

Parts and Accessories. Installation Instructions.



Professional Navigation system retrofit (SA 609) BMW 5 Series (E60, E61)

Retrofit kit No. 65 90 0 397 300

Installation time

The installation time for cars without SA 606 is approx. 6.0 hours, and for cars with SA 606 approx. 4.0 hours but this may vary depending on the condition of the car and the equipment in it.

Important information

Before you install the retrofit system, test the control module status with the CIP (coding, customising, programming) test program. If the test detects incorrect statuses in one or more control modules, these must be updated first using the “Load software” function. The Car Communication Computer retrofit should be installed with the Software Service Station and the OPPS/OPS. Refer to the corresponding Service Information documents.

In order to avoid unnecessary additional expenses/costs, a request must be sent to Technical Parts Support via ASAP immediately whenever assembly or functional problems are detected in a short troubleshooting procedure, approx. 0.5 hours. This request must include the chassis number, the part number of the installed retrofit kit and a detailed description of the problem.

These installation instructions are primarily designed for use within the BMW dealership organisation and by authorised BMW service companies.

In any event the target group for these installation instructions is specialist personnel trained on BMW cars with the appropriate specialist knowledge.

All work must be completed using the latest BMW repair manuals, circuit diagrams, servicing manuals and work instructions in a rational order using the prescribed tools (special tools) and observing current health and safety regulations.

Ensure that the cables/lines are not kinked or damaged as you install them in the car. The costs incurred as a result of this will not be reimbursed by BMW AG.

Additional cables/lines that you install must be secured with cable ties.

All the figures show LHD cars, proceed in exactly the same way on RHD cars.

Ordering instructions

The navigation system retrofit kit must also be ordered for cars without **SA 606** (see EPC for details and part number).

This central instrument panel trim for Car Communication Computer (CCC) is not included in the retrofit kit and must be ordered separately (see EPC for details and part number).

The headlining trim for cars without **SA 638** or **SA 644** is not supplied with the retrofit kit and must be ordered separately to suit the car's interior (see EPC for details and part number).

Pictograms



Denotes instructions that draw your attention to dangers.



Denotes instructions that draw your attention to special features.

◀ denotes the end of the instruction or other text.

See the EBA CD or Aftersales Portal for explanations of the pictograms.

Do not archive the hard copy of these installation instructions since daily updates are made by Aftersales Portal.

Subject to technical modifications.

