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2022 Mazda 3 Service and Repair Manual

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Step	Inspection		Action
7	INSPECT BETWEEN DSC HU/CM AND CONNECTOR C-53 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between DSC HU/CM terminals AF and AC. • Is there continuity? 	Yes	Go to the next step.
		No	Go to Step 9.
8	INSPECT DSC HU/CM FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the DSC HU/CM connector. • Inspect for continuity between DSC HU/CM terminals AF and AC (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between the DSC HU/CM and connector C-53 because the wiring harness is shorted between circuits.
		No	Replace the DSC HU/CM because there is a short between circuits in the DSC HU/CM. (See DSC HU/CM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
9	INSPECT BETWEEN RADAR UNIT AND CONNECTOR C-53 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Inspect for continuity between radar unit terminals D and C. • Is there continuity? 	Yes	Go to the next step.
		No	Go to Step 58.
10	INSPECT RADAR UNIT FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the radar unit connector. • Inspect for continuity between radar unit terminals D and C (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between the radar unit and connector C-53 because the wiring harness is shorted between circuits.
		No	Replace the radar unit because there is a short between circuits in the radar unit. (See RADAR UNIT REMOVAL/INSTALLATION.)
11	INSPECT BETWEEN CONNECTORS C-55,C-54 AND INSTRUMENT CLUSTER FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect connectors C-55,C-54. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals F and E. • Is the voltage at DLC-2 terminals F and E the same? 	Yes	Go to Step 14.
		No	Go to the next step.
12	INSPECT BETWEEN ADAPTIVE FRONT LIGHTING SYSTEM (AFS) CONTROL MODULE / AUTO LEVELING CONTROL MODULE / TURN LIGHT UNIT AND CONNECTORS C-55,C-54 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between adaptive front lighting system (AFS) control module / auto leveling control module terminals A and B (type A). • Inspect for continuity between adaptive front lighting system (AFS) control module / auto leveling control module / turn light unit terminals L and M (type B). • Is there continuity? 	Yes	Go to the next step.
		No	Repair or replace the wiring harness between front body control module (FBCM) and connectors C-55,C-54 because the wiring harness is shorted between circuits.

Step	Inspection		Action
28	INSPECT BETWEEN AUDIO AMPLIFIER AND CONNECTOR C-71 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between audio amplifier terminals 2L and 2N. • Is there continuity? 	Yes	Go to the next step.
		No	Go to Step 30.
29	INSPECT AUDIO AMPLIFIER FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the audio amplifier connector. • Inspect for continuity between audio amplifier terminals 2L and 2N (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between the audio amplifier and connector C-71 because the wiring harness is shorted between circuits.
		No	Replace the audio amplifier because there is a short between circuits in the audio amplifier. (See AUDIO AMPLIFIER REMOVAL/INSTALLATION.)
30	INSPECT BETWEEN ELECTRIC PARKING BRAKE CONTROL MODULE AND CONNECTOR C-71 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Inspect for continuity between electric parking brake control module terminals 2G and 2F. • Is there continuity? 	Yes	Go to the next step.
		No	Go to Step 32.
31	INSPECT ELECTRIC PARKING BRAKE CONTROL MODULE FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the electric parking brake control module connector. • Inspect for continuity between electric parking brake control module terminals 2G and 2F (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between the electric parking brake control module and connector C-71 because the wiring harness is shorted between circuits.
		No	Replace the electric parking brake control module because there is a short between circuits in the electric parking brake control module. (See ELECTRIC PARKING BRAKE CONTROL MODULE REMOVAL/INSTALLATION.)
32	INSPECT BETWEEN AWD CONTROL MODULE AND CONNECTOR C-71 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Inspect for continuity between AWD control module terminals G and H. • Is there continuity? 	Yes	Go to the next step.
		No	<ul style="list-style-type: none"> • Repair or replace the wiring harness between connector C-71 and connector C-87 because the wiring harness is shorted between circuits. (SKYACTIV-D 2.2) • Repair or replace the wiring harness between connector C-71 and connector C-24 because the wiring harness is shorted between circuits. (SKYACTIV-G 2.5T)
33	INSPECT AWD CONTROL MODULE FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the AWD control module connector. • Inspect for continuity between AWD control module terminals G and H (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between the AWD control module and connector C-71 because the wiring harness is shorted between circuits.
		No	Replace the AWD control module because there is a short between circuits in the AWD control module. (See AWD CONTROL MODULE REMOVAL/INSTALLATION.)

