

VW Golf 5 radio removal and Android auto unit installation (VW 8" 2+32Gb, GPS, BT, WiFi)



Radio removal:

- Dashboard tray removal
- Air duct / emergency switch assembly removal
- Lower trim cover removal
- Radio support frame removal

Tools required:

- Torx T20 screwdriver
- Plastic pry tool (e.g. auto trim removal tool)

Additional components:

- Antenna amplifier (2x FAKRA¹ to DIN) for improved reception (e.g. LAMPA 40312)



Remove pad from dashboard tray.

1 FAKRA – Fachkreis Automobil – Automobile Experts (ISO 20860 RF connector)



Remove 2x T20 Torx screws securing the dashboard tray and the air duct / emergency switch assembly.



Remove dashboard tray and set aside.

Collect the two metallic clips at the back of the dashboard tray.

Remove the T20 Torx screw securing the top of the air duct, if present.



Carefully pry out and remove the air duct / emergency switch assembly and set aside (no need to disconnect the connecting cable).



Remove 2x T20 Torx screws securing the lower trim cover.



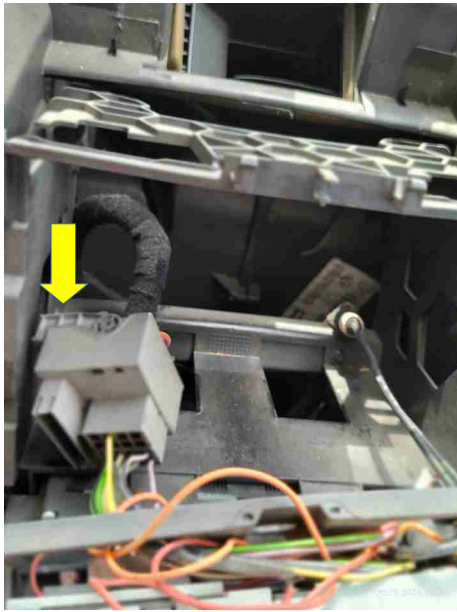
Carefully pry out and remove the lower trim cover and set aside.



Remove the 4x T20 Torx screws holding the radio support frame.



Carefully pull out the radio support frame so as not to damage the antenna and car audio cables.



Pull up the connector lever to disengage and detach the radio plug.

Detach the antenna connector(s).



Radio / frame removed, exposing the stock car audio and the two FAKRA antenna connectors.

Note that if an external antenna is not installed, these are connected to the rear window defogger and the additional amplifier module will be required if reception is not satisfactory.



Plug the large black quadlock connector of car audio wiring harness to the car audio receptacle and secure using the lever.

The second large black car audio connector on the harness is left unconnected.

Connect the CAN BUS DECODER to the wiring harness

CAVEAT: This is the unmodified harness provided with the head unit. The **Raise** decoder provided with the particular harness did not work properly so it was discarded and the harness modified for stand-alone use.

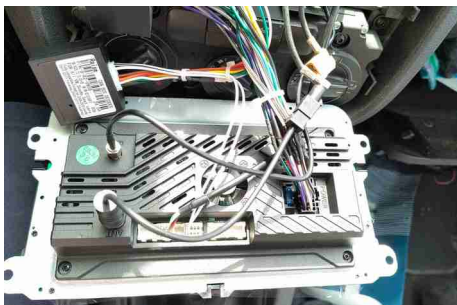


Secure the GPS antenna under the dashboard and above the glove compartment so that metallic components do not attenuate the GPS signals. Use the self-adhesive backing of the antenna assembly.

Route the GPS antenna cable along the edge of the compartment to avoid damage during the replacement of the air duct assembly.

