

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC) AUTOMATIC TRANSMISSION (DIAGNOSTICS)

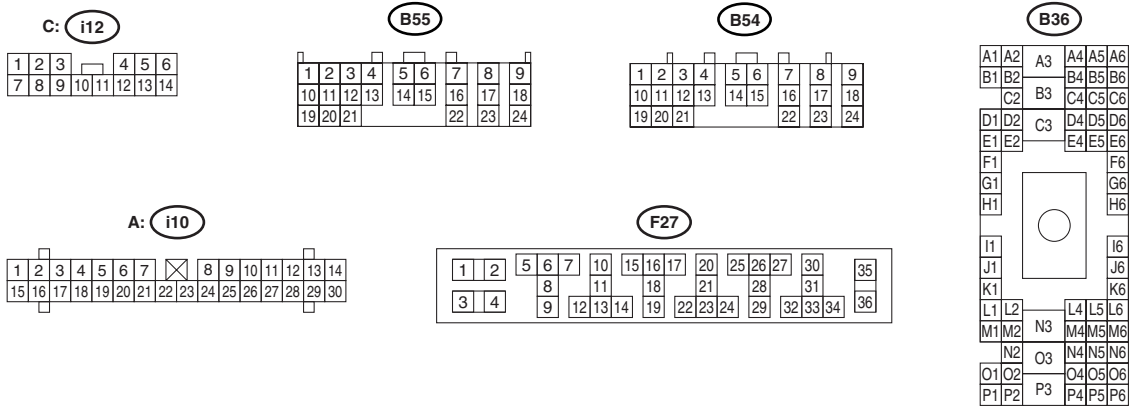
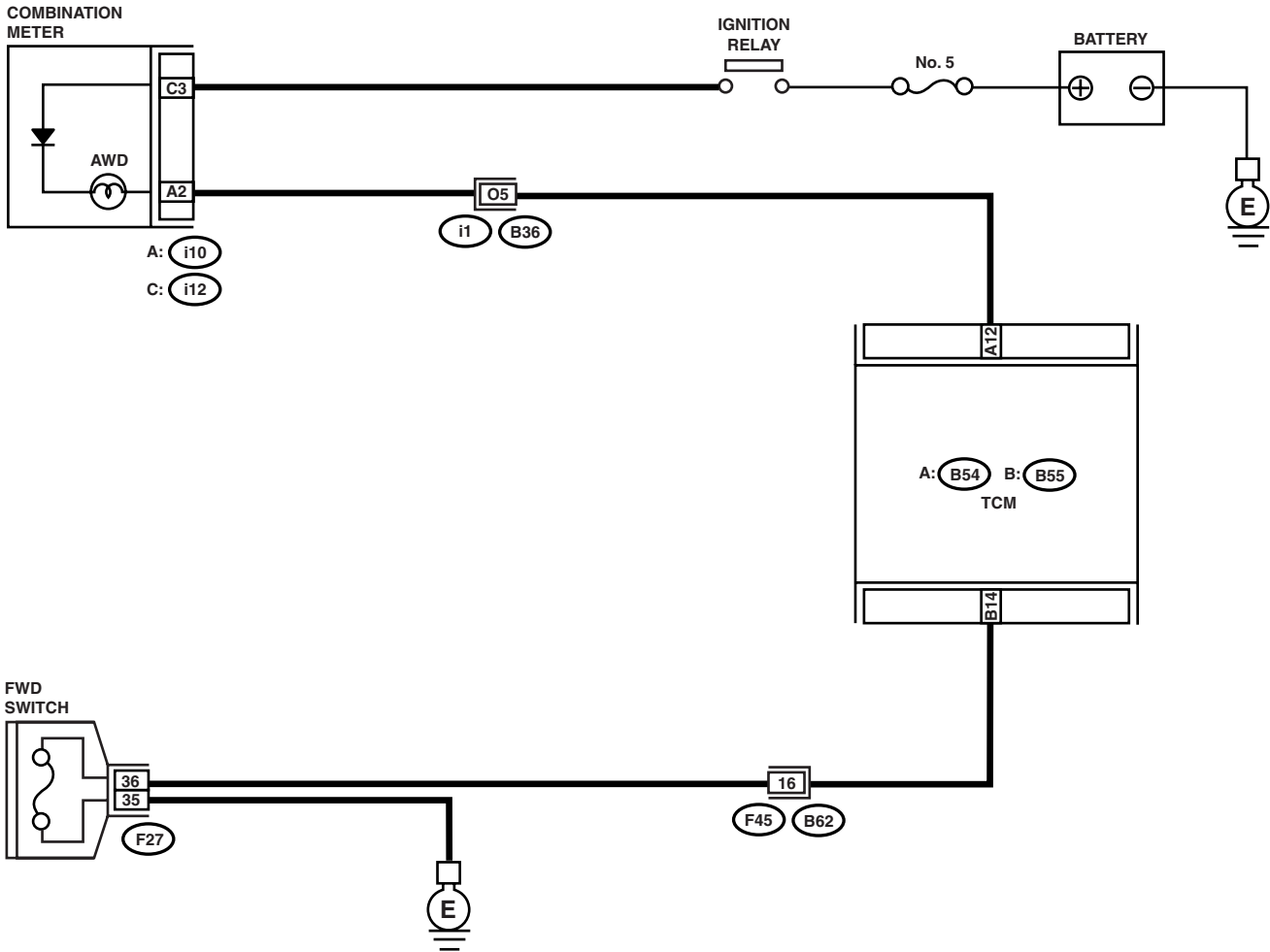
## 15. Diagnostic Procedure without Diagnostic Trouble Code (DTC)

