7. Diagnostics Chart for Power Line

A: BASIC DIAGNOSTICS PROCEDURE

7A1 : DRIVE AT CRUISE SPEED.

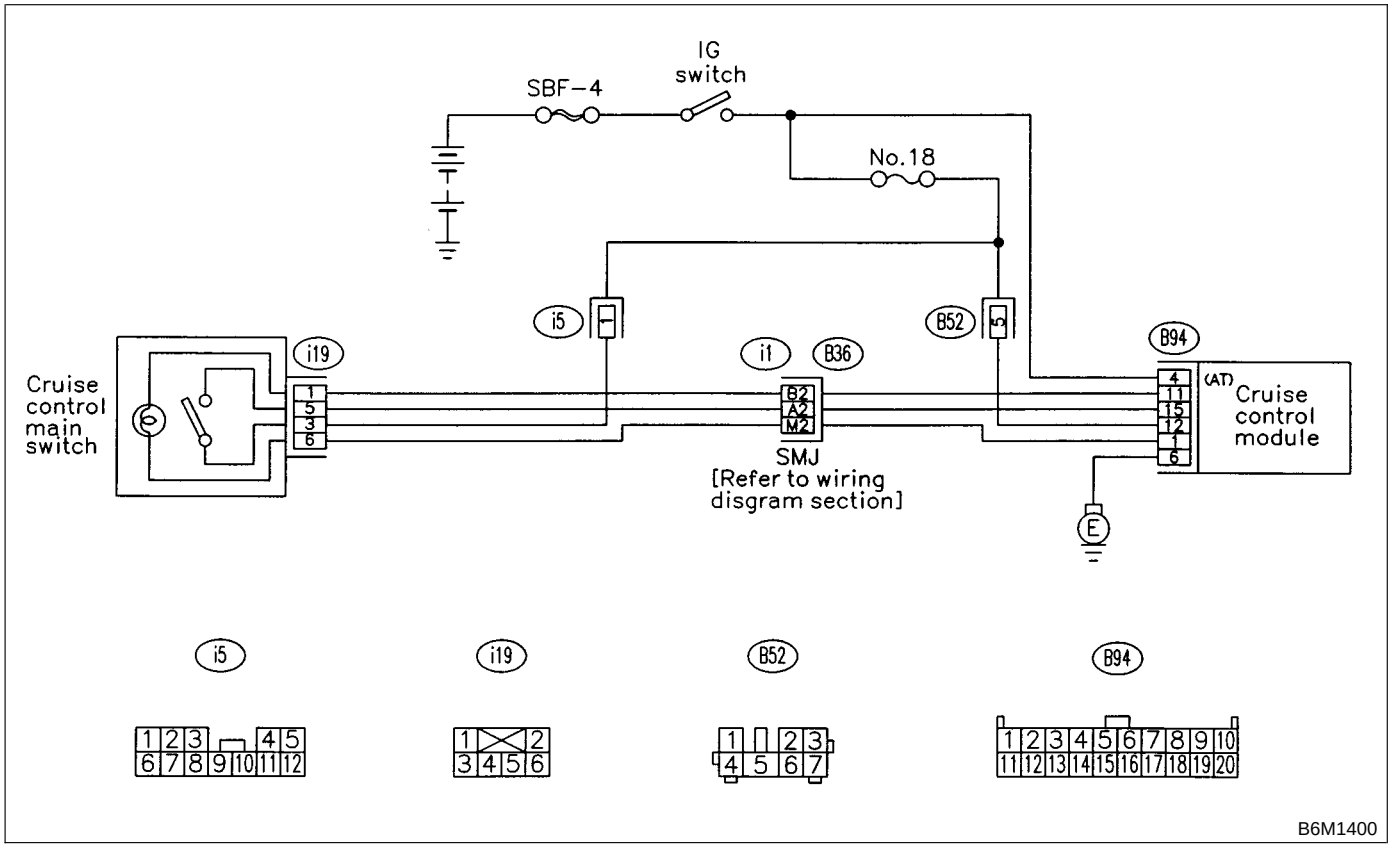
CHECK : ***Can cruise speed be set?***

YES : Go to “CHECK INDICATOR AND CIRCUIT IN CRUISE CONTROL MAIN SWITCH”. <Ref. to 6-2a [T7B0].>

NO : Go to “CHECK CRUISE CONTROL MAIN SWITCH”. <Ref. to 6-2a [T7C0].>

B: CHECK INDICATOR AND CIRCUIT IN CRUISE CONTROL MAIN SWITCH

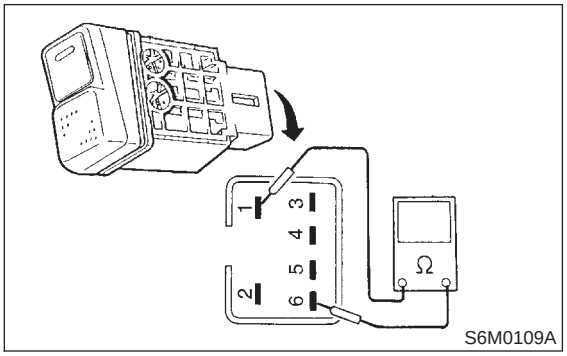
DIAGNOSIS:
Bulb failure or open harness of the indicator circuit in the cruise control main switch.
WIRING DIAGRAM:



7B1 : CHECK CRUISE CONTROL MAIN SWITCH.

1) Remove cruise control main switch.
2) Measure resistance between cruise control main switch terminals.

Terminals
No. 1 — No. 6:

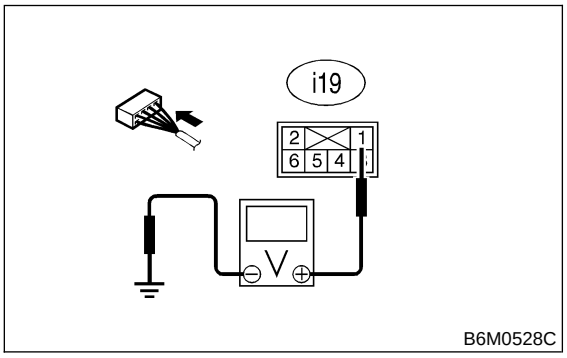


CHECK : ***Is resistance between 10 and 80 Ω?***
YES : Go to step **7B2**.
NO : Replace switch illumination bulb. <Ref. to 6-2 [W12A2].>

7B2 : CHECK CIRCUIT BETWEEN CRUISE CONTROL MODULE AND CRUISE CONTROL MAIN SWITCH INDICATOR LIGHT.

