

DIAGNOSTICS CHART WITH TROUBLE CODE

Cruise Control System (DIAGNOSTICS)

7. Diagnostics Chart with Trouble Code S003620

A: LIST OF DIAGNOSTIC TROUBLE CODE S003620E40

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-30 DIAGNOSTIC TROUBLE CODE 21, 24, 25 AND 2A - CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM -, Diagnostics Chart with Trouble Code.>
22	Vehicle speed sensor	Vehicle speed signal changes more than 10 km/h (6 MPH) within 350 ms.	<Ref. to CC-31 DIAGNOSTIC TROUBLE CODE 22 - VEHICLE SPEED SENSOR -, Diagnostics Chart with Trouble Code.>
24	Cruise control module is abnormal.	Two vehicle speed values stored in cruise control module memory are not the same.	<Ref. to CC-30 DIAGNOSTIC TROUBLE CODE 21, 24, 25 AND 2A - CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM -, Diagnostics Chart with Trouble Code.>
25	Cruise control module is abnormal.	Two output values stored in cruise control module memory are not the same.	<Ref. to CC-30 DIAGNOSTIC TROUBLE CODE 21, 24, 25 AND 2A - CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM -, Diagnostics Chart with Trouble Code.>
28	Wiring harness opened.	Open wiring harness circuit is detected via control module relay when main switch is ON.	<Ref. to CC-34 DIAGNOSTIC TROUBLE CODE 28 - WIRING HARNESS OPENED. -, Diagnostics Chart with Trouble Code.>
35	Motor drive system is abnormal.	<ul style="list-style-type: none"> ● Motor output circuit is open or shorted. ● Motor drive circuit is open or shorted. 	<Ref. to CC-35 DIAGNOSTIC TROUBLE CODE 35 - ACTUATOR MOTOR -, Diagnostics Chart with Trouble Code.>
37	Motor clutch drive system is abnormal.	<ul style="list-style-type: none"> ● Motor clutch output circuit is open or shorted. ● Motor clutch drive circuit is open or shorted. 	<Ref. to CC-37 DIAGNOSTIC TROUBLE CODE 37 - ACTUATOR MOTOR CLUTCH -, Diagnostics Chart with Trouble Code.>
38	Motor drive shaft does not engage properly.	Motor drive gear engagement is not properly adjusted.	<Ref. to CC-39 DIAGNOSTIC TROUBLE CODE 38 - MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY. -, Diagnostics Chart with Trouble Code.>
39	Motor is overloaded.	Current flows through motor more frequently than under normal conditions.	<Ref. to CC-40 DIAGNOSTIC TROUBLE CODE 39 - MOTOR IS OVERLOADED. -, Diagnostics Chart with Trouble Code.>
2A	Cruise control module is abnormal.	Cruise control module self-diagnosis function senses abnormality.	<Ref. to CC-30 DIAGNOSTIC TROUBLE CODE 21, 24, 25 AND 2A - CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM -, Diagnostics Chart with Trouble Code.>

B: DIAGNOSTIC TROUBLE CODE 21, 24, 25 AND 2A — CRUISE CONTROL MODULE BUILT-IN RELAY, CPU RAM — S003620F29

DIAGNOSIS:

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

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Cruise Control System (DIAGNOSTICS)

