BODY SECTION

This service manual has been prepared to provide SUBARU service personnel with the necessary information and data for the correct maintenance and repair of SUBARU vehicles.
This manual includes the procedures for maintenance, disassembling, reassembling, inspection and adjustment of components and diagnostics for guidance of experienced mechanics.
Please peruse and utilize this manual fully to ensure complete repair work for satisfying our customers by keeping their vehicle in optimum condition. When replacement of parts during repair work is needed, be sure to use SUBARU genuine parts.

All information, illustration and specifications contained in this manual are based on the latest product information available at the time of publication approval.

FUJI HEAVY INDUSTRIES LTD.

CRUISE CONTROL SYSTEM (DIAGNOSTICS)

CC

1. Basic Diagnostic Procedure S003501

A: PROCEDURE S003501E45

No.	Step	Check	Yes	No
1	**START DIAGNOSIS.** 1) Perform pre-inspection. <Ref. to CC-6 INSPECTION, General Description.> 2) Check cruise control main switch operation.	Is cruise control main switch turned ON?	Go to step **2**.	Go to symptom 1. **Turbo model:** <Ref. to CC-21 SYMPTOM CHART, Diagnostics Chart with Symptom (Turbo Model).> **Non-turbo model:** <Ref. to CC-49, SYMPTOM CHART, Diagnostics Chart with Symptom (Non-turbo Model).>
2	**PREPARE SUBARU SELECT MONITOR.**	Is the select monitor available?	Go to step **3**.	Go to step **4**.
3	**PERFORM CRUISE CANCEL CONDITIONS DIAGNOSIS.** Perform cruise cancel conditions diagnosis. <Ref. to CC-19 Subaru Select Monitor.>	Is trouble code indicated?	Go to “Diagnostics Chart with Trouble Code”.	Go to step **4**.
4	**CHECK CRUISE CONTROL SET OPERATION.** Check cruise control set operation.	Can cruise control be set while driving at 40 km/h (25 MPH)?	Go to step **5**.	Go to symptom 2. **Turbo model:** <Ref. to CC-21 SYMPTOM CHART, Diagnostics Chart with Symptom (Turbo Model).> **Non-turbo model:** <Ref. to CC-49, SYMPTOM CHART, Diagnostics Chart with Symptom (Non-turbo Model).>
5	**CHECK VEHICLE SPEED IS HELD WITHIN SET SPEED.** Make sure vehicle speed is held within set speed.	Is vehicle speed held within set speed ±3 km/h (±2 MPH) ?	Go to step **6**.	Go to symptom 3. **Turbo model:** <Ref. to CC-21 SYMPTOM CHART, Diagnostics Chart with Symptom (Turbo Model).> **Non-turbo model:** <Ref. to CC-49, SYMPTOM CHART, Diagnostics Chart with Symptom (Non-turbo Model).>

No.	Step	Check	Yes	No
6	**CHECK RESUME/ACCEL OPERATION.** Check RESUME/ACCEL operation.	Does vehicle speed increase or return to set speed after RESUME/ ACCEL switch has been pressed?	Go to step **7**.	Go to symptom 4. **Turbo model:** <Ref. to CC-21 SYMPTOM CHART, Diagnostics Chart with Symptom (Turbo Model).> **Non-turbo model:** <Ref. to CC-49, SYMPTOM CHART, Diagnostics Chart with Symptom (Non-turbo Model).>
7	**CHECK SET/COAST OPERATION.** Check SET/COAST operation.	Does vehicle speed decrease after SET/COAST switch has been pressed?	Go to step **8**.	Go to symptom 5. **Turbo model:**<Ref. to CC-21 SYMPTOM CHART, Diagnostics Chart with Symptom (Turbo Model).> **Non-turbo model:** <Ref. to CC-49, SYMPTOM CHART, Diagnostics Chart with Symptom (Non-turbo Model).>
8	**CHECK CANCEL OPERATION.** Check CANCEL operation.	Is cruise control released after CANCEL switch has been pressed?	Go to step **9**.	Go to symptom 6. **Turbo model:** <Ref. to CC-21 SYMPTOM CHART, Diagnostics Chart with Symptom (Turbo Model).> **Non-turbo model:** <Ref. to CC-49, SYMPTOM CHART, Diagnostics Chart with Symptom (Non-turbo Model).>

No.	Step	Check	Yes	No
9	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check cruise control release operation.	Is cruise control released after brake pedal has been depressed?	Go to step **10**.	Go to symptom 7. **Turbo model:** <Ref. to CC-21 SYMPTOM CHART, Diagnostics Chart with Symptom (Turbo Model).> **Non-turbo model:** <Ref. to CC-49, SYMPTOM CHART, Diagnostics Chart with Symptom (Non-turbo Model).>
10	**CHECK CRUISE CONTROL RELEASE OPERATION.** Check cruise control release operation.	Is cruise control released after clutch pedal has been depressed? (MT)	Finish the diagnostics.	Go to symptom 8. **Turbo model:** <Ref. to CC-21 SYMPTOM CHART, Diagnostics Chart with Symptom (Turbo Model).> **Non-turbo model:** <Ref. to CC-49, SYMPTOM CHART, Diagnostics Chart with Symptom (Non-turbo Model).>

2. General Description S003001

A: CAUTION S003001A03

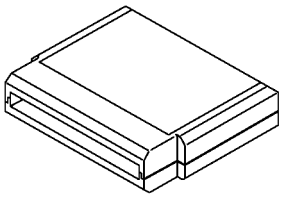
1. SUPPLEMENTAL RESTRAINT SYSTEM "AIRBAG" S003001A0301

Airbag system wiring harness is routed near the cruise control module and cruise control command switch.

CAUTION:
● All Airbag system wiring harness and connectors are colored yellow. Do not use electrical test equipment on these circuits.
● Be careful not to damage Airbag system wiring harness when servicing the cruise control module and cruise control command switch.

B: PREPARATION TOOL S003001A17

1. SPECIAL TOOLS S003001A1701

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 B2M3876	24082AA150 (Newly adopted tool)	CARTRIDGE	Troubleshooting for electrical systems.
 B2M3877	22771AA030	SELECT MONITOR KIT	Troubleshooting for electrical systems. ● English: 22771AA030 (Without printer) ● German: 22771AA070 (Without printer) ● French: 22771AA080 (Without printer) ● Spanish: 22771AA090 (Without printer)

2. GENERAL TOOLS S003001A1702

TOOL NAME	REMARKS
Circuit Tester	Used for measuring resistance, voltage and ampere.

C: INSPECTION S003001A10

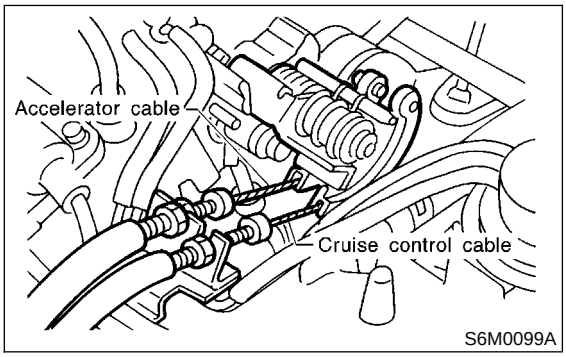
1. BATTERY S003001A1002

Measure battery voltage and specific gravity of electrolyte.

Standard voltage:
12 V, or more

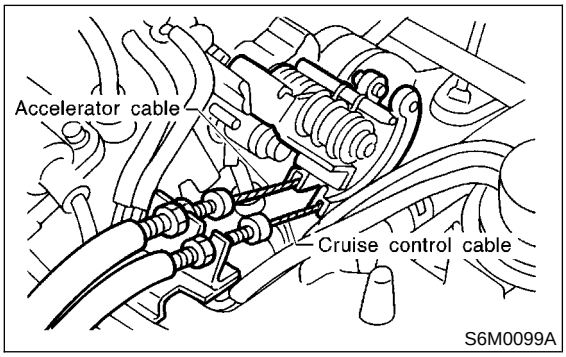
Specific gravity:
Above 1.260

2. CRUISE CONTROL CABLE S003001A1003



Check the cruise control cable installation.
If NG, install the cable securely.

3. ACCELERATOR CABLE S003001A1004

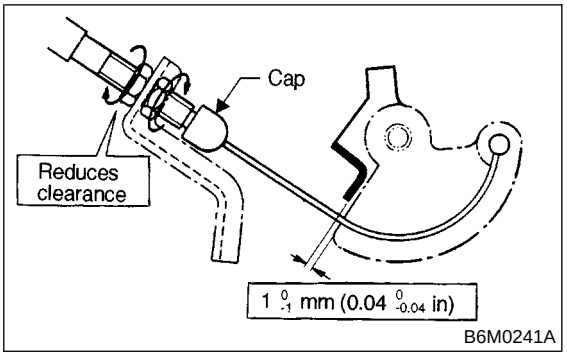


Check movement of the accelerator cable when the cruise control throttle is moved by hand.
If NG, check throttle cam.

4. THROTTLE CAM S003001A1005

Check that the throttle cam moves smoothly.
If NG, repair throttle cam.

5. CABLE FREE PLAY S003001A1006



Check that the throttle cam-to-lever clearance is within specifications.

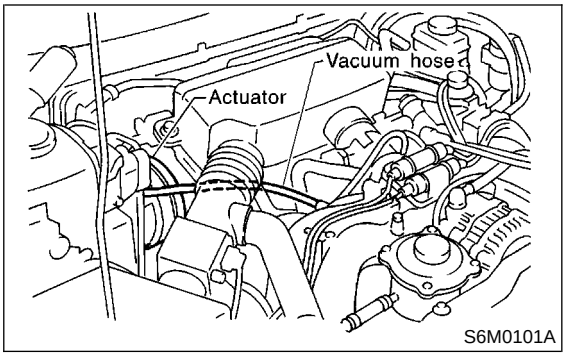
Throttle cam-to-lever clearance:
0 — 1 mm (0 — 0.04 in)

If NG, adjust the clearance with the adjust nut.

NOTE:
Check that the cap is positioned in the groove.

6. VACUUM HOSE (NON-TURBO MODEL)

S003001A1009



Check vacuum hose (which connects actuator and intake manifold).
If NG, replace vacuum hose.

7. ACTUATOR (NON-TURBO MODEL) S003001A1010

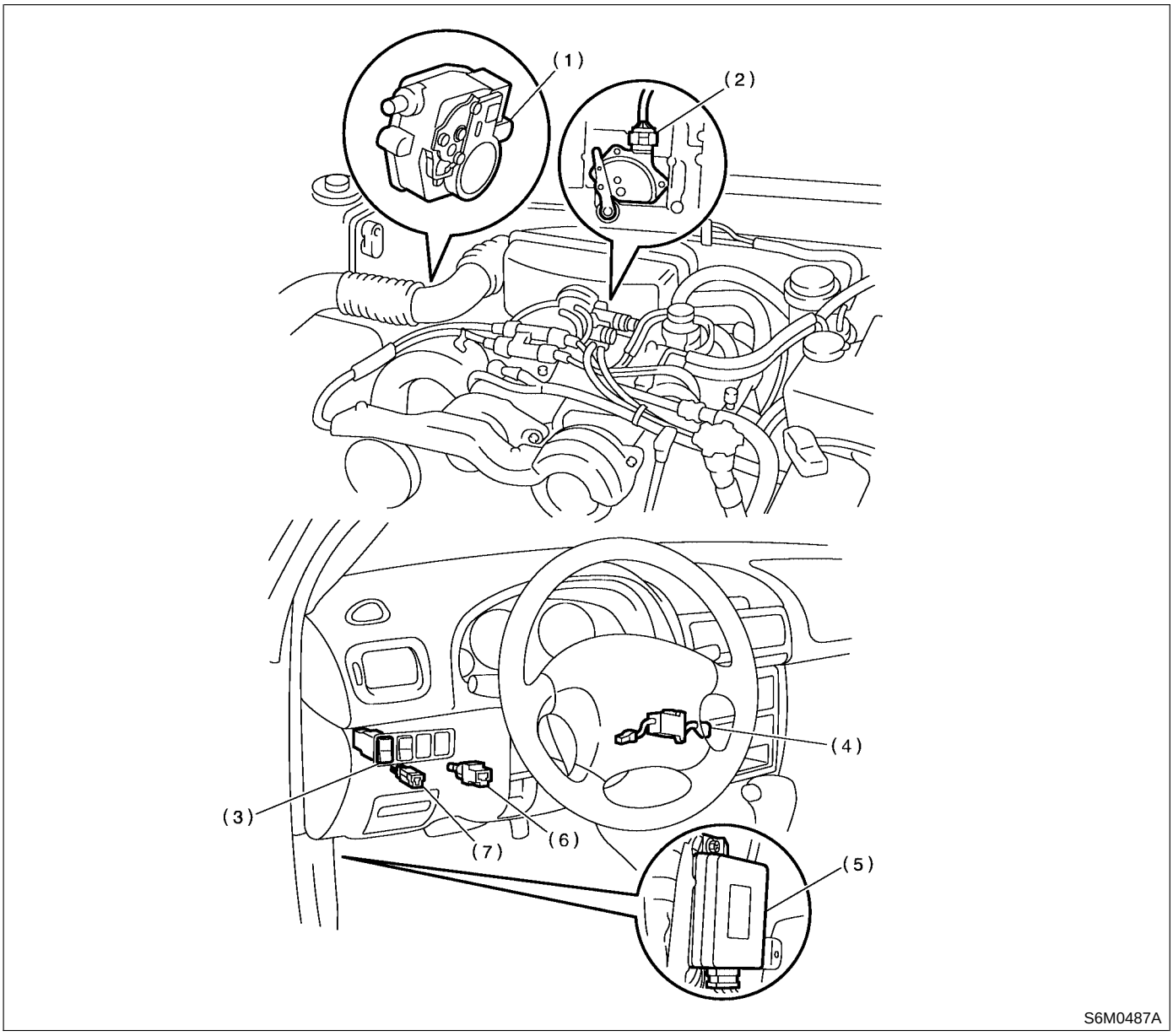
No.	Step	Check	Yes	No
1	**MEASURE RESISTANCE OF VALVE.** 1) Disconnect connector from actuator. 2) Measure resistance between terminals of actuator. ***Terminals*** ***No. 2 — No. 3:***	Is resistance less than 22 Ω?	Go to step **2**.	Replace actuator. <Ref. to CC-7, REMOVAL, Actuator (Non-turbo Model).>
2	**MEASURE RESISTANCE OF VALVE.** Measure resistance between terminals of actuator. ***Terminals*** ***No. 2 — No. 1:***	Is resistance less than 55 Ω?	Go to step **3**.	Replace actuator. <Ref. to CC-7, REMOVAL, Actuator (Non-turbo Model).>
3	**MEASURE RESISTANCE OF VALVE.** Measure resistance between terminals of actuator. ***Terminals*** ***No. 2 — No. 4:***	Is resistance less than 55 Ω?	Go to step **4**.	Replace actuator. <Ref. to CC-7, REMOVAL, Actuator (Non-turbo Model).>
4	**CHECK FOR LEAKAGE AND STICKING OF VALVES.** 1) Disconnect connector from actuator. 2) Disconnect vacuum hose from actuator. 3) Connect vacuum pump. 4) Apply a vacuum pressure of 40.0 kPa (300 mmHg, 11.81 inHg) to actuator. 5) Make sure that cruise control cable moves smoothly when connecting + (positive) battery cable to terminal No. 2 and − (negative) battery cable to terminals No. 1, 3 and 4 of actuator connector.	Does cruise control cable have a stroke of 35 mm (1.38 in) within 3 seconds?	Go to step **5**.	Replace actuator. <Ref. to CC-7, REMOVAL, Actuator (Non-turbo Model).>
5	**CHECK FOR LEAKAGE AND STICKING OF VALVES.** When the battery cable is disconnected from former condition, make sure the cable returns to its original position smoothly.	Does cruise control cable get back to its original position within 1.5 seconds?	Go to step **6**.	Replace actuator. <Ref. to CC-7, REMOVAL, Actuator (Non-turbo Model).>
6	**CHECK CABLE MOVEMENT.** 1) Connect + (positive) battery cable to terminal No. 2 and − (negative) battery cable to terminals No. 1, 3 and 4 of actuator connector. 2) Apply a vacuum pressure of 40 kPa (300 mmHg, 11.81 inHg) to actuator.	Does cruise control perform pull operation?	Go to step **7**.	Replace actuator. <Ref. to CC-7, REMOVAL, Actuator (Non-turbo Model).>
7	**CHECK CABLE MOVEMENT.** After step 6, disconnect − (negative) battery cable from terminal 3 of actuator connector and remove vacuum pump.	Does cruise control perform hold operation?	Go to step **8**.	Replace actuator. <Ref. to CC-7, REMOVAL, Actuator (Non-turbo Model).>
8	**CHECK CABLE MOVEMENT.** After step 7, disconnect − (negative) battery cable from terminal 1 of actuator connector.	Does cruise control perform release operation?	End of actuator inspection.	Replace actuator. <Ref. to CC-7, REMOVAL, Actuator (Non-turbo Model).>

3. Electrical Components Location S003507

A: LOCATION S003507A13

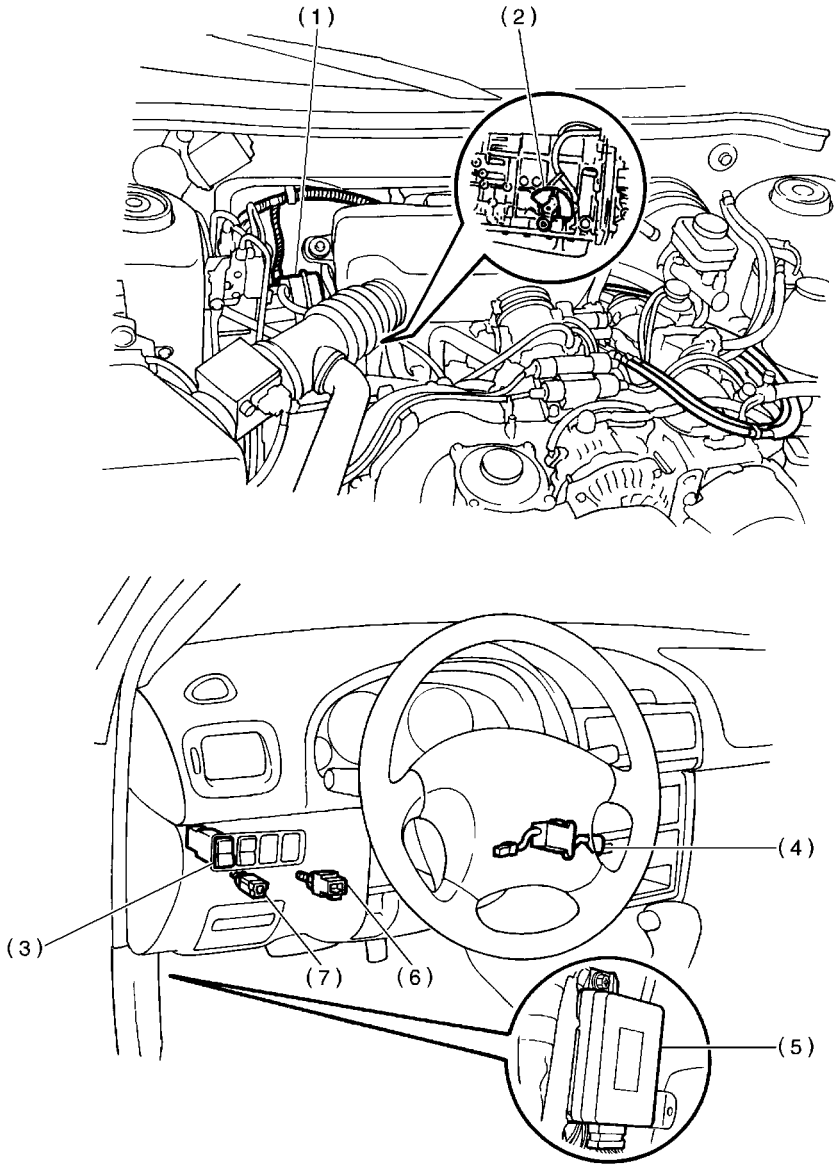
NOTE:
Electrical component locations are for LHD vehicles.
Cruise control actuator and cruise control module locations for RHD vehicles are symmetrically opposite.