Step	Inspection		Action
51	INSPECT BETWEEN SAS CONTORL MODULE AND CONNECTOR C-63 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between SAS control module terminals 3Q and 3S. • Is there continuity? 	Yes	Go to the next step.
		No	Go to Step 53.
52	INSPECT SAS CONTORL MODULE FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the connectivity SAS control module. • Inspect for continuity between SAS control module terminals 3Q and 3S (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between SAS control module and connector C-63 because the wiring harness is shorted between circuits.
		No	Replace the SAS control module because there is a short between circuits in the SAS control module. (See SAS CONTROL MODULE REMOVAL/INSTALLATION [TWO-STEP DEPLOYMENT CONTROL SYSTEM - US/CANADA/ISRAEL SPEC.] .)
53	INSPECT BETWEEN CONNECTIVITY MASTER UNIT (CMU) AND CONNECTOR C-63 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Inspect for continuity between connectivity master unit (CMU) terminals 2E and 2F. • Is there continuity? 	Yes	Go to the next step.
		No	Go to Step 55.
54	INSPECT CONNECTIVITY MASTER UNIT (CMU) FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the connectivity master unit (CMU). • Inspect for continuity between connectivity master unit (CMU) terminals 2E and 2F (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between connectivity master unit (CMU) and connector C-63 because the wiring harness is shorted between circuits.
		No	Replace the connectivity master unit (CMU) because there is a short between circuits in the connectivity master unit (CMU). (See CONNECTIVITY MASTER UNIT (CMU) REMOVAL/INSTALLATION.)
55	INSPECT BETWEEN ACTIVE DRIVING DISPLAY AND CONNECTOR C-63 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the active driving display connector. • Connect connector C-63. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals F and E. • Is the voltage at DLC-2 terminals F and E the same? 	Yes	Repair or replace the wiring harness between active driving display and connector C-63 because the wiring harness is shorted between circuits.
		No	Go to the next step.
56	INSPECT ACTIVE DRIVING DISPLAY FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between active driving display terminals I and K (wiring harness side). • Is there continuity? 	Yes	Replace the active driving display because there is a short between circuits in the active driving display. (See ACTIVE DRIVING DISPLAY REMOVAL/INSTALLATION.)
		No	Go to the next step.

Step	Inspection		Action
4	INSPECT FOR SHORT TO GROUND BETWEEN CONNECTOR C-63 AND PARKING ASSIST UNIT <ul style="list-style-type: none"> Inspect for continuity at the following terminals: <ul style="list-style-type: none"> Between parking assist unit terminal AA and body ground Between parking assist unit terminal AB and body ground Is there continuity? 	Yes	Go to the next step.
		No	Go to Step 6.
5	INSPECT CAN LINE IN PARKING ASSIST UNIT FOR SHORT TO GROUND <ul style="list-style-type: none"> Disconnect the parking assist unit connector. Inspect for continuity at the following terminals: <ul style="list-style-type: none"> Between parking assist unit terminal AA (wiring harness side) and body ground Between parking assist unit terminal AB (wiring harness side) and body ground Is there continuity? 	Yes	Repair or replace the wiring harness between parking assist unit and connector C-63 because the wiring harness is shorted to ground.
		No	Replace the parking assist unit because there is a short to ground inside the parking assist unit. (See PARKING ASSIST UNIT (ULTRASONIC) REMOVAL/INSTALLATION.)
6	INSPECT CAN LINE IN INSTRUMENT CLUSTER FOR SHORT TO GROUND <ul style="list-style-type: none"> Disconnect the instrument cluster connector. Inspect for continuity at the following terminals: <ul style="list-style-type: none"> Between instrument cluster terminal C (wiring harness side) and body ground Between instrument cluster terminal E (wiring harness side) and body ground Is there continuity? 	Yes	Repair or replace the wiring harness between the instrument cluster and connector C-63 because the wiring harness is shorted to ground.
		No	Replace the instrument cluster because there is a short to ground in the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
7	INSPECT FOR SHORT TO GROUND BETWEEN CONNECTORS C-82, C-83 AND REAR BODY CONTROL MODULE (RBCM) <ul style="list-style-type: none"> Disconnect connectors C-82, C-83. Inspect for continuity at the following terminals: <ul style="list-style-type: none"> Between DLC-2 terminal L and body ground Between DLC-2 terminal K and body ground Is there continuity? 	Yes	Go to Step 11.
		No	Go to the next step.

