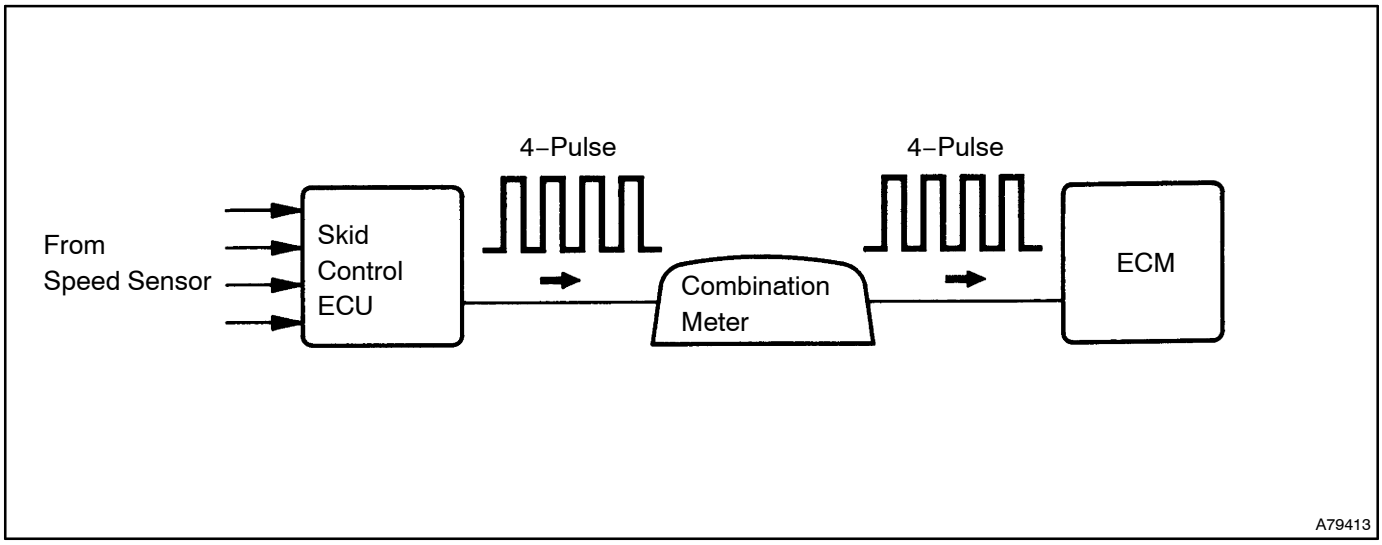
DTC	P0500/42	VEHICLE SPEED SENSOR ”A”

DTC	P0503/23	VEHICLE SPEED SENSOR ”A” INTERMITTENT/ERRATIC/HIGH

CIRCUIT DESCRIPTION

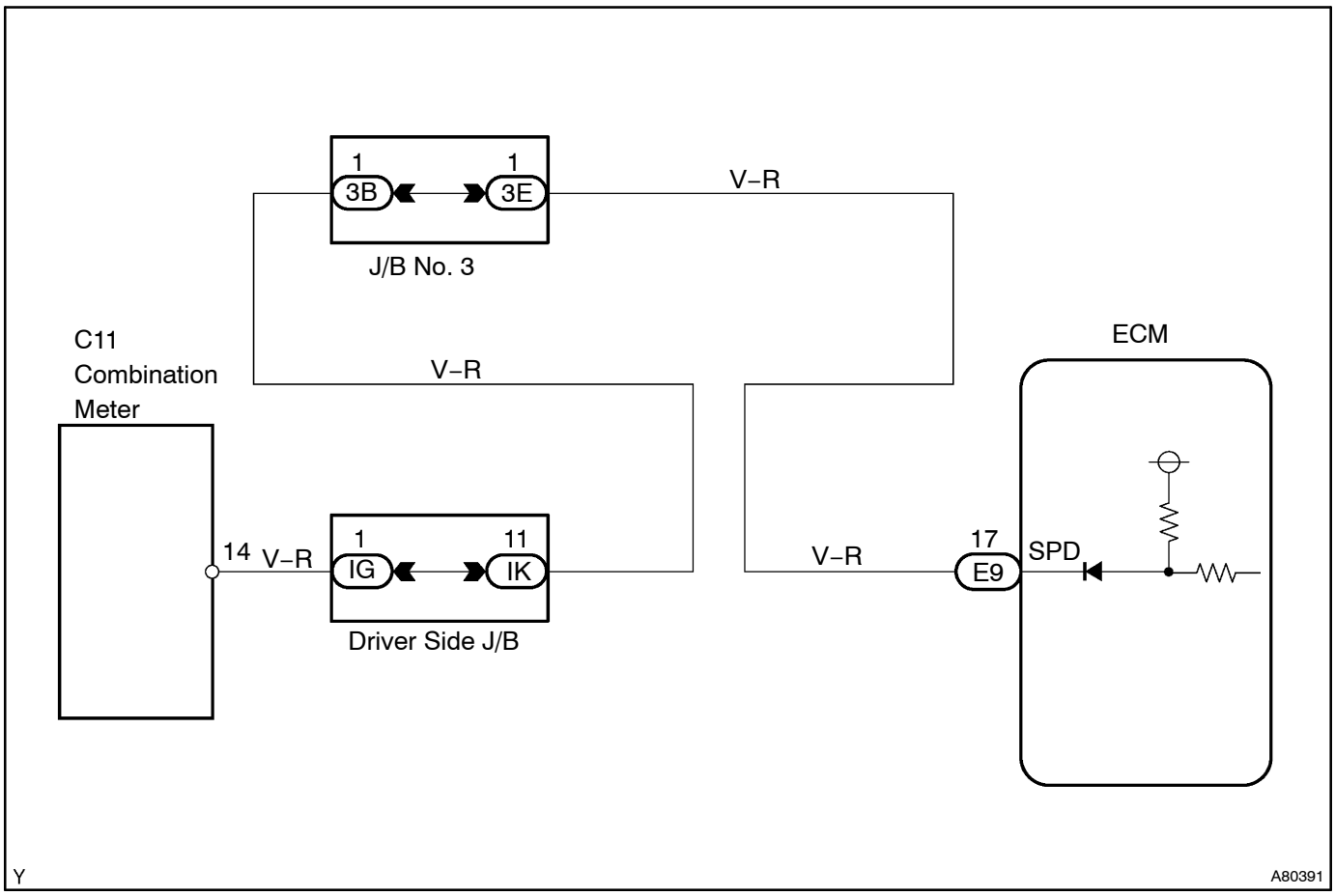
The speed sensor for skid control ECU detects the wheel speed and sends the appropriate signals to the skid control ECU.