1) Turn the ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Measure voltage between cruise control main switch connector and the chassis ground.

Connector & terminal
(i19) No. 1 (+) — Chassis ground (−):

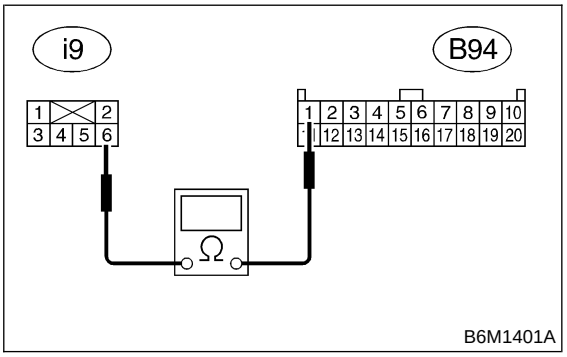


CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7B3**.
NO : Repair or replace wiring harness.

7B3 : CHECK CIRCUIT BETWEEN CRUISE CONTROL MODULE AND CRUISE CONTROL MAIN SWITCH INDICATOR LIGHT.

1) Turn the ignition switch and cruise control main switch to OFF.
2) Remove the connector from the cruise control main switch.
3) Measure resistance of ground circuit between the cruise control main switch connector and cruise control module connector.

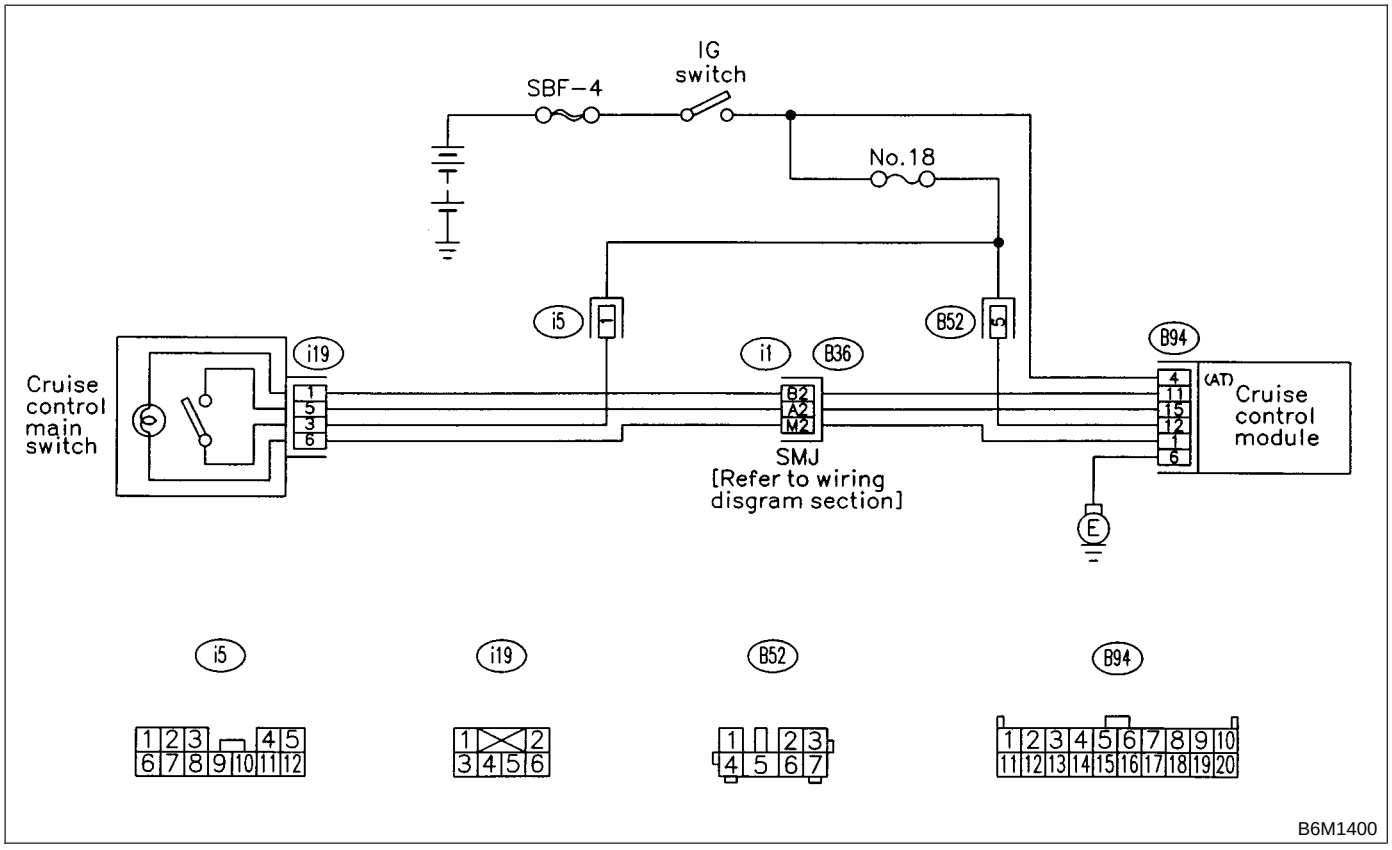
Connector & terminal
(i19) No. 6 — (B94) No. 1:



CHECK : ***Is resistance less than 10 Ω?***
YES : Replace cruise control module. <Ref. to 6-2 [W12A4].>
NO : Repair or replace wiring harness.

