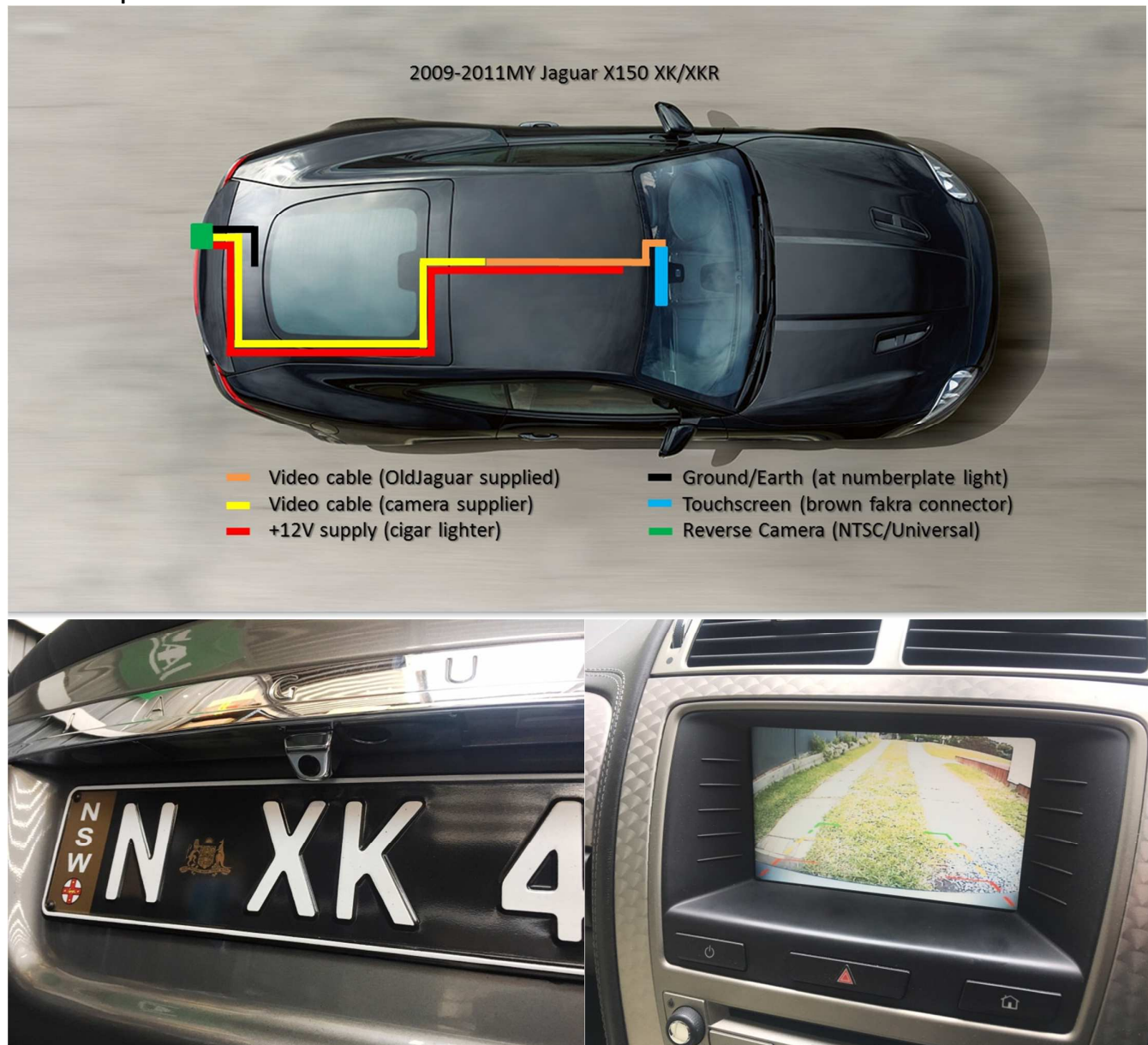


Although there was no factory reversing camera on the Jaguar XK/XKR in the 2009-2011 model year cars, the software in the touchscreen does support an integrated reverse camera, connected directly to the screen, and controlled by the vehicle software. This guide is to explain the installation of an aftermarket camera to these 2009-2011MY cars, utilising the factory operation in the touchscreen.

