A Guide to Retro-fitting the OEM Factory Supplied Rear Screen Entertainment System to a Discovery 3 HSE

Since 2008 model year Land Rover finally made the RSE system available to order for the Discovery 3, but only as a factory supplied option and at a cost of £2250. Strange really as this touch screen controlled rear entertainment system has been available since 2005 on both Range Rover and Sport models. Although Land Rover claims this cannot be retrofitted - it can!

The following is a guide to the parts required and how I went about fitting them but should you wish to attempt this you do so at your own risk - the information contained in this document is for reference purposes only.

Parts List:

Pair of Headrests with OEM monitors installed including cables in LH stems.
RSE Module – YIL000053 / LR011330
DVD 6 Disc Changer – Region Specific so many part numbers!
AVIO Panel (Optional) - XVN500040
DVD Remote Control (Optional) – YUH50060
DVD Mounting Bracket – YIP500430
DVD Retainer Bracket – YIP500420
RSE Mounting Bracket – XQU500180



Cabling List:

13 Pin to 13 Pin Alpine Cable Black (RSE to DVD)
13 Pin to 13 Pin Alpine Cable Blue (RSE to AVIO)
20 Pin Mitsumi to 13 Pin Alpine Cable (RSE to LH Headrest Monitor)
20 Pin Mitsumi to 13 Pin Alpine Cable (RSE to RH Headrest Monitor)
M.O.S.T Fibre Optic Extension Cable
4 Pin SVideo Cable for video signal out (to touch screen) and, if fitted, video in from TV tuner
8 Pin Black Connector for RSE Power & Earth
4 Pin White Connector for DVD Power & Earth
SPDIF (Toslink) Fibre Optic Cable for DVD audio to Logic 7 Amp under front RH seat.

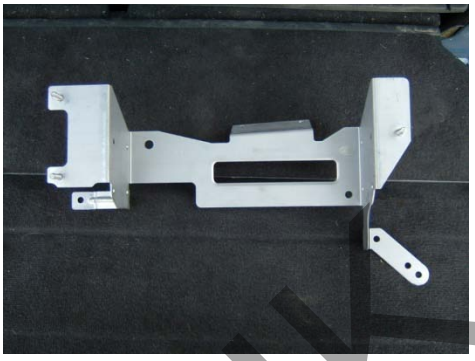
The Headrests:

Removing the existing headrests is straight forward but requires the removal of the grab handles first. Prise off the cover to expose the single torx screw and once removed the grab handle can be pulled off horizontally. The top bolt that goes into the headrest itself is not fixed and comes away with the handle. When both handles have been removed the headrest can be raised by pressing the locking tab in the left hand headrest sleeve, the tabs are located under the leather but operate in the same way as in the second row, don't forget to depress the right hand sleeve locking tab at the point when the stem is nearly completely exposed.

With the headrests out it is then necessary to remove the left hand sleeve which when you know how is again very easy. The sleeve locks into the metal seat frame by a small spring clip located on the opposite side to the locking tab. This can be pressed in using a flat screw driver at the same time pulling the sleeve up and out of the frame. If the new headrests with monitors already have a sleeve fitted, as supplied from the factory, then its time to feed the cable down through the back of the seat. For ease of access it helps to first move and raise the seat forward to be able to unclip the leather in order to retrieve the cable end. If like me, your headrests don't have a new sleeve, then my tip is that as the connector plug on the end of the cable will not pass through the sleeve its far easier to cut the sleeve and feed the cable through it rather than cutting the cable and attempting a soldering job!

With the new headrest and sleeve fitted it's now necessary to modify the grab handles. The standard D3 headrests are approximately 180mm wide; Range Rover Sport headrests are approximately 230mm which are often used with after market screens. The factory supplied headrests with monitors are just 10mm wider at 240mm. Having seen other installations I decided that not only would I cut the bolt section off but to improve the appearance and give a more OEM feel I chose to cut a further 10mm or so and to square off the original angled edge. With all 4 handles modified they can be refitted and the torx bolt done up, this can be a bit of a challenge as each handle needs to be pressed against the headrest firmly in order for the torx screw to locate correctly.

