7. Diagnostics Chart with Trouble Code S003620

A: LIST OF DIAGNOSTIC TROUBLE CODE S003620E40

Diagnostic code	Item	Contents of diagnosis	Index No.
11	BRAKE SW/STOP SW	Input signals from brake switch “OFF”, stop light switch “ON” (Brake pedal is depressed.)	<Ref. to CC-20 DIAGNOSTIC TROUBLE CODE 11 — BRAKE SWITCH, STOP LIGHT SWITCH —, Diagnostics Chart with Trouble Code.>
12	CLUTCH SW/INHIBITOR SW	Input signals from clutch switch “OFF” (MT), or inhibitor switch “P or N” (AT) [Clutch pedal is depressed (MT), or selector lever is set to P or N position (AT).]	<Ref. to CC-22 DIAGNOSTIC TROUBLE CODE 12 — CLUTCH SWITCH, INHIBITOR SWITCH —, Diagnostics Chart with Trouble Code.>
13	LOW SPEED LIMIT	Low-speed control limiter	<Ref. to CC-24 DIAGNOSTIC TROUBLE CODE 13 AND 24 — SPEED SENSOR SYSTEM —, Diagnostics Chart with Trouble Code.>
14	CANCEL SW	Input signal from cancel switch (faulty SET/COAST switch or RESUME/ACCEL switch)	<Ref. to CC-27 DIAGNOSTIC TROUBLE CODE 14 — SET/COAST SWITCH, RESUME/ACCEL SWITCH, CANCEL SWITCH —, Diagnostics Chart with Trouble Code.>
21	VACUUM VALVE	Faulty vacuum valve or valve drive system	<Ref. to CC-30 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE, VENT 1 VALVE —, Diagnostics Chart with Trouble Code.>
22	VENT 2 VALVE	Faulty vent 2 valve or valve drive system	<Ref. to CC-30 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE, VENT 1 VALVE —, Diagnostics Chart with Trouble Code.>
23	VENT 1 VALVE	Faulty vent 1 valve or valve drive system	<Ref. to CC-30 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE, VENT 1 VALVE —, Diagnostics Chart with Trouble Code.>
24	SPEED SENSOR	Faulty vehicle speed sensor 2 (MT) or transmission control module (AT)	<Ref. to CC-24 DIAGNOSTIC TROUBLE CODE 13 AND 24 — SPEED SENSOR SYSTEM —, Diagnostics Chart with Trouble Code.>

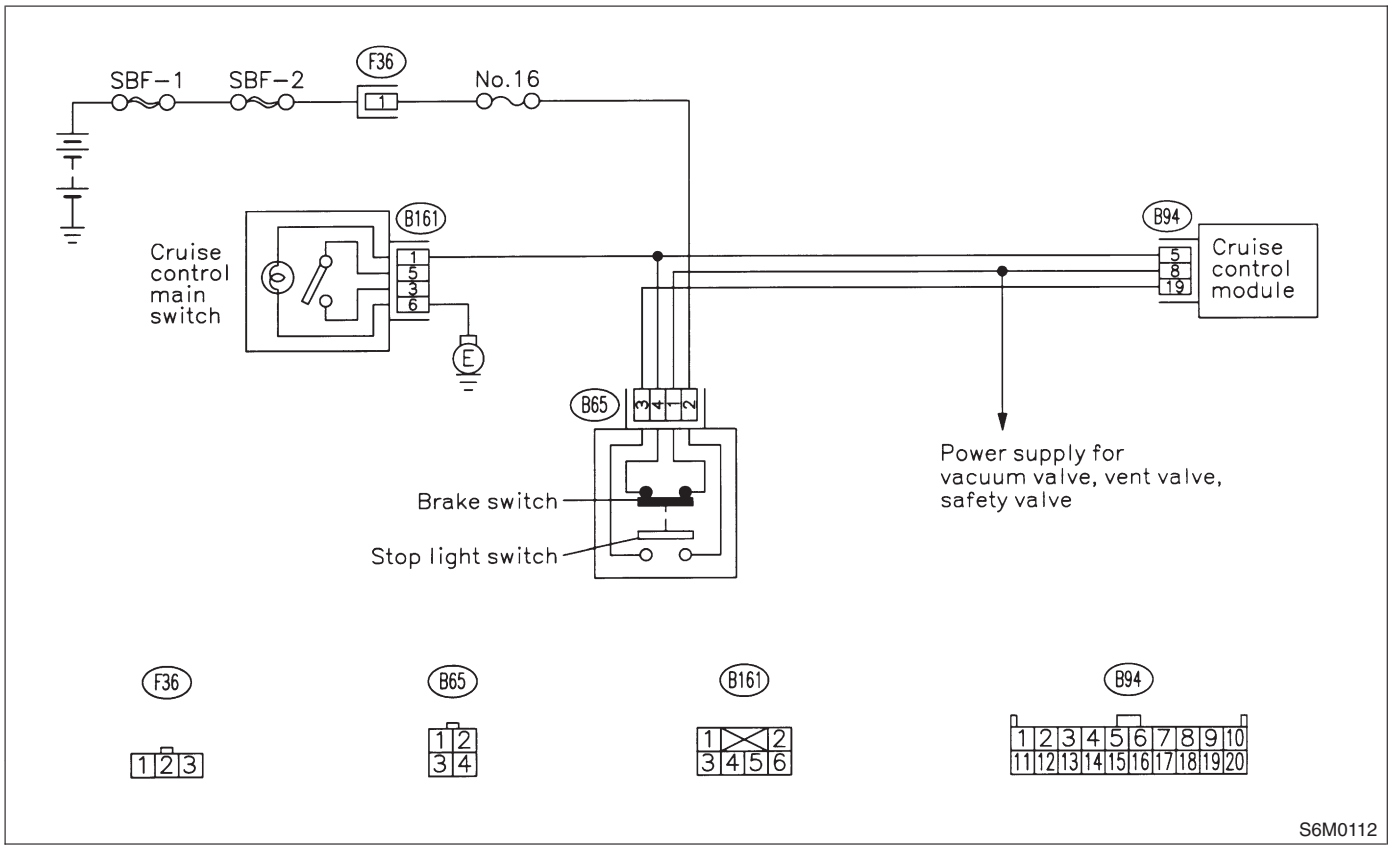
Diagnostic code	Item	Contents of diagnosis	Index No.
25	CONTROL MODULE	Faulty CPU RAM included in cruise control module	<Ref. to CC-32 DIAGNOSTIC TROUBLE CODE 25 — CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM —, Diagnostics Chart with Trouble Code.>