1. TURBO MODEL S003507A1301



(1) Actuator
(2) Inhibitor switch (AT)
(3) Cruise control main switch
(4) Cruise control command switch
(5) Cruise control module
(6) Stop and brake switch
(7) Clutch switch (MT)

2. NON-TURBO MODEL S003507A1302

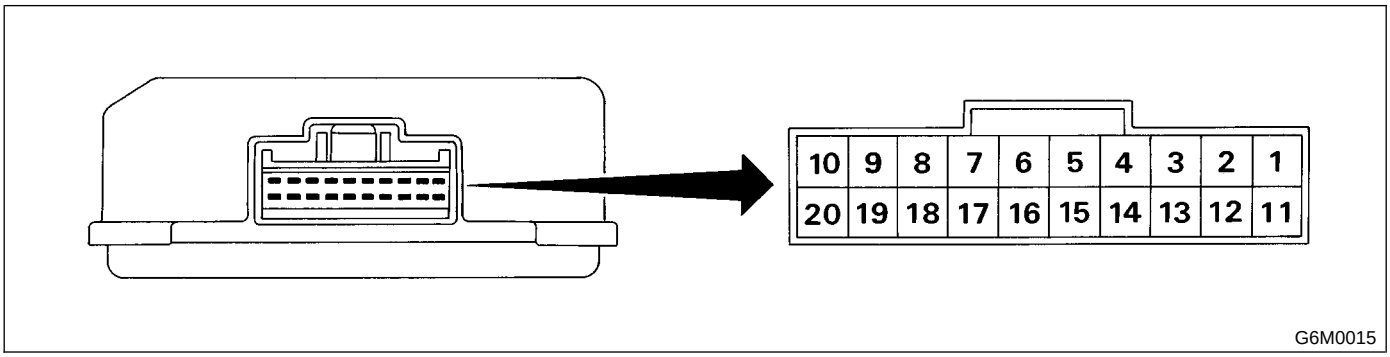


(1) Actuator (with valves)
(2) Inhibitor switch (AT)
(3) Cruise control main switch
(4) Cruise control command switch
(5) Cruise control module
(6) Stop and brake switch
(7) Clutch switch (MT)

4. Cruise Control Module I/O Signal S003515

A: ELECTRICAL SPECIFICATION S003515A08

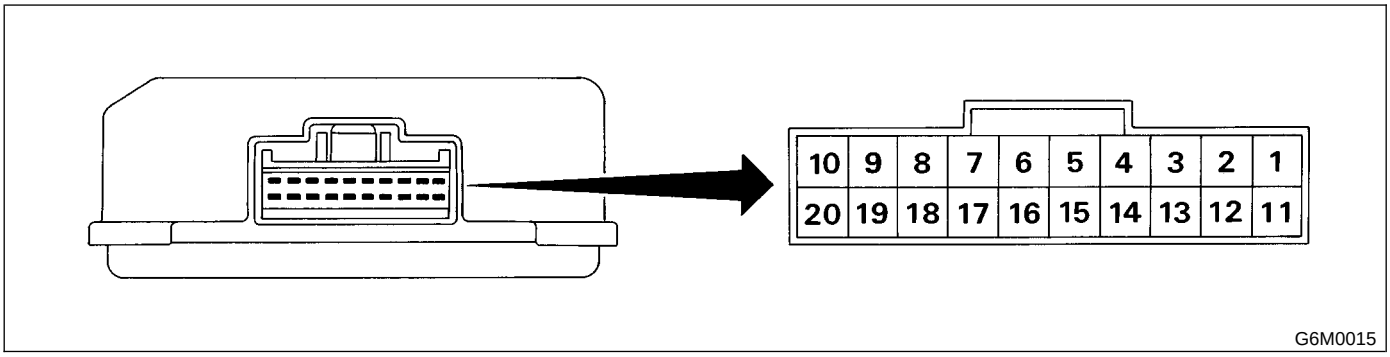
1. TURBO MODEL S003515A0801



Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Main light	1	● Battery voltage is present when main switch is turned OFF. ● “0” volt is present when main switch is turned ON.
Inhibitor switch (AT)	4	● Battery voltage is present when selector lever is other than “P” or “N” position. ● “0” volt is present when selector lever is set to “P” or “N” position.
Motor B	5	● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. ● “0” volt is present when main switch is turned OFF.
Ground	6	—
Motor A	7	● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. ● “0” volt is present when main switch is turned OFF.
RESUME/ACCEL switch	9	● Battery voltage is present when command switch is turned to RESUME/ACCEL position. ● “0” volt is present when command switch is released.
SET/COAST switch	10	● Battery voltage is present when command switch is turned to SET/COAST position. ● “0” volt is present when command switch is released.
Main power supply	11	● Battery voltage is present when main power is turned ON. ● “0” volt is present when main power is turned OFF.
Ignition switch	12	● Battery voltage is present when ignition switch is turned ON. ● “0” volt is present when ignition switch is turned OFF.
Motor C	13	● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. ● “0” volt is present when main switch is turned OFF.
Motor clutch	14	● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating. ● “0” volt is present when vehicle is stopped.
Cruise control main switch	15	● Battery voltage is present during pressing the cruise control main switch, and then battery voltage is present while main switch is turned ON. ● “0” volt is present when main switch is turned OFF.
Brake switch	16	Leave clutch pedal released (MT), while cruise control main switch is turned ON. Then check that; ● Battery voltage is present when brake pedal is released. ● “0” volt is present when brake pedal is depressed. Additionally only in MT vehicle, keep the cruise control main switch to ON and leave brake pedal released. Then check that; ● Battery voltage is present when clutch pedal is released. ● “0” volt is present when clutch pedal is depressed.

Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Data link connector	17	—
Data link connector	18	—
Vehicle speed sensor (MT) TCM (AT)	19	Lift-up the vehicle until all four wheels are raised off ground, and then rotate any wheel manually. Approx. “5” and “0” volt pulse signals are alternately input to cruise control module.
Stop light switch	20	Turn ignition switch to OFF. Then check that; ● Battery voltage is present when brake pedal is depressed. ● “0” volt is present when brake pedal is released.
NOTE: Voltage at terminals 5, 7, 13 and 14 cannot be checked unless vehicle is driving by cruise control operation.		

2. NON-TURBO MODEL S003515A0802

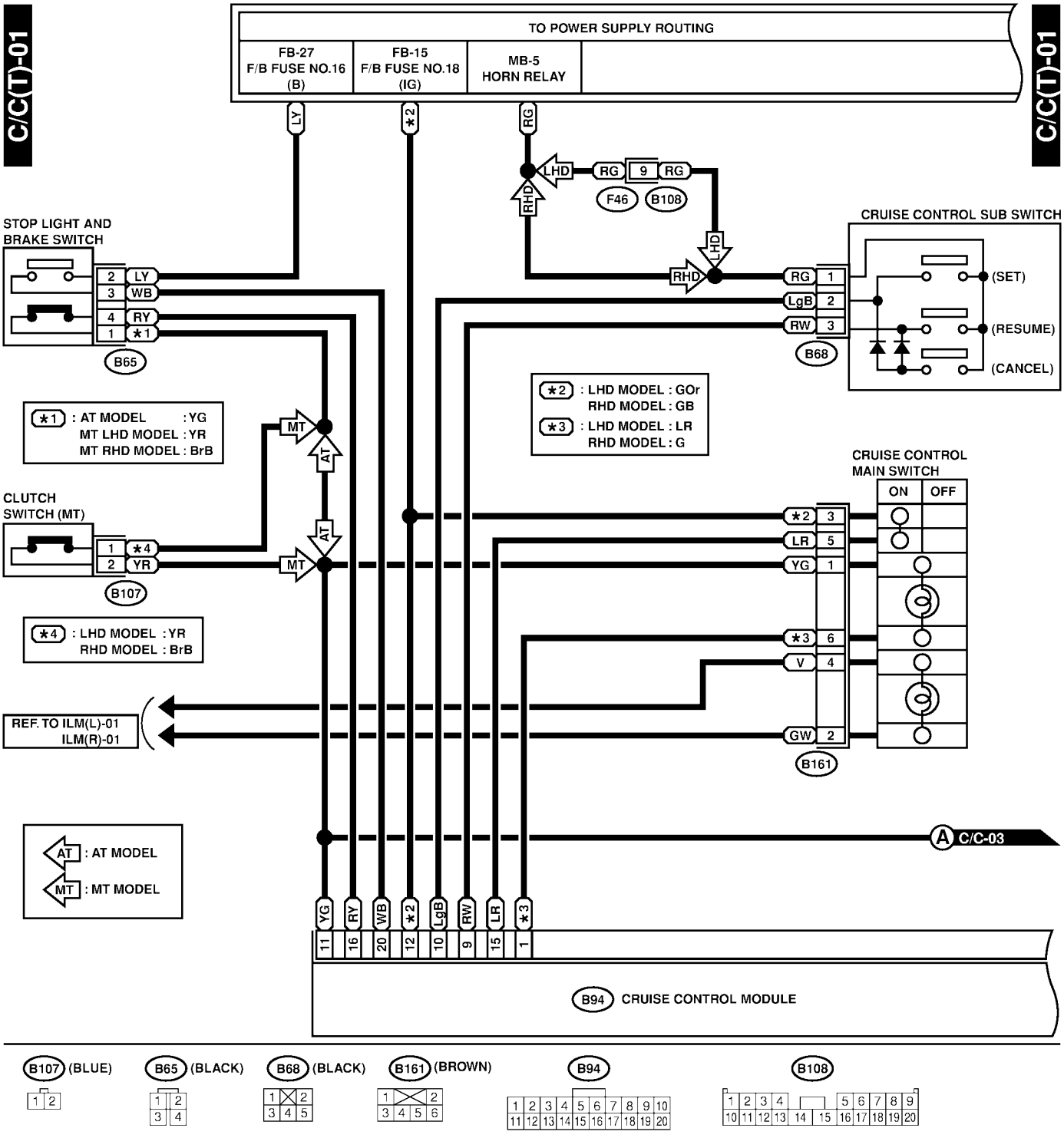


Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Vent valve	1	● Power supply is ON when vehicle is stopped. ● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating.
Safety valve	2	● Power supply is ON when vehicle is stopped. ● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating.
Ignition switch	3	● Battery voltage is present when ignition switch is turned ON. ● “0” volt is present when ignition switch is turned OFF.
Cruise control main switch	4	● Battery voltage is present when main power is turned ON. ● “0” volt is present when main power is turned OFF.
Power supply to vacuum valve, vent valve, safety valve and indicator light	5	● Battery voltage is present when main power is turned ON. ● “0” volt is present when main power is turned OFF.
SET/COAST switch	6	● Battery voltage is present when command switch is turned to SET/COAST position. ● “0” volt is present when command switch is released.
RESUME/ACCEL switch	7	● Battery voltage is present when command switch is turned to RESUME/ ACCEL position. ● “0” volt is present when command switch is released.

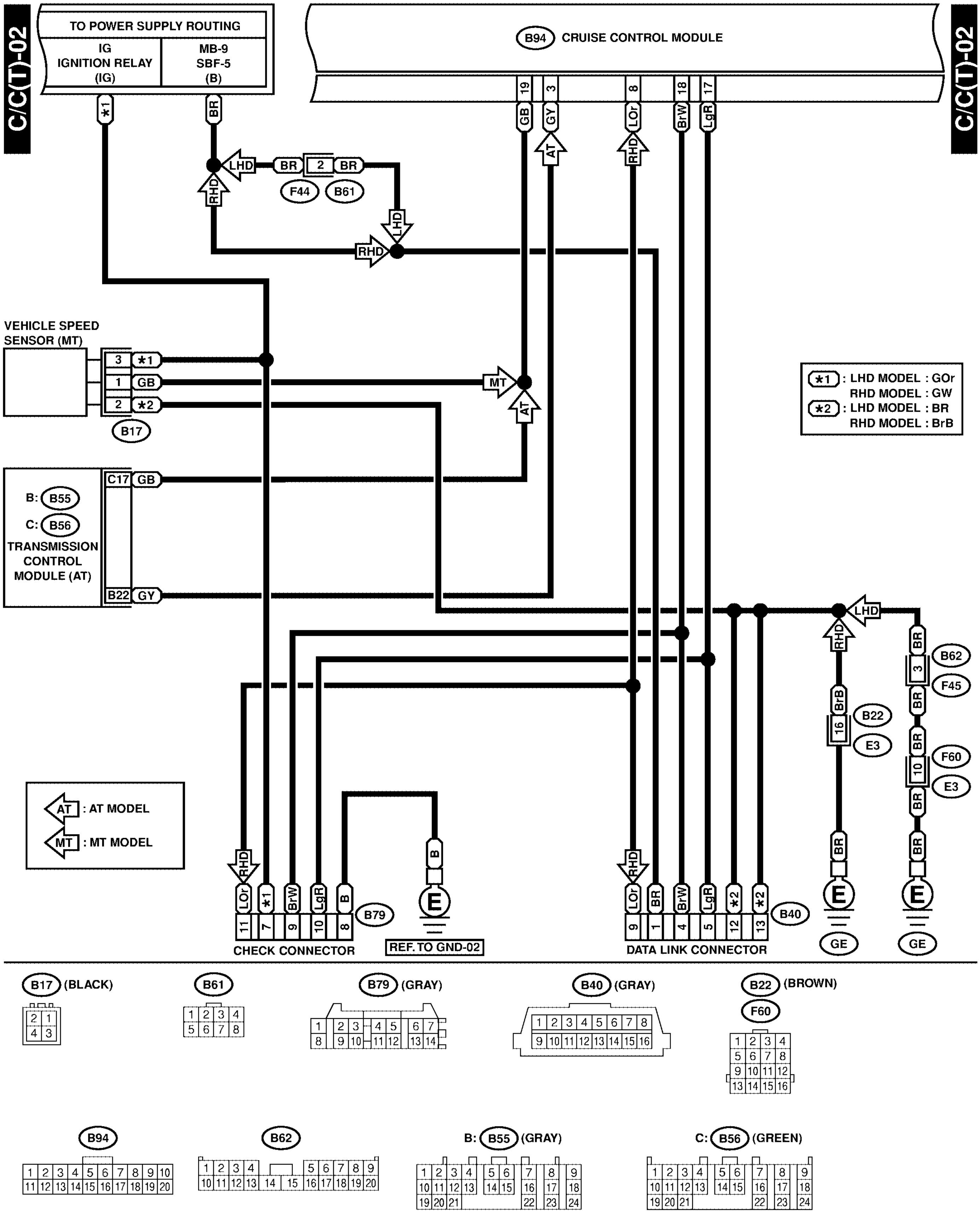
Content	Terminal No.	Measuring conditions and I/O signals (ignition switch ON and engine idling)
Brake switch	8	Set selector lever to any position other than “P” or “N” position (AT) / leave clutch pedal released (MT), while cruise control main switch is turned ON. Then check that; ● Battery voltage is present when brake pedal is released. ● “0” volt is present when brake pedal is depressed, or ● Battery voltage is present when clutch pedal is released (MT). ● “0” volt is present when clutch pedal is depressed (MT). ● Battery voltage is present when selector lever is in any position other than “P” or “N” position (AT). ● “0” volt is present when selector lever is set to “P” or “N” position (AT).
Clutch switch (MT)/ Inhibitor switch (AT)	9	● Battery voltage is present when clutch pedal is released (MT). ● “0” volt is present when clutch pedal is depressed (MT). ● Battery voltage is present when selector lever is in any position other than “P” or “N” position (AT). ● “0” volt is present when selector lever is set to “P” or “N” position (AT).
Vacuum valve	11	● Power supply is ON when vehicle is stopped. ● ON-and-OFF (“0”-and-battery voltage) operation is alternately repeated while cruise control is operating.
Set signal to transmission control module (AT)	12	● TCM emits a ground-level signal while driving vehicle at least 40 km/h (25 MPH) with SET switch ON.
Ground	13	—
Check connector/ OBD-II service connector	14	—
Check connector/ OBD-II service connector	15	—
Vehicle speed sensor 2 (MT) Automatic transmission control module (AT)	18	Lift-up the vehicle until all four wheels are raised off ground, and then rotate any wheel manually. Approx. 5 and 0 volt pulse signals are alternately input to cruise control module.
Stop light switch	19	Turn ignition switch to OFF. Then check that; ● Battery voltage is present when brake pedal is depressed. ● “0” volt is present when brake pedal is released.
Ground	20	—
NOTE: Voltage at terminals 1, 2, 11 and 12 cannot be checked unless vehicle is driving by cruise control operation.		

B: SCHEMATIC S003515A21

1. CRUISE CONTROL TURBO MODEL S003515A2107

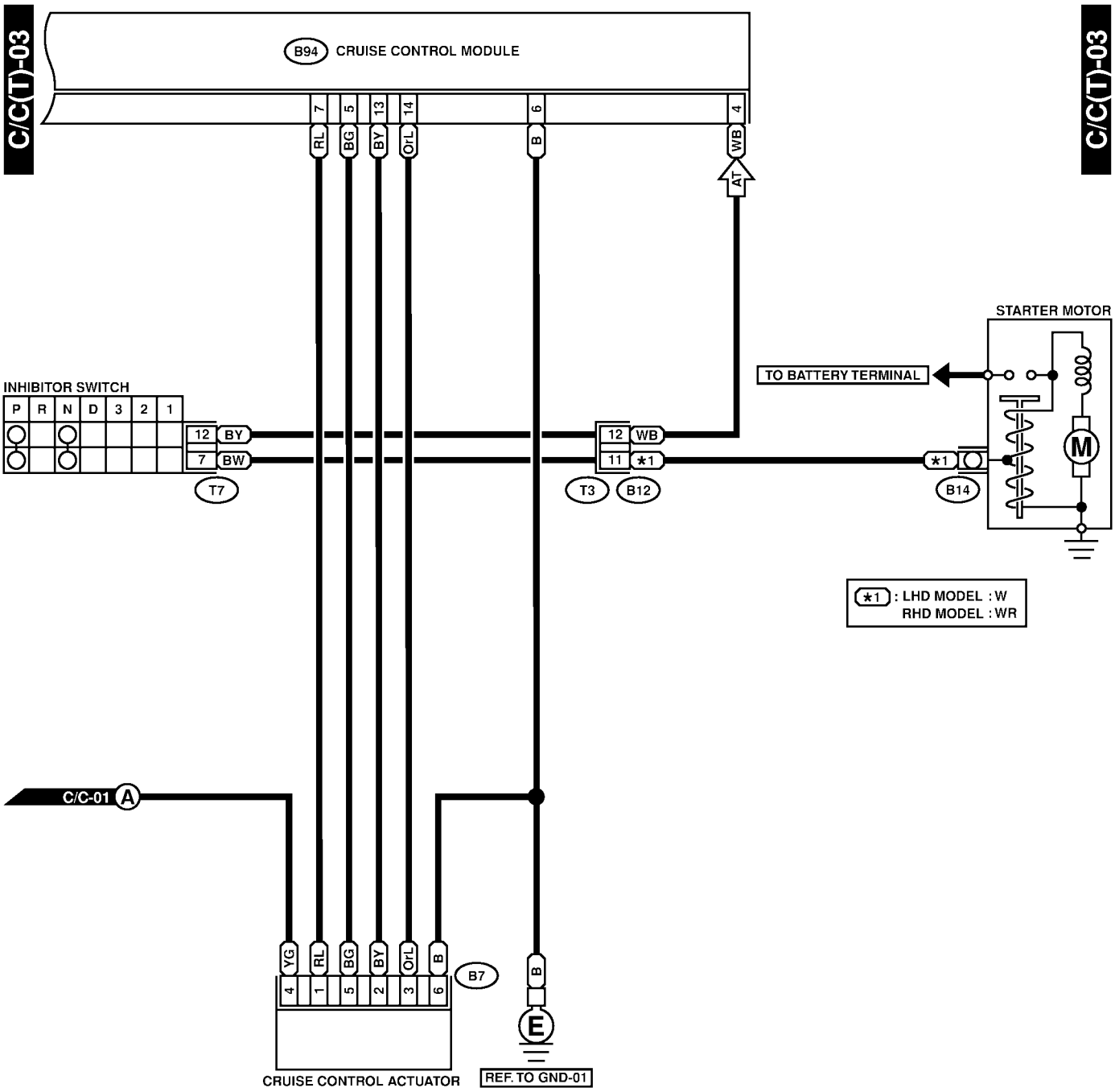


SG71-20A



C/C(T)-02
TO POWER SUPPLY ROUTING
IG
IGNITION RELAY
(IG)
MB-9
SBF-5
(B)
B94 CRUISE CONTROL MODULE
C/C(T)-02
VEHICLE SPEED
SENSOR (MT)
B17
B: B55
C: B56
TRANSMISSION
CONTROL
MODULE (AT)
*1 : LHD MODEL : GOr
RHD MODEL : GW
*2 : LHD MODEL : BR
RHD MODEL : BrB
AT : AT MODEL
MT : MT MODEL
B79
CHECK CONNECTOR
REF. TO GND-02
B40
DATA LINK CONNECTOR
GE
GE
B17 (BLACK)
B61
B79 (GRAY)
B40 (GRAY)
B22 (BROWN)
F60
B94
B62
B: B55 (GRAY)
C: B56 (GREEN)

SG71-20B



B7 (BLACK)