The DVD Changer & RSE Module



Both the DVD Changer & RSE modules fit behind the rear RH quarter panel and are easily secured into place when using the correct brackets which can be ordered for less than £30 through any Land Rover Parts Department.

I mounted the DVD bracket just to take the photo but it's a lot easier to secure the changer, with eight small screws, to the bracket BEFORE fitting it! The bracket is held in place by four machine threaded bolts and in my car (08MY) the holes were already predrilled and tapped in the body of the vehicle. The RSE module fixes to its own bracket again using four of the same small screws used for the changer. The RSE bracket then locates on the three threaded stems of the changer bracket and secured using 6mm locking nuts.

To date it has not been possible to identify individual part numbers for the cables or if they even exist! So for me it was a trip to a breakers yard to strip out the necessary cables from a 06MY Range Rover Sport. The RSE cables required are integrated in the main navigation harness which on my donor vehicle was part number YMW501494. I removed the required cables from the main navigation harness as detailed in the cable list but as my vehicle already has TV I didn't need the coax cable to the front monitor. Be prepared for a long night though as it took me 3 HOURS to strip out the RSE cables without cutting or damaging any of them!

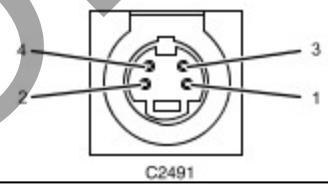
I have labelled in **Red** the 10 cable connections, 7 on the RSE and just 3 on the DVD Changer. Starting from left to right and excluding the two power connectors for now. First up is the M.O.S.T ring and for this you need a female socket extending into two male connectors, this will allow you to disconnect either the TMC or Phone M.O.S.T plug and insert it into the female socket and then install one of the male connectors back into either the TMC or Phone and the other into the RSE Module.

Next is the 13pin to 13pin Alpine lead, a shorter black cable, which connects to the DVD changer.

After this you have the optional AVIO (Audio Video Input Output) lead which connects to the AVIO panel located in the rear centre console under the air vents (assuming you have acquired one!)

Getting the AVIO cable up to the panel is more of a challenge as you really need the additional short blue Alpine extension cable and requires the removal of the centre console trim around the gear shift and cubby box in order that this cable can be routed to an area near the EPB switch, it can then connect into the main blue AVIO cable which needs to run from the RSE module in the rear on up to the EPB area of the centre console. Unfortunately with the cubby box removed there is no direct route the floor due to the "secret" cup holders! I found that removing the two torx screws behind the small grills on the lower rear side sections of the console allows the complete console to be lifted which makes life so much easier not only to run the main AVIO cable but also to get the LH monitor cable across under the carpet to an area near the Navigation Computer. I did complete this part of the project just because I wanted the full OEM package but unless you plan to use these additional inputs for either another portable dvd player or a games console on a regular basis then you could skip this especially as AV1 & AV2 can only be viewed on the headrest monitors and not on the front touch screen.

The next two cables are self explanatory each going to their respective seat headrest monitor which on the RSE Module then just leaves the SVideo cable: This has a 4 pin plug that uses 2 pins to allow the input of the TV signal (if fitted) and the other two pins to output the DVD/TV signal via a single coax cable with a well documented green fakra connector on the other end that joins to the rear of the touch screen. The diagram to the right shows the pinout for the RSE socket. As I already have the TV tuner I didn't need to run this cable to the front screen, but if you need to, the factory loom containing this lead would follow the same path as the AVIO cable under the centre console and then continue on up behind the heater switches and radio before connecting to the touch screen. As an alternative it may be easier to route this down the right hand side of the car next to the other wiring looms.