B: DIAGNOSTIC TROUBLE CODE 11 — BRAKE SWITCH, STOP LIGHT SWITCH — S003620F50

DIAGNOSIS:

- Failure or disconnection of the stop light switch and brake switch.

WIRING DIAGRAM:



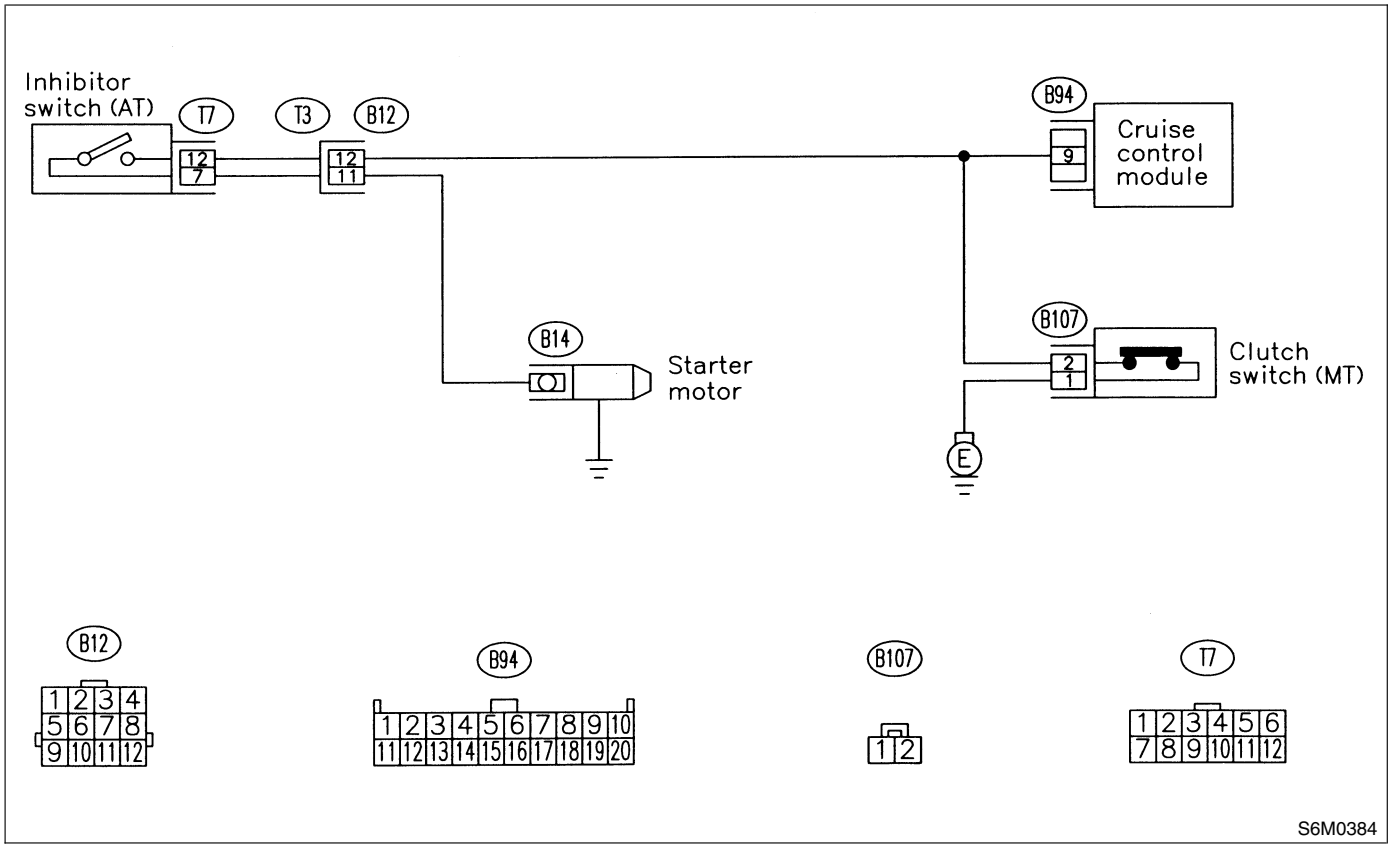
No.	Step	Check	Yes	No
1	**CHECK BRAKE SWITCH.** 1) Turn ignition switch to ON. 2) Turn cruise control main switch to ON. 3) Apply parking brake securely. 4) Set select monitor in “Current Data Display & Save” mode. 5) Depress the brake pedal and check signals for proper operation. (1) The Stop Lamp Switch 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)***	Is resistance less than 1 Ω? (When brake pedal is released.)	Go to step **2**.	Replace brake and stop light switch. <Ref. to BR-57 REMOVAL, Stop Light Switch.>
2	**CHECK BRAKE SWITCH.** Check circuit between brake switch terminal. ***Terminals*** ***No. 1 — No. 4: (Brake switch)***	Is resistance more than 1 MΩ? (When brake pedal is depressed.)	Go to step **3**.	Replace brake and stop light switch. <Ref. to BR-57 REMOVAL, Stop Light Switch.>
3	**CHECK STOP LIGHT SWITCH.** Check circuit between stop light switch terminal. ***Terminals*** ***No. 2 — No. 3: (Stop light switch)***	Is resistance more than 1 MΩ? (When brake pedal is released.)	Go to step **4**.	Replace brake and stop light switch. <Ref. to BR-57 REMOVAL, Stop Light Switch.>
4	**CHECK STOP LIGHT SWITCH.** Check circuit between stop light switch terminal. ***Terminals*** ***No. 2 — No. 3: (Stop light switch)***	Is resistance less than 1 Ω? (When brake pedal is depressed.)	Replace cruise control module. <Ref. to CC-5 REMOVAL, Cruise Control Module.>	Replace brake and stop light switch. <Ref. to BR-57 REMOVAL, Stop Light Switch.>

C: DIAGNOSTIC TROUBLE CODE 12 — CLUTCH SWITCH, INHIBITOR SWITCH — S003620F51

DIAGNOSIS:

- Failure or disconnection of the clutch switch. (MT)
- Failure or disconnection of the inhibitor switch. (AT)

WIRING DIAGRAM:



No.	Step	Check	Yes	No
1	**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. (MT) 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:***	Is resistance less than 10 Ω? (When clutch pedal is released.)	Go to step **2**.	Replace clutch switch.
2	**CHECK CLUTCH SWITCH. (MT)** Check continuity of the clutch switch. ***Terminals*** ***No. 1 — No. 2:***	Is resistance more than 1 MΩ? (When clutch pedal is depressed.)	Replace cruise control module. <Ref. to CC-5 REMOVAL, Cruise Control Module.>	Replace clutch switch.
3	**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. (AT) 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:***	Is resistance less than 10 Ω? (When selector lever is in P or N.)	Go to step **4**.	Replace inhibitor switch. <Ref. to AT-31 REMOVAL, Inhibitor Switch.> Repair inhibitor switch wiring harness.
4	**CHECK INHIBITOR SWITCH. (AT)** Check continuity of the inhibitor switch. ***Terminals*** ***No. 7 — No. 12:***	Is resistance more than 1 MΩ? (When selector lever is not in P or N.)	Replace cruise control module. <Ref. to CC-5 REMOVAL, Cruise Control Module.>	Replace inhibitor switch. <Ref. to AT-31 REMOVAL, Inhibitor Switch.> Repair inhibitor switch wiring harness.