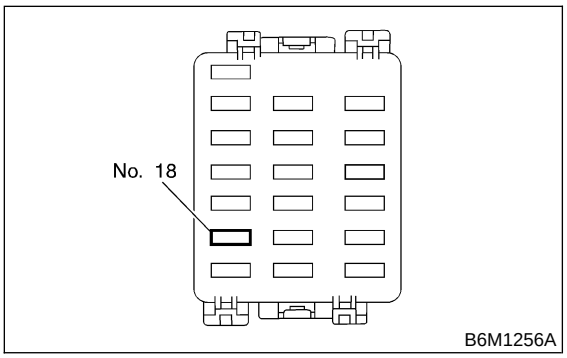
C: CHECK CRUISE CONTROL MAIN SWITCH

DIAGNOSIS:
Faulty cruise control main switch, or open harness.
WIRING DIAGRAM:



7C1 : CHECK FUSE.

Check fuse No. 18.

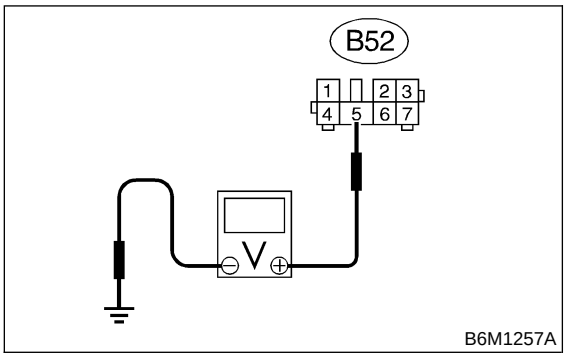


CHECK : ***Is fuse No. 18 blown?***
YES : Replace fuse No. 18. Go to step **7C2**.
NO : Go to step **7C2**.

7C2 : CHECK POWER SUPPLY.

1) Turn ignition switch to ON.
2) Measure voltage between fuse & relay box connector and chassis ground.

Connector & terminal
(B52) No. 5 (+) — Chassis ground (−):

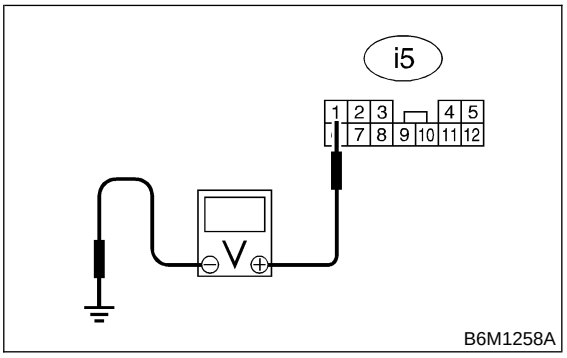


CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C3**.
NO : Replace fuse No. 18. When fuse No. 18 is blown again, repair shorted parts of circuit.

7C3 : CHECK POWER SUPPLY.

Measure voltage between fuse & relay box connector and chassis ground.

Connector & terminal
(i5) No. 1 (+) — Chassis ground (−):

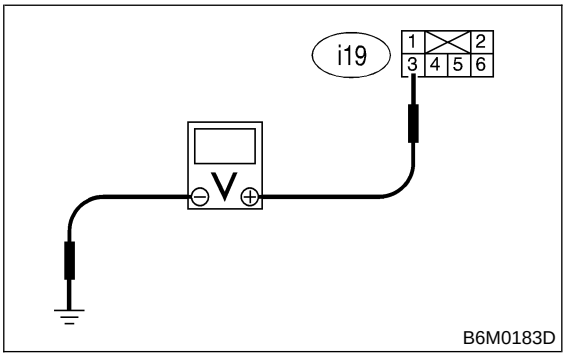


CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C4**.
NO : Replace fuse No. 18. When No. 18 is blown again, repair shorted parts of circuit.

7C4 : CHECK CRUISE CONTROL MAIN SWITCH.

1) Turn ignition switch to OFF.
2) Remove cruise control main switch and disconnect connector.
3) Turn ignition switch to ON.
4) Measure voltage between cruise control main switch connector and chassis ground.

Connector & terminal
(i19) No. 3 (+) — Chassis ground (−):

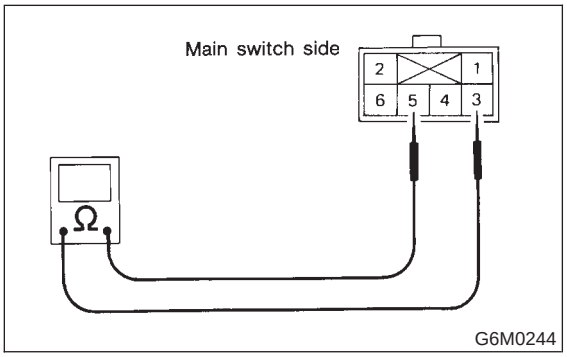


CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C5**.
NO : Replace cruise control main switch. <Ref. to 6-2 [W12A2].>

7C5 : CHECK CRUISE CONTROL MAIN SWITCH.

Measure resistance between cruise control main switch terminals.

Terminals
No. 3 — No. 5:

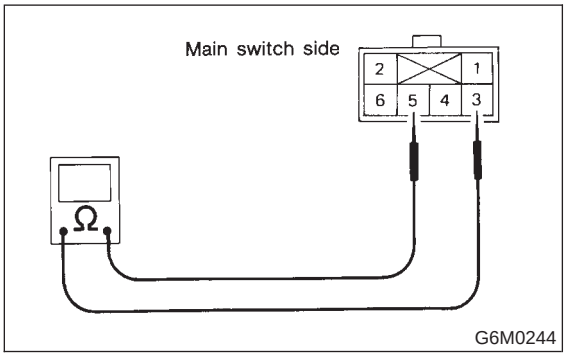


CHECK : ***Is resistance less than 10 Ω? (When switch is ON.)***
YES : Go to step **7C6**.
NO : Replace cruise control main switch. <Ref. to 6-2 [W12A2].>

7C6 : CHECK CRUISE CONTROL MAIN SWITCH.

Measure resistance between cruise control main switch terminals.