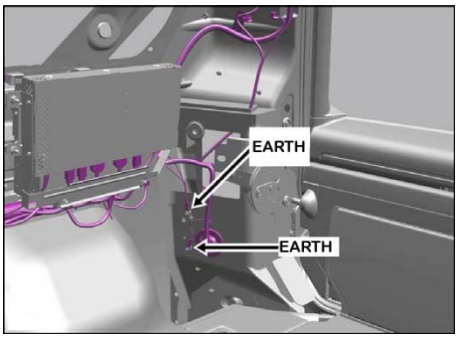


Pin No --- Description --- Input/Output
1 TV tuner composite Input
2 TV tuner GND (ground) Input
3 DVD /TV tuner composite output to TSD Output
4 DVD /TV tuner GND (ground) to TSD Output

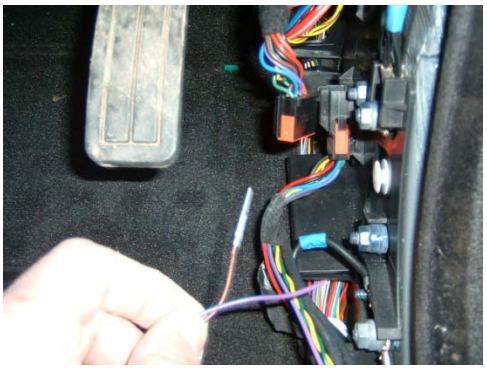
On the DVD Changer the first cable from the left is the SPDIF (Toslink) Fibre Optic Cable which needs to be connected to the Logic 7 Amp under the right hand seat – without this cable the DVD audio in 5.1 stereo cannot be heard through the car speakers. This has no effect on the audio in the rear headphone sockets which receive its sound via the M.O.S.T ring. The next cable is the other end of the 13 pin Alpine cable that connects the DVD to the RSE module, leaving just the power cables for both RSE & DVD.

Power Connections

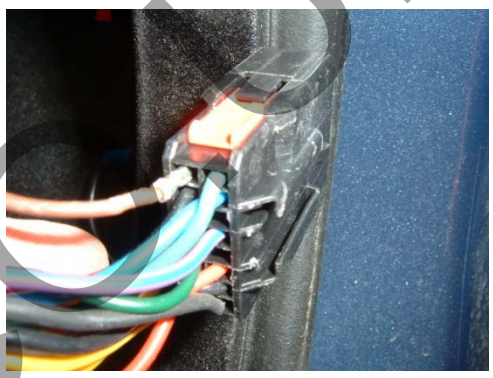
The RSE module has an 8 pin connector for its power feed and the DVD a 4 pin connector. Both connector plugs only use 2 pins each, a 12v + and an earth. The two earth wires can be linked together and should terminate on one of the earth posts at the rear (see diagram right). In order to ensure both units receive the correct power supply from the ICE system it is NOT recommended just to tap into the nearest power supply from other modules such as the TMC, Phone or TV units if fitted!! The correct feeds are as follows:



After closely studying the wiring diagrams it became clear that the RSE Module & DVD Changer should take their power from the ICE navigation loom connector C2247/C2249 located in the front right footwell. This is a 16 pin black/red connector, C2249 (the lower section) is part of the navigation loom and contains male pins that join into the female plug socket C2247 from where the wires then go on up and back to the fuse box area.



I used the correct colour coded wires – Brown for the RSE which goes to Pin 1 and Purple/Blue for the DVD Changer, which needs to join to the cable from C2249 Pin 12, that then goes on to the navigation computer. Although you could join this purple/blue wire further back near the 'B' post I decided that as I had to run the RSE brown power wire to the footwell I would join the DVD changer wire there too plus it was easier to identify and locate the correct Pin 12 wire! My brown wire already had the correct male pin attached so it was a simple process to install it into the C2249 connector in the vacant Pin 1 chamber. On my vehicle and having already checked before I started, I was extremely pleased to find that the corresponding Pin 1 brown wire was already present in the female C2247 socket – Using this feed is important as it is the correct rated fuse (No. 57) and ICE switched supply! Connecting the DVD wire to the existing purple/blue supply from Pin 12 can be achieved in a number of ways, I chose to strip away a small section and solder it but interestingly when I stripped the cables from my originally salvaged loom most "joints" were just twisted together and insulated with tape!!!!!

