



**Fitting instructions for:**

**Brazilian Bay**  
(with standard steering box)

**Vehicles**

**Important document!**  
**Please read these instructions before fitting!**

### **Safety first:**

Before you start any work on your steering system, carefully read and ensure you understand **all** of the instructions. Ensure all tools and equipment are working correctly before use and wear the relevant safety equipment and PPE during the installation process at all times.

### **Tools and equipment required:**

P.P.E. (Personal Protective Equipment)

A good trolley jack

Axle stands

Pitman arm puller (any damage to the steering box may affect the surcharge credit)

36mm socket

½" Knuckle Bar

4 and 6mm allen keys

Selection of spanners

Selection of sockets and a torque wrench

Cable ties

Side cutters

A selection of screw drivers

EP 80/90 Gear Oil

Touch up paint (optional)

### **Getting started:**

Firstly, go boil the kettle! Allow yourself plenty of time to read through the instructions - **don't rush!**

Installation normally takes an experienced VW mechanic (with the use of a ramp) around 4 hours. If you are working on axle stands and you have limited experience, then expect it to take longer and give yourself a clear 6 to 8 hours.

At the rear of these instructions, you will find a set of diagrams which will make components easier to identify. Within the instructions, these components will be coloured **blue**. Throughout the fitting, you will often be asked to view certain "item" numbers. These numbers will be highlighted in **red**. An expanded view of these items and their respective numbers is also attached.

## **Stripping:**

- 1 Jack up the vehicle so you can remove the steering box/column
- 2 Check all of the steering and suspension system for wear and defects and ensure all components are well greased.
- 3 Disconnect the negative battery terminal.
- 4 Move driver's seat as far back as possible and fit a protective seat cover.
- 5 Gently prize off the horn button with a small flat screw driver.(from the W side not the V side).
- 6 Remove the horn wires.
- 7 Remove the steering wheel nut with a 24mm socket and remove wheel.
- 8 Remove coil spring, plastic spacer and steel cup complete with grey bush.(bush may be retained in the ignition housing)
- 9 Leaving the key in the ignition, remove the plastic covers from the ignition housing.
- 10 Remove the 6mm Allen bolt that retains the ignition housing remove all the switch wiring and remove housing.
- 11 Remove the 2x10mm bolts that hold the steering column to the top bracket.
- 12 Push the large rubber grommet through the floor.
- 13 Remove the front under shield. (if fitted)
- 14 Remove the 36mm nut from the pitman arm using a pitman arm-puller and mark on the arm the position of the scribed mark on the steering box shaft.
- 15 With the use of a pitman arm puller remove the arm (please avoid using wedge type ball joint splitters as they damage the housing).
- 16 Remove the 3x 17mm (sometimes 16mm) bolts that retain the steering box to the chassis.
- 17 You can now remove the steering box/column assembly. Please drain all oil from the steering box prior to removal (if you remove the bottom bolt of the 4 M8 bolts in the side plate it will drain through the bolt hole)

## **Fitting:**

- 1 The new steering box and power steering unit are in 2 parts, these are connected via a coupling on the shaft.
- 2 Fill the steering box with oil (80w90) and fit to the chassis loosely with only one bolt (this will allow some clearance at the top bracket area). Note: If you have a RHD conversion, do not fill your steering box with oil, as you may need to remove the steering box shaft in order to fit. Remove the shaft by rotating the shaft to its centre, remove the 4 bolts on the shaft plate and pull out of steering box.
- 3 Carefully fit the lifesteer unit onto the box ensuring that both bolt holes can be seen through the 2 holes on the tube then fit it the 2x 6mm allen key bolts and tighten.
- 4 Fit the upper 2x10mm bolts to the bracket and refit the two remaining steering box retaining bolts and tighten. once
- 5 Temporarily fit the steering wheel and turn lock to lock to ensure a smooth operation.
- 6 Refit all removed components, ensure that the mark on the pitman arm aligns with the mark on the shaft. there have been cases where the pitman arm and drag link have been incorrectly set up. With the scribe line on the steering box aligned with the mark on the box body check that the steering idler arm is in a central position and the wheels are pointing straight forward. If this is not correct there will be more turns from one lock to the other and it will cause the steering box to have play as it's not running in the center of it's range. (if you are unsure of this please ring us!)
- 7 If the van has been converted to right hand drive it is advisable to fit a strengthening bracket to the chassis as the conversion is usually weak.

