

Step	Action	Yes	No
7	High fuel pressure check 1) Check high fuel pressure circuit referring to "High Fuel Pressure Circuit Check".	Go to Step 8.	Repair or replace.
8	Pump power supply check 1) Check that pump supply voltage is equal to 12 V and current is within 2 – 10 A referring to "Table – 1040AA: Check on Supply Voltage and Current Uptake".	Replace fuel pressure regulator valve on common rail referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G".	Voltage is lower than 12 V. Check electrical wiring. Current greater than 10 A: pump defective. Replace fuel pump referring to "Fuel Pump Assembly Removal and Installation in Section 1G". Current less than 2 A: pump obstructed. Replace fuel pump referring to "Fuel Pump Assembly Removal and Installation in Section 1G" and clean fuel tank.

Engine Knocking

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check that engine oil level is correct referring to "Engine Oil and Filter Change in Section 0B". • Check that intake air / vacuum circuit is working properly referring to "Table – 1048OA: Air Intake / Vacuum Circuit Check". • Check condition of fuel circuit and make sure that it is working properly referring to "Table – 1040OA: Fuel Supply System Check". • Check that low pressure circuit is working properly referring to "Low Fuel Pressure Circuit Check". 	Go to Step 2.	Repair or replace.

Step	Action	Yes	No
2	Ambient parameters check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Check value of the following parameters. <ul style="list-style-type: none"> • Battery voltage • Barometric Press • IAT 2 • Boost Press target • Boost Press measured • MAF • Coolant Temp • Fuel Temp • Fuel Press target • Fuel Press measured • Engine speed 	Go to Step 3.	Check that system of faulty parameter.
3	Glow plug control module and its circuit check 1) Check that glow plugs are working properly referring to "Table – 5520CA: Glow Plugs Operation Check".	End.	Replace.

White Exhaust Fumes

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check that engine oil level is correct referring to "Engine Oil and Filter Change in Section 0B". • Check that intake air / vacuum circuit is working properly referring to "Table – 10480A: Air Intake / Vacuum Circuit Check". • Check condition of fuel circuit and make sure that it is working properly referring to "Table – 10400A: Fuel Supply System Check". • Check that low pressure circuit is working properly referring to "Low Fuel Pressure Circuit Check". 	Go to Step 2.	Repair or replace.
2	Ambient parameters check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Check value of the following parameters. <ul style="list-style-type: none"> • Battery voltage • Engine speed • Barometric Press • Coolant Temp • Fuel Temp 	Go to Step 3.	Check that system of faulty parameter.
3	Electrical equipment check 1) Check that main and circuit fuses have not blown.	Go to Step 4.	Repair or replace.

Step	Action	Yes	No
4	Glow plug control module and its circuit check 1) Check that glow plugs are working properly referring to "Table – 5520CA: Glow Plugs Operation Check".	Go to Step 5.	Repair or replace.
5	Cylinder compression check 1) Carry out cylinder compression check referring to "Compression Check in Section 1D".	Go to Step 8.	Cylinder compression insufficient. Go to Step 6.
6	Check cylinder head gasket and valve oil seals 1) Check the following. <ul style="list-style-type: none"> • Check that cylinder head is correctly tightened • Check seal of gasket • Check seal of valve oil seals 	Go to Step 7.	Cylinder head tightening incorrect. Proceed with removing-refitting of cylinder head and renew correct tightening, refer to "Valve and Cylinder Head Assembly Removal and Installation in Section 1D". Gasket damaged Change head gasket referring to "Valve and Cylinder Head Assembly Removal and Installation in Section 1D". Oil seal missing. Replace valve oil seals referring to "Valve and Cylinder Head Disassembly and Reassembly in Section 1D".
7	Check the cause of the insufficient compression 1) With cylinder head removed, check the following. <ul style="list-style-type: none"> • Valve seal • Cylinder/piston ring wear conditions 	Go to Step 8.	Valve seal insufficient. Overhaul cylinder head referring to "Valve and Cylinder Head Disassembly and Reassembly in Section 1D". Cylinder/ring wear outside tolerances. Restore correct operating clearance.

Step	Action	Yes	No
8	Blow-by circuit check 1) Check condition of blow-by gas intake circuit, in particular check that there are no obstructions in separator or in pipes.	Go to Step 9.	Fault in pipe from separator to intake. Restore circuit to working order: change pipe if necessary Fault in separator (tappet cover) Restore circuit to working order: if necessary, replace cylinder head cover
9	Turbocharger seal check 1) Check that there are no engine oil leaks from turbocharger impeller shaft.	End.	Gasket seal insufficient Replace turbocharger referring to "Turbocharger Included in Exhaust Manifold Removal and Installation in Section 1D".

Black Exhaust Fumes

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check that engine oil level is correct referring to "Engine Oil and Filter Change in Section 0B". • Check that intake air / vacuum circuit is working properly referring to "Table – 1048OA: Air Intake / Vacuum Circuit Check". • Check condition of fuel circuit and make sure that it is working properly referring to "Table – 1040OA: Fuel Supply System Check". • Check that low pressure circuit is working properly referring to "Low Fuel Pressure Circuit Check". 	Go to Step 2.	Repair or replace.
2	Ambient parameters check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Check value of the following parameters. <ul style="list-style-type: none"> • Battery voltage • Coolant Temp • Fuel Temp • Engine speed 	Go to Step 3.	Check that system of faulty parameter.
3	Electrical equipment check 1) Check that main and circuit fuses have not blown.	Go to Step 4.	Repair or replace.
4	Glow plug control module and its circuit check 1) Check that glow plugs are working properly referring to "Table – 5520CA: Glow Plugs Operation Check".	End.	Repair or replace.

Excessive Exhaust Fumes

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check that engine oil level is correct referring to “Engine Oil and Filter Change in Section 0B”. • Check that intake air / vacuum circuit is working properly referring to “Table – 1048OA: Air Intake / Vacuum Circuit Check”. • Check condition of fuel circuit and make sure that it is working properly referring to “Table – 1040OA: Fuel Supply System Check”. • Check that low pressure circuit is working properly referring to “Low Fuel Pressure Circuit Check”. 	Go to Step 2.	Repair or replace.
2	Ambient parameters check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Check value of the following parameters. <ul style="list-style-type: none"> • Battery voltage • MAF • Barometric Press • Coolant Temp • Fuel Temp • Engine speed 	Go to Step 3.	Check that system of faulty parameter.
3	Electrical equipment check 1) Check that main and circuit fuses have not blown.	Go to Step 4.	Repair or replace.
4	Glow plug control module and its circuit check 1) Check that glow plugs are working properly referring to “Table – 5520CA: Glow Plugs Operation Check”.	Go to Step 5.	Repair or replace.
5	Cylinder compression check 1) Carry out cylinder compression check referring to “Compression Check in Section 1D”.	End.	Cylinder compression insufficient. Go to Step 6.
6	Check on cause of the insufficient compression 1) With cylinder head removed, check the following. <ul style="list-style-type: none"> • Valve seal • Cylinder/piston ring wear conditions 	End.	Valve seal insufficient. Overhaul cylinder head referring to “Valve and Cylinder Head Disassembly and Reassembly in Section 1D”. Cylinder/ring wear outside tolerances. Restore correct operating clearance.

Engine Oil Excessive Level

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check that engine oil level is correct referring to “Engine Oil and Filter Change in Section 0B”. • Check condition of fuel circuit and make sure that it is working properly referring to “Table – 1040OA: Fuel Supply System Check”. • Check that low pressure circuit is working properly referring to “Low Fuel Pressure Circuit Check”. 	Go to Step 2.	Repair or replace.
2	Ambient parameters check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Check value of the following parameters. <ul style="list-style-type: none"> • Fuel Press target • Fuel Press measured 	End.	Check that system of faulty parameter.

Leaks in Fuel Feed System

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check that engine oil level is correct referring to “Engine Oil and Filter Change in Section 0B”. • Check condition of fuel circuit and make sure that it is working properly referring to “Table – 1040OA: Fuel Supply System Check”. • Check that low pressure circuit is working properly referring to “Low Fuel Pressure Circuit Check”. 	End.	Repair or replace.

DTC P0016: Crankshaft Position – Camshaft Position Correlation

S5RW0D1104175

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if the following conditions are satisfied for at least 0.8 seconds.

- Engine speed is above 50 rpm.
- ECM does not recognize any camshaft signal or signal is not plausible.

Troubleshooting

Step	Action	Yes	No
1	Engine speed check 1) Check that engine speed is correct referring to “Table – 1060GI: Engine Speed Check”.	Go to Step 2.	Repair or replace.

Step	Action	Yes	No
2	Check on correct engine timing 1) Check that engine timing is correct referring to "Installation" under "Timing Belt, Belt tensioner and Idler Removal and Installation in Section 1D".	Go to Step 3.	Timing is not correct. Repair engine timing referring to "Timing Belt, Belt tensioner and Idler Removal and Installation in Section 1D".
3	Timing sensor check 1) Check correct operation of CMP sensor referring to "Table – 5510CG: CMP Sensor Operation Check".	End.	Repair or replace.

DTC P0045: Turbo Boost Control Solenoid Circuit / Open

S5RW0D1104176

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- Boost pressure control solenoid valve circuit is open.
- Boost pressure control solenoid valve circuit is shorted to power supply circuit.
- Boost pressure control solenoid valve circuit is shorted to ground circuit.
- Boost pressure control solenoid valve circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	Circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connector from boost pressure control solenoid valve. 3) Turn ignition switch to ON position. 4) Check that voltage between "E08-2" terminal of boost pressure control solenoid valve and ground is higher than 11 V.	Go to Step 2.	Repair or, if necessary, replace wiring harness of boost pressure control solenoid valve power supply circuit.
2	Circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "E27-7" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between boost pressure control solenoid valve and ECM.
3	Circuit check 1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-7" terminal of ECM connector and ground is less than 500 kΩ.	Go to Step 4.	Repair or, if necessary, replace wiring harness between boost pressure control solenoid valve and ECM.

Step	Action	Yes	No
4	Circuit check 1) Check that resistance between "E27-7" terminal of ECM connector and "E08-1" terminal of boost pressure control solenoid valve connector is less than 5 Ω .	Go to Step 5.	Repair or, if necessary, replace wiring harness between boost pressure control solenoid valve and ECM.
5	Boost pressure control solenoid valve check 1) Check boost pressure control solenoid valve for resistance referring to "Boost Pressure Control Solenoid Valve Inspection in Section 1C".	Substitute a known good ECM and recheck.	Replace boost pressure control solenoid valve.

DTC P0087 / P0088: Fuel Rail Pressure – Too Low / Too High

S5RW0D1104177

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

DTC P0087: This DTC is detected if fuel pressure in common rail is too low.

DTC P0088: This DTC is detected if fuel pressure in common rail is greater than 175,000 kPa (1,750 bar).

▲ WARNING

Before performing the following troubleshooting, be sure to read "Precautions on Fuel System Service in Section 1G".

Troubleshooting

Step	Action	Yes	No
1	Preliminary check (fuel type) 1) Check that fuel tank contains correct type of fuel.	Go to Step 2.	The tank contains irregular substances (petrol, other fluids). Clean tank and refill it correctly.
2	Preliminary check (rest of fuel) 1) The rest of fuel should be more than 5 liters (10.67/8.80 US/Imp pt.).	Go to Step 3.	There are less than 5 liters (10.67/8.80 US/Imp pt.) in tank. Top up fuel level so that it is more than 5 liters (10.67/8.80 US/Imp pt.).
3	Preliminary check (fuel system leak) 1) Check that there are no leaks from fuel system.	Go to Step 4.	Fuel system is leaking or incorrectly sealed. Repair system seal. If necessary, replace damaged components.
4	Preliminary check (connection) 1) Check hoses and pipes connected to identify any obstructions, damage, etc. 2) Check that connectors and seals are correctly fitted.	Go to Step 5.	Pipes obstructed or damaged. Replace pipes. If necessary, replace damaged components.
5	Low Fuel pressure check 1) Check low fuel pressure circuit referring to "Low Fuel Pressure Circuit Check".	Go to Step 6.	Repair or replace.

Step	Action	Yes	No
6	High Fuel pressure check 1) Check high fuel pressure circuit referring to “High Fuel Pressure Circuit Check”.	Go to Step 7.	Repair or replace.
7	Pressure regulator replacement 1) Replace fuel pressure regulator valve referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G”, and check that DTC is not detected.	End.	Replace high pressure pump referring to “High Pressure Pump Removal and Installation in Section 1G”.

DTC P0090: Fuel Pressure Regulator Control Circuit

S5RW0D1104178

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if fuel pressure in common rail is 175,000 kPa (1,750 bar) or more for at least 0.24 seconds.

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to “Low Fuel Pressure Circuit Check”.	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to “High Fuel Pressure Circuit Check”.	Go to Step 3.	Repair or replace.
3	1) Replace fuel pressure regulator referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to “High Pressure Pump Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0091: Fuel Pressure Regulator Control Circuit Low

S5RW0D1104179

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if difference between fuel pressure in common rail and targeted fuel pressure is greater than specified value based on engine speed.

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to "Low Fuel Pressure Circuit Check".	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to "High Fuel Pressure Circuit Check".	Go to Step 3.	Repair or replace.
3	1) Replace fuel pressure regulator referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to "High Pressure Pump Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0092: Fuel Pressure Regulator Control Circuit High

S5RW0D1104180

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if fuel pressure in common rail is higher than targeted fuel pressure by 25000 kPa (250 bar).

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to "Low Fuel Pressure Circuit Check".	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to "High Fuel Pressure Circuit Check".	Go to Step 3.	Repair or replace.

Step	Action	Yes	No
3	1) Replace fuel pressure regulator referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to “High Pressure Pump Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0093: Fuel System Leak Detected – Large Leak

S5RW0D1104181

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if fuel pressure in common rail is lower than targeted fuel pressure by 25000 kPa (250 bar).

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to “Low Fuel Pressure Circuit Check”.	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to “High Fuel Pressure Circuit Check”.	Go to Step 3.	Repair or replace.
3	1) Replace fuel pressure regulator referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to “High Pressure Pump Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0094: Fuel System Leak Detected – Small Leak

S5RW0D1104182

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if fuel pressure in common rail is lower than specified value based on engine speed.

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to “Low Fuel Pressure Circuit Check”.	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to “High Fuel Pressure Circuit Check”.	Go to Step 3.	Repair or replace.
3	1) Replace fuel pressure regulator referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to “High Pressure Pump Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0095: Intake Air Temperature Sensor 2 Circuit

S5RW0D1104183

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- IAT Sensor 2 circuit is open.
- IAT Sensor 2 circuit is shorted to power supply circuit.
- IAT Sensor 2 circuit is shorted to ground circuit.

Troubleshooting

Step	Action	Yes	No
1	IAT sensor-2 operation check 1) Check that IAT sensor-2 is working properly referring to “Table – 1064BD: IAT Sensor 2 Check”.	End.	Repair or replace.

DTC P0100 / P0101: Mass Air Flow Circuit / Mass Air Flow Circuit Range / Performance

S5RW0D1104184

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

DTC P0100:

This DTC is detected if voltage at D05-42 of ECM is too low or too high for at least 0.65 seconds.

DTC P0101:

This DTC is detected if any one of the following conditions is satisfied for at least 0.58 seconds.

- Mass air flow signal circuit is open.
- Mass air flow signal circuit is shorted to power supply circuit.
- Mass air flow signal circuit is shorted to ground circuit.

Troubleshooting

Step	Action	Yes	No
1	<p>Preliminary check</p> <p>1) Check the following.</p> <ul style="list-style-type: none"> • Check that engine oil level is correct referring to “Engine Oil and Filter Change in Section 0B”. • Check that intake air / vacuum circuit is working properly referring to “Table – 1048OA: Air Intake / Vacuum Circuit Check”. • Check condition of fuel circuit and make sure that it is working properly referring to “Table – 1040OA: Fuel Supply System Check”. • Check that low pressure circuit is working properly referring to “Low Fuel Pressure Circuit Check”. 	Go to Step 2.	Repair or replace.
2	<p>MAF operation check</p> <p>1) Check that MAF sensor is working properly referring to “Table – 1060GS: MAF Sensor Operation Check”.</p>	End.	Repair or replace.

DTC P010F: Mass Air Flow Sensitivity Drift

S5RW0D1104185

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if the following conditions are satisfied for at least 10 seconds.

- Engine speed is below 50 rpm.
- Difference between boost pressure and barometric pressure is more than 15 kPa (0.15 bar).

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check value of barometric pressure referring to “Table – 1060GD: Barometric Pressure Check”. • Check value of boost pressure referring to “Table – 1060GF: Boost Pressure Check”. 	End.	Repair or replace.

DTC P0110 / P0111: Intake Air Temperature Sensor 1 Circuit / Intake Air Temperature Sensor 1 Circuit Range / Performance

S5RW0D1104186

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

DTC P0110:

This DTC is detected if IAT sensor-1 voltage is greater than 4.95 V (short to power circuit) or less than 0.05 V (open or short to ground circuit).

DTC P0111:

This DTC is detected if there is interference with signal for sensor at D05-37 terminal of ECM, if there is a short to power circuit or short to ground circuit in circuit connected to D05-37 terminal of ECM.

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Start engine and warm it up to normal operating temperature. 3) With engine idle speed, all electrical loads turned off, accelerator pedal not depressed, and “IAT 1” must be within 10 and 120 °C (50 – 248 °F).	End.	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from MAF sensor with IAT sensor-1. 3) Turn ignition switch to ON position. 4) Check voltage between “D24-1” terminal of MAF sensor with IAT sensor-1 connector and vehicle body ground. Ensure that it is higher than 11 V.	Go to Step 3.	Repair or, if necessary, replace MAF sensor with IAT sensor-1 power supply circuit.
3	1) Turn ignition switch to OFF position. 2) Disconnect connector from MAF sensor with IAT sensor-1. 3) Turn ignition switch to ON position. 4) Check voltage between “D24-1” and “D24-2” terminals of MAF sensor with IAT sensor-1 connector. Ensure that it is higher than 11 V.	Go to Step 4.	Repair or, if necessary, replace wiring harness between ECM and MAF sensor with IAT sensor-1.

