



Nomad Lock-Up Kit UPGRADE Instructions

Suitable for:



Nissan Patrol Y61 GU with RE4 4 Speed Auto

WITH THE FOLLOWING ENGINES:

ZD30 Common Rail (2007 onwards) with Gen 2 Lock-Up Kit
Installed

Please read through all of the instructions carefully before proceeding. If any of the information does not appear correct or the diagrams don't match your vehicle, please contact Wholesale Automatic Transmissions or your place of purchase.

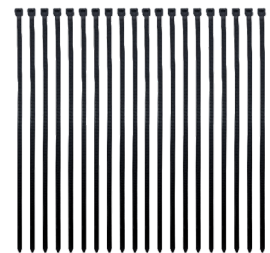
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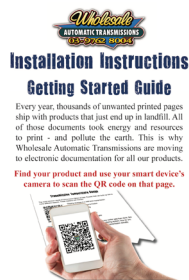
1. Parts List

Nomad Lock-Up
ModuleNomad Lock-Up
Upgrade HarnessCarling-Style
Momentary SwitchCarling Switch Ground
SplitterModule Bypass
Connector2 x Long Metal Self
Tapping Screws2 x Short Metal Self
Tapping Screws4 x 30mm Pieces of
Black Heatshrink

20 x Cable Ties



Getting Started Manual



Estimated Install Time: 2 Hours

2. Information to note prior to starting

2.1. Electrical Safety

- 2.1.1 Disconnect all vehicle power sources including batteries, chargers and solar systems before starting the installation process.
- 2.1.2 You can mount the Nomad module anywhere inside or outside the vehicle. The Nomad Module is IP68 rated so it can be mounted in the engine bay, however it must be away from heat sources such as turbos, exhausts and the engine block.

Also, take into consideration that the further away from the driver the module is mounted the lower the Bluetooth signal strength will be.

We recommend mounting the Nomad module inside the cabin.



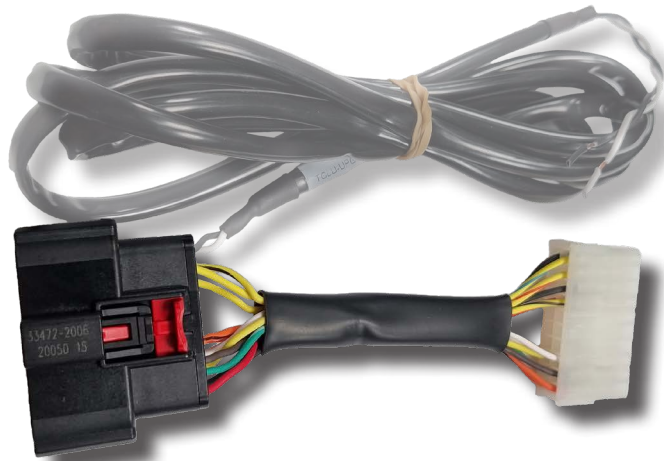
- 2.1.3 The installation of this kit requires the fitter to have good knowledge of 12 volt wiring, an understanding of wiring schematics and good experience with soldering wires together. If you don't feel comfortable doing any of these tasks then please contact one of our local Authorised Fitting Agents or your local Auto Electrician to have the unit installed professionally.

2.2. Identifying the Nomad Lock-Up Kit Upgrade Parts

2.2.1 There are four main parts of the Nomad Lock-Up Upgrade Harness that you need to be aware of.

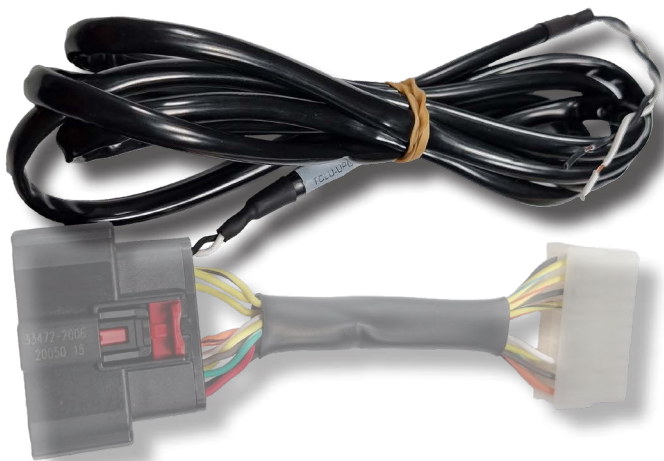
2.2.2 Nomad Upgrade Adapter

This adapter allows you to re-use the existing Gen2 Lock-Up Kit wiring with the Nomad Lock-Up module for its power and solenoid connections. Simply remove the Gen2 module and plug in the white connector on the upgrade adapter to allow the Nomad module to be installed.



2.2.3 CAN Bus Leg

The Nomad module requires access to more vehicle data than the Gen2 module does in order for the automatic lockup functionality to work correctly. In the ZD30 CRD Patrol this is accomplished with a connection to the vehicle's CAN bus network. The CAN bus leg allows you to connect the Nomad module to your vehicle's CAN bus network.



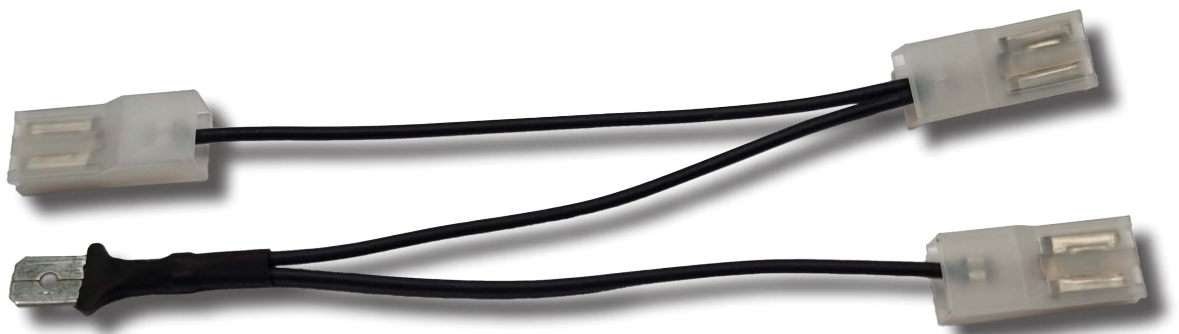
2.2.4 **Momentary Switch**

The Gen2 module requires a latching switch to function correctly, but the automatic control of the Nomad module means a momentary switch is necessary. It is important that the switch is changed when you upgrade from the Gen2 to the Nomad Lock-Up Kit, as the Nomad Lock-Up Kit will not function correctly with the Gen2 switch.



2.2.5 **Carling Switch Ground Splitter**

The replacement switch requires a different wiring configuration than the Gen2 switch. The Carling Switch Ground Splitter will allow you to correctly wire in the new switch into the existing Gen2 wiring.



3. Upgrading to the Nomad Lock-Up Kit

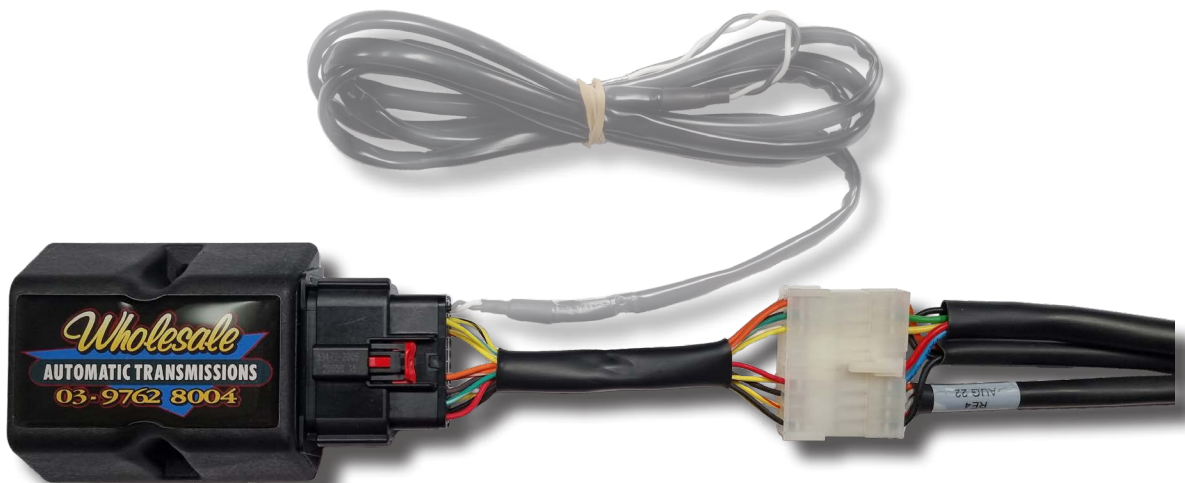
****Disconnect all vehicle power sources including starting and auxiliary batteries, chargers and solar systems before starting the installation process.****

3.1. Installing the Nomad Upgrade Harness

- 3.1.1 Find where your Gen2 module has been installed. These are usually installed either behind the kick panel on the left hand side of the passenger footwell, or under the trim surrounding the shifter assembly, but there other places the module could be mounted.

If you are unable to locate your Gen2 module we recommend following the wiring from the Gen2 TCC switch as this will lead you to the module.

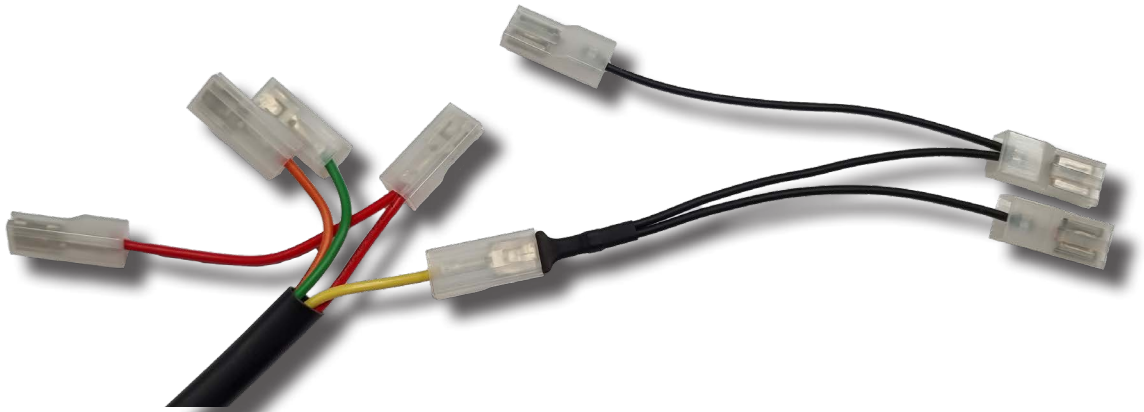
- 3.1.2 Unplug the Gen2 module from the Gen2 harness and remove the module from the vehicle.
- 3.1.3 Plug the white connector from the Gen2 harness into the corresponding white connector on the Nomad Upgrade Harness.
- 3.1.4 Plug the Nomad module into the Nomad Upgrade Harness and secure the red Connector Position Assurance (CPA).
- 3.1.5 Secure the Nomad module with the two long self tapping screws provided.