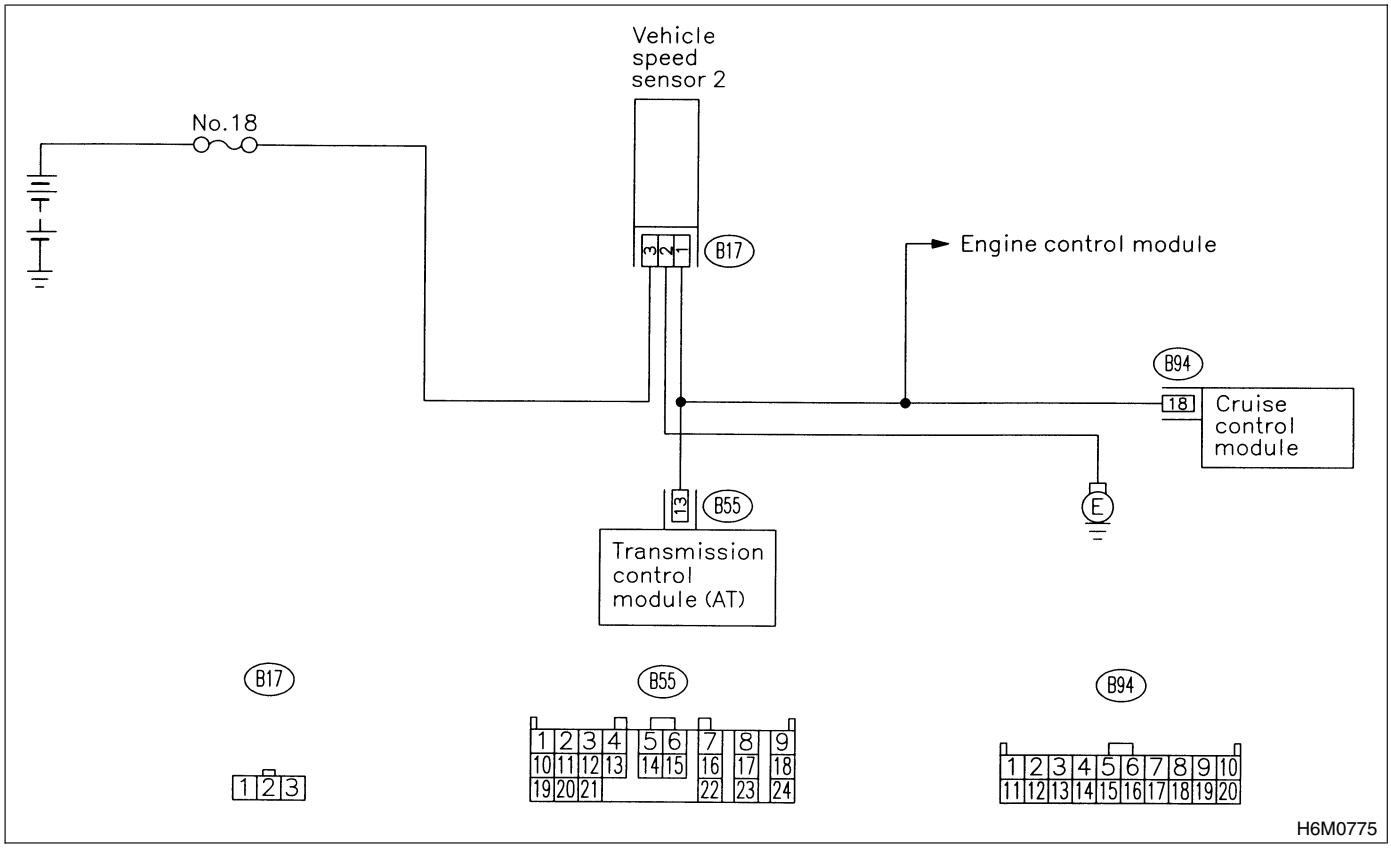
D: DIAGNOSTIC TROUBLE CODE 13 AND 24 — SPEED SENSOR SYSTEM —

S003620F52

DIAGNOSIS:

● Disconnection or short circuit of vehicle speed sensor 2 (MT model) or transmission control module (AT model).