Step	Action	Yes	No
4	1) Measure voltage between "D24-3" terminal of MAF sensor with IAT sensor-1 connector and vehicle body ground. Ensure that it is within 4.8 and 5.2 V.	Go to Step 6.	Go to Step 5.
5	1) If DTC is still detected, repair or, if necessary, replace wiring harness between MAF sensor with IAT sensor-1 and ECM. 2) Connect connector to MAF sensor and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.
6	1) Replace MAF sensor with IAT sensor-1 referring to "MAF Sensor with IAT Sensor-1 Removal and Installation in Section 1C" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0115: Engine Coolant Temperature Circuit

S5RW0D1104187

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

ECT sensor voltage is higher than 4.95 V or less than 0.35 V for 0.48 seconds continuously.

Troubleshooting

Step	Action	Yes	No
1	ECT sensor operation check 1) Check that ECT sensor is working properly referring to "Table – 1060OE: ECT Sensor Operation Check".	End.	Repair or replace.

DTC P0116: Engine Coolant Temperature Circuit Range / Performance

S5RW0D1104188

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- ECT is not 35 °C (95 °F) or more.
- ECT does not rise 5 °C (41 °F) within specified time.

Troubleshooting

Step	Action	Yes	No
1	Cooling system check 1) Check coolant level and engine cooling system referring to "Coolant Level Check in Section 1F" and "Engine Cooling System Inspection and Cleaning in Section 1F".	Go to Step 2.	Repair or replace.

Step	Action	Yes	No
2	Cooling fan operation check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON. 3) Check radiator cooling fan and radiator cooling sub fan for operation by using output test of SUZUKI scan tool.	Go to Step 3.	Check cooling fan motor or its circuit.
3	Thermostat check 1) Check thermostat for operation.	Go to Step 4.	Replace thermostat.
4	1) Replace ECT sensor referring to "Engine Coolant Temperature (ECT) Sensor Removal and Installation in Section 1C" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0120: Throttle Position Sensor Circuit

S5RW0D1104189

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if, with DTC P0641 not recognized or, ECM input voltage (terminal E27-9) is more than 4.67 V (short to power circuit) or less than 0.15 V (open or short to ground circuit).

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that "DTC P0651: Sensor Reference Voltage 2 Circuit / Open" is not detected.	Go to Step 2.	Go to "DTC P0651: Sensor Reference Voltage 2 Circuit / Open".
2	APP sensor check 1) Check that APP sensor is working properly referring to "Table – 1068AC: Accelerator Pedal Check".	End.	Repair or replace.

DTC P0122: Throttle Position Sensor Circuit Low

S5RW0D1104190

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if there is interference with signal for sensor at E27-9 terminal of ECM.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that "DTC P0641: Sensor Reference Voltage 1 Circuit / Open" and/or "DTC P0651: Sensor Reference Voltage 2 Circuit / Open" is not detected.	Go to Step 2.	Go to "DTC P0641: Sensor Reference Voltage 1 Circuit / Open" and/or "DTC P0651: Sensor Reference Voltage 2 Circuit / Open".
2	APP sensor check 1) Check that APP sensor is working properly referring to "Table – 1068AC: Accelerator Pedal Check".	End.	Repair or replace.

DTC P0168: Fuel Temperature Too High

S5RW0D1104191

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if there is a mechanical problem with engine or if system is overheating as a result of over loading.

Troubleshooting

Step	Action	Yes	No
1	DTC check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that "DTC P0180: Fuel Temperature Sensor Circuit" and/or "DTC P1667: Fuel Filter Heating" is not detected.	Go to Step 2.	Go to "DTC P0180: Fuel Temperature Sensor Circuit" and/or "DTC P1667: Fuel Filter Heating".
2	Engine cooling system check 1) Check that there are no engine oil leaks and that the engine oil level is correct referring to "Engine Oil and Filter Change in Section 0B".	Go to Step 3.	Repair or replace.
3	Preliminary check 1) Check that main and circuit fuses have not blown.	Go to Step 4.	Repair or replace.
4	Fuel heater check 1) Check that fuel heater is working properly referring to "Table – 5505AC: Fuel Heater Operation Check".	Go to Step 5.	Repair or replace.
5	Engine cooling system check 1) Check the engine cooling system is working properly referring to "Engine Cooling Symptom Diagnosis in Section 1F".	End.	Repair or replace.

DTC P0180: Fuel Temperature Sensor Circuit

S5RW0D1104192

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC detects if voltage at ECM inlet (terminal E27-11) is more than 4.96 V (short to power circuit) or if it less than 0.23 V (open or short to ground circuit).

Troubleshooting

Step	Action	Yes	No
1	Fuel temperature sensor check 1) Check that fuel temperature sensor is working properly referring to "Table – 1060EA: Fuel Temperature Sensor Check".	End.	Repair or replace.

DTC P0190: Fuel Rail Pressure Sensor Circuit

S5RW0D1104193

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if voltage entering ECM (terminal D05-43) is more than 4.75 V or if it is less than 0.25 V.

Troubleshooting

Step	Action	Yes	No
1	Fuel pressure sensor check 1) Check that fuel pressure sensor is working properly referring to "Table – 1060GH: Diesel Fuel Pressure Check".	End.	Repair or replace.

DTC P0201 / P0202 / P0203 / P0204: Injector Circuit/Open – Cylinder 1 / Cylinder 2 / Cylinder 3 / Cylinder 4

S5RW0D1104194

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected when fuel injector circuit is open.

Troubleshooting

Step	Action	Yes	No
1	Fuel injector check 1) Check that fuel injector is working properly referring to "Table – 1060FA: Injector Operation Check".	End.	Repair or replace.

DTC P0216: Injector / Injection Timing Control Circuit

S5RW0D1104195

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if operation time of fuel injector is longer than specified time.

Troubleshooting

Step	Action	Yes	No
1	Fuel injector check 1) Check that fuel injector is working properly referring to "Table – 1060FA: Injector Operation Check".	Substitute a known-good ECM and recheck.	Repair or replace.

DTC P0219: Engine Overspeed Condition

S5RW0D1104196

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if engine speed reaches above 5400 rpm for at least 0.1 seconds.

Troubleshooting

Step	Action	Yes	No
1	CKP sensor check 1) Check that CKP sensor is working properly referring to "Table – 1060GI: Engine Speed Check".	End.	Repair or replace.

DTC P0220: Pedal Position Sensor Circuit

S5RW0D1104197

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if, with DTC P0651 not recognized, ECM input voltage (terminal E27-31) is more than 4.67 V (short to power circuit) or less than 0.15 V (open or short to ground circuit).

Troubleshooting

Step	Action	Yes	No
1	DTC check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that "DTC P0651: Sensor Reference Voltage 2 Circuit / Open" is not detected.	Go to Step 2.	Go to "DTC P0651: Sensor Reference Voltage 2 Circuit / Open".
2	APP sensor check 1) Check that the APP sensor is working properly referring to "Table – 1068AC: Accelerator Pedal Check".	End.	Repair or replace.

DTC P0230: Fuel Pump Primary Circuit

S5RW0D1104198

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- Fuel pump relay control circuit is open.
- Fuel pump relay control circuit is shorted to power supply circuit.
- Fuel pump relay control circuit is shorted to ground circuit.
- Fuel pump relay control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	Fuel supply system check 1) Check fuel supply system referring to "Table – 1040OA: Fuel Supply System Check".	End.	Repair or replace.

DTC P0235: Turbo Boost Sensor Circuit

S5RW0D1104199

NOTE

If DTC P0235 and DTC P2226 are detected together, perform troubleshooting of DTC P2226 first.

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Boost pressure sensor circuit is open.
- Boost pressure sensor circuit is shorted to power supply circuit.
- Boost pressure sensor circuit is shorted to ground circuit.

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connector from boost pressure sensor with IAT sensor-2. 3) Turn ignition switch to ON position. 4) Check that voltage between "D06-3" terminal of boost pressure sensor with IAT sensor-2 connector and ground is within 4.8 – 5.2 V.	Go to Step 2.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.
2	1) Check that voltage between "D06-3" and "D06-1" terminals of boost pressure sensor with IAT sensor-2 connector is within 4.8 – 5.2 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.

Step	Action	Yes	No
3	1) Turn ignition switch to OFF position. 2) Disconnect ÅgD05Åh connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between “D06-3” terminal of boost pressure sensor with IAT sensor-2 connector and ground is less than 0.3 V.	Go to Step 4.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.
4	1) Check that voltage between “D06-4” terminal of boost pressure sensor with IAT sensor-2 connector and ground is less than 0.3 V.	Go to Step 5.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.
5	1) Turn ignition switch to OFF position. 2) Check that resistance between “D06-3” terminal of boost pressure sensor with IAT sensor-2 connector and “D05-13” terminal of ECM connector is less than 5 Ω.	Go to Step 6.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.
6	1) Check that resistance between “D06-4” terminal of boost pressure sensor with IAT sensor-2 connector and “D05-40” terminal of ECM connector is less than 5 Ω.	Go to Step 7.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.
7	1) Connect “D05” connector to ECM. 2) Replace boost pressure sensor with IAT sensor-2 referring to “Boost Pressure Sensor with IAT Sensor-2 Removal and Installation in Section 1C” and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0237 / P0238: Turbo Boost Sensor Circuit Low / High

S5RW0D1104200

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

DTC P0237:

This DTC is detected if difference between actual pressure and nominal pressure is less than 25,000 kPA, (250 bar) for at least 5 seconds.

DTC P0238:

This DTC is detected if difference between actual pressure and nominal pressure is more than 25,000 kPA, (250 bar) for at least 5 seconds.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check that the engine oil level is correct referring to "Engine Oil and Filter Change in Section 0B". • Check that intake air / vacuum circuit is working properly referring to "Table – 1048OA: Air Intake / Vacuum Circuit Check". • Check condition of fuel circuit and make sure that it is working properly referring to "Table – 1040OA: Fuel Supply System Check". 2) Visually inspect the condition of: <ul style="list-style-type: none"> • High pressure pump • High pressure pipe • Fuel pressure sensor • Fuel pressure regulator • Injectors 	Go to Step 2.	Repair or, if necessary, replace faulty components.
2	Fuel injector calibration code check 1) Using SUZUKI scan tool, check that fuel injector calibration codes registered in ECM are corresponding to calibration codes described on fuel injectors.	Go to Step 3.	Register correct fuel injector calibration codes in ECM referring to "Fuel Injector Registration in Section 1C".
3	Low fuel pressure check 1) Check low fuel pressure circuit referring to "Low Fuel Pressure Circuit Check".	Go to Step 4.	Repair or replace.
4	High fuel pressure check 1) Check high fuel pressure circuit referring to "High Fuel Pressure Circuit Check".	Go to Step 5.	Repair or replace.
5	Check on correct operation 1) Replace fuel pressure regulator valve referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G", and check that DTC is not detected.	End.	If DTC is still detected, go to Step 6.
6	Check on correct operation 1) Replace high pressure pump referring to "High Pressure Pump Removal and Installation in Section 1G", and check that DTC is not detected.	End.	If DTC is still detected, substitute a known-good ECM and recheck.

DTC P0262 / P0265 / P0268 / P0271: Cylinder 1 / 2 / 3 / 4 Injector Circuit High

S5RW0D1104201

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Fuel injector control circuit is shorted to power supply circuit.
- Fuel injector control circuit is shorted to ground circuit.

Troubleshooting

Step	Action	Yes	No
1	Fuel injector check 1) Check that fuel injector is working properly referring to "Table – 1060FA: Injector Operation Check".	End.	Repair or replace.

DTC P0335: Crankshaft Position Sensor Circuit

S5RW0D1104202

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes camshaft impulses, but not impulses from crankshaft or change in position of crankshaft is not within acceptable range of values or cannot be detected.

Troubleshooting

Step	Action	Yes	No
1	CKP sensor check 1) Check correct operation of CKP sensor referring to "Table – 1060GI: Engine Speed Check".	End.	Repair or replace.

DTC P0340: Camshaft Position Sensor Circuit

S5RW0D1104203

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if engine is running and camshaft signal is not recognized or ECM cannot synchronize camshaft signal.

Troubleshooting

Step	Action	Yes	No
1	Engine speed check 1) Check that engine speed is correct referring to "Table – 1060GI: Engine Speed Check".	Go to Step 2.	Repair or replace.
2	Check on correct engine timing 1) Check that engine timing is correct referring to "Timing Belt, Belt tensioner and Idler Removal and Installation in Section 1D".	Go to Step 3.	Repair or replace.
3	CMP sensor check 1) Check correct operation of CMP sensor referring to "Table – 5510CG: CMP Sensor Operation Check".	End.	Repair or replace.

DTC P0380: Glow Plug Circuit

S5RW0D1104204

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- Glow plug control circuit is open.
- Glow plug control circuit is shorted to power supply circuit.
- Glow plug control circuit is shorted to ground circuit.
- Glow plug control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Check that main and circuit fuses have not blown.	Go to Step 2.	Repair or replace.
2	Check on operation of glow plug 1) Check that glow plugs are working properly referring to "Table – 5520CA: Glow Plugs Operation Check".	End.	Repair or replace.

DTC P0401: Exhaust Gas Recirculation Flow Insufficient Detected

S5RW0D1104205

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if actual value of EGR flow is less than nominal value of EGR flow.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check that engine oil level is correct referring to “Engine Oil and Filter Change in Section 0B”. • Check that intake air / vacuum circuit is working properly referring to “Table – 1048OA: Air Intake / Vacuum Circuit Check”. • Check that low pressure circuit is working properly referring to “Low Fuel Pressure Circuit Check”. 	Go to Step 2.	Repair or replace.
2	EGR operation check 1) Check that EGR valve is working properly referring to “Table – 1080CB: EGR Valve Operation Check”.	End.	Repair or replace.

DTC P0402: Exhaust Gas Recirculation Flow Excessive Detected

S5RW0D1104206

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if quantity of EGR is too high.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Check the following. <ul style="list-style-type: none"> • Check seal of the turbo charger system hoses. • Check hoses and connected pipes to identify any obstructions, damage etc. • Check that pipe clamps of air intake system are correctly fitted. 	Go to Step 2.	Repair or, if necessary, replace the faulty components.
2	Check parameters 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Check the following parameters: <ul style="list-style-type: none"> • IAT 2 • Boost Press target • Boost Press measured • MAF 	Substitute a known-good ECM and recheck.	Go to related troubleshooting referring to “Scan Tool Data”.

DTC P0403: Exhaust Gas Recirculation Control Circuit

S5RW0D1104207

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- EGR valve control circuit is open.
- EGR valve control circuit is shorted to power supply circuit.
- EGR valve control circuit is shorted to ground circuit.
- EGR valve control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	Air circuit check 1) Check the following. <ul style="list-style-type: none"> • Check seal of the turbo charger system hoses. • Check hoses and connected pipes to identify any obstructions, damage etc. • Check that pipe clamps of air intake system are correctly fitted. 	Go to Step 2.	Repair or, if necessary, replace the faulty components.
2	EGR operation check 1) Check that EGR valve is working properly referring to "Table – 1080CB: EGR Valve Operation Check".	End.	Repair or replace.

DTC P0480: Fan 1 Control Circuit

S5RW0D1104208

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- Radiator cooling fan relay No. 1 control circuit is open.
- Radiator cooling fan relay No. 1 control circuit is shorted to power supply circuit.
- Radiator cooling fan relay No. 1 control circuit is shorted to ground circuit.
- Radiator cooling fan relay No. 1 control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Turn ignition switch to ON position. 4) Check voltage between "E27-90" terminal of ECM connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Substitute a known-good ECM and recheck.	Go to Step 2.

Step	Action	Yes	No
2	1) Turn ignition switch to OFF position. 2) Remove radiator cooling fan relay No.1. 3) Turn ignition switch to ON position. 4) Check voltage between "E58-3" terminal of radiator cooling fan relay No.1 connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Go to Step 3.	Repair power supply circuit of radiator cooling fan relay No.1.
3	1) Check radiator cooling fan relay No.1 for operation referring to "Radiator Cooling Fan Relay Inspection in Section 1F".	Go to Step 4.	Replace radiator cooling fan relay No.1.
4	1) Turn ignition switch to OFF position. 2) Check radiator cooling fan No.1 control circuit for open or short between "E27-90" terminal of ECM connector and "E58-5" terminal of radiator cooling fan relay No.1 connector.	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace wiring harness between ECM and radiator cooling fan relay No.1.

DTC P0481: Fan 2 Control Circuit

S5RW0D1104209

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Radiator cooling fan relay No. 2 and/or No. 3 control circuit is open.
- Radiator cooling fan relay No. 2 and/or No. 3 control circuit is shorted to power supply circuit.
- Radiator cooling fan relay No. 2 and/or No. 3 control circuit is shorted to ground circuit.
- Radiator cooling fan relay No. 2 and/or No. 3 control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Remove radiator cooling fan relay No. 3. 4) Turn ignition switch to ON position. 5) Check voltage between "E27-69" terminal of ECM connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Go to Step 5.	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Remove radiator cooling fan relay No.2. 3) Turn ignition switch to ON position. 4) Check voltage between "E101-3" terminal of radiator cooling fan relay No. 2 connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Go to Step 3.	Repair power supply circuit of radiator cooling fan relay No. 2.

