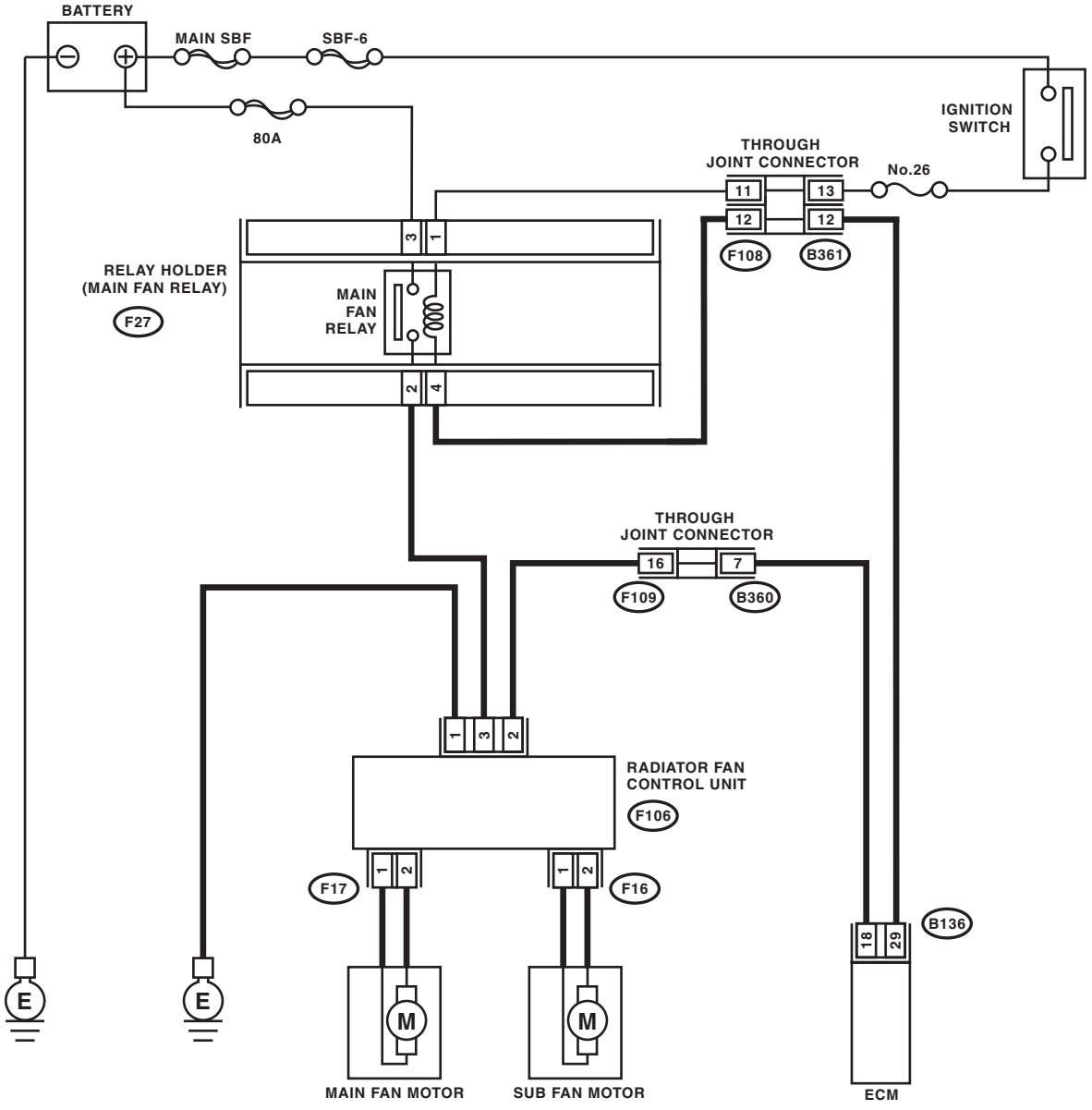
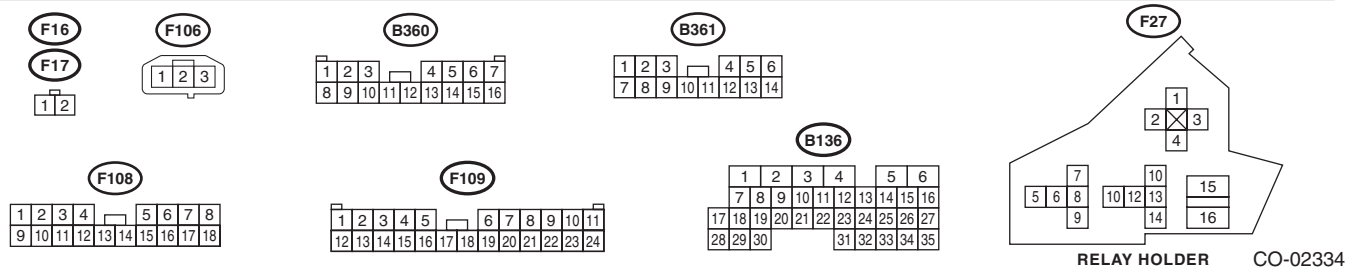
