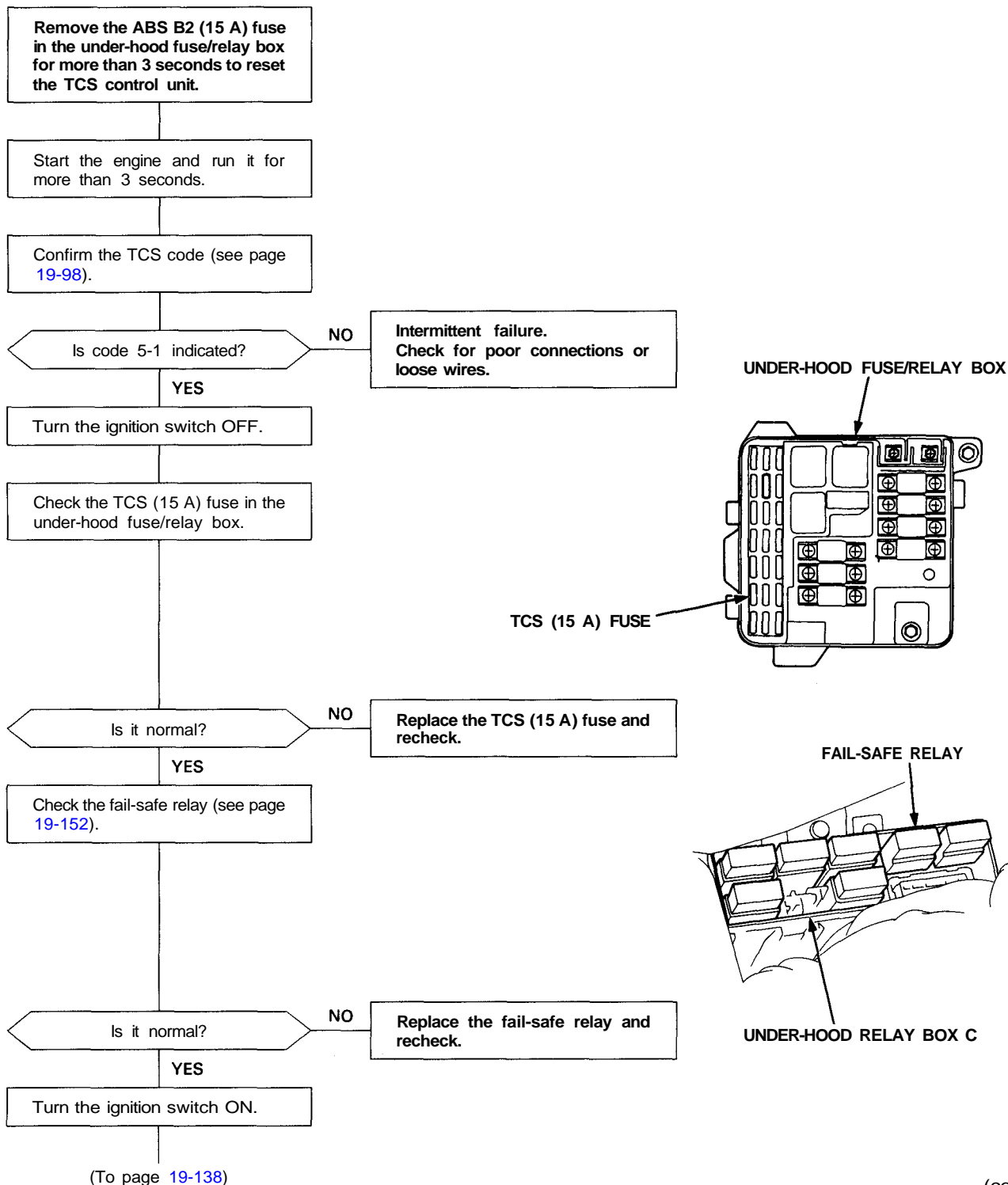




Fail-safe Relay/TCS Control Valve Actuator

Diagnostic Trouble Code (DTC) 5-1: Fail-safe relay system and TCS control valve actuator system

NOTE: The TCS control unit closes the TCS control valve once after the engine is started to check that the TCS control valve actuator operates properly.



