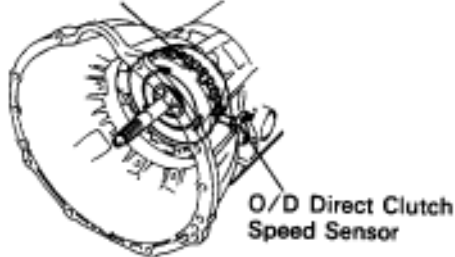


<b>Diag. Code</b>	<b>67</b>	<b>O/D Direct Clutch Speed Sensor Circuit</b>
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### — CIRCUIT DESCRIPTION —

O/D Direct Clutch Drum



AT5609

This sensor detects the rotation speed of the O/D input shaft from the rotation of the O/D direct clutch drum.

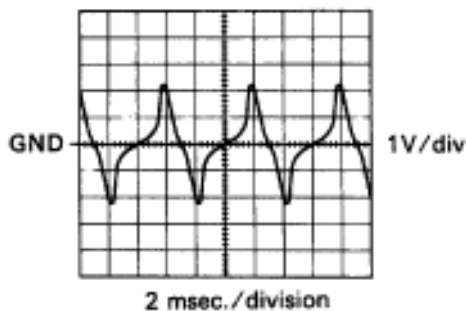
Its construction is the same as that of the No. 2 speed sensor (See page [AT-84](#)).

By comparing the O/D direct clutch speed signal and the No. 2 speed sensor signal, Engine & ECT ECU detects the shift timing of the gears and appropriately controls the engine torque and hydraulic pressure in response to various conditions, thus performing smooth gear shift.

Code No.	Diagnostic Code Detecting Condition	Trouble Area
67	<p>All conditions below are detected for 4 secs. or more. (2 trip detection logic)*</p> <p>(a) Gear position: 1st, 2nd or 3rd</p> <p>(b) T/M input shaft rpm: 100 rpm or more</p> <p>(c) T/M output shaft rpm: less than 300 rpm</p> <p>(d) NSW: OFF (other than P or N range)</p>	<ul style="list-style-type: none"> <li>•O/D direct clutch speed sensor.</li> <li>•Harness or connector between O/D direct clutch speed sensor and ECU.</li> <li>•ECU</li> </ul>

\*: See page [AT-62](#)

