

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

When troubleshooting, check Chapter 1 first. If instructions are given in Chapter 1 to proceed to chapter 2 or 3, proceed as instructed.

- (1) 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.
- (2) 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
Vehicle does not move in any forward position and reverse position	6. On-vehicle repair matrix chart 7. Off-vehicle repair matrix chart	- -
Vehicle does not move in a 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. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. On-vehicle repair matrix chart 6. Park/neutral position switch circuit 7. Off-vehicle repair matrix chart 8. ECM	DI-157 DI-35 DI-87 DI-166 - DI-169 - DI-145
No up-shift (2nd → 3rd)	1. Shift solenoid valve No. 1 and No. 2 circuit 2. Throttle position sensor circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. On-vehicle repair matrix chart 6. Park/neutral position switch circuit 7. Off-vehicle repair matrix chart 8. ECM	DI-157 DI-35 DI-87 DI-166 - DI-169 - DI-145
No up-shift (3rd → O/D)	1. O/D main switch & O/D OFF indicator light circuit 2. Shift solenoid valve No. 1 and No. 2 circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. Throttle position sensor circuit 6. Park/neutral position switch circuit 7. O/D cancel signal circuit 8. Engine coolant temp. sensor circuit 9. On-vehicle repair matrix chart 10. Off-vehicle repair matrix chart 11. ECM	DI-174 DI-157 DI-87 DI-166 DI-35 DI-169 DI-172 DI-30 - - DI-145

No down-shift (O/D → 3rd)	1. Shift solenoid valve No. 1 and No. 2 circuit 2. Throttle position sensor circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. On-vehicle repair matrix chart 6. ECM	DI-157 DI-35 DI-87 DI-166 - DI-145
No down-shift (3rd → 2nd)	1. Shift solenoid valve No. 1 and No. 2 circuit 2. Throttle position sensor circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. On-vehicle repair matrix chart 6. ECM	DI-157 DI-35 DI-87 DI-166 - DI-145
No down-shift (2nd → 1st)	1. Shift solenoid valve No. 1 and No. 2 circuit 2. Throttle position sensor circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. On-vehicle repair matrix chart 6. Off-vehicle repair matrix chart 7. ECM	DI-157 DI-35 DI-87 DI-166 - - DI-145
Lock-up does not engage	1. Shift solenoid valve SL circuit 2. Throttle position sensor circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. Stop light switch circuit 6. Park/neutral position switch circuit 7. Engine coolant temp. sensor circuit 8. On-vehicle repair matrix chart 9. Off-vehicle repair matrix chart 10. ECM	DI-163 DI-35 DI-87 DI-166 DI-185 DI-169 DI-30 - - DI-145
Lock-up does not disengage	1. Shift solenoid valve SL circuit 2. Throttle position sensor circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. Stop light switch circuit 6. On-vehicle repair matrix chart 7. Off-vehicle repair matrix chart 8. ECM	DI-163 DI-35 DI-87 DI-166 DI-185 - - DI-145
Shift point too high or too low	1. Throttle position sensor circuit 2. Pattern select switch circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. ECM	DI-35 DI-179 DI-87 DI-166 DI-145
Up-shifts to 2nd while in L position Up-shifts to 3rd while in L position	1. Park/neutral position switch circuit 2. ECM	DI-169 DI-145
Up-shifts to O/D from 3rd while O/D main switch is OFF	1. O/D main switch & O/D OFF indicator light circuit 2. ECM	DI-174 DI-145
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-30 - - DI-145