DETERMINING SHORT TO POWER SUPPLY LOCATION (MS-CAN) [TYPE-A (SKYACTIV-G 2.5T, SKYACTIV-D 2.2)]

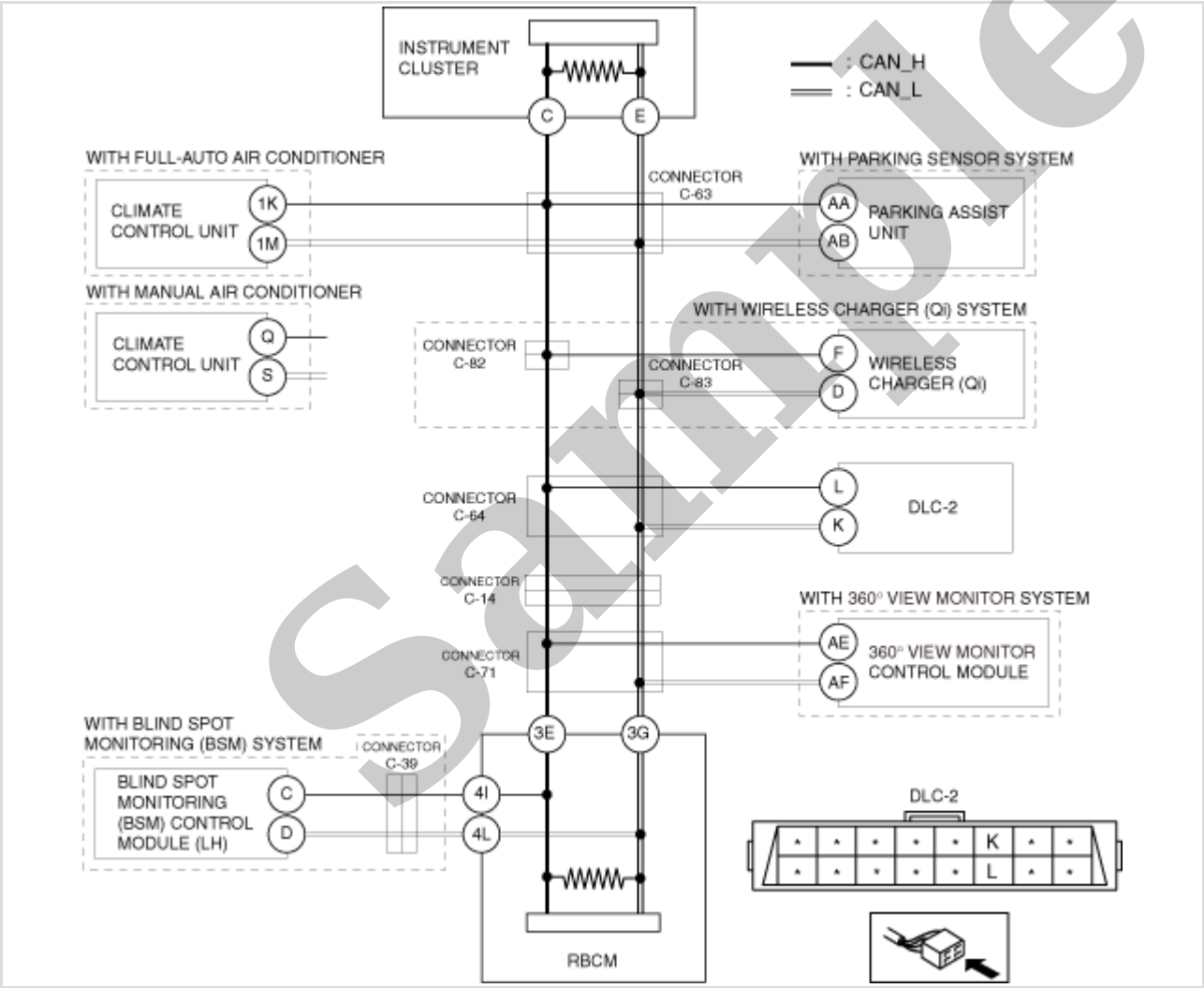
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Caution

