

31 10 Front Axle Suspension

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Front axle support to body	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M12x45 front		120 Nm
	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M12x165 centre		120 Nm
	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M14x60, rear		120 Nm
2AZ Underride protection to front axle support	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M5	Replace expansion nuts.	3 Nm
3AZ Heat shield to front axle carrier	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M6		8 Nm
4AZ Reinforcement plate to front axle carrier	F20ALL / F21ALL / F22ALL / F23ALL / F30ALL / F31ALL / F32ALL / F33ALL / F34ALL / F35ALL / F36ALL	M10	Renew screws.	
			Jointing torque Angle of rotation	56 Nm 60 °
5AZ Vibration absorber to front axle support	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36			28 Nm
6AZ Stiffening plate to front axle support	F23 (2WD) / F33 (2WD)	M10x22	Renew screws.	
			Jointing torque Angle of rotation	56 Nm 45 °
7AZ Stiffening plate on adapter plate	F23 (2WD) / F33 (2WD)	M10x16	Renew screws.	
			Jointing torque Angle of rotation	56 Nm 90 °
8AZ Torsion strut to front axle support	F23 (2WD) / F33 (2WD)	M10x22	Renew screws.	
			Jointing torque Angle of rotation	56 Nm 45 °
9AZ Torsion strut to side member	F23 (2WD) / F33 (2WD)	M12x35	Renew screw.	
			Jointing torque Angle of rotation	100 Nm 90 °

10AZ Set protection to body	F30 PHEV	M12		56 Nm
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3110 Overview of tightening torques

Front axle support to body		
M12x45		120Nm
M12x165		120Nm
M14x60		120Nm
Reinforcement plate to front axle carrier		
M10 Renew screws.	Jointing torque	56Nm
	Angle of rotation	60°

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31 12 Axle guide and axle strut

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Tension strut to front axle support	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M12	Renew screw. Tighten down in normal position. Jointing torque Angle of rotation	100 Nm 90 °
2AZ Tension strut to swivel bearing	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M14	Renew nut.	175 Nm
3AZ Wishbone to front axle support	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M12	Renew screw and nut. Tighten down in normal position. Jointing torque Angle of rotation	100 Nm 90 °
4AZ Wishbone to swivel bearing	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M14	Renew nut.	175 Nm

3112 Overview of tightening torques

Wishbone to front axle support			
M12 Renew screw and nut. Tighten nut in normal position.	Jointing torque		100Nm
	Angle of rotation		90°

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31 21 Wheel Bearings and Steering Knuckle

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Wheel bearing to swivel bearing	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M12	Replace screws. Jointing torque Angle of rotation	80 Nm 90 Å°

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31 31 Spring Struts

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Nut and locknut/self-locking nut	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M8	Renew screws. Jointing torque Angle of rotation	30 Nm 90 °
		M10	Renew screws. Jointing torque Angle of rotation	56 Nm 90 °
2AZ Spring strut shock absorber to support bearing	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M12	Renew nut.	64 Nm
3AZ Spring strut shock absorber to swivel bearing	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M10	Renew screw and nut. Jointing torque Angle of rotation	44 Nm 90 °

31 35 Anti-roll bar

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Anti-roll bar bracket to front axle support	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M8	Replace nuts.	28 Nm
2AZ Anti-roll bar link to anti-roll bar/spring strut	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M10	Replace nut.	56 Nm

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3135 Overview of tightening torques

Anti-roll bar link to anti-roll bar	
M10 Renew nut.	56Nm

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31 50 Front axle differential

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Front axle final drive to engine oil pan	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M12		140 Nm
2AZ Oil filler/oil drain plugs	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M22	Replace oil filler and oil drain plugs.	60 Nm

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3150 Overview of Technical Data

Front axle transmission oil	
Front axle differential capacity	600 ml

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3150 Overview of tightening torques

Bearing support on oil sump			
M8x25		Tightening torque	19Nm
Front axle final drive to engine oil pan			
M12		Tightening torque	140Nm
Oil drain plug			
M22 Renew oil drain plug.			60Nm
Oil filler plug			
M22 Renew the oil filler plug.		Tightening torque	60Nm

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31 60 Output shaft

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Output shaft console to engine oil sump	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M8		19 Nm
2AZ Output shaft to wheel hub	F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36	M16	Observe instructions in Repair Manual. Replace collar bolt and spring. Jointing torque Angle of rotation	210 Nm 90 °

3160 Overview of tightening torques

Output shaft to wheel bearing		
M16 Replace collar bolt and compression spring.	Jointing torque	210Nm
	Angle of rotation	90°

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31 operating fluid overview

Transmission oil

Technically suitable front axle transmission oils

[Main group 31](#)

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