

6431 Overview of tightening torques

Cover to bulkhead		
Nut	Tightening torque	2Nm

6451 Overview of tightening torques

Refrigerant lines to expansion valve		
M6	Tightening torque	8Nm

64 52 Air conditioning compressor

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Refrigerant lines to air-conditioning compressor	F01 / F02 / F03 / F06 / F07 / F10 / F10h/F11 / F12 / F13 / F15 / F25 / F39	M8		18 Nm
	F10 / F11 / F15 / F16 / F18 / F20 / F21 / F22 / F25 / F26 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F80 / F82 / F83 / F87	M6		8 Nm
	N20 F18	M8x30		18 Nm
2AZ Oil filler plug, air conditioning compressor	F01 / F02 / F03 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F15 / F16 / F25 / F26 / F20 / F21 / F22 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F54 / F55 / F56 / F57 / F80 / F82 / F83 / F87 /			30±1 Nm
3AZ Air conditioning compressor on crankcase	N47T, F10 / F11 / F15 / F20 / F21 / F22 / F25 / F26 / F30 / F31 / F32 / F33 / F34 / F36	M10		38 Nm
	N13, F20 / F21 / F22 / F30 / F31	M8		22 Nm
	N20, F07 / F10 / F11 / F18 / F20 / F21 / F22 / F25 / F26 / F30 / F31 / F33 / F34 / F32 / F35 / F36	M10		38 Nm
	N54, F01 / F02	M8		19 Nm

	N55, F06 / F07 / F10 / F10h/F11 / F15 / F16 / F18 / F12 / F13 / F20 / F21 / F22 / F26 / F25 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F87	M8		19 Nm
	N57, F01 / F02 / F07 / F10 / F11	M8		19 Nm
	N57, F06 / F07 / F10 / F11 / F12 / F13 / F15 / F16 / F26 / F25 / F30 / F32 / F31 / F33 / F34 / F36	M10		38 Nm
	N63, F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F12 / F13	M8		21±3 Nm
	N63T, F15 / F16	M8		24,6 Nm
	N74, F01 / F02 / F03	M8		21±3 Nm
	F39 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 all / F60	M10		38 Nm
	B47, F10 / F11 / F20 / F21 / F22 / F23 / F25 / F26	M10		38 Nm
	B37, F20 / F21	M10		38 Nm
	B48, F30 / F31	M10		38 Nm
	B58, F30 / F31	M10		38 Nm
	B38, F20 / F21 / F22 / F23 / F30 / F31	M10		38 Nm
	S55, F80 / F82 / F83	M8		19 Nm
	S63, F85 / F86	M8		24,6 Nm
	N52, F01 / F02 / F10 / F11 / F18 / F25	M8	Replace screws. Torque: Angle of rotation:	10 Nm 180 °
4AZ Refrigerant lines to air-conditioning compressor	F04	M6		10±2 Nm
5AZ Air conditioning compressor holder on crankcase lower section	N55, F20 / F21 / F22 / F23 / F30 / F32 / F31 / F33 / F35 / F36 / F87			19 Nm
6AZ Refrigerant lines to component carrier	F10h	M6		8 Nm

7AZ	Holder of refrigerant lines to air conditioning compressor	N57X, F10 / F11	M6		8 Nm
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64 11 Heater/air conditioner

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Footwell ventilation duct to support	F45 / F46 / F48 / F49 / F52			2,4 Nm
2AZ Controller drive to heating and air-conditioning unit	F45 / F46 / F48 / F49 / F52			1,2 Nm

64 53 Refrigerant Lines and Expansion Valve

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Refrigerant lines to flange (expansion valve)	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F80 / F82 / F83 / F87 /	M6		8 Nm
2AZ Expansion valve to heater - A/C	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F25 / F26 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F80 / F82 / F83 / F87 /	M6		5,5 Nm
3AZ Refrigerant lines to capacitor	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F80 / F82 / F83 / F87 /	M6		8 Nm
	F25 / F26	M6		9 Nm

4AZ Refrigerant lines to air-conditioning compressor	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F25 / F26 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F87 /	M8		19 Nm
5AZ Rear air conditioner expansion valve coolant lines	F01 / F02 / F03	M6		5.5 Nm
6AZ Rear air conditioner expansion valve	F02 / F03			5 + 0.5 Nm
7AZ Intake pipe 1 to intake pipe 2	F01 / F02 / F03 / F04 / F10 / F60 / F52	M6		8 Nm
8AZ Refrigerant pressure sensor	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F25 / F26 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F80 / F82 / F83 / F87 /			10 Nm
9AZ Sealing plate for refrigerant lines on bulkhead	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13			4 Nm
10AZ Expansion valve to retaining clip	F25 / F26	M6		8 Nm
11AZ Refrigerant lines to expansion valve	F25 / F26			18 Nm
12AZ Refrigerant lines with retaining clip to expansion valve	F10h / F01h / F02h			5 Nm
13AZ Refrigerant line to high-voltage battery unit	F01h / F02h / F10h / F30h	M6		8 Nm