(cont'd)

Troubleshooting

Fail-safe Relay/TCS Control Valve Actuator (cont'd)

(From page 19-137)

Measure the voltage between the No. 1 terminal (+) of the fail-safe relay connector and body ground.

Is there battery voltage?

NO

Repair open in the BLK/YEL wire between the fail-safe relay and under-dash fuse/relay box.

YES

Measure the voltage between the No. 2 terminal (+) of the fail-safe relay connector and body ground.

Is there battery voltage?

NO

Repair open in the GRN/RED wire between the fail-safe relay and under-hood fuse/relay box.

YES

Turn the ignition switch OFF.

Install the fail-safe relay.

Disconnect the 26P connector from the TCS control unit.

Turn the ignition switch ON.

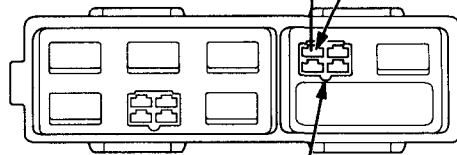
Measure the voltage between the 26P connector terminal 8A (+) and body ground.

(To page 19-139)

Battery voltage?



No. 1 TERMINAL
(From No. 22 (20 A) fuse)

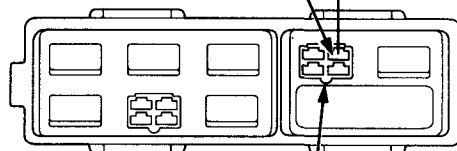


FAIL-SAFE RELAY CONNECTOR

Battery voltage?



No. 2 TERMINAL
(From TCS (15 A) fuse)



FAIL-SAFE RELAY CONNECTOR

TCS CONTROL UNIT
26P CONNECTOR
(HARNESS SIDE)

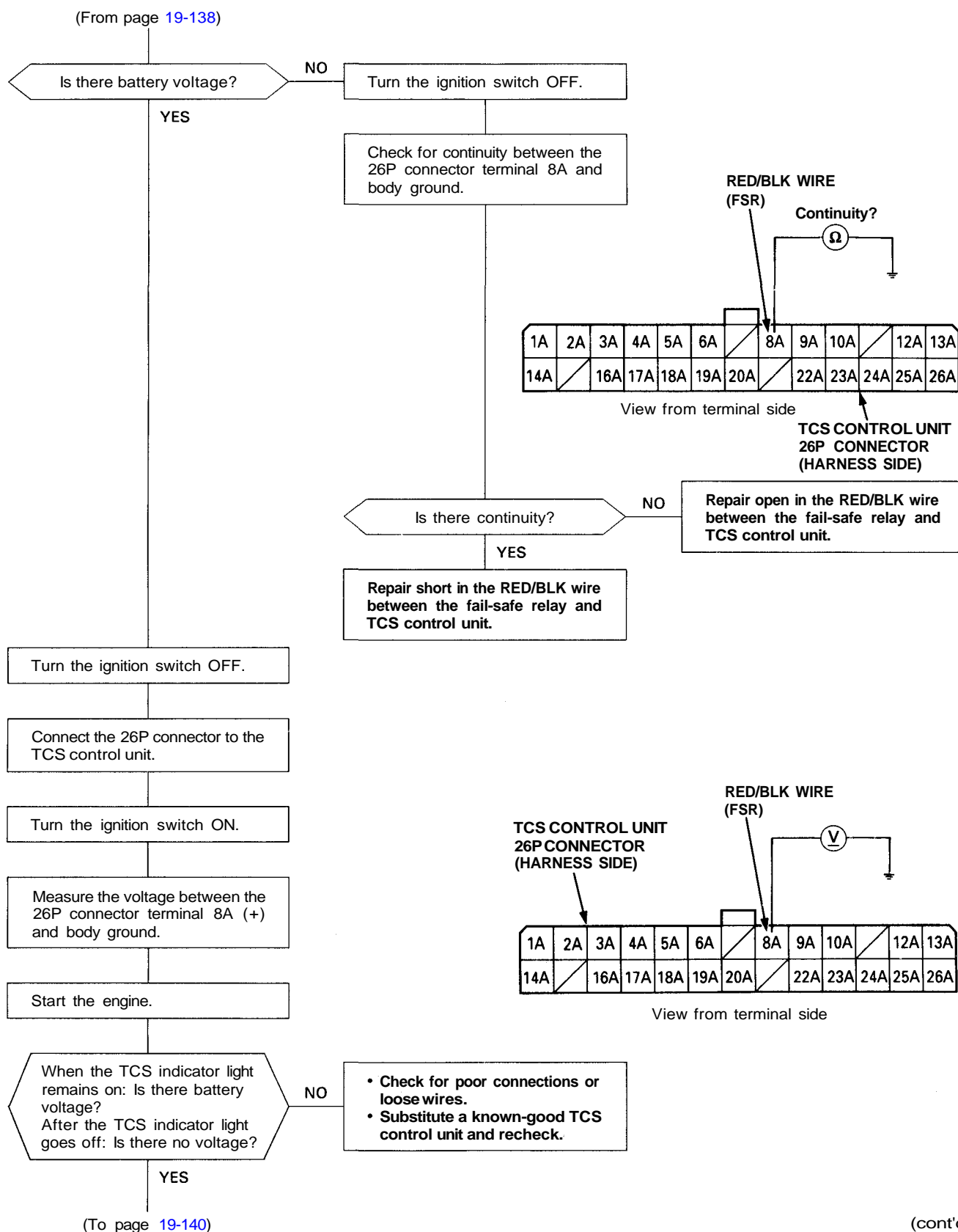
RED/BLK WIRE
(FSR)

