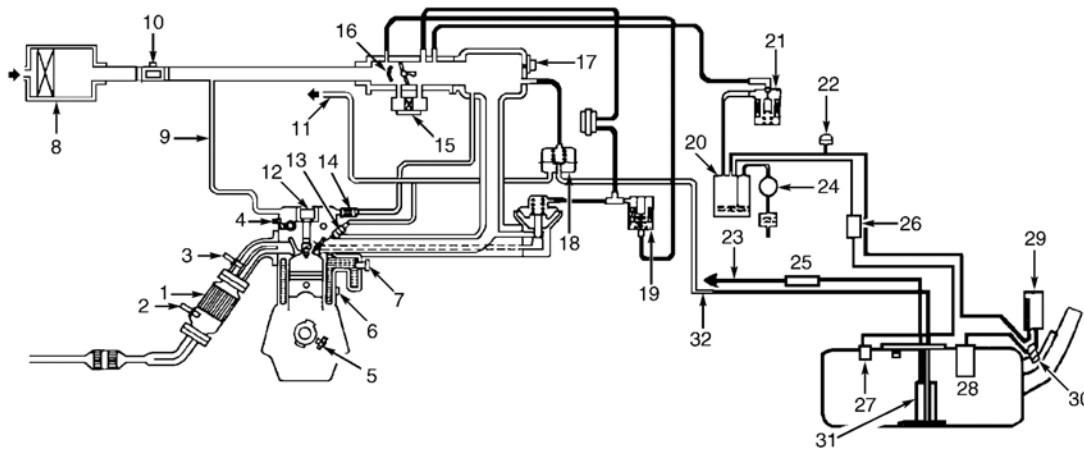


# 2002 ENGINE PERFORMANCE

## Vacuum Diagrams

### INTRODUCTION

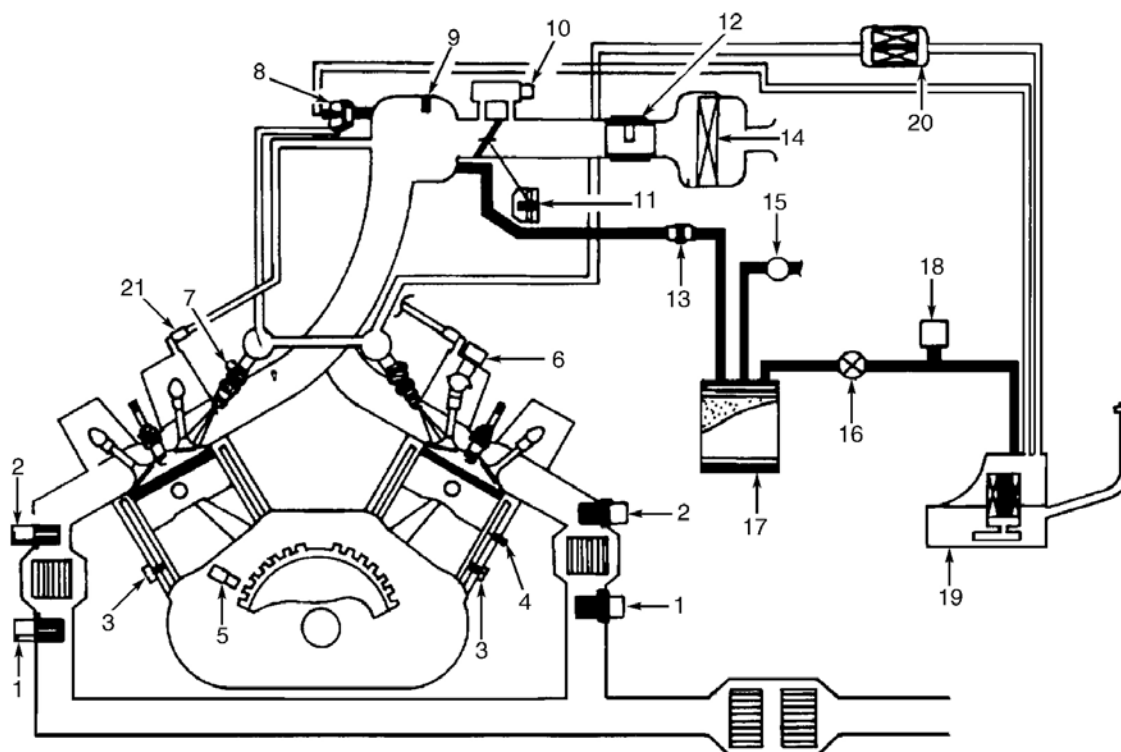
This article contains schematics of vacuum hose routing. Use these vacuum diagrams during the visual inspection in **BASIC DIAGNOSTIC PROCEDURES** article. This will assist in identifying improperly routed vacuum hoses which cause driveability and/or computer-indicated malfunctions.



