

# LEXUS V8 ENGINES LLC

## Client Plug Connection Guide

### Sequoia 12-Pin 4-Speed Transmission Client Plug

Automatic Transmission Technical Reference

Prepared for customer installation and workshop technical reference

[www.lexusv8.com](http://www.lexusv8.com)

#### Important

This guide covers the vehicle-side 12-pin 4-speed automatic transmission client plug for a Sequoia-based automatic transmission standalone system. The standalone harness is an engine and transmission control system, not a full chassis or body harness.

#### Build-Specific Confirmation

Wire colors and terminal locations should be confirmed against the exact harness supplied before the guide is issued to a customer. Do not wire by color alone; always verify pin position, circuit function, and signal polarity before final connection.

## Overview

The 12-pin 4-speed transmission client plug is supplied with Lexus V8 Engines LLC automatic transmission standalone systems. It provides the main vehicle-side connections used for shifter range information, overdrive control, overdrive indicator operation, and vehicle speed signal integration.

The purpose of this plug is to keep installation clean and serviceable while allowing the Toyota/Lexus ECU and 4-speed automatic transmission logic to receive the signals required for correct operation.

#### Standalone System Note

This is not a full vehicle plug-and-play chassis harness. The installer must still connect the required shifter, range, speed signal, indicator, and vehicle-side wiring correctly for the specific vehicle.

## Quick Start: Critical Connections Required

The exact number of connections required depends on the transmission, shifter, vehicle, and final ECU configuration. For most Sequoia 4-speed automatic setups, confirm the following circuits before driving the vehicle:

Function Group	Circuits	Pin(s)	Wire Color(s)	Connection
Range Position Signals	P / R / N / D / 2 / L	Pins 1, 2, 3, 4, 7, 8	White; Red/Black; Green/Red; Green/Yellow; Green/Black; Green	Connect to the shifter or transmission range switch circuits as configured.
Overdrive Switch	O/D Switch	Pin 5	Green/White	Connect to the overdrive cancel switch circuit as configured.
Overdrive Light	O/D OFF Light	Pin 10	Black/Red	Dash O/D OFF indicator circuit. Confirm output polarity before connecting.
Vehicle Speed	VSS / SPD	Pin 12	Yellow/Black	Provide a compatible vehicle speed signal to the ECU/transmission logic.

#### Transmission Wiring Warning

Do not wire by color alone. Confirm the function, pin location, signal direction, and required polarity before connecting to the vehicle. Incorrect range or speed signal wiring can cause no-shift, wrong gear indication, no torque converter lockup, diagnostic trouble codes, or unsafe vehicle operation.

## 12-Pin 4-Speed Transmission Client Plug Pinout

Pin / Terminal	Wire Color	Function	Signal Type	Notes
Pin 1	White	Park	Range selector signal	Park position signal for ECU/shifter logic. Confirm whether the circuit is switched ground, switched +12V, or status-only for the specific build.

Pin / Terminal	Wire Color	Function	Signal Type	Notes
Pin 2	Red / Black	Reverse	Range selector signal	Reverse position signal. May be used for ECU range logic and may also be related to reverse-light or reverse-camera integration depending on vehicle wiring.
Pin 3	Green / Red	Neutral	Range selector signal	Neutral position signal for ECU/shifter logic. Confirm the neutral safety/start circuit strategy before wiring.
Pin 4	Green / Yellow	Drive	Range selector signal	Drive position signal for normal automatic operation.
Pin 5	Green / White	Overdrive Switch	O/D cancel input	Driver overdrive ON/OFF or overdrive cancel switch circuit. Confirm switch type and polarity before connecting.
Pin 6	N/A	Not Used	N/A	No customer connection used for this pin in this 12-pin transmission client plug configuration.
Pin 7	Green / Black	Second / 2	Range selector signal	Second range selector signal for normal 4-speed automatic operation.
Pin 8	Green	Low / L	Range selector signal	Low/first gear selector position signal for normal 4-speed automatic operation.
Pin 9	N/A	Not Used	N/A	No customer connection used for this pin in this 12-pin transmission client plug configuration.
Pin 10	Black / Red	Overdrive Light	Indicator output	Dash O/D OFF indicator circuit. Usually a low-current warning/indicator circuit. Confirm output polarity before connecting.
Pin 11	N/A	Not Used	N/A	No customer connection used for this pin in this 12-pin transmission client plug configuration.
Pin 12	Yellow / Black	Vehicle Speed	Speed signal	Vehicle speed signal used by ECU/transmission logic. Confirm speed source, signal type, and pulse rate.