1	2	3
4	5	6

B12

1	2	3	4
5	6	7	8
9	10	11	12

T7

1	2	3	4	5	6	
7	8	9	10	11	12	

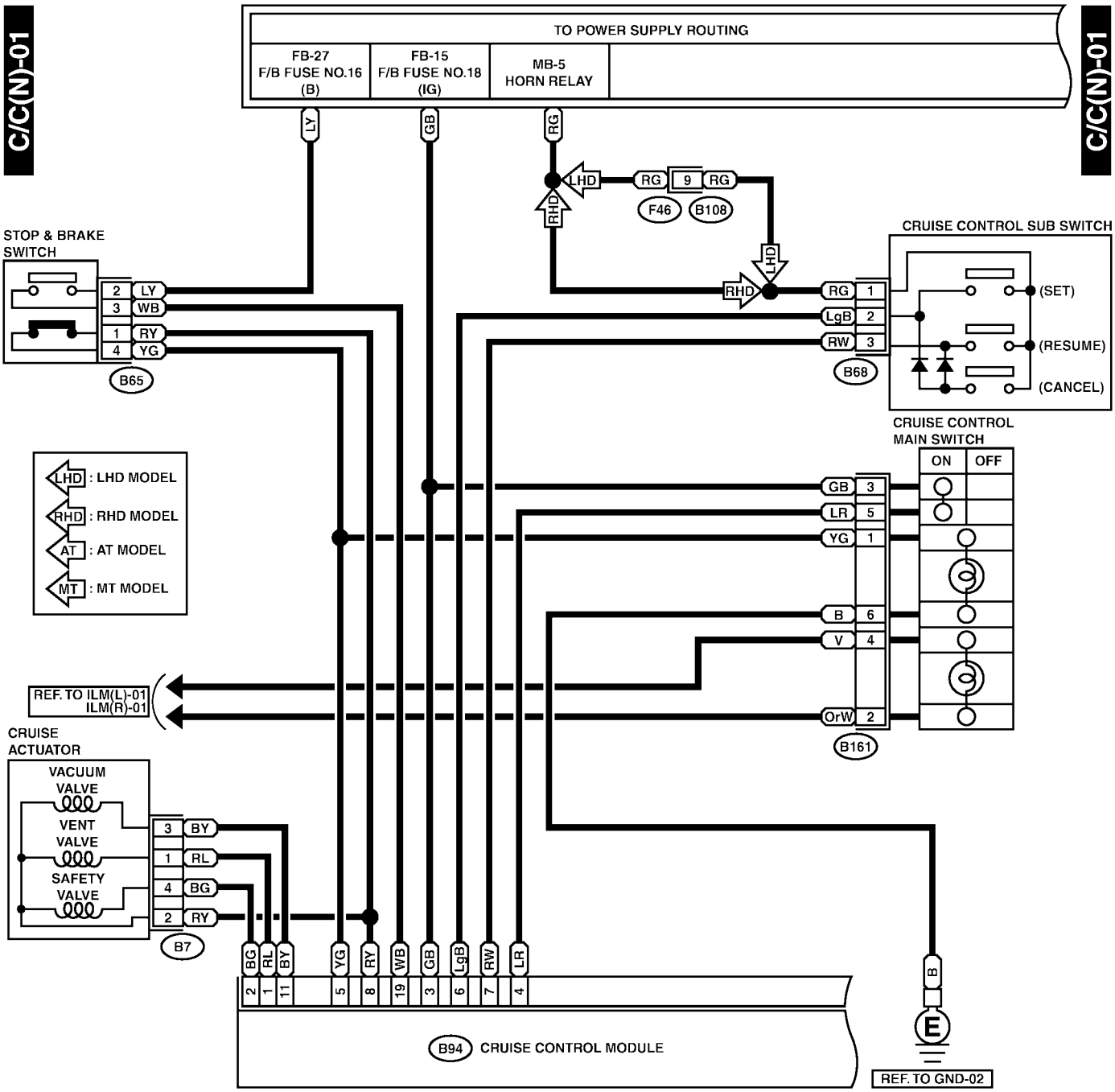
B94

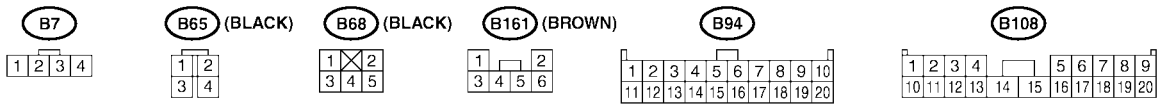
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

SG71-20C

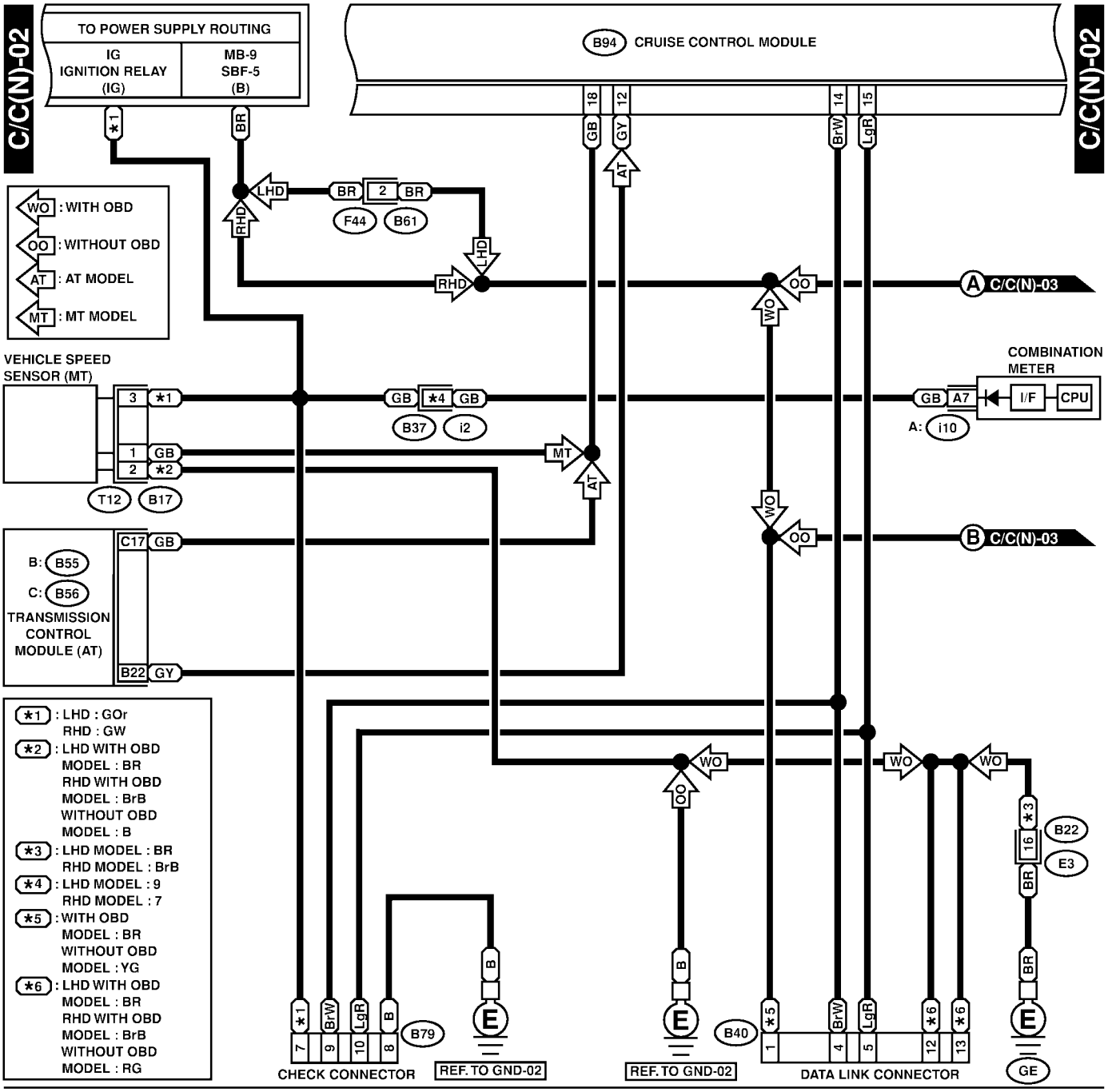
2. CRUISE CONTROL NON-TURBO MODEL

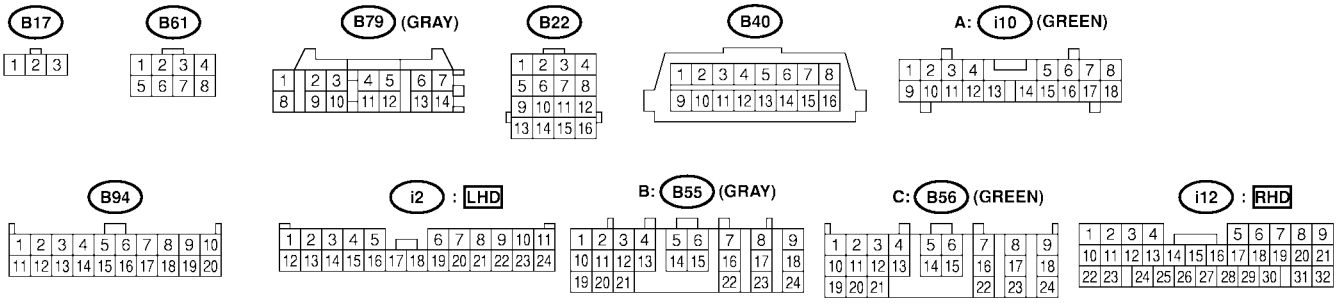
S003515A2108



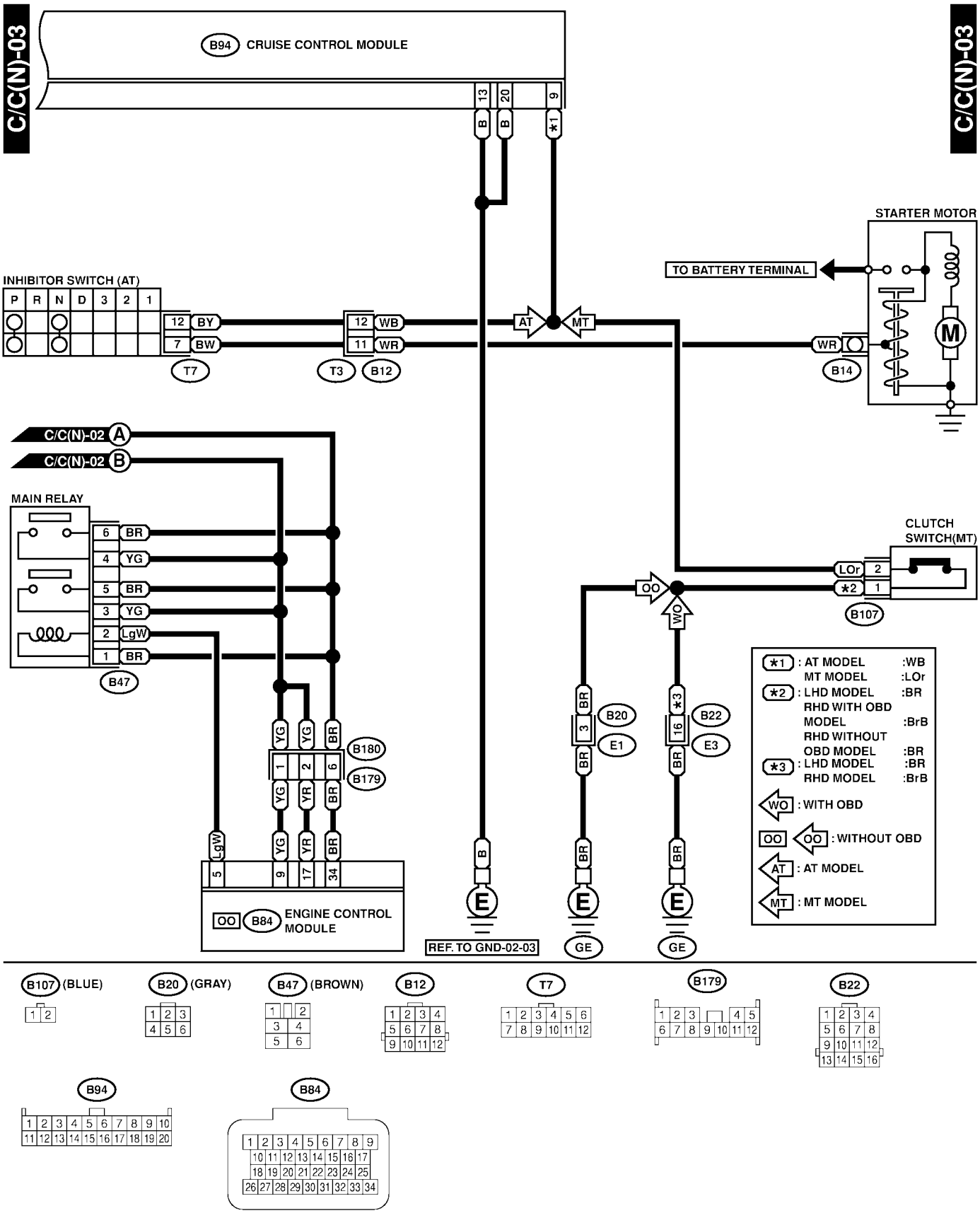


SG71-21A


C/C(N)-02
TO POWER SUPPLY ROUTING
IG
IGNITION RELAY
(IG)
MB-9
SBF-5
(B)
B94 CRUISE CONTROL MODULE
WO : WITH OBD
OO : WITHOUT OBD
AT : AT MODEL
MT : MT MODEL
LHD
RHD
F44
B61
A C/C(N)-03
B C/C(N)-03
VEHICLE SPEED SENSOR (MT)
T12
B17
B37
i2
COMBINATION METER
I/F
CPU
A: i10
B: B55
C: B56
TRANSMISSION CONTROL MODULE (AT)
B79
CHECK CONNECTOR
REF. TO GND-02
B40
DATA LINK CONNECTOR
B22
E3
GE
*1 : LHD : GOr
RHD : GW
*2 : LHD WITH OBD
MODEL : BR
RHD WITH OBD
MODEL : BrB
WITHOUT OBD
MODEL : B
*3 : LHD MODEL : BR
RHD MODEL : BrB
*4 : LHD MODEL : 9
RHD MODEL : 7
*5 : WITH OBD
MODEL : BR
WITHOUT OBD
MODEL : YG
*6 : LHD WITH OBD
MODEL : BR
RHD WITH OBD
MODEL : BrB
WITHOUT OBD
MODEL : RG


B17
B61
B79 (GRAY)
B22
B40
A: i10 (GREEN)
B94
i2 : LHD
B: B55 (GRAY)
C: B56 (GREEN)
i12 : RHD

SG71-21B


C/C(N)-03
B94 CRUISE CONTROL MODULE
13 20 9
B B *1
C/C(N)-03
STARTER MOTOR
TO BATTERY TERMINAL
INHIBITOR SWITCH (AT)
P R N D 3 2 1
12 BY
7 BW
T7
12 WB
11 WR
T3 B12
AT MT
WR
B14
M
C/C(N)-02 A
C/C(N)-02 B
MAIN RELAY
6 BR
4 YG
5 BR
3 YG
2 LgW
1 BR
B47
CLUTCH SWITCH(MT)
LOr 2
*2 1
B107
OO
WO
YG YG BR
B180
1 2 6
B179
YG YR BR
LgW YG YR BR
5 9 17 34
OO B84 ENGINE CONTROL MODULE
B BR
B20
3
E1
*3
B22
16
E3
E
REF. TO GND-02-03
GE
*1 : AT MODEL :WB
MT MODEL :LOr
*2 : LHD MODEL :BR
RHD WITH OBD MODEL :BrB
RHD WITHOUT OBD MODEL :BR
*3 : LHD MODEL :BR
RHD MODEL :BrB
WO : WITH OBD
OO : WITHOUT OBD
AT : AT MODEL
MT : MT MODEL
B107 (BLUE)
B20 (GRAY)
B47 (BROWN)
B12
T7
B179
B22
B94
B84

SG71-21C

5. Subaru Select Monitor S003503

A: OPERATION S003503A16

1. GENERAL S003503A1604

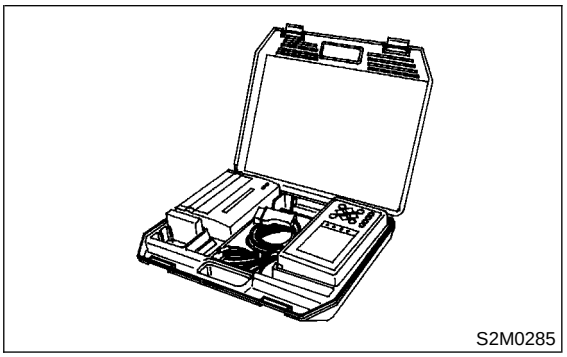
The on-board diagnosis function of the cruise control system uses an external Subaru Select Monitor.
The on-board diagnosis function operates in two categories, which are used depending on the type of problems;
1) Cruise cancel conditions diagnosis
(1) This category of diagnosis requires actual vehicle driving in order to determine the cause, (as when cruise speed is cancelled during driving although cruise cancel condition is not entered).
(2) Cruise control module memory stores the cancel condition (Code No.) which occurred during driving. When there are plural cancel conditions (Code No.), they are shown on the Subaru Select Monitor.

CAUTION:
● The cruise control memory stores not only the cruise "cancel" which occurred (although "cancel" operation is not entered by the driver), but also the "cancel" condition input by the driver.
● The content of memory is cleared when ignition switch or cruise main switch is turned OFF.

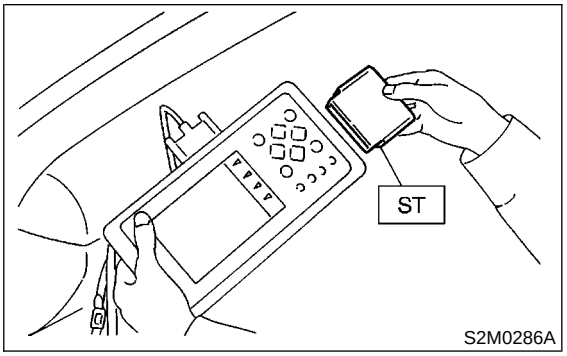
2) Real-time diagnosis
The real-time diagnosis function is used to determine whether or not the input signal system is in good order, according to signal emitted from switches, sensors, etc.
(1) Vehicle cannot be driven at cruise speed because problem occurs in the cruise control system or its associated circuits.
(2) Monitor the signal conditions from switches and sensors.

2. CRUISE CANCEL CONDITIONS DIAGNOSIS S003503A1605

1) Prepare Subaru Select Monitor kit.

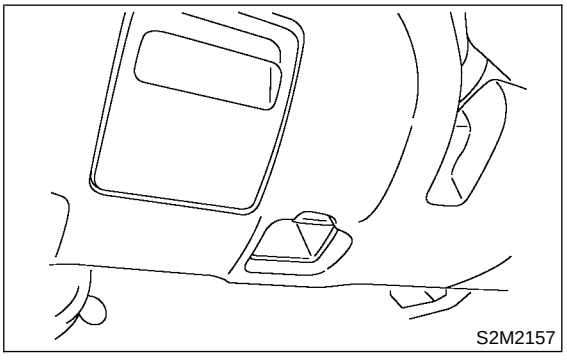

S2M0285

2) Connect diagnosis cable to Subaru Select Monitor.
3) Insert cartridge into Subaru Select Monitor.



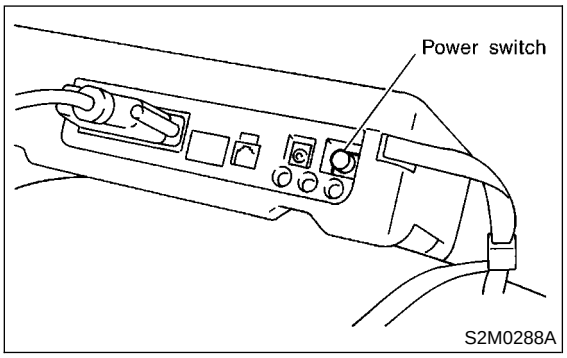
S2M0286A

4) Connect Subaru Select Monitor to data link connector.
(1) Data link connector located in the lower portion of the instrument panel (on the driver's side).


S2M2157

(2) Connect diagnosis cable to data link connector.

5) Start engine and turn cruise control main switch to ON.
6) Turn Subaru Select Monitor switch to ON.



7) On the ≪Main Menu≫ display screen, select the {All System Diagnosis} and press the [YES] key.

NOTE:
The diagnostic trouble code is also shown in the {Each System Check} mode. This mode is called up on the ≪Cruise Control Diagnosis≫ screen by selecting the item {Cancel Code(s) Display}.

8) Drive vehicle at least 30 km/h (19 MPH) with cruise speed set.
9) If cruise speed is canceled itself (without doing any cancel operations), a diagnostic trouble code will appear on select monitor display.

CAUTION:
● A diagnostic trouble code will also appear when cruise cancel is effected by driver. Do not confuse.
● Have a co-worker ride in vehicle to assist in diagnosis during driving.

NOTE:
Diagnostic trouble code will be cleared by turning ignition switch or cruise control main switch to OFF.

