

05-03 SYMPTOM TROUBLESHOOTING

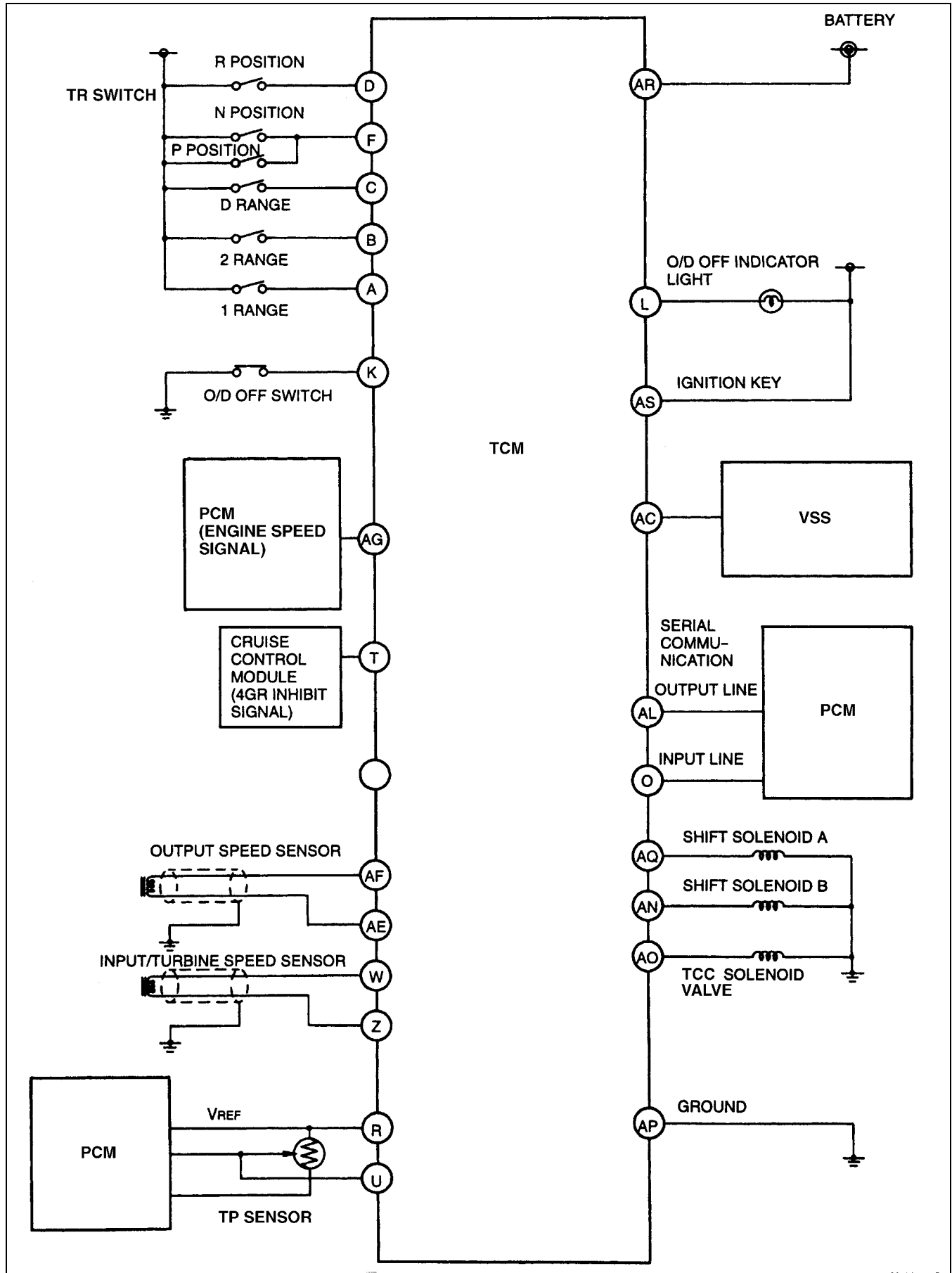
AUTOMATIC TRANSMISSION CONTROL SYSTEM	
WIRING DIAGRAM	05-03-2
FOREWORD	05-03-3
AUTOMATIC TRANSMISSION BASIC	
INSPECTION.....	05-03-3
AUTOMATIC TRANSMISSION SYMPTOM	
TROUBLESHOOTING.....	05-03-4
Diagnostic Index	05-03-4
Quick Diagnosis Chart	05-03-7
NO.1 VEHICLE DOES NOT MOVE IN D, 2, 1	
RANGES, OR IN R POSITION	05-03-9
NO.2 VEHICLE MOVES IN	
N POSITION	05-03-10
NO.3 VEHICLE MOVES IN P POSITION, OR	
PARKING GEAR DOES NOT DISENGAGE WHEN	
P IS DISENGAGED.....	05-03-10
NO.4 EXCESSIVE CREEP	05-03-10
NO.5 NO CREEP AT ALL	05-03-11
NO.6 LOW MAXIMUM SPEED AND POOR	
ACCELERATION	05-03-12
NO.7 NO SHIFT.....	05-03-13
NO.8 NO TCC FUNCTION	05-03-14
NO.9 ABNORMAL SHIFT	05-03-15
NO.10 FREQUENT SHIFTING	05-03-16
NO.11 SHIFT POINT IS HIGH OR	
LOW.....	05-03-17
NO.12 NO KICKDOWN.....	05-03-17
NO.13 ENGINE FLARES UP OR SLIPS WHEN	
UPSHIFTING OR DOWNSHIFTING ...	05-03-17
NO.14 ENGINE FLARES UP OR SLIPS WHEN	

ACCELERATING VEHICLE.....	05-03-18
NO.15 JUDDER UPON TCC	
OPERATION.....	05-03-18
NO.16 EXCESSIVE N TO D OR N TO R POSITION/	
RANGE SHIFT SHOCK	05-03-19
NO.17 EXCESSIVE SHIFT SHOCK WHEN	
UPSHIFTING AND	
DOWNSHIFTING	05-03-20
NO.18 EXCESSIVE TCC	
SHIFT SHOCK	05-03-21
NO.19 NOISE AT IDLE WHEN VEHICLE IS	
STOPPED IN ALL	
POSITION/RANGES.....	05-03-21
NO.20 NOISE AT IDLE WHEN VEHICLE IS	
STOPPED IN D, 2, 1 RANGES OR IN	
R POSITION	05-03-22
NO.21 NO ENGINE BRAKING IN 1, 2, OR	
3 GEAR.....	05-03-22
NO.22 TRANSMISSION OVERHEATS ..	05-03-23
NO.23 ENGINE STALLS WHEN SHIFTED TO D, 2, 1	
RANGES, AND/OR IN R POSITION ...	05-03-23
NO.24 ENGINE STALLS WHEN DRIVING AT SLOW	
SPEEDS OR STOPPING	05-03-24
NO.25 O/D OFF INDICATOR LIGHT DOES NOT	
ILLUMINATE WHEN O/D OFF SWITCH IS TURNED	
ON.....	05-03-24
NO.26 O/D OFF INDICATOR LIGHT ILLUMINATES	
WHEN O/D OFF SWITCH IS NOT	
TURNED ON.....	05-03-25