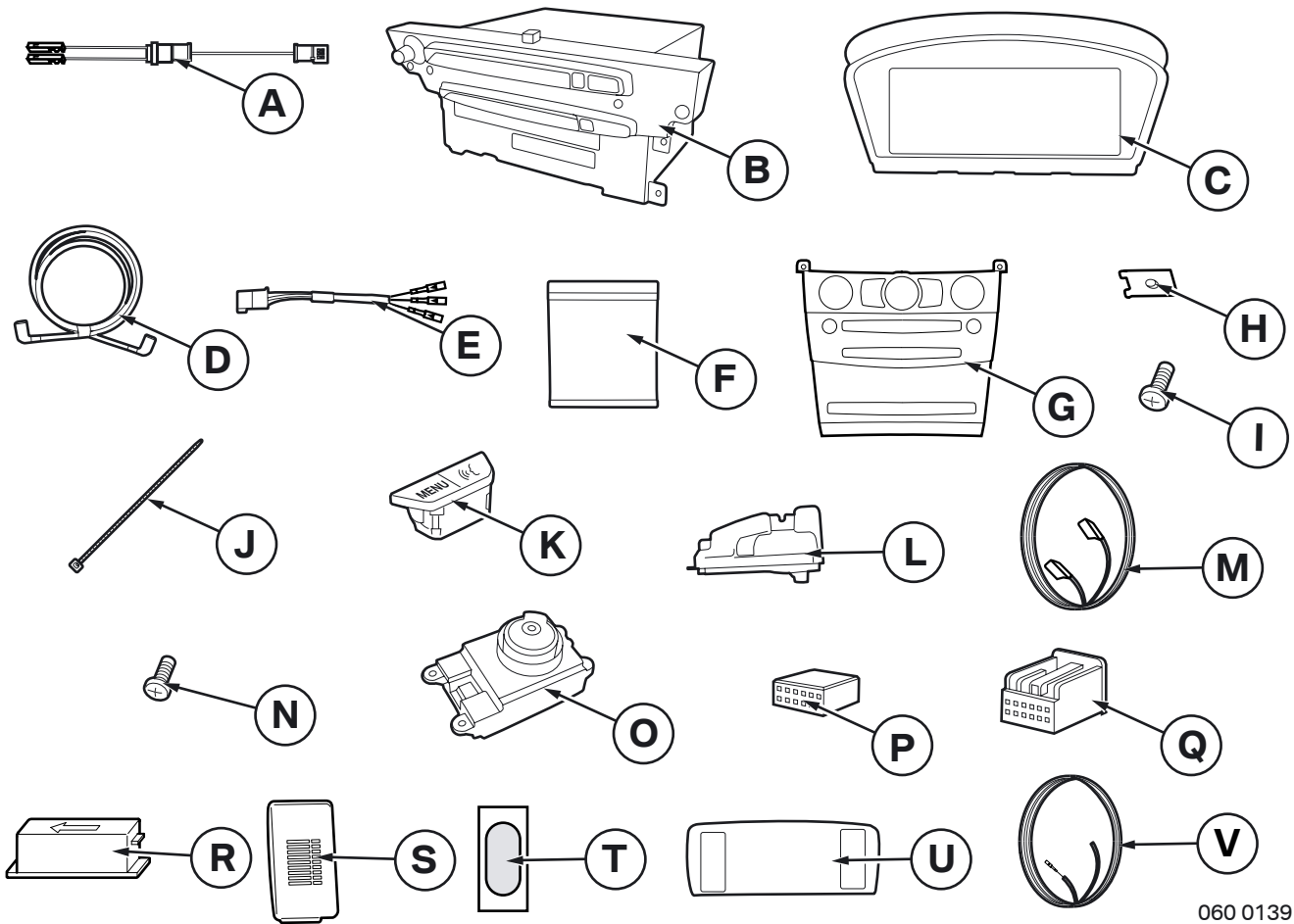
Special tools required

00 9 310

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1. Parts list

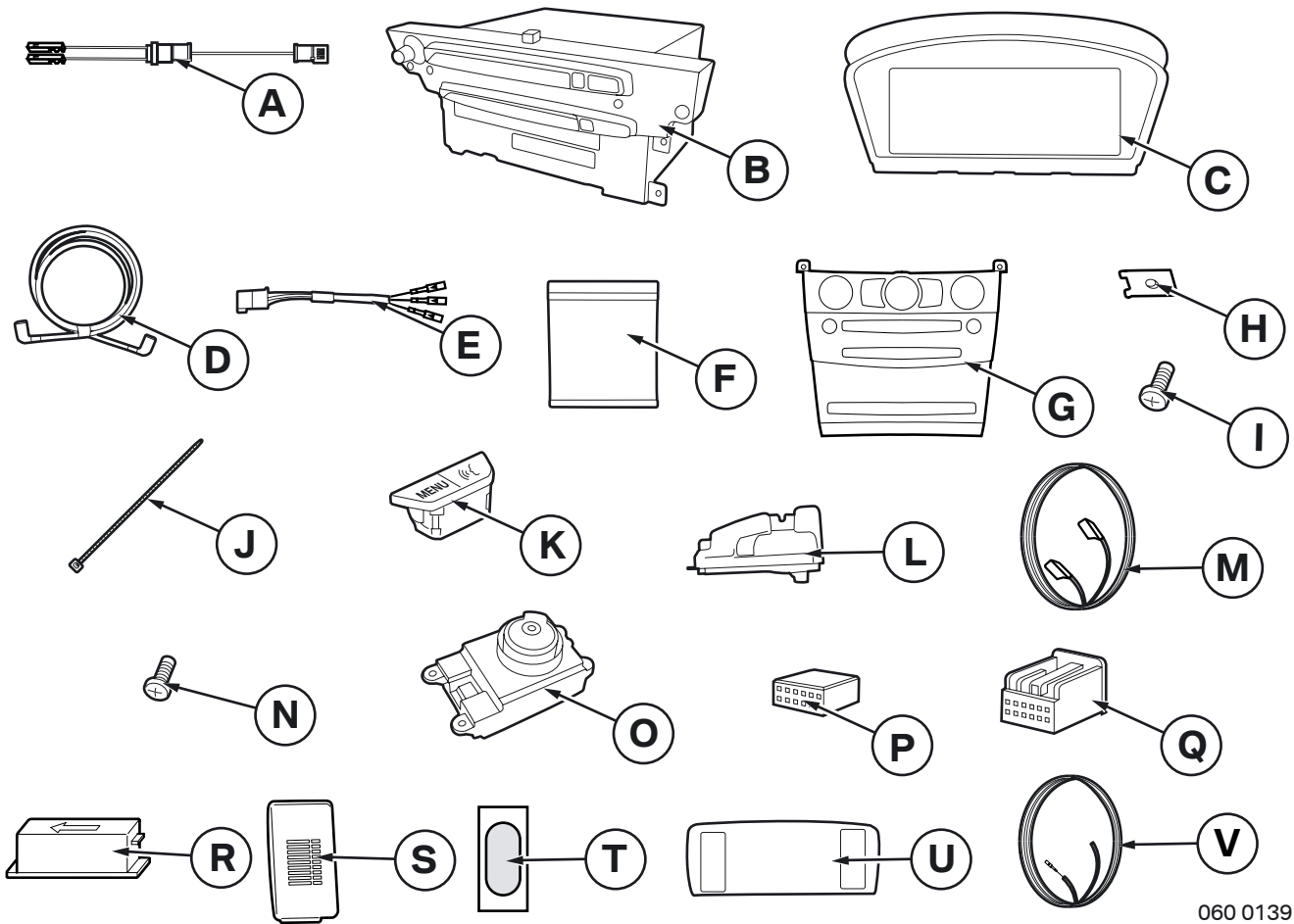


060 0139 V

Legend

- A Voice control wiring harness
- B Car Communication Computer (CCC)
- C 8.8" on-board monitor
- D LVDS cable
- E CCC fan wiring harness
- F Protective strip
- G Central instrument panel trim (not included in the parts kit)
- H Speed nut (2x)
- I Fillister head self-tapping screw 4.2 x 16 (3x)
- J Cable tie (15x)
- K Menu/voice input button
- L GPS aerial (included in navigation system retrofit parts kit)
- M GPS aerial cable (included in navigation system retrofit parts kit)
- N Self-tapping screw (included in navigation system retrofit parts kit)
- O Controller high
- P Socket casing (3x)
- Q Cover cap (3x)

1. Parts list



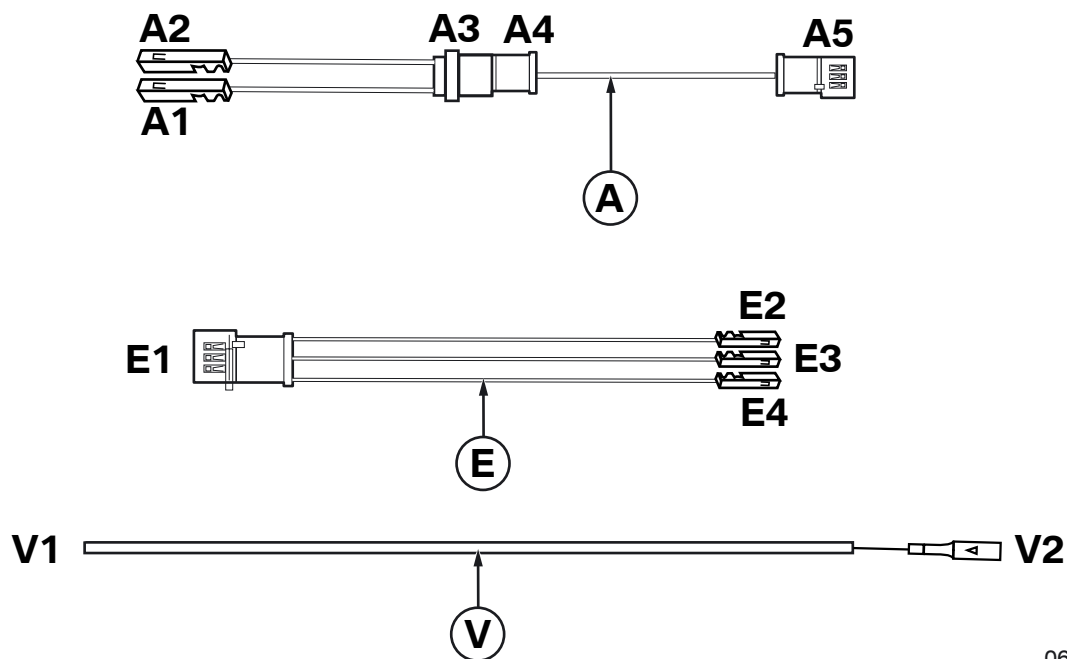
060 0139 V

- R Hands-free microphone
- S Hands-free microphone trim
- T Microphone trim (cars without SA 638 or SA 644 only)
- U Headlining trim (cars in without SA 638 or SA 644 only, not supplied with the retrofit kit)
- V Navigation system cable

