



Mercedes Benz W222 MultiBeam LED Headlights Retrofit Adapter (MBLight Multibeam Retrofit Adapter)

Installation Guide

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WARNING

This device is designed solely for use by properly trained and qualified automotive electronics experts, who are familiar with the dangers related to handling electrical equipment and systems. This manual intends to serve as a guide in the installation of adapter, failure to follow these instruction could result in a hazardous condition, destruction of car equipment and the retrofit adapter.

**DISCONNECT ANY CHARGING EQUIPMENT BEFORE
INSTALLATION AND CODING:
CAR BATTERY CHARGER, NOTEBOOK CHARGER, ETC.**

There are NO user serviceable parts contained in the retrofit adapter. Unscrewing or opening your adapter will render your warranty void. If your retrofit adapter require repair, please contact us directly and we will assist you.

The manufacturer is not legally responsible for any equipment damage or personnel injury caused by incorrect installation by unqualified technicians.



Preface

This document will help you install the Mercedes Benz W222 Multibeam LED Headlights Retrofit Adapter (MBLight Multibeam Retrofit Adapter) for Mercedes Benz S-class cars 2013-2016.

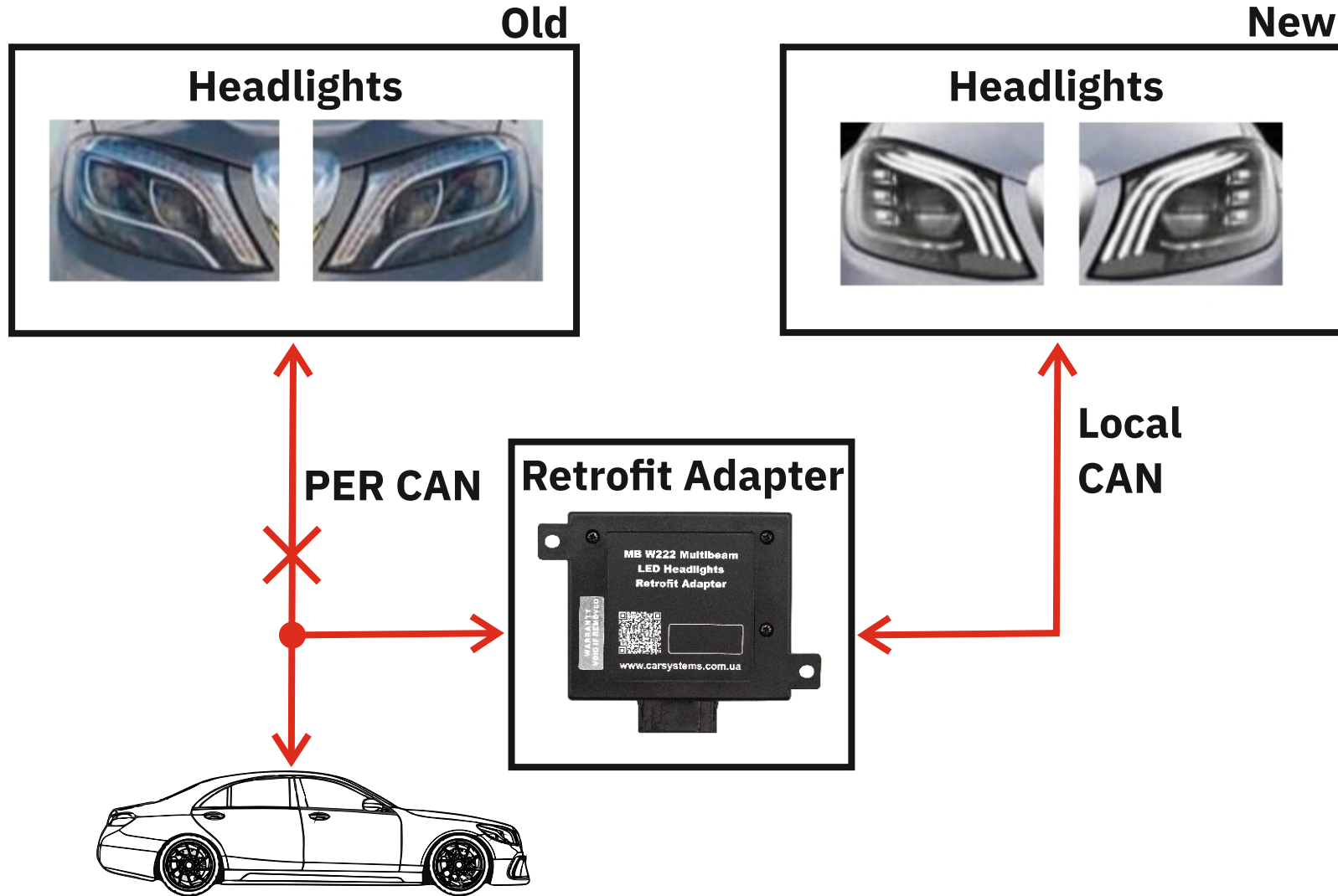
Audience

This document is intended for CarSystems customers, partners, and employees to get familiar with Mercedes Benz W222 Multibeam LED Headlights Retrofit Adapter (MBLight Multibeam Retrofit Adapter). It provides instructions and graphical content for a user to get started with his first installation.

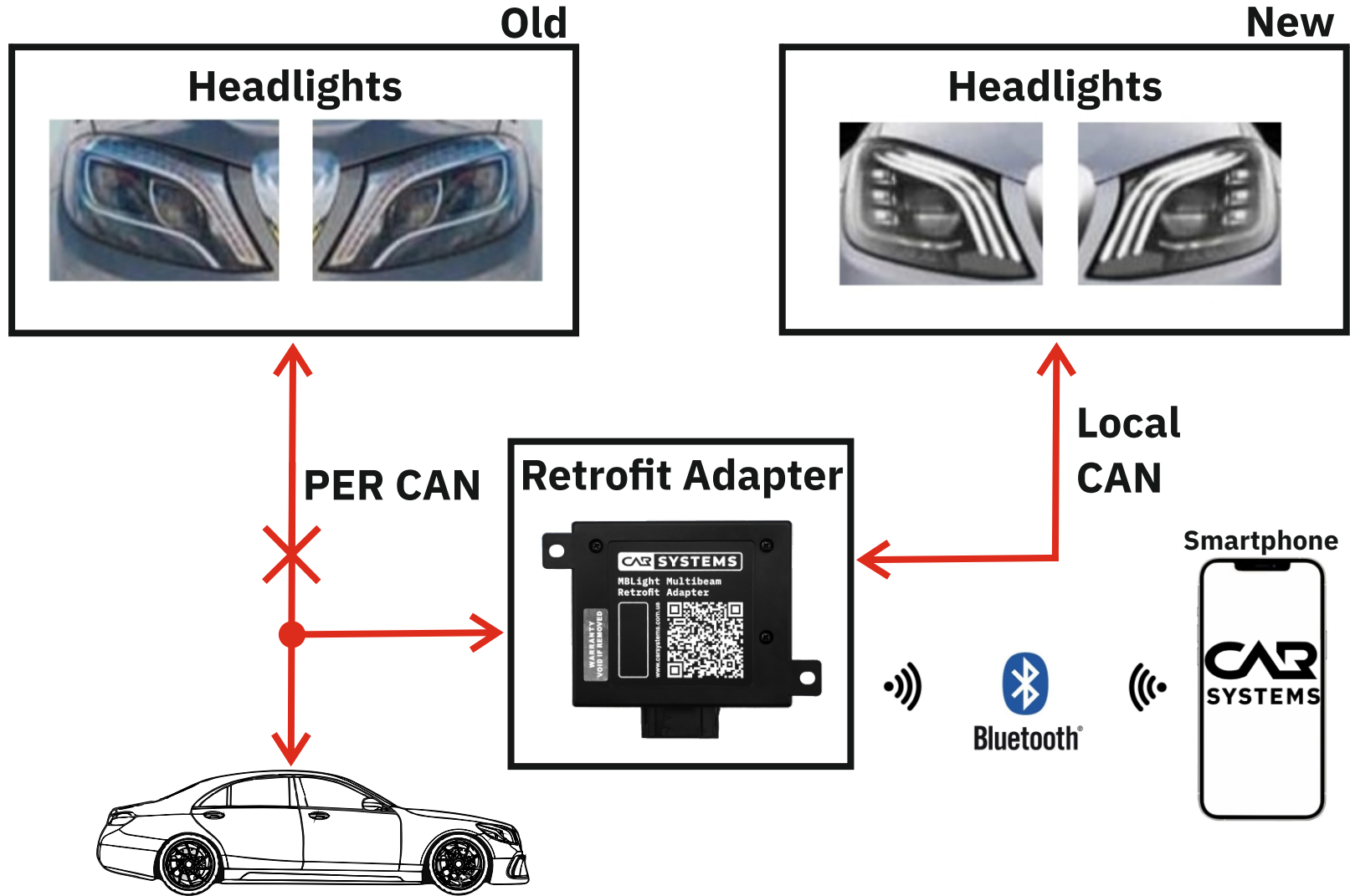
Pre Installation Skills

This document expects that you are familiar with automotive electronics, knowledge and experience in that field. High automotive diagnostic skills are welcome.