SYMPTOM TROUBLESHOOTING

AUTOMATIC TRANSMISSION CONTROL SYSTEM WIRING DIAGRAM

A5U050301026W01



Y5U503WA0

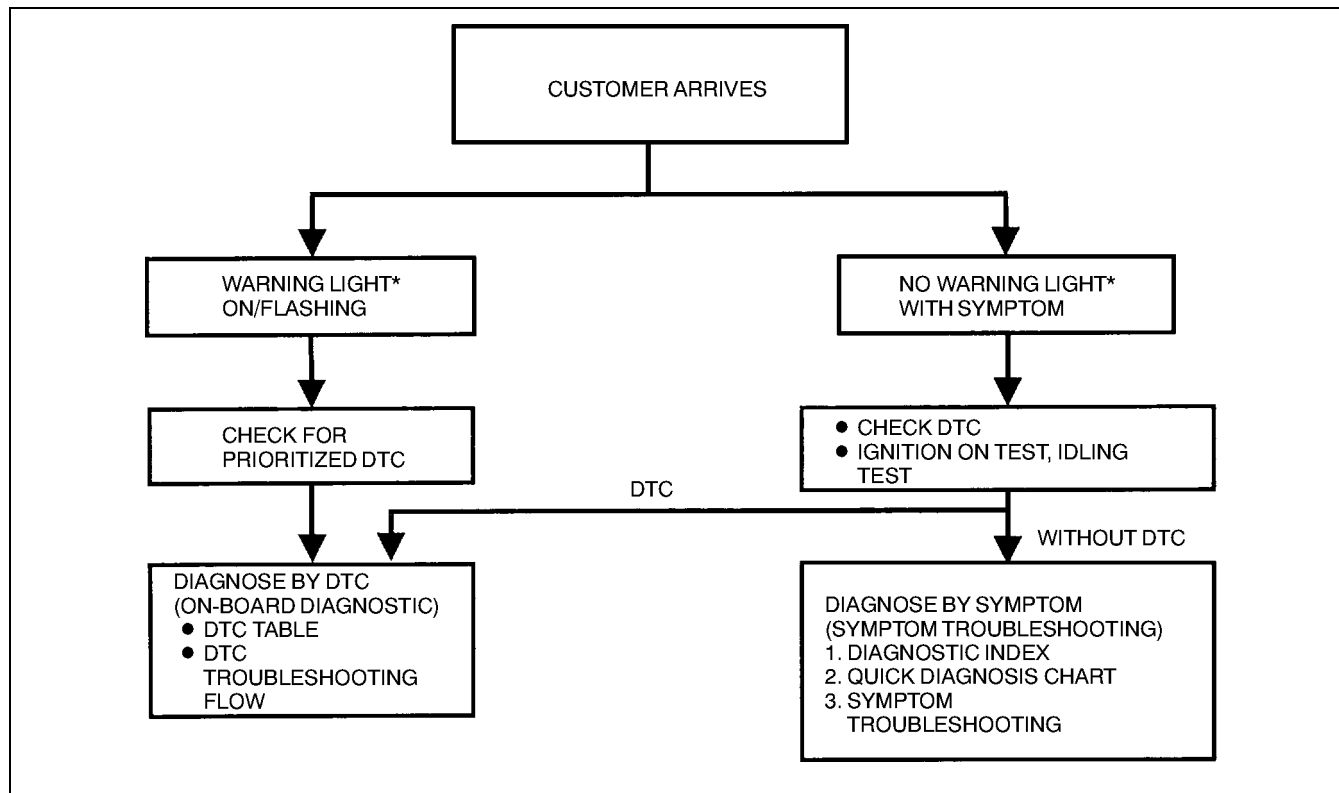
SYMPTOM TROUBLESHOOTING

FOREWORD

A5U050301026W02

1. When the customer reports a vehicle malfunction, check the malfunction indicator lamp (MIL) indication, O/D OFF indicator light flash, and diagnostic trouble code (DTC), then diagnose the malfunction according to following flowchart.

- If a DTC exists, diagnose the applicable DTC inspection. (See 05-02-5 DTC TABLE.)
- If no DTC exists, MIL does not illuminate, and O/D OFF indicator light flash, diagnose the applicable symptom troubleshooting. (See 05-03-4 AUTOMATIC TRANSMISSION SYMPTOM TROUBLESHOOTING.)



05-03

YMU102WBX

*: Malfunction Indicator Lamp (MIL), O/D OFF indicator light

AUTOMATIC TRANSMISSION BASIC INSPECTION

A5U050301026W03

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> • Connect WDS or equivalent to data link connector-2. • Turn ignition switch to ON. • Retrieve any diagnostic trouble code. • Is "PASSED" displayed? 	Yes No diagnostic trouble code is displayed: Go to next step.
		No Diagnostic trouble code is displayed: • Go to appropriate diagnostic trouble code test. If communication error message is displayed on WDS or equivalent, inspect for following: <ul style="list-style-type: none"> • Open circuit between main relay and PCM terminal B • Open main relay ground circuit • Main relay stuck open. • Open or poor ground circuit (PCM terminal 3A, 3B or 4A). • Poor connection of vehicle body ground.
2	<ul style="list-style-type: none"> • Turn ignition switch to ON. • Does O/D OFF indicator light (illuminate/go out) correspond to O/D OFF switch position (ON/OFF)? 	Yes Go to next step.
		No Go to symptom troubleshooting No.25 "O/D OFF INDICATOR LIGHT DOES NOT ILLUMINATE WHEN O/D OFF SWITCH IS TURNED ON" or No.26 "O/D OFF INDICATOR LIGHT ILLUMINATES WHEN O/D OFF SWITCH IS NOT TURNED ON".
3	<ul style="list-style-type: none"> • Inspect ATF color and condition. (See 05-13-8 ATF Condition Inspection) • Are ATF color, odor and level okay? 	Yes Go to next step.
		No <ul style="list-style-type: none"> • Repair or replace any defective parts according to inspection result. • Flush automatic transmission and cooler line if necessary.

05-03-3

SYMPTOM TROUBLESHOOTING

STEP	INSPECTION		ACTION
4	<ul style="list-style-type: none"> Perform line pressure test. (See 05–13–5 Line Pressure Test) Is line pressure okay? 	Yes	Go to next step.
		No	<ul style="list-style-type: none"> Adjust throttle cable if necessary. (See 05–13–10 THROTTLE CABLE ADJUSTMENT) Repair or replace any defective parts according to inspection result.
5	<ul style="list-style-type: none"> Perform stall test. (See 05–13–6 Stall Test) Is stall speed okay? 	Yes	Go to next step.
		No	Repair or replace any defective parts according to inspection result.
6	<ul style="list-style-type: none"> Turn ignition switch off. Disconnect TCM connector. Inspect for continuity between TCM connector terminal AP and ground. Is there continuity? 	Yes	<ul style="list-style-type: none"> Reconnect TCM connector. Go to next step.
		No	<ul style="list-style-type: none"> Inspect ground condition. Repair or replace ground circuit if necessary.
7	<ul style="list-style-type: none"> Access TCM. Inspect voltage at following TCM connector terminals: (See 05–13–20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION) <ul style="list-style-type: none"> Throttle position sensor signal (terminal U) Output speed sensor signal (terminals AF and AE) Input/turbine speed sensor signal (terminals W and Z) R position signal (terminal D) N position signal (terminal F) D range signal (terminal C) 2 range signal (terminal B) 1 range signal (terminal A) Are all terminal voltages okay? 	Yes	Go to appropriate symptom troubleshooting and follow procedures.
		No	<ul style="list-style-type: none"> Inspect following, then go to appropriate symptom troubleshooting and follow procedures: <ul style="list-style-type: none"> Throttle position sensor: <ul style="list-style-type: none"> Inspect for open or short circuit between throttle position sensor and TCM terminals U and R. Inspect throttle position sensor adjustment. Output speed sensor: <ul style="list-style-type: none"> Inspect for open or short circuit between output speed sensor and TCM terminal AF or AE. Inspect for damage of sensor rotor and sensor. Inspect output speed sensor. Input/turbine speed sensor: <ul style="list-style-type: none"> Inspect for open or short circuit between input/turbine speed sensor and TCM terminal W or Z. Inspect for damage of teeth on outer shell. Inspect input/turbine speed sensor. Inspect automatic transmission for internal damage. Transmission range switch signal (R, N, D, 2, and/or 1 range): <ul style="list-style-type: none"> Inspect transmission range switch adjustment. Inspect shift linkage adjustment (include automatic transmission internal related part). Inspect for open or short circuit between transmission range switch and TCM terminals.

AUTOMATIC TRANSMISSION SYMPTOM TROUBLESHOOTING

A5U050301026W04

Diagnostic Index

- Use the chart below to verify the symptoms of the trouble in order to diagnose the appropriate area.

No.	TROUBLESHOOTING ITEM	DESCRIPTION	PAGE
1	Vehicle does not move in D, 2, 1 ranges, or in R position	Vehicle does not move when accelerator pedal is depressed.	(See 05–03–9 NO.1 VEHICLE DOES NOT MOVE IN D, 2, 1 RANGES, OR IN R POSITION)
2	Vehicle moves in N position	<ul style="list-style-type: none"> Vehicle creeps in N position. Vehicle creeps if brake pedal is not depressed in N position. 	(See 05–03–10 NO.2 VEHICLE MOVES IN N POSITION)
3	Vehicle moves in P position, or parking gear does not disengage when P is disengaged	<ul style="list-style-type: none"> Vehicle rolls when on a downward slope and tires do not lock in P position. Tires are locked when P is disengaged, vehicle does not move in D, 2, 1 ranges, and R position when accelerator pedal is depressed, and engine remains in stall condition. 	(See 05–03–10 NO.3 VEHICLE MOVES IN P POSITION, OR PARKING GEAR DOES NOT DISENGAGE WHEN P IS DISENGAGED)
4	Excessive creep	Vehicle accelerates in D, 2, 1 ranges, and R position without depressing accelerator pedal.	(See 05–03–10 NO.4 EXCESSIVE CREEP)
5	No creep at all	Vehicle does not move in D, 2, 1 ranges, or R position when idling on flat paved road.	(See 05–03–11 NO.5 NO CREEP AT ALL)

