9. CAN Communication Circuit Check

A: PROCEDURE

NOTE:
- When measuring the resistance of CAN communication circuit, measure it in sleep status.

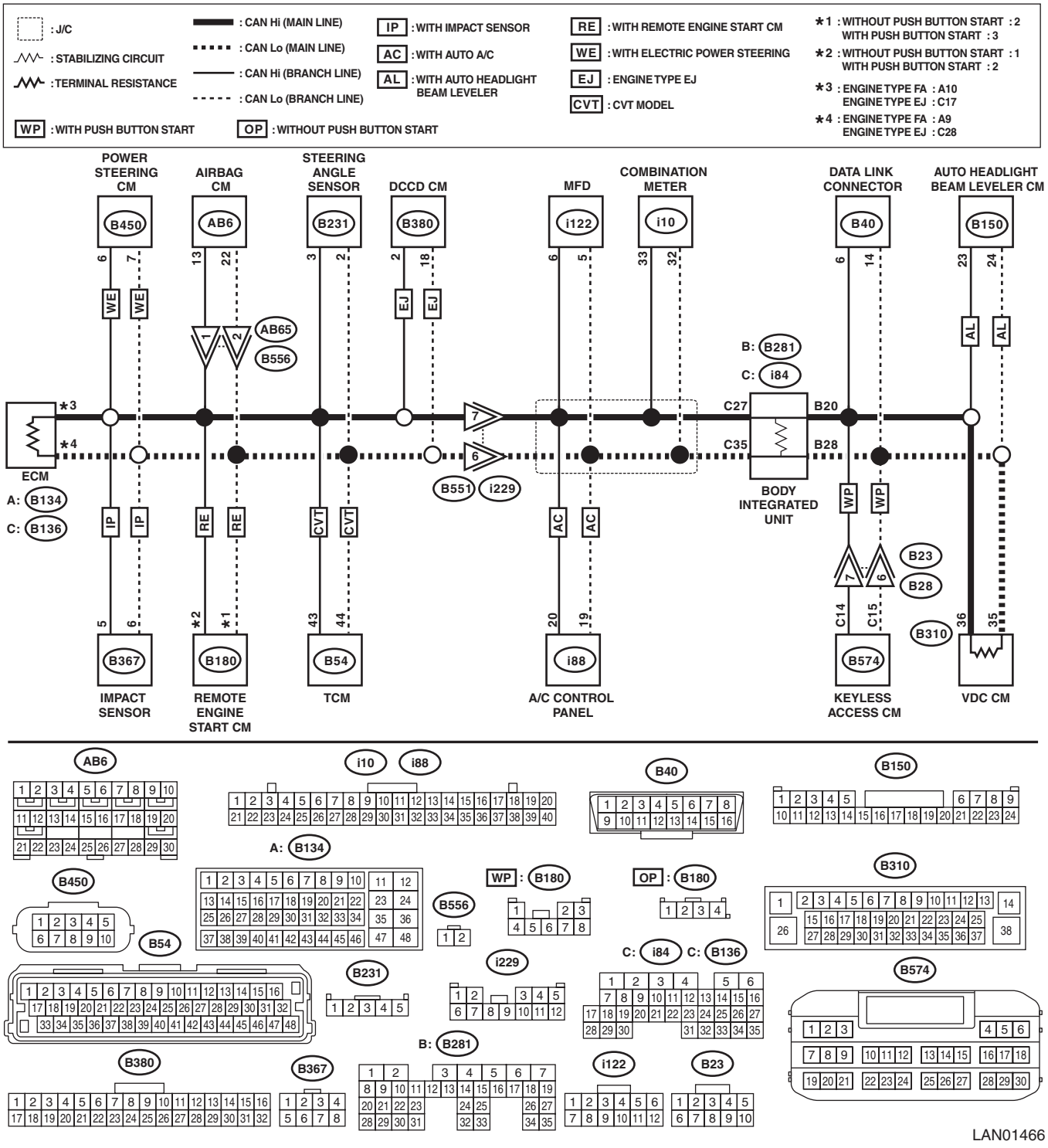
To enter sleep status
  – With ignition switch OFF and key or switch operation stopped, keep the doors, trunk, and rear gate all closed for one minute or more.
  – On models with keyless access function, keep the access key 2 m or more away from the vehicle.

- When the bus line is measured, combined resistance of the end resistance (120 Ω) in ECM and the end resistance (120 Ω) in VDC CM can be measured. The combined resistance is supposed to be approximately 53 — 61 Ω with the stabilizing circuit included. If the measured resistance value becomes 52 Ω or less, main wiring harness or related lines may be shorted. Or, the combined resistance may have changed because of a resistance other than the end resistance created on the circuit. If the measured value is 62 Ω or more, there may be a malfunction such as open circuit in one of the end resistances, in the stabilizing circuit, or in the main wiring harness.

Also, even when the resistance value falls within approx. 53 — 61 Ω, related lines may be open if an error of communication for initializing or a CAN system U-code has occurred. (The resistance cannot be between approx. 53 — 61 Ω if the main wiring harness is open.)

WIRING DIAGRAM:

- Engine electrical system <Ref. to WI-162, WIRING DIAGRAM, Engine Electrical System.>
- CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



	Step	Check	Yes	No
1	**CHECK BASIC DIAGNOSTIC PROCEDURE.** Check that the basic diagnosis has been performed up to STEP 3. NOTE: Possible defective parts can be narrowed easily by inspection using Subaru Select Monitor before performing "CHECK CAN COMMUNICATION CIRCUIT" using a tester.	Was the basic diagnostic procedure performed?	Go to step **2**.	Perform the basic diagnostic procedure. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>
2	**CHECK FROM DATA LINK CONNECTOR.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Is the resistance 10 Ω or less?	Check for ground short. <Ref. to LAN(diag)-35, GROUND SHORT INSPECTION, INSPECTION, CAN Communication Circuit Check.>	Go to step **3**.
3	**CHECK FROM DATA LINK CONNECTOR.** 1) Turn the ignition switch to ON. 2) Using the tester, measure the voltage between terminals. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Is the voltage 5 V or less?	Go to step **4**.	Check for battery short. <Ref. to LAN(diag)-37, BATTERY SHORT INSPECTION, INSPECTION, CAN Communication Circuit Check.>
4	**CHECK FROM DATA LINK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B40) No. 6 — No. 14:***	Is the resistance 52 Ω or less?	Perform the inspection for resistance of 52 Ω or less. <Ref. to LAN(diag)-41, 52 Ω OR LESS, INSPECTION, CAN Communication Circuit Check.>	Go to step **5**.
5	**CHECK FROM DATA LINK CONNECTOR.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B40) No. 6 — No. 14:***	Is the resistance 62 Ω or more?	Perform the inspection for resistance of 62 Ω or less. <Ref. to LAN(diag)-44, 62 Ω OR MORE, INSPECTION, CAN Communication Circuit Check.>	If the display of CAN system U-code disappears from the current malfunction, the CAN network is currently normal. If the U-code has detected as current malfunction, related lines may be open. Perform the inspection for the related line corresponding to the detected DTC. <Ref. to LAN(diag)-34, LIST, CAN Communication Circuit Check.>

B: LIST

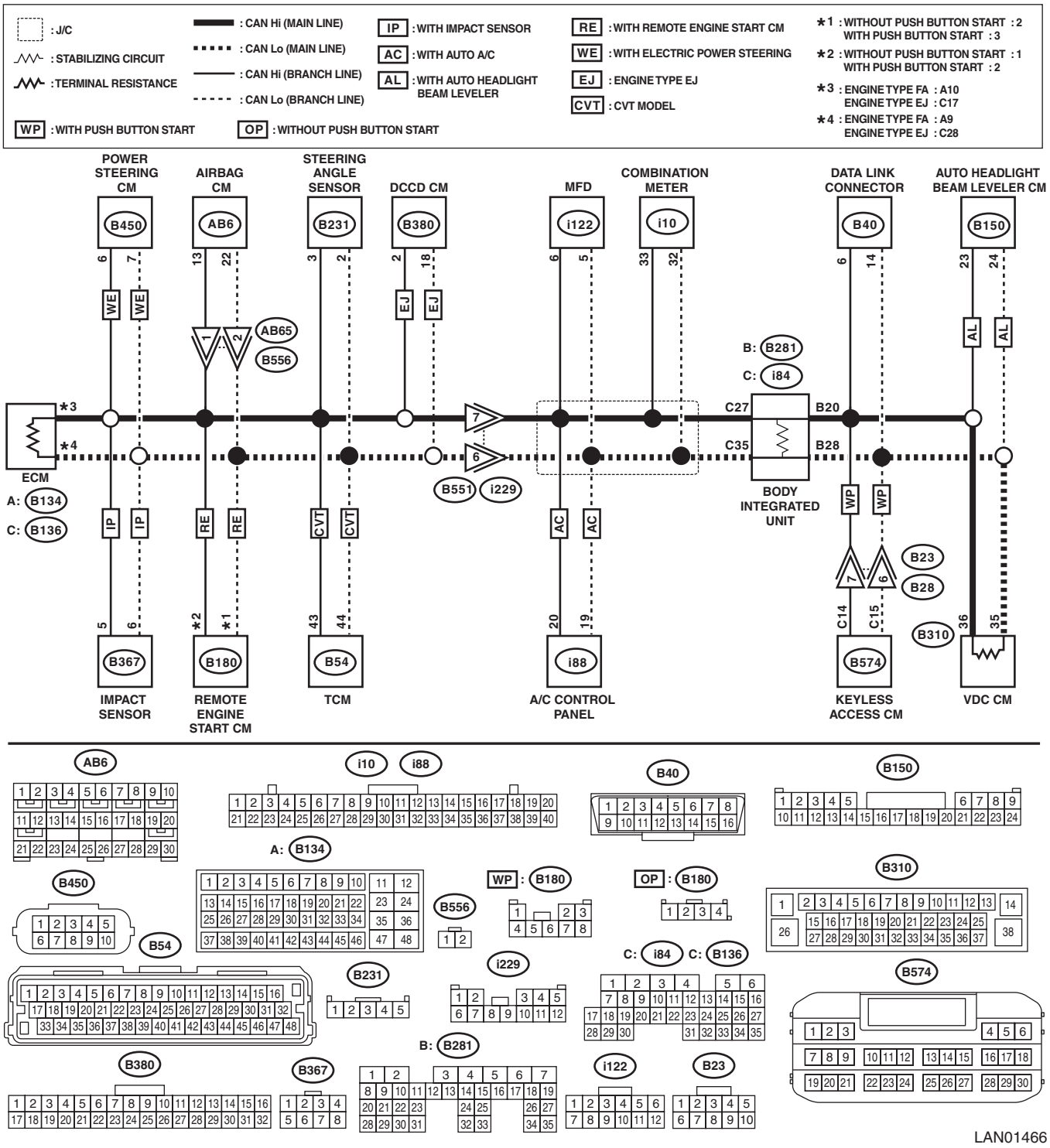
Resistance value between CAN Hi and Lo	Contents of inspection	Note
Ground short inspection	<Ref. to LAN(diag)-35, GROUND SHORT INSPECTION, INSPECTION, CAN Communication Circuit Check.>	Shorted to ground in the communication circuit or control module.
Battery short inspection	<Ref. to LAN(diag)-37, BATTERY SHORT INSPECTION, INSPECTION, CAN Communication Circuit Check.>	Shorted to battery power supply in the communication circuit or control module.
53 — 61 Ω	<Ref. to LAN(diag)-39, 53 — 61 Ω, INSPECTION, CAN Communication Circuit Check.>	Combined resistance of end resistance does not have malfunction; short to ground or +B short of the CAN communication circuit is possible, however.
52 Ω or less	<Ref. to LAN(diag)-41, 52 Ω OR LESS, INSPECTION, CAN Communication Circuit Check.>	Resistance is lower than combined resistance of end resistance. Short to CAN Hi and CAN Lo on the CAN communication circuit is possible.
62 Ω or more	<Ref. to LAN(diag)-44, 62 Ω OR MORE, INSPECTION, CAN Communication Circuit Check.>	Resistance is higher than combined resistance of end resistance. Open circuit of CAN communication circuit is possible.
Related lines 53 — 61 Ω (TCM)	<Ref. to LAN(diag)-46, RELATED LINES 53 — 61 Ω (TCM), INSPECTION, CAN Communication Circuit Check.>	No TCM data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (steering angle sensor)	<Ref. to LAN(diag)-48, RELATED LINES 53 — 61 Ω (STEERING ANGLE SENSOR), INSPECTION, CAN Communication Circuit Check.>	No steering angle sensor data is received. Perform inspection when faulty is detected.
Related line 53 — 61 Ω (A/C control panel)	<Ref. to LAN(diag)-50, RELATED LINE 53 — 61 Ω (A/C CONTROL PANEL), INSPECTION, CAN Communication Circuit Check.>	No A/C data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (electric power steering CM)	<Ref. to LAN(diag)-52, RELATED LINES 53 — 61 Ω (ELECTRIC POWER STEERING CM), INSPECTION, CAN Communication Circuit Check.>	No electric power steering data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (combination meter)	<Ref. to LAN(diag)-54, RELATED LINES 53 — 61 Ω (COMBINATION METER), INSPECTION, CAN Communication Circuit Check.>	No meter data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (MFD)	<Ref. to LAN(diag)-56, RELATED LINES 53 — 61 Ω (MFD), INSPECTION, CAN Communication Circuit Check.>	No MFD data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (airbags)	<Ref. to LAN(diag)-58, RELATED LINES 53 — 61 Ω (A/B CM), INSPECTION, CAN Communication Circuit Check.>	No airbag data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (keyless access system)	<Ref. to LAN(diag)-60, RELATED LINES 53 — 61 Ω (KEYLESS ACCESS SYSTEM), INSPECTION, CAN Communication Circuit Check.>	No keyless access CM data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (impact sensor system)	<Ref. to LAN(diag)-66, RELATED LINES 53 — 61 Ω (IMPACT SENSOR SYSTEM), INSPECTION, CAN Communication Circuit Check.>	Perform inspection when impact sensor malfunction is detected.
Related lines 53 — 61 Ω (DCCD)	<Ref. to LAN(diag)-68, RELATED LINES 53 — 61 Ω (DCCD), INSPECTION, CAN Communication Circuit Check.>	No DCCD data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (headlight beam leveler)	<Ref. to LAN(diag)-62, RELATED LINES 53 — 61 Ω (HEADLIGHT BEAM LEVELER), INSPECTION, CAN Communication Circuit Check.>	No headlight beam leveler data is received. Perform inspection when faulty is detected.
Related lines 53 — 61 Ω (remote engine starter)	<Ref. to LAN(diag)-64, RELATED LINES 53 — 61 Ω (REMOTE ENGINE STARTER), INSPECTION, CAN Communication Circuit Check.>	Perform inspection when the remote engine starter does not operate, while the mobile key side operates normally.