2. Preparations

| | TIS No. |
|---|----------------|
| Conduct a brief test | --- |
| Disconnect the negative pole of the battery | 12 00 ... |
| The following components must be removed first of all | |
| Rear seat (cars without SA 606 only) | 52 24 005 |
| Backrest side part (cars without SA 606 only) | 52 26 008 |
| Oddments box on the driver's side | 51 16 ... |
| Side footwell trim on A pillar | 51 43 070 |
| Trim for door pillar at the bottom | 51 43 150 |
| Trim for roof pillar, rear (cars without SA 606 only) | 51 43 251 |
| Trim for roof pillar, rear (front) (cars without SA 606 only) | 51 43 255 |
| Audio system controller | 65 12 200 |
| Lower rear headlining (cars without SA 606 only) | --- |
| Trim for C pillar (E61) (cars without SA 606 only) | 51 43 255 |
| Trim for D pillar (E61) (cars without SA 606 only) | 51 45 259 |
| Décor trim on right of instrument panel | 51 45 380 |
| Central instrument panel cover | 51 45 310 |
| On-board monitor | 65 82 050 |
| Pedal trim | 51 45 185 |
| Button unit | 61 31 193 |
| Button for controller | 61 31 192 |
| Front controller | 61 31 195 |
| Remove the oddments box | 51 16 200 |
| Lower the A pillar trim on the left | --- |
| Front headlining trim | --- |

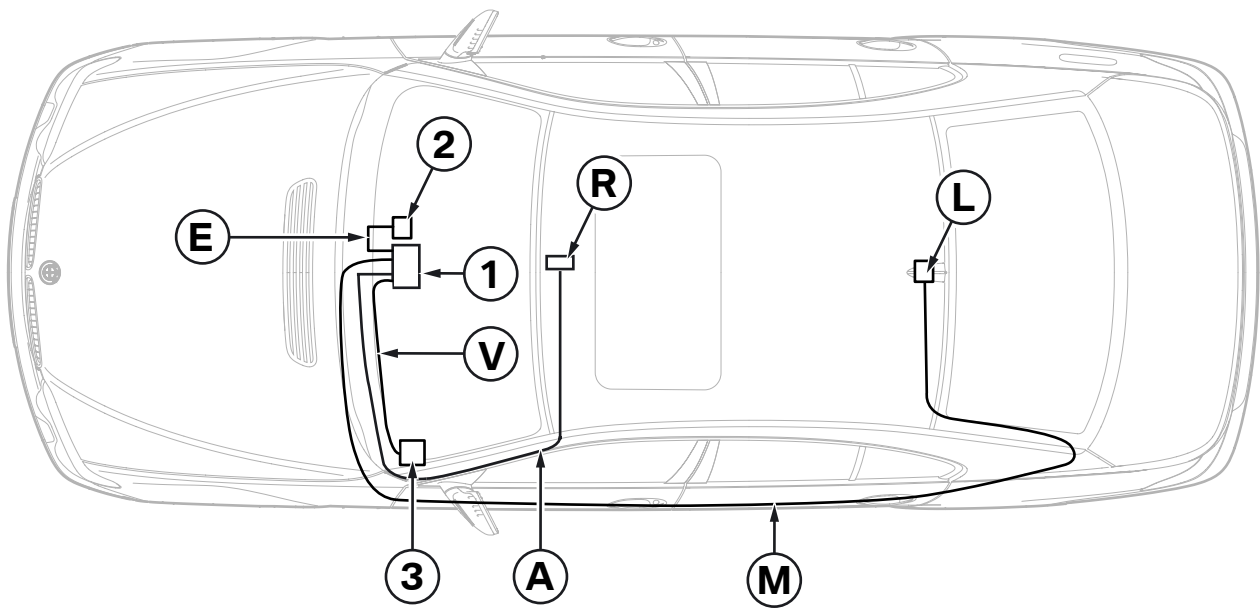
3. Connection diagram



060 0158 V

| Item | Description | Signal | Cable colour / Cross-section | Connection location in the car | Abbreviation / Slot |
|------|----------------------------------|------------|-------------------------------|-----------------------------------|---------------------|
| A | Voice control wiring harness | --- | --- | --- | --- |
| A1 | Socket contact | MIC (+) | WS/GN 0.35 mm ² | To radio plug X13814 | X13814 PIN 1 |
| A2 | Socket contact | MIC (-) | WS/RT 0.35 mm ² | To radio plug X13814 | X13814 PIN 6 |
| A3 | 3-pin plug casing, WS | --- | --- | To branch A4 | X13293 |
| A4 | 3-pin socket casing, WS | --- | --- | To branch A3 | X3759 |
| A5 | Black 3-pin socket casing | --- | --- | To hands-free microphone R | X2759 |
| E | CCC fan wiring harness | --- | --- | --- | --- |
| E1 | Black 3-pin socket casing | --- | --- | To CCC fan | X14055 |
| E2 | Socket contact | Fan (+) | RT/SW 0.35 mm ² | To radio plug X13813 | X13813 PIN 1 |
| E3 | Socket contact | Fan (-) | BR 0.35 mm ² | To radio plug X13813 | X13813 PIN 5 |
| E4 | Socket contact | Diagnostic | WS 0.35 mm ² | To radio plug X13813 | X13813 PIN 11 |
| V | Navigation system wiring harness | --- | --- | --- | --- |
| V1 | Cable open | --- | BRRT 0.35 mm ² | To CAS control module | X10318 PIN 31 |
| V2 | Socket contact | DFAHL | BRRT 0.35 mm ² | To radio plug X13814 | X13814 PIN 12 |