USB cable

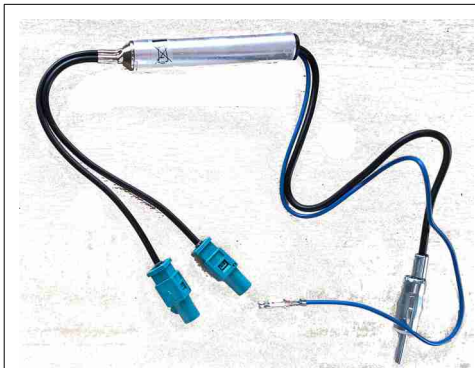
Route the provided USB cable, if needed, to the top part of the glove compartment where the car manual is usually stored (also note that a Type A USB connector is available at the front of the Android car unit).



Connect the Android car unit:

- Car audio (black) connector
- USB (white) cable connector, if used
- CAN bus (white) connector
- GPS antenna
- Radio antenna cable adapter – connect to one of the two available antenna connectors or use the dual antenna amplifier module (see next photo).

Note that the additional audio connectors are not used and their harness is not currently connected.



This is the DUAL FAKRA to DIN antenna amplifier.

The two FAKRA connectors mate with the two diversity antenna receptacles and the DIN plug goes to the corresponding receptacle of the Android car unit.

The **blue wire** connects to the blue ANT PWR wire of the car audio connector. Be careful as there may be live +12V power at the car audio connector side. Crimp together and insulate properly (or use a quick splice connector – see Additional notes, below)



Set the Android car unit in place and turn the ignition key to test. Select the Music tab to check the speakers, press the BAND button and scan to check the radio antenna, select a navigation application to check the GPS antenna.



Secure the Android car unit using 4x T20 Torx screws.



Replace and secure the lower trim cover using 2x T20 Torx screws at the top side.



Replace the air duct / emergency switch assembly being careful not to damage the GPS antenna cable.

Secure the assembly using a T20 Torx screw at the top side.



Replace the dashboard tray taking care to replace the metal clips at the back.

Secure the dashboard tray using 2x T20 Torx screws.



Replace the dashboard tray mat.

Duration: About 1 hour.

Additional notes

With the provided wiring harness the Android head unit and CAN (Controller Area Network) bus decoder are connected to an 'always on' supply line. The CAN bus decoder provides signals controlling the Android head unit.

The expected mode of operation is the 'key present' activation. As soon as the ignition key is moved to the 'on' position, the device is powered. When the key is returned to the 'off' position the device will remain powered but when the key is removed, the head unit is deactivated (it may continue operating for a short while). While in operation, the radio may be manually deactivated by pressing the ON/OFF button for a couple of seconds.

CAVEAT: The CAN bus decoder provided with the wiring harness did not work properly.

After about 8-10 minutes of operation the Android head unit would be deactivated by the provided CAN bus decoder and could only be reactivated after the ignition key was removed and after the car indicator panel turned itself off (about 30 seconds).

The offending unit:

Raise CAN BUS DECODER

P/N: G-RZ-VW58 24.04

SW V003.72.12.03-HS

HW VW-GC-0106V12

FOR: All VW, Skoda, Seat cars (Fully compatible Except for 2008-2010 Laida 2011-2017 Touareg, 2003-2010 Touareg)

The OEM of the specific Android head unit is not currently known but what could be deduced from its factory setting options is that it supports multiple CAN bus decoder vendors and protocols, but also **No CAN Bus** (look under the **Car Type** heading).

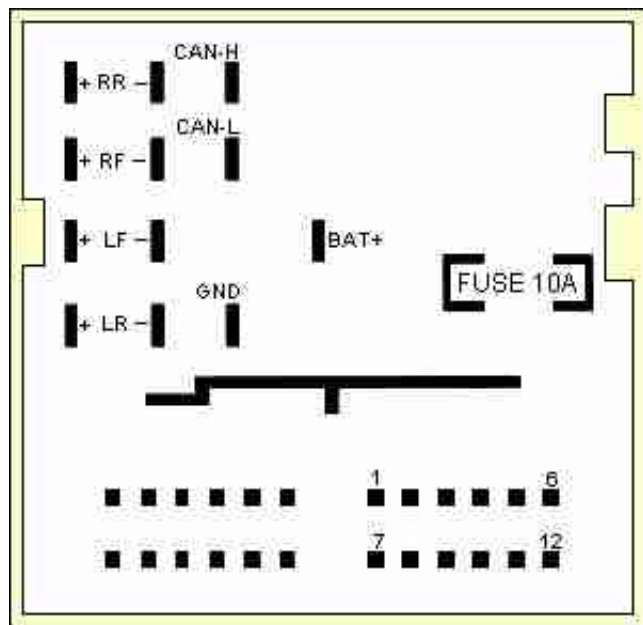
The passcode to enter factory settings is '000000'.

