

PROBLEM SYMPTOMS TABLE

If a normal code is displayed during the diagnostic trouble code 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.

Chapter 1: Electronic Circuit Matrix Chart

Chapter 2: On-vehicle Repair Matrix Chart

Chapter 3: Off-vehicle Repair Matrix Chart

- 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.

1. Chapter 1: Electronic Circuit Matrix Chart

Symptom	Suspect Area	See page
Vehicle does not move in any forward position and reverse position	1. On-vehicle repair matrix chart 2. Off-vehicle repair matrix chart	– –
Vehicle does not move in particular position or positions	1. On-vehicle repair matrix chart 2. Off-vehicle repair matrix chart	– –
No up-shift (1st → 2nd)	1. Shift solenoid valve No.1 and No.2 circuit 2. Throttle position sensor circuit 3. Vehicle speed sensor circuit 4. On-vehicle repair matrix chart 5. Park/neutral position switch circuit 6. Off-vehicle repair matrix chart 7. ECM	DI-176 DI-38 DI-100 – DI-195 – DI-160
No up-shift (2nd → 3rd)	1. Shift solenoid valve No.1 and No.2 circuit 2. Throttle position sensor circuit 3. Vehicle speed sensor circuit 4. On-vehicle repair matrix chart 5. Park/neutral position switch circuit 6. Off-vehicle repair matrix chart 7. ECM	DI-176 DI-38 DI-100 – DI-195 – DI-160
No up-shift (3rd → O/D)	1. O/D main switch circuit 2. Shift solenoid valve No.1 and No.2 circuit 3. Throttle position sensor circuit 4. Vehicle speed sensor circuit 5. Park/neutral position switch circuit 6. Engine coolant temp. sensor circuit 7. On-vehicle repair matrix chart 8. Off-vehicle repair matrix chart 9. ECM	DI-199 DI-176 DI-38 DI-100 DI-195 DI-32 – – DI-160
No down-shift (O/D → 3rd)	1. Throttle position sensor circuit 2. Shift solenoid valve No.1 and No.2 circuit 3. Vehicle speed sensor circuit 4. On-vehicle repair matrix chart 5. ECM	DI-38 DI-176 DI-100 – DI-160
No down-shift (3rd → 2nd)	1. Throttle position sensor circuit 2. Shift solenoid valve No.1 and No.2 circuit 3. Vehicle speed sensor circuit 4. On-vehicle repair matrix chart 5. ECM	DI-38 DI-176 DI-100 – DI-160

Symptom	Suspect Area	See page
No down-shift (2nd → 1st)	1. Throttle position sensor circuit 2. Shift solenoid valve No.1 and No.2 circuit 3. Vehicle speed sensor circuit 4. On-vehicle repair matrix chart 5. Off-vehicle repair matrix chart 6. ECM	DI-38 DI-174 DI-100 – – DI-160
No lock-up	1. Shift solenoid valve SL circuit 2. Throttle position sensor circuit 3. Stop light circuit 4. Vehicle speed sensor circuit 5. Park/neutral position switch circuit 6. Engine coolant temp. sensor circuit 7. On-vehicle repair matrix chart 8. Off-vehicle repair matrix chart 9. ECM	DI-182 DI-38 DI-185 DI-100 DI-195 DI-32 – – DI-160
No lock-up off	1. Throttle position sensor circuit 2. Shift solenoid valve SL circuit 3. Stop light circuit 4. Vehicle speed sensor circuit 5. On-vehicle repair matrix chart 6. Off-vehicle repair matrix chart 7. ECM	DI-38 DI-182 DI-185 DI-100 – – DI-160
Shift point too high or too low	1. Throttle position sensor circuit 2. Park/neutral position switch circuit 3. Pattern select switch circuit 4. Vehicle speed sensor circuit 5. ECM	DI-38 DI-195 DI-202 DI-100 DI-160
Up-shift to 2nd while in L position	1. Park/neutral position switch circuit 2. ECM	DI-195 DI-160
Up-shift to 3rd while in L position	1. Park/neutral position switch circuit 2. ECM	DI-195 DI-160
Up-shift to O/D from 3rd	1. O/D main switch circuit 2. ECM	DI-199 DI-160
Up-shift to O/D from 3rd while engine is cold	1. Engine coolant temp. sensor circuit 2. On-vehicle repair matrix chart 3. Off-vehicle repair matrix chart 4. ECM	DI-32 – – DI-160
Harsh engagement (N → D)	1. Throttle position sensor circuit 2. Park/neutral position switch circuit 3. On-vehicle repair matrix chart 4. Off-vehicle repair matrix chart 5. ECM	DI-38 DI-195 – – DI-160
Harsh engagement (Lock-up)	1. Throttle position sensor circuit 2. Shift solenoid valve SL circuit 3. Vehicle speed sensor circuit 4. On-vehicle repair matrix chart 5. Off-vehicle repair matrix chart 6. ECM	DI-38 DI-182 DI-100 – – DI-160
Harsh engagement (Any driving position)	1. Throttle position sensor circuit 2. Vehicle speed sensor circuit 3. On-vehicle repair matrix chart 4. Off-vehicle repair matrix chart 5. ECM	DI-38 DI-100 – – DI-160

