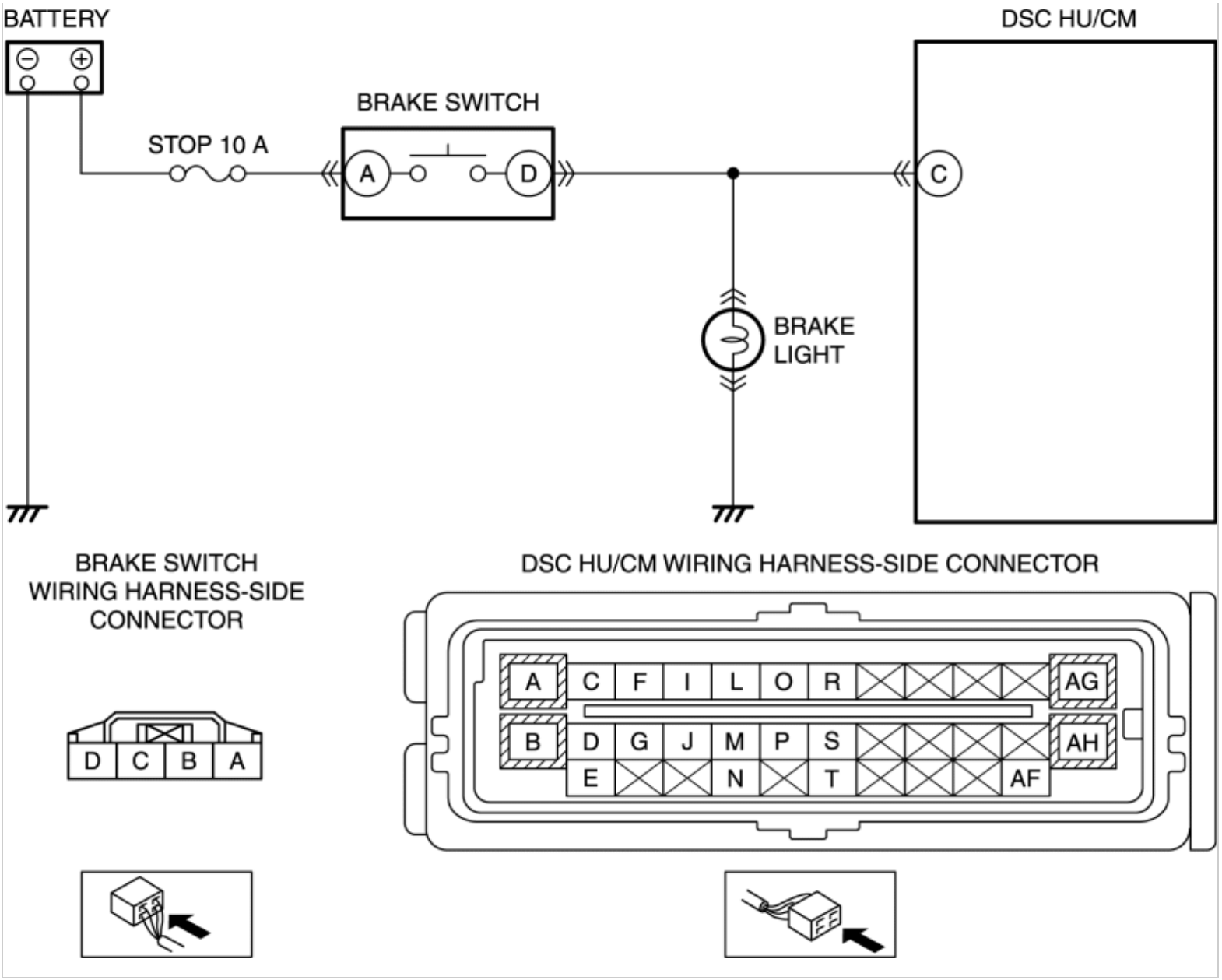
2012 - Mazda6 - Brakes

DTC C0040:13/ C0040:64 [DYNAMIC STABILITY CONTROL (DSC)]