Basic concept



With this arrangement, the camera image is automatically switched when reverse gear is selected, and remains visible after selecting Drive or Neutral, until the vehicle speed exceeds a defined limit, a set time is passed, or the touchscreen is pressed, which displays the parking sensor overview.

Moving guidelines are not possible on pre-2012 model X150's, most aftermarket cameras have fixed guidelines which can be turned on or off by cutting or joining looped wires on the wiring harness.

The reverse camera functionality must be enabled in the Car Configuration File, either using the JLR-dealer SDD (Symptom Driven Diagnostics) with Engineering Mode enabled, or a suitable aftermarket diagnostic tool (AutoLogic?)

Jaguar Land Rover dealers may not be able to provide this service, as the option is restricted in SDD without the use of Engineering Mode.

Parts needed

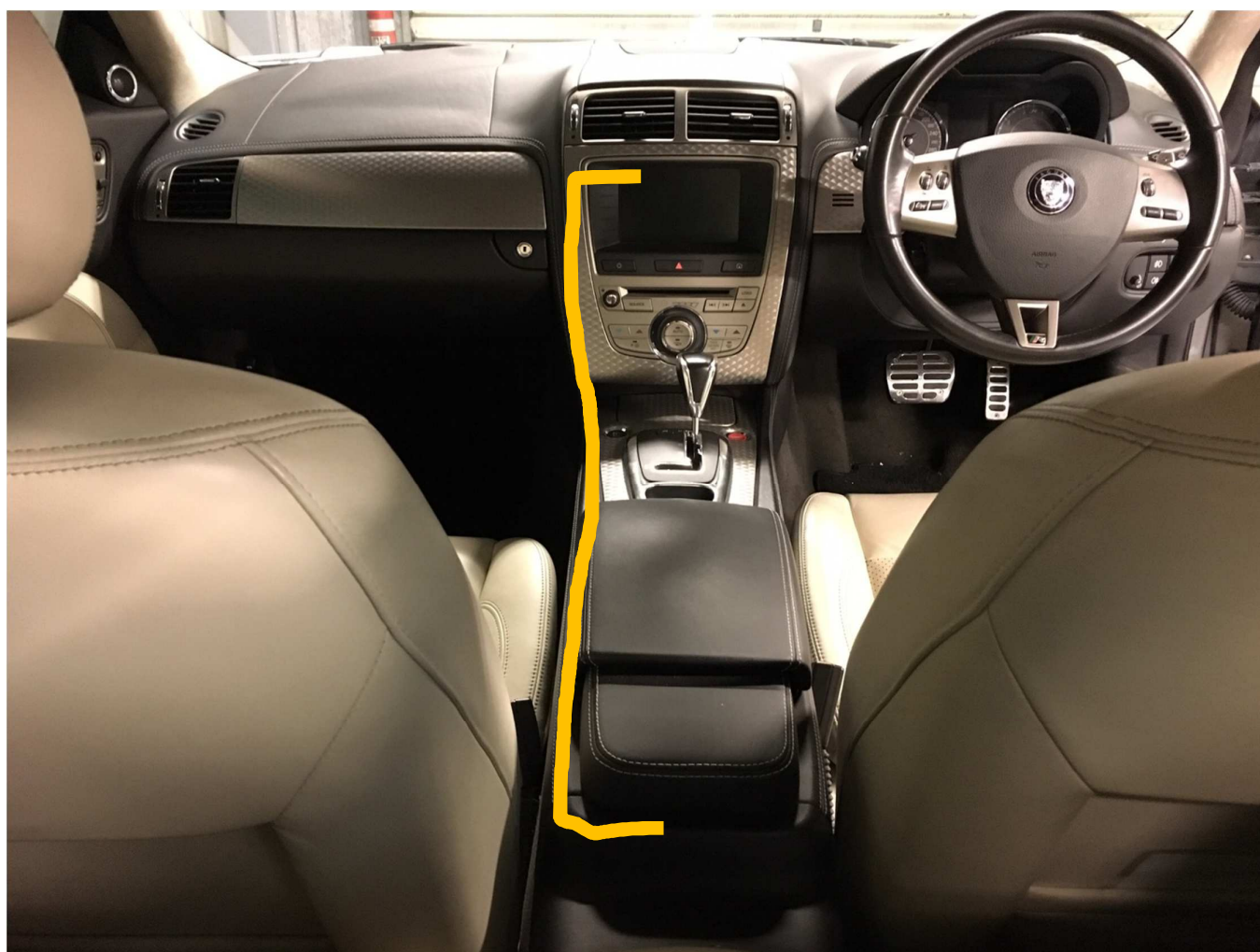
- reverse camera kit, must be an NTSC or "Universal" video output
- video adaptor cable, Fakra to RCA, and spare RCA male plug (OldJaguar supplied)
- mini fuse power tap, red wire, heatshrink, cable ties, masking tape