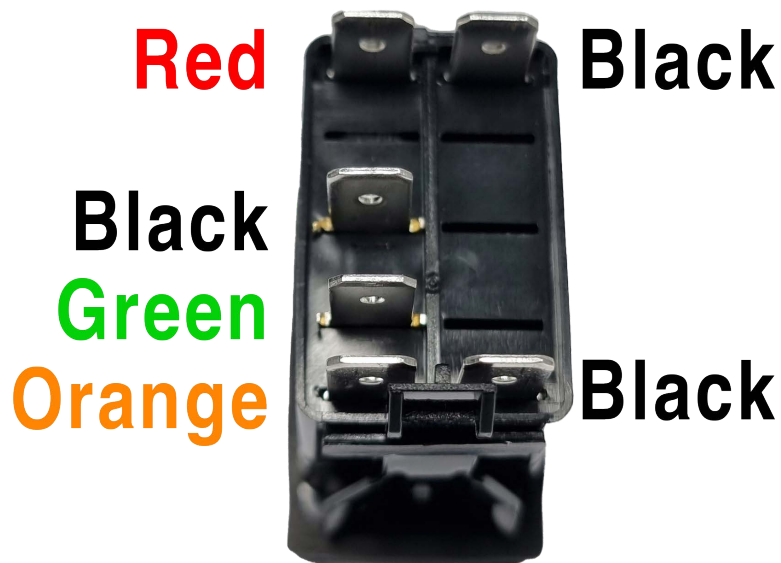
3.2. Installing the Nomad Lock-Up Switch

The switch included with the Gen2 lock up kit will not work correctly with the Nomad module, so we have included a replacement switch that will need to be installed in its place.

- 3.2.1 Start by pulling the Gen2 switch out from its mounting hole and disconnect it from the Gen 2 switch leg.
- 3.2.2 Plug the male spade terminal from the Carling Switch Ground Splitter into the female spade terminal on the yellow wire of the Gen2 switch leg.



- 3.2.3 Using the diagram below, plug in the Nomad Lockup Momentary Switch. You will have one spade terminal attached to a red wire spare; this is expected. You can either cut off this spare connection, or tape it to the rest of the wiring to keep it out of the way.



- 3.2.4 Use some electrical tape to secure the male spade terminal on the Carling Switch Ground Splitter to prevent it from coming apart and to neaten the switch wiring.



- 3.2.5 Install the Carling-Style Momentary Switch into the mounting hole.

3.3. Installing the Harness in the Cabin - CAN bus wiring

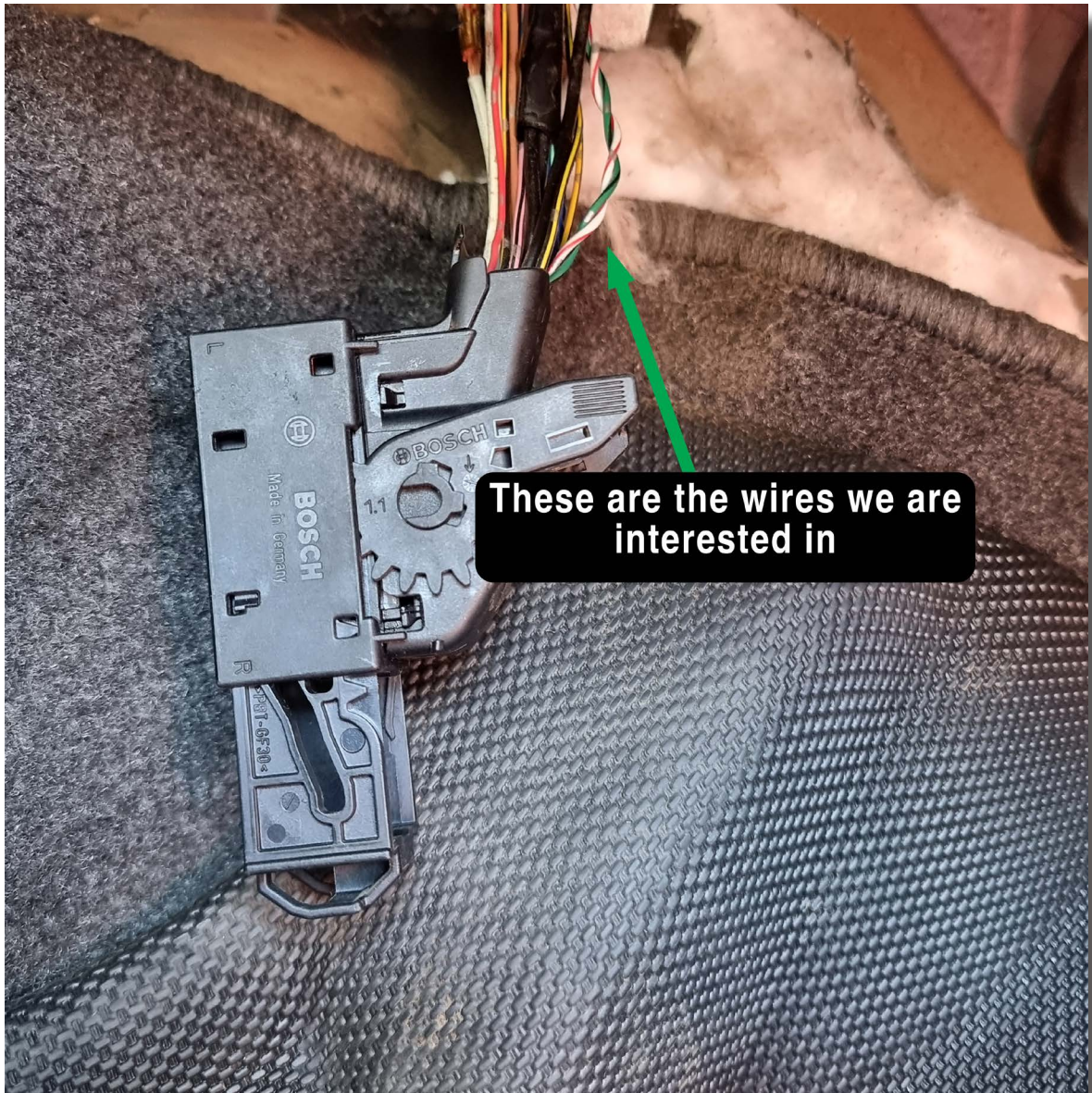
- 3.3.1 The CAN bus connections in the GU Patrol are easiest to access in the ECU main wiring harness. This can be accessed under the dash on the drivers side of the vehicle, close to the transmission tunnel.

The CAN bus connections are located in the connector closest to the rear of the vehicle.



- 3.3.2 To remove this connector unlatch the locking arm and rotate it 90° to release the locking mechanism. Pull the connect straight out of the socket to avoid bending any of the pins.

- 3.3.3 Remove the tape from the wiring harness close to the main connector to reveal the interior wires. Separate out the green-black and white-red twisted pair CAN bus wires.



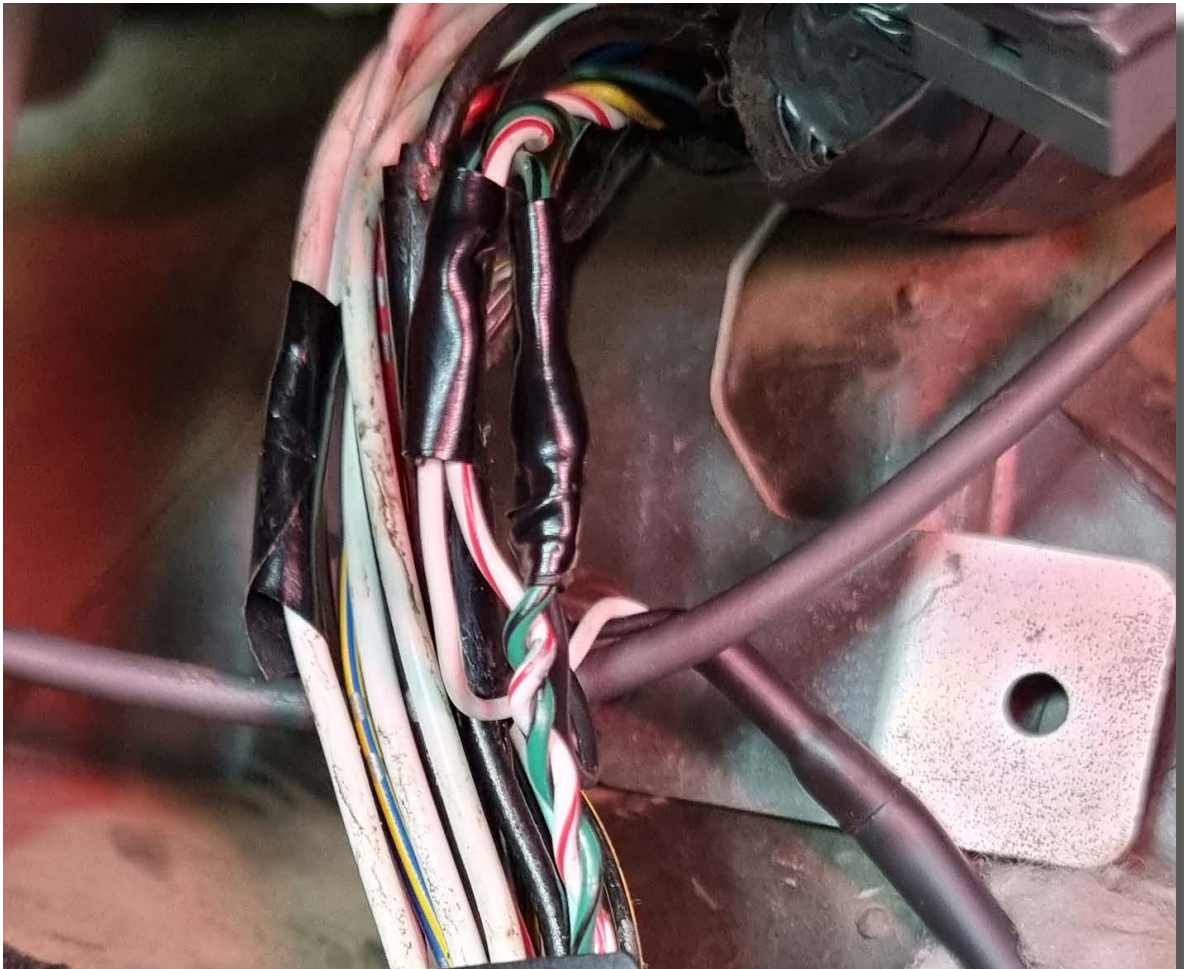
- 3.3.4 The CAN bus harness needs to be soldered to these wires. Care must be taken to ensure they are connected correctly to prevent DTC faults.