### A: CHECK FWD SWITCH

#### DIAGNOSIS:

- The LED does not come on even if FWD switch is ON.
- The FWD switch circuit is open or short.

#### WIRING DIAGRAM:



AT-02974

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No	
1	<b>CHECK FWD SWITCH.</b> Connect Select Monitor to data link connector, and display the LED monitor.	When the fuse is inserted to FWD switch, does LED light up?	Go to step CHECK BRAKE SWITCH.<Ref. to 4AT-99, CHECK BRAKE SWITCH, Diagnostic Procedure without Diagnostic Trouble Code (DTC).>	Go to step 2.
2	<b>CHECK AWD WARNING LIGHT.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter.	Is the AWD warning light bulb OK?	Go to step 3.	Check the AWD warning light bulb.<Ref. to IDI-13, Combination Meter Assembly.>
3	<b>CHECK HARNESS CONNECTOR BETWEEN TCM AND FWD SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Measure the resistance of harness between TCM and FWD switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 14 — (F27) No. 36:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the open circuit in harness between TCM and FWD switch connector.
4	<b>CHECK HARNESS CONNECTOR BETWEEN FWD SWITCH AND CHASSIS GROUND.</b> Measure the resistance of harness between FWD switch and chassis ground. <b>Connector &amp; terminal</b> <b>(F27) No. 35 — Chassis ground:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 5.	Repair the open circuit in harness between FWD switch connector and chassis ground.
5	<b>CHECK HARNESS CONNECTOR BETWEEN TCM AND FWD SWITCH.</b> Measure the resistance of harness connector between TCM and body to make sure that circuit does not short. <b>Connector &amp; terminal</b> <b>(B55) No. 14 — Chassis ground:</b>	Is the resistance more than 1 M $\Omega$ ?	Go to step 6.	Repair the short circuit in harness between TCM and FWD switch connector.
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM. 3) Turn the ignition switch to ON. 4) Measure the signal voltage for TCM while installing the fuse to FWD switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 14 (+) — Chassis ground (-):</b>	Is the voltage less than 1 V?	Go to step 7.	Go to step 11.
7	<b>CHECK INPUT SIGNAL FOR TCM.</b> Measure the signal voltage for TCM while removing the fuse from FWD switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 14 (+) — Chassis ground (-):</b>	Is the voltage 6 — 9.1 V?	Go to step 8.	Replace the TCM.<Ref. to 4AT-77, Transmission Control Module (TCM).>
8	<b>CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and combination meter. 3) Measure the resistance of harness between TCM and diagnosis connector. <b>Connector &amp; terminal</b> <b>(B54) No. 12 — (i12) No. 11:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 9.	Repair the open circuit in harness between TCM and combination meter and poor contact in connector.