14AZ	Nuts for expansion valve	F10h / F01h / F02h	M5		3,5 Nm
15AZ	Expansion valve to high-voltage battery unit	F30h	M6		8,8 Nm
16AZ	Refrigerant line to refrigerant line	F30 / F31 / F60	M6		8 Nm

6452 Overview of tightening torques

Air conditioning compressor in component carrier		
M10	Tightening torque	38Nm
Air conditioning compressor in component carrier		
M10	Tightening torque	38Nm
Refrigerant line on air conditioning compressor		
M8	Tightening torque	19Nm

64 11 Heater/air conditioner

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Footwell ventilation duct to support	F45 / F46 / F48 / F49 / F52			2,4 Nm
2AZ Controller drive to heating and air-conditioning unit	F45 / F46 / F48 / F49 / F52			1,2 Nm

64 53 Refrigerant Lines and Expansion Valve

Tightening Torques

	Type	Thread	Tightening specifications	Torque
1AZ Refrigerant lines to flange (expansion valve)	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F80 / F82 / F83 / F87 /	M6		8 Nm
2AZ Expansion valve to heater - A/C	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F25 / F26 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F80 / F82 / F83 / F87 /	M6		5,5 Nm
3AZ Refrigerant lines to capacitor	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F80 / F82 / F83 / F87 /	M6		8 Nm
	F25 / F26	M6		9 Nm

4AZ Refrigerant lines to air-conditioning compressor	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F25 / F26 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F87 /	M8		19 Nm
5AZ Rear air conditioner expansion valve coolant lines	F01 / F02 / F03	M6		5.5 Nm
6AZ Rear air conditioner expansion valve	F02 / F03			5 + 0.5 Nm
7AZ Intake pipe 1 to intake pipe 2	F01 / F02 / F03 / F04 / F10 / F60 / F52	M6		8 Nm
8AZ Refrigerant pressure sensor	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13 / F20 / F21 / F22 / F23 / F25 / F26 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F45 / F46 / F48 / F49 / F52 / F54 / F55 / F56 / F57 / F60 / F80 / F82 / F83 / F87 /			10 Nm
9AZ Sealing plate for refrigerant lines on bulkhead	F01 / F02 / F03 / F04 / F06 / F07 / F10 / F11 / F18 / F12 / F13			4 Nm
10AZ Expansion valve to retaining clip	F25 / F26	M6		8 Nm
11AZ Refrigerant lines to expansion valve	F25 / F26			18 Nm
12AZ Refrigerant lines with retaining clip to expansion valve	F10h / F01h / F02h			5 Nm
13AZ Refrigerant line to high-voltage battery unit	F01h / F02h / F10h / F30h	M6		8 Nm

14AZ	Nuts for expansion valve	F10h / F01h / F02h	M5		3,5 Nm
15AZ	Expansion valve to high-voltage battery unit	F30h	M6		8,8 Nm
16AZ	Refrigerant line to refrigerant line	F30 / F31 / F60	M6		8 Nm

6453 Overview of tightening torques

Connection point of intake pipe T1 to intake pipe T2		
M6X25	Tightening torque	8Nm
Refrigerant line on the air conditioning condenser/bracket		
M6	Tightening torque	8Nm
Refrigerant line to connecting piece		
Screw M6	Tightening torque	8Nm
Refrigerant line to engine mount		
M6	Tightening torque	8Nm
Safety pressure switch		
	Tightening torque	10Nm

64 operating fluid overview

Expendable materials

Refrigerant R134a	12 kg, Bottle	83199408386
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Expendable materials

Heating and air conditioning system cleaning agent	1000 ml, Bottle	83192180507
	5000 ml, Bottle	83192219932

Expendable materials

Heating and air conditioning system cleaning agent	100 ml, Can	83192409611
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Expendable materials

Ozonizer	100 ml, Can	83192318666
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Expendable materials

Refrigerant oil PAG-Å-L Denso ND8	500 ml, Can	81342147762
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Expendable materials

UV additive Waeco	500 ml, Can	83192232504
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Expendable materials

Cartridge set for leak detector case	3x, Cartridge	83192232569
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Expendable materials

Cleaning agent UV filter	237 ml, Spray bottle	83192243942
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Expendable materials

Refrigerant R1234yf	5 kg, Bottle	83192354790
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Expendable materials

UV additive	472,5 ml, Can	83192243934
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Expendable materials

Refrigerant oil Sanden SP-A2 * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only. EU	250 ml, Can	83222339920
	10 ml.	83192287382

	10 ml, TU*	83190143174
Expendable materials		
Refrigerant oil	250 ml, Can	81229407724
* TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	10 ml, TU*	83190143174