## Detailed Circuit Descriptions

### Park

#### Park Range Signal

- Identifies when the shifter or range switch is in the Park position.
- Depending on the build, this may be used by the ECU, the vehicle starter inhibit circuit, the dash indicator circuit, or a combination of these systems.
- Confirm whether the circuit is switched to ground, switched to +12V, or used as a status input.
- Do not bypass the factory or aftermarket neutral safety strategy unless a safe replacement circuit is installed.
- Verify Park status with a scan tool or electrical test before first drive.

### Reverse

#### Reverse Range Signal

- Identifies when the shifter or range switch is in Reverse.
- On some installations this signal may be used for ECU range information, reverse light activation, camera activation, or chassis-side reverse indication.
- Do not assume this wire can power reverse lamps directly unless the harness was built for that purpose.
- Reverse lamps normally require a properly fused chassis-side power circuit.
- Verify that Reverse is only active when the shifter is in the Reverse position.

### Neutral

#### Neutral Range Signal

- Identifies when the shifter or range switch is in Neutral.
- This signal can be important for ECU idle strategy, start authorization, gear status, and diagnostic logic.
- Confirm Neutral and Park operation before attempting to start the vehicle.
- The vehicle should only crank in Park or Neutral if the neutral safety circuit is used.
- Incorrect Neutral wiring can cause starting, idle, or transmission logic issues.

### Drive

#### Drive Range Signal

- Identifies the main forward driving range.
- This signal allows the ECU or transmission logic to know when the vehicle is in normal automatic Drive operation.
- Verify Drive status before road testing.
- Incorrect Drive signal wiring can cause abnormal shift behavior or diagnostic faults.
- Do not connect this circuit to heavy-load devices.

## Overdrive Switch

### Overdrive Cancel Switch Input

- Used for the driver-controlled overdrive cancel function.
- On Toyota/Lexus 4-speed automatic systems this is commonly associated with the O/D OFF switch and related indicator operation.
- Confirm whether the switch is momentary or latching for the specific setup.
- Confirm whether the ECU expects a ground, +12V, or switched signal.
- Do not power the overdrive light directly from this input unless the circuit was designed for that purpose.

## Second / 2

### Second Gear Selector Signal

- Identifies the second gear selector position.
- Used when the shifter is moved into the 2 range so the transmission control strategy can limit gear operation as designed.
- Verify the 2 position at the shifter before driving.
- This is a control/status circuit, not a power circuit.
- Incorrect wiring can cause the ECU to misread the selected gear range.

## Low / L

### Low / First Gear Selector Signal

- Identifies the low range or first gear selector position.
- Used when the shifter is moved into the L/Low range and the transmission strategy must recognize the low gear request.
- Verify Low position with a meter and, where possible, scan data.
- Do not connect this circuit to any high-current device.
- Incorrect Low wiring can affect manual gear selection behavior.

## Overdrive Light

### Overdrive OFF Indicator Output

- Used to operate the dashboard O/D OFF indicator where applicable.
- This circuit is intended for a low-current indicator lamp or LED circuit, depending on the installation.
- Confirm whether this output switches ground or supplies voltage before wiring the lamp.
- If using an LED, confirm polarity and add a resistor if the LED assembly does not already include one.
- Do not use the indicator output to power relays or other loads unless instructed.

## Vehicle Speed

### Vehicle Speed Signal

- Provides the ECU/transmission control system with a speed signal.
- Correct vehicle speed input is important for shift timing, torque converter lockup, overdrive operation, diagnostics, and drivability.
- Confirm the source of the speed signal: transmission sensor, transfer case sensor, factory cluster output, GPS/speed converter, or signal conditioner.
- The ECU must receive a compatible signal type and pulse rate for the calibration being used.
- Incorrect or missing vehicle speed signal can cause shift complaints, lockup complaints, speed-related DTCs, or poor drivability.

