
SEAT WARMER CONTROL UNIT INSPECTION

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Warning

- Handling a front seat (with built-in side air bag) improperly can accidentally operate (deploy) the air bag, which may seriously injure you. Read the service warnings before handling a front seat (with built-in side air bag). (See AIR BAG SYSTEM SERVICE WARNINGS.) (See AIR BAG SYSTEM SERVICE CAUTIONS.)

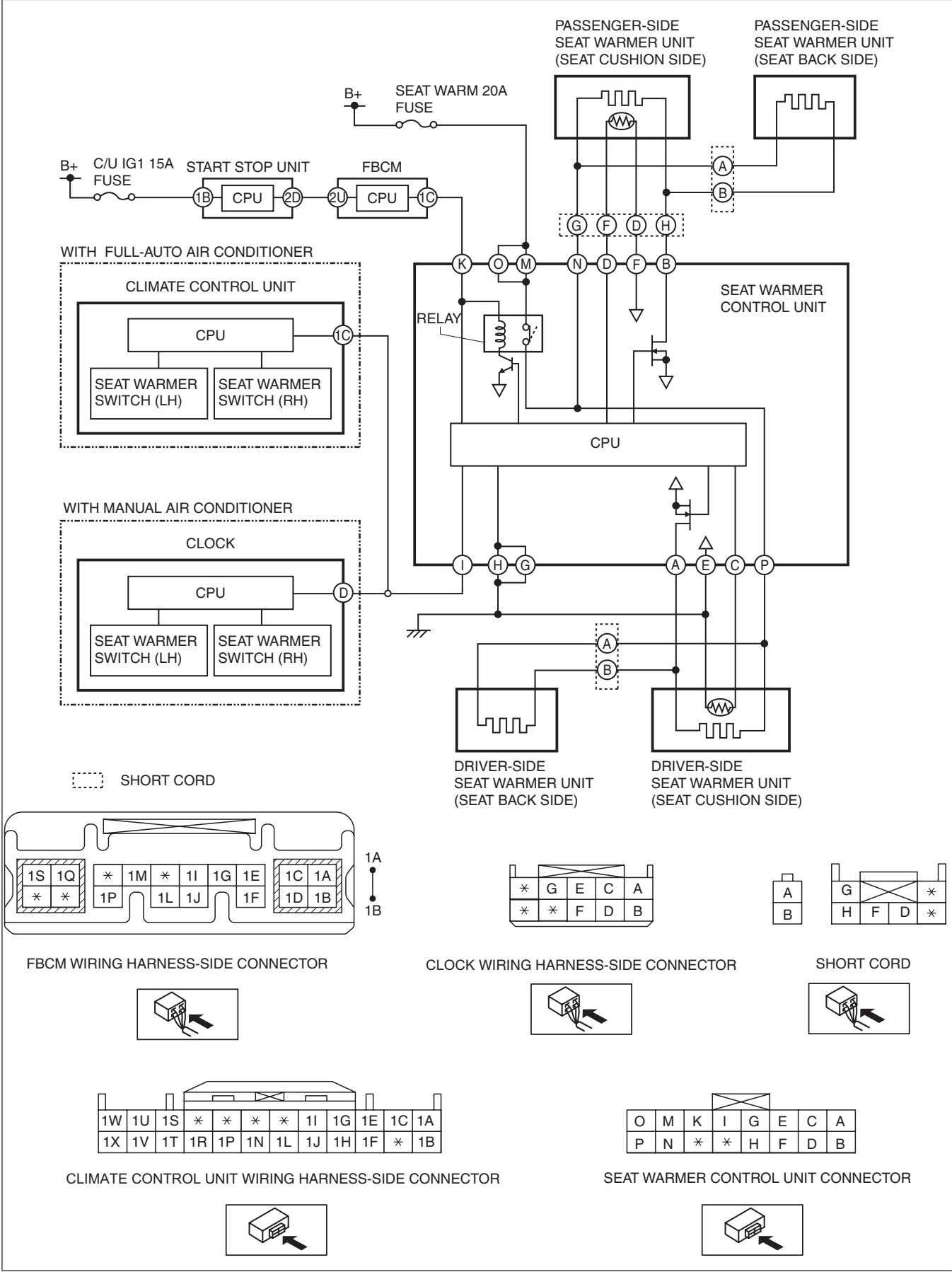
Caution

- After removing a front seat, do not operate the slider lever. If the slider lever is operated, the left and right slide positions will deviate, and the slide adjuster may be damaged after the front seat is installed.
- Verify that there are no malfunctions in the sliding mechanism after installing a front seat.
- When performing the procedure with a front seat removed from the vehicle, perform the procedure on a clean rag so as not to damage or soil the seat.