3. REAL-TIME DIAGNOSIS S003503A1606

1) Connect select monitor.
2) Turn ignition switch and cruise control main switch to ON.
3) Turn Subaru Select Monitor switch to ON.
4) On the ≪Main Menu≫ display screen, select the {Each System Check} and press the [YES] key.
5) On the ≪System Selection Menu≫ display screen, select the {Cruise Control} and press the [YES] key.
6) Press the [YES] key after displayed the information of engine type.
7) On the ≪Cruise Control Diagnosis≫ display screen, select the {Current Data Display & Save} and press the [YES] key.
8) Make sure that normal indication is displayed when controls are operated as indicated below:
● Depress/release the brake pedal. (Stop light switch and brake switch turn ON.)
● Turn ON the “SET/COAST” switch.
● Turn ON the “RESUME/ACCEL” switch.
● Depress/release the clutch pedal. (MT)
● Set the selector lever to P or N. (AT)

NOTE:
● For detailed operation procedure, refer to the SUBARU SELECT MONITOR OPERATION MANUAL.
● For detailed concerning diagnostic trouble codes, refer to the LIST OF DIAGNOSTIC TROUBLE CODE.
<Ref. to CC-37 LIST OF DIAGNOSTIC TROUBLE CODE, Diagnostics Chart with Trouble Code (Turbo Model).> or <Ref. to CC-57, LIST OF DIAGNOSTIC TROUBLE CODE, Diagnostics Chart with Trouble Code (Non-turbo Model).>

6. Diagnostics Chart with Symptom (Turbo Model) S003749

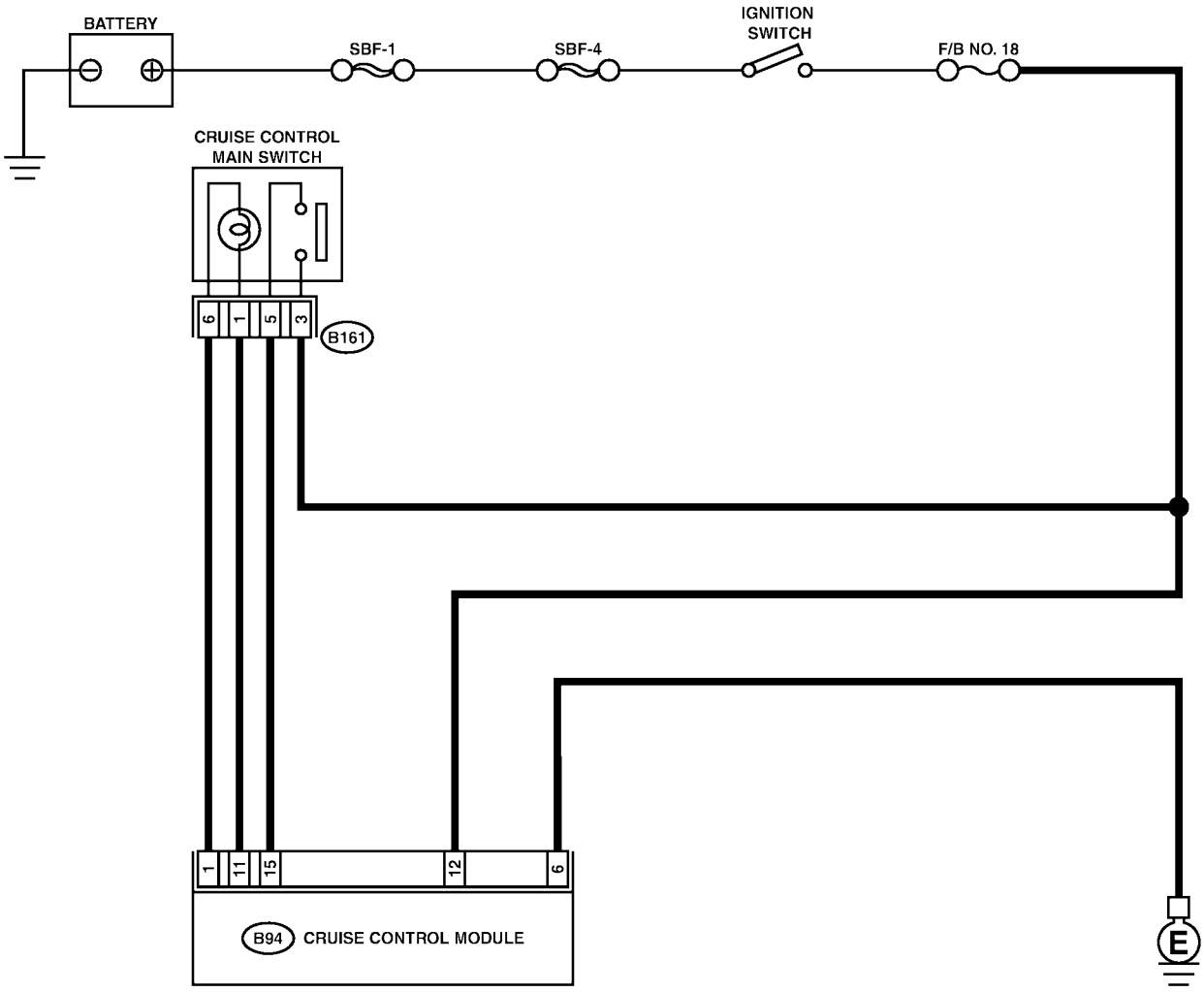
A: SYMPTOM CHART S003749F22

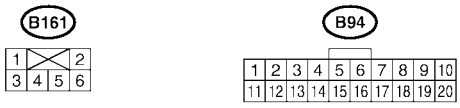
Symptom		Repair area	Reference
1	Cruise control main switch is not turned ON.	(1) Check power supply.	<Ref. to CC-23 CHECK POWER SUPPRY, Diagnostics Chart with Symptom (Turbo Model).>
		(2) Check cruise control main switch.	<Ref. to CC-25 CHECK CRUISE CONTROL MAIN SWITCH, Diagnostics Chart with Symptom (Turbo Model).>
2	Cruise control cannot be set.	(1) Check SET/COAST switch.	<Ref. to CC-29 CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics Chart with Symptom (Turbo Model).>
		(2) Check stop light switch and brake switch.	<Ref. to CC-31 CHECK STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostics Chart with Symptom (Turbo Model).>
		(3) Check clutch switch (MT).	<Ref. to CC-33 CHECK CLUTCH SWITCH (MT), Diagnostics Chart with Symptom (Turbo Model).>
		(4) Check inhibitor switch (AT).	<Ref. to CC-35 CHECK INHIBITOR SWITCH (AT), Diagnostics Chart with Symptom (Turbo Model).>
		(5) Check vehicle speed sensor.	<Ref. to CC-39 DIAGNOSTIC TROUBLE CODE 22 — VEHICLE SPEED SENSOR —, Diagnostics Chart with Trouble Code (Turbo Model).>
		(6) Check motor drive system.	<Ref. to CC-43 DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — , Diagnostics Chart with Trouble Code (Turbo Model).>
		(7) Check motor clutch drive system.	<Ref. to CC-45 DIAGNOSTIC TROUBLE CODE 37 — ACTUATOR MOTOR CLUTCH — , Diagnostics Chart with Trouble Code (Turbo Model).>
3	Vehicle speed is not held within set speed ±3 km/h (±2 MPH).	(1) Check vehicle speed sensor.	<Ref. to CC-39 DIAGNOSTIC TROUBLE CODE 22 — VEHICLE SPEED SENSOR —, Diagnostics Chart with Trouble Code (Turbo Model).>
		(2) Check motor drive system.	<Ref. to CC-43 DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — , Diagnostics Chart with Trouble Code (Turbo Model).>
		(3) Check motor clutch drive system.	<Ref. to CC-45 DIAGNOSTIC TROUBLE CODE 37 — ACTUATOR MOTOR CLUTCH — , Diagnostics Chart with Trouble Code (Turbo Model).>
4	Vehicle speed does not increase or does not return to set speed after RESUME/ACCEL switch has been pressed.	(1) Check RESUME/ACCEL switch.	<Ref. to CC-29 CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics Chart with Symptom (Turbo Model).>
		(2) Check motor drive system.	<Ref. to CC-43 DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — , Diagnostics Chart with Trouble Code (Turbo Model).>
		(3) Check motor clutch drive system.	<Ref. to CC-45 DIAGNOSTIC TROUBLE CODE 37 — ACTUATOR MOTOR CLUTCH — , Diagnostics Chart with Trouble Code (Turbo Model).>
5	Vehicle speed does not decrease after SET/COAST switch has been pressed.	(1) Check SET/COAST switch.	<Ref. to CC-29 CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics Chart with Symptom (Turbo Model).>
		(2) Check motor drive system.	<Ref. to CC-43 DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — , Diagnostics Chart with Trouble Code (Turbo Model).>
		(3) Check motor clutch drive system.	<Ref. to CC-45 DIAGNOSTIC TROUBLE CODE 37 — ACTUATOR MOTOR CLUTCH — , Diagnostics Chart with Trouble Code (Turbo Model).>

Symptom		Repair area	Reference
6	Cruise control is not released after CANCEL switch has been pressed.	(1) Check CANCEL switch.	<Ref. to CC-29 CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics Chart with Symptom (Turbo Model).>
		(2) Check motor drive system.	<Ref. to CC-43 DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — , Diagnostics Chart with Trouble Code (Turbo Model).>
		(3) Check motor clutch drive system.	<Ref. to CC-45 DIAGNOSTIC TROUBLE CODE 37 — ACTUATOR MOTOR CLUTCH — , Diagnostics Chart with Trouble Code (Turbo Model).>
7	Cruise control is not released after brake pedal has been depressed.	(1) Check stop light switch and brake switch.	<Ref. to CC-31 CHECK STOP LIGHT SWITCH AND BRAKE SWITCH, Diagnostics Chart Symptom (Turbo Model).>
		(2) Check motor drive system.	<Ref. to CC-43 DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — , Diagnostics Chart with Trouble Code (Turbo Model).>
		(3) Check motor clutch drive system.	<Ref. to CC-45 DIAGNOSTIC TROUBLE CODE 37 — ACTUATOR MOTOR CLUTCH — , Diagnostics Chart with Trouble Code (Turbo Model).>
8	Cruise control is not released after clutch pedal has been depressed (MT).	(1) Check clutch switch.	<Ref. to CC-33 CHECK CLUTCH SWITCH (MT), Diagnostics Chart with Symptom (Turbo Model).>
		(2) Check motor drive system.	<Ref. to CC-43 DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — , Diagnostics Chart with Trouble Code (Turbo Model).>
		(3) Check motor clutch drive system.	<Ref. to CC-45 DIAGNOSTIC TROUBLE CODE 37 — ACTUATOR MOTOR CLUTCH — , Diagnostics Chart with Trouble Code (Turbo Model).>

B: CHECK POWER SUPPLY S003749F23

TROUBLE SYMPTOM:
Cruise control can be set normally, but indicator does not come on. (When main switch is pressed.)
WIRING DIAGRAM:





S6M0521

DIAGNOSTICS CHART WITH SYMPTOM (TURBO MODEL)

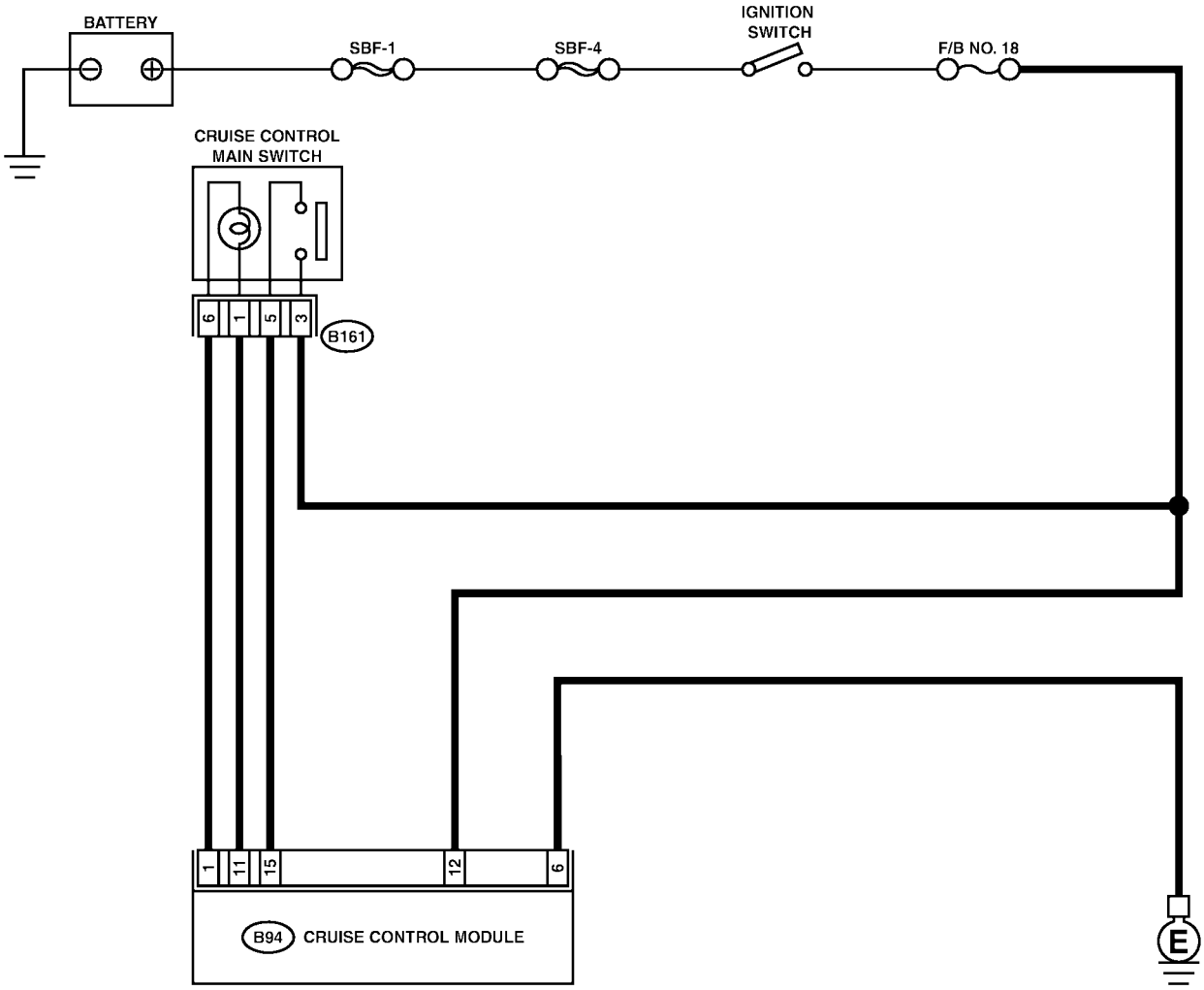
No.	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect cruise control module harness connector. 2) Turn ignition switch ON. 3) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 12 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	• Check fuse No. 18 (in fuse & relay box). • Check harness for open or short between cruise control module and fuse & relay box.
2	**CHECK GROUND CIRCUIT.** Measure resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 6 (+) — Chassis ground (−):***	Is the resistance less than 10 Ω?	Power supply and ground circuit are OK.	Repair harness.

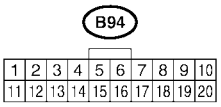
C: CHECK CRUISE CONTROL MAIN SWITCH S003749F24

TROUBLE SYMPTOM:
Cruise control main switch is not turned ON and cruise control cannot be set.

NOTE:
When the main relay (built-in cruise control module) operates, the main switch circuit is in normal condition.
The main relay operation can be checked by hearing the operation sounds.
This operation sounds will be heard when ignition switch and cruise control main switch is turned to ON.

WIRING DIAGRAM:





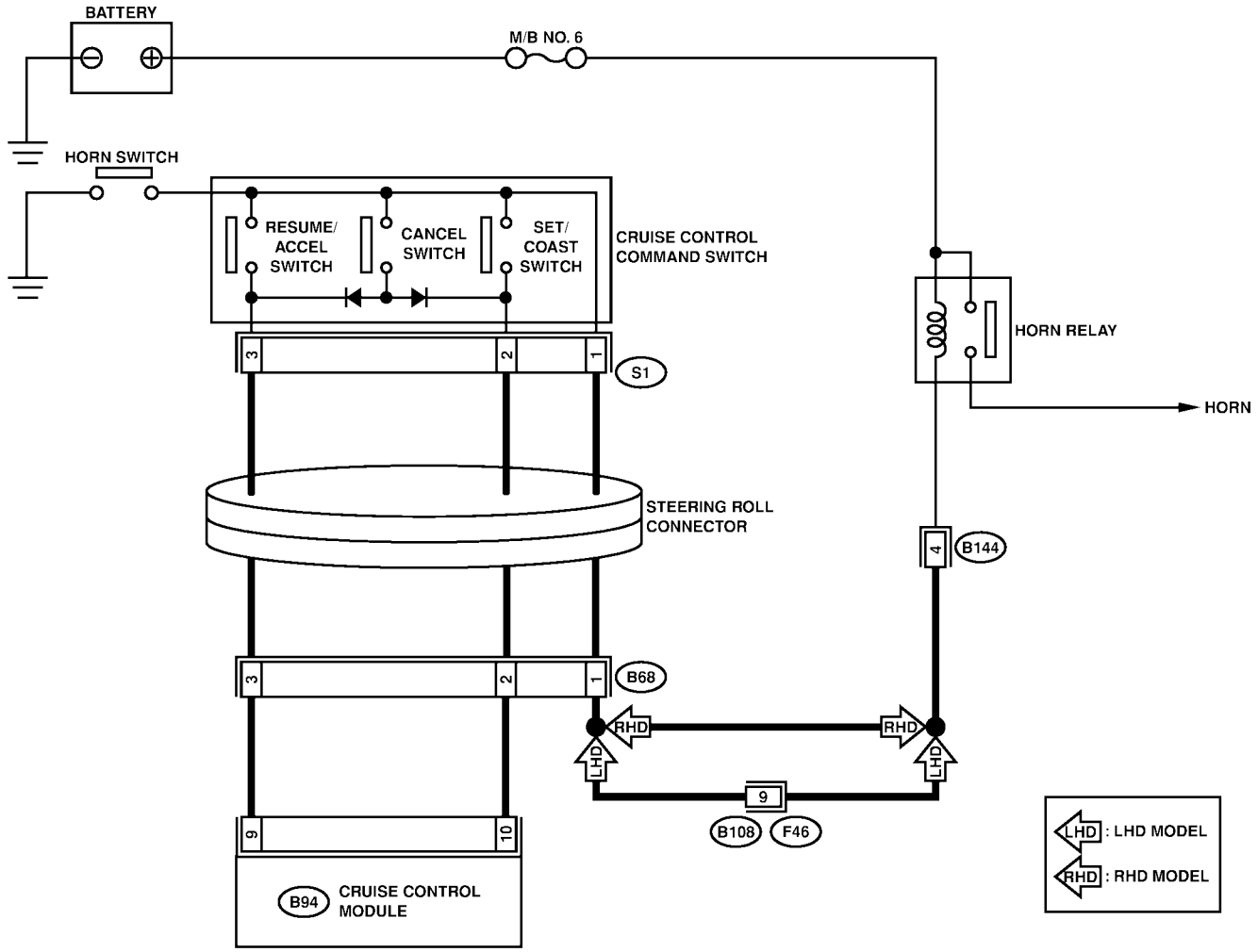
S6M0521

No.	Step	Check	Yes	No
1	**CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.** 1) Disconnect cruise control main switch harness connector. 2) Turn ignition switch ON. 3) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B161) No. 3 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	• Check fuse No. 18 (in fuse & relay box). • Check harness for open or short between cruise control main switch and fuse & relay box.
2	**CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.** 1) Turn ignition switch OFF. 2) Disconnect cruise control module harness connector. 3) Measure resistance between cruise control module harness connector terminal and cruise control main switch harness connector terminal. ***Connector & terminal*** ***(B94) No. 15 (+) — (B161) No. 5 (−):*** ***(B94) No. 1 (+) — (B161) No. 6 (−):*** ***(B94) No. 11(+) — (B161) No. 1 (−):***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair harness.
3	**CHECK CRUISE CONTROL MAIN SWITCH.** Remove and check cruise control main switch. <Ref. to CC-9 Cruise Control Main Switch.>	Is cruise control main switch OK?	Replace cruise control module.	Replace cruise control main switch.

