10. General Diagnostics Table

1. FOR ENGINE

Symptom	Problem parts	1 Mass air flow sensor	2 Engine coolant temperature sensor (*1)	3 Throttle position sensor	4 Crankshaft position sensor & Camshaft position sensor (*2)	5 Idle air control solenoid valve	6 Knock sensor	7 Purge control solenoid valve	8 EGR valve	9 Fuel injection parts (*3)	10 Ignition parts (*4)	11 Fuel pump and relay	12 A/C switch and A/C cut relay	13 Engine torque control signal circuit
1	Engine stalls during idling.	O	△		□	O				O	O	O		
2	Rough idling	O	△	O	□	O				O				
3	Engine does not return to idle.	O		O		O								
4	Poor acceleration	O	△		□					O		O	O	O
5	Engine stalls or engine sags or hesitates at acceleration.	O	△	O	□			O		O	O		O	
6	Surge	O	△	O						O	O		O	
7	Spark knock	O					O			O		O		
8	After burning in exhaust system	O	△							O		O		

*1: The mark, △, indicates the symptom occurring only in cold temperatures.

*2: For items with the mark, □, ensure the secure installation of crankshaft position sensor and camshaft position sensor. Replacement is not necessary.

*3: Check fuel injector, fuel pressure regulator and fuel filter.

*4: Check ignitor, ignition coil and spark plug.

NOTE:

Malfunction of parts other than the above is also possible. Refer to 1. Engine Trouble in General [K100] in Repair Section 2-3 of the Service Manual.

2. FOR AT

Symptom \ Problem parts	Inhibitor switch	Control module	Vehicle speed sensor 1	Vehicle speed sensor 2	Select cable	Select lever	FWD switch	Starter motor and harness	Throttle position sensor	Hold switch	Accumulator ("N" — "D")	Accumulator (2A)	Accumulator (4A)	Accumulator (3R)	ATF temperature sensor	Strainer	Duty solenoid A	Duty solenoid B	Shift solenoid 1	Shift solenoid 2	Shift solenoid 3	Control valve	Detent spring	Manual plate	Transfer clutch	Transfer valve	Transfer pipe	Duty solenoid C	Forward clutch
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Starter does not rotate when select lever is in "P" or "N."; starter rotates when select lever is "R", "D", "3" or "2."	O				O	O		O																					
Abnormal noise when select lever is in "P" or "N."																O												O	
Hissing noise occurs during standing starts.																O													
Noise occurs while driving in "D₁" range.																													
Noise occurs while driving in "D₂" range.																													
Noise occurs while driving in "D₃" range.																													
Noise occurs while driving in "D₄" range.																													
Engine stalls while shifting from one range to another.																						O							
Vehicle moves when select lever is in "N."																													O
Shock occurs when select lever is moved from "N" to "D."		O									O											O							
Excessive time lag occurs when select lever is moved from "N" to "D."																						O							O
Shock occurs when select lever is moved from "N" to "R."		O												O								O							
Excessive time lag occurs when select lever is moved from "N" to "R."																						O							
Vehicle does not start in any shift range (engine revving up).																O						O							
Vehicle does not start in any shift range (engine stall).																													
Vehicle does not start in "R" range only (engine revving up).					O	O																O							
Vehicle does not start in "R" range only (engine stall).																													O
Vehicle does not start in "D" or "3" range (engine revving up).																													O
Vehicle does not start in "D", "3" or "2" range (engine revving up).																													O
Vehicle does not start in "D", "3" or "2" range (engine stall).																													
Vehicle starts in "R" range only (engine revving up).																						O							
Acceleration during standing starts is poor (high stall rpm).																						O							O
Acceleration during standing starts is poor (low stall rpm).																													
Acceleration is poor when select lever is in "D", "3" or "2" range (normal stall rpm).		O																				O							
Acceleration is poor when select lever is in "R" (normal stall rpm).																						O							
No shift occurs from 1st to 2nd gear.		O	O	O					O										O	O		O							
No shift occurs from 2nd to 3rd gear.		O																				O							
No shift occurs from 3rd to 4th gear.		O											O	O							O	O							
No "kick-down" shifts occur.		O							O																				
Engine brake is not effected when select lever is in "3" range.	O	O							O													O							