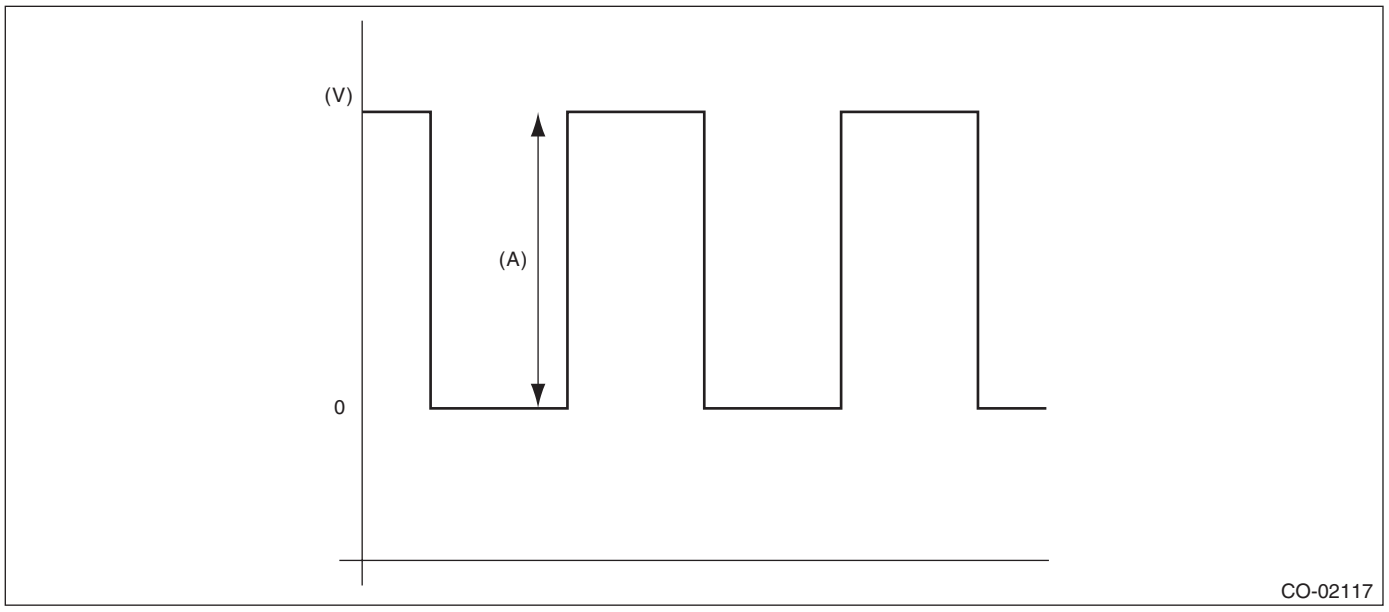
2. Radiator Fan System