Tools needed

- | | | |
|---------------------|------------------------|-----------------------------------|
| - Torx screwdrivers | - Trim removal tools | - Soldering Iron |
| - Socket set | - Drill and drill bits | - Diagnostic tool for programming |

Installation Method

Access is required to the rear of the touchscreen, cable must be run from the screen to the rear of the centre console so the left side of the centre console needs to be removed, the lower and upper trim panels of the centre of the rear seat need to be removed, the rear boot space carpet trims on right hand side need to be removed, the trims on the inside of the hatch or boot lid need to be removed, the plinth with the number plate lights and boot release switch needs to be removed.



This is the approximate route of the video cable, from the rear of the touchscreen to the rear of the centre console.

The fakra connector plugs into the touchscreen (**BROWN** socket), the RCA stops at the rear of the centre console)

You need to remove the veneer around the screen/radio/climate panels, the veneer around the gearshift, and the left side of the centre console in order to run the cable. Removal of the rear plastic cover on the centre console and the padded cushion in the middle of the rear seats is also required



Remove the veneer trim from around the screen and audio/climate panel with a suitable trim removal tool.

A total of 6x Torx screws must be removed to get the complete assembly out in one piece. 2x T20 at the top (marked red), 4x T30 (marked orange) Take note as there are two types of T30 screw in this assembly, you only need to remove the ones screwed into metal.

Once the screws are out, leave the assembly in place until it is time to run the cable.

The veneer around the gear selector must be removed to access the Torx screws which are holding the trimmed side of the centre console in place. We suggest to run the cable on the left side, as that is the side where the connector is on the screen.

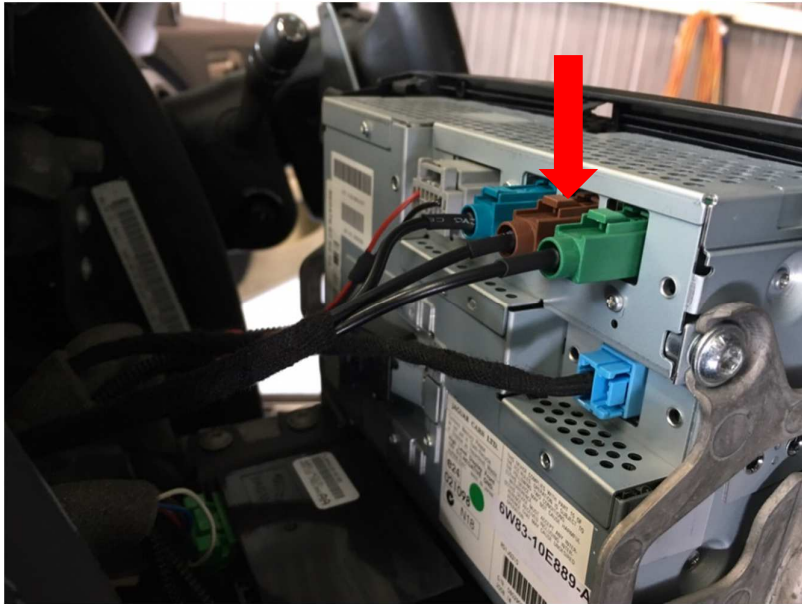
Open the ashtray, and lever up at the edge of the veneer where it normally meets the front edge of the ashtray sliding lid.

The veneer is held in with spring clips, they need a bit of force to release.

You will need to unplug the start and ASL buttons in order to remove the veneer completely.

There are some Torx screws which hold the side panel of the console in place, marked orange, these will need to be removed, the trim panel is held in place by spring clips.

Once you have access to run the cable, pull the touchscreen/radio/climate panel forward, you can then plug in the video cable to the BROWN fakra connector. Then run the cable to the rear of the centre console.