Facelift Block Diagram 1



Facelift Block Diagram 2



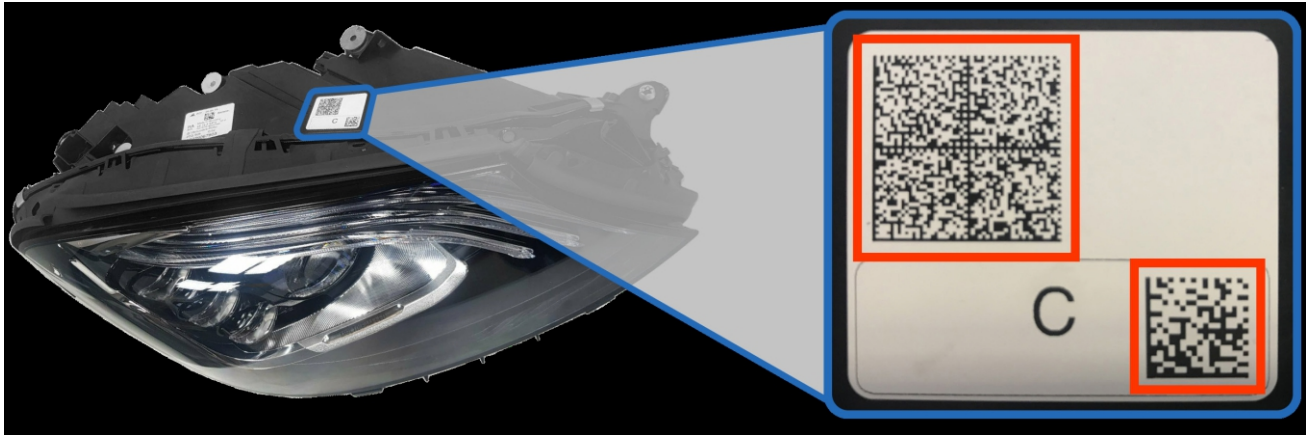
Differences

Distinctive features of the devices are shown in the table

Device name	Bluetooth module
MB W222 Multibeam LED Headlight Retrofit Adapter	not present
MBLight Multibeam Retrofit Adapter	present

Important notice

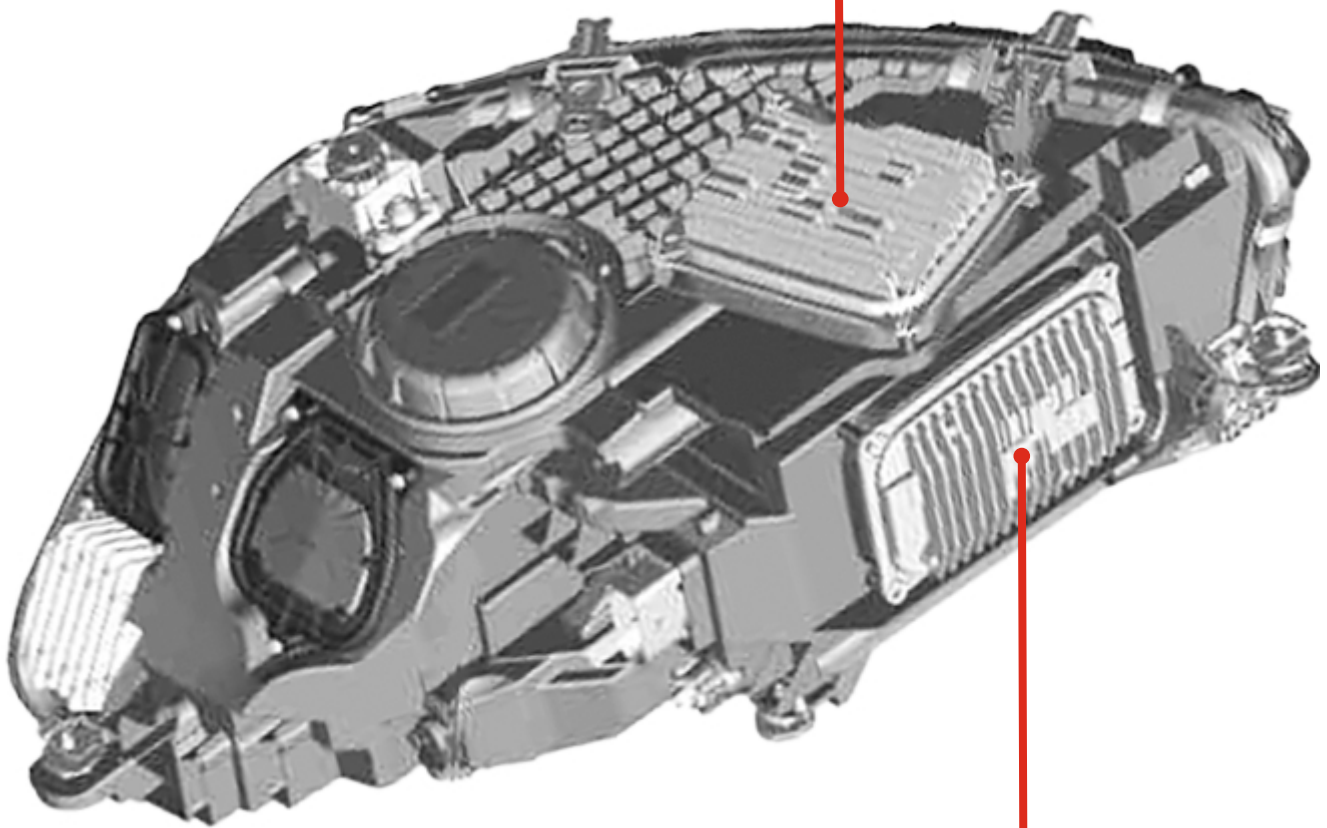
It's necessary to take a photo of 2 QR codes on the side of the each headlight, or you can scan codes by yourself and send it to your technician. These codes will be used in the coding process. Make sure you take a photo before the installation of headlights so you don't need to unmount the bumper again to get the codes.



Use QR codes from exact headlights that are installed on the car. Using other headlights QR codes may disrupt performance and operability of headlights.