MEMO:

D: CHECK CRUISE CONTROL COMMAND SWITCH S003749F25

TROUBLE SYMPTOM:
Cruise control cannot be set. (Cancelled immediately.)
WIRING DIAGRAM:



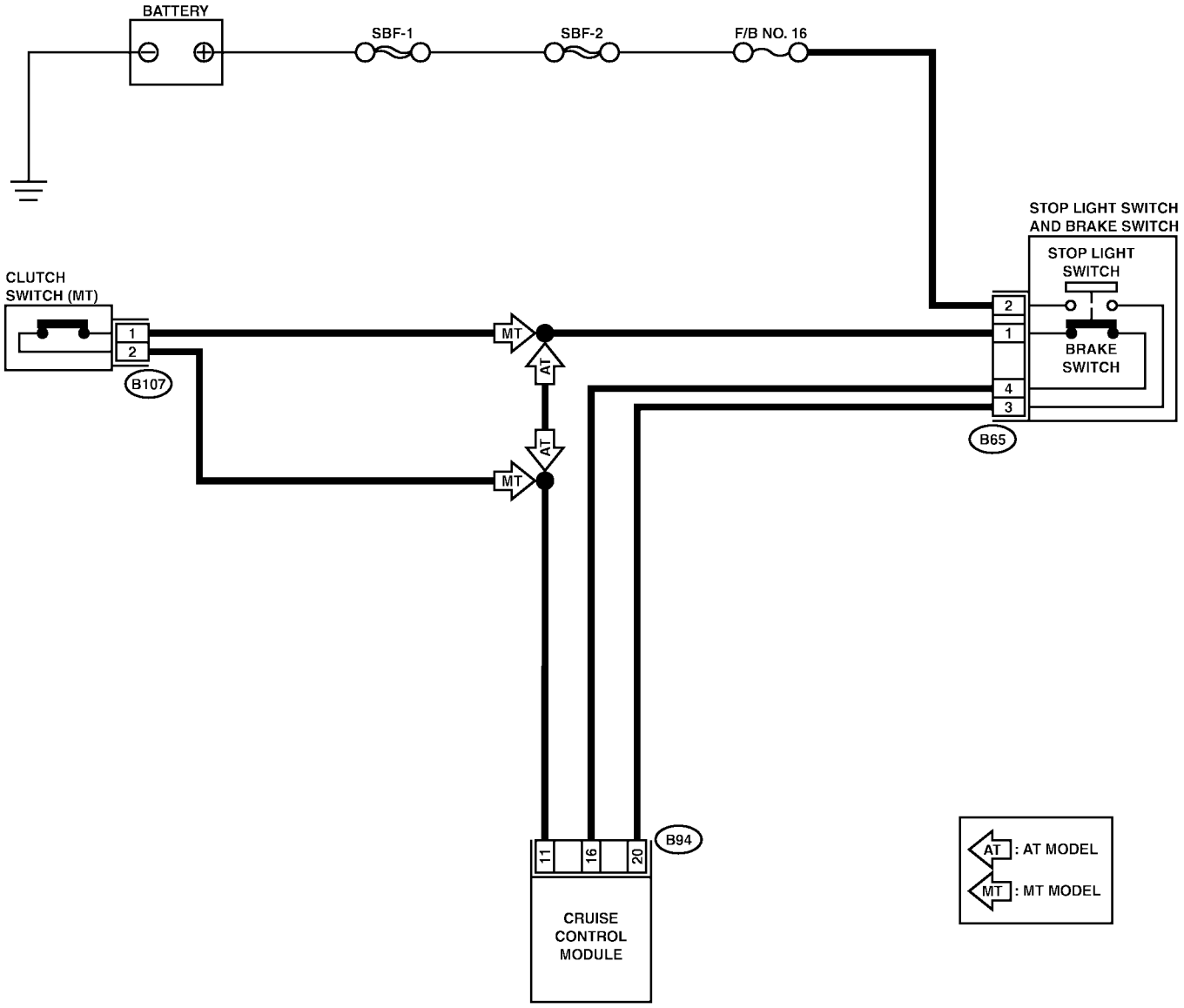
S6M0522

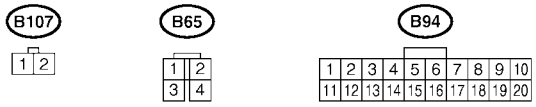
DIAGNOSTICS CHART WITH SYMPTOM (TURBO MODEL)

No.	Step	Check	Yes	No
1	**CHECK SET/COAST SWITCH CIRCUIT.** 1) Disconnect cruise control module harness connector. 2) Turn ignition switch ON. 3) Measure voltage between harness connector terminal and chassis ground when SET/COAST switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 10 (+) — Chassis ground (−):***	Is the voltage 0 V when SET/COAST switch is not pressed? Is the voltage more than 10 V when SET/COAST switch is pressed?	Go to step **2**.	Go to step **4**.
2	**CHECK RESUME/ACCEL SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground when RESUME/ACCEL switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 9 (+) — Chassis ground (−):***	Is the voltage 0 V when RESUME/ACCEL switch is not pressed? Is the voltage more than 10 V when RESUME/ACCEL switch is pressed?	Go to step **3**.	Go to step **4**.
3	**CHECK CANCEL SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground when CANCEL switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 9 (+) — Chassis ground (−):*** ***(B94) No. 10 (+) — Chassis ground (−):***	Is the voltage 0 V when CANCEL switch is not pressed? Is the voltage more than 10 V when CANCEL switch is pressed?	Cruise control command switch circuit is OK.	Go to step **4**.
4	**CHECK POWER SUPPLY FOR COMMAND SWITCH.** Check horn operation.	Does horn sound?	Go to step **5**.	• Check fuse No. 6 (in main fuse box). • Check horn relay. <Ref. to COM-4 HORN RELAY, INSPECTION, Horn System.> • Check harness for open or short between cruise control command switch and fuse & relay box.
5	**CHECK CRUISE CONTROL COMMAND SWITCH.** Remove and check cruise control command switch. <Ref. to CC-10 Cruise Control Command Switch.>	Is cruise control command switch OK?	Check harness between cruise control command switch and cruise control module.	Replace cruise control command switch.

E: CHECK STOP LIGHT SWITCH AND BRAKE SWITCH S003749F26

TROUBLE SYMPTOM:
Cruise control cannot be set.
WIRING DIAGRAM:





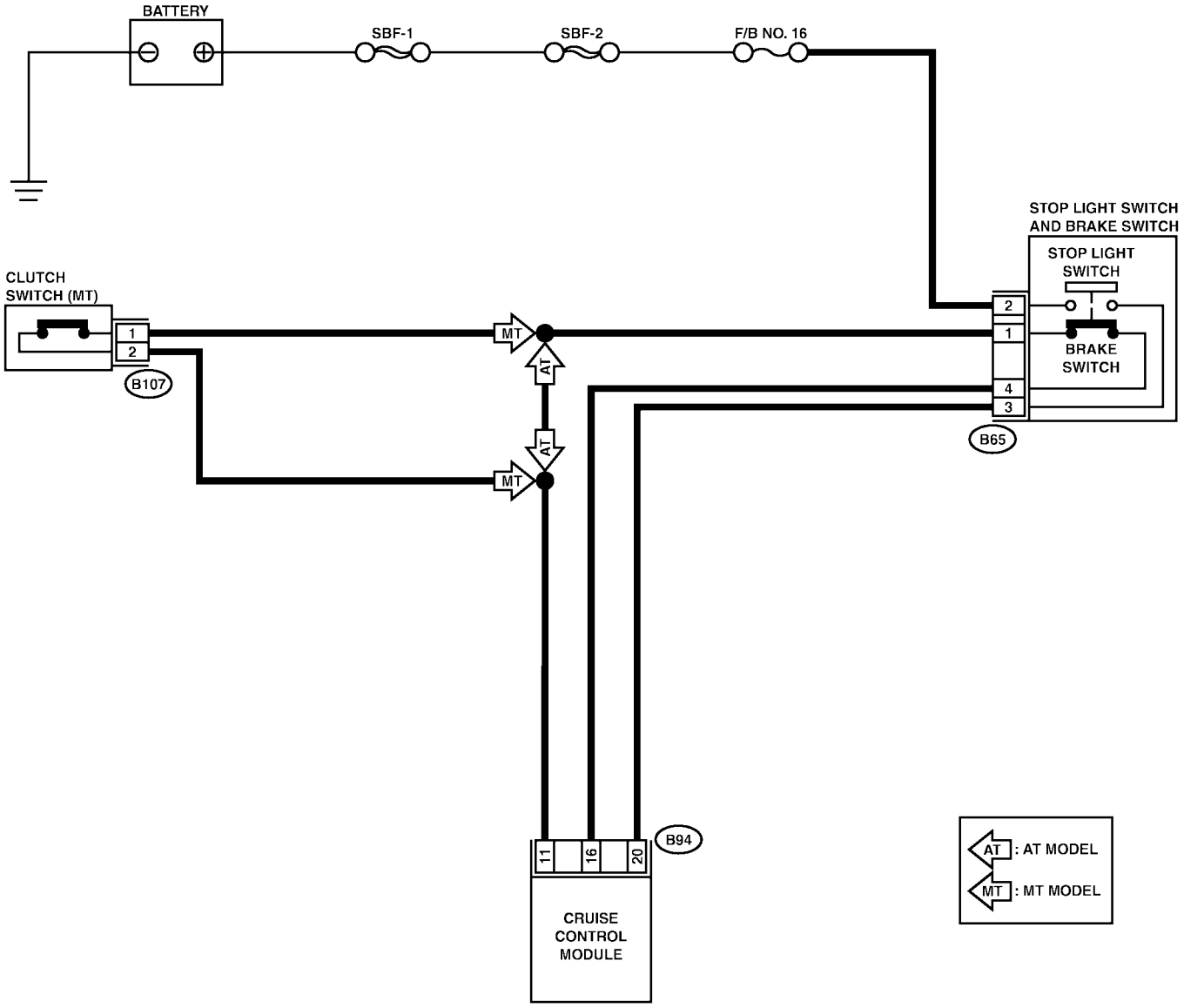
S6M0523

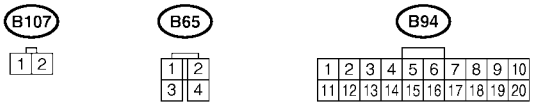
DIAGNOSTICS CHART WITH SYMPTOM (TURBO MODEL)

No.	Step	Check	Yes	No
1	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Disconnect stop light switch and brake switch harness connector. 2) Turn ignition switch ON. 3) Turn cruise control main switch ON. 4) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 2 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	● Check fuse No. 16 (in fuse & relay box). ● Check harness for open or short between stop light/brake switch and fuse & relay box.
2	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 1 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **3**.	● Check harness for open or short between stop light/brake switch and cruise control module (AT). ● Check clutch switch and the circuit (MT).
3	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect cruise control module harness connector. 3) Measure resistance between cruise control module harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B94) No. 20 (+) — (B65) No. 3 (−):*** ***(B94) No. 16 (+) — (B65) No. 4 (−):***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair harness.
4	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH.** Remove and check stop light switch and brake switch. <Ref. to CC-11 Stop and Brake Switch.>	Are stop light switch and brake switch OK?	Stop light switch and brake switch circuit are OK.	Replace stop light switch and brake switch.

F: CHECK CLUTCH SWITCH (MT) S003749F27

TROUBLE SYMPTOM:
Cruise control cannot be set.
WIRING DIAGRAM:



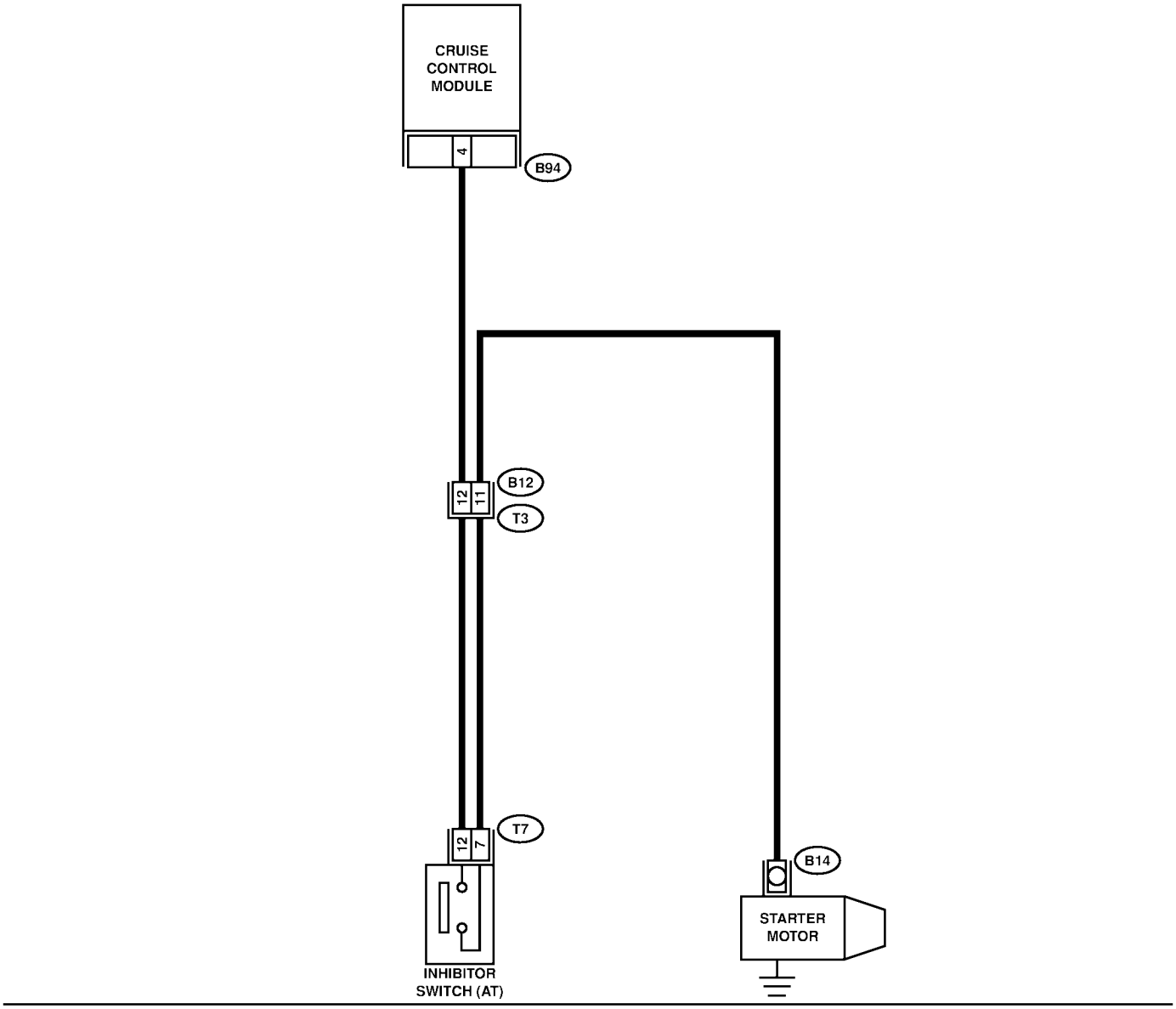


S6M0523

No.	Step	Check	Yes	No
1	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Disconnect clutch switch harness connector. 2) Turn ignition switch ON. 3) Turn cruise control main switch ON. 4) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B107) No. 2 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	Check harness for open or short between clutch switch and cruise control module.
2	**CHECK CLUTCH SWITCH CIRCUIT.** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect stop light switch and brake switch harness connector. 3) Measure resistance between clutch switch harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B107) No. 1 (+) — (B65) No. 1 (−):***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair harness.
3	**CHECK CLUTCH SWITCH.** Remove and check clutch switch. <Ref. to CC-12 Clutch Switch.>	Is clutch switch OK?	Clutch switch circuit is OK.	Replace clutch switch.

G: CHECK INHIBITOR SWITCH (AT) S003749F28

TROUBLE SYMPTOM:
Cruise control cannot be set.
WIRING DIAGRAM:



B6M1527

No.	Step	Check	Yes	No
1	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Disconnect inhibitor switch harness connector. 2) Turn ignition switch ON. 3) Turn cruise control main switch ON. 4) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 12 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	Check harness for open or short between inhibitor switch and cruise control module.
2	**CHECK INHIBITOR SWITCH CIRCUIT.** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect starter motor harness connector. 3) Measure resistance between inhibitor switch harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 7 (+) — (B14) No. 1 (−):***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair harness.
3	**CHECK INHIBITOR SWITCH.** Remove and check inhibitor switch. <Ref. to CC-13 Inhibitor Switch.>	Is inhibitor switch OK?	Inhibitor switch circuit is OK.	Replace inhibitor switch.

7. Diagnostics Chart with Trouble Code (Turbo Model) S003750

A: LIST OF DIAGNOSTIC TROUBLE CODE S003750E40

Diagnostic trouble code	Item	Contents of diagnosis	Reference
21	Inner relay is seized.	Cruise control module inner relay is seized when main switch is OFF.	<Ref. to CC-38 DIAGNOSTIC TROUBE CODE 21, 24, 25, AND 2A — CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM —, Diagnostics Chart with Trouble Code (Turbo Model).>
22	Vehicle speed sensor	Vehicle speed signal changes more than 10 km/h (6 MPH) within 350 ms.	<Ref. to CC-39 DIAGNOSTIC TROUBLE CODE 22 — VEHICLE SPEED SENSOR —, Diagnostics Chart with Trouble Code (Turbo Model).>
24	Cruise control module is abnormal.	Two vehicle speed values stored in cruise control module memory are not the same.	<Ref. to CC-38 DIAGNOSTIC TROUBE CODE 21, 24, 25, AND 2A — CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM —, Diagnostics Chart with Trouble Code (Turbo Model).>
25	Cruise control module is abnormal.	Two output values stored in cruise control module memory are not the same.	<Ref. to CC-38 DIAGNOSTIC TROUBE CODE 21, 24, 25, AND 2A — CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM —, Diagnostics Chart with Trouble Code (Turbo Model).>
28	Wiring harness opened.	Open wiring harness circuit is detected via control module relay when main switch is ON.	<Ref. to CC-42 DIAGNOSTIC TROUBLE CODE 28 — WIRING HARNESS OPENED —, Diagnostics Chart with Trouble Code (Turbo Model).>
35	Motor drive system is abnormal.	• Motor output circuit is open or shorted. • Motor drive circuit is open or shorted.	<Ref. to CC-43 DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — , Diagnostics Chart with Trouble Code (Turbo Model).>
36	Trouble of motor	Motor turning speed is slow.	<Ref. to CC-43, DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR —, Diagnostics Chart with Trouble Code (Turbo Model).>

Diagnostic trouble code	Item	Contents of diagnosis	Reference
37	Motor clutch drive system is abnormal.	● Motor clutch output circuit is open or shorted. ● Motor clutch drive circuit is open or shorted.	<Ref. to CC-45 DIAGNOSTIC TROUBLE CODE 37 — ACTUATOR MOTOR CLUTCH — , Diagnostics Chart with Trouble Code (Turbo Model).>
38	Motor drive shaft does not engage properly.	Motor drive gear engagement is not properly adjusted.	<Ref. to CC-47 DIAGNOSTIC TROUBLE CODE 38 — MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY.— , Diagnostics Chart with Trouble Code (Turbo Model).>
39	Motor is overloaded.	Current flows through motor more frequently than under normal conditions.	<Ref. to CC-48 DIAGNOSTIC TROUBLE CODE 39 — MOTOR IS OVERLOADED.—, Diagnostics Chart with Trouble Code (Turbo Model).>
2A	Cruise control module is abnormal.	Cruise control module self-diagnosis function senses abnormality.	<Ref. to CC-38 DIAGNOSTIC TROUBE CODE 21, 24, 25, AND 2A — CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM —, Diagnostics Chart with Trouble Code (Turbo Model).>

B: DIAGNOSTIC TROUBLE CODE 21, 24, 25 AND 2A — CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM — S003750F29

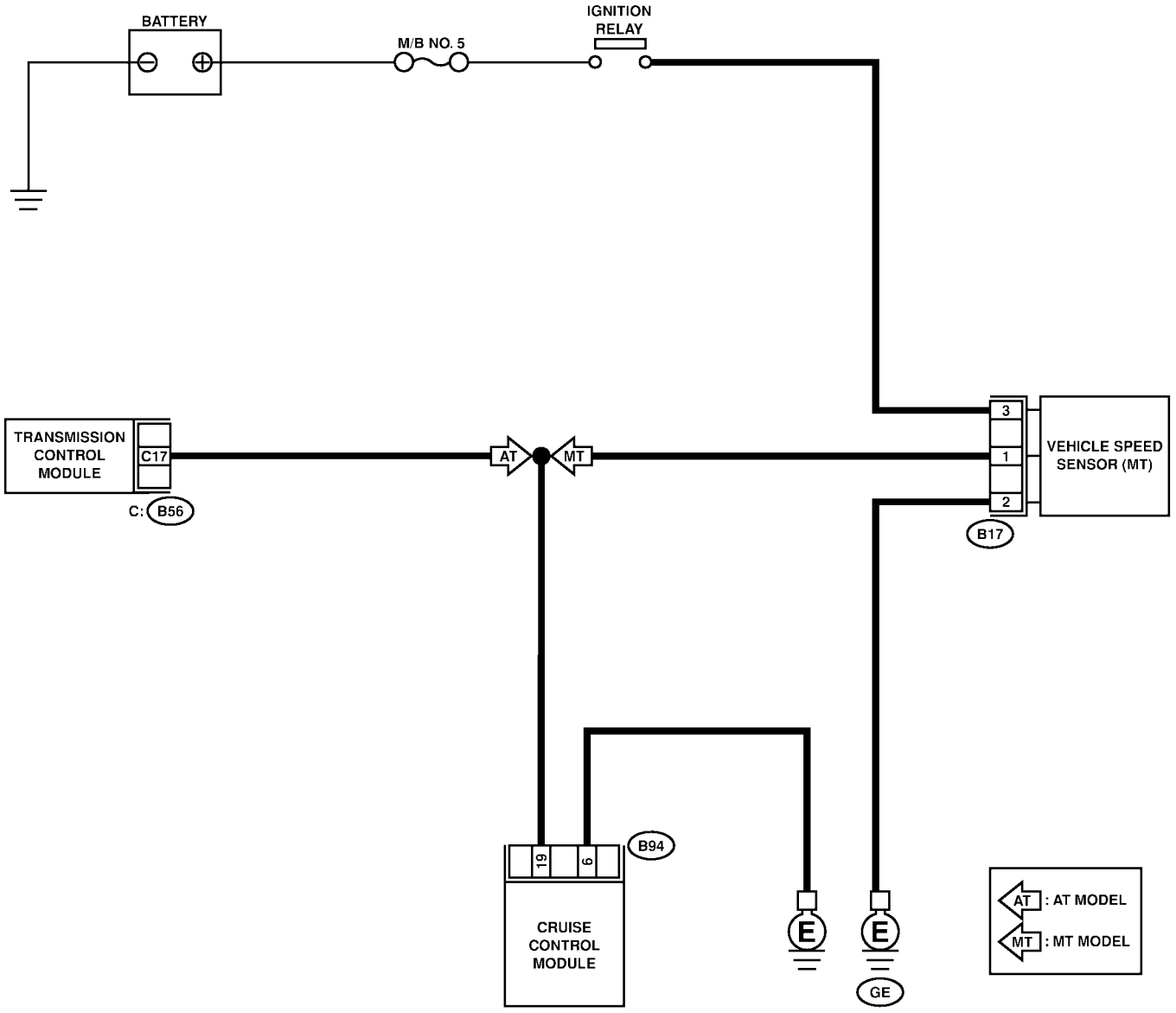
DIAGNOSIS:
- Poor welding of built-in relay of cruise control module.
- Failure of built-in CPU RAM of cruise control module.

