

X LIFTER

World's first
Air-suspension controller with self-levelling feature
for selected Land Rover® vehicles



Installation guide (Range Rover Sport L494)

Model X2 New Generation, Firmware 2.01

Table of contents:

1. Legal disclaimer	2
2. Safety information	2
3. Xlifter EAS unit installation	3
3.1. Package Contents	3
3.2. Installation - General Description and overview	3
3.3. Xlifter EAS Unit Installation – Range Rover Sport L494	4
Step 1: Disconnect the battery (according to the vehicle manual) - optional.	4
Step 2: Dismantle rear fusebox trim panel (right side of the trunk)	4
Step 3: Install compressor temperature lead (optional)	5
Step 4: Install Xlifter EAS unit.	6
Step 5: Install Xlifter cable loom and connect XL EAS unit.	7
Step 6: Finish the XL EAS unit installation.	9
4. Control module quick start and calibration.	10
4.1. Control module quick check.	10
4.2. Select vehicle type and calibrate Xlifter.	10
5. Dismantling XLifter from vehicle.	11
6. Wrapping Up and next steps.	11

Congratulations on your XLifter purchase!

Welcome to the installation journey of your XLifter, the Swiss Army knife for your vehicle's air suspension. This guide is designed to ensure a smooth and efficient setup, offering step-by-step instructions and essential safety tips. Your engagement with this manual not only demonstrates your commitment to maximizing XLifter's potential but also ensures a safe and successful installation.

Handle with care and precision. Your adventure into enhanced vehicle suspension abilities begins here.

Thank you for trusting XLifter.

1. Legal disclaimer

You are provided with XLifter, an air-suspension controller designed for Land Rover vehicles ("the **device**" or "**XLifter**"). XLifter enables the adjustment of the vehicle's air-suspension system and its electronic programming.

Please note that XLifter is an aftermarket product **not officially approved for vehicles on public roads** as per Act no. 361/2000 Coll, as amended. **Its use on public roads or in any context deemed unauthorized by local regulations, whether in the Czech Republic or elsewhere, is at the user's discretion.** The manufacturer bears no liability for compliance with road operation technical requirements under Act No. 56/2001 Coll and regulation no. 341/2014 Coll.

Installation and use of XLifter may affect the warranty of your vehicle's air suspension subsystem components or the vehicle's warranty as a whole. It is the user's responsibility to consult with the local dealership or warranty provider regarding the potential impact of XLifter on the vehicle's warranty. Evaluating the risk of warranty impact is solely up to the user. The manufacturer bears no liability for any warranty issues that may arise as a result of using XLifter.

By installing XLifter, the user releases the manufacturer from any liability related to the product's impact on other vehicle systems, whether mechanical or electronic. **The device is intended for controlled conditions, such as low-speed operations and off-road use, and should be used with caution.**

Users also accept the responsibility to inform any future owners of the vehicle about the installation of XLifter and its intended use.

By proceeding with the installation of XLifter, you acknowledge and agree to the terms outlined above. XLifter is recommended for off-road use only and not for operation on public roads.

2. Safety information

This guide is essential for the safe installation and use of the XLifter. Adherence to these instructions ensures safe Xlifter installation and operation. Please ensure installation is performed by or under the supervision of person familiar with this guide.

Understanding Safety Symbols:

- ⚠ This symbol signifies potential warnings, hazards, or unsafe practices. When accompanied by the word "warning," it highlights situations where disregarding instructions could lead to injury or damage to the vehicle or its systems. Please read any text associated with this symbol and follow the provided instructions to mitigate risks.

General installation warnings:

- ⚠ **Battery Considerations:** While disconnecting the battery is a recommended precaution, be aware that it may introduce complexities such as the need for recalibration of certain vehicle systems. Following this installation guide allows for safe installation without necessarily disconnecting the battery, provided that caution is exercised.
- ⚠ **Handling Vehicle Components:** Extra care should be taken when removing/installing trim panels and other vehicle components to avoid damaging clips or loosening connections. Force should be applied judiciously to prevent breakage.
- ⚠ **Securing Electrical Connections:** Make sure all connectors and their locks are securely fastened. Improper or loose connections may cause unanticipated malfunctions or potential damage to the vehicle's electrical system.
- ⚠ **Sale of Vehicle:** Inform any new owner of the XLifter's installation and provide them with this manual, ensuring it remains with the vehicle for reference.
- ⚠ **Before installation:** Thoroughly review the XLifter user guide to familiarize yourself with its features and safety instructions.