C: INSPECTION

1. GROUND SHORT INSPECTION

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



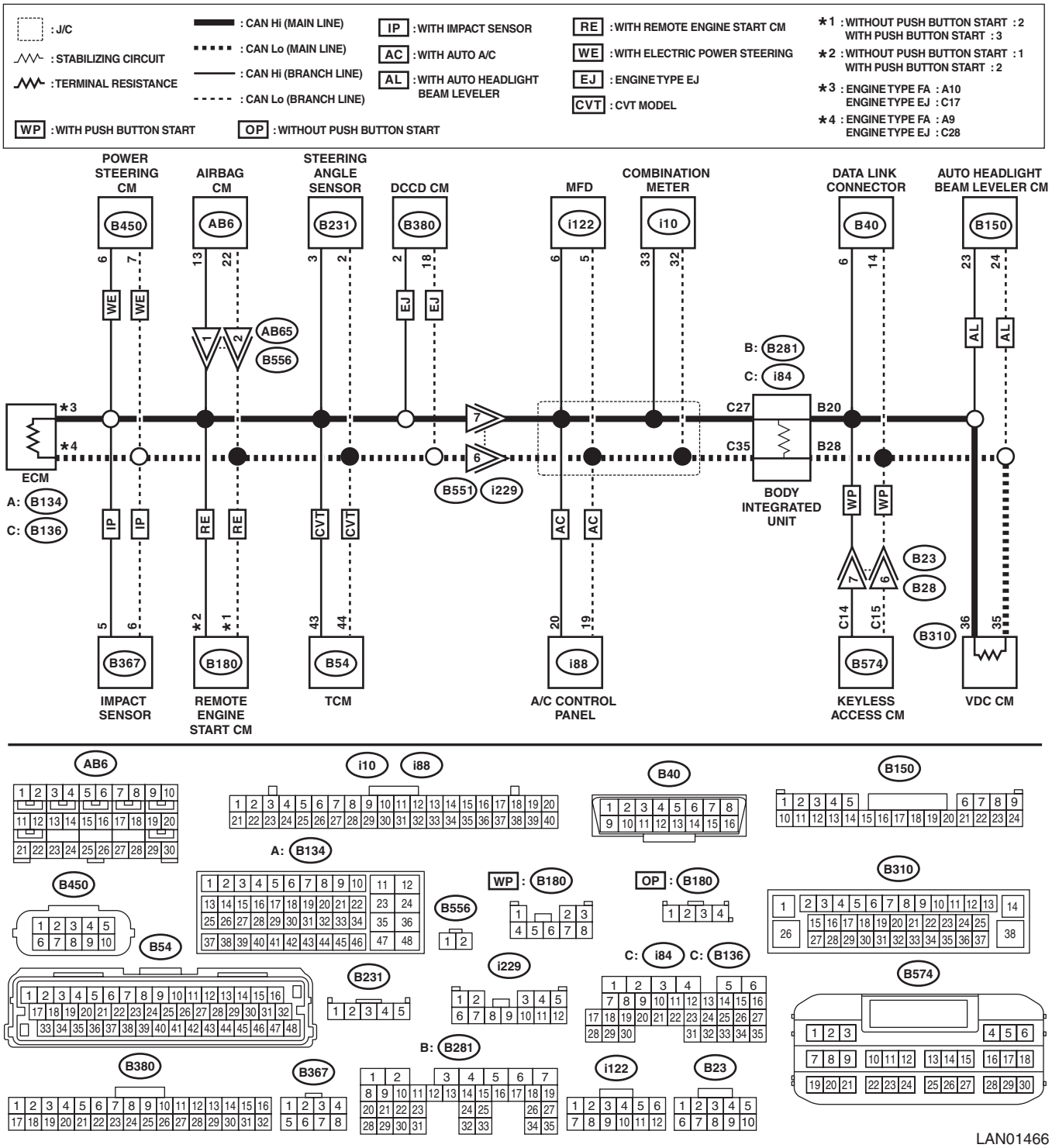
NOTE:
Main wiring harness or related lines may be shorted to ground, or shorted to ground in one of the control modules.

	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Is the resistance 10 Ω or less?	Go to step **2**.	Currently, it is normal.
2	**CHECK CONTROL MODULE.** With the tester connected, disconnect control module. NOTE: Disconnect the body integrated unit at the end. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Did the resistance change to 10 Ω or more?	Replace the control module whose resistance has changed. When the value changed at disconnecting the body integrated unit, Go to step **3**.	Repair or replace the short circuit of the main wiring harness and related lines between body integrated unit and VDC CM.
3	**CHECK BETWEEN MAIN WIRING HARNESSES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i84) No. 27 — Chassis ground:*** ***(i84) No. 35 — Chassis ground:***	Is the resistance 10 Ω or less?	Repair or replace the short circuit of the main wiring harness and related lines between ECM and body integrated unit.	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>

2. BATTERY SHORT INSPECTION

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



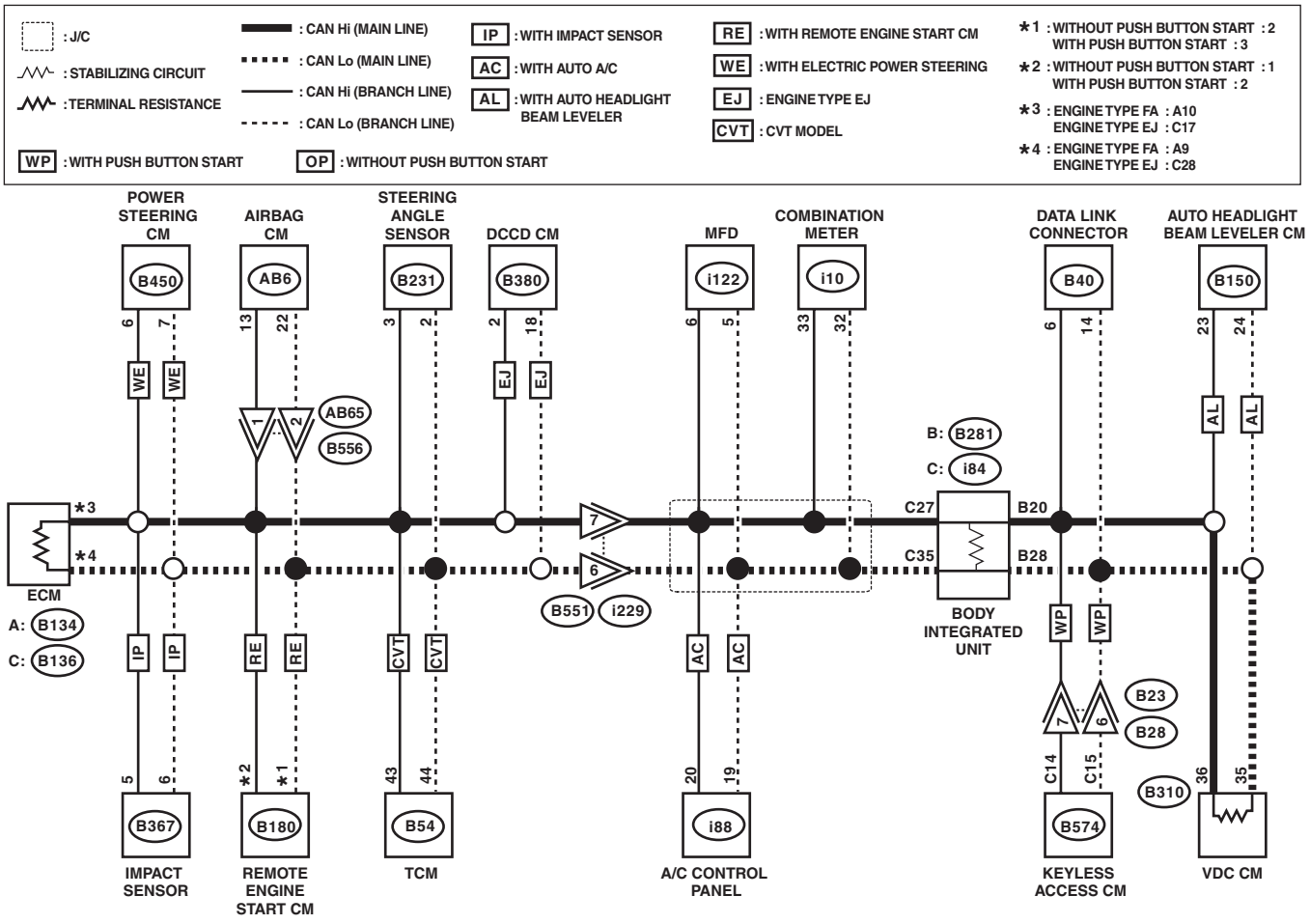
NOTE:
Main wiring harness or related lines may be shorted to battery circuit, or shorted to battery circuit in one of the control modules.

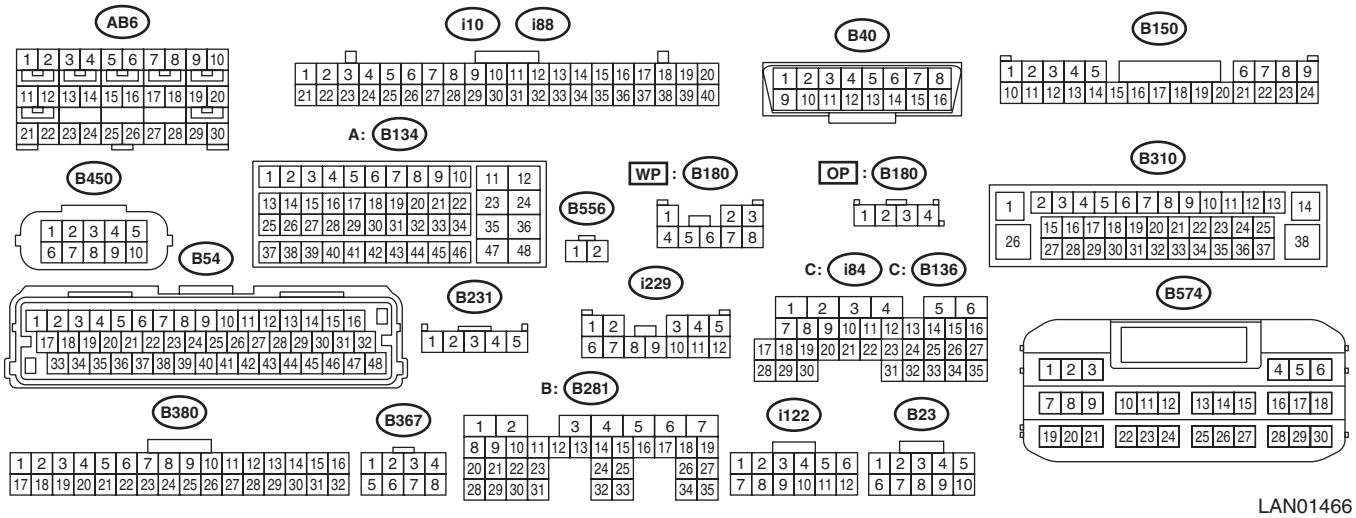
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Turn the ignition switch to ON. 2) Using the tester, measure the voltage between terminals. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Is the voltage 5 V or less?	Currently, it is normal.	Go to step **2**.
2	**CHECK CONTROL MODULE.** With the tester connected, disconnect control module. NOTE: Disconnect the body integrated unit at the end. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Did the voltage change to 5 V or less?	Replace the control module whose voltage has changed. When the value changed at disconnecting the body integrated unit, Go to step **3**.	Repair or replace the short circuit of the harness between body integrated unit and VDC CM.
3	**CHECK BETWEEN MAIN WIRING HARNESSES.** Using the tester, measure the voltage between terminals. ***Connector & terminal*** ***(i84) No. 27 — Chassis ground:*** ***(i84) No. 35 — Chassis ground:***	Is the voltage 5 V or less?	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>	Repair or replace the short circuit of the harness between ECM and body integrated unit.