Forward

- When performing an asterisked (*) troubleshooting inspection, shake the wiring harness and connectors while performing the inspection to discover whether poor contact points are the cause of any intermittent malfunction. If there is a problem, inspect to make sure connectors, terminals and wiring harnesses are connected correctly and undamaged.

System Diagram



Symptom Trouble Shooting Index

No.	Troubleshooting item	Description
1	Seat warmer function is inoperative (See Inspection Procedure (No. 1 Seat Warmer Function Is Inoperative).)	Seat warmer does not warm seat even though seat warmer switch is on
2	Seat warmer always operations (See Inspection Procedure (No.2 Seat Warmer Always Operations).)	Seat warmer warms seat even though seat warmer switch is off
3	Temperature of the seat warmer cannot be adjusted (See Inspection Procedure (No.3 Temperature Of Seat Warmer Cannot Be Adjusted).)	<ul style="list-style-type: none"> • Seat warmer does not adjust temperature even though seat warmer switch is switched between low and high • Seat warmer temperature continues to rise

Inspection Procedure (No.1 Seat Warmer Function Is Inoperative)

No.1	Seat warmer function is inoperative
DETECTION	Seat warmer does not warm seat even though seat warmer switch is on
POSSIBLE CAUSE	<p>The power supply is not supplied to filament of seat warmer</p> <ul style="list-style-type: none"> • Open circuit in seat warmer control unit power supply circuit: <ul style="list-style-type: none"> — Seat warmer control unit terminal O—Battery positive terminal — Seat warmer control unit terminal M—Battery positive terminal • SEAT WARM 20 A fuse malfunction (Blown fuse): <ul style="list-style-type: none"> — Seat warmer control unit terminal O—Battery positive terminal — Seat warmer control unit terminal M—Battery positive terminal • Poor connect the connector: <ul style="list-style-type: none"> — Driver-side seat warmer unit connector—Seat warmer control unit connector — Passenger-side seat warmer unit connector—Seat warmer control unit connector • Open circuit in wiring harness between the following terminal: <ul style="list-style-type: none"> — Driver-side seat warmer unit terminal P—Driver-side seat warmer unit terminal A — Passenger-side seat warmer unit terminal N—Passenger-side seat warmer unit terminal B <p>Seat warmer control unit not operation</p> <ul style="list-style-type: none"> • Open circuit or short to ground in wiring harness between the following terminal: <ul style="list-style-type: none"> — FBCM terminal 1C—Seat warmer control unit terminal K — Seat warmer control unit terminal H—Body ground — Seat warmer control unit terminal G—Body ground <p>Seat warmer unit cannot control filament on</p> <ul style="list-style-type: none"> • Seat warmer control malfunction <p>Seat warmer filament does not generate heat</p> <ul style="list-style-type: none"> • Driver-side seat warmer unit (seat cushion side) malfunction • Driver-side seat warmer unit (seat back side) malfunction • Passenger-side seat warmer unit (seat cushion side) malfunction • Passenger-side seat warmer unit (seat back side) malfunction <p>Seat warmer control unit cannot receive operation signal</p> <ul style="list-style-type: none"> • Seat warmer control unit malfunction • Open circuit or short to ground in wiring harness between the following terminal: <ul style="list-style-type: none"> — Seat warmer control unit terminal I—Climate control unit terminal 1C (with full-auto air conditioner) — Seat warmer control unit terminal I—Clock terminal D (with manual air conditioner)

Diagnostic procedure

STEP	INSPECTION	ACTION
1	PERFORM DTC INSPECTION <ul style="list-style-type: none"> • Perform meter and climate control unit DTC inspection. • Verify the meter DTC inspection and clock output check mode. • Are DTCs and error codes output? 	Yes Perform the diagnosis according to the inspection procedure for each code.
		No Go to the next step.
2	DETERMINE IF THE MALFUNCTION CAUSE IS THE SEAT WARMER SWITCH <ul style="list-style-type: none"> • Select either Low, Mid, or High on the seat warmer switch. • Does the seat warmer switch LED illuminate? 	Yes Go to the next step.
		No Inspect the climate control unit or clock. (See CLIMATE CONTROL UNIT INSPECTION [FULL-AUTO AIR CONDITIONER].) (See CLOCK INSPECTION.)
3	DETERMINE MALFUNCTIONING SYSTEM <ul style="list-style-type: none"> • Are the seat warmers on both sides not operating? 	Yes Go to step 9.
		No Go to the next step.