4. Installation and cabling diagram

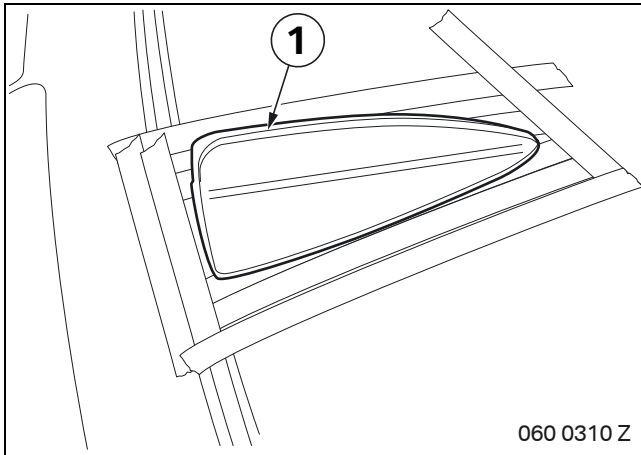


060 0140 V

Legend

- A Voice control wiring harness
 - E CCC fan wiring harness
 - L GPS aerial
 - M GPS aerial cable (for cars without SA 606 only)
 - R Hands-free microphone
 - V Navigation system wiring harness
-
- 1 CCC
 - 2 CCC fan
 - 3 CAS

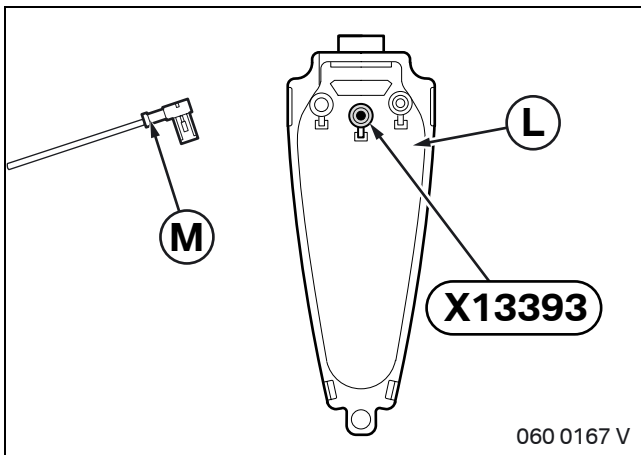
5. Installation work for the GPS aerial and aerial cable (cars without SA 606 only)



- ▶ Mask the area around the roof aerial to prevent damaging the paintwork. ◀

Carefully cut the empty casing (1) for the roof aerial off the roof with the special tool.

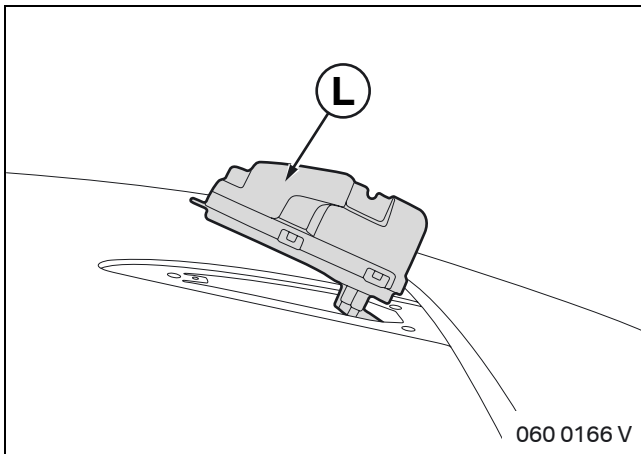
Clean the surfaces in the bonding areas on the empty casing (1) and roof.



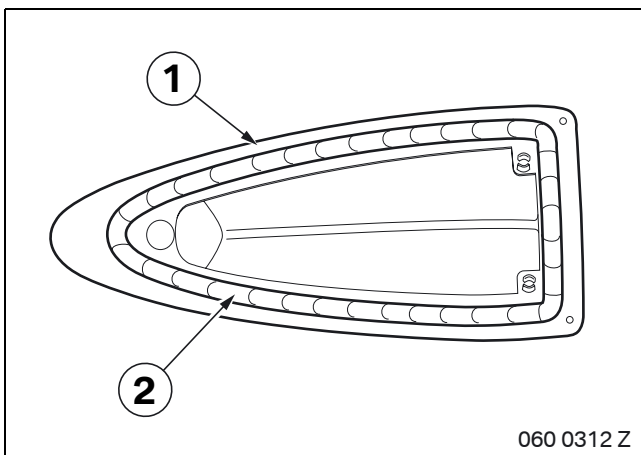
- ▶ If the car has a car phone the existing aerial must be replaced by the GPS aerial.

The aerial cable from the car phone must then be connected to the GPS aerial L. ◀

Connect the GPS aerial cable M to connector X13393 on the GPS aerial L.



Insert the aerial L at the rear and secure it at the front with screw N supplied in the parts kit.

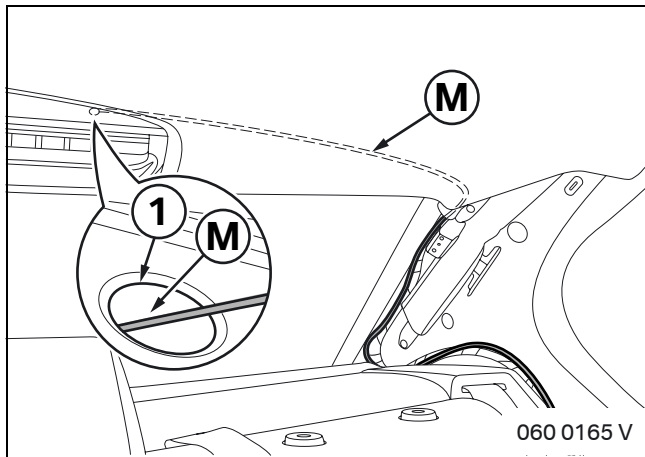


- ▶ The bonding surfaces must be clean and free of grease. The temperature of the adhesive must be at least 20 °C. The hardening time of the adhesive is at least 4 hours. ◀

Apply a bead of adhesive (2) around 8 mm wide and 8 mm high to the empty casing (1).

Carefully place the empty casing (1) in its original position, press it slight and secure it with adhesive tape.