WIRING DIAGRAM:



No.	Step	Check	Yes	No
1	**CHECK TRANSMISSION TYPE.**	Is the transmission type MT?	Go to step **2**.	Go to step **6**.
2	**CHECK HARNESS CONNECTOR BETWEEN CRUISE CONTROL MODULE AND VEHICLE SPEED SENSOR 2.** 1) Disconnect connector from vehicle speed sensor 2 and cruise control module. 2) Measure resistance of harness connector between vehicle speed sensor 2 and cruise control module. ***Connector & terminal*** ***(B17) No. 1 — (B94) No. 18:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair wiring harness.
3	**CHECK HARNESS CONNECTOR BETWEEN BATTERY AND VEHICLE SPEED SENSOR 2.** 1) Turn ignition switch to ON. 2) Measure voltage between vehicle speed sensor 2 connector (B17) and chassis ground. ***Connector & terminal*** ***(B17) No. 3 (+) — Chassis ground (–):***	Is the voltage more than 10 V?	Go to step **4**.	Repair harness connector between battery and vehicle speed sensor 2.
4	**CHECK HARNESS CONNECTOR BETWEEN VEHICLE SPEED SENSOR 2 AND ENGINE GROUND.** 1) Turn ignition switch to OFF. 2) Measure resistance between vehicle speed sensor 2 connector (B17) and engine ground. ***Connector & terminal*** ***(B17) No. 2 (+) — Engine ground (–):***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair harness connector between vehicle speed sensor 2 and engine ground.
5	**CHECK VEHICLE SPEED SENSOR 2.** 1) Connect connector to vehicle speed sensor 2. 2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands. **WARNING:** **Be careful not to be caught up by the running wheels.** 3) Set oscilloscope to vehicle speed sensor 2 connector terminals. Positive probe; (B17) No. 1 Earth lead; (B17) No. 2 4) Drive the vehicle at speed greater than 20 km/h (12 MPH). 5) Measure signal voltage indicated on oscilloscope.	Is the voltage more than 5 V?	Replace cruise control module. <Ref. to CC-5 REMOVAL, Cruise Control Module.>	Replace vehicle speed sensor 2.