Terminals
No. 3 — No. 5:

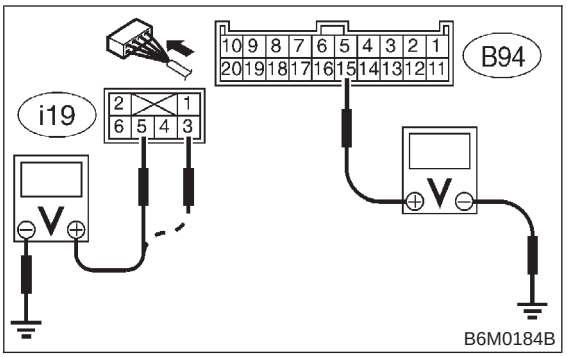


CHECK : ***Is resistance less than 1 MΩ? (When switch is OFF.)***
YES : Go to step **7C7**.
NO : Replace cruise control main switch. <Ref. to 6-2 [W12A2].>

7C7 : CHECK HARNESS BETWEEN CRUISE CONTROL MAIN SWITCH CONNECTOR AND CHASSIS GROUND.

1) Connect connector.
2) Turn ignition switch to ON.
3) Turn cruise control main switch to ON.
4) Measure voltage between terminal of cruise control main switch and chassis ground.

Connector & terminal
(i19) No. 3 (+) — Chassis ground (−):

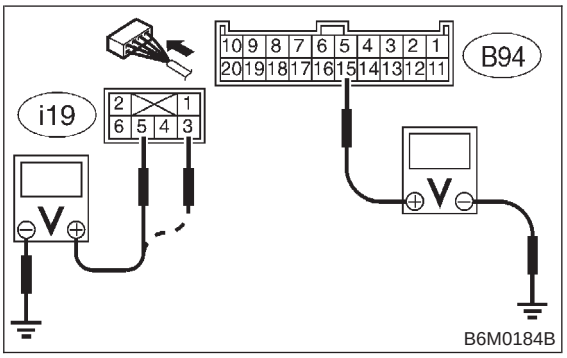


CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C8**.
NO : Repair or replace wiring harness.

7C8 : CHECK HARNESS BETWEEN CRUISE CONTROL MAIN SWITCH CONNECTOR AND CHASSIS GROUND.

Measure voltage between terminal of cruise control main switch chassis ground.

Connector & terminal
(i19) No. 5 (+) — Chassis ground (−):

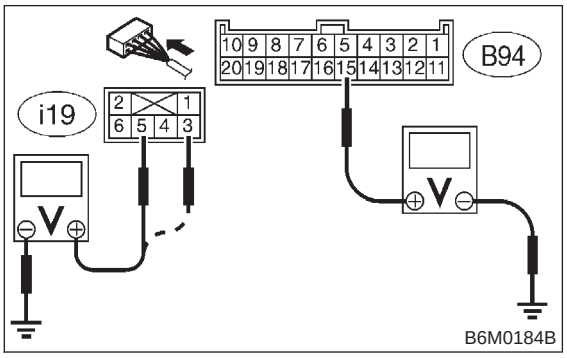


CHECK : ***Is voltage more than 10 V?***
YES : Go to step **7C9**.
NO : Repair or replace wiring harness.

7C9 : CHECK HARNESS BETWEEN CRUISE CONTROL MODULE CONNECTOR AND CHASSIS GROUND.

Measure voltage between terminal of cruise control module and chassis ground.

Connector & terminal
(B94) No. 15 (+) — Chassis ground (−):



CHECK : ***Is voltage more than 10 V?***
YES : Replace cruise control module. <Ref. to 6-2 [W12A4].>
NO : Repair or replace wiring harness.

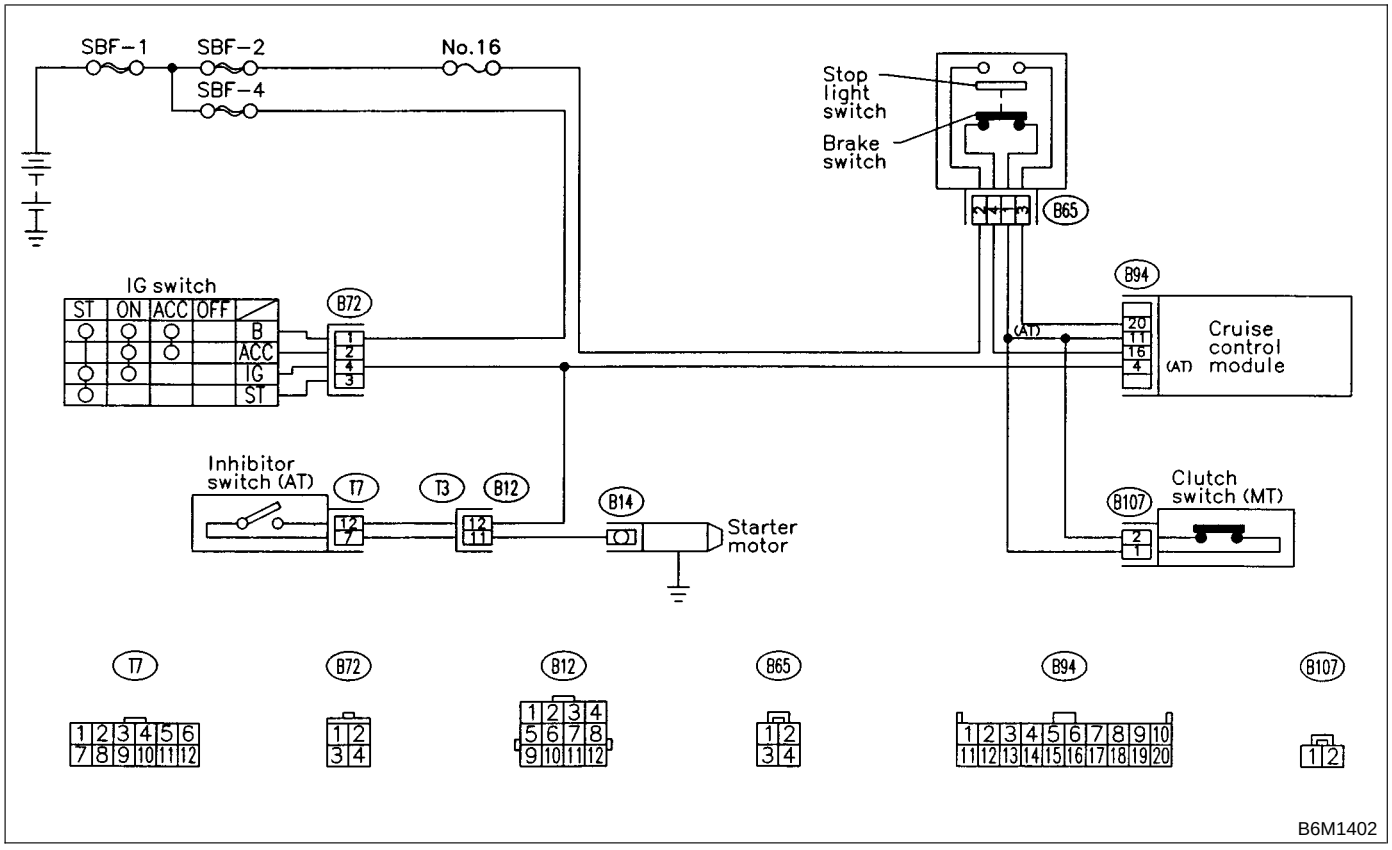
NOTE:
Depress cruise control main switch with fingers while measuring voltage between (i19) No. 5 and chassis ground.