3.3.5 **Connecting the White wire from the Nomad CAN bus harness**

- 3.3.5.1 Remove approximately 1cm of insulation from the white-red wire in the OEM harness to expose the copper conductors about 5cm away from the connector. DO NOT cut this wire.
- 3.3.5.2 Solder the white wire from the Nomad CAN bus harness to the white-red OEM wire. Insulate this connection with electrical tape.

3.3.6 Connecting the Black wire from the Nomad CAN bus harness

- 3.3.6.1 Remove approximately 1cm of insulation from the green-black wire in the OEM harness to expose the copper conductors about 5cm away from the connector. DO NOT cut this wire.
 - 3.3.6.2 Solder the black wire from the Nomad CAN bus harness to the green-black OEM wire. Insulate this connection with electrical tape.
- 3.3.7 Twist the OEM CAN bus wires back together as much as possible before wrapping the OEM harness with electrical tape.



- 3.3.8 Reinstall the ECU connector back into the ECU. Line up the connector first, ensuring it is straight to prevent any pins from being damaged. Gently press the connector into the ECU.

When the connector feels like it has bottomed out, rotate the locking arm to latch the connector into the ECU.

3.4. Final Tidy Up

- 3.4.1 Secure any loose wires with electrical tape and any remaining supplied cable ties. Make sure the wires are clear of any moving parts, especially near the steering column.
- 3.4.2 Reconnect the battery terminals and any other connectors that were removed.
- 3.4.3 We recommend running through the Nomad Setup Wizard to verify that everything is connected correctly and working properly before re-installing any panels, unless they impede the test driving process, just in case any wiring needs to be corrected.
- 3.4.4 Once the Nomad module has been confirmed to be wired correctly and the setup wizard has completed reinstall all removed trim pieces and kick panels.

We do not recommend driving the vehicle before the setup wizard is complete.

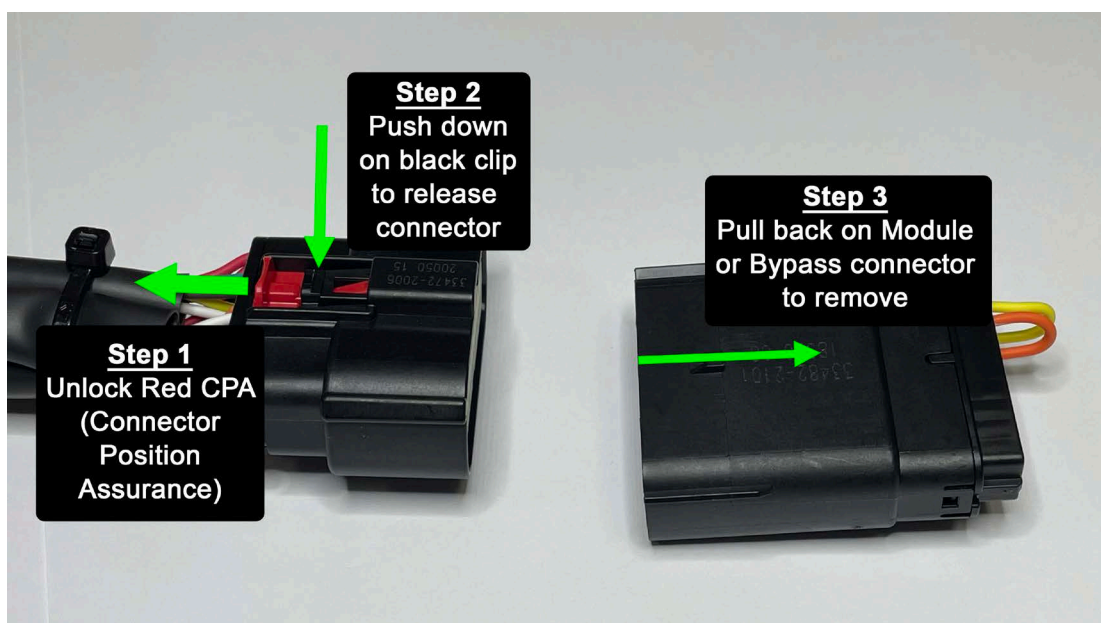
3.5. Lock-Up Module Bypass

- 3.5.1 If you need to remove the Nomad Lock-Up Module at any stage we have supplied a bypass connector that can take the place of the module so that your vehicle will not have faults come up while driving. Fitting this bypass will revert control of the torque converter clutch back to the OEM TCM.

If you are fitting this unit on behalf of a customer please leave this connector in the bag along with the QR code to access the User Guide. Please highlight this to your customer during handover.



- 3.5.2 To remove the Nomad Lock-Up Module or Bypass Connector, unlock the red CPA. Press down on the black clip to release. Then pull the two connectors apart.



3.6. Installing the Nomad LockUp app on Apple Devices

This chapter will cover finding, downloading and confirming that the Nomad LockUp app is ready to communicate with your Nomad LockUp Module using an Apple mobile device.

The Nomad Lock-Up App is a free to download app available from the Apple App Store. You will require an Apple ID in order to download applications from the Apple App Store.

Minimum system requirements for your Apple mobile device to run the Nomad LockUp App are:

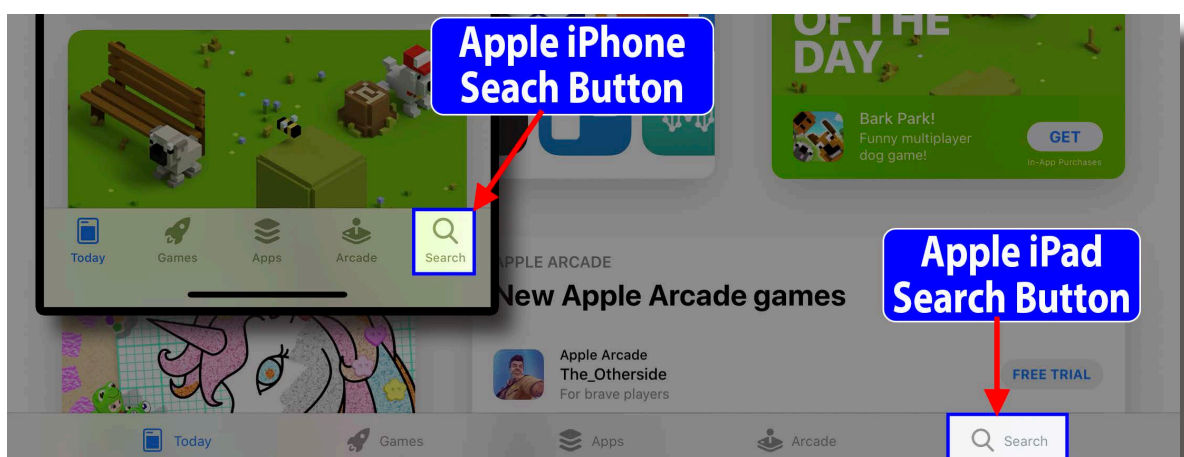
- Apple iPhone mobile digital device with iOS version 11 or later
- Apple iPad mobile digital device with iPadOS version 11 or later
- Internet Access (only required to download the application and for firmware updates)

If your Apple mobile device operating system does not meet these requirements you may not be able to download the app. Please follow the instructions provided by Apple to update your devices operating system first then try downloading the Nomad LockUp app again.

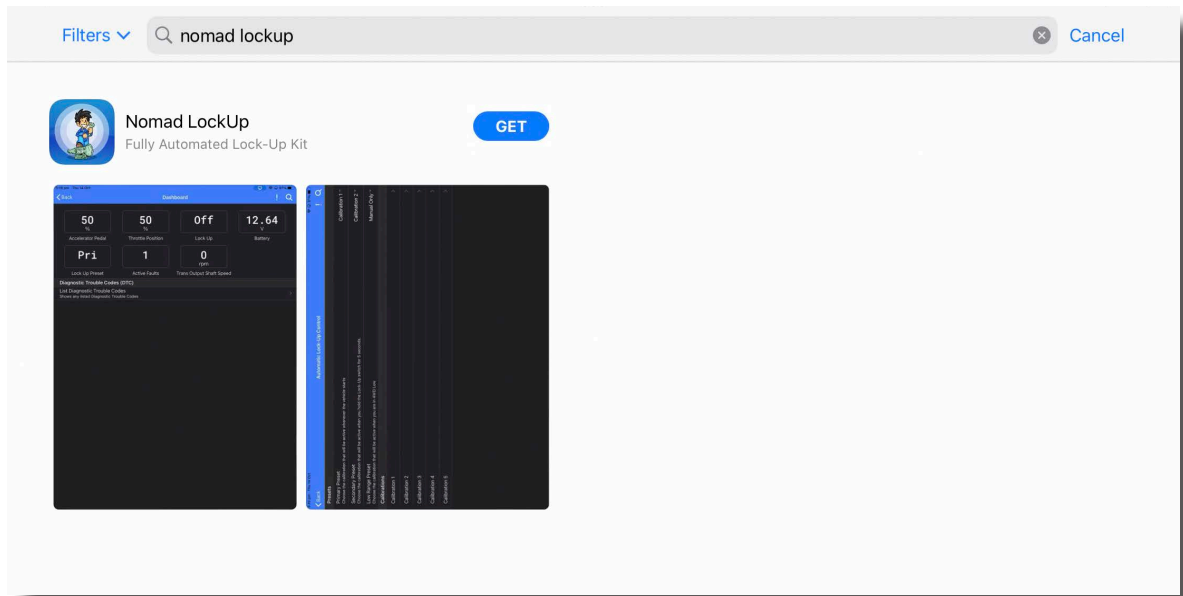
3.6.1 On your Apple device, open the **App Store** application.



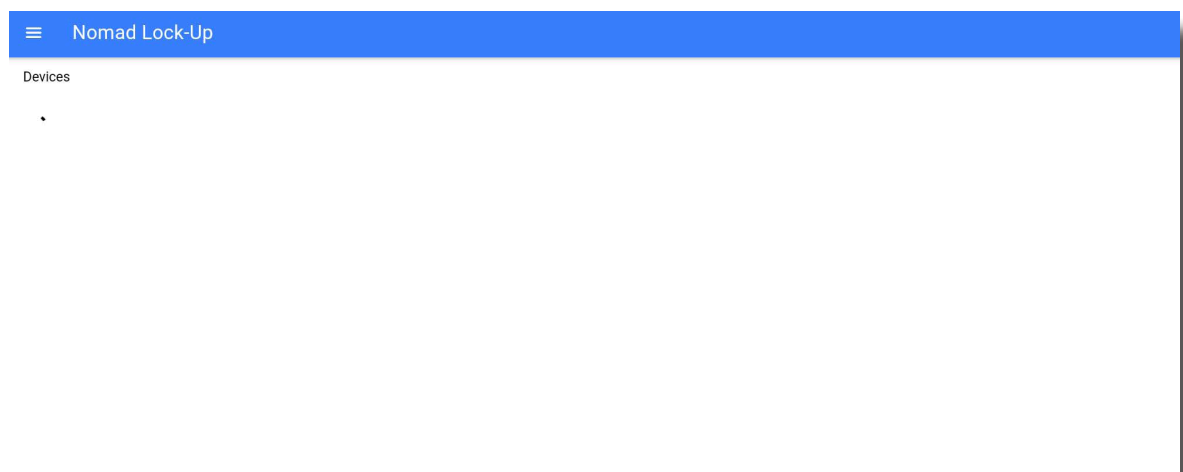
3.6.2 Tap on the **Search** button at the bottom of the App Store screen.