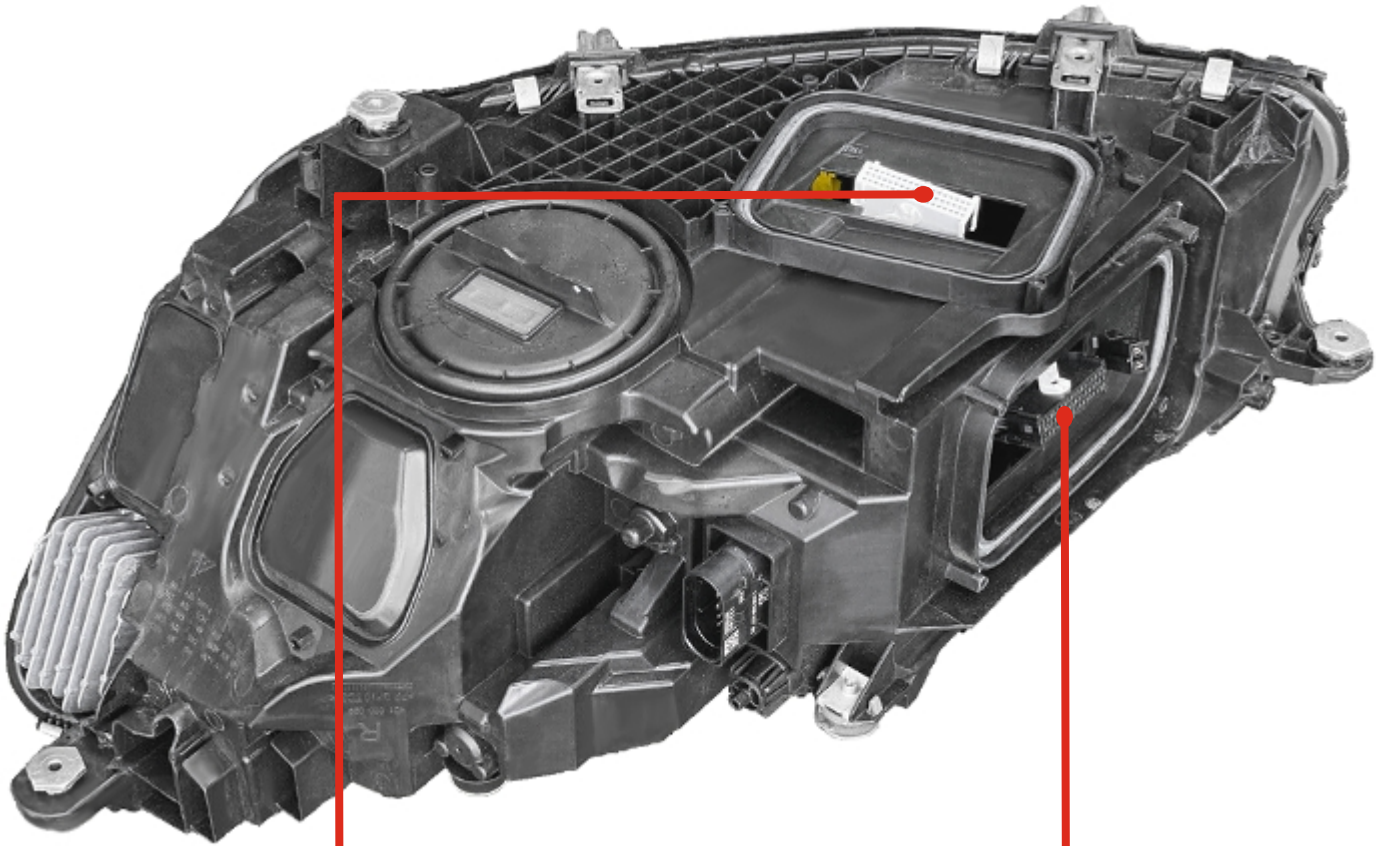
Headlight Control Units location

PXL Headlight Control unit



HLI Headlight Control unit

Headlight Control Units



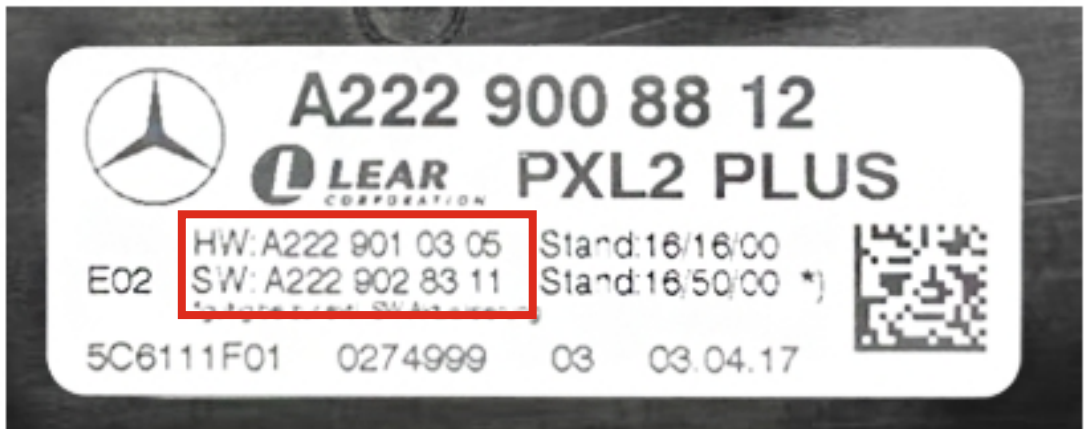
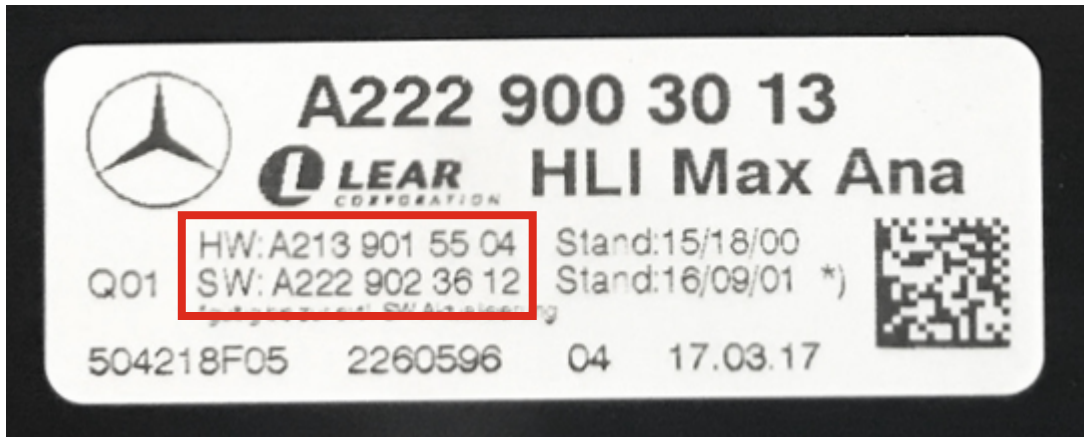
PXL Headlight Control unit



HLI Headlight Control unit



Take photo of software(SW) and hardware(HW) part numbers of the HLI Headlight Control Unit and PXL Headlight Control Unit (see photo below) of Left headlight and Right headlight. To get them you need to unmount Headlight Control Units on the back and the bottom of Left headlight and Right headlight.



Part numbers suitable with W222 Headlights:

HLI Headlight Control Unit:

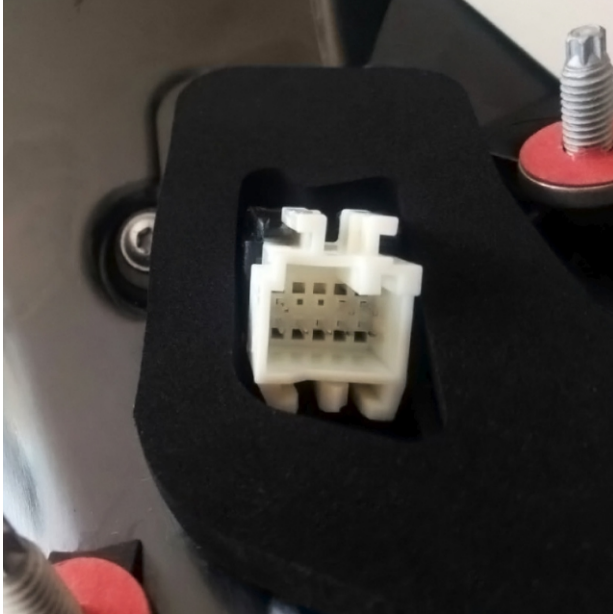
- A 222 900 30 13
- A 222 900 05 15

PXL Headlight Control Unit:

- A 213 900 61 04
- A 222 900 88 12
- A 205 900 95 34

Tail Lights Market Specification

Different coding used for different car and tail lights market specification. There are two types of Tail Lights: ECE market specification and US market specification. ECE market specification Tail Lights have a white connector and the US market have a blue one. Provide our technician with information about the market specification of a car and tail lights before the coding. For example: car - US market specification, tail lights - ECE market specification.



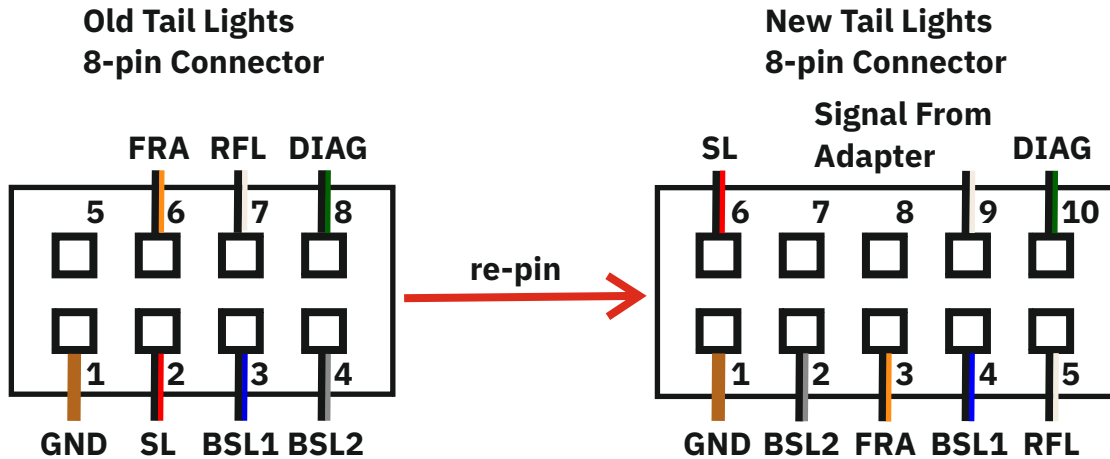
ECE market tail lights connector



US market tail lights connector

Tail Lights connection

For Tail Lights retrofitting, Black/White Control wire E) should be routed to the trunk and connected to pin 9 of Left and Right New tail lights 10 pin connector (Two connectors are supplied with the adapter) in which should be repinned wires from old 8 pin Tail Lights connector according to figure and table below.



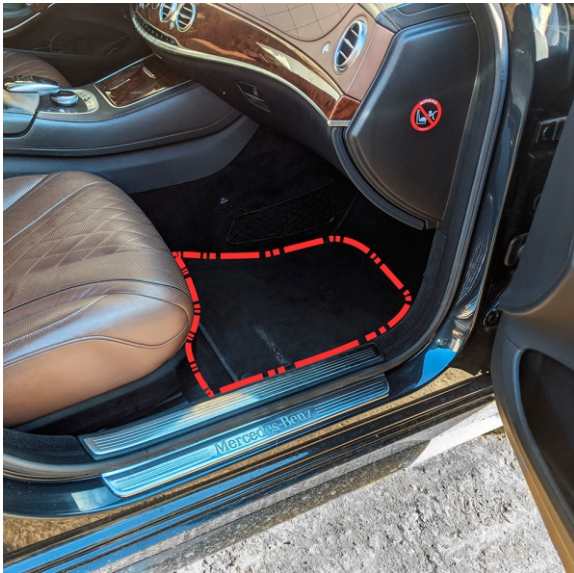
Wire Color	Signal	Old Connector	New Connector	Explanation
Brown	GND	Pin 1	Pin 1	Ground Point
Black/Red	SL	Pin 2	Pin 6	SL(Schlusslicht) - Tail Light
Black/Blue	BSL1	Pin 3	Pin 4	BSL1(Bremslicht) - Stop Light
Black/Gray	BSL2	Pin 4	Pin 2	BSL2(Brems/Schlusslicht2) - Tail Light 2
	SML	Pin 5	Pin 9	Control wire, should be connected to Multibeam Retrofit Adapter for sequential lights control (To wire E of Multibeam Retrofit Adapter)
Black/Orange	FRA	Pin 6	Pin 3	FRA(FahrRichtungAnzeige) - Turn Direction Signal
Black/White	RFL	Pin 7	Pin 5	RFL(RuekFahrLicht) - Reversing Light
Black/Green	DIAG	Pin 8	Pin 10	DIAG - Diagnostic pin for FRA or BSL1

For changing direction/turning indicator from the USA to ECE standard, on both sides of tail lights connect BLACK/ORANGE wire to pin3. After this re-pin this wire on the rear BC module, connector «HL», move BLACK/ORANGE wire from pin 18 to pin 3. Connector «HR» move BLACK/ORANGE wire from pin 10 to pin 12.

