

# PRODUCT KNOWLEDGE

# BRAKES

On average, a driver applies the brakes 40 times in an eight kilometre trip. For every 20,000 kilometres driven, a driver could apply the brakes approximately 100,000 times! Brakes are vital to the safe operation of a vehicle, so it is important that brakes are inspected and maintained on a regular basis. Most Mazdas require a brake service every 24,000 km/12 months. The many parts involved within a brake system work together to ensure the vehicle stops whenever required. This is why it is critical that any brake part repair is done right the first time.

**“BRAKES ARE A TRUST REPAIR”**

When it comes to replacement friction parts, there are no federal (or provincial) laws regulating safety standards. That being said, Mazda brake parts are still tested to meet and in some cases exceed Federal Motor Vehicle Safety Standards (FMVSS) and Canadian Motor Vehicle Safety Standards (CMVSS)\*. The testing process is rigorous. Mazda friction parts are tested on-vehicle in real driving conditions for a greater level of accuracy.

\*Mazda replacement brake pads and shoes are tested to ensure braking performance meets or exceeds CMVSS requirement 105 (hydraulic and electric brake systems) and 135 (light vehicle brake systems) as applicable.



## WARNING SIGNS BRAKE COMPONENTS NEED TO BE INSPECTED:

The symptom:	It could be a sign that:
<ul style="list-style-type: none"> <li>&gt; <b>Squealing and squeaking brakes</b> - some squeaks are normal, however they may become louder or more frequent</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Pads or shoes are glazed or wearing out and need to be replaced</li> <li>&gt; Brakes require servicing</li> </ul>
<ul style="list-style-type: none"> <li>&gt; <b>Grinding</b> - there is a grinding sensation or grinding noise when touching the brake pedal</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Pads are wearing out and need to be replaced</li> </ul>
<ul style="list-style-type: none"> <li>&gt; <b>Grabbing</b> - the vehicle's brakes grab at the slightest pressure</li> </ul>	<ul style="list-style-type: none"> <li>&gt; There is a problem with contaminated brake linings, or a loose or broken component</li> </ul>
<ul style="list-style-type: none"> <li>&gt; <b>Low or fading pedal</b> - the brake pedal needs to be pressed hard to stop the vehicle</li> </ul>	<ul style="list-style-type: none"> <li>&gt; There is a leak in the brake system, or air in the line</li> <li>&gt; Calipers need to be serviced and/or replaced</li> </ul>
<ul style="list-style-type: none"> <li>&gt; <b>Pulling</b> - the vehicle pulls to one side when braking</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Pads are cracked and need to be replaced</li> <li>&gt; Rotors are pitted and need to be machined or replaced</li> <li>&gt; Calipers need to be serviced and/or replaced</li> </ul>
<ul style="list-style-type: none"> <li>&gt; <b>Pulsation</b> - the brake pedal or steering wheel vibrates when braking</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Rotors/drums are warped or scored and need to be machined or replaced</li> <li>&gt; There is a faulty steering component</li> </ul>



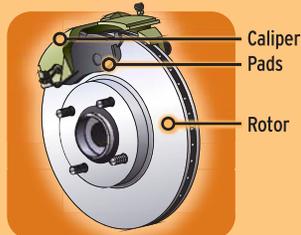
## HOW DOES A BRAKE SYSTEM WORK?

Most vehicles are equipped with disc brakes on the front and either disc or drum brakes on the rear. Despite differences in the systems, both disc and drum have the same function - to create friction causing tires to stop rotating.

### When the brake pedal is pressed:

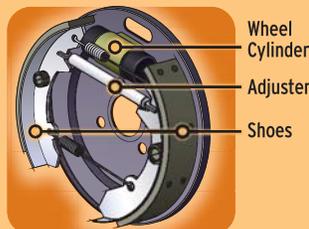
#### Disc brake system

Brake fluid pressure through the piston causes calipers to “squeeze” the pads against the rotor, creating friction forcing the rotor/wheel to stop turning. The caliper releases when force is lifted off the brake pedal.



#### Drum brake

Brake fluid through the wheel cylinder forces the brake shoes against the outer drum. Springs pull the shoes away from the drum once the force is lifted off the pedal.



KEEPING  
THE EMOTION  
IN MOTION.



Mazda Genuine Parts are designed for an exact fit and formulation for specific Mazda models. These parts are constantly tested and updated to ensure they're always the best choice for Mazda vehicle owners.



## MAZDA GENUINE PARTS AND MAZDA VALUE PARTS VERSUS THE COMPETITION

This chart illustrates some of the significant brake part differences between Mazda Genuine Parts, Mazda Value Parts and aftermarket parts.

Brake Parts	Mazda Genuine Parts	Mazda Value Parts	Aftermarket Parts
Engineered and tested for specific Mazda vehicles	✗		
Achieve the best balance between brake noise, lining and rotor/drum life	✗		
Utilize highly engineered shims, slots, and chamfers, reducing noise and increasing quality	✗		
Utilize premium formulations selected by Mazda	✗	✗	
Meet Federal Motor Vehicle Safety Standards	✗	✗	
Friction formulas not subject to federal regulations			✗
"Reverse engineered" for a broad range of vehicles			✗
Limited use of shims, slots and chamfers			✗
Durability and testing varies widely			✗



### CHECK IT ON THE VEHICLE INSPECTION REPORT

Mazda Technicians can help spot problems before they result in costly repairs, or better still, confirm brakes are fine - for peace of mind. Technicians will:

- > Inspect brake pads, shoes, rotors, drums, brake lines and hoses, calipers, wheel cylinders, and parking brake operation, and indicate on the Vehicle Inspection Report any concerns or needed repairs.
- > Measure and record measurements for front brake pads and rear brake pads or shoes, indicating if measurements fall under green, yellow or red conditions. If red, the required brake repair(s) should be done immediately to ensure safe driving.



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