DTC P181F:00 [GW6A-EL, GW6AX-EL]

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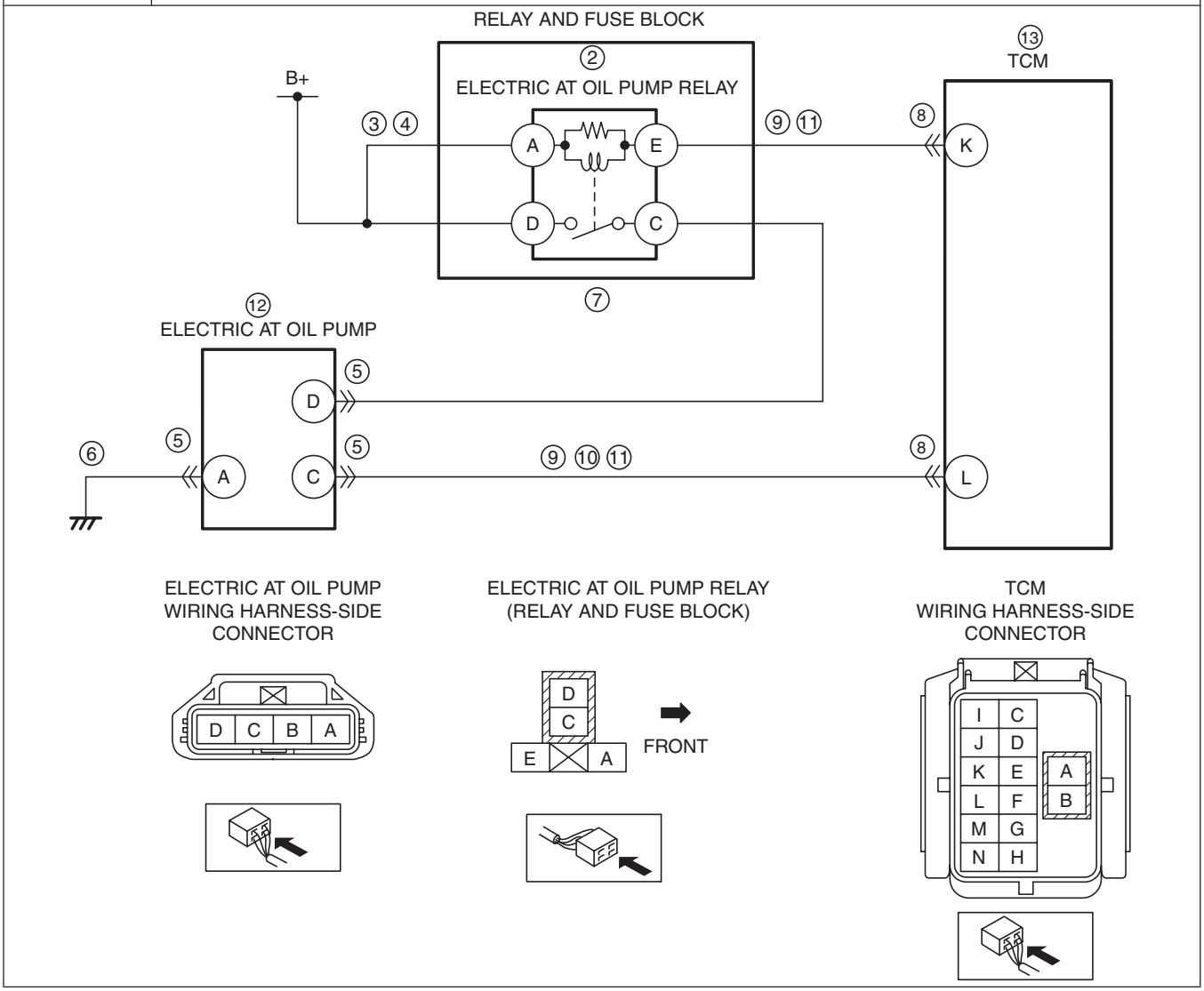
DTC P181F:00	Electric AT oil pump/Electric AT oil pump relay circuit malfunction
DETECTION CONDITION	• If the TCM detects any of the following conditions for a continuous **5 s**: — Electric AT oil pump circuit has a malfunction. — Electric AT oil pump relay circuit has a malfunction. **Diagnostic support note** • The MIL does not illuminate. • The shift position indicator light does not illuminate. • PENDING CODE is available. • FREEZE FRAME DATA is not available. • DTC is stored in the TCM memory.
FAIL-SAFE FUNCTION	• Inhibits i-stop control.
POSSIBLE CAUSE	• Electric AT oil pump relay malfunction • Short to ground in wiring harness between electric AT oil pump relay terminal A and electric AT oil pump relay terminal D • Open circuit in wiring harness between electric AT oil pump relay terminal A and electric AT oil pump relay terminal D • Electric AT oil pump connector or terminals malfunction • Open circuit in wiring harness between electric AT oil pump terminal A and body ground • Short to ground or open circuit in wiring harness between battery positive terminal and electric AT oil pump terminal D • TCM connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Electric AT oil pump relay terminal E—TCM terminal K — Electric AT oil pump terminal C—TCM terminal L • Short to power supply in wiring harness between electric AT oil pump terminal C and TCM terminal L • Open circuit in wiring harness between the following terminals: — Electric AT oil pump relay terminal E—TCM terminal K — Electric AT oil pump terminal C—TCM terminal L • Electric AT oil pump malfunction • TCM malfunction

DTC P181F: 00	Electric AT oil pump/Electric AT oil pump relay circuit malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY RELATED SERVICE INFORMATION AVAILABILITY** • Verify related Service Information availability. • Is any related Service Information available?	Yes	Perform repair or diagnosis according to the available Service Information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
2	**INSPECT ELECTRIC AT OIL PUMP RELAY** • Switch the ignition off. • Remove the electric AT oil pump relay. (See RELAY LOCATION.) • Inspect the electric AT oil pump relay. (See RELAY INSPECTION.) • Is there any malfunction?	Yes	Replace the electric AT oil pump relay, then go to Step 13. (See RELAY LOCATION.)
		No	Go to the next step.

