

## Turbo VSV Monitor Description

### MONITOR SUMMARY

#### 1. VSV No. 1 (VSV for intake air control valve) monitor

The intake air control valve is opened and closed by a vacuum-operated actuator. This valve controls the airflow from turbocharger No. 2. The ECM controls the airflow by sending electrical control signals to VSV No. 1 which then applies and releases vacuum to the intake air control valve actuator. The intake air control valve opens and closes according to the movement of the actuator and thus controls the airflow from the turbocharger.

The ECM monitors the electrical resistance of the VSV No. 1. If the VSV has a resistance value that is out of the normal range, the ECM interprets this as a malfunction of the VSV, illuminates the MIL, and sets a DTC.

#### 2. VSV No. 4 (VSV for wastegate valve) monitor

The ECM controls the maximum boost pressure from turbocharger No. 1. The ECM sends electrical control signals to VSV No. 4, which then applies and releases vacuum to the wastegate valve actuator. The movement of the actuator opens and closes the wastegate valve and limits the exhaust gas that powers the turbocharger.

The ECM monitors the electrical resistance of VSV No. 4. If the VSV has a resistance value that is out of the normal range, the ECM interprets this as a malfunction of the VSV, illuminates the MIL, and sets a DTC.

#### 3. VSV No. 2 (VSV for exhaust gas control valve) monitor

The ECM controls the exhaust-gas flow from turbocharger No. 2. The ECM sends electrical control signals to VSV No. 2, which then applies and releases vacuum to the exhaust-gas control valve actuator. The movement of the actuator opens and closes the exhaust-gas control valve and directs the exhaust from from the turbocharger.

The ECM monitors the electrical resistance of VSV No. 2. If the VSV has a resistance value that is out of the normal range, the ECM interprets this as a malfunction of the VSV, illuminates the MIL, and sets a DTC.

#### 4. VSV No. 3 (VSV for exhaust bypass valve) monitor

The ECM controls the exhaust-gas flow coming from turbocharger No. 1. This control promotes a smooth transition from one-turbo operation to two-turbo operation. The ECM sends electrical control signal to VSV No. 3, which then applies and releases vacuum to the exhaust bypass valve actuator. The movement of the actuator opens and closes the exhaust bypass valve and directs the exhaust from the turbocharger No. 1 into the exhaust-gas bypass for turbocharger No. 2.

The ECM monitors the electrical resistance of the VSV No. 3. If the VSV has a resistance value that is out of the normal range, the ECM interprets this as a malfunction of the VSV, illuminates the MIL, and sets a DTC.

### RELATED DTC

Related DTCs	P1652	VSV No. 1 (for intake air control valve) malfunction
	P1658	VSV No. 4 (for waste gate valve) malfunction
	P1661	VSV No. 2 (for exhaust gas control valve) malfunction
	P1662	VSV No. 3 (for exhaust bypass valve) malfunction

### MODEL YEAR CHART

Model Year	See Page
1996 to 1998	Tu-8