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>9 CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> Measure the resistance of harness connector between TCM and chassis ground to make sure that circuit does not short. <i>Connector &amp; terminal</i> <i>(B54) No. 12 — Chassis ground:</i>	Is the resistance more than 1 M $\Omega$ ?	Go to step 10.	Repair the short circuit in harness between TCM and combination meter connector.
<b>10 CHECK OUTPUT SIGNAL EMITTED FROM TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and combination meter. 3) Turn the ignition switch to ON. 4) Measure the signal voltage for TCM while installing the fuse to FWD switch connector. <i>Connector &amp; terminal</i> <i>(B54) No. 12 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 11.	Go to step 12.
<b>11 CHECK OUTPUT SIGNAL EMITTED FROM TCM.</b> Measure the signal voltage for TCM while removing the fuse from FWD switch connector. <i>Connector &amp; terminal</i> <i>(B54) No. 12 (+) — Chassis ground (-):</i>	Is the voltage more than 9 V?	Go to step 12.	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>
<b>12 CHECK POOR CONTACT.</b>	Is there poor contact in FWD switch circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>

**DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)**  
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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**B: CHECK BRAKE SWITCH**

Step	Check	Yes	No
1 CHECK BRAKE SWITCH.	When the brake pedal is depressed, does LED light up?	Go to step CHECK CRUISE CONTROL SWITCH. <Ref. to 4AT-100, CHECK CRUISE CONTROL SWITCH, Diagnostic Procedure without Diagnostic Trouble Code (DTC).>	Check the brake switch circuit.

**DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)**  
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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**C: CHECK CRUISE CONTROL SWITCH**

Step	Check	Yes	No
1 <b>CHECK CRUISE CONTROL SWITCH.</b>	When the cruise control is set, does LED light up?	Go to step CHECK INHIBITOR SWITCH. <Ref. to 4AT-101, CHECK INHIBITOR SWITCH, Diagnostic Procedure without Diagnostic Trouble Code (DTC).>	Check the cruise control. Turbo and U5 model <Ref. to CC(ETC)-2, Basic Diagnostic Procedure.> Except turbo and U5 model <Ref. to CC-2, Basic Diagnostic Procedure.>

**D: CHECK INHIBITOR SWITCH**

**DIAGNOSIS:**

The input signal circuit of inhibitor switch is open or shorted.

