E46 / E53 / E83	M12		73 Nm
	E70	M12		68 Nm
6AZ Vibration damper to transmission cross-member	E60, E61	M10		38 Nm

23 14 Electrical fittings

	Type	Thread	Tightening specification	Measure
1AZ Reversing light switch	G / H / I / transmission	M12		16 Nm
2AZ Zero gear sensor to transmission	G / H / I /transmission			5 Nm

	Type	Thread	Tightening specification	Measure
2AZ Transmission to clutch housing	B / C / D / E / F / G / H / I / J-transmission	M12		76 Nm
3AZ Reinforcement plate to transmission	B / C / D / E / F / G / H / I / J-transmission	M8		23 Nm
4AZ Oil drain plug / filler plug	B / C-transmission			50 Nm
	D / E-transmission			52 Nm
	G / H-transmission	M18x1.5 hexagon socket		35 Nm
	H / I-transmission	M12x1.5		25 Nm
	J-transmission			40 Nm
5AZ Transmission extension	g / H transmission	M10		46 Nm

	Type	Thread	Tightening specification	Measure
1AZ Transmission to engine Transmission designations, see 23...				
Hex screws	B / C / D / E / F / G / H / I / J-transmission	M6		9 Nm
	B / C / D / E / F / G / H / I / J-transmission	M8		25 Nm
	B / C / D / E / F / G / H / I / J-transmission	M10		49 Nm
	B / C / D / E / F / G / H / I / J-transmission	M12		74 Nm
Torx bolt	B / C / D / E / F / G / H / I / J-transmission	M6		9 Nm
	B / C / D / E / F / J-transmission	M8		22 Nm
	B / C / D / E / H / I / J transmission	M10		43 Nm
	G transmission	M10		38 Nm
	J-transmission	M10x55 8.8		43 Nm
	J-transmission	M10x42 8.8		42 Nm
Steel screws with Torx head	I / G / H-transmission	M8		19 Nm
Steel screws with Torx head	I / G / H-transmission	M12		66 Nm
2AZ Transmission to N52/N52K/N53/N54 aluminium screws marked blue	I / G / H-transmission			

			Replace screws Jointing torque and angle of rotation must be observed without fail	
	I / G / H-transmission	M10x30	Jointing torque Torque angle	20 Nm 90-110 °
	I / G / H-transmission	M10x85	Jointing torque Torque angle	20 Nm 180-200 °
	I / H / G-transmission	M12	Jointing torque Torque angle	25 Nm 130 °
3AZ Cover plate, transmission	I / H-transmission	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Transmission housing, rear section/front section	B / C / D / E / F / G / H / I / J-transmission			22 Nm
2AZ Cover with guide tube/transmission case	B / C / D / E / F / G / H / I / J-transmission	M8 x 22		18 Nm
	B / C / D / E / F / G / H / I / J-transmission	M8 x 30		25 Nm
	B / C / D / E / F / G / H / I / J-transmission	M6		10 Nm
3AZ Bearing cap/sealing flange	B / C / D / E / F / G / H / I / J-transmission			10.5 Nm
4AZ Reverse gear wheel axle to intermediate housing	B / C / D / E / F / G / H / I / J-transmission			49 Nm
5AZ Retaining plate for reverse gear wheel axle to intermediate housing	B / C / D / E / F / G / H / I / J-transmission			25 Nm
6AZ Transmission closing plate	B / C / D / E / F / G / H / I / J-transmission	M6		8 Nm

	Type	Thread	Tightening specification	Measure
16AZ Holder to transfer case	265 / Sport	M6		9 Nm
17AZ Retaining plates for bearings on housing	S5D 310Z / S5D 320Z / S5D 200G / S5D 250G	M6		10 Nm
18AZ Retaining plate to housing	S5D 320Z SMG	M6		5.5 Nm

23 14 Electrical fittings

	Type	Thread	Tightening specification	Measure
1AZ Reversing light switch	G / H / I / transmission	M12		16 Nm
2AZ Zero gear sensor to transmission	G / H / I /transmission			5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Output flange	S5D 200G / S5D 250G / S5D260Z / S5D 310Z / S6S 420G		Collar nut installed with bolt cement Pretension Release Tighten down	 190 Nm 120 Nm
	S5D 280Z / S5D 320Z		Collar nut installed with bolt cement Pretension Release Tighten down	 170 Nm 130 Nm
	S5D 390Z		Collar nut installed with bolt cement Pretension Release Tighten down	 200 Nm 145 Nm
	GS6-37BZ / GS6-17BG		Collar nut installed with bolt cement Pretension Release Tighten down	 170 Nm 120 Nm
	GS6-53DZ		Collar nut installed with bolt cement Pretension Release Tighten down	 200 Nm 140 Nm
	GS7S47BG		Collar nut installed with bolt cement	200 Nm

2AZ Gear to countershaft	265 / Sport	M10		60 Nm

23 31 Interior Shift Components

	Type	Thread	Tightening specification	Measure
1AZ Shift arms to transmission case	S5D 310Z			45 Nm
2AZ Sealing cap for locking sleeves of gearshift rods	S6S 420G	M6		10 Nm
3AZ Retaining screw, shift actuator / selector shaft	S5D 320Z / S6S37BZ / S6S53BZ SMG	M6		10 Nm

	Type	Thread	Tightening specification	Measure
1AZ Servomotor / actuator to transmission housing Insert screws with screw securing adhesive	S6S 420G / GS6S37BZ / GS7S47BG / GS6S53BZ SMG transmission	M6		10 Nm
2AZ Switch for gear recognition to servomotor	S6S 420G SMG transmission	M5		6 Nm
3AZ Hydraulic lines to servomotor	S6S 420G SMG transmission	M12x1		17 Nm
4AZ Actuator to transmission casing	S6S 420G SMG transmission	M8		25 Nm
5AZ Reversing light switch	B / C / D / E / F / G / H / I / J-transmission	M12		16 Nm
6AZ Pressure accumulator to valve block	GS5S31BZ / GS6S53BZ / GS6S37BZ SMG transmission			30 Nm
7AZ Protective plate Expansion tank Shift actuator Hydraulic pump Valve block to transmission housing Ground strap to transmission housing	GS5S31BZ / GS6S53BZ / GS6S37BZ SMG transmission	M6		10 Nm
8AZ Protecting plate / valve block to transmission housing /	GS5S31BZ / GS6S53BZ / GS6S37BZ SMG transmission	M8		20 Nm

9AZ Valves to valve block	GS5S31BZ / GS6S53BZ / GS6S37BZ SMG transmission	M4		3.5 Nm
10AZ Pressure sensor to valve block	GS5S31BZ / GS6S53BZ / GS6S37BZ SMG transmission			15 Nm
11AZ Shift/selector sensor to transmission housing	GS5S31BZ / GS6S53BZ / GS6S37BZ SMG transmission	M4		2.8 Nm
12AZ Retaining screw for hydraulic line	GS5S31BZ / GS6S53BZ / GS6S37BZ SMG transmission			18 Nm
13AZ Banjo bolt for hydraulic line	GS5S31BZ SMG transmission			16 Nm
14AZ Heat shield to expansion tank/ pump bracket	GS6S37BZ SMG transmission			6 Nm
15AZ Clutch speed sensor	GS6S53BZ / GS6S37BZ SMG transmission			35 Nm
16AZ Transmission oil cooler to transmission	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission	M6x35		10 Nm
17AZ Transmission oil screen in transmission oil cooler	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission	M18		25 Nm
18AZ Banjo bolt to transmission oil cooler				

	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission	M16x1.5		40 Nm
19AZ Union nut to screwed socket	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			40 Nm
20AZ Oil cooler connection to transmission oil cooler	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			40 Nm
21AZ Oil pump to transmission oil cooler	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission	M6x20		10 Nm
22AZ Speed sensor to transmission	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission	M6x16		10 Nm
23AZ Temperature and pressure sensor to hydraulic unit	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			15 Nm
24AZ Clamp, pressure accumulator to transmission	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			22 Nm
25AZ Pressure accumulator to pump block	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			29 Nm
26AZ Pump block to transmission	E60 / E63 / E64 / E61 / GS7S47BG SMG			22 Nm

27AZ Banjo bolts, pressure lines clutch actuator and pump block	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			25 Nm
28AZ Screws, actuator block	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			25 Nm
29AZ Union nut, hydraulic line, actuator block	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			11 Nm
30AZ Pump to electric motor	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			5 Nm
31AZ Electric motor to pump block	E60 / E63 / E64 / E61 / GS7S47BG SMG transmission			5 Nm

23 71 Transmission mounts

	Type	Thread	Tightening specification	Measure
1AZ Transmission mounts (rubber) to body	B / C / D / E / F / G / H / I / J-transmission	M10		42 Nm
	B / C / D / E / F / G / H / I / J-transmission	M12		73 Nm
2AZ Transmission cross-member to body	B / C / D / E / F / G / H / I / J-transmission	M10		42 Nm
	B / C / D / E / F / G / H / I / J-transmission	M8		19 Nm
	B / C / D / E / F / G / H / I / J-transmission	M8	E83, E85, E86, E46 only	21 Nm
3AZ Mount bracket to transmission	B / C / D / E / F / G / H / I / J-transmission	M8		19 Nm
4AZ Transmission support block to transmission	B / C / D / E / F / G / H / I / J-transmission	M10 ASA screw		38 Nm
	B / C / D / E / F / G / H / I / J-transmission	M10 ISA pan head		48 Nm
5AZ Transmission mount to transmission support bracket/transmission cross-member	B / C / D / E / F / G / H / I / J-transmission	M8		19 Nm

	Type	Thread	Tightening specification	Measure
1AZ Transmission to engine				
Hex screws	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R/A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M8		24 Nm
Hex screws	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R/A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M10		45 Nm

Hex screws

	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R/A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M12		82 Nm
Torx bolts	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R/A5S 390R	M8		21 Nm
Torx bolts	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R/A5S 390R	M10		42 Nm
Torx bolts	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R/A5S 390R	M12		72 Nm
Torx bolts	GA6HP19Z / GA6HP26Z	M6		9 Nm

Steel Torx screws	GA6HP19Z / GA6L26Z / GA6L45R	M8		19 Nm
Steel Torx screws	GA6HP19Z / GA6HP26Z / GA6L45R	M12		66 Nm
2AZ Transmission to engine N51/N52/N54/N53/N52K Aluminium screws are marked blue	GA6HP19Z / GA6HP26Z / GA6L45R		Replace screws Jointing torque and angle of rotation must be observed without fail	
	GA6HP19Z / GA6L45R	M10x30	Jointing torque Torque angle	20 Nm 90-110 °
	GA6HP19Z	M10x85	Jointing torque Torque angle	20 Nm 180-200 °
	GA6HP19Z / GA6L45R	M12	Jointing torque Torque angle	25 Nm 130 °
3AZ Reinforcement shell to transmission/extension	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R/A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M8		23 Nm
4AZ Cover plate for transmission	GA6HP19Z / GA6L45R	M6		9 Nm
5AZ Heat shield, oil sump	GA6L45R	M6		8 Nm

	Type	Thread	Tightening specification	Measure
8AZ Oil filler pipe	3HP-22			105 Nm
	4HP-22 / 4HP-24 / A5S 310Z			98 Nm
9AZ Plug	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M18		43 Nm
10AZ Oil duct screw plugs	A5S 300J			8 Nm
	A5S 310Z / A5S 560Z			15 Nm
11AZ Damper cover on transmission case	A5S 300J	M6		10 Nm
12AZ Radial shaft seal to converter housing	A4S 270R / A4S 310R / A5S 360R / A4S 360R	M4		3 Nm
13AZ Intermediate plate on intermediate housing	A4S 270R / A4S 310R	5/16 inch		25 Nm

24 11 Transmission housing, transmission oil sump

	Type	Thread	Tightening specification	Measure
1AZ Transmission extension	A4s 200R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M8		25 Nm
	A4S 270R / A4S 310R	5/16 inch		32 Nm
	A5S 360R / A4S 360R	M8		22 Nm
2AZ Guard	A4s 200R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M6		9 Nm
3AZ Converter housing	A4s 200R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M8		25 Nm
	4HP-22 / 4HP-24	M10		46 Nm

	A4S 270R / A4S 310R	1/2"		42 Nm
4AZ Screw plug to intermediate plate	A4s 200R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M10		16 Nm
	4HP-22 / 4HP-24	M14		40 Nm
	4HP-22 / 4HP-24	M20		50 Nm
	A5S 440Z	M12		23 Nm

	Type	Thread	Tightening specification	Measure
5AZ Transmission oil sump	4HP-22 / 4HP-24 / A5S 310Z / A5S 325Z	M6		6 Nm
	A5S 560Z / A5S 440Z	M6		10 Nm
	A4S 270R / A4S 310R	M6		12 Nm
	A5S 360R / A4S 360R	M6		10 Nm
	A5S 300J			9 Nm
	GA6HP26Z / GA6HP19Z / GA6L45R / GA6HP32Z	M6		10 Nm
6AZ Oil drain plug	A4S 200R / A5S 310Z /	M10		16 Nm
	A5S 325Z			35 Nm
	A5S 440Z	M16x1.5		30 Nm
	A5S 560Z			50 Nm
	A5S 360R / A5S 390R	M14		18 Nm
	A4S 270R / A4S 310R			25 Nm
	A5S 300J			35 Nm
	GA6L45R	M12x1.75		14 Nm
	GA6HP19Z / GA6HP26Z / GA6HP32Z	M10x1	Metal oil sump	12 Nm
	GA6HP19Z / GA6HP26Z / GA6HP32Z	M16x1.5 M24x1	Plastic oil sump	8 Nm
7AZ Oil filler plug	A5S 325Z			30 Nm

