

PROBLEM SYMPTOMS TABLE

HINT:

If a normal code is displayed during the DTC check but the trouble still occurs, check the circuits for each symptom in the order given in the charts on the following pages and proceed to the page given for troubleshooting.

The Matrix Chart is divided into 3 chapters.

- If the instruction "Proceed to next circuit inspection shown on matrix chart" is given in the flow chart for each circuit, proceed to the circuit with the next highest number in the table to continue the check.
- If the trouble still occurs even though there are no abnormalities in any of the other circuits, then check and replace the Engine and ECT ECU.

1. CHAPTER 1: ELECTRONIC CIRCUIT MATRIX CHART

Symptom	Suspect Area	See page
No up-shift (A particular gear, from 1st to 4th gear, is not up-shifted)	Engine and ECT ECU	IN-34
No up-shift (4th → 5th)	1. E-shift main switch circuit 2. Engine and ECT ECU	DI-240 IN-34
No down-shift (5th → 4th)	1. E-shift main switch circuit 2. Engine and ECT ECU	DI-240 IN-34
No down-shift (A particular gear, from 1st to 4th gear, is not up-shifted)	Engine and ECT ECU	IN-34
No lock-up	1. Stop light switch signal circuit 2. Engine and ECT ECU	DI-218 IN-34
No lock-up off	Engine and ECT ECU	IN-34
Shift point too high or too low	1. Pattern select switch circuit 2. Engine and ECT ECU	DI-237 IN-34
Up-shift to 5th from 4th while shift lever is M position	1. E-shift main switch circuit 2. Engine and ECT ECU	DI-240 IN-34
Up-shift to 5th from 4th while engine is cold	Engine and ECT ECU	IN-34
No kick-down	1. Kick-down switch circuit 2. Engine and ECT ECU	DI-247 IN-34
No pattern select	1. Pattern select switch circuit 2. Engine and ECT ECU	DI-237 IN-34
Engine stalls when starting off or stopping	1. Stop light switch signal circuit 2. Engine and ECT ECU	DI-218 IN-34
No 2nd start	1. Pattern select switch circuit 2. Engine and ECT ECU	DI-237 IN-34
No E-shift system	1. E-shift main switch circuit 2. Transmission shift switch circuit 3. Engine and ECT ECU	DI-240 DI-243 IN-34

2. CHAPTER 2: ON-VEHICLE REPAIR

(★: A650E AUTOMATIC TRANSMISSION Repair Manual Pub. No. RM780U)

Symptom	Suspect Area	See Page
Vehicle does not move in any forward range and reverse range	1. Transmission control mod 2. Manual valve 3. Parking lock pawl 4. Off-vehicle repair matrix chart	DI-170 ★ ★ -
Vehicle does not move in R range	1. Reverse control valve 2. Off-vehicle repair matrix chart	★ -
Vehicle does not move in particular range or ranges (Except R range)	Off-vehicle repair matrix chart	-
No up-shift (1st → 2nd)	1. 1-2 shift valve 2. Off-vehicle repair matrix chart	★ -
No up-shift (2nd → 3rd)	1. 2-3 shift valve 2. Off-vehicle repair matrix chart	★ -
No up-shift (3rd → 4th)	1. 3-4 shift valve 2. Off-vehicle repair matrix chart	★ -
No up-shift (4th → 5th)	1. 4-5 shift valve 2. Off-vehicle repair matrix chart	★ -
No down-shift (5th → 4th)	1. 4-5 shift valve 2. Off-vehicle repair matrix chart	★ -
No down-shift (4th → 3rd)	1. 3-4 shift valve 2. Off-vehicle repair matrix chart	★ -
No down-shift (3rd → 2nd)	1. 2-3 shift valve 2. Off-vehicle repair matrix chart	★ -
No down-shift (2nd → 1st)	1. 1-2 shift valve 2. Off-vehicle repair matrix chart	★ -
No lock-up or No lock-up off	1. Lock-up control valve 2. Lock-up relay valve 3. Off-vehicle repair matrix chart	★ ★ -
Harsh engagement (N → D)	1. Accumulator control valve 2. Solenoid modulator valve 3. C ₁ accumulator 4. Orifice control valve 5. Off-vehicle repair matrix chart	★ ★ ★ ★ -
Harsh engagement (Lock-up)	1. Lock-up control valve 2. Lock-up relay valve 3. Solenoid relay valve 4. Off-vehicle repair matrix chart	★ ★ ★ -
Harsh engagement (N → R)	1. Accumulator control valve 2. C ₂ accumulator 3. Solenoid modulator valve 4. Off-vehicle repair matrix chart	★ ★ ★ -
Harsh engagement (2 → L)	Coast brake control valve	★
Harsh engagement (2nd → 3rd → 4th → 5th)	1. Accumulator control valve 2. Solenoid modulator valve	★ ★
Harsh engagement (1st → 2nd)	1. Solenoid modulator valve 2. B ₃ control valve 3. B ₂ release control valve 4. Solenoid relay valve 5. Off-vehicle repair matrix chart	★ ★ ★ ★ -