C0040:13 **C0040:64**	Brake switch
DETECTION CONDITION	**C0040:13** • Detect the open circuit in brake switch circuit for **0.3 s**. **C0040:64** • Detect brake switch ON signal for **15 min** or more when driving at vehicle speed of **15 km/h {9.3 mph} or more**.
POSSIBLE CAUSE	• STOP 10 A fuse malfunction • Connector or terminal malfunction • Short to ground or open circuit in wiring harness between brake switch terminal A and battery positive terminal • Open circuit in wiring harness between brake switch terminal D and DSC HU/CM terminal C • Short to power supply in wiring harness between brake switch terminal D and DSC HU/CM terminal C • Brake switch malfunction • DSC HU/CM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**VERIFY PID FOR BRAKE SWITCH MALFUNCTION** • Connect the M-MDS to the DLC-2. • Access the BRAKE_SW PID using the M-MDS. (See **ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)]**.) • Is the brake switch operation normal?	Yes	Go to Step 11.
		No	The PID value is continuously On whether the brake pedal is depressed or not. • Go to Step 8. The PID value is continuously Off whether the brake pedal is depressed or not. • Go to the next step.
2	**INSPECT FUSE**	Yes	Replace the fuse, then go to Step 11.

	• Switch the ignition to off. • Disconnect the negative battery cable. • Remove the STOP 10 A fuse. • Inspect the fuse. • Is there any malfunction?	No	Install the fuse, then go to the next step.
3	**INSPECT BRAKE SWITCH POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Reconnect the negative battery cable. • Measure the voltage between brake switch terminal A (wiring harness-side) and body ground. • Is the voltage **B+** ?	Yes	Go to Step 5.
		No	Go to the next step.
4	**INSPECT BRAKE SWITCH CONNECTOR CONDITION** • Disconnect the negative battery cable. • Disconnect the brake switch connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Is there any malfunction?	Yes	Repair or replace the connector or terminals. Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Repair or replace the wiring harness for a possible short to ground or open circuit. Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
5	**INSPECT DSC HU/ CM CONNECTOR CONDITION** • Disconnect the negative battery cable. • Disconnect the DSC HU/CM connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Is there any malfunction?	Yes	Repair or replace the connector or terminals, then go to Step 11.
		No	Go to the next step.
6	**INSPECT BRAKE SWITCH SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Inspect for continuity between brake switch terminal D (wiring harness-side) and DSC HU/CM terminal C (wiring harness-side). • Is there continuity?	Yes	Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Go to the next step.
7	**INSPECT BRAKE SWITCH CONNECTOR CONDITION** • Disconnect the brake switch connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection).	Yes	Repair or replace the connector or terminals. Replace the brake switch, then go to Step 11.

	• Is there any malfunction?		(See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Repair or replace the wiring harness for a possible short to ground or open circuit. Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
8	**INSPECT DSC HU/ CM CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the negative battery cable. • Disconnect the DSC HU/CM connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Is there any malfunction?	Yes	Repair or replace the connector or terminals, then go to Step 11.
		No	Go to the next step.
9	**INSPECT BRAKE SWITCH CONNECTOR CONDITION** • Disconnect the brake switch connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Is there any malfunction?	Yes	Repair or replace the connector or terminals. Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Go to the next step.
10	**INSPECT BRAKE SWITCH SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Reconnect the negative battery cable. • Measure the voltage between DSC HU/CM terminal C (wiring harness-side) and body ground. • Is the voltage **B+** ?	Yes	Repair or replace the wiring harness for a possible short to power supply. Replace the brake switch, then go to the next step. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Replace the brake switch, then go to the next step. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
11	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect the disconnected connectors. • Reconnect the negative battery cable. • Clear the DTC from the DSC HU/CM memory using the M-MDS.	Yes	Repeat the inspection from Step 1. If the malfunction recurs, replace the DSC HU/CM, then go to the next step. (See **DSC HU/ CM REMOVAL/ INSTALLATION**.)

	(See **ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)]**.) • Drive the vehicle at speed of **15 km/h {9.3 mph} or more**. • Gradually slow down and stop the vehicle. • Perform the DSC DTC inspection. (See **ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)]**.) • Is the same DTC present?	No	Go to the next step.
12	**VERIFY AFTER REPAIR PROCEDURE** • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)]**.)
		No	DTC troubleshooting completed.