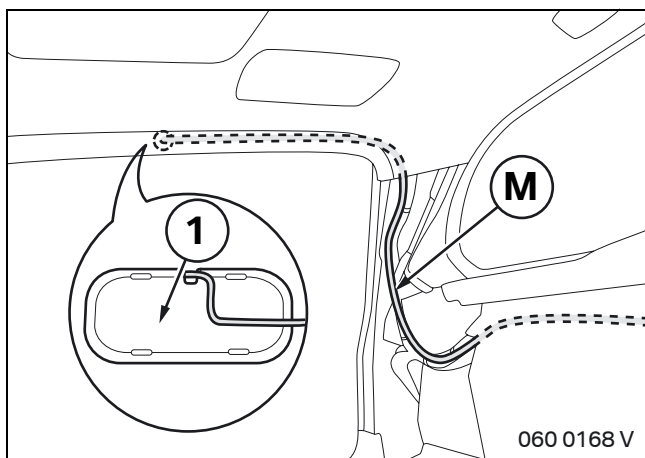
5. Installation work for the GPS aerial and aerial cable (cars without SA 606 only)



For E60 only:

Thread the aerial cable **M** through the opening (1).

Route the aerial cable **M** behind the headlining to the C pillar. Route the aerial cable **M** further along the existing standard wiring harness to the driver's footwell and from there to the centre console.



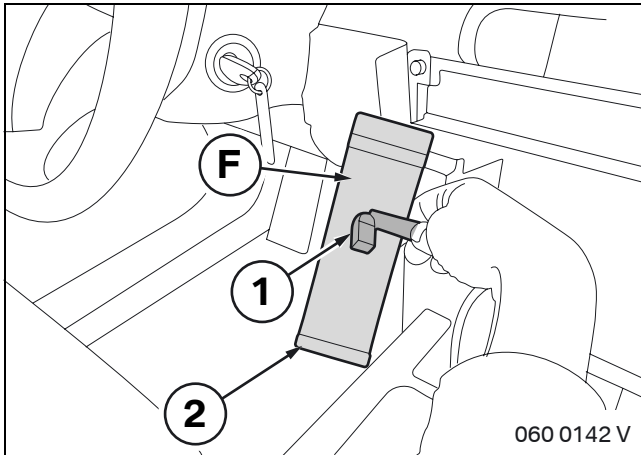
For E61 only:

Thread the aerial cable **M** through the opening (1).

Route the aerial cable **M** behind the headlining to the D pillar. Route the aerial cable **M** further along the existing standard wiring harness to the driver's footwell and from there to the centre console.

Cut the cover cap (1) if necessary.

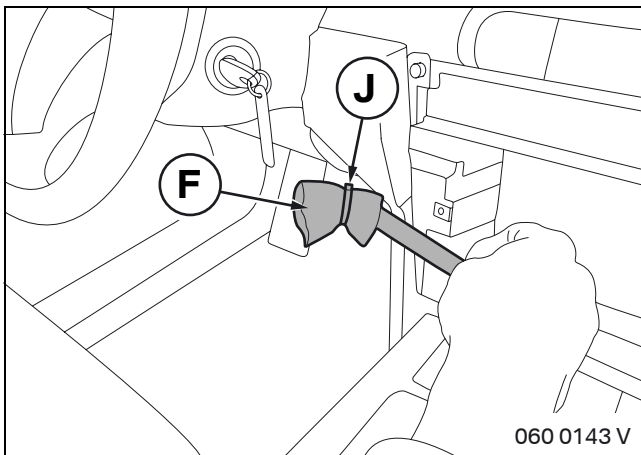
6. Installation work for the Car Communication Computer (CCC)



Cut the protective strip **F** at right angles to the adhesive strips in the middle.

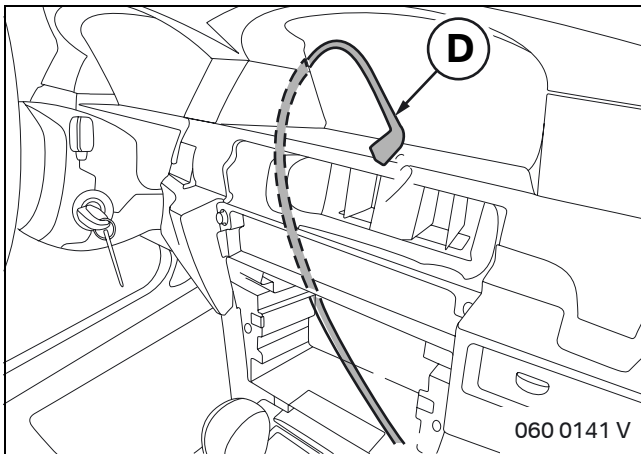
Wrap the plug (1) on the existing LVDS cable with a protective strip **F** and secure it with adhesive strips (2).

Proceed in the same way with the plug on the LVDS cable on the audio system controller.



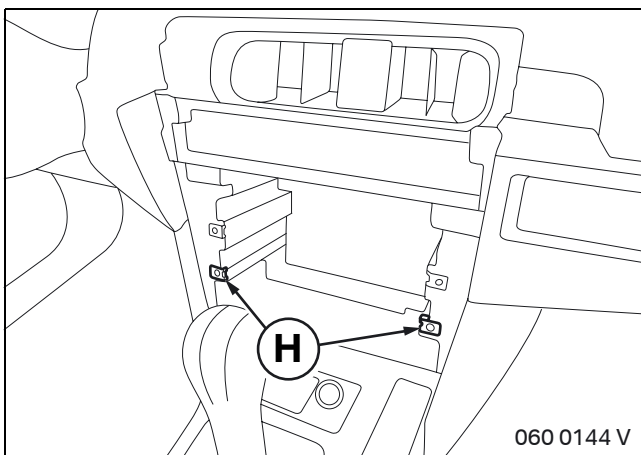
Also secure protective strip **F** using cable tie **J**.

Proceed in the same way with the plug on the LVDS cable on the audio system controller.