Step	Action	Yes	No
3	1) Check radiator cooling fan relay No. 2 for operation referring to "Radiator Cooling Fan Relay Inspection in Section 1F".	Go to Step 4.	Replace radiator cooling fan relay No. 2.
4	1) Turn ignition switch to OFF position. 2) Check radiator cooling fan No. 2 control circuit for open or short between "E27-69" terminal of ECM connector and "E101-5" terminal of radiator cooling fan relay No. 2 connector.	Go to Step 5.	Repair or, if necessary, replace wiring harness between ECM and radiator cooling fan relay No. 2.
5	1) Turn ignition switch to OFF position. 2) Install radiator cooling fan relay No. 3. 3) Remove radiator cooling fan relay No. 2. 4) Turn ignition switch to ON position. 5) Check voltage between "E27-69" terminal of ECM connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Substitute a known-good ECM and recheck.	Go to Step 6.
6	1) Turn ignition switch to OFF position. 2) Remove radiator cooling fan relay No.3. 3) Turn ignition switch to ON position. 4) Check voltage between "E102-3" terminal of radiator cooling fan relay No. 3 connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Go to Step 7.	Repair power supply circuit of radiator cooling fan relay No. 3.
7	1) Check radiator cooling fan relay No. 3 for operation referring to "Radiator Cooling Fan Relay Inspection in Section 1F".	Go to Step 8.	Replace radiator cooling fan relay No. 3.
8	1) Turn ignition switch to OFF position. 2) Check radiator cooling fan No. 3 control circuit for open or short between "E27-69" terminal of ECM connector and "E102-5" terminal of radiator cooling fan relay No. 3 connector.	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace wiring harness between ECM and radiator cooling fan relay No. 3.

DTC P0482: Fan 3 Control Circuit

S5RW0D1104210

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- Radiator cooling sub fan relay circuit is open.
- Radiator cooling sub fan relay circuit is shorted to power supply circuit.
- Radiator cooling sub fan relay circuit is shorted to ground circuit.
- Radiator cooling sub fan relay circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Turn ignition switch to ON position. 4) Check voltage between "E27-94" terminal of ECM connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Substitute a known-good ECM and recheck.	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Remove radiator cooling sub fan relay. 3) Turn ignition switch to ON position. 4) Check voltage between "E93-3" terminal of radiator cooling sub fan relay connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Go to Step 3.	Repair power supply circuit of radiator cooling sub fan relay.
3	1) Check radiator cooling sub fan relay for operation referring to "A/C System Relay Inspection: Manual Type in Section 7B".	Go to Step 4.	Replace radiator cooling sub fan relay.
4	1) Turn ignition switch to OFF position. 2) Check radiator cooling sub fan relay control circuit for open or short between "E27-94" terminal of ECM connector and "E93-4" terminal of radiator cooling sub fan relay connector.	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace wiring harness between ECM and radiator cooling sub fan relay.

DTC P0500: Vehicle Speed Sensor

S5RW0D1104211

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if vehicle speed signal is not input from VSS.

Troubleshooting

Step	Action	Yes	No
1	VSS signal check 1) Check VSS signal referring to "Table – 3340AB: Speed Signal Check".	Go to Step 2.	Repair or replace.
2	VSS check 1) Check front right and left VSS referring to "Front Wheel Speed Sensor Inspection in Section 4E in related manual" and "Front Wheel Speed Sensor On-Vehicle Inspection in Section 4E in related manual".	Substitute a known-good ECM and recheck.	Replace VSS.

DTC P0503: Vehicle Speed Sensor Intermittent / Erratic / High

S5RW0D1104212

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if VSS signal is not plausible.

Troubleshooting

Step	Action	Yes	No
1	VSS signal check 1) Check VSS signal referring to "Table – 3340AB: Speed Signal Check".	Go to Step 2.	Repair or replace.
2	VSS check 1) Check front right and left VSS referring to "Front Wheel Speed Sensor Inspection in Section 4E in related manual" and "Front Wheel Speed Sensor On-Vehicle Inspection in Section 4E in related manual".	Substitute a known-good ECM and recheck.	Replace VSS.

DTC P0504: Brake Switch 1 / 2 Correlation

S5RW0D1104213

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if brake signals from brake light switch 1 and 2 are not plausible.

Troubleshooting

Step	Action	Yes	No
1	Circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM and brake light switch. 3) Turn ignition switch to ON position. 4) Check that voltage between the following terminals is less than 0.3 V. • "E27-17" terminal of ECM connector and ground. • "E27-80" terminal of ECM connector and ground.	Go to Step 2.	Repair or, if necessary, replace wiring harness between brake light switch and ECM.
2	Circuit check 1) Turn ignition switch to OFF position. 2) Check that resistance between the following terminals is less than 500 k Ω . • "E27-17" terminal of ECM connector and ground. • "E27-80" terminal of ECM connector and ground.	Go to Step 3.	Repair or, if necessary, replace wiring harness between brake light switch and ECM.

Step	Action	Yes	No
3	Circuit check 1) Check that resistance between the following terminals "D05-56" terminal of ECM connector and "D04-1" terminal of engine oil pressure switch connector is less than 5 Ω. • "E27-17" terminal of ECM connector and "E36-1" terminal of brake light switch connector. • "E27-80" terminal of ECM connector and "E36-4" terminal of brake light switch connector.	Go to Step 4.	Repair or, if necessary, replace wiring harness between brake light switch and ECM.
4	Brake light switch check 1) Check brake light switch referring to "Brake Light Switch Inspection in Section 9B in related manual".	Substitute a known good ECM and recheck.	Replace brake light switch.

DTC P0520: Engine Oil Pressure Switch Circuit

S5RW0D1104214

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Engine oil pressure switch circuit is open.
- Engine oil pressure switch is shorted to power supply circuit.
- Engine oil pressure switch is shorted to ground circuit.

Troubleshooting

Step	Action	Yes	No
1	Circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM and engine oil pressure switch. 3) Turn ignition switch to ON position. 4) Check that voltage between "D05-56" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between engine oil pressure switch and ECM.
2	Circuit check 1) Turn ignition switch to OFF position. 2) Check that resistance between "D05-56" terminal of ECM connector and ground is less than 500 kΩ.	Go to Step 4.	Repair or, if necessary, replace wiring harness between engine oil pressure switch and ECM.
3	Circuit check 1) Check that resistance between "D05-56" terminal of ECM connector and "D04-1" terminal of engine oil pressure switch connector is less than 5 Ω.	Go to Step 5.	Repair or, if necessary, replace wiring harness between engine oil pressure switch and ECM.
4	Engine oil pressure switch check 1) Check engine oil pressure switch referring to "Oil Pressure Switch Inspection in Section 9C".	Substitute a known good ECM and recheck.	Replace engine oil pressure switch.

DTC P0530: A/C Refrigerant Pressure Sensor Circuit

S5RW0D1104215

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 3 seconds.

- A/C refrigerant pressure sensor circuit is open.
- A/C refrigerant pressure sensor circuit is shorted to power supply circuit.
- A/C refrigerant pressure sensor circuit is shorted to ground circuit.

Troubleshooting

Step	Action	Yes	No
1	1) Check A/C refrigerant pressure sensor and its circuit referring to "A/C Refrigerant Pressure Sensor and Its Circuit Inspection: Manual Type in Section 7B" or "A/C Refrigerant Pressure Sensor and Its Circuit Inspection: Automatic Type in Section 7B in related manual".	Substitute a known-good ECM and recheck.	Repair or replace A/C refrigerant pressure sensor and its circuit.

DTC P0560: System Voltage

S5RW0D1104216

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0601: Internal Control Module Memory Check Sum Error

S5RW0D1104217

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0606: ECM Processor

S5RW0D1104218

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P060A: Shut Off Monitoring During Initialization

S5RW0D1104219

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P060B: ADC Monitoring

S5RW0D1104220

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0611: ECM Performance

S5RW0D1104221

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P061B: FMTC Map Non Strictly Monotonus

S5RW0D1104222

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P061C: Engine Speed Calculation in Overrun

S5RW0D1104223

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P062D: Injectors Specific Chip 1

S5RW0D1104224

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Fuel injector calibration code check 1) Using SUZUKI scan tool, check that fuel injector calibration codes registered in ECM are corresponding to calibration codes described on fuel injectors.	Go to Step 2.	Register correct fuel injector calibration codes in ECM referring to "Fuel Injector Replacement" under "ECM Registration in Section 1C".
2	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P062E: Injectors Specific Chip 2

S5RW0D1104225

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Fuel injector calibration code check 1) Using SUZUKI scan tool, check that fuel injector calibration codes registered in ECM are corresponding to calibration codes described on fuel injectors.	Go to Step 2.	Register correct fuel injector calibration codes in ECM referring to "Fuel Injector Replacement" under "ECM Registration in Section 1C".
2	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P0638: Throttle Actuator Control Range / Performance

S5RW0D1104226

NOTE

If DTC P0638 and DTC P2620 are detected together, perform troubleshooting of DTC P2620 first.

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- "D05-59" terminal of inlet throttle valve control circuit is shorted to power supply circuit.
- "D05-59" terminal of inlet throttle valve control circuit is shorted to ground circuit.
- "D05-59" terminal of inlet throttle valve control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Check that main and circuit fuses have not blown.	Go to Step 2.	Repair or replace.
2	Inlet throttle valve check 1) Check that inlet throttle valve is working properly referring to "Table – 1060GO: Inlet Throttle Valve Operation Check".	End.	Repair or replace.

DTC P0641: Sensor Reference Voltage 1 Circuit / Open

S5RW0D1104227

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if there is short to power circuit or short to ground circuit in circuit connected to "D05-11" or "E27-45" terminal of ECM.

Troubleshooting

Step	Action	Yes	No
1	Connections check 1) Check that ECM connections are correct referring to "Table – 1060GM: Sensor Power Supply 1 Circuit Check".	End.	Repair or replace.

DTC P0645: A/C Clutch Relay Control Circuit

S5RW0D1104228

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- A/C compressor relay circuit is open.
- A/C compressor relay circuit is shorted to power supply circuit.
- A/C compressor relay circuit is shorted to ground circuit.
- A/C compressor relay circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Turn ignition switch to ON position. 4) Check voltage between "E27-29" terminal of ECM connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Substitute a known-good ECM and recheck.	Go to Step 2.

Step	Action	Yes	No
2	1) Turn ignition switch to OFF position. 2) Remove A/C compressor relay. 3) Turn ignition switch to ON position. 4) Check voltage between "E60-3" terminal of A/C compressor relay connector and vehicle body ground. Ensure that it is within 10 – 14 V.	Go to Step 3.	Repair power supply circuit of A/C compressor relay.
3	1) Check A/C compressor relay for operation referring to "A/C System Relay Inspection: Manual Type in Section 7B".	Go to Step 4.	Replace A/C compressor relay.
4	1) Turn ignition switch to OFF position. 2) Check A/C compressor relay control circuit for open or short between "E27-29" terminal of ECM connector and "E60-4" terminal of A/C compressor relay connector.	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace wiring harness between ECM and A/C compressor relay.

DTC P0651: Sensor Reference Voltage 2 Circuit / Open

S5RW0D1104229

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if there is open, short to power circuit or short to ground circuit in circuit connected to "D05-13", "D05-28", "D05-46" or "E27-46" terminal of ECM.

Troubleshooting

Step	Action	Yes	No
1	Connections check 1) Check that ECM connections are correct referring to "Table – 1060GN: Sensor Power Supply 2 Circuit Check".	End.	Repair or replace.

DTC P0683: Glow Plug Control Module to ECM Communication Circuit

S5RW0D1104230

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if there is a problem in glow plug communication circuit.

Troubleshooting

Step	Action	Yes	No
1	Check on operation of glow plug 1) Check that glow plugs are working properly, refer to "Table – 5520CA: Glow Plugs Operation Check".	End.	Repair or replace.

DTC P0685: ECM Power Relay Control Circuit / Open

S5RW0D1104231

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if too quickly, switches off too late or does not switch off at all.

Troubleshooting

Step	Action	Yes	No
1	Main relay operation check 1) Check that main relay is working properly referring to "Table – 1060GL: Main Relay Operation Check".	Substitute a known-good ECM and recheck.	Repair or replace.

DTC P0697: Sensor Reference Voltage 3 Circuit / Open

S5RW0D1104232

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if there is open, short to power circuit or short to ground circuit in circuit connected to "E27-22" or "E27-44" terminal of ECM.

Troubleshooting

Step	Action	Yes	No
1	Connections check 1) Check that ECM connections are correct referring to "Table – 1060GP: Sensor Power Supply 3 Circuit Check".	Substitute a known-good ECM and recheck.	Repair or replace.

DTC P0704: Clutch Switch Input Circuit Malfunction

S5RW0D1104233

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- CPP switch circuit is open.
- CPP switch is shorted to ground circuit.

Troubleshooting

Step	Action	Yes	No
1	Circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM and CPP switch. 3) Turn ignition switch to ON position. 4) Check that voltage between "E27-79" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 2.	Repair or, if necessary, replace wiring harness between CPP switch and ECM.

Step	Action	Yes	No
2	Circuit check 1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-79" terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 3.	Repair or, if necessary, replace wiring harness between CPP switch and ECM.
3	Circuit check 1) Check that resistance between "E27-79" terminal of ECM connector and "E48-1" terminal of CPP switch connector is less than 5 Ω .	Go to Step 4.	Repair or, if necessary, replace wiring harness between CPP switch and ECM.
4	Circuit check 1) Check that resistance between "E48-2" terminal of CPP switch connector and vehicle body ground is less than 5 Ω .	Go to Step 5.	Repair or, if necessary, replace wiring harness between CPP switch and ECM.
5	CPP switch check 1) Check CPP switch referring to "Clutch Pedal Position (CPP) Switch Inspection in Section 5C".	Substitute a known good ECM and recheck.	Replace CPP switch.

DTC P0748: Fuel Flow Actuator Circuit

S5RW0D1104234

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Fuel flow actuator control circuit is open.
- Fuel flow actuator control circuit is short to power supply circuit.
- Fuel flow actuator control circuit is short to ground circuit.
- Fuel flow actuator control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connector from fuel flow actuator. 3) Turn ignition switch to ON position. 4) Check that voltage between "D03-1" terminal of fuel flow actuator connector and ground is higher than 11V.	Go to Step 2.	Repair or, if necessary, replace wiring harness between fuel flow actuator and ECM.
2	1) Turn ignition switch to OFF position. 2) Disconnect Δ gD05 Δ h connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "D03-1" terminal of fuel flow actuator connector and ground is less than 0.3 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between fuel flow actuator and ECM.

Step	Action	Yes	No
3	1) Check that voltage between "D03-2" terminal of fuel pressure regulator connector and ground is less than 0.3 V.	Go to Step 4.	Repair or, if necessary, replace wiring harness between fuel flow actuator and ECM.
4	1) Turn ignition switch to OFF position. 2) Check that resistance between "D03-1" terminal of fuel flow actuator connector and "D05-19" terminal of ECM connector is less than 5 Ω .	Go to Step 5.	Repair or, if necessary, replace wiring harness between fuel flow actuator and ECM.
5	1) Check that resistance between "D03-2" terminal of fuel flow actuator connector and "D05-49" terminal of ECM connector is less than 5 Ω .	Go to Step 6.	Repair or, if necessary, replace wiring harness between fuel flow actuator and ECM.
6	1) Check fuel flow actuator referring to "Fuel Flow Actuator Inspection in Section 1G".	Substitute a known-good ECM and recheck.	Replace high pressure pump assembly.

DTC P0778: Fuel Pressure Regulator Circuit

S5RW0D1104235

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Fuel pressure regulator valve control circuit is open.
- Fuel pressure regulator valve control circuit is shorted to power circuit.
- Fuel pressure regulator valve control circuit is shorted to ground circuit.
- Fuel pressure regulator valve control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	Check on operation of fuel pressure regulator valve on common rail 1) Check that fuel pressure regulator valve is working properly, refer to "Table – 1060GR: Fuel Pressure Regulator Operation Check".	End.	Repair or replace.

DTC P1205: Diesel Particulate Filter Flow Resistance Monitoring Too Low

S5RW0D1104236

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if differential pressure of diesel particulate filter is too low.

Troubleshooting

Step	Action	Yes	No
1	Exhaust system check 1) Check hoses of differential pressure sensor for leakage.	Go to Step 2.	Replace faulty components, if necessary.

Step	Action	Yes	No
2	Check on operation of differential pressure sensor 1) Check correct operation of differential pressure sensor referring to "Table – 1080BF: Differential Pressure Sensor Operation Check".	End.	Repair or replace.

DTC P1206: Diesel Particulate Filter Flow Resistance Monitoring Too High

S5RW0D1104237

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected diesel particulate filter clogging becomes specified valve.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position and clear DTC. 3) Carry out after-sales regeneration referring to "Diesel Particulate Filter After-sales Regeneration in Section 1C". 4) Check that success of after-sales regeneration is displayed on SUZUKI scan tool.	Go to Step 2.	Repair faulty referring to "After-sales Regeneration Failure in Section 1C".
2	Exhaust system check 1) Check that exhaust system for leakage.	Go to Step 3.	Replace faulty components, if necessary.
3	Check on operation of differential pressure sensor 1) Check correct operation of differential pressure sensor referring to "Table – 1080BF: Differential Pressure Sensor Operation Check".	End.	Repair or replace.

DTC P1218: Hard Ware Recovery

S5RW0D1104238

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P1219: Diesel Particulate Filter Regeneration Not Ended

S5RW0D1104239

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if forced regeneration is not finished correctly specified time or more.

Troubleshooting

Step	Action	Yes	No
1	DTC check 1) Check that DTC P1206 is not detected.	Go to Step 2.	Go to "DTC P1206: Diesel Particulate Filter Flow Resistance Monitoring Too High".
2	Warning light check 1) Check that diesel particulate filter warning light is turned on.	Go to Step 3.	Substitute a known-good ECM and recheck.
3	Perform forced regeneration 1) Run vehicle at specified speed referring to owner's manual. 2) Check that DTC P1219 is not detected and diesel particulate filter warning light is turned off.	End.	Perform after-sales regeneration referring to "Diesel Particulate Filter After-sales Regeneration in Section 1C".

