

### Mastery - Like Driving a Car

In automotive service, diagnosing and repairing a car is a lot like driving a car. There is a definite sequence to the steps taken that we refer to as strategy-based diagnostics, as well as others designed to ensure good customer service. To efficiently locate and repair a problem, the following must occur:

1. **Verify the concern** – The majority of people who own vehicles lack the technical savvy to describe vehicle problems in a way that will make them easy to diagnose. You must be able to recreate the issue before you can figure out its cause.
2. **Note the conditions** – Once confirmed, isolate the conditions that cause the concern to occur. Does the problem happen at idle, when cruising, accelerating, turning, braking, etc.?
3. **Isolate the system** – If the concern is a shaking sensation when the brakes are applied at high speeds, it makes sense to focus on the braking system. If the steering wheel shakes at the same time, you can further narrow your inspection to components that would also affect the steering system. In this case, the front brake assemblies would be suspect, as the rear brakes do not turn with the movement of the steering system.
4. **Symptom analysis and pin-point testing** – Keeping with the brake example, a shake or pulsation would indicate a problem with the rotors or discs. Physical inspections should focus around these components. Rotors will be checked for lateral runout and parallelism (thickness variations).
5. **The big picture** – Once the specific cause of the problem is determined, take a step back and examine the entire system to find the root cause. Ask yourself “what caused this to happen?” Did a caliper seize? Is a flexible brake hose twisted or pinched? Did someone apply an incorrect lubricant that caused rubber bushings to swell and restrict movement? Is the driver just overly aggressive? Correcting the initial cause rather than just attacking components that directly produce symptoms results in a proper repair the first time, as well as a happy customer.
6. **Communication** – Although not part of the diagnostic process, this step is critical to customer relations. Once a definite conclusion has been reached, relay that information to the owner of the vehicle. Explain the steps you took and why you took them, as well as how your findings caused the concern they are experiencing. Explain the steps you wish to take to remedy the problem, and why each one is important. It is important to take the time to answer questions and thoroughly explain the process. Avoid up-selling and using scare tactics, the point is to allow the customer to make an informed decision.
7. **Complete the repair** – Using industry approved procedures and practices.
8. **Verify** – After the repair, operate the vehicle in the same manner used to recreate the initial problem. Be sure the issue no longer exists.

Brandon Sharp