SYMPTOM TROUBLESHOOTING

No.	TROUBLESHOOTING ITEM	DESCRIPTION	PAGE
6	<ul style="list-style-type: none"> Low maximum speed and poor acceleration 	<ul style="list-style-type: none"> Vehicle acceleration is poor at start. Delayed acceleration when accelerator is depressed while driving. 	(See 05-03-12 NO.6 LOW MAXIMUM SPEED AND POOR ACCELERATION)
7	<ul style="list-style-type: none"> No shift 	<ul style="list-style-type: none"> Single shift range only. Sometimes shifts correctly. 	(See 05-03-13 NO.7 NO SHIFT)
8	<ul style="list-style-type: none"> No TCC function 	<ul style="list-style-type: none"> TCC does not operate even though vehicle speed is increased. 	(See 05-03-14 NO.8 NO TCC FUNCTION)
9	<ul style="list-style-type: none"> Abnormal shift 	<ul style="list-style-type: none"> Shifts incorrectly (incorrect shift pattern). 	(See 05-03-15 NO.9 ABNORMAL SHIFT)
10	<ul style="list-style-type: none"> Frequent shifting 	<ul style="list-style-type: none"> Downshifting occurs immediately even when accelerator pedal is depressed slightly in D, 2, 1 ranges (O/D OFF switch is off). 	(See 05-03-16 NO.10 FREQUENT SHIFTING)
11	<ul style="list-style-type: none"> Shift point is high or low 	<ul style="list-style-type: none"> Shift point is considerably different from automatic shift diagram. Shift is delayed when accelerating. Shift occurs quickly when accelerating and engine speed does not increase. 	(See 05-03-17 NO.11 SHIFT POINT IS HIGH OR LOW)
12	<ul style="list-style-type: none"> No kickdown 	<ul style="list-style-type: none"> Does not downshift when accelerator pedal is fully depressed within kickdown range. 	(See 05-03-17 NO.12 NO KICKDOWN)
13	<ul style="list-style-type: none"> Engine flares up or slips when upshifting or downshifting 	<ul style="list-style-type: none"> When accelerator pedal is depressed for driveway, engine speed increases but vehicle speed increase slowly. When accelerator pedal is depressed while driving, engine speed increases but vehicle speed does not increase. 	(See 05-03-17 NO.13 ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING)
14	<ul style="list-style-type: none"> Engine flares up or slips when accelerating vehicle 	<ul style="list-style-type: none"> Engine flares up when accelerator pedal is depressed for upshifting. Engine flares up suddenly when accelerator pedal is depressed for downshifting. 	(See 05-03-18 NO.14 ENGINE FLARES UP OR SLIPS WHEN ACCELERATING VEHICLE)
15	<ul style="list-style-type: none"> Judder upon TCC operation 	<ul style="list-style-type: none"> Vehicle jolts when TCC is engaged. 	(See 05-03-18 NO.15 JUDDER UPON TCC OPERATION)
16	<ul style="list-style-type: none"> Excessive N to D or N to R position/range shift shock 	<ul style="list-style-type: none"> Strong shock is felt when shifting from N to D or N to R position/range at idle. 	(See 05-03-19 NO.16 EXCESSIVE N TO D OR N TO R POSITION/RANGE SHIFT SHOCK)
17	<ul style="list-style-type: none"> Excessive shift shock when upshifting and downshifting 	<ul style="list-style-type: none"> Excessive shift shock is felt when depressing accelerator pedal to accelerate at upshifting. During cruising, excessive shift shock is felt when depressing accelerator pedal at downshifting. 	(See 05-03-20 NO.17 EXCESSIVE SHIFT SHOCK WHEN UPSHIFTING AND DOWNSHIFTING)
18	<ul style="list-style-type: none"> Excessive TCC shift shock 	<ul style="list-style-type: none"> Strong shock is felt when torque converter clutch is engaged. 	(See 05-03-21 NO.18 EXCESSIVE TCC SHIFT SHOCK)
19	<ul style="list-style-type: none"> Noise at idle when vehicle is stopped in all position/ranges 	<ul style="list-style-type: none"> Transmission is noisy in all positions and ranges when vehicle is idling. 	(See 05-03-21 NO.19 NOISE AT IDLE WHEN VEHICLE IS STOPPED IN ALL POSITION/RANGES)
20	<ul style="list-style-type: none"> Noise at idle when vehicle is stopped in D, 2, 1 ranges, or in R position 	<ul style="list-style-type: none"> Transmission is noisy in driving ranges when vehicle is idling. 	(See 05-03-22 NO.20 NOISE AT IDLE WHEN VEHICLE IS STOPPED IN D, 2, 1 RANGES OR IN R POSITION)
21	<ul style="list-style-type: none"> No engine braking in 1,2, or 3 gear 	<ul style="list-style-type: none"> Engine speed drops to idle but vehicle coasts when accelerator pedal is released during cruising at medium to high speeds. Engine speed drops to idle but vehicle coasts when accelerator pedal is released in 1 range at low vehicle speed. 	(See 05-03-22 NO.21 NO ENGINE BRAKING IN 1, 2, OR 3 GEAR)

SYMPTOM TROUBLESHOOTING

No.	TROUBLESHOOTING ITEM	DESCRIPTION	PAGE
22	<ul style="list-style-type: none"> Transmission overheats 	<ul style="list-style-type: none"> Burnt smell is emitted from transmission. Smoke is emitted from transmission. 	(See 05-03-23 NO.22 TRANSMISSION OVERHEATS)
23	<ul style="list-style-type: none"> Engine stalls when shifted to D, 2, 1 ranges, and/or in R position 	<ul style="list-style-type: none"> Engine stalls when shifting from N or P position to D, 2, 1 ranges or R position at idle. 	(See 05-03-23 NO.23 ENGINE STALLS WHEN SHIFTED TO D, 2, 1 RANGES, AND/OR IN R POSITION)
24	<ul style="list-style-type: none"> Engine stalls when driving at slow speeds or stopping 	<ul style="list-style-type: none"> Engine stalls when brake pedal is depressed while driving at low speeds or stopping. 	(See 05-03-24 NO.24 ENGINE STALLS WHEN DRIVING AT SLOW SPEEDS OR STOPPING)
25	<ul style="list-style-type: none"> O/D OFF indicator light does not illuminate when O/D OFF switch is turned on 	<ul style="list-style-type: none"> O/D OFF indicator light in dashboard does not illuminate when O/D OFF switch is turned on and ignition switch is at ON. 	(See 05-03-24 NO.25 O/D OFF INDICATOR LIGHT DOES NOT ILLUMINATE WHEN O/D OFF SWITCH IS TURNED ON)
26	<ul style="list-style-type: none"> O/D OFF indicator light illuminates when O/D OFF switch is not turned on 	<ul style="list-style-type: none"> O/D OFF indicator light in dashboard illuminates even though O/D OFF switch is turned off and ignition switch is at ON. 	(See 05-03-25 NO.26 O/D OFF INDICATOR LIGHT ILLUMINATES WHEN O/D OFF SWITCH IS NOT TURNED ON)

SYMPTOM TROUBLESHOOTING

Quick Diagnosis Chart

1	Vehicle does not move in D, 2, 1 ranges, or in R position	x		x					x	x	x	x							x	
2	Vehicle moves in N position	x		x					x	x	x	x							x	
3	Vehicle moves in P position, or parking gear does not disengage when P is disengaged	x																		
4	Excessive creep			x	x	x														
5	No creep at all	x		x					x	x	x	x							x	
6	Low maximum speed and poor acceleration			x		x	x		x	x	x	x	x	x	x				x	
7	No shift			x					x	x	x	x	x	x	x				x	
8	No TCC function			x				x	x	x	x	x	x	x	x	x	x	x	x	
9	Abnormal shift	x		x				x	x	x	x	x							x	
10	Frequent shifting			x					x	x	x	x							x	
11	Shift point is high or low				x	x			x	x	x	x							x	
12	No kickdown								x	x									x	
13	Engine flares up or slips when upshifting or downshifting	x		x					x	x	x	x							x	
14	Engine flares up or slips when accelerating vehicle	x		x					x	x	x	x							x	
15	Judder upon TCC operation			x		x			x	x	x	x								
16	Excessive N to D or N to R position/range shift shock			x	x				x	x	x	x								
17	Excessive shift shock when upshifting and downshifting			x					x	x	x	x								
18	Excessive TCC shift shock			x					x	x	x	x								
19	Noise at idle when vehicle is stopped in all position/ranges								x	x										
20	Noise at idle when vehicle is stopped in D, 2, 1 ranges, or in R position	x						x	x	x										
21	No engine braking in 1, 2, or 3 gear	x		x				x	x	x	x	x	x	x	x					
22	Transmission overheats			x																
23	Engine stalls when shifted to D, 2, 1 ranges, and/or in R position			x		x														
24	Engine stalls when driving at slow speeds or stopping			x		x														
25	O/D OFF indicator light does not illuminate when O/D OFF switch is turned on													x	x					
26	O/D OFF indicator light illuminates when O/D OFF switch is not turned on													x	x					
No.	Item																			
Symptom	Cause of trouble	Selector lever is misadjusted	Ignition system malfunction	Not within line pressure specification	Idle speed misadjusted	Ignition timing misadjusted	Electrical system components													
							ATX outer parts													
Inspection method	Item	Signal is not output	Throttle position sensor	Malfunction signal is output	Signal is not output	Input/turbine speed sensor	Malfunction signal is output	Signal is not output	O/D OFF switch	Signal is not output	Malfunction signal is output	Signal is not input	Output speed sensor	Malfunction signal is output	Poor ground					
Line pressure test																				
Stall test																				
Time lag test																				
Diagnostic trouble code								x				x				x				

