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## WM 4001TW Tightening torques for front axle

### Technical values

Location	Description	Type	Basic value	Tolerance 1	Tol
Threaded connection, cross member to body (front) M12 x 1.5	Please note: Do not grease threaded connection in Dacromet finish - aluminium colour.	Tightening torque	100 Nm (74 ftlb.)		
Threaded connection, cross member with diagonal arm to body (front) M 14 x 1.5	Please note: Do not grease threaded connection in Dacromet finish – aluminium colour.	Tightening torque	160 Nm (118 ftlb.)		
Threaded connection, cross member to body rear (two screws each side) M 14 x 1.5	Please note: Do not grease threaded connections in Dacromet finish – aluminium colour.	Tightening torque	160 Nm (118 ftlb.)		
Diagonal braces to body, M12 x 1.5	Rear wheel drive	Tightening torque	100 Nm (74 ftlb.)		
Diagonal braces to front-axle cross member (hexagon nut), M12 x 1.5	Rear and four-wheel drive	Tightening torque	100 Nm (74 ftlb.)		
Diagonal braces/crash stop to front-axle cross member, M12 x 1.5	Four-wheel drive	Tightening torque	100 Nm (74 ftlb.)		
Crash stop to body, M12 x 1.5	Four-wheel drive	Tightening torque	100 Nm (74 ftlb.)		
Control arm to cross member/side member, M12 x 1.5	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	120 Nm (89 ftlb.)		

Control arm to diagonal arm, M14 x 1.5	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	160 Nm (118 ftlb.)		
Control arm to wheel carrier (ball joint), M12 x 1.5 (also applicable for 911 GT3)	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	75 Nm (56 ftlb.)		
Camber basic setting on two-part trailing arm, M8 (911 GT3)	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	27 Nm (20 ftlb.)		
Spring strut to wheel carrier (anti-roll-bar mount to shock absorber pipe), M12 x 1.5 (911 Carrera)	Single clamp	Tightening torque	85 Nm (63 ftlb.)		
Spring strut to wheel carrier (shock-absorber pipe clamp to wheel carrier), M12 x 1.5 (911 Carrera 4)	Single clamp	Tightening torque	85 Nm (63 ftlb.)		
Spring strut to wheel carrier (shock-absorber pipe clamp/anti-roll-bar mount to wheel carrier), 2x M12 x 1.5 (911 GT3/911 GT2)	Double clamp	Tightening torque	75 Nm (56 ftlb.)		
Spring-strut supporting mount to body, M8		Tightening torque	33 Nm (24 ftlb.)		
Spring strut mount to piston rod, M14 x 1.5		Tightening torque	80 Nm (59 ftlb.)		
Height adjustment on spring strut (lock nut), M52 x 1.5 (911 GT3)		Tightening torque	50 Nm (37 ftlb.)		
Brake cover plate to wheel carrier, M6		Tightening torque	10 Nm (7.5 ftlb.)		

Brake disc to wheel hub, M6		Tightening torque	10 Nm (7.5 ftlb.)		
Brake calliper to wheel carrier, M12 x 1.5	Replace bolts on front and rear axle each time they are removed.	Tightening torque	85 Nm (63 ftlb.)		
Speed sensor to wheel carrier, M6		Tightening torque	10 Nm (7.5. ftlb.)		
Combination coupling to wheel carrier, M6		Tightening torque	10 Nm (7.5 ftlb.)		
Brake hose bracket to wheel carrier, M6		Tightening torque	10 Nm (7.5 ftlb.)		
Cable holder to wheel carrier, M10 (911 GT3)		Tightening torque	46 Nm (34 ftlb.)		
Retainer plate for wheel bearing to wheel carrier, M8		Tightening torque	37 Nm (27 ftlb.)		
Wheel hub to wheel carrier (tension bolt), M22 x 1.5	Rear-wheel drive	Tightening torque	460 Nm (340 ftlb.)		
Drive shaft to wheel hub, M22 x 1.5	All-wheel drive	Tightening torque	460 Nm (340 ftlb.)		
Drive shaft to front-wheel drive halfshaft flange, M8	All-wheel drive	Tightening torque	39 Nm (29 ftlb.)		
Stabiliser to cross member, M10 x 60	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	65 Nm (48 ftlb.)		
Suspension/stabiliser mount to stabiliser, M10	Please note: Observe three-stage tightening procedure! Do not grease threaded connections in Dacromet finish - aluminium colour.	Three-stage tightening procedure (1st stage: tighten to 50 Nm (37 ftlb.). 2nd stage: loosen by 90 degrees. 3rd stage: tighten to 65 Nm (48 ftlb.).	65 Nm (48 ftlb.)		
Suspension/stabiliser to shock absorber	Please note: Do not	Tightening torque	85 Nm (63 ftlb.)		