D: BRAKE SWITCH, STOP LIGHT SWITCH, CLUTCH SWITCH (MT), INHIBITOR SWITCH (AT)

DIAGNOSIS:

- Failure or disconnection of the stop light switch and brake switch.
- Failure or disconnection of the clutch switch (MT).
- Failure or disconnection of the inhibitor switch (AT).

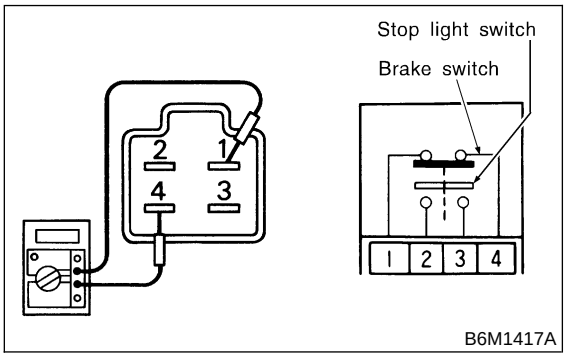
WIRING DIAGRAM:



7D1 : CHECK BRAKE SWITCH.

1) Turn ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Apply parking brake securely.
4) Set select monitor in “Current Data Display & Save” mode.
5) Depress the brake pedal and check signals for proper operation.
   (1) The Stop Lamp Switch shown on the display turns from “OFF” to “ON”.
   (2) The Brake Switch shown on the display turns from “OFF” to “ON”.
6) Release the brake pedal.
7) Remove connector of stop and brake switch.
8) Check circuit between brake switch terminal.

Terminals
No. 1 — No. 4: (Brake switch)

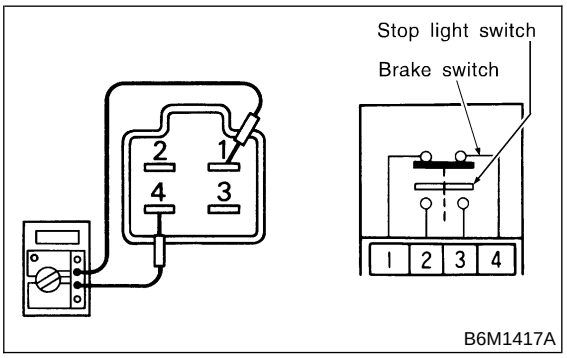


CHECK : ***Is resistance less than 1 Ω? (When brake pedal is released.)***
YES : Go to step **7D2**.
NO : Replace brake and stop light switch. <Ref. to 6-2 [W12A5].>

7D2 : CHECK BRAKE SWITCH.

Check circuit between brake switch terminal.

Terminals
No. 1 — No. 4: (Brake switch)

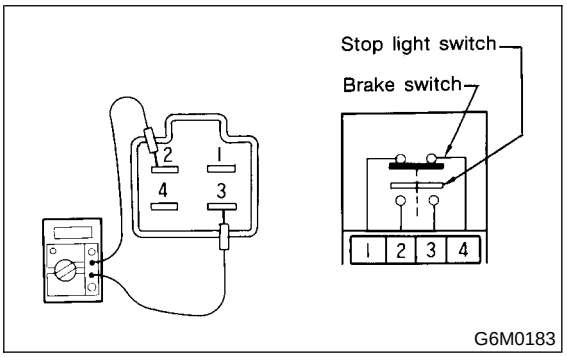


CHECK : ***Is resistance more than 1 MΩ? (When brake pedal is depressed.)***
YES : Go to step **7D3**.
NO : Replace brake and stop light switch. <Ref. to 6-2 [W12A5].>

7D3 : CHECK STOP LIGHT SWITCH.

Check circuit between stop light switch terminal.

Terminals
No. 2 — No. 3: (Stop light switch)

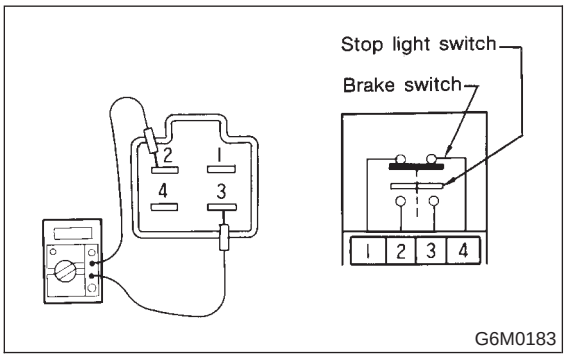


CHECK : ***Is resistance more than 1 MΩ? (When brake pedal is released.)***
YES : Go to step **7D4**.
NO : Replace brake and stop light switch. <Ref. to 6-2 [W12A5].>

7D4 : CHECK STOP LIGHT SWITCH.