- |  |  |
|--|--|
| 1. Catalytic Converter                                   | 17. Manifold Absolute Pressure (MAP) Sensor (Used For EGR Control) |
| 2. Downstream HO2S                                       | 18. Fuel Pressure Regulator  |
| 3. Upstream HO2S   | 19. EGR Control Solenoid Valve                                     |
| 4. Camshaft Position (CMP) Sensor                        | 20. EVAP Canister (ORVR)   |
| 5. Crankshaft Position (CKP) Sensor                      | 21. EVAP Canister Purge Solenoid Valve                             |
| 6. Knock Sensor  | 22. Fuel Tank Pressure Sensor                                      |
| 7. Engine Coolant Temperature (ECT) Sensor               | 23. Fuel Line To Fuel Pressure Regulator                           |
| 8. Air Cleaner   | 24. Canister Close Valve (CCV)                                     |
| 9. Breather Hose   | 25. Fuel Filter  |
| 10. Mass Airflow (MAF) Sensor                            | 26. 2-Way Valve  |
| 11. To Fuel Pump   | 27. Rollover Valve   |
| 12. Ignition Coil  | 28. ORVR Valve   |
| 13. Fuel Injector  | 29. Separator  |
| 14. PCV Valve  | 30. 4-Way Valve  |
| 15. Idle Speed Control (ISC) Solenoid                    | 31. Fuel Pump  |
| 16. Throttle Position (TP) Sensor (Includes Idle Switch) | 32. Fuel Return Line   |

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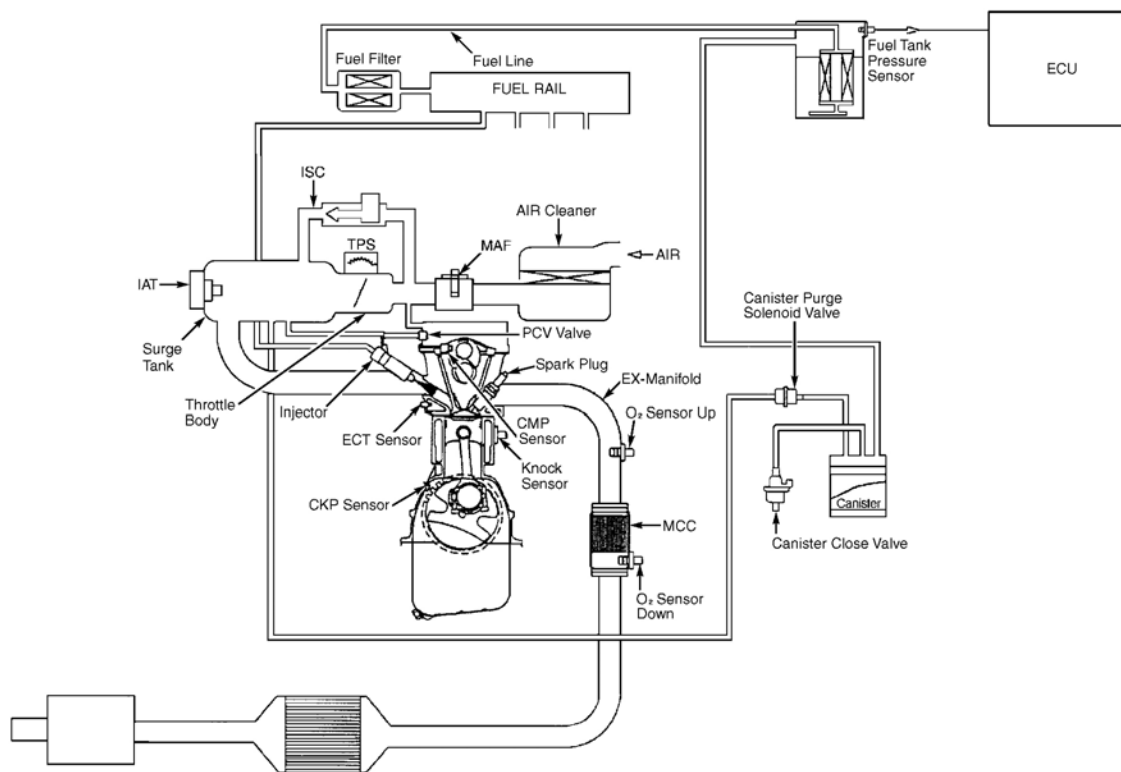
**Fig. 1: Vacuum Diagram (2002 Optima 2.4L)**  
**Courtesy of KIA MOTORS AMERICA, INC.**