	A5S 310Z / A5S 560Z			100 Nm
	A5S 440Z	M18x1.5		35 Nm
	A4S 270R / A4S 310R			33 Nm
	A5S 360R / A4S 360R	M14		18 Nm
	A5S 300J			40 Nm
	GA6HP26Z / GA6HP32Z	M30x1.5		80 Nm
	GA6HP19Z / GA6HP26Z / GA6HP32Z	M18x1.5		35 Nm
	GA6L45R	M18x1.5		19 Nm

	Type	Thread	Tightening specification	Measure
1AZ Slotted nut/output flange	A5S 310Z / A5S 440Z / A5S 560Z / A5S 325Z			120 Nm
2AZ Double hexagon nut/output flange	GA6HP26Z / GA6HP19Z			80 Nm
3AZ Output shaft nut to output flange	GA6L45R	22x1.5		55 Nm

	Type	Thread	Tightening specification	Measure
1AZ Position switch on transmission	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M6		10 Nm

	Type	Thread	Tightening specification	Measure
1AZ Flange nut, output flange	A5S 300J			225 Nm
Flange nut, output flange without spring washer	A5S 360R			30 Nm
Flange nut, output flange, with spring washer	A5S 360R / A5S 390R / A4S 200R			60 Nm
	A4S 270R / A4S 310R			100 Nm

	Type	thread	tightening specification	Measure
1AZ Brake coupling D/G on gear box housing	A5S 310Z / A5S 560Z	M10	Insert all screws until contact is made with screw head in each case	
			center bolt	30 Nm
			both outer screws	15 Nm
			center bolt	63 Nm
			both outer screws	30 Nm
			both outer screws	63 Nm

	Type	thread	tightening specification	Measure
1AZ Torx screws for F clutch on transmission case	4HP-22 / 4HP-24	M6		10 Nm
	/ A5S 560Z	M8		23 Nm
2AZ Brake band adjusting screw	A 4 S 270 R / A 4 S 310 R	5/16"		5 Nm
3AZ Lock nut of brake band adjusting screw	A 4 S 270 R / A 4 S 310 R	5/16"		21 Nm

	Type	Thread	Tightening specification	Measure
1AZ Valve body to transmission	3HP-22	M6		11 Nm
	4HP-22 / 4HP-24 / A5S 310Z / A5S 440Z / A5S 300J / A5S 325Z / GA6HP19Z / GA6HP26Z / GA6HP32Z	M6		8 Nm
	A4S 270R / A4S 310R	5/16 inch		20 Nm
	A5S 360R / A4S 360R	M6		11 Nm
	A5S 560Z	M6 x 12		6 Nm
	A5S 560Z	M6 x 55		8 Nm
	GA6L45R	M5 Torx		8 Nm
2AZ Valve housing to valve body	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 310Z / A5S 440Z / A5S 560Z / A5S 360R / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M6		5 Nm
3AZ Adapter plate on shift unit	A4S 270R / A4S 310R			13 Nm
4AZ Input and output speed sensors to mechatronics		M6		12 Nm

	Type	Thread	Tightening specification	Measure
1AZ Governor flange to transmission	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M8		16 Nm
2AZ Threaded pin to centrifugal governor	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M6		3 Nm
3AZ Hexagon nut to threaded pin	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z			10 Nm

4AZ Hexagon head screw on centrifugal governor	A4S 200R / A4S 270R / A4S 310R / A5S 300J / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R / A5S 390R / GA6HP19Z / GA6HP26Z / GA6HP32Z	M6		11 Nm
5AZ Governor housing to hub	4HP-22H	M6		11 Nm

	Type	thread	tightening specification	Measure
7AZ Pulse generator, output speed	A5S 325Z			6 Nm
8AZ Pulse generator, turbine speed	A5S 325Z			8 Nm
9AZ Plug	A5S 325Z			20 Nm

	Type	Thread	Tightening specification	Measure
1AZ Pressure regulator to valve housing	4HP-22EH / 4HP-24EH / A5S 310Z	M6		5 Nm
	A4S 270R / A4S 310R			10 Nm
2AZ Solenoid valve to valve housing	4HP-22EH / 4HP-24EH / A5S 310Z	M6		5 Nm
	A4S 270R / A4S 310R			10 Nm
	A5S 560Z			6 Nm
	A5S 300J	M5		3 Nm
	A5S 300J	M6		8 Nm
3AZ Guide Plate / Parking Lock Mechanism	A5S 310Z			10 Nm
	A5S 325Z			10 Nm
	A5S 560Z			23 Nm
	A5S 360R / A4S 360R	M6		21 Nm
	A5S 440Z	M6		10 Nm
4AZ Pulse sender	A5S 310Z / A5S 440Z	M5		5 Nm
	A5S 560Z	M5		6 Nm
		M8		23 Nm
	A5S 360R / A4S 360R	M6		11 Nm
	A5S 300J	M5		6 Nm
5AZ Cover for servo piston on shift unit	A4S 270R / A4S 310R	5/16 inch		25 Nm
6AZ Retaining plate for solenoid valves and pressure regulator on shift unit	A5S 440Z	M5		5 Nm

	A5S 325Z			6 Nm
7AZ Retaining plate for solenoid valves and EDS valves to hydraulic unit	GA6HP19Z / GA6HP26Z			5 Nm
8AZ Electronic module to hydraulic unit	GA6HP19Z / GA6HP26Z			8 Nm

	Type	thread	tightening specification	Measure
1AZ Transmission socket to case	4HP-22 EH / 4 HP-24EH / A5S 310Z	M26		12 Nm
	A4S 270R / A4S 310R	M26		14 Nm

	Type	Thread	Tightening specification	Measure
1AZ Torque converter to flywheel		M8		26 Nm
	A4S 270R / A4S 310R / A5S 310Z / A5S 300J / A5S 440Z / A5S 560Z / A5S 325Z / A4S 200R / GA6HP26Z / GA6HP19Z	M10 8.8		45 Nm
	A5S360/390R	M10		45 Nm
	A5S360/390R / GA6HP19Z / GA6HP26Z / GA6HP32Z / GA6L45R	M10 10.9		56 Nm

24 51 External shift linkage

	Type	Thread	Tightening specification	Measure
1AZ Selector lever on transmission	A4S 200R / A4S 270R / A4S 310R / A5S 310Z / A5S 325Z / A5S 440Z / A5S 560Z / A5S 360R / A5S 390R / GA6HP19Z / GA6HP26Z / GA6 HP32Z / GA6L45R	M8x1		10 Nm
	A5S 300J	M8		15 Nm

24 52 Interior Shift Elements

	Type	Thread	Tightening specification	Measure
1AZ Shift segment to shaft	A4S 270R / A4S 310R			22 Nm
	A5S 300J	M14x1.5		35 Nm
2AZ Detent spring on shift unit	A4S 270R / A4S 310R	5/16"		25 Nm

24 71 Transmission mounts

	Type	Thread	Tightening specification	Measure
1AZ Cross member to body	E36 / E38 / E39 / E46 / E53 / E85 / E86 / E83			21 Nm
	E60 / E61 / E63 / E64 / E66 / E67 / E68 / E65 / E83 / E81 / E87 / E93 / E92 / E91 / E90 / E88 / E82	M8		19 Nm
2AZ Rubber mounts to cross member or transmission	E36 / E38 / E39 / E46 / E53			21 Nm
	E81 / E60 / E61 / E63 / E64 / E65 / E66 / E87 / E93 / E92 / E91 / E90 / E87 / E86 / E85 / E68 / E67 / E88 / E82			19 Nm
	E83			73 Nm
3AZ Support tube to engine subframe	E36			42 Nm
4AZ Rubber mounts to carrier pipe	E36			21 Nm
5AZ Carrier plate	E36			21 Nm
6AZ Transmission support block to transmission				

	E60 / E61 / E63 / E64 / E87 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88		ASA screw	38 Nm
	E60 / E61 / E63 / E64 / E87 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88	M10	M10 ISA pan-head screw	48 Nm
7AZ Transmission mount to transmission support bracket/transmission cross-member	E60 / E61 / E63 / E64 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88			19 Nm

	Type	Thread	Tightening specification	Measure
1AZ Bowden cable on shift tower/transmission	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E67 / E68 / E83 / E85 / E86 / E87 / E90 / E91 / E92 / E81 / E82 / E88			15 Nm
2AZ Clamping screw on shift lever	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E67 / E68 / E83 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88			10 Nm
3AZ Shift console to tunnel	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E67 / E68 / E83 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88			7 Nm

4AZ Switch to shift console

	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E67 / E68 / E83 / E85 / E86 / E87 / E90 / E91 / E92			4.5 Nm
5AZ Interlock cable to shift tower	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E67 / E68 / E83 / E85 / E86			7 Nm
6AZ Cable retaining tab to transmission	E91 / E92 AWD	M8x18		19 Nm
7AZ Oval-head screw for emergency release device	E60, E61			1.6 Nm
8AZ Screw for adjusting cable on transmission	E90 / E91 / E60 / E61 / E92 / E93 / E81 / E87 / E83 / E82 / E88		With ball head	13 Nm
9AZ Vulcanized support angle to transmission	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	M6		9 Nm

	Type	Thread	Tightening specification	Measure
1AZ Front console to shift console	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91 / E92, with sheet metal console			25 Nm
2AZ Shift console to transmission	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91 / E92, with sheet metal console			23 Nm
3AZ Rear shift console to body	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91 / E92			11 Nm
4AZ Aluminium shift arm console to transmission	E30 / M3			21.5 Nm
5AZ Aluminium shift arm to console	E30 / M3			11 Nm

6AZ Shift arm console to body

	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E83 / E85 / E86 / E87 / E90 / E91 / E92			21 Nm
	E31			9 Nm
7AZ Adjustable shift rod (clamping sleeve)	E31			23 Nm
8AZ Support bearing to transmission tunnel	E53			21.5 Nm
10AZ Hose clamp, vibration damper	E60 / E61			6 Nm

	Type	Thread	Tightening specification	Measure
1AZ Flexible disk to propeller shaft and transmission output flange Steel propeller shaft	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85 / E87 / E90 / E91	M10 8.8		48 Nm
	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85 / E87 / E90 / E91	M10 10.9		64 Nm
	E31 / E38 / E39 / E46	M14		140 Nm
	E32 / E34 / E36 / E38 / E39	M12 8.8		81 Nm
	E60 / E61 / E63 / E64	M12 8.8		90 Nm
	E32 / E34 / E36 / E38 / E39 / E46 / E53 / E85	M12 10.9		100 Nm
	E60 / E61 / E63 / E64	M12 10.9	Jointing torque Torque angle	55 Nm 90 °
	E39 (M5) / E36 (M3) / E46 (M3),	M12 10.9		115 Nm
	E65	M12 10.9		90 Nm

Flexible disk to transmission output flange	E46 / E39 / E60 / M57 only		Screw with rolled-on shim only Jointing torque Torque angle	 50 Nm 90 °
Flexible disk to transmission output flange	E65 / E66 / All except N73, M67		Screw with rolled-on shim only Jointing torque Torque angle	 50 Nm 90 °
	E60 / E61 / E63 / E64 / E65 / E66 / E67	M12 10.9	Double-stage flexible disc Jointing torque Torque angle	 50 Nm 90 °
Flexible disk on propeller shaft	E83	M12 10.9	Tighten via nut	100 Nm
Flexible disk to transmission output flange	E83	M12 10.9		90 Nm
Aluminium propeller shaft: Flexible disk to transmission output flange	E39 / E60	M12 10.9		100 Nm
Aluminium propeller shaft: Flexible disk on propeller shaft	E39 / E60	M12 10.9		90 Nm
	E60 / E61 / E63 / E64	M10 10.9		64 Nm
	E60	M12 8.8		90 Nm
	E63 (N52)	M12		110 Nm
Flexible disk to transmission output flange ZNS screws and nuts Shiny zinc coating All versions			Replace bolts and nuts Jointing torque and angle of rotation must be observed without fail	

	E60 / E61 / E63 / E64 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E83 / E88	M10 - 10.9	Jointing torque Torque angle	20 Nm 90 °
	E46 / E53 / E60 / E61 / E63 / E64 / E65 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E70 / E81 / E82 / E83 / E88	M12-10.9	Jointing torque Torque angle	55 Nm 90 °
	E60 / E61 / E63 / E64 / E65	M12-8.8	Jointing torque Torque angle	30 Nm 90 °
	E83	M12-10.9	Jointing torque Torque angle Screw with ribbed teeth + double stage flexible disc	30 Nm 90 °
2AZ Coupling propeller shaft to transmission	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85 / E87 / E90 / E91	M10		60 Nm
	E32 / E31	M12		95 Nm

3AZ Clamping ring for slide after installation in the car

	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85 / E87 / E90 / E91			10 Nm
	E30 / Four Wheel Drive			22 Nm

	Type	Thread	Tightening specification	Measure
4AZ Propeller shaft to drive flange (rear differential)				
Version, universal joint: >Compression nut	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85	M10	Only finned nuts to higher tightening torque	64 Nm
Version, universal joint: >Torx bolt	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85	M10		85 Nm
Version, constant-velocity joint: >Torx bolt	E46 (M3) / E38/ E39/ E46 / E60 / E83 (M57TU) E63 (N52)	M10		70 Nm
Version, constant-velocity joint: >Compression nut	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85	M8		32 Nm
Compression nut	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85	M10		64 Nm