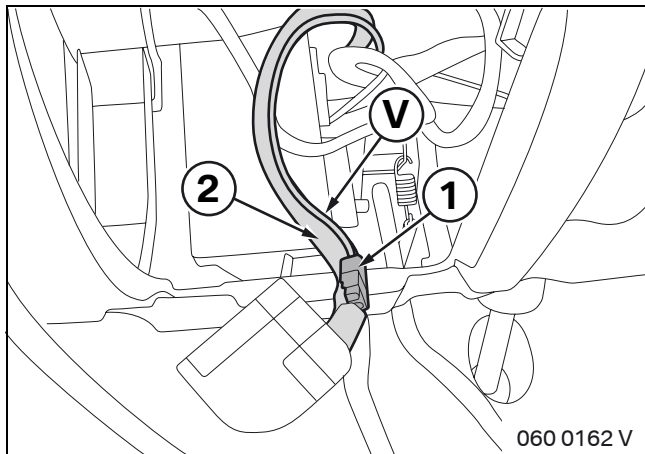
! Connect the violet plug later to the 8.8" on-board monitor **C** and connect the blue plug to CCC **B**. ◀

Route the LVDS cable **D** on the left behind the ventilation duct downwards to the centre console module holder.



Attach speed nuts **H** to the centre console module holder.

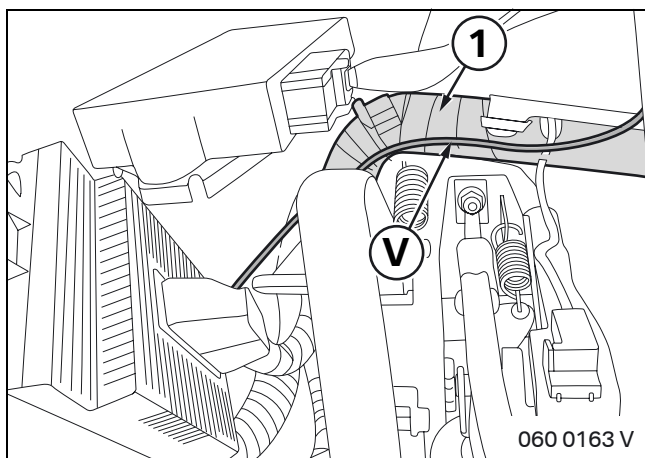
6. Installation work for the Car Communication Computer (CCC)



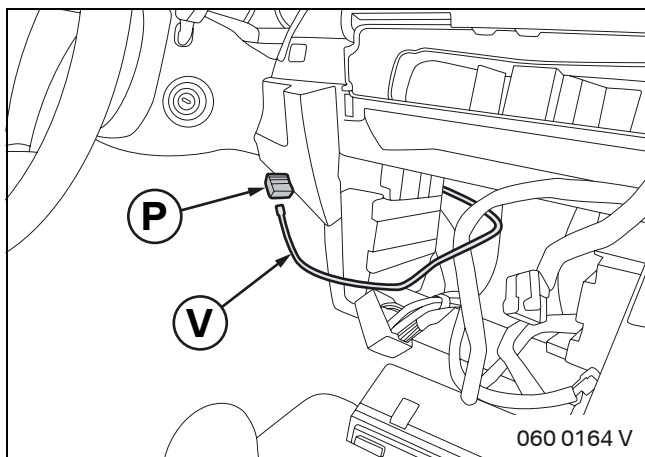
For cars built before 09/2004 only:

Disconnect plug **X10318** from the CAS control module. Connect the navigation system cable **V** to PIN 31, BR/RT cable, using a miniature connector (1).

Route the navigation system cable **V** along the existing wiring harness (2) to the steering column.



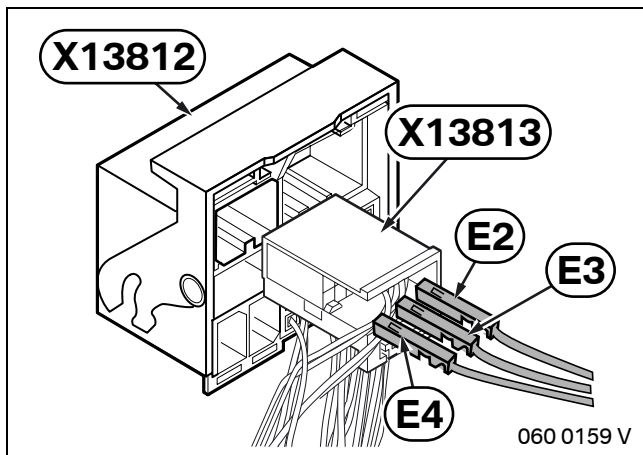
Route the navigation system cable **V** along the existing wiring harness (1) to the centre console.



▶ If the socket casing **X13814** is already on the radio plug, connect the navigation system cable **V** to PIN 12. ◀

Connect the navigation system cable **V** to socket casing **P** PIN 12. Insert the socket casing **P** into the cover cap **Q**.

6. Installation work for the Car Communication Computer (CCC)



For all cars:


Disconnect plug **X13813** from plug **X13812**.

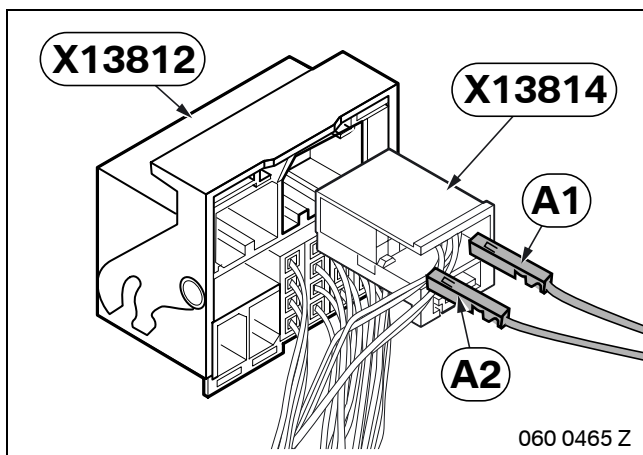
Connect the CCC fan wiring harness **E** to plug **X13813** as follows:

RTSW cable to PIN 1

BR cable to PIN 5

WS cable to PIN 11.

 If the car does not contain plug **X13813**, use socket casing **P**. ◀




Disconnect plug **X13814** from plug **X13812**.

