SECTION CVT

CVT

MURDG2B/1/1

EXCEPT FOR AUSTRALIA

Items (CONSULT-II screen terms)	DTC	Reference page
A/T TCC S/V FNCTN	P0744	CVT-81
ATF TEMP SEN/CIRC	P0710	CVT-68
BELT DAMG	P0730	CVT-77
BRAKE SW/CIRC	P0703	CVT-63
CAN COMM CIRCUIT	U1000	CVT-59
CVT SPD SEN/FNCTN	P1723	CVT-107
ENGINE SPEED SIG	P0725	CVT-76
ELEC TH CONTROL	P1726	CVT-108
ESTM VEH SPD SIG	P1722	CVT-106
INPUT SPD SEN/CIRC	P0715	CVT-71
L/PRESS CONTROL	P1745	CVT-112
L/PRESS SOL/CIRC	P0745	CVT-82
LU-SLCT SOL/CIRC	P1740	CVT-109
MANUAL MODE SWITCH	P0826	CVT-90
PNP SW/CIRC	P0705	CVT-64
PRESS SEN/FNCTN	P0841	CVT-97
PRS CNT SOL/A FCTN	P0746	CVT-85
PRS CNT SOL/B CIRC	P0778	CVT-87
PRS CNT SOL/B FCTN	P0776	CVT-86
SEC/PRESS DOWN	P0868	CVT-101
STARTER RELAY/CIRC	P0615	CVT-61
STEP MOTR CIRC	P1777	CVT-113
STEP MOTR/FNC	P1778	CVT-116
TCC SOLENOID/CIRC	P0740	CVT-78
TCM-POWER SUPPLY	P1701	CVT-102
TP SEN/CIRC A/T	P1705	CVT-105
TR PRS SENS/A CIRC	P0840	CVT-94
TR PRS SENS/B CIRC	P0845	CVT-98
VEH SPD SEN/CIR AT	P0720	CVT-74

EXCEPT FOR AUSTRALIA

DTC	Items (CONSULT-II screen terms)	Reference page
P0615	STARTER RELAY/CIRC	CVT-61
P0703	BRAKE SW/CIRC	CVT-63
P0705	PNP SW/CIRC	CVT-64
P0710	ATF TEMP SEN/CIRC	CVT-68
P0715	INPUT SPD SEN/CIRC	CVT-71
P0720	VEH SPD SEN/CIR AT	CVT-74
P0725	ENGINE SPEED SIG	CVT-76
P0730	BELT DAMG	CVT-77
P0740	TCC SOLENOID/CIRC	CVT-78
P0744	A/T TCC S/V FNCTN	CVT-81
P0745	L/PRESS SOL/CIRC	CVT-82
P0746	PRS CNT SOL/A FCTN	CVT-85
P0776	PRS CNT SOL/B FCTN	CVT-86
P0778	PRS CNT SOL/B CIRC	CVT-87
P0826	MANUAL MODE SWITCH	CVT-90
P0840	TR PRS SENS/A CIRC	CVT-94
P0841	PRESS SEN/FNCTN	CVT-97
P0845	TR PRS SENS/B CIRC	CVT-98
P0868	SEC/PRESS DOWN	CVT-101
P1701	TCM-POWER SUPPLY	CVT-102
P1705	TP SEN/CIRC A/T	CVT-105
P1722	ESTM VEH SPD SIG	CVT-106
P1723	CVT SPD SEN/FNCTN	CVT-107
P1726	ELEC TH CONTROL	CVT-108
P1740	LU-SLCT SOL/CIRC	CVT-109
P1745	L/PRESS CONTROL	CVT-112
P1777	STEP MOTR CIRC	CVT-113
P1778	STEP MOTR/FNC	CVT-116
U1000	CAN COMM CIRCUIT	CVT-59

TROUBLE DIAGNOSIS

PFP:00004

DTC Inspection Priority Chart

ACS00ADQ

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

NOTE:
If DTC "U1000 CAN COMM CIRCUIT" is displayed with other DTCs, first perform the trouble diagnosis for "DTC U1000 CAN COMMUNICATION LINE". Refer to CVT-59 .

Priority	Detected items (DTC)
1	U1000 CAN communication line
2	Except above

Fail-safe

ACS00ADR

The TCM has an electrical fail-safe mode. This mode makes it possible to operate even if there is an error in a main electronic control input/output signal circuit.

FAIL-SAFE FUNCTION

If any malfunction occurs in a sensor or solenoid, this function controls the CVT to make driving possible.

Output Speed Sensor (Secondary Speed Sensor)

The shift pattern is changed in accordance with throttle position when an unexpected signal is sent from the output speed sensor (secondary speed sensor) to the TCM. The manual mode position and second position is inhibited, and the transaxle is put in "D".

Input Speed Sensor (Primary Speed Sensor)

The shift pattern is changed in accordance with throttle position and secondary speed (vehicle speed) when an unexpected signal is sent from the input speed sensor (primary speed sensor) to the TCM. The manual mode position and second position is inhibited, and the transaxle is put in "D".

PNP Switch

If an unexpected signal is sent from the PNP switch to the TCM, the transaxle is put in "D".

Manual Mode Switch

If an unexpected signal is sent from the manual mode switch to the TCM, the transaxle is put in "D".

CVT Fluid Temperature Sensor

If an unexpected signal is sent from the CVT fluid temperature sensor to the TCM, the gear ratio in use before receiving the unexpected signal is maintained or the gear ratio is controlled to keep engine speed under 5,000 rpm.

Transmission Fluid Pressure Sensor A (Secondary Pressure Sensor)

- If an unexpected signal is sent from the transmission fluid pressure sensor A (secondary pressure sensor) to the TCM, the secondary pressure feedback control is stopped and the offset value obtained before the non-standard condition occurs is used to control line pressure.
- If transmission fluid pressure sensor A (secondary pressure sensor) error signal is input to TCM, secondary pressure feedback control stops, but line pressure is controlled normally.

Pressure Control Solenoid A (Line Pressure Solenoid)

If an unexpected signal is sent from the solenoid to the TCM, the pressure control solenoid A (line pressure solenoid) is turned OFF to achieve the maximum fluid pressure.

Pressure Control Solenoid B (Secondary Pressure Solenoid)

If an unexpected signal is sent from the solenoid to the TCM, the pressure control solenoid B (secondary pressure solenoid) is turned OFF to achieve the maximum fluid pressure.

Torque Converter Clutch Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the torque converter clutch solenoid is turned OFF to cancel the lock-up.

Step Motor

If an unexpected signal is sent from the step motor to the TCM, the step motor coil phases “A” through “D” are all turned OFF to hold the gear ratio used right before the non-standard condition occurred.

CVT Lock-up Select Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the CVT lock-up select solenoid is turned OFF to cancel the lock-up.

TCM Power Supply (Memory Back-up)

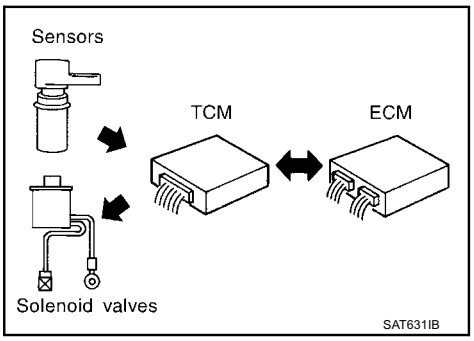
Transaxle assembly is protected by limiting the engine torque when the memory back-up power supply (for controlling) from the battery is not supplied to TCM. Normal statues is restored when turning the ignition switch OFF to ON after the normal power supply.

How to Perform Trouble Diagnosis for Quick and Accurate Repair

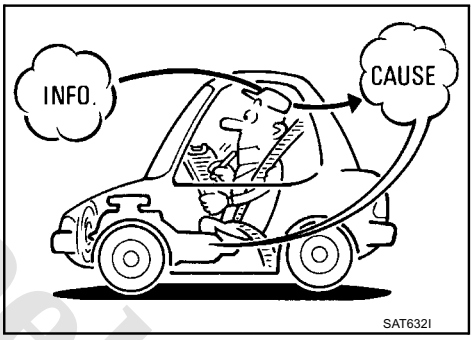
ACS00ADS

INTRODUCTION

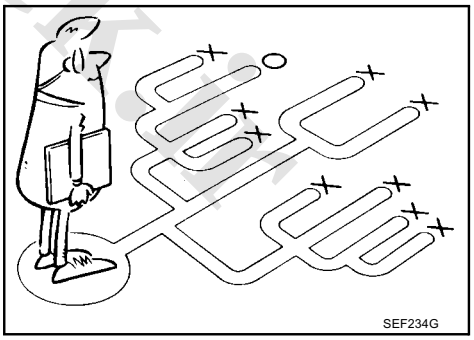
The TCM receives a signal from the vehicle speed sensor, PNP switch and provides shift control or lock-up control via CVT solenoid valves.
Input and output signals must always be correct and stable in the operation of the CVT system. The CVT system must be in good operating condition and be free of valve seizure, solenoid valve malfunction, etc.



It is much more difficult to diagnose an error that occurs intermittently rather than continuously. Most intermittent errors are caused by poor electric connections or improper wiring. In this case, careful checking of suspected circuits may help prevent the replacement of good parts.
A visual check only may not find the cause of the errors. A road test with CONSULT-II or a circuit tester connected should be performed.
Follow the CVT-24, "WORK FLOW" .



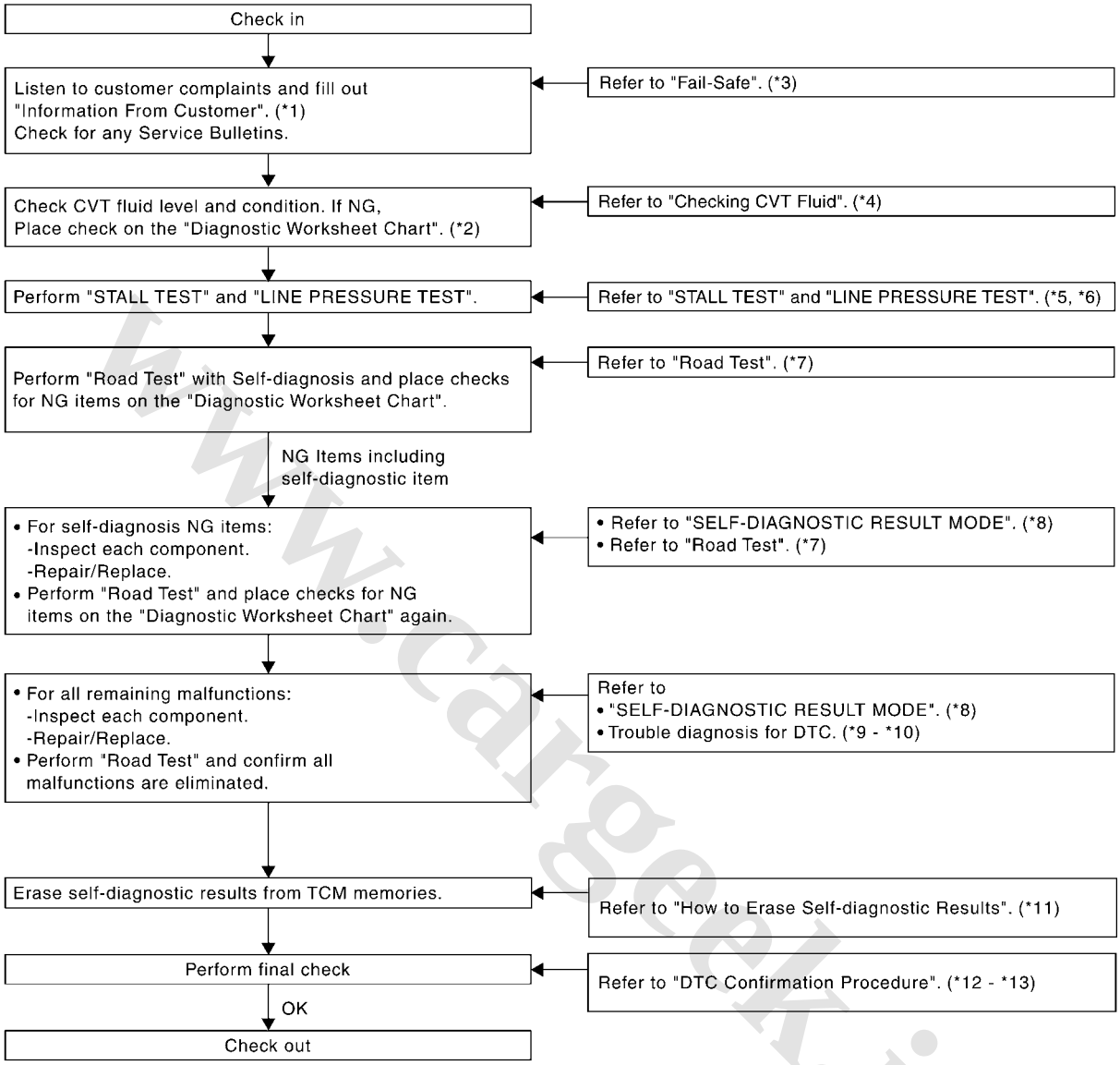
Before undertaking actual checks, take a few minutes to talk with a customer who approaches with a driveability complaint. The customer can supply good information about such errors, especially intermittent ones. Find out what symptoms are present and under what conditions they occur. A “DIAGNOSTIC WORKSHEET” as shown on the example (Refer to CVT-27) should be used.
Start your diagnosis by looking for “conventional” errors first. This will help troubleshoot driveability errors on an electronically controlled engine vehicle.
Also check related Service bulletins.



WORK FLOW

A good understanding of the malfunction conditions can make troubleshooting faster and more accurate.
In general, each customer feels differently about a malfunction. It is important to fully understand the symptoms or conditions for a customer complaint.
Make good use of the two sheets provided, CVT-27, "Information From Customer" and CVT-27, "Diagnostic Worksheet Chart" , to perform the best troubleshooting possible.

Work Flow Chart (Except For Australia)



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*1. CVT-27
*2. CVT-27
*3. CVT-23
*4. CVT-33
*5. CVT-33
*6. CVT-35
*7. CVT-37
*8. CVT-50
*9. CVT-59
*10. CVT-116
*11. CVT-54
*12. CVT-59
*13. CVT-116

DIAGNOSTIC WORKSHEET

Information From Customer

KEY POINTS

- **WHAT**..... Vehicle & CVT model
- **WHEN**..... Date, Frequencies
- **WHERE**..... Road conditions
- **HOW**..... Operating conditions, Symptoms

Customer name MR/MS	Model & Year	VIN
Trans. Model	Engine	Mileage
Malfunction Date	Manuf. Date	In Service Date
Frequency	❏ Continuous ❏ Intermittent (times a day)	
Symptoms	❏ Vehicle does not move. (❏ Any position ❏ Particular position)	
	❏ No shift	
	❏ Lock-up malfunction	
	❏ Shift shock or slip (❏ N → D ❏ N → R ❏ Lock-up ❏ Any drive position)	
	❏ Noise or vibration	
	❏ No pattern select	
	❏ Others ( )	

Diagnostic Worksheet Chart

1	❏ Read the item on cautions concerning fail-safe and understand the customer's complaint.			CVT-23
2	❏ CVT fluid inspection			CVT-33
		❏ Leak (Repair leak location.) ❏ State ❏ Amount		
3	❏ Stall test and line pressure test			CVT-33, CVT-35
		❏ Stall test		
			❏ Torque converter one-way clutch ❏ Reverse brake ❏ Forward clutch ❏ Steel belt	❏ Engine ❏ Line pressure low ❏ Primary pulley ❏ Secondary pulley
		❏ Line pressure inspection - Suspected part:		

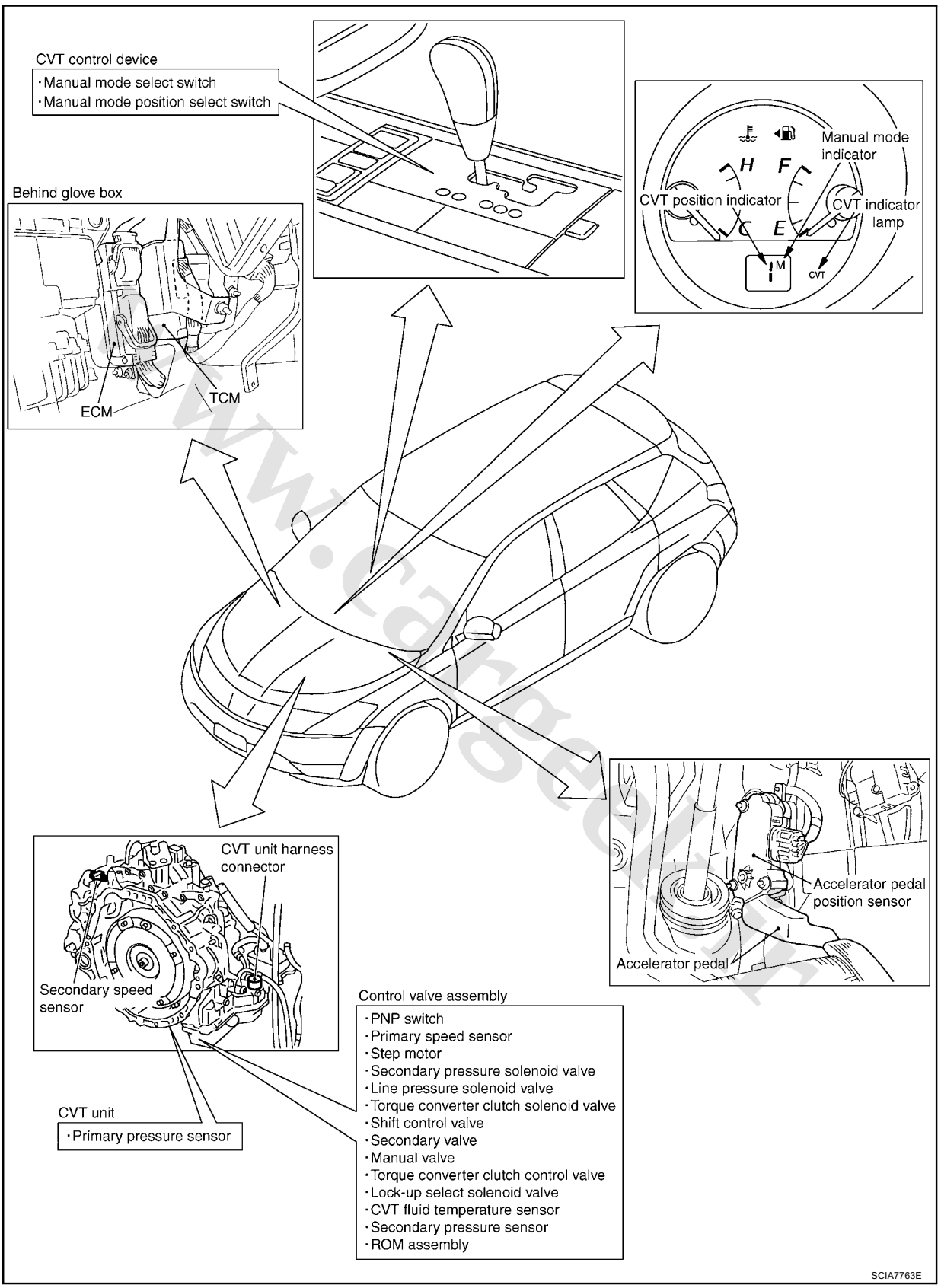
4		❑ Perform road test.		CVT-37
	4-1.	Check before engine is started		CVT-39
		❑ CVT-125, "CVT Indicator Lamp Does Not Come On" ❑ Perform self-diagnosis. Enter checks for detected items. CVT-50		
			❑ CVT-59, "DTC U1000 CAN COMMUNICATION LINE" ❑ CVT-61, "DTC P0615 START SIGNAL CIRCUIT" ❑ CVT-63, "DTC P0703 STOP LAMP SWITCH CIRCUIT" ❑ CVT-64, "DTC P0705 PARK/NEUTRAL POSITION SWITCH" ❑ CVT-68, "DTC P0710 CVT FLUID TEMPERATURE SENSOR CIRCUIT" ❑ CVT-71, "DTC P0715 INPUT SPEED SENSOR CIRCUIT (PRI SPEED SENSOR)" ❑ CVT-74, "DTC P0720 VEHICLE SPEED SENSOR CVT (SECONDARY SPEED SENSOR)" ❑ CVT-76, "DTC P0725 ENGINE SPEED SIGNAL" ❑ CVT-77, "DTC P0730 BELT DAMAGE" ❑ CVT-78, "DTC P0740 TORQUE CONVERTER CLUTCH SOLENOID VALVE" ❑ CVT-81, "DTC P0744 A/T TCC S/V FUNCTION (LOCK-UP)" ❑ CVT-82, "DTC P0745 LINE PRESSURE SOLENOID VALVE" ❑ CVT-85, "DTC P0746 PRESSURE CONTROL SOLENOID A PERFORMANCE (LINE PRESSURE SOLENOID VALVE)" ❑ CVT-86, "DTC P0776 PRESSURE CONTROL SOLENOID B PERFORMANCE (SEC PRESSURE SOLENOID VALVE)" ❑ CVT-87, "DTC P0778 PRESSURE CONTROL SOLENOID B ELECTRICAL (SEC PRESSURE SOLENOID VALVE)" ❑ CVT-90, "DTC P0826 MANUAL MODE SWITCH CIRCUIT" ❑ CVT-94, "DTC P0840 TRANSMISSION FLUID PRESSURE SENSOR A CIRCUIT (SEC PRESSURE SENSOR)" ❑ CVT-97, "DTC P0841 PRESSURE SENSOR FUNCTION" ❑ CVT-98, "DTC P0845 TRANSMISSION FLUID PRESSURE SENSOR B CIRCUIT (PRI PRESSURE SENSOR)" ❑ CVT-101, "DTC P0868 SECONDARY PRESSURE DOWN" ❑ CVT-102, "DTC P1701 TRANSMISSION CONTROL MODULE (POWER SUPPLY)" ❑ CVT-105, "DTC P1705 THROTTLE POSITION SENSOR" ❑ CVT-106, "DTC P1722 ESTM VEHICLE SPEED SIGNAL" ❑ CVT-107, "DTC P1723 CVT SPEED SENSOR FUNCTION" ❑ CVT-108, "DTC P1726 ELECTRIC THROTTLE CONTROL SYSTEM" ❑ CVT-109, "DTC P1740 LOCK-UP SELECT SOLENOID VALVE CIRCUIT" ❑ CVT-113, "DTC P1777 STEP MOTOR - CIRCUIT" ❑ CVT-116, "DTC P1778 STEP MOTOR - FUNCTION"	
	4-2.	Check at idle		CVT-39
		❑ CVT-126, "Engine Cannot Be Started in “P” or “N” Position" ❑ CVT-127, "In “P” Position, Vehicle Moves Forward or Backward When Pushed" ❑ CVT-127, "In “N” Position, Vehicle Moves" ❑ CVT-128, "Large Shock “N” → “R” Position" ❑ CVT-129, "Vehicle Does Not Creep Backward in “R” Position" ❑ CVT-130, "Vehicle Does Not Creep Forward in “D” Position"		

4	4-3.	Cruise test		CVT-41
		❏ CVT-131, "CVT Does Not Shift" ❏ CVT-132, "Cannot Be Changed to Manual Mode" ❏ CVT-132, "CVT Does Not Shift in Manual Mode" ❏ CVT-134, "Vehicle Does Not Decelerate by Engine Brake" ❏ Perform self-diagnosis. Enter checks for detected items. CVT-50		
			❏ CVT-59, "DTC U1000 CAN COMMUNICATION LINE" ❏ CVT-61, "DTC P0615 START SIGNAL CIRCUIT" ❏ CVT-63, "DTC P0703 STOP LAMP SWITCH CIRCUIT" ❏ CVT-64, "DTC P0705 PARK/NEUTRAL POSITION SWITCH" ❏ CVT-68, "DTC P0710 CVT FLUID TEMPERATURE SENSOR CIRCUIT" ❏ CVT-71, "DTC P0715 INPUT SPEED SENSOR CIRCUIT (PRI SPEED SENSOR)" ❏ CVT-74, "DTC P0720 VEHICLE SPEED SENSOR CVT (SECONDARY SPEED SENSOR)" ❏ CVT-76, "DTC P0725 ENGINE SPEED SIGNAL" ❏ CVT-77, "DTC P0730 BELT DAMAGE" ❏ CVT-78, "DTC P0740 TORQUE CONVERTER CLUTCH SOLENOID VALVE" ❏ CVT-81, "DTC P0744 A/T TCC S/V FUNCTION (LOCK-UP)" ❏ CVT-82, "DTC P0745 LINE PRESSURE SOLENOID VALVE" ❏ CVT-85, "DTC P0746 PRESSURE CONTROL SOLENOID A PERFORMANCE (LINE PRESSURE SOLENOID VALVE)" ❏ CVT-86, "DTC P0776 PRESSURE CONTROL SOLENOID B PERFORMANCE (SEC PRESSURE SOLENOID VALVE)" ❏ CVT-87, "DTC P0778 PRESSURE CONTROL SOLENOID B ELECTRICAL (SEC PRESSURE SOLENOID VALVE)" ❏ CVT-90, "DTC P0826 MANUAL MODE SWITCH CIRCUIT" ❏ CVT-94, "DTC P0840 TRANSMISSION FLUID PRESSURE SENSOR A CIRCUIT (SEC PRESSURE SENSOR)" ❏ CVT-97, "DTC P0841 PRESSURE SENSOR FUNCTION" ❏ CVT-98, "DTC P0845 TRANSMISSION FLUID PRESSURE SENSOR B CIRCUIT (PRI PRESSURE SENSOR)" ❏ CVT-101, "DTC P0868 SECONDARY PRESSURE DOWN" ❏ CVT-102, "DTC P1701 TRANSMISSION CONTROL MODULE (POWER SUPPLY)" ❏ CVT-105, "DTC P1705 THROTTLE POSITION SENSOR" ❏ CVT-106, "DTC P1722 ESTM VEHICLE SPEED SIGNAL" ❏ CVT-107, "DTC P1723 CVT SPEED SENSOR FUNCTION" ❏ CVT-108, "DTC P1726 ELECTRIC THROTTLE CONTROL SYSTEM" ❏ CVT-109, "DTC P1740 LOCK-UP SELECT SOLENOID VALVE CIRCUIT" ❏ CVT-113, "DTC P1777 STEP MOTOR - CIRCUIT" ❏ CVT-116, "DTC P1778 STEP MOTOR - FUNCTION"	
5	❏ Inspect each system for items found to be NG in the self-diagnosis and repair or replace the malfunctioning parts.			
6	❏ Perform all road tests and enter the checks again for the required items.			CVT-37
7	❏ For any remaining NG items, perform the “diagnosis procedure” and repair or replace the malfunctioning parts.			
8	❏ Erase the results of the self-diagnosis from the TCM.			CVT-54

CVT Electrical Parts Location

ACS00ADT

LHD models



Circuit Diagram

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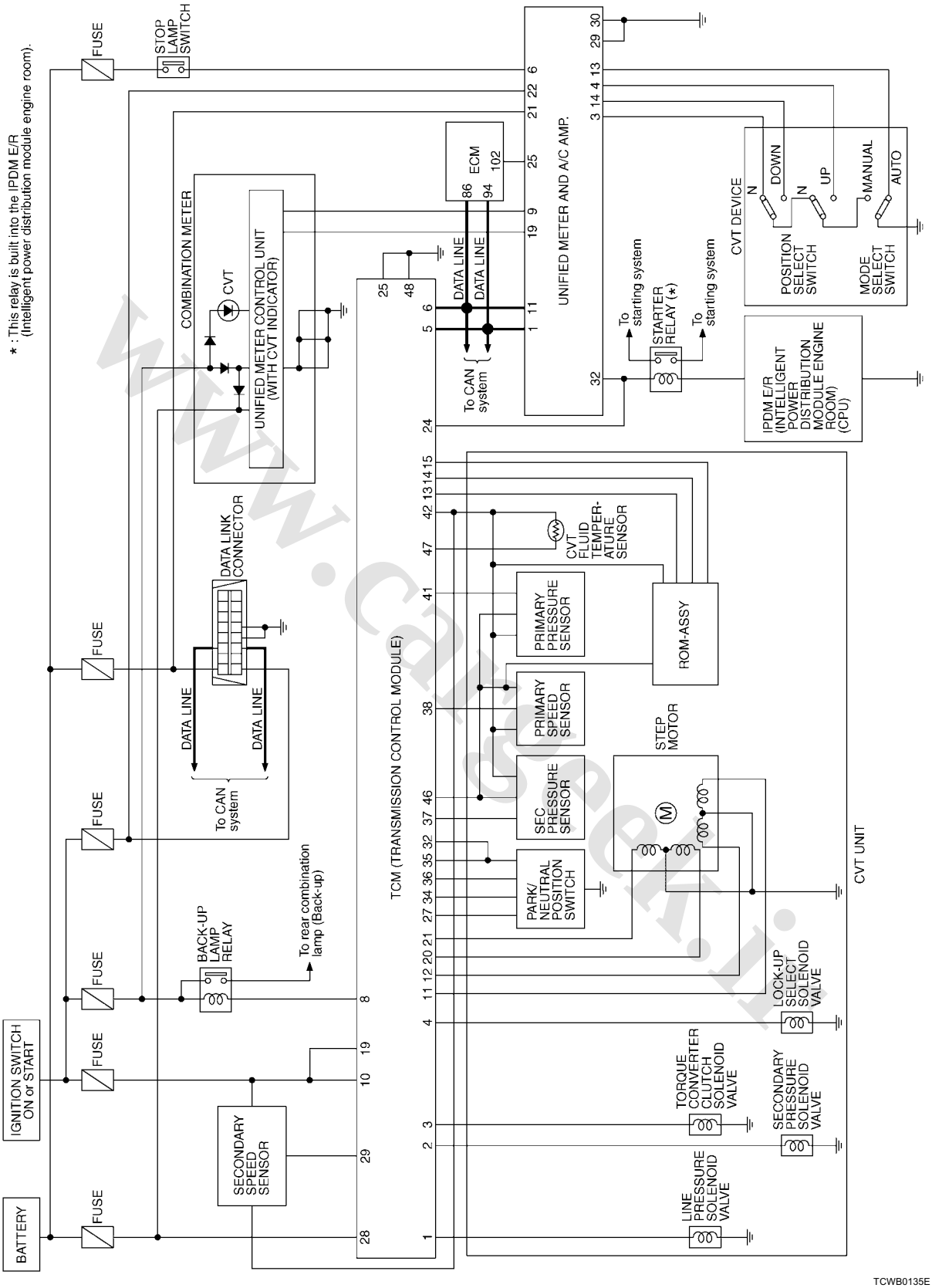


Inspections Before Trouble Diagnosis

ACS00ADV

CVT FLUID CHECK

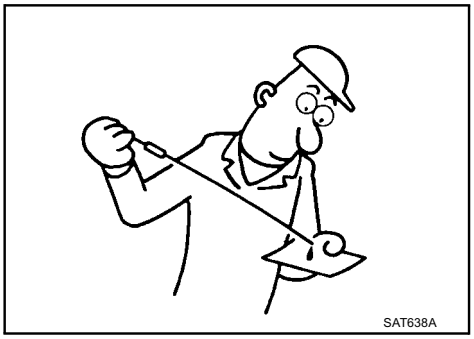
CVT Fluid Leakage and CVT Fluid Level Check

- Inspect for fluid leakage and check the fluid level. Refer to CVT-17, "Checking CVT Fluid" .

CVT Fluid Condition Check

Inspect the fluid condition.

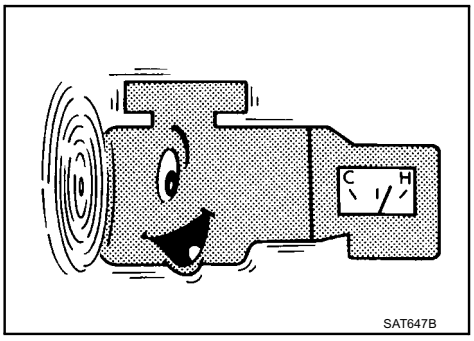
Fluid status	Conceivable cause	Required operation
Varnished (viscous varnish state)	Clutch, brake scorched	Replace the CVT fluid and check the CVT main unit and the vehicle for malfunctions (wire harnesses, cooler pipes, etc.)
Milky white or cloudy	Water in the fluid	Replace the CVT fluid and check for places where water is getting in.
Large amount of metal powder mixed in	Unusual wear of sliding parts within CVT	Replace the CVT fluid and check for improper operation of the CVT.


SAT638A

STALL TEST

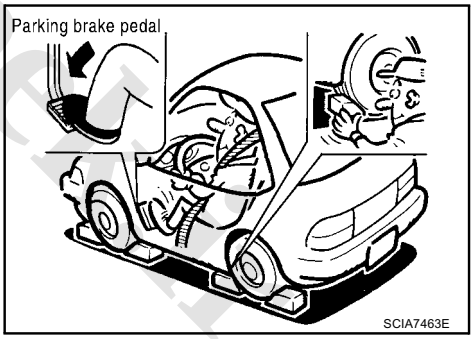
Stall Test Procedure

1. Inspect the amount of engine oil. Replenish the engine oil if necessary.
2. Drive for about 10 minutes to warm up the vehicle so that the CVT fluid temperature is 50 to 80°C (122 to 176°F). Inspect the amount of CVT fluid. Replenish if necessary.



SAT647B

3. Securely engage the parking brake so that the tires do not turn.
4. Install a tachometer where it can be seen by driver during test.
   - **It is good practice to mark the point of specified engine rpm on indicator.**



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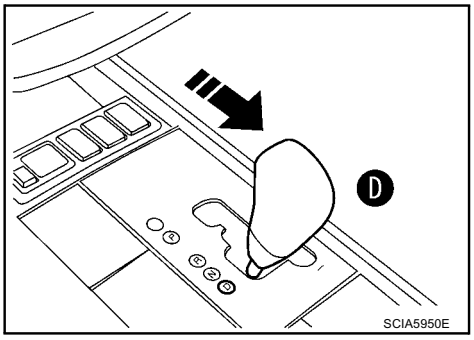
5. Start engine, apply foot brake, and place selector lever in “D” position.