The skid control ECU converts these signals into a 4–pulse signal and outputs it to the combination meter. After this signal is converted into a more precise rectangular waveform by the waveform shaping circuit inside the combination meter, it is then transmitted to the ECM. The ECM determines the vehicle speed based on the frequency of these pulse signals.



DTC No.	DTC Detection Condition	Trouble Area
P0500/42 P0503/23	The ECM detects following conditions simultaneously 500 times (2 trip detection logic) • No SP1 (speed sensor) signal while ECM detects SP2 (No. 2 speed sensor) signal • Vehicle speed is 9 km/h (6 mph) or more for 4 sec. • Park/Neutral position switch is OFF (When the shift lever is in other than P and N positions) • Transfer lever is in other than N position	• Open or short in speed sensor circuit • Speed sensor • Combination meter • ECM • Skid control ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand–held tester, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air–fuel ratio was lean or rich, etc. at the time of the malfunction.

1	CHECK OPERATION OF SPEEDOMETER

(a) Drive the vehicle and check if the operation of the speedometer in the combination meter is normal.

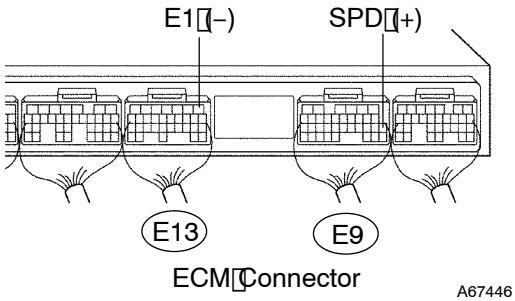
HINT:

The vehicle speed sensor is operating normally if the speedometer display is normal.

NG → **CHECK SPEEDOMETER CIRCUIT (See Pub. No. RM990E on page 05–1560)**

OK

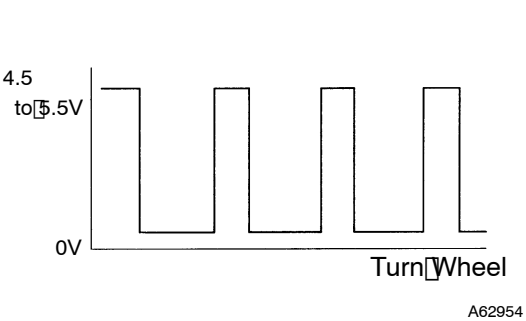
2 INSPECT ECM (SPD VOLTAGE)



(a) Shift the lever to the neutral position.
(b) Jack up the vehicle.
(c) Turn the ignition switch ON.
(d) Measure the voltage between the terminals of the E9 and E13 ECM connectors as the wheel is turned slowly.

Standard:

Symbols (Terminal No.)	Specified condition
SPD (E9–17) – E1 (E13–1)	Generated intermittently



HINT:
The output voltage should fluctuate up and down similarly to the diagram on the left when the wheel is turned slowly.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK →

CHECK AND REPLACE ECM (See page 01–35)