C: DIAGNOSTIC TROUBLE CODE 22

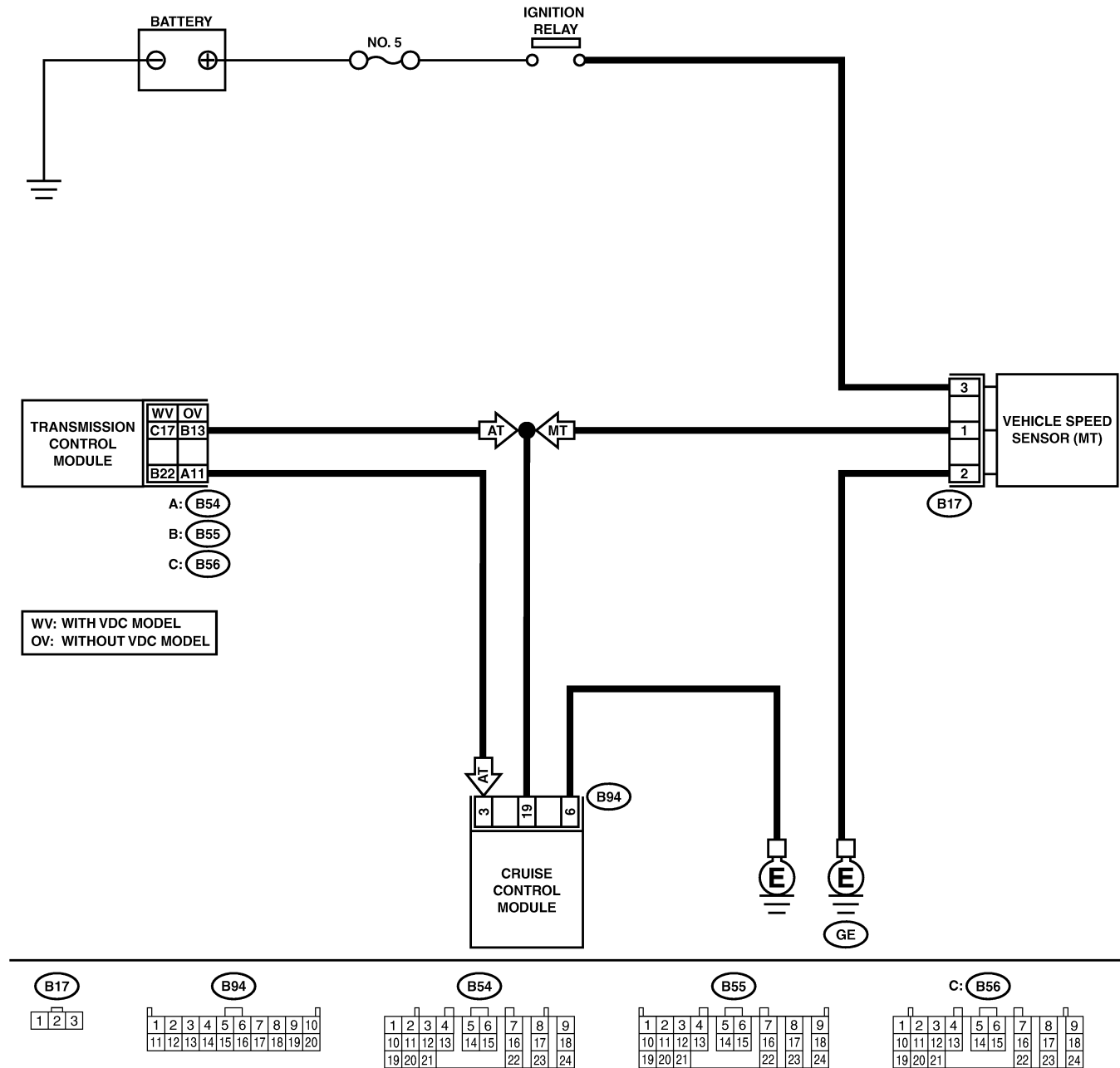
— VEHICLE SPEED SENSOR —

S003620F30

DIAGNOSIS:

Disconnection or short circuit of vehicle speed sensor system.

WIRING DIAGRAM:



B6M1528

DIAGNOSTICS CHART WITH TROUBLE CODE

Cruise Control System (DIAGNOSTICS)

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 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 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 more than 3.5 V?	Replace cruise control module. <Ref. to CC-4 Cruise Control Module.>	Replace vehicle speed sensor.