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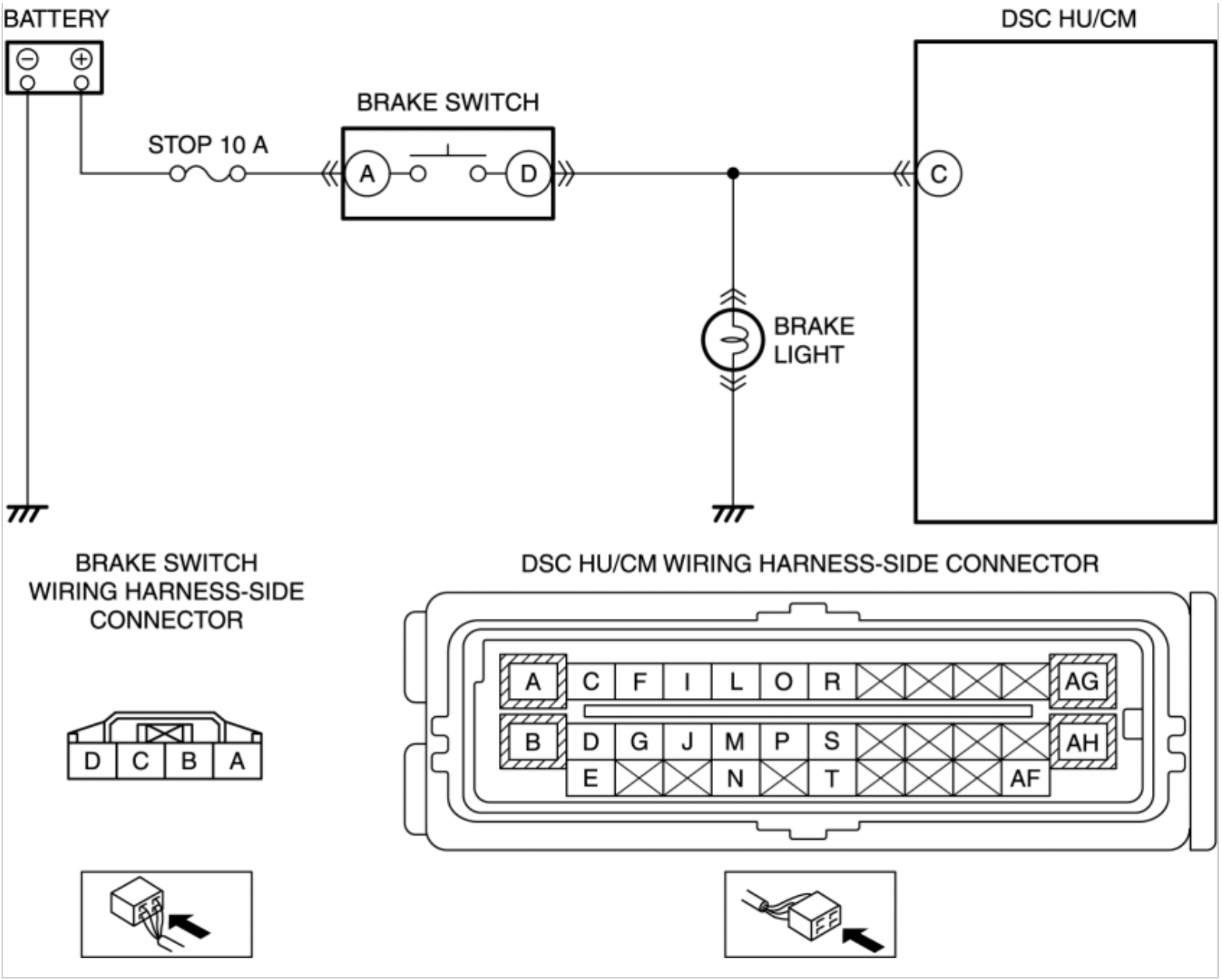
POSSIBLE CAUSE	• STOP 10 A fuse malfunction • Connector or terminal malfunction • Short to ground or open circuit in wiring harness between brake switch terminal A and battery positive terminal • Open circuit in wiring harness between brake switch terminal D and DSC HU/CM terminal C • Short to power supply in wiring harness between brake switch terminal D and DSC HU/CM terminal C • Brake switch malfunction • DSC HU/CM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
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		No	The PID value is continuously On whether the brake pedal is depressed or not. • Go to Step 8. The PID value is continuously Off whether the brake pedal is depressed or not. • Go to the next step.
2	**INSPECT FUSE**	Yes	Replace the fuse, then go to Step 11.