Finned nut

	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85	M8		43 Nm
Finned nut	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85	M10		70 Nm
ZNS screws and nuts, shiny zinc coating All versions with universal or constant-velocity joint			Replace bolts and nuts Jointing torque and angle of rotation must be observed without fail	
	E83 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E81 / E82 / E88	M10-10.9 screw with ribbed teeth	Jointing torque Torque angle	40 Nm 45 °
	E92 M3	M10 screw with ribbed teeth	Jointing torque Torque angle	20 Nm 90 °
	E46 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85 / E86 / E81 / E82 / E87 / E90 / E91 / E92 / E93 / E88	M10 - 10.9	Jointing torque Torque angle	20 Nm 90 °

	E90 / E91 / E92 / E93 / E81 / E87 / E82 / E83 / E88	M12x55-10.9	Jointing torque Torque angle	55 Nm 90 °
Screw with ribbed teeth	E85 / M, E86 / M	M10x46-10.9	Replace screws and shims	70 Nm
5AZ Pivot to centre propeller shaft journal with Loctite (Version without slide)	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85 / E86 / E87 / E90 / E91 / E92			97 Nm
6AZ Centre mount to body	E36 / E38 / E39 / E46 / E52 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E83 / E85 / E86 / E87 / E90 / E91 / E92 / E93 / E70 / E81 / E82 / E88			21 Nm
7AZ Flexible disk to front axle differential	E53	M10 - 10.9		60 Nm
8AZ Flexible disk on propeller shaft	E53	M10 - 10.9		64 Nm
9AZ Front propeller shaft to transfer box/front differential ZNS screws and nuts, shiny zinc coating			Replace bolts and nuts Jointing torque and angle of rotation must be observed without fail	
	E60 / E61 / E90 / E91 / E92	M8	Jointing torque Torque angle	20 Nm 45 °
	E46	M10 - 10.9	Jointing torque Torque angle	20 Nm 45 °

	E53 / E70	M10 - 12.9	Jointing torque Torque angle	10 Nm 90 °
	E46	M10x1.5 10.9	Jointing torque Torque angle	5 Nm 90 °
Universal joint	E70 / E83	M10 - 10.9	Jointing torque Torque angle	40 Nm 45 °

	Type	Thread	Tightening specification	Measure
1AZ Front axle carrier to engine carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12		108 Nm
	E92 / S65	M10 x 42	Jointing torque Torque angle	56 Nm 90 °
2AZ Reinforcement strut to front axle carrier / body	E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M10	Replace screws & insertion nuts Jointing torque Torque angle	 56 Nm 90 °
3AZ Reinforcement plate to front axle carrier	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive, E92 / S65	M10	Replace screws Jointing torque Torque angle	 56 Nm 90 °
4AZ Support angle for engine mount to front axle carrier	M57T2	M8		19 Nm
5AZ Reinforcement plate for engine mount to front axle carrier	M57T2	M8		19 Nm
6AZ Heat shield to front axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M6		4.5 Nm
	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	self-tapping screw		4 Nm

	Type	Thread	Tightening specification	Measure
1AZ Tension strut to front axle support	E81, E82, E87, E88, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M12 8.8	Replace locking nut tighten in normal position Jointing torque Torque angle	 68 Nm 90 °
	E81, E82, E87, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M12 10.9	Replace nut tighten in normal position Jointing torque Torque angle	 100 Nm 90 °
2AZ Tension strut to swivel bearing	E81, E82, E87, E88, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M14	Replace nut	165 Nm
3AZ Control arm to front axle support	E81, E82, E87, E88, E90, E91, E92, E93	M12 8.8	Replace nut tighten in normal position Jointing torque Torque angle	 68 Nm 90 °
	E81, E82, E87, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M12 10.9	Replace nut tighten in normal position	

			Jointing torque Torque angle	100 Nm 90 °
4AZ Control arm to swivel bearing	E81, E82, E87, E88, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M14	Replace nut	165 Nm
	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M14	Replace nut	80 Nm
5AZ Compression strut to front axle carrier	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M12	Replace nut tighten in normal position Jointing torque Torque angle	 68 Nm 90 °
6AZ Compression strut to guide joint	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M14	Replace nut	80 Nm
7AZ Guide joint to swivel bearing	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M10	Recut thread Replace screws	60 Nm

	Type	Thread	Tightening specification	Measure
1AZ Wheel bearing to swivel bearing	E81, E82, E87, E88, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M12	Replace screws	110 Nm
2AZ Drive flange to axle shaft	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M27	Replacing collar nut, lightly oil contact face	420 Nm

	Type	Thread	Tightening specification	Measure
1AZ Support bearing / adapter (for rough road package) to body / adapter	E81, E82, E87, E88, E90, E91, E92, E93	M8	Replace nuts	34 Nm
2AZ Spring strut shock absorber to support bearing	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace nut	64 Nm
3AZ Swivel bearing to spring strut shock absorber	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace nut	81 Nm
	E92 / S65	M10	Replace nut	45 Nm

	Type	Thread	Tightening specification	Measure
1AZ Retaining bar for stabilizer to front axle carrier	E81, E82, E87, E88, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M8	Replace nuts	21 Nm
	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M10	Replace nuts	60 Nm
2AZ Stabilizer link to stabilizer / spring strut shock absorber	E81, E82, E87, E88, E90, E91, E92, E93	M10	Replace nut	58 Nm

	Type	Thread	Tightening specification	Measure
1AZ Steering gear to front axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M10	Replace screws & nuts Jointing torque Torque angle	 56 Nm 90 ◦
2AZ Heat shield to steering gear	E81, E82, E87, E88, E90, E91, E92, E93	M6		7.6 Nm
3AZ Water drain valve to electric steering gear (EPS)	E81, E82, E87, E88, E90, E91, E92, E93		Replace O-ring	20 Nm
4AZ EH converter to power steering gear	E92 / S65			3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Steering gear to front axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M10	Replace screws & nuts Jointing torque Torque angle	 56 Nm 90 ◦
2AZ Heat shield to steering gear	E81, E82, E87, E88, E90, E91, E92, E93	M6		7.6 Nm
3AZ Water drain valve to electric steering gear (EPS)	E81, E82, E87, E88, E90, E91, E92, E93		Replace O-ring	20 Nm
4AZ EH converter to power steering gear	E92 / S65			3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Tie rod to rack	E81 / ZF, E82 / ZF, E87 / ZF, E88 / ZF, E90 / ZF, E91 / ZF, E92 / ZF, E93 / ZF			110+10 Nm
	E81 / TRW, E82 / TRW, E87 / TRW, E88 / TRW, E90 / TRW, E91 / TRW, E92 / TRW, E93 / TRW			100+10 Nm
2AZ Tie rod to tie rod end	E81, E82, E87, E88, E90, E91, E92, E93	M10	Replace screw	40 Nm
3AZ Tie rod end to swivel bearing	E81, E82, E87, E88, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M14	Replace nut	165 Nm
	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M14	Replace nut	80 Nm
4AZ Heat shield for gaiter to front axle carrier	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Lower section of steering spindle to steering gear / steering column	E81, E82, E87, E88, E90 / REAR END, E91 / REAR END, E92 / REAR END, E93	M8	Recut thread Replace clamping screw No subsequent buckling permitted!	21 Nm
2AZ Steering column to support tube	E81, E82, E87, E88, E90, E91, E92, E93	M8		21 Nm
3AZ Double joint to power steering gear	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M8	Recut thread Replace clamping screw No subsequent buckling permitted!	21 Nm
4AZ Steering spindle lower section to double joint / steering column	E90 / Four Wheel Drive, E91 / Four Wheel Drive, E92 / Four Wheel Drive	M8	Recut thread Replace clamping screw No subsequent buckling permitted!	21 Nm
5AZ Universal joint to steering spindle lower section / steering column	E92 / S65	M8	Recut thread Replace clamping screw No subsequent buckling permitted!	21 Nm

	Type	Thread	Tightening specification	Measure
1AZ Steering wheel to steering column	E81, E82, E87, E88, E90, E91, E92, E93	M14		62.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Oil reservoir to holder	E81, E82, E87, E88, E90, E91, E92, E93	M6		4 Nm
2AZ Multipurpose holder to body / holder for oil reservoir	E81, E82, E87, E88, E90, E91, E92, E93	M6		5 Nm
3AZ Belt pulley to power steering pump	E81, E82, E87, E88, E90, E91, E92, E93	M8	Replace screws or stick on again.	19 Nm
	N54	M8	Replace screws or stick on again.	21 Nm
4AZ Power steering pump to water pump	N43 / N45 / N46 / N45T / N46T	M8		32 Nm
5AZ Power steering pump to holder	M47T2 / M57T2 / N43	M8		19 Nm
6AZ Bracket of power steering pump to crankcase / oil sump	M47T2 / M57T2 / N47 / N47S	M8		19 Nm
	M57T2 / 335D	M6		8 Nm
	N51 / N52 / N52K / N53	M8	Replace aluminium screws. Use only Helicoil made of aluminium for thread repairs. Jointing torque and angle of rotation must be observed without fail. Jointing torque Torque angle	 20 Nm 90 °
	N54	M10	Follow repair instruction.	38 Nm
7AZ Power steering pump to crankcase				

	N43 / N45 / N46 / N45T / N46T	M8		19 Nm
8AZ Pressure line to power steering pump	E81, E82, E87, E88, E90, E91, E92, E93	M16		35 Nm
9AZ Pressure line to power steering gear	E81, E82, E87, E88, E90 / Except S65, E91, E92 / Except S65, E93 / Except S65	M14 non-return valve		30 Nm
	S65	M14 non-return valve		33 Nm
10AZ Return line to power steering gear	E81, E82, E87, E88, E90, E91, E92, E93	M16		35 Nm
11AZ Mounting, hydraulic line	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm
12AZ Vane pump to A/C compressor mounting bracket	S65	M8		19 Nm

	Type	Thread	Tightening specification	Measure
1AZ Retaining plate, active front steering control unit to body	E81, E82, E87, E88, E90, E91, E92, E93	M6		7.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Case Covers Transmission allocation	E81, E82, E87, E88, E90, E91, E92, E93	M10 10.9	168L 188L 188LW	55 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	M10 10.9	215L 215LW	90 Nm
	E92	M10 10.9	215 with lock	60 Nm
2AZ Oil filler plug with O-ring	E81, E82, E87, E88, E90 / Except S65, E91, E92 / Except S65, E93	M22	Replace oil filler plug with O-ring	60 Nm
3AZ Oil filler and drain plugs with O-ring	E92 / S65	M22	Replace oil filler and drain plugs with O-ring	60 Nm
4AZ Side cover to housing	E92 / S65	M8	Tighten down screws in crosswise sequence	21.7 Nm

	Type	Thread	Tightening specification	Measure
1AZ Rear differential (if nec. with bracket for vibration damper) to rear axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12 (front)	Observe repair instruction.	100 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	M14 (rear)	Observe repair instruction. Replace nut	165 Nm
2AZ Vibration damper to bolt connection, rear differential	E81, E82, E87, E88, E90 / Except S65, E91, E92 / Except S65, E93	M12		68 Nm
3AZ Vibration damper on bracket	E81, E82, E87, E88, E90 / Except S65, E91, E92 / Except S65, E93	M12		68 Nm

	Type	Thread	Tightening specification	Measure
1AZ Output shaft to rear differential drive flange (Torx screw with ribbed teeth)	E81, E82, E87, E90, E91, E92, E93	M8	Replace screws	52 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	M10 ZNS3	Replace screws	70 Nm
	E87	M10 ZNS	Replace screws	80 Nm
	E92 / S65	M12	Replace screws	120 Nm

	Type	Thread	Tightening specification	Measure
1AZ Trailing arm to rear axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace nut tighten in normal position	100 Nm
2AZ Trailing arm to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace nut tighten in normal position	100 Nm
3AZ Control arm to rear axle support	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace nut tighten in normal position	100 Nm
4AZ Traction strut to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace screw tighten in normal position Jointing torque Torque angle	 100 Nm 90 °
5AZ Control arm to rear axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace nut tighten in normal position	100 Nm
6AZ Control arm to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace screw tighten in normal position Jointing torque Torque angle	 100 Nm 90 °
7AZ Toe arm to rear axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12	Replace nut tighten in normal position	100 Nm
8AZ Toe arm to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M12	tighten in normal position	100 Nm
9AZ Camber arm to rear axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M14	Replace nut tighten in normal position	165 Nm
10AZ Camber arm to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M14	Replace nut tighten in normal position	165 Nm

11AZ Tension strut to body	E81, E82, E92 / Except S65	M8		24 Nm
12AZ Tension strut to compression strut	E81	M12	Jointing torque Torque angle	56 Nm 90 °
	E82, E92 / Except S65	M12	Jointing torque Torque angle	100 Nm 90 °

	Type	Thread	Tightening specification	Measure
1AZ Rear axle carrier with rubber mounts to body	E81, E82, E87, E88, E90, E91, E92, E93	M12	Follow repair instruction.	100 Nm
2AZ Compression strut on body	E81, E82, E87, E88, E90, E91, E92, E93	M10	Replace screws Jointing torque Torque angle	 47 Nm 90 °
3AZ Vibration damper to rear axle carrier	E93	M10		56 Nm
	E93	M8		27 Nm

	Type	Thread	Tightening specification	Measure
1AZ Drive flange hub to output shaft	E81, E82, E87, E88, E90 / Except S65, E91, E92 / Except S65, E93	M27	Replacing collar nut, lightly oil contact face	420 Nm
	E92 / S65	M27	Replacing collar nut, lightly oil contact face	300 Nm
	E81, E82, E87, E88, E90, E91, E92 / Except S65, E93	M24	Replacing collar nut, lightly oil contact face	250 Nm