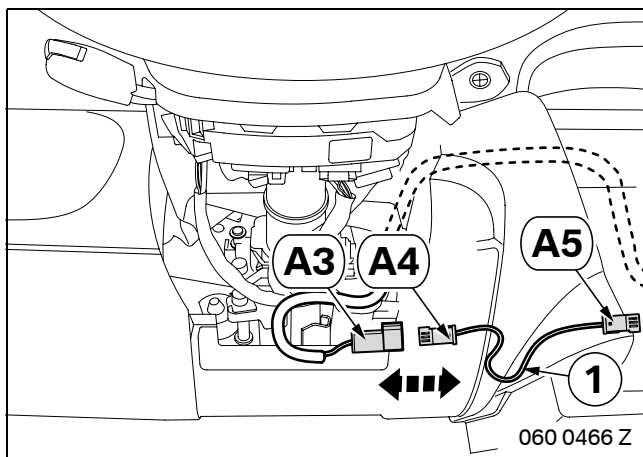
Connect branches **A1-A2** to plug **X13814** as follows:

- **A1**, WS/GN cable, to PIN 1

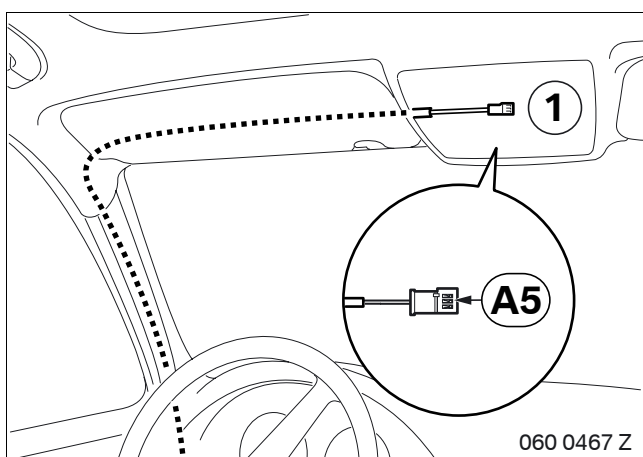
- **A2**, WS/RT cable, to PIN 6

Connect plug **X13814** to plug **X13812**.

 If the car does not contain plug **X13814**, use socket casing **P**. ◀

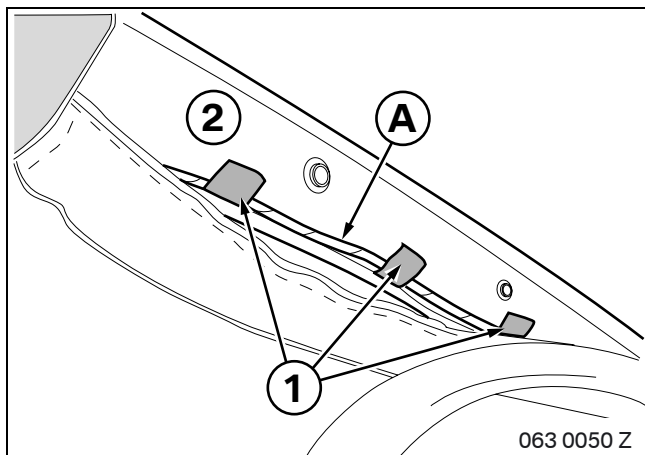


Route branches **A3 – A5** to the steering column.



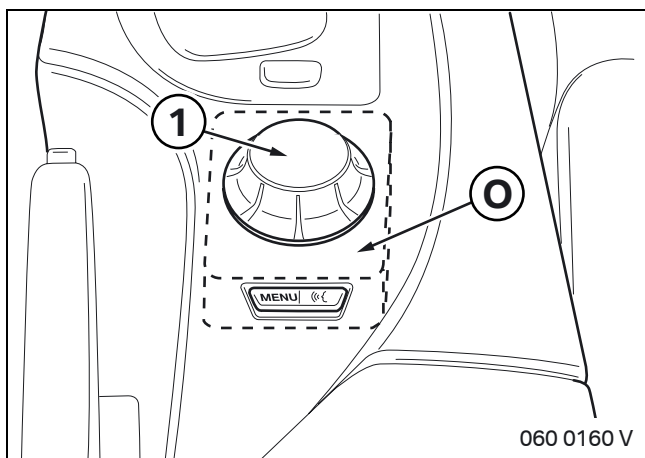
Route branch **A5** to the left A pillar over the lowered headlining to the opening of the roof trim (1).

6. Installation work for the Car Communication Computer (CCC)



Secure wiring harness **A** to the left A pillar (**2**) using textile adhesive tape.

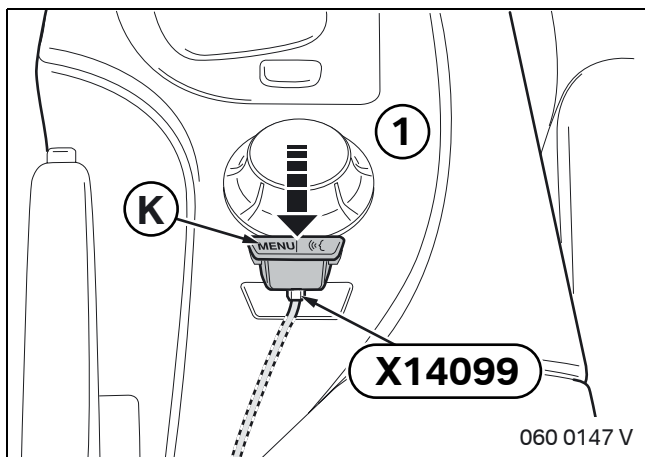
▶ Ensure that wiring harness **A** is routed and secured behind the head airbag. ◀



Install controller **O** from the parts kit as described in TIS No. 61 31 195.

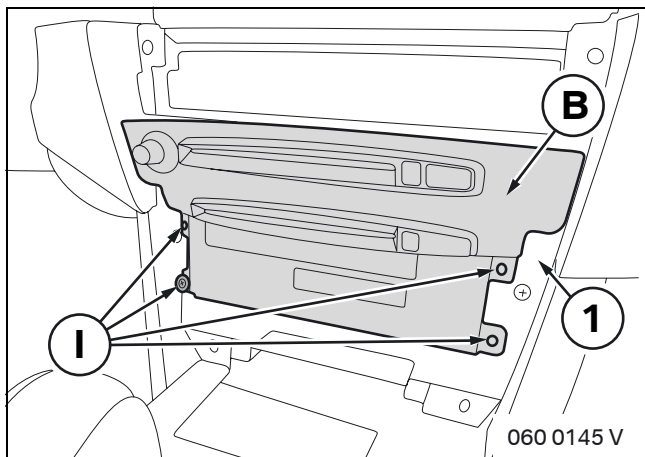
Fit the knob for the controller (**1**) again as described in TIS No. 61 31 192.

