

Section 5 Brakes

Group 51 Wheel brakes

Brakes, Technical data

Brake fluid, type: DOT 4 +	15"		16"		16.5"	
	mm	Inches	mm	Inches	mm	Inches
Front wheel brake						
Brake disc (ventilated):						
Outer diameter, front	278	10.94"	300	10.94"	320	10.94"
Outer diameter, rear	280	11"	280	11"	280	11"
Thickness new, front	25	1"	25	1"	25	1"
Thickness new, rear	11	0.4"	11	0.4"	11	0.4"
Replace when at minimum	23	0.937"	23	0.937"	23	0.937"
Min thickness for brake pad replacement	23.8	0.937"	23.8	0.937"	23.8	0.937"
Max lateral runout, floating disc	0.020	0.0008"	0.020	0.0008"	0.020	0.0008"
Max lateral runout, on hub	0.040	0.0016"	0.040	0.0016"	0.040	0.0016"
Max thickness variation	0.008	0.0003"	0.008	0.0003"	0.008	0.0003"
Wheel cylinder:						
Piston diameter	57	2.244"	57	2.244"	57	2.244"
Brake pads (Ferodo 4209FF):						
Thickness, new (thickness of backing plate not included)	12	0.472"	12	0.472"	12.5	0.472"
Thickness, minimum (thickness of backing plate not included)	3	0.118"	3	0.118"	3	0.118"
Rear wheel brake						
Brake disc (solid):						
Outer diameter	280	11"	280	11"	280	11"
Thickness, new	11	0.4"	11	0.4"	11	0.4"
Must be replaced at min	8.9	0.35"	8.9	0.35"	8.9	0.35"
Min thickness for brake pad replacement	8.4	0.33"	8.4	0.33"	8.4	0.33"
Max lateral runout, floating disc	0.02	0.000797"	0.02	0.000797"	0.020	0.000797"
Max lateral runout, on hub	0.050	0.00196"	0.050	0.00196"	0.050	0.00196"
Max thickness variation	0.008	0.0003"	0.008	0.0003"	0.008	0.0003"
Wheel cylinder:						

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Piston diameter	38	1.496"	38	1.496"	38	1.496"
Brake pads (Galfer 4132FF):						
Thickness, new (thickness of backing plate not included)	10	0.394"	10	0.394"	10	0.394"
Thickness, minimum (thickness of backing plate not included)	3	0.118"	3	0.118"	3	0.118"

Master cylinder	mm	Inches
Master cylinder, type ATE tandem:		
Primary cylinder, diameter	23.81	0.937"
Secondary cylinder, diameter	23.81	0.937"
Servo cylinder:		Inches
Type: ATE (twin booster)	inch	10"
Servo cylinder gear ratio:		
Gear ratio (in practice)	5	

Tightening torques

Designation	Nm	ft.lb.	Dimensions
Brake calliper - Steering arm	120 ± 18	88 ±13	M12
Bleed nipple brake calliper front, rear	14 ± 2	10 ±1.5	M10
Brake calliper, front/rear- Sliding pin	27 ± 2	20 ±1	M9
Guard plate front - Steering arm	9 ± 1.4	6.6 ±1	M6
Brake calliper rear - Wheel bearing housing	70 t 10	51 ±7	M10
Brake calliper rear - Sliding pin	27 ± 2	20 ±1	M9
Guard plate rear - Wheel bearing housing	12 ± 3	9 ±1	M6
Master cylinder - Booster	25 ± 4	18 ±3	M8
Booster - Firewall	22 ± 3	16 ±2	M8
Bracket, ABS - Side member	9 ± 1.4	6.6 ±1	M6
Bracket, ABS - Modulator	9 ± 1.4	6.6 ±1	M6
ABS sensor - Wheel bearing housing	5 ± 0.7	3.6 ±0.5	M5
Brake pipe - Modulator	14 ± 3	10 ±1.5	M10
Brake pipe - Modulator	14 ± 3	10 ±1.5	M12
Brake pipe - Master cylinder	14 ± 3	10 t1.5	M12
Brake pipe - Brake hose	14 ± 3	10 ±1.5	M10
Brake lamp	18 ± 2	13 ±1.5	M10
Bracket vacuum pump - Front side member	10 ± 2	7 ±1.5	M6
Parking brake bracket - Sips box	24 ± 3	17 ±2	M8
Brake fluid reservoir - Master cylinder .	3.5 ± 1	2.5 ±0.7	M5
ABS sensor - Steering arm	5 ± 0.7	3.6 ±0.5	M5
Brake pad rear, locating pins	35	25	
Brake calliper bracket in the stub axle	135	100	
Brake disc screw	70	51	