	Type	Thread	Tightening specification	Measure
1AZ Shock absorber to thrust bearing	E81, E82, E87, E88, E90, E91, E92, E93	M10	Replace support bearing upper section	27 Nm
	E92 / S65	M14	Replace nut	37 Nm
2AZ Shock absorber to rubber mount	E81, E82, E87, E88, E90 / Except S65, E91, E92 / Except S65, E93	M10	Replace nut	38 Nm
3AZ Rubber mount, shock absorber, to camber arm	E81, E82, E87, E88, E90 / Except S65, E91, E92 / Except S65, E93	M10	Replace screws	60 Nm
4AZ Shock absorber to camber arm	E92 / S65	M12	tighten in normal position	100 Nm

	Type	Thread	Tightening specification	Measure
1AZ Retaining bracket, stabilizer bar to rear axle support	E81, E82, E87, E88, E90, E91, E92, E93	M8		21 Nm
2AZ Stabilizer link to stabilizer	E81, E82, E87, E88, E90, E91, E92, E93	M10		58 Nm
3AZ Stabilizer link to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M8		21 Nm

	Type	Thread	Tightening specification	Measure
1AZ Vent valve	E81, E82, E87, E88, E90, E91, E92, E93	wrench size 9 mm		7-11 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	wrench size 11 mm		12-18 Nm

	Type	Thread	Tightening specification	Measure
1AZ Brake disc to wheel hub	E81, E82, E87, E88, E90, E91, E92, E93			16 Nm
2AZ Brake anchor plate to swivel bearing	E81, E82, E87, E88, E90, E91, E92, E93	M12x1.5		110 Nm
3AZ Guard plate to swivel bearing	E81, E82, E87, E88, E90, E91, E92, E93	M6		12 Nm
4AZ Guide screw (socket head cap screw)	E81, E82, E87, E88, E90, E91, E92, E93	WAF 7		30 Nm
5AZ Guide screw (hexagon screw)	E81, E87, E90	WAF 13	Replace screws	35 Nm

	Type	Thread	Tightening specification	Measure
1AZ Brake disc to wheel hub	E81, E82, E87, E88, E90, E91, E92, E93			16 Nm
2AZ Brake caliper to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93			65 Nm
3AZ Protective plate to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M6		12 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	M8		15 Nm
4AZ Guide screw (socket head cap screw)	E81, E82, E87, E88, E90, E91, E92, E93	WAF 7		30-5 Nm
5AZ Guide screw (hexagon screw)	E81, E87, E90, E91	WAF 13	Replace screws	35 ±3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Brake master cylinder to brake booster (vacuum)	E81, E82, E87, E88, E90, E91, E92, E93	M8	Replace self-locking nuts	21 ±3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Brake line screws / union screws	E81, E82, E87, E88, E90, E91, E92, E93	M12 x 1		12 Nm
2AZ Brake hose to brake caliper, front	E81, E82, E87, E88, E90, E91, E92, E93			24 ± 2 Nm
3AZ Brake hose to brake caliper, rear	E81, E82, E87, E88, E90, E91, E92, E93			24 ± 2 Nm

	Type	Thread	Tightening specification	Measure
1AZ Brake booster to pedal assembly console	E81, E82, E87, E88, E90, E91, E92, E93	M8	Retighten 1x after 5 minutes on brake booster	22 Nm

	Type	Thread	Tightening specification	Measure
1AZ Handbrake lever to body	E81, E82, E87, E88, E90, E91, E92, E93			21 Nm
2AZ Spring clip to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm
3AZ Support Duo-Servo to wheel carrier, rear	E81, E82, E87, E88, E90, E91, E92, E93	M8		15 Nm
4AZ Guide tube to body	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm
5AZ Bracket, centre console	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Bearing pedestal to brake assembly and body	E81, E82, E87, E88, E90, E91, E92, E93	M8	Retighten 1x on brake booster after 5 min	21 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Control unit on hydraulic unit	MK60, E81, E82, E87, E88, E90, E91, E93			5+1 Nm
	MK60E5, E90, E91, E92, E93			2 ± 1 Nm
2AZ DSC sensor to holder	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
3AZ Bracket, DSC sensor, to body	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
4AZ Pulse generator to swivel bearing/wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
5AZ Bracket to hydraulic unit	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
6AZ Bracket, hydraulic unit to body	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Control unit on hydraulic unit	MK60, E81, E82, E87, E88, E90, E91, E93			5+1 Nm
	MK60E5, E90, E91, E92, E93			2 ± 1 Nm
2AZ DSC sensor to holder	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
3AZ Bracket, DSC sensor, to body	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
4AZ Pulse generator to swivel bearing/wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
5AZ Bracket to hydraulic unit	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
6AZ Bracket, hydraulic unit to body	E81, E82, E87, E88, E90, E91, E92, E93			8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Bearing pedestal to brake assembly and body	E81, E82, E87, E88, E90, E91, E92, E93	M8	Retighten 1x on brake booster after 5 min	21 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Handbrake lever to body	E81, E82, E87, E88, E90, E91, E92, E93			21 Nm
2AZ Spring clip to wheel carrier	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm
3AZ Support Duo-Servo to wheel carrier, rear	E81, E82, E87, E88, E90, E91, E92, E93	M8		15 Nm
4AZ Guide tube to body	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm
5AZ Bracket, centre console	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Bearing pedestal to brake assembly and body	E81, E82, E87, E88, E90, E91, E92, E93	M8	Retighten 1x on brake booster after 5 min	21 Nm
	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Accelerator pedal module to body	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Wheel bolt	E81, E82, E87, E88, E90, E91, E92, E93	M12x1.5	After installation, check torque of all wheel bolts again.	120 Nm

	Type	Thread	Tightening specification	Measure
1AZ Valve on disc wheel (RDC)	E82, E83, E88, E90, E91, E92, E93			3.5 Nm
2AZ Wheel electronics (RDC) on valve	E82, E83, E88, E90, E91, E92, E93			3.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Ride level sensor to holder	E81, E82, E87, E88, E90, E91, E92, E93	M5		5 Nm
2AZ Bracket ride level sensor to rear axle carrier	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm
3AZ Jointed rod to ride height sensor / bracket	E81, E82, E87, E88, E90, E91, E92, E93	M6	Replace nut	8 Nm
4AZ Bracket to camber arm	E81, E82, E87, E88, E90, E91, E92, E93	M6		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Engine bonnet/hood to bonnet/hood hinge	E63 / E64	M8 8.8		18.5 Nm
	E81 / E82 / E83 / E87 / E88 / E90 / E91 / E92 / E93	M8		15 Nm
	E60 / E61	M8x24 8.8		18.5 Nm
	E85 / E86 / E70 / E71	M8		20 Nm
2AZ Bonnet/hood hinge to body	E63 / E64	M8 8.8		18.5 Nm
	E83	M8x20 10.9		15 Nm
	E83 / from 05/2006	M8x30 10.9		25 Nm
	E60 / E61	M8x24 8.8		18.5 Nm
	E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93 / E70 / E71	M8		20 Nm
3AZ Threaded pin, spacer	E70 / E71	M6		14 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hinge pin	E83	M10x56		10 Nm
	E60 / E61 / E85 / E86 / E70 / E71	M8 nut		27 Nm
	E63 / E64	M6x22 8.8		10.5 Nm
	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	M10x1.25		25 Nm
2AZ Door to door hinge	E63 / E64	M8 nut		20 Nm
	E60 / E61	M8x28		20 Nm
	E70 / E70	M8x28		20 Nm
	E83	M8 nut		18.5 Nm
	E81 / E82 / E87 / E88 / E85 / E86 / E90 / E91 / E92 / E93	M8 nut		20 Nm
3AZ Door hinge to body	E63 / E64	M10x35 10.9		46 Nm
	E60 / E61 / E70 / E71	M12x36 8.8		66 Nm
	E83	M10x35 10.9		56 Nm
	E85 / E86	M10x35 10.9		30 Nm
4AZ Door plug connection to body	E60 / E61 / E63 / E64 / E70 / E71 / E83 / E85 / E86 / E87 / E81 / E82 / E88 / E90 / E91 / E92	M5x16		3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Front panel to support carrier	E81 / E82 / E87 / E88 / E90 / E91	M6		10 Nm
	E92 / E93	M6		12 Nm
	E85 / E86	M8x18		19 Nm
2AZ Headlight holder to front panel	E81 / E82 / E87 / E88	M6x18		8 Nm
	E90 / E91	M6x18		4.5 Nm
	E92 / E93	M6x18		6 Nm
3AZ Headlight holder to side panel, front	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	Sheet metal screw ST4.8x22		2.5 Nm
	E90 / E91 / E92 / E93	M6		6 Nm

	Type	Thread	Tightening specification	Measure
1AZ Rear lid to rear lid hinge	E63	M6x22		10 Nm
	E64	M8x24		18.5 Nm
	E61	ASA nut M8		20 Nm
	E61	M10 nut		38 Nm
	E60	M8x19.5 8.8		18.5 Nm
	E83 / E85 / E86	M8		20 Nm
	E81 / E87 / E70	M8		18.5 Nm
	E71	M10 x 25 - 10.9		18.5 Nm
	E90 / E92 / E82 / E88	M8		15 Nm
	E91	M8		30 Nm
	E93	M8x25		20 Nm
2AZ Adjustment, rear lid hinge	E91	M8		20 Nm
3AZ Rear lid hinge to body	E61 / E83 / E85 / E86 / E90 / E92 / E82 / E88	M8		20 Nm
	E60 / E64 / E81 / E87	M8 nut		18.5 Nm
	E63 / E70 / E71	M8		18.5 Nm
	E91	M8 nut		20 Nm
4AZ Hinge pin	E60	M8 nut		18.5 Nm
5AZ Grounding cable strap to hinge	E87	M5 nut		4.4 Nm
6AZ Rear lid, bottom, to rear lid hinge, bottom	E70	M8x22		18.5 Nm
7AZ Rear lid hinge, bottom, to body	E70	M8x22		18.5 Nm

8AZ Setscrew to rear lid hinge	E70			18.5 Nm
9AZ Stop, rear lid to body	E70 / E71	M12x1.5		16 Nm
	E70 / E71	M6 nut		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Roof to body	E86	M6x12		8 Nm
2AZ Star screw to roof outer skin	E81 / E82 / E87 / E90 / E91 / E92	M10		20 Nm

	Type	Thread	Tightening specification	Measure
1AZ Front side panel to body	E63 / E64	M6 x 22 10.9		12 Nm
	E83	ST6.3x14		7 Nm
	E60 / E61 / E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M6		7.6 Nm
2AZ Front side panel to body	E63 / E64	M6 nut		5 Nm
	E60 / E61	M6 nut		7.6 Nm
3AZ Front side panel to body	E60 / E61	Sheet metal screw ST4.8x19		7.6 Nm
4AZ Combination holder, side panel, front, to body	E81 / E82 / E87 / E88 / E92	M6		7.6 Nm
5AZ Side panel, rear, to body	E85 / E86	M6		7.6 Nm
6AZ Side panel, front, to module carrier/bumper carrier	E70 / E71	M6x16		8 Nm
7AZ Front side panel to body Area, A-pillar	E70 / E71	M6x16		6 Nm
8AZ Front side panel to body Area, sill	E70 / E71	Sheet metal screw ST4.8x19		2.5 Nm
9AZ Front side panel to body Area, cowl panel	E70 / E71	M5x20		2.5 Nm
10AZ Module carrier, top, to support carrier	E70 / E71	M6x26		8 Nm
11AZ Module carrier, bottom, to engine carrier	E70 / E71	M6 nut		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Roof to body	E86	M6x12		8 Nm
2AZ Star screw to roof outer skin	E81 / E82 / E87 / E90 / E91 / E92	M10		20 Nm