Battery voltage?



1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	12A	13A
14A	15A	16A	17A	18A	19A	20A	21A	22A	23A	24A	25A	26A

View from terminal side



(cont'd)

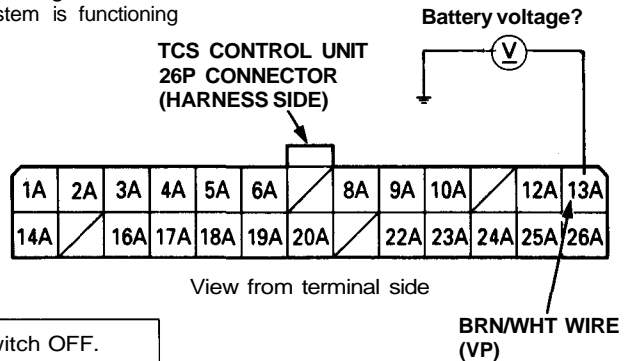
Troubleshooting

Fail-safe Relay/TCS Control Valve Actuator (cont'd)

(From page 19-139)

Measure the voltage between the TCS control unit 26P connector terminal 13A (+) and body ground.

NOTE: Since there is a capacitor inside the TCS control unit, the battery voltage can be measured if the fail-safe relay system is functioning



Is there battery voltage?

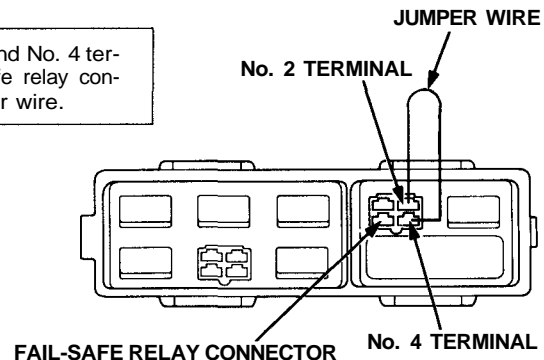
NO

Turn the ignition switch OFF.

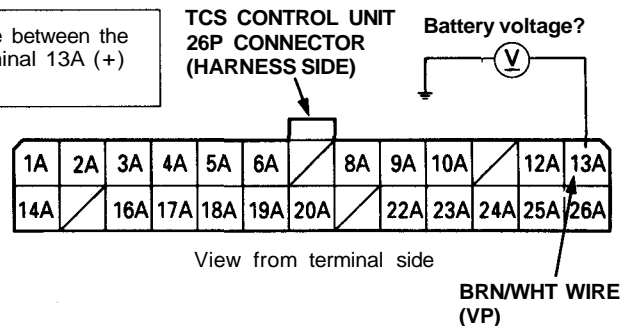
Disconnect the 26P connector from the TCS control unit.

Remove the fail-safe relay from under-hood relay box C.

Connect the No. 2 and No. 4 terminals of the fail-safe relay connector with a jumper wire.