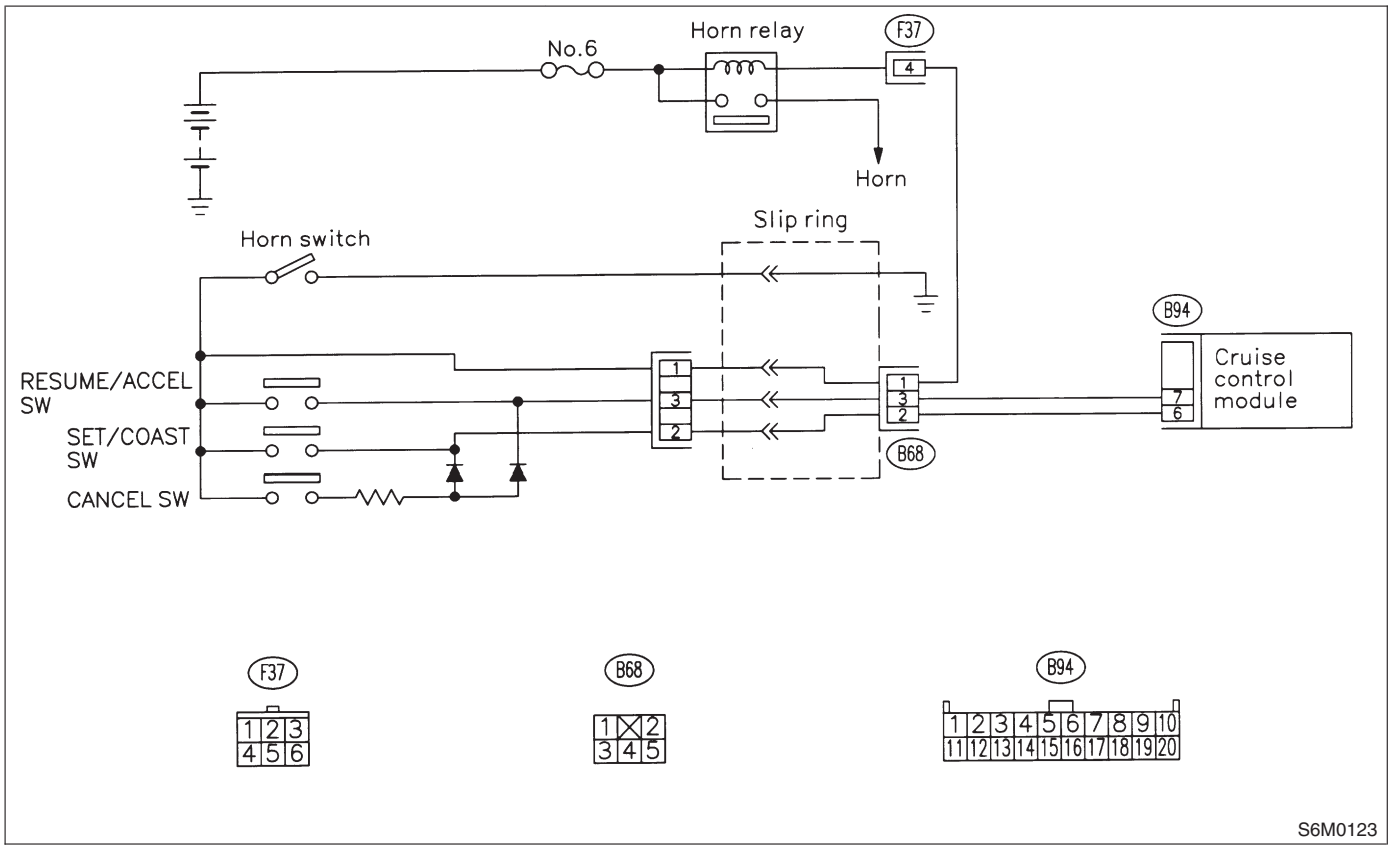
No.	Step	Check	Yes	No
6	**CHECK HARNESS CONNECTOR BETWEEN CRUISE CONTROL MODULE AND AUTOMATIC TRANSMISSION CONTROL MODULE.** 1) Disconnect connector from automatic transmission control module and cruise control module. 2) Measure resistance between cruise control module connector and automatic transmission control module connector. **CAUTION:** **To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).** ***Connector & terminal*** ***(B94) No. 18 — (B55) No. 13:***	Is the resistance less than 10 Ω?	Go to step **7**.	Repair harness connector between cruise control module and automatic transmission control module.
7	**CHECK AUTOMATIC TRANSMISSION CONTROL MODULE.** 1) Connect connector to automatic transmission control module. 2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands. **WARNING:** **Be careful not to be caught by the running wheels.** 3) Drive the vehicle faster than 10 km/h (6 MPH). 4) Measure voltage between automatic transmission control module connector (B55) and chassis ground. **CAUTION:** **To measure the voltage and/or resistance, use a tapered pin with a diameter of less than 0.64 mm (0.025 in). Do not insert the pin more than 5 mm (0.20 in).** ***Connector & terminal*** ***(B55) No. 13 (+) — Chassis ground (–):***	Is the voltage less than 1 V ←→ more than 4 V?	Replace cruise control module. <Ref. to CC-5 REMOVAL, Cruise Control Module.>	Replace automatic transmission control module. <Ref. to AT-41 REMOVAL, Transmission Control Module (TCM).>

E: DIAGNOSTIC TROUBLE CODE 14 — SET/COAST SWITCH, RESUME/ACCEL SWITCH, CANCEL SWITCH — S003620F53

DIAGNOSIS:

- Short circuit inside the SET SW and RESUME SW.

WIRING DIAGRAM:



DIAGNOSTICS CHART WITH TROUBLE CODE