In this example, a three-cable assembly was installed.

The video/reverse camera input is the **BROWN** one in the middle. Some screens may only have two connectors, Brown and Green. Others may have Brown, Green and Beige

BROWN for reverse camera.

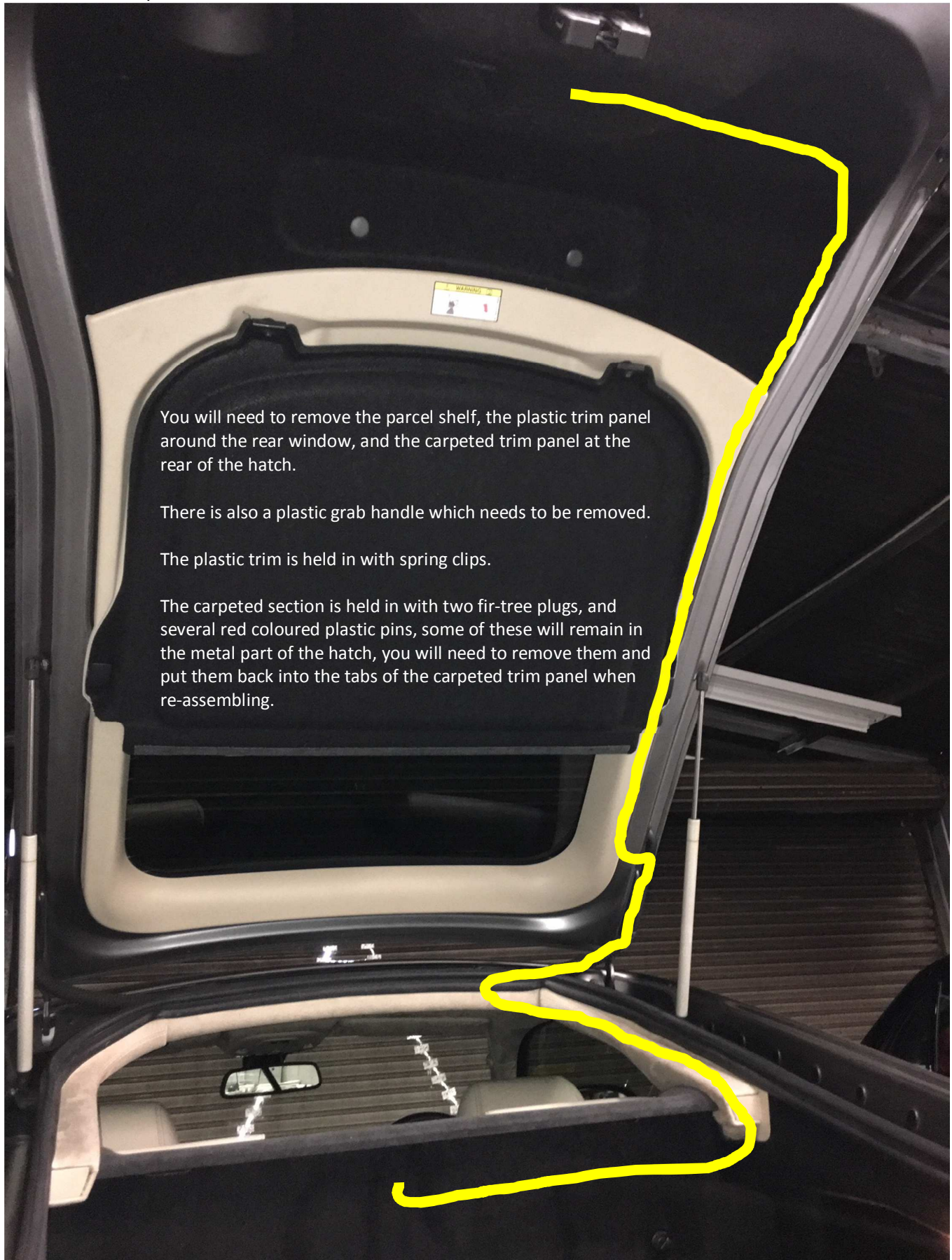
Once you have connected the cable, return the stack to its original position, replace the trims, screws, etc.



The RCA end of the cable should be here at the rear of the centre console.

This is where the video output from the camera will be connected later.