- Perform the following malfunction diagnosis only when it is diagnosed with a short to the power supply by CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW. (See **CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5T, SKYACTIV-D 2.2)]**.)

System Wiring Diagram



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Determination Procedure

Caution

- When disconnecting the connector, verify that there is no looseness, damage, deformation, corrosion, or poor connection of the connector terminals.
- When inspecting the DLC-2, touch it with a paper clip or similar thin pin without directly inserting a tester into the terminals.
- Disconnect the negative battery terminal before performing any work that requires handling of connectors.

Step	Inspection		Action
14	INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTOR C-14 AND CONNECTOR C-71 <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Connect connector C-14. • Disconnect the connector C-71. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 – 3.5 V? 	Yes	Go to the next step.
		No	Repair or replace the wiring harness between connector C-14 and connector C-71 because the wiring harness is shorted to the power supply.
15	INSPECT FOR SHORT TO POWER SUPPLY BETWEEN 360° VIEW MONITOR CONTROL MODULE AND CONNECTOR C-71 <ul style="list-style-type: none"> • Measure the voltage at 360° view monitor control module terminals AE and AF. • Is the voltage between 1.5 – 3.5 V? 	Yes	Go to Step 17.
		No	Go to the next step.
16	INSPECT 360° VIEW MONITOR CONTROL MODULE FOR SHORT TO POWER SUPPLY <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect the 360° view monitor control module connector. • Connect connector C-71. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 – 3.5 V? 	Yes	Replace the 360° view monitor control module because there is a short to the power supply in the 360° view monitor control module. (See 360°VIEW MONITOR CONTROL MODULE REMOVAL/INSTALLATION.)
		No	Repair or replace the wiring harness between the 360° view monitor control module and connector C-71 because the wiring harness is shorted to the power supply.
17	INSPECT FOR SHORT TO POWER SUPPLY BETWEEN CONNECTOR C-71 AND REAR BODY CONTROL MODULE (RBCM) <ul style="list-style-type: none"> • Switch the ignition off (LOCK). • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Connect connector C-71. • Disconnect the rear body control module (RBCM) connector. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage between 1.5 – 3.5 V? 	Yes	Go to the next step.
		No	Repair or replace the wiring harness between connector C-71 and rear body control module (RBCM) because the wiring harness is shorted to the power supply.
18	INSPECT FOR SHORT TO POWER SUPPLY BETWEEN BLIND SPOT MONITORING (BSM) CONTROL MODULE (LH) AND REAR BODY CONTROL MODULE (RBCM) <ul style="list-style-type: none"> • Measure the voltage at rear body control module (RBCM) terminals 4I and 4L (wiring harness side). • Is the voltage between 1.5 – 3.5 V? 	Yes	Replace the rear body control module (RBCM) because there is a short to the power supply in the rear body control module (RBCM). (See REAR BODY CONTROL MODULE (RBCM) REMOVAL/INSTALLATION.)
		No	Go to the next step.