STEP	INSPECTION	ACTION	
4	INSPECT THE SEAT WARMER CONTROL UNIT POWER SUPPLY FUSE <ul style="list-style-type: none"> Inspect the SEAT WARM 20 A fuse. Is the fuse normal? 	Yes	Go to the next step.
		No	<ul style="list-style-type: none"> If the fuse is deterioration: <ul style="list-style-type: none"> Replace the malfunctioning fuse. If the fuse is blown <ul style="list-style-type: none"> Repair the short to ground in wiring harness between the following terminals: <ul style="list-style-type: none"> SEAT WARM 20 A fuse—Seat warmer control unit O SEAT WARM 20 A fuse—Seat warmer control unit M
5*	DETERMINE IF CAUSE OF MALFUNCTION IS CONTROLLER POWER SUPPLY WIRING HARNESS FOR SEAT WARMER OR OTHER CAUSE <ul style="list-style-type: none"> Switch the ignition off (LOCK). Disconnect the seat warmer control unit connector. Measure the voltage at the following terminal (wiring harness-side): <ul style="list-style-type: none"> Seat warmer control unit terminal M Seat warmer control unit terminal O Is the voltage B+? 	Yes	Go to the next step.
		No	<ul style="list-style-type: none"> Repair or replace the open circuit at the following wiring harness. <ul style="list-style-type: none"> SEAT WARMER 20 A fuse—Seat warmer control unit
6*	VERIFY IF MALFUNCTION CAUSE IS OPEN CIRCUIT IN SEAT WARMER CONTROL UNIT POWER SUPPLY WIRING HARNESS <ul style="list-style-type: none"> Seat warmer control unit connector are disconnected. Switch the ignition off (LOCK). Measure the voltage at the following terminal (wiring harness-side): <ul style="list-style-type: none"> Seat warmer control unit terminal K Is the voltage B+? 	Yes	Go to the next step.
		No	<ul style="list-style-type: none"> Inspect the FBCM 1C terminal. (See FRONT BODY CONTROL MODULE (FBCM) INSPECTION.) Repair or replace the open circuit at the following wiring harness. <ul style="list-style-type: none"> FBCM terminal 1C—Seat warmer control unit terminal K
7*	VERIFY IF MALFUNCTION CAUSE IS SHORT TO GROUND IN SEAT WARMER CONTROL UNIT <ul style="list-style-type: none"> Seat warmer control unit connector on the side that is not operating is disconnected. Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> Seat warmer control unit terminal on the side that is not operating H—Ground Seat warmer control unit terminal on the side that is not operating G—Ground Is there continuity? 	Yes	Go to the next step.
		No	<ul style="list-style-type: none"> Inspect the open circuit following. <ul style="list-style-type: none"> Seat warmer unit terminal H—GND Seat warmer unit terminal G—GND Inspect the GND connector terminals for poor connection. Repair or replace the malfunction.
8*	VERIFY IF MALFUNCTION CAUSE IS OPEN CIRCUIT IN WIRING HARNESS OF SEAT WARMER SWITCH SIGNAL <ul style="list-style-type: none"> Seat warmer control unit connector is disconnected. Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> With full-auto air conditioner <ul style="list-style-type: none"> Seat warmer control unit terminal I—Climate control terminal 1C With manual air conditioner <ul style="list-style-type: none"> Seat warmer control unit terminal I—Clock terminal D Is there continuity? 	Yes	Go to the next step.
		No	<ul style="list-style-type: none"> Inspect the open circuit following. <ul style="list-style-type: none"> Seat warmer control unit terminal I—Climate control terminal 1C Seat warmer control unit terminal I—Clock terminal D

STEP	INSPECTION	ACTION	
9*	INSPECT SEAT WARMER CONTROL UNIT AND SEAT WARMER UNIT CONNECTOR <ul style="list-style-type: none"> • Disconnect the seat warmer control unit and seat warmer unit connector on the side not operating. • Inspect the seat warmer control unit and seat warmer unit connector terminals for poor connection (such as damaged/pulled-out pins, and corrosion). • Is there any malfunction? 	Yes	Repair or replace the malfunctions.
		No	Go to the next step.
10*	VERIFY IF MALFUNCTION CAUSE IS OPEN CIRCUIT IN WIRING HARNESS OF SEAT WARMER UNIT CIRCUIT <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the seat warmer control unit connector. • Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> — Driver-side seat warmer unit terminal P—A — Passenger-side seat warmer unit terminal N—B • Is there continuity? 	Yes	Go to the next step.
		No	Replace the seat warmer unit.
11	DETERMINE IF THE MALFUNCTION CAUSE IS SEAT WARMER CONTROL UNIT With full-auto air conditioner <ul style="list-style-type: none"> — Replace the climate control unit. With manual air conditioner <ul style="list-style-type: none"> — Replace the clock. <ul style="list-style-type: none"> • Does the seat warmer system operate? 	Yes	Troubleshooting completed.
		No	Replace the seat warmer control unit.

