

PRELIMINARY BRAKE SYSTEM CHECKS

Proper and consistent inspection of brake systems is crucial to improve your speed and your accuracy in the diagnosis of existing brake problems. When a vehicle is brought in with a brake concern there are certain steps that should be followed. These include:

- **Know and understand the customers concern** – Be sure that the problem that you are going to diagnose is the one that the customer is concerned with. If the customer concern is a noise in the rear of the vehicle, and you repair a rattle in the front, it is not likely that the customer will be satisfied (even though the rattle in the front may have needed repairing).
- **Check brake fluid level and condition** – (Be sure to wipe the top of the master cylinder before removing the cap). This step can give you a good indication of the condition of the hydraulic system. Look at the fluid level. Low fluid may indicate a hydraulic leak. Because the fluid level in the master cylinder drops as the pistons move out to compensate for brake lining wear, low fluid level could indicate excessive wear of the brake linings. Also look for fluid contamination, which may be indicated by discoloration (see Brake Fluid Level Test). While under the hood check for disconnected vacuum lines (for correct vacuum hose routing refer to Group 00 in the vehicle's service manual, or to the Vehicle Emission schematic in the engine compartment). If the vehicle has a hydraulic boost system, inspect for kinked or leaking hydraulic lines or a loose drive belt to the hydraulic pump.
- **Verify the concern by operating the vehicle** – This step allows you to verify that a concern exists and experience the malfunction. Occasionally a customer that is unfamiliar with the vehicle will misinterpret normal operation of the vehicle. Also try to determine when the concern occurs (vehicle cold, hot, heavily loaded, towing a trailer etc.) Inspect all hoses and connections prior to performing the operational check. All unused vacuum connectors should be capped. Make sure hoses and their connections are correctly secured and in good condition with no holes, soft or collapsed areas. Check the parking brake for proper operation.
- **Check vehicle repair history, TSB's and OASIS** – Determine if the vehicle has a history of brake concerns, or if any TSB's or OASIS messages pertain to the vehicle's condition.
- **Perform a visual inspection** – Place the vehicle on a hoist and check for leaking or damaged brake lines. Look for steering or suspension problems that may duplicate a brake concern. Inspect junction blocks and line fittings for leaks. Note if heavy duty trailering devices are installed that may indicate heavy trailering. Inspect for load leveling devices, which if installed, may defeat operation of the height-sensing brake-proportioning valve. Check the condition, adjustment, and tension of the parking brake cable.
- **Remove the wheels and inspect the brake assemblies** – This check will let you determine the condition of the individual brake assemblies. Look for leaking calipers and wheel cylinders, worn out pads or shoes, and damaged drums and rotors. Also note excessive corrosion which could prevent smooth operation of the brake system.

Reading through the above preliminary checks you can see that what you should be looking for are clues to the cause of the concern. Many times the results of preliminary checks will point you towards the cause of a brake problem.