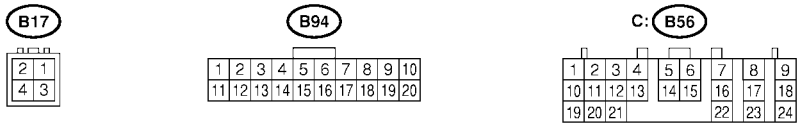
TROUBLE SYMPTOM:
- Cruise control is canceled and memorized cruise speed is also canceled.
- Once cruise control is canceled, cruise control cannot be set until the ignition switch and cruise control main switch turns OFF, and then turns ON again.

NOTE:
Check input/output signal and vehicle speed signal with select monitor. When signals are in good condition, failure is in cruise control module. (Check power supply and ground conditions of cruise control module.)

C: DIAGNOSTIC TROUBLE CODE 22
— VEHICLE SPEED SENSOR — S003750F30

DIAGNOSIS:
Disconnection or short circuit of vehicle speed sensor system.
TROUBLE SYMPTOM:
Cruise control cannot be set. (Cancelled immediately.)
WIRING DIAGRAM:





S6M0524

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 BETWEEN BATTERY AND VEHICLE SPEED SENSOR.** 1) Disconnect harness connector from vehicle speed sensor. 2) Turn ignition switch to ON. 3) Measure voltage between vehicle speed sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(B17) No. 3 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **3**.	Check harness for open or short between ignition relay and vehicle speed sensor.
3	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND VEHICLE SPEED SENSOR.** 1) Disconnect harness connector from cruise control module. 2) Measure resistance between vehicle speed sensor harness connector terminal and cruise control module harness connector terminal. ***Connector & terminal*** ***(B17) No. 1 — (B94) No. 19:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair harness.
4	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND.** 1) Turn ignition switch to OFF. 2) Measure resistance between vehicle speed sensor harness connector terminal and engine ground. ***Connector & terminal*** ***(B17) No. 2 (+) — Engine ground (−):***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair harness.
5	**CHECK VEHICLE SPEED SENSOR.** 1) Connect harness connector to vehicle speed sensor. 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) Drive the vehicle at speed greater than 20 km/h (12 MPH). 4) Measure voltage between cruise control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 19 (+) — Chassis ground (−):***	Is the voltage less than 1 V ←→ more than 4 V?	Replace cruise control module. <Ref. to CC-8 Cruise Control Module.>	Replace vehicle speed sensor.

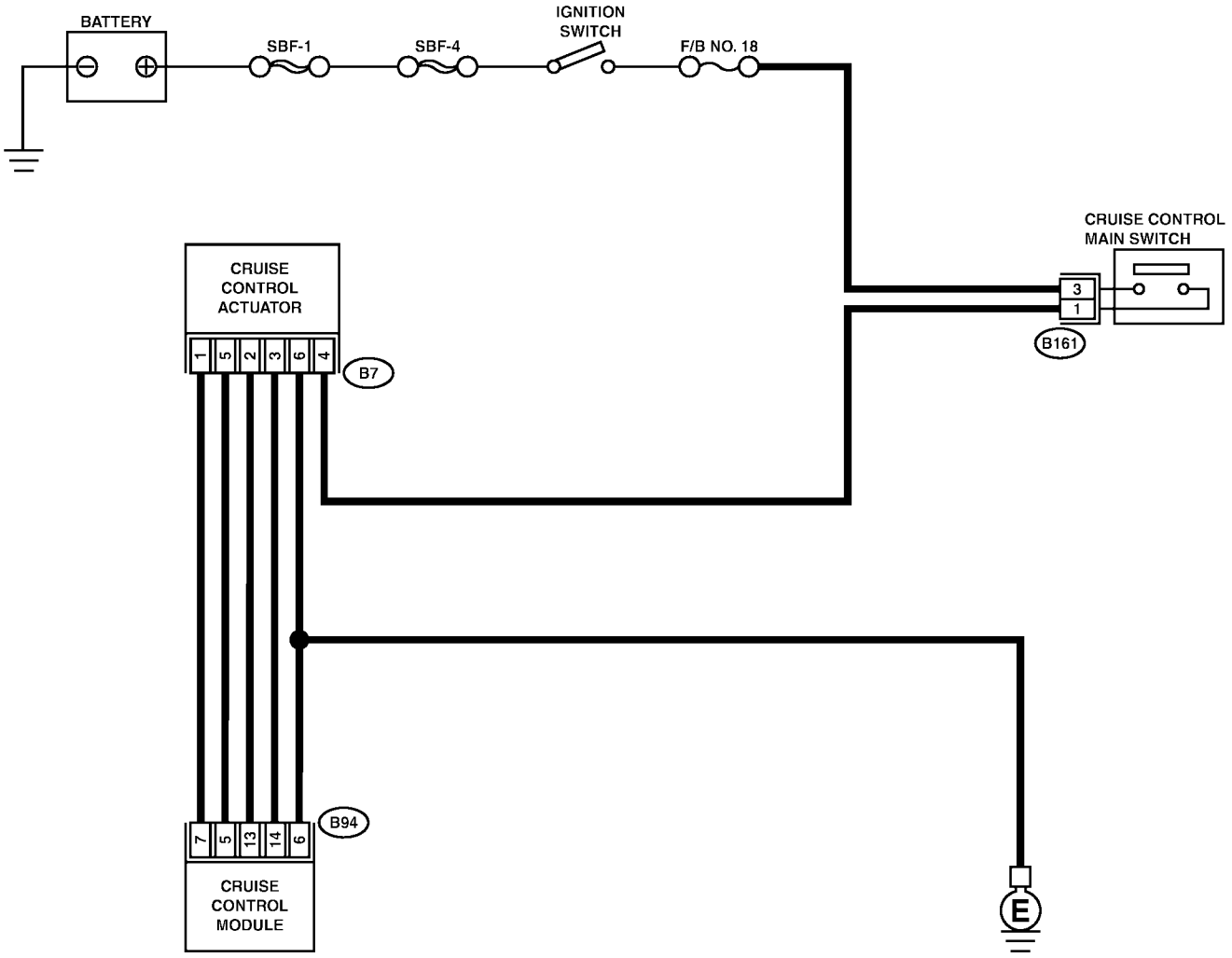
No.	Step	Check	Yes	No
6	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND TRANSMISSION CONTROL MODULE.** 1) Disconnect harness connector from transmission control module and cruise control module. 2) Measure resistance between cruise control module harness connector terminal and transmission control module harness connector terminal. **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. 19 — (B56) No. 17:***	Is the resistance less than 10 Ω?	Go to step **7**.	Repair harness connector between cruise control module and transmission control module.
7	**CHECK TRANSMISSION CONTROL MODULE.** 1) Connect harness connector to 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 transmission control module harness connector terminal 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*** ***(B56) No. 17 (+) — Chassis ground (−):***	Is the voltage less than 1 V ←→ more than 4 V?	Replace cruise control module. <Ref. to CC-8 Cruise Control Module.>	Replace transmission control module. <Ref. to AT-48 Transmission Control Module (TCM).>

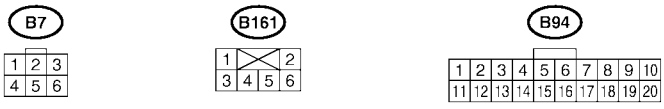
D: DIAGNOSTIC TROUBLE CODE 28 — WIRING HARNESS OPENED. — S003750F31

No.	Step	Check	Yes	No
1	**CHECK BATTERY.** Measure battery specific gravity of electrolyte.	Is battery specific gravity more than 1.250?	Go to step **2**.	Charge or replace battery. Go to step **2**.
2	**CHECK FUSES, CONNECTORS AND HARNESSES.** Check the condition of the main and other fuses, and harnesses and connectors. Also check for proper grounding.	Is there anything unusual about the appearance of main fuse, fuse, harness, connector and grounding?	Repair or replace faulty parts.	End of inspection.

E: DIAGNOSTIC TROUBLE CODE 35 AND 36 — ACTUATOR MOTOR — S003750F32

DIAGNOSIS:
Open or poor contact of cruise control actuator motor.
TROUBLE SYMPTOM:
Cruise control cannot be set. (Cancelled immediately.)
WIRING DIAGRAM:





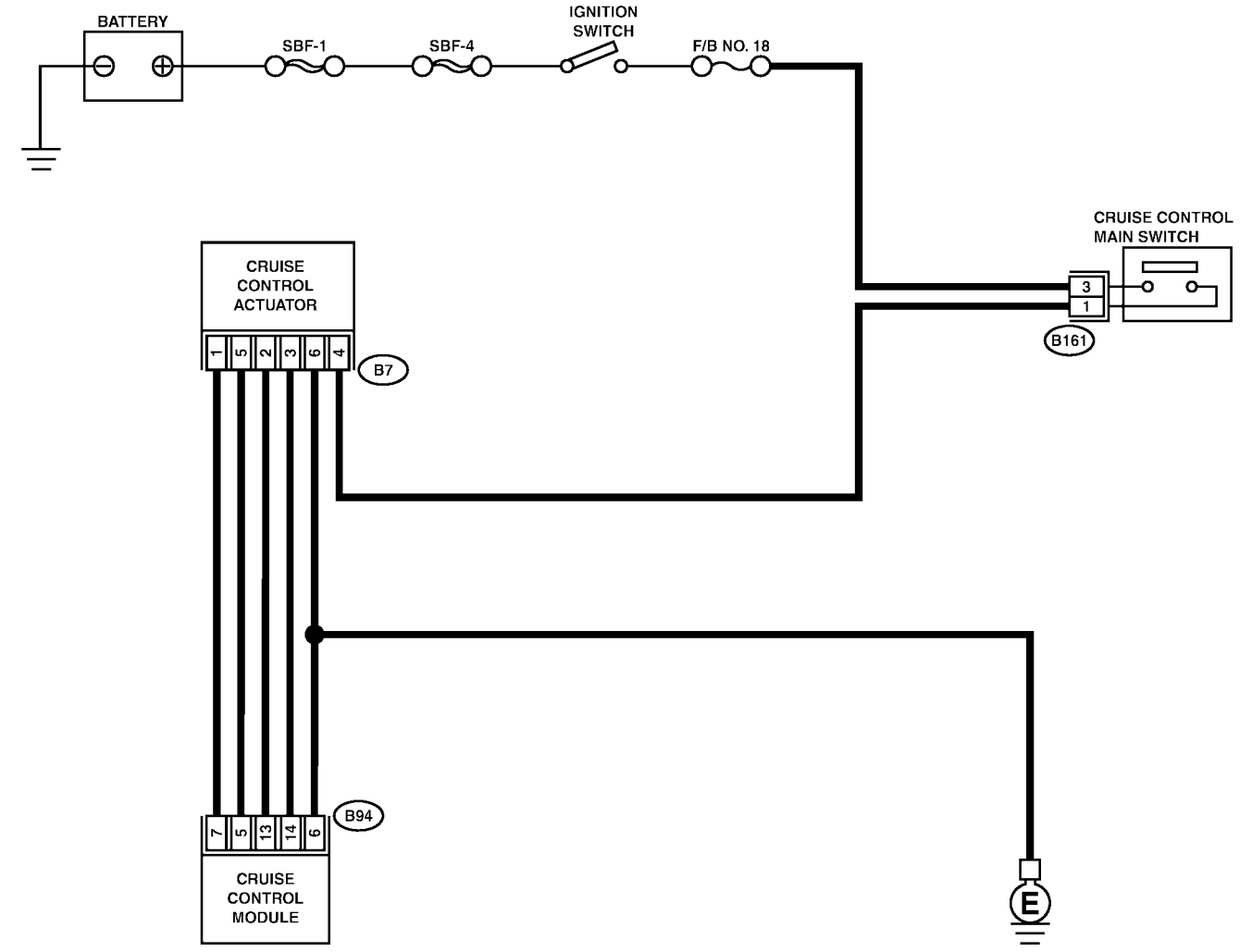
S6M0525

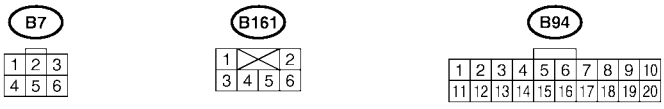
DIAGNOSTICS CHART WITH TROUBLE CODE (TURBO MODEL)

No.	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Turn ignition switch OFF. 2) Disconnect harness connector from cruise control actuator. 3) Turn ignition switch ON. 4) Turn cruise control main switch ON. 5) Measure voltage between cruise control actuator harness connector terminal and chassis ground. ***Terminals*** ***(B7) No. 4 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	Check harness for open or short between cruise control main switch and cruise control actuator.
2	**CHECK GROUND CIRCUIT OF ACTUATOR.** Measure resistance between cruise control actuator harness connector terminal and chassis ground. ***Terminals*** ***(B7) No. 6 (+) — Chassis ground (−):***	Is resistance less than 10 Ω?	Go to step **3**.	Repair harness.
3	**MEASURE RESISTANCE OF ACTUATOR.** Measure resistance of cruise control actuator motor. ***Terminals*** ***No. 4 — No. 1:*** ***No. 4 — No. 2:*** ***No. 4 — No. 5:***	Is resistance approximately 5 Ω?	Go to step **4**.	Replace cruise control actuator. <Ref. to CC-5, Actuator (Turbo Model).>
4	**CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** 1) Disconnect harness connector from cruise control module. 2) Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. ***Connector & terminal*** ***(B7) No. 1 — (B94) No. 7:***	Is resistance less than 10 Ω?	Go to step **5**.	Repair harness.
5	**CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal . ***Connector & terminal*** ***(B7) No. 5 — (B94) No. 5:***	Is resistance less than 10 Ω?	Replace cruise control module. <Ref. to CC-8 Cruise Control Module.>	Repair harness.

F: DIAGNOSTIC TROUBLE CODE 37
— ACTUATOR MOTOR CLUTCH — S003750F33

DIAGNOSIS:
Open or poor contact of cruise control actuator motor clutch.
TROUBLE SYMPTOM:
Cruise control cannot be set. (Cancelled immediately.)
WIRING DIAGRAM:





S6M0525

DIAGNOSTICS CHART WITH TROUBLE CODE (TURBO MODEL)

No.	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Turn ignition switch OFF. 2) Disconnect harness connector from cruise control actuator. 3) Turn ignition switch ON. 4) Turn cruise control main switch ON. 5) Measure voltage between cruise control actuator harness connector terminal and chassis ground. ***Terminals*** ***(B7) No. 4 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	Check harness for open or short between cruise control main switch and cruise control actuator.
2	**CHECK GROUND CIRCUIT OF ACTUATOR.** Measure resistance between cruise control actuator harness connector terminal and chassis ground. ***Terminals*** ***(B7) No. 6 — Chassis ground:***	Is resistance less than 10 Ω?	Go to step **3**.	Repair harness.
3	**MEASURE RESISTANCE OF ACTUATOR CLUTCH.** Measure resistance of cruise control actuator clutch. ***Terminals*** ***No. 3 — No. 6:***	Is resistance approximately 39 Ω?	Go to step **4**.	Replace cruise control actuator. <Ref. to CC-5, Actuator (Turbo Model).>
4	**CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** 1) Disconnect harness connector from cruise control module. 2) Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. ***Connector & terminal*** ***(B7) No. 2 — (B94) No. 13:***	Is resistance less than 10 Ω?	Go to step **5**.	Repair harness.
5	**CHECK HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** Measure resistance between cruise control module harness connector terminal and cruise control actuator harness connector terminal. ***Connector & terminal*** ***(B7) No. 3 — (B94) No. 14:***	Is resistance less than 10 Ω?	Replace cruise control module. <Ref. to CC-8 Cruise Control Module.>	Repair harness.