Harsh engagement (2nd → 3rd)	<ol style="list-style-type: none"> 1. Accumulator control valve 2. Solenoid modulator valve 3. B₂ accumulator 4. B₃ control valve 5. B₂ release control valve 6. Solenoid relay valve 7. Off-vehicle repair matrix chart 	<p>★</p> <p>★</p> <p>★</p> <p>★</p> <p>★</p> <p>★</p> <p>–</p>
Harsh engagement (3rd → 4th)	<ol style="list-style-type: none"> 1. Accumulator control valve 2. Solenoid modulator valve 3. C₂ accumulator 4. Off-vehicle repair matrix chart 	<p>★</p> <p>★</p> <p>★</p> <p>–</p>
Harsh engagement (4th → 5th)	<ol style="list-style-type: none"> 1. Accumulator control valve 2. Solenoid modulator valve 3. B₀ accumulator 4. Off-vehicle repair matrix chart 	<p>★</p> <p>★</p> <p>★</p> <p>–</p>
Harsh engagement (5th → 4th)	<ol style="list-style-type: none"> 1. Accumulator control valve 2. Solenoid modulator valve 3. C₀ accumulator 4. Off-vehicle repair matrix chart 	<p>★</p> <p>★</p> <p>★</p> <p>–</p>
Slip or shudder (Forward and reverse)	<ol style="list-style-type: none"> 1. Transmission control rod 2. Oil strainer 3. Pressure relief valve 4. Off-vehicle repair matrix chart 	<p>DI-170</p> <p>★</p> <p>★</p> <p>–</p>
Slip or shudder (Particular range)	<ol style="list-style-type: none"> 1. Transmission control rod 2. Off-vehicle repair matrix chart 	<p>DI-170</p> <p>–</p>
No engine braking (1st: L range)	<ol style="list-style-type: none"> 1. Coast brake control valve 2. Off-vehicle repair matrix chart 	<p>★</p> <p>–</p>
No engine braking (2nd: 2 range)	<ol style="list-style-type: none"> 1. Coast brake control valve 2. Off-vehicle repair matrix chart 	<p>★</p> <p>–</p>
No kick-down	<ol style="list-style-type: none"> 1. 1–2 shift valve 2. 2–3 shift valve 3. 3–4 shift valve 	<p>★</p> <p>★</p> <p>★</p>

3. CHAPTER 3: OFF-VEHICLE REPAIR

(A650E) AUTOMATIC TRANSMISSION Repair Manual (Pub. No. RM780U)

Symptom	Suspect Area	See Page
Vehicle does not move in any forward range and reverse range	1. P/D one-way clutch (F ₀) 2. P/D direct clutch (C ₀) 3. P/D planetary gear unit 4. Torque converter	★ ★ ★ AT-39
Vehicle does not move in R range	1. Center and gear planetary gear unit 2. Direct clutch (C ₂) 3. 1st & reverse brake (B ₄) 4. P/D brake (B ₀)	★ ★ ★ ★
No up-shift (1st → 2nd)	2nd brake (B ₃)	★
No up-shift (2nd → 3rd)	1. 3rd brake (B ₂) 2. One-way clutch (No. 1) (F ₁)	★ ★
No up-shift (3rd → 4th)	Direct clutch	★
No up-shift (4th → 5th)	O/D brake (B ₀)	★
No lock-up or No lock-up off	Torque converter	AT-39
Harsh engagement (N → D)	1. Forward clutch (C ₁) 2. P/D one-way clutch (F ₀) 3. One-way clutch (No. 2) (F ₂)	★ ★ ★
Harsh engagement (N → R)	1. Direct clutch (C ₂) 2. P/D brake (B ₀) 3. 1st & reverse brake (B ₄)	★ ★ ★
Harsh engagement (1st → 2nd)	2nd brake (B ₃)	★
Harsh engagement (2nd → 3rd)	1. 3rd brake (B ₂) 2. 2nd brake (B ₃) 3. One-way clutch (No. 1) (F ₁)	★ ★ ★
Harsh engagement (3rd → 4th)	Direct clutch (C ₂)	★
Harsh engagement (4th → 5th)	1. P/D brake (B ₀) 2. P/D direct clutch (C ₀)	★ ★
Harsh engagement (Lock-up)	Torque converter	AT-39
Slip or shudder (Forward and reverse: After warm-up)	1. Torque converter 2. P/D one-way clutch (F ₀) 3. P/D direct clutch (C ₀)	AT-39 ★ ★
Slip or shudder (Particular range: Just after engine starts)	Torque converter	AT-39
Slip or shudder (R range)	1. Direct clutch (C ₂) 2. P/D brake (B ₀) 3. 1st & reverse brake (B ₄)	★ ★ ★
Slip or shudder (1st)	1. Forward clutch (C ₁) 2. No. 2 one-way clutch (F ₂)	★ ★
Slip or shudder (2nd)	2nd brake (B ₃)	★
Slip or shudder (3rd)	1. 3rd coast brake (B ₁) 2. 3rd brake (B ₂) 3. One-way clutch (No. 1) (F ₁)	★ ★ ★
Slip or shudder (4th)	Direct clutch	★
Slip or shudder (5th)	O/D brake (B ₀)	★
No engine braking (1st - 4th: D range)	O/C direct clutch (C ₀)	★
No engine braking (1st: L range)	1st & reverse brake (B ₄)	★
No engine braking (2nd: 2 range)	2nd brake (B ₃)	★
No engine braking (3rd: 3 range)	3rd coast brake (B ₁)	★

Poor acceleration (All ranges)	Torque converter	AT-39
Poor acceleration (5th)	1. O/D brake (B ₀) 2. O/D planetary gear unit	★ ★
Engine stalls when starting off or stopping	Torque converter	AT-39