

## **BRAKE-02, Brake Pads - Checking Pad Thickness and Replacing Pads**

### **Checking Brake Pad Thickness**

Since 1984, all 944 models and the 968 are equipped with wear indicators. When the brake pads are worn to the point that the wear indicators make contact with the rotor, a light will be illuminated on the dash to indicate that the pads need to be replaced. However, the wear indicators can become damaged and should not be considered 100% reliable for indicating when the brake pads should be replaced. The wheels must be removed to check the brake pads. The brakes should be inspected each time the tires are rotated. For models with tires that can not be rotated (i.e. different sizes tires front and rear), the brakes should be inspected every 15,000 miles as a minimum. Any time the wheels are removed, it's a good idea to inspect the brakes.

The minimum allowed thickness for the brakes pads is 2 mm. However, Porsche generally recommends replacing the brake pads at a thickness of 2.5 mm. If the brake pads are replaced at 2mm or the wear indicators have been activated, the wear indicators must be replaced along with the brake pads.

### **Replacing the Brake Pads**

#### **Tools Needed**

- Jack Stands
- 19 mm socket and ratchet/breaker bar (preferably 1/2" drive)
- Metric wrench set
- Metric socket set
- Bailing wire / shock cords
- Bearing grease / Petroleum jelly or anti-squeal pads
- Hammer and Flat tip punch (Normally aspirated 944s and 924s only)
- Large channel lock pliers
- Needle nose pliers
- Lineman's pliers
- Turkey baster or vacuum pump type brake bleeder (for removing brake fluid if reservoir level is too high)
- Rags for cleaning brakes
- Small pry bar or large flat tip screwdriver
- Brake piston compressor (optional)

## **Procedure**

1. Using the 19 mm socket and ratchet or breaker bar, loosen the lug nuts (two turns only) on the wheels where brake pads are going to be replaced.
2. Place the car on jack stands.
3. Remove the wheels for the brake pads to be replaced.
4. Remove the old brake pads.

On **944 / 944S** cars perform the following:

- a. Remove the cotter pins from the brake pad retaining pins.
- b. Remove the spring lock (also referred to as the anti-rattle spring) from the brake pad retaining pins.
- c. Using a hammer and flat tip punch, drive the retaining pins out of the brake pads / calipers.
- d. If equipped, remove the wear pad indicators (wire coming off one of the brake pads). Be careful removing the wear indicators as the clips break easily.

### **NOTE**

As the brake caliper is pressed outward, brake fluid is being force back into the brake reservoir. Keep a close eye on brake fluid reservoir level while pressing out caliper to prevent overflowing the reservoir. If level gets too high, remove some of the fluid from the reservoir using a turkey baster or a vacuum pump brake bleeder.

- e. Using a large flat tip screwdriver or small pry bar, press the movable part of the brake caliper outward. Do not press against the rotor if possible. Pressing against the brake pad is okay since it's going to get replaced anyway.
- f. Using needle nose or lineman's pliers, remove the inner and outer brake pads.

On **944 S2 / 944 Turbo / 968** cars perform the following:

- a. Using channel lock pliers, compress the spring clip in the middle and disengage from the support by pushing the spring clip inward toward the brake rotor. Move the clip support away from the top of the clip and pivot the clip out away from the caliper.
- b. Remove the wear pad indicator by lifting the wire lead from the groove in the brake caliper and disengaging the wear pad from the brake pad plate.

**NOTE**

As the brake caliper piston is pressed outward, brake fluid is being force back into the brake reservoir. Keep a close eye on brake fluid reservoir level while pressing out caliper piston to prevent overflowing the reservoir. If level gets too high, remove some of the fluid from the reservoir using a turkey baster or a vacuum pump brake bleeder.

- c. At this point, I normally insert a small pry bar between the brake pad vibration backing plate (if equipped) and the back of the brake pad to press the caliper piston fully out (flush with the surface of the caliper). This may be difficult as the vibration dampers are attached to the brake pad plate by an adhesive backing. Prying between the vibration damper and the pad prevents damaging the caliper piston seals. Leaving the old pad in place will normally allow you enough leverage to move the caliper piston(s) fully out. Moving the piston fully out prior to removing the old pad ensures you have enough room to install the new pads. If the old pads do not have vibration backing plates, pry between the brake pad and the lip of the rotor (taking care not to damage the rotor) enough to loosen the pads and then insert a thin piece of sheet metal between the pad and the caliper pistons. Pry between the sheet metal and the brake pad to move the caliper pistons as previously described.
  - d. Using lineman's pliers or needle nose pliers remove the old brake pads.
5. Using clean rags and brake cleaner clean the calipers and rotors prior to installing new brake pads.
  6. Many of the replacement brake pads are now provided with vibration damper backing plates. If they are provided, I recommend using them on any 944. However, when asbestos-free pads are used on models with fixed calipers (i.e. one piece calipers), the vibration dampers **MUST** be used. If vibrations dampers are not provided, double-sided adhesive tape may be used instead. Porsche recommends using Scotch-3M No. 9485 (38 mm wide).

7. Install the new brake pads into the calipers.

On **944 / 944S** cars perform the following:

- a. Insert the brake pad retain pins.
- b. Using a hammer and flat tip punch, drive the pins into the fully engaged position.
- c. Install the locking spring and cotter pins onto the brake pad retaining pins. A flat tip screwdriver may be needed to compress the locking spring during installation.

On **944 S2 / 944 Turbo / 968** cars perform the following:

- a. Pivot the spring lock toward the rotor.
  - b. Using a pair of channel lock pliers, compress the spring lock in the middle and push into position against the rotor.
  - c. While pushing against the spring lock with the pliers, move the spring clip support into position at the top of the clip.
8. Repeat the above steps until all the brake pads that need replacing have been replaced.
  9. Install the wheels and lug nuts. Tighten the lug nuts to 130 Nm (96 ft-lbs).
  10. Remove car from jack stands.
  11. Ensure parking brake is engaged. You may also wish to install wheel chocks.
  12. Check brake fluid reservoir level and fill if necessary.
  13. Start vehicle and pump brakes until the brake pedal has a solid feel at it's normal pedal height. Do not move vehicle until this is done. Check brake fluid reservoir level again after pumping brakes.
  14. If brakes feel spongy after pumping, bleed the brakes using [BRAKE-01](#).
  15. Take the car for a drive (few miles) making a few stops along the way. Make easy stops at first and then progressively harder, quicker stops. This will help ensure the brake pads are seated properly. An acrid, burning smell and some smoke from the brakes is normal until they are properly seated.

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