DIAGNOSTICS - AUTOMATIC TRANSMISSION

Harsh engagement (N → D)	1. Shift solenoid valve SL circuit 2. ATF temp. sensor circuit 3. Throttle position sensor circuit 4. Park/neutral position switch circuit 5. On-vehicle repair matrix chart 6. Off-vehicle repair matrix chart 7. ECM	DI-163 DI-154 DI-35 DI-169 - - DI-145
Harsh engagement (Lock-up)	1. Shift solenoid valve SL circuit 2. Throttle position sensor circuit 3. No. 1 vehicle speed sensor circuit 4. No. 2 vehicle speed sensor circuit 5. On-vehicle repair matrix chart 6. Off-vehicle repair matrix chart 7. ECM	DI-163 DI-35 DI-87 DI-166 - - DI-145
Harsh engagement (Any driving position)	1. Shift solenoid valve SL circuit 2. ATF temp. sensor circuit 3. Throttle position sensor circuit 4. No. 1 vehicle speed sensor circuit 5. No. 2 vehicle speed sensor circuit 6. On-vehicle repair matrix chart 7. Off-vehicle repair matrix chart 8. ECM	DI-163 DI-154 DI-35 DI-87 DI-166 - - DI-145
Slip or shudder (Forward and reverse)	1. On-vehicle repair matrix chart 2. Off-vehicle repair matrix chart	- -
Slip or shudder (A 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. No. 1 vehicle speed sensor circuit 3. No. 2 vehicle speed sensor circuit 4. Shift solenoid valve No. 1 and No. 2 circuit 5. Shift solenoid valve SL circuit 6. On-vehicle repair matrix chart 7. Off-vehicle repair matrix chart	DI-35 DI-87 DI-166 DI-157 DI-163 - -
No kick-down	1. Throttle position sensor circuit 2. Shift solenoid valve No. 1 and No. 2 circuit 3. No. 1 vehicle speed sensor circuit 4. On-vehicle repair matrix chart 5. ECM	DI-35 DI-157 DI-87 - DI-145
No pattern select	1. Pattern select switch circuit 2. ECM	DI-179 DI-145
No 2nd start	1. Pattern select switch circuit 2. Shift solenoid valve No. 1 and No. 2 circuit 3. ECM	DI-179 DI-157 DI-145
Large shift shock or engine stalls when starting off or stopping	1. Shift solenoid valve SL circuit 2. Stop light switch circuit 3. Off-vehicle repair matrix chart 4. ECM	DI-163 DI-185 - DI-145

Chapter 2: On-Vehicle Repair**(★: A340F, A343F Automatic Transmission Repair Manual Pub. No. RM479U)**

Symptom	Suspect Area	See page
Vehicle does not move in any forward position and reverse position	1. Throttle cable 2. Transmission control rod 3. Manual valve 4. Primary regulator valve 5. Parking lock pawl 6. Off-vehicle repair matrix chart	DI-131 DI-131 ★ ★ ★ -
Vehicle does not move in R position	1. Off-vehicle repair matrix chart	-
Vehicle does not move in a particular position or positions (Except R position)	1. 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	★
No down-shift (3rd → 2nd)	1. 2-3 shift valve	★
No down-shift (2nd → 1st)	1. 1-2 shift valve 2. Off-vehicle repair matrix chart	★ -
Lock-up does not engage or lock-up does not disengage	1. Lock-up relay valve 2. Off-vehicle repair matrix chart	★ -
Harsh engagement (N → D)	1. Accumulator control valve 2. Off-vehicle repair matrix chart	★ -
Harsh engagement (Lock-up)	1. Lock-up control valve 2. Off-vehicle repair matrix chart	★ -
Harsh engagement (N → R)	1. Accumulator control valve 2. C ₂ accumulator 3. Off-vehicle repair matrix chart	★ ★ -
Harsh engagement (N → L)	1. Low coast modulator valve	★
Harsh engagement (1st → 2nd (D position))	1. Accumulator control valve 2. B ₂ accumulator	★ ★
Harsh engagement (1st → 2nd (2 position))	1. Accumulator control valve 2. B ₂ accumulator	★ ★
Harsh engagement (2nd → 3rd → O/D)	1. Cut-back valve	★
Harsh engagement (1st → 2nd → 3rd → O/D)	1. Throttle valve 2. Accumulator control valve	★ ★
Harsh engagement (2nd → 3rd)	3. Accumulator control valve 1. C ₂ accumulator 2. Off-vehicle repair matrix chart	★ ★ -
Harsh engagement (3rd → O/D)	1. Accumulator control valve 2. B ₀ accumulator 3. Off-vehicle repair matrix chart	★ ★ -
Harsh engagement (O/D → 3rd)	1. Accumulator control valve 2. C ₀ accumulator 3. Off-vehicle repair matrix chart	★ ★ -

