

# Them's the brakes



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While looking through a stack of flyers a couple of weeks ago I noticed a special advertised by one of the local automotive parts suppliers. They were offering “performance” brake discs at a bargain basement price – one of those too-good-to-be-true products.

But what really caught my attention was the way these discs were built – complete with cross-drilled holes, slots, funky swirl marks, flashing LEDs, cupholders (okay, I’m exaggerating, but you get the point).

I put the flyer down, shook my head, and wondered what consumers were really getting for their money. These discs were made to look high-end and were designed with all the bells and whistles, but would they really improve braking performance?

If you’ve seen similar ads, and have wondered if the advertised discs are worth the money, consider what the pros have to say.

## Cross-drilled

The experts I’ve interviewed over the years recommend cross-drilled discs for street vehicles, mostly because they work in all sorts of weather conditions. You’ll ob-

viously drive your car on sunny, dry days as well as when it’s wet outside. And that’s when you’ll see the advantage of cross-drilled discs – when the ground is wet.

When driving in the rain, moisture builds up on the discs and the brake pads. So what ends up happening when you’re using solid stock discs is this: you hit your brakes but you don’t experience actual braking for the first second or so because the water needs to be burned off, then the discs need to heat up to their operating temperature range before they begin to work.

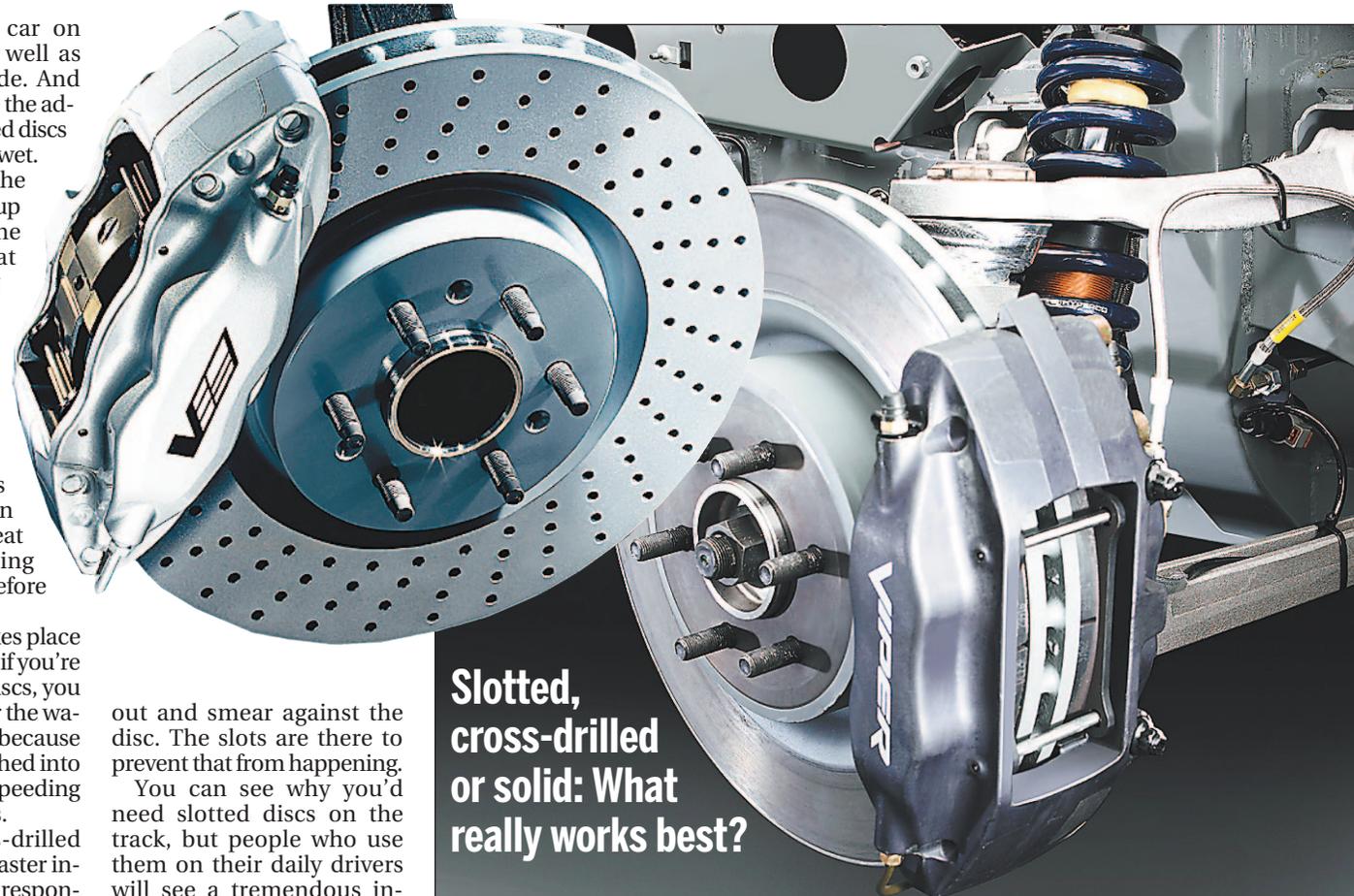
All of the above takes place within moments, but if you’re using cross-drilled discs, you don’t have to wait for the water to be burned off, because it can actually be pushed into the holes, thereby speeding up the entire process.