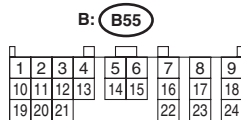
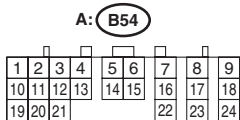
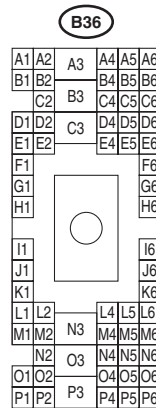
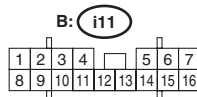
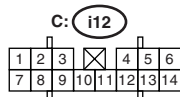
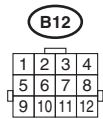
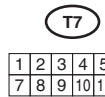
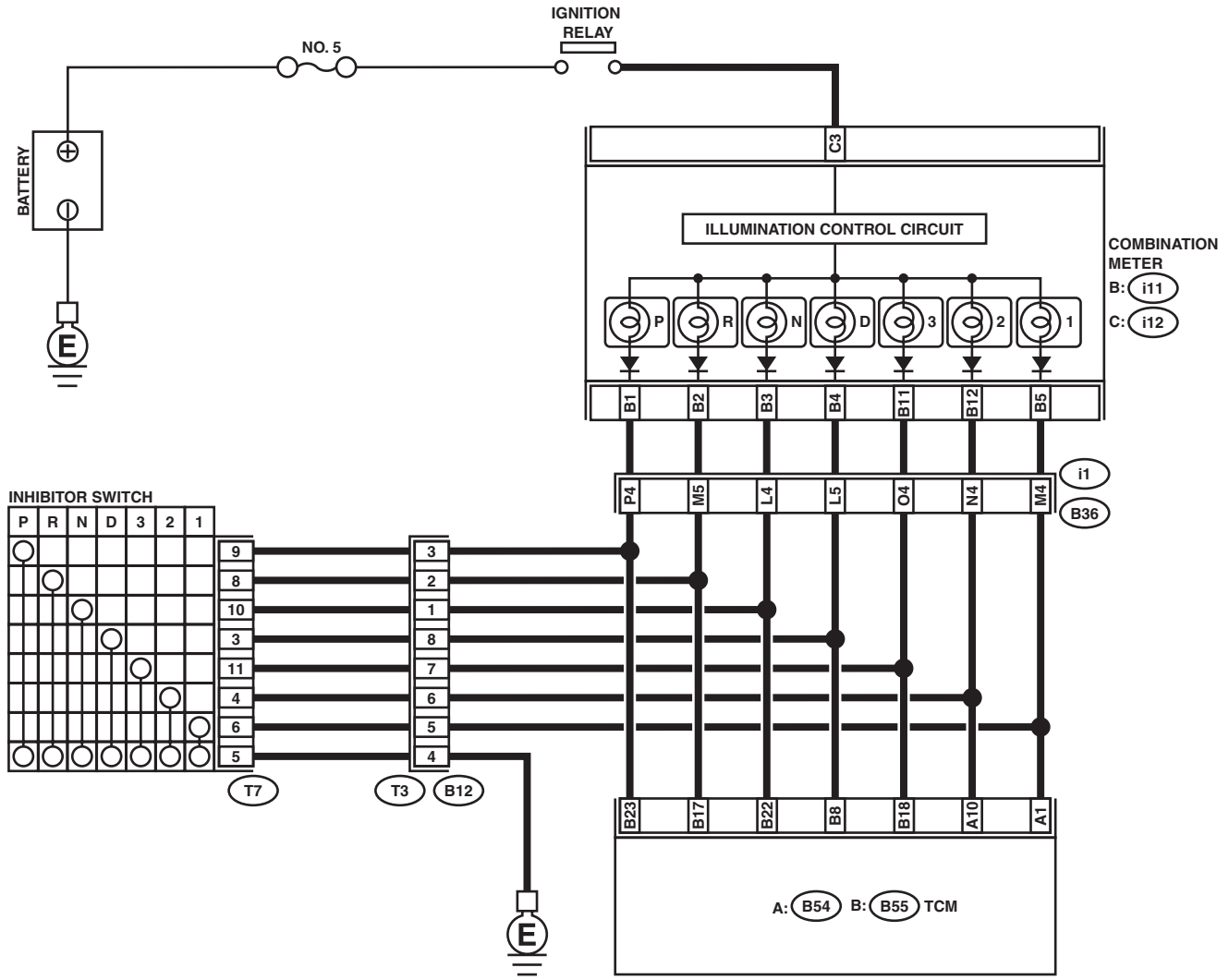
**TROUBLE SYMPTOM:**

- Shift characteristics are erroneous.
- Engine brake is not effected when selector lever is in “3” range.
- Engine brake is not effected when selector lever is in “2” range.
- Engine brake is not effected when selector lever is in “1” range.