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No.	Step	Check	Yes	No
6	<p>CHECK HARNESS BETWEEN CRUISE CONTROL MODULE AND TRANSMISSION CONTROL MODULE.</p> <p>1) Disconnect harness connector from transmission control module and cruise control module.</p> <p>2) Measure resistance between cruise control module harness connector terminal and transmission control module harness connector terminal.</p> <p>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).</p> <p><i>Connector & terminal</i> <i>Without VDC:</i> (B94) No. 19 — (B55) No. 13: <i>With VDC:</i> (B94) No. 19 — (B56) No. 17:</p>	Is the resistance less than 10 Ω?	Go to step 7.	Repair harness connector between cruise control module and transmission control module.
7	<p>CHECK TRANSMISSION CONTROL MODULE.</p> <p>1) Connect harness connector to transmission control module.</p> <p>2) Set the vehicle on free roller, or lift-up the vehicle and support with safety stands.</p> <p>WARNING: Be careful not to be caught by the running wheels.</p> <p>3) Drive the vehicle faster than 10 km/h (6 MPH).</p> <p>4) Measure voltage between transmission control module harness connector terminal and chassis ground.</p> <p>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).</p> <p><i>Connector & terminal</i> <i>Without VDC:</i> (B55) No. 13 (+) — Chassis ground (-): <i>With VDC:</i> (B56) No. 17 (+) — Chassis ground (-):</p>	Is the voltage less than 1 V ←→ more than 4.5 V?	Replace cruise control module. <Ref. to CC-4 Cruise Control Module.>	Replace transmission control module. <Ref. to AT-42 Transmission Control Module (TCM).>

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D: DIAGNOSTIC TROUBLE CODE 28

— WIRING HARNESS OPENED. — S003620F31

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 HAR- NESSES. 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.

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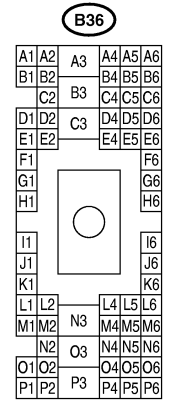
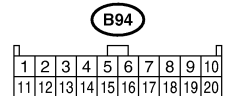
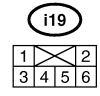
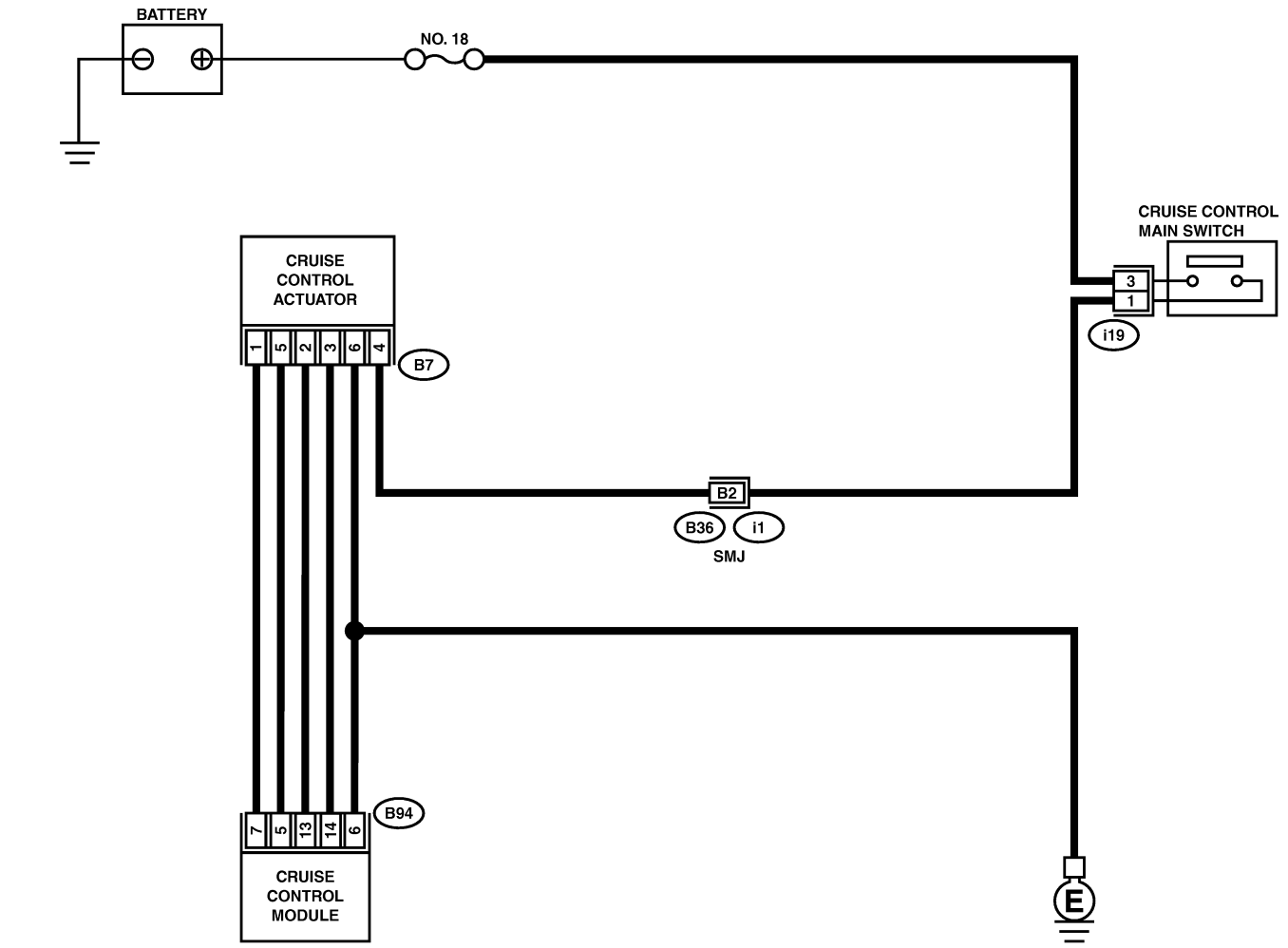
E: DIAGNOSTIC TROUBLE CODE 35