It may be that one of the Raise configurations could work with the Golf 5 but since the model was not listed, the 'simplification' of the wiring harness was decided instead.

Following are the pin-outs of all harness connectors and the proposed modification.

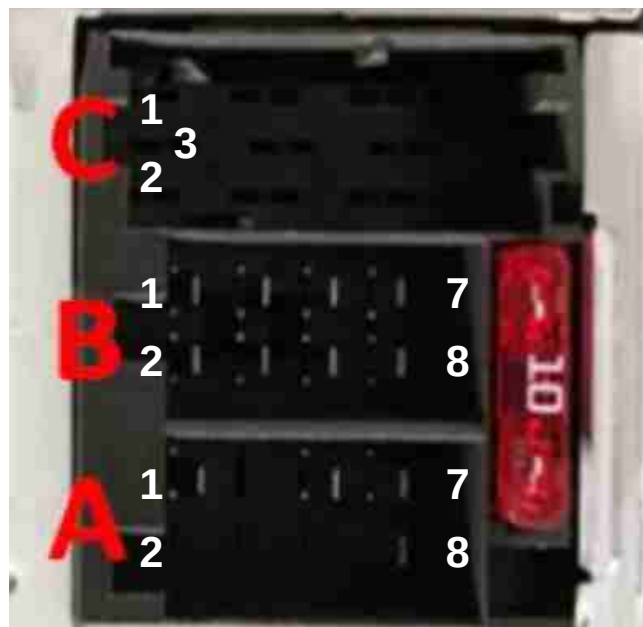
Android head unit wiring harness connector pin-outs

VW GOLF CAR-SIDE CONNECTOR



- BAT+**
Battery+ (12V direct from Battery).
- GND**
Chassis Ground
- RF+ / RF-**
Front right speaker
- LF+ / LF-**
Front left speaker
- RR+ / RR-**
Rear right speaker
- LR+ / LR-**
Rear left speaker
- CAN-L, CAN-H**
CAN on board diagnostic and control bus

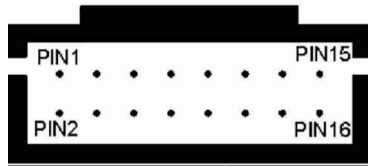
UNUSED CAR-SIDE CONNECTOR



- A1 – CAN-H**
- A5 – CAN-L**
- A7 – B+**
- A8 – GND**
- B1 – RR+**
- B2 – RR-**
- B3 – FR+**
- B4 – FR-**
- B5 – FL+**
- B6 – FL-**
- B7 – RL+**
- B8 – RL-**
- C5 – CAN-H**
- C6 – CAN-L**

Reference: Raise DZ_170

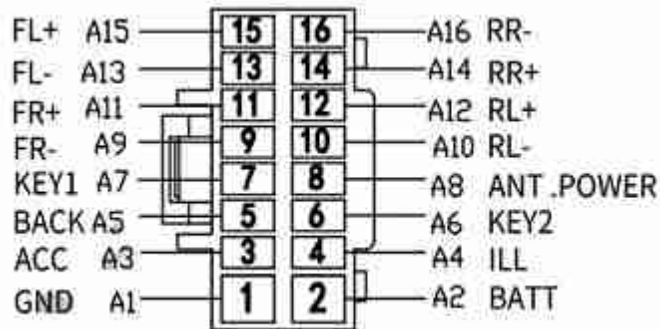
Raise CAN BUS DECODER



PIN	FUNCTION	Color
1	GND (0V)	Black
2	+BAT (12V)	Yellow
3	CAN-H	White
4	CAN-L	Green
5	ILL_OUT (12V / 0V / 100mA)	Orange
6	ACC_OUT (12V / 0V / 100mA)	Red
7	BRAKE_OUT (0V / Z)	N.C.
8	REVERSE_OUT (12V / 0V / 100mA)	Brown
9		N.C.
10		N.C.
11		N.C.
12		N.C.
13	RXD (3.3 or 5V)	White
14		N.C.
15		N.C.
16	TXD (3.3 or 5V)	White / Black