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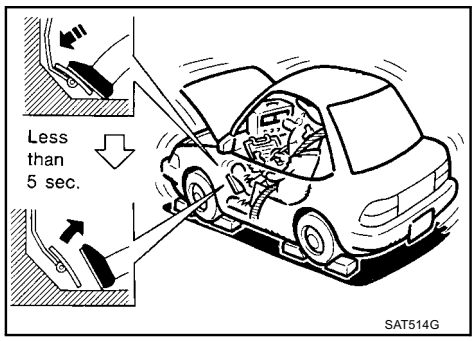
6. While holding down the foot brake, gradually press down the accelerator pedal.
7. Quickly read off the stall speed, and then quickly remove your foot from the accelerator pedal.

   CAUTION:
   Do not hold down the accelerator pedal for more than 5 seconds during this test.

   Stall speed: 2,700 - 3,250 rpm



8. Move the selector lever to the “N” position.
9. Cool down the CVT fluid.

   CAUTION:
   Run the engine at idle for at least one minute.
10. Repeat steps 6 through 9 with selector lever in “R” position.

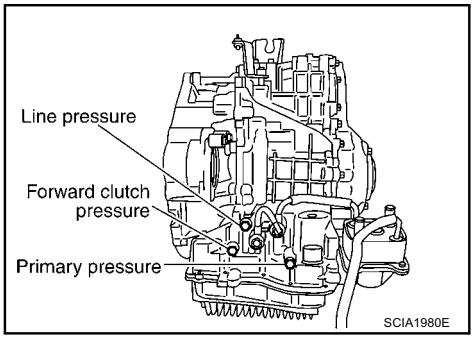
Judgement Stall Test

	Selector lever position		Expected problem location
	“D”	“R”	
Stall rotation	H	O	● Forward clutch
	O	H	● Reverse brake
	L	L	● Engine and torque converter one-way clutch
	H	H	● Line pressure low ● Primary pulley ● Secondary pulley ● Steel belt

O: Stall speed within standard value position.
H: Stall speed is higher than standard value.
L: Stall speed is lower than standard value.

LINE PRESSURE TEST

Line Pressure Test Port

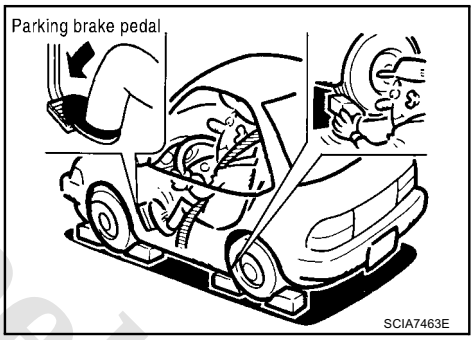


Line Pressure Test Procedure

1. Inspect the amount of engine oil and replenish if necessary.
2. Drive the car for about 10 minutes to warm it up so that the CVT fluid reaches in the range of 50 to 80°C (122 to 176°F), then inspect the amount of CVT fluid and replenish if necessary.

   NOTE:
   The CVT fluid temperature rises in the range of 50 to 80°C (122 to 176°F) during 10 minutes of driving.
3. After warming up CVT, remove the oil pressure detection plug and install the oil pressure gauge. (Special service tool: ST2505S001)

   CAUTION:
   When using the oil pressure gauge, be sure to use the O-ring attached to the oil pressure detection plug.
4. Securely engage the parking brake so that the tires do not turn.

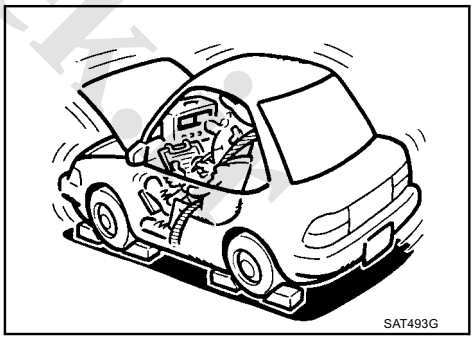


5. Start the engine, and then measure the line pressure at idle speed.

   CAUTION:
   Keep the brake pedal pressed all the way down during measurement.
6. After the measurements are complete, install the oil pressure detection plug and tighten to the specified torque below.

   : 7.5 N·m (0.77 kg-m, 66 in-lb)

   CAUTION:
   - **Do not reuse O-ring.**
   - **Apply CVT fluid to O-ring.**



Line Pressure

Engine	Engine speed	Line pressure kPa (bar, kg/cm^2 , psi)
		"R", "D" positions
VQ35DE	At idle speed	750 (7.50, 7.65, 108.8)
	At stall speed	5,700 (57.00, 58.14, 826.5)*1

*1 : Reference values

Judgement of Line Pressure Test

Judgement		Possible cause
Idle speed	Low for all positions ("P", "R", "N", "D")	Possible causes include malfunctions in the pressure supply system and low oil pump output. For example ● Oil pump wear ● Pressure regulator valve or plug sticking or spring fatigue ● Oil strainer ⇒ oil pump ⇒ pressure regulator valve passage oil leak ● Engine idle speed too low
	Only low for a specific position	Possible causes include an oil pressure leak in a passage or device related to the position after the pressure is distributed by the manual valve.
	High	Possible causes include a sensor malfunction or malfunction in the line pressure adjustment function. For example ● Accelerator pedal position signal malfunction ● CVT fluid temperature sensor malfunction ● Pressure control solenoid A (line pressure solenoid) malfunction (sticking in "OFF" state, filter clog, cut line) ● Pressure regulator valve or plug sticking
Stall speed	Oil pressure does not rise higher than the oil pressure for idle.	Possible causes include a sensor malfunction or malfunction in the pressure adjustment function. For example ● Accelerator pedal position signal malfunction ● TCM malfunction ● Pressure control solenoid A (line pressure solenoid) malfunction (shorting, sticking in "ON" state) ● Pressure regulator valve or plug sticking
	The pressure rises, but does not enter the standard position.	Possible causes include malfunctions in the pressure supply system and malfunction in the pressure adjustment function. For example ● Accelerator pedal position signal malfunction ● Pressure control solenoid A (line pressure solenoid) malfunction (sticking, filter clog) ● Pressure regulator valve or plug sticking
	Only low for a specific position	Possible causes include an oil pressure leak in a passage or device related to the position after the pressure is distributed by the manual valve.

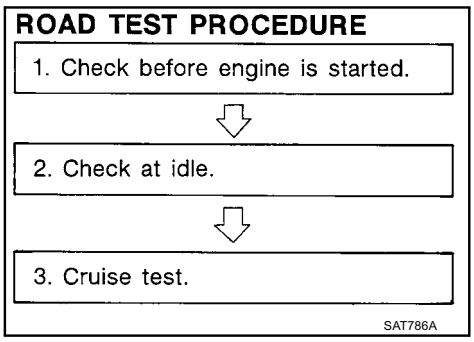
Road Test

ACS00ADW

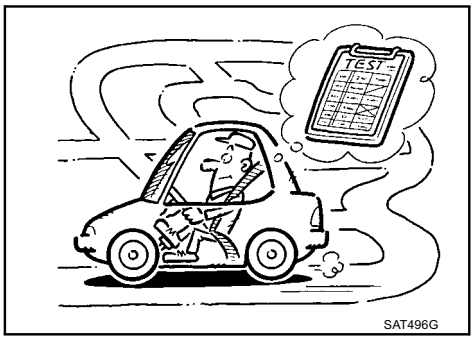
DESCRIPTION

- The purpose of the test is to determine overall performance of CVT and analyze causes of problems.
- The road test consists of the following three parts:

1. “Check Before Engine Is Started” CVT-39 .
2. “Check at Idle” CVT-39 .
3. “Cruise Test” CVT-41 .



- Before road test, familiarize yourself with all test procedures and items to check.
- Perform tests on all items until specified symptom is found. Troubleshoot items which check out No Good after road test.



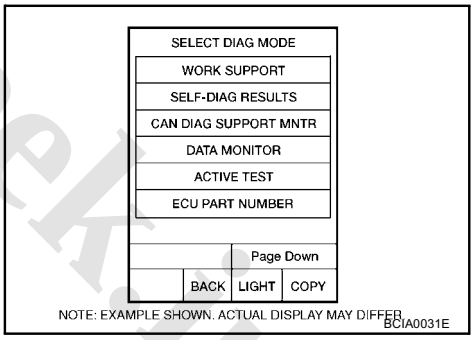
CONSULT-II OPERATION PROCEDURE

CAUTION:

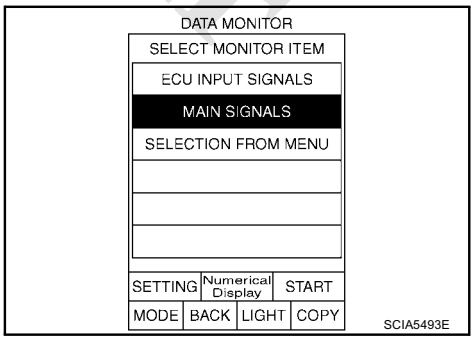
If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which performs CAN communication.

- Using CONSULT-II, perform a cruise test and record the result.
- Print the result and ensure that shifts and lock-ups take place as per Shift Schedule.

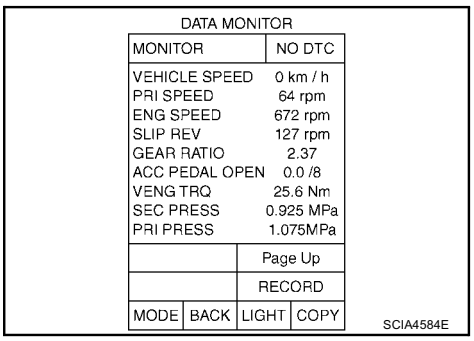
1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.



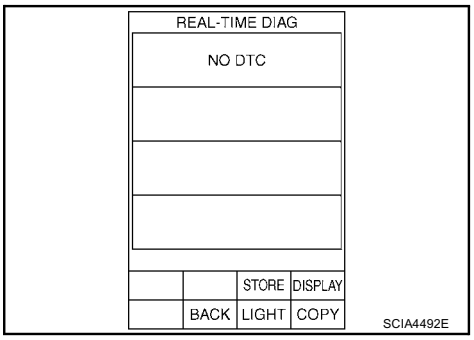
2. Touch “MAIN SIGNALS” to set recording condition.
3. See “Numerical Display”, “Barchart Display” or “Line Graph Display”.
4. Touch “START”.



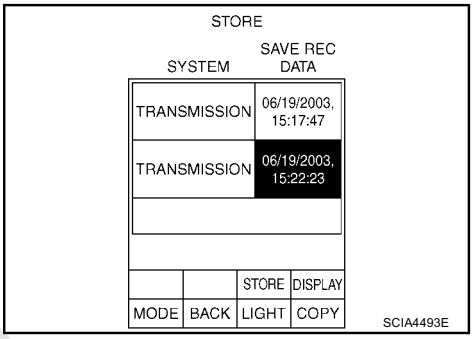
5. When performing cruise test. Refer to CVT-41, "Cruise Test" .
6. After finishing cruise test part, touch “RECORD”.



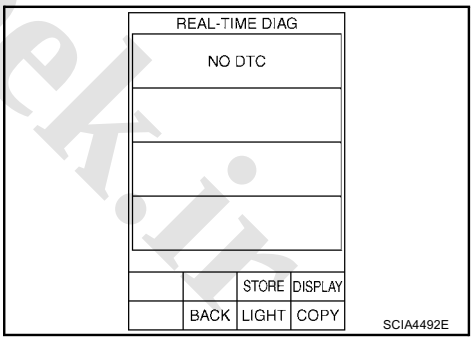
7. Touch “STORE”.



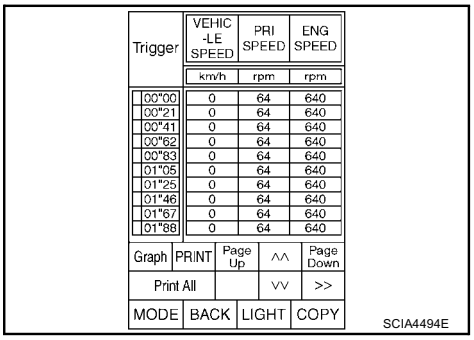
8. Touch “BACK”.



9. Touch “DISPLAY”.



10. Touch “PRINT”.
11. Check the monitor data printed out.



Check Before Engine Is Started

ACS00ADX

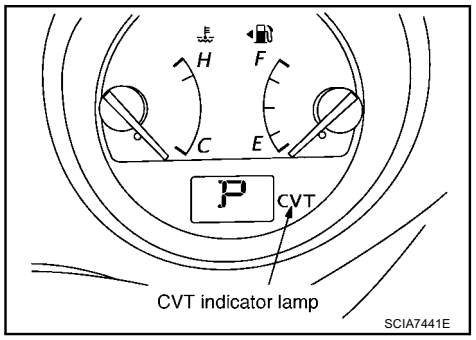
1. CHECK CVT INDICATOR LAMP

1. Park vehicle on flat surface.
2. Move selector lever to “P” position.
3. Turn ignition switch OFF. Wait at least 5 seconds.
4. Turn ignition switch ON. (Do not start engine.)

Does CVT indicator lamp come on for about 2 seconds?

YES >> 1. Turn ignition switch OFF.
2. Perform self-diagnosis and note NG items. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .
3. Go to CVT-39, "Check at Idle" .

NO >> Stop “Road Test”. Go to CVT-125, "CVT Indicator Lamp Does Not Come On" .



Check at Idle

ACS00ADY

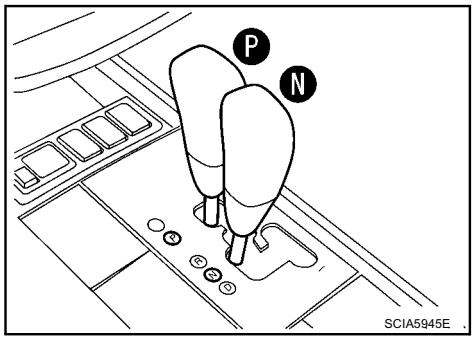
1. CHECK STARTING THE ENGINE

1. Park vehicle on flat surface.
2. Move selector lever to “P” or “N” position.
3. Turn ignition switch OFF.
4. Turn ignition switch to START position.

Is engine started?

YES >> GO TO 2.

NO >> Stop “Road Test”. Mark the box on the CVT-27, "DIAGNOSTIC WORKSHEET" . Go to CVT-126, "Engine Cannot Be Started in “P” or “N” Position" .



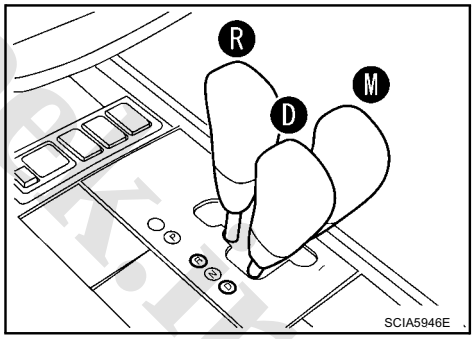
2. CHECK STARTING THE ENGINE

1. Turn ignition switch ON.
2. Move selector lever to “D”, “M” or “R” position.
3. Turn ignition switch to START position.

Is engine started?

YES >> Stop “Road Test”. Mark the box on the CVT-27, "DIAGNOSTIC WORKSHEET" . Go to CVT-126, "Engine Cannot Be Started in “P” or “N” Position" .

NO >> GO TO 3.



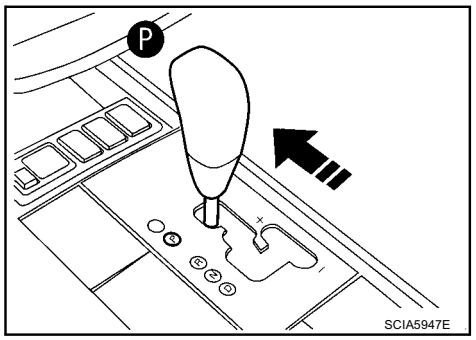
3. CHECK “P” POSITION FUNCTION

1. Move selector lever to “P” position.
2. Turn ignition switch OFF.
3. Release parking brake.
4. Push vehicle forward or backward.
5. Apply parking brake.

Does vehicle move when it is pushed forward or backward?

YES >> Mark the box CVT-127, "In “P” Position, Vehicle Moves Forward or Backward When Pushed" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.

NO >> GO TO 4.

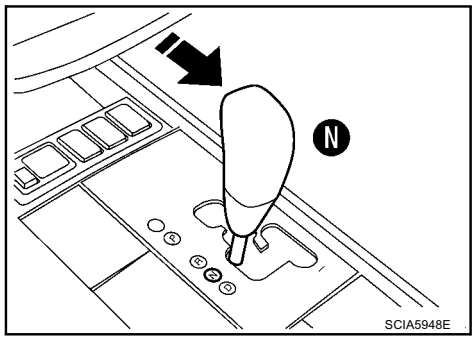


4. CHECK “N” POSITION FUNCTION

1. Start engine.
2. Move selector lever to “N” position.
3. Release parking brake.

Does vehicle move forward or backward?

YES >> Mark the box “In CVT-127, "In “N” Position, Vehicle Moves" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.
NO >> GO TO 5.

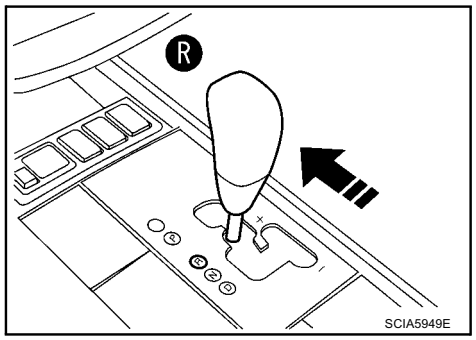


5. CHECK SHIFT SHOCK

1. Apply foot brake.
2. Move selector lever to “R” position.

Is there large shock when changing from “N” to “R” position?

YES >> Mark the box CVT-128, "Large Shock “N” → “R” Position" Position” on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.
NO >> GO TO 6.



6. CHECK “R” POSITION FUNCTION

Release foot brake for several seconds.

Does vehicle creep backward when foot brake is released?

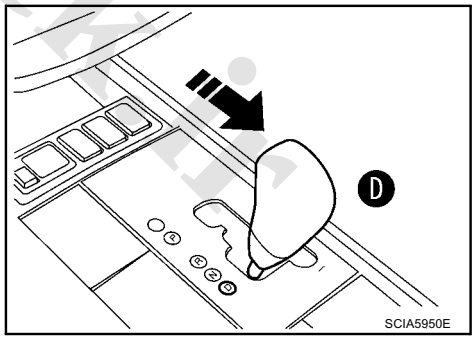
YES >> GO TO 7.
NO >> Mark the box CVT-129, "Vehicle Does Not Creep Backward in “R” Position" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.

7. CHECK “D” POSITION FUNCTION

Move selector lever to “D” position and check if vehicle creeps forward.

Does vehicle creep forward in “D” position?

YES >> Go to CVT-41, "Cruise Test" .
NO >> Mark the box CVT-130, "Vehicle Does Not Creep Forward in “D” Position" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.



Cruise Test

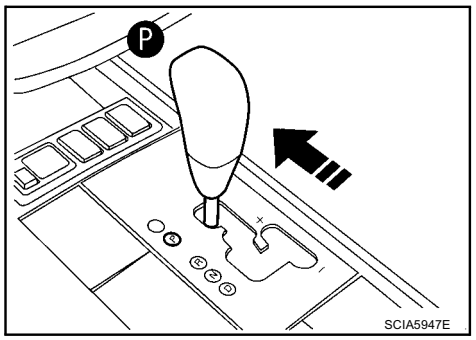
ACS00ADZ

1. CHECK VEHICLE SPEED WHEN SHIFTING GEARS — PART 1

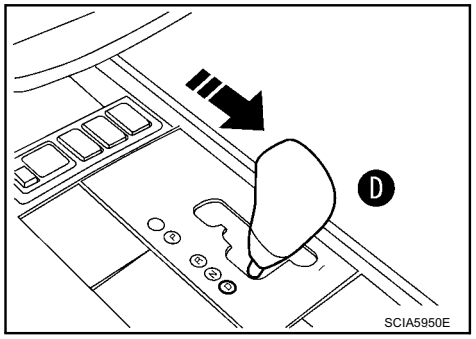
1. Drive vehicle for approximately 10 minutes to warm engine oil and CVT fluid up to operating temperature.

CVT fluid operating temperature: 50 - 80°C (122 - 176°F)

2. Park vehicle on flat surface.
3. Move selector lever to “P” position.
4. Start engine.

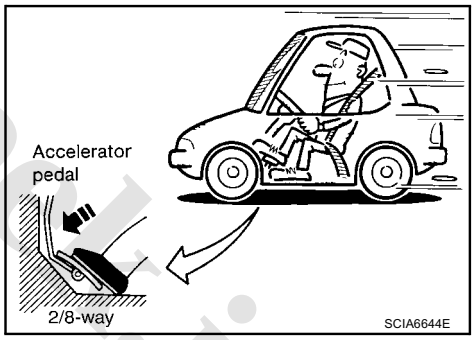


5. Move selector lever to “D” position.



6. Accelerate vehicle to 2/8-way throttle depressing accelerator pedal constantly.

Read vehicle speed and engine speed. Refer to CVT-43, "Vehicle Speed at Which Gear Shifting Occurs" .



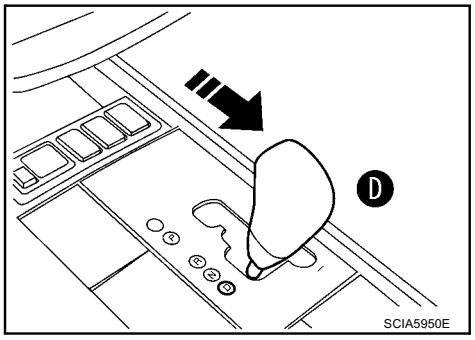
OK or NG

OK >> GO TO 2.

NG >> Mark the box of CVT-131, "CVT Does Not Shift" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.

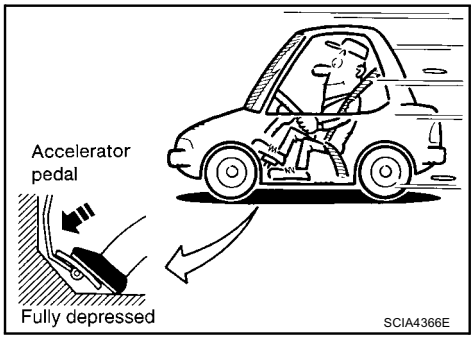
2. CHECK VEHICLE SPEED WHEN SHIFTING GEARS — PART 2

1. Park vehicle on flat surface.
2. Move selector lever to “D” position.



3. Accelerate vehicle to full depression depressing accelerator pedal constantly.

Read vehicle speed and engine speed. Refer to CVT-43, "Vehicle Speed at Which Gear Shifting Occurs" .



OK or NG

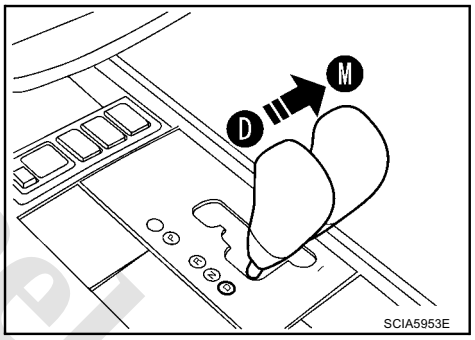
OK >> GO TO 3.
NG >> Mark the box of CVT-131, "CVT Does Not Shift" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.

3. CHECK MANUAL MODE FUNCTION

Move to manual mode from “D” position.

Does it switch to manual mode?

YES >> GO TO 4.
NO >> Mark the box of CVT-132, "Cannot Be Changed to Manual Mode" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.



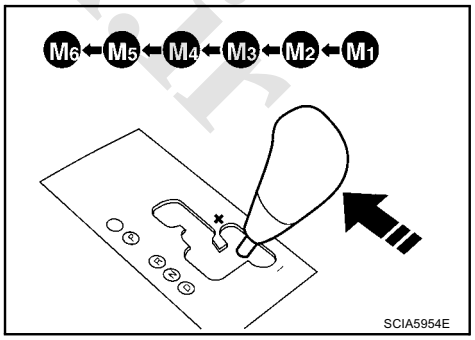
4. CHECK SHIFT-UP FUNCTION

During manual mode driving, is upshift from M1 → M2 → M3 → M4 → M5 → M6 performed?

Read the gear position. Refer to CVT-55, "DATA MONITOR MODE" .

Is upshifting correctly performed?

YES >> GO TO 5.
NO >> Mark the box of CVT-132, "CVT Does Not Shift in Manual Mode" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.



5. CHECK SHIFT-DOWN FUNCTION

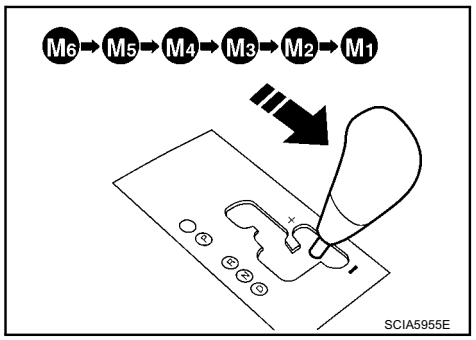
During manual mode driving, is downshift from M6 → M5 → M4 → M3 → M2 → M1 performed?

Read the gear position. Refer to CVT-55, "DATA MONITOR MODE" .

Is downshifting correctly performed?

YES >> GO TO 6.

NO >> Mark the box of CVT-132, "CVT Does Not Shift in Manual Mode" on the CVT-27, "DIAGNOSTIC WORKSHEET" . Continue “Road Test”.



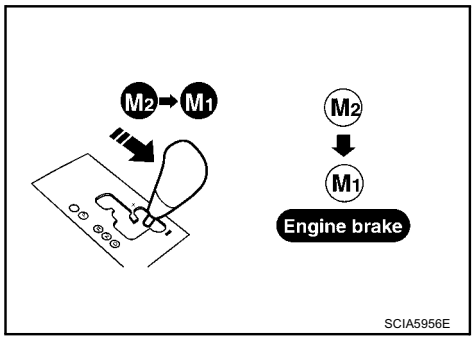
6. CHECK ENGINE BRAKE FUNCTION

Check engine brake.

Does engine braking effectively reduce speed in M1 position?

YES >> 1. Stop the vehicle.
2. Perform self-diagnosis. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

NO >> Mark the box of CVT-134, "Vehicle Does Not Decelerate by Engine Brake" on the CVT-27, "DIAGNOSTIC WORKSHEET" . then continue trouble diagnosis.



Vehicle Speed at Which Gear Shifting Occurs

ACS00AE0

Numerical value data are reference values.

Engine type	Throttle position	Shift pattern	Engine speed (rpm)	
			At 40 km/h (25 MPH)	At 60 km/h (37 MPH)
VQ35DE	8/8	“D” position	2,800 - 4,300	3,900 - 5,300
	2/8	“D” position	1,200 - 2,000	1,300 - 2,100

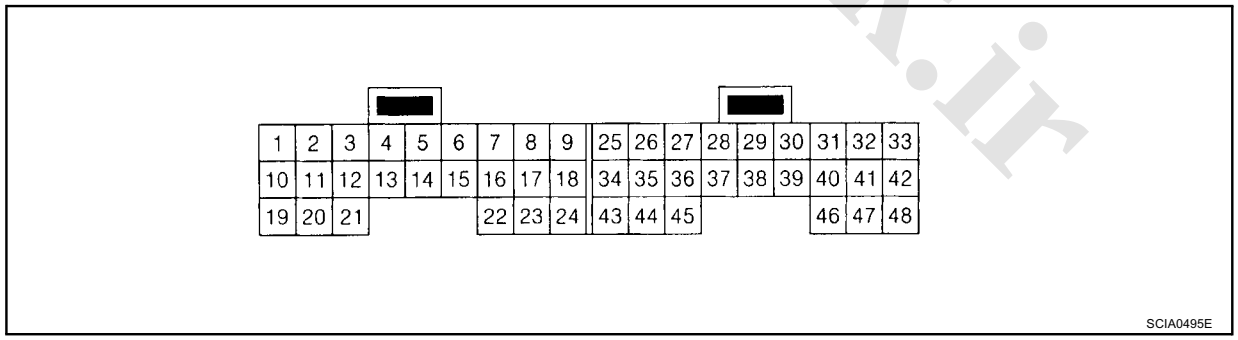
CAUTION:

Lock-up clutch is engaged when vehicle speed is approximately 18 km/h (11 MPH) to 90 km/h (56 MPH).

TCM Input/Output Signal Reference Values

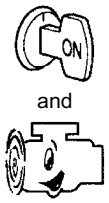
ACS00AE1

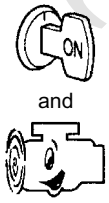
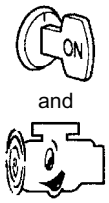
TCM TERMINAL CONNECTOR LAYOUT



TCM INSPECTION TABLE

Data are reference values and are measured between each terminal and ground.

Terminal	Wire color	Item	Condition		Data (Approx.)
1	R/Y	Pressure control solenoid valve A (Line pressure solenoid valve)		Release your foot from the accelerator pedal.	5.0 - 7.0 V
				Press the accelerator pedal all the way down.	1.0 - 3.0 V
2	W/B	Pressure control solenoid valve B (Secondary pressure solenoid valve)		Release your foot from the accelerator pedal.	5.0 - 7.0 V
				Press the accelerator pedal all the way down.	3.0 - 4.0 V
3	L/W*1	Torque converter clutch solenoid valve		When vehicle cruises in “D” position. When CVT performs lock-up.	6.0 V
	G*2			When vehicle cruises in “D” position. When CVT does not perform lock-up.	1.0 V
4	L/Y*1	Lock-up select solenoid valve		Selector lever in “P”, “N” positions.	Battery voltage
	L*2			Wait at least for 5 seconds with the selector lever in “R”, “D” positions.	0 V
5	L	CAN-H	—		—
6	P	CAN-L	—		—
8	SB	Back-up lamp relay		Selector lever in “R” position.	0 V
				Selector lever in other positions.	Battery voltage
10	Y	Power supply		—	Battery voltage
				—	0 V
11	G/R	Step motor A	Within 2 seconds after ignition switch ON, the time measurement by using the pulse width measurement function (Hi level) of CONSULT-II.*1 **CAUTION:** **Connect the diagnosis data link cable to the vehicle diagnosis connector.** *1: A circuit tester cannot be used to test this item.		30.0 msec
12	O/B	Step motor B			10.0 msec
13	G/W	ROM assembly	—		—
14	L/R	ROM assembly	—		—
15	BR/R	ROM assembly	—		—
19	Y	Power supply		—	Battery voltage
				—	0 V
20	R	Step motor C	Within 2 seconds after ignition switch ON, the time measurement by using the pulse width measurement function (Hi level) of CONSULT-II.*1 **CAUTION:** **Connect the diagnosis data link cable to the vehicle diagnosis connector.** *1: A circuit tester cannot be used to test this item.		30.0 msec
21	R/G	Step motor D			10.0 msec
24	G/O	Starter relay		Selector lever in “N”, “P” positions.	Battery voltage
				Selector lever in other positions.	0 V

Terminal	Wire color	Item	Condition		Data (Approx.)
25	B	Ground	Always		0 V
27	BR/W	PNP switch 1		Selector lever in “R”, “N” and “D” positions.	0 V
				Selector lever in “P” position.	Battery voltage
28	Y/R	Power supply (memory back-up)	Always		Battery voltage
29	G*1 / LG/R*2	Output speed sensor (Secondary speed sensor)		When driving [“D” position, 20 km/h (12 MPH)].	300 Hz
32	GR	PNP switch 3 (monitor)		Selector lever in “D” position.	0 V
				Selector lever in “P”, “R” and “N” positions.	8.0 V - Battery voltage
34	P/B	PNP switch 2		Selector lever in “N”, “D” positions.	0 V
				Selector lever in “P”, “R” positions.	10.0 V - Battery voltage
35	P/L	PNP switch 3		Selector lever in “D” position.	0 V
				Selector lever in “P”, “R” and “N” positions.	8.0 V - Battery voltage
36	G*1 / G/O*2	PNP switch 4		Selector lever in “R”, “D” positions.	0 V
				Selector lever in “P”, “N” positions.	10.0 V - Battery voltage
37	V/W	Transmission fluid pressure sensor A (Secondary pressure sensor)	 and	“N” position idle	0.8 V
38	LG	Input speed sensor (Primary speed sensor)		When driving [“D” position, 20 km/h (12 MPH)].	600 Hz
41	V/O	Transmission fluid pressure sensor B (Primary pressure sensor)	 and	“N” position idle	0.7 - 3.5 V
42	W/R	Sensor ground	Always		0 V
46	L/O	Sensor power		—	4.5 - 5.5 V
				—	0 V
47	V	CVT fluid temperature sensor		When CVT fluid temperature is 20°C (68°F)	2.0 V
				When CVT fluid temperature is 80°C (176°F)	1.0 V
48	B	Ground	Always		0 V

*1: LHD models
*2: RHD models

CONSULT-II Function (TRANSMISSION)

ACS00AE2

CONSULT-II can display each diagnostic item using the diagnostic test modes shown below.

FUNCTION

Diagnostic test mode	Function	Reference page
Work support	This mode enables a technician to adjust some devices faster and more accurately by following the indications on CONSULT-II.	CVT-48
Self-diagnostic results	Self-diagnostic results can be read and erased quickly.	CVT-50
Data monitor	Input/Output data in the TCM can be read.	CVT-55
CAN diagnostic support monitor	The results of transmit/receive diagnosis of CAN communication can be read.	CVT-57
CALIB data	Characteristic information for TCM and CVT assembly can be read. Do not use, but displayed.	—
Function test	Performed by CONSULT-II instead of a technician to determine whether each system is “OK” or “NG”.	—
ECU part number	TCM part number can be read.	—

CONSULT-II REFERENCE VALUE

Item name	Condition	Display value (Approx.)
VSP SENSOR	During driving	Approximately matches the speedometer reading.
ESTM VSP SIG		
PRI SPEED SEN	During driving (lock-up ON)	Approximately matches the engine speed.
ENG SPEED SIG	Engine running	Closely matches the tachometer reading.
SEC HYDR SEN	“N” position idle	0.8 - 1.0 V
PRI HYDR SEN	“N” position idle	0.7 - 3.5 V
ATF TEMP SEN	When CVT fluid temperature is 20°C (68°F)	1.8 - 2.0 V
	When CVT fluid temperature is 80°C (176°F)	0.6 - 1.0 V
VIGN SEN	Ignition switch: ON	Battery voltage
VEHICLE SPEED	During driving	Approximately matches the speedometer reading.
PRI SPEED	During driving (lock-up ON)	Approximately matches the engine speed.
SEC SPEED	During driving	45 X Approximately matches the speedometer reading.
ENG SPEED	Engine running	Closely matches the tachometer reading.
GEAR RATIO	During driving	2.37 - 0.43
ACC PEDAL OPEN	Released accelerator pedal - Fully depressed accelerator pedal	0.0/8 - 8.0/8
SEC PRESS	“N” position idle	0.5 - 0.9 MPa
PRI PRESS	“N” position idle	0.3 - 0.9 MPa
STM STEP	During driving	-20 step – 190 step
ISOLT1	Lock-up OFF	0.0 A
	Lock-up ON	0.7 A
ISOLT2	Release your foot from the accelerator pedal.	0.8 A
	Press the accelerator pedal all the way down.	0.0 A
ISOLT3	Secondary pressure low - Secondary pressure high	0.8 - 0.0 A

Item name	Condition	Display value (Approx.)
SOLMON1	Lock-up OFF	0.0 A
	Lock-up ON	0.6 - 0.7 A
SOLMON2	“N” position idle	0.8 A
	When stalled	0.3 - 0.6 A
SOLMON3	“N” position idle	0.6 - 0.7 A
	When stalled	0.4 - 0.6 A
INH SW3M	Selector lever in “D” position	ON
	Selector lever in “P”, “R” and “N” positions	OFF
INH SW4	Selector lever in “R”, “D” positions	ON
	Selector lever in “P”, “N” positions	OFF
INH SW3	Selector lever in “D“ position	ON
	Selector lever in “P”, “R” and “N” positions	OFF
INH SW2	Selector lever in “N”, “D” positions	ON
	Selector lever in “P”, “R” positions	OFF
INH SW1	Selector lever in “R”, “N” and “D” positions	ON
	Selector lever in “P” position	OFF
BRAKE SW	Depressed brake pedal	ON
	Released brake pedal	OFF
FULL SW	Fully depressed accelerator pedal	ON
	Released accelerator pedal	OFF
IDLE SW	Released accelerator pedal	ON
	Fully depressed accelerator pedal	OFF
DOWNLVR	Select lever: - side	ON
	Other than the above	OFF
UPLVR	Select lever: + side	ON
	Other than the above	OFF
NON MMODE	Manual shift gate position (neutral, +side, -side)	OFF
	Other than the above	ON
MMODE	Manual shift gate position (neutral)	ON
	Other than the above	OFF
SMCOIL D	During driving	Changes ON ⇔ OFF.
SMCOIL C		
SMCOIL B		
SMCOIL A		
LUSEL SOL OUT	Selector lever in “P”, “N” positions	ON
	Wait at least for 5 seconds with the selector lever in “R” or “D” position	OFF
STRTR RLY OUT	Selector lever in “P”, “N” positions	ON
	Selector lever in other positions	OFF
STRTR RLY MON	Selector lever in “P”, “N” positions	ON
	Selector lever in other positions	OFF
VDC ON	VDC operate	ON
	Other conditions	OFF
TCS ON	TCS operate	ON
	Other conditions	OFF

Item name	Condition	Display value (Approx.)
ABS ON	ABS operate	ON
	Other conditions	OFF
RANGE	Selector lever in “N” or “P” position	N·P
	Selector lever in “R” position	R
	Selector lever in “D” position	D
M GEAR POS	During driving	1, 2, 3, 4, 5, 6

CONSULT-II SETTING PROCEDURE

Refer to GI-33, "CONSULT-II Start Procedure" .

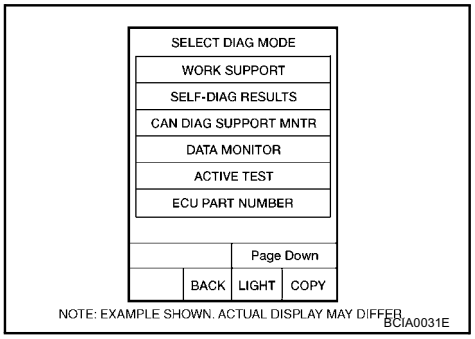
WORK SUPPORT MODE

Display Item List

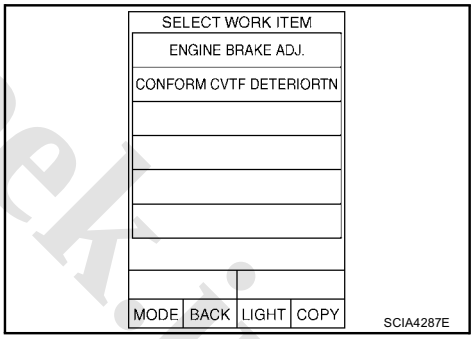
Item name	Description
ENGINE BRAKE ADJ.	The engine brake level setting can be canceled.
CONFORM CVTF DETERIORTN	The CVT fluid deterioration level can be checked.

Engine Brake Adjustment

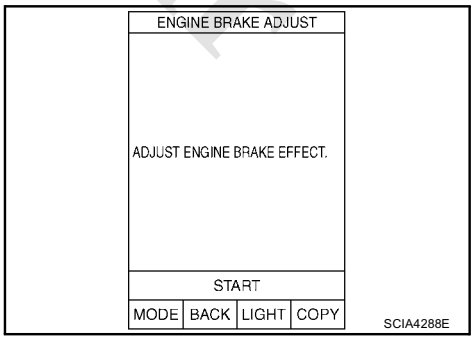
1. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.



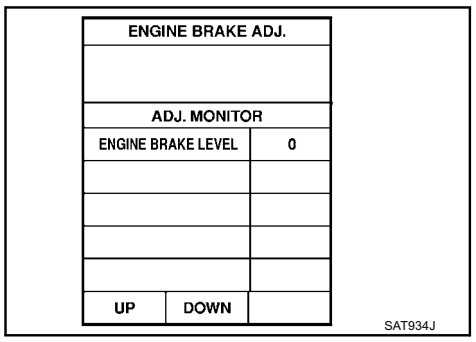
2. Touch “ENGINE BRAKE ADJ”.



3. Touch “START”.



4. Set “ENGINE BRAKE LEVEL” by touching “UP” or “DOWN”.



“ENGINE BRAKE LEVEL”

0: Initial set value (Engine brake level control is activated)

OFF: Engine brake level control is deactivated.

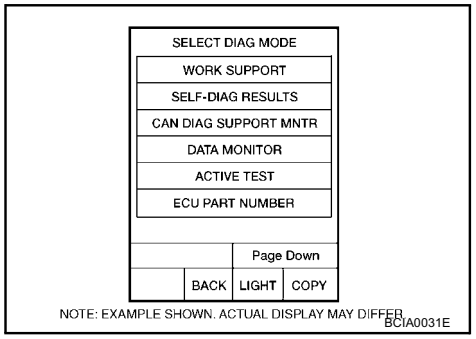
5. Turn ignition switch OFF, wait at least 5 seconds and then turn ignition switch ON.
6. Engine brake level set is completed.

CAUTION:

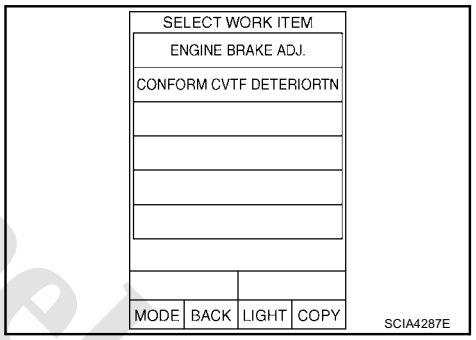
Mode of “+1” “0” “-1” “-2” “OFF” can be selected by pressing the “UP” “DOWN” on CONSULT-II screen. However, do not select mode other than “0” and “OFF”. If the “+1” or “-1” or “-2” is selected, that might cause the irregular driveability.

Check CVT Fluid Deterioration Date

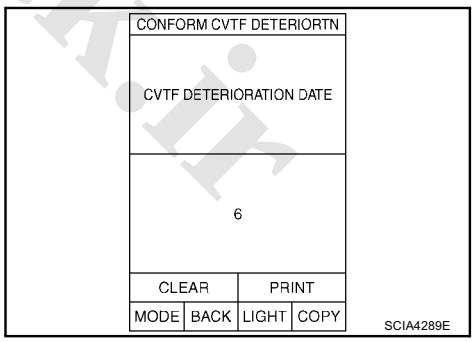
1. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.



2. Touch “CONFORM CVTF DETERIORTN”.



3. Check “CVTF DETERIORATION DATE”.



“CVTF DETERIORATION DATE”

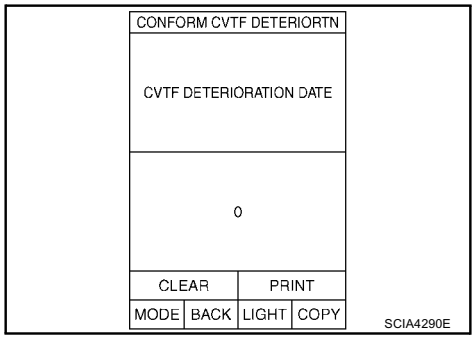
More than 210000:

It is necessary to change CVT fluid.

Less than 210000:

It is not necessary to change CVT fluid.

CAUTION:
Touch “CLEAR” after changing CVT fluid, and then erase “CVTF DETERIORATION DATE”.

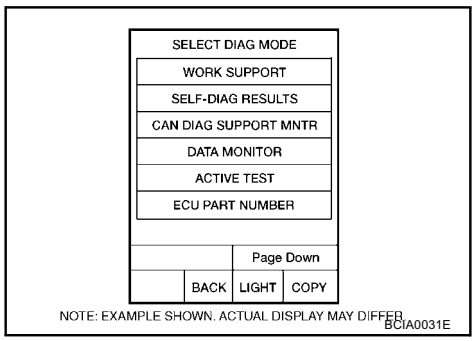


SELF-DIAGNOSTIC RESULT MODE

After performing self-diagnosis, place check marks for results on the CVT-27, "DIAGNOSTIC WORKSHEET" . Reference pages are provided following the items.

Operation Procedure

1. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.
   Display shows malfunction experienced since the last erasing operation.



Display Items List

For Australia

X: Applicable —: Not applicable

Items (CONSULT-II screen terms)	Malfunction is detected when...	TCM self-diagnosis	OBD (DTC)	Reference page
		“TRANS-MISSION” with CON-SULT-II	MI*1, “ENGINE” with CONSULT-II or GST	
CAN COMM CIR-CUIT	● When a malfunction is detected in CAN communications	U1000	U1000	CVT-59
STARTER RELAY/ CIRC	● If this signal is ON other than in “P” or “N” position, this is judged to be a malfunction (And if it is OFF in “P” or “N” position, this is judged to be a malfunction too.)	P0615	—	CVT-61
BRAKE SW/CIRC	● When the brake switch does not switch to ON or OFF	P0703	—	CVT-63
PNP SW/CIRC	● PNP switch 1-4 signals input with impossible pattern ● PNP switch 3 monitor terminal open or short circuit	P0705	P0705	CVT-64
ATF TEMP SEN/ CIRC	● During running, the CVT fluid temperature sensor signal voltage is excessively high or low	P0710	P0710	CVT-68
INPUT SPD SEN/ CIRC	● Input speed sensor (primary speed sensor) signal is not input due to an open circuit ● An unexpected signal is input when vehicle is being driven	P0715	P0715	CVT-71
VEH SPD SEN/ CIR AT	● Signal from vehicle speed sensor CVT [Output speed sensor (Secondary speed sensor)] not input due to open or short circuit ● Unexpected signal input during running	P0720	P0720	CVT-74

Items (CONSULT-II screen terms)	Malfunction is detected when...	TCM self-diagnosis	OBD (DTC)	Reference page
		"TRANSMISSION" with CONSULT-II	MI*1, "ENGINE" with CONSULT-II or GST	
ENGINE SPEED SIG	● TCM does not receive the CAN communication signal from the ECM	P0725	—	CVT-76
BELT DAMG	● Unexpected gear ratio detected	P0730	—	CVT-77
TCC SOLENOID/ CIRC	● Normal voltage not applied to solenoid due to open or short circuit	P0740	P0740	CVT-78
A/T TCC S/V FNCTN	● CVT cannot perform lock-up even if electrical circuit is good ● TCM detects as irregular by comparing difference value with slip rotation	P0744	P0744	CVT-81
L/PRESS SOL/ CIRC	● Normal voltage not applied to solenoid due to open or short circuit ● TCM detects as irregular by comparing target value with monitor value	P0745	P0745	CVT-82
PRS CNT SOL/A FCTN	● Unexpected gear ratio was detected in the LOW side due to excessively low line pressure	P0746	P0746	CVT-85
PRS CNT SOL/B FCTN	● Secondary pressure is too high or too low compared with the commanded value while driving	P0776	P0776	CVT-86
PRS CNT SOL/B CIRC	● Normal voltage not applied to solenoid due to cut line, short, or the like ● TCM detects as irregular by comparing target value with monitor value	P0778	P0778	CVT-87
MANUAL MODE SWITCH	● When an impossible pattern of switch signals is detected, a malfunction is detected	P0826	—	CVT-90
TR PRS SENS/A CIRC	● Signal voltage of the transmission fluid pressure sensor A (secondary pressure sensor) is too high or too low while driving	P0840	P0840	CVT-94
PRESS SEN/ FNCTN	● Correlation between the values of the transmission fluid pressure sensor A (secondary pressure sensor) and the transmission fluid pressure sensor B (primary pressure sensor) is out of specification	P0841	—	CVT-97
TR PRS SENS/B CIRC	● Signal voltage of the transmission fluid pressure sensor B (primary pressure sensor) is too high or too low while driving	P0845	P0845	CVT-98
SEC/PRESS DOWN	● Secondary fluid pressure is too low compared with the commanded value while driving	P0868	—	CVT-101
TCM-POWER SUPPLY	● When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops ● This is not a malfunction message (Whenever shutting OFF a power supply to the TCM, this message appears on the screen)	P1701	—	CVT-102
TP SEN/CIRC A/T	● TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM	P1705	—	CVT-105
ESTM VEH SPD SIG	● CAN communication with the ABS actuator and the electric unit (control unit) is malfunctioning ● There is a great difference between the vehicle speed signal from the ABS actuator and the electric unit (control unit), and the vehicle speed sensor signal	P1722	—	CVT-106

Items (CONSULT-II screen terms)	Malfunction is detected when...	TCM self-diagnosis	OBD (DTC)	Reference page
		"TRANS-MISSION" with CON-SULT-II	MI*1, "ENGINE" with CONSULT-II or GST	
CVT SPD SEN/ FNCTN	● A rotation sensor error is detected because the gear does not change in accordance with the position of the stepping motor **CAUTION:** **One of the "P0720 VEH SPD SEN/CIR AT", the "P0715 INPUT SPD SEN/CIRC" or the "P0725 ENGINE SPEED SIG" is displayed with the DTC at the same time**	P1723	—	CVT-107
ELEC TH CON-TROL	● The electronically controlled throttle for ECM is malfunc-tioning	P1726	—	CVT-108
LU-SLCT SOL/ CIRC	● Normal voltage not applied to solenoid due to cut line, short, or the like ● TCM detects as irregular by comparing target value with monitor value	P1740	P1740	CVT-109
L/PRESS CON-TROL	● TCM detects the unexpected line pressure	P1745	—	CVT-112
STEP MOTR CIRC	● Each coil of the step motor is not energized properly due to an open or a short	P1777	P1777	CVT-113
STEP MOTR/FNC	● There is a great difference between the number of steps for the stepping motor and for the actual gear ratio	P1778	P1778	CVT-116
NO DTC IS DETECTED: FUR-THER TESTING MAY BE REQUIRED	● No NG item has been detected	X	X	—

*1: Refer to CVT-22, "Malfunction Indicator (MI)" .

Except For Australia

X: Applicable —: Not applicable

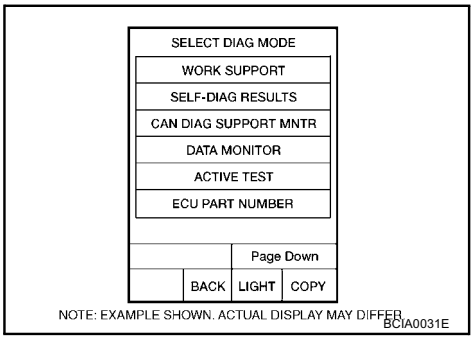
Items (CONSULT-II screen terms)	Malfunction is detected when...	TCM self-diagnosis	Reference page
		DTC	
CAN COMM CIRCUIT	● When a malfunction is detected in CAN communications	U1000	CVT-59
STARTER RELAY/CIRC	● If this signal is ON other than in P or N position, this is judged to be a malfunction (And if it is OFF in P or N position, this is judged to be a malfunc-tion too)	P0615	CVT-61
BRAKE SW/CIRC	● When the brake switch does not switch to ON or OFF	P0703	CVT-63
PNP SW/CIRC	● PNP switch 1-4 signals input with impossible pattern ● PNP switch 3 monitor terminal open or short circuit	P0705	CVT-64
ATF TEMP SEN/CIRC	● During running, the CVT fluid temperature sensor signal voltage is excessively high or low	P0710	CVT-68
INPUT SPD SEN/CIRC	● Input speed sensor (primary speed sensor) signal is not input due to an open circuit ● An unexpected signal is input when vehicle is being driven	P0715	CVT-71
VEH SPD SEN/CIR AT	● Signal from vehicle speed sensor CVT [Output speed sensor (Secondary speed sensor)] not input due to open or short circuit ● Unexpected signal input during running	P0720	CVT-74
ENGINE SPEED SIG	● TCM does not receive the CAN communication signal from the ECM	P0725	CVT-76

Items (CONSULT-II screen terms)	Malfunction is detected when...	TCM self-diagnosis DTC	Reference page
BELT DAMG	● Unexpected gear ratio detected	P0730	CVT-77
TCC SOLENOID/CIRC	● Normal voltage not applied to solenoid due to open or short circuit	P0740	CVT-78
A/T TCC S/V FNCTN	● CVT cannot perform lock-up even if electrical circuit is good ● TCM detects as irregular by comparing difference value with slip rotation	P0744	CVT-81
L/PRESS SOL/CIRC	● Normal voltage not applied to solenoid due to open or short circuit ● TCM detects as irregular by comparing target value with monitor value	P0745	CVT-82
PRS CNT SOL/A FCTN	● Unexpected gear ratio was detected in the LOW side due to excessively low line pressure	P0746	CVT-85
PRS CNT SOL/B FCTN	● Secondary pressure is too high or too low compared with the commanded value while driving	P0776	CVT-86
PRS CNT SOL/B CIRC	● Normal voltage not applied to solenoid due to cut line, short, or the like ● TCM detects as irregular by comparing target value with monitor value	P0778	CVT-87
MANUAL MODE SWITCH	● When an impossible pattern of switch signals is detected, a malfunction is detected	P0826	CVT-90
TR PRS SENS/A CIRC	● Signal voltage of the transmission fluid pressure sensor A (secondary pressure sensor) is too high or too low while driving	P0840	CVT-94
PRESS SEN/FNCTN	● Correlation between the values of the transmission fluid pressure sensor A (secondary pressure sensor) and the transmission fluid pressure sensor B (primary pressure sensor) is out of specification	P0841	CVT-97
TR PRS SENS/B CIRC	● Signal voltage of the transmission fluid pressure sensor B (primary pressure sensor) is too high or too low while driving	P0845	CVT-98
SEC/PRESS DOWN	● Secondary fluid pressure is too low compared with the commanded value while driving	P0868	CVT-101
TCM-POWER SUPPLY	● When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops ● This is not a malfunction message (Whenever shutting OFF a power supply to the TCM, this message appears on the screen)	P1701	CVT-102
TP SEN/CIRC A/T	● TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM	P1705	CVT-105
ESTM VEH SPD SIG	● CAN communication with the ABS actuator and the electric unit (control unit) is malfunctioning ● There is a great difference between the vehicle speed signal from the ABS actuator and the electric unit (control unit), and the vehicle speed sensor signal	P1722	CVT-106
CVT SPD SEN/FNCTN	● A rotation sensor error is detected because the gear does not change in accordance with the position of the stepping motor **CAUTION:** **One of the "P0720 VEH SPD SEN/CIR AT", the "P0715 INPUT SPD SEN/CIRC" or the "P0725 ENGINE SPEED SIG" is displayed with the DTC at the same time**	P1723	CVT-107
ELEC TH CONTROL	● The electronically controlled throttle for ECM is malfunctioning	P1726	CVT-108

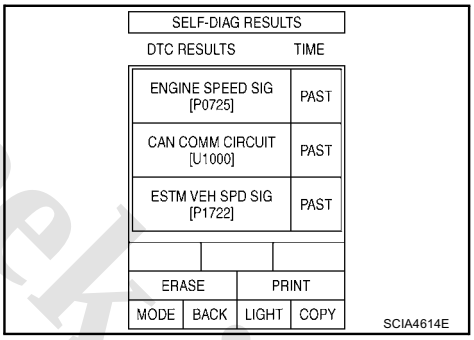
Items (CONSULT-II screen terms)	Malfunction is detected when...	TCM self-diagnosis DTC	Reference page
LU-SLCT SOL/CIRC	● Normal voltage not applied to solenoid due to cut line, short, or the like ● TCM detects as irregular by comparing target value with monitor value	P1740	CVT-109
L/PRESS CONTROL	● TCM detects the unexpected line pressure	P1745	CVT-112
STEP MOTR CIRC	● Each coil of the step motor is not energized properly due to an open or a short	P1777	CVT-113
STEP MOTR/FNC	● There is a great difference between the number of steps for the stepping motor and for the actual gear ratio	P1778	CVT-116
NO DTC IS DETECTED: FURTHER TESTING MAY BE REQUIRED	● No NG item has been detected	X	—

How to Erase Self-diagnostic Results

1. Touch “SELF-DIAG RESULTS” on “SELECT DIAG MODE” screen.



2. Touch “ERASE”. (The self-diagnostic results will be erased.)

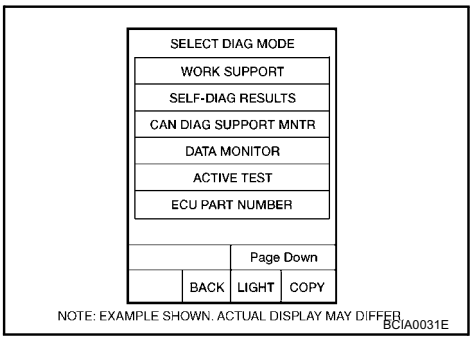


DATA MONITOR MODE

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.

NOTE:
When malfunction is detected, CONSULT-II performs “REAL-TIME DIAGNOSIS”. Also, any malfunction detected while in this mode will be displayed at real time.



Display Items List

X: Standard, —: Not applicable, ▼: Option

Monitored item (Unit)	Monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
VSP SENSOR (km/h)	X	—	▼	Output speed sensor (secondary speed sensor)
ESTM VSP SIG (km/h)	X	—	▼	
PRI SPEED SEN (rpm)	X	—	▼	
ENG SPEED SIG (rpm)	X	—	▼	
SEC HYDR SEN (V)	X	—	▼	
PRI HYDR SEN (V)	X	—	▼	
ATF TEMP SEN (V)	X	—	▼	CVT fluid temperature sensor
VIGN SEN (V)	X	—	▼	
VEHICLE SPEED (km/h)	—	X	▼	Vehicle speed recognized by the TCM
PRI SPEED (rpm)	—	X	▼	Primary pulley speed
SEC SPEED (rpm)	—	—	▼	Secondary pulley speed
ENG SPEED (rpm)	—	X	▼	
SLIP REV (rpm)	—	X	▼	Difference between engine speed and primary pulley speed
GEAR RATIO	—	X	▼	
G SPEED (G)	—	—	▼	
ACC PEDAL OPEN (0.0/8)	X	X	▼	Degree of opening for accelerator recognized by the TCM (Signal input with CAN communications) For fail-safe operation, the specific value used for control is displayed
TRQ RTO	—	—	▼	
SEC PRESS (MPa)	—	X	▼	
PRI PRESS (MPa)	—	X	▼	
ATF TEMP	—	X	▼	
DSR REV (rpm)	—	—	▼	
DGEAR RATIO	—	—	▼	

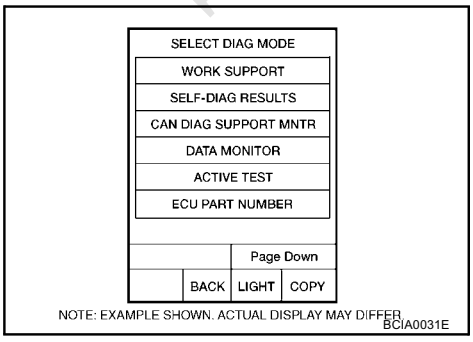
Monitored item (Unit)	Monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
DSTM STEP (step)	—	—	▼	
STM STEP (step)	—	X	▼	
LU PRS (MPa)	—	—	▼	
LINE PRS (MPa)	—	—	▼	
TGT SEC PRESS (MPa)	—	—	▼	
ISOLT1 (A)	—	X	▼	Torque converter clutch solenoid valve output current
ISOLT2 (A)	—	X	▼	Pressure control solenoid valve A (line pressure solenoid valve) output current
ISOLT3 (A)	—	X	▼	Pressure control solenoid valve B (secondary pressure solenoid valve) output current
SOLMON1 (A)	X	X	▼	Torque converter clutch solenoid valve monitor current
SOLMON2 (A)	X	X	▼	Pressure control solenoid valve A (line pressure solenoid valve) monitor current
SOLMON3 (A)	X	X	▼	Pressure control solenoid valve B (secondary pressure solenoid valve) monitor current
INH SW3M (ON/OFF)	X	—	▼	PNP switch 3 ON-OFF status monitor
INH SW4 (ON/OFF)	X	—	▼	PNP switch 4 ON-OFF status
INH SW3 (ON/OFF)	X	—	▼	PNP switch 3 ON-OFF status
INH SW2 (ON/OFF)	X	—	▼	PNP switch 2 ON-OFF status
INH SW1 (ON/OFF)	X	—	▼	PNP switch 1 ON-OFF status
BRAKE SW (ON/OFF)	X	X	▼	Stop lamp switch (Signal input with CAN communications)
FULL SW (ON/OFF)	X	X	▼	Signal input with CAN communications
IDLE SW (ON/OFF)	X	X	▼	
SPORT MODE SW (ON/OFF)	X	X	▼	Not mounted but displayed
STRDWNSW (ON/OFF)	X	—	▼	
STRUPSW (ON/OFF)	X	—	▼	
DOWNLVR (ON/OFF)	X	—	▼	
UPLVR (ON/OFF)	X	—	▼	
NON MMODE (ON/OFF)	X	—	▼	
MMODE (ON/OFF)	X	—	▼	
INDLRNG (ON/OFF)	—	—	▼	
INDDRNG (ON/OFF)	—	—	▼	“D” position indicator output
INDNRNG (ON/OFF)	—	—	▼	“N” position indicator output
INDRRNG (ON/OFF)	—	—	▼	“R” position indicator output
INDPRNG (ON/OFF)	—	—	▼	“P” position indicator output
CVTLAMP (ON/OFF)	—	—	▼	

Monitored item (Unit)	Monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
SPORT MODE IND (ON/OFF)	—	—	▼	Not mounted but displayed
MMODE IND (ON/OFF)	—	—	▼	
SMCOIL D (ON/OFF)	—	—	▼	Step motor coil “D” energizing status
SMCOIL C (ON/OFF)	—	—	▼	Step motor coil “C” energizing status
SMCOIL B (ON/OFF)	—	—	▼	Step motor coil “B” energizing status
SMCOIL A (ON/OFF)	—	—	▼	Step motor coil “A” energizing status
LUSEL SOL OUT (ON/OFF)	—	—	▼	
REV LAMP (ON/OFF)	—	X	▼	
STRTR RLY OUT (ON/OFF)	—	—	▼	Starter relay
LU SEL SOL MON (ON/OFF)	—	—	▼	
STRTR RLY MON (ON/OFF)	—	—	▼	Starter relay
VDC ON (ON/OFF)	X	—	▼	
TCS ON (ON/OFF)	X	—	▼	
ABS ON (ON/OFF)	X	—	▼	
ACC ON (ON/OFF)	X	—	▼	Not mounted but displayed
RANGE	—	X	▼	Indicates position is recognized by TCM Indicates a specific value required for control when fail-safe function is activated
M GEAR POS	—	X	▼	
Voltage (V)	—	—	▼	Displays the value measured by the voltage probe
Frequency (Hz)	—	—	▼	The value measured by the pulse probe is displayed
DUTY-HI (high) (%)	—	—	▼	
DUTY-LOW (low) (%)	—	—	▼	
PLS WIDTH-HI (ms)	—	—	▼	
PLS WIDTH-LOW (ms)	—	—	▼	

CAN DIAGNOSTIC SUPPORT MONITOR MODE

Operation Procedure

1. Touch “CAN DAIG SUPPORT MNTR” on “SELECT DIAG MODE” screen.



Diagnostic Procedure Without CONSULT-II

ACS00AKQ

OBD SELF-DIAGNOSTIC PROCEDURE (WITH GST)

Refer to EC-70, "Generic Scan Tool (GST) Function" .

DTC U1000 CAN COMMUNICATION LINE

PFP:23710

Description

ACS00AE3

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent malfunction detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

On Board Diagnosis Logic

ACS00AE4

Diagnostic trouble code “U1000 CAN COMM CIRCUIT” with CONSULT-II is detected when TCM cannot communicate to other control units.

Possible Cause

ACS00AE5

Harness or connectors
(CAN communication line is open or shorted.)

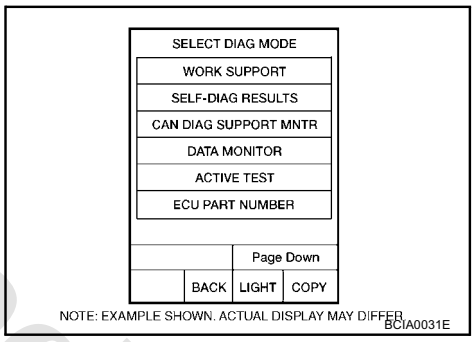
DTC Confirmation Procedure

ACS00AE6

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine and wait for at least 6 seconds.
4. If DTC is detected, check possible cause items.



WITH GST

Follow the procedure “WITH CONSULT-II”.

TCM Input/Output Signal Reference Values

ACS00AKR

TCM terminal data are reference values, measured between each terminal and ground.

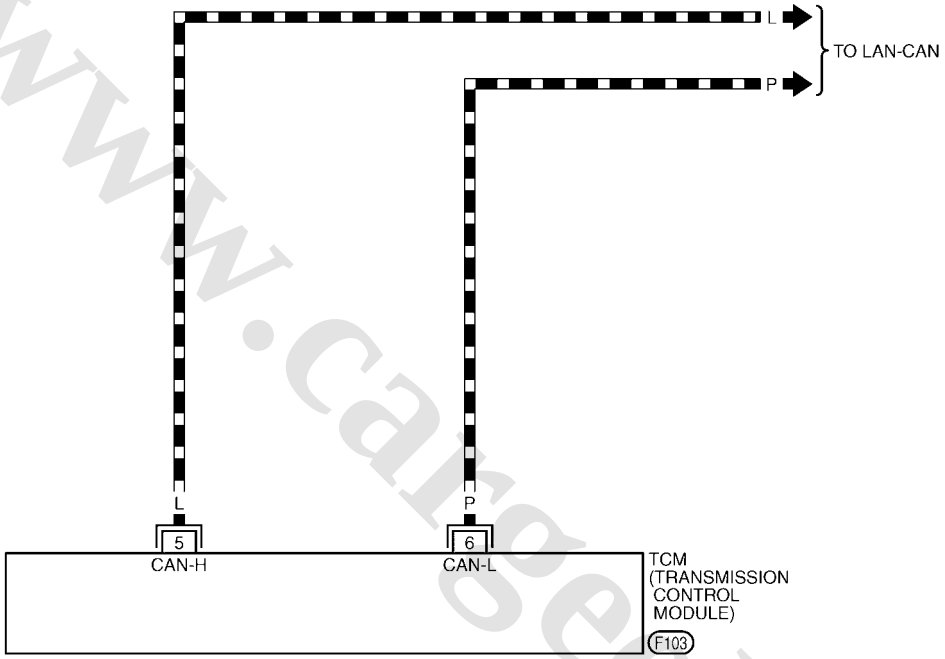
Terminal	Wire color	Item	Condition	Data (Approx.)
5	L	CAN-H	—	—
6	P	CAN-L	—	—

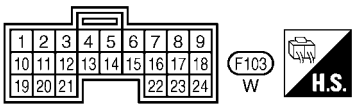
Wiring Diagram — CVT — CAN

ACS00AE7

CVT-CAN-01

: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC
: DATA LINE





TCWB0136E

DTC P0615 START SIGNAL CIRCUIT

PFP:25230

Description

ACS00AE9

- TCM controls starter relay in IPDM E/R.
- TCM switches starter relay ON at “P” or “N” position and allows to crank engine.
- Then it prohibits cranking other than at “P” or “N” position.

CONSULT-II Reference Value

ACS00AEA

Remarks: Specification data are reference values.

Item name	Condition	Display value
STRTR RLY OUT	Selector lever in “P”, “N” positions	ON
	Selector lever in other positions	OFF
STRTR RLY MON	Selector lever in “P”, “N” positions	ON
	Selector lever in other positions	OFF

On Board Diagnosis Logic

ACS00AEB

Diagnostic trouble code “P0615 STARTER RELAY/CIRC” with CONSULT-II is detected when starter relay switched ON other than at “P” or “N” position. (Or when switched OFF at “P” or “N” position).

Possible Cause

ACS00AEC

- Harness or connectors
  (Starter relay and TCM circuit is open or shorted.)
- Starter relay

DTC Confirmation Procedure

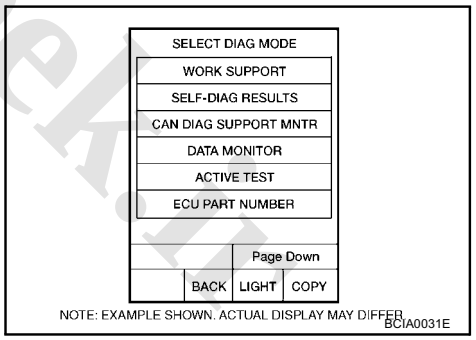
ACS00AED

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine.
4. Drive vehicle for at least 2 consecutive seconds.
5. If DTC is detected, check possible cause items.



TCM Input/Output Signal Reference Values

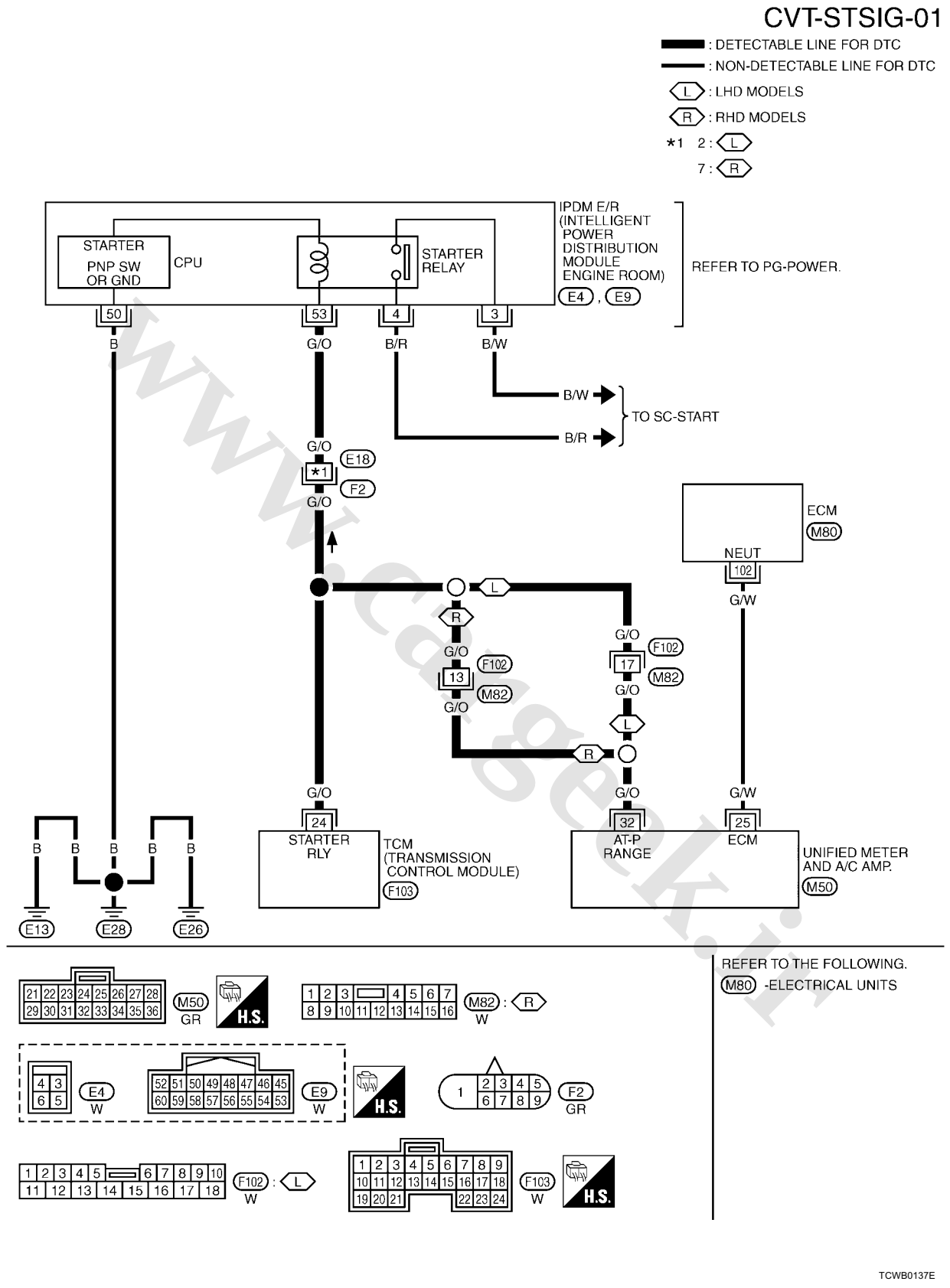
ACS00AKS

TCM terminal data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition		Data (Approx.)
24	G/O	Starter relay		Selector lever in “N”, “P” positions.	Battery voltage
				Selector lever in other positions.	0 V

Wiring Diagram — CVT — STSIG

ACS00AEE



TCWB0137E

DTC P0703 STOP LAMP SWITCH CIRCUIT

PFP:25320

Description

ACS00AEG

"ON", "OFF" status of the stop lamp switch is sent via the CAN communication from the unified meter and A/C amp to TCM using the signal.

CONSULT-II Reference Value

ACS00AEH

Remarks: Specification data are reference values.

Item name	Condition	Display value
BRAKE SW	Depressed brake pedal	ON
	Released brake pedal	OFF

On Board Diagnosis Logic

ACS00AEI

Diagnostic trouble code "P0703 BRAKE SW/CIRC" with CONSULT-II is detected when the stop lamp switch does not switch to ON and OFF.

- The stop lamp switch does not switch to ON and OFF.

Possible Cause

ACS00AEJ

- Harness or connectors
  (Stop lamp switch, and unified meter and A/C amp circuit are open or shorted.)
  (CAN communication line is open or shorted.)
- Stop lamp switch

DTC Confirmation Procedure

ACS00AEK

CAUTION:

Always drive vehicle at a safe speed.

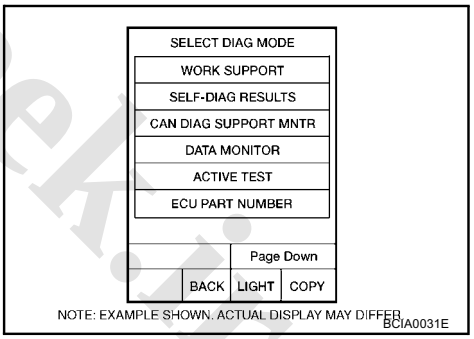
NOTE:

If "DTC Confirmation Procedure" has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.

After the repair, touch "ERASE" on "SELF-DIAG RESULTS" and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select "DATA MONITOR" mode for "TRANSMISSION" with CONSULT-II.
3. Start engine.
4. Start vehicle for at least 3 consecutive seconds.
5. If DTC is detected, check possible cause items.



DTC P0705 PARK/NEUTRAL POSITION SWITCH

PFP:32006

Description

ACS00AEM

- The PNP switch includes 4 transmission position switches.
- TCM judges the selector lever position by the PNP switch signal.

Shift position	PNP switch 1	PNP switch 2	PNP switch 3	PNP switch 4	PNP switch 3 (monitor)
P	OFF	OFF	OFF	OFF	OFF
R	ON	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF	OFF
D	ON	ON	ON	ON	ON

CONSULT-II Reference Value

ACS00AEN

Remarks: Specification data are reference values.

Item name	Condition	Display value
INH SW3M	Selector lever in “D” position	ON
	Selector lever in “P”, “R” and “N” positions	OFF
INH SW4	Selector lever in “R”, “D” positions	ON
	Selector lever in “P”, “N” positions	OFF
INH SW3	Selector lever in “D” position	ON
	Selector lever in “P”, “R” and “N” positions	OFF
INH SW2	Selector lever in “N”, “D” positions	ON
	Selector lever in “P”, “R” positions	OFF
INH SW1	Selector lever in “R”, “N” and “D” positions	ON
	Selector lever in “P” position	OFF

On Board Diagnosis Logic

ACS00AEO

Diagnostic trouble code “P0705 PNP SW/CIRC” with CONSULT-II is detected under the following conditions.

- When TCM does not receive the correct voltage signal from the PNP switches 1, 2, 3 and 4 based on the gear position.
- When the signal from monitor terminal of PNP switch 3 is different from PNP switch 3.

Possible Cause

ACS00AEP

- Harness or connectors
  (PNP switches 1, 2, 3, 4 and TCM circuit is open or shorted.)
- PNP switches 1, 2, 3 and 4
- PNP switch 3 monitor terminal is open or shorted

DTC Confirmation Procedure

ACS00AEQ

CAUTION:

Always drive vehicle at a safe speed.

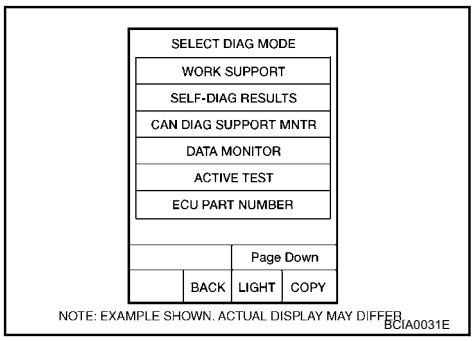
NOTE:

If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.

After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine.
4. Drive vehicle and maintain the following conditions for at least 2 consecutive seconds.
   VEHICLE SPEED: More than 10 km/h (6 MPH)
   ENG SPEED: More than 450 rpm
   ACC PEDAL OPEN: More than 1.0/8
5. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

WITH GST

Follow the procedure “WITH CONSULT-II”.

TCM Input/Output Signal Reference Values

ACS00AKT

TCM terminal data are reference values, measured between each terminal and ground.

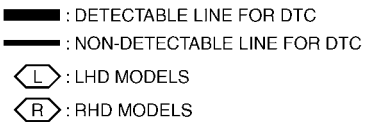
Terminal	Wire color	Item	Condition		Data (Approx.)
27	BR/W	PNP switch 1		Selector lever in “R”, “N” and “D” positions.	0 V
				Selector lever in “P” position.	Battery voltage
32	GR	PNP switch 3 (monitor)		Selector lever in “D” position.	0 V
				Selector lever in “P”, “R” and “N” positions.	8.0 V - Battery voltage
34	P/B	PNP switch 2		Selector lever in “N”, “D” positions.	0 V
				Selector lever in “P”, “R” positions.	10.0 V - Battery voltage
35	P/L	PNP switch 3		Selector lever in “D” position.	0 V
				Selector lever in “P”, “R” and “N” positions.	8.0 V - Battery voltage
36	G*1	PNP switch 4		Selector lever in “R”, “D” positions.	0 V
	G/O*2			Selector lever in “P”, “N” positions.	10.0 V - Battery voltage

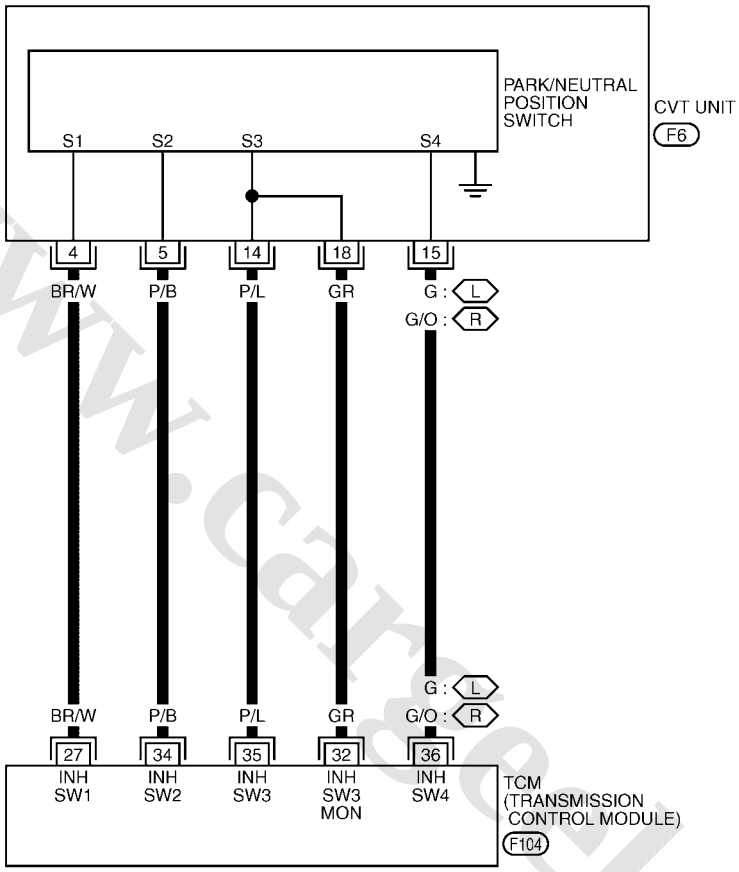
*1: LHD models
*2: RHD models

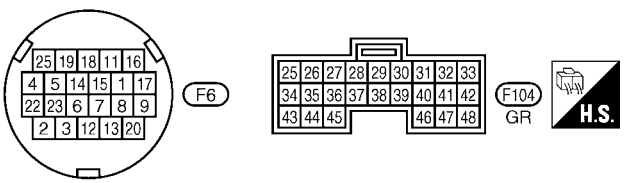
Wiring Diagram — CVT — PNP/SW

ACS00AER

CVT-PNP/SW-01







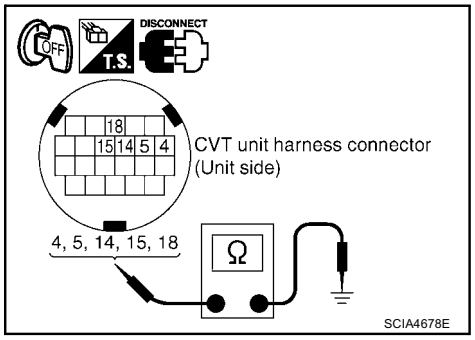
TCWB0138E

Component Inspection

ACS00AET

PNP SWITCH

1. Change selector lever to various positions to check the continuity between terminals on the PNP switch and ground.



PNP SW	Shift position	Connector	Terminal	Continuity
SW 1	“R”, “N” and “D”	F6	4 - Ground	Yes
	“P”			No
SW 2	“N”, “D”		5 - Ground	Yes
	“P”, “R”			No
SW 3	“D”		14 - Ground	Yes
	“P”, “R” and “N”			No
SW 4	“R”, “D”		15 - Ground	Yes
	“P”, “N”			No
SW 3 monitor	“D”		18 - Ground	Yes
	“P”, “R” and “N”			No

2. If NG, check continuity with control cable disconnected. (Refer to step 1 above.)
3. If OK, with the control cable disconnected, adjust the control cable. Refer to CVT-137, "Adjustment of CVT Position" .
4. If NG, even when the control cable is disconnected, replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .

DTC P0710 CVT FLUID TEMPERATURE SENSOR CIRCUIT

PFP:31020

Description

ACS00AEU

The CVT fluid temperature sensor detects the CVT fluid temperature and sends a signal to the TCM.

CONSULT-II Reference Value

ACS00AEV

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
ATF TEMP SEN	Cold [20°C (68°F)]	1.8 - 2.0 V
	Hot [80°C (176°F)]	0.6 - 1.0 V

On Board Diagnosis Logic

ACS00AEW

Diagnostic trouble code “P0710 ATF TEMP SEN/CIRC” with CONSULT-II is detected when TCM receives an excessively low or high voltage from the sensor.

Possible Cause

ACS00AEX

- Harness or connectors
  (Sensor circuit is open or shorted.)
- CVT fluid temperature sensor

DTC Confirmation Procedure

ACS00AEY

CAUTION:

Always drive vehicle at a safe speed.

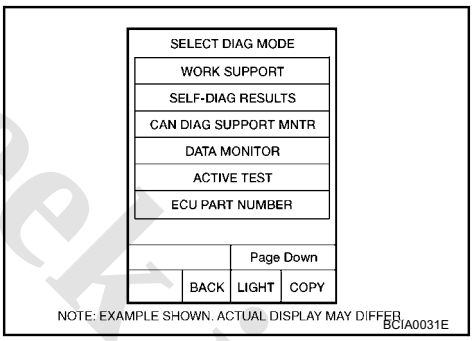
NOTE:

If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.

After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine and maintain the following conditions for at least 10 minutes (Total).
   VEHICLE SPEED: 10 km/h (6 MPH) or more
   ENG SPEED: 450 rpm more than
   ACC PEDAL OPEN: More than 1.0/8
   RANGE: “D” position
4. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER
BCIA0031E

WITH GST

Follow the procedure “WITH CONSULT-II”.

TCM Input/Output Signal Reference Values

ACS00AKU

TCM terminal data are reference values, measured between each terminal and ground.

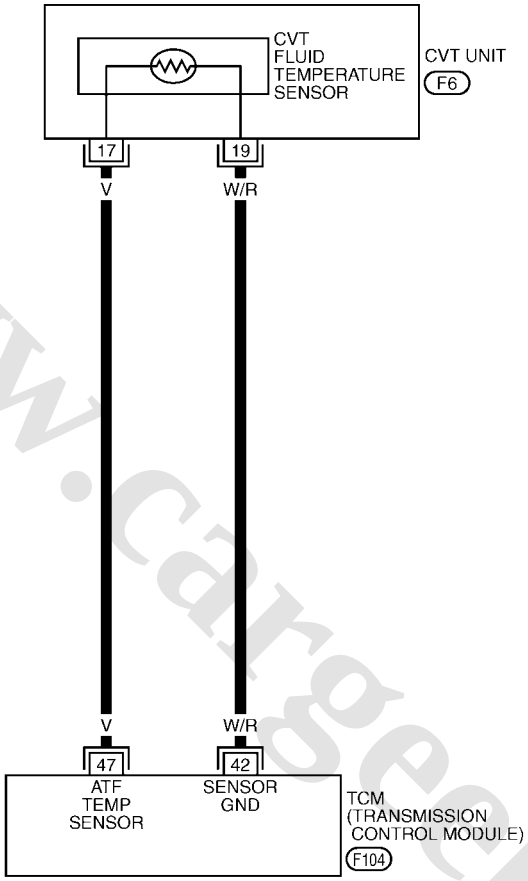
Terminal	Wire color	Item	Condition		Data (Approx.)
42	W/R	Sensor ground	Always		0 V
47	V	CVT fluid temperature sensor		When CVT fluid temperature is 20°C (68°F).	2.0 V
				When CVT fluid temperature is 80°C (176°F).	1.0 V

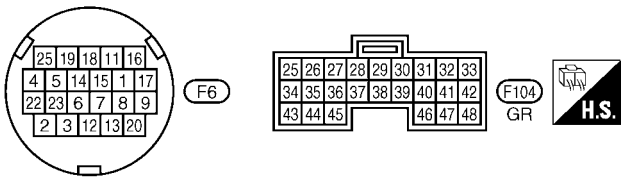
Wiring Diagram — CVT — FTS

ACS00AEZ

CVT-FTS-01

: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC





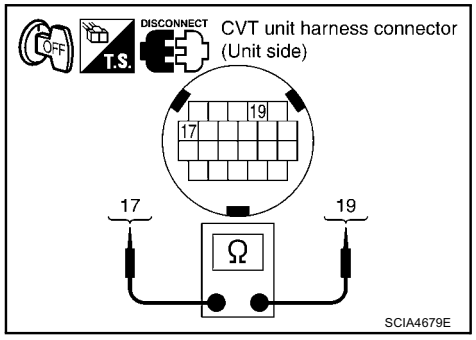
TCWA0247E

Component Inspection

ACS00AF1

CVT FLUID TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check resistance between CVT unit harness connector terminals.



Name	Connector	Terminal	Temperature °C (°F)	Resistance (Approx.)
CVT fluid temperature sensor	F6	17 - 19	20 (68)	6.5 kΩ
			80 (176)	0.9 kΩ

4. If NG, replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .

DTC P0715 INPUT SPEED SENSOR CIRCUIT (PRI SPEED SENSOR)

PFP:31935

Description

ACS00AF2

The input speed sensor (primary speed sensor) detects the primary pulley revolution speed and sends a signal to the TCM.

CONSULT-II Reference Value

ACS00AF3

Remarks: Specification data are reference values.

Item name	Condition	Display value
ENG SPEED SIG	Engine running	Closely matches the tachometer reading.
PRI SPEED SEN	During driving (lock-up ON)	Approximately matches the engine speed.

On Board Diagnosis Logic

ACS00AF4

Diagnostic trouble code “P0715 INPUT SPD SEN/CIRC” with CONSULT-II is detected when TCM does not receive the proper signal from the sensor.

Possible Cause

ACS00AF5

- Harness or connectors
  (Sensor circuit is open or shorted.)
- Input speed sensor (Primary speed sensor)

DTC Confirmation Procedure

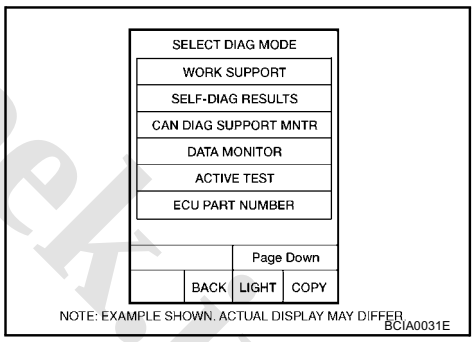
ACS00AF6

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Start engine and maintain the following conditions for at least 5 consecutive seconds.
   VEHICLE SPEED: 10 km/h (6 MPH) or more
   ACC PEDAL OPEN: More than 1.0/8
   RANGE: “D” position
   ENG SPEED: 450 rpm or more
   Driving location: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.
3. If DTC is detected, check possible cause items.



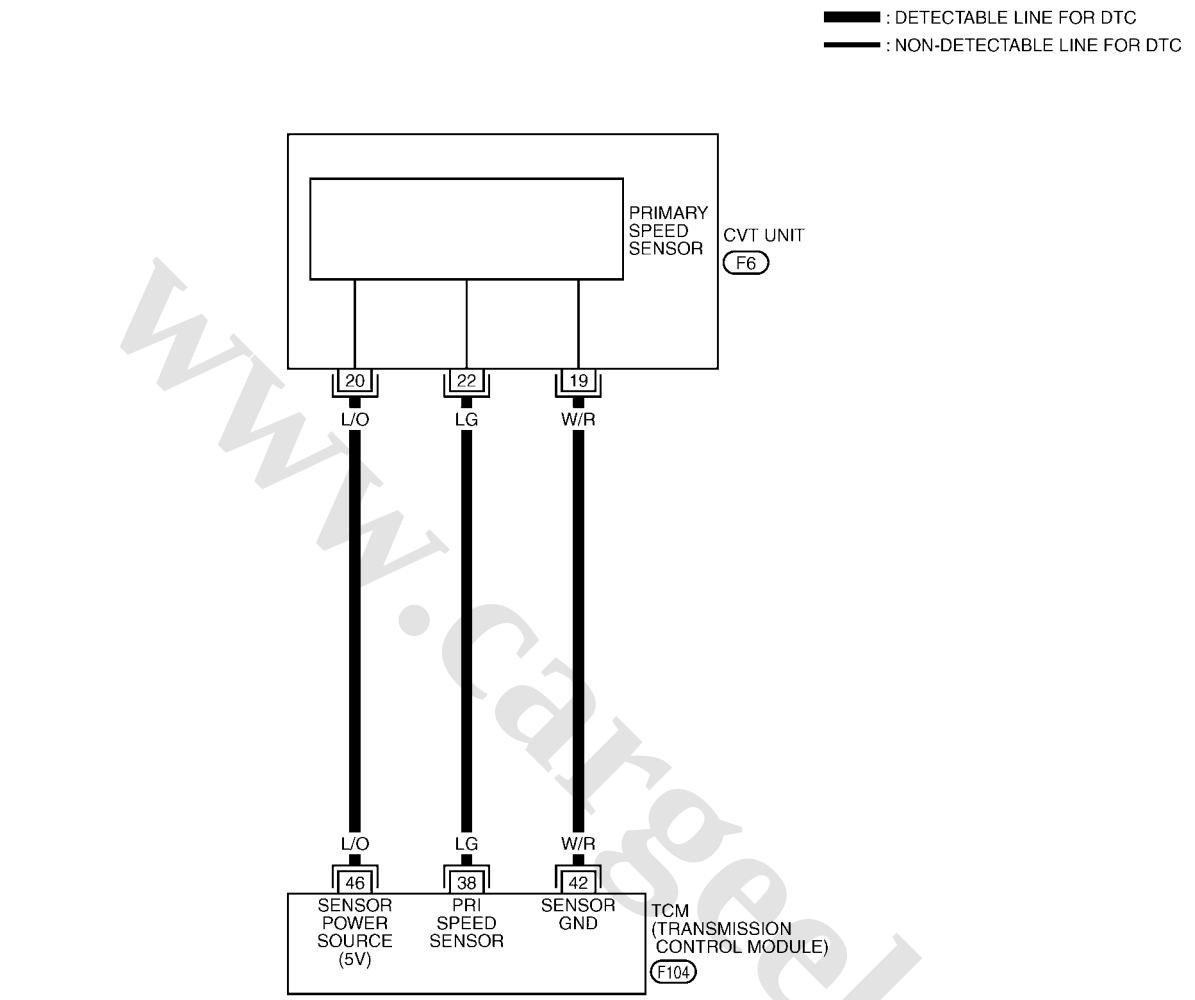
WITH GST

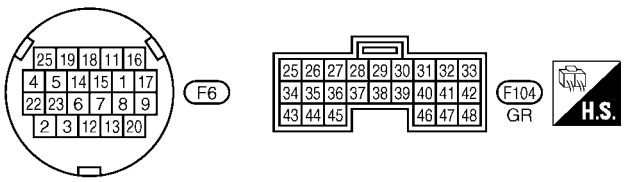
Follow the procedure “WITH CONSULT-II”.

Wiring Diagram — CVT — PRSCVT

ACS00AF7

CVT-PRSCVT-01





TCWA0254E

TCM Input/Output Signal Reference Values

ACS00AKV

TCM terminal data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition		Data (Approx.)
38	LG	Input speed sensor (Primary speed sensor)		When driving [“D” position, 20 km/h (12 MPH)].	600 Hz
42	W/R	Sensor ground	Always		0 V
46	L/O	Sensor power		—	4.5 - 5.5 V
				—	0 V

DTC P0720 VEHICLE SPEED SENSOR CVT (SECONDARY SPEED SENSOR)

PFP:31935

Description

ACS00AF9

The vehicle speed sensor CVT [output speed sensor (secondary speed sensor)] detects the revolution of the CVT output shaft and emits a pulse signal. The pulse signal is sent to the TCM, which converts it into vehicle speed.

CONSULT-II Reference Value

ACS00AFA

Remarks: Specification data are reference values.

Item name	Condition	Display value
VSP SENSOR	During driving	Approximately matches the speedometer reading.

On Board Diagnosis Logic

ACS00AFB

Diagnostic trouble code “P0720 VEH SPD SEN/CIR AT” with CONSULT-II is detected TCM does not receive the proper signal from the sensor.

Possible Cause

ACS00AFC

- Harness or connectors
  (Sensor circuit is open or shorted.)
- Output speed sensor (Secondary speed sensor)

DTC Confirmation Procedure

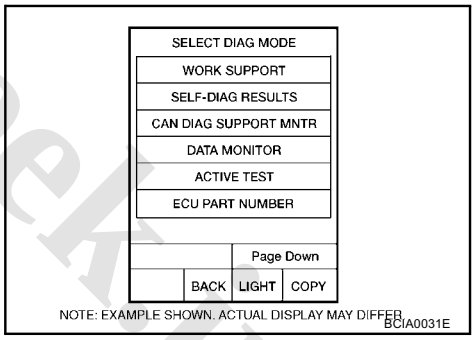
ACS00AFD

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Start engine and maintain the following conditions for at least 12 consecutive seconds.
   ACC PEDAL OPEN: More than 1.0/8
   RANGE: “D” position
   Driving location: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.
3. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

WITH GST

Follow the procedure “WITH CONSULT-II”.

TCM Input/Output Signal Reference Values

ACS00AKW

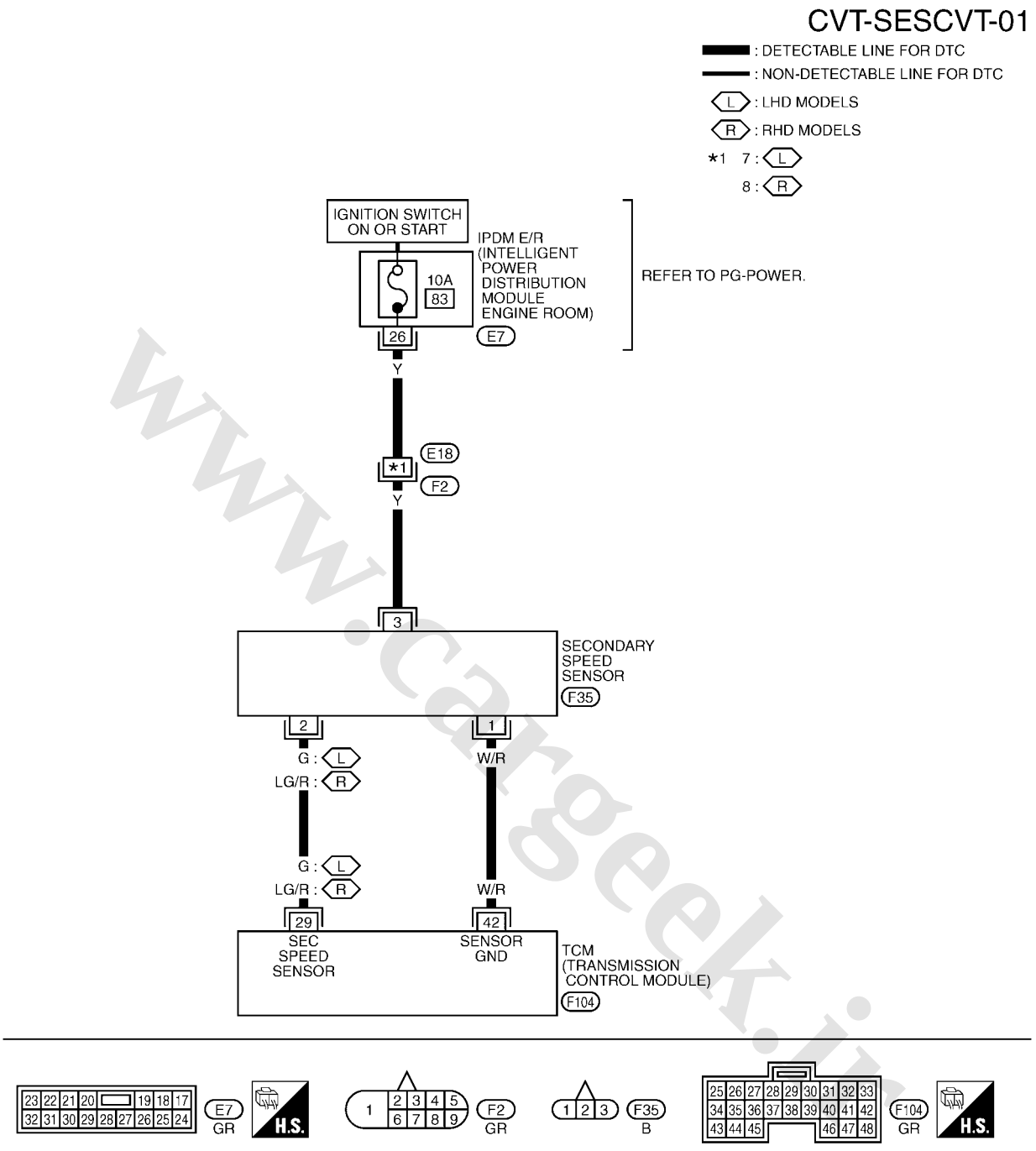
TCM terminal data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition		Data (Approx.)
29	G*1	Output speed sensor (Secondary speed sensor)		When driving [“D” position, 20 km/h (12 MPH)].	300 Hz
	LG/R*2				
42	W/R	Sensor ground	Always		0 V

*1: LHD models
*2: RHD models

Wiring Diagram — CVT — SESCVT

ACS00AFE



TCWB0139E

DTC P0725 ENGINE SPEED SIGNAL

PFP:24825

Description

ACS00AFG

The engine speed signal is sent from the ECM to the TCM.

CONSULT-II Reference Value

ACS00AFH

Remarks: Specification data are reference values.

Item name	Condition	Display value
ENG SPEED SIG	Engine running	Closely matches the tachometer reading.
ACC PEDAL OPEN	Released accelerator pedal - Fully depressed accelerator pedal	0.0/8 - 8.0/8

On Board Diagnosis Logic

ACS00AFI

Diagnostic trouble code “P0725 ENGINE SPEED SIG” with CONSULT-II is detected when TCM does not receive the engine speed signal (input by CAN communication) from ECM.

Possible Cause

ACS00AFJ

Harness or connectors
(The ECM to the TCM circuit is open or shorted.)
(CAN communication line is open or shorted.)

DTC Confirmation Procedure

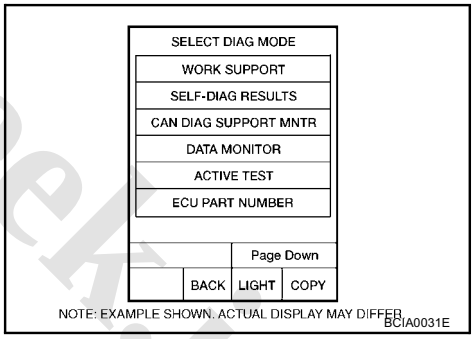
ACS00AFK

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Start engine and maintain the following conditions for at least 10 consecutive seconds.
   PRI SPEED SEN: More than 1000 rpm
3. If DTC is detected, check possible cause items.



DTC P0730 BELT DAMAGE

PFP:31935

Description

ACS00AFM

TCM selects the gear ratio using the engine load (throttle position), the primary pulley revolution speed, and the secondary pulley revolution speed as input signal. Then it changes the operating pressure of the primary pulley and the secondary pulley and changes the groove width of the pulley.

CONSULT-II Reference Value

ACS00AFN

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
GEAR RATIO	During driving	2.37 - 0.43

On Board Diagnosis Logic

ACS00AFO

- TCM calculates the actual gear ratio with input speed sensor (primary speed sensor) and output speed sensor (secondary speed sensor).
- Diagnostic trouble code “P0730 BELT DAMG” with CONSULT-II is detected, when TCM receives an unexpected gear ratio signal.

Possible Cause

ACS00AFP

Transaxle assembly

DTC Confirmation Procedure

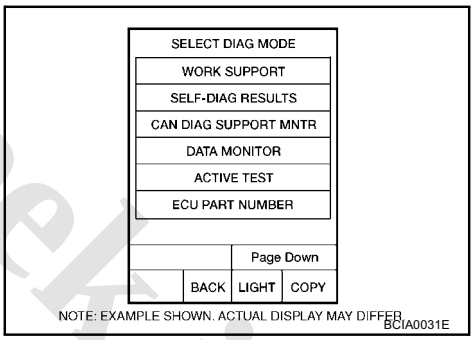
ACS00AFQ

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Make sure that output voltage of CVT fluid temperature sensor is within the range below.
   ATF TEMP SEN: 1.0 - 2.0 V
   If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)
3. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
4. Start engine and maintain the following conditions for at least 30 consecutive seconds.
   TEST START FROM 0 km/h (0 MPH)
   CONSTANT ACCELERATION: Keep 30 sec or more
   VEHICLE SPEED: 10 km/h (6 MPH) or more
   ACC PEDAL OPEN: More than 1.0/8
   RANGE: “D” position
   ENG SPEED: 450 rpm or more
5. If DTC is detected, check possible cause items.



DTC P0740 TORQUE CONVERTER CLUTCH SOLENOID VALVE

PFP:31940

Description

ACS00AFS

- The torque converter clutch solenoid valve is activated by the TCM in response to signals sent from the vehicle speed and throttle position sensors. Lock-up piston operation will then be controlled.
- Lock-up operation, however, is prohibited when CVT fluid temperature is too low.
- When the accelerator pedal is depressed (less than 2/8) in lock-up condition, the engine speed should not change abruptly. If there is a big jump in engine speed, there is no lock-up.

CONSULT-II Reference Value

ACS00AFT

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
ISOLT1	Lock-up OFF	0.0 A
	Lock-up ON	0.7 A

On Board Diagnosis Logic

ACS00AFU

Diagnostic trouble code “P0740 TCC SOLENOID/CIRC” with CONSULT-II is detected under the following conditions.

- TCM detects an improper voltage drop when it tries to operate the solenoid valve.

Possible Cause

ACS00AFV

- Torque converter clutch solenoid valve
- Harness or connectors
  (Solenoid circuit is open or shorted.)

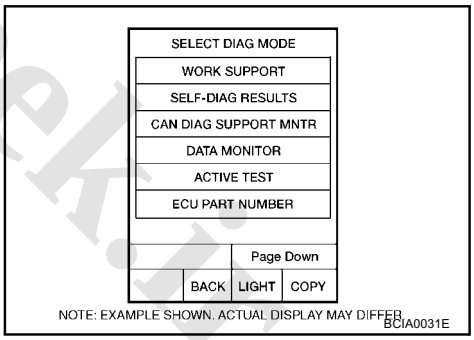
DTC Confirmation Procedure

ACS00AFW

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II and wait at least 10 consecutive seconds.
3. If DTC is detected, check possible cause items.



WITH GST

Follow the procedure “WITH CONSULT-II”.

TCM Input/Output Signal Reference Values

ACS00AKX

TCM terminal data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition			Data (Approx.)
3	L/W*1	Torque converter clutch solenoid valve		When vehicle cruises in “D” position.	When CVT performs lock-up.	6.0 V
	G*2				When CVT does not perform lock-up.	1.0 V

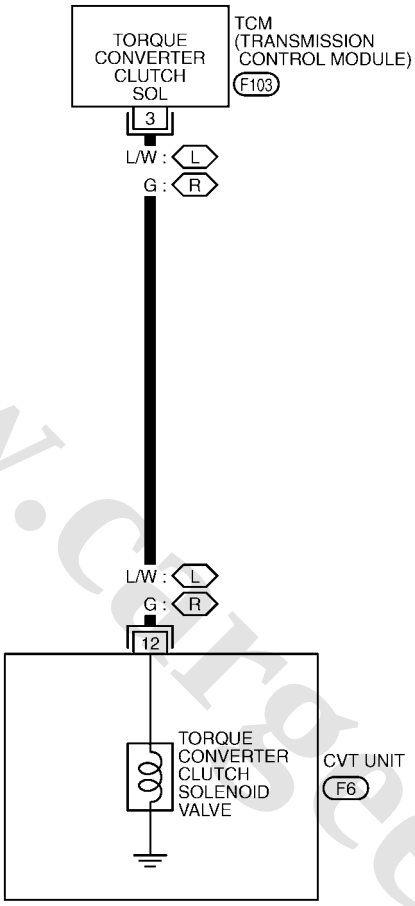
*1: LHD models
*2: RHD models

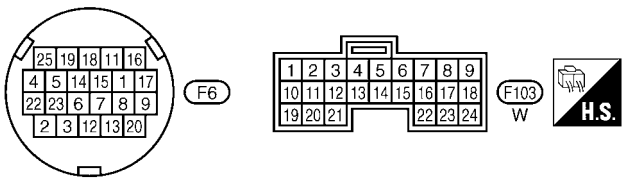
Wiring Diagram — CVT — TCV

ACS00AFX

CVT-TCV-01

: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC
L : LHD MODELS
R : RHD MODELS





TCWB0140E

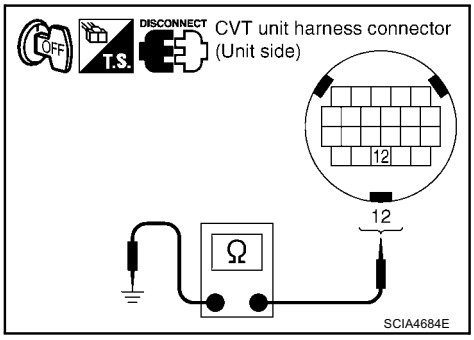
Component Inspection

ACS00AFZ

TORQUE CONVERTER CLUTCH SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check resistance between CVT unit harness connector terminal and ground.

Solenoid Valve	Connector	Terminal	Resistance (Approx.)
Torque converter clutch solenoid valve	F6	12 - Ground	3.0 - 9.0 Ω



4. If NG, replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .

DTC P0744 A/T TCC S/V FUNCTION (LOCK-UP)

PFP:31940

Description

ACS00AG0

This malfunction is detected when the torque converter clutch does not lock-up as instructed by the TCM. This is not only caused by electrical malfunction (circuits open or shorted), but also by mechanical malfunction such as control valve sticking, improper solenoid valve operation, etc.

CONSULT-II Reference Value

ACS00AG1

Remarks: Specification data are reference values.

Item name	Condition	Display value
ENG SPEED SIG	Engine running	Closely matches the tachometer reading.
PRI SPEED SEN	During driving (lock-up ON)	Approximately matches the engine speed.

On Board Diagnosis Logic

ACS00AG2

Diagnostic trouble code “P0744 A/T TCC S/V FNCTN” with CONSULT-II is detected under the following conditions.

- When CVT cannot perform lock-up even if electrical circuit is good.
- When TCM compares difference value with slip revolution and detects an irregularity.

Possible Cause

ACS00AG3

- Torque converter clutch solenoid valve
- Hydraulic control circuit

DTC Confirmation Procedure

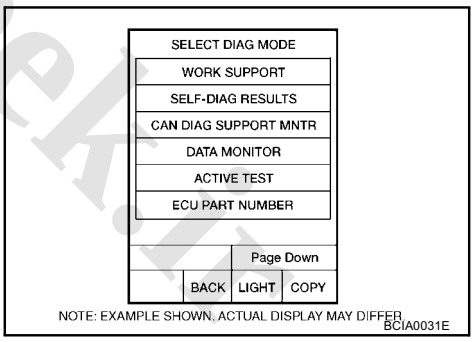
ACS00AG4

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine and maintain the following condition for at least 30 seconds.
   ACC PEDAL OPEN: More than 1.0/8
   RANGE: “D” position
   [Vehicle speed: Constant speed of more than 40 km/h (25 MPH)]
4. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN, ACTUAL DISPLAY MAY DIFFER
BCIA0031E

WITH GST

Follow the procedure “WITH CONSULT-II”.

DTC P0745 LINE PRESSURE SOLENOID VALVE

PFP:31940

Description

ACS00AG6

The pressure control solenoid valve A (line pressure solenoid valve) regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

CONSULT-II Reference Value

ACS00AG7

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
ISOLT2	Release your foot from the accelerator pedal.	0.8 A
	Press the accelerator pedal all the way down.	0.0 A

On Board Diagnosis Logic

ACS00AG8

Diagnostic trouble code “P0745 L/PRESS SOL/CIRC” with CONSULT-II is detected under the following conditions.

- TCM detects an improper voltage drop when it tries to operate the solenoid valve.
- When TCM compares target value with monitor value and detects an irregularity.

Possible Cause

ACS00AG9

- Harness or connectors
  (Solenoid circuit is open or shorted.)
- Pressure control solenoid valve A (Line pressure solenoid valve)

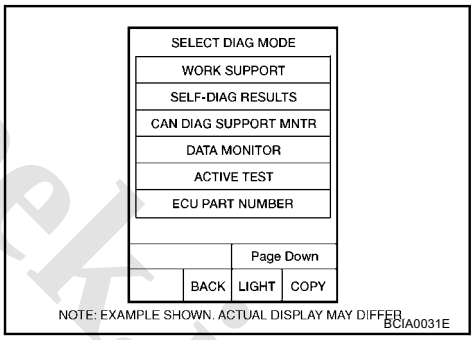
DTC Confirmation Procedure

ACS00AGA

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Start engine and wait at least 5 seconds.
3. If DTC is detected, check possible cause items.



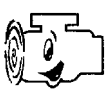
WITH GST

Follow the procedure “WITH CONSULT-II”.

TCM Input/Output Signal Reference Values

ACS00AKY

TCM terminal data are reference values, measured between each terminal and ground.

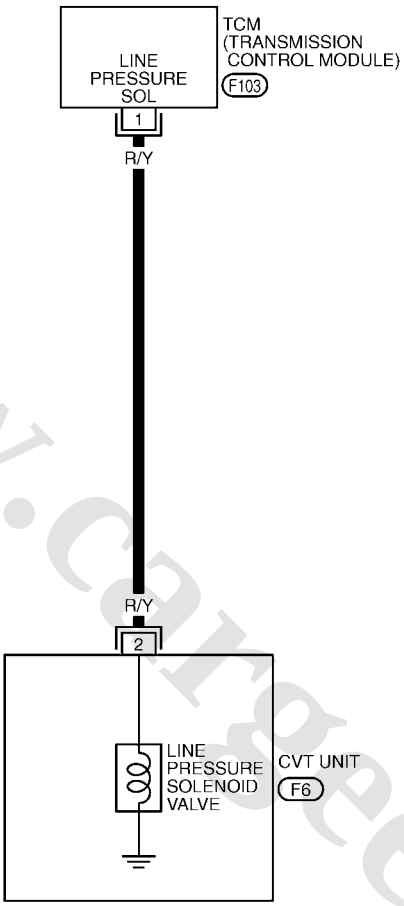
Terminal	Wire color	Item	Condition		Data (Approx.)
1	R/Y	Pressure control solenoid valve A (Line pressure solenoid valve)	 and 	Release your foot from the accelerator pedal.	5.0 - 7.0 V
				Press the accelerator pedal all the way down.	1.0 - 3.0 V

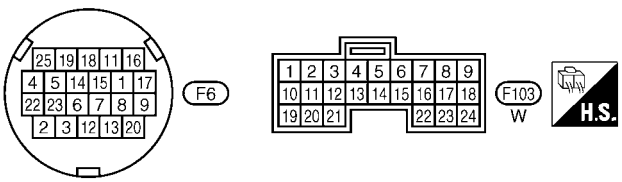
Wiring Diagram — CVT — LPSV

ACS00AGB

CVT-LPSV-01

: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC





TCWA0249E

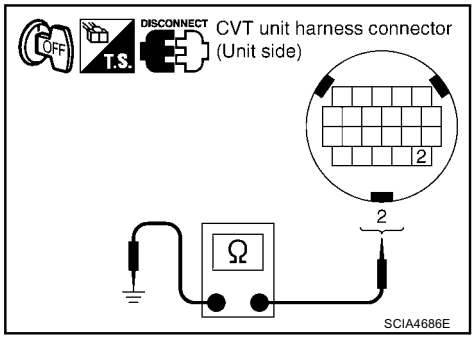
Component Inspection

ACS00AGD

PRESSURE CONTROL SOLENOID VALVE A (LINE PRESSURE SOLENOID VALVE)

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check resistance between CVT unit harness connector terminal and ground.

Solenoid valve	Connector	Terminal	Resistance (Approx.)
Pressure control solenoid valve A (Line pressure solenoid valve)	F6	2 - Ground	3.0 - 9.0 Ω



4. If NG, replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .

DTC P0746 PRESSURE CONTROL SOLENOID A PERFORMANCE (LINE PRESSURE SOLENOID VALVE)

PFP:31941

Description

ACS00AGE

The pressure control solenoid valve A (line pressure solenoid valve) regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

CONSULT-II Reference Value

ACS00AGF

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
PRI PRESS	"N" position idle	0.3 - 0.9 MPa

On Board Diagnosis Logic

ACS00AGG

Diagnostic trouble code "P0746 PRS CNT SOL/A FCTN" with CONSULT-II is detected under the following conditions.

- Unexpected gear ratio was detected in the LOW side due to excessively low line pressure.

Possible Cause

ACS00AGH

- Line pressure control system
- Output speed sensor (Secondary speed sensor)
- Input speed sensor (Primary speed sensor)

DTC Confirmation Procedure

ACS00AGI

CAUTION:

Always drive vehicle at a safe speed.

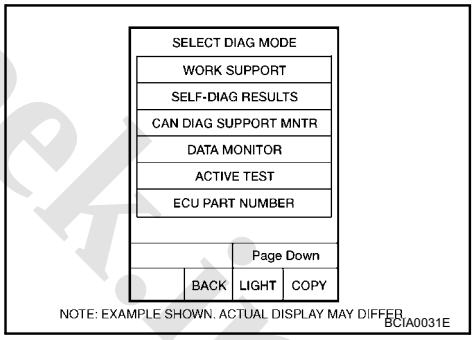
NOTE:

If "DTC Confirmation Procedure" has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.

After the repair, touch "ERASE" on "SELF-DIAG RESULTS" and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select "DATA MONITOR" mode for "TRANSMISSION" with CONSULT-II.
2. Start engine and maintain the following conditions for at least 10 consecutive seconds. Test start from 0 km/h (0 MPH).
   ATF TEMP SEN: 1.0 - 2.0 V
   ACC PEDAL OPEN: More than 1.0/8
   RANGE: "D" position
   VEHICLE SPEED: 10 km/h (6 MPH) More than
   Driving location: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.
3. If DTC is detected, check possible cause items.



WITH GST

Follow the procedure "WITH CONSULT-II".

DTC P0776 PRESSURE CONTROL SOLENOID B PERFORMANCE (SEC PRESSURE SOLENOID VALVE)

PFP:31941

Description

ACS00AGK

The pressure control solenoid valve B (secondary pressure solenoid valve) regulates the secondary pressure to suit the driving condition in response to a signal sent from the TCM.

CONSULT-II Reference Value

ACS00AGL

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
SEC PRESS	"N" position idle	0.5 - 0.9 MPa

On Board Diagnosis Logic

ACS00AGM

Diagnostic trouble code "P0776 PRS CNT SOL/B FCTN" with CONSULT-II is detected when secondary pressure is too high or too low compared with the commanded value while driving.

Possible Cause

ACS00AGN

- Harness or connectors
  (Solenoid circuit is open or shorted.)
- Pressure control solenoid valve B (Secondary pressure solenoid valve system)
- Transmission fluid pressure sensor A (Secondary pressure sensor)
- Line pressure control system

DTC Confirmation Procedure

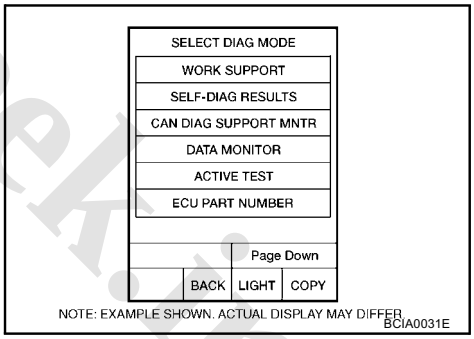
ACS00AGO

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If "DTC Confirmation Procedure" has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select "DATA MONITOR" mode for "TRANSMISSION" with CONSULT-II.
2. Start engine and maintain the following conditions for at least 30 consecutive seconds.
   ATF TEMP SEN: 1.0 - 2.0 V
   ACC PEDAL OPEN: More than 1.0/8
   RANGE: "D" position
   VEHICLE SPEED: 10 km/h (6 MPH) More than
   Driving location: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.
3. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

WITH GST

Follow the procedure "WITH CONSULT-II".

DTC P0778 PRESSURE CONTROL SOLENOID B ELECTRICAL (SEC PRESSURE SOLENOID VALVE)

PFP:31941

Description

ACS00AGQ

The pressure control solenoid valve B (secondary pressure solenoid valve) regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

CONSULT-II Reference Value

ACS00AGR

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
ISOLT3	Secondary pressure low - Secondary pressure high	0.8 - 0.0 A
SOLMON3	"N" position idle	0.6 - 0.7 A
	When stalled	0.4 - 0.6 A

On Board Diagnosis Logic

ACS00AGS

Diagnostic trouble code "P0778 PRS CNT SOL/B CIRC" with CONSULT-II is detected under the following conditions.

- TCM detects an improper voltage drop when it tries to operate the solenoid valve.
- When TCM compares target value with monitor value and detects an irregularity.

Possible Cause

ACS00AGT

- Harness or connectors
  (Solenoid circuit is open or shorted.)
- Pressure control solenoid valve B (Secondary pressure solenoid valve)

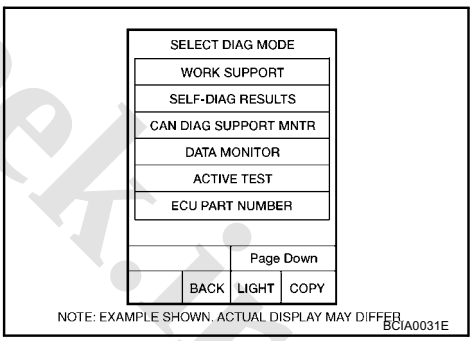
DTC Confirmation Procedure

ACS00AGU

NOTE:
If "DTC Confirmation Procedure" has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON.
2. Select "DATA MONITOR" mode for "TRANSMISSION" with CONSULT-II.
3. Start engine and wait at least 5 seconds.
4. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

WITH GST

Follow the procedure "WITH CONSULT-II".

TCM Input/Output Signal Reference Values

ACS00AKZ

TCM terminal data are reference values, measured between each terminal and ground.

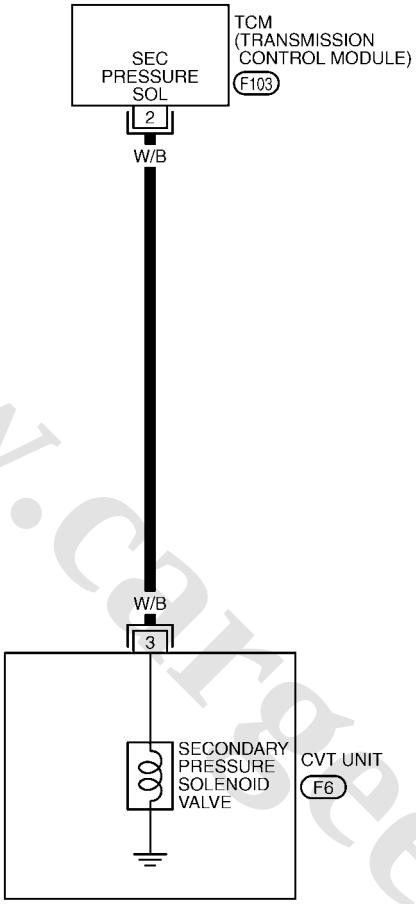
Terminal	Wire color	Item	Condition		Data (Approx.)
2	W/B	Pressure control solenoid valve B (Secondary pressure solenoid valve)		Release your foot from the accelerator pedal.	5.0 - 7.0 V
			and	Press the accelerator pedal all the way down.	3.0 - 4.0 V

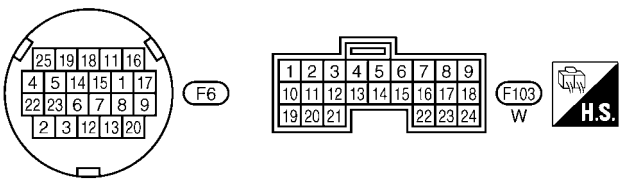
Wiring Diagram — CVT — SECPSV

ACS00AGV

CVT-SECPSV-01

: DETECTABLE LINE FOR DTC
: NON-DETECTABLE LINE FOR DTC





TCWA0250E

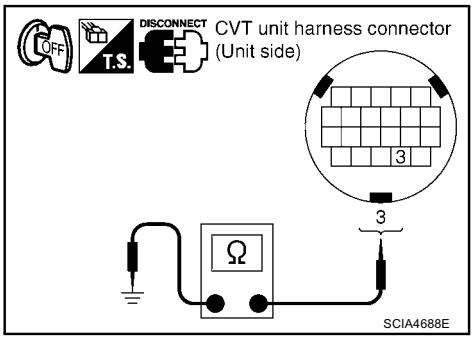
Component Inspection

ACS00AGX

PRESSURE CONTROL SOLENOID VALVE B (SECONDARY PRESSURE SOLENOID VALVE)

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check resistance between CVT unit harness connector terminal and ground.

Solenoid Valve	Connector	Terminal	Resistance (Approx.)
Pressure control solenoid valve B (Secondary pressure solenoid valve)	F6	3 - Ground	3.0 - 9.0 Ω



4. If NG, replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .

DTC P0826 MANUAL MODE SWITCH CIRCUIT

PFP:34901

Description

ACS00AGY

Manual mode switch is installed in CVT control device. The manual mode switch sends shift up and shift down switch signals to TCM.
TCM sends the switch signals to unified meter and A/C amp via CAN communication line. Then manual mode switch position is indicated on the CVT position indicator. For inspection, refer to CVT-117, "CVT INDICATOR CIRCUIT" .

CONSULT-II Reference Value

ACS00AGZ

Item name	Condition	Display value
MMODE	Manual shift gate position (neutral)	ON
	Other than the above	OFF
NON MMODE	Manual shift gate position (neutral, +side, -side)	OFF
	Other than the above	ON
UPLVR	Select lever: + side	ON
	Other than the above	OFF
DOWNLVR	Select lever: - side	ON
	Other than the above	OFF

On Board Diagnosis Logic

ACS00AH0

Diagnostic trouble code “P0826 MANUAL MODE SWITCH” with CONSULT-II is detected when TCM monitors Manual mode, Non manual mode, Up or Down switch signal, and then detects irregular with impossible input pattern for 1 second or more.

Possible Cause

ACS00AH1

- Harness or connectors
  (These switches circuit is open or shorted.)
  (TCM, and unified meter and A/C amp circuit are open or shorted.)
  (CAN communication line is open or shorted.)
- Manual mode select switch (Built into CVT control device)
- Manual mode position select switch (Built into CVT control device)

DTC Confirmation Procedure

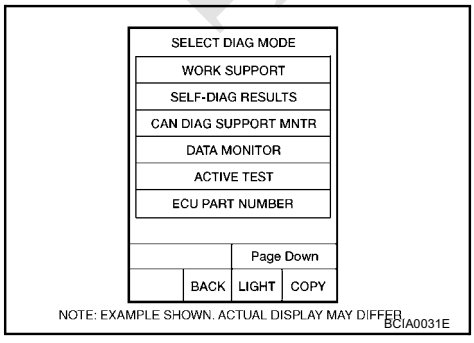
ACS00AH2

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine.
4. Move selector lever to “M” position.
5. Drive vehicle for at least 2 consecutive seconds.
6. If DTC is detected, check possible cause items.

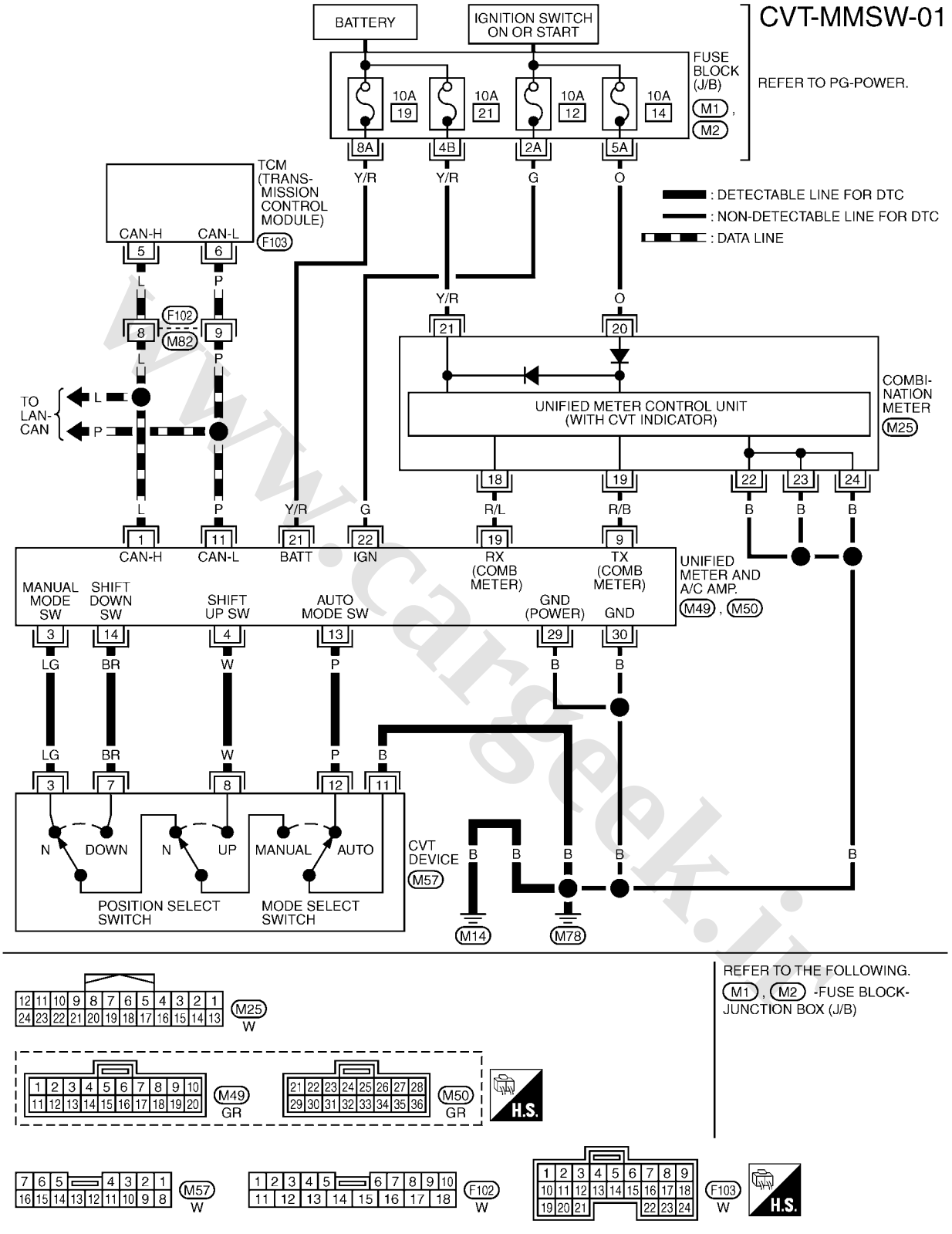


NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

Wiring Diagram — CVT — MMSW

ACS00AH3

LHD models



TCWB0141E

TCM Input/Output Signal Reference Values

ACS00AL0

TCM terminal data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition	Data (Approx.)
5	L	CAN-H	–	–
6	P	CAN-L	–	–

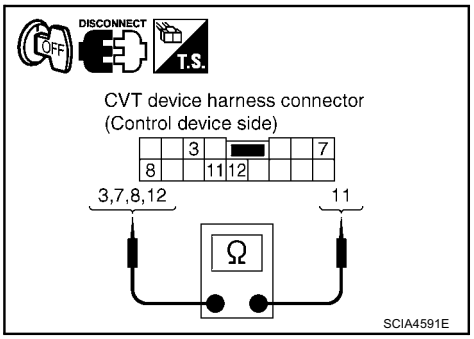
Component Inspection

ACS00AH5

MANUAL MODE SWITCH

Check continuity between CVT device harness connector terminals.

Item	Position	Connector	Terminal	Continuity
Manual mode select switch	Auto	M57	12 - 11	Yes
	Manual		3 - 11	
Manual mode position select switch	Up		8 - 11	
	Down		7 - 11	



DTC P0840 TRANSMISSION FLUID PRESSURE SENSOR A CIRCUIT (SEC PRESSURE SENSOR)

PFP:31936

Description

ACS00AH6

The transmission fluid pressure sensor A (secondary pressure sensor) detects secondary pressure of CVT and sends TCM the signal.

CONSULT-II Reference Value

ACS00AH7

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
SEC HYDR SEN	“N” position idle	0.8 - 1.0 V
SEC PRESS		0.5 - 0.9 MPa

On Board Diagnosis Logic

ACS00AH8

Diagnostic trouble code “P0840 TR PRS SENS/A CIRC” with CONSULT-II is detected when TCM detects an improper voltage drop when it receives the sensor signal.

Possible Cause

ACS00AH9

- Transmission fluid pressure sensor A (Secondary pressure sensor)
- Harness or connectors
  (Switch circuit is open or shorted.)

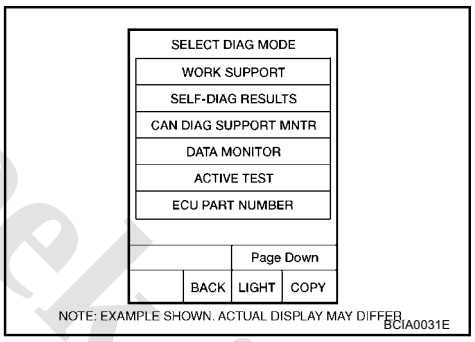
DTC Confirmation Procedure

ACS00AHA

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Make sure that output voltage of line temperature sensor is within the range below.
   ATF TEMP SEN: 1.0 - 2.0 V
   If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)
3. Start engine and wait for at least 5 consecutive seconds.
4. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

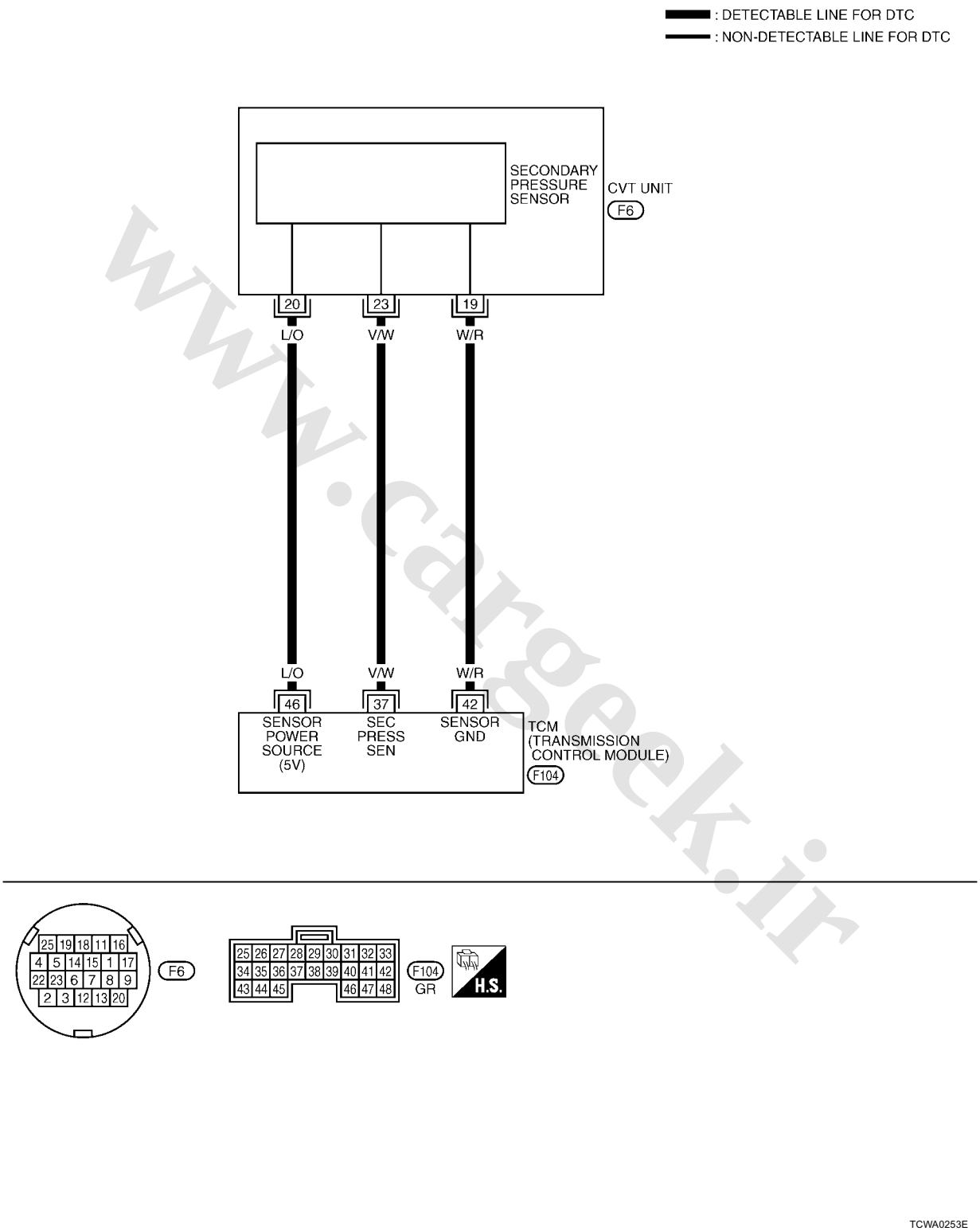
WITH GST

Follow the procedure “WITH CONSULT-II”.

Wiring Diagram — CVT — SECPS

ACS00AHB

CVT-SECPS-01

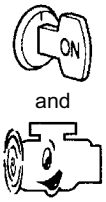


TCWA0253E

TCM Input/Output Signal Reference Values

ACS00AL1

TCM terminal data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition		Data (Approx.)
37	V/W	Transmission fluid pressure sensor A (Secondary pressure sensor)	 and	"N" position idle	0.8 V
42	W/R	Sensor ground	Always		0 V
46	L/O	Sensor power		—	4.5 - 5.5 V
				—	0 V

DTC P0841 PRESSURE SENSOR FUNCTION

PFP:31936

Description

ACS00AHD

Using the engine load (throttle position), the primary pulley revolution speed, and the secondary pulley revolution speed as input signal, TCM changes the operating pressure of the primary pulley and the secondary pulley and changes the groove width of the pulley to control the gear ratio.

CONSULT-II Reference Value

ACS00AHE

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
PRI HYDR SEN	"N" position idle	0.7 - 3.5 V
SEC HYDR SEN		0.8 - 1.0 V

On Board Diagnosis Logic

ACS00AHF

Diagnostic trouble code "P0841 PRESS SEN/FNCTN" with CONSULT-II is detected when correlation between the values of the secondary pressure sensor and the primary pressure sensor is out of specification.

Possible Cause

ACS00AHG

- Transmission fluid pressure sensor A (Secondary pressure sensor)
- Transmission fluid pressure sensor B (Primary pressure sensor)
- Harness or connectors
  (Sensor circuit is open or shorted.)

DTC Confirmation Procedure

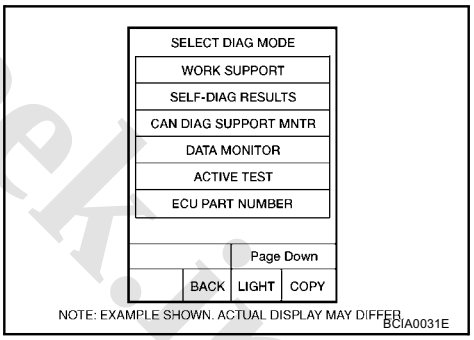
ACS00AHH

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If "DTC Confirmation Procedure" has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select "DATA MONITOR" mode for "TRANSMISSION" with CONSULT-II.
2. Start engine and maintain the following conditions for at least 12 consecutive seconds.
   VEHICLE SPEED: 40 km/h (25 MPH) More than
   RANGE: "D" position
3. If DTC is detected, check possible cause items.



DTC P0845 TRANSMISSION FLUID PRESSURE SENSOR B CIRCUIT (PRI PRESSURE SENSOR)

PFP:31936

Description

ACS00AHJ

The primary pressure sensor detects primary pressure of CVT and sends TCM the signal.

CONSULT-II Reference Value

ACS00AHK

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
PRI HYDR SEN	"N" position idle	0.7 - 3.5 V

On Board Diagnosis Logic

ACS00AHL

Diagnostic trouble code "P0845 TR PRS SENS/B CIRC" with CONSULT-II is detected under the following conditions.

- When TCM detects an improper voltage drop when it receives the sensor signal.
- When TCM compares target value with monitor value and detects an irregularity.

Possible Cause

ACS00AHM

- Transmission fluid pressure sensor B (Primary pressure sensor)
- Harness or connectors
  (Sensor circuit is open or shorted.)

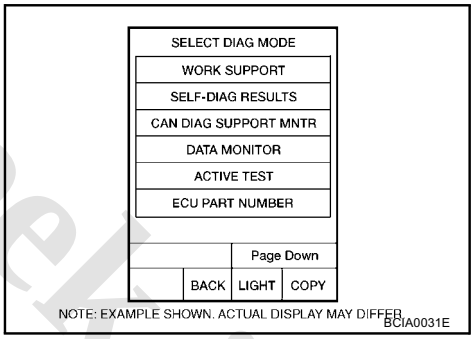
DTC Confirmation Procedure

ACS00AHN

NOTE:
If "DTC Confirmation Procedure" has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select "DATA MONITOR" mode for "TRANSMISSION" with CONSULT-II.
2. Make sure that output voltage of line temperature sensor is within the range below.
   ATF TEMP SEN: 1.0 - 2.0 V
   If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)
3. Start engine and wait for at least 5 consecutive seconds.
4. If DTC is detected, check possible cause items.



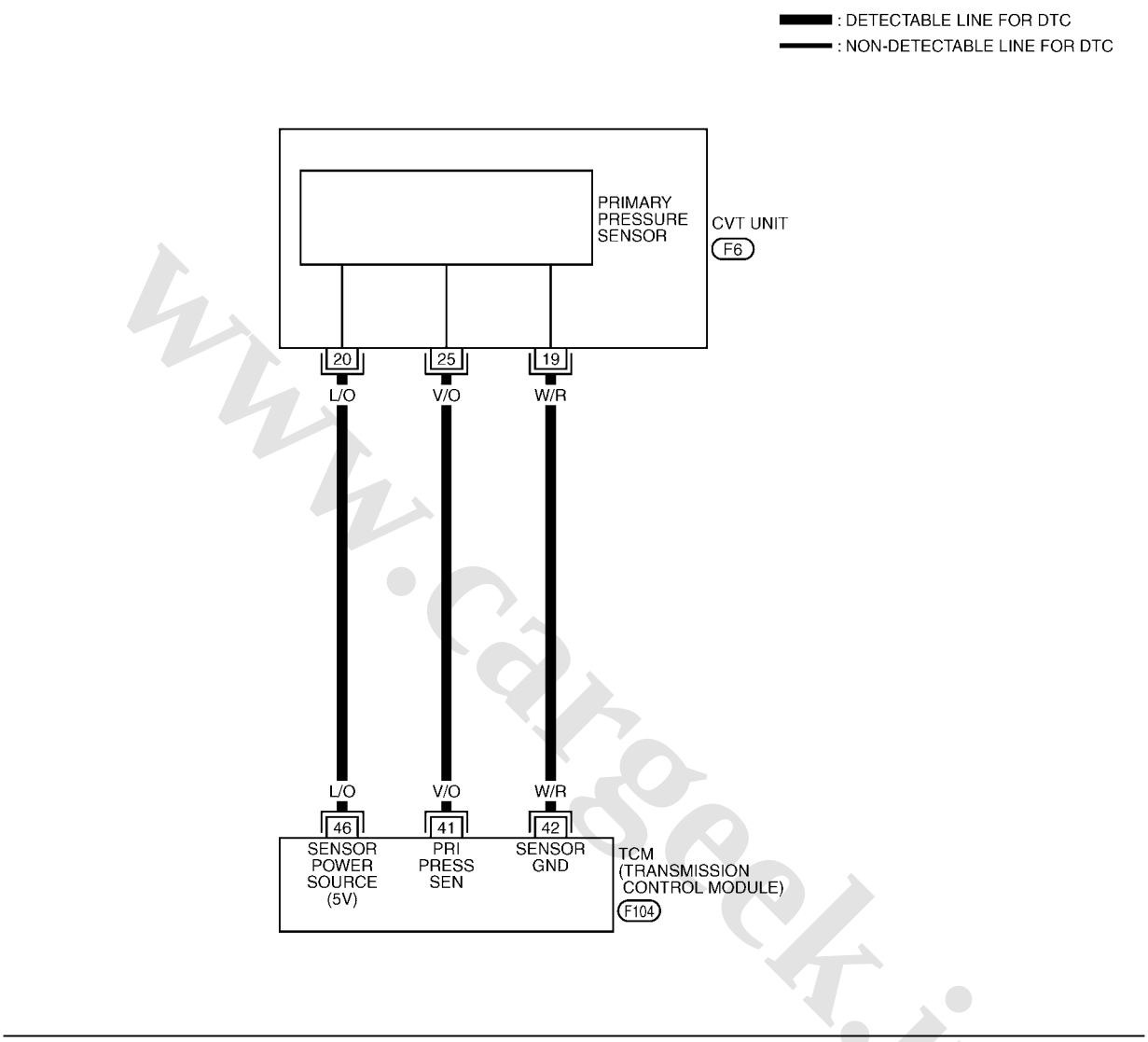
WITH GST

Follow the procedure "WITH CONSULT-II".

Wiring Diagram — CVT — PRIPS

ACS00AHO

CVT-PRIPS-01

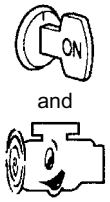


TCWA0255E

TCM Input/Output Signal Reference Values

ACS00AL2

TCM terminal data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition		Data (Approx.)
41	V/O	Transmission fluid pressure sensor B (Primary pressure sensor)	 and	"N" position idle	0.7 - 3.5 V
42	W/R	Sensor ground	Always		0 V
46	L/O	Sensor power		—	4.5 - 5.5 V
				—	0 V

DTC P0868 SECONDARY PRESSURE DOWN

PFP:31941

Description

ACS00AHQ

The pressure control solenoid valve B (secondary pressure solenoid valve) regulates the secondary pressure to suit the driving condition in response to a signal sent from the TCM.

CONSULT-II Reference Value

ACS00AHR

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
SEC PRESS	“N” position idle	0.5 - 0.9 MPa

On Board Diagnosis Logic

ACS00AHS

Diagnostic trouble code “P0868 SEC/PRESS DOWN” with CONSULT-II is detected when secondary fluid pressure is too low compared with the commanded value while driving.

Possible Cause

ACS00AHT

- Harness or connectors
  (Solenoid circuit is open or shorted.)
- Pressure control solenoid valve B (Secondary pressure solenoid valve) system
- Transmission fluid pressure sensor A (Secondary pressure sensor)
- Line pressure control system

DTC Confirmation Procedure

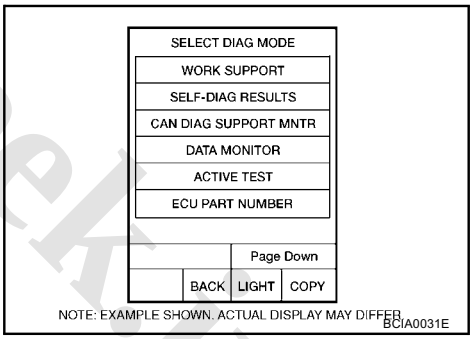
ACS00AHU

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Make sure that output voltage of CVT fluid temperature sensor is within the range below.
   ATF TEMP SEN: 1.0 - 2.0 V
   If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)
3. Start engine and maintain the following conditions for at least 10 consecutive seconds.
   VEHICLE SPEED (accelerate slowly): 0 → 50 km/h (31 MPH)
   ACC PEDAL OPEN: 0.5/8 - 1.0/8
   RANGE: “D” position
4. If DTC is detected, check possible cause items.



DTC P1701 TRANSMISSION CONTROL MODULE (POWER SUPPLY)

PFP:31036

Description

ACS00AHW

When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops, malfunction is detected.

NOTE:
Since "P1701 TCM-POWER SUPPLY" will be indicated when replacing TCM, perform diagnosis after erasing "SELF-DIAG RESULTS"

On Board Diagnosis Logic

ACS00AHX

- Diagnostic trouble code "P1701 TCM-POWER SUPPLY" with CONSULT-II is detected when TCM does not receive the voltage signal from the battery power supply.
- This is not a malfunction message. (Whenever shutting OFF a power supply to the TCM, this message appears on the screen.)

Possible Cause

ACS00AHY

Harness or connectors (Battery or ignition switch and TCM circuit is open or shorted.)

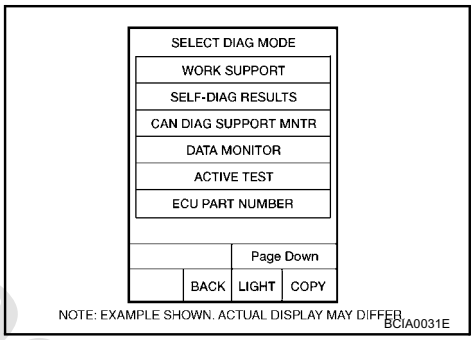
DTC Confirmation Procedure

ACS00AHZ

NOTE:
If "DTC Confirmation Procedure" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select "DATA MONITOR" mode for "TRANSMISSION" with CONSULT-II.
3. Wait for at least 2 consecutive seconds.
4. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

TCM Input/Output Signal Reference Values

ACS00AL3

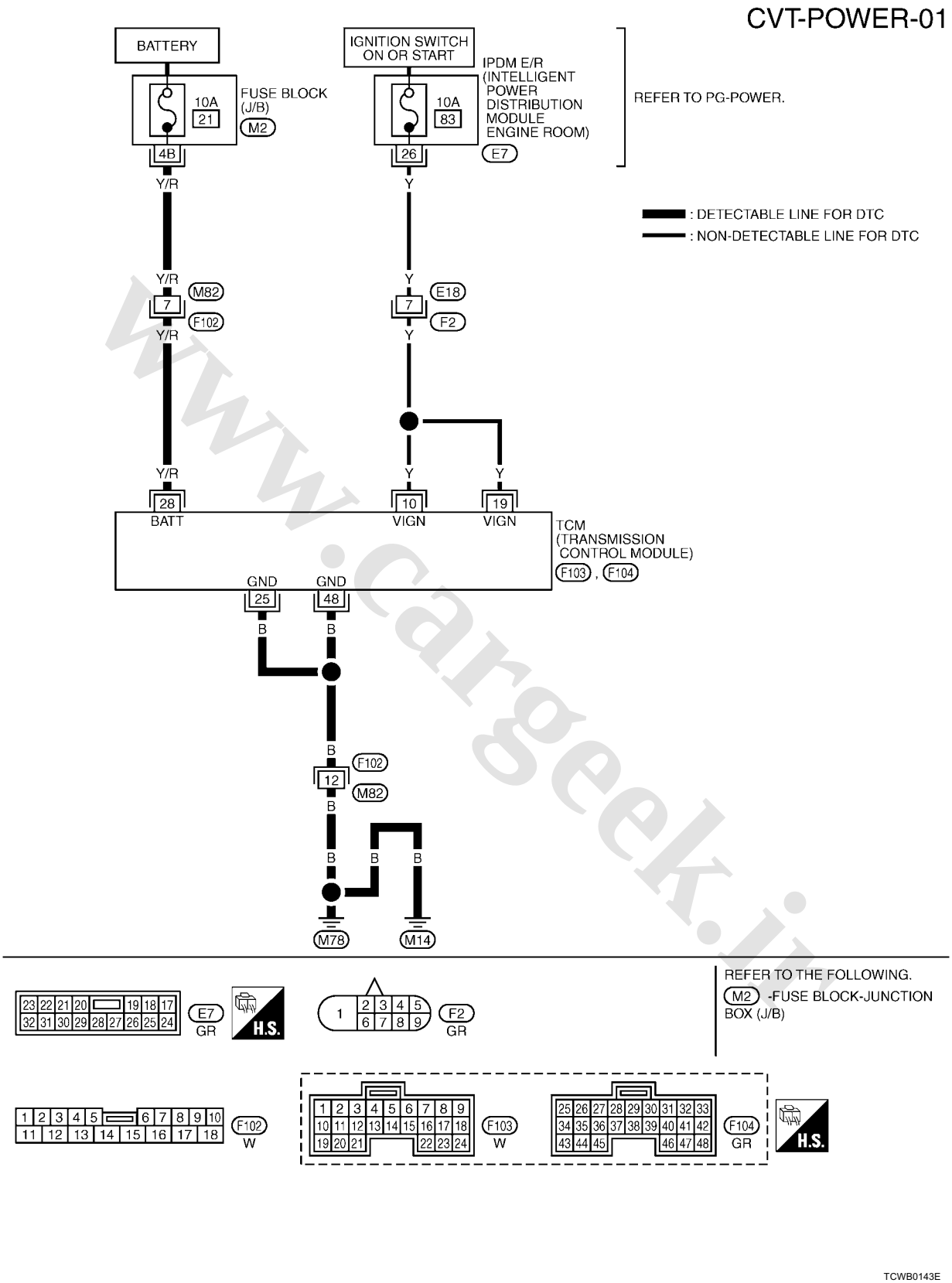
TCM terminals data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition		Data (Approx.)
10	Y	Power supply		–	Battery voltage
				–	0 V
19	Y	Power supply		–	Battery voltage
				–	0 V
25	B	Ground	Always		0 V
28	Y/R	Power supply (memory back-up)	Always		Battery voltage
48	B	Ground	Always		0 V

Wiring Diagram — CVT — POWER

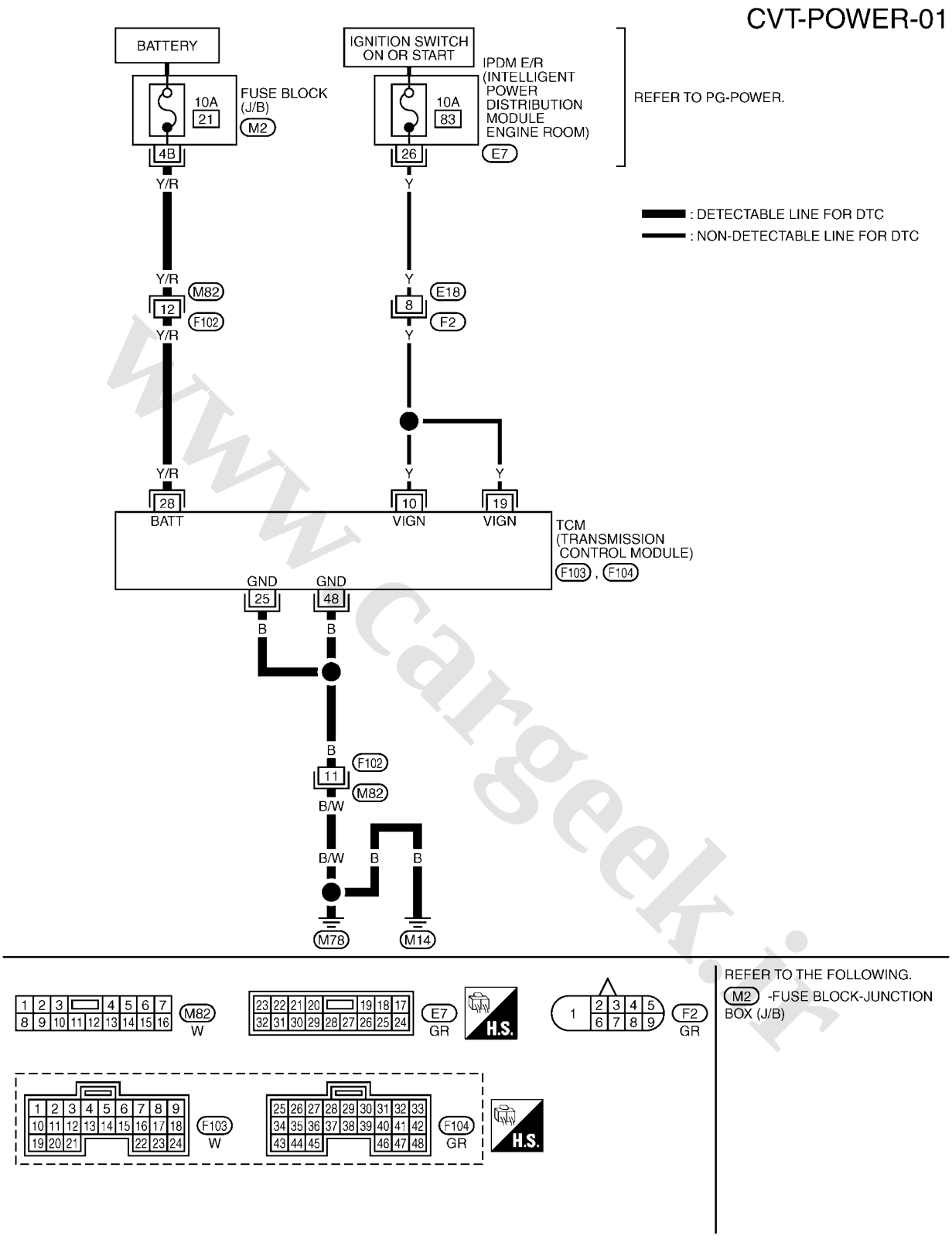
ACS00AI0

LHD models



TCWB0143E

RHD models



TCWB0391E

DTC P1705 THROTTLE POSITION SENSOR

PFP:22620

Description

ACS00AI2

Electric throttle control actuator consists of throttle control motor, accelerator pedal position sensor, throttle position sensor etc. The actuator sends a signal to the ECM, and ECM sends the signal to TCM with CAN communication.

CONSULT-II Reference Value

ACS00AI3

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
ACC PEDAL OPEN	Released accelerator pedal - Fully depressed accelerator pedal	0.0/8 - 8.0/8

On Board Diagnosis Logic

ACS00AI4

Diagnostic trouble code “P1705 TP SEN/CIRC A/T” with CONSULT-II is detected when TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM.

Possible Cause

ACS00AI5

- ECM
- Harness or connectors
  (CAN communication line is open or shorted.)

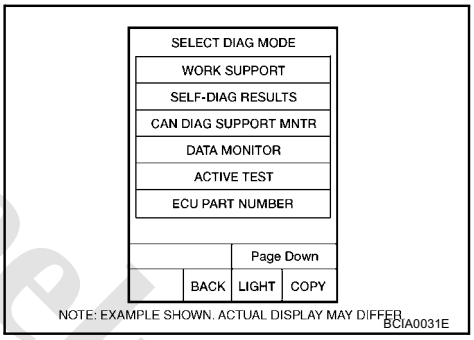
DTC Confirmation Procedure

ACS00AI6

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Depress accelerator pedal fully and release it, then wait for 5 seconds.
4. If DTC is detected, check possible cause items.



DTC P1722 ESTM VEHICLE SPEED SIGNAL

PFP:47660

Description

ACS00AI8

The vehicle speed signal is transmitted from ABS actuator and electric unit (control unit) to TCM by CAN communication line.

CONSULT-II Reference Value

ACS00AI9

Remarks: Specification data are reference values.

Item name	Condition	Display value
ESTM VSP SIG	During driving	Approximately matches the speedometer reading.
VEHICLE SPEED		

On Board Diagnosis Logic

ACS00AIA

Diagnostic trouble code “P1722 ESTM VEH SPD SIG” with CONSULT-II is detected when TCM does not receive the proper vehicle speed signal (input by CAN communication) from ABS actuator and electric unit (control unit).

Possible Cause

ACS00AIB

- Harness or connectors
  (Sensor circuit is open or shorted.)
  (CAN communication line is open or shorted.)
- ABS actuator and electric unit (control unit)

DTC Confirmation Procedure

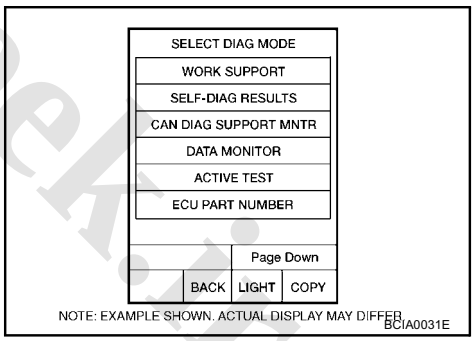
ACS00AIC

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine and maintain the following conditions for at least 5 consecutive seconds.
   ACC PEDAL OPEN: 1.0/8 or less
   VEHICLE SPEED: 30 km/h (17 MPH) or more
4. If DTC is detected, check possible cause items.



DTC P1723 CVT SPEED SENSOR FUNCTION

PFP:31907

Description

ACS00AIE

The vehicle speed sensor CVT [output speed sensor (secondary speed sensor)] detects the revolution of the idler gear parking pawl lock gear and generates a pulse signal. The pulse signal is sent to the TCM, which converts it into vehicle speed.
The input speed sensor (primary speed sensor) detects the primary pulley revolution speed and sends a signal to the TCM.

On Board Diagnosis Logic

ACS00AIF

Diagnostic trouble code “P1723 CVT SPD SEN/FNCTN” with CONSULT-II is detected when there is a great difference between the vehicle speed signal and the secondary speed sensor signal.

CAUTION:
One of the “P0720 VEH SPD SEN/CIR AT”, the “P0715 INPUT SPD SEN/CIRC” or the “P0725 ENGINE SPEED SIG” is displayed with the DTC at the same time.

Possible Cause

ACS00AIG

- Harness or connectors
  (Sensor circuit is open or shorted.)
- Output speed sensor (Secondary speed sensor)
- Input speed sensor (Primary speed sensor)
- Engine speed signal system

DTC Confirmation Procedure

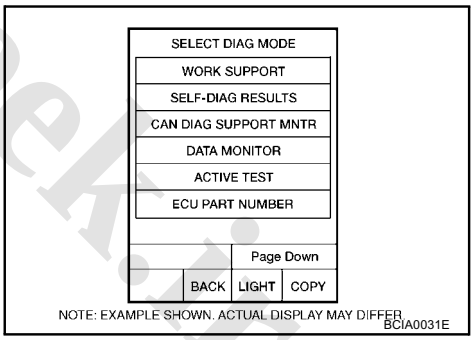
ACS00AIH

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Start engine and maintain the following conditions for at least 5 consecutive seconds.
   VEHICLE SPEED: 10 km/h (6 MPH) or more
   ACC PEDAL OPEN: More than 1.0/8
   RANGE: “D” position
   ENG SPEED: 450 rpm or more
   Driving location: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.
3. If DTC is detected, check possible cause items.



DTC P1726 ELECTRIC THROTTLE CONTROL SYSTEM

PFP:23710

Description

ACS00AIJ

Electric throttle control actuator consists of throttle control motor, accelerator pedal position sensor, throttle position sensor etc. The actuator sends a signal to the ECM, and ECM sends the signal to TCM with CAN communication.

On Board Diagnosis Logic

ACS00AIK

Diagnostic trouble code “P1726 ELEC TH CONTROL” with CONSULT-II is detected when the electronically controlled throttle for ECM is malfunctioning.

Possible Cause

ACS00AIL

Harness or connectors
(Sensor circuit is open or shorted.)

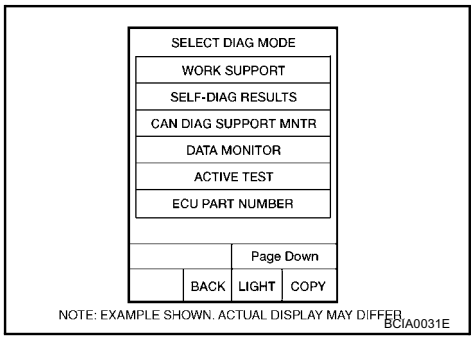
DTC Confirmation Procedure

ACS00AIM

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine and let it idle for 5 second.
4. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

DTC P1740 LOCK-UP SELECT SOLENOID VALVE CIRCUIT

PFP:31941

Description

ACS00AIO

- Lock-up select solenoid valve controls lock-up clutch pressure or forward clutch pressure (reverse brake pressure).
- When controlling lock-up clutch, the valve is turned OFF. When controlling forward clutch, it is turned ON.

CONSULT-II Reference Value

ACS00AIP

Item name	Condition	Display value
LUSEL SOL OUT	Selector lever in “P”, “N” positions	ON
	Wait at least for 5 seconds with the selector lever in “R”, “D” positions	OFF

On Board Diagnosis Logic

ACS00AIQ

Diagnostic trouble code “P1740 LU-SLCT SOL/CIRC” with CONSULT-II is detected under the following conditions.

- When TCM compares target value with monitor value and detects an irregularity.

Possible Cause

ACS00AIR

- Lock-up select solenoid valve
- Harness or connectors
  (Solenoid circuit is open or shorted.)

DTC Confirmation Procedure

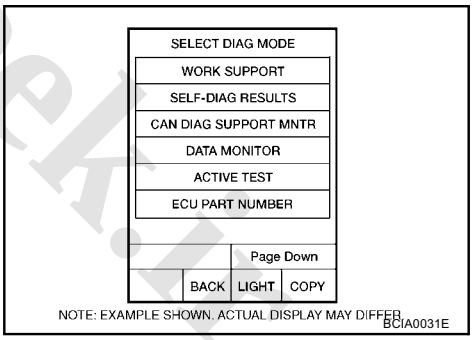
ACS00AIS

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON. (Do not start engine.)
2. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
3. Start engine and maintain the following conditions for at least 5 consecutive seconds.
   RANGE: “D” position and “N” position
   (At each time, wait for 5 seconds.)
4. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

WITH GST

Follow the procedure “WITH CONSULT-II”.

TCM Input/Output Signal Reference Values

ACS00AL4

TCM terminal data are reference values, measured between each terminal and ground.

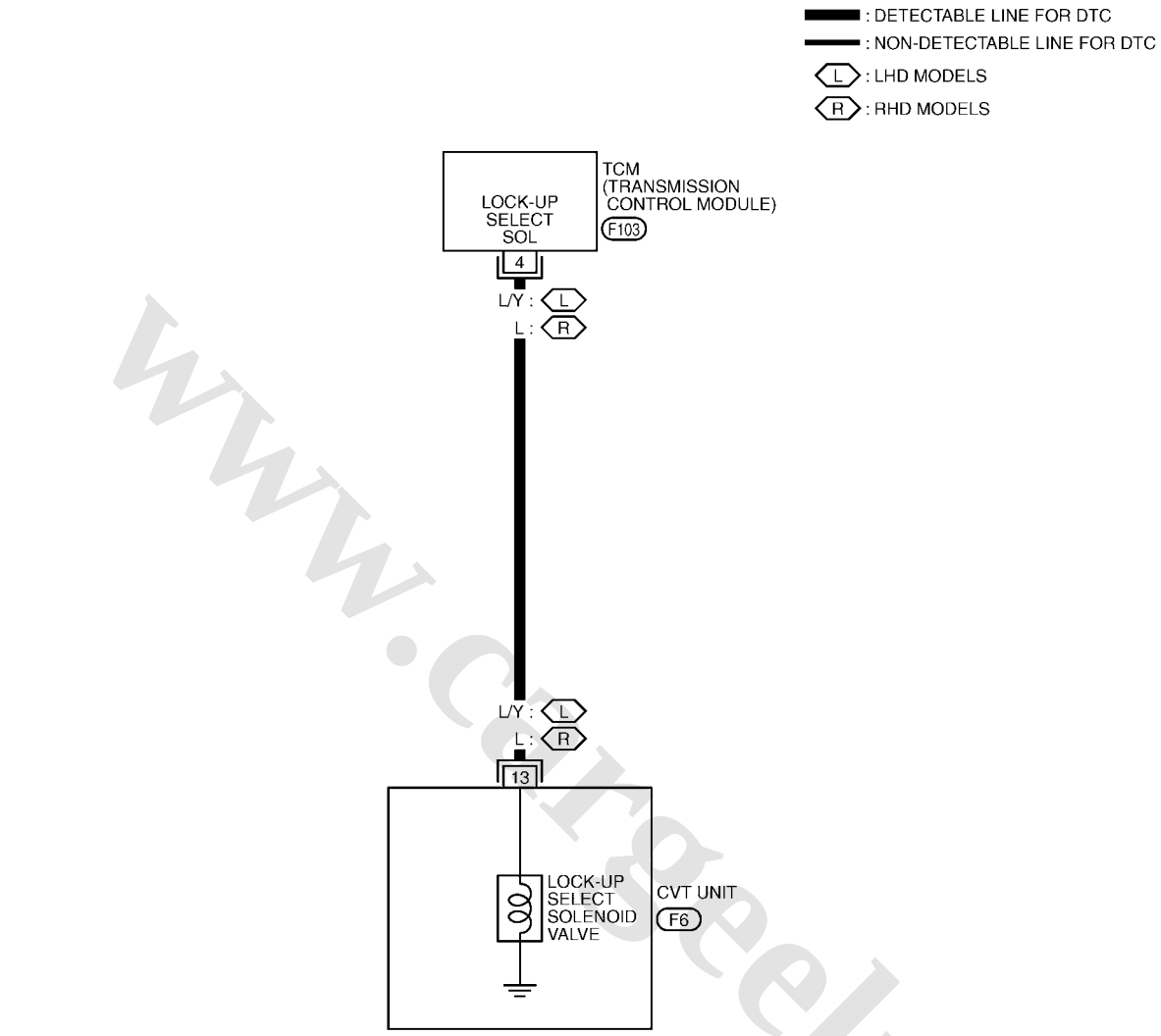
Terminal	Wire color	Item	Condition		Data (Approx.)
4	L/Y*1	Lock-up select solenoid valve		Selector lever in “P”, “N” positions	Battery voltage
	L*2			Wait at least for 5 seconds with the selector lever in “R”, “D” positions	0 V

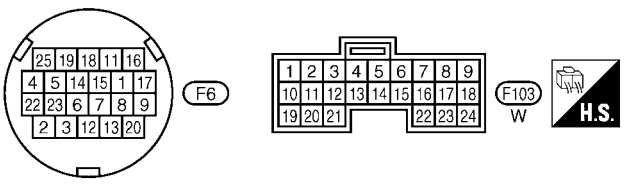
*1: LHD models
*2: RHD models

Wiring Diagram — CVT — L/USSV

ACS00AIT

CVT-L/USSV-01





TCWB0145E

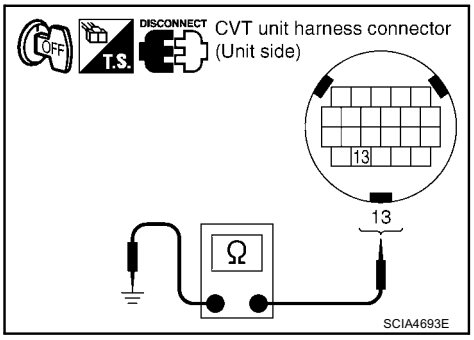
Component Inspection

ACS00AIV

LOCK-UP SELECT SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check resistance between CVT unit harness connector terminal and ground.

Solenoid valve	Connector	Terminal	Resistance (Approx.)
Lock-up select solenoid valve	F6	13 - Ground	6.0 - 19.0 Ω



4. If NG, replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .

DTC P1745 LINE PRESSURE CONTROL

PFP:31036

Description

ACS00AIW

The pressure control solenoid valve A (line pressure solenoid valve) regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

On Board Diagnosis Logic

ACS00AIX

Diagnostic trouble code “P1745 L/PRESS CONTROL” with CONSULT-II is detected when TCM detects the unexpected line pressure.

Possible Cause

ACS00AIY

TCM

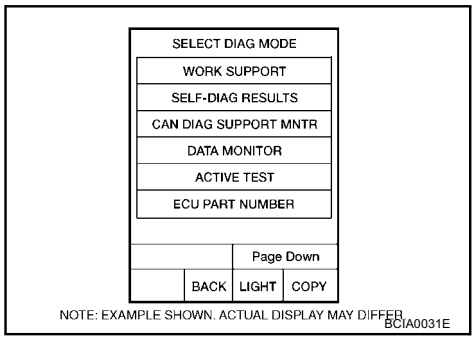
DTC Confirmation Procedure

ACS00AIZ

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Make sure that output voltage of CVT fluid temperature sensor is within the range below.
   ATF TEMP SEN: 1.0 - 2.0 V
   If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)
3. If DTC is detected, check possible cause items.



DTC P1777 STEP MOTOR - CIRCUIT

PFP:31020

Description

ACS00AJ1

The step motor changes the step with turning 4 coils ON/OFF according to the signal from TCM. As a result, the flow of line pressure to primary pulley is changed and pulley ratio is controlled.

CONSULT-II Reference Value

ACS00AJ2

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
STM STEP	During driving	-20 step – 190 step
SMCOIL A		Changes ON⇔OFF.
SMCOIL B		
SMCOIL C		
SMCOIL D		

On Board Diagnosis Logic

ACS00AJ3

Diagnostic trouble code “P1777 STEP MOTR CIRC” with CONSULT-II is detected under the following conditions.

- When operating step motor ON and OFF, there is no proper change in the voltage of TCM terminal which corresponds to it.

Possible Cause

ACS00AJ4

- Step motor
- Harness or connectors
  (Step motor circuit is open or shorted.)

DTC Confirmation Procedure

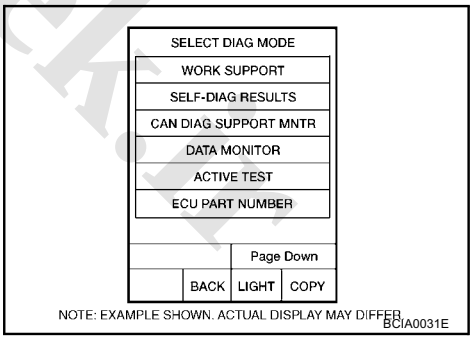
ACS00AJ5

CAUTION:
Always drive vehicle at a safe speed.

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Drive vehicle for at least 5 consecutive seconds.
3. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER.
BCIA0031E

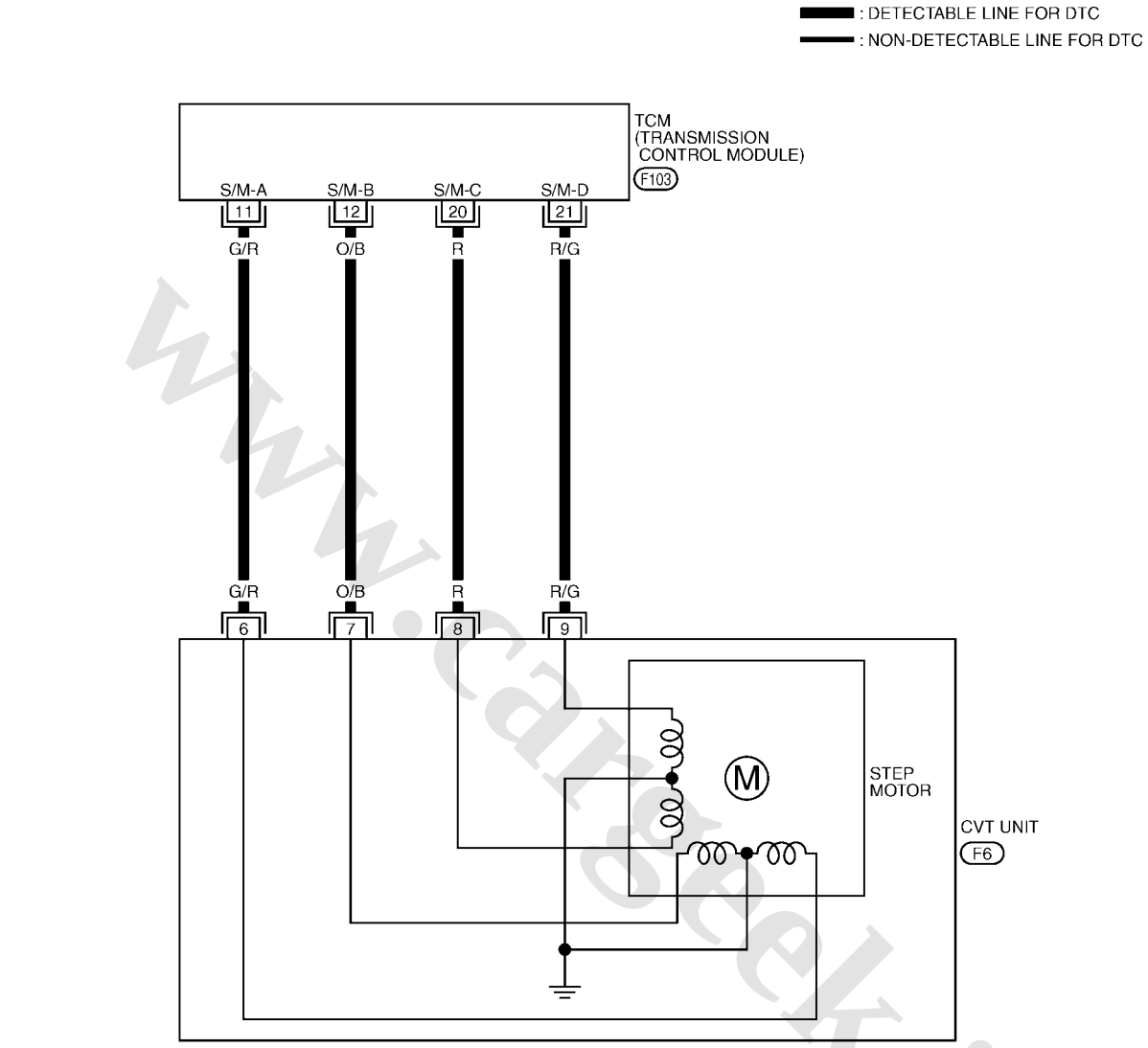
WITH GST

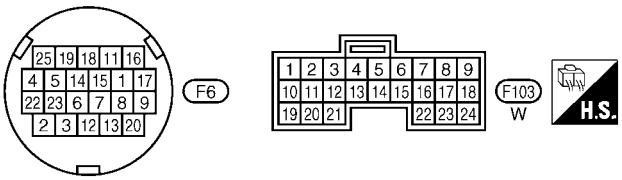
Follow the procedure “WITH CONSULT-II”.

Wiring Diagram — CVT — STM

ACS00AJ6

CVT-STM-01





TCWA0256E

TCM Input/Output Signal Reference Values

ACS00AL5

TCM terminals data are reference values.

Terminal	Wire color	Item	Condition	Data (Approx.)
11	G/R	Step motor A	Within 2 seconds after ignition switch ON, the time measurement by using the pulse width measurement function (Hi level) of CONSULT-II.*1 **CAUTION:** **Connect the diagnosis data link cable to the vehicle diagnosis connector.** *1: A circuit tester cannot be used to test this item.	30.0 msec
12	O/B	Step motor B		10.0 msec
20	R	Step motor C		30.0 msec
21	R/G	Step motor D		10.0 msec

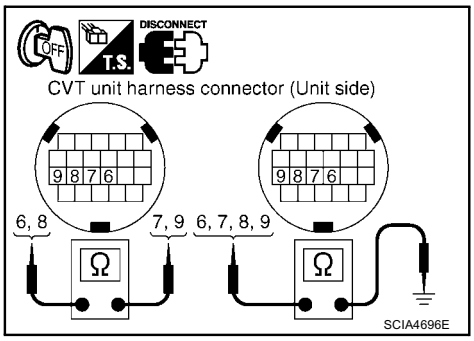
Component Inspection

ACS00AJ8

STEP MOTOR

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check resistance between CVT unit harness connector terminals and ground.

Name	Connector	Terminal	Resistance (Approx.)
Step motor	F6	6 - 7	30 Ω
		8 - 9	
		6 - Ground	15 Ω
		7 - Ground	
		8 - Ground	
		9 - Ground	



4. If NG, replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .

DTC P1778 STEP MOTOR - FUNCTION

PFP:31947

Description

ACS00AJ9

- The step motor's 4 aspects of ON/OFF change according to the signal from TCM.
  As a result, the flow of line pressure to primary pulley is changed and pulley ratio is controlled.
- This diagnosis item is detected when electrical system is OK, but mechanical system is NG.
- This diagnosis item is detected when the state of the changing the speed mechanism in unit does not operate normally.

CONSULT-II Reference Value

ACS00AJA

Remarks: Specification data are reference values.

Item name	Condition	Display value (Approx.)
STM STEP	During driving	-20 step – 190 step
GEAR RATIO		2.37 - 0.43

On Board Diagnosis Logic

ACS00AJB

Diagnostic trouble code “P1778 STEP MOTR/FNC” with CONSULT-II is detected under the following conditions.

- When not changing the pulley ratio according to the instruction of TCM.

Possible Cause

ACS00AJC

Step motor

DTC Confirmation Procedure

ACS00AJD

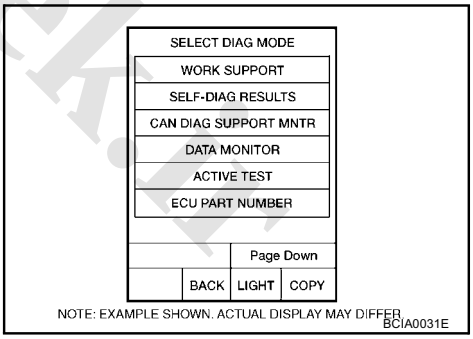
CAUTION:

- **Always drive vehicle at a safe speed.**
- **Before starting “DTC Confirmation Procedure”, confirm “Hi” or “Mid” or “Low” fixation by “PRI SPEED” and “VEHICLE SPEED” on “DATA MONITOR MODE”.**
- **If hi-geared fixation occurred, check possible cause items.**

NOTE:
If “DTC Confirmation Procedure” has been previously performed, always turn ignition switch OFF and wait at least 10 seconds before performing the next test.
After the repair, touch “ERASE” on “SELF-DIAG RESULTS” and then perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

1. Turn ignition switch ON and select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
2. Make sure that output voltage of CVT fluid temperature sensor is within the range below.
   ATF TEMP SEN: 1.0 - 2.0 V
   If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)
3. Select “DATA MONITOR” mode for “TRANSMISSION” with CONSULT-II.
4. Start engine and maintain the following conditions for at least 30 consecutive seconds.
   TEST START FROM 0 km/h (0 MPH). CONSTANT ACCELERATION: Keep 30 sec or more.
   VEHICLE SPEED: 10 km/h (6 MPH) or more. ACC PEDAL OPEN: More than 1.0/8.
   RANGE: “D” position. ENG SPEED: 450 rpm or more.
5. If DTC is detected, check possible cause items.



NOTE: EXAMPLE SHOWN. ACTUAL DISPLAY MAY DIFFER
BCIA0031E

WITH GST

Follow the procedure “WITH CONSULT-II”.

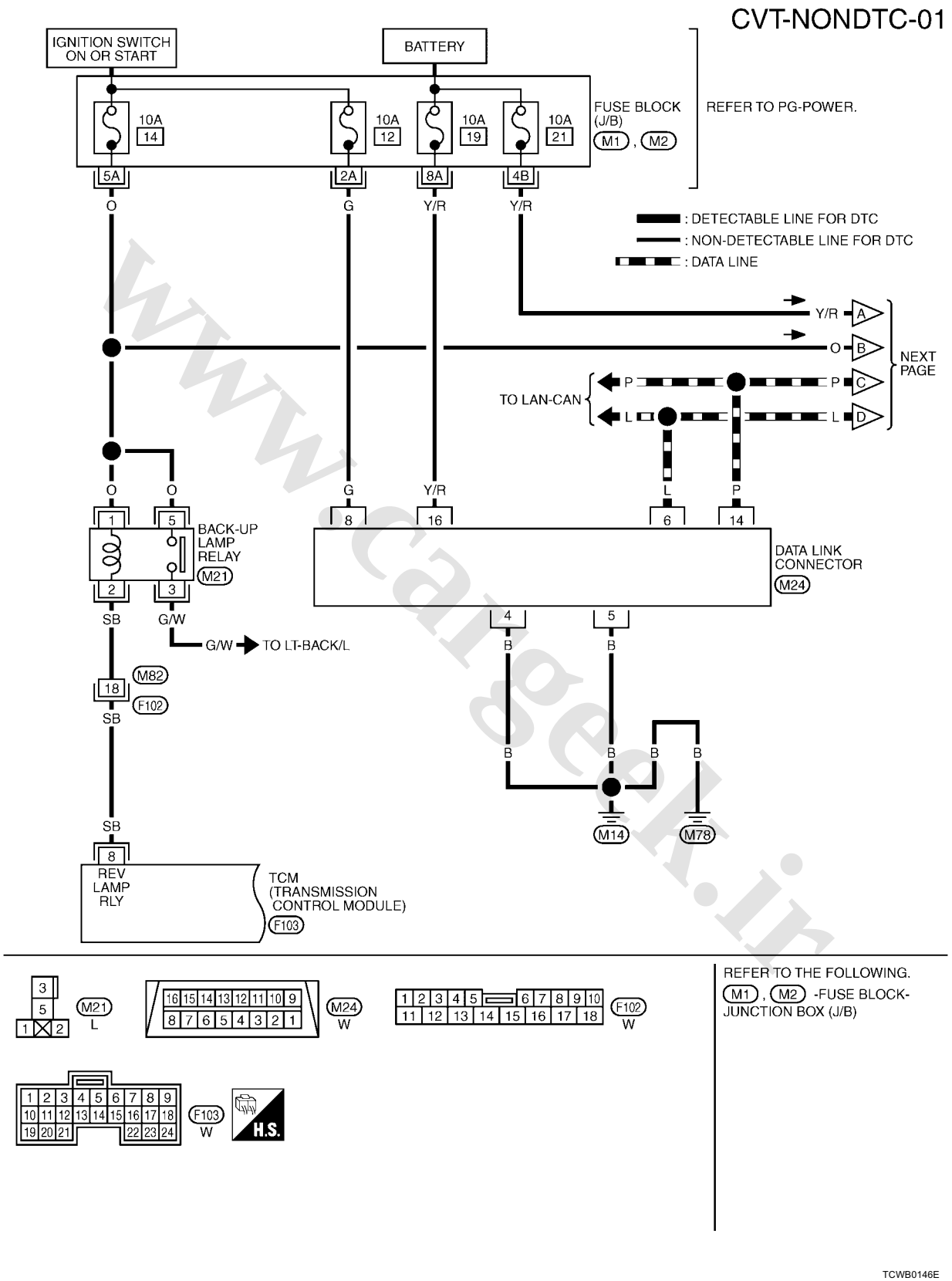
TROUBLE DIAGNOSIS FOR SYMPTOMS

PFP:00007

Wiring Diagram — CVT — NONDTC

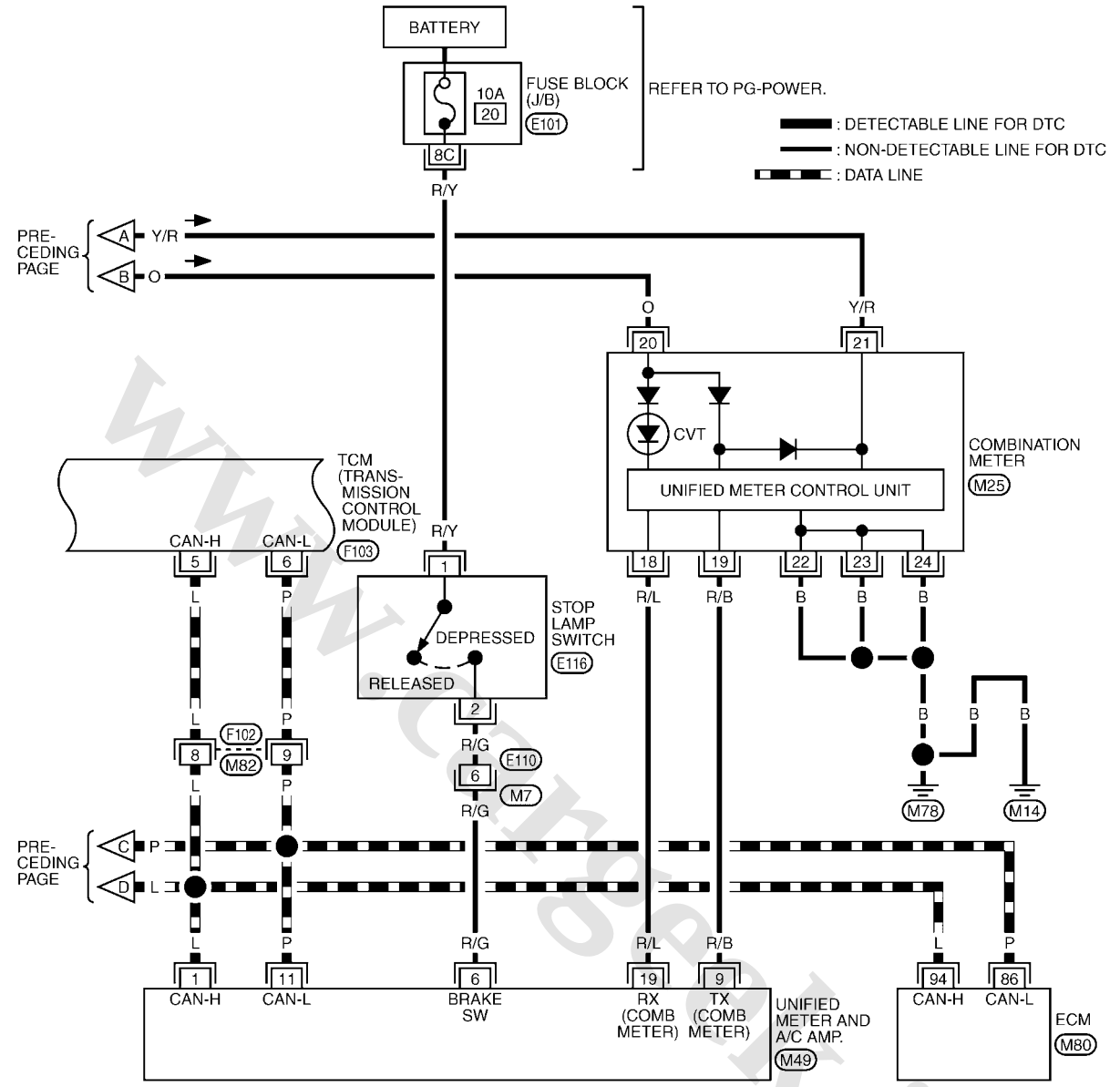
ACS00AJI

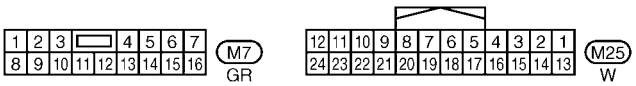
LHD models

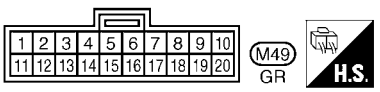


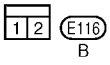
TCWB0146E

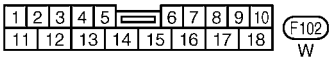
CVT-NONDTC-02

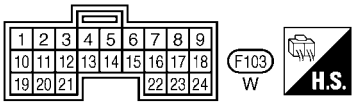








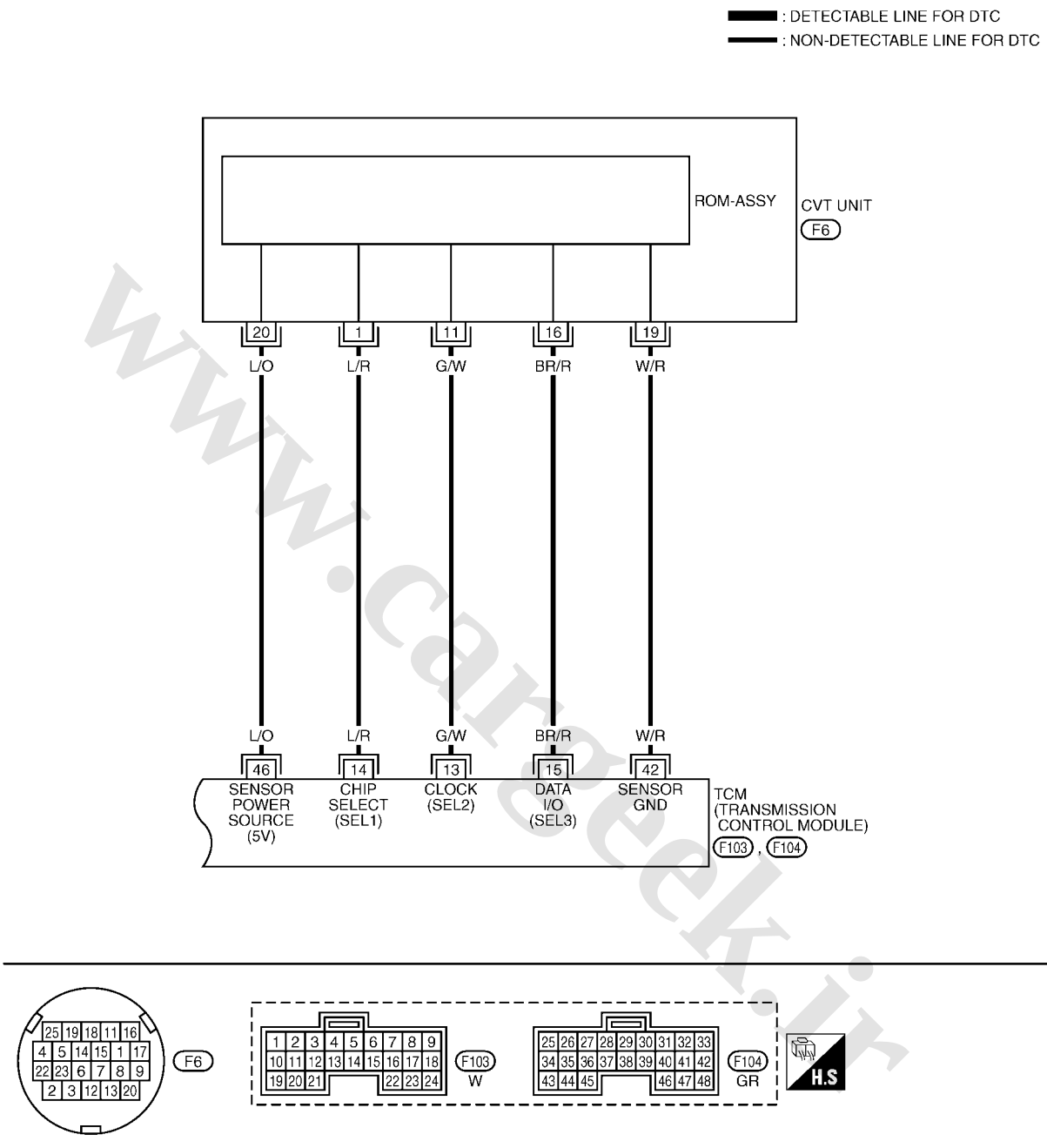




REFER TO THE FOLLOWING.
E101 -FUSE BLOCK-JUNCTION BOX (J/B)
M80 -ELECTRICAL UNITS

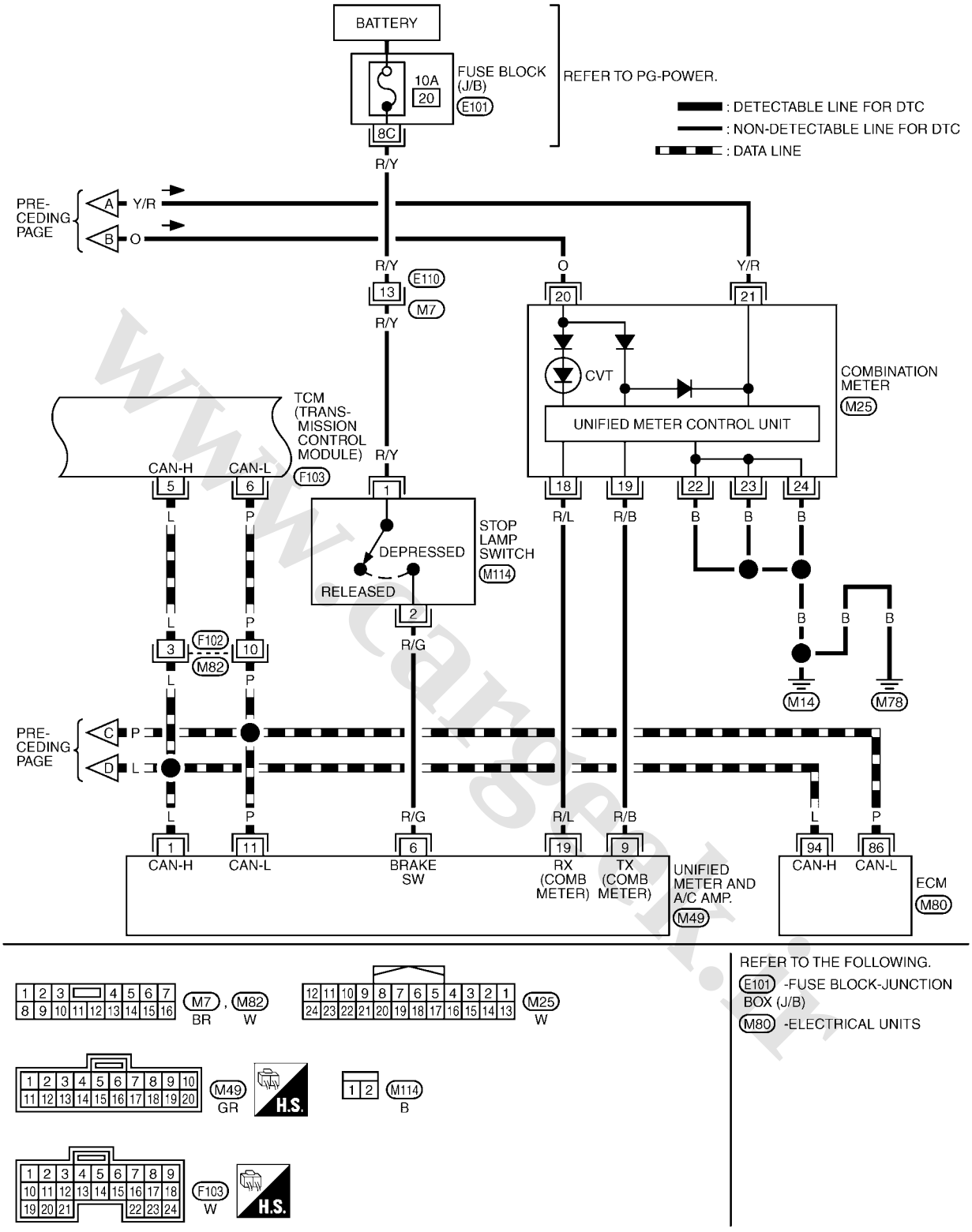
TCWB0147E

CVT-NONDTC-03



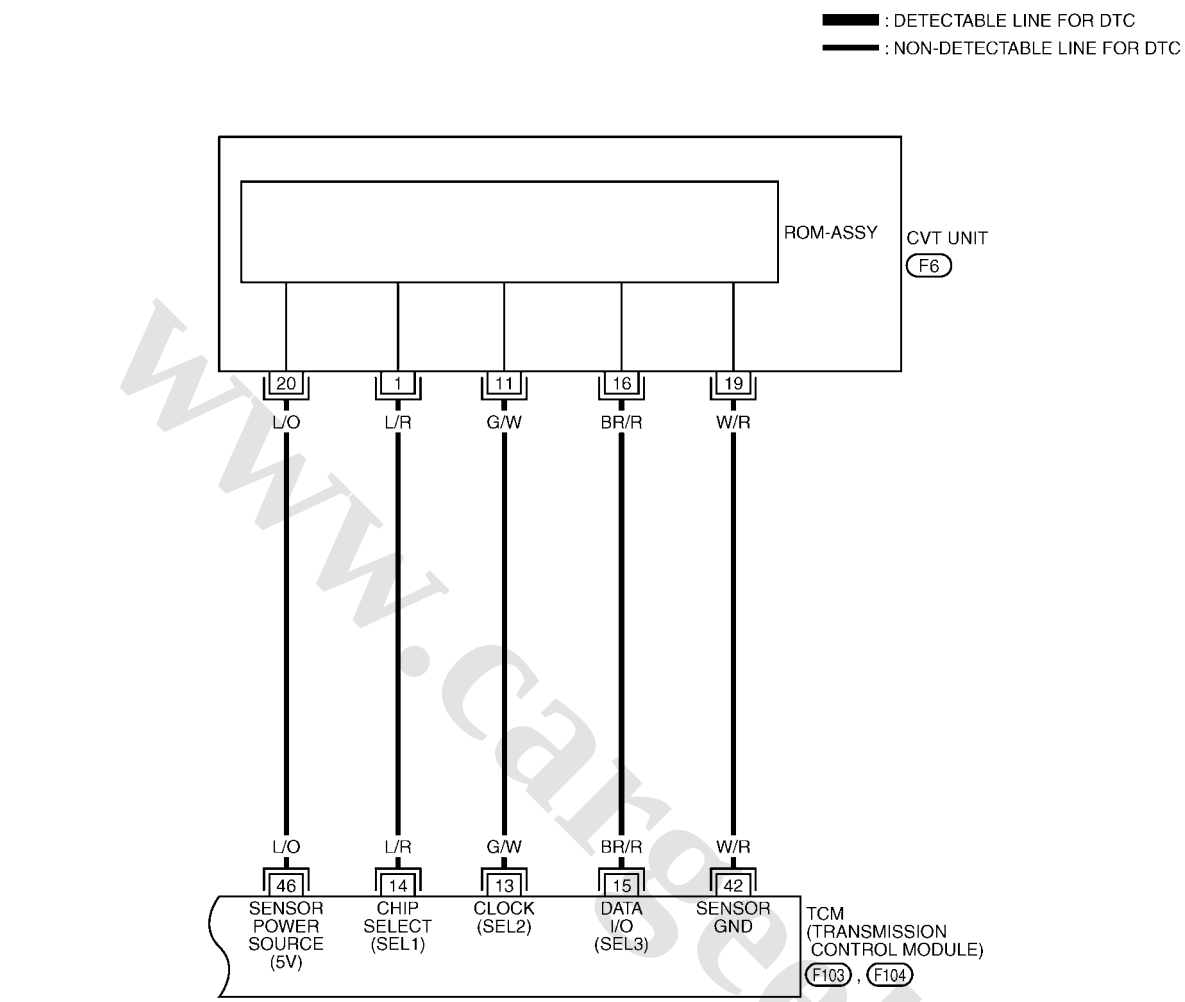
TCWA0258E

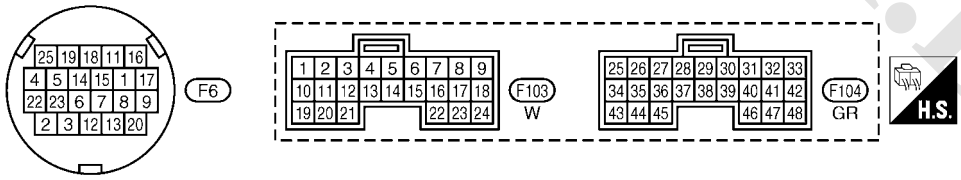
CVT-NONDTC-02



TCWB0392E

CVT-NONDTC-03





TCWB0255E

TCM terminal data are reference values, measured between each terminal and ground.

Terminal	Wire color	Item	Condition		Data (Approx.)
5	L	CAN-H	—		—
6	P	CAN-L	—		—
8	SB	Back-up lamp relay		Selector lever in “R” position.	0 V
				Selector lever in other positions.	Battery voltage
13	G/W	ROM assembly	—		—
14	L/R	ROM assembly	—		—
15	BR/R	ROM assembly	—		—
42	W/R	Sensor ground	Always		0 V
46	L/O	Sensor power		—	4.5 - 5.5 V
				—	0 V

CVT Indicator Lamp Does Not Come On

ACS00AJJ

SYMPTOM:

CVT indicator lamp does not come on for about 2 seconds when turning ignition switch to ON.

DIAGNOSTIC PROCEDURE

1. CHECK CAN COMMUNICATION LINE

Perform the self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

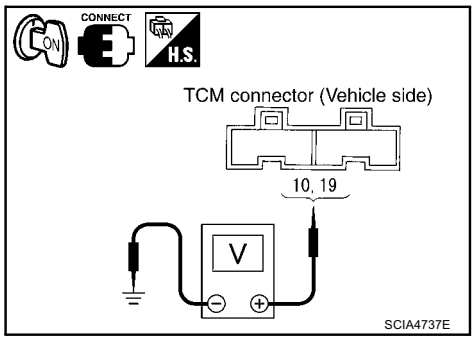
Is any malfunction of the “U1000 CAN COMM CIRCUIT” indicated in the results?

YES >> Check CAN communication line. Refer to CVT-59, "DTC U1000 CAN COMMUNICATION LINE" .
NO >> GO TO 2.

2. CHECK TCM POWER SOURCE

1. Turn ignition switch ON.
2. Check voltage between TCM connector terminals and ground. Refer to CVT-103, "Wiring Diagram — CVT — POWER" .

Name	Connector	Terminal	Voltage (Approx.)
Power supply	F103	10	Battery voltage
		19	



OK or NG

OK >> GO TO 4.
NG >> GO TO 3.

3. DETECT MALFUNCTIONING ITEM

Check the following.

- Harness for short or open between ignition switch and TCM connector terminal 10, 19 Refer to CVT-103, "Wiring Diagram — CVT — POWER" .
- 10 A fuse (No.83, located in the IPDM E/R). Refer to CVT-103, "Wiring Diagram — CVT — POWER" .
- Ignition switch. Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

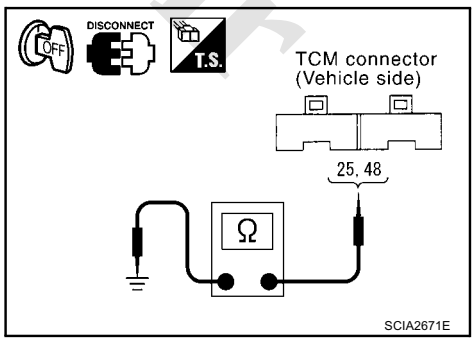
OK or NG

OK >> GO TO 4.
NG >> Repair or replace damaged parts.

4. CHECK TCM GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check continuity between TCM connector terminal and ground. Refer to CVT-103, "Wiring Diagram — CVT — POWER" .

Name	Connector	Terminal	Continuity
Ground	F104	25	Yes
		48	



OK or NG

OK >> GO TO 5.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

5. DETECT MALFUNCTIONING ITEM

Check the following.

- Harness and fuse for short or open between ignition switch and CVT indicator lamp
  Refer to PG-4, "POWER SUPPLY ROUTING CIRCUIT" .

OK or NG

OK >> GO TO 6.
NG >> Repair or replace damaged parts.

6. CHECK SYMPTOM

Check again. Refer to CVT-39, "Check Before Engine Is Started" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 7.

7. CHECK COMBINATION METERS

Check combination meters.

- Refer to DI-5, "COMBINATION METERS" .

OK or NG

OK >> **INSPECTION END**
NG >> Repair or replace damaged parts.

Engine Cannot Be Started in “P” or “N” Position

ACS00AJK

SYMPTOM:

- **Engine cannot be started with selector lever in “P” or “N” position.**
- **Engine can be started with selector lever in “D”, “M” or “R” position.**

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Do the self-diagnostic results indicate PNP switch circuit or start signal circuit?

YES >> Check PNP switch circuit or start signal circuit. Refer to CVT-64, "DTC P0705 PARK/NEUTRAL POSITION SWITCH" or CVT-61, "DTC P0615 START SIGNAL CIRCUIT" .
NO >> GO TO 2.

2. CHECK CONTROL CABLE

Check control cable. Refer to CVT-137, "Checking of CVT Position"

OK or NG

OK >> GO TO 3.
NG >> Adjust control cable. Refer to CVT-137, "Adjustment of CVT Position" .

3. CHECK STARTING SYSTEM

Check starting system. Refer to SC-4, "STARTING SYSTEM" .

OK or NG

OK >> **INSPECTION END**
NG >> Repair or replace damaged parts.

In “P” Position, Vehicle Moves Forward or Backward When Pushed

ACS00AJL

SYMPTOM:

Vehicle moves when it is pushed forward or backward with selector lever in “P” position.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Do the self-diagnostic results indicate PNP switch circuit?

YES >> Check PNP switch circuit. Refer to CVT-64, "DTC P0705 PARK/NEUTRAL POSITION SWITCH" .
NO >> GO TO 2.

2. CHECK CONTROL CABLE

Check control cable. Refer to CVT-137, "Checking of CVT Position"

OK or NG

OK >> GO TO 3.
NG >> Adjust control cable. Refer to CVT-137, "Adjustment of CVT Position" .

3. CHECK SYMPTOM

Check again. Refer to CVT-39, "Check at Idle" .

OK or NG

OK >> **INSPECTION END**
NG >> Replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .

In “N” Position, Vehicle Moves

ACS00AJM

SYMPTOM:

Vehicle moves forward or backward when selecting “N” position.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Do the self-diagnostic results indicate PNP switch circuit?

YES >> Check PNP switch circuit. Refer to CVT-64, "DTC P0705 PARK/NEUTRAL POSITION SWITCH" .
NO >> GO TO 2.

2. CHECK CONTROL CABLE

Check control cable. Refer to CVT-137, "Checking of CVT Position"

OK or NG

OK >> GO TO 3.
NG >> Adjust control cable. Refer to CVT-137, "Adjustment of CVT Position" .

3. CHECK CVT FLUID LEVEL

Check CVT fluid level. Refer to CVT-17, "Checking CVT Fluid" .

OK or NG

OK >> GO TO 4.
NG >> Refill CVT fluid.

4. CHECK SYMPTOM

Check again. Refer to CVT-39, "Check at Idle" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 5.

5. CHECK TCM

1. Check TCM input/output signals. Refer to CVT-43, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .
NG >> Repair or replace damaged parts.

Large Shock “N” → “R” Position

ACS00AJN

SYMPTOM:

There is large shock when shifting from “N” to “R” position.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Is any malfunction detected by self-diagnosis?

YES >> Check the malfunctioning system. Refer to CVT-50, "Display Items List" .
NO >> GO TO 2.

2. CHECK ENGINE IDLE SPEED

Check engine idle speed. Refer to EC-43, "Basic Inspection" (TYPE 1*), EC-293, "Basic Inspection" (TYPE 2*).
*: Refer to EC-9, "APPLICATION NOTICE" .

OK or NG

OK >> GO TO 3.
NG >> Repair.

3. CHECK CVT FLUID LEVEL

Check CVT fluid level. Refer to CVT-17, "Checking CVT Fluid" .

OK or NG

OK >> GO TO 4.
NG >> Refill CVT fluid.

4. CHECK LINE PRESSURE

Check line pressure at idle. Refer to CVT-35, "LINE PRESSURE TEST" .

OK or NG

OK >> GO TO 5.
NG >> Check the malfunctioning item. Refer to CVT-36, "Judgement of Line Pressure Test" .

5. CHECK SYMPTOM

Check again. Refer to CVT-39, "Check at Idle" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 6.

6. CHECK TCM

1. Check TCM input/output signals. Refer to CVT-43, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .
NG >> Repair or replace damaged parts.

Vehicle Does Not Creep Backward in “R” Position

ACS00AJO

SYMPTOM:

Vehicle does not creep backward when selecting “R” position.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Is any malfunction detected by self-diagnosis?

YES >> Check the malfunctioning system. Refer to CVT-50, "Display Items List" .
NO >> GO TO 2.

2. CHECK CONTROL CABLE

Check control cable. Refer to CVT-137, "Checking of CVT Position"

OK or NG

OK >> GO TO 3.
NG >> Adjust control cable. Refer to CVT-137, "Adjustment of CVT Position" .

3. CHECK CVT FLUID LEVEL

Check CVT fluid level. Refer to CVT-17, "Checking CVT Fluid" .

OK or NG

OK >> GO TO 4.
NG >> Refill CVT fluid.

4. CHECK LINE PRESSURE

Check line pressure at idle. Refer to CVT-35, "LINE PRESSURE TEST" .

OK or NG

OK >> GO TO 5.
NG >> Check the malfunctioning item. Refer to CVT-36, "Judgement of Line Pressure Test" .

5. CHECK SYMPTOM

Check again. Refer to CVT-39, "Check at Idle" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 6.

6. CHECK TCM

1. Check TCM input/output signals. Refer to CVT-43, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .
NG >> Repair or replace damaged parts.

Vehicle Does Not Creep Forward in “D” Position

ACS00AJP

SYMPTOM:

Vehicle does not creep forward when selecting “D” position.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Is any malfunction detected by self-diagnosis?

YES >> Check the malfunctioning system. Refer to CVT-50, "Display Items List" .
NO >> GO TO 2.

2. CHECK CONTROL CABLE

Check control cable. Refer to CVT-137, "Checking of CVT Position"

OK or NG

OK >> GO TO 3.
NG >> Adjust control cable. Refer to CVT-137, "Adjustment of CVT Position" .

3. CHECK CVT FLUID LEVEL

Check CVT fluid level. Refer to CVT-17, "Checking CVT Fluid" .

OK or NG

OK >> GO TO 4.
NG >> Refill CVT fluid.

4. CHECK LINE PRESSURE

Check line pressure at idle. Refer to CVT-35, "LINE PRESSURE TEST" .

OK or NG

OK >> GO TO 5.
NG >> Check the malfunctioning item. Refer to CVT-36, "Judgement of Line Pressure Test" .

5. CHECK SYMPTOM

Check again. Refer to CVT-39, "Check at Idle" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 6.

6. CHECK TCM

1. Check TCM input/output signals. Refer to CVT-43, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .
NG >> Repair or replace damaged parts.

CVT Does Not Shift

ACS00AJQ

SYMPTOM:

CVT does not shift at the specified speed on “Cruise Test”.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Is any malfunction detected by self-diagnosis?

YES >> Check the malfunctioning system. Refer to CVT-50, "Display Items List" .
NO >> GO TO 2.

2. CHECK CONTROL CABLE

Check control cable. Refer to CVT-137, "Checking of CVT Position"

OK or NG

OK >> GO TO 3.
NG >> Adjust control cable. Refer to CVT-137, "Adjustment of CVT Position" .

3. CHECK CVT FLUID LEVEL

Check CVT fluid level. Refer to CVT-17, "Checking CVT Fluid" .

OK or NG

OK >> GO TO 4.
NG >> Refill CVT fluid.

4. CHECK LINE PRESSURE

Check line pressure at idle. Refer to CVT-35, "LINE PRESSURE TEST" .

OK or NG

OK >> GO TO 5.
NG >> Check the malfunctioning item. Refer to CVT-36, "Judgement of Line Pressure Test" .

5. CHECK SYMPTOM

Check again. Refer to CVT-41, "Cruise Test" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 6.

6. CHECK TCM

1. Check TCM input/output signals. Refer to CVT-43, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .
NG >> Repair or replace damaged parts.

Cannot Be Changed to Manual Mode

ACS00AJR

SYMPTOM:

Does not change to manual mode when manual shift gate is used.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Is any malfunction detected by self-diagnosis?

YES >> Check the malfunctioning system. Refer to CVT-50, "Display Items List" .
NO >> GO TO 2.

2. CHECK MANUAL MODE SWITCH

Check manual mode switch circuit. Refer to CVT-90, "DTC P0826 MANUAL MODE SWITCH CIRCUIT" .

OK or NG

OK >> GO TO 3.
NG >> Repair or replace damaged parts.

3. CHECK SYMPTOM

Check again. Refer to CVT-41, "Cruise Test" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 4.

4. CHECK TCM

1. Check TCM input/output signals. Refer to CVT-43, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> **INSPECTION END**
NG >> Repair or replace damaged parts.

CVT Does Not Shift in Manual Mode

ACS00AJS

SYMPTOM:

Speed does not change even if the selector lever is put in the manual shift gate position and the selector lever is operated to + side or to - side.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Is any malfunction detected by self-diagnosis?

YES >> Check the malfunctioning system. Refer to CVT-50, "Display Items List" .
NO >> GO TO 2.

2. CHECK MANUAL MODE SWITCH

Check manual mode switch circuit. Refer to CVT-90, "DTC P0826 MANUAL MODE SWITCH CIRCUIT" .

OK or NG

OK >> GO TO 3.
NG >> Repair or replace damaged parts.

3. CHECK CONTROL CABLE

Check control cable. Refer to CVT-137, "Checking of CVT Position"

OK or NG

OK >> GO TO 4.
NG >> Adjust control cable. Refer to CVT-137, "Adjustment of CVT Position" .

4. CHECK CVT FLUID LEVEL

Check CVT fluid level. Refer to CVT-17, "Checking CVT Fluid" .

OK or NG

OK >> GO TO 5.
NG >> Refill CVT fluid.

5. CHECK LINE PRESSURE

Check line pressure at idle. Refer to CVT-35, "LINE PRESSURE TEST" .

OK or NG

OK >> GO TO 6.
NG >> Check the malfunctioning item. Refer to CVT-36, "Judgement of Line Pressure Test" .

6. CHECK SYMPTOM

Check again. Refer to CVT-41, "Cruise Test" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 7.

7. CHECK TCM

1. Check TCM input/output signals. Refer to CVT-43, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> Replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .
NG >> Repair or replace damaged parts.

Vehicle Does Not Decelerate by Engine Brake

ACS00AJT

SYMPTOM:

No engine brake is applied when the gear is shifted from the “M2” to “M1” position.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Perform self-diagnosis check. Refer to CVT-50, "SELF-DIAGNOSTIC RESULT MODE" .

Is any malfunction detected by self-diagnosis?

YES >> Check the malfunctioning system. Refer to CVT-50, "Display Items List" .
NO >> GO TO 2.

2. CHECK CONTROL CABLE

Check control cable. Refer to CVT-137, "Checking of CVT Position"

OK or NG

OK >> GO TO 3.
NG >> Adjust control cable. Refer to CVT-137, "Adjustment of CVT Position" .

3. CHECK CVT FLUID LEVEL

Check CVT fluid level. Refer to CVT-17, "Checking CVT Fluid" .

OK or NG

OK >> GO TO 4.
NG >> Refill CVT fluid.

4. CHECK LINE PRESSURE

Check line pressure at idle. Refer to CVT-35, "LINE PRESSURE TEST" .

OK or NG

OK >> GO TO 5.
NG >> Check the malfunctioning item. Refer to CVT-36, "Judgement of Line Pressure Test" .

5. CHECK MANUAL MODE SWITCH

Check manual mode switch circuit. Refer to CVT-90, "DTC P0826 MANUAL MODE SWITCH CIRCUIT" .

OK or NG

OK >> GO TO 6.
NG >> Repair or replace damaged parts.

6. CHECK SYMPTOM

Check again. Refer to CVT-41, "Cruise Test" .

OK or NG

OK >> **INSPECTION END**
NG >> GO TO 7.

7. CHECK TCM

1. Check TCM input/output signals. Refer to CVT-43, "TCM Input/Output Signal Reference Values" .
2. If NG, re-check TCM pin terminals for damage or loose connection with harness connector.

OK or NG

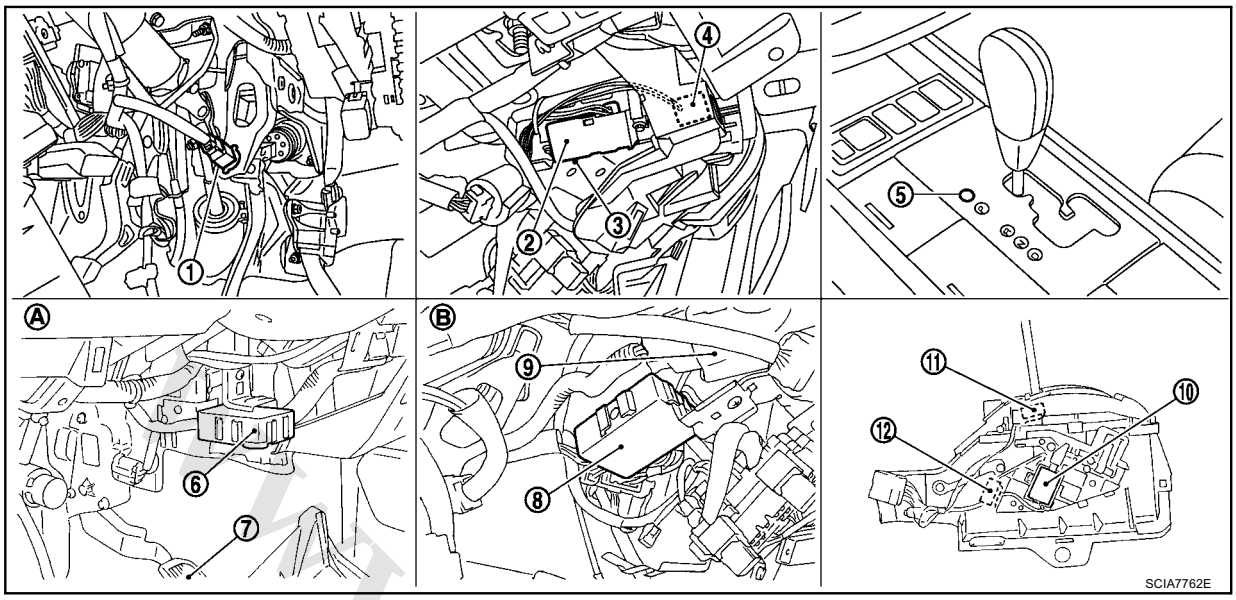
OK >> Replace the transaxle assembly. Refer to CVT-153, "Removal and Installation" .
NG >> Repair or replace damaged parts.

CVT SHIFT LOCK SYSTEM

PFP:00000

Shift Lock System Electrical Parts Location

ACS00AJY



1. Stop lamp switch
2. Key lock solenoid
3. Emergency lever
4. Key switch
5. Shift lock release button
6. Shift lock control unit
7. Accelerator pedal
8. Shift lock control unit
9. Ignition switch
10. Shift lock solenoid
11. Detention switch (key)
12. Detention switch (shift)

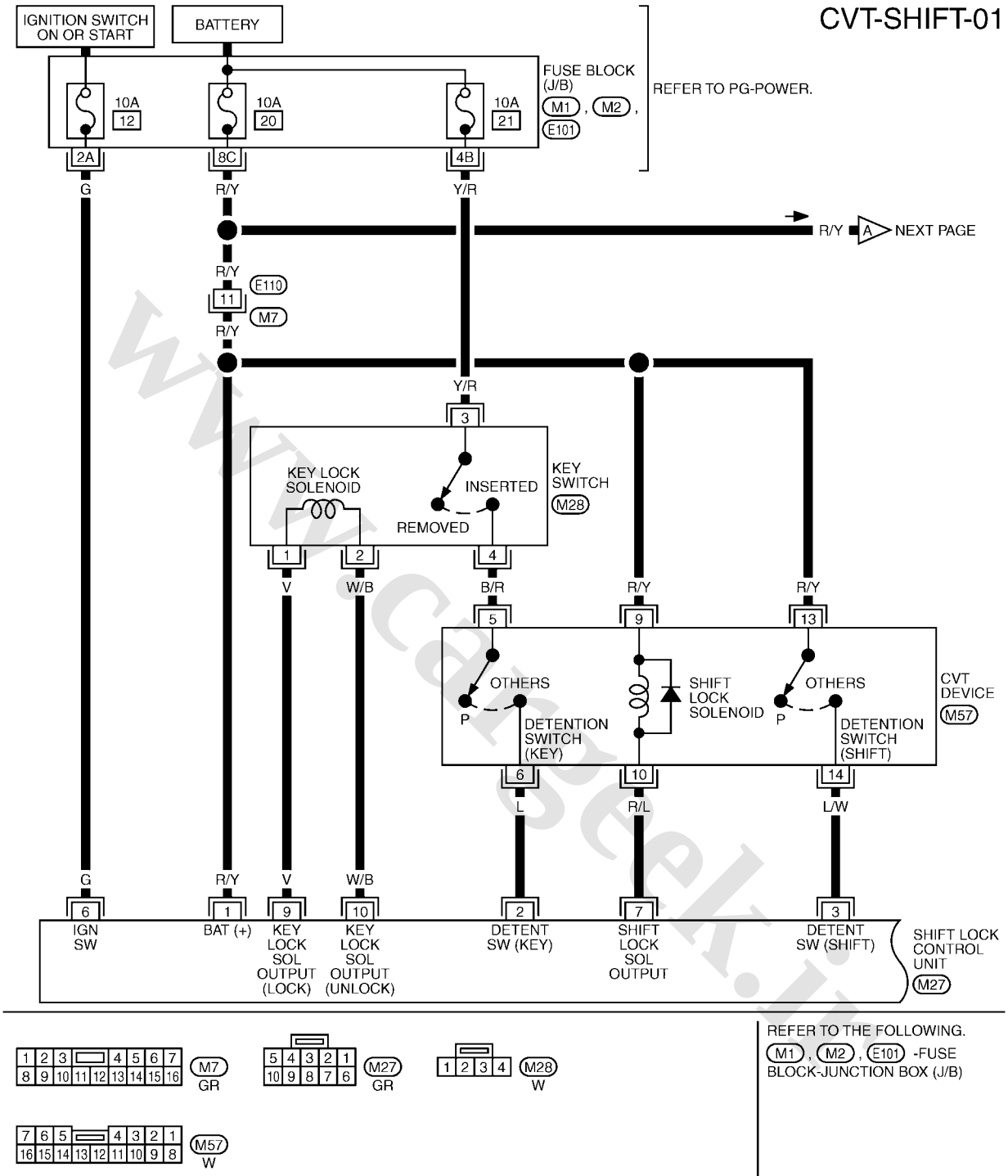
A. LHD models
B. RHD models

NOTE:
This emergency lever can be used when battery is off ignition key cannot be removed. In the situation like this, by operating this lever, ignition key can be removed.

Wiring Diagram — CVT — SHIFT

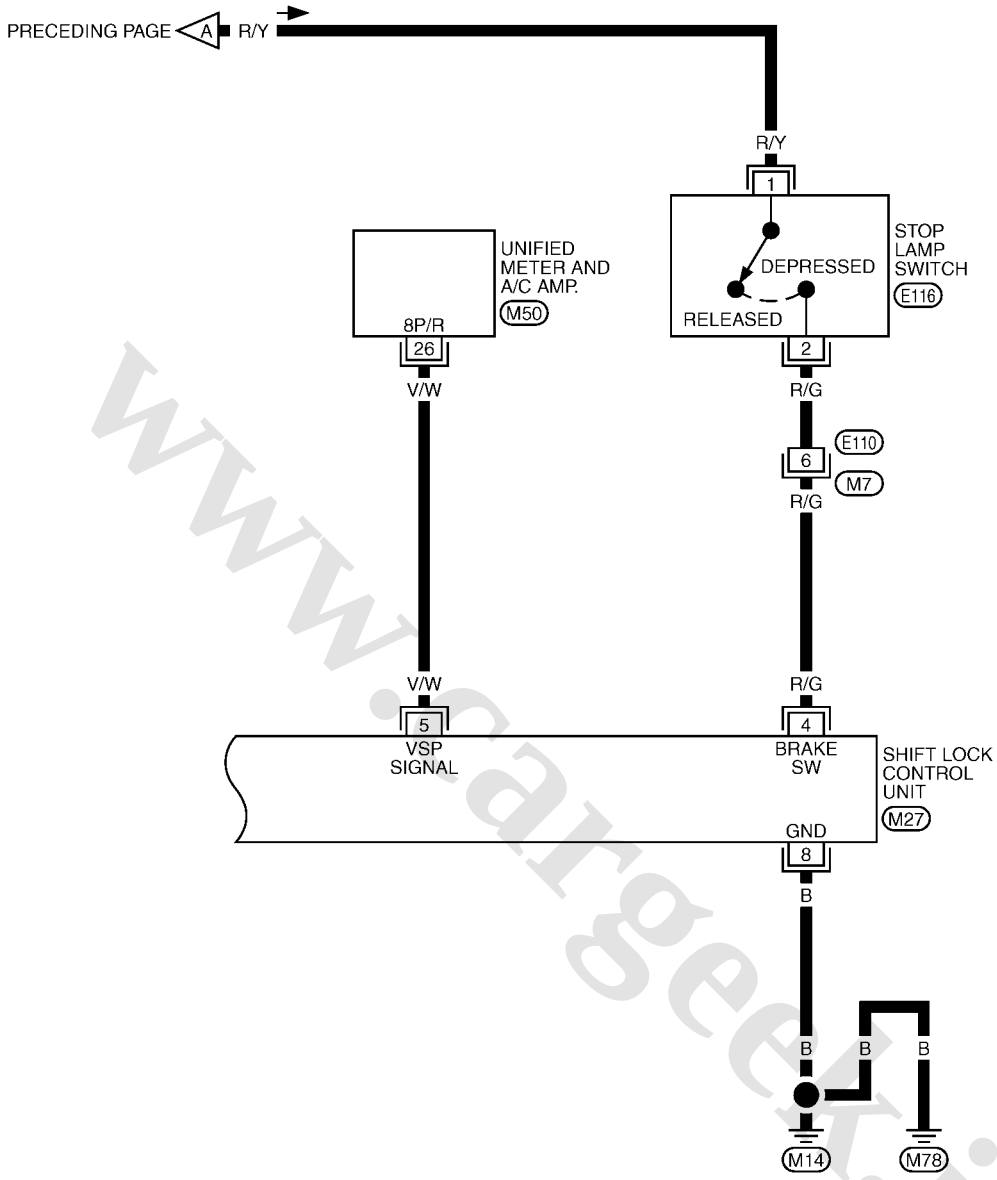
ACS00AJZ

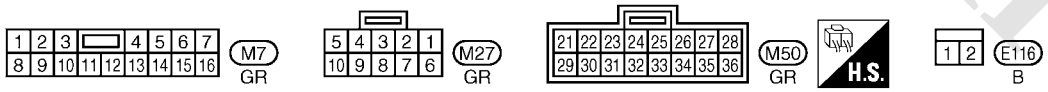
LHD models



TCWB0151E

CVT-SHIFT-02



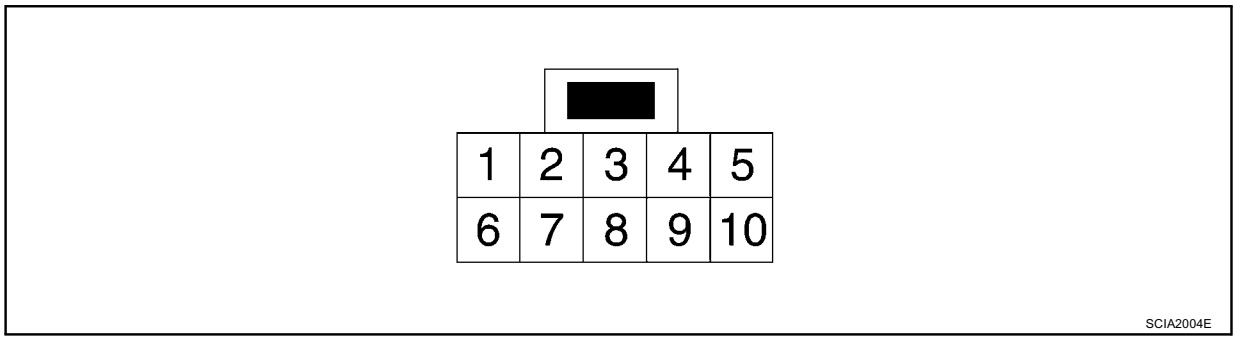


TCWA0166E

Shift Lock Control Unit Reference Values

ACS00AK0

SHIFT LOCK HARNESS CONNECTOR TERMINALS LAYOUT



SHIFT LOCK CONTROL UNIT INSPECTION TABLE

Shift lock control unit terminal data are reference values, measured between each terminal and ground.

Terminal (Wire color)	Item	Condition	Judgement standard
1 (R/Y)	Power source	Always	Battery voltage
2 (L)	Detention switch (for key)	When selector lever is not in “P” position with key inserted.	Battery voltage
		When selector lever is in “P” position with key inserted.	Approx. 0 V
3 (L/W)	Detention switch (for shift)	When selector lever is not in “P” position.	Battery voltage
		When selector lever is in “P” position.	Approx. 0 V
4 (R/G)	Stop lamp switch	When brake pedal is depressed	Battery voltage
		When brake pedal is released	Approx. 0 V
5 (V/W)	Vehicle speed signal (8pulse signal)	Speed meter is operated	Refer to DI-23, "Terminals and Reference Value for Unified Meter and A/C Amp." .
6 (G)	Ignition signal	Ignition switch: OFF	Approx. 0 V
		Ignition switch: ON	Battery voltage
7 (R/L)	Shift lock solenoid	● When selector lever is in “P” position, brake pedal is depressed, and ignition switch is ON. ● When selector lever is not in “P” position, ignition switch is ON, and vehicle speed is 10 km/h (6 MPH) or less. ● For 3 minutes after selector lever is not in “P” position, vehicle speed is 10 km/h (6 MPH) or less, and ignition switch is ON → OFF.	Approx. 0 V
		Except the above	Battery voltage
8 (B)	Ground	—	Approx. 0 V
9 (V)	Key lock solenoid	When selector lever is not “P” position.	Battery voltage for approx. 0.1 sec. (Note)
		When selector lever is in “P” position.	Approx. 0 V
10 (W/B)	Key unlock solenoid	When selector lever is in “P” position with ignition switch OFF.	Battery voltage for approx. 0.1 sec. (Note)
		When selector lever is not in “P” position with ignition switch OFF.	Approx. 0 V

NOTE:
Take care that the pointer swings only momentarily because the output time is so short. If the inspection is done with an oscilloscope, it should be observed that the power source voltage lasts for 3.5 to 10 ms.

Component Inspection

ACS00AK1

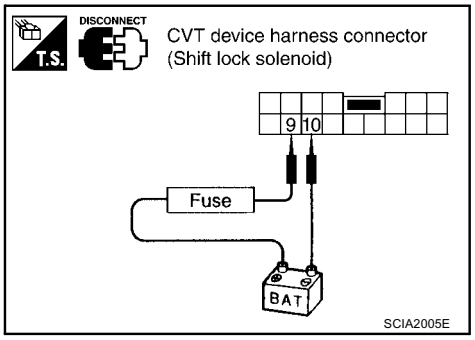
SHIFT LOCK SOLENOID

Check operation by applying battery voltage to the CVT device harness connector.

CAUTION:

Be sure to apply the voltage of the correct polarity to the respective terminals. Otherwise, the part may be damaged.

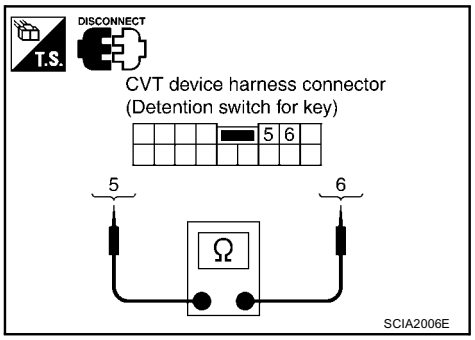
Connector	Terminal
M57	9 (Battery voltage) - 10 (Ground)



DETENTION SWITCH (FOR KEY)

Check continuity between terminals of the CVT device harness connector.

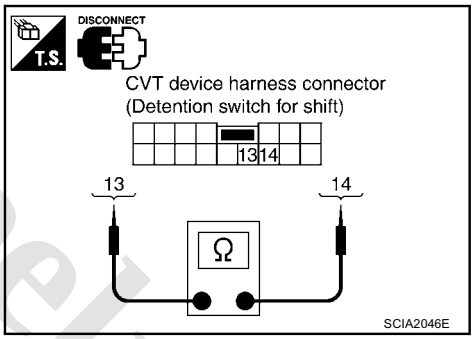
Condition	Connector	Terminal	Continuity
When selector lever is in “P” position.	M57	5 - 6	No
When selector lever is not in “P” position.			Yes



DETENTION SWITCH (FOR SHIFT)

Check continuity between terminals of the CVT device harness connector.

Condition	Connector	Terminal	Continuity
When selector lever is in “P” position.	M57	13 - 14	No
When selector lever is not in “P” position.			Yes



KEY LOCK SOLENOID

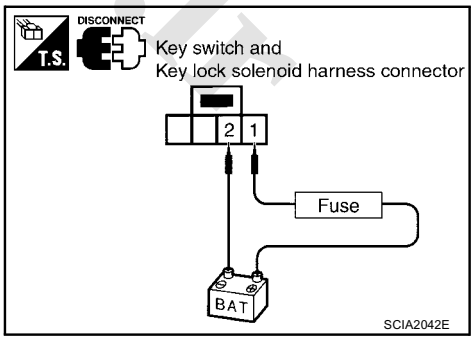
Key Lock

Check operation by applying battery voltage to key switch and key lock solenoid harness connector.

CAUTION:

Be careful not to cause burnout of the harness.

Connector	Terminal
M28	1 (Battery voltage) - 2 (Ground)



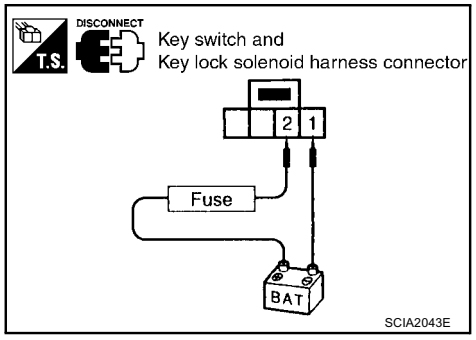
Key Unlock

Check operation by applying battery voltage to key switch and key lock solenoid harness connector.

CAUTION:

Be careful not to cause burnout of the harness.

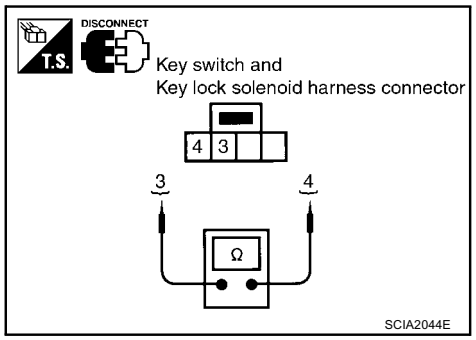
Connector	Terminal
M28	2 (Battery voltage) - 1 (Ground)



KEY SWITCH

Check continuity between terminals of the key switch and key lock solenoid harness connector.

Condition	Connector	Terminal	Continuity
Key inserted	M28	3 - 4	Yes
Key withdrawn			No



STOP LAMP SWITCH

Check continuity between terminals of the stop lamp switch harness connector.

Condition	Connector	Terminal	Continuity
When brake pedal is depressed	M114	1 - 2	Yes
When brake pedal is released			No

Check stop lamp switch after adjusting brake pedal.