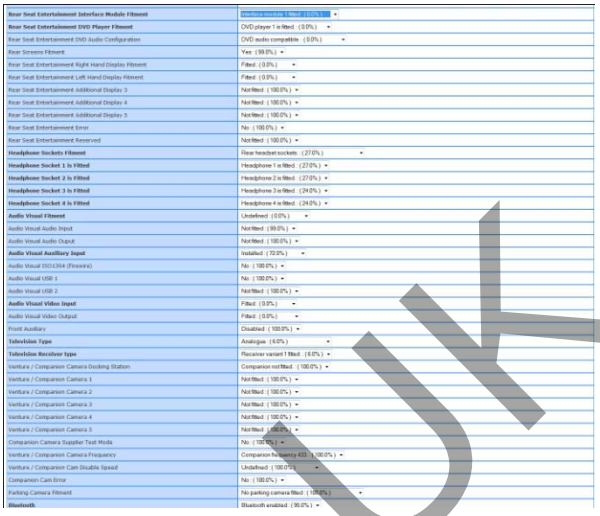


By now you should have a good idea of which cables need to go where and have probably worked out that in addition to removing the rear right quarter panel it is also necessary to remove the right hand scuff plate which just unclips as a single component front and rear! This will reveal the existing looms which the new cables can run alongside. For me one of the most demanding parts of this whole project was feeding the cables under the carpet and onto their respective locations. For reference the only cables that need to come forward from the rear in this new "custom loom" are the two for the headrest monitors, one for the AVIO panel (if fitted), the SPDIF (Toslink) cable and the two power wires to the footwell.

The Rear Quarter Panel

With the DVD & RSE Modules fitted in their correct location you have two choices relating to refitting the rear quarter panel. The first is to pay around £120 for a brand new panel with the correct section beneath the hinged cubby box lid (Part No. ESJ501580PVJ) or the second more cost effective option is to cut away most of the box itself and re-use the original panel which for me made much more sense. Just pay close attention to the left hand side of the RSE module which needs a small additional piece removed in order for the panel to locate correctly as it sits higher than the DVD but when the hinged lid is closed you would never know they were there!

Recoding the CCF (Car Configuration File)



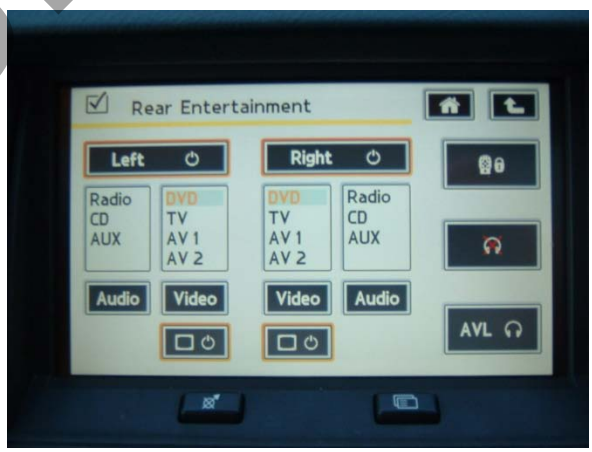
In order to activate the DVD & RSE menus on the touch screen it is necessary to change the CCF. Even if they knew how to I don't think your friendly dealer will do this for you! It requires someone with a Faultmate or similar piece of kit or in my case a "WIGGS" ☺

Plugging in his box of tricks to read the CCF it is then necessary to switch on the options to tell the car it now has the RSE, DVD and AVIO fitted. The picture to the right shows the correct options we selected for my car. This is just a five minute job and when complete you should end up with the new options on the home screen a sample of which are below!

And that's it! You're done! And like me and my children you can then start enjoying the very expensive factory system for a fraction of the cost! I have attached a number of useful supporting documents taken from the GTR system to assist anyone wishing to tackle this and will try and offer help via the forum when I can.

Finally I must remind you that this document is **FOR INFORMATION ONLY** and that anyone attempting any aspect of this does so at their own risk.