- |  |  |
|--|--|
| 1. Downstream HO2S                         | 12. Mass Airflow (MAF) Sensor            |
| 2. Upstream HO2S                           | 13. EVAP Canister Purge Solenoid Valve   |
| 3. Knock Sensor                            | 14. Air Filter                           |
| 4. Engine Coolant Temperature (ECT) Sensor | 15. Canister Close Valve (CCV)           |
| 5. Crankshaft Position (CKP) Sensor        | 16. 2-Way Valve                          |
| 6. Camshaft Position (CMP) Sensor          | 17. EVAP Canister                        |
| 7. Fuel Injector                           | 18. Fuel Tank Pressure Sensor            |
| 8. Fuel Pressure Regulator                 | 19. Fuel Tank                            |
| 9. Intake Air Temperature (IAT) Sensor     | 20. Fuel Filter                          |
| 10. Idle Speed Control (ISC) Solenoid      | 21. Positive Crankcase Ventilation (PCV) |
| 11. Throttle Position (TP) Sensor          |  |

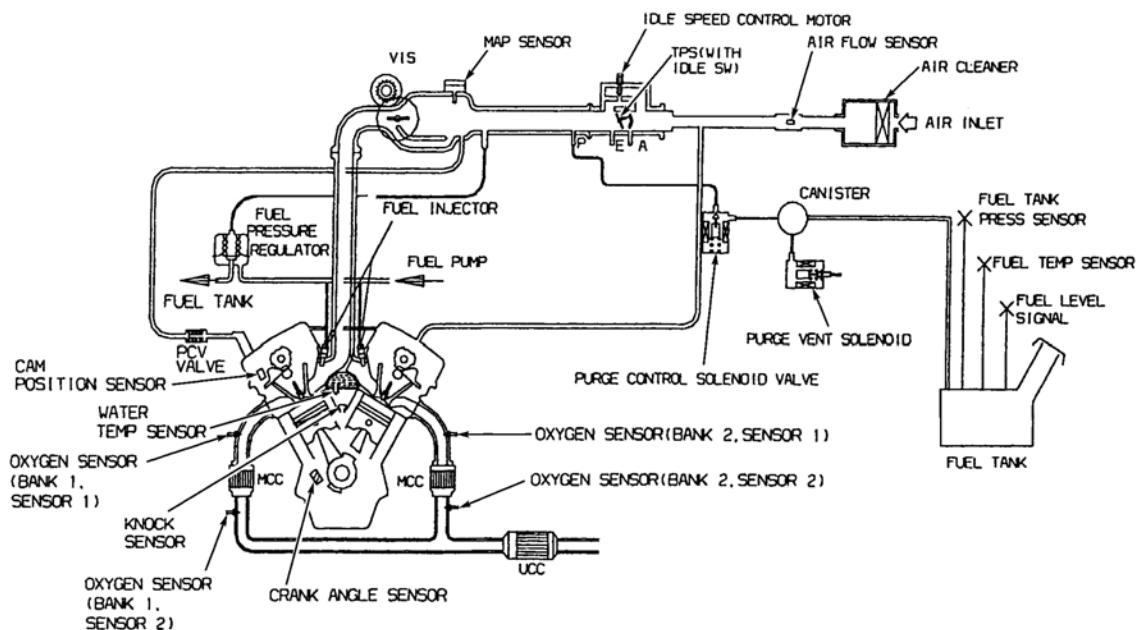
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**Fig. 2: Vacuum Diagram (2002 Optima 2.7L)**  
**Courtesy of KIA MOTORS AMERICA, INC.**