Step	Inspection		Action
6	INSPECT INSTRUMENT CLUSTER FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the instrument cluster connector. • Inspect for continuity between instrument cluster terminals C and E (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between the instrument cluster and connector C-63 because the wiring harness is shorted between circuits.
		No	Replace the instrument cluster because there is a short between circuits in the instrument cluster. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
7	INSPECT BETWEEN CONNECTORS C-82, C-83 AND REAR BODY CONTROL MODULE (RBCM) FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect connectors C-82, C-83. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage at DLC-2 terminals L and K the same? 	Yes	Go to Step 11.
		No	Go to the next step.
8	INSPECT BETWEEN CONNECTORS C-82, C-83 AND WIRELESS CHARGER (Qi) FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Inspect for continuity between wireless charger (Qi) terminals F and D. • Is there continuity? 	Yes	Go to the next step.
		No	Repair or replace the wiring harness between connector C-63 and connectors C-82, C-83 because the wiring harness is shorted between circuits.
9	INSPECT WIRELESS CHARGER (Qi) FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect the wireless charger (Qi) connector. • Inspect for continuity between wireless charger (Qi) terminals F and D (wiring harness side). • Is there continuity? 	Yes	Repair or replace the wiring harness between the wireless charger (Qi) and connectors C-82, C-83 because the wiring harness is shorted between circuits.
		No	Replace the wireless charger (Qi) because there is a short between circuits inside the wireless charger (Qi). (See WIRELESS CHARGER (Qi) REMOVAL/INSTALLATION.)
10	INSPECT BETWEEN CONNECTORS C-82, C-83 AND CONNECTOR C-64 FOR SHORT BETWEEN CIRCUITS <ul style="list-style-type: none"> • Disconnect connector C-64. • Connect connectors C-82, C-83. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Switch the ignition ON (engine off). • Measure the voltage at DLC-2 terminals L and K. • Is the voltage at DLC-2 terminals L and K the same? 	Yes	Repair or replace the wiring harness between connectors C-82, C-83 and connector C-64 because the wiring harness is shorted between circuits.
		No	Go to Step 12.

Sample

Troubleshooting item		Possible factor									
		Drive-by-wire control system improper operation	Drive-by-wire control system operates with brake override system	Throttle body malfunction	Purge solenoid valve malfunction	Vacuum leakage (vacuum hose damage, misrouting)	Ignition coil malfunction (e.g. open, short or cracks)	Initial ignition timing misadjustment (CKP and pulse wheel misadjustment)	Spark plug malfunction	Fuel pump (low-pressure side) malfunction (mechanically or electrically)	Pressure regulator (built-into fuel pump unit at fuel tank) malfunction
1	I-stop warning light (amber) illuminates										
2	I-stop warning light (amber) flashes	X									
3	I-stop indicator light (green) flashes										
4	I-stop function does not operate										
5	I-stop function operates under no engine-stop conditions										
6	Engine does not restart										
7	Limited i-stop function operation time										
8	Ineffective operation of A/C during engine stop (i-stop system)										
9	Acceleration malfunction (ATX)										
10	Vehicle moves when accelerating from standstill on slope (ATX)										

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X: Applied

Troubleshooting item		Possible factor									
		Constant voltage supply circuit malfunction	Main relay malfunction (mechanically or electrically)	No battery power supply to PCM	Poor PCM ground or vehicle ground (open)	Electrical connector disconnection	Oil pressure switch or related circuit malfunction	ECT sensor or related circuit malfunction	Transaxle range sensor malfunction	Brake switch or related circuit malfunction	A/F sensor or HO2S or related circuit malfunction
1	I-stop warning light (amber) illuminates										
2	I-stop warning light (amber) flashes										
3	I-stop indicator light (green) flashes										
4	I-stop function does not operate							X			X
5	I-stop function operates under no engine-stop conditions										
6	Engine does not restart								X		
7	Limited i-stop function operation time								X		
8	Ineffective operation of A/C during engine stop (i-stop system)										
9	Acceleration malfunction (ATX)										
10	Vehicle moves when accelerating from standstill on slope (ATX)										

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