# LEXUS V8 ENGINES LLC

## Client Plug Connection Guide

### OBD2 / DLC3 Client Plug

### No Accelerator Pedal Connection

1st Gen 2UZ and 1UZ VVT Cable-Throttle Applications

Prepared for customer installation and workshop technical reference

www.lexusv8.com

**Important**

This guide covers the vehicle-side OBD2/DLC3 diagnostic client plug for first-generation 2UZ and 1UZ VVT cable-throttle applications where the accelerator pedal cable attaches directly to the throttle body. It is not a complete chassis harness.

**No Accelerator Pedal Connection**

This document does not include an accelerator pedal connector. These applications use a mechanical throttle cable at the throttle body. Do not use this document to wire an electronic accelerator pedal unless the supplied harness documentation specifically instructs otherwise.

**Build-Specific Confirmation**

Always confirm wire colors, terminal locations, OBD2 connector orientation, ECU configuration, and programming requirements against the exact harness supplied before final customer installation.

## Overview

The OBD2 client plug is supplied with Lexus V8 Engines LLC standalone harness systems where a separate accelerator pedal connection is not required. It provides the required diagnostic and programming-related circuits from the engine harness to the customer-supplied or supplied 16-pin OBD2 / DLC3 connector.

The purpose of this plug is to keep the diagnostic connector wiring clean, serviceable, and easy to verify during installation. Correct OBD2 wiring is required for scan tool communication, diagnostic trouble code checks, data viewing, and ECU programming where supported by the ECU and calibration.

**Standalone System Note**

This is not a full vehicle plug-and-play chassis harness. The installer must mount and wire the OBD2 connector correctly and ensure the diagnostic connector has proper power, ground, and signal continuity.

## Application Notes

- Intended for first-generation 2UZ and 1UZ VVT applications where the accelerator pedal cable attaches to the throttle body.
- No electronic accelerator pedal connector is used in this version of the client plug.
- The 6-pin OBD2 client plug connects to the standard 16-pin OBD2/DLC3 diagnostic connector.
- The OBD2 connector must be mounted where it can be accessed easily for scan tool connection, diagnostics, and ECU programming where applicable.

## Quick Start: Required OBD2 Connections

Wire the 6-pin OBD2 client plug to the 16-pin OBD2 connector as shown below. Pin numbering on the OBD2 connector should always be verified from the front face of the female connector where the scan tool plugs in.

| Function | Client Plug Pin | Wire Color | OBD2 Pin | Connection |
|---|---|---|---|---|
| TC | Client Pin 1 | White / Pink | OBD2 Pin 13 | Toyota diagnostic/test terminal. |
| SIL | Client Pin 2 | White / Green | OBD2 Pin 7 | Serial communication line. |
| B+ | Client Pin 3 | Red | OBD2 Pin 16 | Permanent fused +12V supply. |
| RPM | Client Pin 4 | White / Blue | OBD2 Pin 9 | Engine speed signal. |
| WFSE | Client Pin 5 | White | OBD2 Pin 15 | Programming/write-enable circuit. |
| Ground | Client Pin 6 | Brown | OBD2 Pins 4 and 5 | Ground supply for diagnostic connector. |

**OBD2 Power Warning**

The red B+ wire is a permanent +12V supply for OBD2 connector Pin 16 and must be correctly fused. Do not use any diagnostic signal wire as a power feed.

# 6-Pin OBD2 Client Plug Pinout

| Pin | Wire Color | Function | Signal Type | Notes |
|---|---|---|---|---|
| Pin 1 | White / Pink | TC | Diagnostic / test terminal | Connect to OBD2 Pin 13. |
| Pin 2 | White / Green | SIL | Serial communication line | Connect to OBD2 Pin 7. |
| Pin 3 | Red | B+ | Permanent +12V supply | Connect to OBD2 Pin 16. Use proper fuse protection. |
| Pin 4 | White / Blue | RPM | Engine speed signal | Connect to OBD2 Pin 9. |
| Pin 5 | White | WFSE | Programming / write-enable circuit | Connect to OBD2 Pin 15 for programming through OBD2 where supported. |
| Pin 6 | Brown | Ground | Ground supply | Connect to OBD2 Pins 4 and 5. |

# OBD2 / DLC3 16-Pin Connector Mapping

Only the OBD2/DLC3 pins listed below are used for this harness configuration. All other OBD2 connector positions should remain unused unless the build-specific wiring instructions say otherwise.

