

(Porsche Stability Management) as standard	booster, internally ventilated brake discs with six-piston aluminum monobloc fixed-calliper brake on front axle and one-piston floating-calliper brake with integrated parking brake on rear axle.
PSM	Porsche Stability Management (PSM) as standard with functions ABS, ASR (Traction Control TC+, engine drag torque control MSR, ABD, PTM lock control (longitudinal)). Optional: Levelling system, infinite shock absorber adjustment PASM, electronically regulated limited-slip rear differential PTV+
Tandem brake booster Ø (vacuum)	
Boost ratio	
Brake master cylinder Ø	
Brake-circuit division	
Brake disc Ø, front	
Brake disc Ø, rear	

9/9 Zoll		
9		
28.57 mm		
24/12 mm		
350 mm		
330 mm		

Brake disc thickness, front	
Brake disc thickness, rear	
Thickness tolerance of brake disc, max.	
Effective brake disc Ø, front	
Effective brake disc Ø, rear	
Piston Ø in brake calliper, front	2 x 36 mm + 2 x 36 mm + 2 x 36 mm
Piston Ø in brake calliper, rear	43 mm
Brake pad area per wheel, front	
Brake pad area per wheel, rear	
Total brake pad area	
Service brake (footbrake) with grey cast iron brake discs (standard brake) with PSM (Porsche Stability Management) as standard	Hydraulic dual-circuit brake system with brake-circuit division per axle. Vacuum brake booster, internally ventilated brake discs with six-piston aluminum monobloc fixed-calliper brake on front axle and one-piston floating-calliper brake with integrated parking brake on rear axle.
PSM	Porsche Stability Management (PSM) as

34 mm		
22 mm		
0.01 mm		
142.6 mm		
144.1 mm		
215 cm ²		
90.6 cm ²		
611.2 cm ²		

	standard with functions ABS, ASR (Traction Control TC+, engine drag torque control MSR, ABD, PTM lock control (longitudinal)). Optional: Levelling system, infinite shock absorber adjustment PASM, electronically regulated limited-slip rear differential PTV+
Tandem brake booster Ø (vacuum)	
Boost ratio	
Brake master cylinder Ø	
Brake-circuit division	
Brake disc Ø, front	
Brake disc Ø, rear	
Brake disc thickness, front	
Brake disc thickness, rear	
Thickness tolerance of brake disc, max.	
Effective brake disc Ø, front	
Effective brake disc Ø, rear	
Piston Ø in brake calliper, front	2 x 36 mm + 2 x 36 mm + 2 x 36 mm

9/9 Zoll		
9		
28.57 mm		
24/12 mm		
360 mm		
356 mm		
36 mm		
28 mm		
0.01 mm		
147.2 mm		
152.75 mm		

Piston Ø in brake calliper, rear	43 mm
Brake pad area per wheel, front	
Brake pad area per wheel, rear	
Total brake pad area	
Service brake (foot brake) with ceramic brake discs with PSM (Porsche Stability Management) as standard	Hydraulic dual-circuit brake system with brake-circuit division per axle. Vacuum brake booster, internally ventilated brake discs with six-piston aluminum monobloc fixed-calliper brake on front axle and one-piston floating-calliper brake with integrated parking brake on rear axle.
PSM	Porsche Stability Management (PSM) as standard with functions ABS, ASR (Traction Control TC+, engine drag torque control MSR, ABD, PTM lock control (longitudinal)). Optional: Levelling system, infinite shock absorber adjustment PASM, electronically regulated limited-slip rear differential PTV+

234 cm ²		
106 cm ²		
680 cm ²		

Tandem brake booster Ø (vacuum)	
Boost ratio	
Brake master cylinder Ø	
Brake-circuit division	
Brake disc Ø, front	
Brake disc Ø, rear	
Brake disc thickness, front	
Brake disc thickness, rear	
Thickness tolerance of brake disc, max.	
Effective brake disc Ø, front	
Effective brake disc Ø, rear	
Piston Ø in brake calliper, front	6 x 36 mm
Piston Ø in brake calliper, rear	43 mm
Brake pad area per wheel, front	
Brake pad area per wheel, rear	
Total brake pad area	
Pad thickness, front	Wear limit 2 mm
Pad thickness, rear	Wear limit 2 mm
Brake disc minimum thickness after machining, front	Only as-new brake discs may be reworked! Only rework the brake