3. 53 — 61 Ω

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>





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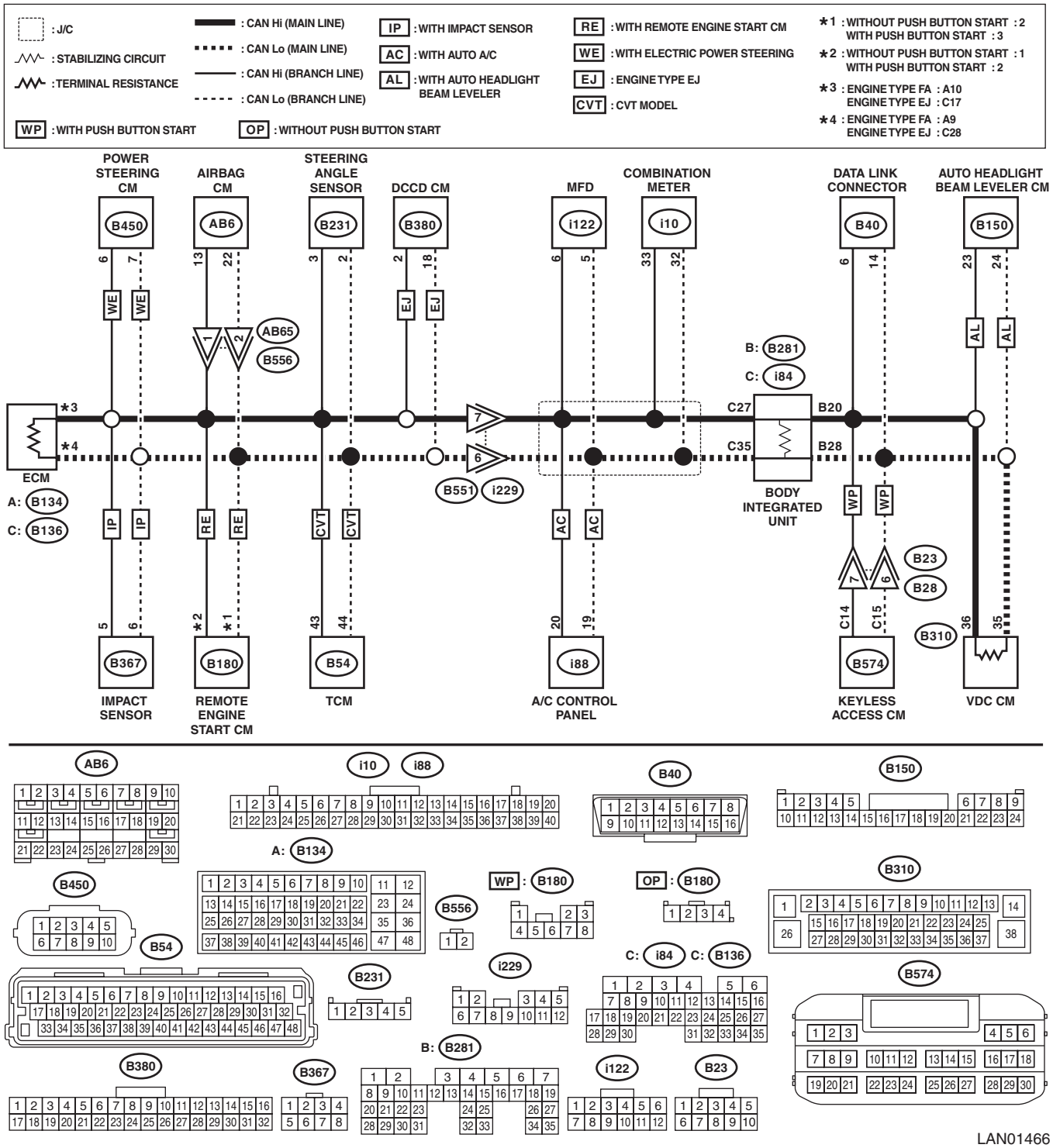
NOTE:
When the measured resistance value is 53 — 61 Ω, main wiring harness or related lines may be shorted to ground, or shorted to power supply line, or related line may be open.

	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Is the resistance 10 Ω or less?	Go to step **2**.	Go to step **4**.
2	**CHECK CONTROL MODULE.** With the tester connected, disconnect control module. NOTE: Disconnect the body integrated unit at the end. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Did the resistance change to 10 Ω or more?	Replace the control module whose resistance has changed. When the value changed at disconnecting the body integrated unit, Go to step **3**.	Repair or replace the short circuit of the harness between body integrated unit and VDC CM.
3	**CHECK MAIN WIRING HARNESS AND RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i84) No. 27 — Chassis ground:*** ***(i84) No. 35 — Chassis ground:***	Is the resistance 10 Ω or less?	Repair or replace the short circuit of the harness between ECM and body integrated unit.	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>
4	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Turn the ignition switch to ON. 2) Using the tester, measure the voltage between terminals. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Is the voltage 5 V or less?	CAN communication circuit is normal.	Go to step **5**.
5	**CHECK CONTROL MODULE.** With the tester connected, disconnect control module. NOTE: Disconnect the body integrated unit at the end. ***Connector & terminal*** ***(B40) No. 6 — Chassis ground:*** ***(B40) No. 14 — Chassis ground:***	Did the voltage change to 5 V or less?	Replace the control module whose voltage has changed. When the value changed at disconnecting the body integrated unit, Go to step **6**.	Repair or replace the short circuit of the harness between body integrated unit and VDC CM.
6	**CHECK HARNESS.** Using a tester, measure the voltage between terminals and chassis ground. ***Connector & terminal*** ***(i84) No. 27 — Chassis ground:*** ***(i84) No. 35 — Chassis ground:***	Is the voltage 5 V or less?	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>	Repair or replace the short circuit of the harness between ECM and body integrated unit.

4. 52 Ω OR LESS

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



NOTE:

When the bus line is measured, combined resistance of end resistance (120 Ω) in ECM and end resistance (120 Ω) in VDC CM can be measured. The combined resistance is approximately 53 — 61 Ω with the stabilizing circuit included. When the measured resistance value is 52 Ω or less, main wiring harness or related lines may be shorted, or combined resistance may have changed because resistance other than end resistance is created on the circuit.

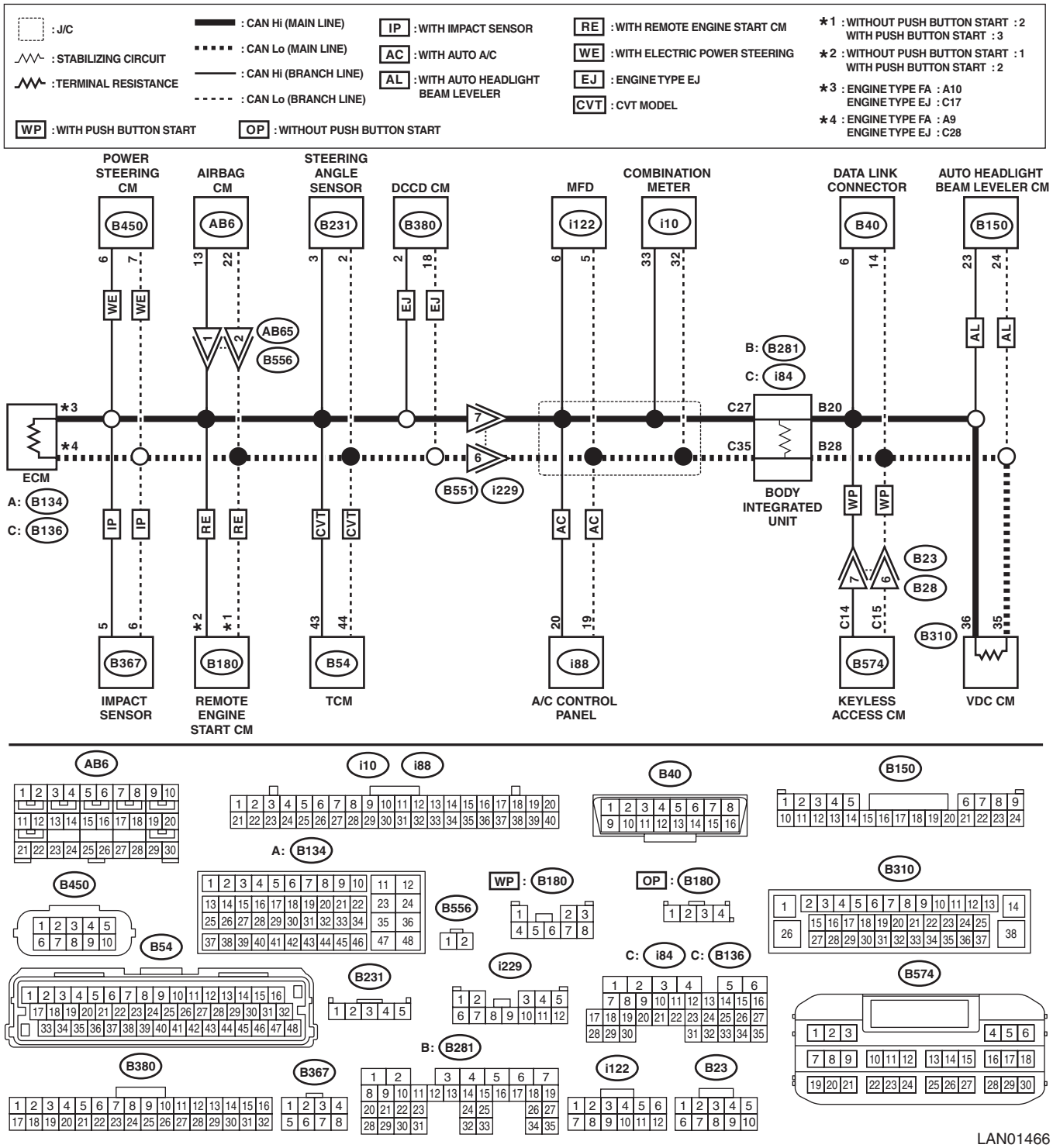
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B40) No. 6 — No. 14:***	Is the resistance 10 Ω or less?	Go to step **2**.	Go to step **4**.
2	**CHECK MAIN WIRING HARNESS AND RELATED LINES.** With a tester connected, disconnect control module connectors in order. NOTE: Disconnect the body integrated unit at the end. ***Connector & terminal*** ***(B40) No. 6 — No. 14:***	Is there any control module whose condition has changed from short state?	Replace the control module whose resistance has changed. When the value changed at disconnecting the body integrated unit, Go to step **3**.	Repair or replace the short circuit of the harness between body integrated unit and VDC CM.
3	**CHECK BETWEEN MAIN WIRING HARNESSES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i84) No. 27 — No. 35:***	Is the resistance 10 Ω or less?	Repair or replace the short circuit of the harness between ECM and body integrated unit.	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>
4	**CHECK CONTROL MODULE.** 1) Disconnect ECM and VDC CM connectors. 2) Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***Engine type: FA*** ***(B134) No. 9 — No. 10:*** ***(B310) No. 35 — No. 36:*** ***Engine type: EJ*** ***(B136) No. 17 — No. 28:*** ***(B310) No. 35 — No. 36:***	Is the resistance 114 — 126 Ω?	Go to step **5**.	Replace the control module whose end resistance value is out of the specified range.
5	**CHECK CONTROL MODULE.** 1) Disconnect the connector of body integrated unit. 2) Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***(B281) No. 28 — (i84) No. 27:*** ***(B281) No. 20 — (i84) No. 35:***	Is the resistance 2850 — 3150 Ω?	Go to step **6**.	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>
6	**CHECK CONTROL MODULE.** Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***(B281) No. 28 — (i84) No. 35:*** ***(B281) No. 20 — (i84) No. 27:***	Is the resistance less than 1 Ω?	Go to step **7**.	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>
7	**CHECK CONTROL MODULE.** 1) Disconnect the combination meter connector. 2) Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***(i10) No. 32 — No. 33:***	Is the resistance 2850 — 3150 Ω?	Go to step **8**.	Replace the combination meter.

	Step	Check	Yes	No
8	**CHECK CONTROL MODULE (ONLY FOR MODELS WITH HIGH GRADE MFD).** 1) Disconnect the MFD connector. 2) Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***(i122) No. 5 — No. 6:***	Is the resistance 2850 — 3150 Ω?	Go to step **9**.	Replace the MFD.
9	**CHECK HARNESS.** Using the tester, check the short circuit portion of each harness. ***Connector & terminal*** ***(B281) No. 28 — No. 20:***	Is the resistance 1 MΩ or more?	Go to step **11**.	Go to step **10**.
10	**CHECK CONTROL MODULE.** With a tester connected, disconnect control modules in order. ***Connector & terminal*** ***(B281) No. 28 — No. 20:***	Are there any control modules whose resistance changed to 1 MΩ or more?	Replace the control module that has changed.	Repair or replace the harness part which has resistance component.
11	**CHECK CONTROL MODULE.** With a tester connected, disconnect control modules in order. ***Connector & terminal*** ***(i84) No. 27 — No. 35:***	Is there any control module whose resistance has changed to 1 MΩ or more?	Replace the control module that has changed.	Repair or replace the harness part which has resistance component.

