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2020 Mazda CX-30 Service and Repair Manual

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Step	Inspection		Action
64	INSPECT PCM FOR SHORT TO POWER SUPPLY • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect the PCM connector. • Connect connector C-53. • 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 between 1.5 – 3.5 V?	Yes	Replace the PCM because there is a short to the power supply in the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITH CYLINDER DEACTIVATION)].) (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5 (WITHOUT CYLINDER DEACTIVATION)].) (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].) (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No	Repair or replace the wiring harness between the PCM and connector C-53 because the wiring harness is shorted to the power supply.

Step	Inspection		Action
6	**INSPECT BETWEEN FRONT BODY CONTROL MODULE (FBCM) AND CONNECTOR C-53 FOR SHORT BETWEEN CIRCUITS** • Disconnect connector C-53. • Connect connector 2 which has front body control module (FBCM) terminals 2K and 2I. • 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 the front body control module (FBCM) and connector C-53 because the wiring harness is shorted between circuits.
		No	Go to Step 12.
7	**INSPECT BETWEEN FRONT BODY CONTROL MODULE (FBCM) AND CONNECTOR C-01 FOR SHORT BETWEEN CIRCUITS** • Disconnect connector C-01. • Connect connector 2 which has front body control module (FBCM) terminals 2K and 2I. • 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 the front body control module (FBCM) and connector C-01 because the wiring harness is shorted between circuits.
		No	Go to the next step.
8	**INSPECT BETWEEN TCM AND CONNECTOR C-01 FOR SHORT BETWEEN CIRCUITS** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between TCM terminals E and F. • Is there continuity?	Yes	Go to the next step.
		No	Go to Step 11.
9	**INSPECT TCM FOR SHORT BETWEEN CIRCUITS** • Disconnect the TCM connector. • Inspect for continuity between TCM terminals E and F (wiring harness side). • Is there continuity?	Yes	With i-stop : Go to the next step. Without i-stop : Repair or replace the wiring harness between the TCM and connector C-01 because the wiring harness is shorted between circuits.
		No	Replace the TCM because there is a short between circuits in the TCM. (See CONTROL VALVE BODY REMOVAL/INSTALLATION [FW6A-EL, FW6AX-EL].) (See CONTROL VALVE BODY REMOVAL/INSTALLATION [GW6A-EL, GW6AX-EL].)
10	**INSPECT BETWEEN TCM AND CONNECTOR C-89 FOR SHORT BETWEEN CIRCUITS** • Disconnect connector C-89. • Inspect for continuity between TCM terminals E and F (wiring harness side). • Is there continuity?	Yes	Repair or replace the wiring harness between the TCM and connector C-89 because the wiring harness is shorted between circuits.
		No	Repair or replace the wiring harness between connector C-89 and connector C-01 because the wiring harness is shorted between circuits.

Step	Inspection		Action
23	**INSPECT BETWEEN POWER LIFTGATE (PLG) CONTROL MODULE AND CONNECTOR C-74 FOR SHORT BETWEEN CIRCUITS** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between power liftgate (PLG) control module terminals 1B and 1A. • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness between connector C-24 and connector C-74 because the wiring harness is shorted between circuits.
24	**INSPECT POWER LIFTGATE (PLG) CONTROL MODULE FOR SHORT BETWEEN CIRCUITS** • Disconnect the power liftgate (PLG) control module connector. • Inspect for continuity between power liftgate (PLG) control module terminals 1B and 1A (wiring harness side). • Is there continuity?	Yes	Repair or replace the wiring harness between the power liftgate (PLG) control module and connector C-19 because the wiring harness is shorted between circuits.
		No	Replace the power liftgate (PLG) control module because there is a short between circuits in the power liftgate (PLG) control module. (See POWER LIFTGATE (PLG) CONTROL MODULE REMOVAL/INSTALLATION.)
25	**INSPECT BETWEEN CONNECTOR C-87 AND INSTRUMENT CLUSTER FOR SHORT BETWEEN CIRCUITS** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect connector C-87. • 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 35.
		No	Go to the next step.
26	**INSPECT BETWEEN DOSING CONTROL UNIT AND CONNECTOR C-87 FOR SHORT BETWEEN CIRCUITS** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between dosing control unit terminals BK and BL. • Is there continuity?	Yes	Go to the next step.
		No	Go to Step 28.
27	**INSPECT DOSING CONTROL UNIT FOR SHORT BETWEEN CIRCUITS** • Disconnect the dosing control unit connector. • Inspect for continuity between dosing control unit terminals BK and BL (wiring harness side). • Is there continuity?	Yes	Repair or replace the wiring harness between the dosing control unit and connector C-87 because the wiring harness is shorted between circuits.
		No	Replace the dosing control unit because there is a short between circuits in the dosing control unit. (See DOSING CONTROL UNIT REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
28	**INSPECT BETWEEN NOx SENSOR No.1 / NOx SENSOR No.2 / PM SENSOR AND CONNECTOR C-87 FOR SHORT BETWEEN CIRCUITS** • Inspect for continuity between NOx sensor No.1 / NOx sensor No.2 / PM sensor terminals B and C. • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness between connector C-87 and connector C-24 because the wiring harness is shorted between circuits.