DTC P1301: Fuel Injector Calibration Code Classification

S5RW0D1104240

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if injector calibration code is not registered to ECM.

Troubleshooting

Step	Action	Yes	No
1	Fuel injector calibration code check 1) Using SUZUKI scan tool, register fuel injector calibration codes referring to "Fuel Injector Registration in Section 1C".	End.	Substitute a known-good ECM and recheck.

DTC P1605: Communication between CY310 and μ P

S5RW0D1104241

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P1606: Hard Ware Module Communication

S5RW0D1104242

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P1618: Supply Voltage of CJ940 above Limit

S5RW0D1104243

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P1619: Supply Voltage of CJ940 below Limit

S5RW0D1104244

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P1623: SPI Communication

S5RW0D1104245

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P1667: Fuel Filter Heating

S5RW0D1104246

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied for at least 0.48 seconds.

- Fuel heater relay control circuit is open.
- Fuel heater relay control circuit is shorted to power circuit.
- Fuel heater relay control circuit is shorted to ground circuit.
- Fuel heater relay control circuit is not within applicable temperature.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Check that main and circuit fuses have not blown.	Go to Step 2.	Repair or replace.
2	Fuel heater check 1) Check that fuel heater is working properly referring to "Table – 5505AC: Fuel Heater Operation Check".	End.	Repair or replace.

DTC P2080 / P2081: Exhaust Gas Temperature Sensor Circuit Range / Performance / Intermittent

S5RW0D1104247

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

DTC P2080:

This DTC is detected if exhaust gas temperature sensor-1 signal is not within acceptable range.

DTC P2081:

This DTC is detected if voltage at "E27-34" terminal of ECM is higher than 2.25 V (short to power circuit) or less than 0.58 V (open or short to ground circuit).

Troubleshooting

Step	Action	Yes	No
1	Check on operation of exhaust gas temperature sensor-1 1) Check that exhaust gas temperature sensor-1 is working properly, refer to "Table – 1080BG: Exhaust Gas Temperature Sensor-1 Operation Check".	End.	Repair or replace.

DTC P2084 / P2085: Exhaust Gas Temperature Sensor-2 Circuit Range / Performance / Intermittent

S5RW0D1104248

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

DTC P2084:

This DTC is detected if exhaust gas temperature sensor-2 signal is outside acceptable range.

DTC P2085:

This DTC is detected if voltage at "D05-32" terminal of ECM is greater than 2.25 V (short to power circuit) or less than 0.58 V (open or short to ground circuit).

Troubleshooting

Step	Action	Yes	No
1	Check on operation of exhaust gas temperature sensor-2 1) Check that exhaust gas temperature sensor-2 is working properly, refer to "Table – 1080BH: Exhaust Gas Temperature Sensor-2 Operation Check".	End.	Repair or replace.

DTC P2100 / P2101: Throttle Actuator Control Motor Circuit / Open / Range / Performance

S5RW0D1104249

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation (open in circuit connected to "D05-59" terminal of ECM or inlet throttle valve control circuit is not within applicable temperature).

Troubleshooting

Step	Action	Yes	No
1	Check on inlet throttle valve operation 1) Check that inlet throttle valve is working properly referring to "Table – 1060GO: Inlet Throttle Valve Operation Check".	End.	Repair or replace.

DTC P2107 / P2108: Throttle Actuator Control Module Processor / Performance

S5RW0D1104250

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

DTC P2107:

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation or switched power supply is less than 10 V.

DTC P2108:

This DTC is detected if ECM recognizes a mechanical malfunction of inlet throttle valve by means of internal evaluation logic.

Troubleshooting

Step	Action	Yes	No
1	Check on inlet throttle valve operation 1) Check that inlet throttle valve is working properly referring to "Table – 1060GO: Inlet Throttle Valve Operation Check".	End.	Repair or replace.

DTC P2111 / P2112: Throttle Actuator Control System – Stuck Open / Stuck Closed

S5RW0D1104251

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a mechanical malfunction of inlet throttle valve by means of internal evaluation logic.

Troubleshooting

Step	Action	Yes	No
1	Check on inlet throttle valve operation 1) Check that inlet throttle valve is working properly referring to "Table – 1060GO: Inlet Throttle Valve Operation Check".	End.	Repair or replace.

DTC P2135: Throttle / Pedal Position Sensor Voltage Correlation

S5RW0D1104252

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if, with DTC P0641 and/or P0651 not recognized, ECM detects a general error for APP sensor.

Troubleshooting

Step	Action	Yes	No
1	APP sensor check 1) Check that APP sensor is working properly referring to "Table – 1068AC: Accelerator Pedal Check".	End.	Repair or replace.

DTC P2146 / P2148: Fuel Injector Group 1 Supply Voltage Circuit / Open / High

S5RW0D1104253

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if voltage measured by ECM for injector No. 1 / No. 4 does not correspond to nominal value.

Troubleshooting

Step	Action	Yes	No
1	Fuel injector circuit check 1) Check that fuel injector is working properly referring to "Table – 1060FB: Injector Circuit Operation Check".	End.	Repair or replace.

DTC P2149 / P2151: Fuel Injector Group 2 Supply Voltage Circuit / Open / High

S5RW0D1104254

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if voltage measured by ECM for injector No. 2 / No. 3 does not correspond to nominal value.

Troubleshooting

Step	Action	Yes	No
1	Fuel injector circuit check 1) Check that fuel injector is working properly referring to "Table – 1060FB: Injector Circuit Operation Check".	End.	Repair or replace.

DTC P2226: Barometric Pressure Circuit

S5RW0D1104255

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Barometric pressure sensor signal voltage is less or higher than specification.
- Difference between boost pressure and barometric pressure is more than specification.

Troubleshooting

Step	Action	Yes	No
1	Barometric pressure sensor check 1) Check the value of barometric pressure, refer to "Table – 1060GD: Barometric Pressure Check".	End.	Repair or replace.

DTC P2264: Water in Fuel Sensor Circuit

S5RW0D1104256

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Fuel filter water detection sensor is detected water in fuel filter.
- ECM detects fuel filter water detection sensor circuit is shorted to ground circuit.

Troubleshooting

Step	Action	Yes	No
1	Preliminary check 1) Check that main and circuit fuses have not blown.	Go to Step 2.	Repair or replace.
2	Check on operation of fuel filter water detection sensor 1) Check that fuel filter water detection sensor is working properly, refer to "Table – 1060GQ: Fuel Filter Water Detection Sensor Operation Check".	End.	Repair or replace.

DTC P2293: Fuel Pressure Regulator Performance

S5RW0D1104257

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if any one of the following conditions is satisfied.

- Fuel pressure in common rail is 175,000 kPa (1,750 bar) or more.
- Fuel pressure in common rail is lower than specified value based on engine speed.

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to "Low Fuel Pressure Circuit Check".	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to "High Fuel Pressure Circuit Check".	Go to Step 3.	Repair or replace.
3	1) Replace fuel pressure regulator referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to "High Pressure Pump Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P2294: Fuel Pressure Regulator Control Circuit

S5RW0D1104258

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if difference between fuel pressure in common rail and targeted fuel pressure is greater than specified value based on engine speed.

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to "Low Fuel Pressure Circuit Check".	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to "High Fuel Pressure Circuit Check".	Go to Step 3.	Repair or replace.
3	1) Replace fuel pressure regulator referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to "High Pressure Pump Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P2295: Fuel Pressure Regulator Control Circuit Low

S5RW0D1104259

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if fuel pressure in common rail is lower than targeted fuel pressure by 25000 kPa (250 bar).

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to "Low Fuel Pressure Circuit Check".	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to "High Fuel Pressure Circuit Check".	Go to Step 3.	Repair or replace.

Step	Action	Yes	No
3	1) Replace fuel pressure regulator referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to "High Pressure Pump Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P2296: Fuel Pressure Regulator Control Circuit High

S5RW0D1104260

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if fuel pressure in common rail is higher than targeted fuel pressure by 25000 kPa (250 bar).

Troubleshooting

Step	Action	Yes	No
1	Low fuel pressure check 1) Check low fuel pressure circuit referring to "Low Fuel Pressure Circuit Check".	Go to Step 2.	Repair or replace.
2	High fuel pressure check 1) Check high fuel pressure circuit referring to "High Fuel Pressure Circuit Check".	Go to Step 3.	Repair or replace.
3	1) Replace fuel pressure regulator referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 4.
4	1) Replace fuel pressure sensor referring to "Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Go to Step 5.
5	1) Replace high pressure pump referring to "High Pressure Pump Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P2299: Brake Pedal Position / Accelerator Pedal Position Incompatible

S5RW0D1104261

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if accelerator pedal and brake pedal are depressed at the same time for at least 0.48 seconds when vehicle is running.

Troubleshooting

Step	Action	Yes	No
1	Brake light switch circuit check 1) Check brake light switch circuit referring to Step1 to 3 of “DTC P0504: Brake Switch 1 / 2 Correlation”.	Go to Step 2.	Repair or, if necessary, replace wiring harness between brake light switch and ECM.
2	Brake light switch check 1) Check brake light switch referring to “Brake Light Switch Inspection in Section 9B in related manual”.	Go to Step 3.	Replace brake light switch.
3	APP sensor operation check 1) Check that APP sensor is working properly referring to “Table – 1068AC: Accelerator Pedal Check”.	Substitute a known-good ECM and recheck.	Repair or replace.

DTC P2452: Differential Pressure Sensor Electrical Failure

S5RW0D1104262

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

This DTC is detected if voltage at ECM input (terminal “E27-36”) is more than 4.9 V or less than 0.2 V for at least 0.48 seconds.

Troubleshooting

Step	Action	Yes	No
1	Check on operation of differential pressure sensor 1) Check correct operation of differential pressure sensor referring to “Table – 1080BF: Differential Pressure Sensor Operation Check”.	End.	Repair or replace.

DTC P2453 / P2455: Differential Pressure Sensor Hose Line Monitoring / Plausibility

S5RW0D1104263

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM detects a malfunction using differential pressure sensor internal evaluation logic.

Troubleshooting

Step	Action	Yes	No
1	Exhaust system check 1) Check that exhaust system for leakage.	Go to Step 2.	Replace faulty components, if necessary.
2	Check on operation of differential pressure sensor 1) Check correct operation of differential pressure sensor referring to "Table – 1080BF: Differential Pressure Sensor Operation Check".	End.	Repair or replace.

DTC P2505: ECM Power Input Signal

S5RW0D1104264

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation.

Troubleshooting

Step	Action	Yes	No
1	Recheck DTC 1) Clear DTC. 2) Recheck DTC and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

DTC P2620: Throttle Position Output Circuit / Open

S5RW0D1104265

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

This DTC is detected if ECM recognizes a malfunction in circuit through an internal logic evaluation ("D22-2", "D05-39" or "D05-52" terminal of inlet throttle valve circuit is open).

Troubleshooting

Step	Action	Yes	No
1	Check on inlet throttle valve operation 1) Check that inlet throttle valve is working properly referring to "Table – 1060GO: Inlet Throttle Valve Operation Check".	End.	Repair or replace.

DTC U1601: Control Module Communication Bus Off

S5RW0D1104266

NOTE

For details of CAN communication system, refer to “CAN Communication System Description”.

Wiring Diagram

For wiring circuit and connector number, refer to “A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A”.

DTC Detecting Condition

Transmission error that is inconsistent between transmission data and transmission monitor (CAN bus monitor) data is detected.

Troubleshooting

Step	Action	Yes	No
1	<p>Control module connector check</p> <p>1) Check connection of connectors of all control modules communicating by means of CAN.</p> <p>2) Recheck ECM for DTC. (DTC U1601 is not detected.)</p>	Go to Step 2.	Intermittent trouble. Check for intermittent referring to “Intermittent and Poor Connection Inspection in Section 00 in related manual”.
2	<p>CAN communication circuit check</p> <p>1) Turn ignition switch to OFF position.</p> <p>2) Disconnect connectors of all control modules communicating by means of CAN.</p> <p>3) Check CAN communication circuit between control modules for open, short and high resistance.</p>	Go to Step 3.	Repair circuit.
3	<p>DTC check of ECM</p> <p>1) Turn ignition switch to OFF position.</p> <p>2) Connect connectors of disconnected control modules communicating by means of CAN.</p> <p>3) Disconnect connector from any one of control modules other than ECM.</p> <p>4) Recheck ECM for DTC. (DTC U1601 is not detected.)</p>	Disconnect connectors of control modules other than the one whose connector is disconnected in Step 3) one by one and check that DTC U1601 is detected by ECM each time connector is disconnected. When DTC U1601 is not detected by ECM while checking in this way, go to description under “NO” below. If DTC U1601 is detected by ECM even when connectors of all control modules that use CAN communication with ECM are disconnected, substitute a known-good ECM and recheck.	Check power and ground circuit of control module disconnect in Step 3). If circuit is OK, substitute a known-good control module disconnected in Step 3) and recheck.

DTC U1700: Lost Communication with Body Control Module

S5RW0D1104267

NOTE

For details of CAN communication system, refer to "CAN Communication System Description".

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

ECM can not receive CAN data from BCM for longer than specified time continuously.

Troubleshooting

Step	Action	Yes	No
1	DTC check of ECM 1) Check DTC U1601 is not detected.	Go to "DTC U1601: Control Module Communication Bus Off".	Go to Step 2.
2	DTC check of BCM 1) Check DTC U0073 is not detected.	Go to "DTC U0073 (No. 0073): Control Module Communication Bus Off in Section 10B".	Go to Step 3.
3	Control module connector check 1) Check connection of connectors of all control modules communicating by means of CAN. 2) Check DTC U1700 is not detected.	Intermittent trouble. Check for intermittent referring to "Intermittent and Poor Connection Inspection in Section 00 in related manual".	Go to Step 4.
4	CAN communication circuit check 1) Disconnect connectors from BCM, ECM and ABS or ESP® control module with ignition switch turned OFF. 2) Check CAN communication circuit for open, short and high resistance.	Go to Step 5.	Repair circuit.
5	CAN communication circuit check 1) Disconnect connectors of all control modules communicating by means of CAN. 2) Check CAN communication circuit between control modules other than Step 4) for open, short and high resistance.	Go to Step 6.	Repair circuit.

Step	Action	Yes	No
6	DTC check of ECM 1) Turn ignition switch to OFF position. 2) Connect connectors of disconnected control modules communicating by means of CAN. 3) Disconnect connector from any one of control modules other than ECM. 4) Recheck ECM for DTC. (DTC U1700 is not detected.)	Disconnect connectors of control modules other than the one whose connector is disconnected in Step 3) one by one and check that DTC U1700 is detected by ECM each time connector is disconnected. When DTC U1700 is not detected by ECM while checking in this way, go to description under "NO" below. If DTC U1700 is detected by ECM even when connectors of all control modules that use CAN communication with ECM are disconnected, substitute a known-good ECM and recheck.	Check power and ground circuit of control module disconnect in Step 3). If circuit is OK, substitute a known-good control module disconnected in Step 3) and recheck.

DTC U1706: Lost Communication with ABS or ESP® Control Module

S5RW0D1104268

NOTE

For details of CAN communication system, refer to "CAN Communication System Description".

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

ECM can not receive CAN data from ABS or ESP® control module for longer than specified time continuously.

Troubleshooting

Step	Action	Yes	No
1	DTC check of ECM 1) Check DTC U1601 is not detected.	Go to "DTC U1601: Control Module Communication Bus Off".	Go to Step 2.
2	Control module connector check 1) Check connection of connectors of all control modules communicating by means of CAN. 2) Recheck ECM for DTC. (DTC U1706 is not detected.)	Go to Step 3.	Intermittent trouble. Check for intermittent referring to "Intermittent and Poor Connection Inspection in Section 00 in related manual".
3	CAN communication circuit check 1) Disconnect connectors from ECM and ABS or ESP® control module with ignition switch turned OFF. 2) Check CAN communication circuit for open, short and high resistance.	Go to Step 4.	Repair circuit.

Step	Action	Yes	No
4	CAN communication circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connectors of all control modules communicating by means of CAN. 3) Check CAN communication circuit between control modules for open, short and high resistance.	Go to Step 5.	Repair circuit.
5	DTC check of ECM 1) Turn ignition switch to OFF position. 2) Connect connectors of disconnected control modules communicating by means of CAN. 3) Disconnect connector from any one of control modules other than ECM. 4) Recheck ECM for DTC. (DTC U1706 is not detected.)	Disconnect connectors of control modules other than the one whose connector is disconnected in Step 3) one by one and check that DTC U1706 is detected by ECM each time connector is disconnected. When DTC U1706 is not detected by ECM while checking in this way, go to description under "NO" below. If DTC U1706 is detected by ECM even when connectors of all control modules that use CAN communication with ECM are disconnected, substitute a known-good ECM and recheck.	Check power and ground circuit of control module disconnect in Step 3). If circuit is OK, substitute a known-good control module disconnected in Step 3) and recheck.

DTC U1711: Lost Communication with 4WD Control Module

S5RW0D1104269

NOTE

For details of CAN communication system, refer to "CAN Communication System Description".

Wiring Diagram

For wiring circuit and connector number, refer to "A-5 Engine and A/C Control System Circuit Diagram (DSL) in Section 9A".

DTC Detecting Condition

ECM can not receive CAN data from 4WD control module for longer than specified time continuously.