5. 62 Ω OR MORE

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



NOTE:

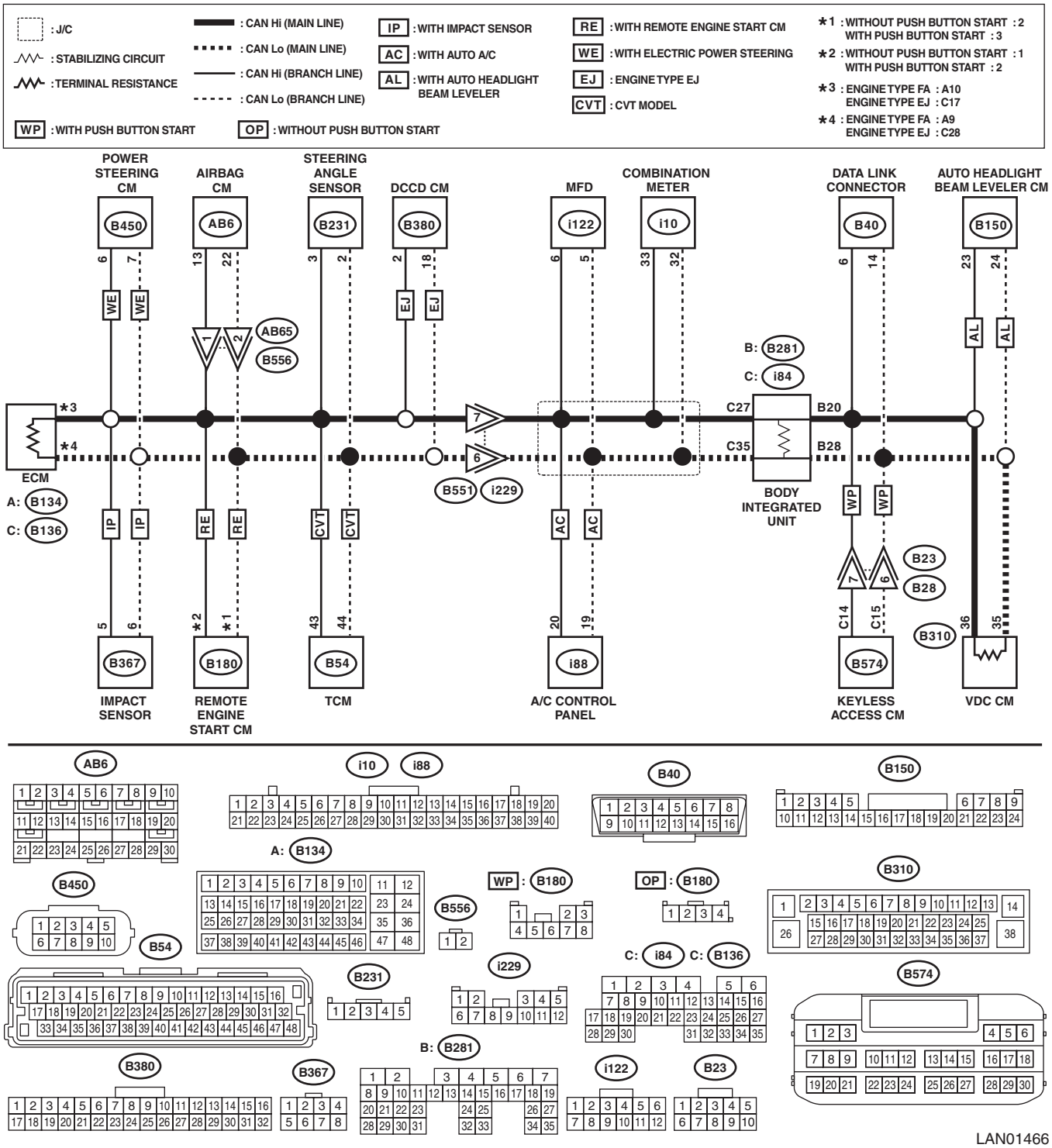
When CAN communication circuit is measured, combined resistance of end resistance (120 Ω) in ECM and end resistance (120 Ω) in VDC CM can be measured. The combined resistance is approximately 53 — 61 Ω with the stabilizing circuit included. When the measured resistance value is 62 Ω or more, either one of the end resistances, or stabilizing circuit, or main wiring harness may have malfunction such as open circuit.

	Step	Check	Yes	No
1	**CHECK CONTROL MODULE.** 1) Disconnect ECM and VDC CM connectors. 2) Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***Engine type: FA*** ***(B134) No. 9 — No. 10:*** ***(B310) No. 35 — No. 36:*** ***Engine type: EJ*** ***(B136) No. 17 — No. 28:*** ***(B310) No. 35 — No. 36:***	Is the resistance 114 — 126 Ω?	Go to step **2**.	Replace the control module whose value is out of the specification.
2	**CHECK CONTROL MODULE.** 1) Disconnect the connector of body control module. 2) Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***(B281) No. 28 — (i84) No. 27:*** ***(B281) No. 20 — (i84) No. 35:***	Is the resistance 2850 — 3150 Ω?	Go to step **3**.	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>
3	**CHECK CONTROL MODULE.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B281) No. 28 — (i84) No. 35:*** ***(B281) No. 20 — (i84) No. 27:***	Is the resistance less than 1 Ω?	Go to step **4**.	Replace the body integrated unit. <Ref. to SL-78, REMOVAL, Body Integrated Unit.>
4	**CHECK CONTROL MODULE.** 1) Disconnect the combination meter connector. 2) Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***(i10) No. 32 — No. 33:***	Is the resistance 2850 — 3150 Ω?	Go to step **5**.	Replace the combination meter.
5	**CHECK CONTROL MODULE (ONLY FOR MODELS WITH HIGH GRADE MFD).** 1) Disconnect the MFD connector. 2) Using a tester, measure the resistance between control module terminals. ***Connector & terminal*** ***(i122) No. 5 — No. 6:***	Is the resistance 2850 — 3150 Ω?	Go to step **6**.	Replace the MFD.
6	**CHECK HARNESS.** Using a tester, check continuity between terminals. ***Connector & terminal*** ***(B40) No. 6 — (B310) No. 36:*** ***(B40) No. 14 — (B310) No. 35:*** ***(B40) No. 6 — (B281) No. 20:*** ***(B40) No. 14 — (B281) No. 28:***	Is there continuity?	Go to step **7**.	Repair or replace the open circuit of harness.
7	**CHECK HARNESS.** 1) Disconnect the ECM connector. 2) Using a tester, check continuity between terminals. ***Connector & terminal*** ***Engine type: FA*** ***(i84) No. 27 — (B134) No. 10:*** ***(i84) No. 35 — (B134) No. 9:*** ***Engine type: EJ*** ***(i84) No. 27 — (B136) No. 17:*** ***(i84) No. 35 — (B136) No. 28:***	Is there continuity?	It is possible that temporary poor communication occurs.	Repair or replace the open circuit of harness.

6. RELATED LINES 53 — 61 Ω (TCM)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



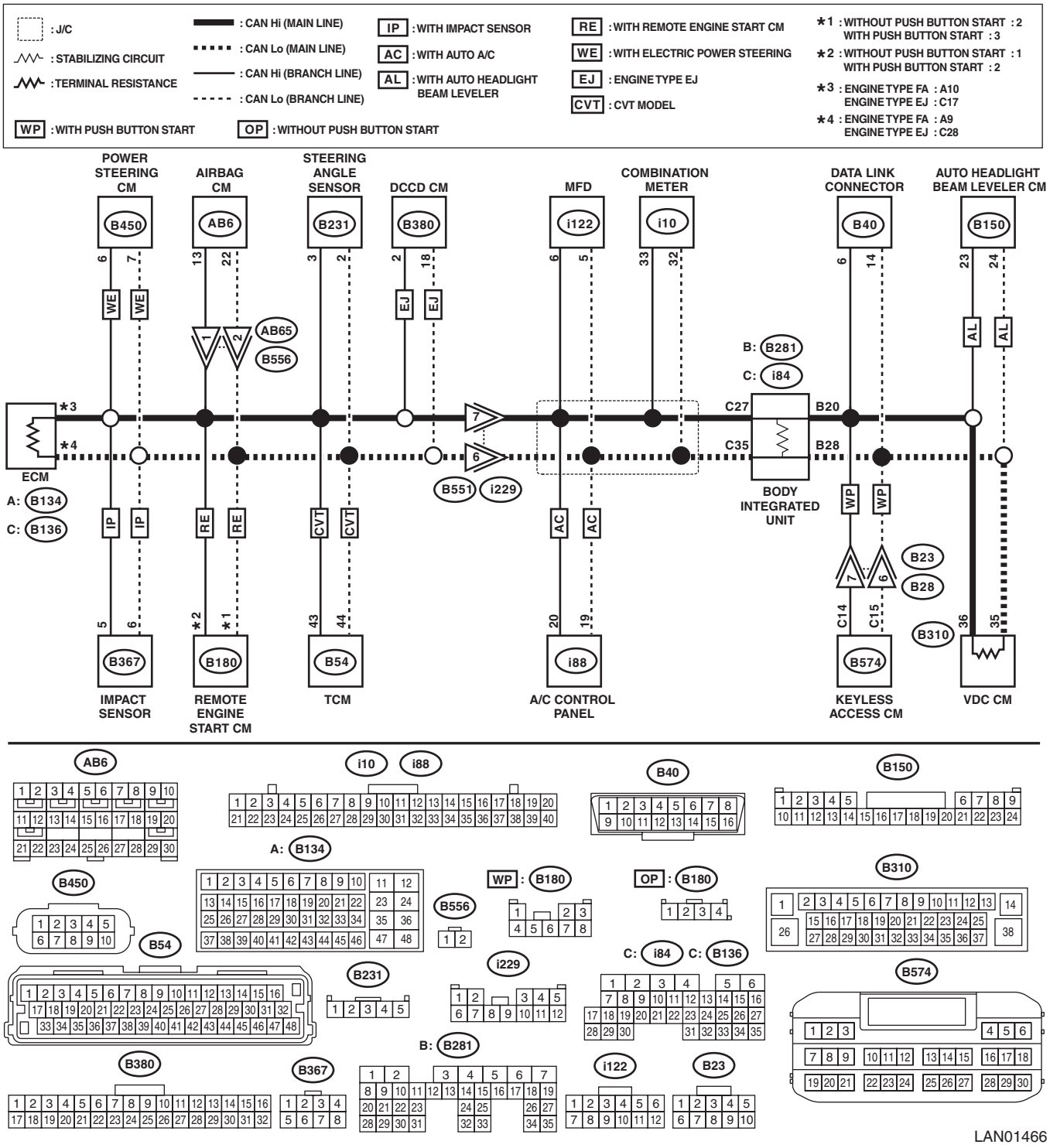
NOTE:
Perform inspection when no data is received, or faulty is detected. This is different from power supply shorted or ground shorted.

	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the TCM connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B54) No. 43 — No. 44:***	Is the resistance 400 Ω or more?	Related lines between TCM and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B54) No. 44 — (B40) No. 14:*** ***(B54) No. 43 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit portion of TCM related lines.	Check DTC of TCM. <Ref. to CVT(diag)-16, OPERATION, Read Diagnostic Trouble Code (DTC).>