PER CAN Potential Distributor, positive point and ground point location

Retrofit adapter connection points - depending on the car body model (see the table below)

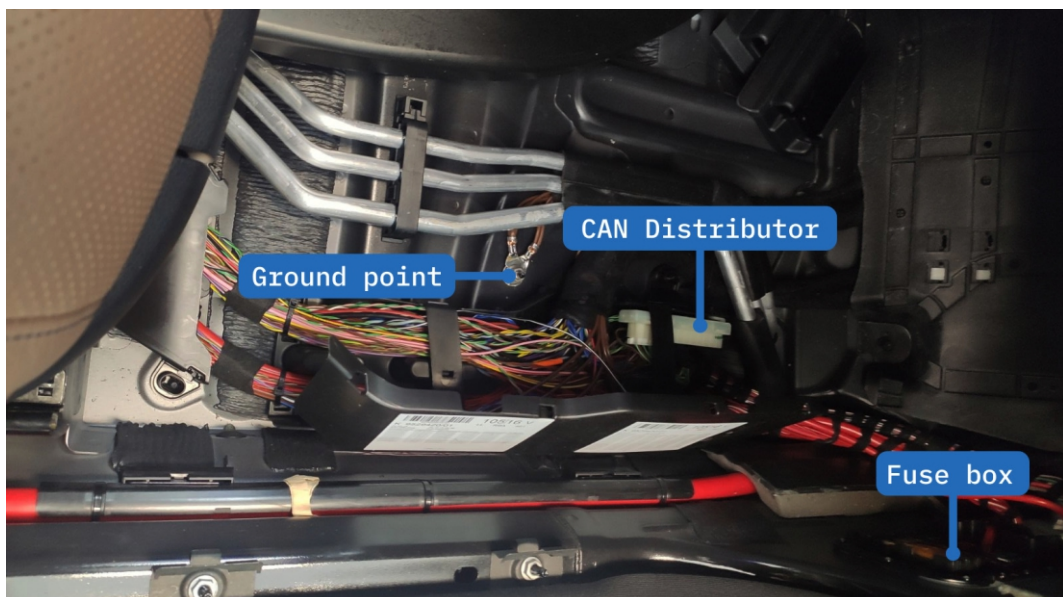
Body type	PER CAN Distributor	PER CAN Color	Positive point	Ground point	Notation
W205	X30/27	Green/White Green	Fuse f212 (K40/6)	W15/5	pages 22-24
W222	X30/27	Green/White Green	Fuse f308 (F1/3)	W19	pages 25-27
W253	X30/27	Green/White Green	Fuse f220 (K40/6)	W15/6	pages 28-30



Front passenger footwel zone.



Front passenger footwell zone opened.



Location of necessary connection points in front passenger footwell zone.

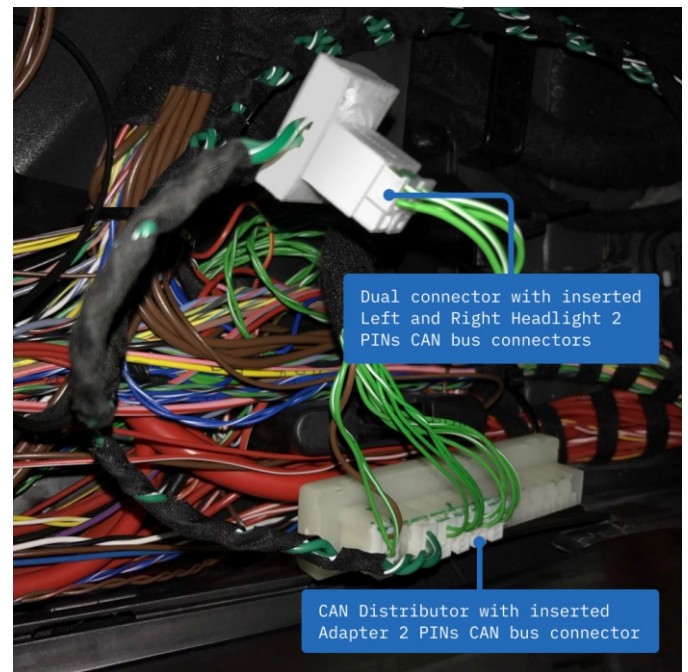
Adapter installation

As soon as PER CAN Distributor, fuse box and ground point identified, you can start the installation.

Start with connecting the black wire from the adapter to the ground point. Connect the red wire to the fuse (see page 11) in Fuse Box and install the fuse which we supply in the kit. Now you can connect male connector to CAN Distributor. Then you should disconnect the Left and Right headlights 2 PINs CAN bus plugs from the Peripheral CAN Distributor (PER CAN) and connect to dual connector from the retrofit adapter. To do this you first need to identify these two headlights CAN bus plugs in the PER CAN Distributor. It is really easy, you need to turn on the ignition and remove one by one 2 PINs plugs from the PER CAN Distributor when the headlight plug is disconnected the headlight without CAN bus connection enters limp-home mode and the headlight low beam start to illuminate. When 2 headlights connectors are identified you can connect them to a dual connector from the adapter.

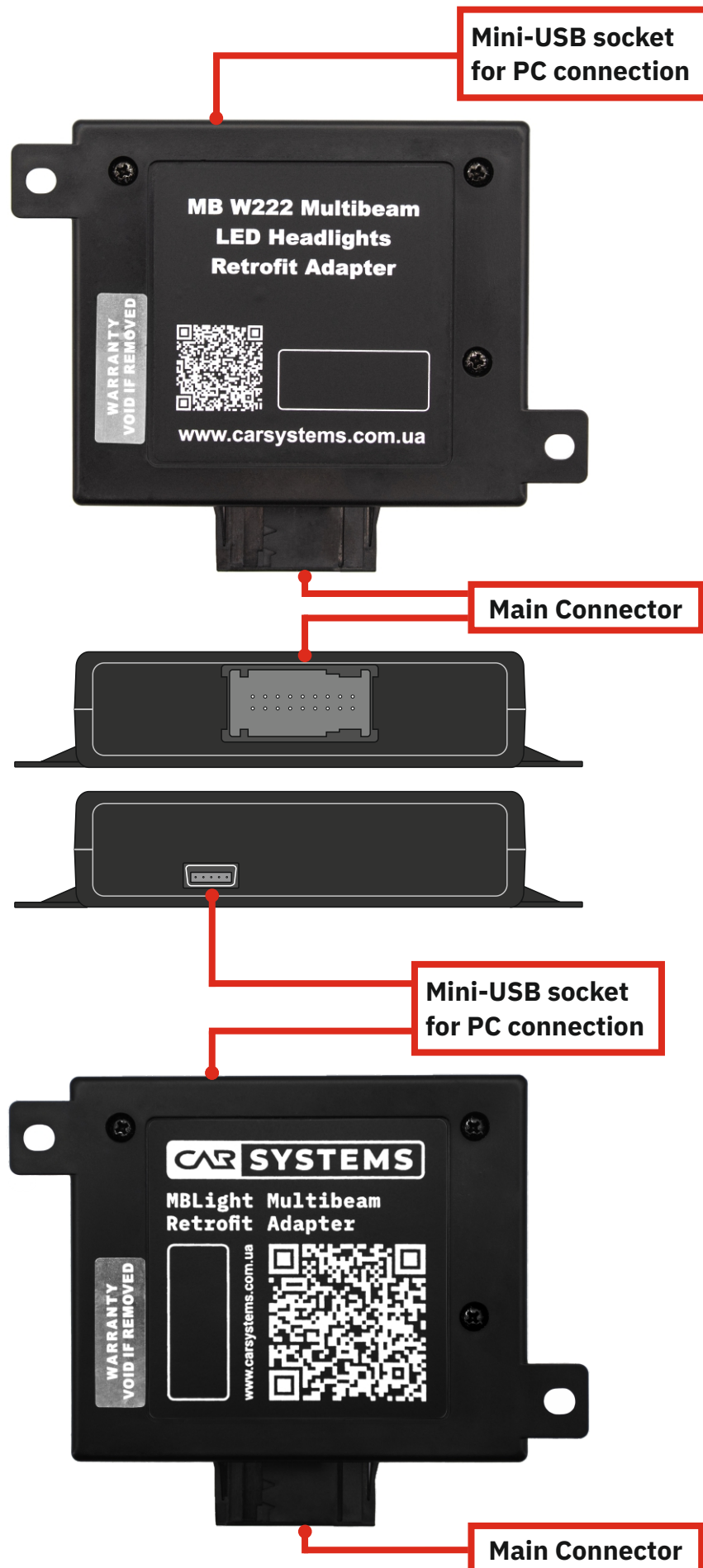


CAN Distributor.