9/9 Zoll		
9		
28.57 mm		
24/12 mm		
396 mm		
370 mm		
38 mm		
30 mm		
0.01 mm		
164.7 mm		
159.75 mm		
230 cm ²		
106 cm ²		
672 cm ²		
approx. 9.5 mm		
approx. 11.5 mm		
33, 6 mm		

	disc symmetrically, evenly from both sides!
Brake disc minimum thickness after machining, rear	Only as-new brake discs may be reworked! Only rework the brake disc symmetrically, evenly from both sides!
Brake disc wear dimension, front	
Brake disc wear dimension, rear	
Peak-to-valley surface roughness of brake disc after machining, max.	
Thickness tolerance of brake discs after machining, max.	
Lateral runout of brake disc, max.	
Lateral runout of wheel hub, max.	
Lateral runout of brake disc when installed, max.	
Pad thickness, front	Wear limit 2 mm
Pad thickness, rear	Wear limit 2 mm
Brake disc minimum thickness after machining, front	Only as-new brake discs may be reworked! Only rework the brake disc symmetrically, evenly from both sides!

21, 6 mm		
32 mm		
20 mm		
0.006 mm		
0.02 mm		
0.03 mm		
0.02 mm		
0.06 mm		
approx. 9.5 mm		
approx. 11.5 mm		
35, 6 mm		

Brake disc minimum thickness after machining, rear	Only as-new brake discs may be reworked! Only rework the brake disc symmetrically, evenly from both sides!		27, 6 mm		
Brake disc wear dimension, front			34 mm		
Brake disc wear dimension, rear			26 mm		
Peak-to-valley surface roughness of brake disc after machining, max.			0.006 mm		
Thickness tolerance of brake discs after machining, max.			0.02 mm		
Lateral runout of brake disc, max.			0.03 mm		
Lateral runout of wheel hub, max.			0.02 mm		
Lateral runout of brake disc when installed, max.			0.06 mm		
Pad thickness, front	Wear limit 9.9 mm		approx. 15.8 mm		
Pad thickness, rear	Wear limit 8.8 mm		approx. 17.6 mm		
Lateral runout of brake disc, max.		New	0.025 mm		
Lateral runout of wheel hub, max.		New	0.02 mm		
Lateral runout of brake disc when installed, max.		New	0.07 mm		

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Service brake (footbrake) with grey cast iron brake discs (standard brake) with PSM (Porsche Stability Management) as standard	Hydraulic dual-circuit brake system with brake-circuit division per axle. Vacuum brake booster, internally ventilated brake discs with six-piston aluminum monobloc fixed-calliper brake on front axle and one-piston floating-calliper brake with integrated parking brake on rear axle.				
PSM	Porsche Stability Management (PSM) as standard with functions ABS, ASR (Traction Control TC+, engine drag torque control MSR, ABD, PTM lock control (longitudinal)). Optional: Levelling system, infinite shock absorber adjustment PASM, electronically regulated limited-slip rear differential PTV+				
Tandem brake booster Ø (vacuum)			9/9 Zoll		
Boost ratio			9		
Brake master cylinder Ø			28.57 mm		

Brake-circuit division			24/12 mm		
Brake disc Ø, front			350 mm		
Brake disc Ø, rear			330 mm		
Brake disc thickness, front			34 mm		
Brake disc thickness, rear			22 mm		
Thickness tolerance of brake disc, max.			0.01 mm		
Effective brake disc Ø, front			142.6 mm		
Effective brake disc Ø, rear			144.1 mm		
Piston Ø in brake calliper, front	2 x 36 mm + 2 x 36 mm + 2 x 36 mm				
Piston Ø in brake calliper, rear	43 mm				
Brake pad area per wheel, front			215 cm ²		
Brake pad area per wheel, rear			90.6 cm ²		
Total brake pad area			611.2 cm ²		

WM 4650TW TECHNICAL DATA/BRAKE WEAR LIMIT (ALL MODELS) > TECHNICAL DATA > TECHNICAL DATA - MACAN TURBO BRAKE SYSTEM

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Service brake (footbrake) with grey cast iron brake discs (standard brake) with PSM (Porsche Stability Management) as standard	Hydraulic dual-circuit brake system with brake-circuit division per axle. Vacuum brake booster, internally ventilated brake discs with six-piston aluminum monobloc fixed-calliper brake on front axle and one-piston floating-calliper brake with integrated parking				