G: DIAGNOSTIC TROUBLE CODE 38 — MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY. — S003750F34

No.	Step	Check	Yes	No
1	**CHECK ACTUATOR MOTOR.** 1) Disconnect harness connector from cruise control actuator. 2) Remove cruise control actuator from mounting bracket. 3) Pull cable by hand to check for looseness or status of inner gear engagement.	Are foreign particles caught in inner gear or does inner gear engage and disengage improperly?	Replace cruise control actuator. <Ref. to CC-5, Actuator (Turbo Model).>	Check the cruise control cable adjustment. <Ref. to CC-6 CABLE FREE PLAY, INSPECTION, General Description.>

H: DIAGNOSTIC TROUBLE CODE 39 — MOTOR IS OVERLOADED. — S003750F35

No.	Step	Check	Yes	No
1	**CHECK THE OPERATING CURRENT TO ACTUATOR MOTOR.** 1) Connect Subaru Select Monitor to data link connector. 2) Try to drive the vehicle while operating the cruise control system. 3) Check the operation current to the cruise control actuator motor.	Is current more than 10A?	Replace cruise control module. <Ref. to CC-8 Cruise Control Module.>	Check the power supply circuit. <Ref. to CC-23, CHECK POWER SUPPLY, Diagnostics Chart with Symptom (Turbo Model).>

8. Diagnostics Chart with Symptom (Non-turbo Model) S003751

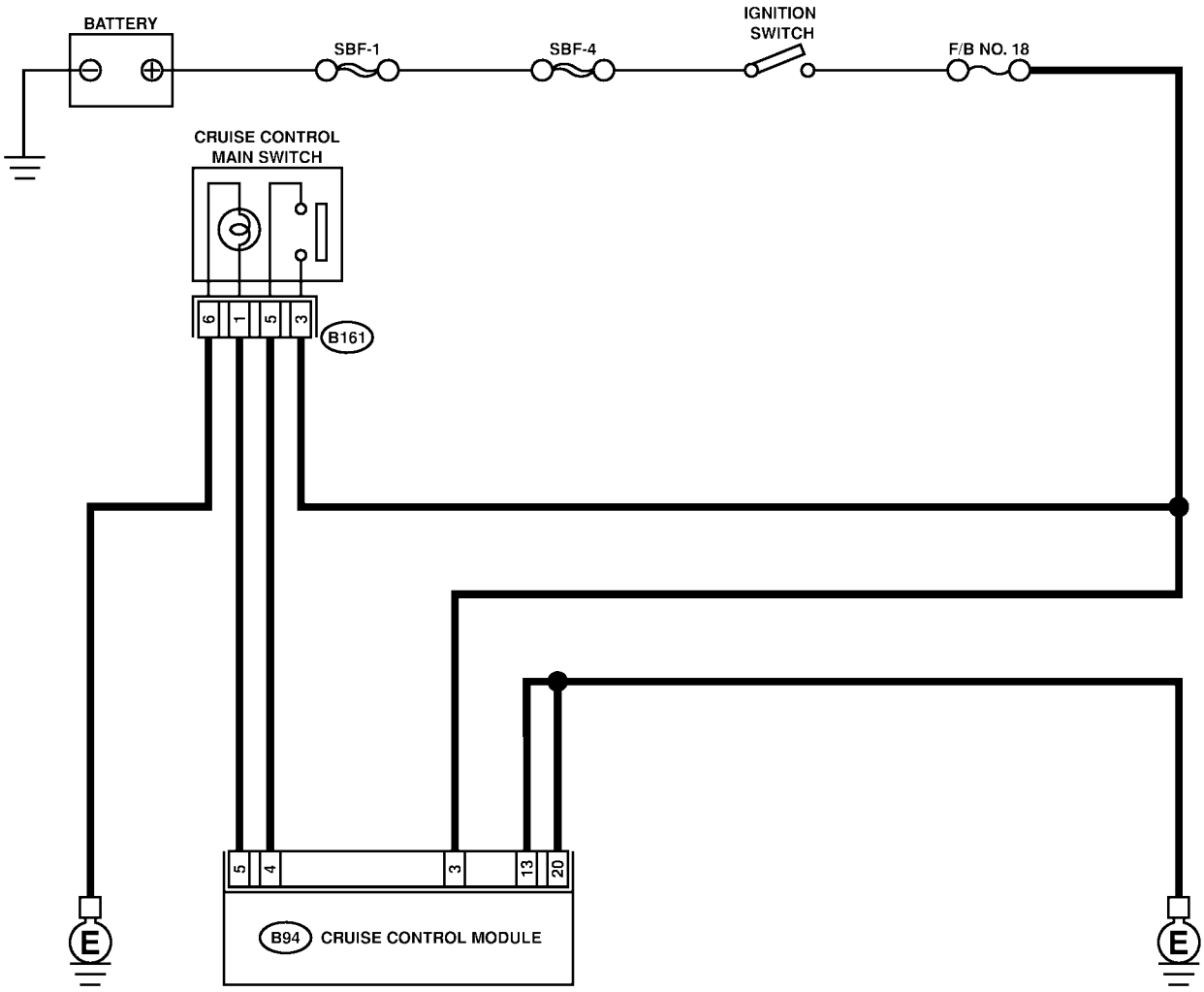
A: SYMPTOM CHART S003751F22

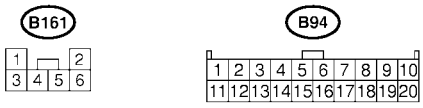
Symptom		Repair area	Reference
1	Cruise control main switch is not turned ON.	(1) Check power supply.	<Ref. to CC-51 CHECK POWER SUPPLY, Diagnostics Chart with Symptom (Non-turbo Model).>
		(2) Check cruise control main switch.	<Ref. to CC-53 CHECK CRUISE CONTROL MAIN SWITCH, Diagnostics Chart with Symptom (Non-turbo Model).>
2	Cruise control cannot be set.	(1) Check SET/COAST switch.	<Ref. to CC-66 DIAGNOSTIC TROUBLE CODE 14 — SET/COAST SWITCH, RESUME/ACCEL SWITCH AND CANCEL SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(2) Check stop light switch and brake switch.	<Ref. to CC-59 DIAGNOSTIC TROUBLE CODE 11 — BRAKE SWITCH AND STOP LIGHT SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(3) Check clutch switch (MT).	<Ref. to CC-61 DIAGNOSTIC TROUBLE CODE 12 — CLUTCH SWITCH AND INHIBITOR SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(4) Check inhibitor switch (AT).	<Ref. to CC-61 DIAGNOSTIC TROUBLE CODE 12 — CLUTCH SWITCH AND INHIBITOR SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(5) Check vehicle speed sensor.	<Ref. to CC-63, DIAGNOSTIC TROUBLE CODE 13 AND 24 — SPEED SENSOR SYSTEM —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(6) Check actuator.	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
3	Vehicle speed is not held within set speed ±3 km/h (±2 MPH).	(1) Check vehicle speed sensor.	<Ref. to CC-63, DIAGNOSTIC TROUBLE CODE 13 AND 24 — SPEED SENSOR SYSTEM —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(2) Check actuator.	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
4	Vehicle speed does not increase or does not return to set speed after RESUME/ACCEL switch has been pressed.	(1) Check RESUME/ACCEL switch.	<Ref. to CC-66 DIAGNOSTIC TROUBLE CODE 14 — SET/COAST SWITCH, RESUME/ACCEL SWITCH AND CANCEL SWITCH —,Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(2) Check actuator.	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
5	Vehicle speed does not decrease after SET/COAST switch has been pressed.	(1) Check SET/COAST switch.	<Ref. to CC-66 DIAGNOSTIC TROUBLE CODE 14 — SET/COAST SWITCH, RESUME/ACCEL SWITCH AND CANCEL SWITCH —,Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(2) Check actuator.	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>

Symptom		Repair area	Reference
6	Cruise control is not released after CANCEL switch has been pressed.	(1) Check CANCEL switch.	<Ref. to CC-66 DIAGNOSTIC TROUBLE CODE 14 — SET/COAST SWITCH, RESUME/ACCEL SWITCH AND CANCEL SWITCH —,Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(2) Check actuator.	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
7	Cruise control is not released after brake pedal has been depressed.	(1) Check stop light switch and brake switch.	<Ref. to CC-59 DIAGNOSTIC TROUBLE CODE 11 — BRAKE SWITCH AND STOP LIGHT SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(2) Check actuator.	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
8	Cruise control is not released after clutch pedal has been depressed (MT).	(1) Check clutch switch.	<Ref. to CC-61 DIAGNOSTIC TROUBLE CODE 12 — CLUTCH SWITCH AND INHIBITOR SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
		(2) Check actuator.	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>

B: CHECK POWER SUPPLY S003751F23

TROUBLE SYMPTOM:
Cruise control can be set normally, but indicator does not come on. (When main switch is pressed.)
WIRING DIAGRAM:





S6M0526

DIAGNOSTICS CHART WITH SYMPTOM (NON-TURBO MODEL)

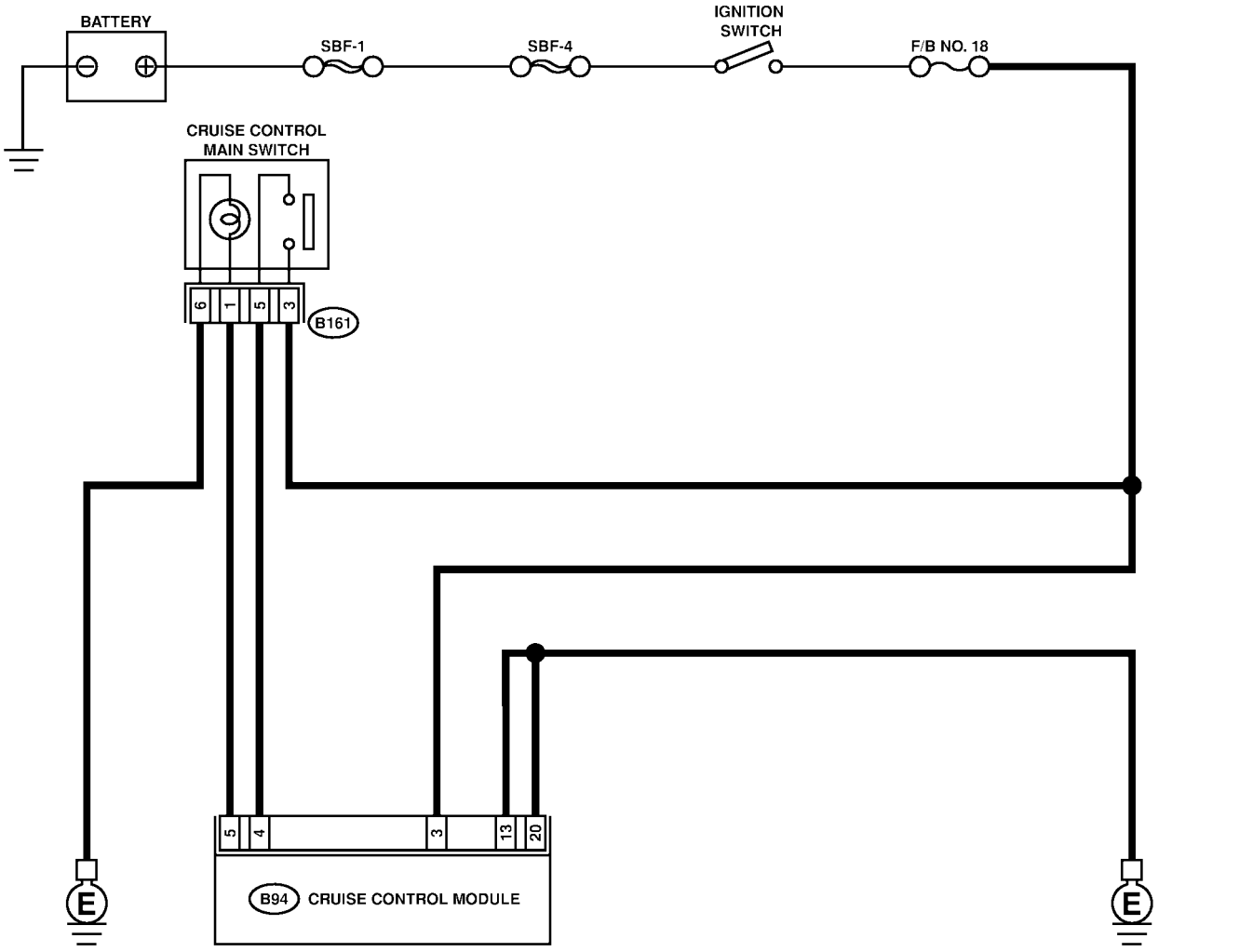
No.	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1) Disconnect cruise control module harness connector. 2) Turn ignition switch ON. 3) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 3 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	• Check fuse No. 18 (in fuse & relay box). • Check harness for open or short between cruise control module and fuse & relay box.
2	**CHECK GROUND CIRCUIT.** Measure resistance between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 13, No. 20 (+) — Chassis ground (−):***	Is the resistance less than 10 Ω?	Power supply and ground circuit are OK.	Repair harness.

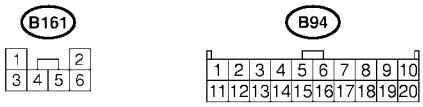
C: CHECK CRUISE CONTROL MAIN SWITCH S003751F24

TROUBLE SYMPTOM:
Cruise control main switch is not turned ON and cruise control cannot be set.

NOTE:
When the main relay (built-in cruise control module) operates, the main switch circuit is in normal condition.
The main relay operation can be checked by hearing the operation sounds.
This operation sounds will be heard when ignition switch and cruise control main switch is turned to ON.

WIRING DIAGRAM:





S6M0526

No.	Step	Check	Yes	No
1	**CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.** 1) Disconnect cruise control main switch harness connector. 2) Turn ignition switch ON. 3) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B161) No. 3 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	● Check fuse No. 18 (in fuse & relay box). ● Check harness for open or short between cruise control main switch and fuse & relay box.
2	**CHECK CRUISE CONTROL MAIN SWITCH CIRCUIT.** 1) Turn ignition switch OFF. 2) Disconnect cruise control module harness connector. 3) Measure resistance between cruise control module harness connector terminal and cruise control main switch harness connector terminal. ***Connector & terminal*** ***(B94) No. 4 (+) — (B161) No. 5 (−):*** ***(B94) No. 5 (+) — (B161) No. 1 (−):*** ***(B161) No. 6 (+) — Chassis ground:***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair harness.
3	**CHECK CRUISE CONTROL MAIN SWITCH.** Remove and check cruise control main switch. <Ref. to CC-9 Cruise Control Main Switch.>	Is cruise control main switch OK?	Replace cruise control module.	Replace cruise control main switch.

MEMO:

9. Diagnostics Chart with Trouble Code (Non-turbo Model) S003752

A: LIST OF DIAGNOSTIC TROUBLE CODE S003752E40

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-59 DIAGNOSTIC TROUBLE CODE 11 — BRAKE SWITCH AND STOP LIGHT SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
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-61 DIAGNOSTIC TROUBLE CODE 12 — CLUTCH SWITCH AND INHIBITOR SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
13	LOW SPEED LIMIT	Low-speed control limiter	<Ref. to CC-63 DIAGNOSTIC TROUBLE CODE 13 AND 24 — VEHICLE SPEED SENSOR SYSTEM —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
14	CANCEL SW	Input signal from cancel switch (faulty SET/COAST switch or RESUME/ACCEL switch)	<Ref. to CC-66 DIAGNOSTIC TROUBLE CODE 14 — SET/COAST SWITCH, RESUME/ACCEL SWITCH AND CANCEL SWITCH —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
21	VACUUM VALVE	Faulty vacuum valve or valve drive system	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
22	VENT 2 VALVE	Faulty vent 2 valve or valve drive system	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
23	VENT 1 VALVE	Faulty vent 1 valve or valve drive system	<Ref. to CC-68 DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE —, Diagnostics Chart with Trouble Code (Non-turbo Model).>

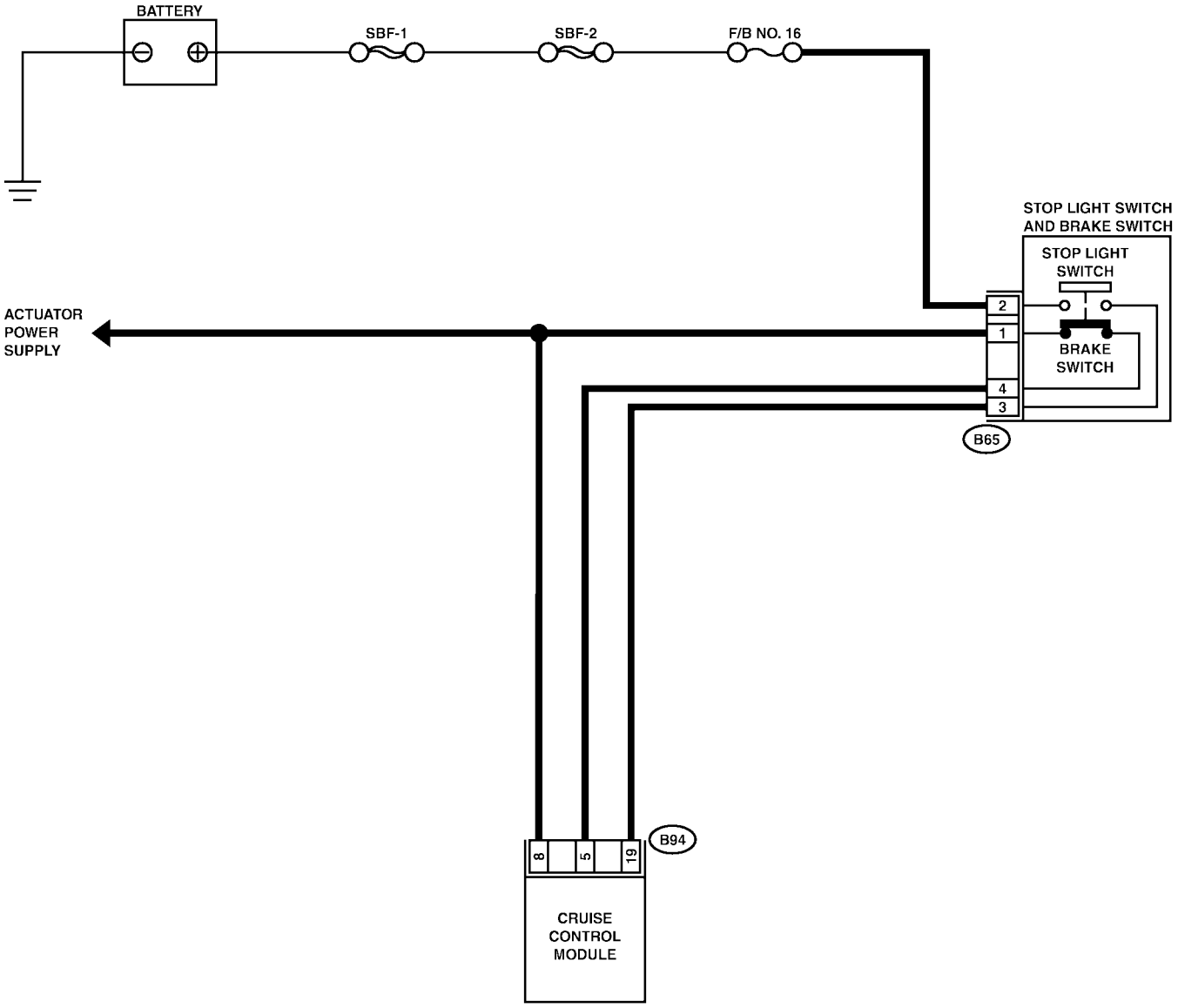
Diagnostic code	Item	Contents of diagnosis	Index No.
24	SPEED SENSOR	Faulty vehicle speed sensor 2 (MT) or transmission control module (AT)	<Ref. to CC-63 DIAGNOSTIC TROUBLE CODE 13 AND 24 — VEHICLE SPEED SENSOR SYSTEM —, Diagnostics Chart with Trouble Code (Non-turbo Model).>
25	CONTROL MODULE	Faulty CPU RAM included in cruise control module	<Ref. to CC-70 DIAGNOSTIC TROUBLE CODE 25 — CRUISE CONTROL MODULE BUILT-IN RELAY AND CPU RAM —, Diagnostics Chart with Trouble Code (Non-turbo Model).>

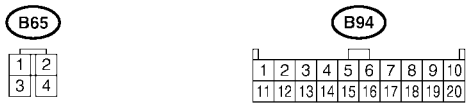
B: DIAGNOSTIC TROUBLE CODE 11 — BRAKE SWITCH AND STOP LIGHT SWITCH — S003752H52

DIAGNOSIS:

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

WIRING DIAGRAM:





S6M0527

DIAGNOSTICS CHART WITH TROUBLE CODE (NON-TURBO MODEL)

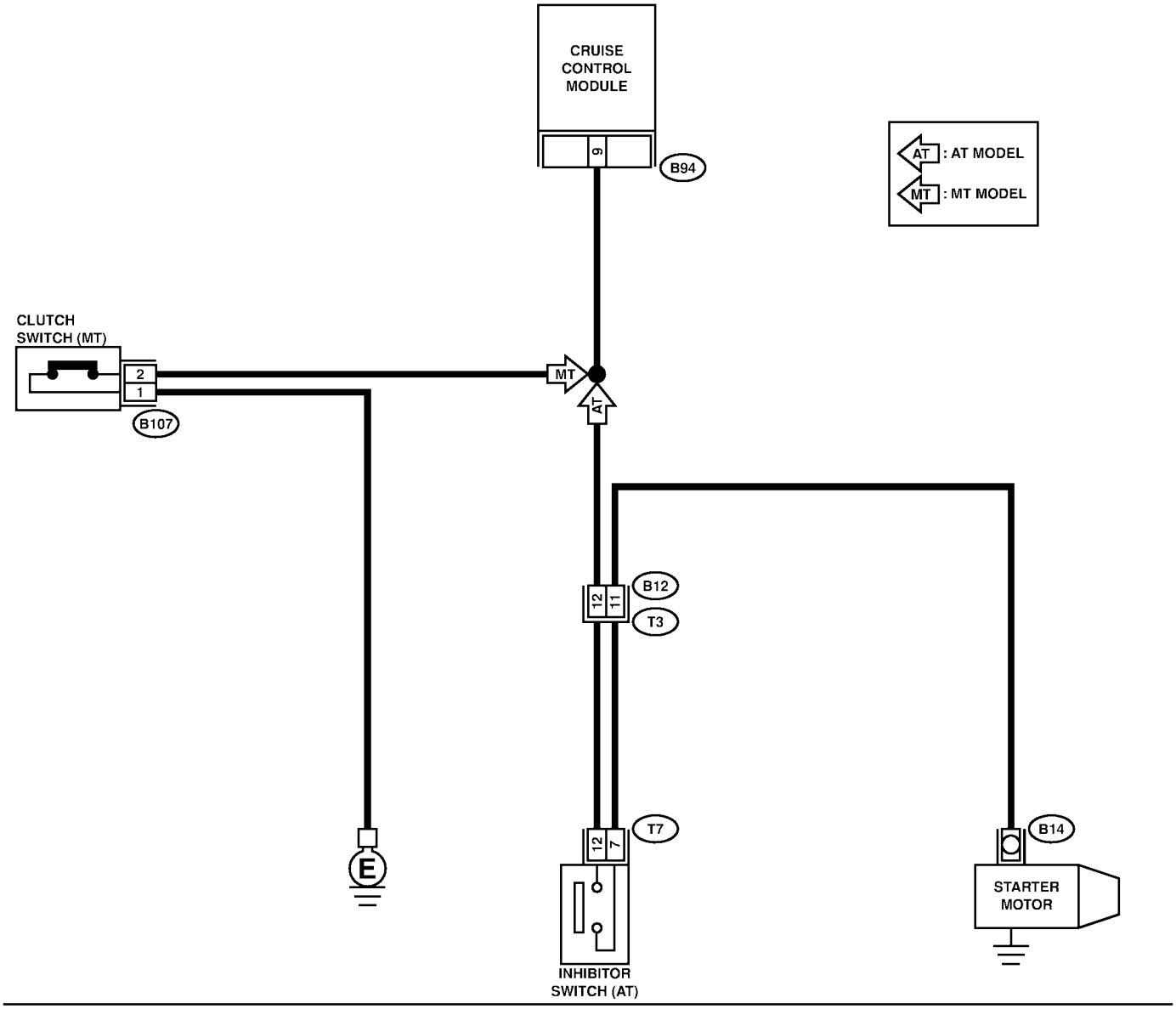
No.	Step	Check	Yes	No
1	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Disconnect stop light switch and brake switch harness connector. 2) Turn ignition switch ON. 3) Turn cruise control main switch ON. 4) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 2 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	● Check fuse No. 16 (in fuse & relay box). ● Check harness for open or short between stop light/brake switch and fuse & relay box.
2	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B65) No. 1 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **3**.	● Check harness for open or short between stop light/brake switch and cruise control module.
3	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH CIRCUIT.** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect cruise control module harness connector. 3) Measure resistance between cruise control module harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B94) No. 5 (+) — (B65) No. 4 (−):*** ***(B94) No. 19 (+) — (B65) No. 3 (−):***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair harness.
4	**CHECK STOP LIGHT SWITCH AND BRAKE SWITCH.** Remove and check stop light switch and brake switch. <Ref. to CC-11 Stop and Brake Switch.>	Are stop light switch and brake switch OK?	Stop light switch and brake switch circuit are OK.	Replace stop light switch and brake switch.