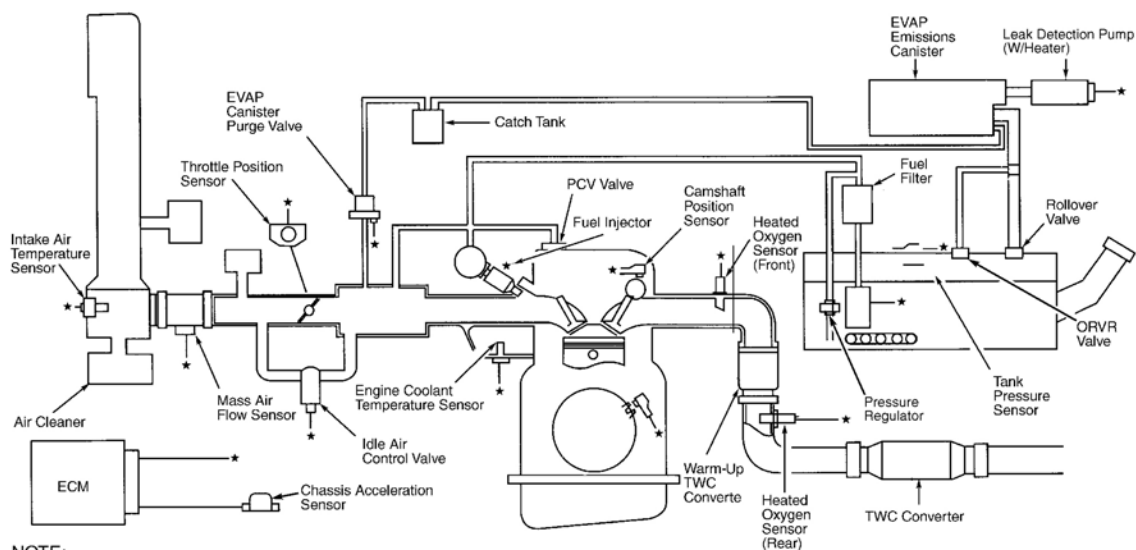
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**Fig. 3: Vacuum Diagram (2002 Rio 1.5L)**  
 Courtesy of KIA MOTORS AMERICA, INC.



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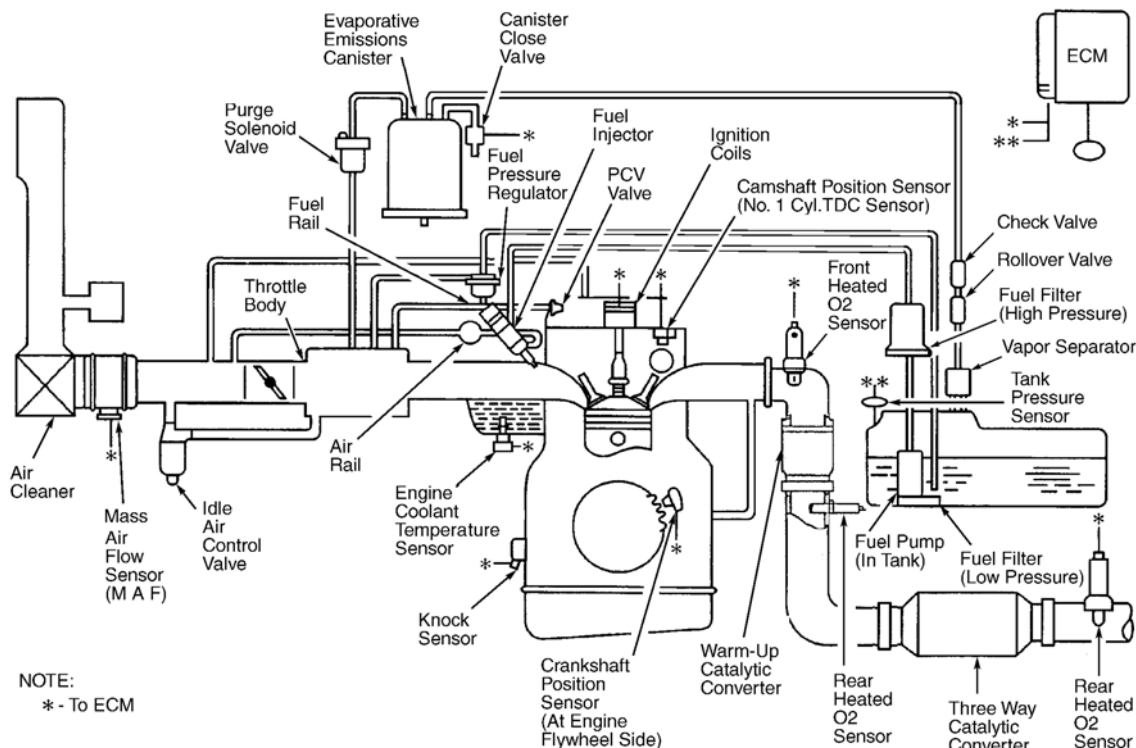
**Fig. 4: Vacuum Diagram (2002 Sedona 3.5L)**  
 Courtesy of KIA MOTORS AMERICA, INC.



NOTE:  
\* - To ECM

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**Fig. 5: Vacuum Diagram (2002 Spectra 1.8L)**  
Courtesy of KIA MOTORS AMERICA, INC.



NOTE:  
\* - To ECM

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**Fig. 6: Vacuum Diagram (2002 Sportage 2.0L)**  
Courtesy of KIA MOTORS AMERICA, INC.