pipe/wheel carrier, M12 x 1.5 (911 Carrera/911 GT3)	grease threaded connections in Dacromet finish - aluminium colour.			
Suspension/stabiliser to spring strut plate, M10 (911 Carrera 4)	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	65 Nm (48 ftlb.)	
Tie rod (ball-joint pin) on lever M12 x 1.5	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	75 Nm (56 ftlb.)	
Aluminium tie rod to axial joint (lock nut) M14 x 1.5	Please note: When using special tool P9730 (socket wrench insert), observe the changed tightening torque! 50 Nm (37 ftlb.) at the lock nut corresponds to a setting of approx. 32.5 Nm (24 ftlb.) on the torque wrench.	Tightening torque	50 Nm (37 ftlb.)	
Universal joint (steering shaft) to steering gear M8 x 35	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour! Replace fit bolt after each removal.	Tightening torque	23 Nm (17 ftlb.)	
Steering gear to	Please note:	Tightening	70 Nm (52 ftlb.)	

cross member, M10 x 1.5	Do not grease threaded connections in Dacromet finish - aluminium colour! Replace fastening screws following removal.	torque			
Wheel to wheel hub on front and rear axle when using silver wheel bolts (up to model year 2011), M14 x 1.5	Apply a light coating of Optimoly TA (aluminium paste) to the thread, shank and under the head (between screw head bearing surface and spherical cap ring) of the wheel bolts. Do not grease bearing surface of the spherical cap facing the wheel. If heavily soiled, clean bolts first with a lint-free cloth. Replace damaged wheel bolts (cannot be reworked)	Tightening torque for using silver wheel bolts (up to model year 2011): 130 Nm/96 ftlb. (160 Nm/118 ftlb. also permitted retroactively)	130Nm Nm (96 ftlb.) (160 Nm/118 ftlb. also permitted)		
Wheel to wheel hub on front and rear axle when using silver wheel bolts (as of model year 2012), M14 x 1.5	Apply a light coating of Optimoly TA (aluminium paste) to the thread, shank and under the head (between screw head bearing surface and spherical cap ring) of the	Tightening torque for using silver wheel bolts (as of model year 2012): 160 Nm (118 ftlb.)	160Nm Nm (118 ftlb.)		

	<p>wheel bolts. Do not grease bearing surface of the spherical cap facing the wheel. If heavily soiled, clean bolts first with a lint-free cloth. Replace damaged wheel bolts (cannot be reworked).</p>			
<p>Wheel to wheel hub on front and rear axle when using black wheel bolts, M14 x 1.5</p>	<p>Apply a light coating of Optimoly TA (aluminium paste) to the thread, shank and under the head (between screw head bearing surface and spherical cap ring) of the wheel bolts. Do not grease bearing surface of the spherical cap facing the wheel. If heavily soiled, clean bolts first with a lint-free cloth. Replace damaged wheel bolts (cannot be reworked).</p>	<p>Tightening torque for using black wheel bolts: 160 Nm (118 ftlb.)</p>	<p>160Nm Nm (118 ftlb.)</p>	
<p>Wheel to wheel hub/central bolt</p>	<p>All contact surfaces of the wheel, wheel hub and brake disc as well as the trapezoidal thread in the wheel hub</p>	<p>3-step tightening procedure (Step 1: Tighten to 600 Nm (444 ftlb.). Step 2: Loosen the central bolt</p>	<p>600 Nm (444 ftlb.)</p>	

	<p>must be free of abrasion, sand, dust or chips. Apply some aluminium paste (Optimoly TA) on the trapezoidal thread on the wheel hub if necessary. Grease the conical surface of the central bolt with a very light coating of aluminium paste before fitting each wheel. For advanced grease specifications (which are only necessary under certain conditions), refer to the description 440519 Removing and installing wheel with central bolt.</p>	<p>again (slightly) by approx. 60 angular degrees (1/6 turn). Step 3: Tighten to 600 Nm (444 ftlb.). The tightening torque was increased to 600 Nm (444 ftlb.) (previously 500 Nm (370 ftlb.)) in the course of model year 2011. The higher tightening torque also applies to older vehicles.</p>		
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### Tightening torques for cross member/side member (one component)

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Threaded connection, cross member to body (front) M12 x 1.5	Please note: Do not grease threaded connection in Dacromet finish - aluminium colour.	Tightening torque	100 Nm (74 ftlb.)		
Threaded connection, cross member with diagonal arm to body (front) M 14 x 1.5	Please note: Do not grease threaded connection in Dacromet finish – aluminium colour.	Tightening torque	160 Nm (118 ftlb.)		
Threaded connection, cross member to body rear (two screws each side) M 14 x 1.5	Please note: Do not grease threaded connections in Dacromet finish – aluminium colour.	Tightening torque	160 Nm (118 ftlb.)		