C: DIAGNOSTIC TROUBLE CODE 12 — CLUTCH SWITCH AND INHIBITOR SWITCH — S003752H53

DIAGNOSIS:

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

WIRING DIAGRAM:



S6M0528

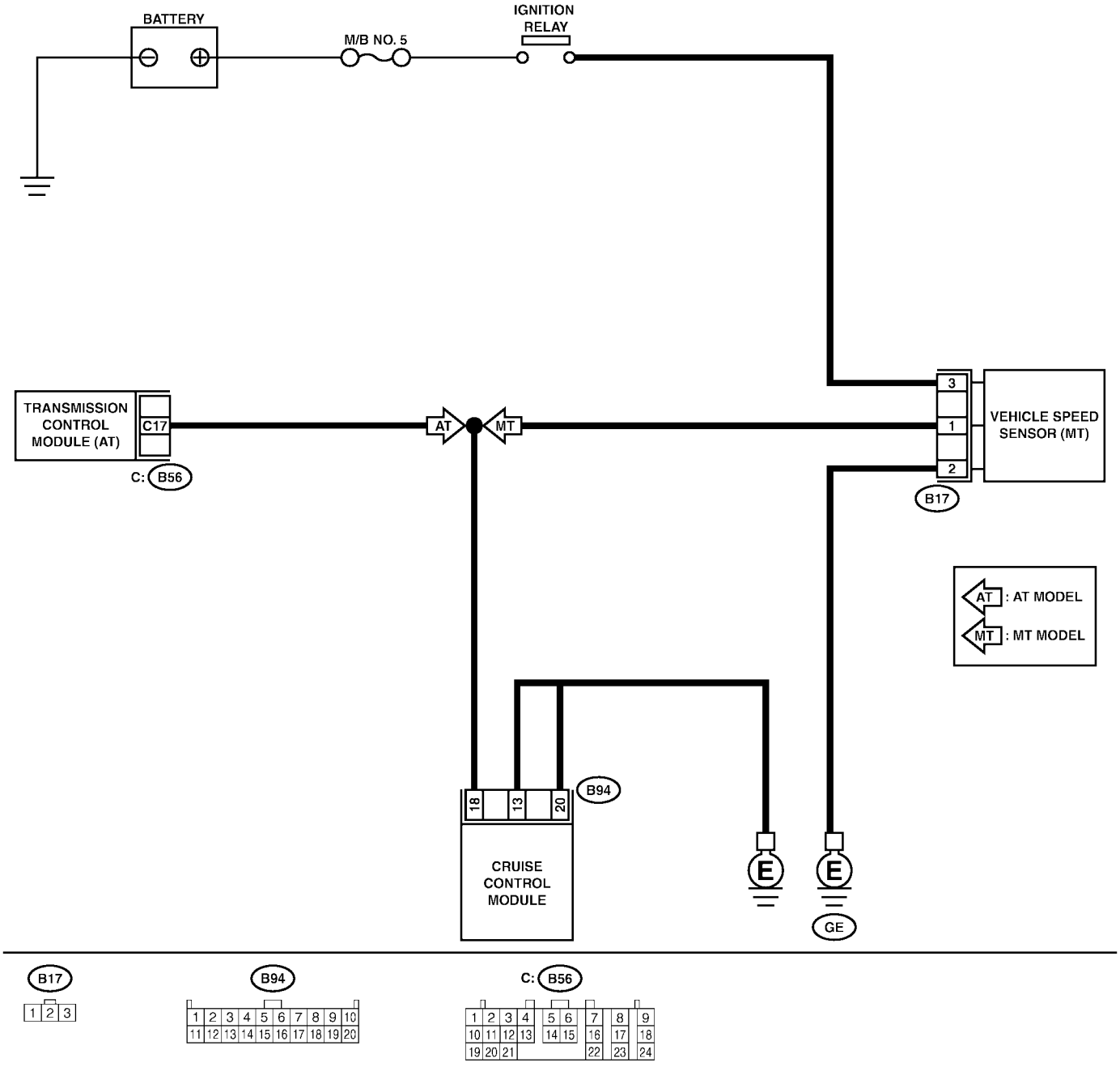
No.	Step	Check	Yes	No
1	**CHECK INHIBITOR SWITCH CIRCUIT (AT).** 1) Disconnect inhibitor switch harness connector. 2) Turn ignition switch ON. 3) Turn cruise control main switch ON. 4) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 12 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **2**.	Check harness for open or short between inhibitor switch and cruise control module.
2	**CHECK INHIBITOR SWITCH CIRCUIT (AT).** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect starter motor harness connector. 3) Measure resistance between inhibitor switch harness connector terminal and chassis ground. ***Connector & terminal*** ***(T7) No. 7 (+) — (B14) No. 1 (−):***	Is the resistance less than 10 Ω?	Go to step **3**.	Repair harness.
3	**CHECK INHIBITOR SWITCH (AT).** Remove and check inhibitor switch. <Ref. to CC-13 Inhibitor Switch.>	Is inhibitor switch OK?	Inhibitor switch circuit is OK.	Replace inhibitor switch.
4	**CHECK CLUTCH SWITCH CIRCUIT (MT).** 1) Disconnect clutch switch harness connector. 2) Turn ignition switch ON. 3) Turn cruise control main switch ON. 4) Measure voltage between harness connector terminal and chassis ground. ***Connector & terminal*** ***(B107) No. 2 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **5**.	Check harness for open or short between clutch switch and cruise control module.
5	**CHECK CLUTCH SWITCH CIRCUIT (MT).** 1) Turn cruise control main switch and ignition switch OFF. 2) Disconnect stop light switch and brake switch harness connector. 3) Measure resistance between clutch switch harness connector terminal and stop light switch and brake switch harness connector terminal. ***Connector & terminal*** ***(B107) No. 1 (+) — Chassis ground (−):***	Is the resistance less than 10 Ω?	Go to step **6**.	Repair harness.
6	**CHECK CLUTCH SWITCH (MT).** Remove and check clutch switch. <Ref. to CC-12 Clutch Switch.>	Is clutch switch OK?	Clutch switch circuit is OK.	Replace clutch switch.

D: DIAGNOSTIC TROUBLE CODE 13 AND 24 — VEHICLE SPEED SENSOR SYSTEM — S003752F52

DIAGNOSIS:

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

WIRING DIAGRAM:



S6M0529

DIAGNOSTICS CHART WITH TROUBLE CODE (NON-TURBO MODEL)

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 BETWEEN BATTERY AND VEHICLE SPEED SENSOR.** 1) Disconnect harness connector from vehicle speed sensor. 2) Turn ignition switch to ON. 3) Measure voltage between vehicle speed sensor harness connector terminal and chassis ground. ***Connector & terminal*** ***(B17) No. 3 (+) — Chassis ground (−):***	Is the voltage more than 10 V?	Go to step **3**.	Check harness for open or short between ignition relay and vehicle speed sensor.
3	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND VEHICLE SPEED SENSOR.** 1) Disconnect harness connector from cruise control module. 2) Measure resistance between vehicle speed sensor harness connector terminal and cruise control module harness connector terminal. ***Connector & terminal*** ***(B17) No. 1 — (B94) No. 18:***	Is the resistance less than 10 Ω?	Go to step **4**.	Repair harness.
4	**CHECK HARNESS BETWEEN VEHICLE SPEED SENSOR AND ENGINE GROUND.** 1) Turn ignition switch to OFF. 2) Measure resistance between vehicle speed sensor harness connector terminal and engine ground. ***Connector & terminal*** ***(B17) No. 2 (+) — Engine ground (−):***	Is the resistance less than 10 Ω?	Go to step **5**.	Repair harness.
5	**CHECK VEHICLE SPEED SENSOR.** 1) Connect harness connector to vehicle speed sensor. 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) Drive the vehicle at speed greater than 20 km/h (12 MPH). 4) Measure voltage between cruise control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(B94) No. 18 (+) — Chassis ground (−):***	Is the voltage less than 1 ←→ more than 4 V?	Replace cruise control module. <Ref. to CC-8 Cruise Control Module.>	Replace vehicle speed sensor.

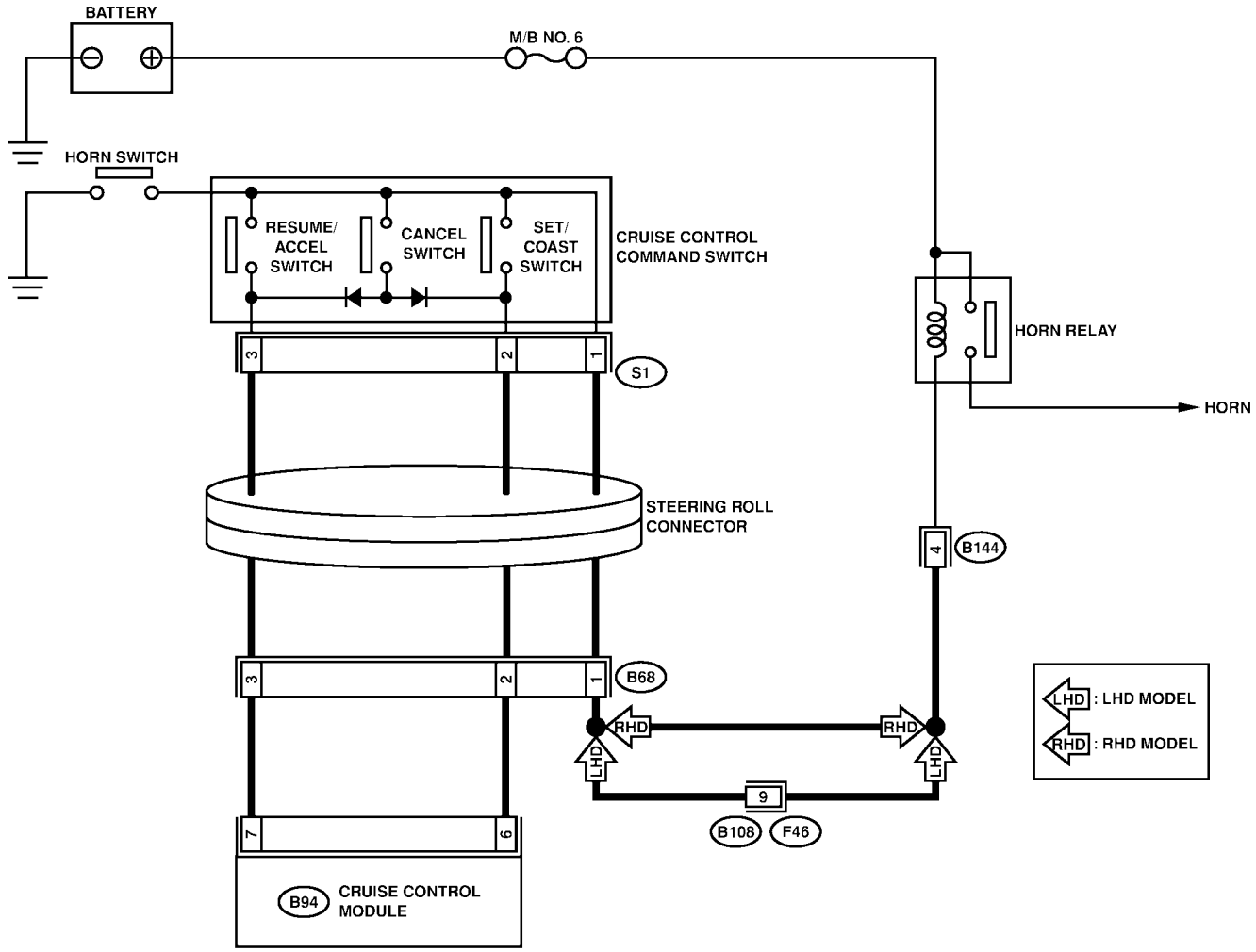
No.	Step	Check	Yes	No
6	**CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND TRANSMISSION CONTROL MODULE.** 1) Disconnect harness connector from transmission control module and cruise control module. 2) Measure resistance between cruise control module harness connector terminal and transmission control module harness connector terminal. **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 — (B56) No. 17:***	Is the resistance less than 10 Ω?	Go to step **7**.	Repair harness connector between cruise control module and transmission control module.
7	**CHECK TRANSMISSION CONTROL MODULE.** 1) Connect harness connector to 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 transmission control module harness connector terminal 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*** ***(B56) No. 17 (+) — Chassis ground (−):***	Is the voltage less than 1 V ←→ more than 4 V?	Replace cruise control module. <Ref. to CC-8 Cruise Control Module.>	Replace transmission control module. <Ref. to AT-48 Transmission Control Module (TCM).>

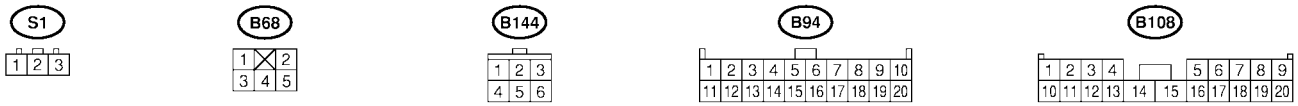
E: DIAGNOSTIC TROUBLE CODE 14 — SET/COAST SWITCH, RESUME/ACCEL SWITCH AND CANCEL SWITCH — S003752H54

DIAGNOSIS:

- Short circuit inside the SET SW and RESUME SW.

WIRING DIAGRAM:





S6M0530

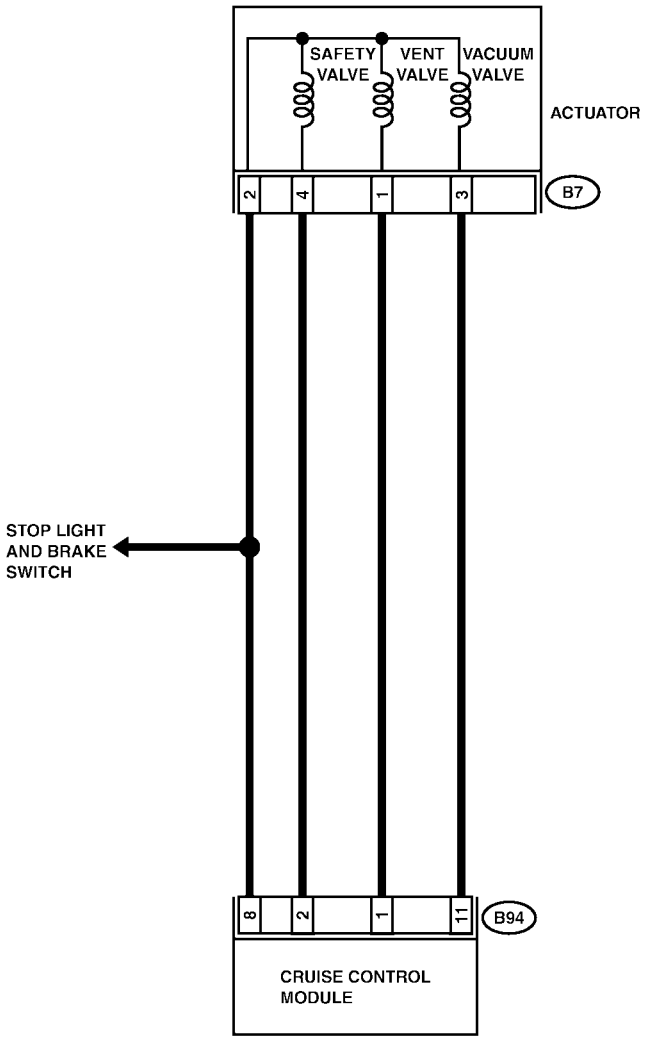
No.	Step	Check	Yes	No
1	**CHECK SET/COAST SWITCH CIRCUIT.** 1) Disconnect cruise control module harness connector. 2) Turn ignition switch ON. 3) Measure voltage between harness connector terminal and chassis ground when SET/COAST switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 6 (+) — Chassis ground (−):***	Is the voltage 0 V when SET/COAST switch is not pressed? Is the voltage more than 10 V when SET/COAST switch is pressed?	Go to step **2**.	Go to step **4**.
2	**CHECK RESUME/ACCEL SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground when RESUME/ACCEL switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 7 (+) — Chassis ground (−):***	Is the voltage 0 V when RESUME/ACCEL switch is not pressed? Is the voltage more than 10 V when RESUME/ACCEL switch is pressed?	Go to step **3**.	Go to step **4**.
3	**CHECK CANCEL SWITCH CIRCUIT.** Measure voltage between harness connector terminal and chassis ground when CANCEL switch is pressed and not pressed. ***Connector & terminal*** ***(B94) No. 7 (+) — Chassis ground (−):*** ***(B94) No. 6 (+) — Chassis ground (−):***	Is the voltage 0 V when CANCEL switch is not pressed? Is the voltage more than 10 V when CANCEL switch is pressed?	Cruise control command switch circuit is OK.	Go to step **4**.
4	**CHECK POWER SUPPLY FOR COMMAND SWITCH.** Check horn operation.	Does horn sound?	Go to step **5**.	• Check fuse No. 6 (in main fuse box). • Check horn relay. <Ref. to COM-4 HORN RELAY, INSPECTION, Horn System.> • Check harness for open or short between cruise control command switch and main fuse box.
5	**CHECK CRUISE CONTROL COMMAND SWITCH.** Remove and check cruise control command switch. <Ref. to CC-10 Cruise Control Command Switch.>	Is cruise control command switch OK?	Check harness between cruise control command switch and cruise control module.	Replace cruise control command switch.

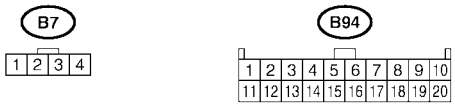
F: DIAGNOSTIC TROUBLE CODE 21, 22 AND 23 — VACUUM VALVE, VENT 2 VALVE AND VENT 1 VALVE — S003752H55

DIAGNOSIS:

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

WIRING DIAGRAM:





S6M0531

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-7, REMOVAL, Actuator (Non-turbo Model).>
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-7, REMOVAL, Actuator (Non-turbo Model).>
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-7, REMOVAL, Actuator (Non-turbo Model).>
4	**PERFORM A CIRCUIT TEST IN HARNESS BETWEEN ACTUATOR AND CRUISE CONTROL MODULE.** 1) Disconnect connector from cruise control module. 2) Measure resistance of harness connector between cruise control module and actuator. ***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 AND CRUISE CONTROL MODULE.** Measure resistance of harness connector between cruise control module and actuator. ***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 AND CRUISE CONTROL MODULE.** Measure resistance of harness connector between cruise control module and actuator. ***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 AND CRUISE CONTROL MODULE.** Measure resistance of harness connector between cruise control module and actuator. ***Connector & terminal*** ***(B7) No. 4 — (B94) No. 2:***	Is resistance less than 10 Ω?	Replace cruise control module. <Ref. to CC-8 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 AND CPU RAM — S003752H56

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

TROUBLE SYMPTOM:
- Cruise control is canceled and memorized cruise speed is also canceled.
- Once cruise control is canceled, cruise control cannot be set until the ignition switch and cruise control main switch turns OFF, and then turns ON again.

NOTE:
Check input/output signal and vehicle speed signal with select monitor. When signals are in good condition, failure is in cruise control module. (Check power supply and ground conditions of cruise control module.)