

EGR System Diagnosis

Meets NATEF Task: (A8-E-3) Diagnose emission and driveability problems caused by malfunctions in the exhaust gas recirculation (EGR) system; determining necessary action. (P-1)

Name _____ Date _____ Time on Task _____

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

The purpose and function of the exhaust gas recirculation (EGR) valve is to blend a slight amount (about 7%) of exhaust gas into the fresh intake charge entering the combustion chamber. The burned exhaust gases are inert and therefore, cannot react chemically with the burning process. The exhaust gases take up mass in the combustion chamber and slow the burning of the air/fuel mixture reducing the peak temperatures that would normally occur if the exhaust gases were not present. This prevents combustion chamber temperatures from exceeding 2500°F (1370°C) and reduces the formation of oxides of nitrogen (NO_x) exhaust emissions.

A typical EGR problem:

- Too much EGR flow causes rough idle and stalling (engine could operate okay at highway speeds).
- Too little EGR flow causes spark knock (ping or detonation) and excessive NO_x emissions especially during cruise and moderate acceleration.

_____ 1. Check service information for the specified procedures to follow when diagnosing the EGR system.

_____ 2. Based on the test, what is the necessary action?