Troubleshooting

Step	Action	Yes	No
1	DTC check of ECM 1) Check DTC U1601 is not detected.	Go to "DTC U1601: Control Module Communication Bus Off".	Go to Step 2.
2	DTC check of 4WD control module 1) Check DTC U0073 is not detected.	Go to "DTC U0073: Control Module Communication Bus Off in Section 3B in related manual".	Go to Step 3.
3	Control module connector check 1) Check connection of connectors of all control modules communicating by means of CAN. 2) Check DTC U1711 is not detected.	Intermittent trouble. Check for intermittent referring to "Intermittent and Poor Connection Inspection in Section 00 in related manual".	Go to Step 4.
4	CAN communication circuit check 1) Disconnect connectors from 4WD control module, ECM and ABS or ESP® control module with ignition switch turned OFF. 2) Check CAN communication circuit for open, short and high resistance.	Go to Step 5.	Repair circuit.
5	CAN communication circuit check 1) Disconnect connectors of all control modules communicating by means of CAN. 2) Check CAN communication circuit between control modules other than Step 4 for open, short and high resistance.	Go to Step 6.	Repair circuit.
6	DTC check of ECM 1) Turn ignition switch to OFF position. 2) Connect connectors of disconnected control modules communicating by means of CAN. 3) Disconnect connector from any one of control modules other than ECM. 4) Recheck ECM for DTC. (DTC U1711 is not detected.)	Disconnect connectors of control modules other than the one whose connector is disconnected in Step 3) one by one and check that DTC U1711 is detected by ECM each time connector is disconnected. When DTC U1700 is not detected by ECM while checking in this way, go to description under "NO" below. If DTC U1711 is detected by ECM even when connectors of all control modules that use CAN communication with ECM are disconnected, substitute a known-good ECM and recheck.	Check power and ground circuit of control module disconnect in Step 3). If circuit is OK, substitute a known-good control module disconnected in Step 3) and recheck.

Table – 1040AA: Check on Supply Voltage and Current Uptake

S5RW0D1104286

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to ON position. 2) Check that fuel pump supply voltage at fuel pump connector is 12 V.	Go to Step 2.	Repair fuel pump power supply circuit.
2	1) Measure fuel pump absorption current by ammeter for power supply wiring harness of fuel pump. Fuel pump current should be between 2 and 10 A.	End.	Repair fuel pump power supply circuit.

Table – 1040OA: Fuel Supply System Check

S5RW0D1104270

Troubleshooting

Step	Action	Yes	No
1	1) Check that fuel tank contains correct type of fuel.	Go to Step 2.	The fuel tank contains irregular substances (petrol, other fluids). Clean fuel tank and refill it correctly.
2	1) The rest of fuel should be more than 5 liters.	Go to Step 3.	There are less than 5 liters in fuel tank. Top up fuel level so that more than 5 liters.
3	1) Check the following. <ul style="list-style-type: none"> • Check fuel leaks in fuel circuit. • Check hoses and connected pipes to identify any obstructions, damage etc. • Check for breaks / scratches on fuel supply or injection pipes. • Check fuel pipe fittings (quick-fit) • Check that fuel pipes are not leaking. • Check fittings and seals are correctly fitted. • Check for blockages, leaks, air or water in fuel system. 	Go to Step 4.	Repair or, if necessary, replace faulty components.
4	1) Turn ignition switch to OFF position. 2) Remove fuel pump relay. 3) Turn ignition switch to ON position. 4) Check that voltage between the following terminals is higher than 11 V. <ul style="list-style-type: none"> • “E57-2” terminal of fuel pump relay connector and ground. • “E57-3” terminal of fuel pump relay connector and ground. 	Go to Step 5.	Repair power supply circuit of fuel pump relay.

Step	Action	Yes	No
5	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM and fuel pump. 3) Turn ignition switch to ON position. 4) Check that voltage between "E27-91" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 6.	Repair or, if necessary, replace wiring harness between fuel pump relay and ECM.
6	1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-91" terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 7.	Repair or, if necessary, replace wiring harness between fuel pump relay and ECM.
7	1) Check that resistance between "E27-91" terminal of ECM connector and "E57-4" terminal of fuel pump relay connector is less than 5 Ω .	Go to Step 8.	Repair or, if necessary, replace wiring harness between fuel pump relay and ECM.
8	1) Turn ignition switch to ON position. 2) Check that voltage between "E57-1" terminal of fuel pump relay connector and ground is less than 0.3 V.	Go to Step 9.	Repair or, if necessary, replace wiring harness between fuel pump relay and fuel pump.
9	1) Turn ignition switch to OFF position. 2) Check that resistance between "E57-1" terminal of fuel pump relay connector and ground is less than 500 k Ω .	Go to Step 10.	Repair or, if necessary, replace wiring harness between fuel pump relay and fuel pump.
10	1) Check that resistance between "E57-1" terminal of ECM connector and "R02-1" terminal of fuel pump connector is less than 5 Ω .	Go to Step 11.	Repair or, if necessary, replace wiring harness between fuel pump relay and fuel pump.
11	1) Connect connectors to ECM and fuel pump. 2) Connect service wire between "E57-2" and "E57-1" terminals of fuel pump relay connector. 3) Turn ignition switch to ON position and check that fuel pump heard to operate.	GO to Step 12.	Repair or, if necessary, replace wiring harness of fuel pump ground circuit. If circuit is OK, replace fuel pump.
12	1) Check fuel pump relay referring to "Fuel Pump Relay, Starting Motor Control Relay, Main Relay and Fuel Heating Relay Inspection in Section 1C".	End.	Replace fuel pump relay.

Table – 10480A: Air Intake / Vacuum Circuit Check

S5RW0D1104271

NOTE

Generally, EGR valve is operated as follows.

- EGR OFF (valve opening: 0 – 5%): Engine runs idle speed before warm up.
- EGR ON (valve opening: 40% or more): Engine runs idle speed after warm up.

Troubleshooting

Step	Action	Yes	No
1	1) Check the following. <ul style="list-style-type: none"> • Check vacuum supply system components/functions: in particular, check for leaks or blockages. • Check seal of turbo charger system hoses. • Also check for any obstructions or porosity. • Check for leaks in intercooler. • Check that pipe restriction bands in air intake system are correctly fitted. • Check hoses and connected pipes to identify any obstructions, damage etc. • Check that MAF sensor with IAT sensor-1 is not contaminated. • Check turbo charger and exhaust system components/functions. 	Go to Step 2.	Repair or if necessary replace faulty components.
2	1) Check that air cleaner filter is not contaminated.	Go to Step 3.	Replace air cleaner filter referring to “Air Cleaner Filter Removal and Installation in Section 1D”.
3	1) Check that air cleaner filter is correctly fitted.	Go to Step 4.	Refit correctly.
4	1) Check that vacuum pressure is correctly referring to “Vacuum Pump Removal and Installation in Section 1D”.	Go to Step 5.	Replace vacuum pump referring to “Vacuum Pump Removal and Installation in Section 1D”.
5	1) Turn ignition switch to OFF position. 2) Disconnect vacuum hose from boost pressure control solenoid valve. 3) Connect pressure gauge between solenoid and hose. 4) Start engine and warm it up to normal operating temperature. 5) Connect SUZUKI scan tool to DLC. 6) Carry out output test “Boost pressure control solenoid valve”, ensuring that it is successful.	Go to Step 6.	Replace boost pressure control solenoid valve referring to “Boost Pressure Control Solenoid Valve Removal and Installation in Section 1C”.
6	1) Check that vacuum read on pressure gauge during output test is within –50 to 100 kPa (–0.5 to 1.0 bar).	Go to Step 7.	Check boost pressure control solenoid valve is operating correctly referring to “Table – 1064BB: Boost Pressure Control Solenoid Valve Operation Check”.

Step	Action	Yes	No
7	1) Turn ignition switch to OFF position. 2) Connect vacuum hose to boost pressure control solenoid valve. 3) Start engine and warm it up to normal operating temperature. 4) Select the following parameters of the SUZUKI scan tool. <ul style="list-style-type: none"> • EGR valve • MAF 5) Connect SUZUKI scan tool to DLC, and check the following. <ul style="list-style-type: none"> • Set conditions where EGR valve is open and check that MAF is within 150 – 350 mg/str. • Set conditions where EGR valve is closed and check that MAF is within 400 – 600 mg/str. 	End.	Replace MAF sensor with IAT sensor-1 referring to “Air Cleaner Components in Section 1D”.

Table – 1060EA: Fuel Temperature Sensor Check

S5RW0D1104272

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Start engine and warm it up to normal operating temperature, check that “Fuel Temp” displayed on SUZUKI scan tool is within 10 – 120 °C (50 – 248 °F).	End.	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from fuel temperature sensor. 3) Turn ignition switch to ON position. 4) Check voltage between “E50-3” terminal of fuel temperature sensor connector and vehicle body ground. Ensure that it is within 4.8 – 5.2 V.	Go to Step 4.	Go to Step 3.
3	1) If DTC is still detected, repair or if necessary replace the electrical wiring between ECM and fuel temperature sensor.	End.	Substitute a known-good ECM and recheck.
4	1) Check voltage between “E50-3” and “E50-4” terminals of fuel temperature sensor connector. Ensure that it is within 4.8 – 5.2 V.	Go to Step 5.	Go to Step 3.
5	1) Replace fuel filter assembly (included in fuel temperature sensor) referring to “Fuel Filter Assembly Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 1060FA: Injector Operation Check

S5RW0D1104308

NOTE**In the following procedures, troubleshoot only parts and circuits that relate to cause of faulty.****Troubleshooting**

Step	Action	Yes	No
1	1) Carry out a visual check and confirm that condition of fuel injectors and connecting pipes are good condition.	Go to Step 2.	Replace faulty component.
2	1) Disconnect connectors from ECM with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that voltage between the following terminals is less than 0.3 V. <ul style="list-style-type: none"> • For injector No. 1: "D05-16" terminal of ECM connector and ground. • For injector No. 2: "D05-2" terminal of ECM connector and ground. • For injector No. 3: "D05-1" terminal of ECM connector and ground. • For injector No. 4: "D05-17" terminal of ECM connector and ground. 	Go to Step 3.	Repair or, if necessary, replace wiring harness between ECM and fuel injector.
3	1) Turn ignition switch to OFF position. 2) Check that resistance between the following terminals is higher than 500 kΩ. <ul style="list-style-type: none"> • For injector No. 1: "D05-16" terminal of ECM connector and ground. • For injector No. 2: "D05-2" terminal of ECM connector and ground. • For injector No. 3: "D05-1" terminal of ECM connector and ground. • For injector No. 4: "D05-17" terminal of ECM connector and ground. 	Go to Step 6.	Go to Step 4.
4	1) Disconnect connector from fuel injectors. 2) Check that resistance between the following terminals is higher than 500 kΩ. <ul style="list-style-type: none"> • For injector No. 1: "D05-16" terminal of ECM connector and ground. • For injector No. 2: "D05-2" terminal of ECM connector and ground. • For injector No. 3: "D05-1" terminal of ECM connector and ground. • For injector No. 4: "D05-17" terminal of ECM connector and ground. 	Go to Step 5.	Repair or, if necessary, replace wiring harness between ECM and fuel injector.

Step	Action	Yes	No
5	1) Check that resistance between the following terminals is higher than 500 k Ω . <ul style="list-style-type: none"> • For injector No. 1: "D05-47" terminal of ECM connector and ground. • For injector No. 2: "D05-31" terminal of ECM connector and ground. • For injector No. 3: "D05-46" terminal of ECM connector and ground. • For injector No. 4: "D05-33" terminal of ECM connector and ground. 	Replace fuel injector.	Repair or, if necessary, replace wiring harness between ECM and fuel injector.
6	1) Disconnect connector from fuel injectors. 2) Check that resistance between the following terminals is higher than 500 k Ω . <ul style="list-style-type: none"> • For injector No. 1: "D05-16" and "D05-47" terminals of ECM connector. • For injector No. 2: "D05-2" and "D05-31" terminals of ECM connector. • For injector No. 3: "D05-1" and "D05-46" terminals of ECM connector. • For injector No. 4: "D05-17" and "D05-33" terminals of ECM connector. 	Go to Step 7.	Repair or, if necessary, replace wiring harness between ECM and fuel injector.
7	1) Check that resistance between the following terminals is less than 5 Ω . <ul style="list-style-type: none"> • For injector No. 1: "D05-16" terminal of ECM connector and "D14-1" terminal of fuel injector connector No. 1. • For injector No. 2: "D05-2" terminal of ECM connector and "D15-1" terminal of fuel injector connector No. 2. • For injector No. 3: "D05-1" terminal of ECM connector and "D16-1" terminal of fuel injector connector No. 3. • For injector No. 4: "D05-17" terminal of ECM connector and "D17-1" terminal of fuel injector connector No. 4. 	Go to Step 8.	Repair or, if necessary, replace wiring harness between ECM and fuel injector.
8	1) Check that resistance between the following terminals is less than 5 Ω . <ul style="list-style-type: none"> • For injector No. 1: "D05-47" terminal of ECM connector and "D14-2" terminal of fuel injector connector No. 1. • For injector No. 2: "D05-31" terminal of ECM connector and "D15-2" terminal of fuel injector connector No. 2. • For injector No. 3: "D05-46" terminal of ECM connector and "D16-2" terminal of fuel injector connector No. 3. • For injector No. 4: "D05-33" terminal of ECM connector and "D17-2" terminal of fuel injector connector No. 4. 	Go to Step 9.	Repair or, if necessary, replace wiring harness between ECM and fuel injector.

Step	Action	Yes	No
9	1) Check that resistance between terminals of each fuel injector is within 0.3 – 0.7 Ω .	Substitute a known-good ECM and recheck.	Replace fuel injector.

Table – 1060FB: Injector Circuit Operation Check

S5RW0D1104289

Troubleshooting

Step	Action	Yes	No
1	1) Confirm with SUZUKI scan tool is not detected the following DTC. <ul style="list-style-type: none"> • DTC P2149: Fuel Injector Group 2 Supply Voltage Circuit / Open • DTC P2151: Fuel Injector Group 2 Supply Voltage Circuit High 	Go to Step 18.	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between “D05-2” terminal of ECM connector and ground is less than 0.3 V.	Go to Step 3.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 2.
3	1) Turn ignition switch to OFF position. 2) Check that resistance between “D05-2” terminal of ECM connector and ground is higher than 500 k Ω .	Go to Step 6.	Go to Step 4.
4	1) Disconnect connector from fuel injector No. 2. 2) Check that resistance between “D05-2” terminal of ECM connector and ground is higher than 500 k Ω .	Go to Step 5.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 2.
5	1) Check that resistance between “D05-31” terminal of ECM connector and ground is higher than 500 k Ω .	Replace fuel injector No. 2.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 2.
6	1) Disconnect connector from fuel injector No. 2. 2) Check that resistance between “D05-2” and “D05-31” terminals of ECM connector is higher than 500 k Ω .	Go to Step 7.	Repair or replace, if necessary, wiring harness of ECM.
7	1) Check that resistance between “D05-2” terminal of ECM connector and “D15-1” terminal of fuel injector No. 2 connector is less than 5 Ω .	Go to Step 8.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 2.
8	1) Check that resistance between “D05-31” terminal of ECM connector and “D15-2” terminal of fuel injector connector No. 2 is less than 5 Ω .	Go to Step 9.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 2.
9	1) Check that resistance between terminals of fuel injector No. 2 is within 0.3 – 0.7 Ω .	Go to Step 10.	Replace fuel injector No. 2.

Step	Action	Yes	No
10	1) Turn ignition switch to ON position. 2) Check that voltage between "D05-1" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 11.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 3.
11	1) Turn ignition switch to OFF position. 2) Check that resistance between "D05-1" terminal of ECM connector and ground is higher than 500 kΩ.	Go to Step 14.	Go to Step 12.
12	1) Disconnect connector from fuel injector No. 3. 2) Check that resistance between "D05-1" terminal of ECM connector and ground is higher than 500 kΩ.	Go to Step 13.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 3.
13	1) Check that resistance between "D05-46" terminal of ECM connector and ground is higher than 500 kΩ.	Replace fuel injector No. 3.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 3.
14	1) Disconnect connector from fuel injector No. 3. 2) Check that resistance between "D05-1" and "D05-46" terminals of ECM connector is higher than 500 kΩ.	Go to Step 15.	Repair or replace, if necessary, wiring harness of ECM.
15	1) Check that resistance between "D05-1" terminal of ECM connector and "D16-1" terminal of fuel injector No.3 connector is less than 5 Ω.	Go to Step 16.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 3.
16	1) Check that resistance between "D05-46" terminal of ECM connector and "D16-2" terminal of fuel injector connector No. 3 is less than 5 Ω.	Go to Step 17.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 3.
17	1) Check that resistance between terminals of fuel injector No. 3 is within 0.3 – 0.7 Ω.	Substitute a known-good ECM and recheck.	Replace fuel injector No. 3.
18	1) Turn ignition switch to OFF position. 2) Disconnect connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "D05-16" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 19.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 1.
19	1) Turn ignition switch to OFF position. 2) Check that resistance between "D05-16" terminal of ECM connector and ground is higher than 500 kΩ.	Go to Step 22.	Go to Step 20.
20	1) Disconnect connector from fuel injector No. 1. 2) Check that resistance between "D05-16" terminal of ECM connector and ground is higher than 500 kΩ.	Go to Step 21.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 1.
21	1) Check that resistance between "D05-47" terminal of ECM connector and ground is higher than 500 kΩ.	Replace fuel injector No. 1.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 1.