| OBD2 Pin | Function | Client Plug Wire | Purpose |
|---|---|---|---|
| Pin 4 | Ground | Brown from Client Pin 6 | Ground side of OBD2 connector. |
| Pin 5 | Ground | Brown from Client Pin 6 | Ground side of OBD2 connector. |
| Pin 7 | SIL | White / Green from Client Pin 2 | Serial communication line. |
| Pin 9 | RPM | White / Blue from Client Pin 4 | Engine RPM signal. |
| Pin 13 | TC | White / Pink from Client Pin 1 | Toyota diagnostic/test terminal. |
| Pin 15 | WFSE | White from Client Pin 5 | Programming/write-enable circuit. |
| Pin 16 | B+ | Red from Client Pin 3 | Permanent fused +12V supply. |

# OBD2 Connector Face Reference

The table below is a workshop reference for the common 16-pin OBD2 connector layout. Verify connector orientation before pinning the plug. This reference is shown from the front face of the female OBD2 connector where the scan tool plugs in.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4<br>GND | 5<br>GND | 6 | 7<br>SIL | 8 |
| 9<br>RPM | 10 | 11 | 12 | 13<br>TC | 14 | 15<br>WFSE | 16<br>B+ |

**Connector Orientation Warning**
Do not pin the OBD2 connector from the back side without confirming orientation. Pin numbers can appear mirrored when viewed from the wire side of the connector.

# Detailed Circuit Descriptions

## Pin 1 - TC

### Toyota Diagnostic / Test Terminal

- Connect the White / Pink TC wire to OBD2 connector Pin 13.
- TC is a Toyota diagnostic/test terminal used for diagnostic functions depending on ECU and vehicle configuration.
- Do not permanently ground or power this wire unless a specific diagnostic or programming procedure instructs it.
- Keep this circuit isolated from B+, ground, and other communication circuits during normal operation.

## Pin 2 - SIL

### Serial Communication Line

- Connect the White / Green SIL wire to OBD2 connector Pin 7.
- SIL is the main serial communication line used by the scan tool for this OBD2 connector configuration.
- Do not connect SIL to power or ground.
- Route this wire cleanly and avoid splices into unrelated circuits to prevent communication faults.

## Pin 3 - B+

### Permanent +12V OBD2 Power Supply

- Connect the Red B+ wire to OBD2 connector Pin 16.
- This wire supplies permanent +12V power to the OBD2 connector so scan tools and programming tools can power up correctly.
- The circuit must be properly fused.
- Verify battery voltage is present at OBD2 Pin 16 before attempting scan tool communication or ECU programming.

## Pin 4 - RPM

### Engine Speed Signal

- Connect the White / Blue RPM wire to OBD2 connector Pin 9.
- This circuit provides an RPM/engine speed signal at the diagnostic connector where required by the system.
- Do not connect the RPM signal to high-current devices.
- If the signal is used by other equipment, confirm signal compatibility before connecting.

## Pin 5 - WFSE

### Programming / Write-Enable Circuit

- Connect the White WFSE wire to OBD2 connector Pin 15.
- WFSE is used for ECU programming/write-enable functions through the OBD2 connector where supported by the ECU and calibration.
- Do not apply power or ground to this circuit unless the programming procedure specifically requires it.
- Incorrect WFSE wiring can prevent programming or create communication problems.

## Pin 6 - Ground

### OBD2 Connector Ground Supply

- Connect the Brown ground wire to OBD2 connector Pins 4 and 5.
- Where the supplied harness uses a single ground wire, split it cleanly to both OBD2 ground pins at the connector.
- Use a clean, reliable ground with low resistance to battery negative and ECU ground.
- Poor ground quality can cause scan tool communication faults and unreliable programming behavior.

