9. General Diagnostic Table

A: GENERAL DIAGNOSTICS TABLE WITH NONCONFORMITY SYMPTOM FOR ENGINE

NOTE:
Malfunction of parts other than those listed is also possible.
<Ref. to 2-3 [K100], 2-3b [K100].>

Symptom	Problem parts
1. Engine stalls during idling.	1) Idle air control solenoid valve 2) Mass air flow sensor 3) Ignition parts (*1) 4) Engine coolant temperature sensor (*2) 5) Crankshaft position sensor (*3) 6) Camshaft position sensor (*3) 7) EGR valve 8) Fuel injection parts (*4)
2. Rough idling	1) Idle air control solenoid valve 2) Mass air flow sensor 3) Engine coolant temperature sensor (*2) 4) Ignition parts (*1) 5) Air intake system (*5) 6) Fuel injection parts (*4) 7) Throttle position sensor 8) Crankshaft position sensor (*3) 9) Camshaft position sensor (*3) 10) EGR valve 11) Oxygen sensor 12) Fuel pump and fuel pump relay
3. Engine does not return to idle.	1) Idle air control solenoid valve 2) Engine coolant temperature sensor 3) Accelerator cable (*6) 4) Throttle position sensor 5) Mass air flow sensor
4. Poor acceleration	1) Mass air flow sensor 2) Throttle position sensor 3) Fuel injection parts (*4) 4) Fuel pump and fuel pump relay 5) Engine coolant temperature sensor (*2) 6) Crankshaft position sensor (*3) 7) Camshaft position sensor (*3) 8) A/C switch and A/C cut relay 9) Engine torque control signal circuit 10) Ignition parts (*1)
5. Engine stalls or engine sags or hesitates at acceleration.	1) Mass air flow sensor 2) Engine coolant temperature sensor (*2) 3) Crankshaft position sensor (*3) 4) Camshaft position sensor (*3) 5) Purge control solenoid valve 6) EGR valve 7) Fuel injection parts (*4) 8) Throttle position sensor 9) Fuel pump and fuel pump relay
6. Surge	1) Mass air flow sensor 2) Engine coolant temperature sensor (*2) 3) Crankshaft position sensor (*3) 4) Camshaft position sensor (*3) 5) EGR valve 6) Fuel injection parts (*4) 7) Throttle position sensor 8) Fuel pump and fuel pump relay

Symptom	Problem parts
7. Spark knock	1) Mass air flow sensor 2) Engine coolant temperature sensor 3) Knock sensor 4) Fuel injection parts (*4) 5) Fuel pump and fuel pump relay
8. After burning in exhaust system	1) Mass air flow sensor 2) Engine coolant temperature sensor (*2) 3) Fuel injection parts (*4) 4) Fuel pump and fuel pump relay

*1: Check ignitor, ignition coil and spark plug.
*2: Indicate the symptom occurring only in cold temperatures.
*3: Ensure the secure installation.
*4: Check fuel injector, fuel pressure regulator and fuel filter.
*5: Inspect air leak in air intake system.
*6: Adjust accelerator cable.

B: GENERAL DIAGNOSTICS TABLE WITH NONCONFORMITY SYMPTOM FOR AUTOMATIC TRANSMISSION

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
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 "D_1" range.																													
Noise occurs while driving in "D_2" range.																													
Noise occurs while driving in "D_3" range.																													
Noise occurs while driving in "D_4" 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.	○	○							○													○							
	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

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	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
																													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 “D_1” range.
					○												○	○							○				Noise occurs while driving in “D_2” range.
					○													○							○				Noise occurs while driving in “D_3” range.
					○												○	○							○				Noise occurs while driving in “D_4” 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

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	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
○																													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.
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	