This is the basic layout of the video cable run.



You will need to remove the parcel shelf, the plastic trim panel around the rear window, and the carpeted trim panel at the rear of the hatch.

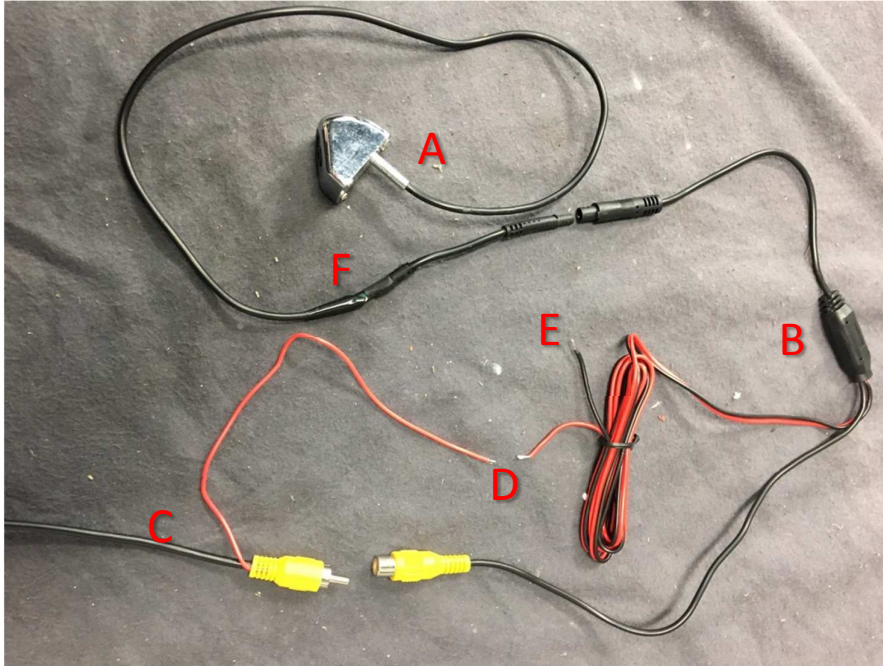
There is also a plastic grab handle which needs to be removed.

The plastic trim is held in with spring clips.

The carpeted section is held in with two fir-tree plugs, and several red coloured plastic pins, some of these will remain in the metal part of the hatch, you will need to remove them and put them back into the tabs of the carpeted trim panel when re-assembling.

To run the video cable you will need to cut the yellow RCA off one end of the video extension cable otherwise it cannot pass through the rubber boot between the hatch and the roof. Using a stiff insulated wire, first probe through the rubber boot, then pull the video cable through into the roof cavity, it then runs down the C-Pillar cavity, and in between the rear bulkhead and the back seat, the cable can then be run to where the RCA from the other cable is located at the rear of the centre console. Here you will solder the replacement male RCA connector onto the cable, the red power wire.

The connections of the camera in the hatch assembly are as follows;



A = reverse camera, will be mounted on the plinth

B = an intermediate harness that goes between the camera and the video extension cable, has the +12V and ground connections for the camera