Step	Inspection		Action
47	**INSPECT BETWEEN CONNECTOR C-19 AND INSTRUMENT CLUSTER FOR SHORT BETWEEN CIRCUITS** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect connector C-19. • 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 50.
		No	Go to the next step.
48	**INSPECT BETWEEN FORWARD SENSING CAMERA (FSC) AND CONNECTOR C-19 FOR SHORT BETWEEN CIRCUITS** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between forward sensing camera (FSC) terminals M and N. • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness between connector C-19 and connector C-16 because the wiring harness is shorted between circuits.
49	**INSPECT FORWARD SENSING CAMERA (FSC) FOR SHORT BETWEEN CIRCUITS** • Disconnect the forward sensing camera (FSC) connector. • Inspect for continuity between forward sensing camera (FSC) terminals M and N (wiring harness side). • Is there continuity?	Yes	Repair or replace the wiring harness between the forward sensing camera (FSC) and connector C-19 because the wiring harness is shorted between circuits.
		No	Replace the forward sensing camera (FSC) because there is a short between circuits in the forward sensing camera (FSC). (See FORWARD SENSING CAMERA (FSC) REMOVAL/INSTALLATION.)
50	**INSPECT BETWEEN CONNECTOR C-64 AND INSTRUMENT CLUSTER FOR SHORT BETWEEN CIRCUITS** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect connector C-64. • 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 55.
		No	Go to the next step.
51	**INSPECT BETWEEN EPS CONTROL MODULE AND CONNECTOR C-64 FOR SHORT BETWEEN CIRCUITS** • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Inspect for continuity between EPS control module terminals 2B and 2D. • Is there continuity?	Yes	Go to the next step.
		No	Go to Step 53.

M-MDS display / DTC output module	DTC	DTC output pattern and malfunctioning location						
Blind spot monitoring (BSM) control module (LH)	U0155:00	×						
Rear body control module (RBCM)	U0155:00	×						
Gateway unit (GWU)	U0151:00							
	U0336:82							
	U2132:00							
M-MDS display module		Module displayed in red or blue						
Instrument cluster		×						×
Climate control unit			×					×
Parking assist unit				×				×
Blind spot monitoring (BSM) control module (LH)					×	×		×
Rear body control module (RBCM)					×		×	×
Gateway unit (GWU)								×
Diagnostic result								
Possible cause and inspection item		A	B	C	D	E	F	G

A

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Instrument cluster power supply voltage or body ground malfunction
- Open circuit in wiring harness between instrument cluster and connector C-63
- Connector C-63 malfunction
- Instrument cluster malfunction

