

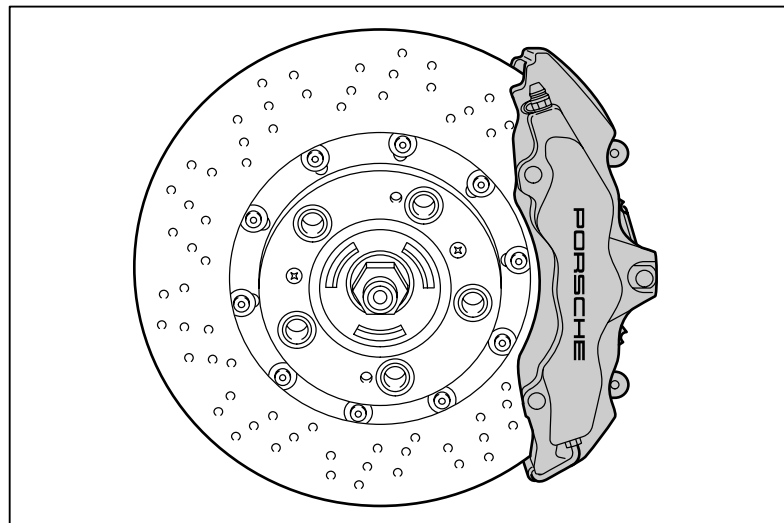
Porsche Ceramic Composite Brake - PCCB (I No. 450)

Vehicle Type: **911 Turbo**

Model Year: **As of 2007**

Situation: **Retrofitting**

Note: The PCCB ceramic brake discs on the new 911 Turbo have a diameter of 380 mm at the front and 350 mm at the rear – for improved braking power. The low level of thermal expansion typical of the PCCB brake system prevents deformation in extreme braking conditions. In addition, the ceramic brake discs prevent corrosion and improve sound damping. The use of six-piston aluminum monobloc fixed calipers on the front axle and four-piston aluminum monobloc fixed calipers on the rear axle ensures very high and constant brake pressure during deceleration. The decisive advantage of PCCB is the extremely low weight of the brake disc. It is about 50 % lighter than grey cast-iron discs of comparable size. This fact is not only apparent while driving and using the brakes, but also reduces unsprung weight and rotating mass in particular. This gives better grip and improved driving and rolling comfort.



Parts Info: **997.044.600.60**

⇒ Set, PCCB

Parts List:

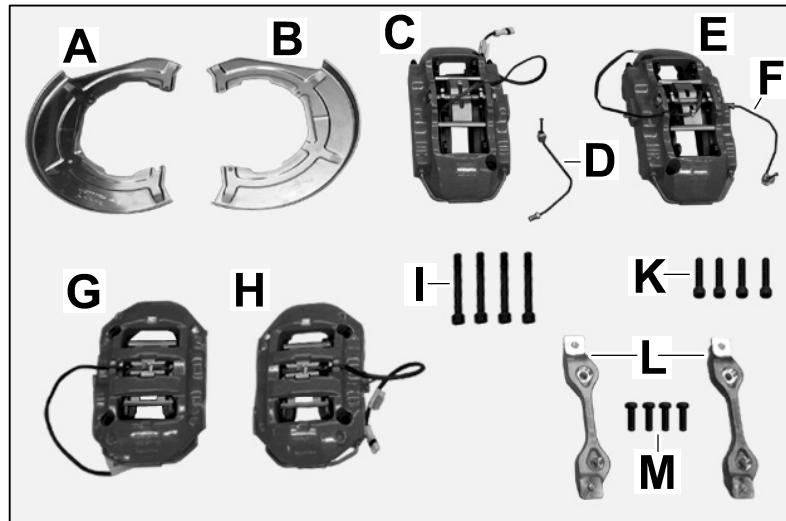


Figure 2

997.351.031.31	1 x	Ceramic brake disc, front axle (FA) left (not shown)
997.351.032.31	1 x	Ceramic brake disc, FA right (not shown)
996.352.031.04	1 x	Ceramic brake disc, rear axle (RA) left (not shown)
996.352.032.04	1 x	Ceramic brake disc, RA right (not shown)
997.352.802.02	1 x	Cover plate, rear right ⇒ Figure 2-A-
997.352.801.02	1 x	Cover plate, rear left ⇒ Figure 2-B-
996.351.057.30	1 x	Brake caliper, complete, FA left ⇒ Figure 2-C-
997.355.587.10	1 x	Brake line, FA left ⇒ Figure 2-D-
996.351.058.30	1 x	Brake caliper, complete, FA right ⇒ Figure 2-E-
997.355.588.10	1 x	Brake line, FA right ⇒ Figure 2-F-
997.352.055.41	1 x	Brake caliper, complete, RA right ⇒ Figure 2-G-
997.352.056.41	1 x	Brake caliper, complete, RA left ⇒ Figure 2-H-
999.067.040.01	4 x	Cheese head bolts, M12 x 1.5 x 95 ⇒ Figure 2-I-
999.067.054.09	4 x	Cheese head bolts, M12 x 1.5 x 62 ⇒ Figure 2-K-
997.351.505.02	2 x	Adapter ⇒ Figure 2-L-
999.073.313.09	4 x	Countersunk screw, M12 x 1.5 x 37 ⇒ Figure 2-M-

