Scan Tool Setup and Functionality

Connect the scan tool to the data link connector (DLC) for communication with the vehicle.

The DLC is located in the driver side compartment. It is attached to the instrument panel under the steering column and accessible from the driver seat.

The DLC is rectangular in design and capable of accommodating up to 16 terminals. The connector has keying features to allow easy connection.

The required scan tool functions are described below:

- monitor, record, and playback of parameter identification (PIDs)
- freeze frame PID data
- diagnostic test modes; self-test, clear DTCs
- output state control mode
- resetting the PCM adaptive tables
- diagnostic monitoring test results (mode 6) for on board diagnostic (OBD) on board monitors
- on board system readiness (OBD monitor completion status)
- resetting the diesel particulate filter parameters
- initiate a manual diesel particulate filter regeneration
- power balance test
- relative compression test

Some of these functions are described in this section. Refer to the scan tool manufacturers manual for instructions on the scan tool setup, operation, and specific cables and adapters required.

Diesel Particulate Filter Manual Regeneration

WARNING: Initiate a manual regeneration of the diesel particulate filter only when the vehicle is on the ground with the area around the tailpipe free of people, obstructions, foreign material or other items. Manual regeneration causes the exhaust gas to quickly get VERY HOT. Failure to follow these instructions may result in serious personal injury.

The diesel particulate filter manual regeneration scan tool function commands the PCM to carry out a diesel particulate filter regeneration. When the diesel particulate filter manual regeneration is initiated the PCM checks several operating conditions to determine if the diesel particulate filter manual regeneration can begin. The engine speed may increase during the diesel particulate filter manual regeneration.

Certain customer driving habits may prevent a complete regeneration from occurring during normal operation. This function may be used to assist in diagnosing a diesel particulate filter concern related to customer driving habits.

Operator Commanded Regeneration

For vehicles equipped with operator commanded regeneration, the vehicle must be at normal operating temperature, the PCM must have no DTCs stored, and the power take off (PTO) must be disengaged (if equipped). The message center will display the exhaust soot load as a percentage, indicate the exhaust is full, or indicate the exhaust is overloaded. When the exhaust is full, the message center will allow the operator the option to command a manual regeneration. Additionally, operator commanded regeneration may be cancelled at any time by pressing any pedal or shutting down the engine.

Power Balance Test

The power balance test determines the relative power contribution of each engine cylinder. During the power stroke of each cylinder the test monitors the acceleration of the crankshaft. The crankshaft acceleration is recorded and displayed in firing order for all cylinders. This procedure may be used to assist in diagnosing a low contributing cylinder or injector concern.

Relative Compression Test

The relative compression test determines the relative compression per cylinder by monitoring changes in crankshaft speed during the compression stroke of each cylinder. The relative compression test is carried out by the PCM during a 10

second cranking event. Greater compression adds resistance resulting in lower crankshaft speed. The crankshaft speed data is calculated by the PCM software. The result is a difference in RPM per cylinder. This is displayed on the scan tool in bar graph form indicating each cylinder contribution.