### Tightening torques for diagonal brace

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Diagonal braces to body, M12 x 1.5	Rear wheel drive	Tightening torque	100 Nm (74 ftlb.)		
Diagonal braces to front-axle cross member (hexagon nut), M12 x 1.5	Rear and four-wheel drive	Tightening torque	100 Nm (74 ftlb.)		
Diagonal braces/crash stop to front-axle cross member, M12 x 1.5	Four-wheel drive	Tightening torque	100 Nm (74 ftlb.)		
Crash stop to body, M12 x 1.5	Four-wheel drive	Tightening torque	100 Nm (74 ftlb.)		

### Tightening torques for axle strut

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Control arm to cross member/side member, M12 x 1.5	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	120 Nm (89 ftlb.)		
Control arm to diagonal arm, M14 x 1.5	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	160 Nm (118 ftlb.)		
Control arm to wheel carrier (ball joint), M12 x 1.5 (also applicable for 911 GT3)	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	75 Nm (56 ftlb.)		
Camber basic setting on two-part trailing arm, M8 (911 GT3)	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	27 Nm (20 ftlb.)		

### Tightening torques for spring strut

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Spring strut to wheel carrier (anti-roll-bar mount to shock absorber pipe), M12 x 1.5 (911 Carrera)	Single clamp	Tightening torque	85 Nm (63 ftlb.)		
Spring strut to wheel carrier (shock-absorber pipe clamp to wheel carrier), M12 x 1.5 (911 Carrera 4)	Single clamp	Tightening torque	85 Nm (63 ftlb.)		
Spring strut to wheel carrier (shock-absorber pipe clamp/anti-roll-bar mount to wheel carrier), 2x M12 x 1.5 (911 GT3/911 GT2)	Double clamp	Tightening torque	75 Nm (56 ftlb.)		
Spring-strut supporting mount to body, M8		Tightening torque	33 Nm (24 ftlb.)		
Spring strut mount to piston rod, M14 x 1.5		Tightening torque	80 Nm (59 ftlb.)		
Height adjustment on spring strut (lock nut),		Tightening	50 Nm		



M52 x 1.5 (911 GT3)		torque	(37 ftlb.)		
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### Tightening torques for wheel carrier

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Brake cover plate to wheel carrier, M6		Tightening torque	10 Nm (7.5 ftlb.)		
Brake disc to wheel hub, M6		Tightening torque	10 Nm (7.5 ftlb.)		
Brake calliper to wheel carrier, M12 x 1.5	Replace bolts on front and rear axle each time they are removed.	Tightening torque	85 Nm (63 ftlb.)		
Speed sensor to wheel carrier, M6		Tightening torque	10 Nm (7.5 ftlb.)		
Combination coupling to wheel carrier, M6		Tightening torque	10 Nm (7.5 ftlb.)		
Brake hose bracket to wheel carrier, M6		Tightening torque	10 Nm (7.5 ftlb.)		
Cable holder to wheel carrier, M10 (911 GT3)		Tightening torque	46 Nm (34 ftlb.)		
Retainer plate for wheel bearing to wheel carrier, M8		Tightening torque	37 Nm (27 ftlb.)		
Wheel hub to wheel carrier (tension bolt), M22 x 1.5	Rear-wheel drive	Tightening torque	460 Nm (340 ftlb.)		
Drive shaft to wheel hub, M22 x 1.5	All-wheel drive	Tightening torque	460 Nm (340 ftlb.)		
Drive shaft to front-wheel drive halfshaft flange, M8	All-wheel drive	Tightening torque	39 Nm (29 ftlb.)		