## Wiring:

- 1 The Litesteer wiring will follow the original wiring loom through the hole in the bulkhead over the front beam and down the chassis to the engine bay and battery (over the top of the catalytic converter heat shield)
- 2 Connect the **main power** wire terminal to one end of the **50 amp fuse** box. Next, fit the short **fly lead** to the other end of the **50 amp fuse** box (if not already connected). Ensure that both ends are securely fitted. You may then fit the remaining loose end of the **fly lead** to the main positive power wire/terminal on the battery. Once happy with the position of the **50 amp fuse** box, you may mount the box into position using cable ties.
- 3 Cable tie the rest of the **main power** wire to the chassis, starting from the engine compartment at the back and working forward. Ensure the wires do not interfere with any moving parts.
- 4 Fit the **GPS speed sensor** to the top of the ignition housing using the 3M double-sided, adhesive tape supplied. (Be sure to clean the surround with a solvent-based cleaner/alcohol wipe to ensure secure adhesion)
- 5 The **GPS speed sensor** has a small LED light located at the side of its plug. On initial start-up, the LED will flash **orange** 3 times. After this, the LED signals are as follows:
  - **Red** – No GPS fix (searching)
  - **Green** - GPS Fix acquired
  - **Green (flashing)** – GPS fix acquired and vehicle moving
- 6 Connect the wire from the **motor** (blue) and **torque sensor** connector (black) to the right side of the **control unit**. To the other side, fit the blue and white connectors from the loom itself. Fit the **earth wire** to the **earth point** on the unit between the two M8 nuts (positioned next to the motor).
- 7 Identify an ignition live fuse in the main fuse box and remove it. Normally, this can be found as a 10A fuse, on the left-hand side, second fuse down on the fuse box. Fit the removed fuse to the fuse holder from the new wiring loom and refit the new fuse holder into where the fuse came out of the fuse box originally. (You will end up with two fuses in the new fuse holder)
- 8 Mount the control unit under the dash using the bracket provided. Ensure the torque sensor wire can reach it without stretching and it doesn't interfere with the columns plastic surrounds. This can be mounted above the unit, under the dash vertically.
- 9 Fit the earth lead to the bolt on the back of the unit adjacent to the motor. (This has a m8 nut and washer fitted to it)
- 10 Refit the battery and start the engine, the control unit will click and the unit will be operational.

## **Finally:**

Re-fit the negative battery terminal and start the engine. The control unit will make a single click sound on startup which is an indication that the unit is operational (You will also hear the unit click a few seconds after you have switched the vehicle off).

Now, carry out a spanner check, including **every** nut, bolt and screw that you have come in contact with. We can't stress the importance of this step strongly enough! This is a safety critical process and it is the responsibility of the fitter to ensure it is fitted correctly.

Check electrical equipment; lights, wipers, etc, just in case you have disturbed any wiring. Take the vehicle for a test drive. During the test drive, note the position of the steering wheel whilst the vehicle is driving in a straight line, as you may need to centre the wheel. Once the wheel has been re-aligned, torque the steering wheel nut (**item 38**) to 26lbs and re-fit the horn wire and horn button (**item 39**).

Note: Please remember that just because you can turn the steering very easily, you should avoid static/dry steering as it damages tires!

## **Enjoy!**

Thank you for purchasing one of our Litesteer systems!

If you have any feedback or questions regarding this product, please don't hesitate to call, e-mail us or visit our Facebook page!

Finally, if you love the product as much as we think you will, please spread the word by fitting the Litesteer sticker (enclosed with your kit) to your rear window!

Many thanks again from,

The Litesteer Team!