7. RELATED LINES 53 — 61 Ω (STEERING ANGLE SENSOR)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



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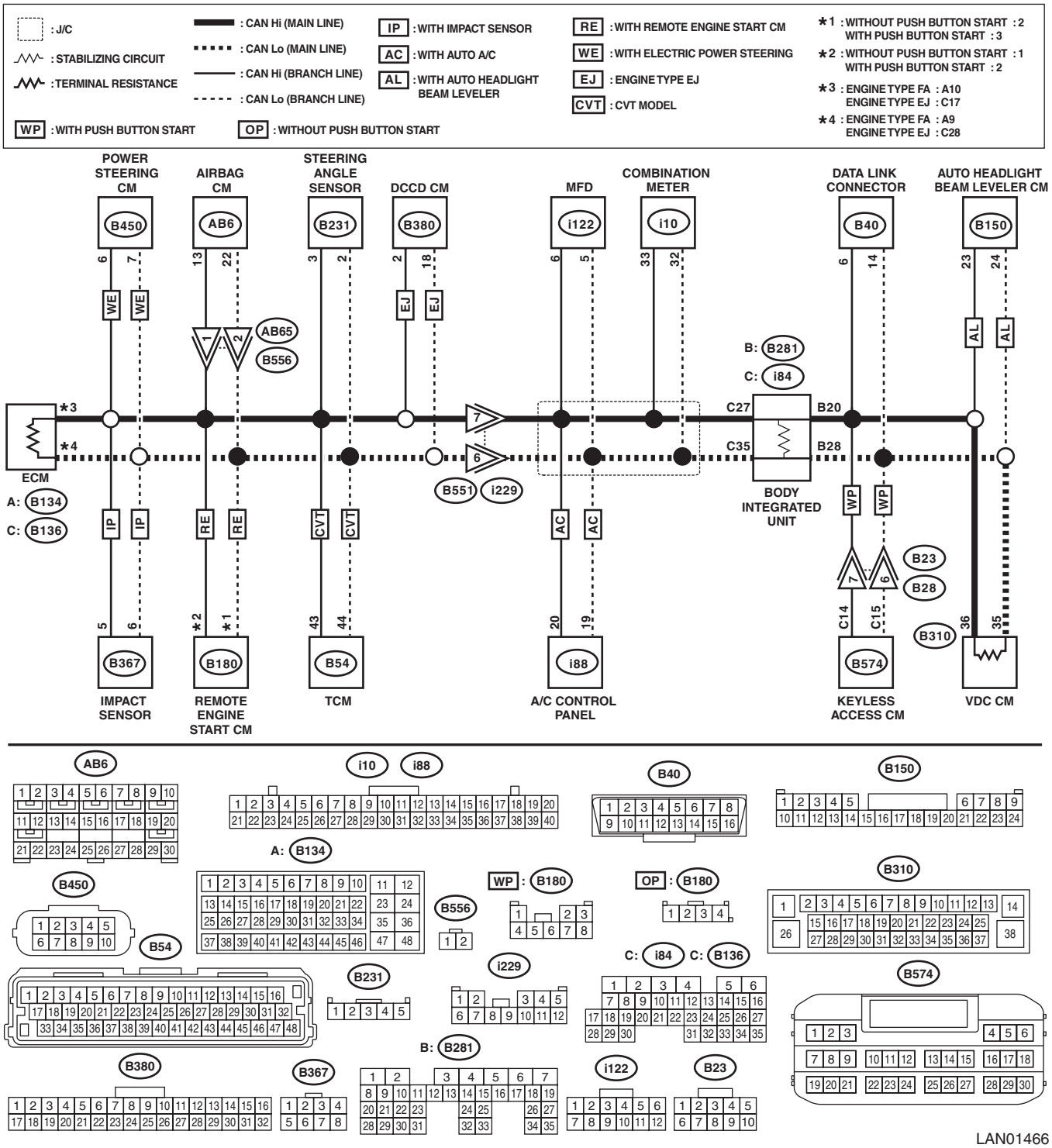
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the steering angle sensor connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B231) No. 2 — No. 3:***	Is the resistance 400 Ω or more?	Related lines between steering angle sensor and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B231) No. 2 — (B40) No. 14:*** ***(B231) No. 3 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit portion of steering angle sensor related lines.	Check DTC of VDC CM. <Ref. to VDC(diag)-21, OPERATION, Read Diagnostic Trouble Code (DTC).>

8. RELATED LINE 53 — 61 Ω (A/C CONTROL PANEL)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>

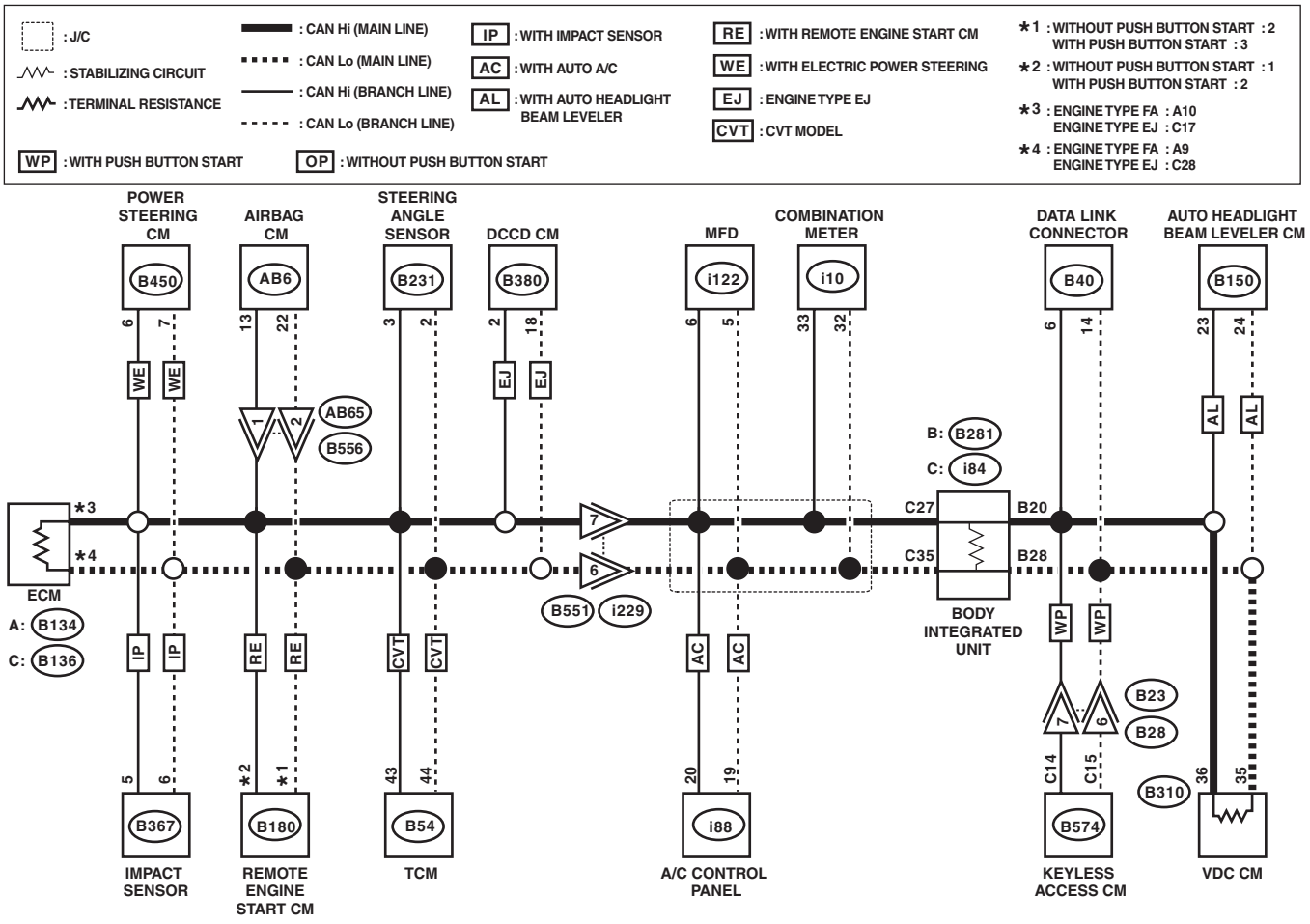


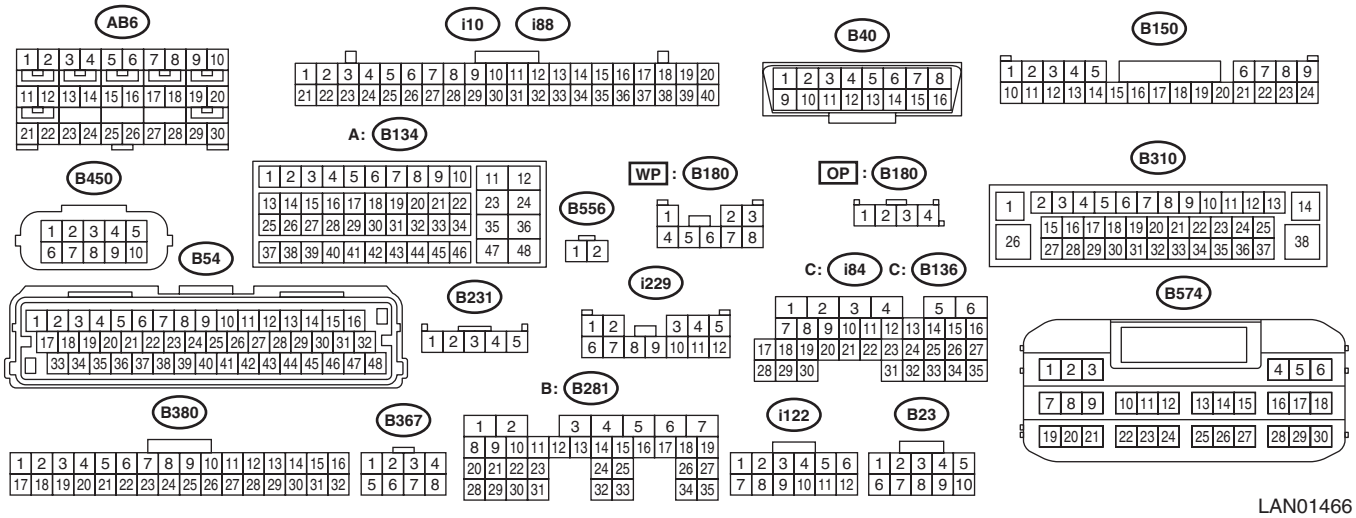
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the A/C control panel connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i88) No. 19 — No. 20:***	Is the resistance 400 Ω or more?	Related lines between A/C control panel and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i88) No. 19 — (B40) No. 14:*** ***(i88) No. 20 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit of A/C control panel related lines.	Check the DTC of A/C control panel. <Ref. to AC(diag)-36, Read Diagnostic Trouble Code (DTC).>