No.	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Turn ignition switch to ON. 2) Turn cruise control main switch to ON. 3) Set select monitor in “Current Data Display & Save” mode. 4) Check signals for proper operation. (1) When pushing the SET/COAST switch: The SET/COAST switch shown on the display turns from “OFF” to “ON”. (2) When pushing the RESUME/ACCEL switch: The RESUME/ACCEL switch shown on the display turns from “OFF” to “ON”. 5) Turn ignition switch to OFF. 6) Disconnect connector from cruise control command switch. 7) Turn ignition switch to ON. 8) Measure voltage between cruise control command switch connector and chassis ground. ***Terminals*** ***No. 1 (+) — Chassis ground (–):***	Is voltage more than 10 V?	Go to step **2**.	Repair or replace wiring harness between fuse & relay box and cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>
2	**CHECK CRUISE CONTROL COMMAND SWITCH.** 1) Turn ignition switch to OFF. 2) Connect connector of cruise control command switch. 3) Turn ignition switch to ON. 4) Measure voltage between cruise control command switch connector and chassis ground. ***Terminals*** ***No. 2 (+) — Chassis ground (–):***	Is voltage more than 10 V? (When SET/COAST switch is ON.)	Go to step **3**.	Replace cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>
3	**CHECK CRUISE CONTROL COMMAND SWITCH.** Measure voltage between cruise control command switch connector and chassis ground. ***Terminals*** ***No. 3 (+) — Chassis ground (–):***	Is voltage more than 10 V? (When RESUME/ACCEL switch is ON.)	Go to step **4**.	Replace cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>
4	**CHECK CRUISE CONTROL COMMAND SWITCH.** Measure voltage between cruise control command switch connector and chassis ground. ***Terminals*** ***No. 2 (+) — Chassis ground (–):***	Is voltage more than 10 V? (When CANCEL switch is ON.)	Go to step **5**.	Replace cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>
5	**CHECK CRUISE CONTROL COMMAND SWITCH.** Measure voltage between cruise control command switch connector and chassis ground. ***Terminals*** ***No. 3 (+) — Chassis ground (–):***	Is voltage more than 10 V? (When CANCEL switch is ON.)	Go to step **6**.	Replace cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>