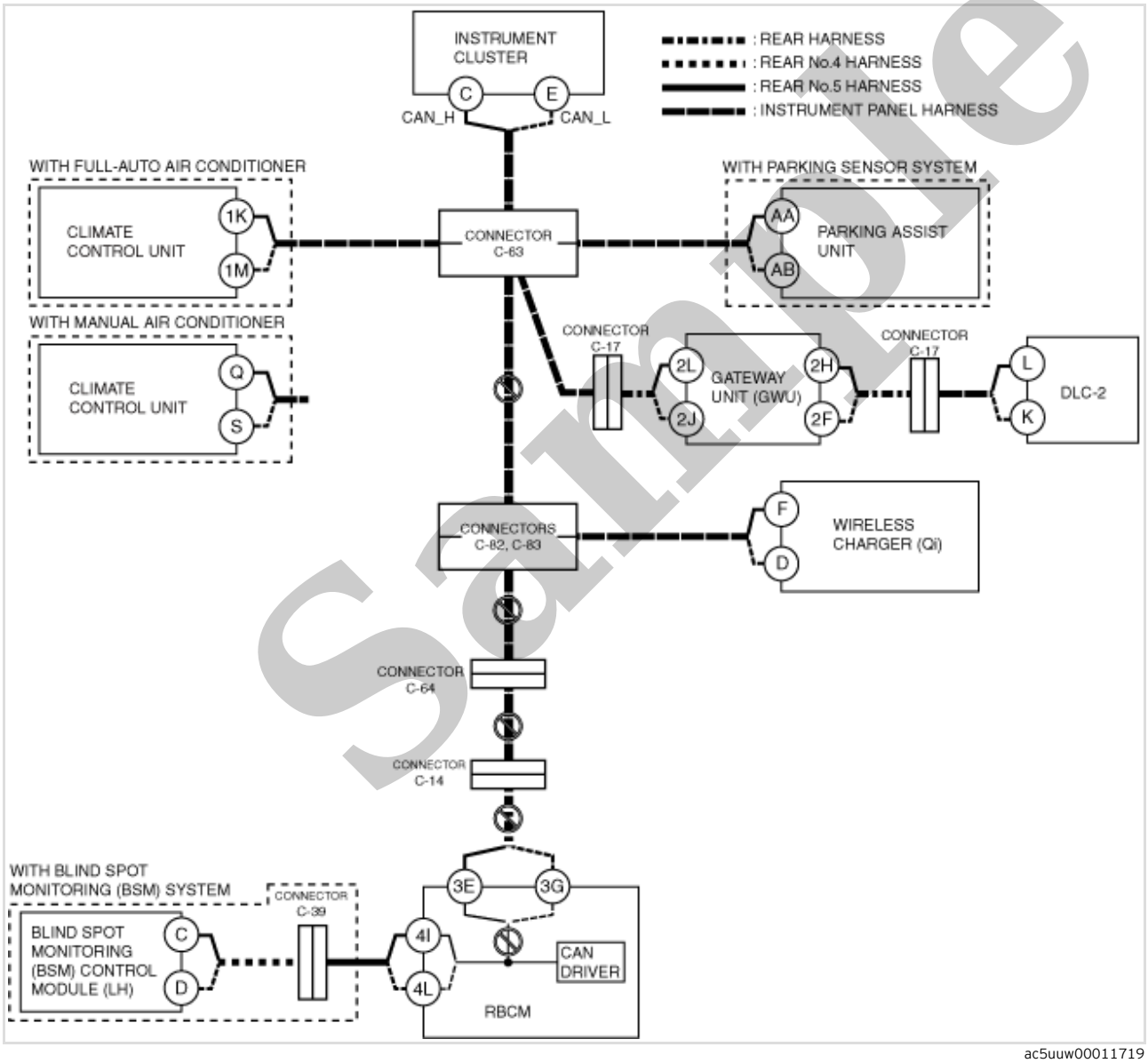
System wiring diagram

With wireless charger (Qi)

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Connector C-63 malfunction
- Connectors C-82, C-83 malfunction
- Connector C-64 malfunction
- Connector C-14 malfunction
- Open circuit in wiring harness between connector C-63 and connectors C-82, C-83
- Open circuit in wiring harness between connectors C-82, C-83 and connector C-64
- Open circuit in wiring harness between connector C-64 and connector C-14
- Open circuit in wiring harness between connector C-14 and rear body control module (RBCM)
- CAN circuit in rear body control module (RBCM) malfunction