Slip or shudder (Forward and reverse)	1. Throttle cable 2. Transmission control rod 3. Oil strainer 4. Pressure relief valve 5. Off-vehicle repair matrix chart	DI-131 DI-131 ★ ★ -
Slip or shudder (Particular position)	1. Throttle cable 2. Transmission control rod 3. Off-vehicle repair matrix chart	DI-131 DI-131 -
No engine braking (1st (L position))	1. Low coast modulator 2. Off-vehicle repair matrix chart	★ -
No engine braking (2nd (2 position))	1. 2nd coast modulator 2. Off-vehicle repair matrix chart	★ -
No kick-down	1. 1-2 shift valve 2. 2-3 shift valve	★ ★

Chapter 3: Off-Vehicle Repair

(★: A340F, A343F Automatic Transmission Repair Manual Pub. No. RM479U)

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 planetary gear unit 3. Torque converter clutch	★ ★ AT-26
Vehicle does not move in R position	1. 2nd coast brake (B ₁) 2. Front and rear planetary gear unit 3. Direct clutch (C ₂) 4. 1st and reverse brake (B ₃)	★ ★ ★ ★
Vehicle does not move in D, 2 and L positions	1. Forward clutch (C ₁)	★
Vehicle does not move in D and 2 positions	1. No. 2 one-way clutch (F ₂)	★
Vehicle does not move in 2 position	1. 1st and reverse brake (B ₃)	★
Vehicle does not move in L position	1. 2nd brake (B ₂) 2. 2nd coast brake (B ₁) 3. Direct clutch (C ₂)	★ ★ ★
No up-shift (1st → 2nd)	1. 2nd brake (B ₂) 2. No. 1 one-way clutch (F ₁)	★ ★
No up-shift (2nd → 3rd)	1. Direct clutch (C ₂)	★
No up-shift (3rd → O/D)	1. O/D brake (B ₀)	★
No down-shift (2nd → 1st)	1. 2nd brake (B ₂)	★
Lock-up does not engage or lock-up does not disengage	1. Torque converter clutch	AT-26
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 (2nd → 3rd)	1. Direct clutch (C ₂)	★
Harsh engagement (3rd → O/D)	1. O/D brake (B ₀) 2. O/D planetary gear unit	★ ★
Harsh engagement (O/D → 3rd)	1. O/D one-way clutch (F ₀)	★
Harsh engagement (Lock-up)	1. Torque converter clutch	AT-26
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)	AT-26 ★ ★
Slip or shudder (Forward and reverse (Just after engine starts))	1. Torque converter clutch	AT-26

Slip or shudder (R position)	1. Direct clutch (C ₂) 2. 1st and reverse brake (B ₃) 3. O/D one-way clutch (F ₀)	★ ★ ★
Slip or shudder (1st)	1. Forward clutch (C ₁) 2. No. 2 one-way clutch (F ₂) 3. O/D one-way clutch (F ₀)	★ ★ ★
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)	1. Direct clutch (C ₂)	★
Slip or shudder (O/D)	1. O/D brake (B ₀)	★
No engine braking (1st - 3rd)	1. O/D direct clutch (C ₀)	★
No engine braking (1st)	1. 1st and reverse brake (B ₃)	★
No engine braking (2nd)	1. 2nd coast brake (B ₁)	★
Poor acceleration (All positions)	1. Torque converter clutch	AT-26
Poor acceleration (O/D)	1. O/D brake (B ₀) 2. O/D planetary gear unit	★ ★
Poor acceleration (Other than O/D)	1. O/D brake (B ₀)	★
Poor acceleration (Other than 2nd)	1. 2nd coast brake (B ₁) 2. No. 1 one-way clutch (F ₁)	★ ★
Poor acceleration (1st and 2nd)	1. O/D one-way clutch (F ₀)	★
Poor acceleration (L and R positions)	1. 1st and reverse brake (B ₃)	★
Poor acceleration (R position)	1. Forward clutch (C ₁)	★
Engine stalls when starting off or stopping	1. Torque converter clutch	AT-26