Brake System Inspection

Material

Item	Specification
Metal Brake Parts Cleaner PM-4-A or PM-4-B (US); CPM-4 (Canada)	—
Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

Brake Pads

NOTE: It is not required to install new brake pads when the brake discs are machined.

1. Inspect the brake pad friction material for contamination.
   - If the friction material shows evidence of contamination, install new brake pads. For additional information, refer to Section 206-03 for front brake pads or Section 206-04 for rear brake pads.

2. Inspect and measure the thickness of the brake pad friction material. For additional information, refer to Specifications in this section.
   - Minor surface cracks do not require pad replacement, however, if there are missing chunks or cracks in the lining through to the backing plate, install new brake pads. For additional information, refer to Section 206-03 for front brake pads or Section 206-04 for rear brake pads.
   - If the thickness of the friction material is less than the specified thickness, install new brake pads. For additional information, refer to Section 206-03 for front brake pads or Section 206-04 for rear brake pads.
   - If the friction material shows taper wear that is not within specifications, install new brake pads and verify the caliper guide pins are functioning correctly. For additional information, refer to Brake Caliper Guide Pins inspection.

Brake Discs

NOTICE: **Using an impact tool without a torque socket will lead to unevenly tightened wheel nuts. This causes brake disc on-vehicle lateral runout and brake roughness.**

1. Inspect the brake discs and measure the brake disc thickness. Record the measurement. Refer to Specifications in this section.
   - If the brake disc is cracked or otherwise damaged, install a new brake disc. For additional information, refer to Section 206-03 for front brakes or Section 206-04 for rear brakes.
   - If the measurement is below the minimum thickness specification, install a new brake disc. For additional information, refer to Section 206-03 for front brakes or Section 206-04 for rear brakes.
   - If the diagnosis has revealed vibration in the steering wheel, seat or pedal while braking that varies with vehicle speed, machine the brake disc. Heavily scored brake discs, similar to that caused by pads worn down to the backing plate, should also be machined. In order to machine, discs must be above the minimum thickness specification. For additional information, refer to Specifications and Brake Disc Machining in this section.

Brake Calipers

1. Inspect the brake calipers for leaks, damage to seals and piston corrosion or binding.
    - If the brake caliper is leaking or otherwise damaged, install a new brake caliper. For additional information, refer to Section 206-03 for front brake calipers or Section 206-04 for rear brake calipers.

Brake Caliper Guide Pins

1. The guide pins should slide with a reasonable amount of hand force. If the brake pads show taper wear or the guide pins are difficult to move, carry out the following steps.
    - Disassemble the brake caliper guide pins and inspect the guide pins and guide pin bores for wear, damage and corrosion. If the bore is worn or damaged, replace the damaged component.
    - Use a wire brush, rolled-up sandpaper or emery cloth to remove all corrosion and foreign material from the caliper guide pin bores. Clean any remaining foreign material from the bores with brake parts cleaner and compressed air.
    - Assemble the caliper seals, boots and guide pins. Use an ample amount of the specified grease to lubricate the bores and guide pins.
    - Inspect the brake pads. For additional information, refer to Brake Pads inspection in this section.

Brake Flexible Hoses and Tubes

NOTICE: **Never use copper tubing. It is subject to fatigue, cracking and corrosion, which may result in brake tube failure.**

NOTE: Double-wall steel tubing is used throughout the brake hydraulic system. All brake tube fittings must be correctly double flared to provide strong, leakproof connections. When bending tubing to fit the underbody or rear axle contours, be careful not to kink or crack the tube.

1. Inspect brake tubes for corrosion, cracks, leaks or any other signs of damage.
    - If a section of the brake tube is damaged, the entire section must be installed with a new tube of the same type, size, shape and length.
    - When installing the hydraulic brake tubing, hoses or connectors, tighten all connections to specifications. After installation, bleed the brake system. For additional information, refer to Brake System Bleeding in this section.

2. Inspect the brake flexible hoses for cracks, leaks and swelling during brake application or any other signs of damage.
    - Install a new brake flexible hose if the hose shows signs of softening, cracking or other damage. For additional information, refer to Section 206-03 for the front brake flexible hose or Section 206-04 for the rear brake flexible hose.

Brake Master Cylinder

NOTE: During normal operation of the brake master cylinder, the fluid level in the brake master cylinder reservoir will fall during brake application and rise during release. The returning brake fluid creates a slight turbulence in the master cylinder reservoir. This is a normal condition and indicates that the compensator ports are not clogged. Clogged compensator ports may cause the brakes to hang up or not fully release. The net fluid level (such as after brake application and release) will remain unchanged. Fluid level will decrease with pad wear.

NOTE: A trace of brake fluid will exist on the booster shell below the master cylinder mounting flange. This results from the normal lubricating action of the master cylinder bore and seal.

1. Inspect the brake master cylinder for fluid leaks.
    - Install a new master cylinder or brake fluid reservoir if signs of excessive leaking are present. For additional information, refer to Section 206-06 .
    - To check for correct brake master cylinder operation, refer to Component Tests in this section.

Brake Booster

1. Inspect the brake booster for excessive corrosion or damage. Inspect the vacuum hoses for leaks and kinks.
    - Install a new brake booster if signs of excessive corrosion or damage is found. For additional information, refer to Section 206-07 .
    - Repair or replace vacuum hoses as necessary.
    - To check for correct brake booster operation, refer to Component Tests in this section.