Tools:	Assembly aids
	PIWIS Tester 9718
	Torque wrench Nr.90 Pos.3
	Torque wrench Nr.90 Pos.6
	Piston resetting fixture Nr.144
	Brake filling and bleeding device ATE 1096

Work Procedure: 1 Remove wheels. ⇒ *Workshop Manual '440519 Removing and installing wheel'*

2 Remove rear brake caliper and rear brake disc.

2.1 Remove rear brake caliper. ⇒ *Workshop Manual '474119 Removing and installing rear brake calliper'*

2.2 Remove rear brake disc. ⇒ *Workshop Manual '46531900 Removing and installing rear brake disc'*

2.3 Unscrew screws ⇒ *Figure 3-A-* and remove cover plate.

3 Install rear ceramic brake disc and preassembled rear brake caliper.

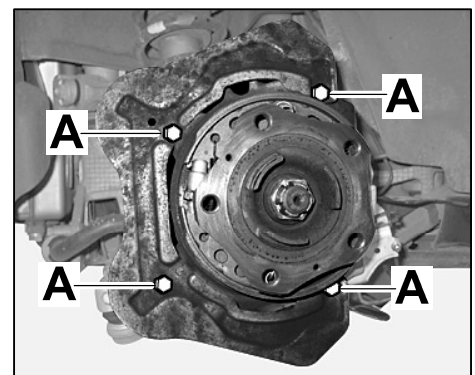


Figure 3

3.1 Fit new cover plate at the right/left ⇒ *Figure 4 -arrow-*.

Tightening torque 10 Nm (7.5 ftlb.)

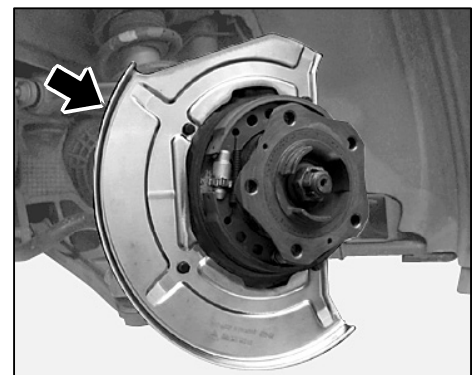


Figure 4

- 3.2 Install rear ceramic brake disc. ⇒ *Workshop Manual '465419 Removing and installing rear PCCB brake disc'*

Tightening torque 10 Nm (7.5 ftlb.)



Figure 5

- 3.3 Replace fixing clip ⇒ *Figure 3-A-* for electric line for wear indicator if necessary.

- 3.4 Install preassembled rear brake caliper. ⇒ *Workshop Manual '474119 Removing and installing rear brake calliper'*

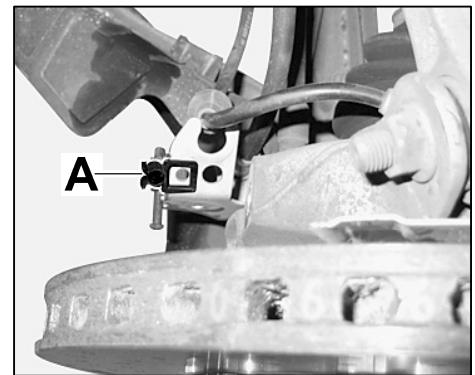


Figure 6

- 3.4.1 Position brake caliper and secure with cheese head bolts (M12 x 1.5 x 95) ⇒ *Figure 7-3-*.

Tightening torque 85 Nm (63 ftlb.)

- 3.4.2 Tighten brake line ⇒ *Figure 7-1-* on brake caliper.

Tightening torque 12 Nm (9.0 ftlb.)

- 3.4.3 Tighten screw ⇒ *Figure 7-2-* securing brake line holder on brake caliper.

Tightening torque 10 Nm (7.5 ftlb.)

- 3.5 Adjust the handbrake. ⇒ *Workshop Manual '468316 Adjusting the parking-brake shoes'*

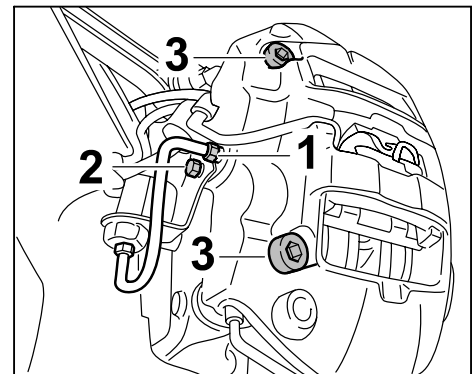


Figure 7

- 4 Remove front brake caliper and front brake disc.

- 4.1 Remove brake caliper.

- 4.1.1 Open lock on plug connection for electric line for the wear indicator on the wheel carrier and pull off connector for wear indicator.