Reference: Raise DZ_170

ANDROID HEAD



A1	GND	Black
A2	BATT	Yellow
A3	ACC	Red
A4	ILL	Orange
A5	BACK (REVERSE)	Brown
A6	KEY2	Orange / White
A7	KEY1	Pink
A8	ANT. POWER	Blue
A9	FR-	Gray / Black
A10	RL-	Green / Black
A11	FR+	Gray
A12	RL+	Green
A13	FL-	White / Black
A14	RR+	Violet
A15	FL+	White
A16	RR-	Violet / Black

Reference: SKYFAME harnesses

Wiring for stand-alone use (no CAN bus)



What is needed:

- T-type quick splice connectors or similar (Amio type shown above)
- Crimping and flat pliers for pressing the quick splice connector ends
- Wire cutters

The aim is to remove the extraneous car-side connector and the CAN bus decoder and to connect the Android head unit power inputs (BATT, ACC, ILL) to corresponding 12V power lines.

- Snip off the unused car-side connector.
- Press a T-type connector receptacle onto the yellow (BAT+) wire of the quadlock connector. This may be used to connect the ACC wire for testing; read on for proper ACC wiring.
- Snip off the CAN bus decoder connector, leaving adequate lengths of the red (ACC) and orange (ILL) wires to reach the T-type connector receptacles.
- Strip and crimp the red (ACC) wire to the T-type connector plug
- Strip and crimp the orange (ILL) wire to a T-type connector plug (do not connect, yet)
- Connect the ACC T-type connector plug to the T-type connector receptacle

The **Car Type** in the factory settings should be set to **No CAN bus**.

As the activation input is now always on, the Android head unit may only be turned on or off manually, using the ON/OFF button at the front panel. **However, when OFF, the current drawn is 400 mA, sure to drain your battery in a few days.**

In order to reduce the current drain to a minimum, but also in order to have the unit start quickly, **the ACC input of the Android head unit should be connected to a switched +12V power supply line**, while the BATT power input – coming from the harness – will always be connected to the battery.



More supplies needed:

- A “current thief” device (Amio fuse splitter shown above)
- Extra fuse for the splitter (use lowest available rating)
- A length of automotive supply cable (~2m)
- Voltmeter / voltage presence indicator