Overrunning clutch	Drive pinion	Crown gear	Axle shaft	Differential gear	Final gear	Seal pipe	Oil pump	High clutch	Band brake	Low & reverse clutch	Reverse clutch	One-way clutch (1-2)	One-way clutch (3-4)	Double oil seal	Input shaft	Output shaft	Planetary gear	Reduction gear	Drive plate	Torque converter one-way clutch	Lock-up facing	Lock-up damper	ATF deterioration	ATF level too high or too low	Differential gear oil level too high or too low	Engine performance	Engine speed signal	Parking brake mechanism	Symptom
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	
																													Starter does not rotate when select lever is in "P" or "N."; starter rotates when select lever is "R", "D", "3" or "2."
							○												○					○					Abnormal noise when select lever is in "P" or "N."
																								○					Hissing noise occurs during standing starts.
				○													○	○							○				Noise occurs while driving in "D₁" range.
				○													○	○							○				Noise occurs while driving in "D₂" range.
				○														○							○				Noise occurs while driving in "D₃" range.
				○													○	○							○				Noise occurs while driving in "D₄" range.
																						○				○			Engine stalls while shifting from one range to another.
																													Vehicle moves when select lever is in "N."
																							○						Shock occurs when select lever is moved from "N" to "D."
																													Excessive time lag occurs when select lever is moved from "N" to "D."
																							○						Shock occurs when select lever is moved from "N" to "R."
										○	○																		Excessive time lag occurs when select lever is moved from "N" to "R."
	○	○	○	○			○								○	○	○		○					○					Vehicle does not start in any shift range (engine revving up).
																												○	Vehicle does not start in any shift range (engine stall).
										○	○																		Vehicle does not start in "R" range only (engine revving up).
									○								○												Vehicle does not start in "R" range only (engine stall).
													○																Vehicle does not start in "D" or "3" range (engine revving up).
																													Vehicle does not start in "D", "3" or "2" range (engine revving up).
											○																		Vehicle does not start in "D", "3" or "2" range (engine stall).
																													Vehicle starts in "R" range only (engine revving up).
											○														○				Acceleration during standing starts is poor (high stall rpm).
								○												○						○			Acceleration during standing starts is poor (low stall rpm).
								○	○								○												Acceleration is poor when select lever is in "D", "3" or "2" range (normal stall rpm).
○								○	○								○												Acceleration is poor when select lever is in "R" (normal stall rpm).
									○																				No shift occurs from 1st to 2nd gear.
								○					○																No shift occurs from 2nd to 3rd gear.
									○																				No shift occurs from 3rd to 4th gear.
																													No "kick-down" shifts occur.
																													Engine brake is not effected when select lever is in "3" range.
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	