3. Xlifter EAS unit installation

3.1. Package Contents

1x Xlifter EAS unit with 3M fasteners	1x Cable harness with the bypass plug
1x Extra 3M fastener	1x Compressor temperature lead cable
1x Xlifter control module.	1x Quick splice connector
1x Velcro strip for control module installation	1x Xlifter sticker
1x Installation manual	1x user manual

3.2. Installation - General Description and overview

The Xlifter device consists of two main components: the control module and the Xlifter EAS installation unit (where EAS stands for Electronic Air Suspension). The control module, a display unit with buttons, is used to manage all settings and inform the user of the operating status. The EAS unit is responsible for adjusting the wheel height sensor signals and vehicle tilt measurements. Communication between the control module and the EAS unit is wireless.

The control module can be placed anywhere inside the vehicle that allows for easy access, according to user preference. It needs to be connected to a switched 12V power supply, such as a cigarette lighter socket. Advanced users have the option to cut the power connector and wire the cable directly to an appropriate 12V junction point or use a custom power harness in selected vehicles (available separately). Installing the device with all cables concealed not only looks more aesthetically pleasing but also keeps the lighter socket free for other uses.

There is a range of 3D printable mounting frames at <https://www.xlifter.com/xlifter-accessories/>

The Xlifter EAS unit is installed close to the original air suspension control module, referred to as the Chassis Control Module (CHCM) in the latest generation vehicles. Both units are connected via the supplied cable harness. After installation, the Xlifter EAS unit is mechanically secured to the vehicle's body and functions as an accurate tilt sensor.

Please see the Xlifter installation video guide before installation and FAQ:

www.xlifter.com/installation/ contains the video guides and installation hints. The video guide is also available on Xlifter's YouTube channel.

<https://www.xlifter.com/faq/> contains **Xlifter FAQ** (Frequently asked questions).

Here's a quick installation overview:

- Install the Xlifter EAS unit.
- Connect the cable harness.
- Connect compressor temperature lead (optional)
- Plug the control module power into 12V socket.
- Set the vehicle type and run the calibration procedure.

3.3. Xlifter EAS Unit Installation – Range Rover Sport L494

The Xlifter EAS unit is installed near the Landrover Chassis Control Module (CHCM). This module is located behind right side trim panel in vehicle trunk.

Estimated installation time:

- The Xlifter EAS unit installation should take approximately 0,5-1 hour.

Tools required:

- Common flat screwdriver
- Slip Joint Pliers for crimping quick splice connector.

Xlifter EAS unit installation procedure:

Step 1: Disconnect the battery (according to the vehicle manual) - **optional**.

 Battery disconnection and reconnection can be complex procedure. Upon reconnection, resetting the electric window one-touch facility and recalibrating the electric park brake and tailgate may be required. If the vehicle is equipped with stolen vehicle tracking, it must be placed into service mode before disconnection and should be taken out of Service Mode after the battery is reconnected. Please refer to the relevant Land Rover documentation/user manual - BATTERY AND CHARGING SYSTEM – GENERAL INFORMATION 414-00.

 However, the XLifter EAS unit installation can be cautiously completed without disconnecting the battery. It's crucial to follow the procedure precisely, especially during the cable loom installation — only the D and E connectors should be disconnected from the air suspension control module, and the vehicle must be powered down (ignition off, infotainment system off, etc.).

Step 2: Dismantle rear fusebox trim panel (right side of the trunk)

- a) Remove rear fusebox cover panel – pull it towards centre of trunk, few clips will release.
- b) Remove also adjacent rear panel (with button panel) and disconnect 2 connectors



Step 3: Install compressor temperature lead (optional)

Compressor temperature monitoring in the XLifter alerts users to potential overheating during frequent height adjustments, assisting in early detection of air suspension problems signaled by extended compressor activity.

To enable this feature, connect the compressor temperature lead using a custom T-splice connector to a specific wire, a task best done by a qualified automotive electrician. If unsure, skip this step and disable the feature in XLifter service menu.