## Range Selector Signal Summary

Range	Shifter Marking	Pin	Wire Color	Purpose
Park	P	Pin 1	White	Used for Park status / start safety strategy where applicable.
Reverse	R	Pin 2	Red / Black	Used for Reverse status and possible reverse lamp/camera integration.
Neutral	N	Pin 3	Green / Red	Used for Neutral status / start safety strategy where applicable.
Drive	D	Pin 4	Green / Yellow	Used for normal automatic Drive range.
Second	2	Pin 7	Green / Black	Used for second range selector position.
Low	L	Pin 8	Green	Used for low/first range selector position.

## Overdrive Switch and Light Notes

The overdrive switch and overdrive light should be wired exactly as configured for the ECU and harness build. The switch and indicator are related, but they should not be treated as the same circuit unless the final wiring diagram specifically shows that arrangement.

Circuit	Type	Description
O/D Switch	Driver input	Requests overdrive cancel / O/D OFF depending on configuration.
O/D Light	Dash output	Indicates overdrive OFF or transmission status depending on configuration.

### Best Practice

Test the O/D switch and light with the vehicle safely stationary before road testing. Confirm that the indicator responds correctly and that the ECU/transmission responds to the overdrive command.

## Vehicle Speed Signal Notes

Vehicle speed wiring is one of the most important parts of a successful automatic transmission swap. Many shift complaints are caused by a missing, incorrect, noisy, or incompatible speed signal.

- Confirm the speed sensor type and signal source before wiring.
- Route speed signal wiring away from ignition coils, alternator wiring, starter wiring, and other high-noise circuits where possible.
- Use shielded wiring or a signal conditioner if required by the installation.
- Confirm vehicle speed data with a scan tool before road testing at speed.

## First Test and Road-Test Checklist

Item	Check
Park / Neutral	Vehicle only cranks in a safe range where neutral safety is used.
Reverse	Reverse status and reverse lights/camera operate correctly where connected.
Drive / 2 / Low	Each range is recognized correctly before driving.
O/D Switch	Overdrive cancel switch changes status correctly.
O/D Light	Indicator responds correctly and does not stay on incorrectly.
Vehicle Speed	Scan tool shows vehicle speed when the vehicle moves.
Transmission Fluid	ATF level and cooler line routing confirmed before road test.
DTC Check	Check for transmission and speed-signal related fault codes.

## Installation Notes

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### Shifter and Range Switch Wiring

- Test the shifter and range switch wiring with a multimeter before final connection.
- Confirm which circuits are active in each shifter position and make sure there is no overlap or backfeed between positions unless the factory circuit design requires it.
- Label each shifter/range wire before connecting it to the client plug.
- Use the transmission service manual or wiring diagram where available.
- Do not connect multiple range wires together unless specifically instructed.

### Grounding and Power

- Good grounding and clean power supply are critical for automatic transmission control.
- Poor grounds, voltage drop, or backfeed can cause false range signals and unstable operation.
- Use clean engine, chassis, and battery grounds.
- Avoid sharing sensitive signal grounds with high-current loads.
- Protect all added circuits with correct fusing where power is supplied by the vehicle.

### Reverse Light Wiring

Reverse light wiring may remain part of the vehicle chassis harness or may be integrated through the shifter/range wiring depending on the swap. Do not assume the transmission client plug wire is designed to carry reverse lamp current unless the build-specific instructions say so.

## Included With System

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- Standalone engine and transmission harness integration.
- 12-pin 4-speed transmission client plug.
- Required shifter/range signal wires.
- Overdrive switch and overdrive light circuits where applicable.
- Vehicle speed signal input/output wiring where applicable.
- OBD2 diagnostic port as part of the engine management system.
- Bench test or startup verification where applicable.

## Final Installation Note

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When wired correctly, the Lexus V8 Engines standalone automatic transmission system is designed to allow the Sequoia-based 4-speed automatic transmission and ECU logic to operate cleanly in a swap application while keeping the vehicle-side wiring simple and serviceable.

#### Best Practice

For best results, all transmission client plug wiring should be soldered or professionally crimped, insulated correctly, strain-relieved, and routed away from exhaust heat, sharp edges, driveshafts, linkages, and moving suspension components.

### Lexus V8 Engines LLC

Website: [www.lexusv8.com](http://www.lexusv8.com)

Technical support and build-specific wiring requirements should be confirmed during the harness build process or through the client form.