Component Procedures: Variable Induction Control Actuator

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Component Procedures: Variable Induction Control Actuator

Parts and Labor (itype_189)

Parts

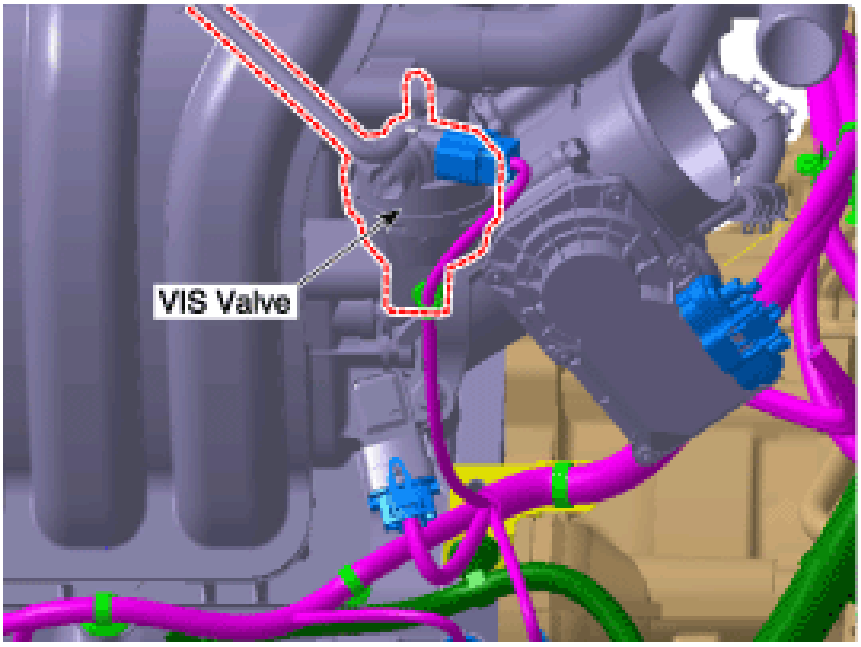
Qualifier	Part #	Name	Price	Note
Intake > Motor	283212EAA0	Vcm Motor	80.55	

Variable Charge Motion Actuator (VCMA) - Description and Operation (Article 44182)

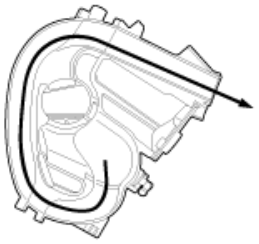
- Description

Variable Intake Solenoid (VIS) Valve - Description and Operation (Article 44172)

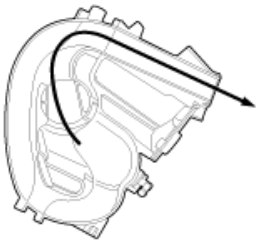
- Description



Engine condition VIS valve Operation
Medium speed Closed Increasing engine performance in low engine speed by reducing intake interference among cylinders
Low / High speed Open Minimizing intake resistance by shortening intake manifold length and increasing area of air entrance



Medium speed

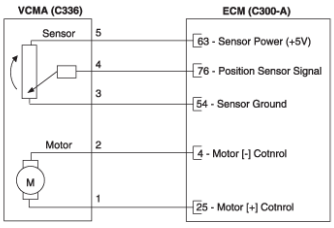


Low / High speed

Variable Charge Motion Actuator (VCMA) - Schematic Diagrams (Article 44185)

- Circuit diagram

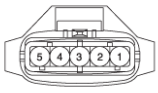
[Circuit Diagram]



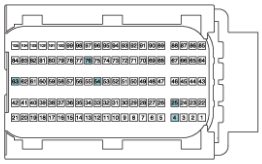
[Connection Information]

Terminal	Connected to	Function
1	ECM C300-A (25)	Motor [+] Cotnrol
2	ECM C300-A (4)	Motor [-] Cotnrol
3	ECM C300-A (54)	Sensor Ground
4	ECM C300-A (76)	Position Sensor Signal
5	ECM C300-A (63)	Sensor Power (+5V)

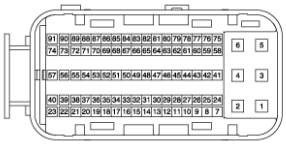
[Harness Connector]



C336
VCMA



C300-A

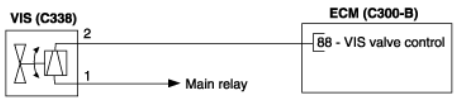


C300-B
ECM

Variable Intake Solenoid (VIS) Valve - Schematic Diagrams (Article 44174)