# OBD2 Connector Test Procedure

Before connecting a scan tool or programming device, verify the OBD2 connector with a multimeter. This helps avoid damage to the scan tool, ECU, or harness and makes communication faults much easier to diagnose.

| Test Item | Meter Location | Expected Result | Purpose |
|---|---|---|---|
| Power | OBD2 Pin 16 to Pin 4 or 5 | Approx. battery voltage at all times | Confirms permanent B+ supply. |
| Ground | OBD2 Pin 4 to battery negative | Low resistance / continuity | Confirms ground path. |
| Ground | OBD2 Pin 5 to battery negative | Low resistance / continuity | Confirms second ground path. |
| SIL | OBD2 Pin 7 | Not shorted to B+ or ground | Confirms communication line is not shorted. |
| RPM | OBD2 Pin 9 | Signal present when engine is running, where applicable | Confirms engine speed signal. |
| TC | OBD2 Pin 13 | Not shorted to B+ or ground | Confirms diagnostic/test terminal is isolated. |
| WFSE | OBD2 Pin 15 | Not shorted to B+ or ground | Confirms programming circuit is isolated. |

**Programming Warning**
Only use the WFSE programming circuit as instructed for the specific ECU and programming method. Do not experiment by applying power or ground to diagnostic pins.

# First Diagnostic Check

| Item | Check |
|---|---|
| OBD2 Power | Scan tool powers up from the OBD2 connector. |
| Grounds | Pins 4 and 5 both show a clean ground path. |
| Communication | Scan tool communicates with the engine ECU through SIL. |
| Data | Engine data can be viewed where the ECU and scan tool support it. |
| RPM | RPM data or signal behavior is present when the engine is running, if required. |
| Codes | Diagnostic trouble codes can be checked and cleared where supported. |
| Programming | WFSE is only used when programming through OBD2 with the correct procedure. |

# Installation Notes

## Mounting the OBD2 Connector

- Mount the OBD2 connector where it is protected but easy to access with a scan tool.
- Avoid mounting the connector near pedals, sharp brackets, steering shafts, or areas where it may be kicked or damaged.
- Leave enough service loop in the wiring so the connector can be accessed and inspected later.
- Secure the wiring so vibration does not pull terminals out of the connector.

## Power and Ground

- OBD2 Pin 16 must have a fused permanent +12V supply from the Red client plug wire.
- OBD2 Pins 4 and 5 must both be grounded from the Brown client plug wire unless build-specific instructions say otherwise.
- Do not share diagnostic signal wires with high-current accessories.
- Poor ground or missing B+ at the DLC is one of the most common causes of no scan tool communication.

## Signal Wiring

- Keep SIL, TC, WFSE, and RPM wiring clean and separate from starter, alternator, ignition coil, and high-current accessory wiring where possible.
- Do not twist diagnostic wires together with power output wires unless specifically instructed.
- Do not connect unused OBD2 connector pins unless required by a build-specific diagram.
- Label both the client plug side and OBD2 connector side before final loom wrapping.

# Troubleshooting Quick Reference

| Symptom | Items to Check |
|---|---|
| Scan tool does not power up | Check OBD2 Pin 16 for permanent +12V and Pins 4/5 for ground. |
| Scan tool powers up but will not communicate | Check SIL on OBD2 Pin 7, ECU power/grounds, ignition ON status, and that SIL is not shorted to B+ or ground. |
| Programming will not start | Confirm WFSE is connected to OBD2 Pin 15 and follow the correct ECU programming procedure. |
| No RPM signal at connector | Check White / Blue RPM wire from Client Pin 4 to OBD2 Pin 9 and confirm engine is running during testing. |
| Diagnostic pins appear mirrored | Confirm whether the connector is being viewed from the front scan-tool side or rear wire side before repinning. |
| Intermittent communication | Check terminal tension, ground quality, connector mounting, and routing away from electrical noise sources. |

# Included With System

- OBD2 / DLC3 diagnostic client plug wiring.
- Six client plug circuits: TC, SIL, B+, RPM, WFSE, and Ground.
- OBD2 connector wiring reference for Pins 4, 5, 7, 9, 13, 15, and 16.
- No accelerator pedal connector for cable-throttle applications.
- Build-specific ECU programming and diagnostic support where applicable.

# Final Installation Note

When wired correctly, the OBD2 client plug allows the engine ECU to communicate through the standard 16-pin diagnostic connector while keeping the diagnostic wiring separate, serviceable, and easy to test. Correct OBD2 wiring is especially important for ECU programming, troubleshooting, and customer support after installation.

**Best Practice**

For best results, all OBD2 client plug wiring should be soldered or professionally crimped, insulated correctly, strain-relieved, labeled, and routed away from exhaust heat, sharp edges, pedals, steering shafts, and high-current electrical wiring.

**Lexus V8 Engines LLC**

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