	brake on rear axle.			
PSM	Porsche Stability Management (PSM) as standard with functions ABS, ASR (Traction Control TC+, engine drag torque control MSR, ABD, PTM lock control (longitudinal)). Optional: Levelling system, infinite shock absorber adjustment PASM, electronically regulated limited-slip rear differential PTV+			
Tandem brake booster Ø (vacuum)		9/9 Zoll		
Boost ratio		9		
Brake master cylinder Ø		28.57 mm		
Brake-circuit division		24/12 mm		
Brake disc Ø, front		360 mm		
Brake disc Ø, rear		356 mm		
Brake disc thickness, front		36 mm		
Brake disc thickness, rear		28 mm		
Thickness tolerance of brake disc, max.		0.01 mm		
Effective brake disc Ø, front		147.2 mm		
Effective brake disc Ø, rear		152.75 mm		
Piston Ø in brake calliper, front	2 x 36 mm + 2 x 36 mm + 2 x 36 mm			
Piston Ø in brake calliper, rear	43 mm			
Brake pad area per wheel, front		234 cm ²		
Brake pad area per wheel, rear		106 cm ²		
Total brake pad area		680 cm ²		

WM 4650TW TECHNICAL DATA/BRAKE WEAR LIMIT (ALL MODELS) > TECHNICAL DATA > TECHNICAL DATA - PCCB BRAKE SYSTEM

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Service brake (foot brake) with ceramic brake discs with PSM (Porsche Stability Management) as standard	Hydraulic dual-circuit brake system with brake-circuit division per axle. Vacuum brake booster, internally ventilated brake discs with six-piston aluminum monobloc fixed-calliper brake on front axle and one-piston floating-calliper brake with integrated parking brake on rear axle.				
PSM	Porsche Stability Management (PSM) as standard with functions ABS, ASR (Traction Control TC+, engine drag torque control MSR, ABD, PTM lock control (longitudinal)). Optional: Levelling system, infinite shock absorber adjustment PASM, electronically regulated limited-slip rear differential PTV+				
Tandem brake booster Ø (vacuum)			9/9 Zoll		

Boost ratio		9		
Brake master cylinder Ø		28.57 mm		
Brake-circuit division		24/12 mm		
Brake disc Ø, front		396 mm		
Brake disc Ø, rear		370 mm		
Brake disc thickness, front		38 mm		
Brake disc thickness, rear		30 mm		
Thickness tolerance of brake disc, max.		0.01 mm		
Effective brake disc Ø, front		164.7 mm		
Effective brake disc Ø, rear		159.75 mm		
Piston Ø in brake calliper, front	6 x 36 mm			
Piston Ø in brake calliper, rear	43 mm			
Brake pad area per wheel, front		230 cm ²		
Brake pad area per wheel, rear		106 cm ²		
Total brake pad area		672 cm ²		

WM 4650TW TECHNICAL DATA/BRAKE WEAR LIMIT (ALL MODELS) > TEST VALUES AND WEAR LIMITS > TEST VALUES AND WEAR LIMITS FOR MACAN S/DIESEL S BRAKE SYSTEM

Information

Depending on the extent of wear on cast iron brake discs, two condition criteria can make replacement necessary:

- Formation of cracks at advanced stage on the brake disc friction surfaces.

- Minimum brake disc thickness is not retained due to wear (material erosion due to friction) . → 46500200 CHECKING FRONT BRAKE DISCS (WEAR ASSESSMENT) → 46530250 CHECKING REAR BRAKE DISCS (WEAR ASSESSMENT)

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Pad thickness, front	Wear limit 2 mm		approx. 9.5 mm		
Pad thickness, rear	Wear limit 2 mm		approx. 11.5 mm		
Brake disc minimum thickness after machining, front	Only as-new brake discs may be reworked! Only rework the brake disc symmetrically, evenly from both sides!		33, 6 mm		
Brake disc minimum thickness after machining, rear	Only as-new brake discs may be reworked! Only rework the brake disc symmetrically, evenly from both sides!		21, 6 mm		
Brake disc wear dimension, front			32 mm		
Brake disc wear dimension, rear			20 mm		
Peak-to-valley surface roughness of brake disc after machining, max.			0.006 mm		
Thickness tolerance of brake discs after machining, max.			0.02 mm		
Lateral runout of brake disc, max.			0.03 mm		
Lateral runout of wheel hub, max.			0.02 mm		
Lateral runout of brake disc when installed, max.			0.06 mm		

Possible complaints

- Damage due to lack of use (rusting). This causes vibrations in the steering wheel, noises and brake pedal pulsation.
- Brake disc becomes distorted as a result of serious driving.
- Too much lateral runout when new brake discs are fitted on dirty or distorted wheel hubs.

Procedure

- Check brake disc for cracks, minimum thickness, lateral runout, thickness tolerance, flatness and surface roughness.
- If necessary, (depending on the actual brake disc thickness and the brake disc wear limit) machine the brake disc using one of the disc brake dressing machines approved by Porsche.
- The brake disc must only be reworked symmetrically, i.e. evenly from both sides! Read the operating instructions for the disc brake dressing machine!