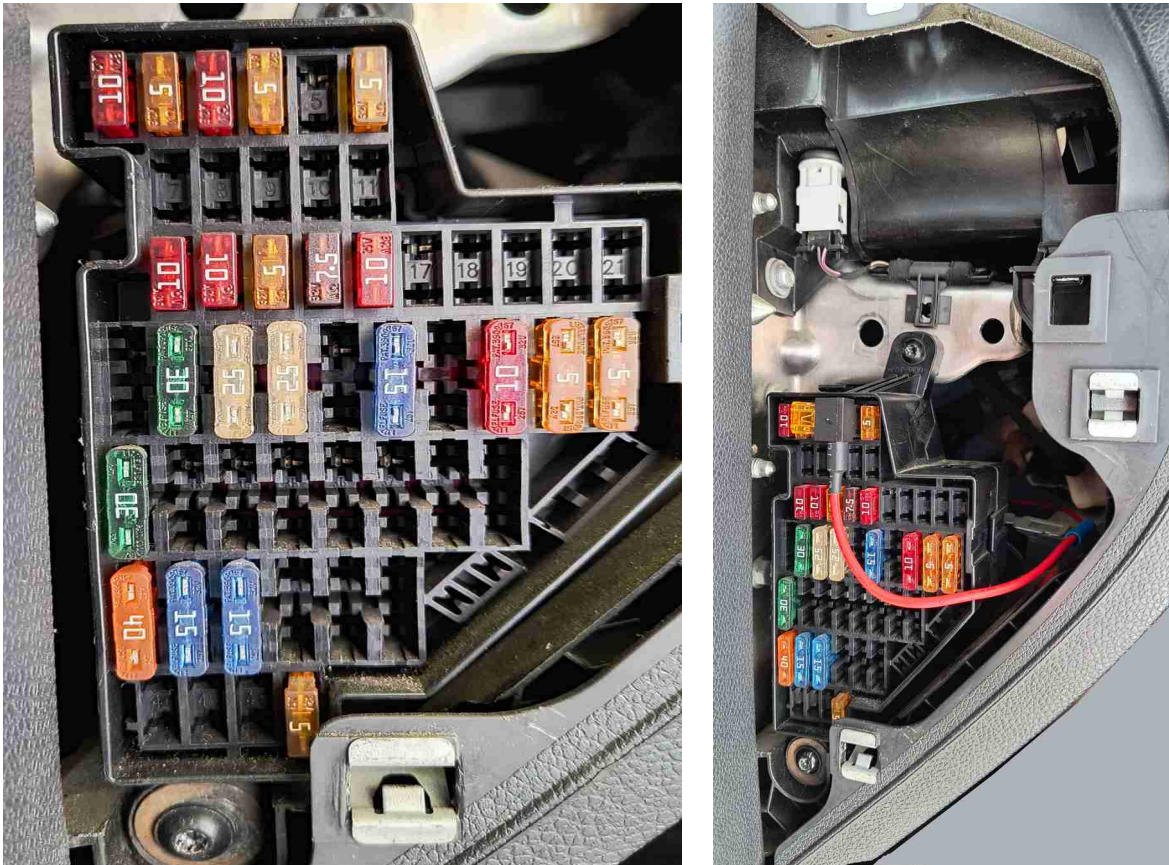
There are two fuse panels in the car. The main one is under the hood, in the engine compartment – next to the battery, and the secondary one is in the passenger cabin at the left side of the dashboard.



The fuse panel in the engine compartment includes the **Audio system fuse (F19)** which you may want to remove while working with the Android head unit or in order to eliminate the current drain of the unit while the car is immobilized.

Locate the fuse box inside the passenger compartment and pry open using the plastic pry tool.

Looking at the fuse panel inside the passenger compartment, you may notice that a few empty fuse slots have a (+12V) contact present (e.g. slots number 5, 17, 26, etc.) Using a voltmeter check that the selected slot is powered when the ignition key is inserted or is at the ON position and that **power is removed (0V) when the ignition key is at the OFF position or when the ignition key is removed.**