Step	Action	Yes	No
22	1) Disconnect connector from fuel injector No. 1. 2) Check that resistance between "D05-16" and "D05-47" terminals of ECM connector is higher than 500 k Ω .	Go to Step 23.	Repair or replace, if necessary, wiring harness of ECM.
23	1) Check that resistance between "D05-16" terminal of ECM connector and "D14-1" terminal of fuel injector No. 1 connector is less than 5 Ω .	Go to Step 24.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 1.
24	1) Check that resistance between "D05-47" terminal of ECM connector and "D14-2" terminal of fuel injector No. 1 connector is less than 5 Ω .	Go to Step 25.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 1.
25	1) Check that resistance between terminals of fuel injector No. 1 is within 0.3 – 0.7 Ω .	Go to Step 26.	Replace fuel injector No.1.
26	1) Turn ignition switch to ON position. 2) Check that voltage between "D05-17" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 27.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 4.
27	1) Turn ignition switch to OFF position. 2) Check that resistance between "D05-17" terminal of ECM connector and ground is higher than 500 k Ω .	Go to Step 30.	Go to Step 28.
28	1) Disconnect connector from fuel injector No. 4. 2) Check that resistance between "D05-17" terminal of ECM connector and ground is higher than 500 k Ω .	Go to Step 29.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 4.
29	1) Check that resistance between "D05-33" terminal of ECM connector and ground is higher than 500 k Ω .	Replace fuel injector No. 4.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 4.
30	1) Disconnect connector from fuel injector No. 4. 2) Check that resistance between "D05-17" and "D05-33" terminals of ECM connector is higher than 500 k Ω .	Go to Step 31.	NG: Repair or replace, if necessary, wiring harness of ECM.
31	1) Check that resistance between "D05-17" terminal of ECM connector and "D17-1" terminal of fuel injector No. 4 connector is less than 5 Ω .	Go to Step 32.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 4.
32	1) Check that resistance between "D05-33" terminal of ECM connector and "D17-2" terminal of fuel injector No. 4 connector is less than 5 Ω .	Go to Step 33.	Repair or replace, if necessary, wiring harness between ECM and fuel injector No. 4.
33	1) Check that resistance between terminals of fuel injector No. 4 is within 0.3 0 – 0.7 Ω .	Substitute a known-good ECM and recheck.	Replace fuel injector No. 4.

Table – 1060GD: Barometric Pressure Check

S5RW0D1104290

Troubleshooting

Step	Action	Yes	No
1	1) Disconnect connector from ECM with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) With engine off and all electrical loads turned off. 4) Check “Barometric Press” displayed on SUZUKI scan tool. Displayed value should be within range of 90 – 120 kPa (0.8 – 1.2 bar).	End.	Substitute a known-good ECM and recheck.

Table – 1060GF: Boost Pressure Check

S5RW0D1104273

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON. 3) With engine off and all electrical loads turned off, “Boost Press Target” must be within 90 – 120 kPa (0.9 – 1.2 bar). 4) Under the same conditions, “Boost Press Measured” reading must be within 90 – 120 kPa (0.9 – 1.2 bar) and in any case must be approximately equal to “Barometric press”.	Go to Step 2.	Go to Step 4.
2	1) With engine idle speed and accelerator pedal not operated, “Boost Press Target” must be within 90 – 120 kPa (0.9 – 1.2 bar). 2) Under the same conditions, “Boost Press Measured” must be within 90 – 120 kPa (0.9 – 1.2 bar).	Go to Step 3.	Go to Step 4.
3	1) With accelerator pedal slightly operated and engine speed equal to 3,000 rpm, “Boost Press Target” must be within 1,000 – 2,300 kPa (10 – 23 bar). 2) Under the same conditions, “Boost Press Measured” must be within 1,000 – 2,300 kPa (10 – 23 bar).	End.	Go to Step 4.
4	1) Turn ignition switch to OFF position. 2) Disconnect connector from boost pressure sensor with IAT sensor-2. 3) Turn ignition switch to ON position. 4) Measure voltage between “D06-1” and “D06-3” terminals of boost pressure sensor with IAT sensor-2 connector. Ensure that it is within 4.8 – 5.2 V.	Go to Step 5.	Go to Step 6.
5	1) If DTC is still detected, repair or if necessary replace wiring harness between ECM and sensor.	End.	Substitute a known-good ECM and recheck.

Step	Action	Yes	No
6	1) Check voltage between "D06-3" terminal of boost pressure sensor with IAT sensor-2 connector and vehicle body ground. Ensure that it is within 4.9 – 6.0 V.	Go to Step 7.	Go to Step 5.
7	1) Check "Boost Press Sen Volt" displayed on SUZUKI scan tool is within 4.8 – 5.2 V	Go to Step 8.	Substitute a known-good ECM and recheck.
8	1) Connect service wire between "D06-3" terminal of boost pressure sensor with IAT sensor-2 connector and vehicle body ground. 2) Check that "Boost Press Sen Volt" is less than 0.3 V.	Replace boost pressure sensor with IAT sensor-2 referring to "Boost Pressure Sensor with IAT Sensor-2 Removal and Installation in Section 1C".	Substitute a known-good ECM and recheck.

Table – 1060GG: Check Measured Air Mass

S5RW0D1104274

NOTE

Generally, EGR valve is operated as follows.

- EGR OFF (valve opening: 0 – 5%): Engine runs idle speed before warm up.
- EGR ON (valve opening: 40% or more): Engine runs idle speed after warm up.

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) With engine off and all electrical loads turned off. 4) "MAF" parameter displayed on SUZUKI scan tool must be within 0 – 1 mg/str.	Go to Step 2.	Go to Step 5.
2	1) Start engine and warm it up to normal operating temperature. 2) With engine idle speed, with EGR valve closed and accelerator pedal not operated, "MAF" parameter displayed on SUZUKI scan tool must be within 400 – 600 mg/str.	Go to Step 3.	Go to Step 5.
3	1) With all electrical loads turned off, when accelerator pedal is depressed several times, "MAF" parameter displayed on SUZUKI scan tool must be seen to change in a short time.	Go to Step 4.	Go to Step 5.
4	1) When EGR valve is opened and accelerator pedal is not depressed, "MAF" parameter displayed on SUZUKI scan tool must be within 150 – 400 mg/str.	End.	Go to Step 5.

Step	Action	Yes	No
5	1) Turn ignition switch to OFF position. 2) Disconnect connector from MAF sensor with IAT sensor-1. 3) Turn ignition switch to ON position. 4) Check voltage between "D24-1" terminal of MAF sensor with IAT sensor-1 connector and vehicle body ground. Ensure that it is greater than 11 V.	Go to Step 7.	Go to Step 6.
6	1) If DTC is still detected, repair or if necessary replace wiring harness between ECM and MAF sensor with IAT sensor-1.	End.	Substitute a known-good ECM and recheck.
7	1) Check voltage between "D24-1" and "D24-2" terminals of MAF sensor with IAT sensor-1 connector. Ensure that it is greater than 11 V.	Go to Step 8.	Go to Step 6.
8	1) Check voltage between "D24-4" terminal of MAF sensor with IAT sensor-1 connector and vehicle body ground. Ensure that it is within 4.8 – 5.2 V.	Go to Step 9.	Go to Step 6.
9	1) Replace MAF sensor with IAT sensor-1 referring to "Air Cleaner Components in Section 1D", and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 1060GH: Diesel Fuel Pressure Check

S5RW0D1104307

Troubleshooting

Step	Action	Yes	No
1	1) Start engine and warm it up to normal operating temperature. 2) With engine idling, all electrical loads turned off and accelerator pedal not depressed. 3) Check "Fuel Press target" and "Fuel Press measured" must be within 20,000 – 50,000 kPa (200 – 500 bar).	Go to Step 2.	Go to Step 3.
2	1) When accelerator pedal is depressed several times, "Fuel Press measured" must be within 20,000 – 150,000 kPa (200 – 1,500 bar).	End.	Go to Step 3.
3	1) Turn ignition switch to OFF position. 2) Disconnect connector from fuel pressure sensor. 3) Turn ignition switch to ON position. 4) Check that voltage between "D23-3" terminal of fuel pressure sensor connector and ground. Check that it is within 4.8 – 5.2 V.	Go to Step 5.	Go to Step 4.
4	1) If DTC is still detected, repair or replace, if necessary, wiring harness between ECM and fuel pressure sensor.	End.	Substitute a known-good ECM and recheck.

Step	Action	Yes	No
5	1) Check that resistance between "D23-3" and "D23-1" terminals of fuel pressure sensor, and check that it is within 4.8 – 5.2 V.	Go to Step 6.	Go to Step 4.
6	1) Check that resistance between "D23-2" terminal of fuel pressure sensor and ground, and check that it is within 4.8 – 5.2 V.	Go to Step 7.	Go to Step 4.
7	1) Replace fuel pressure sensor and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 1060GI: Engine Speed Check

S5RW0D1104275

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that the engine rpm does not exceed 60 rpm.	Go to Step 2.	Go to Step 3.
2	1) Start engine and warm it up to normal operating temperature. 2) With engine idle speed, all electrical loads turned off and accelerator pedal not operated, engine speed must be within 770 – 930 rpm.	End.	Go to Step 3.
3	1) Check for presence of "DTC P0219: Engine Over Speed Condition".	Go to Step 5.	Engine rpm would be greater than 5400 rpm. Inform customer that this high engine rpm speed may cause mechanical damage. Go to Step 4.
4	1) Turn ignition switch to OFF position. 2) Check that intake system is not contaminated with oil.	End.	Repair or, if necessary, replace faulty components.
5	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Turn ignition switch to ON position. 4) Check voltage between "D05-27" terminal of ECM connector and vehicle body ground. Ensure that voltage is less than 0.3 V.	Go to Step 7.	Go to Step 6.
6	1) If DTC is still detected, repair or if necessary replace electrical wiring between ECM and CKP sensor.	End.	Replace CKP sensor referring to "CKP Sensor Removal and Installation in Section 1C".

Step	Action	Yes	No
7	1) Turn ignition switch to OFF position. 2) Check resistance between "D05-27" terminal of ECM connector and vehicle body ground. Ensure that resistance is higher than 1 MΩ.	Go to Step 8.	Go to Step 6.
8	1) Turn ignition switch to OFF position. 2) Check resistance between "D05-12" and "D05-27" terminals of ECM connector. Ensure that resistance is within 200 – 3,000 Ω.	Go to Step 9.	Go to Step 6.
9	1) Connect connectors to ECM. 2) Disconnect connector from CKP sensor. 3) Measure voltage between "D09-1" and "D09-2" terminals of CKP sensor connector. 4) Start engine and check that voltage is greater than 0.5 V.	Go to Step 10.	Replace CKP sensor referring to "CKP Sensor Removal and Installation in Section 1C".
10	1) Check that CKP sensor operates correctly: in particular, check for intermittent contacts, missing teeth, incorrect reference point, incorrect gap position, etc.	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace faulty components.

Table – 1060GL: Main Relay Operation Check

S5RW0D1104292

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Remove main relay. 3) Turn ignition switch to ON position. 4) Check voltage between the following terminals. Ensure that it is within 10 and 14 V. • "E56-2" terminal of main relay connector and vehicle body ground. • "E56-1" terminal of main relay connector and vehicle body ground.	Go to Step 2.	Repair power supply circuit of main relay.
2	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Check that resistance between "E27-72" terminal of ECM connector and ground is less than 500 kΩ.	Go to Step 3.	Repair or, if necessary, replace wiring harness between ECM and main relay.
3	1) Check that resistance between "E27-72" terminal of ECM connector and "E56-3" terminal of main relay connector is less than 5 Ω.	Go to Step 4.	Repair or, if necessary, replace wiring harness between ECM and main relay.
4	1) Check main relay for operation referring to "Fuel Pump Relay, Starting Motor Control Relay, Main Relay and Fuel Heating Relay Inspection in Section 1C".	Substitute a known-good ECM and recheck.	Replace main relay.

Table – 1060GM: Sensor Power Supply 1 Circuit Check

S5RW0D1104293

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Disconnect connector from APP sensor. 3) Turn ignition switch to ON position. 4) Check that "DTC P0641: Sensor Reference Voltage 1 Circuit / Open" is not detected.	Go to Step 2.	Go to Step 5.
2	1) Turn ignition switch to OFF position. 2) Disconnect "E27" connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "E27-9" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between APP sensor and ECM.
3	1) Check that voltage between "E27-30" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 4.	Repair or, if necessary, replace wiring harness between APP sensor and ECM.
4	1) Connect "E27" connector to ECM. 2) Replace APP sensor and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.
5	1) Turn ignition switch to OFF position. 2) Disconnect connector from CMP sensor. 3) Turn ignition switch to ON position. 4) Check that "DTC P0641: Sensor Reference Voltage 1 Circuit / Open" is not detected.	Replace CMP sensor.	Go to Step 6.
6	1) Turn ignition switch to OFF position. 2) Disconnect "E27" connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "E27-45" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 8.	Go to Step 7.
7	1) If any faulty is found, connect connectors to ECM and APP sensor. If necessary, replace wiring harness.	End.	Replace APP sensor.
8	1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-30" terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 9.	Repair or, if necessary, replace wiring harness between APP sensor and ECM.
9	1) Disconnect "D05" connector from ECM. 2) Turn ignition switch to ON position. 3) Check that voltage between "D05-11" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 10.	Repair or, if necessary, replace wiring harness between CMP sensor and ECM.

Step	Action	Yes	No
10	1) Turn ignition switch to OFF position. 2) Check that resistance between "D05-11" terminal of ECM connector and ground is less than 500 kΩ.	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace wiring harness between CMP sensor and ECM.

Table – 1060GN: Sensor Power Supply 2 Circuit Check

S5RW0D1104294

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Disconnect connector from fuel pressure sensor. 3) Turn ignition switch to ON position. 4) Check that "DTC P0651: Sensor Reference Voltage 2 Circuit / Open" is not detected.	Go to Step 2.	Go to Step 4.
2	1) Turn ignition switch to OFF position. 2) Disconnect "D05" connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "D05-43" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between fuel pressure sensor and ECM.
3	1) Check that voltage between "D05-8" terminal of ECM connector and ground is less than 0.3 V.	Replace fuel pressure sensor.	Repair or, if necessary, replace wiring harness between fuel pressure sensor and ECM.
4	1) Turn ignition switch to OFF position. 2) Connect "D05" connector to ECM. 3) Disconnect connector from boost pressure sensor with IAT sensor-2. 4) Turn ignition switch to ON position. 5) Check that "DTC P0651: Sensor Reference Voltage 2 Circuit / Open" is not detected.	Go to Step 5.	Go to Step 7.
5	1) Turn ignition switch to OFF position. 2) Disconnect "D05" connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "D05-40" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 6.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.
6	1) Check that voltage between "D05-23" terminal of ECM connector and ground is less than 0.3 V.	Replace boost pressure sensor with IAT sensor-2.	Repair or, if necessary, replace wiring harness between fuel pressure sensor and ECM.

Step	Action	Yes	No
7	1) Turn ignition switch to OFF position. 2) Connect "D05" connector to ECM. 3) Disconnect connector from APP sensor. 4) Turn ignition switch to ON position. 5) Check that "DTC P0651: Sensor Reference Voltage 2 Circuit / Open" is not detected.	Go to Step 11.	Go to Step 8.
8	1) Turn ignition switch to OFF position. 2) Disconnect "E27" connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "E27-31" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 9.	Repair or, if necessary, replace wiring harness between APP sensor and ECM.
9	1) Check that voltage between "E27-8" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 10.	Repair or, if necessary, replace wiring harness between CMP sensor and ECM.
10	1) Connect "E27" connector to ECM. 2) Replace APP sensor and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.
11	1) Turn ignition switch to OFF position. 2) Disconnect "D05" connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "D05-28" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 12.	Repair or, if necessary, replace wiring harness between fuel pressure sensor and ECM.
12	1) Turn ignition switch to OFF position. 2) Check that resistance between "D05-28" terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 13.	Repair or, if necessary, replace wiring harness between fuel pressure sensor and ECM.
13	1) Disconnect "E27" connector from ECM. 2) Turn ignition switch to ON position. 3) Check that voltage between "E27-46" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 14.	Repair or, if necessary, replace wiring harness between APP sensor and ECM.
14	1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-46" terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 15.	Repair or, if necessary, replace wiring harness between APP sensor and ECM.
15	1) Turn ignition switch to ON position. 2) Check that voltage between "D05-1" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 16.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.
16	1) Turn ignition switch to OFF position. 2) Check that resistance between "D05-13" terminal of ECM connector and ground is less than 500 k Ω .	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace wiring harness between boost pressure sensor with IAT sensor-2 and ECM.

Table – 1060GO: Inlet Throttle Valve Operation Check

S5RW0D1104295

Troubleshooting

Step	Action	Yes	No
1	1) Disconnect connector from inlet throttle valve with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that voltage between “D22-2” terminal of inlet throttle valve connector and ground is higher than 11 V.	Go to Step 2.	Repair or, if necessary, replace wiring harness of inlet throttle valve power supply circuit.
2	1) Check that voltage between “D22-2” and “D22-1” terminals of inlet throttle valve connector is higher than 11 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between inlet throttle valve and ECM.
3	1) Turn ignition switch to OFF position. 2) Disconnect “D05” connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between “D05-59” terminal of ECM connector and ground is less than 0.3 V.	Go to Step 4.	Repair or, if necessary, replace wiring harness between inlet throttle valve and ECM.
4	1) Check that voltage between “D05-52” terminal of ECM connector and ground is less than 0.3 V.	Go to Step 5.	Repair or, if necessary, replace wiring harness between inlet throttle valve and ECM.
5	1) Turn ignition switch to OFF position. 2) Check that resistance between “D05-59” terminal of ECM connector and ground is less than 500 kΩ.	Go to Step 6.	Repair or, if necessary, replace wiring harness between inlet throttle valve and ECM.
6	1) Check that resistance between “D05-52” terminal of ECM connector and ground is less than 500 kΩ.	Go to Step 7.	Repair or, if necessary, replace wiring harness between inlet throttle valve and ECM.
7	1) Check that resistance between “D05-59” terminal of ECM connector and “D22-6” terminal of inlet throttle valve connector is less than 5 Ω.	Go to Step 8.	Repair or, if necessary, replace wiring harness between inlet throttle valve and ECM.
8	1) Check that resistance between “D05-52” terminal of ECM connector and “D22-4” terminal of inlet throttle valve connector is less than 5 Ω.	Go to Step 9.	Repair or, if necessary, replace wiring harness between inlet throttle valve and ECM.
9	1) Remove inlet throttle valve referring to “Inlet Throttle Valve Removal and Installation in Section 1D” and check that there is no dirt blocking movement of inlet throttle valve.	Go to Step 10.	Clean inlet throttle valve.
10	1) Replace inlet throttle valve referring to “Inlet Throttle Valve Removal and Installation in Section 1D” and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 1060GP: Sensor Power Supply 3 Circuit Check

S5RW0D1104296

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Disconnect connector from differential pressure sensor. 3) Turn ignition switch to ON position. 4) Check that "DTC P0697: Sensor Reference Voltage 3 Circuit / Open" is not detected.	Replace differential pressure sensor referring to "Differential Pressure Sensor Removal and Installation in Section 1B".	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from A/C refrigerant pressure sensor. 3) Turn ignition switch to ON position. 4) Check that "DTC P0697: Sensor Reference Voltage 3 Circuit / Open" is not detected.	Replace A/C refrigerant pressure sensor referring to "A/C Refrigerant Pressure Sensor Removal and Installation: Manual Type in Section 7B in related manual" "A/C Refrigerant Pressure Sensor Removal and Installation: Automatic Type in Section 7B in related manual".	Go to Step 3.
3	1) Turn ignition switch to OFF position. 2) Disconnect "E27" connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "E27-44" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 4.	Repair or, if necessary, replace wiring harness between differential pressure sensor and ECM.
4	1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-44" terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 5.	Repair or, if necessary, replace wiring harness between differential pressure sensor and ECM.
5	1) Turn ignition switch to ON position. 2) Check that voltage between "E27-22" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 6.	Repair or, if necessary, replace wiring harness between A/C refrigerant pressure sensor and ECM.
6	1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-22" terminal of ECM connector and ground is less than 500 k Ω .	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace wiring harness between A/C refrigerant pressure sensor and ECM.