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

### WIRING DIAGRAM:



AT-02975

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No	
1	CHECK "P" RANGE SWITCH.	When the "P" range is selected, does LED light up?	Go to step 2.	Go to step 22.
2	CHECK INDICATOR LIGHT.	Does the combination meter "P" range indicator illuminate?	Go to step 3.	Go to step 26.
3	CHECK "P" RANGE SWITCH.	When the "R" range is selected, does "P" range LED light up?	Go to step 28.	Go to step 4.
4	CHECK "R" RANGE SWITCH.	When the "R" range is selected, does LED light up?	Go to step 5.	Go to step 29.
5	CHECK INDICATOR LIGHT.	Does the combination meter "R" range indicator illuminate?	Go to step 6.	Go to step 32.
6	CHECK "R" RANGE SWITCH.	When the "N" range is selected, does "R" range LED light up?	Go to step 34.	Go to step 7.
7	CHECK "N" RANGE SWITCH.	When the "N" range is selected, does LED light up?	Go to step 8.	Go to step 35.
8	CHECK INDICATOR LIGHT.	Does the combination meter "N" range indicator illuminate?	Go to step 9.	Go to step 38.
9	CHECK "N" RANGE SWITCH.	When the "D" range is selected, does "N" range LED light up?	Go to step 40.	Go to step 10.
10	CHECK "D" RANGE SWITCH.	When the "D" range is selected, does LED light up?	Go to step 11.	Go to step 41.
11	CHECK INDICATOR LIGHT.	Does the combination meter "D" range indicator illuminate?	Go to step 12.	Go to step 44.
12	CHECK "D" RANGE SWITCH.	When the "3" range is selected, does "D" range LED light up?	Go to step 46.	Go to step 13.
13	CHECK "3" RANGE SWITCH.	When the "3" range is selected, does LED light up?	Go to step 14.	Go to step 47.
14	CHECK INDICATOR LIGHT.	Does the combination meter "3" range indicator illuminate?	Go to step 15.	Go to step 50.
15	CHECK "3" RANGE SWITCH.	When the "2" range is selected, does "3" range LED light up?	Go to step 52.	Go to step 16.
16	CHECK "2" RANGE SWITCH.	When the "2" range is selected, does LED light up?	Go to step 17.	Go to step 53.
17	CHECK INDICATOR LIGHT.	Does the combination meter "2" range indicator illuminate?	Go to step 18.	Go to step 56.
18	CHECK "2" RANGE SWITCH.	When the "1" range is selected, does "2" range LED light up?	Go to step 58.	Go to step 19.
19	CHECK "1" RANGE SWITCH.	When the "1" range is selected, does LED light up?	Go to step 20.	Go to step 59.
20	CHECK INDICATOR LIGHT.	Does the combination meter "1" range indicator illuminate?	Go to step 21.	Go to step 62.
21	CHECK "1" RANGE SWITCH.	When the "2" range is selected, does "1" range LED light UP?	Go to step 64.	Go to Symptom Related Diagnostic. <Ref. to 4AT-111, Symptom Related Diagnostic.>



# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>22 CHECK HARNESS CONNECTOR BETWEEN INHIBITOR SWITCH AND CHASSIS GROUND.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from inhibitor switch. 3) Measure the resistance of harness between inhibitor switch and chassis ground. <b>Connector &amp; terminal</b> <b>(T7) No. 5 — Chassis ground:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 23.	Repair the open circuit in harness between inhibitor switch connector and chassis ground, and poor contact in coupling connector.
<b>23 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM and inhibitor switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 23 — (T7) No. 9:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 24.	Repair the open circuit in harness between TCM and inhibitor switch connector, and poor contact in coupling connector.
<b>24 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Move the select lever to "P" range. 5) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 23 (+) — Chassis ground (-):</b>	Is the voltage less than 1 V?	Go to step 25.	Go to step 65.
<b>25 CHECK INPUT SIGNAL FOR TCM.</b> 1) Position the select lever to any other than "P" range. 2) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 23 (+) — Chassis ground (-):</b>	Is the voltage more than 8 V?	Go to step 65.	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>
<b>26 CHECK "P" RANGE INDICATOR LIGHT BULB.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter. 3) Remove the "P" range indicator light bulb from combination meter.	Is the "P" range indicator light bulb OK?	Go to step 27.	Replace the "P" range indicator light bulb. <Ref. to IDI-13, Combination Meter Assembly.>
<b>27 CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> 1) Disconnect the connectors from TCM and combination meter. 2) Measure the resistance of harness between TCM and combination meter. <b>Connector &amp; terminal</b> <b>(B55) No. 23 — (i12) No. 14:</b>	Is the resistance more than 1 $\Omega$ ?	Go to step 65.	Repair the open circuit in harness between TCM connector and combination meter, and poor contact in coupling connector.

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>28 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM, inhibitor switch and combination meter. 3) Measure the resistance of harness between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 23 — Chassis ground:</b>	Is the resistance less than 1 M $\Omega$ ?	Go to step <b>29</b> .	Repair the ground short circuit in "P" range circuit.
<b>29 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM and inhibitor switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 17 — (T7) No. 8:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step <b>30</b> .	Repair the open circuit in harness between TCM and inhibitor switch connector, and poor contact in coupling connector.
<b>30 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Move the select lever to "R" range. 5) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 17 (+) — Chassis ground (-):</b>	Is the voltage less than 1 V?	Go to step <b>31</b> .	Go to step <b>65</b> .
<b>31 CHECK INPUT SIGNAL FOR TCM.</b> 1) Position the select lever to any other than "R" range. 2) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 17 (+) — Chassis ground (-):</b>	Is the voltage more than 8 V?	Go to step <b>65</b> .	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>
<b>32 CHECK "R" RANGE INDICATOR LIGHT BULB.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter. 3) Remove the "R" range indicator light bulb from combination meter.	Is "R" range indicator light bulb OK?	Go to step <b>33</b> .	Replace the "R" range indicator light bulb. <Ref. to IDI-13, Combination Meter Assembly.>
<b>33 CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> 1) Disconnect the connectors from TCM and combination meter. 2) Measure the resistance of harness between TCM and combination meter. <b>Connector &amp; terminal</b> <b>(B55) No. 17 — (i11) No. 2:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step <b>65</b> .	Repair the open circuit in harness between TCM connector and combination meter, and poor contact in TCM connector.
<b>34 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM, inhibitor switch and combination meter. 3) Measure the resistance of harness between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 17 — Chassis ground:</b>	Is the resistance more than 1 M $\Omega$ ?	Go to step <b>35</b> .	Repair the ground short circuit in "R" range circuit.

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>35 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM and inhibitor switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 22 — (T7) No. 10:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 36.	Repair the open circuit in harness between TCM and inhibitor switch connector, and poor contact in coupling connector.
<b>36 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Move the select lever to "N" range. 5) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 22 (+) — Chassis ground (-):</b>	Is the voltage less than 1 V?	Go to step 37.	Go to step 65.
<b>37 CHECK INPUT SIGNAL FOR TCM.</b> 1) Position the select lever to any other than "N" range. 2) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 22 (+) — Chassis ground (-):</b>	Is the voltage more than 8 V?	Go to step 65.	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>
<b>38 CHECK "N" RANGE INDICATOR LIGHT BULB.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter. 3) Remove the "N" range indicator light bulb from combination meter.	Is the "N" range indicator light bulb OK?	Go to step 39.	Replace the "N" range indicator light bulb. <Ref. to IDI-13, Combination Meter Assembly.>
<b>39 CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> 1) Disconnect the connectors from TCM and combination meter. 2) Measure the resistance of harness between TCM and combination meter. <b>Connector &amp; terminal</b> <b>(B55) No. 22 — (i12) No. 12:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 65.	Repair the open circuit in harness between TCM connector and combination meter, and poor contact in TCM connector.
<b>40 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM, inhibitor switch and combination meter. 3) Measure the resistance of harness between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 22 — Chassis ground:</b>	Is the resistance more than 1 M $\Omega$ ?	Go to step 41.	Repair the ground short circuit in "N" range circuit.
<b>41 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM and inhibitor switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 8 — (T7) No. 3:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 42.	Repair the open circuit in harness between TCM and inhibitor switch connector, and poor contact in coupling connector.

