

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 trouble-shooting.

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 ECM.

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)	ECM	IN-32
No up-shift (4th → 5th)	1. Transmission control switch circuit 2. ECM	DI-478 IN-32
No down-shift (5th → 4th)	1. Transmission control switch circuit 2. ECM	DI-478 IN-32
No down-shift (A particular gear, from 1st to 4th gear, is not up-shifted)	ECM	IN-32
No lock-up	ECM	IN-32
No lock-up off	ECM	IN-32
Shift point too high or too low	1. Pattern select switch circuit 2. ECM	DI-477 IN-32
Up-shift to 5th from 4th while shift lever is 4 position	1. Transmission control switch circuit 2. ECM	DI-478 IN-32
Up-shift to 5th from 4th while engine is cold	ECM	IN-32
No kick-down	ECM	IN-32
No pattern select	1. Pattern select switch circuit 2. ECM	DI-477 IN-32
Engine stalls when starting off or stopping	ECM	IN-32
No kick-down	ECM	IN-32
No 2nd start	1. Pattern select switch circuit 2. ECM	DI-477 IN-32
No steering shift system	1. Transmission control switch circuit 2. Pattern select switch circuit 3. ECM	DI-478 DI-477 IN-32

CHAPTER 2: ON-VEHICLE REPAIR**(★: A650E AUTOMATIC TRANSMISSION Repair Manual Pub. No. RM794U)**

Symptom	Suspect Area	See page
Vehicle does not move in any forward position and reverse positions	1. Transmission control rod 2. Manual valve 3. Parking lock pawl 4. Off-vehicle repair matrix chart	DI-417 ★ ★ –
Vehicle does not move in R position	1. Reverse control valve 2. Off-vehicle repair matrix chart	★ –
Vehicle does not move in particular position or positions (Except R position)	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	★ ★ ★ ★ –

DIAGNOSTICS – AUTOMATIC TRANSMISSION (3UZ-FE)

Harsh engagement (2nd → 3rd)	1. Accumulator control valve 2. Solenoid modulator valve 3. B ₂ accumulator 4. B ₃ control valve 5. B ₂ release control valve 6. Solenoid relay valve 7. Off-vehicle repair matrix chart	★ ★ ★ ★ ★ ★ –
Harsh engagement (3rd → 4th)	1. Accumulator control valve 2. Solenoid modulator valve 3. C ₂ accumulator 4. Off-vehicle repair matrix chart	★ ★ ★ –
Harsh engagement (4th → 5th)	1. Accumulator control valve 2. Solenoid modulator valve 3. B ₀ accumulator 4. Off-vehicle repair matrix chart	★ ★ ★ –
Harsh engagement (5th → 4th)	1. Accumulator control valve 2. Solenoid modulator valve 3. C ₀ accumulator 4. Off-vehicle repair matrix chart	★ ★ ★ –
Slip or shudder (Forward and reverse)	1. Transmission control rod 2. Oil strainer 3. Pressure relief valve 4. Off-vehicle repair matrix chart	DI-417 ★ ★ –
Slip or shudder (Particular position)	1. Transmission control rod 2. Off-vehicle repair matrix chart	DI-417 –
No engine braking (1st: L position)	1. Coast brake control valve 2. B-4 relay valve 3. Off-vehicle repair matrix chart	★ ★ –
No engine braking (2nd: 2 position)	1. Coast brake control valve 2. Off-vehicle repair matrix chart	★ –
No kick-down	1. 1-2 shift valve 2. 2-3 shift valve 3. 3-4 shift valve	★ ★ ★

CHAPTER 3: OFF-VEHICLE REPAIR**(★: A650E AUTOMATIC TRANSMISSION Repair Manual Pub. No. RM794U)**

Symptom	Suspect Area	See page
Vehicle does not move in any forward position and reverse positions	1. O/D one-way clutch (F ₀) 2. O/D direct clutch (C ₀) 3. O/D planetary gear unit 4. Torque converter clutch	★ ★ ★ AT-44
Vehicle does not move in R position	1. Center and rear planetary gear unit 2. Direct clutch (C ₂) 3. 1st & reverse brake (B ₄) 4. O/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 clutch	AT-44
Harsh engagement (N → D)	1. Forward clutch (C ₁) 2. O/D one-way clutch (F ₀) 3. One-way clutch No.2 (F ₂)	★ ★ ★
Harsh engagement (N → R)	1. Direct clutch (C ₂) 2. O/D brake (B ₀) 3. 1st & reverse brake (B ₄)	★ ★ ★
Harsh engagement (1 → 2)	2nd brake (B ₃)	★
Harsh engagement (2 → 3)	1. 3rd brake (B ₂) 2. 2nd brake (B ₃) 3. One-way clutch No.1 (F ₁)	★ ★ ★
Harsh engagement (3 → 4)	Direct clutch (C ₂)	★
Harsh engagement (4 → 5th)	1. O/D brake (B ₀) 2. O/D direct clutch (C ₀)	★ ★
Harsh engagement (Lock-up)	Torque converter clutch	AT-44
Slip or shudder (Forward and reverse: After warm-up)	1. O/D one-way clutch (F ₀) 2. O/D direct clutch (C ₀) 3. Torque converter clutch	★ ★ AT-44
Slip or shudder (Particular position: Just after engine starts)	Torque converter clutch	AT-44
Slip or shudder (R position)	1. Direct clutch (C ₂) 2. O/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 position)	O/D direct clutch (C ₀)	★
No engine braking (1st: L position)	1st & reverse brake (B ₄)	★
No engine braking (2nd: 2 position)	2nd brake (B ₃)	★
No engine braking (3rd: 3 position)	3rd coast brake (B ₁)	★

DIAGNOSTICS – AUTOMATIC TRANSMISSION (3UZ-FE)

Poor acceleration (All positions)	Torque converter clutch	AT-44
Poor acceleration (5th)	1. O/D brake (B ₀) 2. O/D planetary gear unit	★ ★
Engine stalls when starting off or stopping	Torque converter clutch	AT-44