So having cross-drilled discs will give you a faster initial bite, and a more responsive brake. They also dissipate heat better than solid discs.

## Slotted

Slotted brakes, on the other hand, are primarily recommended for use with brake pads designed for racing. Slotted discs “slice” the brake pad every time the two pass each other, thereby increasing the temperature to get the brakes into their operating range. This slicing action also prevents glazing.

What is glazing? If you over-heat the pads, which is common in racing, the brake pads tend to gel. In other words, the binding resin that holds the pad together starts to ooze



**Slotted, cross-drilled or solid: What really works best?**

out and smear against the disc. The slots are there to prevent that from happening.

You can see why you’d need slotted discs on the track, but people who use them on their daily drivers will see a tremendous increase in brake dust. If there’s no dust, it’s not working properly.

If you were to test all three side by side – solid, cross-drilled and slotted – the cross-drilled will bring a car to a stop in the shortest average distance, solid discs will have the next shortest, and the car with the slotted discs will be third.

## Pads

Another source of confusion is the brake pad. Since the choices are extensive, you have to know what you want from your pad before you go out and buy it. It’s kind of like choosing a tire. Do you need

something that’s long-lasting? If you do it won’t be super high performance. If you want super high performance, you’re not going to get the wear out of it that you might want.

## Brake lines

If you’re upgrading the brakes, it only makes sense to upgrade the lines feeding them. With rubber brake lines, when you apply brake pressure the hose actually expands. So when you’re pushing on the pedal part of that pedal motion is trying to compensate for the flex in the stock rubber hoses.

By switching over to a steel braided hose, which is essentially a Teflon tube with a steel braided jacket over it, you prevent the expansion of the brake line. And if you can reduce the expansion of the brake line you end up transferring more pedal feel to the driver. If you have more pedal feel, you have more modulation, and you can feel your brakes better so they can be used much more efficiently.

## Pistons count

Finally, beware of ads boasting how many pistons per caliper you get for your money. What you want to

look at is not the number of pistons per caliper but the pistons’ total area. The bigger the square area, the more brake power you have, provided you have the necessary hydraulics to drive them – the proper master cylinder, etc.

Some people are misled into believing that a six-piston caliper is better than a four-piston caliper, for example. But you have to calculate the piston diameter. If you have six little pistons vs. four larger ones, you might be better off with the four-piston caliper system – do the math before you buy.

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