- 3.6.3 In the search field type “nomad lockup” and press enter/search. Locate the app called **Nomad LockUp** in the results and tap on ‘Get’. You may be asked to enter your Apple ID username and password.



- 3.6.4 Once the app has finished downloading, tap on the icon to open. The first time you open the Nomad LockUp app it will ask permission to use the devices Bluetooth® communication system to access the Nomad Lock-Up Module. Please select OK.
- 3.6.5 The app will now search for any Nomad Lock-Up Modules within range that are powered up. If you are not in range of your Nomad Lock-Up Module or it is not powered up, then the app will only show a spinning wheel indicating that there is no module in range.

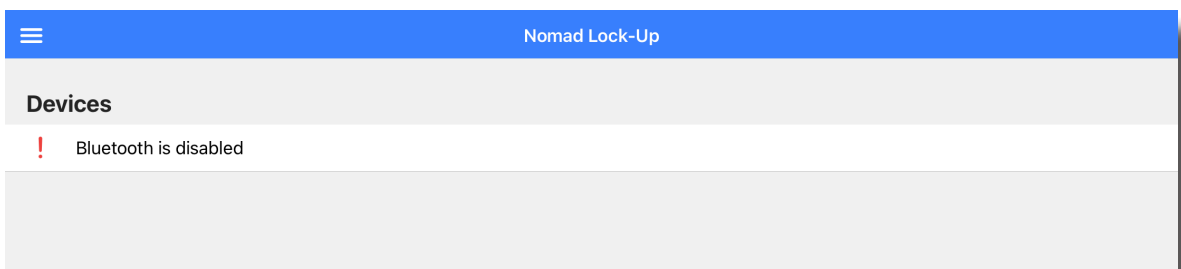


- 3.6.6 If you have reached this step then the app is installed and ready to connect to your Nomad Lock-Up Module. You can now skip to step 4.

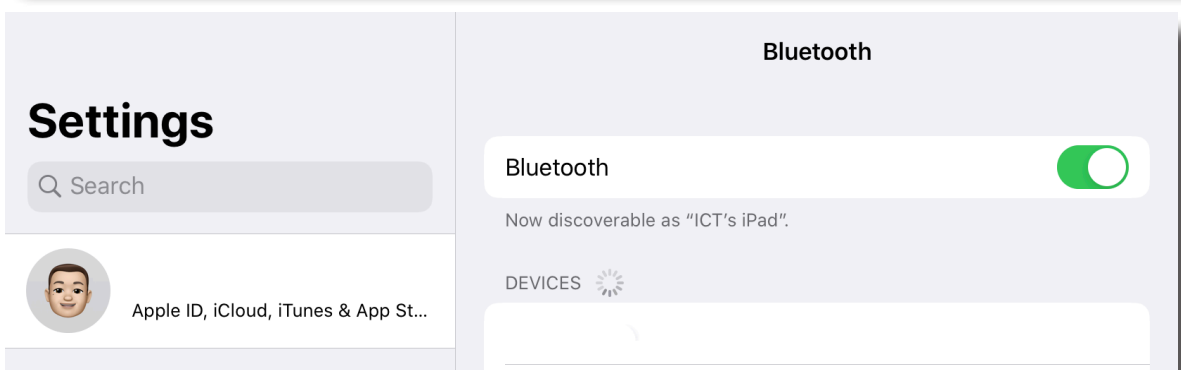
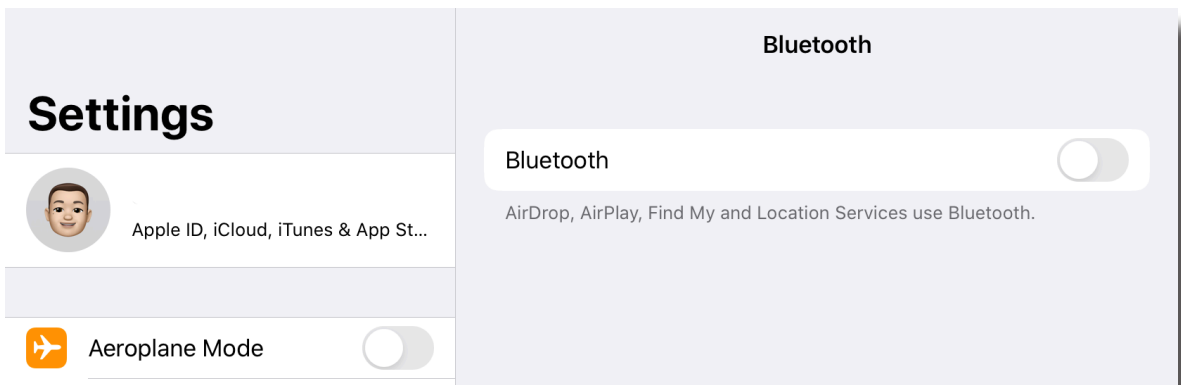
3.7. Troubleshooting Installation on Apple Devices

This chapter will cover some basic troubleshooting steps you can follow if you have not been able to connect your Apple device to the Nomad Lock-Up module.

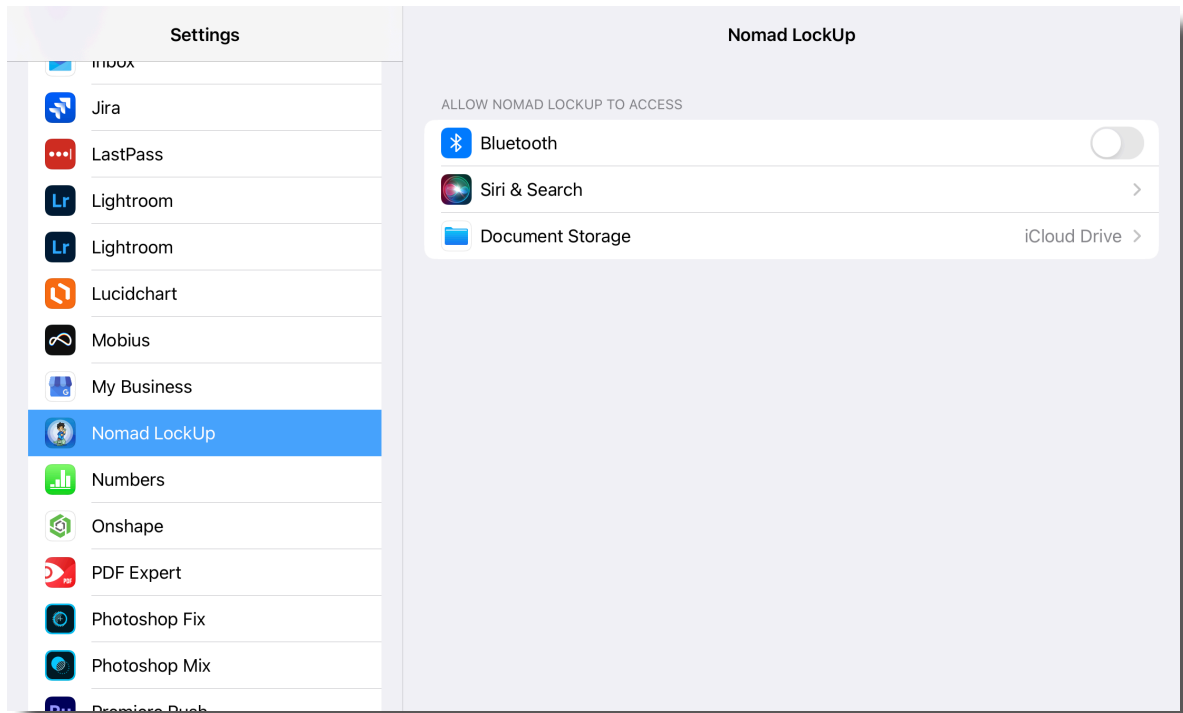
- 3.7.1 If the app says '**! Bluetooth is disabled**' then it means that the Bluetooth communication in your smart device is not set up correctly. Most commonly this is due to the Bluetooth being turned off completely or it could be that the Nomad LockUp app has not been authorised to use Bluetooth yet.
- 3.7.2 First, close the app down and then quit the app by swiping up from the bottom or double pressing the home button and then swipe up on the app. Re-open the app. If the '**! Bluetooth is disabled**' message still remains continue to the next step.



- 3.7.3 Open the Settings app and select Bluetooth. If Bluetooth is switched off, please turn it on. Close the settings app and re-open the Nomad LockUp app. You should no longer see the '**! Bluetooth is disabled**' message, instead it should be replaced with the spinning wheel.



- 3.7.4 If you are still seeing the '**! Bluetooth is disabled**' message, open the Settings app and scroll down the menu to Nomad LockUp. Tap on Nomad LockUp and verify that the Bluetooth access is enabled for the app. If not, switch access on. Return to the Nomad Lock-Up app and check you are no longer seeing the '**! Bluetooth is disabled**' message, instead you should be seeing the spinning wheel.



- 3.7.5 If none of these items have worked, please close the app. Tap and hold on the Nomad Lock-Up app icon and select Delete app. Then power your device off and reboot. Start from the beginning and download the app again. Make sure you allow the app all the permissions it requests.
- 3.7.6 If you are still unable to get rid of the '**! Bluetooth is Disabled**' message please contact Wholesale Automatic Transmissions for further assistance.

3.8. Installing the Nomad LockUp app on Android™ Devices

This chapter will cover finding, downloading and confirming that the Nomad LockUp app is ready to communicate with your Nomad Lock-Up Module using an Android mobile device.

The Nomad LockUp app is a free to download app available from the Google Play Store. You will require a Google Account in order to download applications from the Google Play Store.