System wiring diagram



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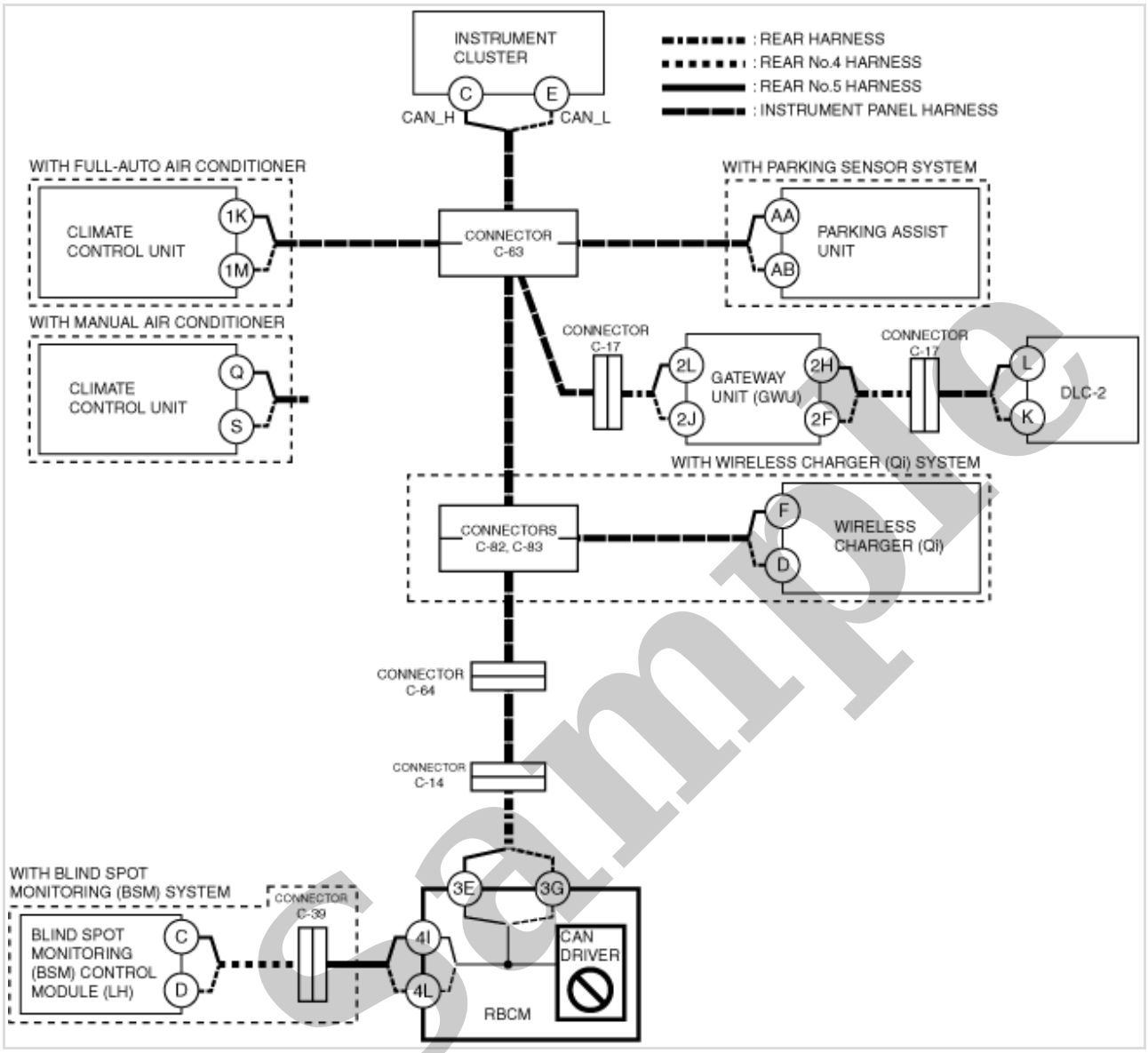
Inspection item

- Rear body control module (RBCM) connector
- Connector C-63
- Connectors C-82, C-83
- Connector C-64
- Connector C-14

- Connector terminal disconnection, poor contact, damage, deformation, corrosion
- Rear body control module (RBCM) power supply voltage or body ground malfunction
- Rear body control module (RBCM) malfunction

System wiring diagram



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Inspection item

- Rear body control module (RBCM) power supply voltage-related wiring harness and fuse
- Rear body control module (RBCM) body ground related wiring harness
- Rear body control module (RBCM)

