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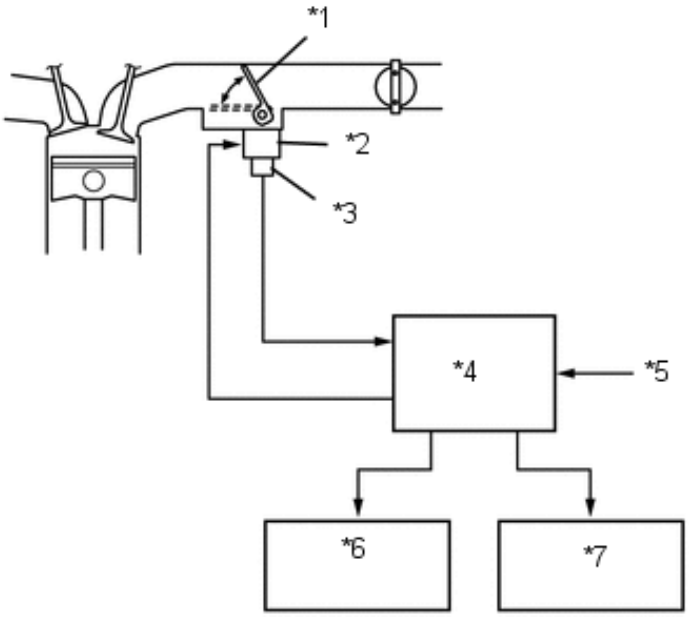
| **Last Modified:** 03-12-2013 | 6.4 F | **Doc ID:** NM1000000004HBV |
| **Model Year:** 2013 | **Model:** RAV4 | **Prod Date Range:** [12/2012 - ] |
| **Title:** 2AR-FE ENGINE CONTROL: SFI SYSTEM: TUMBLE CONTROL; 2013 MY RAV4 [12/2012 - ] | | |

# TUMBLE CONTROL

## 1. FUNCTION

(a) In the tumble control system, the tumble control valve remains fully closed during cold start and cold running conditions, in order to create a strong tumble current in the combustion chamber. In addition, this system optimally controls the ignition timing and the fuel injection volume in accordance with the opening and closing of the valve. As a result, the system improves combustion while the engine is running cold.

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|---|---|---|---|
| *1 | Tumble Control Valve | *2 | Actuator (DC motor) |
| *3 | Tumble Control Valve Position Sensor | *4 | ECM |
| *5 | Engine Coolant Temperature Sensor | *6 | Fuel Injector Assembly |
| *7 | Ignition Coil Assembly | - | - |