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>42 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Move the select lever to "D" range. 5) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 8 (+) — Chassis ground (-):</b>	Is the voltage less than 1 V?	Go to step <b>43</b> .	Go to step <b>65</b> .
<b>43 CHECK INPUT SIGNAL FOR TCM.</b> 1) Position select lever to any other than "D" range. 2) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 8 (+) — Chassis ground (-):</b>	Is the voltage more than 8 V?	Go to step <b>65</b> .	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>
<b>44 CHECK "D" RANGE INDICATOR LIGHT BULB.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter. 3) Remove the "D" range indicator light bulb from combination meter.	Is the "D" range indicator light bulb OK?	Go to step <b>45</b> .	Replace the "D" range indicator light bulb. <Ref. to IDI-13, Combination Meter Assembly.>
<b>45 CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> 1) Disconnect the connectors from TCM and combination meter. 2) Measure the resistance of harness between TCM and combination meter. <b>Connector &amp; terminal</b> <b>(B55) No. 8 — (i11) No. 4:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step <b>65</b> .	Repair the open circuit in harness between TCM connector and combination meter, and TCM connector.
<b>46 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM, inhibitor switch and combination meter. 3) Measure the resistance of harness between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 8 — Chassis ground:</b>	Is the resistance more than 1 M $\Omega$ ?	Go to step <b>47</b> .	Repair the ground short circuit in "D" range circuit.
<b>47 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM and inhibitor switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 18 — (T7) No. 11:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step <b>48</b> .	Repair the open circuit in harness between TCM and inhibitor switch connector, and poor contact in coupling connector.
<b>48 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Move the select lever to "3" range. 5) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 18 (+) — Chassis ground (-):</b>	Is the voltage less than 1 V?	Go to step <b>49</b> .	Go to step <b>65</b> .