Inspection Procedure (No.2 Seat Warmer Always Operations)

No.2	Seat warmer always operations
DETECTION	Seat warmer warms seat even though seat warmer switch is off
POSSIBLE CAUSE	Seat warmer switch is always ON <ul style="list-style-type: none"> • Seat warmer switch malfunction Seat warmer control unit falsely detects seat warmer switch is ON <ul style="list-style-type: none"> • Seat warmer control unit malfunction • Short circuit in wiring harness between the following terminal: <ul style="list-style-type: none"> — Seat warmer control unit terminal I—Climate control unit terminal 1C — Seat warmer control unit terminal I—Clock terminal D

Diagnostic procedure

STEP	INSPECTION	ACTION	
1*	DETERMINE IF THE MALFUNCTION CAUSE IS THE SEAT WARMER SWITCH <ul style="list-style-type: none"> • Switch the ignition off (LOCK). With full-auto air conditioner <ul style="list-style-type: none"> — Disconnect the climate control unit connector. With manual air conditioner <ul style="list-style-type: none"> — Disconnect the clock connector. <ul style="list-style-type: none"> • Switch the ignition ON (engine off or on). • Is the seat warmer system operating? 	Yes	Go to the next step.
		No	Replace the climate control unit or clock.
2	DETERMINE IF THE MALFUNCTION CAUSE IS THE SEAT WARMER COTROL UNIT <ul style="list-style-type: none"> • Disconnect the seat warmer control unit connector. • Measure the voltage between seat warmer control unit terminal I and body ground. • Is the voltage 1.0 or more? 	Yes	Repair or replace for a short to ground in the wiring harness.
		No	Replace the seat warmer control unit. (See SEAT WARMER CONTROL UNIT REMOVAL/INSTALLATION.)

Inspection Procedure (No.3 Temperature Of Seat Warmer Cannot Be Adjusted)

No.3	Temperature of seat warmer cannot be adjusted
DETECTION	<ul style="list-style-type: none"> • Seat warmer does not adjust temperature even though seat warmer Lo/Mid/Hi switch is switched between low and high • Seat warmer temperature continues to rise
POSSIBLE CAUSE	<p>Seat warmer switch does not Low/Mid/Hi switched</p> <ul style="list-style-type: none"> • Seat warmer switch malfunction <p>Seat warmer control unit falsely detects always seat warmer switch to Low, Mid or Hi</p> <ul style="list-style-type: none"> • Seat warmer control unit malfunction • Short to ground in wiring harness between the following terminal: <ul style="list-style-type: none"> — Seat warmer control unit terminal I—Climate control unit terminal 1C — Seat warmer control unit terminal I—Clock terminal D <p>Seat warmer control unit cannot control seat warmer unit</p> <ul style="list-style-type: none"> • Seat warmer control unit malfunction • Thermostat (Built-in seat warmer unit) malfunction • Short to ground circuit in wiring harness between the following terminal: <ul style="list-style-type: none"> — Driver-side seat warmer unit—Seat warmer control unit terminal C — Passenger-side seat warmer unit—Seat warmer control unit terminal D

Diagnostic procedure

STEP	INSPECTION	ACTION
1	<p>DETERMINE MALFUNCTIONING SYSTEM</p> <ul style="list-style-type: none"> • Are the seat warmers on both sides not operating? 	<p>Yes: Replace the seat warmer control unit. (See SEAT WARMER CONTROL UNIT REMOVAL/INSTALLATION.)</p> <p>No: Go to the next step.</p>
2*	<p>VERIFY IF MALFUNCTION CAUSE IS OPEN CIRCUIT IN WIRING HARNESS OF SEAT WARMER UNIT CIRCUIT</p> <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the seat warmer control unit connector. • Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> — Driver-side seat warmer unit terminal C—E — Passenger-side seat warmer unit terminal D—F • Is there continuity? 	<p>Yes: Go to the next step.</p> <p>No: Replace the seat warmer unit.</p>
3*	<p>VERIFY IF MALFUNCTION CAUSE IS SHORT CIRCUIT IN WIRING HARNESS OF SEAT WARMER UNIT CIRCUIT</p> <ul style="list-style-type: none"> • Inspect for continuity between the following terminals (wiring harness-side): <ul style="list-style-type: none"> — Driver-side seat warmer unit terminal C—Body ground — Passenger-side seat warmer unit terminal D—Body ground • Is there continuity? 	<p>Yes: Repair or replace for a short to ground in the wiring harness.</p> <p>No: Replace the seat warmer control unit.</p>