

TECH ARTICLE # T010

## Disc Rotor Minimum Thickness

### Australian Standard AS3617-1997

**4.3 (b)(iii)** - If after machining the brake disc measures *on or below the minimum thickness* specified by the vehicle manufacturer, *the brake disc shall be replaced.*

#### **Definition:**

Disc Brake Rotor Minimum Thickness (also known as Scrap Thickness) is the minimum safe working thickness of a rotor at which it must be replaced.

#### **Risk:**

Continued operation at or below Rotor Minimum Thickness can lead to Brake system failure. As the rotor reaches its minimum thickness, the braking distance increases, sometimes up to 4 meters.

Rotor Minimum Thickness is determined by the motor Vehicle Manufacturer during the initial vehicle design (also refer to AUSTRALIAN STANDARD 3617:1997)

A brake system is designed to take kinetic energy and transfer it into heat energy. This heat energy is created by the driver when he or she presses the brake pedal. Driver foot force is boosted then converted into hydraulic pressure which forces the piston to move inside the caliper. The piston movement forces the brake pads in contact with the spinning rotor. Rubbing between the brake pads and the brake rotor generates heat which is then dissipated by convection (i.e. hot air rising from the surface of the disc rotor) into the atmosphere.

As a rotor reduces in thickness its ability to absorb and dissipate heat generated during braking is reduced. Once Rotor Minimum Thickness has been reached its ability to absorb and dissipate heat is reduced to such an extent that a significant reduction in braking capacity can result. This can be evident in premature fade and increased stopping distance.

Technical Support  
Disc Brakes Australia