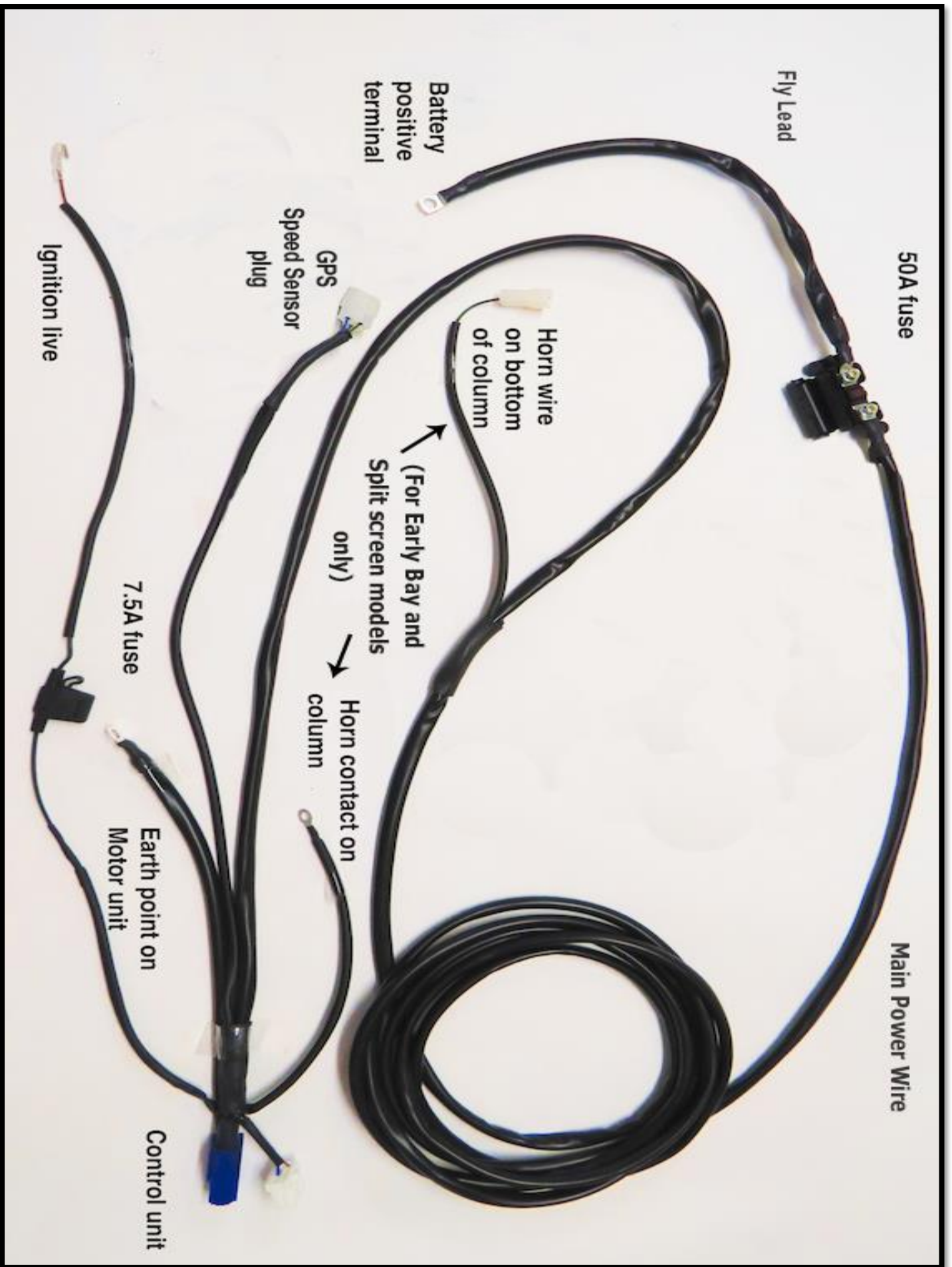


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50A fuse

Fly Lead

Main Power Wire

Battery positive terminal

Horn wire on bottom of column

(For Early Bay and Split screen models only)

Horn contact on column

GPS Speed Sensor plug

7.5A fuse

Ignition live

Earth point on Motor unit

Control unit