— ACTUATOR MOTOR — S003620F32

DIAGNOSIS:

Open or poor contact of cruise control actuator motor.

WIRING DIAGRAM:



B6M1529

CC-35

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Cruise Control System (DIAGNOSTICS)

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-3 Actuator.>
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-4 Cruise Control Module.>	Repair harness.

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Cruise Control System (DIAGNOSTICS)

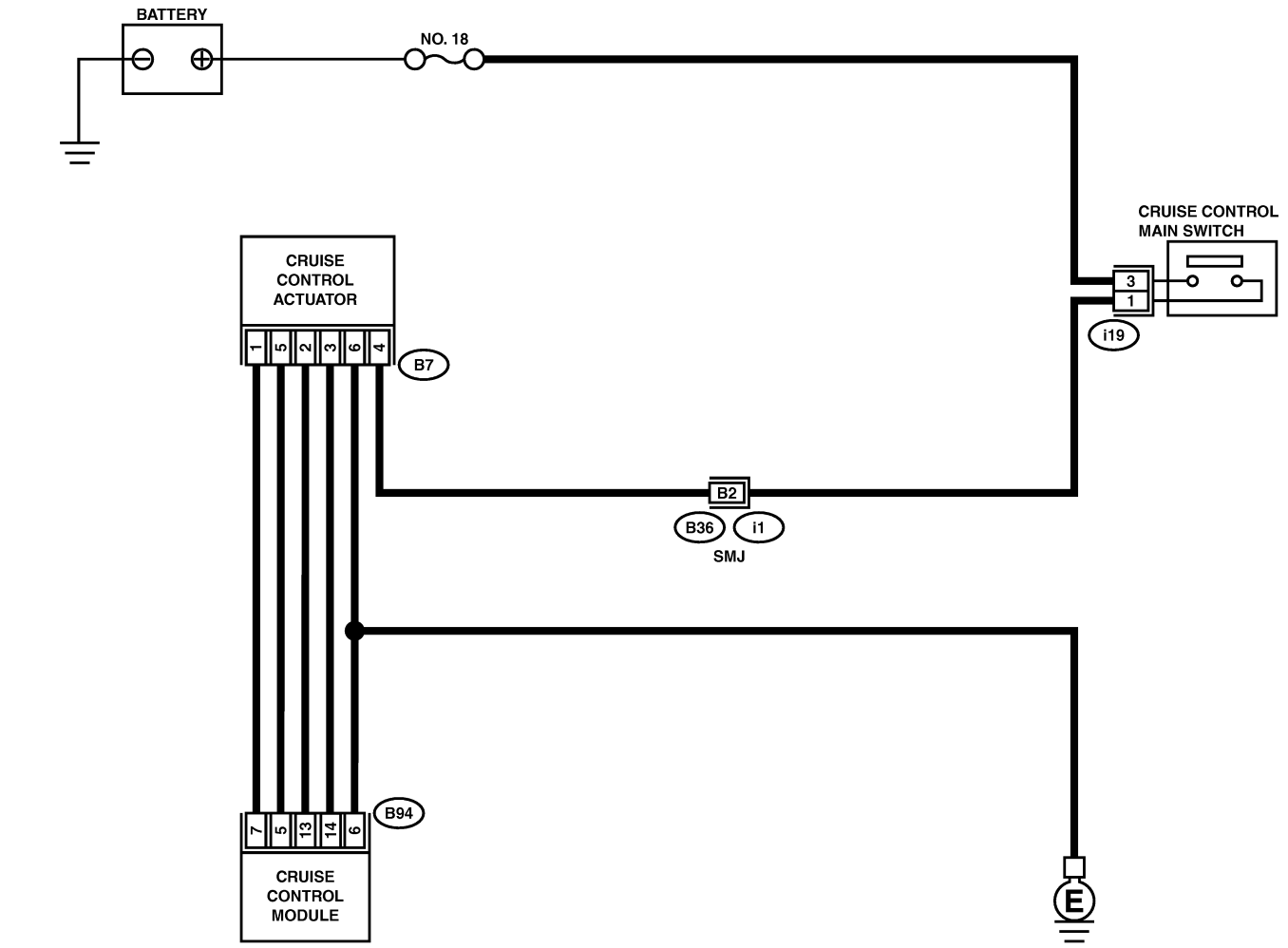
F: DIAGNOSTIC TROUBLE CODE 37

— ACTUATOR MOTOR CLUTCH — S003620F33

DIAGNOSIS:

Open or poor contact of cruise control actuator motor clutch.

WIRING DIAGRAM:



B7

1	2	3
4	5	6

i19

1	2	3
4	5	6

B94

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

B36

A1	A2	A3	A4	A5	A6
B1	B2	B3	B4	B5	B6
C1	C2	C3	C4	C5	C6
D1	D2	D3	D4	D5	D6
E1	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
H1	H2	H3	H4	H5	H6
I1	I2	I3	I4	I5	I6
J1	J2	J3	J4	J5	J6
K1	K2	K3	K4	K5	K6
L1	L2	L3	L4	L5	L6
M1	M2	M3	M4	M5	M6
N1	N2	N3	N4	N5	N6
O1	O2	O3	O4	O5	O6
P1	P2	P3	P4	P5	P6

B6M1529

CC-37

DIAGNOSTICS CHART WITH TROUBLE CODE

Cruise Control System (DIAGNOSTICS)