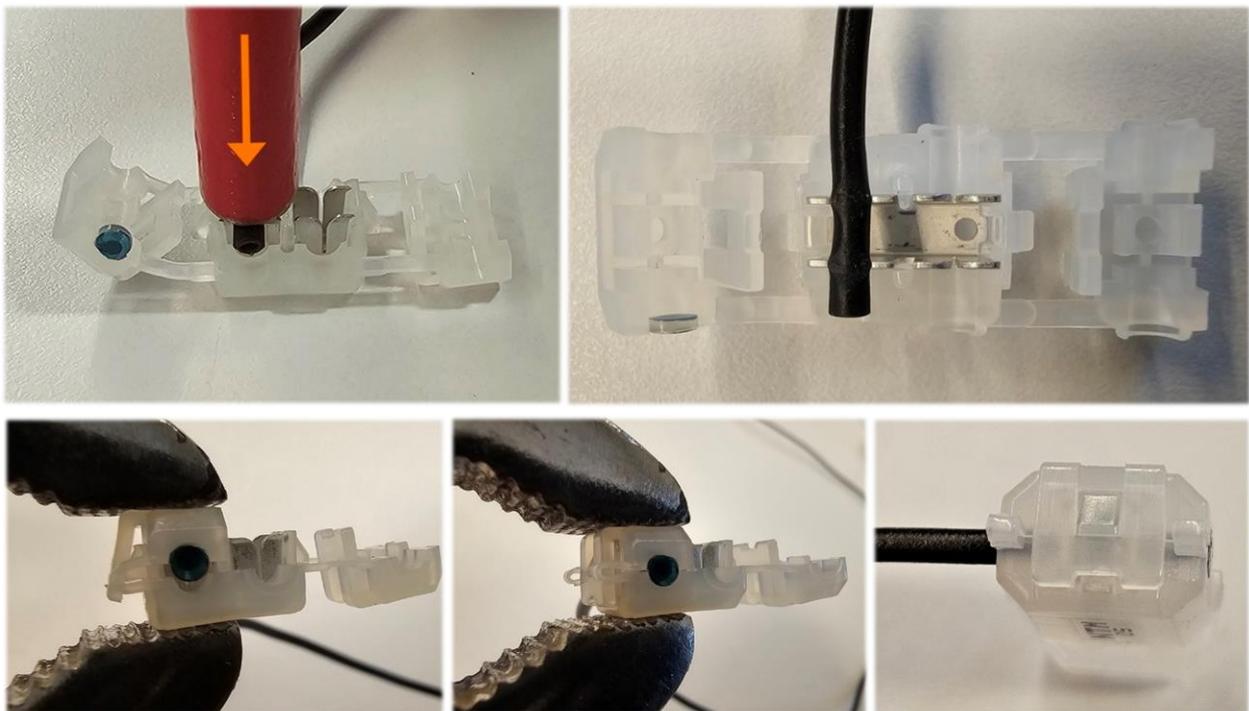
 While this can be done at the end, it's easier to do now, before installing the XLifter cable loom.

 If the battery wasn't disconnected first, avoid unplugging the GY connector (e.g. for easier access); otherwise, you may need to recalibrate the adaptive cruise control.