Install the oddments box as described in TIS No. 51 16 200.





Connect plug **X14099** to button unit **K**. Clip the button unit **K** into the centre console (**1**).

6. Installation work for the Car Communication Computer (CCC)



Connect all connectors to the CCC **B**. Connect branch **E1** to the CCC fan.

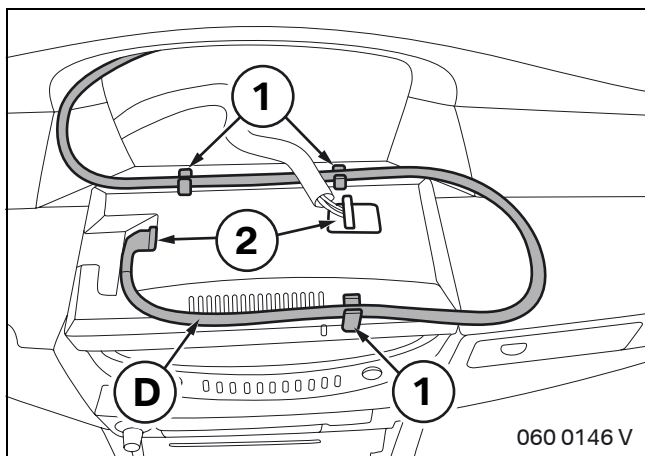
 Tie back the old LVDS cable on the standard wiring harness (see Figure 060 0142 V). Cut open a few centimetres of the wiring harness wrapping if necessary. ◀

 As you insert the CCC **B**, ensure that the wiring harness does not get trapped and that no parts of the interior trim are damaged. ◀

Push the CCC **B** into the centre console module holder (1) and secure it using fillister head self-tapping screws **I**.


Tightening torque 2.1 – 2.5 Nm.


Clip the centre console switch centre and automatic air conditioning control into the new instrument panel centre trim **G**. Connect the cable and install the trim.

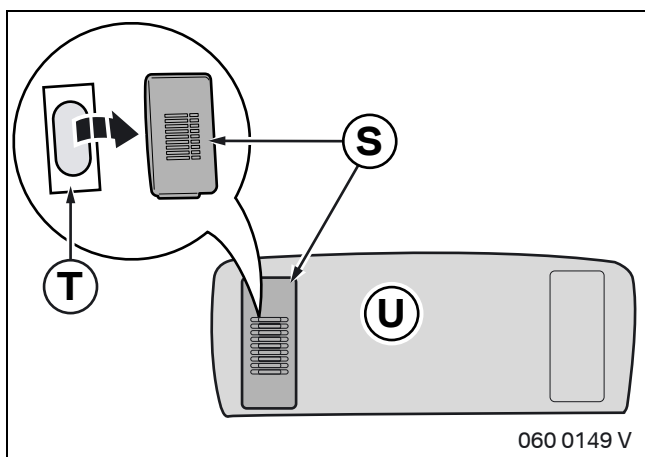


Secure LVDS cable **D** in a broad arc in the holders (1) of the 8.8" on-board monitor **B**.

Connect the plug (2).

 Take care not to kink LVDS cable **D** when you install the 8.8" on-board monitor **C**. ◀

 Tie back the old LVDS cable on the standard wiring harness (see figure 060 0142 V) in the area behind the 8.8" on-board monitor **C**. Cut open a few centimetres of the wiring harness wrapping if necessary. ◀

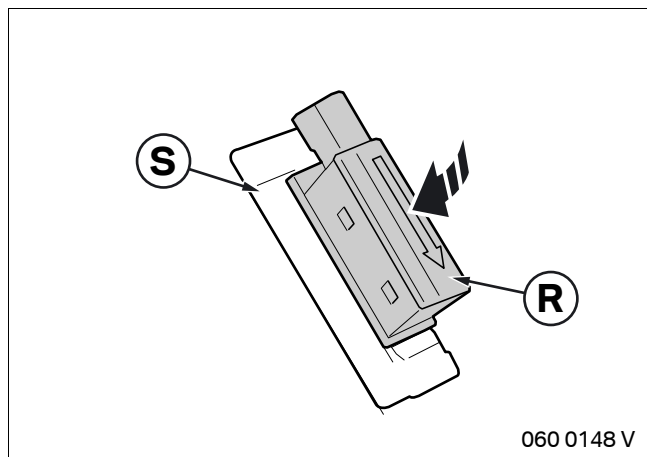



Cars without SA 638 or SA 644 only

Clip the microphone trim **T** into the hands-free microphone trim **S**.

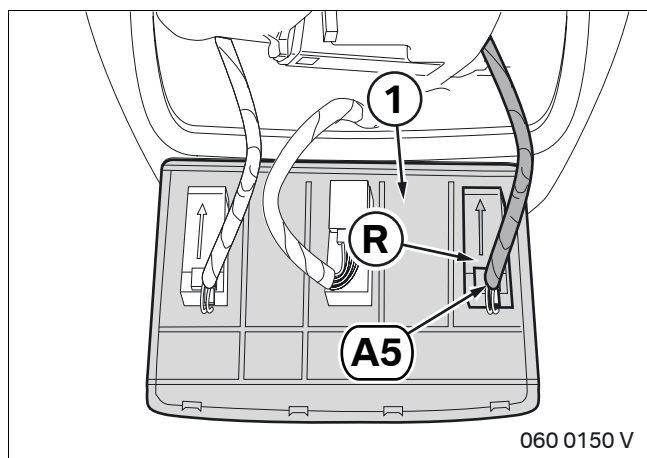
Clip the hands-free microphone trim **S** into the headlining trim **U**.

6. Installation work for the Car Communication Computer (CCC)



 The arrow on the hands-free microphone **R** must point to the front of the car after it has been installed. ◀

Clip hands-free microphone **R** into the hands-free microphone trim **S**.



Clip the hands-free microphone **R** into the headlining trim (1) and connect branch **A5** to the hands-free microphone **R**.

7. Concluding work and coding

This retrofit system requires coding.

- Connect the battery
- Encode the retrofit kit using the **Retrofit/Nav Pro** path
- Conduct a brief test
- Conduct a function test
- Re-assemble the car

8. Circuit diagram

Cable colours

| | |
|----|-------|
| GN | Green |
| RT | Red |
| WS | White |
| BR | Brown |
| SW | Black |