

## THE BENEFITS OF CROSS-DRILLED AND SLOTTED DISCS

### What Does Slotting Do?

Slotting increases the bite of the pads. This helps pull the car up more quickly. Used on its own, the process doesn't involve removing as much metal as cross-drilling, so it doesn't result in as great a weight saving. However, slotting can be as effective as cross drilling in combating the problem of 'out gassing', particularly with the up to nine uni-directional slots machined into each side of Slotted discs (or rotors depending on where in the world you are reading this!). The slots pump away gas and restore full contact.

The 'micro-shaving' effect of the slots also serves to de-glaze the pads (therefore the edges of the slots on street type discs are not chamfered or 'radiused'). It also tends to even out the wear across the brake pad faces, increasing the effective contact area. This can extend disc life.

### What does cross drilling do?

Cross drilling lightens the disc thereby decreasing its rotational inertia.

The edges of the holes continuously clean and refresh the pad surface (but not as well as slotting) as well as providing increased brake "bite". Additionally, they prevent gasses from collecting between the pad and disc interface.

### How to choose between Slotted and Cross Drilled Discs

Assuming all the other variables remain unchanged, cross-drilled and slotted discs will almost always deliver better braking figures than plain types. The improved cooling effect of these discs allows effective use of the brake system under extremely severe conditions (as might be seen in racing). For road use (or endurance racing), slotted discs are perfect most of the time as the system is seldom used to capacity. The discs should last a normal life span.

If the disc is of only marginally adequate specification for the vehicle weight or use, cross-drilled discs can be problematic and require frequent "crack checking" and possible frequent replacement (This only applies to race applications). As a result, cross drilling only is not recommended. Under these conditions, slotted only discs are more desirable. Slotted discs are less prone to cracking under severe service than cross-drilled. What they lack in efficiency (if any) they make up for in longevity. You will seldom find a high-performance car competing in club 10 lap races with drilled discs, these cars are almost always fitted with slotted or slotted and cross-drilled discs for the reasons listed here.

If we had to stop hard one time from high speed, we would probably select a drilled and slotted disc. If we had to do it over and over, we would almost certainly use slotted discs.

So, in sequence of performance we have: - Plain discs, Slotted discs then Slotted and cross-drilled. Beyond this, if still better performance is needed, vented discs are the order of the day which themselves can be Plain, Slotted or Slotted and cross-drilled.

### What are ventilated discs?

Improved ventilation through the vanes, sometimes straight, sometimes curved, increases the disc's ability to shed heat, resulting in cooler operating temperatures. Vented discs can be plain, slotted or slotted and cross drilled.



**Slotted only disc**



**Slotted and cross drilled disc**



**vented disc**