



Metering Valve Inspection and Testing

Meet NATEF Task: (A5-B-10) Inspect, test, and/or replace metering (hold-off) proportioning (balance), pressure differential, and combination valves. (P-3)

Name _____ Date _____ Time on Task _____

Make/Model/Year _____ VIN _____ Evaluation: 4 3 2 1

A defective metering valve can leak brake fluid and/or cause the front brakes to apply before the rear brakes. This is most commonly noticed on slippery surfaces such as on snow or ice or on rain-slick roads. If the front brakes lock up during these conditions, the front wheels cannot be steered. Inspect the metering for these two conditions:

- _____ 1. Check the vehicle manufacturer's service information for the recommended metering valve testing procedure:

- _____ 2. Leakage - Look at the bottom on the metering valve for brake fluid leakage. (Ignore slight dampness.) Replace the metering valve assembly if leaking.
- _____ 3. As the pressure builds to the front brakes, the metering valve stem should move. If it does not, replace the valve.
- _____ 4. More accurate testing of the metering valve can be accomplished using pressure gauges. Install two gauges, one in the pressure line coming from the master cylinder and the other in the outlet line leading to the front brakes.
- _____ 5. Depress the brake pedal. Both gauges should read the same until about 3-30 psi (20 to 200 kPa) when the metering valve shuts thereby delaying the operation of the front brakes.
- _____ 6. The master cylinder outlet gauge should show an increase in pressure as the brake pedal is depressed further.
- _____ 7. Once 75 to 300 psi is reached, the gauge showing pressure to the front brakes should match the pressure from the master cylinder. If the pressures do not match these ranges, the metering valve assembly should be replaced.

NOTE: Neither the metering valve nor the proportioning valve can cause a pull to one side if defective. The metering valve controls *both* front brakes, and the proportioning valve controls *both* rear brakes. A defective master cylinder cannot cause a pull either. Therefore, if a vehicle pulls to one side during a stop, look for problems in the individual wheel brakes, hoses or suspension.