	Type	Thread	Tightening specification	Measure
1AZ Front panel to support carrier	E81 / E82 / E87 / E88 / E90 / E91	M6		10 Nm
	E92 / E93	M6		12 Nm
	E85 / E86	M8x18		19 Nm
2AZ Headlight holder to front panel	E81 / E82 / E87 / E88	M6x18		8 Nm
	E90 / E91	M6x18		4.5 Nm
	E92 / E93	M6x18		6 Nm
3AZ Headlight holder to side panel, front	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	Sheet metal screw ST4.8x22		2.5 Nm
	E90 / E91 / E92 / E93	M6		6 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hinge pin	E83	M10x56		10 Nm
	E60 / E61 / E85 / E86 / E70 / E71	M8 nut		27 Nm
	E63 / E64	M6x22 8.8		10.5 Nm
	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	M10x1.25		25 Nm
2AZ Door to door hinge	E63 / E64	M8 nut		20 Nm
	E60 / E61	M8x28		20 Nm
	E70 / E70	M8x28		20 Nm
	E83	M8 nut		18.5 Nm
	E81 / E82 / E87 / E88 / E85 / E86 / E90 / E91 / E92 / E93	M8 nut		20 Nm
3AZ Door hinge to body	E63 / E64	M10x35 10.9		46 Nm
	E60 / E61 / E70 / E71	M12x36 8.8		66 Nm
	E83	M10x35 10.9		56 Nm
	E85 / E86	M10x35 10.9		30 Nm
4AZ Door plug connection to body	E60 / E61 / E63 / E64 / E70 / E71 / E83 / E85 / E86 / E87 / E81 / E82 / E88 / E90 / E91 / E92	M5x16		3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Front side panel to body	E63 / E64	M6 x 22 10.9		12 Nm
	E83	ST6.3x14		7 Nm
	E60 / E61 / E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M6		7.6 Nm
2AZ Front side panel to body	E63 / E64	M6 nut		5 Nm
	E60 / E61	M6 nut		7.6 Nm
3AZ Front side panel to body	E60 / E61	Sheet metal screw ST4.8x19		7.6 Nm
4AZ Combination holder, side panel, front, to body	E81 / E82 / E87 / E88 / E92	M6		7.6 Nm
5AZ Side panel, rear, to body	E85 / E86	M6		7.6 Nm
6AZ Side panel, front, to module carrier/bumper carrier	E70 / E71	M6x16		8 Nm
7AZ Front side panel to body Area, A-pillar	E70 / E71	M6x16		6 Nm
8AZ Front side panel to body Area, sill	E70 / E71	Sheet metal screw ST4.8x19		2.5 Nm
9AZ Front side panel to body Area, cowl panel	E70 / E71	M5x20		2.5 Nm
10AZ Module carrier, top, to support carrier	E70 / E71	M6x26		8 Nm
11AZ Module carrier, bottom, to engine carrier	E70 / E71	M6 nut		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hinge pin	E83	M10x56		10 Nm
	E60 / E61 / E85 / E86 / E70 / E71	M8 nut		27 Nm
	E63 / E64	M6x22 8.8		10.5 Nm
	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	M10x1.25		25 Nm
2AZ Door to door hinge	E63 / E64	M8 nut		20 Nm
	E60 / E61	M8x28		20 Nm
	E70 / E70	M8x28		20 Nm
	E83	M8 nut		18.5 Nm
	E81 / E82 / E87 / E88 / E85 / E86 / E90 / E91 / E92 / E93	M8 nut		20 Nm
3AZ Door hinge to body	E63 / E64	M10x35 10.9		46 Nm
	E60 / E61 / E70 / E71	M12x36 8.8		66 Nm
	E83	M10x35 10.9		56 Nm
	E85 / E86	M10x35 10.9		30 Nm
4AZ Door plug connection to body	E60 / E61 / E63 / E64 / E70 / E71 / E83 / E85 / E86 / E87 / E81 / E82 / E88 / E90 / E91 / E92	M5x16		3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Engine bonnet/hood to bonnet/hood hinge	E63 / E64	M8 8.8		18.5 Nm
	E81 / E82 / E83 / E87 / E88 / E90 / E91 / E92 / E93	M8		15 Nm
	E60 / E61	M8x24 8.8		18.5 Nm
	E85 / E86 / E70 / E71	M8		20 Nm
2AZ Bonnet/hood hinge to body	E63 / E64	M8 8.8		18.5 Nm
	E83	M8x20 10.9		15 Nm
	E83 / from 05/2006	M8x30 10.9		25 Nm
	E60 / E61	M8x24 8.8		18.5 Nm
	E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93 / E70 / E71	M8		20 Nm
3AZ Threaded pin, spacer	E70 / E71	M6		14 Nm

	Type	Thread	Tightening specification	Measure
1AZ Engine bonnet/hood to bonnet/hood hinge	E63 / E64	M8 8.8		18.5 Nm
	E81 / E82 / E83 / E87 / E88 / E90 / E91 / E92 / E93	M8		15 Nm
	E60 / E61	M8x24 8.8		18.5 Nm
	E85 / E86 / E70 / E71	M8		20 Nm
2AZ Bonnet/hood hinge to body	E63 / E64	M8 8.8		18.5 Nm
	E83	M8x20 10.9		15 Nm
	E83 / from 05/2006	M8x30 10.9		25 Nm
	E60 / E61	M8x24 8.8		18.5 Nm
	E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93 / E70 / E71	M8		20 Nm
3AZ Threaded pin, spacer	E70 / E71	M6		14 Nm

	Type	Thread	Tightening specification	Measure
1AZ Hinge pin	E83	M10x56		10 Nm
	E60 / E61 / E85 / E86 / E70 / E71	M8 nut		27 Nm
	E63 / E64	M6x22 8.8		10.5 Nm
	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	M10x1.25		25 Nm
2AZ Door to door hinge	E63 / E64	M8 nut		20 Nm
	E60 / E61	M8x28		20 Nm
	E70 / E70	M8x28		20 Nm
	E83	M8 nut		18.5 Nm
	E81 / E82 / E87 / E88 / E85 / E86 / E90 / E91 / E92 / E93	M8 nut		20 Nm
3AZ Door hinge to body	E63 / E64	M10x35 10.9		46 Nm
	E60 / E61 / E70 / E71	M12x36 8.8		66 Nm
	E83	M10x35 10.9		56 Nm
	E85 / E86	M10x35 10.9		30 Nm
4AZ Door plug connection to body	E60 / E61 / E63 / E64 / E70 / E71 / E83 / E85 / E86 / E87 / E81 / E82 / E88 / E90 / E91 / E92	M5x16		3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Front panel to support carrier	E81 / E82 / E87 / E88 / E90 / E91	M6		10 Nm
	E92 / E93	M6		12 Nm
	E85 / E86	M8x18		19 Nm
2AZ Headlight holder to front panel	E81 / E82 / E87 / E88	M6x18		8 Nm
	E90 / E91	M6x18		4.5 Nm
	E92 / E93	M6x18		6 Nm
3AZ Headlight holder to side panel, front	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	Sheet metal screw ST4.8x22		2.5 Nm
	E90 / E91 / E92 / E93	M6		6 Nm

	Type	Thread	Tightening specification	Measure
1AZ Rear lid to rear lid hinge	E63	M6x22		10 Nm
	E64	M8x24		18.5 Nm
	E61	ASA nut M8		20 Nm
	E61	M10 nut		38 Nm
	E60	M8x19.5 8.8		18.5 Nm
	E83 / E85 / E86	M8		20 Nm
	E81 / E87 / E70	M8		18.5 Nm
	E71	M10 x 25 - 10.9		18.5 Nm
	E90 / E92 / E82 / E88	M8		15 Nm
	E91	M8		30 Nm
	E93	M8x25		20 Nm
2AZ Adjustment, rear lid hinge	E91	M8		20 Nm
3AZ Rear lid hinge to body	E61 / E83 / E85 / E86 / E90 / E92 / E82 / E88	M8		20 Nm
	E60 / E64 / E81 / E87	M8 nut		18.5 Nm
	E63 / E70 / E71	M8		18.5 Nm
	E91	M8 nut		20 Nm
4AZ Hinge pin	E60	M8 nut		18.5 Nm
5AZ Grounding cable strap to hinge	E87	M5 nut		4.4 Nm
6AZ Rear lid, bottom, to rear lid hinge, bottom	E70	M8x22		18.5 Nm
7AZ Rear lid hinge, bottom, to body	E70	M8x22		18.5 Nm

8AZ Setscrew to rear lid hinge	E70			18.5 Nm
9AZ Stop, rear lid to body	E70 / E71	M12x1.5		16 Nm
	E70 / E71	M6 nut		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Roof to body	E86	M6x12		8 Nm
2AZ Star screw to roof outer skin	E81 / E82 / E87 / E90 / E91 / E92	M10		20 Nm

	Type	Thread	Tightening specification	Measure
1AZ Front side panel to body	E63 / E64	M6 x 22 10.9		12 Nm
	E83	ST6.3x14		7 Nm
	E60 / E61 / E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M6		7.6 Nm
2AZ Front side panel to body	E63 / E64	M6 nut		5 Nm
	E60 / E61	M6 nut		7.6 Nm
3AZ Front side panel to body	E60 / E61	Sheet metal screw ST4.8x19		7.6 Nm
4AZ Combination holder, side panel, front, to body	E81 / E82 / E87 / E88 / E92	M6		7.6 Nm
5AZ Side panel, rear, to body	E85 / E86	M6		7.6 Nm
6AZ Side panel, front, to module carrier/bumper carrier	E70 / E71	M6x16		8 Nm
7AZ Front side panel to body Area, A-pillar	E70 / E71	M6x16		6 Nm
8AZ Front side panel to body Area, sill	E70 / E71	Sheet metal screw ST4.8x19		2.5 Nm
9AZ Front side panel to body Area, cowl panel	E70 / E71	M5x20		2.5 Nm
10AZ Module carrier, top, to support carrier	E70 / E71	M6x26		8 Nm
11AZ Module carrier, bottom, to engine carrier	E70 / E71	M6 nut		8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Bumper to front panel, top	E81, E87			6 Nm
	E82, E88			2.6 Nm
	E90, E91, E92, E93			5 Nm
2AZ Carrier to body	E81, E87	M8		20 Nm
	E82, E88, E90, E91, E92, E93	M8		22 Nm
3AZ License plate to bumper	E81, E82, E87, E88, E90, E91, E92, E93			1 Nm
4AZ License plate to bumper (thread repair)	E81, E82, E87, E88, E90, E91, E92, E93	M5		4.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Carrier to body	E81, E82, E87, E88, E90, E91, E92, E93	M12		66 Nm
2AZ Bumper to guide, side panel	E81, E82, E87, E88, E90, E91, E92, E93			3 Nm
3AZ Guide to side panel	E81, E82, E87, E88, E90, E91, E92, E93			3 Nm
4AZ Bumper to guide, top middle	E81, E82, E87, E88, E90, E91, E92, E93			3 Nm
5AZ Guide, top middle, to rear trim panel	E81, E82, E87, E88, E90, E91, E92, E93			3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Bracket, roof luggage rack on body	E36 / Z3 and M Coupé, E39, E46, E81, E82, E87, E90, E91, E92	M10		20 Nm
2AZ Water drain to body (plastic nut)	E46			1 Nm
Water drain to body (metal nut or rivet nut)	E46			1.8 Nm
3AZ Roof railing to body	E39		Centre, front, rear	24 Nm
	E61	M8	 settling time Check	16 Nm 15 min 16 Nm
	E83	M8	Front Jointing torque Release nut after settling time Jointing torque Torque angle	 21 Nm 15 min 21 Nm 120 ± 10 °
	E83	M8	Centre, rear settling time Check	21 Nm 15 min 21 Nm
	E91			25 Nm
	E70			19 Nm
4AZ Handle strip to rear lid	E39 / Touring			3 Nm
	E46, E53			2.5 Nm
	E83			1.8 Nm
5AZ Cowl panel cover to body	E60, E61, E63, E64			2.5 Nm

6AZ Centre trim to rear lid	E65, E66, E67	M8		2.5 Nm
7AZ Trim to hood/bonnet	E90, E91			2 Nm

	Type	Thread	Tightening specification	Measure
1AZ Mirror to front door	E70, E81, E82, E87, E88, E90, E91, E92, E93			6 Nm
Initial screw connection for new rearview mirror (shaping of thread-cutting screws)	E70, E81, E82, E87, E88, E90, E91, E92, E93			8 Nm
2AZ Carrier, gear selector switch, to carrier, centre console	E70	M6		5.6 Nm

51 21 Front Door Locks

	Type	Thread	Tightening specification	Measure
1AZ Door lock to front door	E70, E81, E82, E87, E88, E90, E91, E92, E93		Install bolt with bolt cement.	9.5 Nm
2AZ Door striker to body	E70, E81, E82, E87, E88, E90, E91, E92, E93			18.5 Nm
3AZ Door retainer to A-pillar	E70, E81, E82, E87, E88, E90, E91, E92, E93			22 Nm
4AZ Door retainer to door	E81, E82, E87, E88, E90, E91, E92, E93			12 Nm
	E70			10 Nm

51 23 Hood/bonnet locks

	Type	Thread	Tightening specification	Measure
1AZ Retaining hook to engine hood/bonnet (replace microencapsulated screws)	E81, E82, E87, E88, E90, E91, E92, E93			10 Nm
2AZ Lock to body (replace microencapsulated screws)	E70, E81, E82, E87, E88, E90, E91, E92, E93			10 Nm
3AZ Upper lock section (striker) to bonnet/hood	E70			10 Nm

51 24 Rear lid locks

	Type	Thread	Tightening specification	Measure
1AZ Rear lid lock to rear lid	E81, E82, E87, E88, E90, E92, E93			10 Nm
	E91			20 Nm
2AZ Striker to body	E81, E82, E87, E88, E90, E91, E92			10 Nm
3AZ Fastener to rear lid	E82, E88, E90, E92, E93			10 Nm
4AZ Striker to kinematics, rear module	E93			10 Nm

	Type	Thread	Tightening specification	Measure
1AZ Door window glass to power window unit	E92, E93		With special tool 51 0 320 (longer lever arm)	10 Nm 7 Nm
	E81		With special tool 51 3 240 (longer lever arm)	12 Nm 7 Nm
	E82, E88		With special tool 51 3 240 (longer lever arm)	10 Nm 6 Nm

51 33 Power windows, front

	Type	Thread	Tightening specification	Measure
1AZ Window regulator to door	E70, E81, E82, E87, E88, E90, E91, E92, E93			10 Nm
2AZ Motor to window regulator	E70, E87, E90, E91, E92, E93			6 Nm
	E81, E82, E88			3 Nm

51 41 Front door trim panel with armrests

	Type	Thread	Tightening specification	Measure
1AZ Door trim panel to front door (screw to armrest or door handle)	E81, E82, E87, E88, E90, E91, E92, E93			4 Nm
2AZ Armrest to door trim panel	E81, E82, E87, E88			2 Nm
3AZ Door handle to door trim panel	E81, E82, E87, E88			2 Nm

51 43 Side Trim Panel with Armrests

	Type	Thread	Tightening specification	Measure
1AZ Trim, front roof pillar (A-pillar) on body	E81, E82, E87, E90, E91, E92			2.5 Nm
2AZ Trim, rear roof pillar (C-pillar) on body	E81, E82, E87, E90, E91, E92			2.5 Nm
3AZ Side trim panel to body	E92			4.0 Nm
	E81, E88			3.0 Nm
4AZ Armrest to side trim panel	E81, E82, E88			2.0 Nm