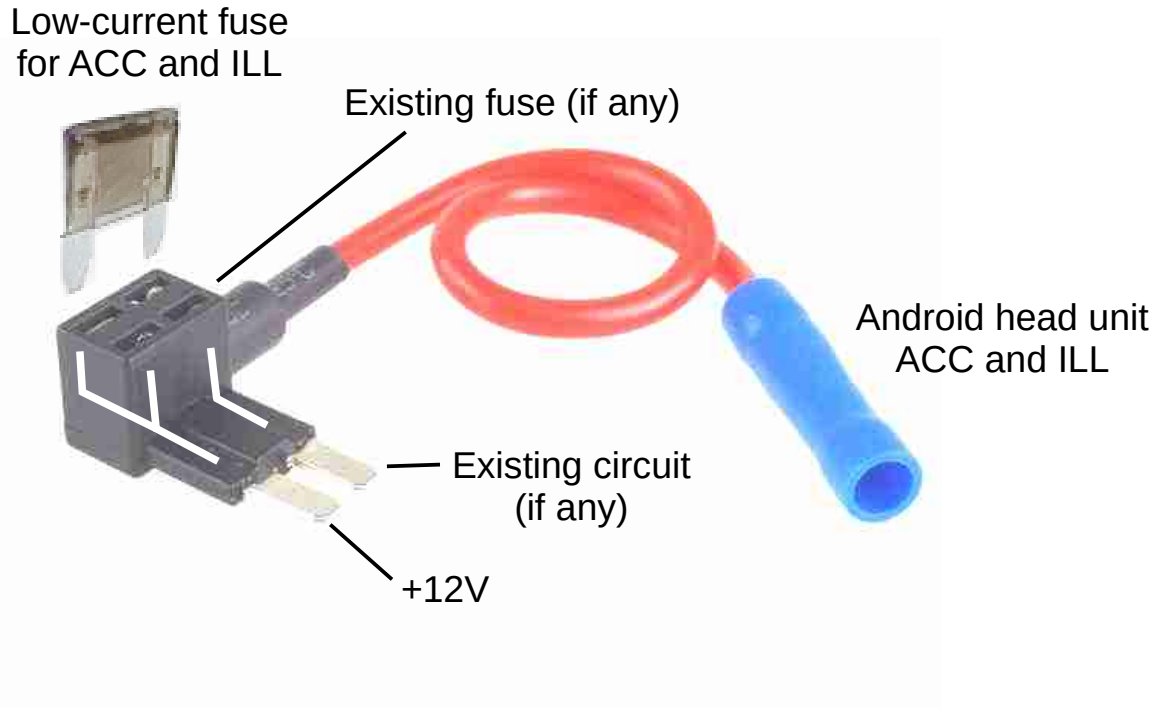


VW Golf 5 fuse box (left) and fuse splitter inserted at fuse slot 5 (right)

A fuse splitter is used to connect to the selected switched power supply contact. The fuse splitter connects to the automotive supply cable and is inserted into the selected fuse slot. In this example, **fuse slot 5** is used.

The trick here is to pass the available cable length through the steering well to reach the air duct area at the middle of the dashboard, where the Android head unit is installed. A flexible plastic rod may assist in this effort.

The drawing below shows the fuse splitter wiring. A low-current fuse should be used for the new connection. The ACC and ILL outputs of the Raise decoder are rated at 100 mA (max) each, so a 2A fuse should be more than adequate. A 5A fuse is shown in the pictures above.



Fuse splitter contact wiring

Attach a couple of T-type quick splice connectors at the air duct / Android head unit end of the cable, to be used for connecting the ACC and, optionally, the ILL plugs of the head unit. Secure the wire to the existing harness cable with tie wraps.

Connect the Android head unit ACC plug to one of the T-type connectors at the end of the cable coming from the fuse splitter.

Insert and turn the ignition key to the ON position to power the Android head unit and proceed with the Car settings (see below).

If desired, connect the ILL plug of the Android head unit to the remaining T-type connector.

Following are the current measurements for the different states of the unit and the proposed settings for the stand-alone (no CAN bus) configuration.

Android head unit current drain

Ignition key at the ON position (cold start)	About 2 minutes to operating	up to 900 mA
Ignition key at the ON position (standby)	About 10 seconds to operating	up to 900 mA
OPERATING	Operating at mid volume	800 mA – 900 mA
OFF from front panel	Switched ACC input at 12V	400 mA
Ignition key at the OFF position or removed	Switched ACC input at 0V. Current drain for about 30 seconds, before switching to STANDBY	400 mA – 600 mA
STANDBY	Switched ACC input at 0V	< 20 mA
After selected delay (6 hours to 7 days, see Car settings)	Switched ACC input at 0V	Not measured, expected to be zero or close to zero.

Car settings used for the No CAN bus setup

- Touch the top of the screen and slide downwards
- Touch the cogwheel symbol

Select:

- Car settings
- Factory settings (enter passcode: **000000** and touch the check symbol - ✓)
- Car type – Model: **No canbus**
- ACC delay: **2000 mS**
- Fast start: **Cold start after 3 days** (selections range from “never standby, to Cold start after 7 days, to standby every time)

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