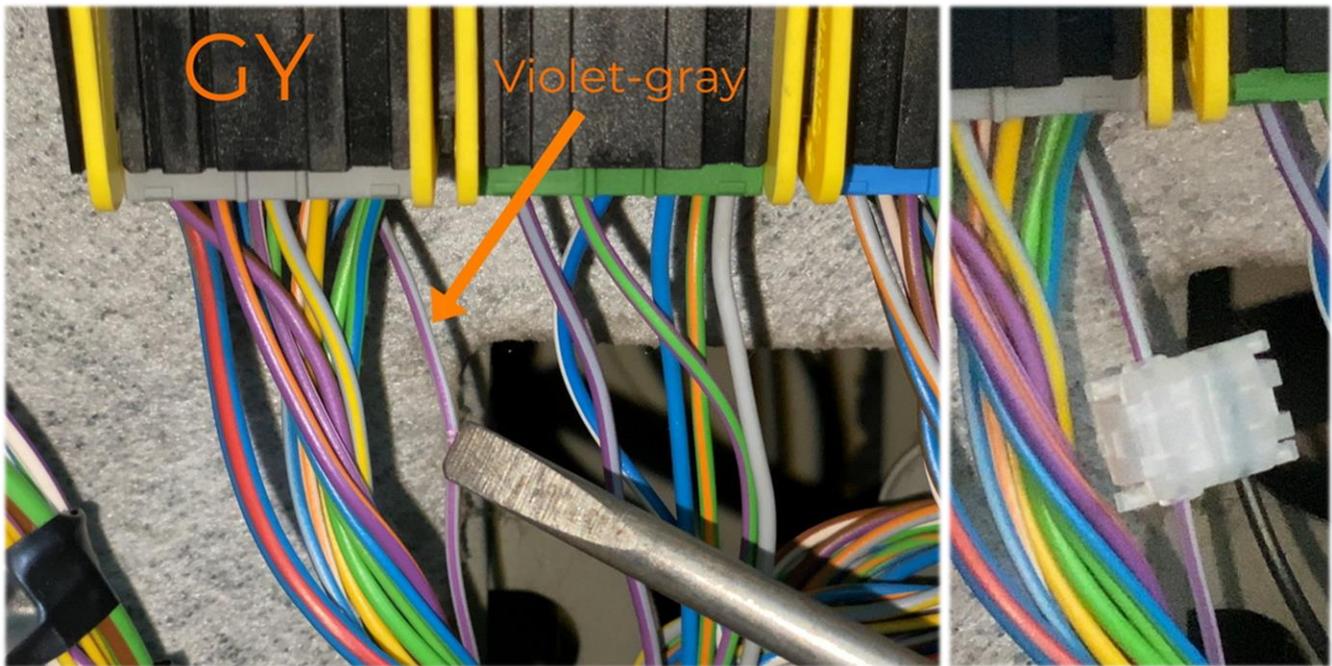
a) Shorten supplied XLifter compressor temperature lead wire to about 30 cm.

b) Crimp the wire into the supplied quick splice connector.

- One side of the splice connector has a closure. For better visibility, it's marked with a green dot in the pictures below. Locate it, position the wire as shown in the pictures, and push the wire partially in using any flat-surfaced tool. The wire should hold temporarily.
- Use Slip Joint Pliers (also known as Water Pump Pliers or Wrench Pliers) to press the connector housing fully in. Ensure the connector lock is fully engaged.
- Do not use needle-nose pliers, these works poorly. Only use pliers with parallel jaws!



Locate the **GY connector** on the LR Chassis Control Module (first from the left). Find the **violet-gray wire**. Crimp this wire into the quick splice connector. Double-check the color: **violet-gray**. Insert the wire into the open slot of the splice connector, close the housing, and then securely close it with pliers, as described in the previous step.



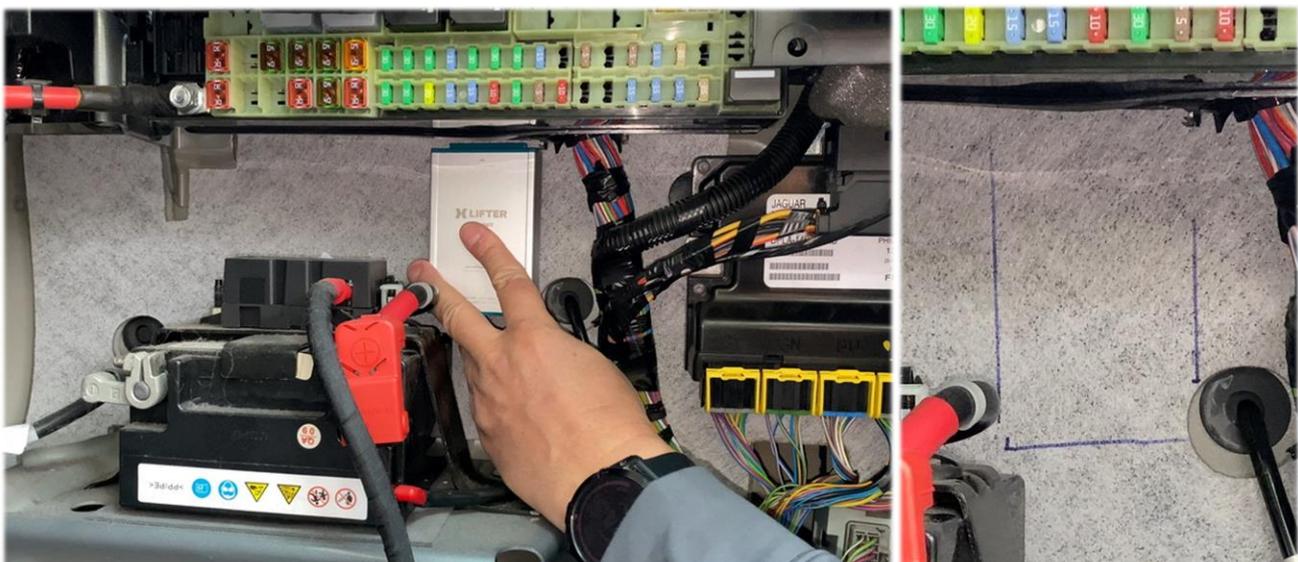
Step 4: Install Xlifter EAS unit.