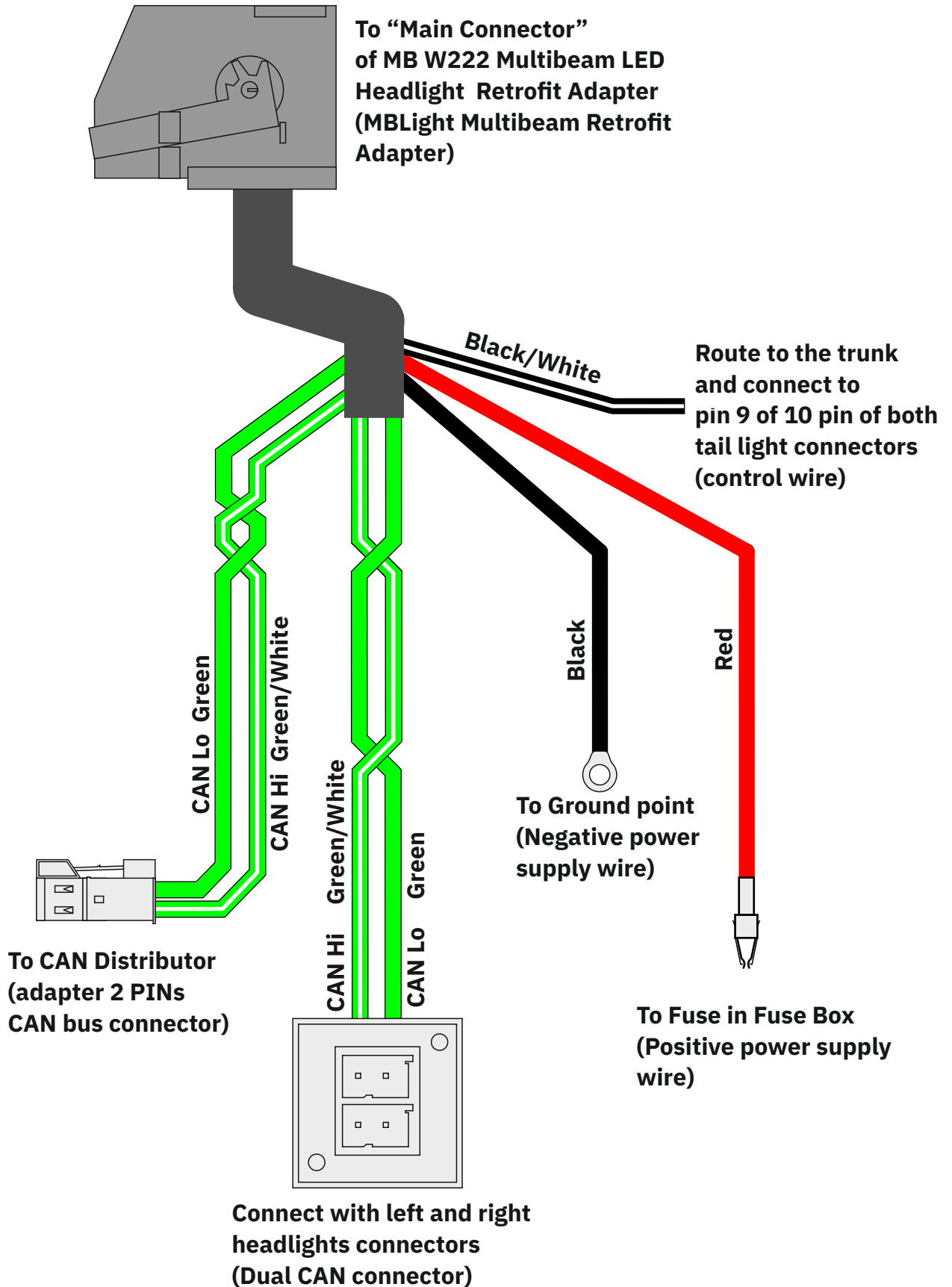
CAN Distributor and Dual connector.

Retrofit Adapters connection points

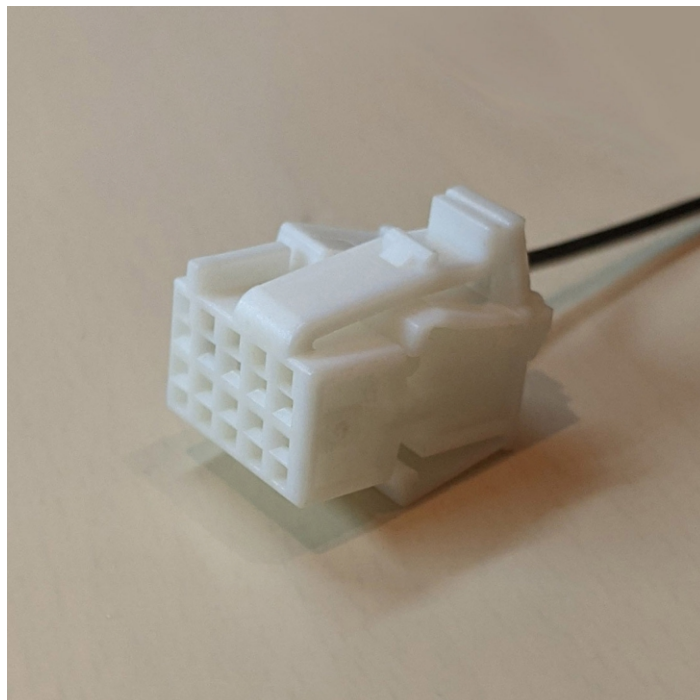


Main Wiring Harness (for W222)

This wiring harness comes with white CAN bus connector housings



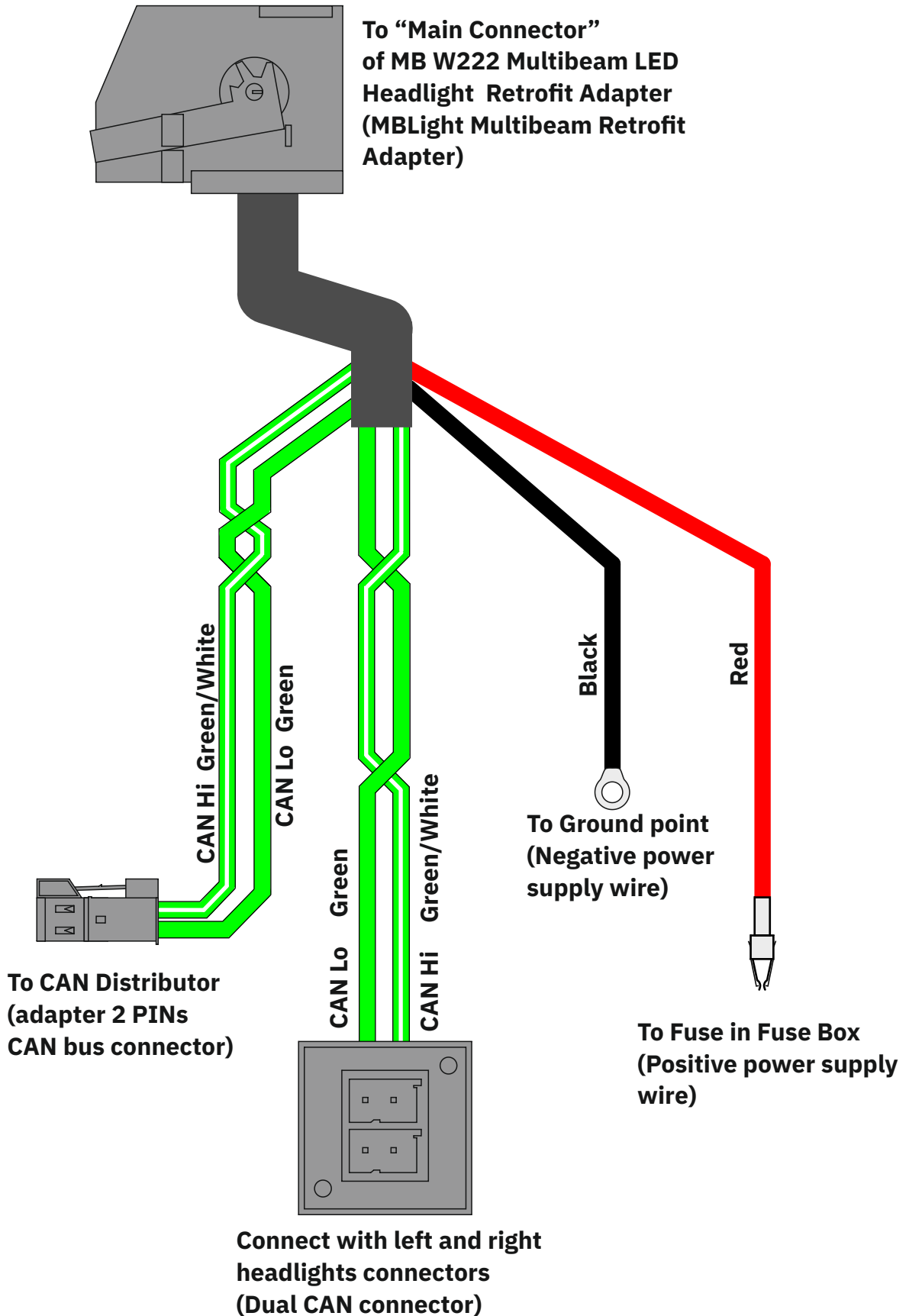
Additional Wiring Harness (for W222)



Tail Lights 10 pin connector

Wiring Harness (for all other models)

This wiring harness comes with black CAN bus connector housings



Preparation for coding

Windows 7 or 10 PC (English locale, without hieroglyphs, clean English installation) and TeamViewer for remote control are required. About coding time we need to agree in advance.

Headlights coding

For Tail Lights coding special OBD cable is used, which is not shipped with an adapter and available only on request. Coding includes two main phases: Body Control Modules coding and Headlights coding, both performed by our technician but assistance on your part is necessary. To start coding take the following steps:

1. Start Teamviewer session with our technician.
2. Connect the adapter to the laptop via a mini USB data cable.



3. Disconnect one headlight 2 PINs CAN bus connector (F) from dual connector (D).
4. Connect OBD cable to vacated dual connector(D) socket (watch Fig.14).
5. Connect OBD cable to OBD-II socket on the car side (watch Fig.15).
6. Turn ignition on and wait for Body Control Modules coding to complete.
7. When Body Control Modules coding is completed turn ignition off.
8. Disconnect OBD cable from car OBD-II socket.
9. Disconnect OBD cable from dual connector(D).
10. Restore the CAN connection with the headlight (connect detached headlight 2 PINs CAN bus connector (F) back to dual connector(D)).
11. Turn ignition on and wait for Headlights coding to complete.
12. If the coding is successful go to the next point.If errors appears during headlights coding, use Table 2 for troubleshooting.
13. When Headlights coding is completed disconnect the mini USB data cable from adapter.
14. Turn off the ignition.



OBD cable.



OBD cable connected to the car.