G

Possible cause

- Connector terminal disconnection, poor contact, damage, deformation, corrosion

Step	Inspection		Action
1	**INSPECT FOR SHORT TO GROUND BETWEEN CONNECTOR C-63 AND REAR BODY CONTROL MODULE (RBCM)** • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect connector C-63. • Inspect for continuity at the following terminals: — Between rear body control module (RBCM) terminal 3E and body ground — Between rear body control module (RBCM) terminal 3G and body ground • Is there continuity?	Yes	Go to Step 11.
		No	Go to the next step.
2	**INSPECT FOR SHORT TO GROUND BETWEEN CONNECTOR C-63 AND CLIMATE CONTROL UNIT** • Inspect for continuity at the following terminals: — Between climate control unit terminal 1K and body ground (with full-auto air conditioner) — Between climate control unit terminal 1M and body ground (with full-auto air conditioner) — Between climate control unit terminal Q and body ground (with manual air conditioner) — Between climate control unit terminal S and body ground (with manual air conditioner) • Is there continuity?	Yes	Go to the next step.
		No	Go to Step 4.
3	**INSPECT CAN LINE IN CLIMATE CONTROL UNIT FOR SHORT TO GROUND** • Disconnect the climate control unit connector. • Inspect for continuity at the following terminals: — Between climate control unit terminal 1K (wiring harness side) and body ground (with full-auto air conditioner) — Between climate control unit terminal 1M (wiring harness side) and body ground (with full-auto air conditioner) — Between climate control unit terminal Q (wiring harness side) and body ground (with manual air conditioner) — Between climate control unit terminal S (wiring harness side) and body ground (with manual air conditioner) • Is there continuity?	Yes	Repair or replace the wiring harness between the climate control unit and connector C-63 because the wiring harness is shorted to ground.
		No	Replace the climate control unit because there is a short to ground in the climate control unit. (See CLIMATE CONTROL UNIT REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) (See CLIMATE CONTROL UNIT REMOVAL/INSTALLATION [MANUAL AIR CONDITIONER].)

Step	Inspection		Action
17	**INSPECT FOR SHORT TO GROUND BETWEEN CONNECTOR C-14 AND REAR BODY CONTROL MODULE (RBCM)** • Disconnect the rear body control module (RBCM) connector. • Connect connector C-14. • Inspect for continuity at the following terminals: — Between DLC-2 terminal L and body ground — Between DLC-2 terminal K and body ground • Is there continuity?	Yes	Repair or replace the wiring harness between connector C-14 and rear body control module (RBCM) because the wiring harness is shorted to ground.
		No	Go to the next step.
18	**INSPECT FOR SHORT TO GROUND BETWEEN BLIND SPOT MONITORING (BSM) CONTROL MODULE (LH) AND REAR BODY CONTROL MODULE (RBCM)** • Inspect for continuity at the following terminals: — Between rear body control module (RBCM) terminal 4I (wiring harness side) and body ground — Between rear body control module (RBCM) terminal 4L (wiring harness side) and body ground • Is there continuity?	Yes	Go to the next step.
		No	Replace the rear body control module (RBCM) because there is a short to ground in the rear body control module (RBCM). (See REAR BODY CONTROL MODULE (RBCM) REMOVAL/INSTALLATION.)
19	**INSPECT FOR SHORT TO GROUND BETWEEN BLIND SPOT MONITORING (BSM) CONTROL MODULE (LH) AND CONNECTOR C-39** • Disconnect connector C-39. • Inspect for continuity at the following terminals: — Between blind spot monitoring (BSM) control module (LH) terminal C and body ground — Between blind spot monitoring (BSM) control module (LH) terminal D and body ground • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness between the rear body control module (RBCM) and connector C-39 because the wiring harness is shorted to ground.
20	**INSPECT CAN LINE IN BLIND SPOT MONITORING (BSM) CONTROL MODULE (LH) FOR SHORT TO GROUND** • Disconnect the blind spot monitoring (BSM) control module (LH) connector. • Inspect for continuity at the following terminals: — Between blind spot monitoring (BSM) control module (LH) terminal C (wiring harness side) and body ground — Between blind spot monitoring (BSM) control module (LH) terminal D (wiring harness side) and body ground • Is there continuity?	Yes	Repair or replace the wiring harness between the blind spot monitoring (BSM) control module (LH) and connector C-39 because the wiring harness is shorted to ground.
		No	Replace the blind spot monitoring (BSM) control module (LH) because there is a short to ground in the blind spot monitoring (BSM) control module (LH). (See BLIND SPOT MONITORING (BSM) CONTROL MODULE REMOVAL/INSTALLATION.)