STEP	INSPECTION		ACTION
3	**INSPECT ELECTRIC AT OIL PUMP RELAY CIRCUIT FOR SHORT TO GROUND** • Verify that the electric AT oil pump relay is removed. • Inspect for continuity between electric AT oil pump relay terminal A (wiring harness-side) and body ground. • Is there continuity?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between electric AT oil pump relay terminal A and electric AT oil pump relay terminal D. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. Go to Step 13.
		No	Go to the next step.
4	**INSPECT ELECTRIC AT OIL PUMP RELAY CIRCUIT FOR OPEN CIRCUIT** • Verify that the electric AT oil pump relay is removed. • Inspect for continuity between electric AT oil pump relay terminal A (wiring harness-side) and electric AT oil pump relay terminal D (wiring harness-side). • Is there continuity?	Yes	Install the electric AT oil pump relay, then go to the next step. (See RELAY LOCATION.)
		No	Refer to the wiring diagram and verify whether or not there is a common connector between electric AT oil pump relay terminal A and electric AT oil pump relay terminal D. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has an open circuit. Go to Step 13.
5	**INSPECT ELECTRIC AT OIL PUMP CONNECTOR CONDITION** • Disconnect the electric AT oil pump connector. • Inspect for poor connection (such as damaged/ pulled-out pins, corrosion). • Is there any malfunction	Yes	Repair or replace the connector and/or terminals, then go to Step 13.
		No	Go to the next step.
6	**INSPECT ELECTRIC AT OIL PUMP GROUND CIRCUIT FOR OPEN CIRCUIT** • Verify that the electric AT oil pump connector is disconnected. • Inspect for continuity between electric AT oil pump terminal A (wiring harness-side) and body ground. • Is there continuity?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between electric AT oil pump terminal A and body ground. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has an open circuit. Go to Step 13.
7	**INSPECT ELECTRIC AT OIL PUMP POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Verify that the electric AT oil pump connector is disconnected. • Switch the electric AT oil pump relay to ON using the simulation item EOP_RLY. (See ON-BOARD DIAGNOSTIC SYSTEM SIMULATION INSPECTION [GW6A-EL, GW6AX-EL].) • Measure the voltage at the electric AT oil pump terminal D (wiring harness-side). • Is the voltage **0 V**?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between battery positive terminal and electric AT oil pump terminal D. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground or open circuit. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. Go to Step 13.
		No	Go to the next step.

STEP	INSPECTION		ACTION
8	**INSPECT TCM CONNECTOR CONDITION** • Disconnect the TCM connector. • Visually inspect the TCM connector and terminals. • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 13.
		No	Go to the next step.
9	**INSPECT ELECTRIC AT OIL PUMP CIRCUIT FOR SHORT TO GROUND** • Verify that the electric AT oil pump and TCM connectors are disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — Electric AT oil pump relay terminal E — Electric AT oil pump terminal C • Is there continuity?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • Electric AT oil pump relay terminal E—TCM terminal K • Electric AT oil pump terminal C—TCM terminal L **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. Go to Step 13.
		No	Go to the next step.
10	**INSPECT ELECTRIC AT OIL PUMP CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the electric AT oil pump and TCM connectors are disconnected. • Switch the ignition ON (engine on). • Measure the voltage at the electric AT oil pump terminal C (wiring harness-side). • Is the voltage **0 V**?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between electric AT oil pump terminal C and TCM terminal L. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to power supply. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to power supply. Go to Step 13.
11	**INSPECT ELECTRIC AT OIL PUMP CIRCUIT FOR OPEN CIRCUIT** • Verify that the electric AT oil pump and TCM connectors are disconnected. • Switch the ignition off. • Visually inspect the wiring harness between the following terminals (wiring harness-side): — Electric AT oil pump relay terminal E—TCM terminal K — Electric AT oil pump terminal C—TCM terminal L • Is there any malfunction?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • Electric AT oil pump relay terminal E—TCM terminal K • Electric AT oil pump terminal C—TCM terminal L **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has an open circuit. Go to the next step.
		No	Go to the next step.
12	**INSPECT ELECTRIC AT OIL PUMP** • Remove the electric AT oil pump. (See ELECTRIC AT OIL PUMP REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].) • Verify that the resistance according to the following: — Between electric AT oil pump terminal D and A: **Approx. 18.2 Kilohms** — Between electric AT oil pump terminal C and A: **Approx. 21.5 Kilohms** • Is the resistance normal?	Yes	Go to the next step.
		No	Replace the electric AT oil pump, then go to the next step. (See ELECTRIC AT OIL PUMP REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)

STEP	INSPECTION		ACTION
13	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Always reconnect all disconnected connectors. • Clear the DTC using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [GW6A-EL, GW6AX-EL].) • Perform the following procedure to ensure that the DTC has been resolved: 1. Operates the i-stop. • Perform the DTC inspection using the M-MDS. (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [GW6A-EL, GW6AX-EL].) • Is the DTC P181F:00 present?	Yes	Replace the control valve body, then go to the next step. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)
		No	Go to the next step.
14	**VERIFY NO DTC HAS BEEN PRESENTED** • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [GW6A-EL, GW6AX-EL].)
		No	DTC troubleshooting completed.