Table – 1060GQ: Fuel Filter Water Detection Sensor Operation Check

S5RW0D1104297

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Clean fuel filter and, if it is necessary, replace it. 3) Turn ignition switch to ON position. 4) Check that "DTC P2264: Water in Fuel Sensor Circuit" is not detected.	There was actually water in fuel filter. Check that there is no water in fuel tank. Clean fuel tank if it is necessary.	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Disconnect "E27" connector from ECM. 3) Disconnect connector from fuel filter water detection sensor. 4) Turn ignition switch to ON position. 5) Check that voltage between "E27-74" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between fuel filter water detection sensor and ECM.
3	1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-74" terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 4.	Repair or, if necessary, replace wiring harness between fuel filter water detection sensor and ECM.
4	1) Check that resistance between "E27-74" terminal of ECM connector and "E49-3" terminal of fuel filter water detection sensor connector is less than 5 Ω .	Go to Step 5.	Repair or, if necessary, replace wiring harness between fuel filter water detection sensor and ECM.
5	1) Connect service wire between "E27-72" terminal of ECM connector and ground. 2) Check that voltage between "E49-1" terminal of fuel filter water detection sensor connector and ground is higher than 11 V.	Go to Step 6.	Repair or, if necessary, replace wiring harness of fuel filter water detection sensor power supply circuit.
6	1) Remove service wire. 2) Check that resistance between "E49-2" terminal of fuel filter water detection sensor connector and ground is less than 5 Ω .	Go to Step 7.	Repair or, if necessary, replace wiring harness between fuel filter water detection sensor and ground.
7	1) Connect "E27" connector to ECM. 2) Replace fuel filter assembly referring to "Fuel Filter Assembly Removal and Installation in Section 1G" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 1060GR: Fuel Pressure Regulator Operation Check

S5RW0D1104298

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connector from fuel pressure regulator. 3) Turn ignition switch to ON position. 4) Check that voltage between “D02-2” terminal of fuel pressure regulator connector and ground is higher than 11 V.	Go to Step 2.	Repair or, if necessary, replace wiring harness between fuel pressure regulator and ECM.
2	1) Turn ignition switch to OFF position. 2) Disconnect “D05” connector from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between “D02-1” terminal of fuel pressure regulator connector and ground is less than 0.3 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between fuel pressure regulator and ECM.
3	1) Turn ignition switch to OFF position. 2) Check that resistance between “D02-1” terminal of fuel pressure regulator connector and “D05-34” terminal of ECM connector is less than 5 Ω.	Go to Step 4.	Repair or, if necessary, replace wiring harness between fuel pressure regulator and ECM.
4	1) Connect “D05” connector to ECM. 2) Replace fuel pressure regulator referring to “Common Rail, Fuel Pressure Sensor and Fuel Pressure Regulator Valve Removal and Installation in Section 1G” and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 1060GS: MAF Sensor Operation Check

S5RW0D1104306

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connector from MAF sensor. 3) Turn ignition switch to ON position. 4) Check that voltage between “D24-1” terminal of MAF sensor connector and ground is higher than 11 V.	Go to Step 2.	Repair or, if necessary, replace wiring harness of MAF sensor power supply circuit.
2	1) Check that voltage between “D24-1” and “D24-2” terminals of MAF sensor connector is higher than 11 V.	Go to Step 4.	Go to Step 3.
3	1) If any fault is found, repair or, as necessary, replace wiring harness between MAF sensor and ECM. 2) Connect connector to MAF sensor and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.
4	1) Check that voltage between “D24-3” terminal of MAF sensor connector and ground is within 4.8 – 5.2 V.	Go to Step 5.	Go to Step 3.

Step	Action	Yes	No
5	1) Replace MAF sensor referring to "Air Cleaner Components in Section 1D" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 1060OE: ECT Sensor Operation Check

S5RW0D1104276

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Start engine and warm it up normal operating temperature. 3) Turn off all electrical loads. 4) Check that "Coolant Temp" displayed on SUZUKI scan tool is more or less the same as temperature shown on combination meter.	End.	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from ECT sensor. 3) Turn ignition switch to ON position. 4) Check voltage between "D01-1" terminal of ECT sensor connector and vehicle body ground. Ensure that it is within 4.8 – 5.2 V.	Go to Step 3.	Go to Step 4.
3	1) If DTC is still detected, repair or if necessary replace wiring harness between ECM and ECT sensor.	End.	Substitute a known-good ECM and recheck.
4	1) Check that "ECT sensor Volt" displayed on SUZUKI scan tool is within 4.8 – 5.2 V.	Go to Step 5.	Substitute a known-good ECM and recheck.
5	1) Turn ignition switch to OFF position. 2) Connect service wire to terminals of ECT sensor connector. 3) Turn ignition switch to ON position. 4) Check that "ECT sensor Volt" displayed on SUZUKI scan tool is more than 0.1 V.	Go to Step 3.	Replace ECT sensor referring to "Engine Coolant Temperature (ECT) Sensor Removal and Installation in Section 1C".

Table – 1064BB: Boost Pressure Control Solenoid Valve Operation Check

S5RW0D1104299

Troubleshooting

Step	Action	Yes	No
1	Circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connector from boost pressure control solenoid valve. 3) Turn ignition switch to ON position. 4) Measure voltage between “E08-2” terminal of boost pressure control solenoid valve and ground is higher than 11 V.	Go to Step 2.	Repair or, if necessary, replace wiring harness of boost pressure control solenoid valve power supply circuit.
2	Circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connector from ECM. 3) Turn ignition switch to ON position. 4) Measure voltage between “E27-7” terminal of ECM connector and ground is less than 0.3 V.	Go to Step 3.	Repair or, if necessary, replace wiring harness between boost pressure control solenoid valve and ECM.
3	Circuit check 1) Turn ignition switch to OFF position. 2) Measure resistance between “E27-7” terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 4.	Repair or, if necessary, replace wiring harness between boost pressure control solenoid valve and ECM.
4	Circuit check 1) Measure resistance between “E27-7” terminal of ECM connector and “E08-1” terminal of boost pressure control solenoid valve connector is less than 5 Ω .	Go to Step 5.	Repair or, if necessary, replace wiring harness between boost pressure control solenoid valve and ECM.
5	Boost pressure control solenoid valve check 1) Check boost pressure control solenoid valve for resistance referring to “Boost Pressure Control Solenoid Valve Inspection in Section 1C”.	Substitute a known good ECM and recheck.	Replace boost pressure control solenoid valve.

Table – 1064BD: IAT Sensor 2 Check

S5RW0D1104277

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Start engine and warm it up to normal operating temperature. 3) With engine idle speed, all electrical loads turned off, accelerator pedal not depressed, and “IAT 2” must be within 10 – 120 °C (50 – 248 °F).	End.	Go to Step 2.

Step	Action	Yes	No
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from boost pressure sensor with IAT sensor-2. 3) Turn ignition switch to ON position. 4) Check voltage between "D06-1" and "D06-2" terminals of boost pressure sensor with IAT sensor-2 connector. Ensure that it is within 4.8 – 5.2 V.	Go to Step 4.	Go to Step 3.
3	1) If faults are present, repair or if necessary replace wiring harness between ECM and boost pressure sensor with IAT sensor-2.	End.	Substitute a known-good ECM and recheck.
4	1) Check voltage between "D06-2" terminal of boost pressure sensor with IAT sensor-2 connector and vehicle body ground. Ensure that it is within 4.8 – 5.2 V.	Go to Step 5.	Go to Step 3.
5	1) Check that "IAT Sen 2 Volt" displayed on SUZUKI scan tool is within 4.8 – 5.2 V.	Go to Step 5.	Substitute a known-good ECM and recheck.
6	1) Turn ignition switch to OFF position. 2) Connect service wire between "D06-2" terminal of boost pressure sensor with IAT sensor-2 connector and vehicle body ground. 3) Turn ignition switch to ON position. 4) Check that "IAT Sen 2 Volt" displayed on scan tool is less than 0.3 V.	Replace boost pressure sensor with IAT sensor-2 referring to "Boost Pressure Sensor with IAT Sensor-2 Removal and Installation in Section 1C".	Substitute a known-good ECM and recheck.

Table – 1068AC: Accelerator Pedal Check

S5RW0D1104279

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) With all electrical loads turned off and accelerator pedal not depressed, "Accel Position" value should be 0%. 4) Under the same conditions, value of "APP sensor 1 voltage" should be less than 1 V and "APP sensor 2 voltage" less than 0.5 V.	Go to Step 2.	Go to Step 4.
2	1) With accelerator pedal slightly operated, value of "APP sensor 1 voltage" must be higher than 1 V and "APP sensor 2 voltage" higher than 0.5 V.	Go to Step 3.	Go to Step 4.
3	1) With accelerator pedal depressed fully, "Accel Position" value must be higher than 90%. 2) Under the same conditions, value of "APP sensor 1 voltage" should be higher than 3 V and "APP sensor 2 voltage" higher than 1.5 V.	End.	Go to Step 4.

Step	Action	Yes	No
4	<ol style="list-style-type: none"> 1) Turn ignition switch to OFF position. 2) Disconnect connector from APP sensor. 3) Turn ignition switch to ON position. 4) Check voltage between "E25-5" terminal of APP sensor connector and vehicle body ground. Ensure that it is higher than 4.8 V. 	Go to Step 6.	Go to Step 5.
5	<ol style="list-style-type: none"> 1) If DTC is still detected, repair or if necessary replace wiring harness between ECM and APP sensor. 	End.	Substitute a known-good ECM and recheck.
6	<ol style="list-style-type: none"> 1) Check voltage between "E25-3" and "E25-5" terminals of APP sensor. Ensure that they are within 4.8 – 5.2 V. 	Go to Step 7.	Go to Step 5.
7	<ol style="list-style-type: none"> 1) Turn ignition switch to OFF position. 2) Connect service wire between "E25-3" and "E25-4" terminals of APP sensor connector. 3) Turn ignition switch to ON position. 4) Check that "APP sensor 1 voltage" displayed on scan tool is less than 0.3 V. 	Go to Step 8.	Go to Step 5.
8	<ol style="list-style-type: none"> 1) Turn ignition switch to OFF position. 2) Disconnect service wire from APP sensor connector. 3) Connect service wire between "E25-4" and "E25-5" terminals of APP sensor connector. 4) Turn ignition switch to ON position. 5) Check that "APP sensor 1 voltage" displayed on scan tool is higher than 4.8 V. 	Go to Step 9.	Go to Step 5.
9	<ol style="list-style-type: none"> 1) Turn ignition switch to OFF position. 2) Disconnect service wire from APP sensor connector. 3) Turn ignition switch to ON position. 4) Check voltage between "E25-6" terminal of APP sensor connector and vehicle body ground. Ensure it is higher than 4.8 V. 	Go to Step 10.	Go to Step 5.
10	<ol style="list-style-type: none"> 1) Check voltage between "E25-2" and "E25-6" terminals of APP sensor. Ensure that they are within 4.8 – 5.2 V. 	Go to Step 11.	Go to Step 5.
11	<ol style="list-style-type: none"> 1) Turn ignition switch to OFF position. 2) Connect service wire between "E25-1" and "E25-2" terminals of APP sensor connector. 3) Turn ignition switch to ON position. 4) Check that "APP sensor 1 voltage" displayed on scan tool is less than 0.3 V. 	Go to Step 12.	Go to Step 5.

Step	Action	Yes	No
12	1) Turn ignition switch to OFF position. 2) Disconnect service wire from APP sensor connector. 3) Connect service wire between "E25-1" and "E25-6" terminals of APP sensor connector. 4) Turn ignition switch to ON position. 5) Check that "APP sensor 2 voltage" displayed on scan tool is higher than 4.8 V.	Replace APP sensor referring to "Accelerator Pedal Position (APP) Sensor Assembly Removal and Installation in Section 1C".	Substitute a known-good ECM and recheck.

Table – 1080BE: Particulate Filter Saturation Check

S5RW0D1104280

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position and all electrical loads turned off. 3) Check that "Diesel PF clogging" displayed on scan tool is greater than 130%.	Go to Step 2.	End.
2	1) Using SUZUKI scan tool, carry out after-sales regeneration referring to "Diesel Particulate Filter After-sales Regeneration in Section 1C" and ensure it is successful.	Go to Step 3.	Go to Step 4.
3	1) Check that DTC is not detected.	End.	Go to Step 4.
4	1) Check there is no leaks or clogs in exhaust circuit, including differential pressure sensor hoses.	Go to Step 5.	Repair or if necessary replace the faulty components.
5	1) Check pre-catalytic converter is not faulty.	Go to Step 6.	Replace pre-catalytic converter referring to "Exhaust System Components in Section 1K".
6	1) Check main catalytic converter is not faulty.	Go to Step 7.	Replace diesel particulate filter referring to "Exhaust System Components in Section 1K".
7	1) Check that exhaust gas temperature sensor-1 on pre-catalytic converter is correctly connected.	Go to Step 8.	Repair connections.
8	1) Check that exhaust gas temperature sensor-1 on pre-catalytic converter does not contain visually detectable faults.	Go to Step 9.	Replace exhaust gas temperature sensor-1 referring to "Exhaust System Components in Section 1K".
9	1) Check that exhaust gas temperature sensor-2 on diesel particulate filter is correctly connected.	Go to Step 10.	Repair connections.

Step	Action	Yes	No
10	1) Check that exhaust gas temperature sensor-2 on diesel particulate filter does not contain visually detectable faults.	Go to Step 11.	Replace exhaust gas temperature sensor-2 referring to "Exhaust System Components in Section 1K".
11	1) Check that differential pressure sensor on diesel particulate filter is correctly connected.	Go to Step 12.	Repair connections.
12	1) Check that differential pressure sensor on diesel particulate filter does not contain visually detectable faults.	Replace diesel particulate filter referring to "Exhaust System Components in Section 1K".	Replace differential pressure sensor referring to "Differential Pressure Sensor Removal and Installation in Section 1B".

Table – 1080BF: Differential Pressure Sensor Operation Check

S5RW0D1104300

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that "DTC P2455: Differential Pressure Sensor Plausibility" is not detected.	Go to Step 2.	Replace differential pressure sensor.
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from differential pressure sensor. 3) Turn ignition switch to ON position. 4) Check that voltage between "E09-1" and "E09-2" terminals of differential pressure sensor connector is higher than 4.8 V.	Go to Step 4.	Go to Step 3.
3	1) If there are any faults, repair or, as necessary, replace wiring harness between differential pressure sensor and ECM. 2) Connect connector to differential pressure sensor and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.
4	1) Check that "Diff Press Sen Volt" parameter displayed on SUZUKI scan tool is within 4.8 – 5.2 V.	Go to Step 5.	Go to Step 3.
5	1) Turn ignition switch to OFF position. 2) Connect service wire between "E09-3" terminal of differential pressure sensor and ground. 3) Turn ignition switch to ON position. 4) Check that "Diff Press Sen Volt" parameter displayed on SUZUKI scan tool is less than 0.3 V.	Replace differential pressure sensor.	Go to Step 3.

Table – 1080BG: Exhaust Gas Temperature Sensor-1 Operation Check

S5RW0D1104301

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that “DTC P2080: Exhaust Gas Temperature Sensor-1 Circuit Range / Performance” is not detected.	Go to Step 2.	Replace exhaust gas temperature sensor-1.
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from exhaust gas temperature sensor-1. 3) Turn ignition switch to ON position. 4) Check that voltage between “D25-1” and “D25-2” terminals of exhaust gas temperature sensor-1 connector is higher than 4.8 V.	Go to Step 4.	Go to Step 3.
3	1) If there are any faults, repair or, as necessary, replace wiring harness between exhaust gas temperature sensor-1 and ECM. 2) Connect connector to exhaust gas temperature sensor-1 and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.
4	1) Turn ignition switch to OFF position. 2) Check that resistance between “D25-1” and “D25-2” terminals of exhaust gas temperature sensor-1 is within 200 – 600 Ω.	Substitute a known-good ECM and recheck.	Replace exhaust gas temperature sensor-1.

Table – 1080BH: Exhaust Gas Temperature Sensor-2 Operation Check

S5RW0D1104302

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Check that “DTC P2084: Exhaust Gas Temperature Sensor-2 Circuit Range / Performance” is not detected.	Go to Step 2.	Replace exhaust gas temperature sensor-2.
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from exhaust gas temperature sensor-2. 3) Turn ignition switch to ON position. 4) Check that voltage between “E10-1” and “E10-2” terminals of exhaust gas temperature sensor-2 connector is higher than 4.8 V.	Go to Step 4.	Go to Step 3.