05-03

SYMPTOM TROUBLESHOOTING

1	Vehicle does not move in D, 2, 1 ranges, or in R position	x	x		x						x	x	x	
2	Vehicle moves in N position	x	x		x							x		
3	Vehicle moves in P position, or parking gear does not disengage when P is disengaged											x		
4	Excessive creep													
5	No creep at all	x	x		x						x	x	x	
6	Low maximum speed and poor acceleration	x	x		x						x	x	x	
7	No shift	x	x		x						x	x		
8	No TCC function			x	x						x		x	
9	Abnormal shift	x	x		x						x	x		
10	Frequent shifting				x						x			
11	Shift point is high or low													
12	No kickdown	x	x		x						x	x		
13	Engine flares up or slips when upshifting or downshifting	x	x		x						x			
14	Engine flares up or slips when accelerating vehicle	x	x		x						x			
15	Judder upon TCC operation			x	x								x	x
16	Excessive N to D or N to R position/range shift shock				x			x			x	x		
17	Excessive shift shock when upshifting and downshifting	x	x		x	x	x				x	x		
18	Excessive TCC shift shock			x	x									
19	Noise at idle when vehicle is stopped in all position/ranges	x	x										x	
20	Noise at idle when vehicle is stopped in D, 2, 1 ranges, or in R position												x	
21	No engine braking in 1, 2 or 3 gear				x						x			
22	Transmission overheats			x						x		x		x
23	Engine stalls when shifted to D, 2, 1 ranges, and/or in R position			x	x									x
24	Engine stalls when driving at slow speeds or stopping			x	x									x
25	O/D OFF indicator light does not illuminate when O/D OFF switch is turned on													
26	O/D OFF indicator light illuminates when O/D OFF switch is not turned on													
No.	Item	Electrical system components			Hydraulic system components			Powertrain system						
		ATX inner parts												
	Symptom													
	Cause of trouble													
	Inspection method													
	Item													
	Line pressure test													
	Stall test													
	Time lag test													
	Diagnostic trouble code	x	x	x										

SYMPTOM TROUBLESHOOTING

NO.1 VEHICLE DOES NOT MOVE IN D, 2, 1 RANGES, OR IN R POSITION

A5U050301026W05

1	Vehicle does not move in D, 2, 1 range, or in R position
DESCRIPTION	<ul style="list-style-type: none"> Vehicle does not move when accelerator pedal is depressed
POSSIBLE CAUSE	<ul style="list-style-type: none"> If the vehicle does not move in D, 2, 1 ranges or R position, basically, the malfunction is in the automatic transmission. (Vehicle will move even with a malfunction in the PCM.) Since a malfunction in the sensor circuit or output circuit is the cause of the malfunction in the automatic transmission, inspect the sensors, output circuit, and the related harnesses. <ol style="list-style-type: none"> Clutch slippage, worn (D, 2, 1 ranges—Forward clutch, 4GR clutch, one-way clutch No.0, one-way clutch No.2, R position—Reverse brake, 4GR clutch, direct clutch, one-way clutch No.0) <ul style="list-style-type: none"> Line pressure is low Sensor ground malfunction Shift solenoid A malfunction Shift solenoid B malfunction Body ground malfunction Control valve body malfunction Selector lever malfunction Parking mechanism not operating properly. Torque converter malfunction <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

05-03

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> With vehicle stopped on a flat road and engine off, does vehicle move when pushed? (in D, 2 range or N, R position and brake released) 	Yes Go to next step.
		No Inspect parking mechanism.
2	<ul style="list-style-type: none"> Does vehicle move when selector lever is in between N position and D range? 	Yes Go to next step.
		No Inspect and adjust the selector lever. (See 05-14-6 SELECTOR LEVER ADJUSTMENT.)
3	<ul style="list-style-type: none"> Turn ignition switch to ON. Inspect voltages between following TCM connector terminals and ground in D, 2 and 1 ranges. (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION.) Specification TCM terminal AQ: B+ TCM terminal AN: 0 V Are voltages okay? 	Yes Go to next step.
		No <ul style="list-style-type: none"> Inspect following: <ul style="list-style-type: none"> Body ground condition TCM connector terminals AS and AR voltage Specifications: B+
4	<ul style="list-style-type: none"> Disconnect shift solenoid connector. Turn ignition switch to ON. Inspect voltages between each shift solenoid connector terminal and ground in D, 2 and 1 ranges. (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION.) Specification Terminal B: B+ Terminal A: 0 V Are voltages okay? 	Yes <ul style="list-style-type: none"> Inspect shift solenoid terminal on automatic transmission for bending, damage, corrosion, or loose connection. Inspect for mechanically stuck shift solenoids. (See 05-13-18 Operating Inspection.) <ul style="list-style-type: none"> If shift solenoids are okay, overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.
		No Inspect for open or short circuit between TCM connector terminal and shift solenoid connector terminal.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

SYMPTOM TROUBLESHOOTING

NO.2 VEHICLE MOVES IN N POSITION

A5U050301026W06

2	Vehicle moves in N position
DESCRIPTION	<ul style="list-style-type: none"> Vehicle creeps in N position. Vehicle creeps if brake pedal is not depressed in N position
POSSIBLE CAUSE	<ul style="list-style-type: none"> If the vehicle moves in N position, basically, the malfunction is in the automatic transmission. Since a malfunction in the sensor circuit or output circuit is the cause of the malfunction in the automatic transmission, inspect the sensor, output circuit, and the related harnesses. <ol style="list-style-type: none"> Clutch is burned. (Move forward: Forward clutch, one-way clutch No.0, one-way clutch No.2, Move backward: Direct clutch, reverse brake, one-way clutch No.0) <ul style="list-style-type: none"> Line pressure is low Control valve body malfunction Selector lever position disparity <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	Does vehicle creep when selector lever is moved slightly in N position?	Yes
		No
		<ul style="list-style-type: none"> Overhaul control valve body and repair or replace any defective parts. <ul style="list-style-type: none"> If problem remains, replace or overhaul transmission and repair or replace any defective parts.
		Inspect and adjust selector lever. (See 05-14-6 SELECTOR LEVER ADJUSTMENT)

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.3 VEHICLE MOVES IN P POSITION, OR PARKING GEAR DOES NOT DISENGAGE WHEN P IS DISENGAGED

A5U050301026W07

3	Vehicle moves in P position, or parking gear does not disengage when P is disengaged
DESCRIPTION	<ul style="list-style-type: none"> Vehicle rolls when on a downward slope and tires do not lock in P position Tires are locked when P is disengaged, vehicle does not move in D, 2, 1 ranges, or R position when accelerator pedal is depressed, and engine remains in stall condition
POSSIBLE CAUSE	<ol style="list-style-type: none"> Parking mechanism (May have effect on noise or shock from transmission) malfunction Improper adjustment of selector lever If vehicle moves in N position, perform No.2 "VEHICLE MOVES IN N POSITION". <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.4 EXCESSIVE CREEP

A5U050301026W08

4	Excessive creep
DESCRIPTION	<ul style="list-style-type: none"> Vehicle accelerates in D, 2, 1 ranges, and R position without depressing accelerator pedal.
POSSIBLE CAUSE	<ol style="list-style-type: none"> Engine idle speed is high (transmission system is not cause of problem) Go to No.8 "NO TCC FUNCTION." (See 01-02A-13 DTC TABLE) <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

SYMPTOM TROUBLESHOOTING

NO.5 NO CREEP AT ALL

A5U050301026W09

5	No creep at all
DESCRIPTION	<ul style="list-style-type: none"> Vehicle does not move in D, 2, 1 ranges, or R position when idling on a flat paved road
POSSIBLE CAUSE	<ul style="list-style-type: none"> Either the transmission is stuck in 3GR or 4GR position, or there is clutch circuit slippage because the direct clutch is stuck. <ol style="list-style-type: none"> Clutch is burned <ul style="list-style-type: none"> Line pressure is low. Shift solenoid A malfunction Shift solenoid B malfunction Body ground malfunction Control valve body malfunction Transmission is fixed in 3GR or 4GR (Operation of fail-safe function) <ul style="list-style-type: none"> Short or open circuit in wiring Poor connection of connector Malfunction of the electronic parts of output and input system Insufficient starting torque <ul style="list-style-type: none"> Torque converter malfunction <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