The best spot for the Xlifter EAS unit is under the rear junction box, but you'll need to cut a bit of insulation to fit it in there. The levelling firmware is optimised for this orientation.



It doesn't really matter if you put in the EAS unit or the cable loom first. But, starting with the EAS unit makes things smoother since you can hook up the XL cable loom right after.

- a) Position the EAS below fuse box unit as depicted, and mark area to cut. Add about 1 cm extra at the bottom, where the cable loom connects.
- b) Cut the insulation area (left, bottom and right, all the way to top end) and store removed piece for example behind the battery for case of xlifter removal.



c) Clean the sticking surface from dust with a degreaser like isopropyl alcohol. It's crucial for the XL EAS unit's secure placement since it contains the inclinometer. Also, note a small rivet at the top center of the exposed area.

d) Prepare additional 3M fasterer for the EAS unit:

- Separate 2 pieces of the supplied fastener.
- Peel off the protective foil from one piece and the upper fastener on the EAS unit; stick them together.
- Slice the other piece in half (leave the foil on) and attach these halves to the piece you just glued, leaving about 15mm gap in the middle. This creates a space for the rivet, ensuring the fastener sticks around the rivet, not just to its head.



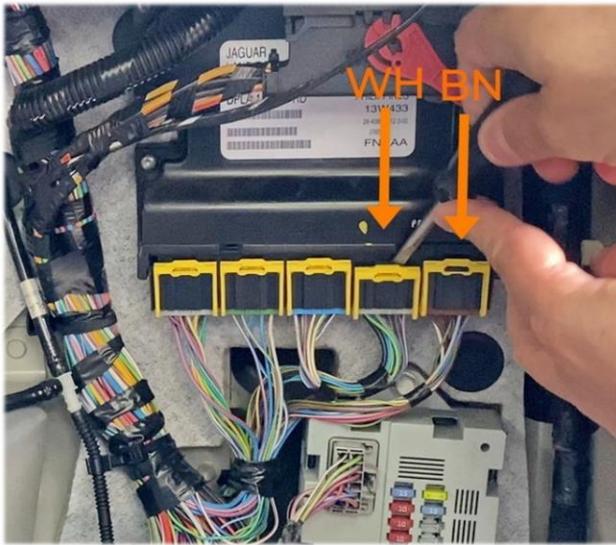
e) Peel off the remaining protective foils and firmly attach the XL EAS unit to the metal, following the placement shown in step b). Ensure the rivet is positioned between the upper stickers and that the entire surface adheres well to the metal underneath. Press down firmly for a few seconds to secure it.

Step 5: Install Xlifter cable loom and connect XL EAS unit.

a) If the battery wasn't disconnected, ensure the vehicle is in "sleep" mode—ignition and infotainment screens should be off.