Andy.
{Ajay(UK).}



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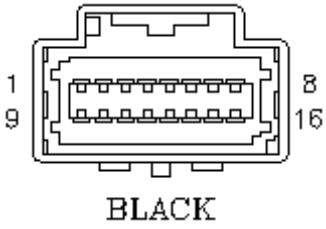
Connector: C2249



Part No.: YPC500910

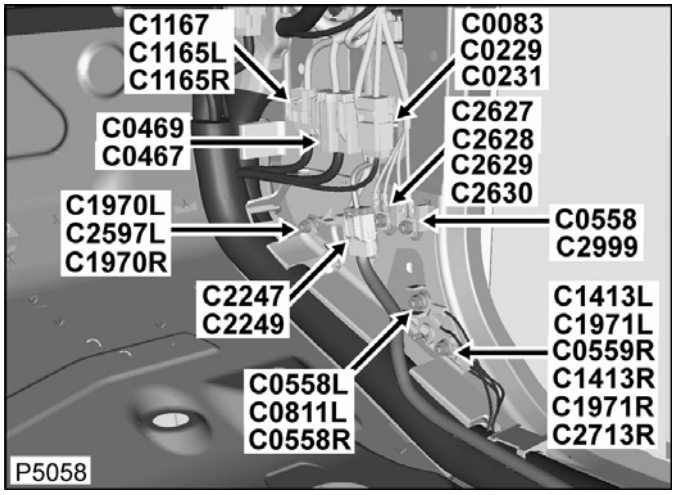
Colour: BLACK

Cavities: 16WY

Harness: ICE/NAVIGATION HARNESS

Description: ICE harness to instrument panel harness

Location: Base of RH 'A' post



Wire Chart

CAV	TERMINAL	CSA	COL	CCT	DESTN
1	YPJ800250	0.5D	N	425	C2116
2	YPJ800250	0.5D	B	148	S/JOINT SJ134
3	YPJ800250	0.75D	R	502	S/JOINT SJ299
4	YPJ800250	0.5D	G	148	C2114
5	YPJ800250	0.5D	Y	148	C2114
8	YPJ800250	MQD	Y	148	C2114
9	YPJ800250	MQD	G	148	C2114
10	YPJ800250	0.75D	U	420	S/JOINT SJ530
12	YPJ800250	0.75D	PU	701	C2114
12	YPJ800250	0.75D	PU	703	S/JOINT SJ138
12	YPJ800250	0.75D	PU	702	C2832
14	YPJ800250	MQE	R	704	C0395

Service Repair Kits

CSA	0.50- 0.75 CSA
Cavities: 1-5,8-10,12,14,15	
VDK500010	SRK ITEM GENERAL
YMI901170	SRK ITEM 0.75CSA
YPQ000100	SRK ITEM
YRV000040	SRK ITEM PIDG RED
YRW000390	SRK ITEM
YRW500010	SRK ITEM

VUB9012

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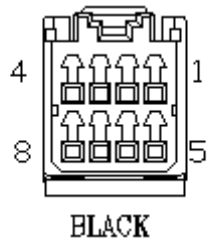
Connector: C2116



Part No.: YPC10486

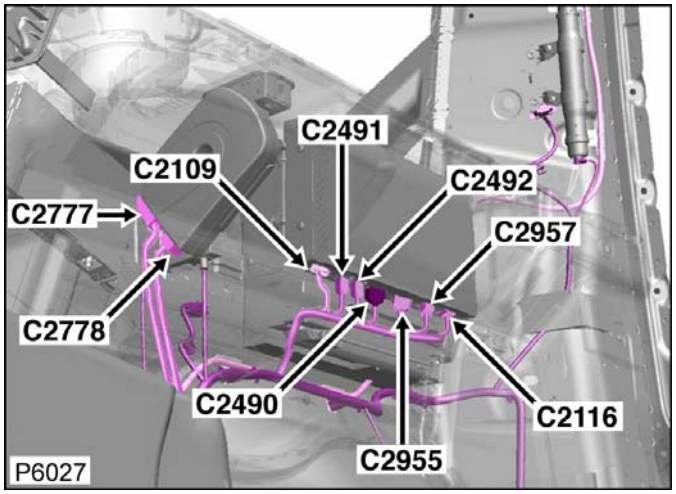
Colour: BLACK

Cavities: 8WY

Harness: ICE/NAVIGATION HARNESS

Description: Module-Rear seat-entertainment

Location: Behind RH rear trim panel



Wire Chart

CAV	TERMINAL	CSA	COL	CCT	DESTN
1	YPL10036	0.5D	N	425	C2249
3	YPL10036	0.5D	B	425	S/JOINT SJ700

Service Repair Kits

CSA	0.30- 0.50 CS
Cavities: 1,3	
VDK500010	SRK ITEM GENERAL
YMI000640	SRK ITEM MULTILOCK 040 FAMILY 0.5CSA
YPQ000100	SRK ITEM
YQD000210	SRK ITEM R/B
YRV000040	SRK ITEM PIDG RED
YRW500010	SRK ITEM