Check circuit between stop light switch terminal.

Terminals
No. 2 — No. 3: (Stop light switch)



CHECK : ***Is resistance less than 1 Ω? (When brake pedal is depressed.)***

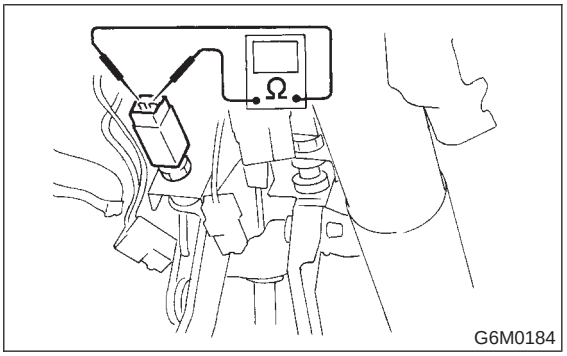
YES : (MT) Go to step **7D5**. (AT) Go to step **7D7**.

NO : Replace brake and stop light switch. <Ref. to 6-2 [W12A5].>

7D5 : CHECK CLUTCH SWITCH. (MT)

1) Turn ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Apply parking brake securely.
4) Set select monitor in “Current Data Display & Save” mode.
5) Depress the clutch pedal and check signal for proper operation.
The Clutch/Inhibitor Switch shown on the display turns from “ON” to “OFF”.
6) Disconnect connector of clutch switch.
7) Check continuity of the clutch switch.

Terminals
No. 1 — No. 2:



CHECK : ***Is resistance less than 10 Ω? (When clutch pedal is released.)***

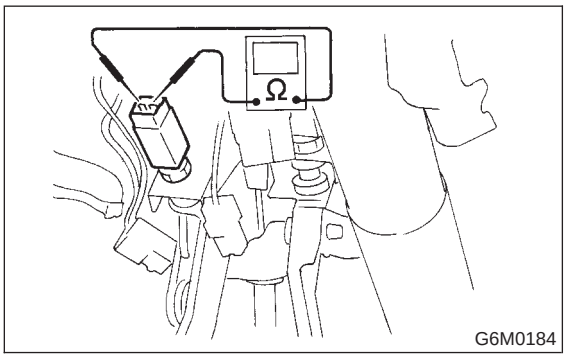
YES : Go to step **7D6**.

NO : Replace clutch switch. <Ref. to 6-2 [W12A6].>

7D6 : CHECK CLUTCH SWITCH. (MT)

Check continuity of the clutch switch.

Terminals
No. 1 — No. 2:



CHECK : ***Is resistance more than 1 MΩ? (When clutch pedal is depressed.)***

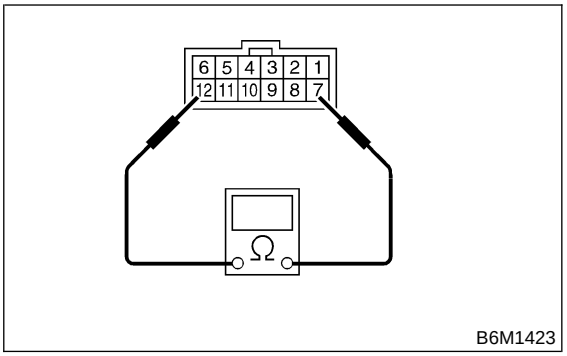
YES : Replace cruise control module. <Ref. to 6-2 [W12A4].>

NO : Replace clutch switch. <Ref. to 6-2 [W12A6].>

7D7 : CHECK INHIBITOR SWITCH. (AT)

1) Turn ignition switch to ON.
2) Turn cruise control main switch to ON.
3) Apply parking brake securely.
4) Set select monitor in “Current Data Display & Save” mode.
5) Set the selector lever from P or N position to D position and check signal for proper operation.
The Clutch/Inhibitor Switch shown on the display turns from “ON” to “OFF”.
6) Set the selector lever to P or N position.
7) Disconnect connector of inhibitor switch.
8) Check continuity of the inhibitor switch.

Terminals
No. 7 — No. 12:



CHECK : ***Is resistance less than 10 Ω? (When selector lever is in P or N.)***

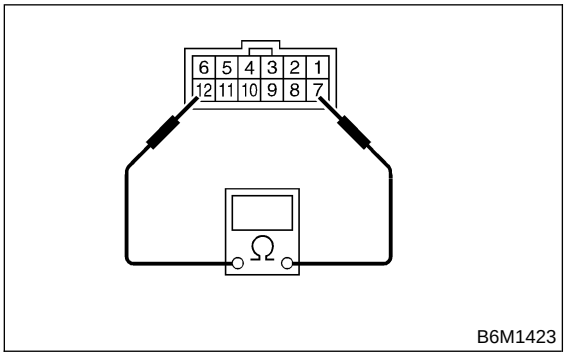
YES : Go to step **7D8**.

NO : Replace inhibitor switch. <Ref. to 3-2 [W200].> Repair inhibitor switch wiring harness.

7D8 : CHECK INHIBITOR SWITCH. (AT)

Check continuity of the inhibitor switch.