05-03

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Does vehicle creep in any range/position except for P and N positions? 	Yes
		No
2	<ul style="list-style-type: none"> Turn ignition switch to ON. Inspect voltages between following TCM connector terminals and ground in D range. (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION.) Specification TCM terminal AQ: B+ TCM terminal AN: 0 V Are voltages okay? 	Yes
		No
3	<ul style="list-style-type: none"> Disconnect shift solenoid connector. Turn ignition switch to ON. Inspect voltages between each shift solenoid connector terminal and ground in D range: Specification Terminal B: B+ Terminal A: 0 V Are voltages okay? 	Yes
		No
4	<ul style="list-style-type: none"> Overhaul control valve body and repair or replace any defective parts. Is problem eliminated? 	Yes
		No

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

SYMPTOM TROUBLESHOOTING

NO.6 LOW MAXIMUM SPEED AND POOR ACCELERATION

A5U050301026W10

6	Low maximum speed and poor acceleration
DESCRIPTION	<ul style="list-style-type: none"> Vehicle acceleration is poor at start Delayed acceleration when accelerator is depressed while driving
POSSIBLE CAUSE	<ul style="list-style-type: none"> If the clutch is stuck or gear is fixed in 3GR or 4GR, the malfunction is in the engine circuit. <ol style="list-style-type: none"> Clutch slippage, burning <ul style="list-style-type: none"> Line pressure is low Throttle position sensor malfunction Output speed sensor malfunction Input/turbine speed sensor malfunction Sensor ground malfunction Shift solenoid A and/or B malfunction Body ground malfunction Control valve body malfunction Transmission is fixed in 3GR or 4GR (Operation of fail-safe function) <ul style="list-style-type: none"> Short or open circuit in wiring Poor connection of connector Malfunction of the electronic parts in output and input system Insufficient starting torque (Suspected when gear condition, shift control and engine circuit are normal) <ul style="list-style-type: none"> Torque converter (Poor operation, sticking) malfunction Engagement in TCC operation range (Operation of fail-safe function) <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Go to symptom troubleshooting No.11 "SHIFT POINT IS HIGH OR LOW" (See 01-02A-13 DTC TABLE) Does engine control system okay? 	Yes Go to next step.
		No Repair or replace any defective parts according to inspection results.
2	<ul style="list-style-type: none"> Disconnect shift solenoid connector. Does vehicle operate as follows? <ul style="list-style-type: none"> D range—4GR (fixed) 2 range—3GR (fixed) 1 range—1GR (fixed) R position—Reverse 	Yes Go to next step.
		No <ul style="list-style-type: none"> Overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.
3	<ul style="list-style-type: none"> Connect shift solenoid connector. Drive vehicle in D, 2, and 1 ranges (O/D OFF switch is off). Does vehicle start from stop in first gear? 	Yes Go to next step.
		No <ul style="list-style-type: none"> Inspect voltage at TCM connector terminals AQ and AN in D, 2, and 1 ranges. (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION.) <ul style="list-style-type: none"> If not, inspect body ground condition and TCM terminal AS and AR voltage (B+). If okay, inspect shift solenoid terminals for bending, damage, corrosion, or loose connection. Specification <ul style="list-style-type: none"> TCM terminal AQ: B+ TCM terminal AN: 0 V Inspect for continuity between following wiring harness: <ul style="list-style-type: none"> Shift solenoid ground circuit TCM terminal AQ—Shift solenoid terminal B TCM terminal AN—Shift solenoid terminal A

SYMPTOM TROUBLESHOOTING

STEP	INSPECTION	ACTION
4	<ul style="list-style-type: none"> Connect WDS or equivalent to data link connector-2. Access TP and VSS PIDs. Drive vehicle. Inspect following TCM connector terminal voltages at each shift point monitored by TP and VSS PIDs. (See 05-13-7 Typical Shift Diagram.) <ul style="list-style-type: none"> 1GR <ul style="list-style-type: none"> TCM terminal AQ: B+ TCM terminal AN: 0 V 2GR <ul style="list-style-type: none"> TCM terminal AQ: B+ TCM terminal AN: B+ 3GR <ul style="list-style-type: none"> TCM terminal AQ: 0 V TCM terminal AN: B+ 4GR <ul style="list-style-type: none"> TCM terminal AQ: 0 V TCM terminal AN: 0 V Are terminal voltages okay? 	Yes <ul style="list-style-type: none"> Replace torque converter. <ul style="list-style-type: none"> If problem remains, replace or overhaul automatic transmission and repair or replace any defective parts.
		No <ul style="list-style-type: none"> If no shift up from 1GR in D range: <ul style="list-style-type: none"> Inspect output speed sensor and related wiring harness. If shifts up from 1GR to 4GR in D range: <ul style="list-style-type: none"> Inspect shift solenoid B and related wiring harnesses. For other results: <ul style="list-style-type: none"> Inspect following TCM connector terminal voltages while driving in suspect condition: <ul style="list-style-type: none"> Throttle position sensor signal (TCM terminal U) Input/turbine speed sensor (TCM terminals W and Z) Output speed sensor (TCM terminals AE and AF) <ul style="list-style-type: none"> If okay, inspect shift solenoids

05-03

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.7 NO SHIFT

A5U050301026W11

7	No shift
DESCRIPTION	<ul style="list-style-type: none"> Single shift range only Sometimes shifts correctly
POSSIBLE CAUSE	<ul style="list-style-type: none"> If the gear position is fixed in 3GR (in 2 range) or 4GR (in D range) due to the fail-safe operation, the malfunction is in the automatic transmission. Perform malfunction diagnosis according to No.6 "LOW MAXIMUM SPEED AND POOR ACCELERATION". <ol style="list-style-type: none"> Clutch is burned. <ul style="list-style-type: none"> Line pressure is low Malfunction of output speed sensor malfunction <p>Note</p> <ul style="list-style-type: none"> Fix 1GR in D and 2 ranges if there is malfunction in output speed sensor <ul style="list-style-type: none"> Input/turbine speed sensor malfunction Sensor ground (TCM AP—ground) malfunction Shift solenoid A malfunction Shift solenoid B malfunction Body ground malfunction Control valve body malfunction <ol style="list-style-type: none"> 3GR (in 2 range) or 4GR (in D range) is fixed (operation in fail-safe function). <ul style="list-style-type: none"> Short or open circuit in wiring Poor connection of connector Disconnected shift solenoid connector Poor ground of shift solenoid <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

SYMPTOM TROUBLESHOOTING

Fail-safe function

Range	D range				2 range	1 range
Required gear position	1GR	2GR	3GR	4GR	2GR	1GR
Shift solenoid A malfunction	3GR	3GR	3GR	4GR	3GR	1GR
Shift solenoid B malfunction	1GR	4GR	4GR	4GR	3GR	1GR
Both shift solenoids A and B malfunction	4GR	4GR	4GR	4GR	3GR	1GR
Output speed sensor malfunction	1GR	1GR	1GR	1GR	1GR	2GR

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.8 NO TCC FUNCTION

A5U050301026W12

8	No TCC function
DESCRIPTION	<ul style="list-style-type: none"> TCC does not operate even though vehicle speed is increased.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Basically, the TCC does not operate when the fail-safe is operating. Verify the diagnostic trouble code at first. If the TCC operates when driving at high speeds only, the malfunction (improper adjustment) is in the O/D OFF switch circuit or transmission range switch circuit. Caution <ul style="list-style-type: none"> If the torque converter clutch or piston is stuck, inspect them. In addition, inspect the oil cooler for foreign particles which may have mixed in with the ATF. 1. TCC piston slippage, burn <ul style="list-style-type: none"> Line pressure is low Throttle position sensor malfunction Engine coolant temperature sensor malfunction Output speed sensor malfunction Input/turbine speed sensor malfunction Sensor ground malfunction 2. Transmission range switch malfunction <ul style="list-style-type: none"> Short or open circuit in wiring Poor connection of connector Sensor malfunction Selector lever adjustment is incorrect Transmission range switch adjustment is incorrect 3. TCC control solenoid valve malfunction <ul style="list-style-type: none"> Short or open circuit in wiring Poor connection of connector Solenoid valve is stuck 4. O/D OFF switch malfunction 5. Torque converter malfunction 6. Control valve body malfunction <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION	
1	<ul style="list-style-type: none">• Drive vehicle in D range and inspect following:<ul style="list-style-type: none">— 1-2 shift up and down— 2-3 shift up and down— 3-4 shift up and down• Are all shift up and down possible?	Yes	Go to next step.
		No	<p>No shift at all</p> <ul style="list-style-type: none">• Go to symptom troubleshooting No.7 “NO SHIFT”. <p>No shift from 1GR in D rage</p> <ul style="list-style-type: none">• Inspect output speed sensor. <p>3GR and 4GR are only available in D range.</p> <ul style="list-style-type: none">• Inspect shift solenoid A and related harness. <p>4GR is only available in D range.</p> <ul style="list-style-type: none">• Inspect both shift solenoids A and B.• Inspect shift solenoid related wiring harness including shift solenoid ground. <p>Abnormal shift</p> <ul style="list-style-type: none">• Go to symptom troubleshooting No.9 “ABNORMAL SHIFT”.