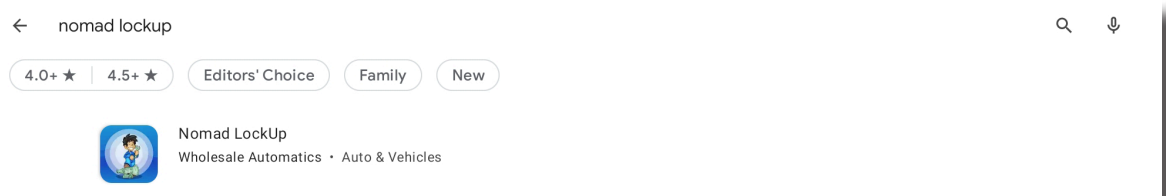
Minimum system requirements for your Android mobile device to run the Nomad LockUp app are:

- Android operating system version 4.4 or later
- Internet access (only required to download the application and for firmware updates)

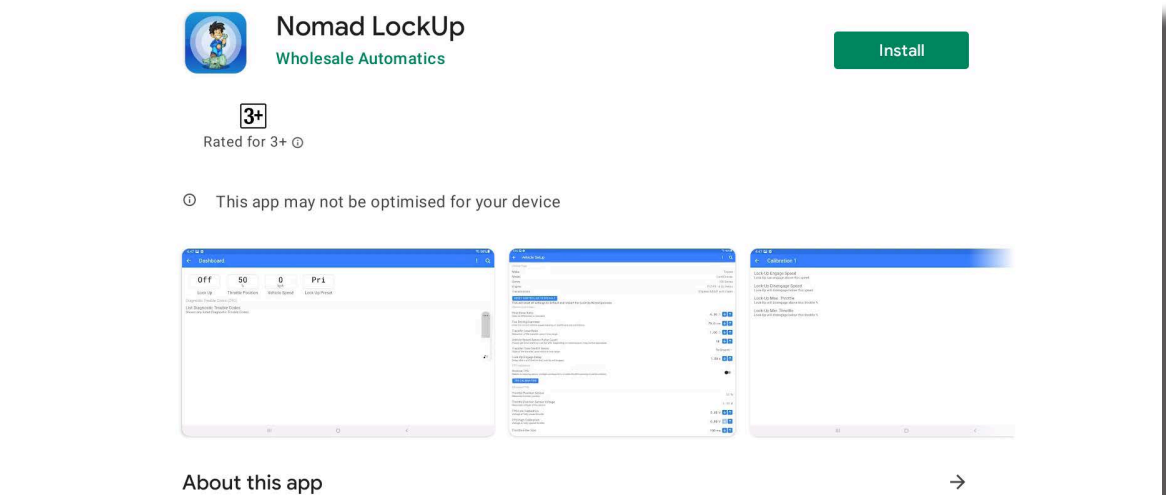
If your Android mobile device operating system does not meet these requirements you may not be able to download the app. Please follow the instructions provided by your device manufacturer to update your devices operating system first then try downloading the Nomad LockUp app again.

If the operating system on your Android mobile device is unable to be updated to a compatible version you will need to locate an alternative smart device that does meet the requirements.

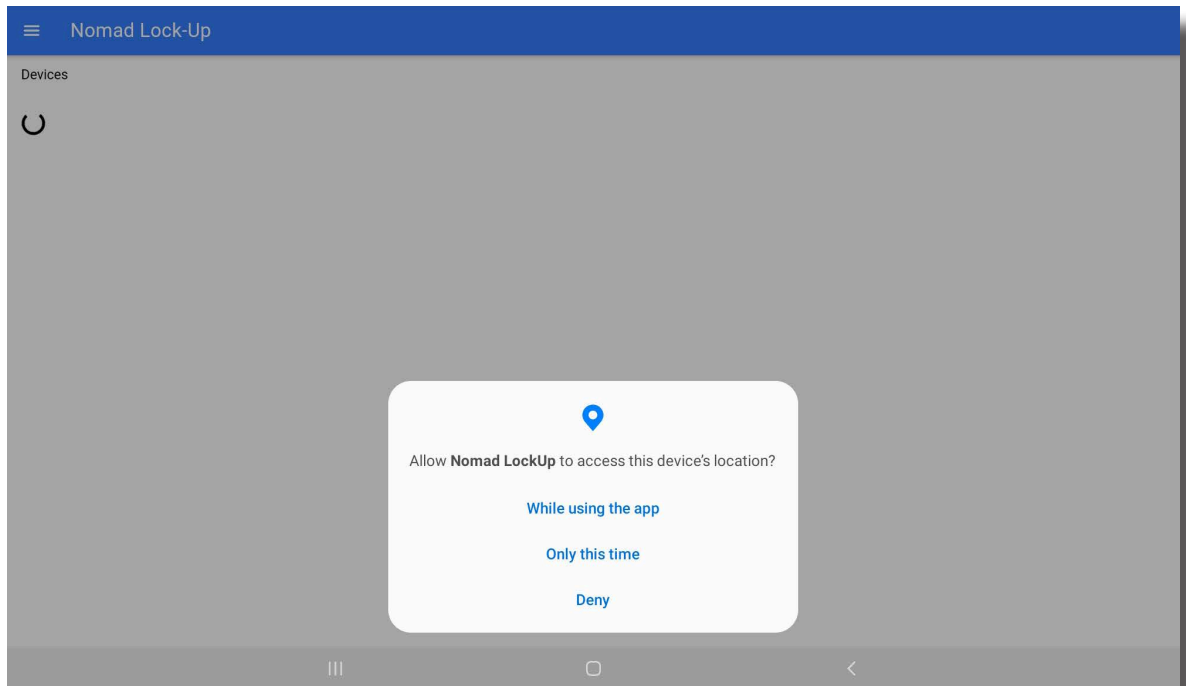
- 3.8.1 On your Android device, open the **Google Play Store** application. Tap on the **Search** field at the top of the Google Play Store screen and type “nomad lockup”. Tap on the Nomad LockUp app to show the app page.



- 3.8.2 On the app page, tap on Install to download and install the app.



- 3.8.3 When the app opens for the first time you will be asked for permission for the app to access the devices location. Tap on 'While using the app' to continue. This permission is required for the Bluetooth functionality.



- 3.8.4 You should now see the devices page and a list of any Nomad Lock-Up Modules that are powered up and within range. If you are not in range of your Nomad Lock-Up Module or it is not powered up then the app will only show a spinning wheel indicating that there is no module in range.

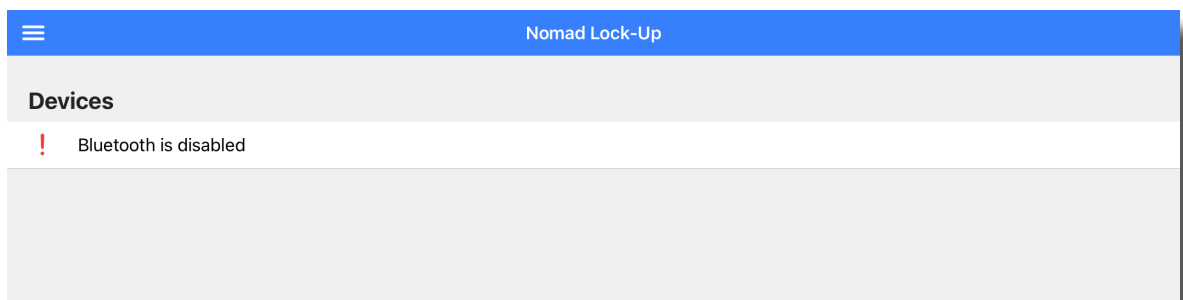


- 3.8.5 If you have reached this step the app is installed and ready to connect to your Nomad Lock-Up Module. You can now skip to step 4.

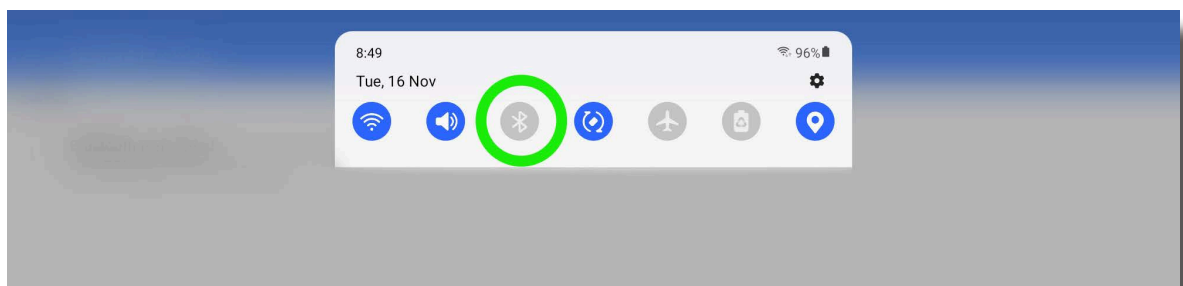
3.9. Troubleshooting Installation on Android Devices

This chapter will cover some basic troubleshooting steps you can follow if you have not been able to connect your Android device to the Nomad Lock-Up module.

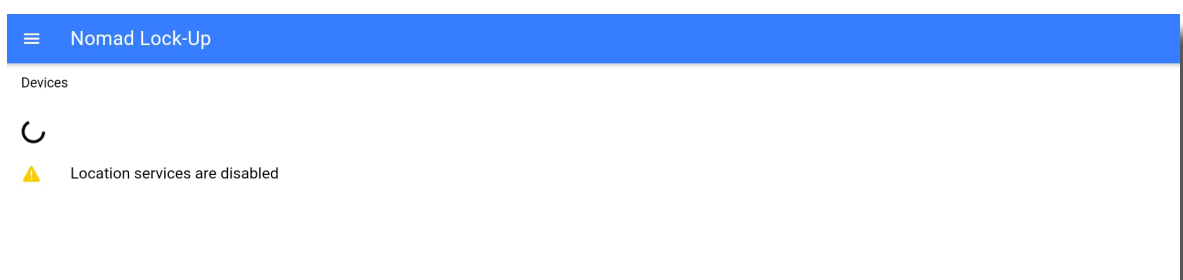
- 3.9.1 If the app says '**! Bluetooth is Disabled**' then it means that the Bluetooth communication in your smart device is not set up correctly. This could be because your app did not recognise that it has access to your Bluetooth system, Bluetooth is turned off completely or it could be that the Nomad LockUp app does not have the required Bluetooth permissions.
- 3.9.2 First, close the app and close it from the multitasking menu. Re-open the app. If the '**! Bluetooth is Disabled**' message still remains continue to the next step.



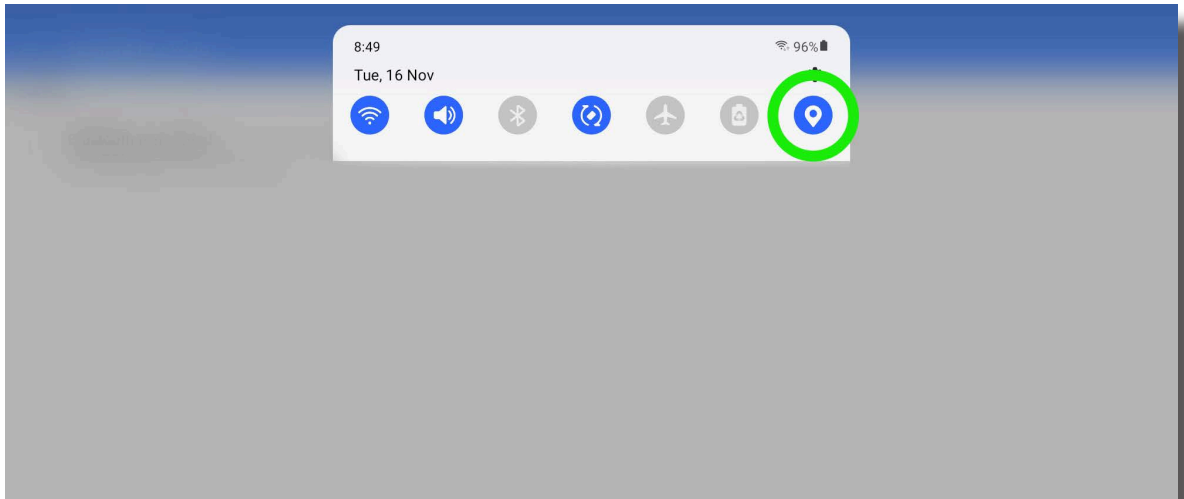
- 3.9.3 Swipe down from the top of the screen and tap on the grayed out Bluetooth icon. Close the settings window and force close the Nomad LockUp App. Re-open the Nomad LockUp app, you should no longer see the '**! Bluetooth is disabled**' message, instead it should be replaced with the spinning wheel.