	• Switch the ignition to off. • Disconnect the negative battery cable. • Remove the STOP 10 A fuse. • Inspect the fuse. • Is there any malfunction?	No	Install the fuse, then go to the next step.
3	**INSPECT BRAKE SWITCH POWER SUPPLY CIRCUIT FOR SHORT TO GROUND OR OPEN CIRCUIT** • Reconnect the negative battery cable. • Measure the voltage between brake switch terminal A (wiring harness-side) and body ground. • Is the voltage **B+** ?	Yes	Go to Step 5.
		No	Go to the next step.
4	**INSPECT BRAKE SWITCH CONNECTOR CONDITION** • Disconnect the negative battery cable. • Disconnect the brake switch connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Is there any malfunction?	Yes	Repair or replace the connector or terminals. Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Repair or replace the wiring harness for a possible short to ground or open circuit. Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
5	**INSPECT DSC HU/ CM CONNECTOR CONDITION** • Disconnect the negative battery cable. • Disconnect the DSC HU/CM connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Is there any malfunction?	Yes	Repair or replace the connector or terminals, then go to Step 11.
		No	Go to the next step.
6	**INSPECT BRAKE SWITCH SIGNAL CIRCUIT FOR OPEN CIRCUIT** • Inspect for continuity between brake switch terminal D (wiring harness-side) and DSC HU/CM terminal C (wiring harness-side). • Is there continuity?	Yes	Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Go to the next step.
7	**INSPECT BRAKE SWITCH CONNECTOR CONDITION** • Disconnect the brake switch connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection).	Yes	Repair or replace the connector or terminals. Replace the brake switch, then go to Step 11.

	• Is there any malfunction?		(See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Repair or replace the wiring harness for a possible short to ground or open circuit. Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
8	**INSPECT DSC HU/ CM CONNECTOR CONDITION** • Switch the ignition to off. • Disconnect the negative battery cable. • Disconnect the DSC HU/CM connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Is there any malfunction?	Yes	Repair or replace the connector or terminals, then go to Step 11.
		No	Go to the next step.
9	**INSPECT BRAKE SWITCH CONNECTOR CONDITION** • Disconnect the brake switch connector. • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Is there any malfunction?	Yes	Repair or replace the connector or terminals. Replace the brake switch, then go to Step 11. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Go to the next step.
10	**INSPECT BRAKE SWITCH SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Reconnect the negative battery cable. • Measure the voltage between DSC HU/CM terminal C (wiring harness-side) and body ground. • Is the voltage **B+** ?	Yes	Repair or replace the wiring harness for a possible short to power supply. Replace the brake switch, then go to the next step. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
		No	Replace the brake switch, then go to the next step. (See **BRAKE PEDAL REMOVAL/ INSTALLATION**.)
11	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Make sure to reconnect the disconnected connectors. • Reconnect the negative battery cable. • Clear the DTC from the DSC HU/CM memory using the M-MDS.	Yes	Repeat the inspection from Step 1. If the malfunction recurs, replace the DSC HU/CM, then go to the next step. (See **DSC HU/ CM REMOVAL/ INSTALLATION**.)

	(See **ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)]**.) • Drive the vehicle at speed of **15 km/h {9.3 mph} or more**. • Gradually slow down and stop the vehicle. • Perform the DSC DTC inspection. (See **ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)]**.) • Is the same DTC present?	No	Go to the next step.
12	**VERIFY AFTER REPAIR PROCEDURE** • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See **ON-BOARD DIAGNOSIS [DYNAMIC STABILITY CONTROL (DSC)]**.)
		No	DTC troubleshooting completed.

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