SYMPTOM TROUBLESHOOTING

STEP	INSPECTION		ACTION
2	<ul style="list-style-type: none"> Connect WDS or equivalent to data link connector-2. Access VSS and TP PIDs. Connect voltmeter to TCM connector terminal AO. Inspect if TCM connector terminal AO voltage is B+ in torque converter clutch operating condition while monitoring VSS and TP PIDs. (See 05-13-7 Typical Shift Diagram.) Is voltage okay? 	Yes	<ul style="list-style-type: none"> Inspect for open or short circuit between TCM connector terminal AO and shift solenoid connector terminal C. Repair or replace if necessary. Inspect if torque converter clutch solenoid valve is stuck. (See 05-13-18 Operating Inspection.) Then, go to next step.
		No	<ul style="list-style-type: none"> Inspect TCM connector terminals for bending, damage, corrosion, or loose connection. Inspect following TCM connector terminal voltages while driving in suspect condition. (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION) <ul style="list-style-type: none"> D range signal (TCM terminal C) Input/turbine speed sensor signal (TCM terminals W and Z) Ground (TCM terminal AP) Output speed sensor signal (TCM terminals AE and AF) Throttle position sensor signal (TCM terminal U) Repair or replace any defective parts.
3	<ul style="list-style-type: none"> Overhaul control valve body and repair or replace any defective parts. Is problem eliminated? 	Yes	AT is now normal.
		No	<ul style="list-style-type: none"> Replace torque converter. <ul style="list-style-type: none"> If problem remains, replace or overhaul transmission and repair or replace any defective parts

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.9 ABNORMAL SHIFT

A5U050301026W13

9	Abnormal shift
DESCRIPTION	<ul style="list-style-type: none"> Shifts incorrectly. (incorrect shift pattern)
POSSIBLE CAUSE	<ul style="list-style-type: none"> There is a malfunction in the signal circuit which controls shifting (throttle position sensor, input/turbine speed sensor, and output speed sensor), the control valve is stuck, or the clutch circuit is stuck. <ol style="list-style-type: none"> Clutch slippage, burn <ul style="list-style-type: none"> Line pressure is low Misadjustment of throttle position sensor malfunction Output speed sensor malfunction Input/turbine speed sensor malfunction Sensor ground malfunction Shift solenoid A malfunction Shift solenoid B malfunction Torque converter clutch solenoid valve malfunction Body ground malfunction Throttle cable malfunction Control valve body malfunction <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	<ul style="list-style-type: none"> Inspect for continuity between TCM connector terminal AP and ground. Is there continuity? 	Yes	Go to next step.
		No	Repair or replace ground circuit.

05-03

SYMPTOM TROUBLESHOOTING

STEP	INSPECTION	ACTION	
2	<ul style="list-style-type: none"> Make sure abnormal shift driving condition Inspect for any abnormal signal change at the following TCM terminals when abnormal shift occurs: <ul style="list-style-type: none"> — D, 2, or 1 range signal (TCM C, B, or A) — Throttle position sensor signal (TCM terminal U) — Output speed sensor signal (TCM terminals AE and AF) — Input/turbine speed sensor signal (TCM terminals W and Z) Are all signals okay? 	Yes	Go to next step.
		No	Inspect related wiring harness and sensor for intermittent open or short circuit.
3	<ul style="list-style-type: none"> Connect WDS or equivalent to data link connector-2. Access TP and VSS PIDs. Drive vehicle. Inspect following TCM connector terminal voltage at each shift point while monitoring TP and VSS PIDs: (See 05-13-7 Typical Shift Diagram.) <ul style="list-style-type: none"> — 1GR <ul style="list-style-type: none"> • TCM terminal AQ: B+ • TCM terminal AN: 0 V — 2GR <ul style="list-style-type: none"> • TCM terminal AQ: B+ • TCM terminal AN: B+ — 3GR <ul style="list-style-type: none"> • TCM terminal AQ: 0 V • TCM terminal AN: B+ — 4GR <ul style="list-style-type: none"> • TCM terminal AQ: 0 V • TCM terminal AN: 0 V Are terminal voltages okay? 	Yes	Inspect for continuity between TCM connector terminal and shift solenoid connector terminal. Inspect if shift solenoid is stuck. (See 05-13-18 Operating Inspection.) <ul style="list-style-type: none"> If okay, overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.
		No	Inspect for bending, damage, corrosion, or loose connection TCM terminal.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.10 FREQUENT SHIFTING

A5U050301026W14

10	Frequent shifting
DESCRIPTION	<ul style="list-style-type: none"> Downshifting occurs immediately even when accelerator pedal is depressed slightly in D, 2, 1 ranges. (O/D OFF switch is off.)
POSSIBLE CAUSE	<ul style="list-style-type: none"> The circuit is the cause and possible cause is basically the same as for No.9 "ABNORMAL SHIFT". However, a malfunction of the input signal to the throttle position sensor, input/turbine speed sensor, output speed sensor (including the sensor ground, sensor harness and connector), or clutch slippage (clutch stuck, low pressure in line) may also be the cause. <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

SYMPTOM TROUBLESHOOTING

NO.11 SHIFT POINT IS HIGH OR LOW

A5U050301026W15

11	Shift point is high or low
DESCRIPTION	<ul style="list-style-type: none"> Shift point considerably different from automatic shift diagram. Shifts delayed when accelerating. Shift occurs quickly when accelerating and engine speed does not increase.
POSSIBLE CAUSE	<ul style="list-style-type: none"> If the transmission does not shift normally, there is a malfunction of the input signal to the throttle position sensor, input/turbine speed sensor, or output speed sensor. If the engine speed is high or low regardless that shifting is normal, inspect the tachometer. Verify that the output signal of the throttle position sensor changes linearly. <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

05-03

NO.12 NO KICKDOWN

A5U050301026W16

12	No kickdown
DESCRIPTION	<ul style="list-style-type: none"> Does not downshift when accelerator pedal is fully depressed within kickdown range.
POSSIBLE CAUSE	<ul style="list-style-type: none"> If the transmission does not downshift though shifting is normal, the malfunction is in the throttle position sensor circuit (including the sensor ground, sensor harness and connector). <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.13 ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING

A5U050301026W17

13	Engine flares up or slips when upshifting or downshifting
DESCRIPTION	<ul style="list-style-type: none"> When accelerator pedal is depressed for driveaway, engine speed increases normally but vehicle speed increases slowly. When accelerator pedal is depressed while driving, engine speed increases but vehicle speed does not increase.
POSSIBLE CAUSE	<ul style="list-style-type: none"> There is clutch slippage because the clutch is stuck or the line pressure is low. <ol style="list-style-type: none"> Clutch stuck, slippage (Forward clutch, direct clutch, 4GR brake, brake No.2, one-way clutch No.0, one-way clutch No.1, one-way clutch No.2) <ul style="list-style-type: none"> Line pressure is low Misadjustment of throttle position sensor malfunction Output speed sensor malfunction Input/turbine speed sensor malfunction Sensor ground malfunction Shift solenoid A malfunction Shift solenoid B malfunction TCC solenoid valve malfunction Body ground malfunction Throttle cable malfunction Control valve body malfunction Poor operation of mechanical pressure <ul style="list-style-type: none"> Selector lever position disparity Transmission range switch position disparity <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

SYMPTOM TROUBLESHOOTING

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Is line pressure okay? (See 05–13–5 Line Pressure Test.) 	Yes Go to next step.
		No Repair or replace any defective parts according to inspection results.
2	<ul style="list-style-type: none"> Is shift point okay? (See 05–13–7 ROAD TEST) 	Yes Go to next step.
		No Go to No.9 "ABNORMAL SHIFT".
3	<ul style="list-style-type: none"> Inspect whether shift solenoids A and B are mechanically stuck. (See 05–13–18 Operating Inspection.) Are both shift solenoids okay? 	Yes Inspect TCM connector terminal and shift solenoid connector terminals for bending, damage, corrosion, or loose connection. Inspect also shift solenoid ground condition. <ul style="list-style-type: none"> If all items are okay, overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.
		No Replace shift solenoid. (See 05–13–18 SOLENOID VALVES REMOVAL/ INSTALLATION)

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.14 ENGINE FLARES UP OR SLIPS WHEN ACCELERATING VEHICLE

A5U050301026W18

14	Engine flares up or slips when accelerating vehicle
DESCRIPTION	<ul style="list-style-type: none"> Engine flares up when accelerator pedal is depressed for upshifting. Engine flares up suddenly when accelerator pedal is depressed for downshifting.
POSSIBLE CAUSE	<ul style="list-style-type: none"> The malfunction is basically the same as for No.13 "ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING". If condition for No.13 worsens, the malfunction will develop into No.14. <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.15 JUDDER UPON TCC OPERATION