- 3.9.4 If you are seeing the '**Location services are disabled**' message, this means that you have locations service switch off. This service is required for the app to function correctly.



- 3.9.5 Swipe down from the top of the screen and tap on the grayed out locations icon. This will turn locations service on. Close the settings window and force close the Nomad LockUp app. Re-open the Nomad LockUp app, you should no longer see the '**Location services are disabled**' message. It instead should be replaced with the spinning wheel.

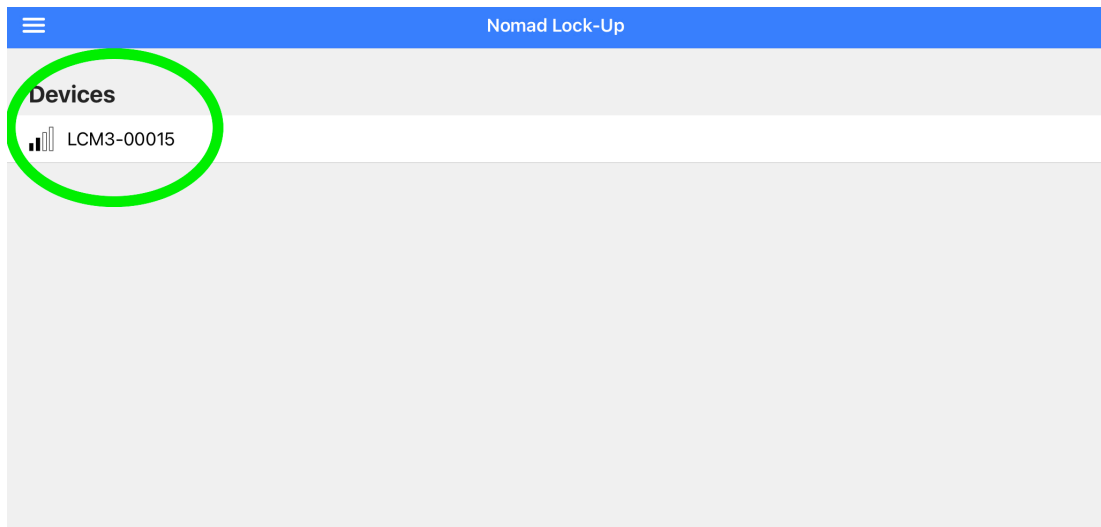


- 3.9.6 If none of these items have worked, please close the app. Tap and hold on the Nomad LockUp app icon and tap on Uninstall. Then power your device off and reboot. Start from the beginning and download the app again.
- 3.9.7 If you are still seeing the '**! Bluetooth is disabled**' message or the '**Location services are disabled**' message please contact Wholesale Automatic Transmissions for further assistance.

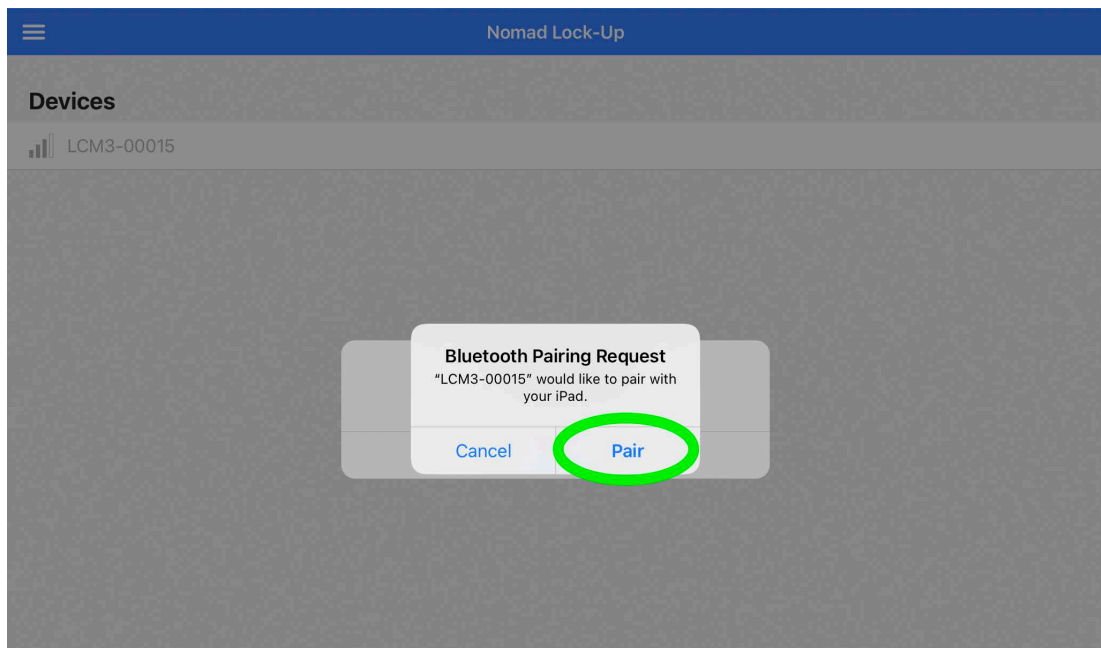
4. Setup Wizard

4.1. First Connection and Firmware Update

- 4.1.1 Turn your vehicle's ignition on, but do not start the engine.
- 4.1.2 Open the Nomad Lock-Up application
- 4.1.3 Tap on your Nomad Lock-Up module from the Devices list.

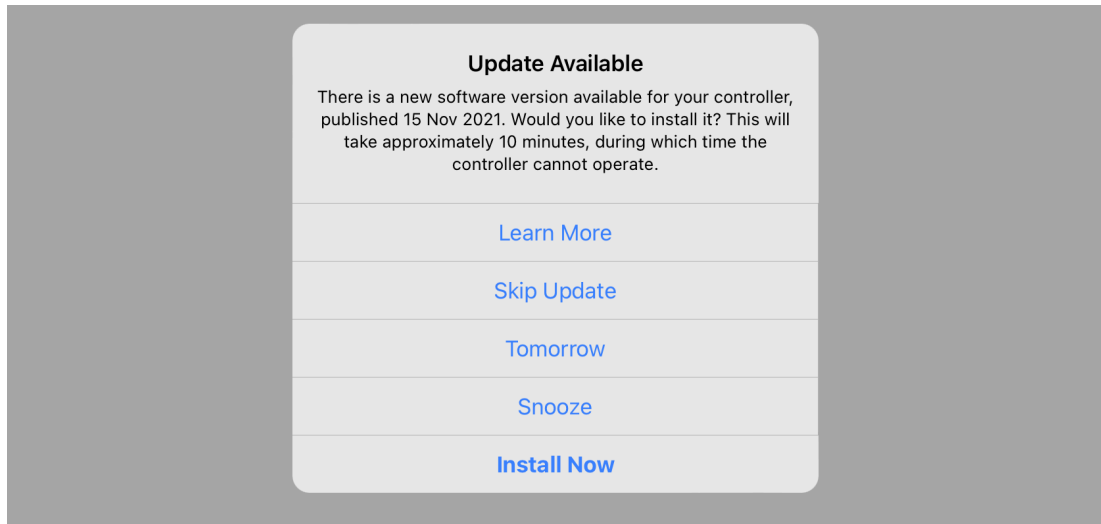


- 4.1.4 If this is the first time you have connected to your Nomad module you will be prompted to pair your device. Tap Pair.

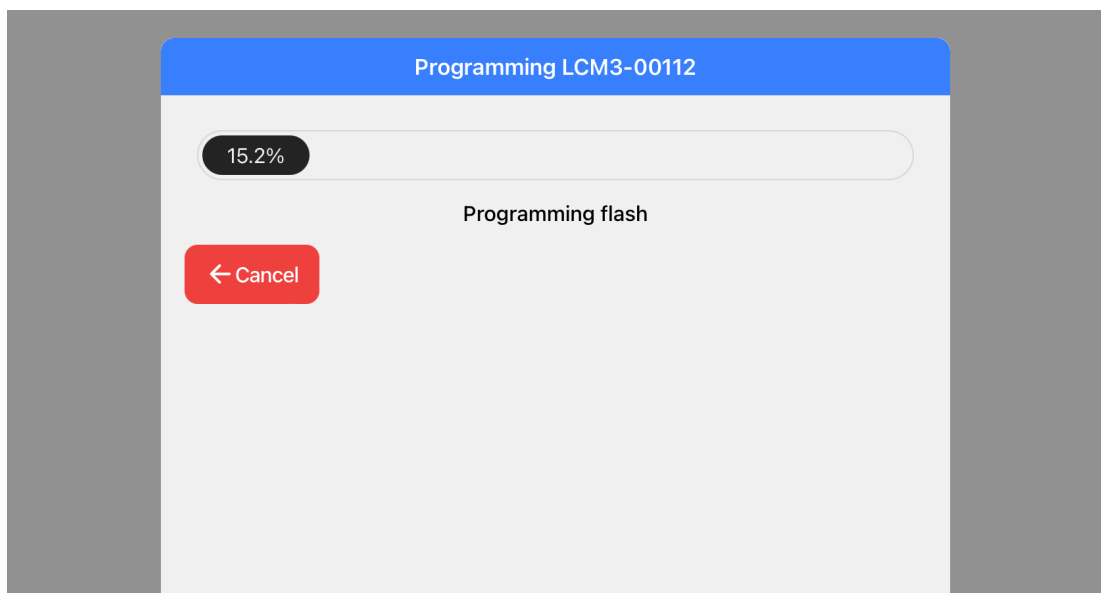


- 4.1.5 Upon initial connection the Nomad LockUp app will check if there is a new version of firmware for the module. As we develop new vehicles and add features we will provide the ability to update firmware as needed.

You will see the following prompt if there is new firmware available for your Nomad module. If your Nomad Lock-Up module is running the latest firmware, you can skip to the vehicle setup step.



- 4.1.6 Tap on Install Now. This will take approximately 10mins to download and install the latest firmware to ensure your Nomad Lock-Up module is up to date.
- 4.1.7 Please ensure your device does not go to sleep during this process. Also if you are using a phone do not answer a call during this process as it may cause the update to fail.



- 4.1.8 Once your modules firmware has been updated you will be returned to the devices page. Tap on your device once more to connect.