51 46 Panel, rear parcel shelf, roller sun blind

	Type	Thread	Tightening specification	Measure
1AZ Rear parcel shelf to body	E65, E66, E67			2.5 Nm
2AZ Roller sun blind to rear parcel shelf	E38, E39			3 Nm
	E65, E66, E67			2 Nm
3AZ Roller sun blind with rear parcel shelf to body	E38, E39			6 Nm
	E60, E65, E66, E67, E90, E92			4 Nm
4AZ Cover, rollover bar	E88, E93			4.4 Nm
5AZ Trim grille, air outlet, to rollover protection system	E88			3 Nm
	E93			8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Rear spoiler	E91		Screw Nut	3 Nm 7 Nm
2AZ Tension strut in engine compartment	E81, E82, E87, E88, E90, E91, E92, E93	M10	Replace screws Jointing torque Torque angle	 40 Nm 60 °
	E81, E82, E87, E88, E90, E91, E92, E93	M12 x 1.5	Replace screws Jointing torque Torque angle	 100 Nm 100 °
3AZ Tension strut to rear axle	E91	M12	Replace screws Jointing torque Torque angle	 100 Nm 90 °
	E91	M10		50 Nm
4AZ Support tube to support, steering column upper section	E87, E90, E91, E92, E93	M8		19 Nm
5AZ Support tube to body	E87, E90, E91, E92, E93	M8		21 Nm
6AZ Heater to support tube	E87, E90, E91, E92, E93			4 Nm
7AZ Bracket, handle, to body	E82, E87, E90, E91		self-tapping screw	3.5 Nm
8AZ Bracket, suspension, dividing net to body	E91			11 Nm
9AZ Multifunction pan to body	E81, E82, E87, E90, E91, E92, E93	M6		8 Nm
10AZ V-strut, front axle carrier	E93	M8	Replace screws	

			Jointing torque Torque angle	56 Nm 90 °
	E93	M10	Replace screws Jointing torque Torque angle	 100 Nm 90 °
	E88	M10 to front axle carrier, front		50 Nm
	E88	M10 to blind rivet nut	Jointing torque Torque angle	60 Nm 105 °
	E88	M10 to captive nut	Replace captive nut	50 Nm
	E88	M12	Jointing torque Torque angle	100 Nm 105 °
11AZ Diagonal strut, front end	E88, E93	Nut	Replace nut	56 Nm
	E88, E93	Screw	Replace screws Jointing torque Torque angle	 56 Nm 90 °
12AZ Protecting skid / mounting bracket to front axle carrier	E93	M8	Replace screws Jointing torque Torque angle	 56 Nm 90 °
	E88	M10	Replace screws	50 Nm
13AZ Rear middle tension strut to underbody bracket	E93 / from 03_2007	M8		28 Nm
14AZ Battery carrier to body	E93	M8		19 Nm
15AZ Vibration damper to battery carrier	E93	M8		19 Nm
16AZ Grounding strap to body	E93	M6		8 Nm
17AZ Bulkhead connection, suspension cross-brace, to holder, spring suspension cross-brace	E92 / M3	M12 x 1.5	Replace screw Jointing torque Torque angle	 100 Nm 100 °

18AZ Suspension cross-brace to bulkhead connection, suspension cross-brace	E92 / M3	M8	Replace screws	34 Nm
19AZ Suspension cross-brace to bulkhead connection, suspension cross-brace / ring, suspension cross-brace	E92 / M3	M8	Replace nuts	34 Nm
20AZ Tension strut to underbody cross-member	E88, E93	M10		50 Nm
21AZ Tension strut to frame side member locating bushing	E88, E93 / from 03_2007	M12	Jointing torque Torque angle	100 Nm 105 °
22AZ Tension struts to underbody triangle	E88, E93 / from 03_2007	M12	Jointing torque Torque angle	100 Nm 105 °
23AZ Left tension strut to right tension strut (rear axle)	E88, E93 / from 03_2007	M10	Jointing torque Torque angle	56 Nm 105 °
24AZ Rear middle tension strut to underbody bracket/triangle bracket	E93 / up to 03_2007	M8	Jointing torque	19 Nm
25AZ Tension strut to frame side member locating bushing	E93 / up to 03_2007	M12	Jointing torque Torque angle	100 Nm 90 °
26AZ Left and right tension strut to underbody triangle	E93 / up to 03_2007	M12	Jointing torque Torque angle	100 Nm 90 °
27AZ Strut, rollover protection system, to rollover protection system	E88, E93	M10	Jointing torque Torque angle	56 Nm 100 °
28AZ Strut, rollover protection system, to body	E88, E93	M10	Jointing torque Torque angle	56 Nm 100 °

	Type	Thread	Tightening specification	Measure
1AZ Seat to floor plate	E81 / E82 / E87 / E90 / E91 / E92 / E93	M10 (trilobular)	Replace Powerlok screw	44 Nm
2AZ Backrest frame to seat frame	E81 / E82 / E87 / E90 / E91 / E92	(trilobular)	Replace Powerlok screw	32 Nm
3AZ Bracket, control unit, to seat mechanism	E81 / E82 / E87 / E90 / E91 / E92			2 Nm
4AZ Carrier section for electr. actuating unit	E81 / E82 / E87 / E90 / E91 / E92			9 Nm
5AZ Mounting, Isofix bracket to backrest frame	E81 / E82 / E87 / E90 / E91 / E92	M6		10 Nm
	E81 / E82 / E87 / E90 / E91 / E92	M5		3 Nm
6AZ Trim to seat, outer	E81 / E82 / E87 / E90 / E91 / E92			1 Nm
7AZ Backrest frame to seat frame - Screw	E93			24 $^{+4}$ Nm
8AZ Backrest frame to seat frame - Pin with knurling and lock nut	E93			40 $^{+5}$ Nm
9AZ Kinematic element to backrest frame	E93			3 $^{+2}$ Nm
10AZ Seat depth adjustment to seat mechanism	E87 / E82 / E90 / E91 / E92			2.6 Nm
11AZ Microswitch to front seat	E93			2 $\pm^{1}$ Nm

	Type	Thread	Tightening specification	Measure
1AZ Backrest on body	E38	M6		5 Nm
	E60	M8		18.5 Nm
2AZ Head restraint support to backrest	E60	M6	Screws, top Screws, bottom	5.6 Nm 8 Nm
3AZ Armrest lock to backrest	E60	M6		8 Nm
4AZ Backrest lock to backrest	E60	M6		19 Nm
5AZ Center armrest to backrest frame	E60	M6		19 Nm
6AZ Storage compartment casing to body	E63 / E64			7.5 Nm
7AZ Ski bag casing to body (hexagon screw)	E63 / E64	M8		24 Nm
8AZ Lock to body				
9AZ Top Tether eyelet	E60 / E63 / E65 / E66			17 Nm

	Type	Thread	Tightening specification	Measure
1AZ Backrest on body	E90	M8		31 Nm
2AZ Lock to body	E90			18.5 Nm
3AZ Top Tether eyelet	E90 / E92			22 Nm
4AZ Eyelet, retaining strap	E88			22 Nm
5AZ Transportation box (ski bag)	E88			9 Nm

	Type	Thread	Tightening specification	Measure
1AZ Backrest on body	E38			5 Nm
	E65 / E66 / E67		Install nuts with Loctite	20 Nm
2AZ Seat to floor plate	E65 / E66 / E67			20 Nm
	E65 / E66 / E67		Plastic nut	12 Nm
3AZ Backrest frame to seat frame	E65 / E66 / E67			18 Nm
4AZ Center armrest to body	E65 / E66 / E67			19 Nm

	Type	Thread	Tightening specification	Measure
1AZ Outer mount (backrest) to body	E81 / E82 / E87 / E90 / E91 / E92 / E93			31 Nm
2AZ Centre mount (backrest) to body	E81 / E82 / E87 / E90 / E91 / E92			21 Nm
3AZ Centre armrest to seat back	E81 / E82 / E87 / E90 / E91 / E92			5 ±0.35 Nm
4AZ Outer mount to seat back	E81 / E82 / E87 / E90 / E91 / E92 / E93			36 Nm
5AZ Striker to body	E87 / E91			21 Nm
	E93			9 Nm
6AZ Lashing eye to backrest	E87			15 Nm
7AZ Lock to backrest	E87 / E91			20+5 Nm
8AZ Lock to body	E81 / E82 / E90 / E92			18.5 Nm
9AZ Top Tether eyelet	E90 / E92			22 Nm

	Type	Thread	Tightening specification	Measure
1AZ Outer mount (backrest) to body	E81 / E82 / E87 / E90 / E91 / E92 / E93			31 Nm
2AZ Centre mount (backrest) to body	E81 / E82 / E87 / E90 / E91 / E92			21 Nm
3AZ Centre armrest to seat back	E81 / E82 / E87 / E90 / E91 / E92			5 ±0.35 Nm
4AZ Outer mount to seat back	E81 / E82 / E87 / E90 / E91 / E92 / E93			36 Nm
5AZ Striker to body	E87 / E91			21 Nm
	E93			9 Nm
6AZ Lashing eye to backrest	E87			15 Nm
7AZ Lock to backrest	E87 / E91			20+5 Nm
8AZ Lock to body	E81 / E82 / E90 / E92			18.5 Nm
9AZ Top Tether eyelet	E90 / E92			22 Nm

	Type	Thread	Tightening specification	Measure
1AZ Drive to cassette	E31, E32, E34, E36, E38, E39, E46, E53, E83			2.8 Nm
	E34 Touring, E60, E61, E63, E65, E66, E81, E82, E87			3.5 Nm
	E90, E92			3.8 Nm
	E91			2.5 Nm
	E70			3 ±0.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Glass lid to gate	E81 / E82 / E87 / E90 / E92		Always use new nuts and bolts.	4.5 Nm
2AZ Cassette to body	E81 / E82 / E87 / E90 / E92	M6	Self-tapping screw	5.4 ±0.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Drive to cassette	E31, E32, E34, E36, E38, E39, E46, E53, E83			2.8 Nm
	E34 Touring, E60, E61, E63, E65, E66, E81, E82, E87			3.5 Nm
	E90, E92			3.8 Nm
	E91			2.5 Nm
	E70			3 ±0.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Battery positive lead to distributor, luggage compartment	E60 / E61 / E63 / E64 / E65 / E66 / E70 / E81 / E82 / E83 / E87 / E88 / E90 / E91 / E92 / E93	M8		15 Nm
2AZ Battery positive lead to connector, engine compartment partition wall	E83	M8		19 Nm
3AZ Battery positive lead to connection support point, luggage compartment floor	E60 / E61 / E63 / E64 / E65 / E66 / E70 / E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M8		15 Nm
4AZ Battery positive lead to engine compartment B+ terminal	E70 / E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M8		15 Nm
	E70 / E81 / E82 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M6		8 Nm
5AZ Battery negative lead to body	E70 / E81 / E82 / E85 / E86 / E87 / E88 / E93	M8		15 Nm

	Type	Thread	Tightening specification	Measure
1AZ Battery positive lead	E85 / E86 / E87 / E90 / E91 / E92 / E93	M8		15 Nm
2AZ Positive lead to fuse box	E85 / E86	M8		15 Nm
	E85 / E86	M6		8.0 Nm
	E85 / E86	M5		4.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Battery positive lead	E85 / E86 / E87 / E90 / E91 / E92 / E93	M8		15 Nm
2AZ Positive lead to fuse box	E85 / E86	M8		15 Nm
	E85 / E86	M6		8.0 Nm
	E85 / E86	M5		4.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Battery positive lead, battery negative lead, safety battery terminal, IBS (screw connection from above)	E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E67 / E70 / E71 / E81 / E82 / E83 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M6		5 Nm
	E38 / E39	M8		15 Nm
2AZ Distribution box	E60 / E61 / E63 / E64 / E70 / E71 / E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93	M8		15 Nm
	E60 / E61 / E63 / E64	M6		5 Nm
3AZ Fuse box	E85 / E86	M8		15 Nm
	E85 / E86	M6		8 Nm
	E85 / E86	M5		5 Nm
4AZ Battery positive lid to distributor, safety battery terminal	E46 / E53 / E60 / E61 / E63 / E64 / E65 / E66 / E67 / E70 / E71 / E81 / E82 / E83 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M8		15 Nm

	Type	Thread	Tightening specification	Measure
1AZ Ignition starter switch	E60 / E61 / E63 / E64			0.4 Nm
2AZ Reversing light switch	E36 / E38 / E39 / E46 / E53 / E60 / E61 / E63 / E64 / E81 / E82 / E83 / E85 / E86 / E87 / E88 / E90 / E91 / E92 / E93	M12		16.0 Nm
3AZ Trim, gear selector switch	E70	M4		2.0 Nm
4AZ Gear selector switch	E70	M5		5.0 Nm
5AZ Controller	E70	M4		1.5 Nm
6AZ Gear selector switch	E60 / E61 / E63 / E64	M6		7.5 Nm
7AZ Emergency release to gear selector switch	E60 / E61 / E63 / E64	M4		1.6 Nm

	Type	Thread	Tightening specification	Measure
1AZ Fanfare horn to holder	E90 / E91 / E92 / E93	M6		8 Nm + 3 Nm
	E81 / E82 / E87 / E88	M6		10 Nm
2AZ Fanfare horn to retaining plate	E63 / E64	M8		8 Nm
3AZ Retaining plate, fanfare horn to holder	E63 / E64	M6		8 Nm
4AZ Bracket, fanfare horn, to body	E70	M8		20 Nm