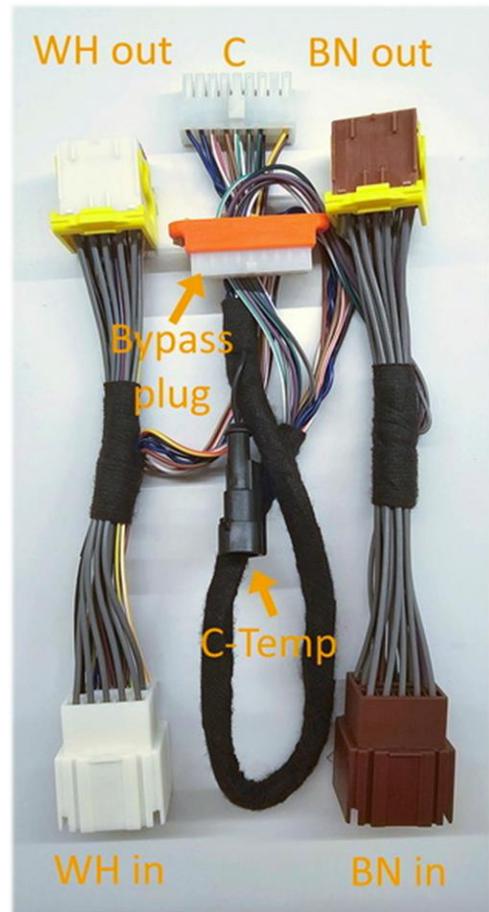
b) Unplug the two rear-most connectors of the LR CHCM module:

- These connectors, located nearest to the junction box, are color-coded white (WH) and brown (BN).
- With a small flat screwdriver, unclip the two yellow levers, push the levers down to unlock, and then pull the connectors downward to detach.



c) Install the Xlifter cable loom.

- Attach the Xlifter cable loom connectors to the LR CHCM module: match the White (WH) connector to the WH-labeled slot and the Brown (BN) connector to the BN-labeled slot.
- From below, align and gently push the connectors into place. The yellow levers will begin to move as you insert the connectors. Secure by pushing the lever up until it clicks.
- Reconnect the vehicle's cable harness to the Xlifter cable loom, matching White to White and Brown to Brown, ensuring each latch clicks securely. If a latch doesn't click, gently push connectors together and reattempt closing the latch.
- Organize the cables and place connectors around the lower fuse box (not in front of it) to avoid obstruction, facilitating easier reinstallation of the trunk trim panels.



d) connect the Xlifter EAS unit.

- Plug the Xlifter cable loom connector C into the XL EAS unit.
- Ensure the connector snaps securely in place. Gently tug on the connector (not the wires) to test its security. Verify all wires are firmly seated in their slots without any loose pins. If everything looks good, press the connector in securely.
- Observe the EAS unit's LED; it should start blinking within 10 seconds of connecting the cable loom. The LED will turn off after 5 minutes if the vehicle is in "sleep" mode, which is normal. The LED will blink again once the ignition is on.
- If you've installed the Compressor Temperature Lead, make sure to connect the superseal connectors (black with yellow rubber).



Step 6: Finish the XL EAS unit installation.

Congratulations, the most challenging part is over. But you're not quite done yet. Now, you need to ensure everything is working correctly, tidy up, and put all the trims back in place.

It's a great idea to test the basic functionality of the Xlifter system before you finish reassembling everything.

- a) Reconnect the vehicle battery as per the vehicle's user manual if it was disconnected.
- b) Turn on the ignition. Check the Xlifter EAS unit green status LED; it should flash rapidly at 2x per second, signaling it's ready for operation and waiting for a wireless connection from the control module.
- c) Inspect the vehicle dashboard for any air suspension errors:
 - If the installation occurred without the vehicle being fully in "sleep" mode, a suspension error may appear.
 - To clear these errors, turn off the ignition and allow the car to "sleep" (lock it using the remote key - this will turn off the dashboard and infotainment display). Then, reopen the vehicle and turn on the ignition; all errors should clear.
 - If you possess a diagnostic tool, look for height sensor signal errors from the CHCM module, which can be cleared.
- d) Proceed to chapter 4.1 for a quick check of the Control Module. Follow the steps outlined there to ensure the controller connects to the XL EAS unit properly, the temperature readings are accurate, and no dashboard errors are present.
- e) Once everything is functioning smoothly, it's time to put all the trim pieces back:
 - Reattach all trims in the reverse order of removal.
 - Remember to reconnect the two connectors on the rear panel.
 - Double-check the alignment of clips before pressing them into place to avoid the need for replacing them.
 - Where applicable, reinstall or adjust all aperture seals to their correct positions.

4. Control module quick start and calibration.

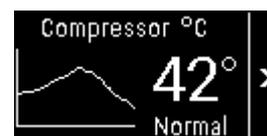
The control module gets its power from an ignition-switched +12V source, like a cigarette lighter socket, and communicates wirelessly with the XLifter EAS within a 10-meter range. Thus, any suitable 12V socket will work, especially the one located on the center console just below the climate controls.