4.2. Vehicle Configuration

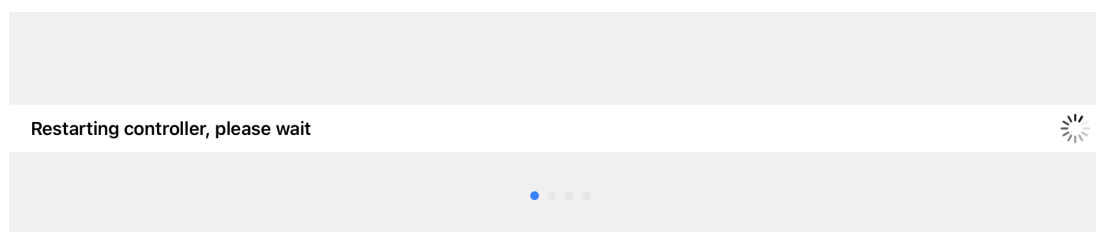
- 4.2.1 The Setup Wizard will ask you to select your vehicle configuration. In some cases we may prefill the following values due to them being the only option. Select “Apply Changes and Restart” to continue.

The screenshot shows a mobile application interface for the Setup Wizard. At the top, there is a blue header with a back arrow and the text "Setup Wizard". Below this is a form with the following fields:

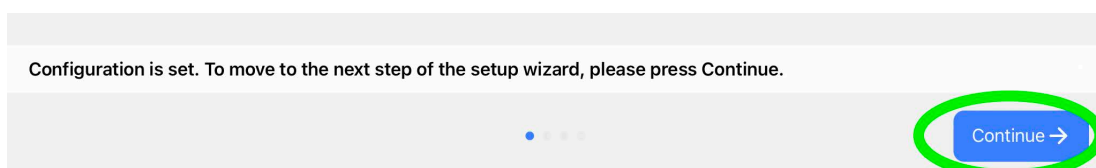
Select Vehicle Type	
Make	Nissan ▾
Model	Patrol
Series	GU
Engine	ZD30 Common Rail Turbo Deisel
Transmission	RE4R03A 4 Speed Auto

Below the form, there is a message: "Once all settings are complete, please press Apply Changes and Restart to save the vehicle configuration to the Nomad Lock-Up controller and restart the controller with the new settings." At the bottom right, there is a blue button labeled "APPLY CHANGES AND RESTART". At the bottom left, there is a blue button labeled "← BACK". At the bottom right, there is a blue button labeled "CONTINUE →". In the center, there are five dots, with the first one being filled, indicating the current step in the wizard.

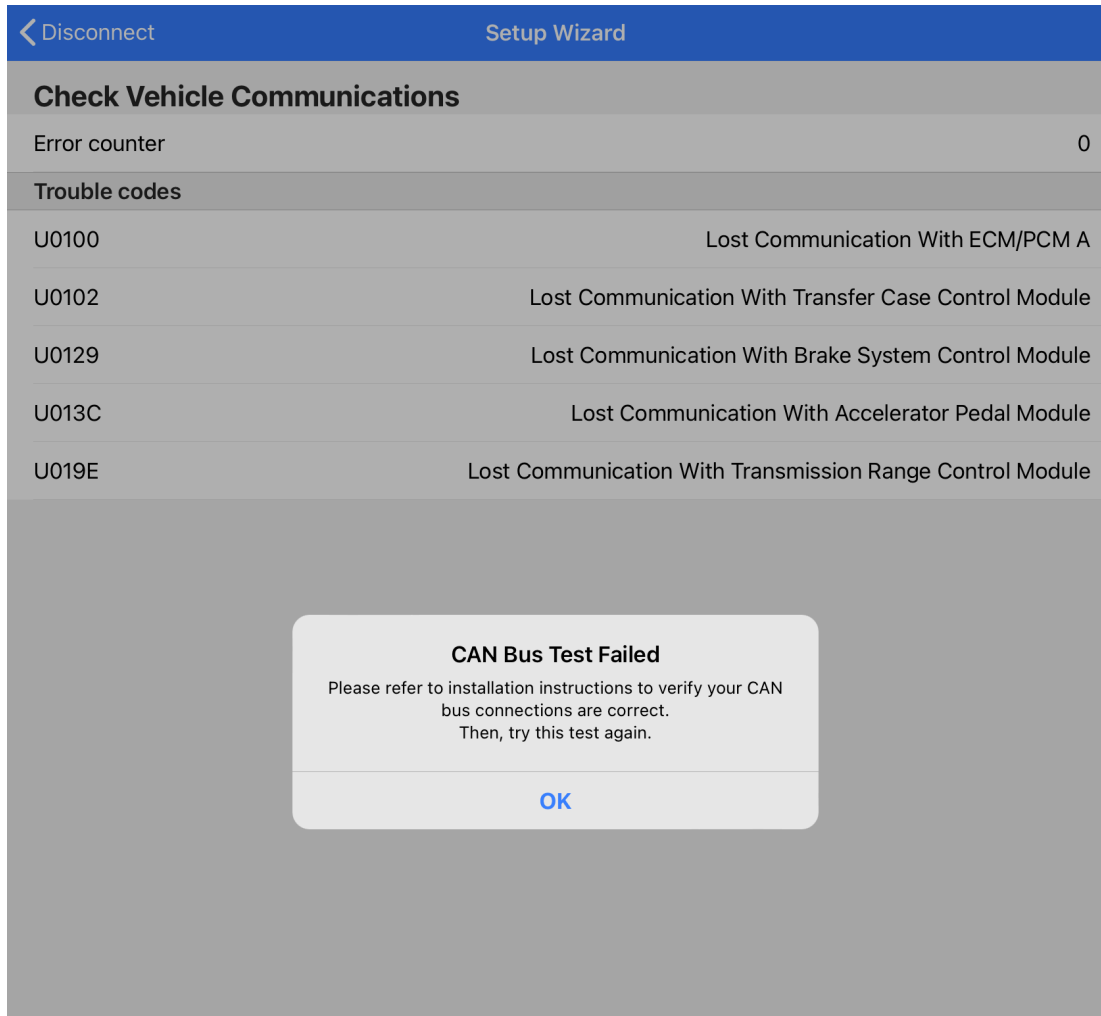
- 4.2.2 Wait while the Nomad Lock-Up Module restarts.



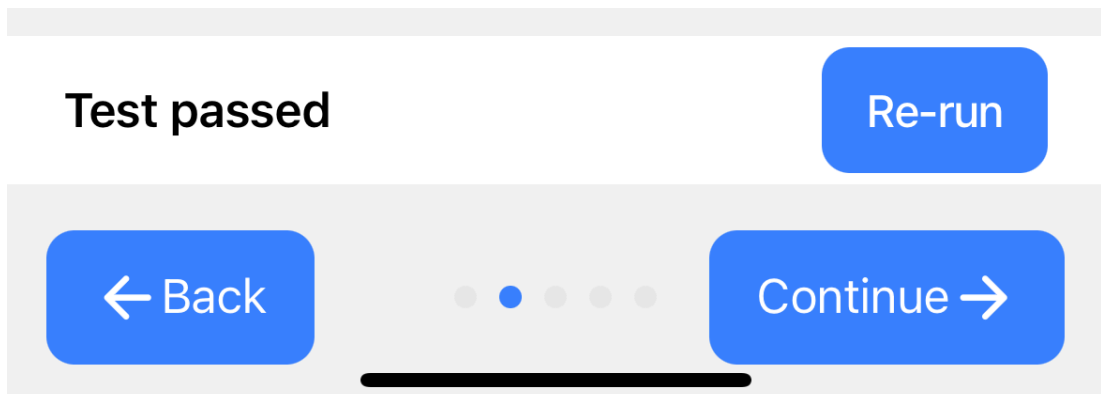
- 4.2.3 After the Nomad Lock-Up Module has rebooted tap “Continue”.



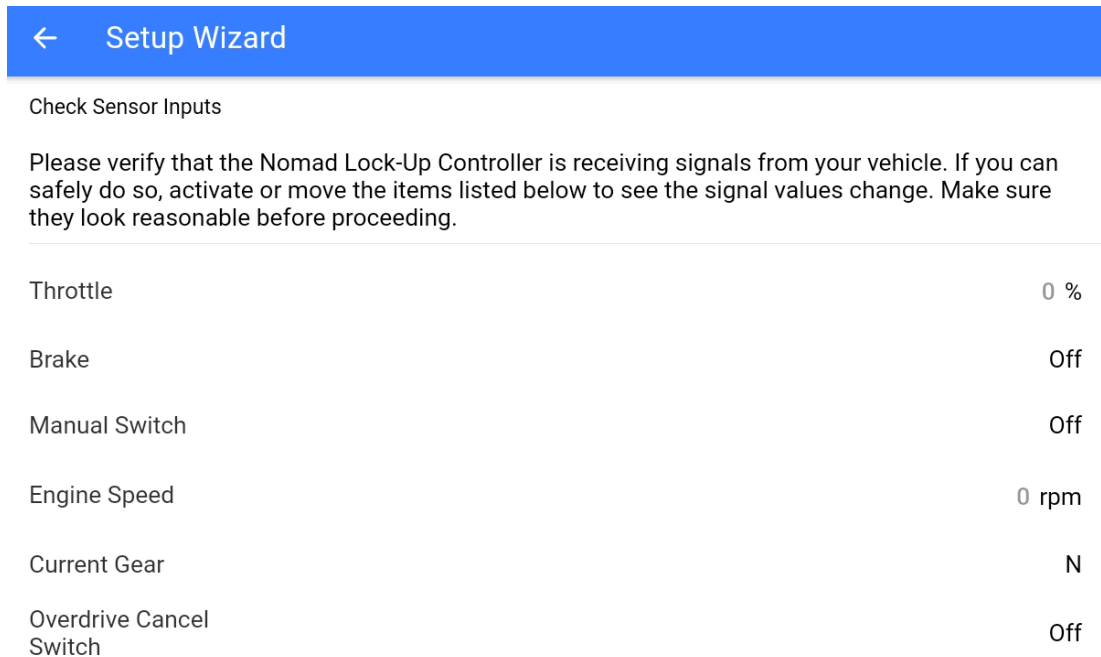
- 4.2.4 The Nomad Lock-Up Module will check for the necessary CAN bus signals that match your vehicle configuration. If the Nomad Lock-Up Module detected issues it will list the errors on the app. We recommend confirming that you have chosen the correct vehicle configuration. Also check that the CAN bus connections and the position of the two wires in the CAN bus connector are correct. You can run the test again by tapping on Try Again.



- 4.2.5 If all the CAN bus signals check out you will see Test Passed and the continue button will be shown. Tap Continue.



- 4.2.6 Checking Sensor Inputs allows you to verify that the signals the Nomad Lock-Up module requires to operate are being decoded correctly. Test these signals with the engine off.



4.2.6.1 **Throttle**

Press down on the Accelerator Pedal and you should see the Throttle value change according to the throttle pedal position.

4.2.6.2 **Brake**

Push down on the brake pedal to confirm we are receiving that signal. The Patrol only gives us an on-off brake signal.

4.2.6.3 **Manual Switch**

Push the Lock-Up switch to check that the Manual Switch value changes from "Off" to "On".

4.2.6.4 **Engine Speed**

While your engine is off this should read 0. This confirms that the CAN bus signal is correct.