	Type	Thread	Tightening specification	Measure
1AZ Wiper motor secured to wiper bracket	E52	M6		9.9 Nm
2AZ Parked position stop to wiper console				
3AZ Wiper contact pressure motor to wiper console				
4AZ Motor crank to wiper motor	E52	M8		27 Nm
5AZ Wiper shaft nut to body				
6AZ Wiper bracket to firewall	E52 / E53 / E65 / E66 / E67 / E70 / E81 / E82 / E85 / E86 / E87 / E88 / E60 / E61 / E63 / E64 / E90 / E91 / E92 / E93	M6	If necessary, observe tightening sequence.	10 Nm
7AZ Wiper bracket to rubber buffer	E53	M6		10 Nm
8AZ Wiper arms	E53		Due to risk of releasing: check tightening torque after approx. 15 mins. settling time.	30 Nm
9AZ Wiper arms	E52			27 Nm
10AZ Adjusting screw, wiper arm, right side	E65 / E66 / E67		Due to risk of releasing: check tightening torque after approx. 15 mins. settling time.	30 Nm
11AZ Wiper arms	E85 / E86			25 Nm
	E90 / E91 / E92 / E93	M10		30 Nm
	E81 / E82 / E87 / E88 / E70	M10		35 Nm

12AZ Wiper arm, left side	E60 / E61 / E63 / E64	M10	For torque, see inscription on wiper arm. Due to risk of releasing: check TT after approx. 50 mins. settling time.	30 or 35 Nm
	E65 / E66 / E67	M10	Due to risk of releasing: check tightening torque after approx. 15 mins. settling time.	45 Nm
13AZ Wiper arm, right side	E60 / E61 / E63 / E64	2xM8	For torque, see inscription on wiper arm. Due to risk of releasing: check TT after approx. 50 mins. settling time.	20 Nm
	E60 / E61 / E63 / E64	1xM8 1xM10	Wiper arm without torque label.	17 or 35 Nm
	E65 / E66 / E67	M10	Due to risk of releasing: check tightening torque after approx. 15 mins. settling time.	35 Nm
14AZ Adjusting screw, wiper arm, right side	E60 / E61 / E63 / E64			20 Nm
15AZ Bearing block tension strut/cowl panel	E60 / E61 / E63 / E64			24 Nm
16AZ Nut to deflection lever	E65 / E66 / E67	M10		30 Nm

62 13 Instrument cluster

	Type	Thread	Tightening specification	Measure
1AZ Instrument cluster	E60 / E61 / E63 / E64 / E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93			1.5 Nm

62 13 Instrument cluster

	Type	Thread	Tightening specification	Measure
1AZ Instrument cluster	E60 / E61 / E63 / E64 / E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93			1.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Headlight arm to front wall	E90 / E91 / E92 / E93			6.0 Nm
2AZ Headlight arm to headlight	E90 / E91 / E92 / E93			6.0 Nm
3AZ Headlight to front wall	E90 / E91 / E92 / E93			6.0 Nm
	E63 / E64			4.6 Nm
4AZ Xenon control unit to headlight	E63 / E64 / E90 / E91 / E92 / E93			1.5 Nm
5AZ Drive/electronics box, adaptive headlight to headlight	E63 / E64 / E90 / E91 / E92 / E93			1.5 Nm
6AZ Cover cap to headlight	E92 / E93			1.5 Nm
7AZ Support, headlight arm, to headlight arm	E92 M3			3.0 Nm
8AZ Headlight to side panel holder	E63 / E64			4.6 Nm

	Type	Thread	Tightening specification	Measure
1AZ Retaining nuts, rear light	E60 / E61 / E70 / E85 / E86 / E90 / E91 / E92 / E93		See Repair Instruction	2.5 Nm
	E63 / E64			2.5 Nm
	E81 / E82 / E87 / E88		See Repair Instruction	2.8 Nm
	E83		See Repair Instruction	4.0 Nm ± 0.5 Nm
2AZ Retaining screws, rear light	E63 / E64			1.5 Nm
3AZ Retaining clip (clamping claw), rear light	E92 / E93			4.0 Nm
	E70			2.5 Nm
4AZ Auxiliary brake light to carrier	E81 / E87			2.3 Nm
5AZ Additional brake light to rear spoiler	E83			2.5 Nm ± 0.5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Retaining nuts, rear light	E60 / E61 / E70 / E85 / E86 / E90 / E91 / E92 / E93		See Repair Instruction	2.5 Nm
	E63 / E64			2.5 Nm
	E81 / E82 / E87 / E88		See Repair Instruction	2.8 Nm
	E83		See Repair Instruction	4.0 Nm ± 0.5 Nm
2AZ Retaining screws, rear light	E63 / E64			1.5 Nm
3AZ Retaining clip (clamping claw), rear light	E92 / E93			4.0 Nm
	E70			2.5 Nm
4AZ Auxiliary brake light to carrier	E81 / E87			2.3 Nm
5AZ Additional brake light to rear spoiler	E83			2.5 Nm ± 0.5 Nm

64 11 Housing, heater/air conditioner

	Type	Thread	Tightening specification	Measure
1AZ Bulkhead adapter	E85, E86			1.0 ± 0.3 Nm
2AZ Fan for heater/air conditioner	E85, E86			1.5 ± 0.3 Nm
3AZ Controller for heater - A/C system fan	E85, E86			1.0 ± 0.3 Nm
4AZ Air conditioner to bulkhead	E60, E61, E63, E64, E83, E81, E82, E87, E88, E90, E91, E92, E93			6 Nm
	E70, E71			6.5 Nm
5AZ Cooler box to luggage compartment partition wall	E65, E66, E67			4.5 Nm
6AZ Air conditioner to support tube	E81, E82, E87, E88, E90, E91, E92, E93			9 Nm
7AZ Mounting, positive/negative lead, to electric auxiliary heater	E83			8.8 Nm

	Type	thread	tightening specification	Dimension
1AZ Additional heater to body floor	All			4.5 Nm
2AZ Glow plug	E24			17.5 Nm
	E31 / E32 / E34			4 Nm
3AZ Temperature sensor	E31 / E32 / E34			0.5 Nm
4AZ Oil control plug and oil filler plug	All			16 Nm
5AZ Mounting screws	All	M5		6 Nm
	All	M6		10 Nm
	All	M8		24 Nm
	All	M10		48 Nm
6AZ Screws for filter cover	All			0.9 Nm
7AZ Central cover on heater	All			1.5 Nm
8AZ Combustion air fan unit on heater	All			1.5 Nm
9AZ Recirculating pump on heater	All			1.5 Nm
10AZ Control unit/transfers heat to heater Install screws with Loctite 243	All			4.5 Nm

	Type	thread	tightening specification	Measure
1AZ Battery positive and negative leads to auxiliary heater	E46	M6		8.8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Muffler to independent heater bracket	E90, E91, E92, E93	M6		8.0 Nm
2AZ Mounting, independent heater, to engine carrier	E90, E91, E92, E93	M6		7.6 Nm
3AZ Mounting, independent heater, to locator, cooling module	E90, E91, E92, E93			19.5 Nm
4AZ Rubber mount to independent heater	E90, E91, E92, E93			8.0 Nm

	Type	Thread	Tightening specification	Measure
1AZ High/medium pressure pressostat Bolt cement, Part No. 81 22 9 407 144.	E32 / E34			25 Nm
2AZ Low pressure pressostat. Bolt cement, Part No. 81 22 9 407 144	E32 / E34			19 Nm
3AZ Three-way safety switch	E32 / E34			25 Nm

64 11 Housing, heater/air conditioner

	Type	Thread	Tightening specification	Measure
1AZ Bulkhead adapter	E85, E86			1.0 ± 0.3 Nm
2AZ Fan for heater/air conditioner	E85, E86			1.5 ± 0.3 Nm
3AZ Controller for heater - A/C system fan	E85, E86			1.0 ± 0.3 Nm
4AZ Air conditioner to bulkhead	E60, E61, E63, E64, E83, E81, E82, E87, E88, E90, E91, E92, E93			6 Nm
	E70, E71			6.5 Nm
5AZ Cooler box to luggage compartment partition wall	E65, E66, E67			4.5 Nm
6AZ Air conditioner to support tube	E81, E82, E87, E88, E90, E91, E92, E93			9 Nm
7AZ Mounting, positive/negative lead, to electric auxiliary heater	E83			8.8 Nm

	Type	Thread	Tightening specification	Measure
1AZ Refrigerant lines to A/C compressor	E36/7 M54, E36/7 S54, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E67, E83, E85, E87, E90, E91, E92, E93	M8		20 Nm
2AZ Filler plug, A/C compressor	E36, E38, E39, E46, E52, E53, E60, E61, E63, E64, E65, E66, E67, E83, E85, E87, E90, E91, E92, E93			30 ±1 Nm
3AZ A/C compressor to carrier	M67TU, M54, N62, S85, N54	M8		21 Nm
	N45, N46, M47T2, M57TU, M57T2	M8		19 Nm
	N52K	M8 x 87	Replace aluminium screw/bolt Jointing torque Torque angle	 10 Nm 180 ±15 °
	N52K	M8 x 52	Replace aluminium screw/bolt Jointing torque Torque angle	 10 Nm 90 ±15 °
	N52	M8 x 87	Replace aluminium screw/bolt Jointing torque Torque angle	 10 Nm 180 ±15 °

	N53	M8 x 52	Replace aluminium screw/bolt Jointing torque Torque angle	 10 Nm 90 ±15 °
	N53	M8 x 87	Replace aluminium screw/bolt Jointing torque Torque angle	 10 Nm 180 ±15 °
	E85 S54, E86 S54			20 Nm
4AZ Belt pulley / hub to A/C compressor	M47T2			35 ±5 Nm
5AZ Bracket, A/C compressor to lower crankcase	N54			19 Nm
6AZ Cable holder to A/C compressor	M47T2			3 Nm

	Type	Thread	Tightening specification	Measure
1AZ Refrigerant lines to A/C compressor	E70, E71	M8		21 Nm
	E60 / N47, E61 / N47, E81, E82, E87, E88, E90 / N47, E91 / N47, E92 / N47	M8		18.5 Nm
	E92 / S65	M8		21 Nm
2AZ Filler plug, A/C compressor	E70, E71			30 ±1 Nm
	E81 / N43, E82, E88			25 Nm
3AZ A/C compressor to carrier	E70	M8 x 15		20 Nm
	N52, N52K	M8 x 87	Replace aluminium screw/bolt Jointing torque Torque angle	 10 Nm 180 ±15 °
	N52, N52K	M8 x 52	Replace aluminium screw/bolt Jointing torque Torque angle	 10 Nm 90 ±15 °
	E81 / N43, E88			23 Nm
	E82 / N47, E90 / N47, E91 / N47, E92 / N47			19 Nm
	E71 / N54	M8 x 90		19 Nm
4AZ Bracket, pressure line, to compressor	E82 / N54			7.6 Nm

64 53 Refrigerant Lines and Expansion Valve

	Type	Thread	Tightening specification	Measure
1AZ Refrigerant lines to dryer bottle	E83, E85, E86	M8		20 Nm
2AZ Refrigerant lines to expansion valve/double pipe	E46, E83, E85, E86, E81, E82, E87, E88, E90, E91, E92, E93	M8		20 Nm
	E53	M8		18 Nm
3AZ Adapter plate to expansion valve	E85, E86	M6		10 ±2 Nm
4AZ Expansion valve to heater - A/C	E85, E86	M5		5.5 Nm
5AZ Refrigerant line to bulkhead	E85, E86	M6		8.6 Nm
6AZ Refrigerant lines to condenser	E60, E61, E63, E64, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93	M8		20 Nm
7AZ Refrigerant lines to expansion valve	E60, E61, E63, E64	M6		8.8 Nm
8AZ Refrigerant line to assembly compartment partition reinforcement	E60, E61, E63, E64	M6		7.6 Nm
9AZ Expansion valve to heater - A/C	E46, E60, E61, E63, E64, E83	M5		5.5 Nm
10AZ Refrigerant line to body	E46, E83	M6		5.5 Nm
11AZ Double pipe to expansion valve	E46, E83	M6		8.0 Nm
12AZ Screw plug to condenser	E53, E81, E82, E87, E88, E90, E91, E92			3.0 ±0.5 Nm
13AZ Expansion valve to retainer	E81, E82, E87, E88, E90, E91, E92, E93	M6		5.5 Nm

14AZ Pressure sensor in refrigerant line

	E53, E60, E61, E63, E64, E65, E66, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93			10 Nm

64 11 Housing, heater/air conditioner

	Type	Thread	Tightening specification	Measure
1AZ Bulkhead adapter	E85, E86			1.0 ± 0.3 Nm
2AZ Fan for heater/air conditioner	E85, E86			1.5 ± 0.3 Nm
3AZ Controller for heater - A/C system fan	E85, E86			1.0 ± 0.3 Nm
4AZ Air conditioner to bulkhead	E60, E61, E63, E64, E83, E81, E82, E87, E88, E90, E91, E92, E93			6 Nm
	E70, E71			6.5 Nm
5AZ Cooler box to luggage compartment partition wall	E65, E66, E67			4.5 Nm
6AZ Air conditioner to support tube	E81, E82, E87, E88, E90, E91, E92, E93			9 Nm
7AZ Mounting, positive/negative lead, to electric auxiliary heater	E83			8.8 Nm