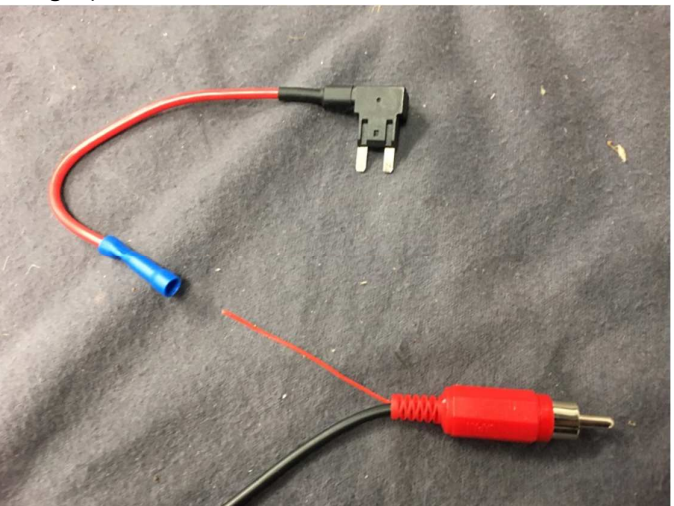
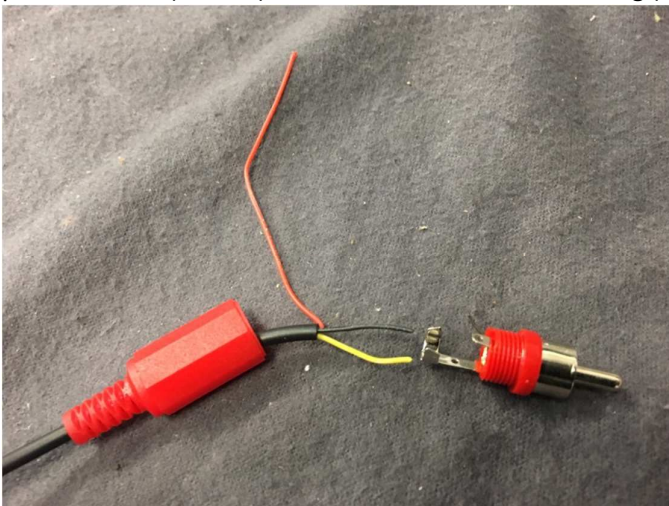
C = video extension cable, which is run to the back seat, the red wire is for the +12V supply to the camera

D = the +12V wire on the video extension cable must be connected to the red wire on the intermediate harness.

E = earth/ground, connect this to a suitable earthing point in the hatch, a 6mm ring terminal on the mounting bolt for the black AM/FM antenna amplifier is good.

F = green and white looped wires, which are used to select if the guidelines are displayed, and to flip/reverse the image.

Once you have pulled the cable through and it is located at the rear of the centre console, a new RCA plug will need to be soldered on. Keep the red wire longer as it will need to be run back out of the RCA. The Yellow wire is to the centre pin of the RCA (video +) the Black wire is to the outer ring (video gnd)



You will need to solder an extension of red wire a suitable length to get it back to the fuse panel, where the power can be tapped using a mini fuse extension, on a suitable fuse in the fuse panel.

You can power the camera from the cigar lighter circuit.

Blue/white wire is +12V, the ground for the camera is tapped onto ground of the numberplate lamps (Black/White)



Mounting the camera to the plinth

The camera needs to be offset to avoid the boot release button which is central.



The plinth is fixed in place by four screws, and by double-sided tape at each end.

The screws are accessed by removing the two round plastic caps, and the number plate lights.

You need to disconnect the number plate lights out of the housings, be careful as these housings become quite brittle with age!

Use masking tape to protect the paintwork around the plinth when you are fighting against the double-sided tape.

You will need to disconnect the wiring harness for the boot release button inside the cavity of the hatch, there are access holes where you can get your hand in.

The plinth is plastic, so be gentle with it.



Double check the chosen position of the camera, and try to get the aim right.

Drill the hole, fit the foam gasket, fix in place with the nut.



Run the cable through the same grommet as the boot release switch.

Now reassemble the car!

Double-check that the boot switch is functional.

Double-check that the camera is functional.

You may want to do the programming before fitting the camera, so that checking the camera function is easier. With the camera function enabled in the software, but no camera fitted, you get a blue screen when selecting reverse.

Programming

The Car Configuration File (CCF) must be modified to enable the Park Assist Camera function.

This can be done using SDD with Engineering Mode enabled, or a suitable aftermarket diagnostic tool which can modify the CCF accordingly.

Our experience is that Jaguar Land Rover dealers are unable to provide this service, due to limited access to Engineering Mode, provided on request only by JLR HQ.

What about 2007-2008MY cars?

A similar retrofit is possible on the 2007-2008MY cars however first the Touchscreen and Infotainment Control Module software must be updated to the 2009MY version. This is possible, but a somewhat complicated process. To get the most value out of the work involved to update the software, we would suggest additional retrofits at the same time e.g. DAB+ Digital Radio, Portable Audio iPod/USB, and Reverse Camera. The costs in time/labour for the software update is more than the value of a GVIF video interface, which would provide reverse camera input to the earlier cars.

What about 2012-onward model year cars?

Most of the 2012-onward cars were built with reverse camera from the factory. But if a 2012-on car does not have a reverse camera, then again a similar retrofit is possible, but we would suggest to use the factory camera as the moving guidelines will be available as part of the retrofit.