9. RELATED LINES 53 — 61 Ω (ELECTRIC POWER STEERING CM)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



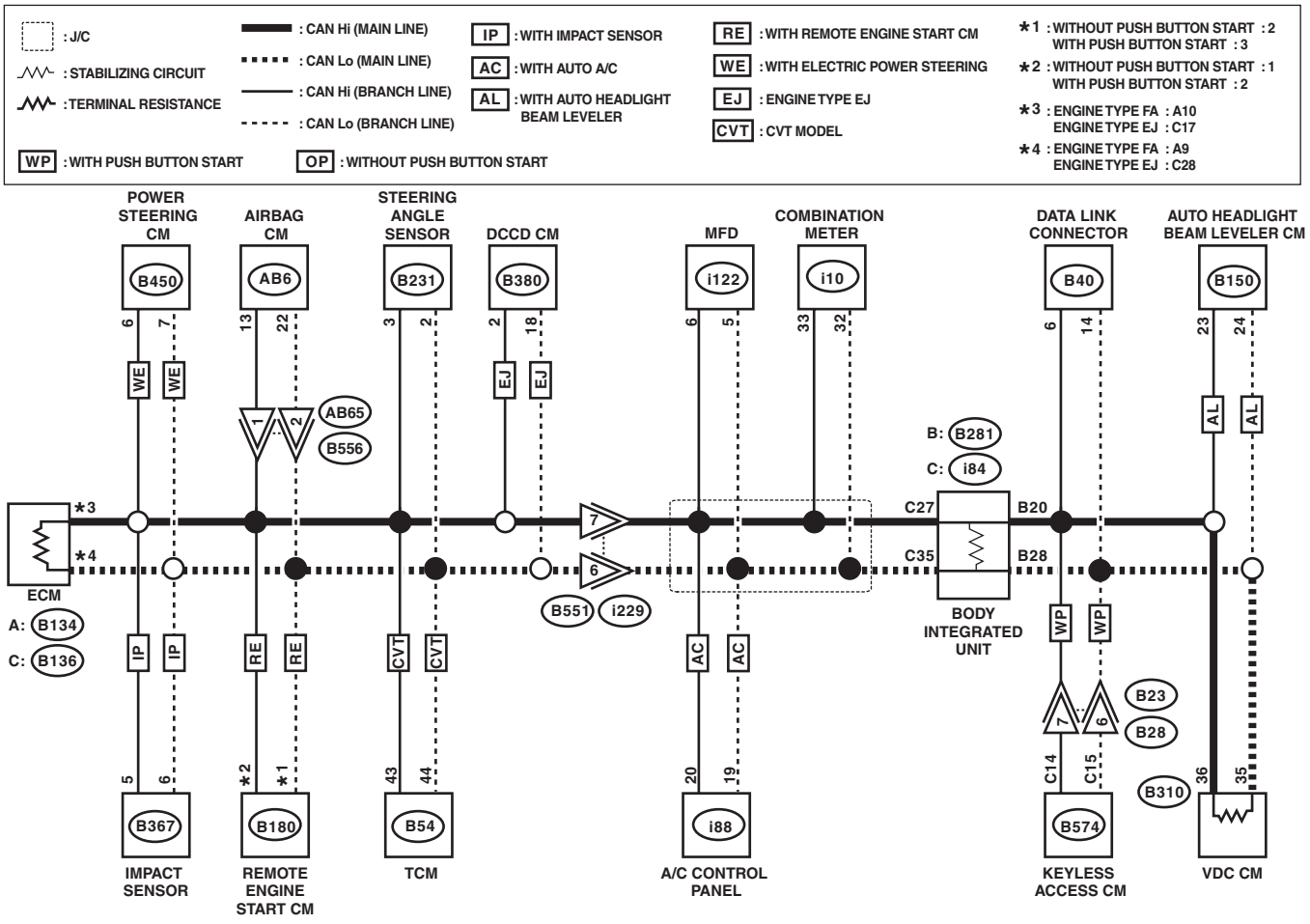


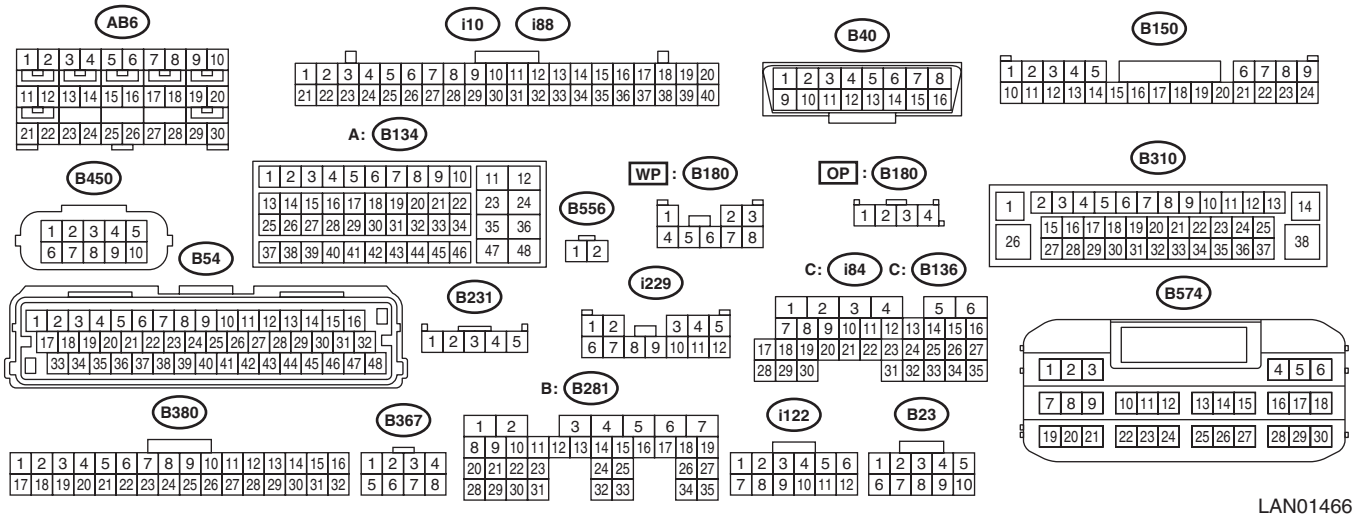
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the electric power steering CM connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B450) No. 6 — No. 7:***	Is the resistance 400 Ω or more?	Related lines or main wiring harness between electric power steering CM and main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B450) No. 6 — (B40) No. 6:*** ***(B450) No. 7 — (B40) No. 14:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit portion of electric power steering CM related lines.	Check DTC of electric power steering CM. <Ref. to PS(diag)-16, OPERATION, Read Diagnostic Trouble Code (DTC).>

10.RELATED LINES 53 — 61 Ω (COMBINATION METER)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>





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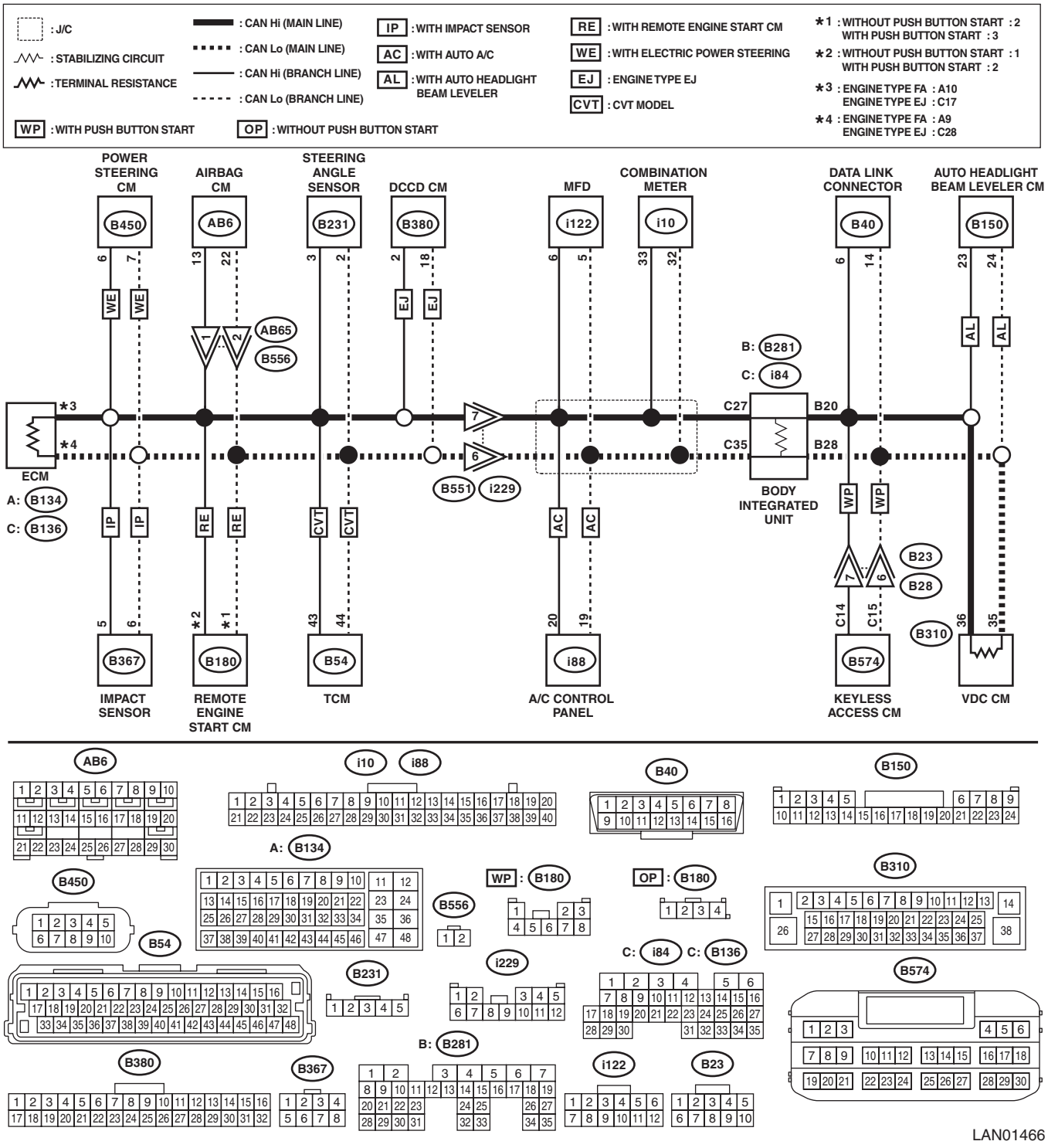
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the combination meter connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i10) No. 32 — No. 33:***	Is the resistance 400 Ω or more?	Related lines between combination meter and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i10) No. 32 — (B40) No. 14:*** ***(i10) No. 33 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit portion of combination meter related lines.	Check DTC of combination meter.

11.RELATED LINES 53 — 61 Ω (MFD)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



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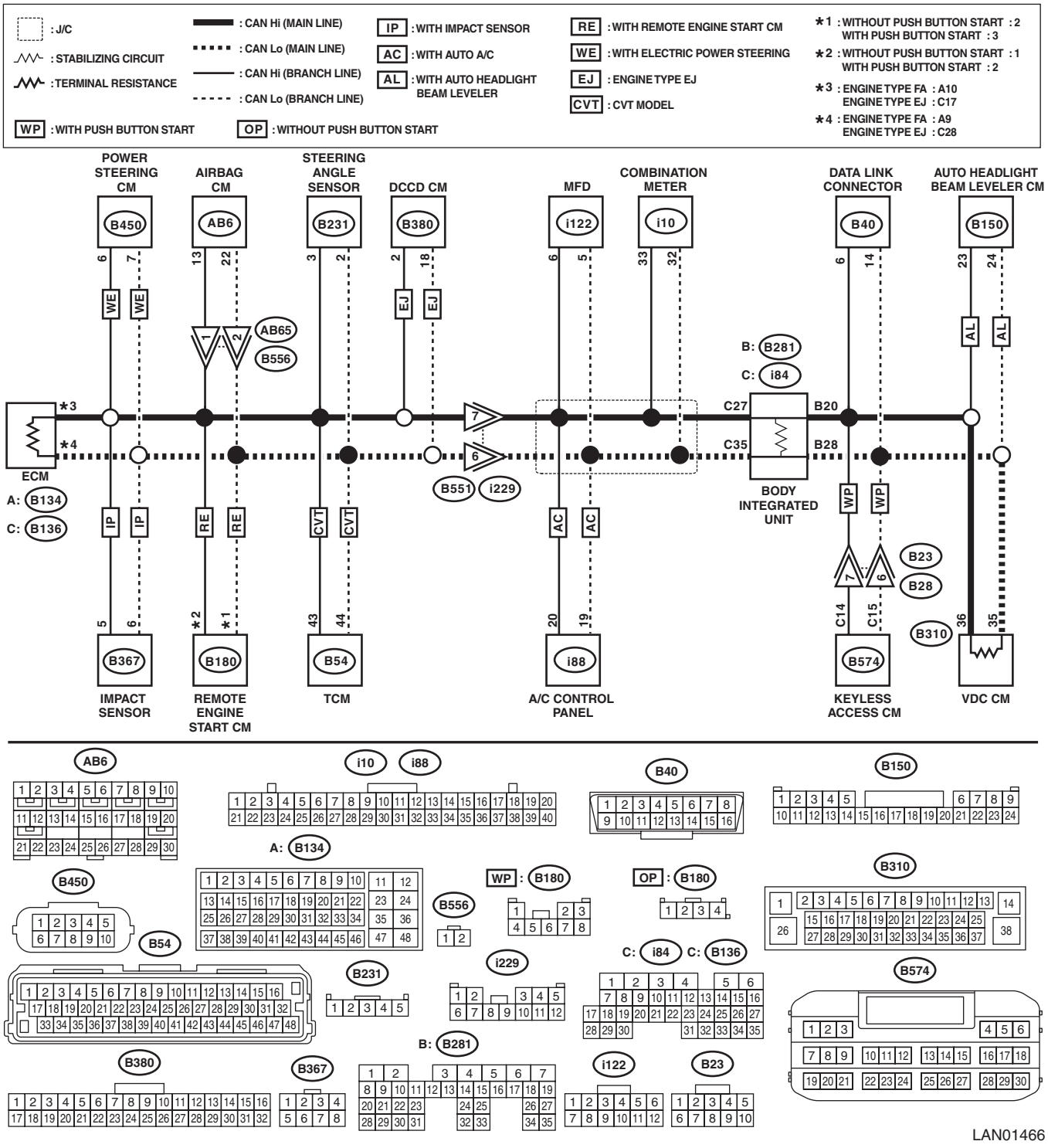
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the MFD connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i122) No. 5 — No. 6:***	Is the resistance 400 Ω or more?	Related lines between MFD and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i122) No. 5 — (B40) No. 14:*** ***(i122) No. 6 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit of MFD related lines.	Check DTC of MFD.

12.RELATED LINES 53 — 61 Ω (A/B CM)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



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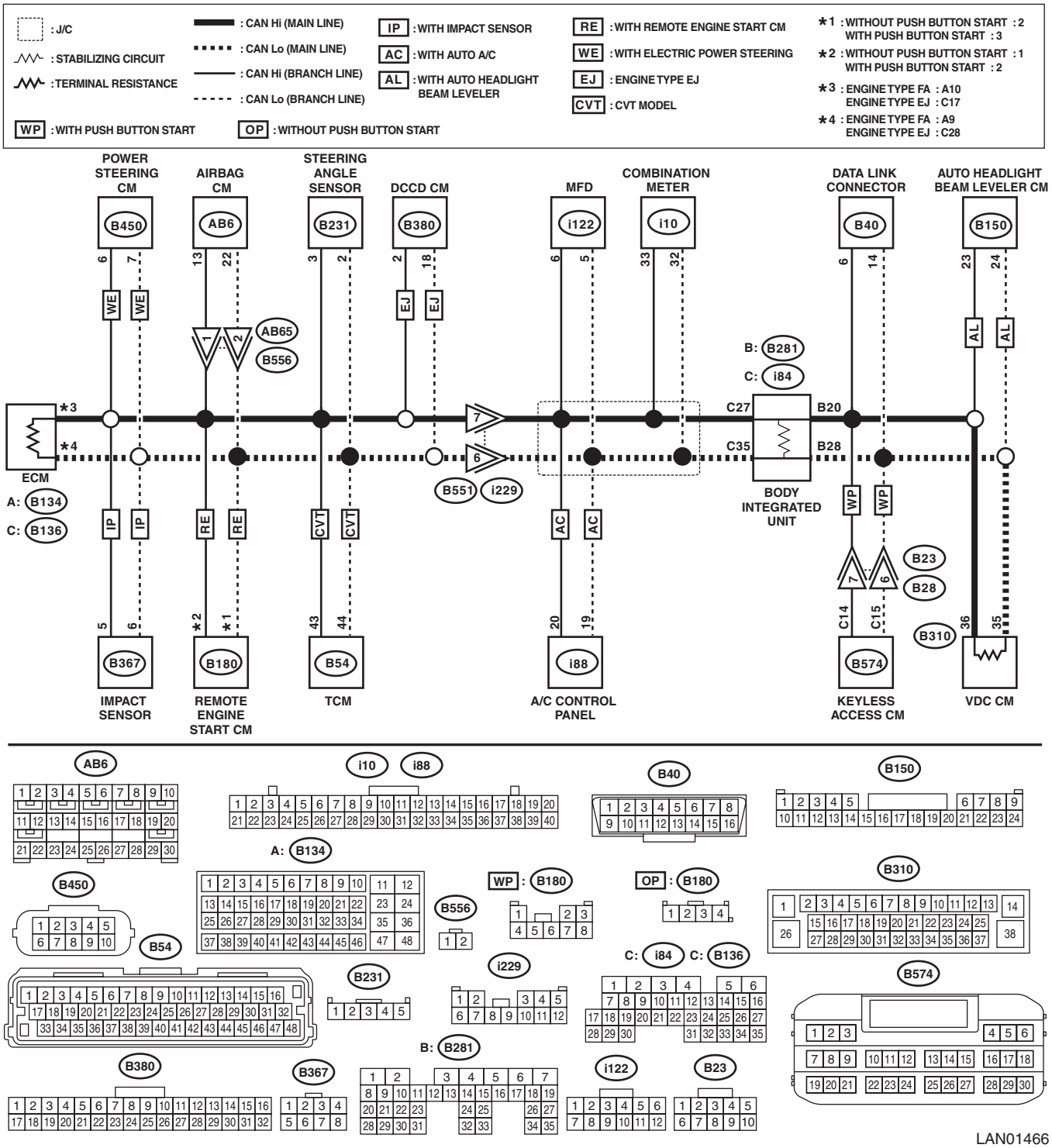
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the A/B CM connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(AB6) No. 13 — No. 22:***	Is the resistance 400 Ω or more?	Related lines between A/B CM and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(AB6) No. 22 — (B40) No. 14:*** ***(AB6) No. 13 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit of A/B CM related lines.	Check DTC of A/B CM.