- 4.1.2 Reset the brake pads slightly and uniformly using the piston resetting fixture No. 144.
- 4.1.3 Unscrew brake line on brake caliper.
- 4.1.4 Remove brake caliper on wheel carrier.
- 4.2 Remove front brake disc. ⇒ *Workshop Manual '46501900 Removing and installing the front brake disc'*



Note

Observe marking (**L** = left/**R** = right) on the PCCB brake discs and direction of rotation (arrows) during installation!

- 5 Install ceramic brake disc and preassembled front brake caliper.

- 5.1 Fit adapter to brake carrier and secure with countersunk screws (M12 x 1.5 x 37) ⇒ *Figure 8-A-*.

Tightening torque 85 Nm (63 ftlb.)

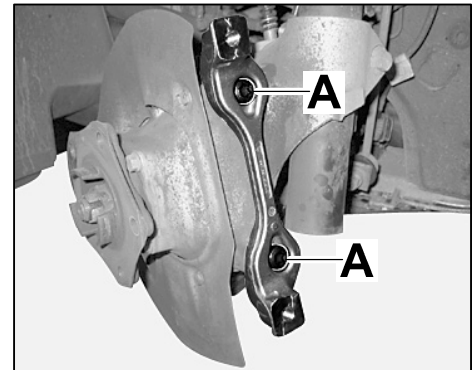


Figure 8

- 5.2 Install ceramic brake disc. ⇒ *Workshop Manual '465319 Removing and installing rear PCCB brake disc'*

Tightening torque 10 Nm (7.5 ftlb.)

- 5.3 Install preassembled brake caliper.



Figure 9

- 5.3.1 Position brake caliper and secure with cheese head bolts (M12 x 1.5 x 62) ⇒ *Figure 10-A-*.

Tightening torque 85 Nm (63 ftlb.)

- 5.3.2 Fit new brake line ⇒ *Figure 10-B-* on brake caliper.

Tightening torque 12 Nm (9.0 ftlb.)

- 5.3.3 Secure brake line to brake hose.

Tightening torque 12 Nm (9.0 ftlb.) +2 Nm (+1.5 ftlb.)

- 5.3.4 Fit connector for wear indicator into the wheel carrier and secure electric line for wear indicator to the brake line with retaining clips ⇒ *Figure 10-C-*.

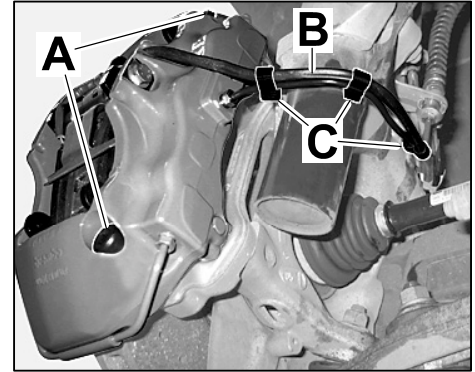


Figure 10

6 Concluding work

- 6.1 Bleed the brakes. ⇒ *Workshop Manual '470107 Bleeding the brake system'*



ATTENTION

Removing and installing wheels for vehicles with Porsche Ceramic Composite Brake (PCCB)

- Risk of damage to ceramic brake disc
- ⇒ Always use the specified assembly aids (2 x assembly pins) for removing and mounting wheels.
- ⇒ Carefully guide the wheel towards the wheel hub to prevent any heavy impact on the ceramic brake disc.

- 6.2 Fit wheels. ⇒ *Workshop Manual '440519 Removing and installing wheel - section on "Installing"*

- 6.3 Carry out version coding for the PCCB brake system using the PIWIS Tester P 9718 .

- 6.3.1 PIWIS Tester 9718 must be connected and ignition must be switched on.

- 6.3.2 Select vehicle type and "PSM" control unit.

- 6.3.3 Select "Coding" in the PSM function selection and code the PCCB.

- 6.3.4 Read out the fault memories of all systems, correct any existing faults, and erase the fault memories.

- 6.3.5 Switch off ignition and disconnect PIWIS Tester 9718 .

Working Time: 47 01 31 03 –Converting brake system from grey cast iron to ceramic brake discs–

Labor time: **310 TU**

Includes: Removing and installing wheels, brake calipers and brake discs, adjusting brake shoes and bleeding the brake system, performing version coding in the PSM control unit.

Without: Test drive.

- References:
- ⇒ *Workshop Manual '440519 Removing and installing wheel'*
 - ⇒ *Workshop Manual '465019 Removing and installing front brake disc'*
 - ⇒ *Workshop Manual '465019 Removing and installing front PCCB brake disc'*
 - ⇒ *Workshop Manual '465319 Removing and installing rear brake disc'*
 - ⇒ *Workshop Manual '465319 Removing and installing rear PCCB brake disc'*
 - ⇒ *Workshop Manual '468316 Adjusting the brake shoe'*
 - ⇒ *Workshop Manual '470107 Bleeding the brake system'*

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