Troubleshooting

Coding result				Reason	Solution
Left headlight		Left headlight			
PXL module	HLI module	PXL module	HLI module		
OK	OK	ERROR	ERROR	One of the headlight's 2 PIN CAN bus connectors (F) is not identified correctly and is still connected to the CAN Distributor	Turn the ignition on and remove one by one 2 PIN CAN bus connectors from the CAN Distributor, when the headlight connector is disconnected from the CAN Distributor the corresponding headlight starts to illuminate in limp-home mode. When missing headlight 2 PINs CAN bus connector identified, connect it to (D) dual connector
ERROR	ERROR	OK	OK		
ERROR	OK	ERROR	OK	No wiring for MULTIBEAM LED headlights	Check what headlights type were installed on the car. You can check with a voltmeter if there are four 12V power supplies and two GND on each headlight connector. Specifically, pins 3, 4, 7, 9 must be 12V power supplies, and pins 5, 10 must be GND. If the pinout doesn't match add the appropriate wiring for the MULTIBEAM LED headlights.
				OBD cable and headlight 2 PINs CAN bus connector connected to the CAN Distributor	Check if OBD cable and either of headlight 2 PINs CAN bus connectors (F) connected to the CAN Distributor. Disconnect them. Connect headlight 2 PINs CAN bus connector (F) to the dual connector (D).
OK	ERROR	ERROR	OK	Blown Fuse	Check the voltage on the pins of the right headlight and left headlight connectors. Pins 3, 4, 7, 9 must be 12V power supplies, and pins 5, 10 must be GND. If the voltage doesn't match replace a blown fuse.
ERROR	OK	OK	ERROR		
OK	ERROR	OK	OK	Headlamp side detection counter overflow	Do the HLI side detection counter reset. Disconnect headlights connectors from the car for 30 seconds.
OK	OK	OK	ERROR		

Operability Check

After coding completion disconnect all equipment, turn off the ignition, close the car, and let it sleep for 5 minutes. To start operability check, call up Vehicle settings, select Locator illumination and switch function ON. Then select Exterior lighting delayed shut-off, set delay for 15s.



Locator illumination settings



Exterior lighting delayed shut-off settings.



Complete darkness is required to check the operation of the headlights, we suggest you cover light sensor in the center of the windshield near Interior Rear View Mirror. Now you can test your new headlight's functions. Enjoy your MULTIBEAM LED.

Stroboscopic activation

For stroboscopic activation - you should press and hold for 2 seconds the button RETURN (it located near the joystic). For stroboscopic - you should turn the rod for for the high-beam blinking. As long as you hold - it will be stroboscopic



Package list

1. MB W222 Multibeam LED Headlights Retrofit adapter or MBLight Multibeam Retrofit Adapter - 1pcs
2. Main wiring harness - 1pcs
3. Additional wiring harness - 2pcs (optional)

Contacts



Mail:

support@carsystems.com.ua



Telephone:

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Skype:

[carsystems.support](https://www.skype.com/people/carsystems.support)



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[+38 \(096\) 809-00-11](tel:+380968090011)



Telegram:

[@CarSystems_Support](https://www.telegram.com/@CarSystems_Support)

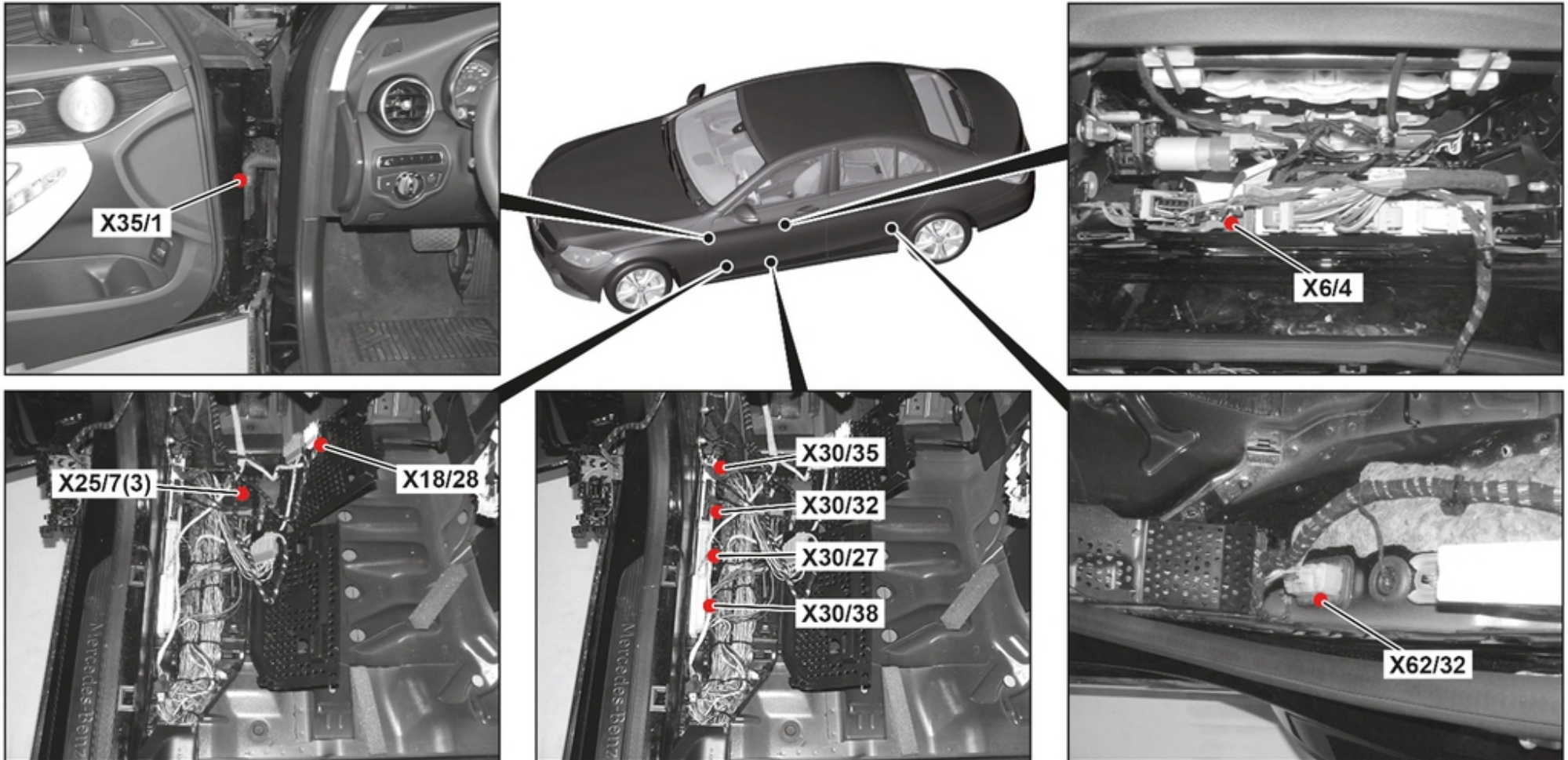
We provide technical support during our working hours:

**Monday to Friday (except public holidays),
from 10:00 to 19:00 (UTC+2:00).**

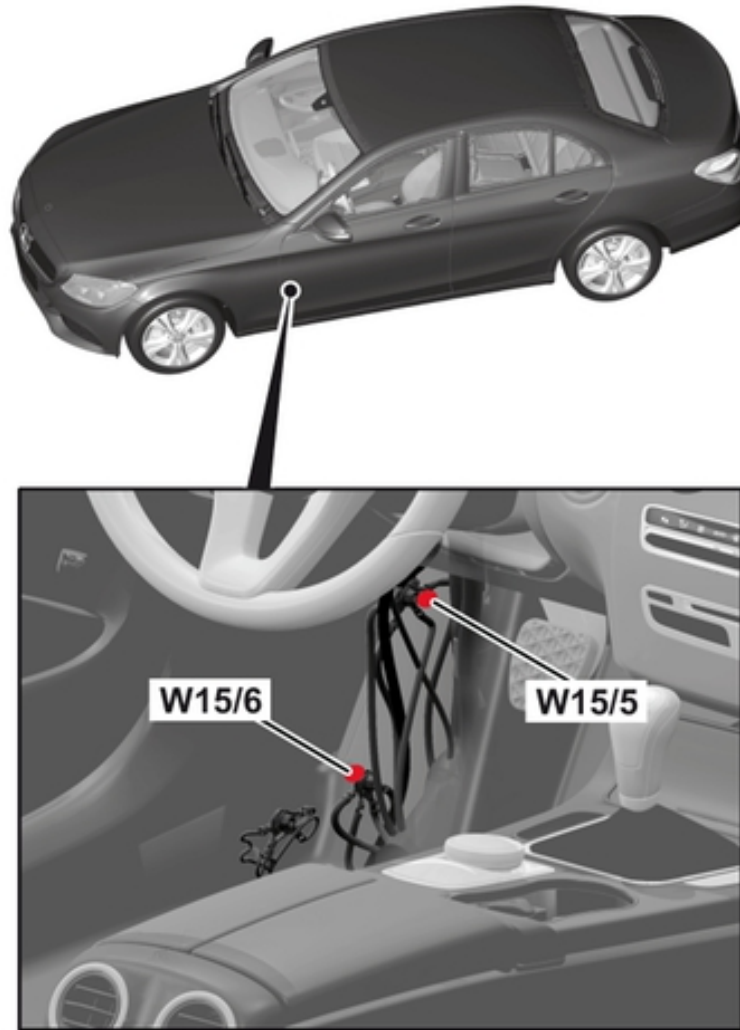
Due to the increasing amount of unsolicited emails we tightened anti-spam. If your letter has not been delivered, please contact us via Skype or through the inquiry form in our website **carsystems.com.ua**