Attach the control module using the provided Velcro to your preferred spot. This can be done immediately or at a later stage. Alternatively, for a neater setup, consider hardwiring the 12v power to suitable switched source. And explore mounting frames options for your vehicle at <https://www.xlifter.com/xlifter-accessories/>

4.1. Control module quick check.

Powering up & Checking the Control Module:

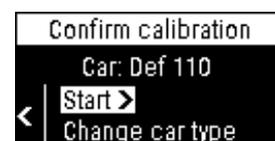
- Turn the ignition ON
- Plug the 12 V power plug into the cigarette lighter socket.
- You should see an animated logo and a wireless search indicator for the XLifter EAS unit on the control module's display.
- The control module and the XLifter EAS unit are pre-paired. Connection should occur within 10 seconds, but allow up to 20 seconds if the EAS unit, or vehicle battery, was just connected.
- Once connected, the XLifter "home screen" will display, indicating zero lift and "Not Calibrated."
- If you've installed the Compressor Temperature lead, press ◀ to check the compressor temperature, which should reflect ambient conditions if the compressor was inactive during installation. Press ▶ to return to the home screen.



4.2. Select vehicle type and calibrate XLifter.

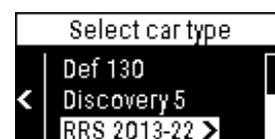
Before using the XLifter for the first time, you must select your vehicle type and perform a calibration.

1. Press ▶ three times to reach the "Confirm calibration" menu, navigating through the main and settings menus. The menu items are pre-selected for convenience.



2. Setting the Car Type:

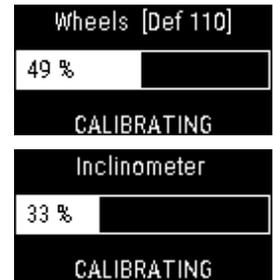
- Default car type is set to Def 110 – New Defender 110. Change this to **RRS 2013-22**.
1. Use ▲▼ to select "change car type", press ▶.
 2. Use ▲▼ to select your specific vehicle type, press ▶.
 - Def 90, 110 or 130 - L663 (only Defender 110 is supported in 2.0 firmware)
 - Discovery 5 - L462
 - **RRS 2013-22 for Range Rover Sport - L494. Select this one!**



3. Calibrate the XLifter

After setting the car type, you'll return to the "Confirm Calibration" menu. Please review the chapter 5, Calibration of the XLifter user manual, or the accompanying calibration leaflet for guidance.

- Ensure the vehicle on a flat surface.
- Set Land Rover "Original" height to Standard.
- Enable tight mode tolerance.
- When ready, press ► to run the calibration procedure.
- The calibration routine will take around 30-60 seconds, after which "Success: XLifter calibrated" will display. This confirms the measurement of normal wheel heights and sets the inclinometer to zero. Press ► to return to home screen.



Congratulations! The installation is complete.

5. Dismantling XLifter from vehicle.

Removing the XLifter from your vehicle is straightforward, essentially reversing the installation steps, with these nuances:

- For temporary removal, the XLifter cable harness can remain in the vehicle. Just disconnect Connector C from the XLifter EAS unit and then insert the bypass plug into the now-free C connector.
- To detach the EAS unit from the 3M reclosable fastener, pull it straight out, perpendicular to its printed side, towards the direction of the center console. Pulling sideways won't work. Leave any fastener pieces that remain on the original EAS unit; they're quite sturdy. If you're moving the unit to another vehicle, you'll need a new piece of fastener, specifically a 3M SJ3550 reclosable fastener, which is 25 mm wide with 39 heads per cm², not included.

6. Wrapping Up and next steps.

You've successfully completed the installation of your XLifter, taking an important step to enhance your vehicle's air suspension capabilities. Thank you for following the installation guide.

To fully understand and utilize your XLifter, **it's essential to proceed with the User Guide**. It covers the operational details and limitations, ensuring you get the most from your system safely, avoiding undue stress on vehicle components.

For additional support and troubleshooting, the FAQ at <https://www.xlifter.com/faq/> is a valuable resource.

We appreciate your choice to install XLifter and are happy to have you on board. Here's to awesome adventures and solid overlanding trips with your boosted setup.
Enjoy the journey.