KJ: Supercharger Bypass Control

This pinpoint test is intended to diagnose the following:

- supercharger bypass actuator
- vacuum hoses

KJ1 CHECK FOR DTCS

Note: *The DTCs P1227 and P1228 are for informational purposes only and are usually accompanied by other DTCs. If concerns are present with the turbocharger inlet pressure (TCIP) sensor or the manifold absolute pressure (MAP) sensor, the DTCs P1227 or P1228 may set. Diagnose all other DTCs before diagnosing the DTCs P1227 or P1228.*

Are DTCs P1227 or P1228 present?

Yes	GO to KJ2.
No	GO to KJ3.

KJ2 VERIFY THE DTC

- Record the DTCs.
- Clear the PCM DTCs.
- Drive the vehicle at normal operating temperature with the engine exceeding 2,000 RPM.
- Carry out the PCM self-test.

Are any other DTCs present?

Yes	DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, Diagnostic Trouble Code (DTC) Charts and Descriptions.
No	GO to KJ4.

KJ3 CHECK THE INTAKE AIR TEMPERATURE 2 (IAT2) PID

WARNING: To avoid personal injury do not unscrew the coolant pressure relief cap while the engine is operating or hot. The cooling system is under pressure. Steam and hot liquid can come out forcefully when the cap is loosened slightly. Failure to follow these instructions may result in personal injury.

- Ignition ON, engine running.
- Access the PCM and monitor the IAT2 (TEMP) PID.

Is the temperature greater than 110° C (230°F)?

Yes	CHECK for low fluid level in the charge air cooler (CAC) system. CHECK for damaged CAC lines. REFER to the Workshop Manual Section 303-03B, Supercharger Cooling, to DIAGNOSE a loss of coolant.
No	GO to KJ4.

KJ4 CHECK THE SUPERCHARGER BYPASS ACTUATOR VACUUM HOSES

- Check for correct connections, damage or restrictions in the vacuum lines going to the supercharger bypass actuator.

Are any concerns present?

Yes	REPAIR or INSTALL new vacuum lines as necessary. Clear the PCM DTCs. REPEAT the self-test.
No	GO to KJ5.

KJ5 CHECK THE BYPASS VALVE ACTUATOR

Note: *Additional DTCs may set as a result of disconnecting the vacuum line in this step.*

- Visually inspect the bypass valve actuator for damage.
- Ignition OFF.
- Monitor the position of the supercharger bypass actuator linkage.
- Ignition ON, engine running.
- Monitor the position of the supercharger bypass actuator linkage.
- Disconnect the supercharger bypass actuator vacuum line.

Does the supercharger bypass actuator linkage move when the engine is started, and return to the original position when the supercharger bypass actuator vacuum line is disconnected?

Yes	The concern is not present at this time. Return to Section 3, GO to Pinpoint Test QT.
No	INSTALL a new supercharger bypass actuator. Clear the PCM DTCs. REPEAT the self-test.