Step	Action	Yes	No
3	1) If there are any faults, repair or, as necessary, replace wiring harness between exhaust gas temperature sensor-2 and ECM. 2) Connect connector to exhaust gas temperature sensor-2 and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.
4	1) Turn ignition switch to OFF position. 2) Check that resistance between "E10-1" and "E10-2" terminals of exhaust gas temperature sensor-2 is within 200 – 600 Ω .	Substitute a known-good ECM and recheck.	Replace exhaust gas temperature sensor-2.

Table – 1080CB: EGR Valve Operation Check

S5RW0D1104282

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Check condition of main and circuit fuses. If not, replace fuse and check for short circuit to ground. 3) Disconnect connector from EGR valve. 4) Turn ignition switch to ON. 5) Carry out output test for EGR valve. 6) Check voltage between "D08-1" terminal of EGR valve connector and vehicle body ground. Ensure that it is greater than 11 V.	Go to Step 4.	Go to Step 2.
2	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Turn ignition switch to ON position. 4) Check voltage between "D08-5" terminal of EGR valve connector and vehicle body ground. Ensure that it is less than 0.3 V.	Go to Step 3.	Repair or if necessary replace wiring harness between ECM and EGR valve.
3	1) Turn ignition switch to OFF position. 2) Check resistance between "D08-5" terminal of EGR valve connector and vehicle body ground. Ensure that it is greater than 500 k Ω .	Go to Step 4.	Repair or if necessary replace wiring harness between ECM and EGR valve.
4	1) Check resistance between "D08-5" terminal of EGR valve connector and "D05-60" terminal of ECM connector. Ensure that it is less than 5 Ω .	Connect connectors to EGR valve and ECM. Go to Step 5.	Repair or if necessary replace wiring harness between ECM and EGR valve.
5	1) Replace EGR valve referring to "EGR Valve Removal and Installation in Section 1D", and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 3340AB: Speed Signal Check

S5RW0D1104288

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Carry out a road test and drive vehicle at constant speed of 30 km/h. 3) Check the following parameters displayed on SUZUKI scan tool. • RF Wheel Speed • LF Wheel Speed • RR Wheel Speed • LR Wheel Speed 4) Ensure they approximately coincide with speed shown on combination meter.	End.	Go to Step 2.
2	1) Check ABS / ESP® control module for DTC. Check that DTC related wheel speed sensor is not detected.	Substitute a known-good ECM and recheck.	Go to applicable DTC diag. flow.

Table – 5505AC: Fuel Heater Operation Check

S5RW0D1104303

Troubleshooting

Step	Action	Yes	No
1	1) Connect SUZUKI scan tool to DLC with ignition switch turned OFF. 2) Turn ignition switch to ON position. 3) Perform output test of “Fuel heater”. 4) Check that “Fuel temp” rises in several minutes.	End.	Go to step 2.
2	1) Perform output test of “Fuel heater” and check that operating sound of fuel heater relay is heard.	Go to Step 8.	Go to Step 3.
3	1) Turn ignition switch to OFF position. 2) Remove fuel heater relay. 3) Turn ignition switch to ON position. 4) Check that voltage between the following terminals is higher than 11 V. • “E45-2” terminal of fuel heater relay connector and ground. • “E45-4” terminal of fuel heater relay connector and ground.	Go to Step 4.	Repair power supply circuit of fuel pump relay.
4	1) Check fuel heater relay referring to “Fuel Pump Relay, Starting Motor Control Relay, Main Relay and Fuel Heating Relay Inspection in Section 1C”.	Go to Step 5.	Replace fuel pump relay.

Step	Action	Yes	No
5	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Turn ignition switch to ON position. 4) Check that voltage between "E27-68" terminal of ECM connector and ground is less than 0.3 V.	Go to Step 6.	Repair or, if necessary, replace wiring harness between fuel heater relay and ECM.
6	1) Turn ignition switch to OFF position. 2) Check that resistance between "E27-68" terminal of ECM connector and ground is less than 500 k Ω .	Go to Step 7.	Repair or, if necessary, replace wiring harness between fuel heater relay and ECM.
7	1) Check that resistance between "E27-68" terminal of ECM connector and "E45-1" terminal of fuel heater relay connector is less than 5 Ω .	Substitute a known-good ECM and recheck.	Repair or, if necessary, replace wiring harness between fuel heater relay and ECM.
8	1) Turn ignition switch to OFF position. 2) Disconnect connector from fuel heater with fuel temperature sensor. 3) Turn ignition switch to ON position. 4) Check that voltage between "E45-1" terminal of fuel heater relay connector and ground is less than 0.3 V.	Go to Step 9.	Repair or, if necessary, replace wiring harness between fuel heater relay and fuel heater with fuel temperature sensor.
9	1) Turn ignition switch to OFF position. 2) Check that resistance between "E45-1" terminal of fuel heater relay connector and ground is less than 500 k Ω .	Go to Step 10.	Repair or, if necessary, replace wiring harness between fuel heater relay and fuel heater with fuel temperature sensor.
10	1) Check that resistance between "E45-1" terminal of fuel heater relay connector and "E50-2" terminal of fuel heater with fuel temperature sensor connector is less than 5 Ω .	Go to Step 10.	Repair or, if necessary, replace wiring harness between fuel heater relay and fuel heater with fuel temperature sensor.
11	1) Check that resistance between "E50-1" terminal of fuel heater with fuel temperature sensor connector and ground is less than 5 Ω .	Replace fuel heater with fuel temperature sensor.	Repair or, if necessary, replace wiring harness of fuel heater with fuel temperature sensor ground circuit.

Table – 5510CG: CMP Sensor Operation Check

S5RW0D1104304

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to OFF position. 2) Disconnect connector from CMP sensor. 3) Turn ignition switch to ON position. 4) Check that voltage between "D07-1" terminal of CMP sensor connector and ground is within 4.8 – 5.2 V.	Go to Step 2.	Repair or, if necessary, replace wiring harness between CMP sensor and ECM.
2	1) Check that voltage between "D07-1" and "D07-3" terminals of CMP sensor connector is within 4.8 – 5.2 V.	Go to Step 4.	Go to Step 3.

Step	Action	Yes	No
3	1) If any fault is found, repair or, as necessary, replace wiring harness between CMP sensor and ECM. 2) Connect connector to CMP sensor and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.
4	1) Check that voltage between "D07-2" terminal of MAF sensor connector and ground is within 4.8 – 5.2 V.	Go to Step 5.	Go to Step 3.
5	1) Check that there are no faults such as intermittent contacts, missing teeth, reference point or incorrect gap in CMP sensor.	Go to Step 6.	Repair or, if necessary, replace faulty condition.
6	1) Replace CMP sensor referring to "Camshaft Position (CMP) Sensor Removal and Installation in Section 1C" and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 5520CA: Glow Plugs Operation Check

S5RW0D1104281

Troubleshooting

Step	Action	Yes	No
1	1) Check glow plugs for resistance referring to "Glow Plug Inspection in Section 1C"	Go to Step 4.	Replace faulty glow plug referring to "Glow Plug Removal and Installation in Section 1C".
2	1) Turn ignition switch to OFF position. 2) Disconnect connector from glow plug control module. 3) Check voltage between "E29-7" terminal of glow plug control module connector and vehicle body ground. Ensure that it is higher than 11 V.	Go to Step 3.	Repair power supply circuit of glow plug control module.
3	1) Check voltage between "E29-6" and "E29-7" terminals of glow plug control module connector. Ensure that it is higher than 11 V.	Go to Step 3.	Repair ground circuit of glow plug control module.
4	1) Turn ignition switch to ON position. 2) Check voltage between "E29-1" terminal of glow plug control module connector and vehicle body ground. Ensure that it is higher than 11 V.	Go to Step 5.	Repair power supply circuit of glow plug control module.
5	1) Turn ignition switch to OFF position. 2) Disconnect connectors from ECM. 3) Check resistance between "E29-3" terminal of glow plug control module connector and "E27-52" terminal of ECM connector. Ensure that it is less than 5 Ω.	Go to Step 6.	Repair or, if necessary, replace wiring harness between ECM and glow plug control module.
6	1) Check resistance between "E29-8" terminal of glow plug control module connector and "E27-93" terminal of ECM connector. Ensure that it is less than 5 Ω.	Go to Step 7.	Repair or, if necessary, replace wiring harness between ECM and glow plug control module.

Step	Action	Yes	No
7	1) Disconnect connectors from glow plugs. 2) Check resistance the following. <ul style="list-style-type: none"> • “D18-1” terminal of glow plug connector and “E29-4” terminal of glow plug control module connector to ensure it is less than 5Ω. • “D18-2” terminal of glow plug connector and “E29-4” terminal of glow plug control module connector to ensure it is less than 5Ω. • “D18-3” terminal of glow plug connector and “E29-5” terminal of glow plug control module connector to ensure it is less than 5Ω. • “D18-4” terminal of glow plug connector and “E29-5” terminal of glow plug control module connector to ensure it is less than 5Ω. 	Go to Step 8.	Repair or, if necessary, replace wiring harness between ECM and glow plug control module.
8	1) Replace glow plug control module referring to “Glow Plug Control Module Removal and Installation in Section 1C”, and check that DTC is not detected.	End.	Substitute a known-good ECM and recheck.

Table – 5530BB: Battery Voltage Check

S5RW0D1104287

Troubleshooting

Step	Action	Yes	No
1	1) Turn ignition switch to ON position. 2) All electrical loads are switched OFF. 3) Check that battery voltage should be between 10 and 14 V.	Go to Step 2.	Go to Step 3.
2	1) Check that battery voltage is more than 8V while engine is cranking.	End.	Go to Step 3.
3	1) Start engine and warm it up to normal operating temperature. 2) Check charging system for operation referring to “Charging System in Section 1J”.	End.	Repair or replace.

Low Fuel Pressure Circuit Check

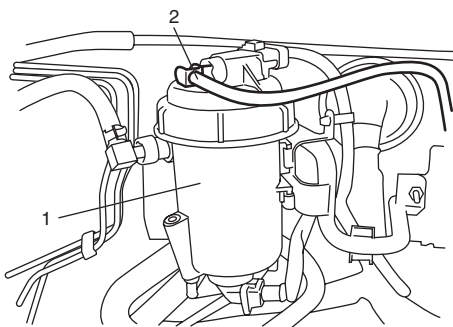
▲ WARNING

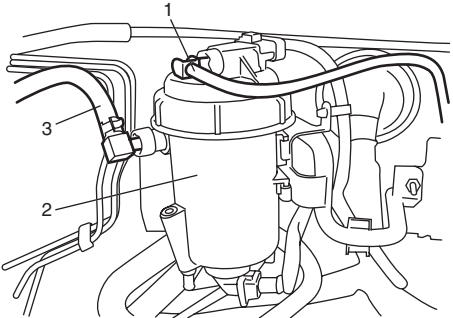
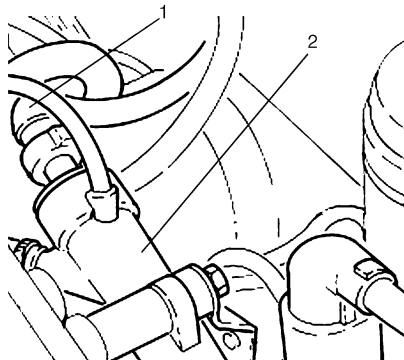
Before performing the following troubleshooting, be sure to read "Precautions on Fuel System Service in Section 1G"

Troubleshooting

NOTE

Before performing the following check, make sure that battery voltage is 11 V or more.

Step	Action	Yes	No
1	Preliminary check 1) Check fuel supply system referring to "Table – 10400A: Fuel Supply System Check".	Go to Step 2.	Repair or replace.
2	Low fuel pressure check 1) Disconnect fuel feed hose No.1 (2) from fuel filter (1). 2) Connect fuel pressure gauge between fuel filter and fuel feed hose No.1.  <p style="text-align: right; font-size: small;">I5RW0D110013-01</p> 3) Turn ignition switch to ON position. 4) Within 30 seconds, check that fuel pressure reading on pressure gauge is higher than 350 kPa (3.5 bar). Fuel pump in fuel tank should switch off after 30 seconds automatically.	Go to Step 3.	Repair or replace fuel feed pipe.

Step	Action	Yes	No
3	<p>Low fuel pressure check</p> <ol style="list-style-type: none"> 1) Turn ignition switch to OFF position. 2) Remove fuel pressure gauge. 3) Connect fuel feed hose No.1 (1) to fuel filter (2). 4) Disconnect fuel feed hose No.2 (3) from fuel filter. 5) Connect fuel pressure gauge between fuel filter and fuel feed hose No.2.  <p style="text-align: right; font-size: small;">I5RW0D110014-01</p> <ol style="list-style-type: none"> 6) Turn ignition switch to ON position. 7) Within 30 seconds, check that fuel pressure reading on pressure gauge is higher than 350 kPa (3.5 bar). Fuel pump in fuel tank should switch off after 30 seconds automatically. 	Go to Step 4.	Replace fuel filter element and recheck. If fuel pressure is not within specification again, replace fuel filter assembly.
4	<p>Return fuel pressure check</p> <ol style="list-style-type: none"> 1) Turn ignition switch to OFF position. 2) Remove fuel pressure gauge. 3) Connect fuel feed hose No.2 to fuel filter. 4) Disconnect fuel return hose (1) from fuel damper (2).  <p style="text-align: right; font-size: small;">I5RW0D110016-01</p> <ol style="list-style-type: none"> 5) Connect fuel pressure gauge between fuel return hose and fuel damper. 6) Turn ignition switch to ON position. 7) Within 30 seconds, check that fuel pressure reading on pressure gauge is less than 100 kPa (1 bar). Fuel pump in fuel tank should switch off after 30 seconds automatically. 	End.	Repair or replace fuel return hose or pipe.

High Fuel Pressure Circuit Check

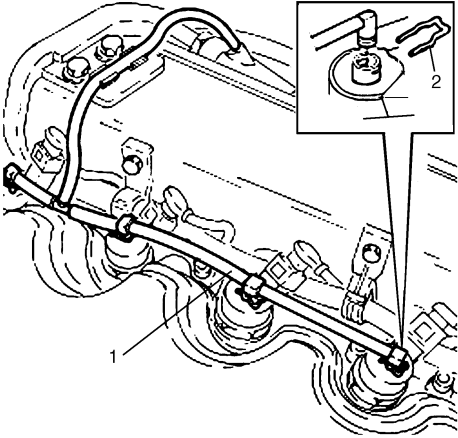
▲ WARNING

Before performing the following troubleshooting, be sure to read "Precautions on Fuel System Service in Section 1G"

Troubleshooting

NOTE

Before performing the following check, make sure that battery voltage is 11 V or more.

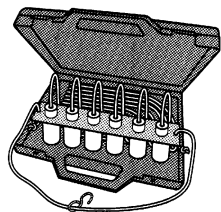
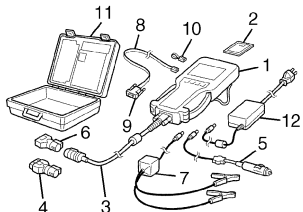
Step	Action	Yes	No
1	Fuel injector calibration code check 1) Using SUZUKI scan tool, check that fuel injector calibration codes registered in ECM are corresponding to calibration codes described on fuel injectors.	Go to Step 2.	Register correct fuel injector calibration codes in ECM referring to "Fuel Injector Registration in Section 1C".
2	Fuel injector check 1) Check fuel injector for resistance referring to "Fuel Injector On-Vehicle Inspection in Section 1G".	Go to Step 3.	Replace faulty fuel injector.
3	Fuel injector leak check 1) Turn ignition switch to OFF position. 2) Disconnect connectors from all injectors. 3) After removing clips (2), disconnect fuel return hose (1) from all fuel injectors.  I5RW0D110017-01 4) Plug fuel return hose with plug cap so that no fuel comes out during this check. For details, refer to "Precautions on Fuel System Service in Section 1G". 5) Connect special tool to fuel injectors. Special tool : 09912-96540 6) Crank engine for 10 seconds. 7) Check that quantity of return fuel from injector is approximately same and small.	Go to Step 4.	Replace faulty fuel injector.

Step	Action	Yes	No
4	Fuel injector leak check 1) Turn ignition switch to OFF position. 2) Connect connectors to all injectors. 3) Run engine at idle speed for 3 minute. 4) Check that quantity of return fuel from injector is approximately same.	Go to Step 5.	Replace faulty fuel injector.
5	High pressure fuel circuit check 1) Turn ignition switch to OFF position. 2) Disconnect connector from all fuel injectors. 3) Connect SUZUKI scan tool to DLC. 4) Crank engine for 5 seconds. 5) Check that "Fuel Press measured" displayed on SUZUKI scan tool is greater than 30,000 kPa (300 bar) with engine speed higher than 200 rpm.	End.	Go to Step 6.
6	Parameter check 1) Turn ignition switch to OFF position. 2) Connect connector to all fuel injectors. 3) Connect fuel return hose to all fuel injectors. 4) Start engine at idle speed. 5) Check that the following parameters displayed on SUZUKI scan tool are reference value referring to "Scan Tool Data". <ul style="list-style-type: none"> • Fuel flow actuator • Fuel pressure regulator • Fuel pressure sensor 	End.	Go to applicable troubleshoot according to "Scan Tool Data".

Special Tools and Equipment

Special Tool

S5RW0D1108001

<p>09912-96540 Injector flow measuring kit Mot. 1711</p>		<p>SUZUKI scan tool</p> <p>—</p> <p>This kit includes following items. 1. Tech 2, 2. PCMCIA card, 3. DLC cable, 4. SAE 16/19 adapter, 5. Cigarette cable, 6. DLC loop back adapter, 7. Battery power cable, 8. RS232 cable, 9. RS232 adapter, 10. RS232 loop back connector, 11. Storage case, 12. Power supply</p> 
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