- Circuit Diagram

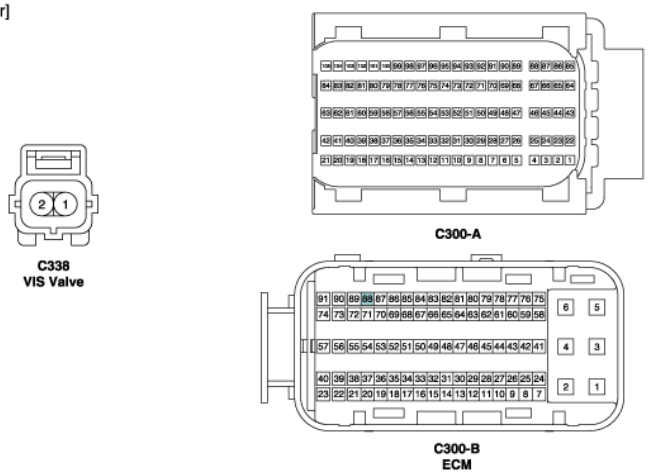
[Circuit Diagram]



[Connection Information]

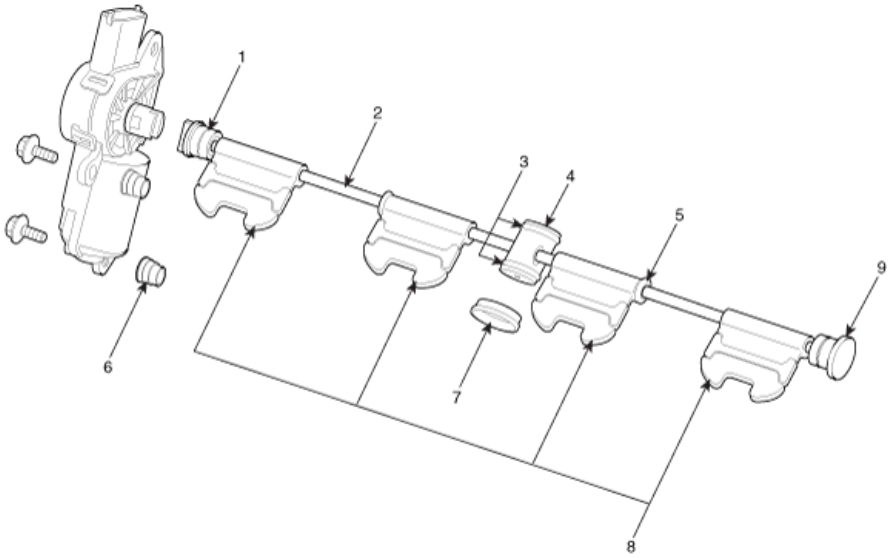
Terminal	Connected to	Function
1	Main relay	Power supply (B+)
2	ECM C300-B (88)	VIS valve control

[Harness Connector]



Variable Charge Motion Actuator (VCMA) - Components and Components Location (Article 44184)