64 53 Refrigerant Lines and Expansion Valve

	Type	Thread	Tightening specification	Measure
1AZ Refrigerant lines to dryer bottle	E83, E85, E86	M8		20 Nm
2AZ Refrigerant lines to expansion valve/double pipe	E46, E83, E85, E86, E81, E82, E87, E88, E90, E91, E92, E93	M8		20 Nm
	E53	M8		18 Nm
3AZ Adapter plate to expansion valve	E85, E86	M6		10 ±2 Nm
4AZ Expansion valve to heater - A/C	E85, E86	M5		5.5 Nm
5AZ Refrigerant line to bulkhead	E85, E86	M6		8.6 Nm
6AZ Refrigerant lines to condenser	E60, E61, E63, E64, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93	M8		20 Nm
7AZ Refrigerant lines to expansion valve	E60, E61, E63, E64	M6		8.8 Nm
8AZ Refrigerant line to assembly compartment partition reinforcement	E60, E61, E63, E64	M6		7.6 Nm
9AZ Expansion valve to heater - A/C	E46, E60, E61, E63, E64, E83	M5		5.5 Nm
10AZ Refrigerant line to body	E46, E83	M6		5.5 Nm
11AZ Double pipe to expansion valve	E46, E83	M6		8.0 Nm
12AZ Screw plug to condenser	E53, E81, E82, E87, E88, E90, E91, E92			3.0 ±0.5 Nm
13AZ Expansion valve to retainer	E81, E82, E87, E88, E90, E91, E92, E93	M6		5.5 Nm

14AZ Pressure sensor in refrigerant line

	E53, E60, E61, E63, E64, E65, E66, E81, E82, E83, E85, E86, E87, E88, E90, E91, E92, E93			10 Nm

65 52 CD/DVD drives and special devices

	Type	Thread	Tightening specification	Measure
1AZ Retaining screw, CD/DVD changer to bracket	E60, E61, E63, E64			0.7 Nm
	E65, E66, E67, E70			0.8 Nm
	E83			1.0 Nm
	E53, E85, E90, E91, E92, E93			1.2 Nm
2AZ Mounting bracket CD/DVD changer to body	E83			6.0 Nm
	E90, E91, E92, E93			3.3 Nm
	E53			4.9 Nm
	E60, E61, E63, E64			5 Nm
	E85, E86			4.4 Nm
3AZ CD/DVD drive to Car Communication Computer	E61, E60, E63, E64, E81, E82, E87, E88, E90, E91, E92, E93, R56			0.4 Nm
4AZ Rear cabin DVD player to centre console	E70			3 Nm
5AZ CD/DVD changer to glovebox	E70			6 Nm
6AZ Car Communication Computer (CCC) to instrument panel	E70, E71			2.8 Nm

65 13 Speakers

	Type	Thread	Tightening specification	Measure
1AZ Mid-range speaker to door trim panel	E81, E82, E87, E88, E90, E91, E92, E93			3 Nm
	E70, E71			1.5 Nm
2AZ Central bass to seat cross-member	E70, E71			4 Nm

65 52 CD/DVD drives and special devices

	Type	Thread	Tightening specification	Measure
1AZ Retaining screw, CD/DVD changer to bracket	E60, E61, E63, E64			0.7 Nm
	E65, E66, E67, E70			0.8 Nm
	E83			1.0 Nm
	E53, E85, E90, E91, E92, E93			1.2 Nm
2AZ Mounting bracket CD/DVD changer to body	E83			6.0 Nm
	E90, E91, E92, E93			3.3 Nm
	E53			4.9 Nm
	E60, E61, E63, E64			5 Nm
	E85, E86			4.4 Nm
3AZ CD/DVD drive to Car Communication Computer	E61, E60, E63, E64, E81, E82, E87, E88, E90, E91, E92, E93, R56			0.4 Nm
4AZ Rear cabin DVD player to centre console	E70			3 Nm
5AZ CD/DVD changer to glovebox	E70			6 Nm
6AZ Car Communication Computer (CCC) to instrument panel	E70, E71			2.8 Nm

65 13 Speakers

	Type	Thread	Tightening specification	Measure
1AZ Mid-range speaker to door trim panel	E81, E82, E87, E88, E90, E91, E92, E93			3 Nm
	E70, E71			1.5 Nm
2AZ Central bass to seat cross-member	E70, E71			4 Nm

	Type	Thread	Tightening specification	Measure
1AZ Airbag control unit	E36, E38, E39, E46, E52, E53			8.8 Nm
	E85			4.6 Nm
	E60, E61, E63, E64, E83, E81, E87, E90, E91, E92, E93			8.0 Nm
	E60 / from 09/2005, E61 / from 09/2005			8.0 Nm
2AZ Impact sensor for side airbag	E36, E38, E39, E46, E52, E53			5.5 Nm
3AZ Sensor, front	E83, E85, E86			8.0 Nm
4AZ Sensor, A-pillar	E65, E66			4.5 Nm
5AZ Sensor, B-pillar	E60, E61, E63, E64, E65, E66, E85, E86			4.6 Nm
	E81, E83, E87, E90, E91, E92, E93			8.0 Nm
6AZ Sensor, vehicle centre	E65, E66			5.5 Nm
	E60, E61, E63, E64			8.0 Nm
7AZ Sensor, front door	E65, E66			8.2 Nm
	E60,, E61, E90, E91, E92, E93			8.0 Nm
	E85, E86			5.6 Nm
	E83			4.6 Nm
8AZ Sensor, rear seat	E65, E66			8.0 Nm
9AZ Acceleration sensor, front	E63, E64, E90, E91, E92, E93		Replace screws	8.0 Nm

	E60, E61		Replace screws	7.0 Nm

	Type	Thread	Tightening specification	Measure
1AZ Motor to window regulator	E46, E85, E86, E93			4.5 Nm
	E31, E36, E65 , E66			5 Nm
	E81, E82, E83, E88			3 Nm
	E60, E61, E63, E64, E87, E90, E91, E92			6 Nm
	E70		Observe screwing sequence	6 Nm

	Type	Thread	Tightening specification	Measure
1AZ Muffler to independent heater bracket	E90, E91, E92, E93	M6		8.0 Nm
2AZ Mounting, independent heater, to engine carrier	E90, E91, E92, E93	M6		7.6 Nm
3AZ Mounting, independent heater, to locator, cooling module	E90, E91, E92, E93			19.5 Nm
4AZ Rubber mount to independent heater	E90, E91, E92, E93			8.0 Nm

	Type	Thread	Tightening specification	Measure
1AZ Trailer tow hitch to body	E46	Nut M10 and screw M10 10.9	1. Collar nuts M10 trailer tow hitch / rear panel 2. M10 screws to axial struts	59 Nm
	E90, E91, E92, E93	M12		108 Nm
2AZ Release unit to trailer tow hitch	E90, E91, E92, E93	M6 x 35	Replace microencapsulated screw	5 Nm

	Type	Thread	Tightening specification	Measure
1AZ Passenger airbag module to instrument panel	E90 / E91 / E92 / E93		Hexagon nut with flange, self-locking	7 Nm
	E81 / E82 / E87 / E88		Hexagon nut with flange, self-locking	8 Nm
2AZ Side airbag to backrest frame	E81 / E82 / E87 / E90 / E91 / E92			6.5 Nm
	E88			7 Nm
	E93			40 ±5 Nm
3AZ Gas generator, head airbag	E81 / E82 / E87 / E90 / E91			6.5 Nm
4AZ Bracket, folding pack (head airbag), to body	E81 / E82 / E87 / E90 / E91	Self-tapping		3 Nm
5AZ End fitting (eyelet), head airbag	E81 / E82 / E87 / E90 / E91			3 Nm
6AZ Mounting, ramp (B- and C-pillars)	E81 / E82 / E87 / E90 / E91			3 Nm
7AZ Knee airbag module, driver's side - to support tube	E88 / E93			8 Nm
8AZ Knee airbag module, front passenger side - in glovebox	E88 / E93			8 Nm

	Type	Thread	Tightening specification	Measure
Seat belt, front:				
1AZ Automatic reel				
- to B-pillar	E81 / E87 / E88 / E90 / E91 / E92			36 Nm
	E82		Hexagon screw with washer	46 Nm
- to backrest frame	E93			36 Nm
2AZ Anchor fitting, belt				
- to front seat	E87 / E90 / E91			44 Nm
	E93			36 Nm
3AZ Belt deflection fitting (to B-pillar, top)	E81 / E82 / E87 / E88 / E90 / E91 / E92			36 Nm
- to front seat	E93	M6		9 Nm
4AZ Corner hoop (to B-pillar, middle)	E87 / E90 / E91 / E92			3.5 Nm
	E81 / E82	M5		3 Nm
	E81 / E82	M6	Repair screw	3 Nm
	E88			8 Nm
5AZ Slide bar to body	E81 / E92			36 Nm
	E82 / E88			31 Nm
6AZ Buckle retractor to front seat	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93			38 Nm
7AZ Belt handover	E92			2.5 Nm

8AZ Coupling gear

(stud)	E93			3 Nm
9AZ Coupling gear	E93			2.5 Nm
Seat belt, rear:				
20AZ Automatic reel for rear seat, normal				
- middle to body	E90			36 Nm
- outer to body	E90 / E88			36 Nm
21AZ Automatic reel for rear seat, through-loading				
- middle to backrest				
- outer to body	E81 / E82 / E87 / E90 / E91 / E92 / E93			36 Nm
22AZ Anchor fitting, belt				
- middle	E87 / E90 / E91			31 Nm
- outer	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93			38 Nm
23AZ Seat belt buckle				
- with buckle retractor	E87 / E90 / E91			38 Nm
- without buckle retractor	E81 / E82 / E87 / E88 / E90 / E91 / E92 / E93			38 Nm
24AZ Belt deflection fitting (to rollover protection system)	E88 / E93			36 Nm

	Type	Thread	Tightening specification	Measure
1AZ Passenger airbag module to instrument panel	E90 / E91 / E92 / E93		Hexagon nut with flange, self-locking	7 Nm
	E81 / E82 / E87 / E88		Hexagon nut with flange, self-locking	8 Nm
2AZ Side airbag to backrest frame	E81 / E82 / E87 / E90 / E91 / E92			6.5 Nm
	E88			7 Nm
	E93			40 ±5 Nm
3AZ Gas generator, head airbag	E81 / E82 / E87 / E90 / E91			6.5 Nm
4AZ Bracket, folding pack (head airbag), to body	E81 / E82 / E87 / E90 / E91	Self-tapping		3 Nm
5AZ End fitting (eyelet), head airbag	E81 / E82 / E87 / E90 / E91			3 Nm
6AZ Mounting, ramp (B- and C-pillars)	E81 / E82 / E87 / E90 / E91			3 Nm
7AZ Knee airbag module, driver's side - to support tube	E88 / E93			8 Nm
8AZ Knee airbag module, front passenger side - in glovebox	E88 / E93			8 Nm

	Type	thread	tightening specification	Measure
1AZ Nut to retaining thread, rear light		M5		7 Nm
2AZ Bar to platform		M8x35		23 Nm
3AZ Lashing plate to platform		M8x35		15 Nm
4AZ Front guard to cross-member		M8x55		28 Nm
5AZ Front guard to longitudinal member		M8x25		34 Nm
6AZ Saucer head screw to rail		M5x15		7 Nm
7AZ Rail, loading ramp frame to cross strut		M6x16		11.5 Nm
8AZ Rail, loading ramp frame to longitudinal member mount		M6x16		11.5 Nm
9AZ Cross strut to rail		M6x16		5.5 Nm
10AZ Footplate to drawbar member		M6x25		11.5 Nm
11AZ Bracket to drawbar member		M8x25		34 Nm
12AZ Wiring harness mount to reversing housing		M10x1x20		58 Nm
13AZ Socket holder to drawbar		M10x95		55 Nm
14AZ Top reversing housing and bracket to drawbar member		M10		55 Nm
15AZ Towing attachment to tow tube		M12x70		96 Nm
16AZ Drawbar member to cross-member		M8x20		28 Nm
17AZ Cross-member to drawbar member		M8x25		40 Nm
18AZ Drawbar member to cross-member		M8x25		28 Nm
19AZ Disk wheel to brake hub				100 Nm
20AZ Brake hub to axle				280 Nm
21AZ Shock absorber to bracket		M12x55		96 Nm
22AZ Trailing arm to coil spring		M10x35		46 Nm
23AZ Coil spring to longitudinal member		M10x25		46 Nm
24AZ Wheel brake to trailing arm		M10x1.5x30		145 Nm

25AZ Trailing arm to mount		M12x85		96 Nm
26AZ Rear apron to bracket		M8x25		26 Nm
27AZ Bracket to mounting bracket		M6x16		11 Nm
28AZ Rotary striker lock to cross strut		M8x35		18 Nm
29AZ Bearing pedestal to loading ramp frame		M6x16		10 Nm
30AZ Outer towbar mount to longitudinal member		M10x25		55 Nm
31AZ Mounting bracket to longitudinal member		M10x25		78 Nm
32AZ Base plate to cross-member		M10x35		78 Nm

	Type	thread	tightening specification	Measure
1AZ Roof railing, front and rear, to roof railing adapter		M8		22.5 Nm
2AZ Roof railing, middle, to roof railing adapter		M8		22.5 Nm
3AZ Roof railing, front and rear, to support		M6		15 Nm
4AZ Roof railing, middle, to support		M6		10 Nm
5AZ Upper lock striker fixture to lower lock striker fixture		M8		27 Nm
6AZ Hinge, side lid, to support		M8		27 Nm
7AZ Support, lid to lid		M8		23 Nm
8AZ Screw, depth adjustment, side lid		M8		27 Nm
9AZ Screw, depth adjustment, rear lid		M8		27 Nm
10AZ Ball pivot to retaining bracket		M8		23 Nm
11AZ Retaining bracket to support		M8		27 Nm
12AZ Rotary striker lock to support		M5		7 Nm