

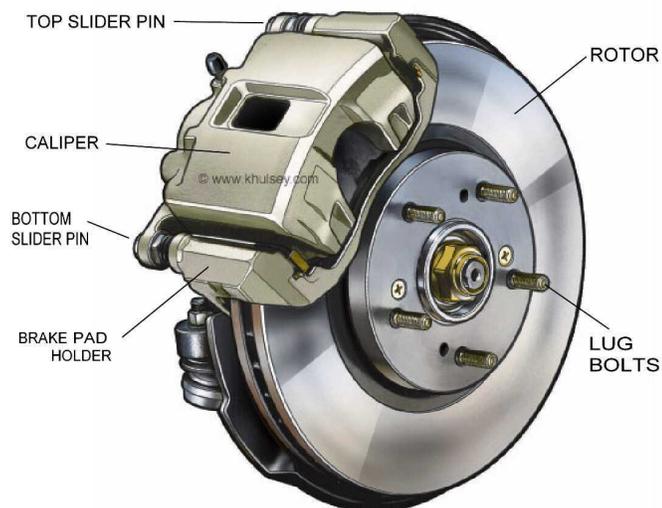
## Sticking Disc Brakes.

Most of us never think twice about the brakes on our cars. Brake components are not easily visible, and as long as the brakes work, they don't get much attention. We tend to just take them for granted. The purpose of this article is to create awareness of the working parts of the brakes, and the problem I had. I just hope I can help someone avoid a serious problem down the road.

I recently had a problem with the front brakes on my Miata that I didn't find out about until it was almost "too late"! My front pads wore out at 43,000 miles, when other Miatas have gone 60 to 80,000 miles on their front pads. While replacing my front brake pads, I found one of the caliper slider pins were sticking on each side. This sticking pin would not let the brakes "relax" when I left my foot off the pedal, so the brake pads wore against the rotor all of the time. On top of this, it was only one pin each side, so the pads wore thin on one end, and the other end of the brake pad was as much as 1/16" thicker.

If I would not have caught this, it could have developed into one or both of 2 major problems. One problem that could have developed is the pad surface could have worn off to where the metal backing plate would chew into the rotors. Then my repair would have been more expensive as I would have had to replace both the pad sets and the rotors. The second situation could have been brake failure. The pads tend to lose their grip when overheated. It is known as "brake fade". On a sporty drive or trip, I could have had the situation where I would have hit the brakes hard to stop quickly, and found that nothing happened. This would be scary or dangerous to say the least.

The major parts of each brake are the rotor, brake pad holder, caliper, and slider pins. The rotor spins behind the wheel. The pads are held in place along the rotor by the brake pad holder frame. And the slider pins keep the caliper in position over the brake pads. When you apply the brakes, the caliper moves a little on the slider pins and squeezes the brake pads against the rotor. See the picture examples below. When you leave your foot off the brake, the slider pins let the caliper relax off the pads a little to relieve the stopping pressure while keeping everything aligned. The picture below points to the location of the 2 slider pins. But note the lines point to the small bolts that hold the slider pins in place. The slider pins are actually located between the caliper and the brake pad holder with a rubber boot over them.



I was not sure what the exact problem was until I read on Miata.net where some other Miata owners had the same problem. Most were 2006 and the next couple year models. But this can happen to ANY car with Disc Brakes. What made my problem unique to the 2006 and newer Miata is that the bottom slider pin has a rubber sleeve on it which I am guessing is to absorb vibration. The Rubber sleeves on the bottom slider pins, on both sides of my car, swelled up and froze tightly inside the brake pad holder.

When I applied my brakes, the pads were squeezed against the rotors, but when I left off the pedal, only one end of the pad relaxed away from the rotor. The other end was still dragging against the rotor.

I am at a total loss as to why this happened. The previous owner gave me all of his receipts when I bought the car from him. All he ever had done was a couple oil changes. I have never had the brakes apart, nor had a garage do anything to them. This had to be something from the factory, I guess?

To fix the problem I replaced all 4 slider pins to avoid any future trouble. The brakes do not get as hot now, and they are more effective stopping me quicker than I can remember happening before. Plus the wheels are not as dusty and dirty as they had previously been.

How you can tell if you have a problem? If you are not mechanically inclined, the best way is to have your favorite garage check them explaining about a possible "Sticking Bottom Slider Pin". One way you can keep an eye on this is to look at your wheels in the next couple days after you wash them. If you have a wheel or two that seems to have a lot more brake dust on it, you could have a sticking problem.

Another way could be to use a "Non-Contact" Infra-red thermometer per a method I learned on Miata.net. After a sporty drive, check the temperature of the four rotors. The two front rotors should be close to the same temps as each other, and the rear rotors should be close to each other also. I have done some experimenting, and I found that for normal driving, my brake rotors now normally run about 20 to 30 degrees "F" hotter than the ambient air temperature on my Miata. I measure the rotor temp, and the fender behind it, and compare.

Always remember, your life depends on the brakes on your car. If you ever have any concerns about your brakes, please have them checked.

Zoom-Zoom, with care!  
Bill Latsha