### Tightening torques for stabiliser

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Stabiliser to cross member, M10 x 60	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	65 Nm (48 ftlb.)		
Suspension/stabiliser mount to stabiliser, M10	Please note: Observe three-stage tightening procedure! Do not grease threaded connections in Dacromet finish - aluminium colour.	Three-stage tightening procedure (1st stage: tighten to 50 Nm (37 ftlb.). 2nd stage: loosen by 90 degrees. 3rd stage: tighten to 65 Nm (48 ftlb.).	65 Nm (48 ftlb.)		
Suspension/stabiliser to	Please note: Do not	Tightening torque	85 Nm		

shock absorber pipe/wheel carrier, M12 x 1.5 (911 Carrera/911 GT3)	grease threaded connections in Dacromet finish - aluminium colour.		(63 ftlb.)		
Suspension/stabiliser to spring strut plate, M10 (911 Carrera 4)	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	65 Nm (48 ftlb.)		

### Tightening torques for steering

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Tie rod (ball-joint pin) on lever M12 x 1.5	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour.	Tightening torque	75 Nm (56 ftlb.)		
Aluminium tie rod to axial joint (lock nut) M14 x 1.5	Please note: When using special tool P9730 (socket wrench insert), observe the changed tightening torque! 50 Nm (37 ftlb.) at the lock nut corresponds to a setting of approx. 32.5 Nm (24 ftlb.) on the torque wrench.	Tightening torque	50 Nm (37 ftlb.)		
Universal joint (steering shaft) to steering gear M8 x 35	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour! Replace fit bolt after each removal.	Tightening torque	23 Nm (17 ftlb.)		
Steering gear to cross member, M10 x 1.5	Please note: Do not grease threaded connections in Dacromet finish - aluminium colour! Replace fastening screws following removal.	Tightening torque	70 Nm (52 ftlb.)		

### Tightening torques for wheel mounting

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Wheel to wheel hub on front and rear axle when using silver wheel bolts (up to model year 2011), M14 x 1.5	Apply a light coating of Optimoly TA (aluminium paste) to the thread, shank and under the head (between screw head bearing surface and spherical cap ring) of the wheel bolts. Do not grease bearing surface of the spherical cap facing the	Tightening torque for using silver wheel bolts (up to model year 2011): 130 Nm/96 ftlb. (160 Nm/118 ftlb. also permitted retroactively)	130Nm Nm (96 ftlb.) (160 Nm/118 ftlb. also permitted)		

	<p>wheel. If heavily soiled, clean bolts first with a lint-free cloth. Replace damaged wheel bolts (cannot be reworked)</p>				
<p>Wheel to wheel hub on front and rear axle when using silver wheel bolts (as of model year 2012), M14 x 1.5</p>	<p>Apply a light coating of Optimoly TA (aluminium paste) to the thread, shank and under the head (between screw head bearing surface and spherical cap ring) of the wheel bolts. Do not grease bearing surface of the spherical cap facing the wheel. If heavily soiled, clean bolts first with a lint-free cloth. Replace damaged wheel bolts (cannot be reworked).</p>	<p>Tightening torque for using silver wheel bolts (as of model year 2012): 160 Nm (118 ftlb.)</p>	160Nm Nm (118 ftlb.)		
<p>Wheel to wheel hub on front and rear axle when using black wheel bolts, M14 x 1.5</p>	<p>Apply a light coating of Optimoly TA (aluminium paste) to the thread, shank and under the head (between screw head bearing surface and spherical cap ring) of the wheel bolts. Do not grease bearing surface of the spherical cap facing the wheel. If</p>	<p>Tightening torque for using black wheel bolts: 160 Nm (118 ftlb.)</p>	160Nm Nm (118 ftlb.)		

	heavily soiled, clean bolts first with a lint-free cloth. Replace damaged wheel bolts (cannot be reworked).				
Wheel to wheel hub/central bolt	All contact surfaces of the wheel, wheel hub and brake disc as well as the trapezoidal thread in the wheel hub must be free of abrasion, sand, dust or chips. Apply some aluminium paste (Optimoly TA) on the trapezoidal thread on the wheel hub if necessary. Grease the conical surface of the central bolt with a very light coating of aluminium paste before fitting each wheel. For advanced grease specifications (which are only necessary under certain conditions), refer to the description 440519 Removing and installing wheel with central bolt.	3-step tightening procedure (Step 1: Tighten to 600 Nm (444 ftlb.). Step 2: Loosen the central bolt again (slightly) by approx. 60 angular degrees (1/6 turn). Step 3: Tighten to 600 Nm (444 ftlb.)). The tightening torque was increased to 600 Nm (444 ftlb.) (previously 500 Nm (370 ftlb.)) in the course of model year 2011. The higher tightening torque also applies to older vehicles.	600 Nm (444 ftlb.)		

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Model year as of 2005

C00, C02, C05, C06, C07, C08, C09, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C32, C33, C34, C35, C36, C37, C38, C39, C41, C45, C46, C96, C97, C98, C99