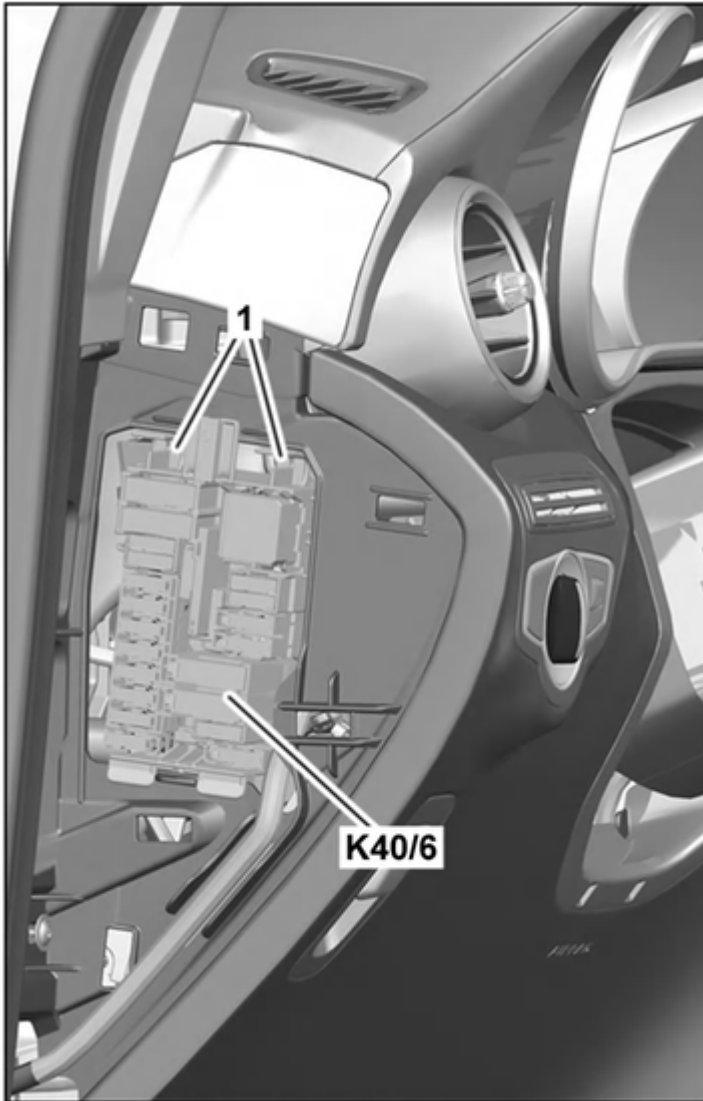
Appendix 1. W205 X30/27 location



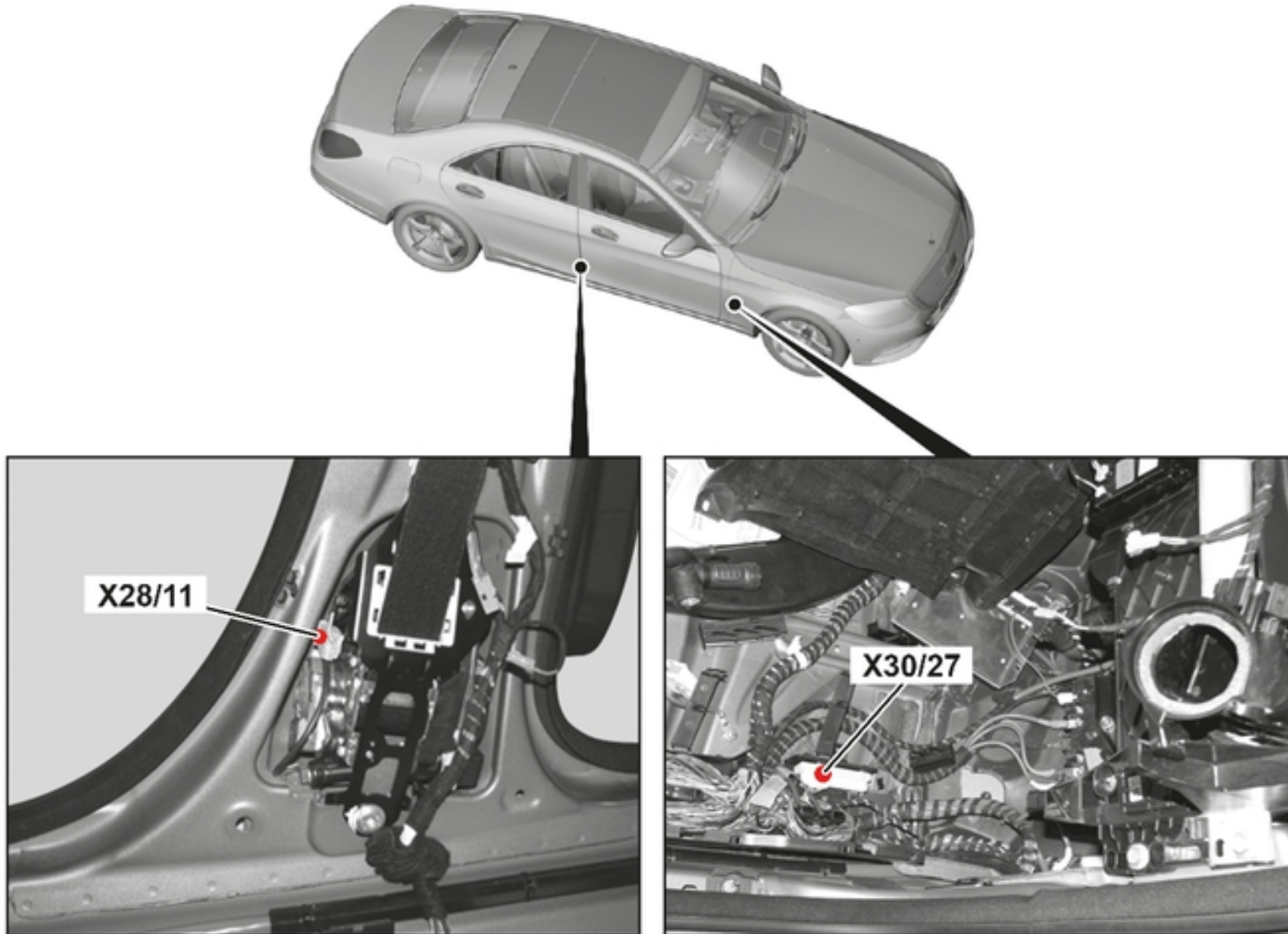
Appendix 2. W205 ground point W15/5 location



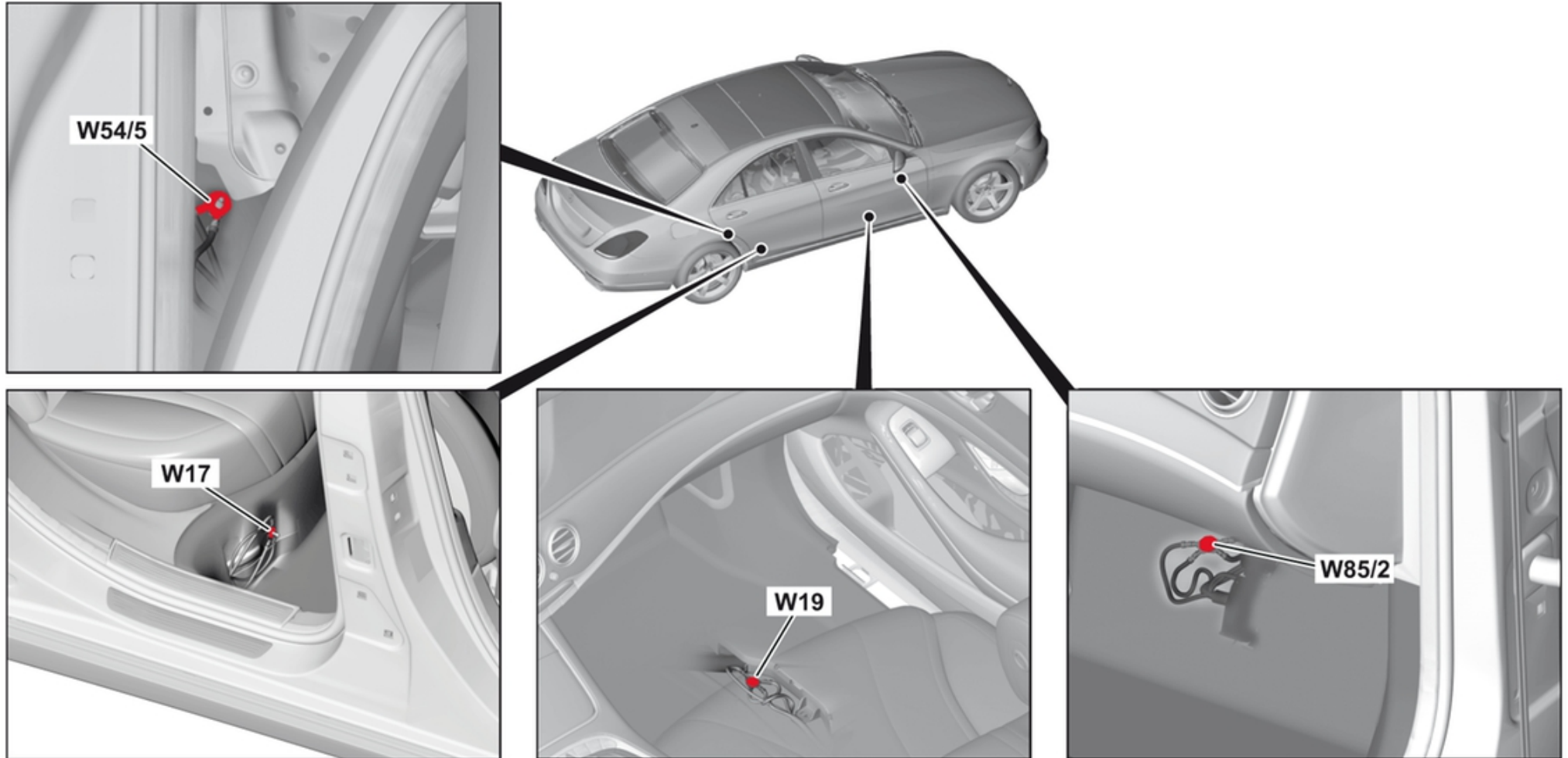
Appendix 3. W205 K40/6 fuse and relay module location