4.2.6.5 **Current Gear**

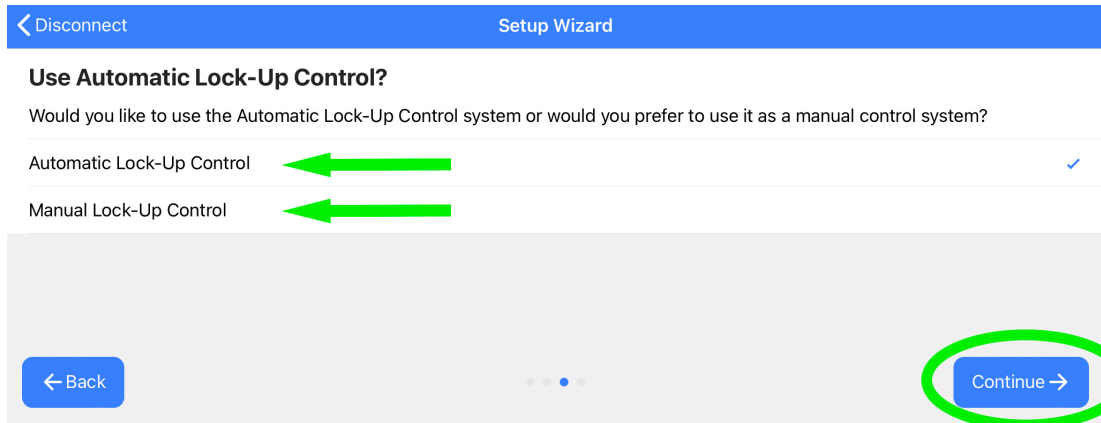
Move your shifter through its range and check that the gear indicated is correct. You may have to press the 2nd Start button in some variants.

4.2.6.6 **Overdrive Cancel Switch**

Check that the Module can detect when the overdrive cancel switch is pressed. Once all signals are confirmed, tap "Continue".

4.2.7 Once all signals are confirmed, tap “Continue”.

4.2.8 Choose if you would like the Nomad Lock-Up Module to operate in Automatic or Manual Mode. Then tap continue.



4.2.8.1 **Automatic mode**

The torque converter lock-up will automatically engage and disengage at predetermined speeds and loads that we have configured for you. These values can be modified at anytime to suit your driving style.

This is the recommended setting for most people.

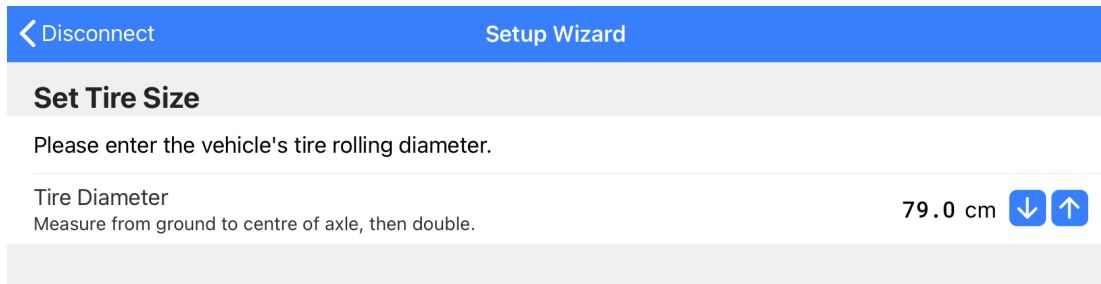
For more information about configuring the Nomad Lock-Up system, please check out our Nomad Lock-Up Users Guide. Link below.



4.2.8.2 **Manual mode**

You decide when the lock-up is engaged by toggling lock-up on and off via the manual switch. This will make the Nomad Lock-Up Module operate the same way as our previous GEN2 Lock-Up Kit.

- 4.2.9 Please set the Rolling Tire Diameter for your vehicle. To find the Rolling Diameter measure from the ground to the centre of the axle, then double this measurement and enter it into the app.

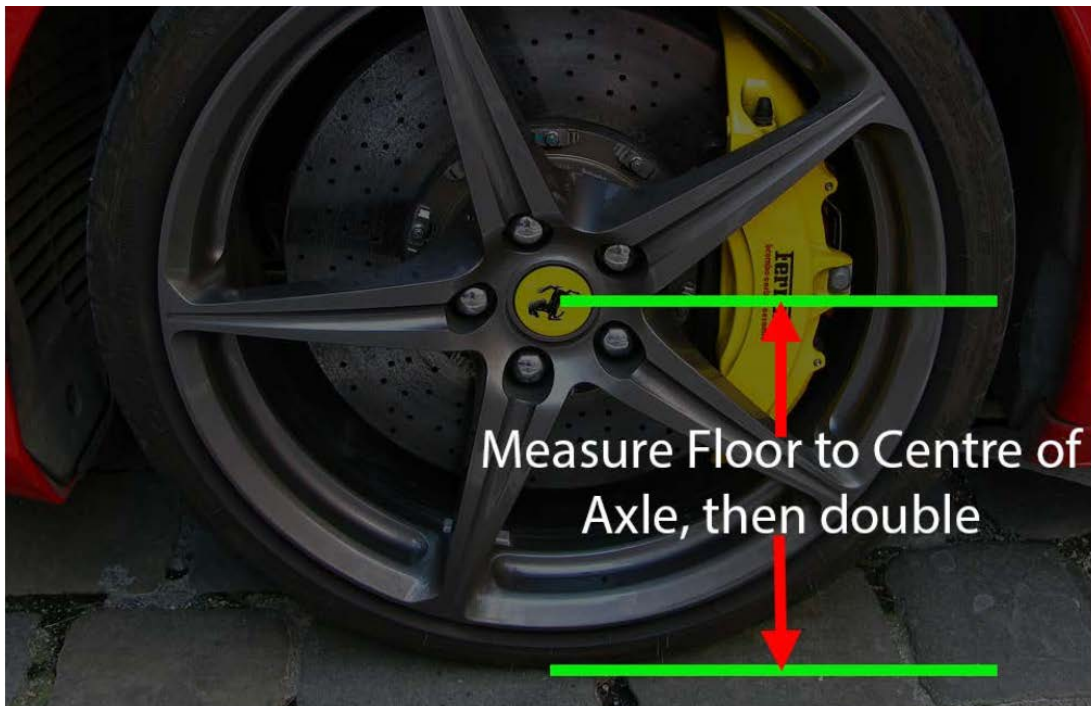


< Disconnect Setup Wizard

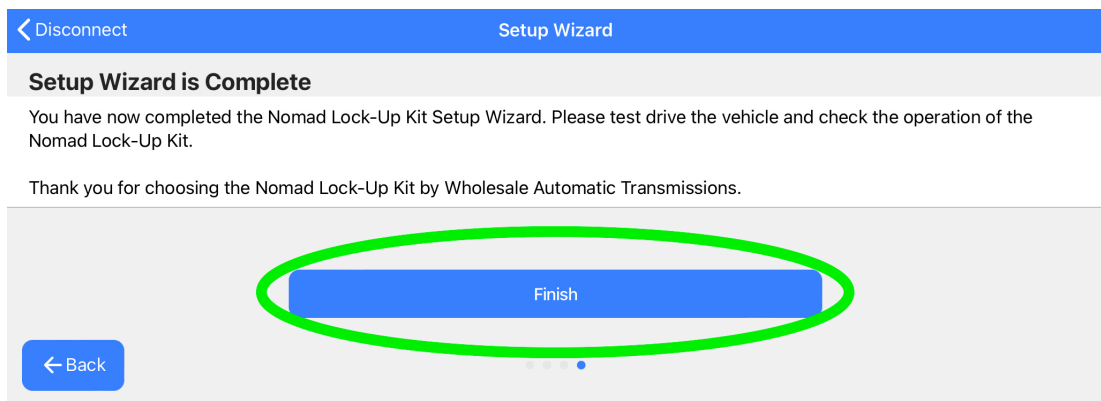
Set Tire Size

Please enter the vehicle's tire rolling diameter.

Tire Diameter 79.0 cm ↓ ↑
Measure from ground to centre of axle, then double.



- 4.2.10 Tap "Finish" to complete the Setup Wizard



< Disconnect Setup Wizard

Setup Wizard is Complete

You have now completed the Nomad Lock-Up Kit Setup Wizard. Please test drive the vehicle and check the operation of the Nomad Lock-Up Kit.

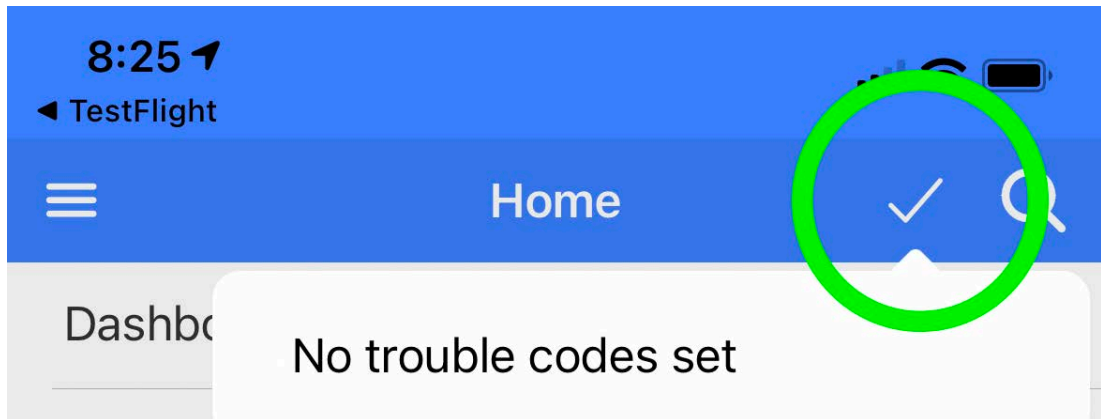
Thank you for choosing the Nomad Lock-Up Kit by Wholesale Automatic Transmissions.

Finish

< Back

- 4.2.11 Turn your ignition off and then back on again to power cycle the Nomad module.

- 4.2.12 Allow time for the app to reconnect to the Nomad Lock-Up Module. Confirm there are no DTCs (Diagnostic Trouble Codes) set. If you see the tick at the top right, you have completed the installation.



- 4.2.13 You can now take the vehicle for a test drive to confirm the Nomad Lock-Up kit is operating as expected. At this point, we recommend re-installing any dash panels or parts removed during the installation process of the Nomad Lockup Module.
- 4.2.14 After the test drive, before switching off the vehicle, connect to the Nomad Lock-Up Module with the app to confirm you still see the tick at the top right.

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This completes the Installation of the Nomad Lock-Up Kit

If you would like further information
on how to adjust all of the
calibration settings, please see
User Guide documentation on our
website using the QR code below or
tapping on the QR code.



Please provide us with feedback

If you have a minute to provide us with some feedback about your experience with Wholesale Automatic Transmissions and our products, that would be greatly appreciated.

Using your device's camera app to scan the QR code below. This will take you straight to our feedback page for you to choose the most appropriate feedback method.