A5U050301026W19

15	Judder upon TCC operation
DESCRIPTION	<ul style="list-style-type: none"> Vehicle jolts when TCC is engaged.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Poor torque converter clutch engagement due to slippage because either the TCC piston is stuck or the line pressure is low. <p>Note</p> <ul style="list-style-type: none"> If the TCC or piston are stuck, inspect them. In addition, inspect the oil cooler for foreign particles which may have mixed in with the ATF. <ol style="list-style-type: none"> TCC piston slippage, burning <ul style="list-style-type: none"> Line pressure is low Misadjustment of throttle position sensor malfunction Output speed sensor malfunction Input/turbine speed sensor malfunction Sensor ground malfunction TCC solenoid valve malfunction Control valve body malfunction Torque converter malfunction <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

SYMPTOM TROUBLESHOOTING

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Inspect for abnormal signal change at following TCM connector terminal when judder occurs: <ul style="list-style-type: none"> Throttle position sensor signal (TCM terminal U) Output speed sensor signal (TCM terminals AE and AF) Input/turbine speed sensor signal (TCM terminals W and Z) Are all signals okay? 	Yes Go to next step.
		No Inspect related wiring harness and sensor for intermittent open or short circuit.
2	<ul style="list-style-type: none"> Connect WDS or equivalent to data link connector-2. Access VSS and TP PIDs. Inspect TCM connector terminal AO voltage in TCC operating condition while monitoring VSS and TP PIDs. (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION) Specification: B+ in TCC condition Does voltage change from 0 V to B+ with correct TCC timing? 	Yes <ul style="list-style-type: none"> Inspect for continuity between TCM connector terminal AO and TCC solenoid valve terminal C. Inspect if TCC solenoid valve is stuck. (See 05-13-18 Operating Inspection.) — If okay, go to next step.
		No <ul style="list-style-type: none"> Inspect TCM connector terminal for bending, damage, corrosion, or loose connection. Inspect for short to ground between TCC solenoid valve connector terminal C and TCM connector terminal AO.
3	<ul style="list-style-type: none"> Overhaul control valve body and repair or replace any defective parts. Is problem eliminated? 	Yes AT is now normal.
		No Replace torque converter.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.16 EXCESSIVE N TO D OR N TO R POSITION/RANGE SHIFT SHOCK

A5U050301026W20

16	Excessive N to D or N to R position/range shift shock
DESCRIPTION	<ul style="list-style-type: none"> Strong shock is felt when shifting from N to D or N to R position/range at idle.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Shift shock may worsen when the fail-safe is operating. If no diagnostic trouble code is output, the shift shock may worsen due to poor operation of the control valve body or sticking of the clutch. <ol style="list-style-type: none"> Clutch is burned (N→D: Forward clutch, N→R: Reverse brake or direct clutch) <ul style="list-style-type: none"> Line pressure is low Throttle position sensor malfunction Sensor ground malfunction Throttle cable malfunction Control valve body malfunction Poor hydraulic operation (Malfunction in range change) Idle speed is high Poor tightening torque of engine mount or exhaust mount <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Does shift shock occur only when engine is cold? 	Yes Inspect following TCM connector terminal voltages: (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION) <ul style="list-style-type: none"> Throttle position sensor signal (TCM terminal U) Ground (TCM terminal AP)
		No Go to next step.
2	<ul style="list-style-type: none"> Is line pressure okay? (See 05-13-5 Line Pressure Test.) 	Yes Go to next step.
		No Repair or replace any defective parts according to inspection results.

05-03

SYMPTOM TROUBLESHOOTING

STEP	INSPECTION		ACTION
3	<ul style="list-style-type: none"> Is stall speed okay? (See 05-13-6 Stall Test) 	Yes	Go to next step.
		No	Repair or replace any defective parts according to inspection results.
4	<ul style="list-style-type: none"> Turn ignition switch to ON. Inspect TCM connector terminal AP voltage: (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION) Is voltage okay? 	Yes	<ul style="list-style-type: none"> Inspect ground condition. Overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.
		No	<ul style="list-style-type: none"> Adjust throttle position sensor if necessary. Replace throttle position sensor if necessary.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.17 EXCESSIVE SHIFT SHOCK WHEN UPSHIFTING AND DOWNSHIFTING

A5U050301026W21

17	Excessive shift shock when upshifting and downshifting	
DESCRIPTION	<ul style="list-style-type: none"> Excessive shift shock is felt when depressing accelerator pedal at upshifting. During cruising, excessive shift shock is felt when depressing accelerator pedal at downshifting. 	
POSSIBLE CAUSE	<ul style="list-style-type: none"> Shift shock may worsen when the fail-safe is operating. The shift shock has worsened if the throttle position sensor, input/turbine speed sensor, or output speed sensor signal malfunctions. <ol style="list-style-type: none"> Clutch slippage, burning <ul style="list-style-type: none"> Line pressure is low or high Throttle position sensor malfunction Output speed sensor malfunction Input/turbine speed sensor malfunction Shift solenoid A malfunction Shift solenoid B malfunction TCC solenoid valve malfunction Throttle cable malfunction Body ground and sensor ground malfunction Control valve body malfunction Poor hydraulic operation (Malfunction in range change) <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted. 	

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	<ul style="list-style-type: none"> Is line pressure okay? 05-13-5 Line Pressure Test. 	Yes	Go to next step.
		No	Repair or replace any defective parts according to inspection results.
2	<ul style="list-style-type: none"> Is stall speed okay? (See 05-13-6 Stall Test) 	Yes	Go to next step.
		No	Repair or replace any defective parts according to inspection results.
3	<ul style="list-style-type: none"> Inspect for abnormal signal change at following TCM connector terminal while upshifting or downshifting: <ul style="list-style-type: none"> Throttle position sensor signal (TCM terminal U) Output speed sensor (TCM terminals AE and AF) Input/turbine speed sensor signal (TCM terminals W and Z) Are all signals okay? 	Yes	Go to next step.
		No	Inspect related wiring harness and sensor for intermittent open or short circuit.

SYMPTOM TROUBLESHOOTING

STEP	INSPECTION	ACTION
4	<ul style="list-style-type: none"> Inspect whether shift solenoids are mechanically stuck. (See 05-13-18 Operating Inspection.) Are shift solenoids okay? 	Yes <ul style="list-style-type: none"> Inspect for continuity between appropriate shift solenoid connector terminal and appropriate TCM connector terminal. <ul style="list-style-type: none"> If okay, overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.
		No <ul style="list-style-type: none"> Replace shift solenoid.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.18 EXCESSIVE TCC SHIFT SHOCK

A5U050301026W22

18	Excessive TCC shift stock
DESCRIPTION	<ul style="list-style-type: none"> Strong shock is felt when torque converter clutch is engaged.
POSSIBLE CAUSE	1. The troubleshooting flow is the same as for No.15 "Judder upon TCC operation" Note <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

05-03

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.19 NOISE AT IDLE WHEN VEHICLE IS STOPPED IN ALL POSITION/RANGES

A5U050301026W23

19	Noise at idle when vehicle is stopped in all position/ranges
DESCRIPTION	<ul style="list-style-type: none"> Transmission is noisy in all positions and ranges when vehicle is idling.
POSSIBLE CAUSE	<ul style="list-style-type: none"> The malfunction is in the oil pump which causes a high-pitched noise to be emitted from the transmission at idle. Note <ul style="list-style-type: none"> If a noise is emitted during shifting only, the malfunction is in shift solenoid A, B, or TCC solenoid valve. If a noise is emitted during shifting at certain gears only or during deceleration only, it is gear noise. Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Inspect engine condition. Is there anything wrong with the engine? 	Yes <ul style="list-style-type: none"> Go to appropriate symptom troubleshooting. (See 01-02A-13 DTC TABLE)
		No <ul style="list-style-type: none"> Inspect installation condition of engine and transmission mounts. Inspect also for AT cooler pipe vibration. <ul style="list-style-type: none"> If okay, overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

SYMPTOM TROUBLESHOOTING

NO.20 NOISE AT IDLE WHEN VEHICLE IS STOPPED IN D, 2, 1 RANGES OR IN R POSITION

A5U050301026W24

20	Noise at idle when vehicle is stopped in D, 2, 1 ranges or in R position
DESCRIPTION	<ul style="list-style-type: none"> Transmission is noisy in driving ranges when vehicle is idling.
POSSIBLE CAUSE	<ol style="list-style-type: none"> Although the malfunction is basically the same as No.19 "NOISE AT IDLE WHEN VEHICLE IS STOPPED IN ALL POSITIONS/RANGES", other causes may be selector lever position disparity or transmission range switch position disparity. <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.21 NO ENGINE BRAKING IN 1, 2, OR 3 GEAR