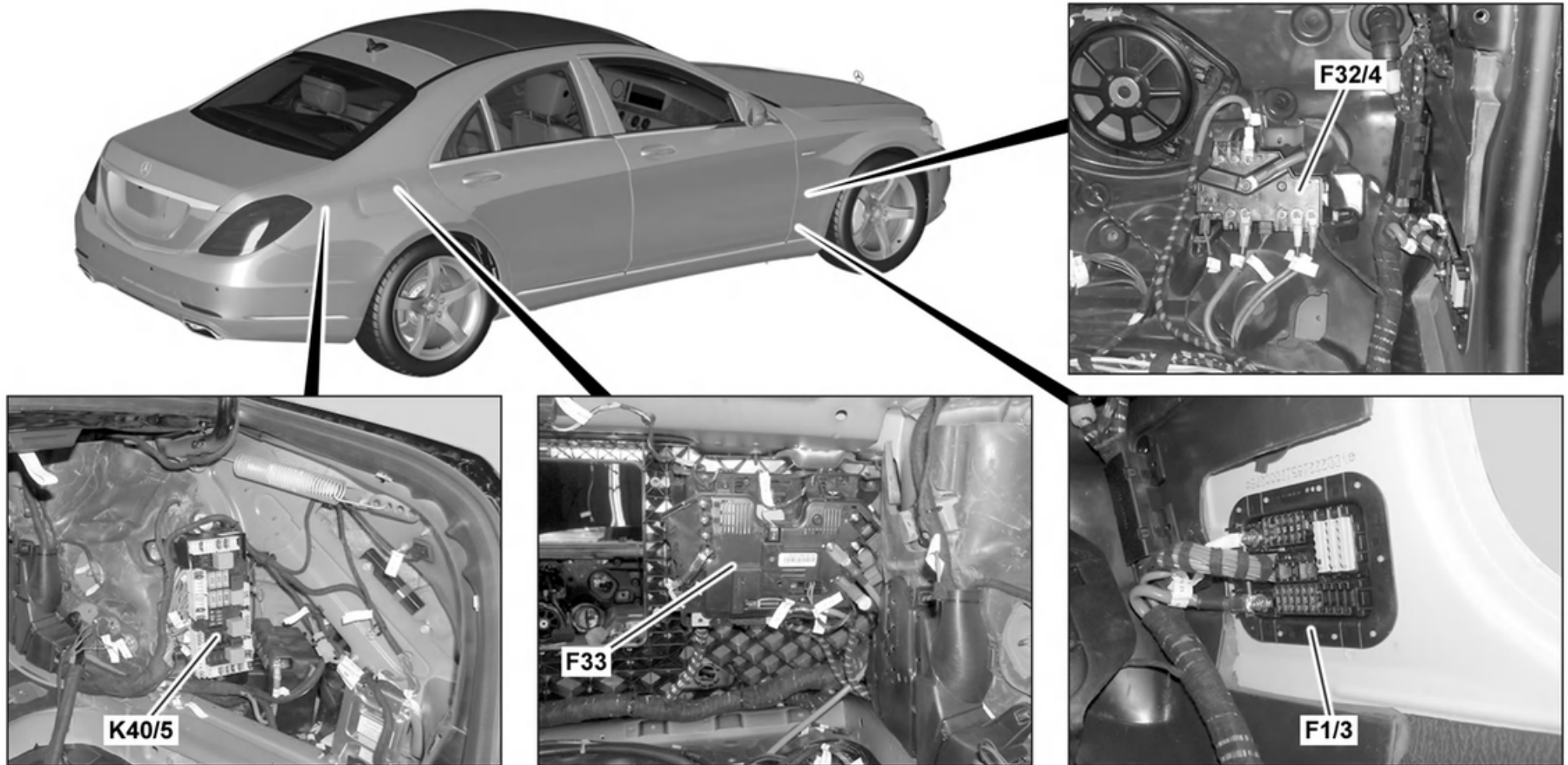
Appendix 4. W222 X30/27 location



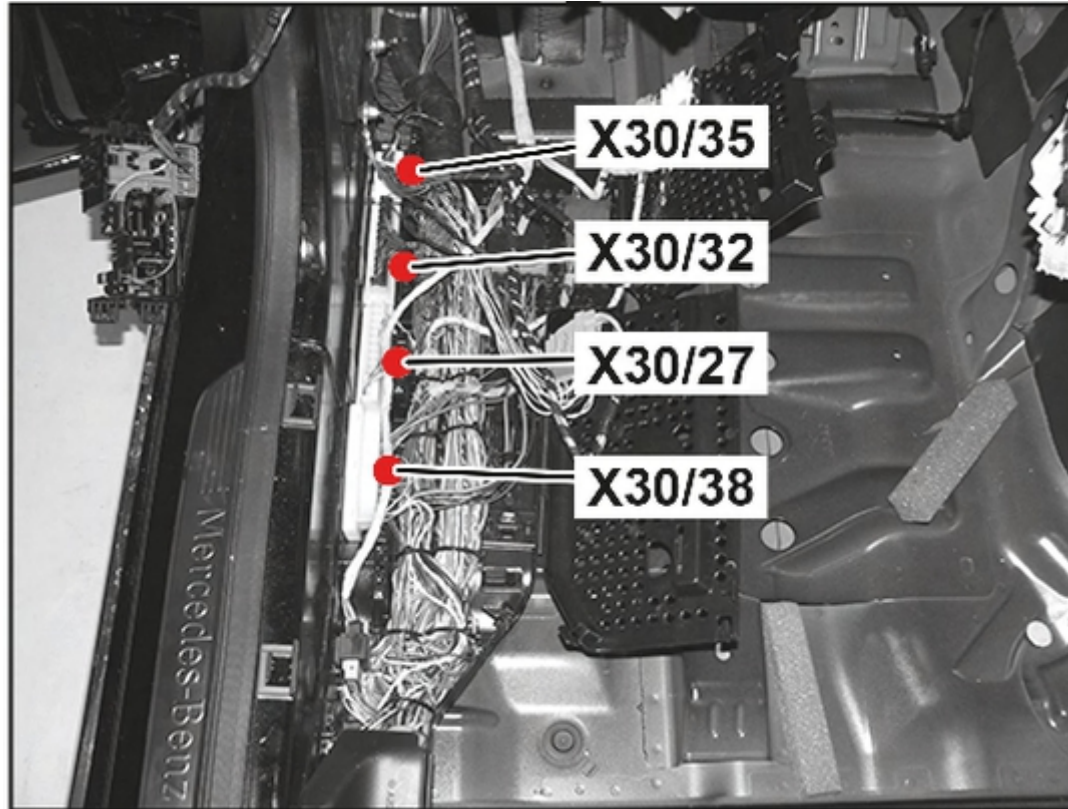
Appendix 5. W222 ground point W19 location



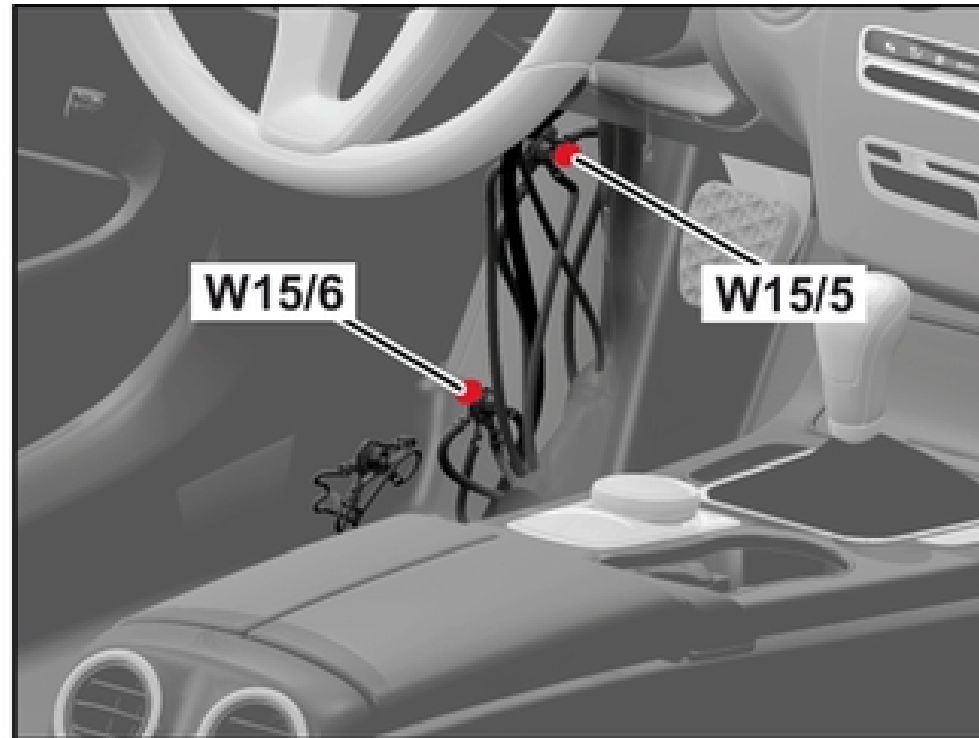
Appendix 6. W222 F1/3 fuse and relay module location



Appendix 7. W253 X30/27 location



Appendix 8. W253 ground point W15/6 location



Appendix 9. W253 K40/6 fuse and relay module location