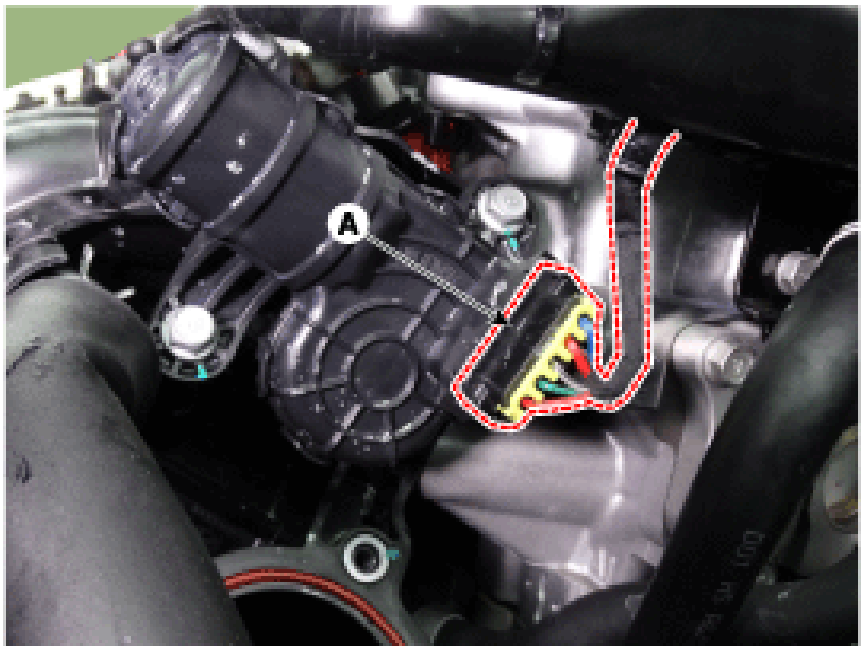
- Components



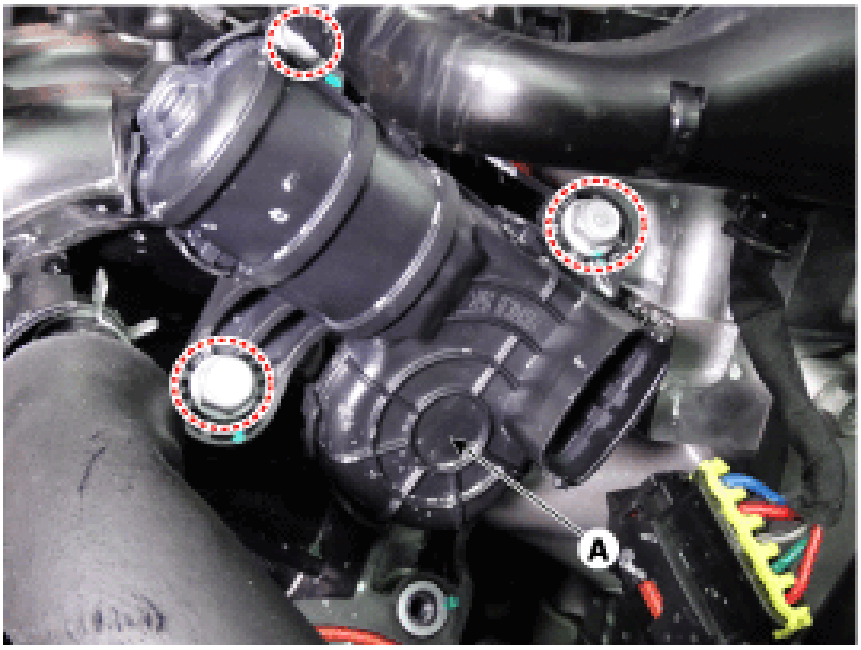
1. Coupling 2. Shaft 3. Stabilizer O-ring 4. Stabilizer 5. O-ring 6. Insert nut 7. Stabilizer Cover 8. Valve
9. Hole cover

Variable Charge Motion Actuator (VCMA) - Repair Procedures (Article 44187)

- Inspection
- Turn ignition switch OFF.
- Disconnect the VCMA connector.
- Check that the VCMA is not stuck by foreign material.
- Measure resistance between motor (+) and (-) control terminals of the motor.
- Check that the resistance is within the specification. Specification : Refer to "Specification"
- Measure resistance between voltage supply terminal and ground terminal of the position sensor.
- Removal
- Turn the ignition sw itch OFF and disconnect the battery negative (-) cable.
- Disconnect the VCMA connector (A).



- Remove the VCMA (A) after removing 3 installation bolts.



- Installation

Install the component with the specified torques. Note that internal damage may occur when the component is dropped. In this case, use it after inspecting.

CAUTION

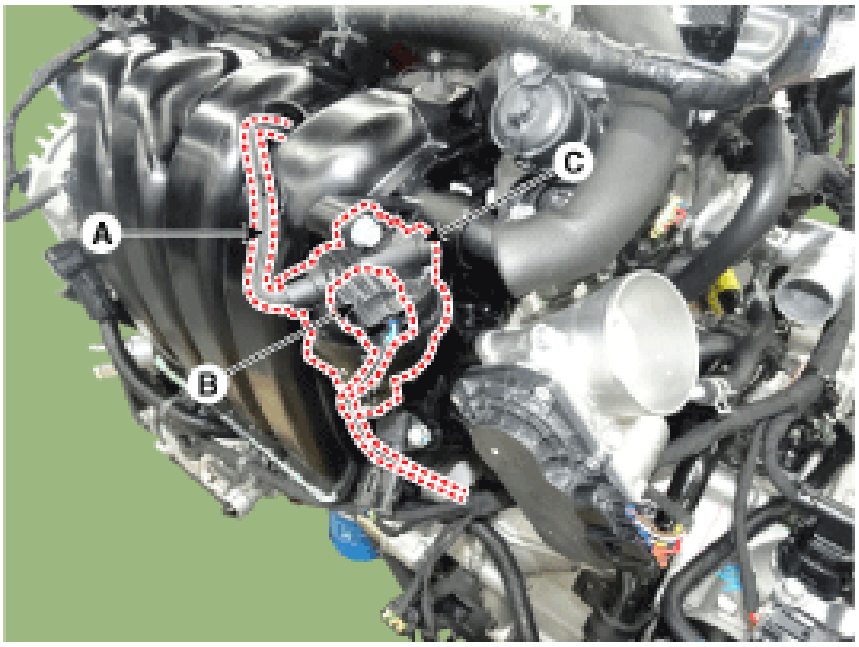
- Install the component with the specified torques.
- Note that internal damage may occur when the component is dropped. In this case, use it after inspecting.