Measure the voltage between the 26P connector terminal 13A (+) and body ground.



Is there battery voltage?

NO

Repair open in the BRN/WHT wire between the fail-safe relay and TCS control unit.

YES

Substitute a known-good TCS control unit and recheck.

(To page 19-141)



(From page 19-140)

Turn the ignition switch OFF.

Disconnect the 2P connector from the TCS control valve actuator and the 26P connector from the TCS control unit.

Check for continuity between the 26P connector terminals and body ground:
No. 25: BLU/BLK (M +)
No. 26: BLU/YEL (M -)

Is there continuity?

YES

Repair short in the BLU/BLK wire and/or BLU/YEL wire between the TCS control unit and actuator.

NO

Connect the harness side 2P connector No. 1 and No. 2 terminals with a jumper wire.

Check for continuity between the 26P connector terminals 25A and 26A.

Is there continuity?

NO

Repair open in the BLU/BLK wire and/or BLU/YEL wire between the TCS control unit and actuator.

YES

Measure the resistance between the No. 1 and No. 2 terminals of the TCS control valve actuator 2P connector.

Is the resistance less than 2.5 Ω ?

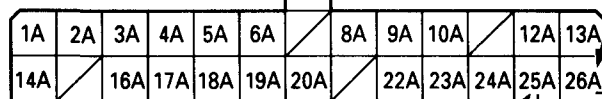
YES

- Check for poor connections or loose wires.
- Substitute a known-good TCS control unit and recheck.

NO

(To page 19-142)

TCS CONTROL UNIT
26P CONNECTOR
(HARNESS SIDE)



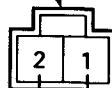
View from terminal side

BLU/BLK WIRE
(M +)

BLU/YEL WIRE
(M -)

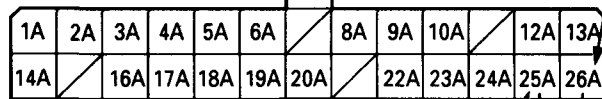
Continuity?

TCS CONTROL VALVE ACTUATOR
2P CONNECTOR
(HARNESS SIDE)



View from terminal side

TCS CONTROL UNIT
26P CONNECTOR
(HARNESS SIDE)



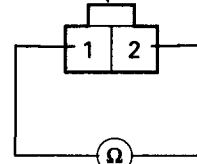
View from terminal side

BLU/BLK WIRE
(M +)

BLU/YEL WIRE
(M -)

Continuity?

TCS CONTROL VALVE ACTUATOR
2P CONNECTOR
(ACTUATOR SIDE)



View from terminal side

Less than 2.5 Ω ?

(cont'd)

Troubleshooting

Fail-safe Relay/TCS Control Valve Actuator (cont'd)

(From page 19-141)

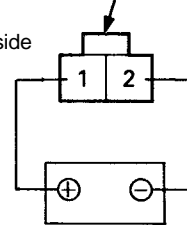
Connect the battery (+) terminal to the No. 1 terminal of the actuator 2P connector, and the (-) terminal to the No. 2 terminal for 1–2 seconds to operate the TCS control valve actuator.

CAUTION:

- Be careful not to short the terminals.
- Disconnect the (-) terminal from the actuator immediately after the TCS control valve clicks (is fully closed).

TCS CONTROL VALVE ACTUATOR
2P CONNECTOR
(ACTUATOR SIDE)

View from terminal side



Does the TCS control valve click?

NO

Remove the intake air duct and recheck the TCS control valve operation. If it is defective, replace the TCS control valve assembly (see page 19-156).

YES

Operate the TCS control valve actuator with the battery 10 times.

Measure the resistance between the No. 1 and No. 2 terminals of the TCS control valve actuator 2P connector.

Is the resistance less than 2.5 Ω ?

NO

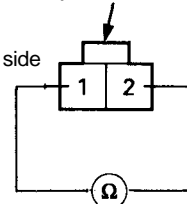
The TCS control valve actuator is faulty. Replace the TCS control valve assembly (see page 19-156).

YES

- Check for poor connections or loose wires.
- Substitute a known-good TCS control unit and recheck.

TCS CONTROL VALVE ACTUATOR
2P CONNECTOR
(ACTUATOR SIDE)

View from terminal side



Less than 2.5 Ω ?