WM 4650TW TECHNICAL DATA/BRAKE WEAR LIMIT (ALL MODELS) > TEST VALUES AND WEAR LIMITS > TEST VALUES AND WEAR LIMITS FOR MACAN TURBO BRAKE SYSTEM

Information

Depending on the extent of wear on cast iron brake discs, two condition criteria can make replacement necessary:

- Formation of cracks at advanced stage on the brake disc friction surfaces.
- Minimum brake disc thickness is not retained due to wear (material erosion due to friction) . → 46500200 CHECKING FRONT BRAKE DISCS (WEAR ASSESSMENT) → 46530250 CHECKING REAR BRAKE DISCS (WEAR ASSESSMENT)

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Pad thickness, front	Wear limit 2 mm		approx. 9.5 mm		
Pad thickness, rear	Wear limit 2 mm		approx. 11.5 mm		
Brake disc minimum thickness after machining, front	Only as-new brake discs may be reworked! Only rework the brake disc symmetrically, evenly from both sides!		35, 6 mm		

Brake disc minimum thickness after machining, rear	Only as-new brake discs may be reworked! Only rework the brake disc symmetrically, evenly from both sides!		27, 6 mm		
Brake disc wear dimension, front			34 mm		
Brake disc wear dimension, rear			26 mm		
Peak-to-valley surface roughness of brake disc after machining, max.			0.006 mm		
Thickness tolerance of brake discs after machining, max.			0.02 mm		
Lateral runout of brake disc, max.			0.03 mm		
Lateral runout of wheel hub, max.			0.02 mm		
Lateral runout of brake disc when installed, max.			0.06 mm		

Possible complaints

- Damage due to lack of use (rusting). This causes vibrations in the steering wheel, noises and brake pedal pulsation.
- Brake disc becomes distorted as a result of serious driving.
- Too much lateral runout when new brake discs are fitted on dirty or distorted wheel hubs.

Procedure

- Check brake disc for cracks, minimum thickness, lateral runout, thickness tolerance, flatness and surface roughness.
- If necessary, (depending on the actual brake disc thickness and the brake disc wear limit) machine the brake disc using one of the disc brake dressing machines approved by Porsche.
- The brake disc must only be reworked symmetrically, i.e. evenly from both sides! Read the operating instructions for the disc brake dressing machine!

WM 4650TW TECHNICAL DATA/BRAKE WEAR LIMIT (ALL MODELS) > TEST VALUES AND WEAR LIMITS > TEST VALUES AND WEAR LIMITS FOR PCCB BRAKE SYSTEM

Information

The following condition criteria can make replacement necessary depending on the wear of the PCCB brake discs:

- Surface changes in the brake disc friction surfaces at an advanced stage.
- Minimum brake disc thickness is not retained due to wear (material erosion due to friction).

Information

The PCCB brake disc must not be machined.

Location	Description	Type	Basic value	Tolerance 1	Tolerance 2
Pad thickness, front	Wear limit 9.9 mm		approx. 15.8 mm		
Pad thickness, rear	Wear limit 8.8 mm		approx. 17.6 mm		
Lateral runout of brake disc, max.		New	0.025 mm		
Lateral runout of wheel hub, max.		New	0.02 mm		
Lateral runout of brake disc when installed, max.		New	0.07 mm		

Possible complaints

- Brake disc becomes distorted as a result of serious driving.
- Too much lateral runout when new brake discs are fitted on dirty or distorted wheel hubs.

Procedure

- Check brake disc for cracks, lateral runout, thickness tolerance, flatness and surface roughness.

WM 465102 CHECKING FRONT PCCB BRAKE DISCS (WEAR ASSESSMENT USING TEST EQUIPMENT VAS 6813) (ALL MODELS) > TOOLS

Designation	Type	Number	Description	
test equipment for PCCB brake discs	Workshop equipment	WE 1578		

WM 465102 CHECKING FRONT PCCB BRAKE DISCS (WEAR ASSESSMENT USING TEST EQUIPMENT VAS 6813) (ALL MODELS) > INFORMATION > PCCB BRAKE DISCS WITH NEW FRICTION COATING TECHNOLOGY

Information

The pictures shown in this document may differ from the original.

New measuring method for wear assessment. Wear assessment is performed using **test equipment for PCCB brake discs WE 1578** .

1. Test equipment VAS 6813
2. Laser beam for positioning
3. Measured value display