The VCM actuator has to be installed at the fully closing positon of the VCM valve. If it doesn't, the VCM coupling of the VCM shaft can 't be put in the the VCM actuator.

- The VCM actuator has to be installed at the fully closing positon of the VCM valve. If it doesn't, the VCM coupling of the VCM shaft can 't be put in the the VCM actuator.
- Installation is reverse of removal. Variable charge motion actuator installation bolt : 9.8 - 11.8 N.m (1.0 - 1.2 kgf.m, 7.2 - 8.7 lb-ft)

Variable Intake Solenoid (VIS) Actuator - Repair Procedures (Article 45394)

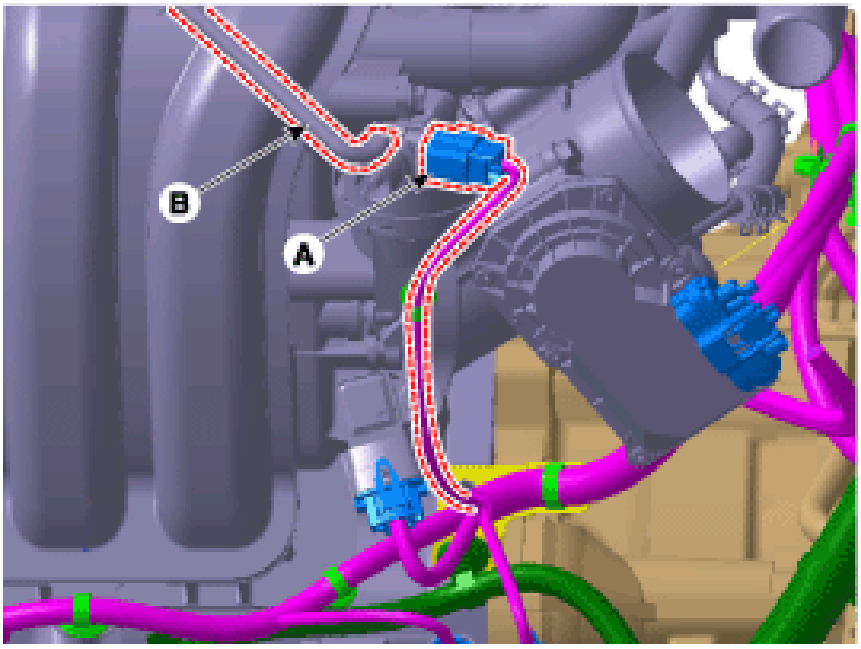
- Removal and Installation
- Disconnect the vacuum hose (A).
- Remove the variable Intake solenoid (VIS) actuator connector (B) and actuator (C). Tightening torque : 9.8 - 11.8 N.m (1.0 - 1.2 kgf.m, 7.2 - 8.7 lb-ft)



- Install in the reverse order of removal.

Variable Intake Solenoid (VIS) Valve - Repair Procedures (Article 44176)

- Inspection
- Turn the ignition switch OFF.
- Disconnect the VIS valve connector.
- Measure resistance between VIS valve terminals 1 and 2. Specification : Refer to "Specification"
- Removal
- Turn the ignition sw itch OFF and disconnect the battery negative (-) cable.
- Disconnect the variable intake solenoid valve connector (A).
- Disconnect the vacuum hoses (B) from the valve.
- Remove the installation bolts, and then remove the valve from the surge tank.



- Installation

Install the component with the specified torques. Note that internal damage may occur when the component is dropped. In this case, use it after inspecting.

CAUTION

- Install the component with the specified torques.
- Note that internal damage may occur when the component is dropped. In this case, use it after inspecting.

Be careful of foreign material not to flow into the valve.

- Be careful of foreign material not to flow into the valve.
- Installation is reverse of removal. Variable intake solenoid valve bracket installtion bolt : 9.8 - 11.8 N.m (1.0 - 1.2 kgf.m, 7.2 - 8.7 lb-ft)

Variable Charge Motion Actuator (VCMA) - Specifications (Article 44183)

- Specification

[Motor]

Item	Specification
Coil Resistance (Ω)	3.4 - 4.4 [20°C (68°F)]

[Position Sensor]

Coil Resistance (kΩ)	3.44 - 5.16 [20°C (68°F)]

Variable Intake Solenoid (VIS) Valve - Specifications (Article 44173)

- Specification

Item	Specification
Coil resistance (Ω)	30.0 - 35.0 [20°C (68°F)]