Terminals
No. 7 — No. 12:



CHECK : ***Is resistance more than 1 MΩ? (When selector lever is not in P or N.)***

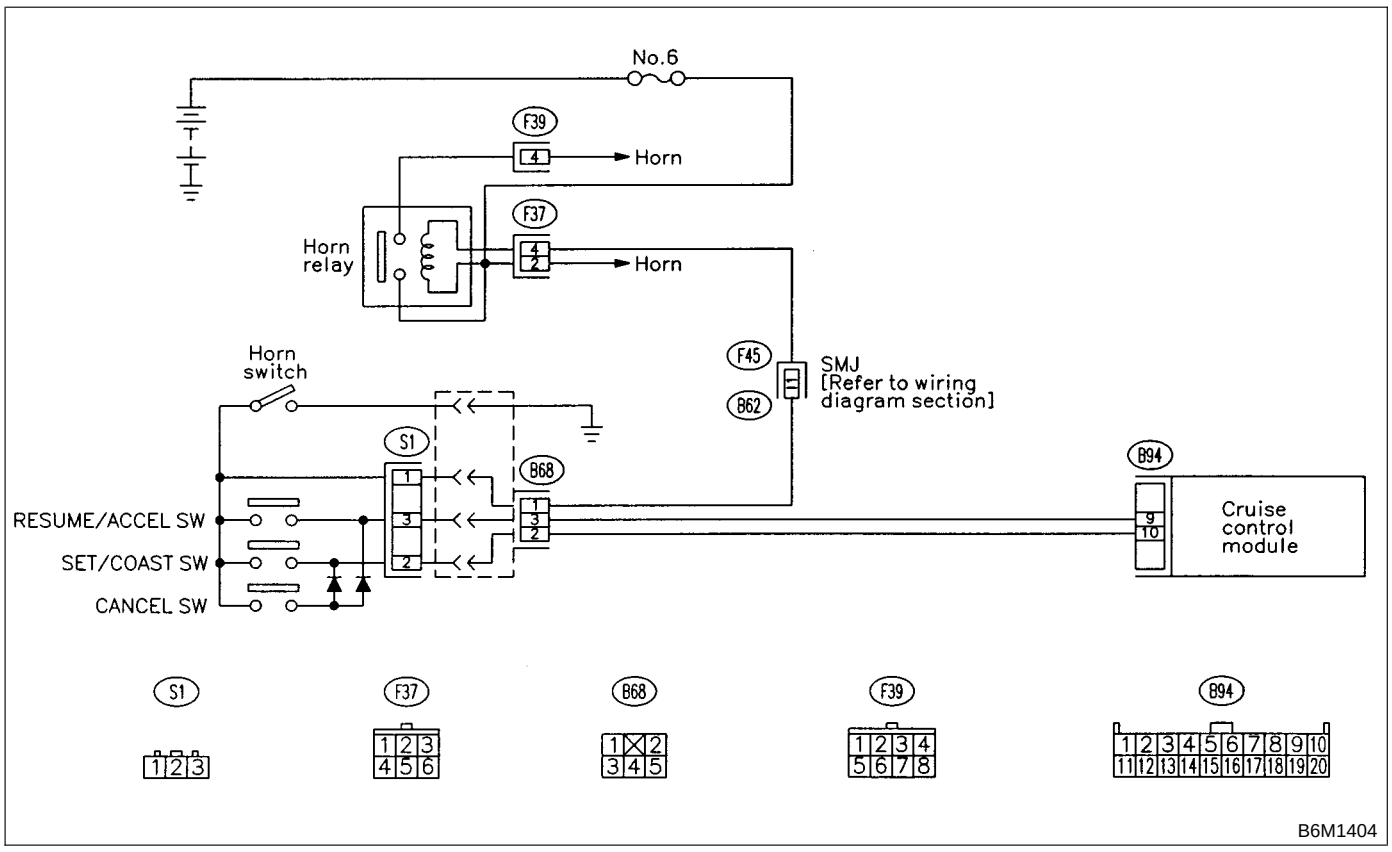
YES : Replace cruise control module. <Ref. to 6-2 [W12A4].>

NO : Replace inhibitor switch. <Ref. to 3-2 [W200].> Repair inhibitor switch wiring harness.

MEMO:

E: SET/COAST SWITCH, RESUME/ACCEL SWITCH, CANCEL SWITCH

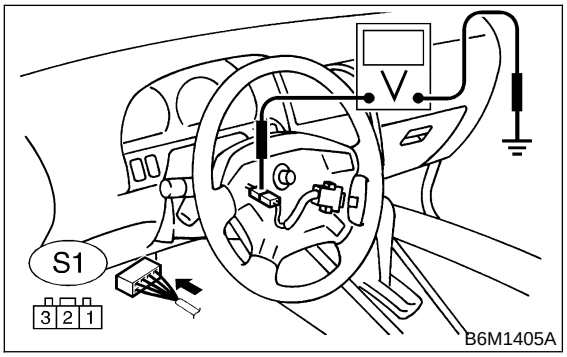
DIAGNOSIS:
Short circuit inside the SET/COAST SW and RESUME/ACCEL SW.
WIRING DIAGRAM:



7E1 : CHECK CRUISE CONTROL COMMAND SWITCH.

Measure voltage between cruise control command switch connector and chassis ground.

Terminals
(S1) No. 2 (+) — Chassis ground (−):

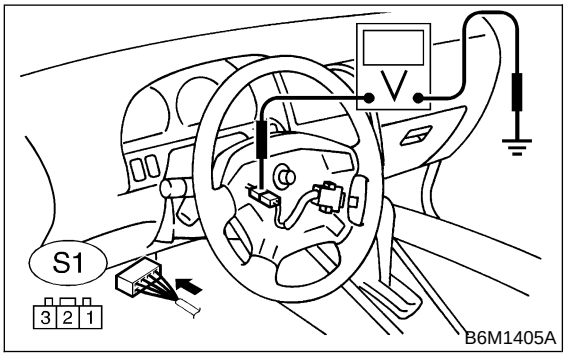


CHECK : ***Is voltage more than 10 V? (When CANCEL switch is ON.)***
YES : Go to step **7E2**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W12A3].>

7E2 : CHECK CRUISE CONTROL COMMAND SWITCH.

Measure voltage between cruise control command switch connector and chassis ground.

Terminals
(S1) No. 3 (+) — Chassis ground (−):

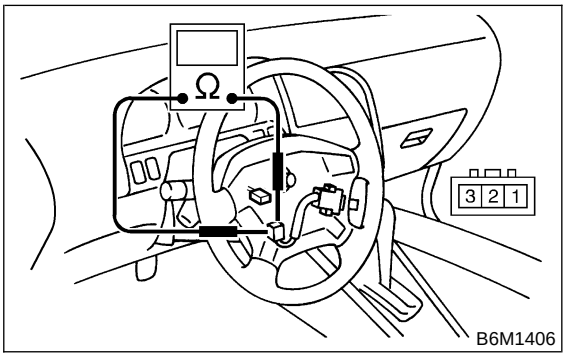


CHECK : ***Is voltage more than 10 V? (When CANCEL switch is ON.)***
YES : Go to step **7E3**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W12A3].>

7E3 : CHECK CRUISE CONTROL COMMAND SWITCH.