Problem parts → Symptom	Inhibitor switch	Control module	Vehicle speed sensor 1	Vehicle speed sensor 2	Select cable	Select lever	FWD switch	Starter motor and harness	Throttle position sensor	Hold switch	Accumulator ("N" — "D")	Accumulator (2A)	Accumulator (4A)	Accumulator (3R)	ATF temperature sensor	Strainer	Duty solenoid A	Duty solenoid B	Shift solenoid 1	Shift solenoid 2	Shift solenoid 3	Control valve	Detent spring	Manual plate	Transfer clutch	Transfer valve	Transfer pipe	Duty solenoid C	Forward clutch
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Engine brake is not effected when select lever is in "3" or "2" range.																													
Engine brake is not effected when select lever is in "1" range.																						○							
Shift characteristics are erroneous.	○	○	○	○					○													○							
No lock-up occurs.		○							○								○					○							
Vehicle cannot be set in "D" range power mode.		○							○																				
"D" range power mode cannot be released.		○							○						○														
Parking brake is not effected.					○	○																							
Shift lever cannot be moved or is hard to move from "P" range.					○	○																							
Select lever is hard to move.					○	○																	○	○					
Select lever is too light to move (unreasonable resistance).																							○	○					
ATF spurts out.																													
Differential oil spurts out.																													
Differential oil level changes excessively.																													
Odor is produced from oil supply pipe.																									○				○
Shock occurs when select lever is moved from "1" to "2" range.		○							○			○			○		○					○							
Slippage occurs when select lever is moved from "1" to "2" range.		○							○			○			○		○					○							
Shock occurs when select lever is moved from "2" to "3" range.		○							○				○	○	○		○					○							
Slippage occurs when select lever is moved from "2" to "3" range.		○							○				○	○	○		○					○							
Shock occurs when select lever is moved from "3" to "4" range.		○							○				○		○		○					○							
Slippage occurs when select lever is moved from "3" to "4" range.		○							○				○		○		○					○							
Shock occurs when select lever is moved from "3" to "2" range.		○							○						○		○					○							
Shock occurs when select lever is moved from "D" to "1" range.		○							○						○		○					○							
Shock occurs when select lever is moved from "2" to "1" range.		○							○						○		○					○							
Shock occurs when accelerator pedal is released at medium speeds.		○							○						○		○					○							
Vibration occurs during straight-forward operation.		○																○											
Select lever slips out of position during acceleration or while driving on rough terrain.			○	○																			○	○					
Vibration occurs during turns (tight corner "braking" phenomenon).		○	○	○					○	○					○										○	○		○	
Front wheel slippage occurs during standing starts.		○		○		○			○	○					○							○			○	○	○	○	
Vehicle is not set in FWD mode.		○					○																		○	○		○	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

Problem parts

30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	Symptom
Overrunning clutch	Drive pinion	Crown gear	Axle shaft	Differential gear	Final gear	Seal pipe	Oil pump	High clutch	Band brake	Low & reverse clutch	Reverse clutch	One-way clutch (1-2)	One-way clutch (3-4)	Double oil seal	Input shaft	Output shaft	Planetary gear	Reduction gear	Drive plate	Torque converter one-way clutch	Lock-up facing	Lock-up damper	ATF deterioration	ATF level too high or too low	Differential gear oil level too high or too low	Engine performance	Engine speed signal	Parking brake mechanism	
O																													Engine brake is not effected when select lever is in "3" or "2" range.
										O																			Engine brake is not effected when select lever is in "1" range.
																													Shift characteristics are erroneous.
																					O					O			No lock-up occurs.
																													Vehicle cannot be set in "D" range power mode.
																													"D" range power mode cannot be released.
																												O	Parking brake is not effected.
																												O	Shift lever cannot be moved or is hard to move from "P" range.
																													Select lever is hard to move.
																													Select lever is too light to move (unreasonable resistance).
																								O					ATF spurts out.
																									O				Differential oil spurts out.
		O												O															Differential oil level changes excessively.
O								O	O	O	O										O		O						Odor is produced from oil supply pipe.
									O												O					O			Shock occurs when select lever is moved from "1" to "2" range.
									O																				Slippage occurs when select lever is moved from "1" to "2" range.
								O	O												O					O			Shock occurs when select lever is moved from "2" to "3" range.
								O	O																				Slippage occurs when select lever is moved from "2" to "3" range.
O									O												O					O			Shock occurs when select lever is moved from "3" to "4" range.
									O																				Slippage occurs when select lever is moved from "3" to "4" range.
O									O												O								Shock occurs when select lever is moved from "3" to "2" range.
																					O								Shock occurs when select lever is moved from "D" to "1" range.
										O											O								Shock occurs when select lever is moved from "2" to "1" range.
																						O				O			Shock occurs when accelerator pedal is released at medium speeds.
																					O	O							Vibration occurs during straight-forward operation.
																													Select lever slips out of position during acceleration or while driving on rough terrain.
																							O						Vibration occurs during turns (tight corner "braking" phenomenon).
																													Front wheel slippage occurs during standing starts.
																													Vehicle is not set in FWD mode.
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	