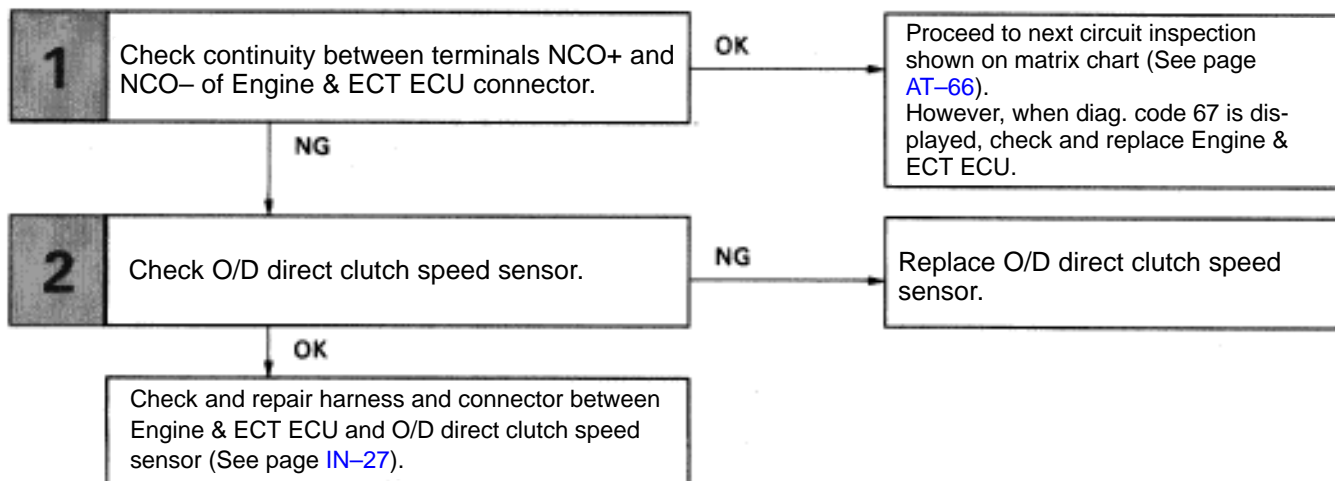
### < Reference >



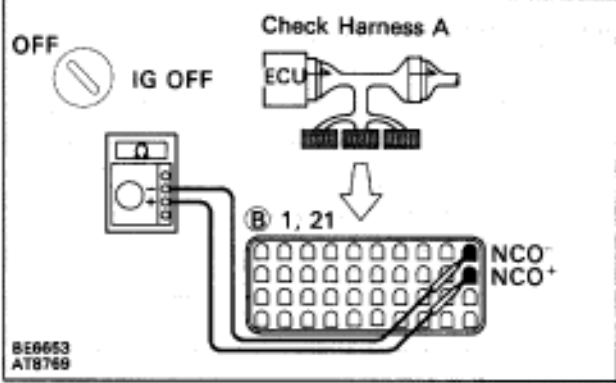
AT8783

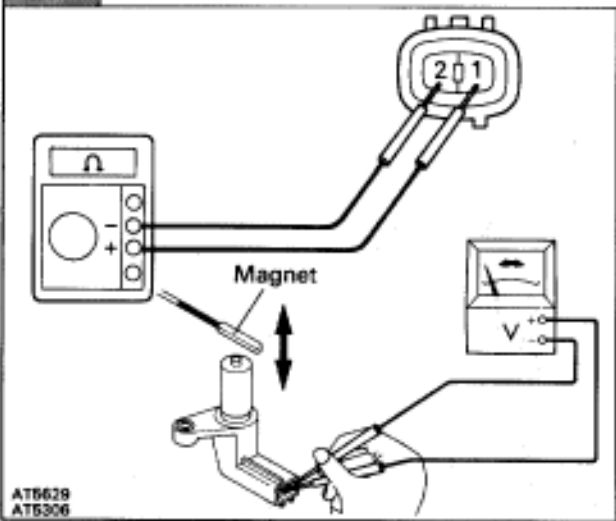
- Waveform between terminals NCO+ and NCO- during engine idling

### — DIAGNOSTIC CHART —



## INSPECTION PROCEDURE

<p><b>1</b> Check resistance between terminals NCO+ and NCO– of Engine &amp; ECT ECU connector.</p>  <p>BE0653 AT8769</p>	<p><b>P</b> Connect the Check Harness A to the ECU. (See page <a href="#">TR-30</a>.)</p> <p><b>C</b> Check resistance between terminals NCO+ and NCO– of Engine &amp; ECT ECU connector.</p> <p><b>OK</b> Resistance: 560 – 680 Ω</p>
<p><b>NG</b></p>	<p><b>OK</b> Proceed to next circuit inspection shown on matrix chart (See page <a href="#">AT-66</a>). However, when diag. code 67 is displayed, check and replace Engine &amp; ECT ECU.</p>

<p><b>2</b> Check O/D direct clutch speed sensor.</p>  <p>AT8628 AT8306</p>	<p><b>P</b> Remove O/D direct clutch speed sensor from transmission (See page <a href="#">AT-19</a>)</p> <p><b>C</b> Measure resistance between terminals 1 and 2 of O/D direct clutch speed sensor.</p> <p><b>OK</b> Resistance: 560 – 680 Ω</p> <p>&lt; Reference &gt; <b>Check the speed sensor function</b></p> <p><b>C</b> Check voltage between terminals 1 and 2 of the speed sensor when a magnet is put close to the front end of the speed sensor then kept away quickly.</p> <p><b>OK</b> Voltage is generated intermittently.</p> <p><b>Hint</b> The voltages generated is extremely low.</p>
<p><b>OK</b></p>	<p><b>NG</b> Replace O/D direct clutch speed sensor.</p>

Check and repair harness and connector between Engine & ECT ECU and O/D direct clutch speed sensor (See page [IN-27](#)).

## WIRING DIAGRAM

