DNA Knowledge Base

Cross-Drilled or Slotted Rotors?

Cross-Drilled or Slotted Rotors – does it make any difference?

Usually most brake rotors have a smooth, flat surface. Modifying the rotor surface has a number of advantages.

The first is to remove gasses from the face of the disc. When hot, disc pads give off gasses that form a cushion between the rotor and the pad. This can have an impact on braking effectiveness as it reduces the level of friction between the two.

Surely this cannot be much you say?? It takes a 1/10th of a second to squeeze these gasses out on normal rotors. While this might not sound like a long time, think about this. When a vehicle is travelling at 100 km/h or 30 metres per second, a tenth of a second is three metres. This means at 100 km/h your 4WD travels for three metres squeezing out gases and not creating any real friction to slow you down!

Another problem that occurs is over time the pad material becomes hardened and glazed which greatly reduces the level of grip between the pad and disc. Cross-drilling and slotting allow these gasses to be moved immediately. This also helps in deglazing the pads which in-turn increases the grip between the pad and the disc and improves braking performance.

Cross-drilling and slotting also makes the disc surface uneven so that water and dust cannot develop into a thin layer that becomes a smooth, glass-like surface which can also reduce initial braking performance.

There are some tradeoffs to Cross-drilled and slotted rotors, such as reducing pad life by around 10%. Cross-drilled rotors are more prone to cracking under extreme conditions. In normal motoring the slotted-only and cross-drilled and slotted rotors have will give comparable performance.

So do I fit cross-drilled and slotted rotors, or just slotted rotors?

If a vehicle is only used on the street and maybe driven hard occasionally then cross-drilled and slotted rotors are for you.

If the vehicle used for racing or is it driven hard often [including towing] and/or the vehicle goes off road, then slotted-only rotors are your best choice.

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