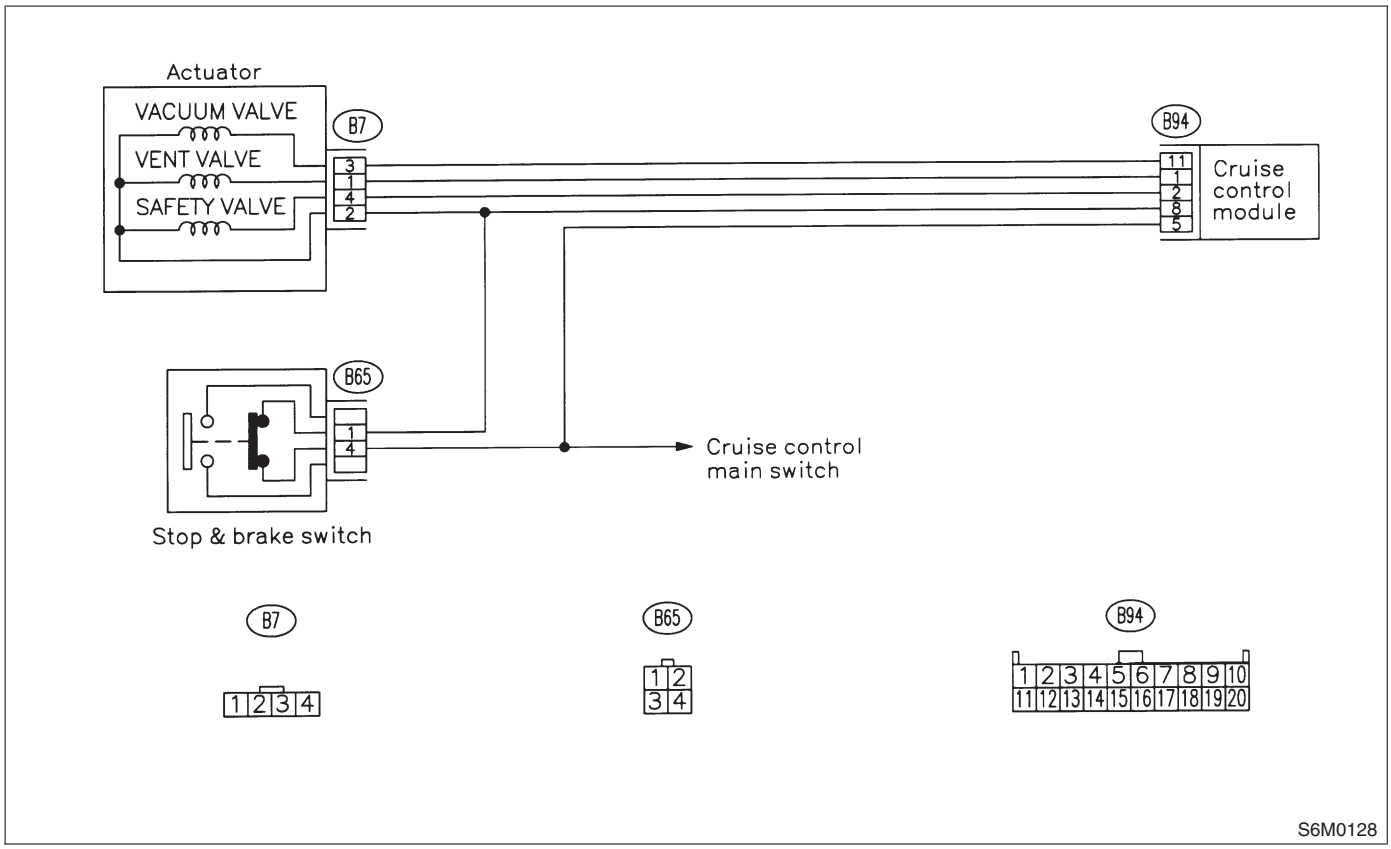
No.	Step	Check	Yes	No
6	**CHECK CRUISE CONTROL COMMAND SWITCH.** 1) Turn ignition switch to OFF. 2) Disconnect connector from cruise control command switch. 3) Measure resistance between terminals of cruise control command switch connector (switch side) to check the switch operation. ***Terminals*** ***No. 1 — No. 2:***	Is resistance less than 10 Ω? (When SET/COAST switch is ON.)	Go to step **7**.	Replace cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>
7	**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:***	Is resistance more than 1 MΩ? (When SET/COAST switch is OFF.)	Go to step **8**.	Replace cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>
8	**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:***	Is resistance less than 10 Ω? (When RESUME/ ACCEL switch is ON.)	Go to step **9**.	Replace cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>
9	**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:***	Is resistance more than 1 MΩ? (When RESUME/ ACCEL switch is OFF.)	Go to step **10**.	Replace cruise control command switch. <Ref. to CC-7 REMOVAL, Cruise Control Command Switch.>
10	**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*** ***No. 2 (command switch) — (B94) No. 6:***	Is resistance less than 10 Ω?	Go to step **11**.	Repair or replace wiring harness.
11	**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*** ***No. 3 (command switch) — (B94) No. 7:***	Is resistance less than 10 Ω?	Replace cruise control module. <Ref. to CC-5 REMOVAL, Cruise Control Module.>	Repair or replace wiring harness.