A5U050301026W25

21	No engine braking in 1, 2, or 3 gear
DESCRIPTION	<ul style="list-style-type: none"> Engine speed drops to idle but vehicle coasts when accelerator pedal is released during cruising at medium to high speeds. Engine speed drops to idle but vehicle coasts when accelerator pedal is released in 1 range at low vehicle speed.
POSSIBLE CAUSE	<ol style="list-style-type: none"> Clutch slippage, burning (brake No.1, reverse brake) <ul style="list-style-type: none"> Line pressure is low Output speed sensor malfunction Input/turbine speed sensor malfunction Sensor ground malfunction Control valve body malfunction Selector lever malfunction "O/D OFF switch is on" is not judged by TCM (short or open circuit, or poor operation) <ul style="list-style-type: none"> Malfunction of O/D OFF switch signal <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Inspect adjustment of TR switch. Is TR switch adjusted properly? 	Yes Go to next step.
		No <ul style="list-style-type: none"> Inspect transmission range switch adjustment. (See 05-13-16 TRANSMISSION RANGE (TR) SWITCH ADJUSTMENT) Adjust transmission range switch if necessary. Inspect transmission range switch. Repair or replace any defective parts.
2	<ul style="list-style-type: none"> Do following symptoms concurrently occur? <ul style="list-style-type: none"> Engine flares up or slips during acceleration. Engine flares up or slips when shifting. 	Yes Go to symptom troubleshooting No.13 "ENGINE FLARES UP OR SLIPS WHEN UPSHIFTING OR DOWNSHIFTING" or No.14 "ENGINE FLARES UP OR SLIPS WHEN ACCELERATING VEHICLE".
		No Go to next step.
3	<ul style="list-style-type: none"> Inspect voltages at following TCM connector terminals: (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION) <ul style="list-style-type: none"> TCC solenoid valve signal (TCM terminal AO) Input/turbine speed sensor signal (TCM terminals W and Z) Output speed sensor signal (TCM terminals AE and AF) Are voltages okay? 	Yes <ul style="list-style-type: none"> Overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.
		No Inspect for intermittent open or short circuit on related wiring harness and/or sensor.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

SYMPTOM TROUBLESHOOTING

NO.22 TRANSMISSION OVERHEATS

A5U050301026W26

22	Transmission overheats
DESCRIPTION	<ul style="list-style-type: none"> Burnt smell is emitted from transmission. Smoke is emitted from transmission.
POSSIBLE CAUSE	<ul style="list-style-type: none"> The malfunction is restricted to hindrance of coolant at the oil cooler. <ol style="list-style-type: none"> Line pressure is low <ul style="list-style-type: none"> ATF level is low Throttle position sensor malfunction Misadjustment of throttle cable Oil cooler malfunction (Foreign material mixed in with ATF) Excessive amount of ATF <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Is line pressure okay? (See 05-13-5 Line Pressure Test.) 	Yes Go to next step.
		No Repair or replace any defective parts according to inspection results.
2	<ul style="list-style-type: none"> Perform stall test. (See 05-13-6 Stall Test) Is stall speed okay? 	Yes Go to next step.
		No Repair or replace any defective parts according to inspection results.
3	<ul style="list-style-type: none"> Inspect oil cooler pipes for bending, damage, corrosion or kinks. Are oil cooler pipes okay? 	Yes <ul style="list-style-type: none"> Overhaul control valve body and repair or replace any defective parts. If problem remains, replace or overhaul transmission and repair or replace any defective parts.
		No Replace any defective parts.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.23 ENGINE STALLS WHEN SHIFTED TO D, 2, 1 RANGES, AND/OR IN R POSITION

A5U050301026W27

23	Engine stalls when shifted to D, 2, 1 ranges, and/or R position
DESCRIPTION	<ul style="list-style-type: none"> Engine stalls when shifting from N to P position to D, 2, 1 ranges or R position at idle.
POSSIBLE CAUSE	<ol style="list-style-type: none"> The malfunction is on engine control side (i.e. IAC control). Otherwise, the malfunction is in TCC circuit (engine always stalls) <p>Note</p> <ul style="list-style-type: none"> Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> Go to symptom troubleshooting No.4 "ENGINE STALLS" (See 01-02A-13 DTC TABLE.) Is engine control system okay? 	Yes Go to next step.
		No Repair or replace any defective parts according to inspection results.
2	<ul style="list-style-type: none"> Inspect TCM connector terminal AO voltage. (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION) Is terminal voltage okay? 	Yes Inspect if TCC solenoid valve is stuck mechanically. (See 05-13-18 Operating Inspection.) <ul style="list-style-type: none"> If okay, go to next step.
		No Inspect for intermittent short to power circuit between TCC connector terminal AO and TCC solenoid valve connector terminal.
3	<ul style="list-style-type: none"> Inspect oil cooler line pipes for bending, damage or kinks. — If okay, overhaul control valve body and repair or replace any defective parts. Is problem eliminated? 	Yes AT is now normal.
		No <ul style="list-style-type: none"> Replace torque converter. If problem remains, replace or overhaul transmission and repair or replace any defective parts.

SYMPTOM TROUBLESHOOTING

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.24 ENGINE STALLS WHEN DRIVING AT SLOW SPEEDS OR STOPPING

A5U050301026W28

24	Engine stalls when driving at slow speeds or stopping
DESCRIPTION	<ul style="list-style-type: none"> • Engine stalls when brake pedal is depressed while driving at low speeds or stopping.
POSSIBLE CAUSE	<ul style="list-style-type: none"> • The malfunction is on the engine control side (fuel injection control, IAC control). <p>Note</p> <ul style="list-style-type: none"> • Before following the troubleshooting steps, make sure that the on-board diagnosis and basic inspection have been conducted.

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> • Go to symptom troubleshooting No.9 "ABNORMAL SHIFT". (See 01-02A-13 DTC TABLE) • Is engine control system okay? 	Yes Go to symptom troubleshooting No.23 "ENGINE STALLS WHEN SHIFTED TO D, 2, 1 RANGE, AND/OR IN R POSITION".
		No Repair or replace any defective parts according to inspection results.

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

NO.25 O/D OFF INDICATOR LIGHT DOES NOT ILLUMINATE WHEN O/D OFF SWITCH IS TURNED ON

A5U050301026W29

25	O/D OFF indicator light does not illuminate when O/D off switch is turned on
DESCRIPTION	<ul style="list-style-type: none"> • O/D OFF indicator light in dashboard does not illuminate when O/D OFF switch is turned on and ignition switch is at ON.
POSSIBLE CAUSE	<ul style="list-style-type: none"> • O/D OFF switch or related wiring harness malfunction

Diagnostic Procedure

STEP	INSPECTION	ACTION
1	<ul style="list-style-type: none"> • Are other indicator lights illuminated with ignition switch at ON? 	Yes Inspect meter fuse.
		No Go to next step.
2	<ul style="list-style-type: none"> • Inspect O/D OFF switch. (See 05-13-13 O/D OFF SWITCH INSPECTION) • Is O/D OFF switch okay? 	Yes Go to next step.
		No Replace O/D OFF switch. (See 05-13-14 O/D OFF SWITCH REMOVAL/ INSTALLATION)
3	<ul style="list-style-type: none"> • Inspect TCM connector terminal L voltage. (See 05-13-20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION) • Is terminal voltage okay? 	Yes Go to next step.
		No Inspect for continuity between O/D OFF switch and TCM terminal K.
4	<ul style="list-style-type: none"> • Remove O/D OFF indicator light. • Is O/D OFF indicator light bulb burned out? 	Yes Replace O/D OFF indicator light.
		No Inspect for open circuit or disconnected connector in following harness: <ul style="list-style-type: none"> • Ignition switch and O/D OFF indicator light • O/D OFF indicator light and TCM terminal L including instrument cluster circuit board

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.

SYMPTOM TROUBLESHOOTING

NO.26 O/D OFF INDICATOR LIGHT ILLUMINATES WHEN O/D OFF SWITCH IS NOT TURNED ON

A5U050301026W30

26	O/D OFF indicator light illuminates when O/D OFF switch is not turned on
DESCRIPTION	<ul style="list-style-type: none"> O/D OFF indicator light in dashboard illuminates even though O/D OFF switch is turned off and ignition switch is at ON.
POSSIBLE CAUSE	<ul style="list-style-type: none"> O/D OFF switch or related wiring harness malfunction

Diagnostic Procedure

STEP	INSPECTION		ACTION
1	<ul style="list-style-type: none">Inspect O/D OFF switch. (See 05–13–13 O/D OFF SWITCH INSPECTION.)Is O/D OFF switch okay?	Yes	Go to next step.
		No	Replace O/D OFF switch. (See 05–13–14 O/D OFF SWITCH REMOVAL/ INSTALLATION.)
2	<ul style="list-style-type: none">Inspect TCM connector terminal L voltage. (See 05–13–20 TRANSMISSION CONTROL MODULE (TCM) INSPECTION.)Is terminal voltage okay?	Yes	Inspect for short to ground circuit between O/D OFF switch terminal and TCM terminal K.
		No	Inspect for short to ground circuit between O/D OFF indicator light on instrument cluster and TCM connector terminal L including instrument cluster circuit board.

05-03

Note

- If the malfunction remains even though all inspections have been performed, get assistance from technical hot line/your distributors.