VUB002

Connector: C2116

Description: Module-Rear seat-entertainment

Location: Behind RH rear trim panel

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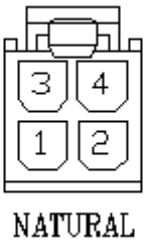
Connector: C2832



Part No.: YPC906180

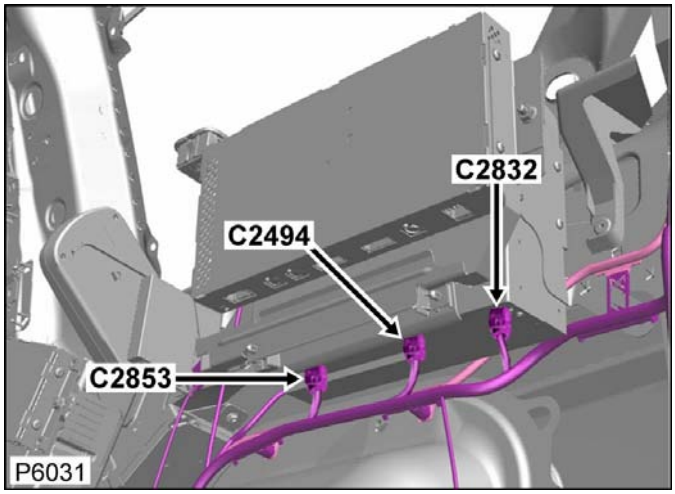
Colour: NATURAL

Cavities: 4WY

Harness: ICE/NAVIGATION HARNESS

Description: Module-DVD

Location: Behind RH rear trim panel



Wire Chart

CAV	TERMINAL	CSA	COL	CCT	DESTN
2	YPL102630	0.5D	B	425	S/JOINT SJ700
4	YPL102630	0.75D	PU	703	S/JOINT SJ138
4	YPL102630	0.75D	PU	702	C2249

Service Repair Kits

Refer to Harness Repair

Se référer aux informations de rép

Siehe Informationen über Kabe

Vedere le informazioni che tratt

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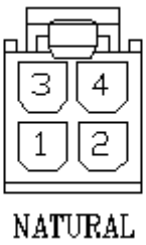
Connector: C2832



Part No.: YPC906180

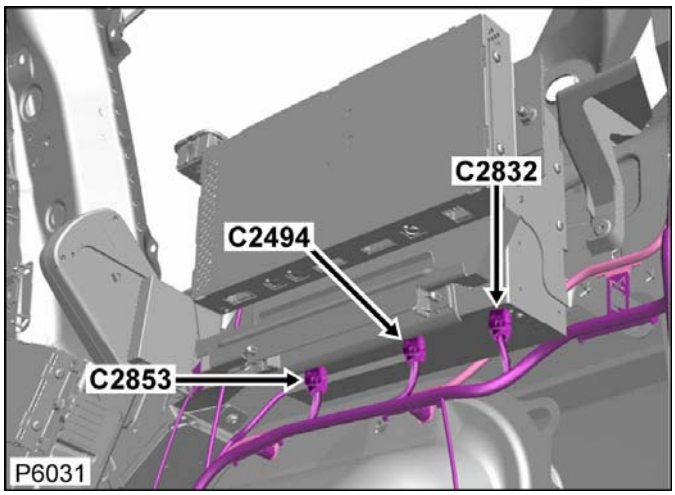
Colour: NATURAL

Cavities: 4WY

Harness: ICE/NAVIGATION HARNESS

Description: Module-DVD

Location: Behind RH rear trim panel



Service Repair Kits