F: DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE, VENT 1 VALVE — S003620F54

DIAGNOSIS:

- Open or poor contact of vacuum valve, vent 2 valve and vent 1 valve.

WIRING DIAGRAM:



No.	Step	Check	Yes	No
1	**MEASURE RESISTANCE OF VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE.** 1) Disconnect connector from actuator. 2) Measure resistance of vacuum valve, vent 2 valve and vent 1 valve. ***Terminals*** ***No. 2 — No. 3:***	Is resistance less than 22 Ω?	Go to step **2**.	Replace actuator. <Ref. to CC-4 REMOVAL, Actuator.>
2	**MEASURE RESISTANCE OF VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE.** Measure resistance of vacuum valve, vent 2 valve and vent 1 valve. ***Terminals*** ***No. 2 — No. 1:***	Is resistance less than 55 Ω?	Go to step **3**.	Replace actuator. <Ref. to CC-4 REMOVAL, Actuator.>
3	**MEASURE RESISTANCE OF VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE.** Measure resistance of vacuum valve, vent 2 valve and vent 1 valve. ***Terminals*** ***No. 2 — No. 4:***	Is resistance less than 55 Ω?	Go to step **4**.	Replace actuator. <Ref. to CC-4 REMOVAL, Actuator.>
4	**PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR (VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE) AND CRUISE CONTROL MODULE.** 1) Disconnect connector from cruise control module. 2) Measure resistance of harness connector between cruise control module, vacuum valve, vent 2 valve and vent 1 valve. ***Connector & terminal*** ***(B7) No. 1 — (B94) No. 1:***	Is resistance less than 10 Ω?	Go to step **5**.	Repair or replace wiring harness between actuator and cruise control module.
5	**PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR (VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE) AND CRUISE CONTROL MODULE.** Measure resistance of harness connector between cruise control module, vacuum valve, vent 2 valve and vent 1 valve. ***Connector & terminal*** ***(B7) No. 2 — (B94) No. 8:***	Is resistance less than 10 Ω?	Go to step **6**.	Repair or replace wiring harness between actuator and cruise control module.
6	**PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR (VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE) AND CRUISE CONTROL MODULE.** Measure resistance of harness connector between cruise control module, vacuum valve, vent 2 valve and vent 1 valve. ***Connector & terminal*** ***(B7) No. 3 — (B94) No. 11:***	Is resistance less than 10 Ω?	Go to step **7**.	Repair or replace wiring harness between actuator and cruise control module.
7	**PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR (VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE) AND CRUISE CONTROL MODULE.** Measure resistance of harness connector between cruise control module, vacuum valve, vent 2 valve and vent 1 valve. ***Connector & terminal*** ***(B7) No. 4 — (B94) No. 2:***	Is resistance less than 10 Ω?	Replace cruise control module. <Ref. to CC-5 REMOVAL, Cruise Control Module.>	Repair or replace wiring harness between actuator and cruise control module.

G: DIAGNOSTIC TROUBLE CODE 25 — CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM — S003620F55

DIAGNOSIS:

- Poor welding of built-in relay of cruise control module.
- Failure of built-in CPU RAM of cruise control module.