DIAGNOSTICS – AUTOMATIC TRANSMISSION

Symptom	Suspect Area	See page
Slip or shudder (Forward and reverse)	1. On-vehicle repair matrix chart 2. Off-vehicle repair matrix chart	– –
Slip or shudder (Particular position)	1. On-vehicle repair matrix chart 2. Off-vehicle repair matrix chart	– –
No engine braking	1. On-vehicle repair matrix chart 2. Off-vehicle repair matrix chart	– –
Poor acceleration	1. Throttle position sensor circuit 2. Vehicle speed sensor circuit 3. Shift solenoid valve No.1 and No.2 circuit 4. Shift solenoid valve SL circuit 5. Off-vehicle repair matrix chart 6. ECM	DI-38 DI-100 DI-174 DI-182 – DI-160
No pattern select	1. Pattern select switch circuit 2. ECM	DI-202 DI-160
No 2nd start	1. Pattern select switch circuit 2. Shift solenoid valve No.1 and No.2 circuit 3. ECM	DI-202 DI-174 DI-160
Large shift shock or engine stalls when starting off or stopping	1. Shift solenoid valve SL circuit 2. Off-vehicle repair matrix chart 3. ECM	DI-182 – DI-160

2. Chapter 2: On-Vehicle Repair**(★: A343F AUTOMATIC TRANSMISSION Repair Manual Pub. No. RM491U)**

Symptom	Suspect Area	See page
Vehicle does not move in any forward position and reverse position	1. Transmission control rod 2. Manual valve 3. Parking lock pawl 4. Off-vehicle repair matrix chart	DI-146 ★ ★ –
Vehicle does not move in R position	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 → O/D)	1. 3-4 shift valve 2. Off-vehicle repair matrix chart	★ –
No down-shift (O/D → 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 (N → L)	Low coast modulator valve	★
Harsh engagement (1st → 2nd → 3rd → O/D)	1. Accumulator control valve 2. Solenoid modulator valve	★ ★
Harsh engagement (2nd → 3rd)	1. Accumulator control valve 2. Solenoid modulator valve 3. C ₂ accumulator 4. Off-vehicle repair matrix chart	★ ★ ★ –
Harsh engagement (3rd → O/D)	1. Accumulator control valve 2. Solenoid modulator valve 3. B ₀ accumulator 4. Off-vehicle repair matrix chart	★ ★ ★ –

DIAGNOSTICS – AUTOMATIC TRANSMISSION

Symptom	Suspect Area	See page
Harsh engagement (O/D → 3rd)	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-146 ★ ★ –
Slip or shudder (Particular position)	1. Transmission control rod 2. Off-vehicle repair matrix chart	DI-146 –
No engine braking (1st: L position)	1. Low coast modulator valve 2. Off-vehicle repair matrix chart	★ –
No engine braking (2nd: 2 position)	1. 2nd coast modulator valve 2. Off-vehicle repair matrix chart	★ –
No kick-down	1. 1–2 shift valve 2. 2–3 shift valve	★ ★

3. Chapter 3: Off-Vehicle Repair**(★: A343F AUTOMATIC TRANSMISSION Repair Manual Pub. No. RM491U)**

Symptom	Suspect Area	See page
Vehicle does not move in any forward position and reverse position	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-31
Vehicle does not move in R position	1. Front and rear planetary gear unit 2. Direct clutch (C ₂) 3. 1st and reverse brake (B ₃) 4. O/D direct clutch (C ₀)	★ ★ ★ ★
No up-shift (1st → 2nd)	1. 2nd brake (B ₂) 2. No. 1 one-way clutch (F ₁)	★ ★
No up-shift (2nd → 3rd)	Direct clutch (C ₂)	★
No up-shift (3rd → O/D)	O/D brake (B ₀)	★
No lock-up or No lock-up off	Torque converter clutch	AT-31
Harsh engagement (N → D)	1. Forward clutch (C ₁) 2. O/D one-way clutch (F ₀) 3. No. 2 one-way clutch (F ₂)	★ ★ ★
Harsh engagement (N → R)	1. Direct clutch (C ₂) 2. 1st and reverse brake (B ₃) 3. O/D one-way clutch (F ₀)	★ ★ ★
Harsh engagement (N → 2)	1. Forward clutch (C ₁) 2. O/D one-way clutch (F ₀) 3. No. 2 one-way clutch (F ₂)	★ ★ ★
Harsh engagement (N → L)	1. Forward clutch (C ₁) 2. 1st and reverse brake (B ₃) 3. O/D one-way clutch (F ₀) 4. No. 2 one-way clutch (F ₂)	★ ★ ★ ★
Harsh engagement (Lock-up)	Torque converter clutch	AT-31
Slip or shudder (Forward and reverse: After warm-up)	1. Torque converter clutch 2. O/D one-way clutch (F ₀) 3. O/D direct clutch (C ₀)	★ ★ ★
Slip or shudder (Particular position: Just after engine starts)	Torque converter clutch	AT-31
Slip or shudder (R position)	1. Direct clutch (C ₂) 2. 1st and reverse brake (B ₃)	★ ★
Slip or shudder (1st)	1. Forward clutch (C ₁) 2. No. 2 one-way clutch (F ₂)	★ ★
Slip or shudder (2nd)	1. 2nd brake (B ₂) 2. 2nd coast brake (B ₁) 3. No. 1 one-way clutch (F ₁)	★ ★ ★
Slip or shudder (3rd)	Direct clutch (C ₂)	★
Slip or shudder (O/D)	O/D brake (B ₀)	★
No engine braking (1st ~ 3rd: D position)	2nd brake (B ₂)	★
No engine braking (1st: L position)	1st and reverse brake (B ₃)	★
No engine braking (2nd: 2 position)	2nd coast brake (B ₁)	★
Poor acceleration (All position)	Torque converter clutch	AT-31
Poor acceleration (O/D)	1. O/D direct clutch (C ₀) 2. O/D planetary gear unit	★ ★
Engine stalls when starting off or stopping	Torque converter clutch	AT-31