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>49 CHECK INPUT SIGNAL FOR TCM.</b> 1) Position the select lever to any other than "3" range. 2) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 18 (+) — Chassis ground (-):</b>	Is the voltage more than 8 V?	Go to step 65.	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>
<b>50 CHECK "3" RANGE INDICATOR LIGHT BULB.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter. 3) Remove the "3" range indicator light bulb from combination meter.	Is the "3" range indicator light bulb OK?	Go to step 51.	Replace the "3" range indicator light bulb. <Ref. to ID1-13, Combination Meter Assembly.>
<b>51 CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> 1) Disconnect the connectors from TCM and combination meter. 2) Measure the resistance of harness between TCM and combination meter. <b>Connector &amp; terminal</b> <b>(B55) No. 18 — (i11) No. 11:</b>	Is the resistance more than 1 $\Omega$ ?	Go to step 65.	Repair the open circuit in harness between TCM connector and combination meter, and poor contact in TCM connector.
<b>52 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM, inhibitor switch and combination meter. 3) Measure the resistance of harness between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 18 — Chassis ground:</b>	Is the resistance more than 1 M $\Omega$ ?	Go to step 53.	Repair the ground short circuit in "3" range circuit.
<b>53 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM and inhibitor switch connector. <b>Connector &amp; terminal</b> <b>(B54) No. 10 — (T7) No. 4:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 54.	Repair the open circuit in harness between TCM and inhibitor switch connector, and poor contact in coupling connector.
<b>54 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Move the select lever to "2" range. 5) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 10 (+) — Chassis ground (-):</b>	Is the voltage less than 1 V?	Go to step 55.	Go to step 65.
<b>55 CHECK INPUT SIGNAL FOR TCM.</b> 1) Position the select lever to any other than "2" range. 2) Measure the voltage between TCM and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 10 (+) — Chassis ground (-):</b>	Is the voltage more than 8 V?	Go to step 65.	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>56 CHECK "2" RANGE INDICATOR LIGHT BULB.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter. 3) Remove the "2" range indicator light bulb from combination meter.	Is the "2" range indicator light bulb OK?	Go to step 57.	Replace the "2" range indicator light bulb. <Ref. to IDI-13, Combination Meter Assembly.>
<b>57 CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> 1) Disconnect the connectors from TCM and combination meter. 2) Measure the resistance of harness between TCM and combination meter. <i>Connector &amp; terminal (B54) No. 10 — (i11) No. 12:</i>	Is the resistance less than 1 $\Omega$ ?	Go to step 65.	Repair the open circuit in harness between TCM and combination meter, and poor contact in TCM connector.
<b>58 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM, inhibitor switch and combination meter. 3) Measure the resistance of harness between TCM and chassis ground. <i>Connector &amp; terminal (B54) No. 10 — Chassis ground:</i>	Is the resistance more than 1 $M\Omega$ ?	Go to step 59.	Repair the ground short circuit in "2" range circuit.
<b>59 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM and inhibitor switch connector. <i>Connector &amp; terminal (B54) No. 1 — (T7) No. 6:</i>	Is the resistance less than 1 $\Omega$ ?	Go to step 60.	Repair the open circuit in harness between TCM and inhibitor switch connector, and poor contact in coupling connector.
<b>60 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Move the select lever to "1" range. 5) Measure the voltage between TCM and chassis ground. <i>Connector &amp; terminal (B54) No. 1 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 61.	Go to step 65.
<b>61 CHECK INPUT SIGNAL FOR TCM.</b> 1) Position the select lever to any other than "1" range. 2) Measure the voltage between TCM and chassis ground. <i>Connector &amp; terminal (B54) No. 1 (+) — Chassis ground (-):</i>	Is the voltage more than 8 V?	Go to step 65.	Replace the TCM. <Ref. to 4AT-77, Transmission Control Module (TCM).>
<b>62 CHECK "1" RANGE INDICATOR LIGHT BULB.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter. 3) Remove the "1" range indicator light bulb from combination meter.	Is the "1" range indicator light bulb OK?	Go to step 63.	Replace the "1" range indicator light bulb. <Ref. to IDI-13, Combination Meter Assembly.>

# DIAGNOSTIC PROCEDURE WITHOUT DIAGNOSTIC TROUBLE CODE (DTC)

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>63 CHECK HARNESS CONNECTOR BETWEEN TCM AND COMBINATION METER.</b> 1) Disconnect the connectors from TCM and combination meter. 2) Measure the resistance of harness between TCM and combination meter. <i>Connector &amp; terminal</i> <i>(B54) No. 1 — (i11) No. 5:</i>	Is the resistance less than 1Ω?	Go to step <b>65</b> .	Repair the open circuit in harness between TCM and combination meter, poor contact in TCM connector.
<b>64 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM, inhibitor switch and combination meter. 3) Measure the resistance of harness between TCM and chassis ground. <i>Connector &amp; terminal</i> <i>(B54) No. 1 — Chassis ground:</i>	Is the resistance more than 1 MΩ?	Go to step <b>65</b> .	Repair the ground short circuit in "1" range circuit.
<b>65 CHECK POOR CONTACT.</b>	Is there poor contact in inhibitor switch circuit?	Repair the poor contact.	Adjust the inhibitor switch and select cable. <Ref. to 4AT-50, ADJUSTMENT, Inhibitor Switch.> and <Ref. to CS-31, Select Cable.>