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. <i>Terminals</i> <i>(B7) No. 4 (+) — Chassis ground (-):</i>	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. <i>Terminals</i> <i>(B7) No. 6 — Chassis ground:</i>	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. <i>Terminals</i> <i>No. 3 — No. 6:</i>	Is resistance approximately 39 Ω ?	Go to step 4.	Replace cruise control actuator. <Ref. to CC-3 Actuator.>
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 <i>Connector & terminal</i> <i>(B7) No. 2 — (B94) No. 13:</i>	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. <i>Connector & terminal</i> <i>(B7) No. 3 — (B94) No. 14:</i>	Is resistance less than 10 Ω ?	Replace cruise control module. <Ref. to CC-4 Cruise Control Module.>	Repair harness.

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G: DIAGNOSTIC TROUBLE CODE 38

— MOTOR DRIVE SHAFT DOES NOT ENGAGE PROPERLY. — S003620F34

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-3 Actuator.>	Check the cruise control cable adjustment. <Ref. to CC-3 CABLE FREE PLAY, INSPECTION, General Description.>

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H: DIAGNOSTIC TROUBLE CODE 39

— MOTOR IS OVERLOADED. — S003620F35

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 flow more than 10A?	Replace cruise control module. <Ref. to CC-4 Cruise Control Module.>	Check the power supply circuit. <Ref. to CC-18 CHECK POWER SUPPLY, Diagnostics Chart with Symptom.>