1) Turn ignition switch to OFF.
2) Disconnect connector from cruise control command switch.
3) Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation.

Terminals
No. 1 — No. 2:

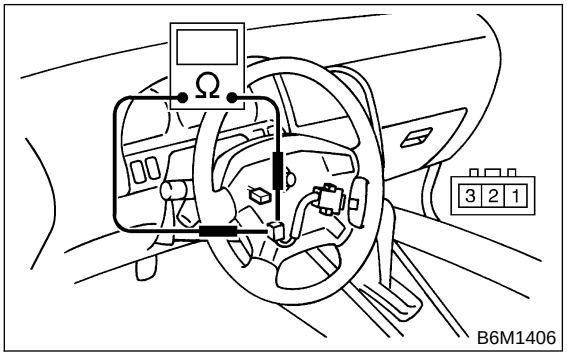


CHECK : ***Is resistance less than 10 Ω? (When SET/COAST switch is ON.)***
YES : Go to step **7E4**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W12A3].>

7E4 : CHECK CRUISE CONTROL COMMAND SWITCH.

Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation.

Terminals
No. 1 — No. 2:

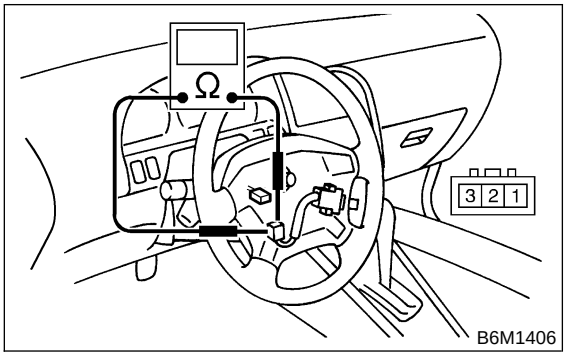


CHECK : ***Is resistance more than 1 MΩ? (When SET/COAST switch is OFF.)***
YES : Go to step **7E5**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W12A3].>

7E5 : CHECK CRUISE CONTROL COMMAND SWITCH.

Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation.

Terminals
No. 1 — No. 3:

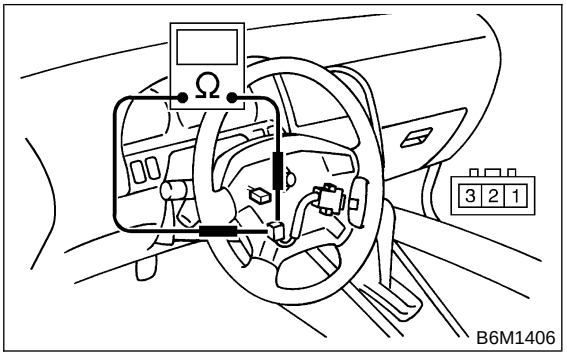


CHECK : ***Is resistance less than 10 Ω? (When RESUME/ACCEL switch is ON.)***
YES : Go to step **7E6**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W12A3].>

7E6 : CHECK CRUISE CONTROL COMMAND SWITCH.

Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation.

Terminals
No. 1 — No. 3:

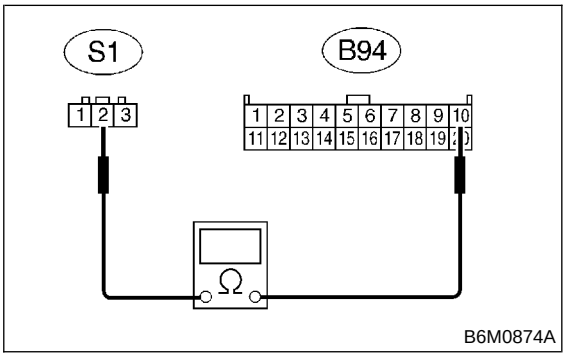


CHECK : ***Is resistance more than 1 MΩ? (When RESUME/ACCEL switch is OFF.)***
YES : Go to step **7E7**.
NO : Replace cruise control command switch. <Ref. to 6-2 [W12A3].>

7E7 : CHECK HARNESS CONNECTOR BETWEEN CRUISE CONTROL COMMAND SWITCH AND CRUISE CONTROL MODULE.

1) Disconnect connector from cruise control module.
2) Measure resistance of harness connector between cruise control command switch and cruise control module.

Connector & terminal
(S1) No. 2 — (B94) No. 10:

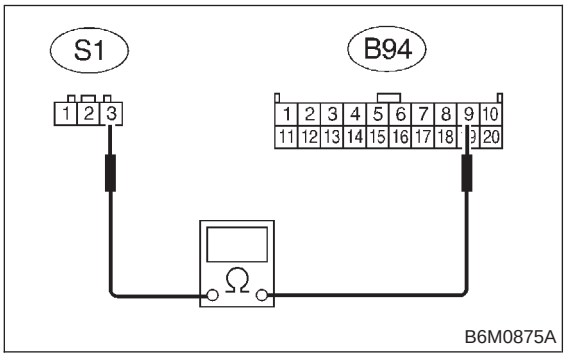


CHECK : ***Is resistance less than 10 Ω?***
YES : Go to step **7E8**.
NO : Repair or replace wiring harness.

7E8 : CHECK HARNESS CONNECTOR BETWEEN CRUISE CONTROL COMMAND SWITCH AND CRUISE CONTROL MODULE.

Measure resistance of harness connector between cruise control command switch and cruise control module.

Connector & terminal
(S1) No. 3 — (B94) No. 9:



CHECK : ***Is resistance less than 10 Ω?***
YES : Replace cruise control module. <Ref. to 6-2 [W12A4].>
NO : Repair or replace wiring harness.

MEMO: