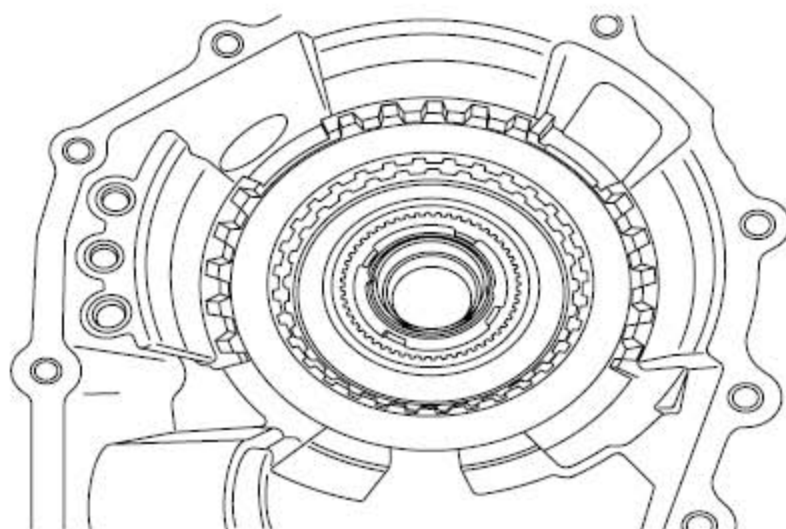
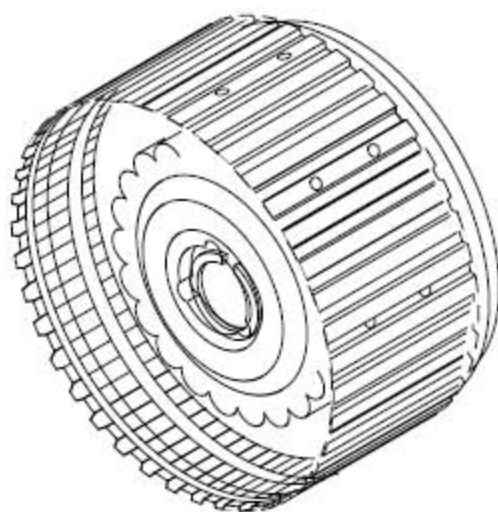


## P0734 GEAR 4 INCORRECT RATIO

### COMPONENT LOCATION



2ND BRAKE



OD CLUTCH

### GENERAL DESCRIPTION

The value of the input shaft speed should be equal to the value of the output shaft speed, when multiplied by the 4th gear ratio, while the transaxle is engaged in the 4th gear. For example, if the output speed is 1,000 rpm and the 4th gear ratio is 0.712, then the input speed is 0,712 rpm.

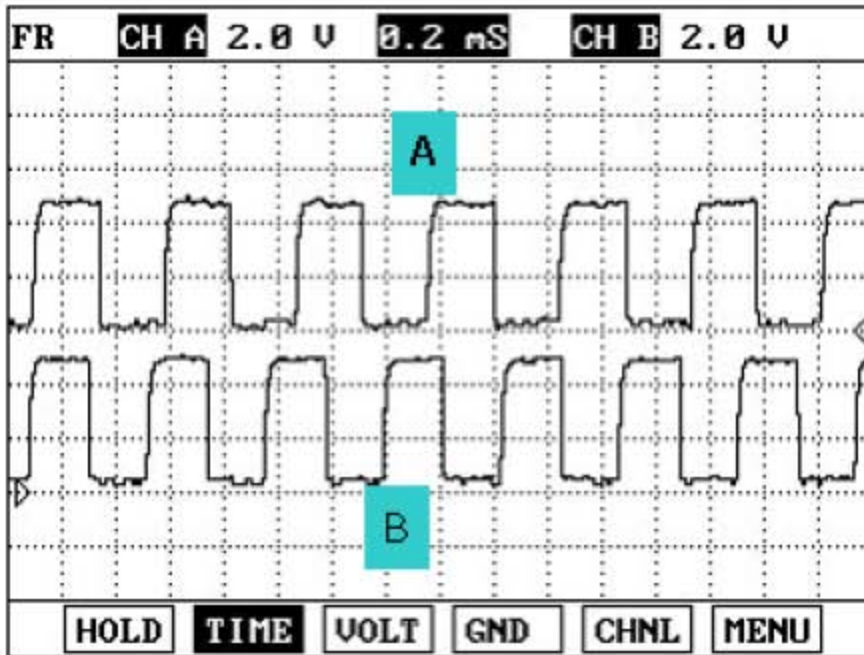
## DTC DESCRIPTION

This code is set if the value of input shaft speed is not equal to the value of the output shaft, when multiplied by the 4th gear ratio, while the transaxle is engaged in 4th gear. This malfunction is mainly caused by mechanical troubles such as control valve sticking or solenoid valve malfunctioning rather than an electrical issue.

## DTC DETECTING CONDITION

Item	Detecting Condition	Possible cause
<b>DTC Strategy</b>	• 4th gear incorrect ratio	<ul style="list-style-type: none"> <li>• Faulty Input speed sensor</li> <li>• Faulty output speed sensor</li> <li>• Faulty UD clutch or 2nd brake</li> </ul>
<b>Enable Conditions</b>	<ul style="list-style-type: none"> <li>• Engine speed &gt;450rpm</li> <li>• Output speed &gt;900rpm</li> <li>• Shift stage 4th. gear</li> <li>• Input speed &gt;0rpm</li> <li>• A/T oil temp sensor voltage &lt;4.5V</li> <li>• Voltage of Battery &gt;10V</li> <li>• TRANSAXLE RANGE SWITCH is normal and above 2sec is passed from IG ON</li> </ul>	
<b>Threshold value</b>	<ul style="list-style-type: none"> <li>• <math>\left  \frac{\text{Input speed}}{\text{1st gear ratio}} - \text{output speed} \right  \geq 200\text{rpm}</math></li> </ul>	
<b>Diagnostic Time</b>	• More than 1sec	
<b>Fail Safe</b>	• Locked into 3rd gear. (If diagnosis code P0734 is output four times, the transaxle is locked into 3rd gear)	

## SIGNAL WAVEFORM



## MONITOR SCANTOOL DATA

It is difficult to "STALL TEST" in 4th gear, therefore Go to "Signal Circuit Inspection" procedure.

1.2 CURRENT DATA	
× CRK POSITION SNSR	2335 rpm
× INPUT SPEED SNSR	0 rpm
× OUTPUT SPEED SNSR	0 rpm
× SHIFT POSITION	3
THROTTLE P. SENSOR	39.6 %
FLUID TEMP. SENSOR	-40 °C
VEHICLE SPEED	0 Km/h
L&RSU DUTY	0.0 %

FIX    SCRN    FULL    PART    GRPH    HELP

## OPERATING ELEMENT OF EACH SHIFTING RANGE

	UD/C	OD/C	REV/C	2ND/B	LR/B	OWC
P					●	
R			●		●	
N					●	
D1	●				●	○
D2	●			●		
D3	●	●				
D4		●		●		

Low & Reverse Brake is released when the vehicle speed is over 7Km/h(5 MPH).

## SIGNAL CIRCUIT INSPECTION

- 1). Connect Scantool.
- 2). Engine "ON".
- 3). Monitor the "INPUT & OUTPUT SPEED SENSOR" parameter on the scantool.
- 4). Accelerate the Engine speed until about 2000 rpm in the 4th gear.

**Specification :** INPUT SPEED - (OUTPUT SPEED × GEAR RATIO) ≤ 200 RPM

1.2 CURRENT DATA	
× ENGINE RPM	2133 rpm
× INPUT SPEED	2056 rpm
× OUTPUT SPEED	2911 rpm
× SHIFT POSITION	4 GEAR
× SELECT LEVER SW.	D
2ND SOLENOID DUTY	0.0 %
OD SOLENOID DUTY	0.0 %
OIL TEMPERATURE	156 °F

FIX    SCRNM    FULL    PART    GRPH    HELP

5). Are "INPUT & OUTPUT SPEED SENSOR" within specifications?

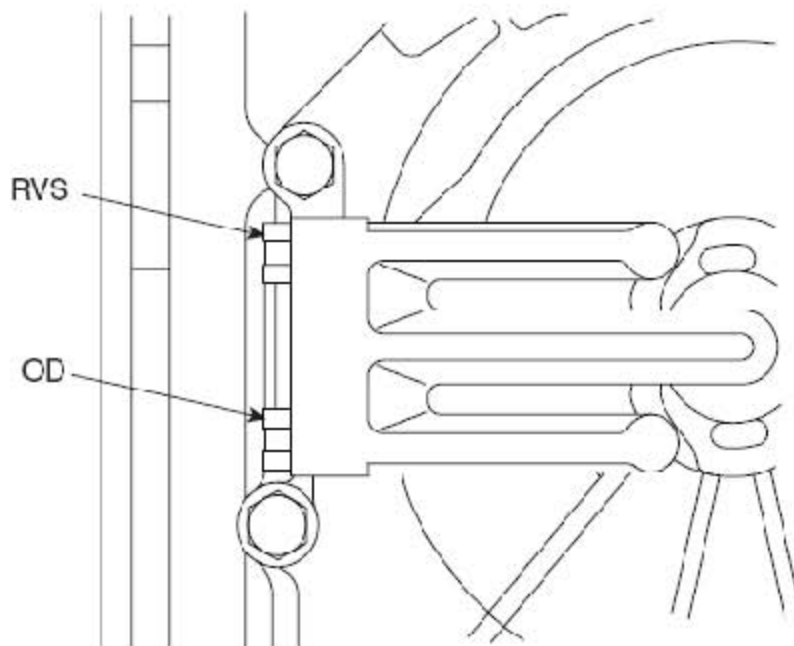
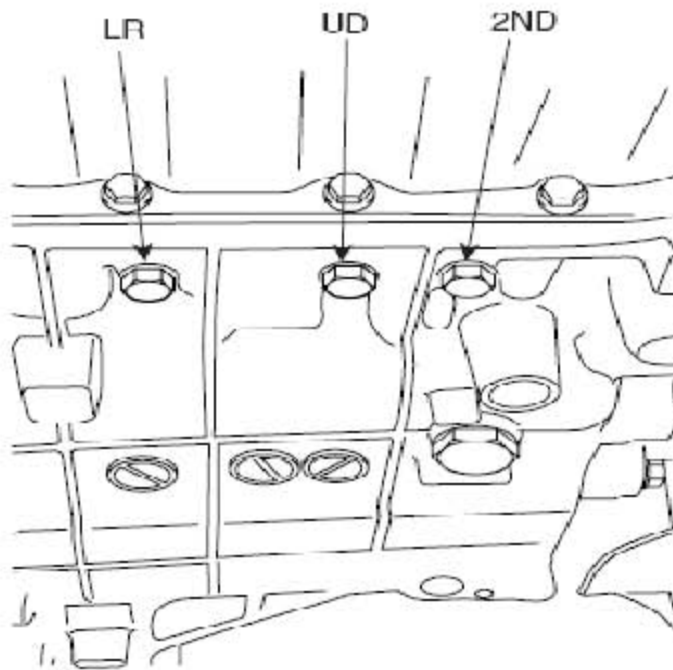
**YES**

▶ Go to "Component Inspection" procedure.

**NO**

▶ Check for electrical noise of circuit in INPUT & OUTPUT SPEED SENSOR or replace INPUT & OUTPUT SPEED SENSOR. Repair as necessary and go to "Verification of Vehicle Repair" procedure.

## COMPONENT INSPECTION



- 1). Connect oil pressure gauge to "UD" and "UD" port.
- 2). Engine "ON".
- 3). Drive the car with gear position "4".
- 4). Compare it with reference data as below.

**Specification** : shown below

Measurement condition			Standard hydraulic pressure kPa (psi)						
Selector lever position	Shift position	Engine speed (rpm)	Under drive clutch pressure	Reverse clutch pressure	Over-dive clutch pressure	Low & reverse brake pressure	Second brake pressure	Damper clutch Apply pressure (DA)	Damper clutch Release pressure (DR)
P	-	2,500	-	-	-	260-340 (38-50)	-	-	-
				1,270		1,270			
R	Reverse	2,500	-	1,770 (185-256)	-	1,770 (185-256)	-	-	-
N	-	2,500	-	-	-	260-340 (38-50)	-	-	-
						1,010			
	1st gear	2,500	430-510 (62-74)	-	-	1,050 (146-152)	-	-	-
D	2nd gear	2,500	430-510 (62-74)	-	-	-	430-510 (62-74)	-	-

	3rd gear	2,500	430-510 (62-74)	-	430-510 (62-74)	-	-	More than 730 (100)	0-10 (0-1)
	4th gear	2,500	-	-	430-510 (62-74)	-	780-880 (110-130)	More than 730 (100)	0-10 (0-1)

The values are subject to change according to vehicle model or condition

5). Is oil pressure value within specification?

**YES**

- ▶ Repair AUTO TRANSAXLE(Clutch or Brake) as necessary and Go to "Verification of Vehicle Repair" procedure.

**NO**

- ▶ Replace AUTO TRANSAXLE (BODY CONTROL VALVE faulty) as necessary and go to "Verification of Vehicle Repair " procedure.

## VERIFICATION OF VEHICLE REPAIR

After a repair, it is essential to verify that the fault has been corrected.

- 1). Connect scan tool and select "Diagnostic Trouble Codes(DTCs)" mode.
- 2). Using a scantool, Clear DTC.
- 3). Operate the vehicle within DTC Enable conditions in general information.
- 4). Are any DTCs present ?

**YES**

- ▶ Go to the applicable troubleshooting procedure.

**NO**

- ▶ System performing to specification at this time.