A: WIRING DIAGRAM





B: RADIATOR FAN CONTROL OUTPUT WAVEFORM



(A) 5 V

C: INSPECTION

DETECTING CONDITION:

- Engine coolant temperature is 95°C (203°F) or more.
- A/C switch OFF
- Vehicle speed is below 19 km/h (12 MPH).

TROUBLE SYMPTOMS:

Radiator main fan and sub fan do not rotate under the above conditions.

	Step	Check	Yes	No
1	**CHECK MAIN FAN RELAY.** 1) Turn the ignition switch to OFF. 2) Remove main fan relay from the relay holder. 3) Measure the resistance of the main fan relay switch terminal.	Is the resistance 1 MΩ or more?	Go to step **2**.	Replace the main fan relay.
2	**CHECK MAIN FAN RELAY.** 1) Connect the battery to the main fan relay coil terminal. 2) Measure the resistance between main fan relay switch terminals.	Is the resistance less than 1 Ω?	Go to step **3**.	Replace the main fan relay.
3	**CHECK POWER SUPPLY FOR ECM.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Turn the ignition switch to ON. 4) Measure the voltage between ECM terminal and chassis ground. ***Connector & terminal*** ***(B136) No. 29 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	Repair the power supply line.

	Step	Check	Yes	No
4	**CHECK POWER SUPPLY FOR RADIATOR FAN CONTROL UNIT.** 1) Turn the ignition switch to OFF. 2) Connect the connector to ECM. 3) Disconnect the connector from radiator fan control unit. 4) Turn the ignition switch to ON. 5) Measure the voltage between radiator fan control unit terminal and chassis ground. ***Connector & terminal*** ***(F106) No. 3 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **5**.	Repair the power supply line.
5	**CHECK HARNESS BETWEEN ECM AND RADIATOR FAN CONTROL UNIT.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from ECM. 3) Measure the resistance between radiator fan control unit and ECM connector. ***Connector & terminal*** ***(B136) No. 18 — (F106) No. 2:***	Is the resistance less than 1 Ω?	Go to step **6**.	Repair the open circuit in harness between the ECM and radiator fan control unit.
6	**CHECK RADIATOR FAN CONTROL UNIT AND GROUND CIRCUIT.** 1) Connect the connector to ECM and radiator fan control unit. 2) Measure the resistance between radiator fan control unit connector and chassis ground. ***Connector & terminal*** ***(F106) No. 1 — Chassis ground:***	Is the resistance less than 5 Ω?	Go to step **7**.	Repair the open circuit in harness between radiator fan control unit connector and chassis ground.
7	**CHECK MAIN FAN MOTOR.** 1) Disconnect the connector from radiator fan control unit. 2) Connect the battery positive (+) terminal to terminal No. 1 of the main fan motor, and the ground (–) terminal to terminal No. 2.	Does the main fan motor rotate?	Go to step **8**.	Replace the main fan motor.
8	**CHECK SUB FAN MOTOR.** 1) Disconnect the connector from radiator fan control unit. 2) Connect the battery positive (+) terminal to terminal No. 1 of the sub fan motor, and the ground (–) terminal to terminal No. 2.	Does the sub fan motor rotate?	Go to step **9**.	Replace the sub fan motor.
9	**CHECK OUTPUT SIGNAL OF ECM.** 1) Turn the ignition switch to OFF. 2) Connect the delivery (test) mode connector. 3) Turn the ignition switch to ON. 4) Check the output waveform using oscilloscope. <Ref. to CO(H6DO)-10, RADIATOR FAN CONTROL OUTPUT WAVEFORM, Radiator Fan System.> ***Connector & terminal*** ***(B134) No. 18 (+) — Chassis ground (–):***	Is waveform being output?	Replace the radiator fan control unit. <Ref. to CO(H6DO)-31, Radiator Fan Control Unit.>	Replace the ECM. <Ref. to FU(H6DO)-38, Engine Control Module (ECM).>