13.RELATED LINES 53 — 61 Ω (KEYLESS ACCESS SYSTEM)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>



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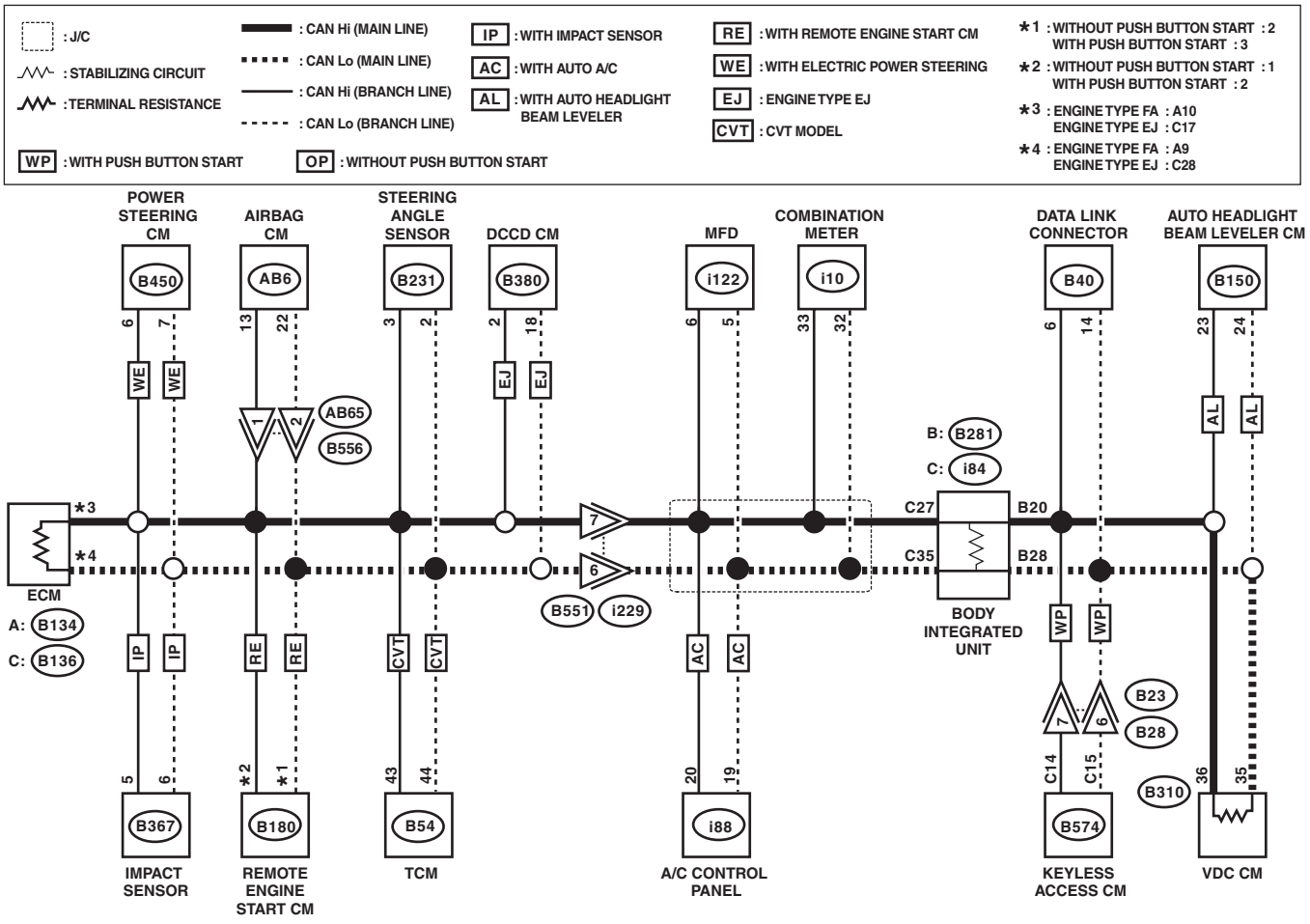
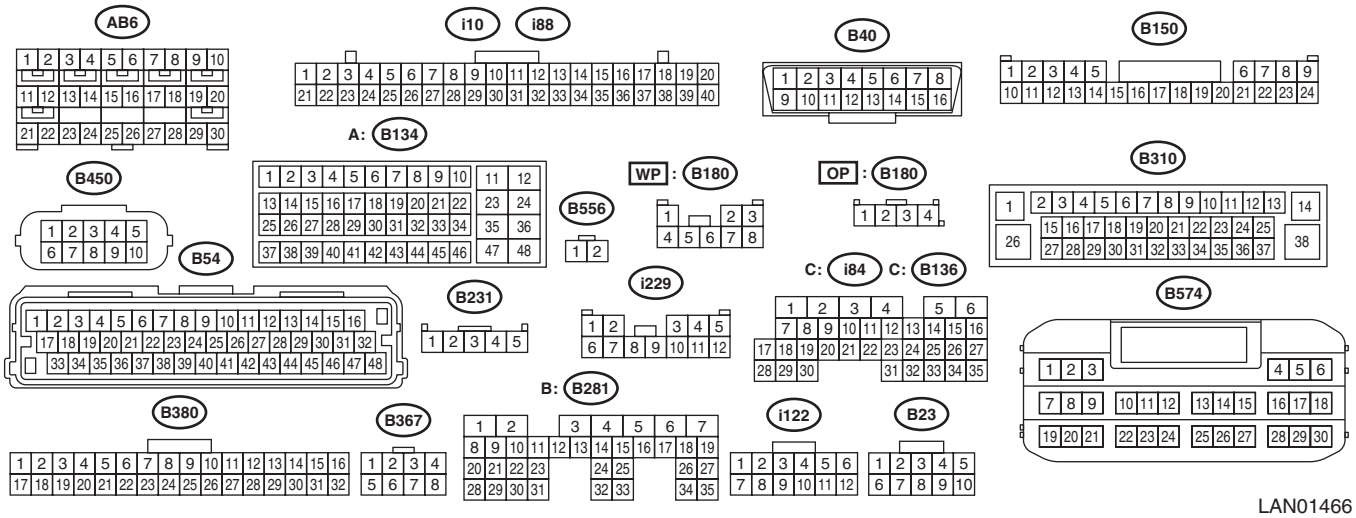
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the keyless access CM connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B574) No. 14 — No. 15:***	Is the resistance 400 Ω or more?	Related lines between keyless access CM and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B574) No. 15 — (B40) No. 14:*** ***(B574) No. 14 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit portion of keyless access CM related lines.	Check DTC of keyless access CM. <Ref. to KPS(diag)-27, OPERATION, Read Diagnostic Trouble Code (DTC).>

14.RELATED LINES 53 — 61 Ω (HEADLIGHT BEAM LEVELER)

WIRING DIAGRAM:

CAN communication system <Ref. to WI-110, WIRING DIAGRAM, CAN Communication System.>





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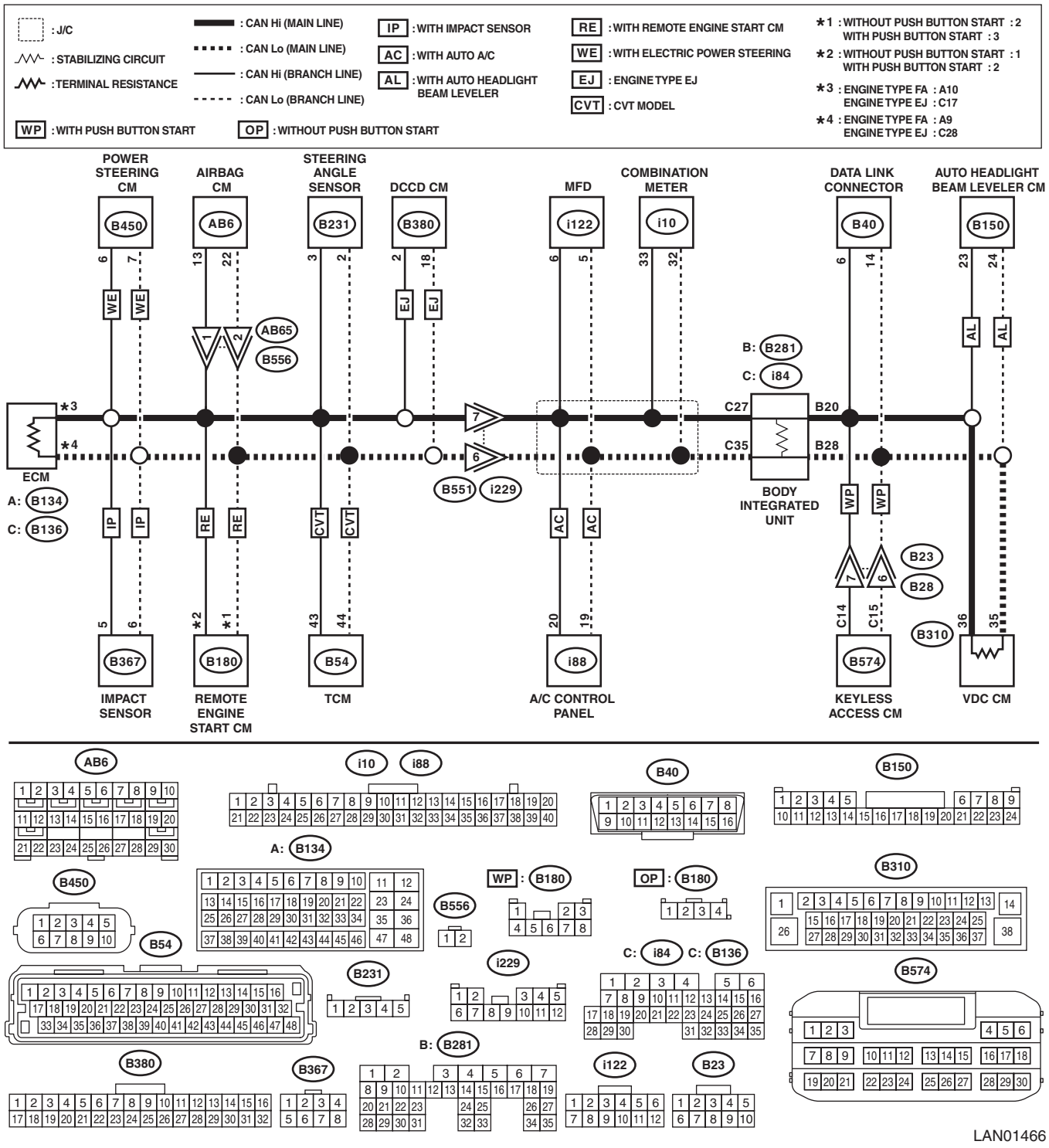
	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the headlight beam leveler CM connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B150) No. 23 — No. 24:***	Is the resistance 400 Ω or more?	Related lines between headlight beam leveler CM and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B150) No. 24 — (B40) No. 14:*** ***(B150) No. 23 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit portion of headlight beam leveler CM related lines.	Check DTC of headlight beam leveler system.

15.RELATED LINES 53 — 61 Ω (REMOTE ENGINE STARTER)

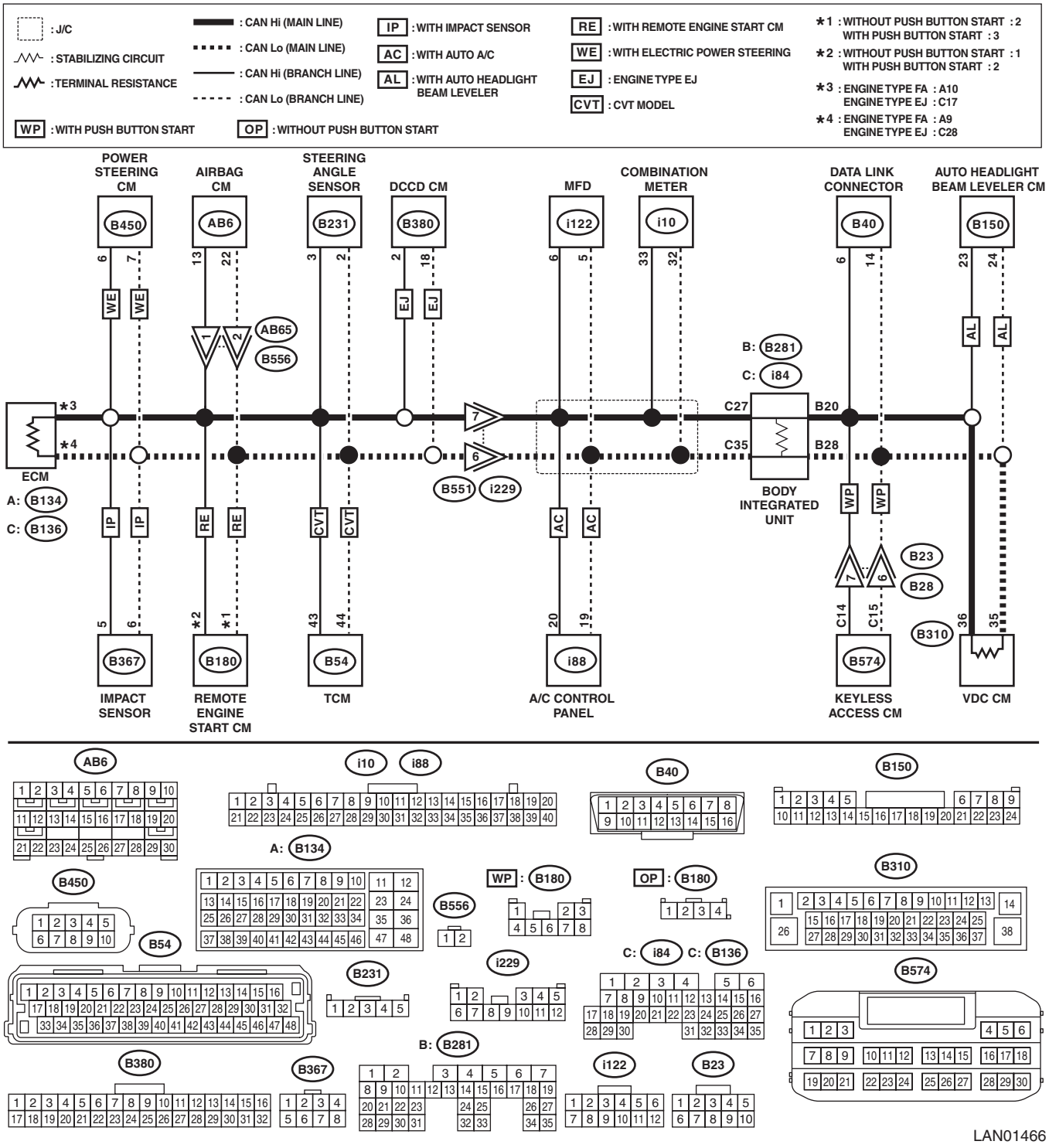
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the remote engine start CM connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***Without push button start*** ***(B180) No. 1 — No. 2:*** ***With push button start*** ***(B180) No. 2 — No. 3:***	Is the resistance 400 Ω or more?	Related lines between remote engine start CM and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***Without push button start*** ***(B180) No. 1 — (B40) No. 6:*** ***(B180) No. 2 — (B40) No. 14:*** ***With push button start*** ***(B180) No. 2 — (B40) No. 6:*** ***(B180) No. 3 — (B40) No. 14:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit portion of remote engine start CM related lines.	The communication harness is normal. Check the remote engine starter CM or the mobile key.

16.RELATED LINES 53 — 61 Ω (IMPACT SENSOR SYSTEM)

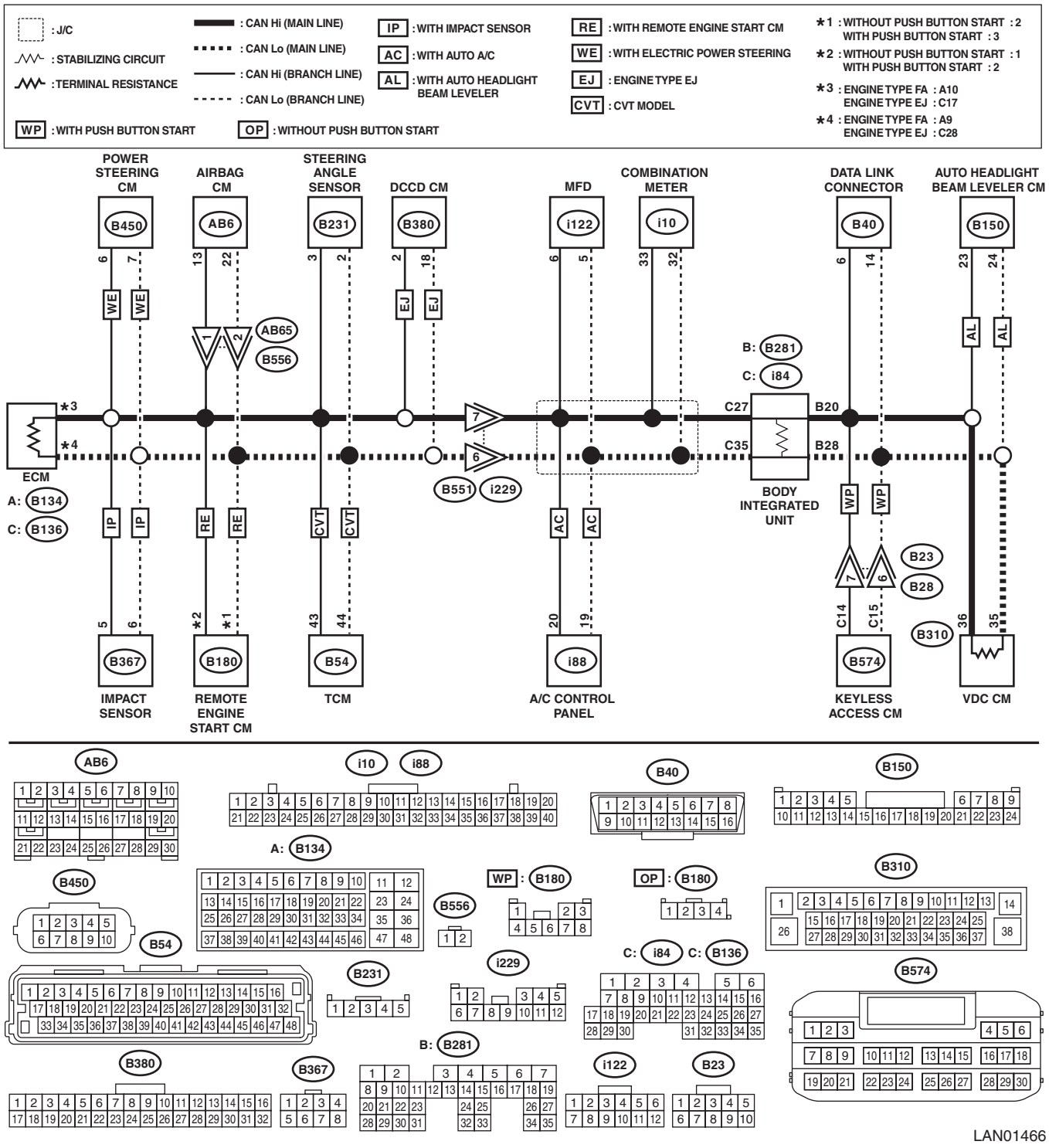
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the impact sensor connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B367) No. 5 — No. 6:***	Is the resistance 400 Ω or more?	Related lines between the impact sensor and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B367) No. 6 — (B40) No. 14:*** ***(B367) No. 5 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open circuit of the impact sensor system related lines.	The communication harness is normal. Check the impact sensor.

17.RELATED LINES 53 — 61 Ω (DCCD)

WIRING DIAGRAM:



LAN01466

	Step	Check	Yes	No
1	**CHECK BETWEEN RELATED LINES AND MAIN WIRING HARNESS.** 1) Disconnect the DCCD CM connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B380) No. 2 — No. 18:***	Is the resistance 400 Ω or more?	Related lines between DCCD CM and main wiring harness is open, or main wiring harness is open at two places or more.	Go to step **2**.
2	**CHECK RELATED LINES.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(B380) No. 18 — (B40) No. 14:*** ***(B380) No. 2 — (B40) No. 6:***	Is the resistance 10 Ω or more?	Repair or replace the open portion of DCCD CM related lines.	The communication harness is normal. Check the DCCD CM.

10.List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Item	Content of diagnosis	Note
U1201	CAN-HS Counter Abnormal	High speed CAN communication error	<Ref. to LAN(diag)-80, DTC U1201 CAN-HS COUNTER ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0073	Control Module Communication Bus Off	Communication of some module is shut down.	<Ref. to LAN(diag)-81, DTC U0073 CONTROL MODULE COMMUNICATION BUS OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0401	Invalid Data Received From ECM/PCM “A”	Error data is received from ECM.	<Ref. to LAN(diag)-82, DTC U0401 INVALID DATA RECEIVED FROM ECM/PCM “A”, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0402	Invalid Data Received From TCM	Error data is received from TCM.	<Ref. to LAN(diag)-83, DTC U0402 INVALID DATA RECEIVED FROM TCM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0416	Invalid Data Received From Vehicle Dynamics Control Module	Error data is received from VDC module.	<Ref. to LAN(diag)-84, DTC U0416 INVALID DATA RECEIVED FROM VEHICLE DYNAMICS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0420	Invalid Data Received From Power Steering Control Module	Error data is received from EPS module.	<Ref. to LAN(diag)-85, DTC U0420 INVALID DATA RECEIVED FROM POWER STEERING CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0422	Invalid Data Received From Body Control Module	Error data is received from body integrated unit.	<Ref. to LAN(diag)-86, DTC U0422 INVALID DATA RECEIVED FROM BODY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0423	Invalid Data Received From Instrument Panel Cluster Control Module	Error data is received from meter.	<Ref. to LAN(diag)-87, DTC U0423 INVALID DATA RECEIVED FROM INSTRUMENT PANEL CLUSTER CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0424	Invalid Data Received From HVAC Control Module	Error data is received from A/C control panel.	<Ref. to LAN(diag)-88, DTC U0424 INVALID DATA RECEIVED FROM HVAC CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0427	Invalid Data Received From Vehicle Security Control Module	Error data is received from keyless access CM.	<Ref. to LAN(diag)-89, DTC U0427 INVALID DATA RECEIVED FROM VEHICLE SECURITY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0428	Invalid Data Received From Steering Angle Sensor Module	Error data is received from steering angle sensor.	<Ref. to LAN(diag)-90, DTC U0428 INVALID DATA RECEIVED FROM STEERING ANGLE SENSOR MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0452	Invalid Data Received From Restraints Control Module	Error data is received from airbag module.	<Ref. to LAN(diag)-91, DTC U0452 INVALID DATA RECEIVED FROM RESTRAINTS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0100	Lost Communication With ECM/PCM “A”	Data does not arrive from ECM.	<Ref. to LAN(diag)-93, DTC U0100 LOST COMMUNICATION WITH ECM/PCM “A”, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0101	Lost Communication With TCM	Data does not arrive from TCM.	<Ref. to LAN(diag)-94, DTC U0101 LOST COMMUNICATION WITH TCM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

DTC	Item	Content of diagnosis	Note
U0122	Lost Communication With Vehicle Dynamics Control Module	Data does not arrive from VDC module.	<Ref. to LAN(diag)-95, DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0126	Lost Communication With Steering Angle Sensor Module	Data does not arrive from steering angle sensor.	<Ref. to LAN(diag)-96, DTC U0126 LOST COMMUNICATION WITH STEERING ANGLE SENSOR MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0131	Lost Communication With Power Steering Control Module	Data does not arrive from EPS module.	<Ref. to LAN(diag)-97, DTC U0131 LOST COMMUNICATION WITH POWER STEERING CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0140	Lost Communication With Body Control Module	Data does not arrive from body integrated unit.	<Ref. to LAN(diag)-98, DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0151	Lost Communication With Restraints Control Module	Data does not arrive from airbag module.	<Ref. to LAN(diag)-99, DTC U0151 LOST COMMUNICATION WITH RESTRAINTS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	Data does not arrive from meter.	<Ref. to LAN(diag)-100, DTC U0155 LOST COMMUNICATION WITH INSTRUMENT PANEL CLUSTER (IPC) CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0164	Lost Communication With HVAC Control Module	Data does not arrive from A/C control panel.	<Ref. to LAN(diag)-101, DTC U0164 LOST COMMUNICATION WITH HVAC CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0327	Software Incompatibility With Vehicle Security Control Module	Data does not arrive from keyless access CM.	<Ref. to LAN(diag)-102, DTC U0327 SOFTWARE INCOMPATIBILITY WITH VEHICLE SECURITY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1135	Lost Communication With DCCD Control Module	Data does not arrive from DCCD CM.	<Ref. to LAN(diag)-103, DTC U1135 LOST COMMUNICATION WITH DCCD CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1436	Invalid Data Received From DCCD Control Module	Error data is received from DCCD CM.	<Ref. to LAN(diag)-92, DTC U1436 INVALID DATA RECEIVED FROM DCCD CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>